

Terrillville
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Penney Home Store

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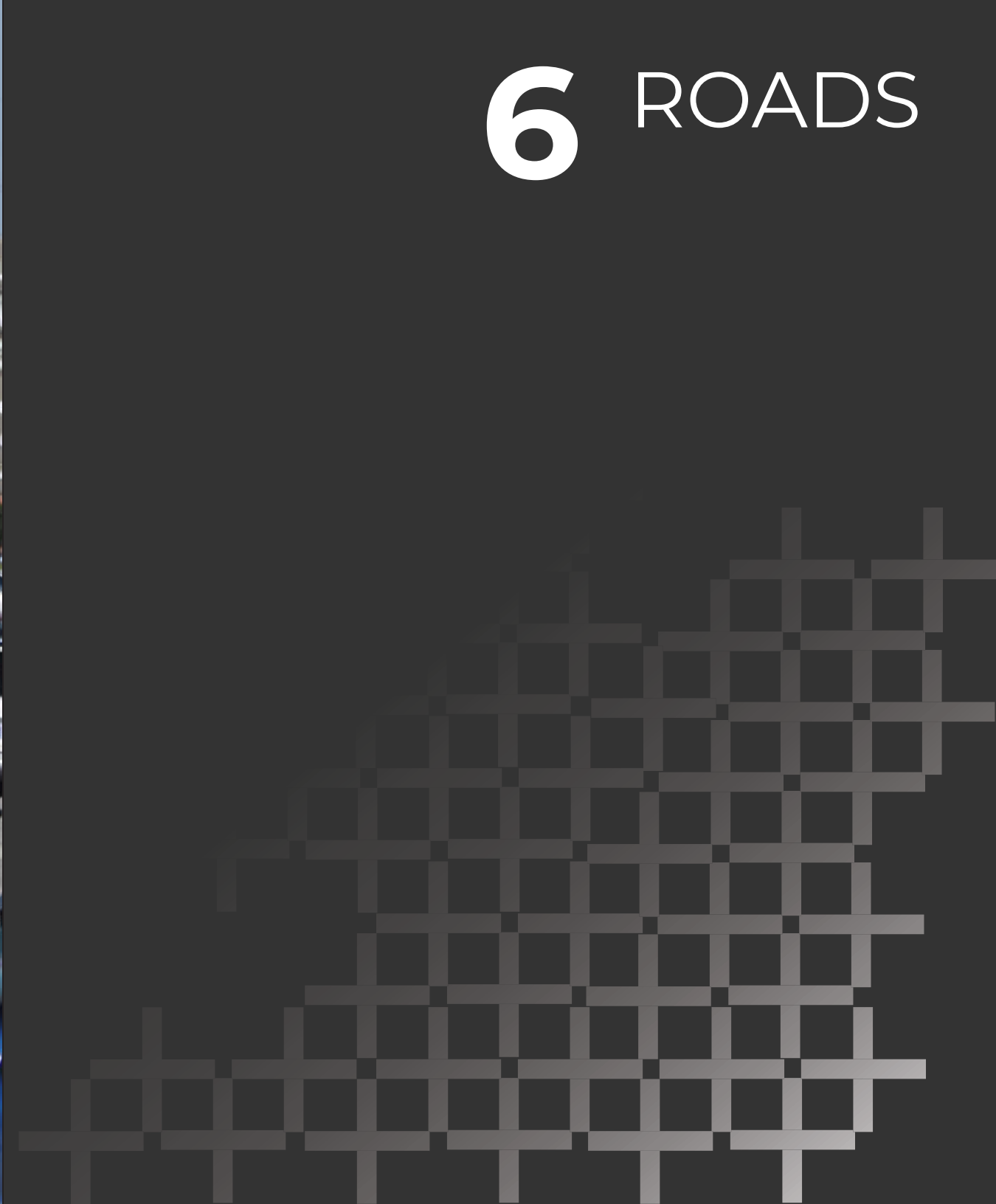
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NAVY



6 ROADS



Connected

The vision of a Connected region in 2019's *NWI 2050* states, *NWI's people have accessible, safe, and equal opportunities for working, playing, living and learning.* The *NWI 2050* Mobility focus area formulated a goal to address this vision as, "complete roadway, bicycle, sidewalk, and transit networks across municipal and county lines to enhance safe and efficient access to opportunities for all." In the context of roadways, *NWI 2050+* distills this goal into four objectives:

1. The roadway network in Northwest Indiana adequately covers the region and affords roadway users sufficient mobility and accessibility.
2. The roadway network in Northwestern Indiana balances opportunities for working, playing, living, and learning in the region.
3. The roadway network extent in Northwestern Indiana is not itself a major contributor to congestion.
4. The roadway network in Northwestern Indiana fosters connections between communities without imposing barriers.

Objective #1: *The roadway network in Northwestern Indiana adequately covers the region and affords roadway users sufficient mobility and accessibility.*

Northwestern Indiana offers residents, workers, and visitors an extensive roadway network. Indiana is known as "the Crossroads of America," and Northwestern Indiana is the second most populated region in the state after the Indianapolis region. On a national scale, the Northwestern Indiana region benefits from an even more connected roadway network by virtue of the fact that it lies at the southern tip of the Great Lakes that geographically block the path between the population centers of the Chicago Metropolitan Area and the East Coast. Figure 6-1 shows the Functional Classification map of the Northwestern Indiana region.



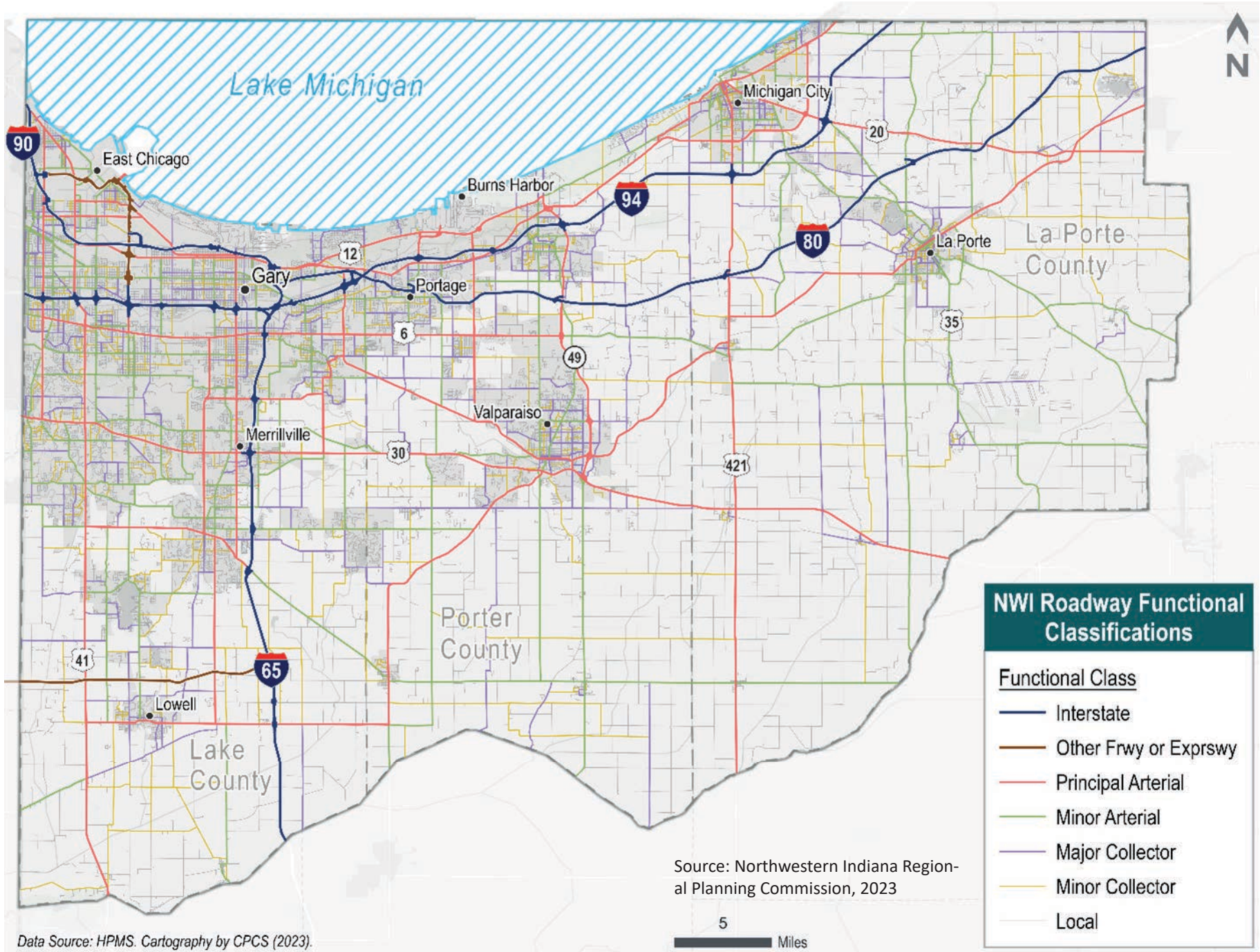


Figure 6-1: Roadway Functional Classification in Northwestern Indiana

Functional Classification is a classification of roadways by the functions they are designed to serve. Freeways, Expressways, and Arterials are primarily designed to provide mobility, whereas Collectors and Local Roads are primarily designed to provide accessibility at the beginning and end of roadway trips. Mobility is defined as “how far you can go in a given amount of time,” whereas accessibility is defined as “how much you can get to in that time.” Northwestern Indiana is clearly well-covered by Freeways, Expressways, and Arterials, so region roadway users experience good mobility. It is a bit harder to assess exactly how well covered Northwestern Indiana is from an accessibility perspective by just looking at Figure 6-1 at first glance. In general, it does appear there are plenty of Collectors and Local Roads to serve region road users’ accessibility needs. In order to more fully assess how well Northwestern Indiana’s roadways provide for accessibility, it is necessary to examine some metrics about how efficiently region residents, workers, and visitors are reaching opportunities as discussed in Objective #2.



Purpose	2007-2008 Household Travel Survey	2018 Household Travel Survey
Home-based Work	25.6	28.0
Home-based Shopping	15.3	14.7
Home-based Other	19.5	17.4
All Home-based	18.9	19.8

Source: Northwestern Indiana Regional Planning Commission, 2007-2008 and 2018.

Table 6-1: 2007-2008 and 2018 Household Travel Survey Average Trip Duration by Purpose for Road-based Trips (minutes)

Objective #2: *The roadway network in Northwestern Indiana balances opportunities for working, playing, living, and learning in the region.*

Whether it be accessing jobs, enjoying beautiful beaches and parks, getting to a family member or friend’s house, or commuting to a world class college or university, road users in Northwestern Indiana depend on the roadway network. One purpose of using the roadway network should not outweigh another. NIRPC surveyed region households in 2007-2008 and then again in 2018 about their daily experiences traveling, predominately on the region’s roadways. These household travel surveys collect vital information about how long it takes residents to complete trips of various purposes: work, shopping, and other. Table 6-1 shows the differences between the 2007-2008 and 2018 household travel surveys in terms of how long on average trips by a road-based mode take for each of these three different purposes.

Table 6-1 shows that Northwestern Indiana road users experienced slightly longer trip times for all home-based trips in 2018 than a decade earlier, but the difference was particularly pronounced for home-based work trips, with Northwestern Indiana road users taking on average about two and a half minutes longer on each leg of their commute in 2018 than in 2008. It should be noted, however, that road users experienced slightly shorter travel times for shopping trips and other purposes in 2018 than in 2008. Overall, the degree of change in road users’ experience between 2008 and 2018 was relatively minor, but planners should ensure that Northwestern Indiana work commuters do not have to continue driving for ever increasing lengths to reach jobs.

Objective #3: The roadway network extent in Northwestern Indiana is not itself a major contributor to congestion.

Road users in Northwestern Indiana may experience congestion on the region's roadway network due to traveling at high-demand periods of the day, but congestion is of special concern to planners when it is caused by physical features in the roadway network itself. In 2016, NIRPC conducted the *Regional Corridors Study* to assess the degree to which gaps in certain major roadway corridors contribute to congestion and to prioritize which corridor gaps planners should pursue with projects to fill in these gaps. Figure 6-2 shows a map of the Regional Corridors as part of the *Regional Corridors Study*, and Table 6-2 shows the ordered ranking and status of each of the 22 corridor gaps evaluated in the *Regional Corridors Study*.

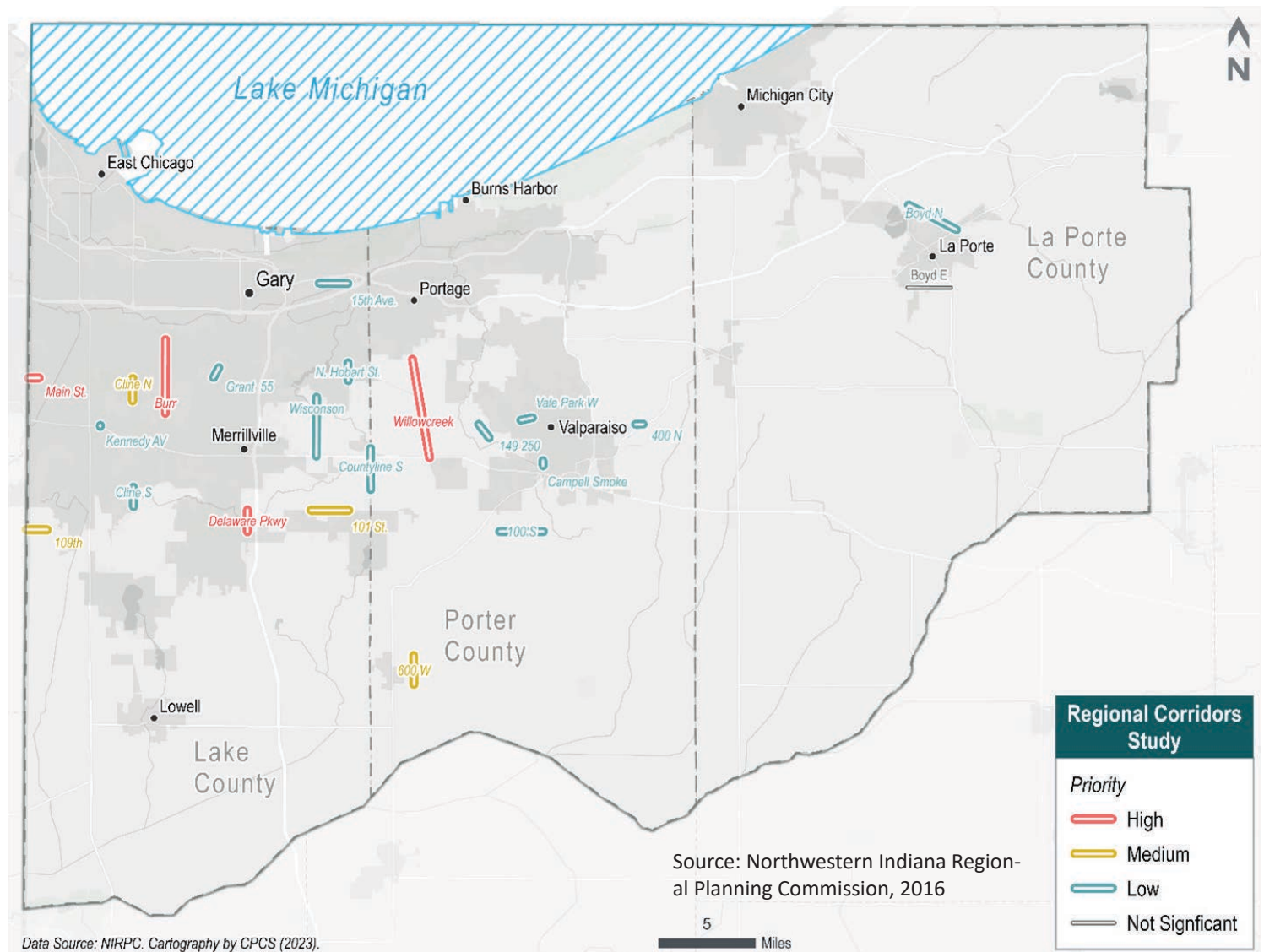


Figure 6-2: Regional Corridors Study Map

Rank	Roadway Segment	Total Score	Status (if in NIRPC's Core Planning and Programming Documents)
1	Main St	89	In <i>NWI 2050</i>
2	Cline Ave N	85	
3	Willowcreek Rd	83	In <i>NWI 2050</i> and FY 2022-2026 TIP
4	Burr St	82	
5	Kennedy Ave	81	In <i>NWI 2050</i> and FY 2022-2026 TIP
6	Grant St	81	
7	15th Ave	80	
8	Campbell St	71	In FY 2024-2028 TIP
9	Cline Ave S	70	In <i>NWI 2050</i> and FY 2022-2026 TIP
10	N Hobart Rd	70	
11	Wisconsin St	67	
12	County Line Rd	64	
13	Boyd Blvd N	64	In <i>NWI 2050</i>
14	101st Ave E	63	
15	600 W	62	
16	Vale Park Rd W	61	In <i>NWI 2050</i>
17	109th Ave	57	
18	Boyd Blvd E	57	
19	Delaware Pkwy	53	
20	Vale Park Rd E	47	
21	SR-149	44	
22	100 S	34	

Source: Northwestern Indiana Regional Planning Commission, 2023

Table 6-2: Rank and Status of Regional Corridors Study Corridor Gaps

Figure 6-2 shows that while there are corridors with gaps that contribute to congestion in all three counties in Northwestern Indiana, the majority are in Lake and Porter Counties, which have a higher concentration of roads than LaPorte County. Also, Figure 6-2 shows that the highest priority corridor gaps are in Lake and western Porter Counties. Table 6-2 shows that seven out of 22 of the *Regional Corridors Study* gaps have already progressed to the point of being included in NIRPC's planning and programming documents. As these corridor gaps continue to progress, Northwestern Indiana road users should continue to expect improvements in congestion.

Objective #4: *The roadway network in Northwestern Indiana fosters connections between communities without imposing barriers.*

While the Northwestern Indiana roadway network is extensive and provides a reasonably well-balanced experience in meeting motorists' demands, it does impose some barriers that impedes connections between communities. Limited access highways in particular, along with their interchanges and ramps, block non-roadway users from being able to conveniently travel between different communities. Figure 6-3 shows the sheer extent of limited access highways in Northwestern Indiana.

These limited access highways effectively improve mobility, but they also do not permit non-roadway users and only allow non-roadway users to cross them at certain grade separated bridges or tunnels. In addition to imposing barriers by themselves, they also require supporting interchange and ramp infrastructure to allow motorists to access them. Figure 6-4 displays the extent of these interchanges and ramps.

The interchanges and ramps shown in Figure 6-4 further compound the barriers limited access facilities impose on non-roadway users by bringing the high-speed merging and exiting limited access motorized traffic down to grade level with surface roads, requiring extensive physical space to achieve this. Figure 6-4 also shows that the largest and most concentrated interchange and ramp facilities are mainly located in Northern Lake County, an area with greater Environmental Justice populations. Planners should seek to work with traffic engineers to design interchanges and ramps in ways that balance motorists' mobility needs with non-motorized users' and local motorists' needs of connecting within communities.

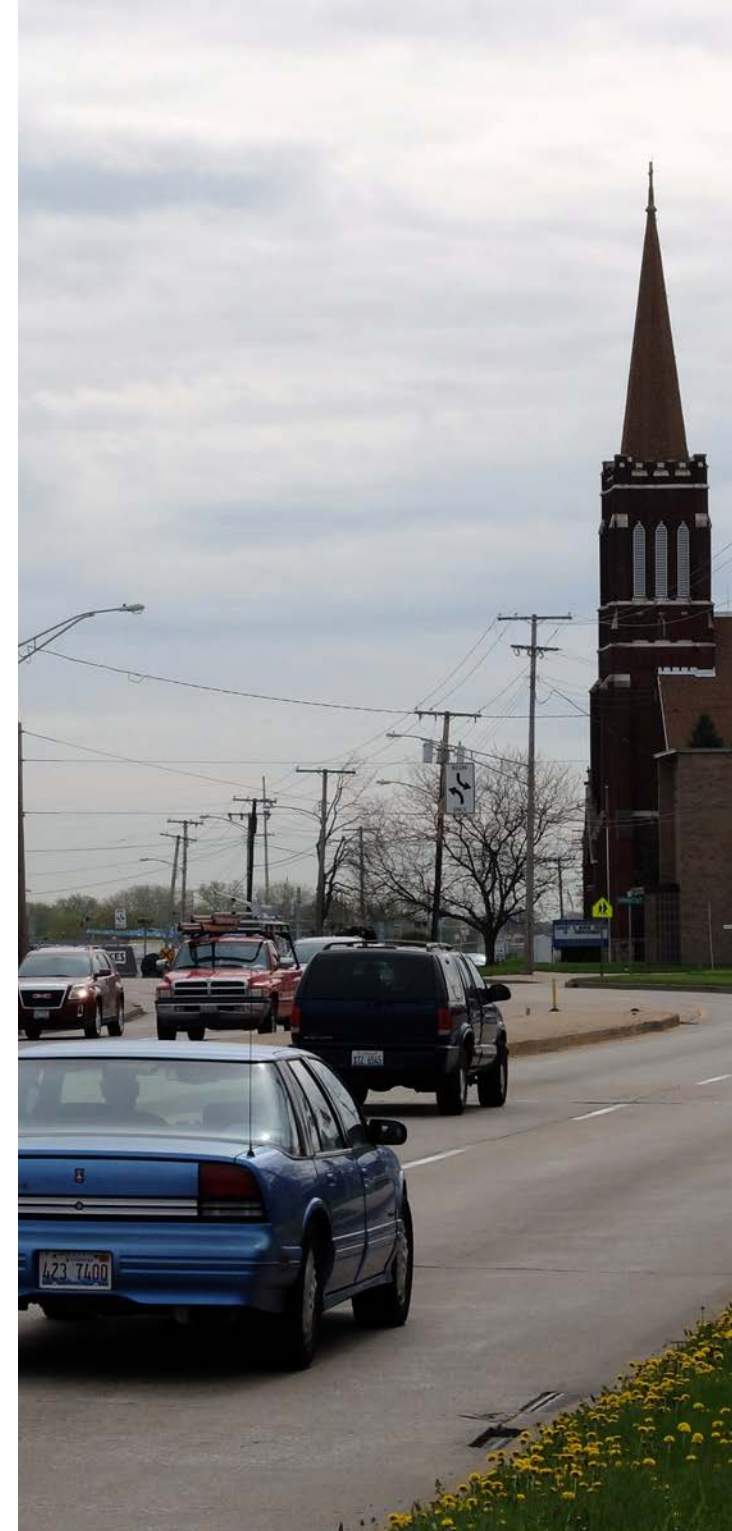




Figure 6-3: Limited Access Highways in Northwestern Indiana

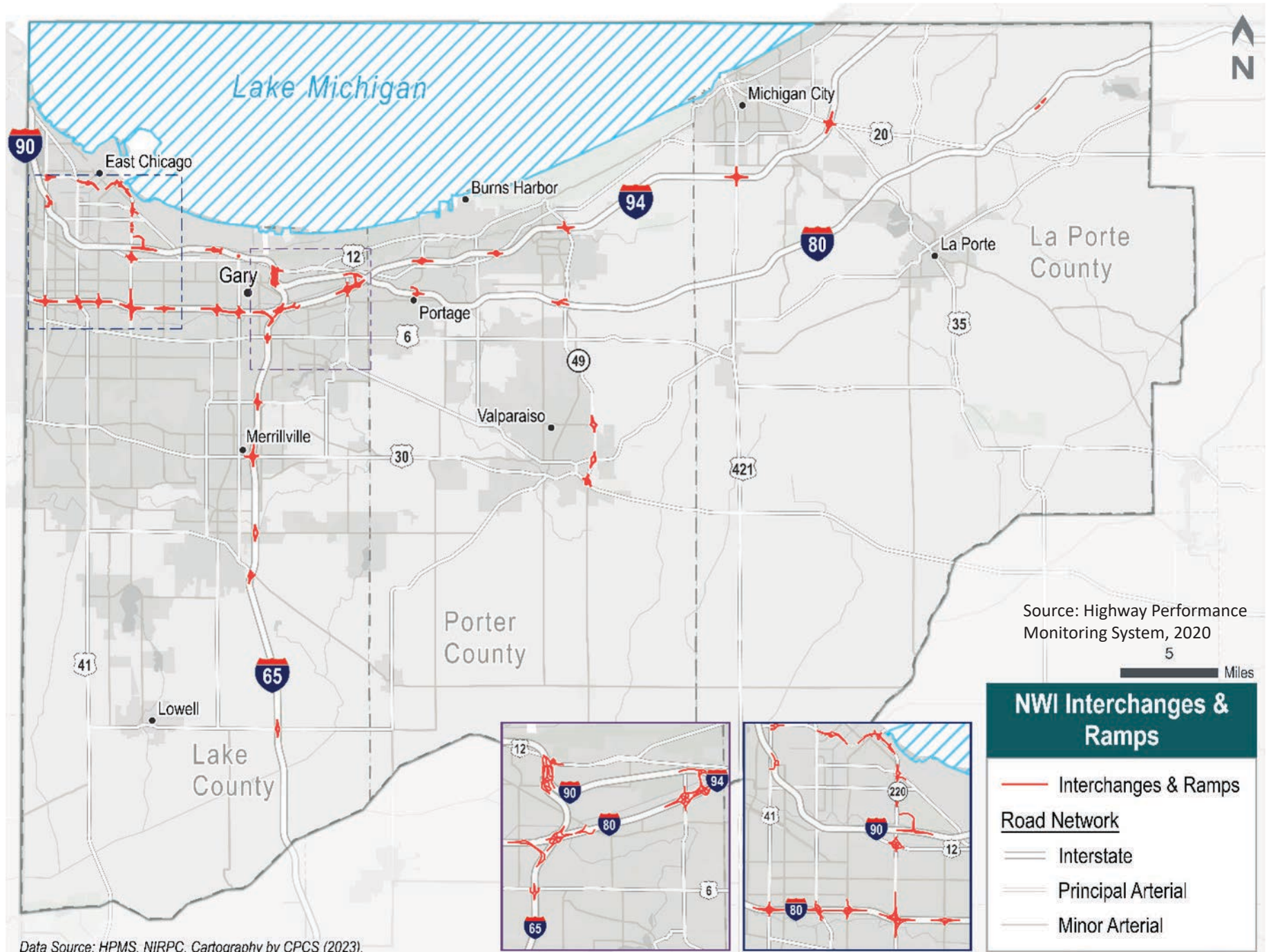


Figure 6-4: Interchanges and Ramps in Northwestern Indiana

United

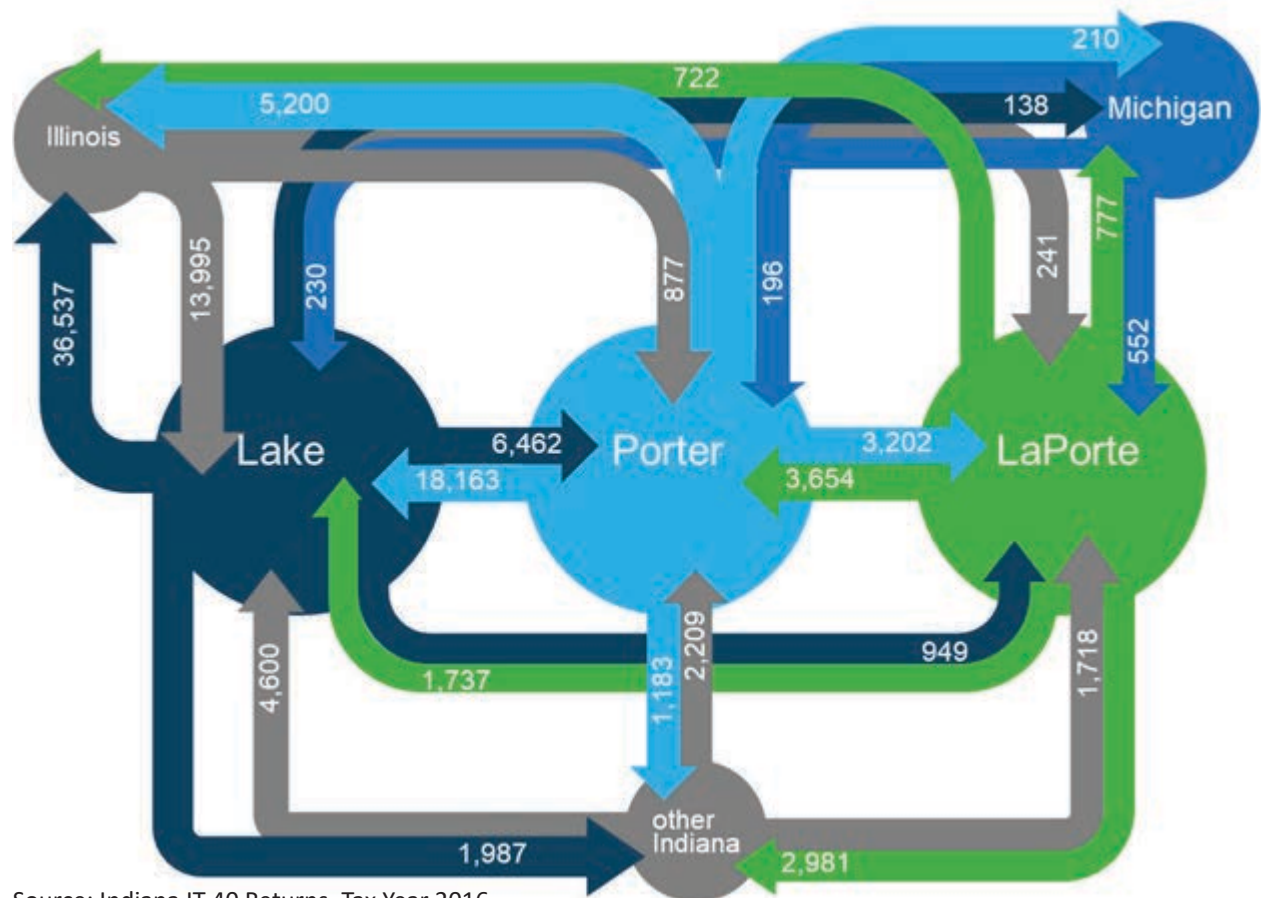
The vision of a United region in 2019's NWI 2050 states as a goal, NWI's diversity is celebrated, and we work together as a community across racial, ethnic, political and cultural lines for the mutual benefit of the region. The NWI 2050 Mobility focus area formulated a goal to address this vision as, "prioritize transformative investments to elevate the position of the region and to attract a diversity of residents and high-quality economic opportunities." In the context of roadways, NWI 2050+ distills this goal into two objectives:

1. Northwestern Indiana's residents are able to access jobs both within and outside the region, and Northwestern Indiana's jobs attract talent from both within and outside the region.
2. Leaders deploy Travel Demand Management (TDM) strategies and transformative Transportation Systems Management and Operations (TSMO) investments in the region.

Objective #1: Northwestern Indiana's residents are able to access jobs both within and outside the region, and Northwestern Indiana's jobs attract talent from both within and outside the region.

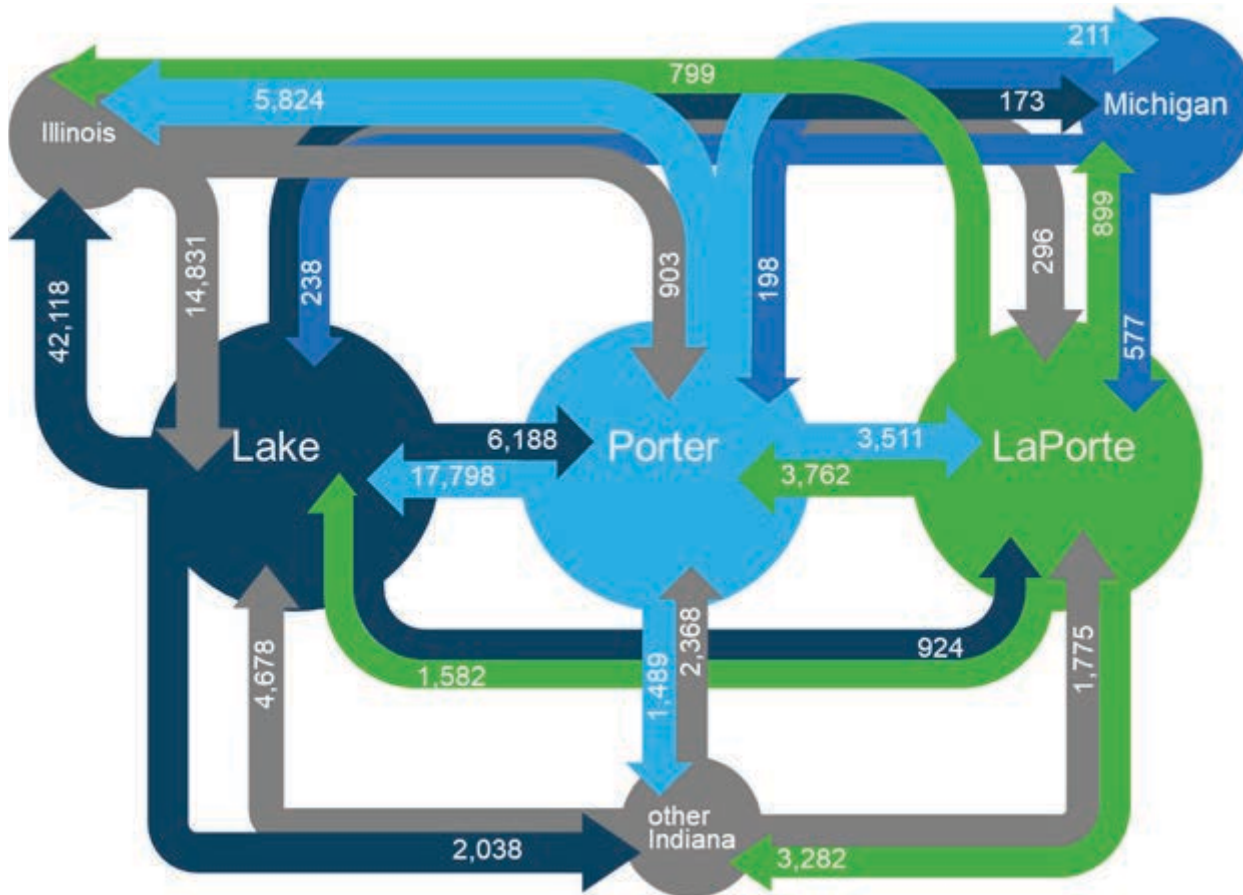
Northwestern Indiana workers are able to access good quality jobs both within the region and in neighboring areas. Likewise, the jobs in Northwestern Indiana attract talent from region residents as well as residents from other areas. NWI 2050 examined commute patterns between Lake, Porter, and LaPorte Counties as well as

between each of the three counties and adjacent areas. NWI 2050+ reexamines these same commute patterns, and the results are shown in Figures 6-5 and 6-6.



Source: Indiana IT-40 Returns, Tax Year 2016

Figure 6-5: Average Daily Commute Patterns Into and Out Of Northwestern Indiana from NWI 2050



Source: Indiana IT-40 Returns, Tax Year 2020 (Adjusted from 2019, so no COVID-19 impact)

Figure 6-6: Average Daily Commute Patterns Into and Out Of Northwestern Indiana in NWI 2050+

Figures 6-5 and 6-6 show that while most region workers find jobs in Northwestern Indiana, Illinois attracts a significant number of commuters. At least immediately before the COVID-19 Pandemic, the number of workers commuting between Northwestern Indiana and Illinois continued to grow. As Table 6-3 shows, most Northwestern Indiana commuters commute by driving alone.

Table 6-3 shows that the vast majority of Northwestern Indiana workers commute by motorized vehicle, with well over 90 percent of commuters choosing to either drive alone or carpool. Therefore, it is critical that planners maintain the region's roadway network in order to continue to keep the economy thriving. It is also notable that the percentage of commuters working from home increased between 2017 and 2021, though the 2020 and 2021 percentages were based on the preceding five-year averages, meaning they are almost certainly lower than the actual one-year estimates in 2020 and 2021 would show due to the COVID-19 Pandemic.

Year	% Drive Alone	% Carpool	% Transit	% Walk	% Work from Home	% Other Mode
2017	84.2%	7.4%	2.2%	1.5%	3.2%	1.5%
2018	84.0%	7.5%	2.2%	1.5%	3.3%	1.4%
2019	84.0%	7.5%	2.3%	1.4%	3.4%	1.5%
2020	83.2%	7.8%	1.9%	1.3%	4.4%	1.3%
2021	82.8%	7.5%	1.6%	1.2%	5.5%	1.3%

Source: American Community Survey, 2017-2021 5-Year Estimates

Table 6-3: Commute Mode Share of Northwestern Indiana Workers, 2017-2021

Objective #2: Leaders deploy Travel Demand Management (TDM) strategies and transformative Transportation Systems Management and Operations (TSMO) investments in the region.

Reducing congestion is not usually as straightforward as building more capacity into the roadway network. Transportation planners often examine two types of strategies to reduce congestion: Travel Demand Management (TDM) strategies and Transportation Systems Management and Operations (TSMO) strategies. *MOVE NWI*, NIRPC’s Congestion Management Process (CMP) for the Northwestern Indiana region, prescribes both strategies. TDM strategies are strategies to reduce the demand for travel during peak times. Table 6-4 shows TDM strategies in *MOVE NWI*.



Strategy	Description
Increased transit	Strategically expand transit or make transit more accessible and attractive to existing or would-be riders
Increased non-motorized use	Make non-motorized, active transportation such as bicycling, walking, or e-scooter use safer and more accessible and attractive to existing or would-be users
Alternative/flexible work hours	Work with employers to encourage and incentivize having employees work in staggered shifts and/or have the option of working at more non-traditional, off-peak times
Telecommuting	Work with employers to allow employees to work from an alternative location, including at home, at least on certain days
Ridesharing	Encourage and remove barriers for ridesharing companies/programs to operate
Carpooling/School-pooling	Work with employers to incentivize carpooling or with school districts to incentivize school-pooling
Vanpooling	Promote Pace vanpool program and other possible upstart vanpool programs that allow employees working at close-by work locations to arrange shared van rides to and from work
High-Occupancy Vehicle (HOV) lanes	Implement lanes on major road corridors that are restricted to vehicles with more than 1 occupant
Congestion pricing	Levy a fee on certain congested roadway segments or dense geographical areas that may vary by congestion condition or time-of-day

Source: Northwestern Indiana Regional Planning Commission, *MOVE NWI*, 2020

Table 6-4: Travel Demand Management (TDM) Strategies in *MOVE NWI*

The TDM strategies explained in Table 6-4 above all require multiple stakeholders in Northwestern Indiana coalescing around the shared mission of reducing the demand for single occupancy vehicle travel. For example, effective transit requires sufficiently funded operators working strategically with transportation planners as well as a willing traveling public to use the system. Flexible hours and telecommuting require employers to be willing to grant their employees these benefits. Carpooling and vanpooling often greatly benefit from the private sector marketing these programs and developing mobile apps. HOV lanes and congestion pricing programs, while not currently planned in Northwestern Indiana, would require transportation planners and policymakers to work with project engineers to design these concepts. In short, TDM strategies propagate the spirit of a United Northwestern Indiana.

In addition to TDM, Transportation Systems Management and Operations (TSMO) strategies can help transportation planners reduce congestion without adding capacity to the roadway network. Unlike TDM strategies, which seek to reduce the demand for single occupancy vehicle travel before it even uses the roadway network, TSMO strategies are aimed at optimally using existing capacity. Table 6-5 shows the TSMO strategies in *MOVE NWI*.

Strategy	Description
Signal preemption/priority	Allow certain classes of vehicles (such as emergency vehicles, transit vehicles, etc.) to receive priority when they arrive at or are approaching traffic signals
Signal coordination	Better coordinate a series of adjacent traffic signals along a corridor(s) so as to optimize traffic flow
Reduced or variable speed limits	Reduce speed limits in areas with high non-motorized activity or allow variable speed limits in order to optimize traffic flow
Crash reduction focus at specific sites	Employ a crash-reduction focus on the project(s) by incorporating specific, non-capacity adding targeted interventions based on crash data and in a way that effectiveness can be measured over time after implementation

Table 6-5: Transportation Systems Management and Operations (TSMO) Strategies in *MOVE NWI*

The ongoing I-80/94 FlexRoad project, led by the Indiana Department of Transportation (INDOT) partnering with the Illinois Department of Transportation (IDOT) and the Illinois Tollway, is an example of a TSMO project in the Northwestern Indiana region that has involved the States of Indiana and Illinois working together along with stakeholders and members of the public. The project explores a menu of possible TSMO strategies on the heavily traveled I-80/94 corridor between IL-394 and I-65, a roughly 15-mile stretch.

While the project has just completed the Planning and Environmental Linkages (PEL) Study process and is moving into the National Environmental Policy Act (NEPA) process without having identified a preferred alternative at the time of *NWI 2050+*, the I-80/94 FlexRoad project will deploy a variety of TSMO strategies. These may include dynamic shoulder lanes (DSL), queue warning, variable speed limits, and ramp metering. NIRPC staff has participated during the Planning and Environmental Linkages (PEL) Study phase of the I-80/94 FlexRoad project on both the Resource Agency Committee and Community Advisory Committee.



Strategy	Description
Increased operational data sharing	Commit to <i>increasing</i> the amount of operational data (i.e. crash locations, traffic volumes, travel times, etc.) shared with NIRPC, first responders, university partners, and/or other external entities
Intelligent Transportation Systems (ITS)	Incorporate ITS elements into the project(s) not already mentioned in other OM strategies such as dynamic messaging signs, travel time signs/notifications, etc.
Freight/intermodal coordination	Coordinate with freight-specific stakeholders to incorporate non-capacity adding freight congestion reduction elements into the project(s)
Tolling	Levy a toll on a corridor in order to more efficiently transfer the costs of its operation and maintenance to the users and shift some traffic to other nearby corridors
HOT/managed lanes	Implement lanes on major road corridors that are restricted to vehicles with more than 1 occupant or are willing to pay a posted price that can vary, or lanes that are restricted in some way so as to optimally manage traffic flow
Reversible lanes	Implement lanes on major road corridors that can be directionally reversed at certain times of day on a fixed schedule or variable schedule when conditions warrant
Part-time shoulder use	Allow through-motor vehicle traffic on shoulders of major road corridors during certain times of day or during certain conditions of congestion
Ramp metering	Implement signals or other traffic control devices at merging interchanges to optimize the times/intervals of allowing merging traffic to proceed

Source: Northwestern Indiana Regional Planning Commission, *MOVE NWI*, 2020

Table 6-5: Transportation Systems Management and Operations (TSMO) Strategies in *MOVE NWI*

Renewed

The vision of a Renewed region in 2019's *NWI 2050* states as a goal, *NWI's urban and rural centers are places people want to come to and live in, and our environment is safe and healthy.* The *NWI 2050* Mobility focus area formulated a goal to address this vision as, "improve roadway, bicycle, sidewalk, and transit networks to revitalize existing urban and rural centers and enhance equity." In the context of roadways, *NWI 2050+* distills this goal into two objectives:

1. Leaders prioritize maintaining roadway and highway pavements in satisfactory condition in the Northwestern Indiana region.
2. Leaders prioritize maintaining bridges in a state of good repair in the Northwestern Indiana region.

Objective #1: *Leaders prioritize maintaining roadway and highway pavements in satisfactory condition in the Northwestern Indiana region.*

Maintaining the existing roadway network in a state of good repair is the second most important investment leaders can make in roads and highway after safety improvements. Pavements are expensive investments, so to protect the investment in the asset, it is incumbent upon planners at the local level to rely on good data and pavement management systems to target investments in maintaining pavements in satisfactory condition.

Figure 6-7 maps the pavement condition on major roadways and highways in Northwestern Indiana.

Figure 6-7 clearly demonstrates that Northwestern Indiana planners and leaders have a lot of room for improvement in maintaining pavements in good or fair condition. Rural areas in general have a much higher percentage of pavements in good condition than in the more urban areas of the region. This could be partially due to higher traffic volumes in urban areas than in rural areas, but the clear pattern suggests that there could be other contributing factors. Northwestern Indiana lacks a distinct, central hub city with a much larger population than surrounding communities, so it is possible that the more fractured nature of municipal governance in the region than in many regions of similar population leads to higher hurdles to overcome in coordinating planning, data collection, and prioritization of road maintenance projects. However, there have been many success stories of Northwestern Indiana communities receiving Community Crossings Matching Grant Program funding awards from the State of Indiana since the program launched in 2016. Table 6-6 shows the Community Crossings Matching Grant Program funds awarded to communities in Northwestern Indiana between 2016 and 2022.



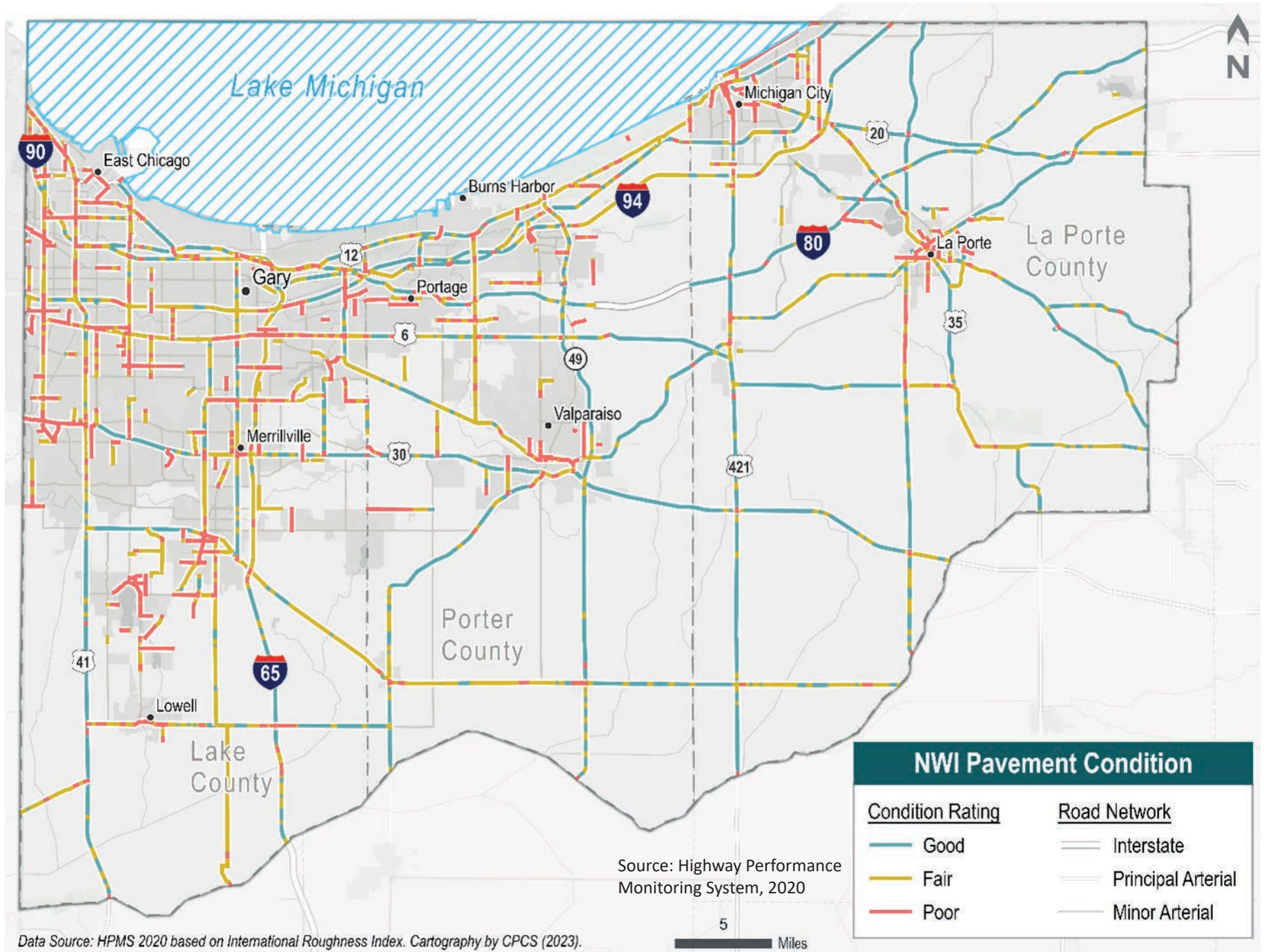


Figure 6-7: Pavement Condition on Major Roadways and Highways in Northwestern Indiana

Community	2016	2017	2018	2019	2020	2021	2022	2016-2022 Total
Beverly Shores	\$35,141		\$297,225	\$182,216	\$31,260		\$65,314	\$611,156
Burns Harbor	\$96,856		\$1,000,000	\$1,000,000		\$705,000	\$1,000,000	\$3,801,856
Cedar Lake		\$690,000			\$1,064,516	\$999,814	\$202,850	\$2,957,179
Chesterton	\$156,563		\$444,618	\$167,889	\$352,020	\$265,726	\$383,773	\$1,770,587
Crown Point	\$1,000,000			\$999,718	\$1,055,984	\$1,017,513	\$994,791	\$5,068,006
Dune Acres	\$50,014		\$325,543	\$149,631	\$105,079	\$143,841		\$774,107
Dyer	\$325,000		\$695,000	\$946,000	\$1,071,588	\$1,000,000	\$1,000,000	\$5,037,588
East Chicago	\$935,764				\$1,000,000	\$568,964	\$1,000,000	\$3,504,728
Gary	\$1,000,000			\$1,000,000	\$1,000,000		\$767,599	\$3,767,599
Griffith	\$800,000			\$950,292	\$761,883	\$1,000,000		\$3,512,175
Hammond	\$1,000,000				\$956,323	\$1,000,000	\$1,000,000	\$3,956,323
Hebron	\$150,600			\$329,076	\$758,197		\$443,454	\$1,681,327
Highland	\$472,671			\$899,478	\$1,000,000	\$500,000	\$705,950	\$3,578,099
Hobart	\$1,000,000			\$1,000,000	\$997,321	\$999,990	\$999,998	\$4,997,309
Kingsford Heights			\$6,843	\$545,550	\$381,150		\$391,072	\$1,324,615
Kouts		\$216,160	\$185,755		\$483,390			\$885,305
La Porte (city)	\$1,000,000		\$460,037	\$710,110	\$994,813	\$946,912	\$1,000,000	\$5,111,872
LaCrosse	\$93,868							\$93,868
Lake County	\$1,000,000		\$1,000,000	\$1,000,000	\$975,073	\$1,000,000	\$1,000,000	\$5,975,073
Lake Station		\$232,803		\$999,942	\$896,250	\$348,636		\$2,477,631
LaPorte County		\$568,500	\$636,591	\$1,000,000	\$996,975	\$1,000,000	\$1,000,000	\$5,202,066
Long Beach			\$719,483		\$990,159	\$326,766	\$256,110	\$2,292,518
Lowell	\$1,000,000		\$1,000,000	\$999,976	\$1,000,000	\$1,000,000	\$489,493	\$5,489,469
Merrillville		\$425,800		\$888,332	\$751,574	\$1,000,000	\$738,254	\$3,803,959
Michiana Shores			\$84,034					\$84,034
Michigan City	\$977,533			\$1,000,000	\$983,192	\$999,404	\$697,573	\$4,657,702
Munster	\$481,075			\$1,016,960	\$1,027,792	\$428,460	\$1,000,000	\$3,954,286
New Chicago		\$89,151	\$65,228	\$150,104	\$530,978	\$137,842	\$93,098	\$1,066,400
Ogden Dunes		\$234,000		\$316,815	\$127,875			\$678,690
Pines		\$67,177	\$63,000		\$78,942	\$41,280	\$225,457	\$475,856
Portage	\$900,954			\$1,000,000	\$1,327,883	\$1,000,000	\$1,000,000	\$5,228,837
Porter (town)				\$623,697	\$602,948	\$593,301		\$1,819,946
Porter County	\$1,000,000		\$817,545	\$838,996	\$1,125,263	\$1,000,000	\$1,000,000	\$5,781,803

Table 6-6: Community Crossings Matching Grant Program Funding Awards to Northwestern Indiana Communities, 2016-2022

Community	2016	2017	2018	2019	2020	2021	2022	2016-2022 Total
Pottawatomie Park				\$98,644				\$98,644
St. John		\$670,000		\$1,000,000	\$1,000,000		\$1,000,000	\$3,670,000
Schererville	\$426,500		\$1,000,000	\$738,767	\$1,125,382	\$1,021,024	\$1,000,000	\$5,311,673
Schneider	\$59,915		\$74,670					\$134,585
Trail Creek		\$333,665		\$291,413	\$332,561			\$957,638
Valparaiso	\$849,200		\$1,000,000	\$114,398	\$1,422,822	\$1,000,000	\$1,000,000	\$5,386,420
Wanatah		\$105,909		\$317,402	\$153,033		\$240,993	\$817,337
Westville		\$404,998	\$300,000		\$120,000	\$89,999	\$299,991	\$1,214,988
Whiting	\$333,850		\$374,591	\$1,000,000		\$532,433	\$427,500	\$2,668,373
Winfield	\$50,300		\$981,930	\$541,498	\$1,000,000	\$535,283	\$944,423	\$4,053,434
NWI Total	\$15,195,803	\$4,038,163	\$11,532,093	\$22,816,902	\$28,582,224	\$21,202,188	\$22,367,692	\$125,735,065

Source: Indiana Department of Transportation, 2023

Table 6-6: Community Crossings Matching Grant Program Funding Awards to Northwestern Indiana Communities, 2016-2022 (continued)

It is a remarkable success story that 43 local units of government in Northwestern Indiana have received Community Crossings Matching Grant Program funding awards since the program was authorized by the Indiana General Assembly in 2016. These funds are only awarded to communities that have asset management plans, meaning that they take a data-driven approach to assessing their transportation assets, primarily pavements. The challenge will be for Northwestern Indiana communities to continue to prioritize maintaining pavements in good or fair condition on roads and highways that connect across and between communities, not just within them.

Objective #2: Leaders prioritize maintaining bridges in a state of good repair in the Northwestern Indiana region.

Bridges are perhaps the single most critical element of the roadway network, since if they

fail or collapse completely, communities can be completely cut off from one another. However, lining up funding for maintaining bridges in a state of good repair is often more overlooked, at least at the local level, than maintaining pavements. Counties are responsible for maintaining bridges in Indiana, except for INDOT roads, which are maintained by INDOT. Figure 6-8 shows a map of the condition of bridges in Northwestern Indiana.

Figure 6-8 shows that while overall, most bridges in the region are in good or fair condition, there are several bridges in poor condition, particularly on non-INDOT roads. This suggests that it will continue to be critical for local and county officials to work together and with NIRPC on prioritizing bridge rehabilitation and replacement work using an asset management approach.



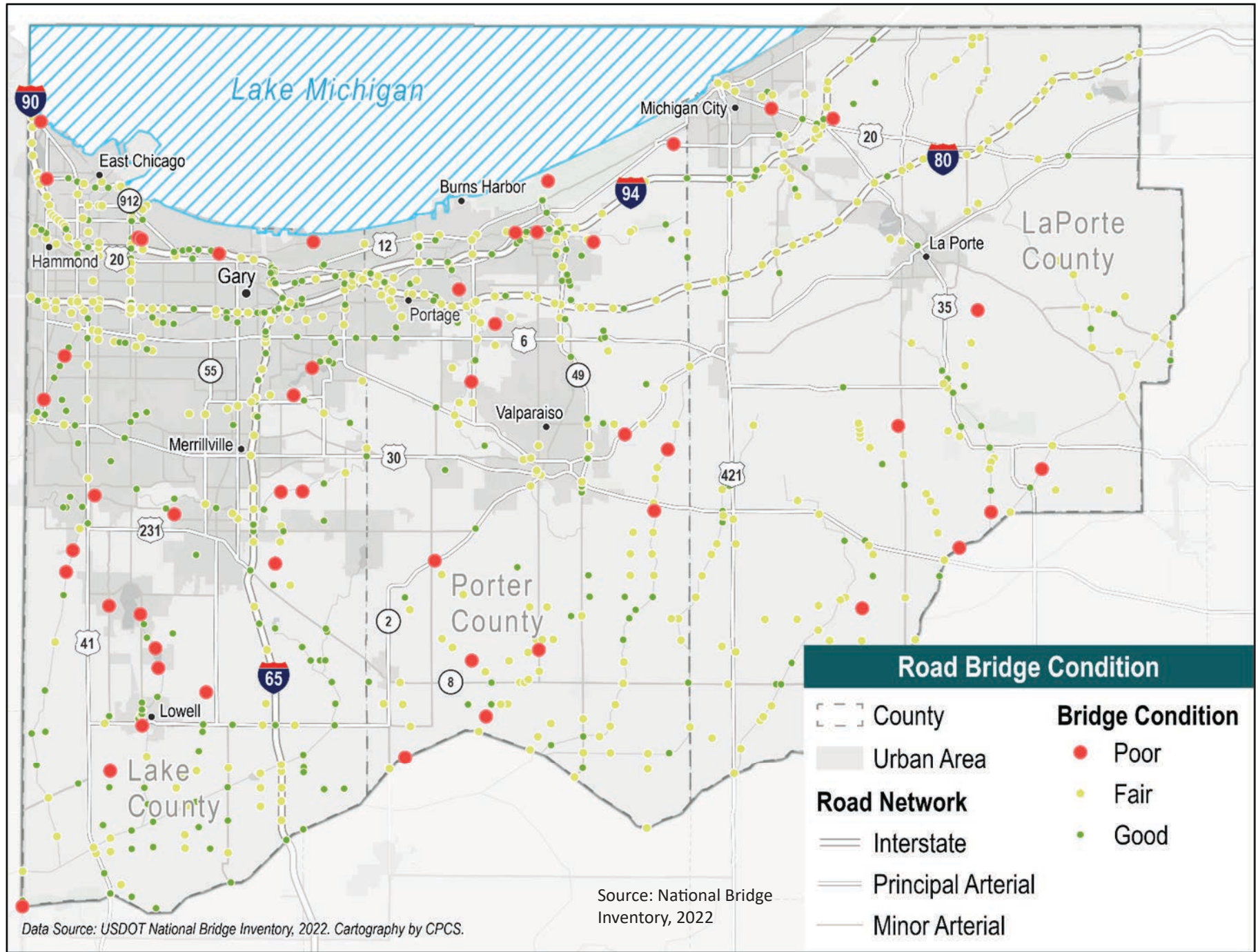


Figure 6-8: Bridge Condition in Northwestern Indiana

Vibrant

The vision of a Vibrant region in 2019’s *NWI 2050* states as a goal, *NWI’s economy is thriving, our people are well educated, growth is planned, and natural and agricultural areas are valued and protected.* The *NWI 2050* Mobility focus area formulated a goal to address this vision as, “adopt technological innovation that enhances the safe and fluid movement of people and goods to enable a flourishing economy.” In the context of roadways, *NWI 2050+* distills this goal into three objectives:

1. The Northwestern Indiana region is prepared to transition to Electric Vehicles (EVs) by ensuring that residents have the means to access EVs and that EV charging infrastructure is adequately and equitably distributed across the region.
2. Northwestern Indiana residents and freight carriers can expect to travel at reliable and safe speeds on the region’s roadway network.

Year	Electric (EV)
2016	0.023%
2017	0.033%
2018	0.058%
2019	0.086%
2020	0.117%
2021	0.172%

Source: U.S. Department of Energy, 2023

Table 6-7: Electric Vehicle (EV) Registrations in Indiana as a Percentage of Total Registrations, 2016-2021

3. Leaders effectively manage congestion on the region’s roadway network to ensure that people and goods move fluidly in order to sustain a flourishing economy.

Objective #1: *The Northwestern Indiana region is prepared to transition to Electric Vehicles (EVs) by ensuring that residents have the means to access EVs and that EV charging infrastructure is adequately and equitably distributed across the region.*

By 2023 at the time *NWI 2050+* launches, it is clear that the automobile market is moving toward Electric Vehicles (EVs). There are a host of reasons for this trend, many having to do with market forces and policies outside of the Northwestern Indiana region. From a roadways perspective, it is critical that the Northwestern Indiana region is prepared for an increasing amount of EVs. Regional EV preparation means that regional planners and leaders proactively make it more convenient for drivers to choose EVs by making them more affordable and accessible where possible, but more under regional control, ensuring that charging infrastructure is adequately and equitably distributed. In recent years, it is evident that while EVs still only represent a small fraction of statewide vehicle registrations, their rate of registration is beginning to rapidly increase as shown in Table 6-7.

In order to accommodate the growing number of EV registrations shown in Table 6-7, Northwestern Indiana regional leaders are planning for and implementing more charging infrastructure as shown in Figure 6-9.

Figure 6-9 shows that while there are a significant number of EV charging stations in the region with even more already planned, the coverage could be improved. Central Lake and northern Porter counties, and the Michigan City area clearly have more EV charging stations than other portions of the region. The relative sparseness of EV charging stations in northern Lake County should raise the attention of region leaders and planners, as this area has a high residential and road network density, but that has not translated into as much momentum in siting EV charging stations.



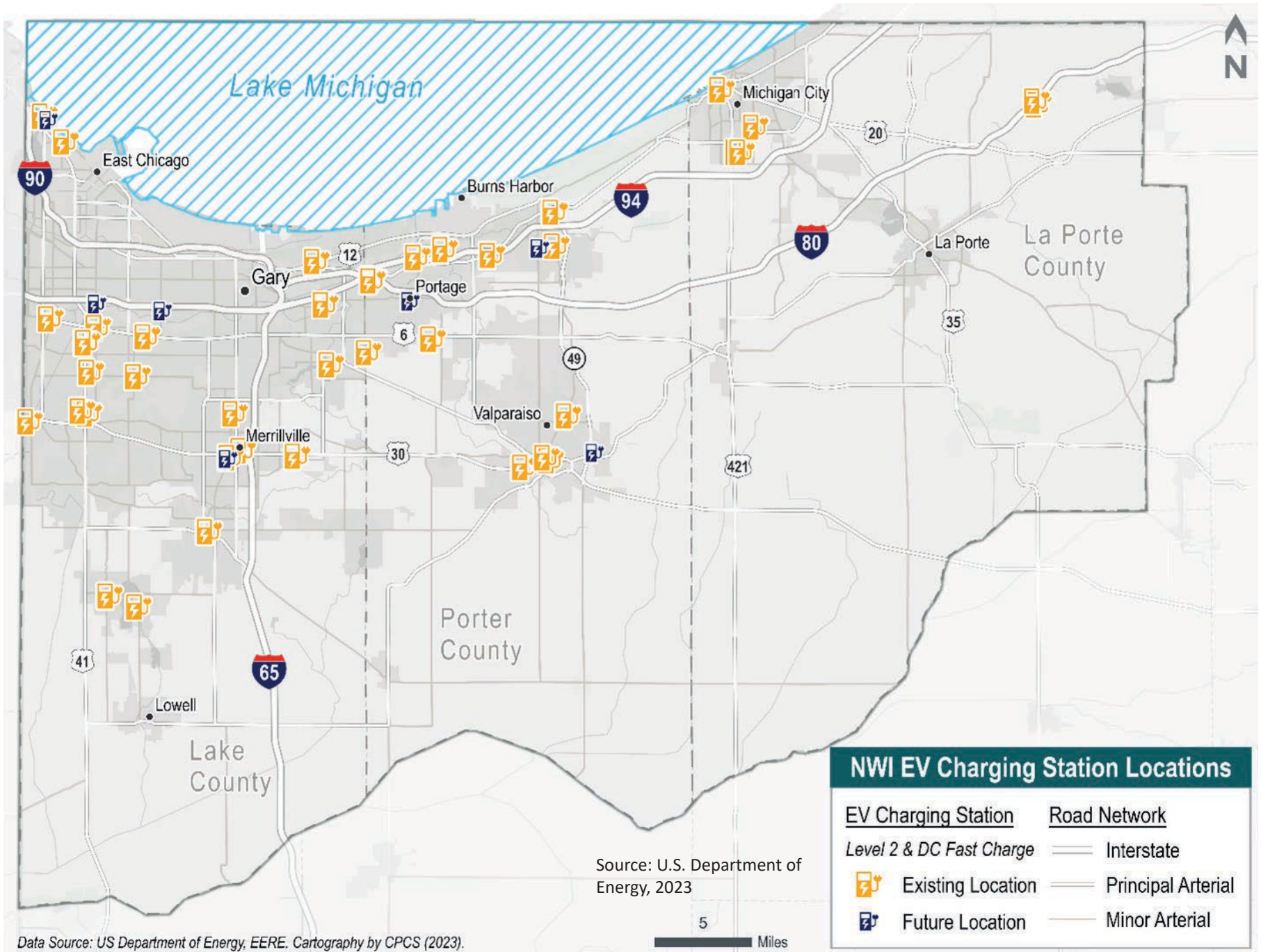


Figure 6-9: Location of Present and Future Planned Level 2 and DC Fast Chargers for EVs in Northwestern Indiana

Objective #2: Northwestern Indiana residents and freight carriers can expect to travel at reliable and safe speeds on the region's roadway network.

Achieving a balance between operating at speeds both reliable and safe will help the roadway network in Northwestern Indiana contribute to a vibrant region. Achieving reliable speeds on the roadway network ensures that Northwestern Indiana residents and truck drivers can predictably reach their destinations on time. Achieving safe speeds ensures that roadway users can reach their destinations safely without encountering other roadway users traveling at unsafe speeds. Roadway design, rather than posted speed limit, is the key determinant of how fast roadway users are likely to travel. Posted speed limits are traditionally determined based on the 85th percentile of observed speed. Figure 6-10 shows the observed 85th percentile speeds on major roads and highways in Northwestern Indiana, while Figure 6-11 shows the median speeds on major roads and highways in Northwestern Indiana.

Since the overall color schemes representing 85th percentile and median speeds in Figures 6-10 and 6-11 respectively are very similar, roadway users in Northwestern Indiana experience remarkably reliable speeds. The corridors with the largest apparent fluctuations between low and high speeds are US 30, particularly west of SR 49, US 41 in the northern half of Lake County, and US 6 in northern Porter County and near the boundary between Lake and Porter Counties.



Even though it appears from Figures 6-10 and 6-11 that Northwestern Indiana road users experience reliable speeds, it is less clear from these figures if they experience safe speeds. According to Figure 6-11, every stretch of Interstate except for the far western portion of I-80/94 near the Illinois State Line and Indiana Toll Road (I-90 and I-80/90) near the toll plazas experienced median speeds of 70 miles per hour or greater in 2019. Figure 6-10 also shows that many stretches of Interstate Highway in the region saw 85th percentile speeds of nearly 80 miles per hour. The posted speed limit on the Interstate Highways in Northwestern Indiana is 70 miles per hour except for I-80/94 in Lake County and I-65 north of US 30, where it is 55 miles per hour, and immediately around the toll plazas on the Indiana Toll Road where it is reduced. Even median speeds on the rural stretches of US 41 south of the Town of Lowell and US 30 east of US 421 approach or exceed 70 miles per hour when their speed limit is only 60 miles per hour. Region leaders should consider either changing the design of these stretches of roadway to encourage slightly slower speeds or increasing law enforcement activity to discourage speeding.

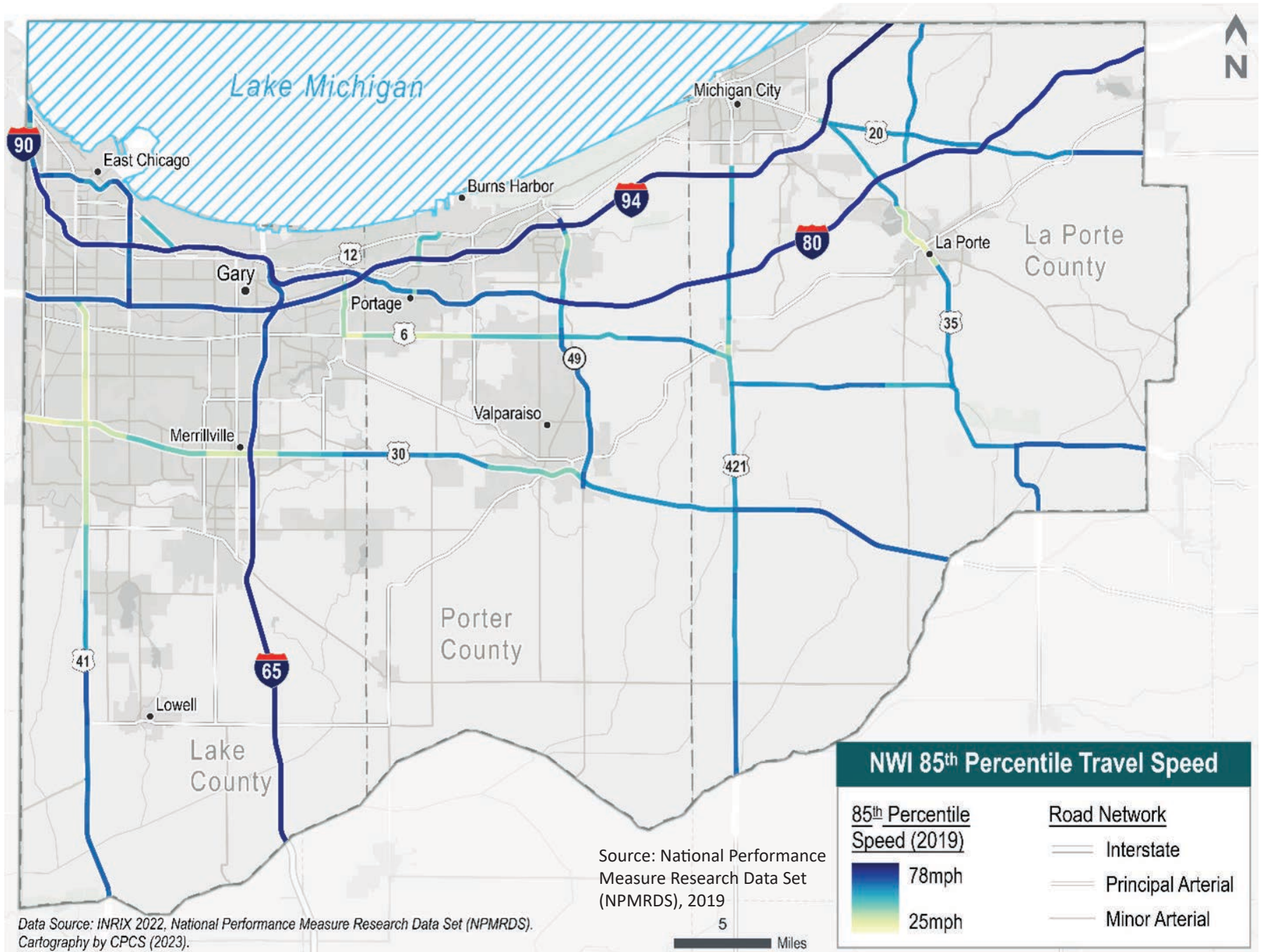


Figure 6-10: 85th Percentile Speeds on Major Roads and Highways in Northwestern Indiana

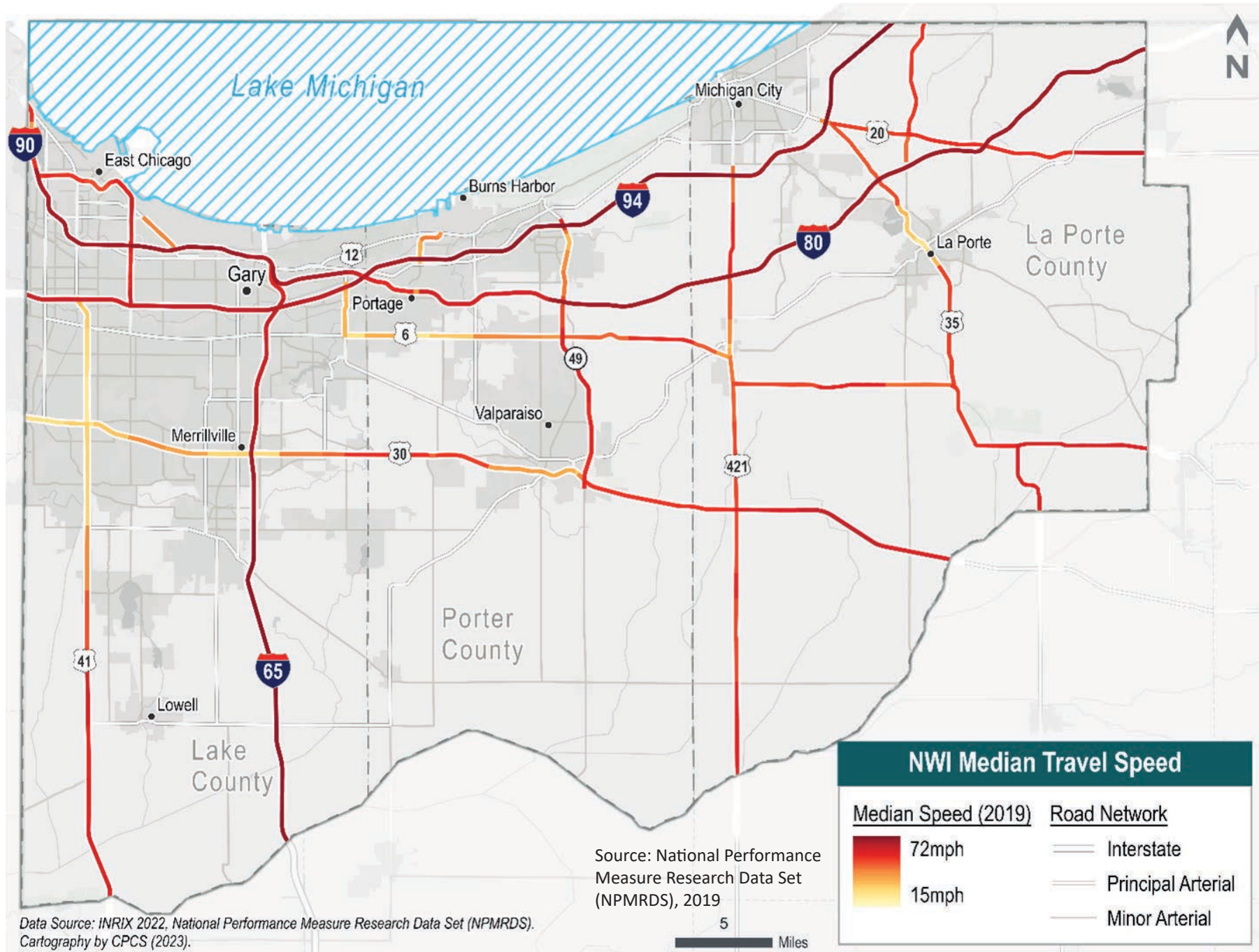


Figure 6-11: Median Speeds on Major Roads and Highways in Northwestern Indiana

Objective #3: *Leaders effectively manage congestion on the region's roadway network to ensure that people and goods move fluidly in order to sustain a flourishing economy.*

Roadway congestion erodes at the regional productivity of the economy and leaves roadway users with a lower quality of life than with less congestion. *MOVE NWI* is NIRPC's Congestion Management Process, which prescribes a variety of strategies to attempt to reduce congestion and to vet new planned projects to minimize their impacts on congestion. Travel Demand Management (TDM) and Transportation Systems Management and Operation (TSMO) strategies as previously mentioned are two types of strategies to reduce congestion that unite multiple regional stakeholders around the common mission of reducing congestion, but there are others such as land use strategies and capacity adding strategies. Regardless of which strategies end up best fitting a particular project or situation, it is important for planners to be able to understand and forecast congestion as accurately as possible. One of the most important concepts of diagnosing congestion is Level of Service (LOS). The Highway Capacity Manual defines LOS as "a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience" (Highway Capacity Manual 2000). LOS is graded on a letter scale from A (Free Flow) to F (Gridlock). Figure 6-12 shows LOS on Northwestern Indiana roadways in 2019 (the base year of *NWI 2050+*).

Roadways with LOS E and F are generally considered congested during peak periods, and even in 2019, there were several stretches of roadways that met these criteria. I-94 generally from Portage west to the Illinois State Line as well as US 30 from the Illinois State Line east to about the Lake-Porter County Line were already particularly long stretches of roadways with LOS E or F. US 41 in the vicinity of US 30 was also performing at a poor LOS in 2019. Figure 6-13 shows the forecasted LOS on Northwestern Indiana roadways in 2050 (the horizon year of *NWI 2050+*).

Figure 6-13 shows that generally across all modeled roadways, LOS is forecasted to either stay the same or get slightly more congested. It is notable that the stretch of I-94 between Lake Station and Burns Harbor through the Portage corridor is projected to get significantly more congested by the year 2050. Some corridors are forecasted to slightly improve in LOS between 2019 and 2050. For example, US 41 in the vicinity of US 30 is forecasted to improve slightly by 2050, probably due in part to the Town of Schererville's Kennedy Avenue Extension projected to be open to traffic by 2030. Main Street along the border between the Towns of Munster and Dyer near the Illinois State Line is also forecasted to improve in congestion due to the Main Street Extension between Burnham Avenue in the Village of Lansing, Illinois and the Munster/Dyer Station of the future Northern Indiana Commuter Transportation District West Lake Corridor project being open to traffic by 2040.

These projects are both part of the Regional Corridors Study as previously mentioned and look to have an impact on reducing congestion. It is important that planners continue to use tools like Travel Demand Models to monitor and forecast congestion in order to best insure that people and goods move as freely as possible.





Figure 6-12: Level of Service (LOS) on Northwestern Indiana Roadways in 2019



Figure 6-13: Forecasted Level of Service (LOS) on Northwestern Indiana Roadways in 2050

Equitable

Feedback from the planning and public involvement processes in the NWI 2050+ development effort led to a vision for an Equitable Northwestern Indiana region as, *seek fairness in access to resources and opportunities to meet the needs of all community members.* In the context of roadways, NWI 2050+ formulates a goal to address this vision as, “seek to distribute access to the region’s roadway network equitably and justly as well as ensure that leaders invest in improvements to roadways equitably and justly.” NWI 2050+ distills this goal into two objectives:

1. Leaders seek to ensure that Northwestern Indiana region households have more equal access to vehicles.
2. Leaders invest in projects and other improvements to the roadway network equitably and justly, not unduly benefiting or burdening certain communities at the expense of others.

Objective #1: *Leaders seek to ensure that Northwestern Indiana region households have more equal access to vehicles.*

There are significant cost burdens associated with being able to access the roads and highways in Northwestern Indiana. First and foremost, a motorized user needs to be able to access a vehicle. Access to a vehicle does not necessarily mean owning or even leasing a vehicle. The U.S. Census Bureau asks about household access to a vehicle, and even having one shared vehicle among many licensed members of the household or subscribing to a shared vehicle service would qualify as “access.” However, it remains an unfortunate fact that household vehicle access is not evenly or equitably distributed when for much of the region lack of access to a vehicle significantly limits being able to have access to jobs or otherwise attend to the needs of daily living. Figure 6-14 shows Census Block Groups in Northwestern Indiana with high concentrations of households that do not have access to a vehicle.

Figure 6-14 shows that almost all of the Census Block Groups with higher than regional average households reporting no vehicle access are in the northern half of the region. Gary, and to a lesser extent, Hammond and Merrillville, are communities with a particularly high concentration of households unable to access a vehicle. East Chicago, Michigan City, and La Porte also have significant areas where households report no access to a vehicle compared to the Northwestern Indiana regional average. While a more extensive transit system and denser development can help to ensure that these households are able to access the same quality of opportunities as households with access to a vehicle, it is incumbent upon regional leaders and planners to strive to lower the barriers to vehicle access when so much of the region is inaccessible otherwise.



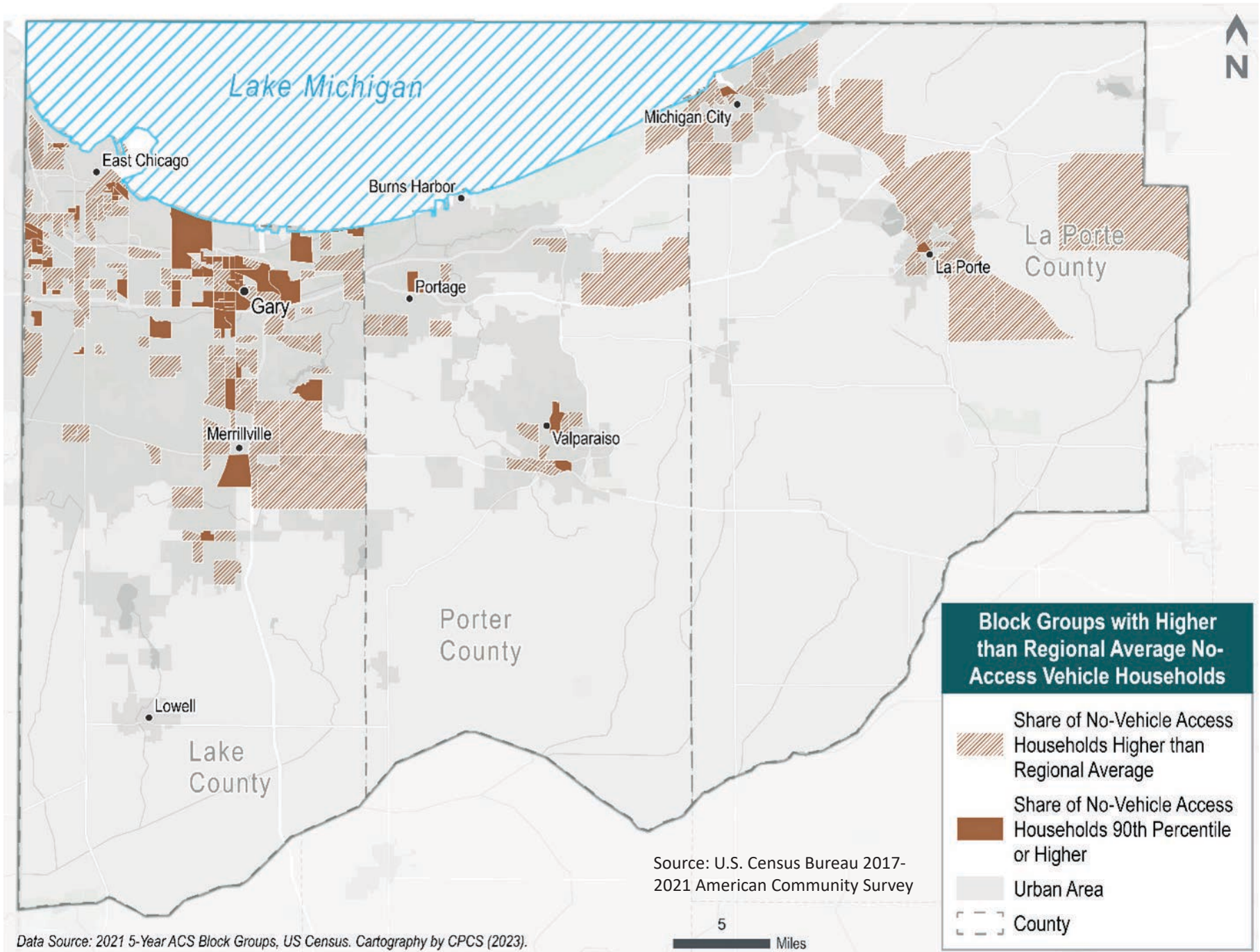


Figure 6-14: Census Block Groups with Higher than Regional Average and 90th Percentile Concentrations of Households with No Vehicle Access

Objective #2: Leaders invest in projects and other improvements to the roadway network equitably and justly, not unduly benefiting or burdening certain communities at the expense of others.

Investing in improvements to roadways equitably and justly is an enormous responsibility for transportation planners and leaders to take seriously. *NWI 2050+* thoroughly examines the issue of Environmental Justice through the lens of seven socioeconomic and demographic criteria of stress: racial or ethnic minority status, low-income, limited English speaking proficiency, disability status, veteran status, senior status (aged 65 and older), and no vehicle access (as previously explained). These are the same seven criteria used to assess the Environmental Justice status of Census Block Groups as in *NWI 2050*, but *NWI 2050+* expands upon this methodology by examining Block Groups not only by higher than regional average status for each of these stressors but also by 90th percentile status for each stressor. Figures 6-15 through 6-20 show Block Groups with high concentrations of each of these other six stressors than no vehicle access (Figure 6-14), and Figure 6-21 shows the composite Environmental Justice status for each Block Group.

While 1994's Executive Order 12898 only defines Environmental Justice communities as those experiencing burdens of low-income and minority status, *NWI 2050+* includes not only these two criteria, but also five others to arrive at the composite Environmental Justice designation of Census Block Groups shown in Figure 6-21. Census Block Groups were chosen as the geographical unit of analysis because these were the most granular level of detail for which data were available. Every Census Block Group designated as having a significant risk level of Environmental Justice populations except one is located in Lake County, and almost all are located in the communities of Hammond, East Chicago, Gary, and Merrillville.

NWI 2050+ assesses the benefits and burdens of transportation investments on these Environmental Justice populations by examining the location of projects funded in NIRPC's State Fiscal Years (FY) 2024-2028 Transportation Improvement Program (TIP). Figure 6-22 shows a map of projects funded in the FY 2022-2024 TIP overlaid on the Environmental Justice map.

In general, Figure 6-22 shows that the fiscally constrained projects NIRPC has awarded in its FYs 2024-2028 TIP align with Environmental Justice areas. Certainly not every project NIRPC awards is located in an Environmental Justice area, but the greatest density of fiscally constrained projects is concentrated in northern Lake County in and immediately adjacent to Environmental Justice areas.



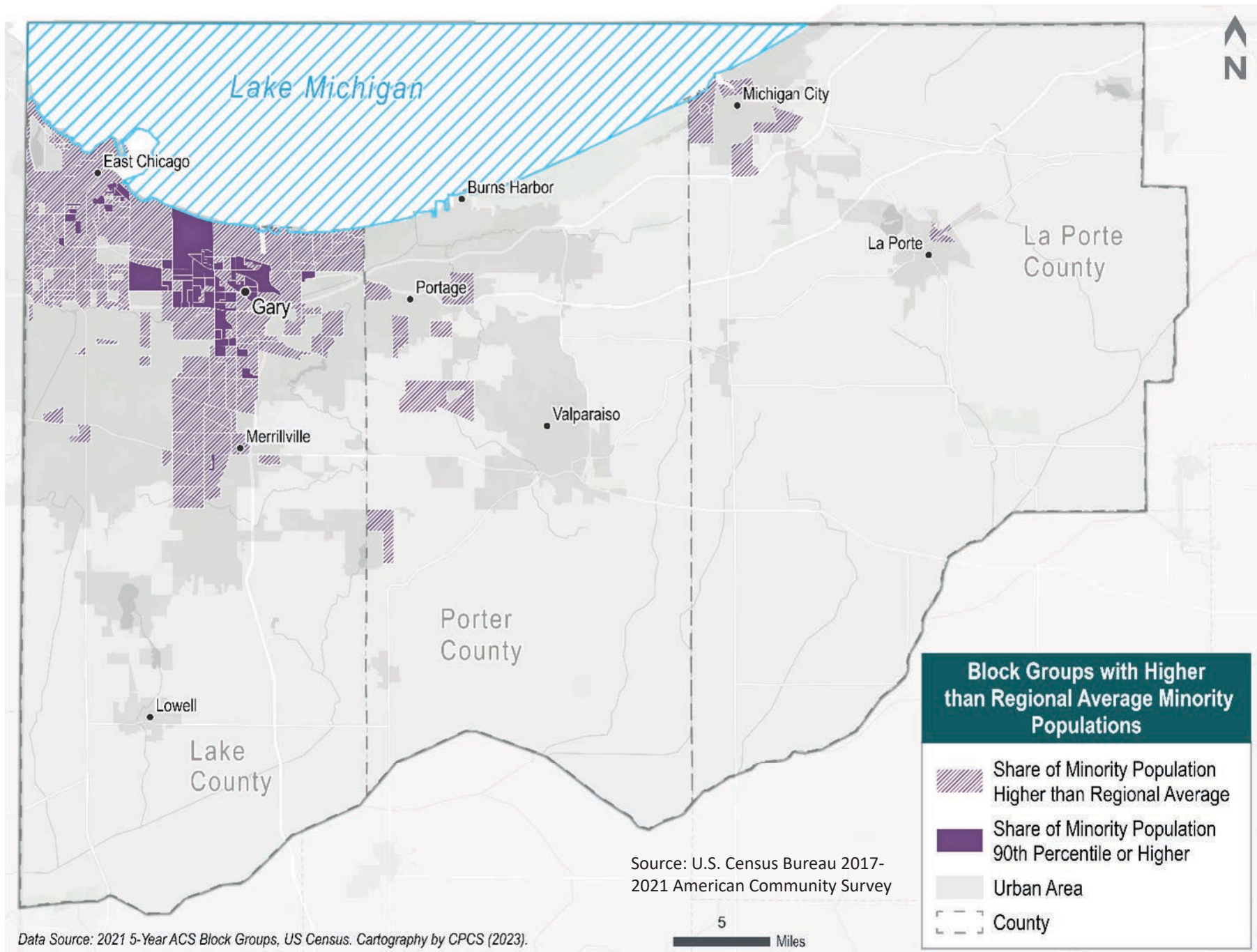


Figure 6-15: Census Block Groups with Higher than Regional Average and 90th Percentile Concentrations of Racial or Ethnic Minorities

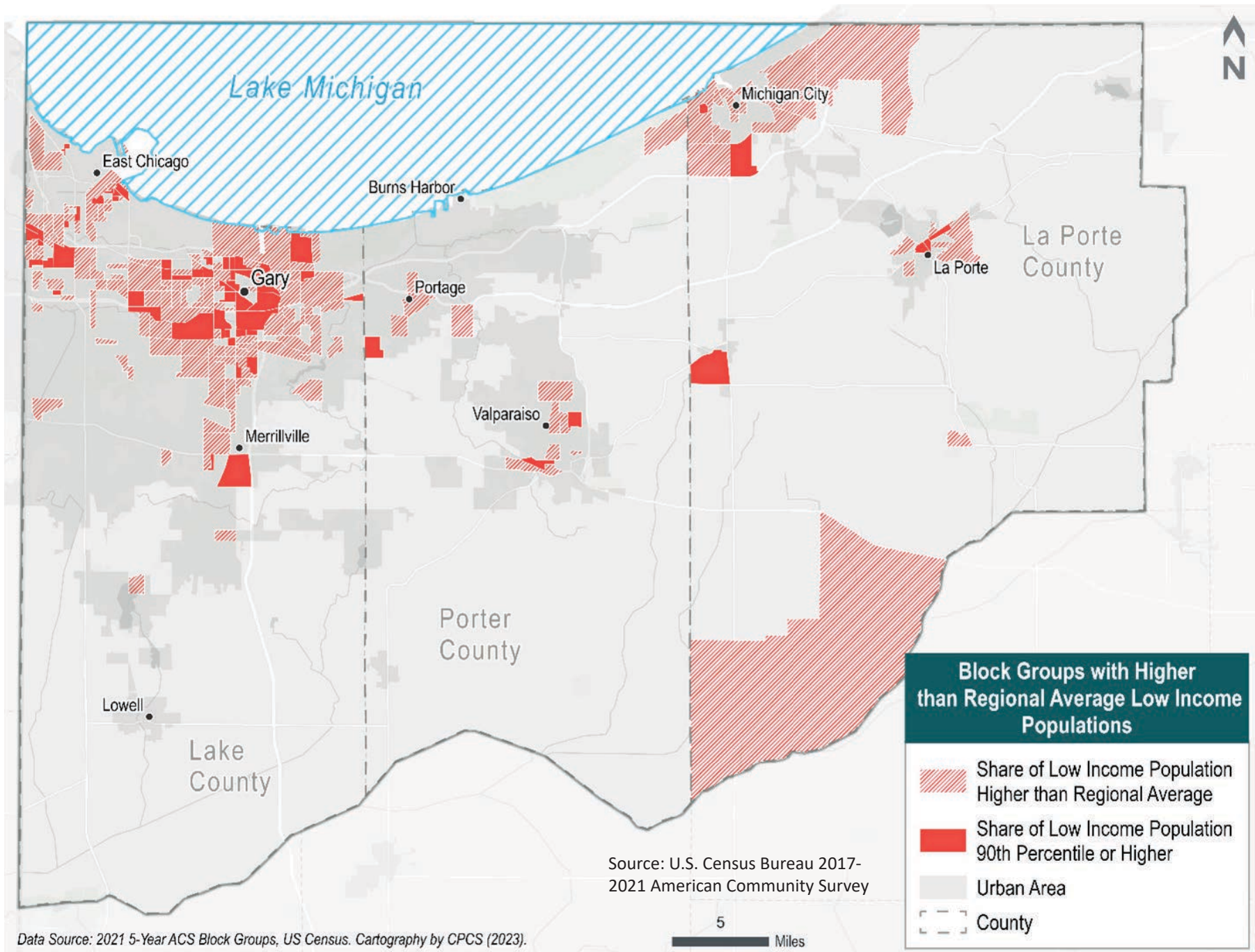


Figure 6-16: Census Block Groups with Higher than Regional Average and 90th Percentile Concentrations of Low Income Households

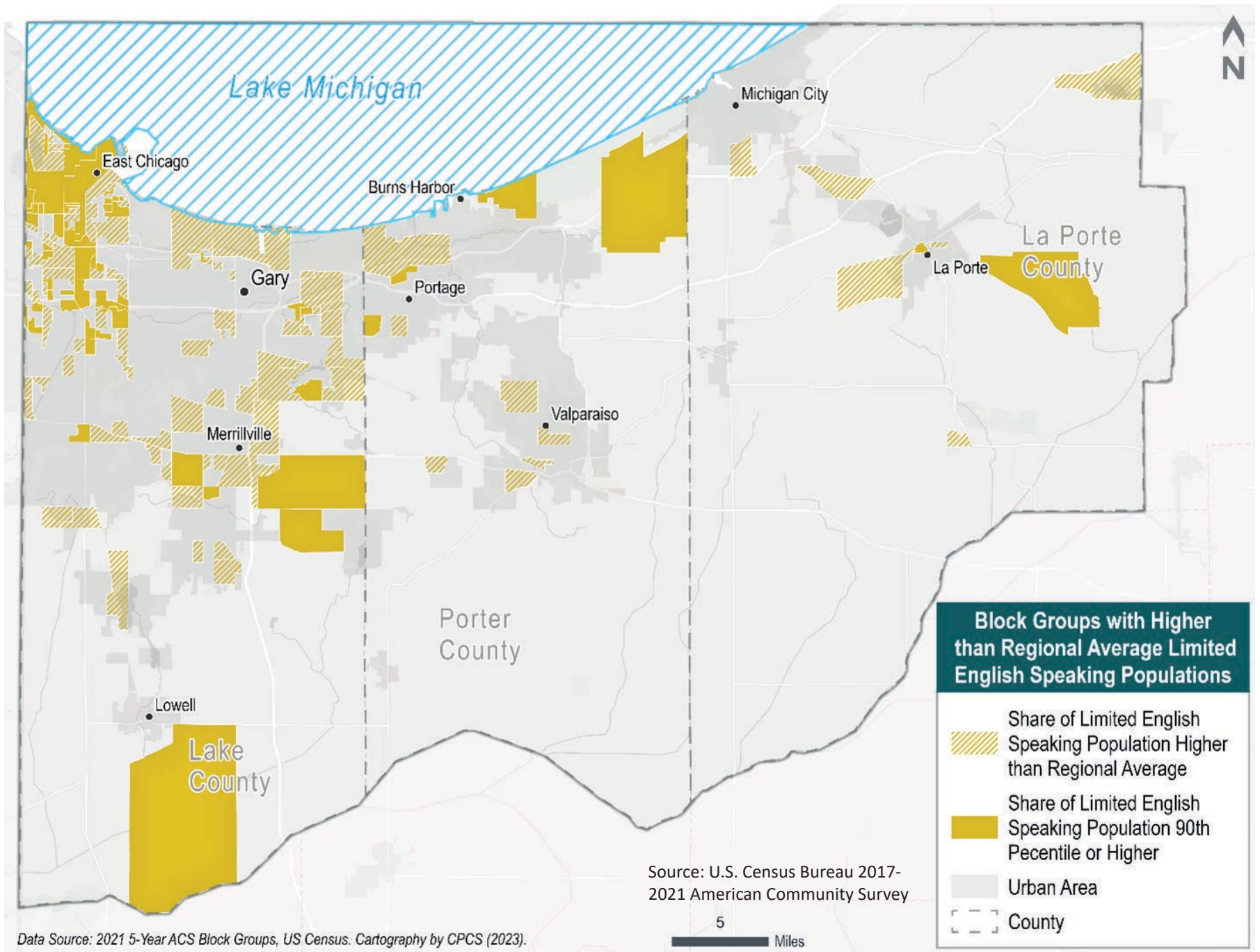


Figure 6-17: Census Block Groups with Higher than Regional Average and 90th Percentile Concentrations of Limited English Speaking Households

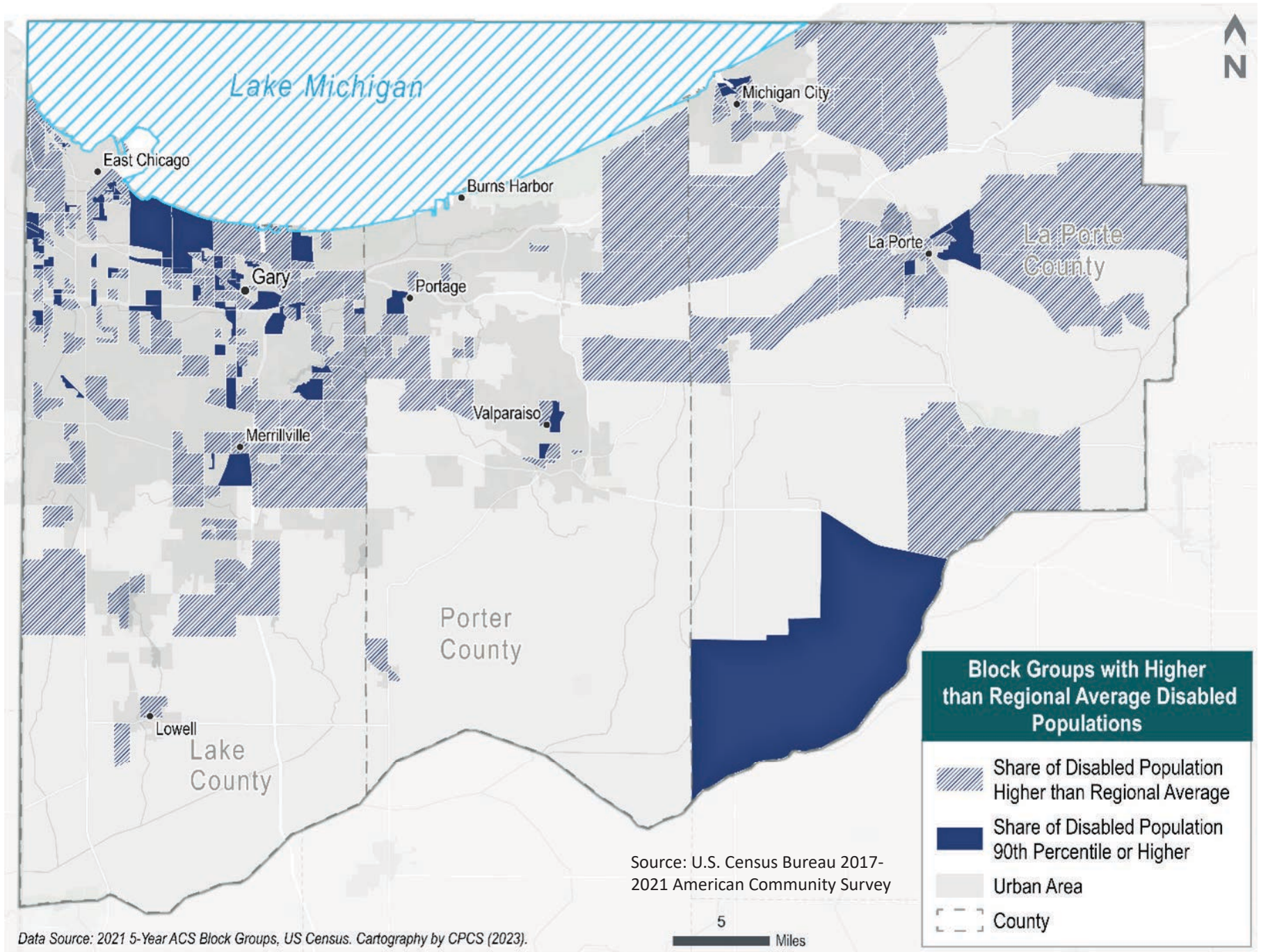


Figure 6-18: Census Block Groups with Higher than Regional Average and 90th Percentile Concentrations of People with Disabilities

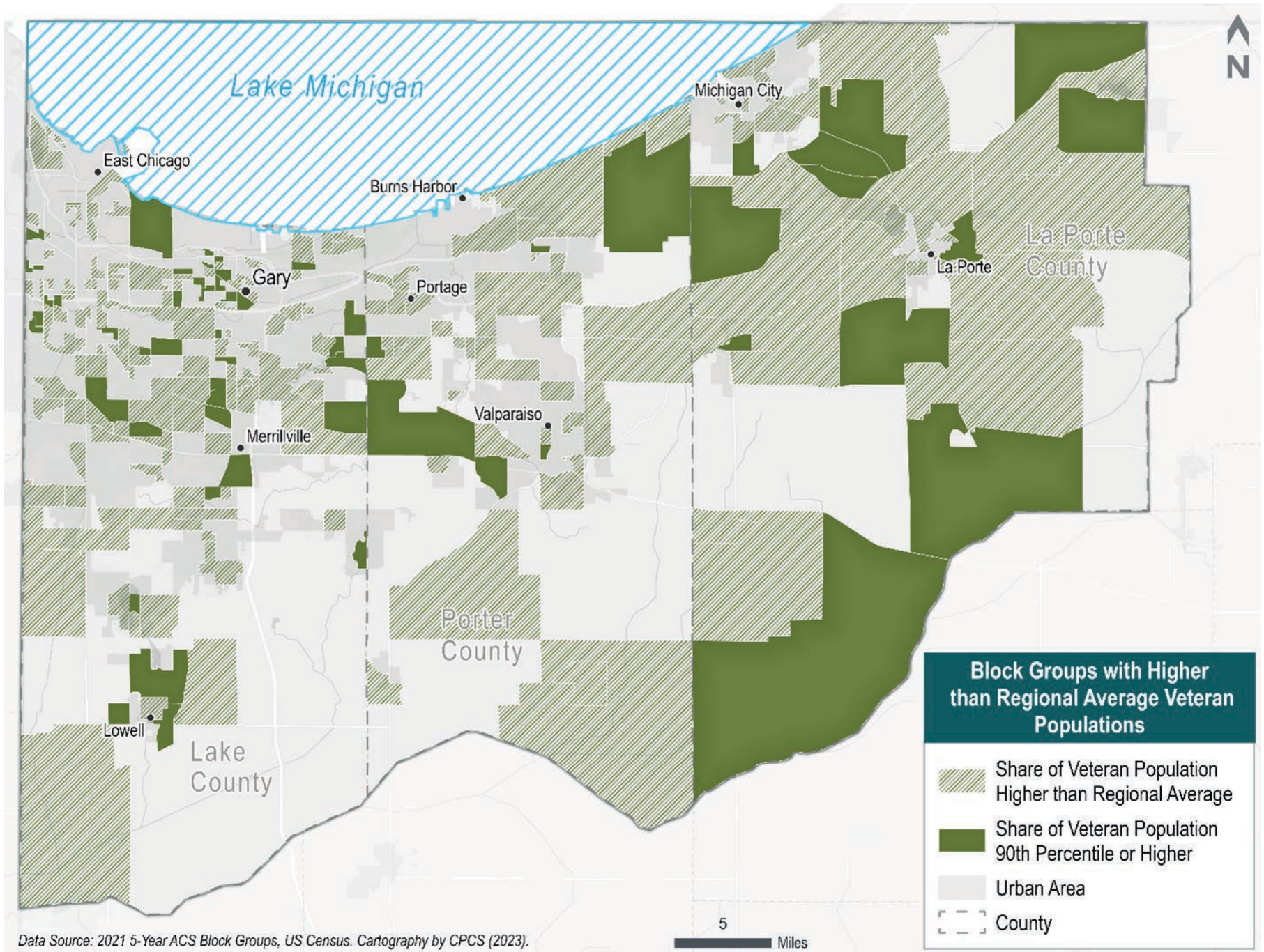


Figure 6-19: Census Block Groups with Higher than Regional Average and 90th Percentile Concentrations of Veteran Populations

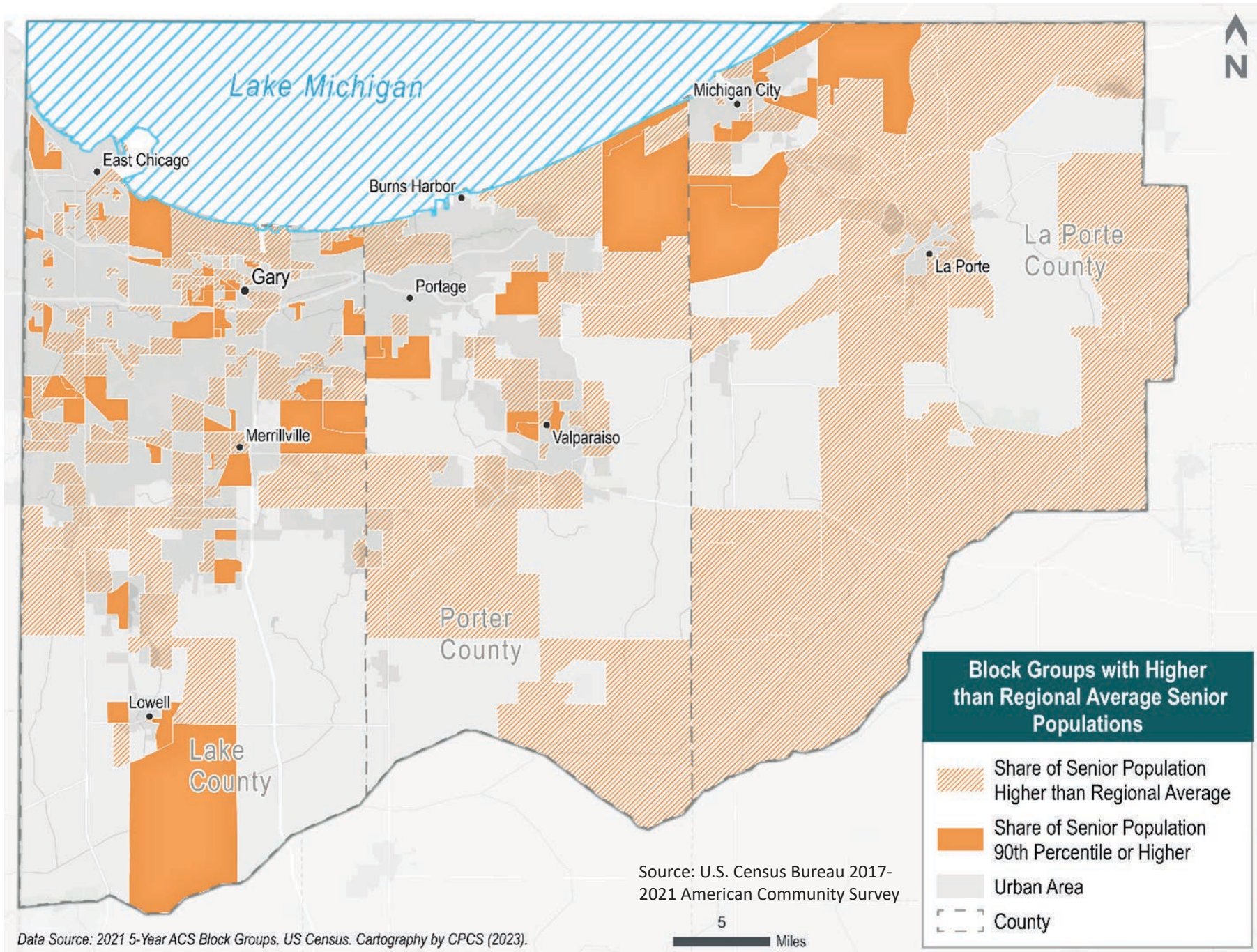


Figure 6-20: Census Block Groups with Higher than Regional Average and 90th Percentile Concentrations of Senior Populations

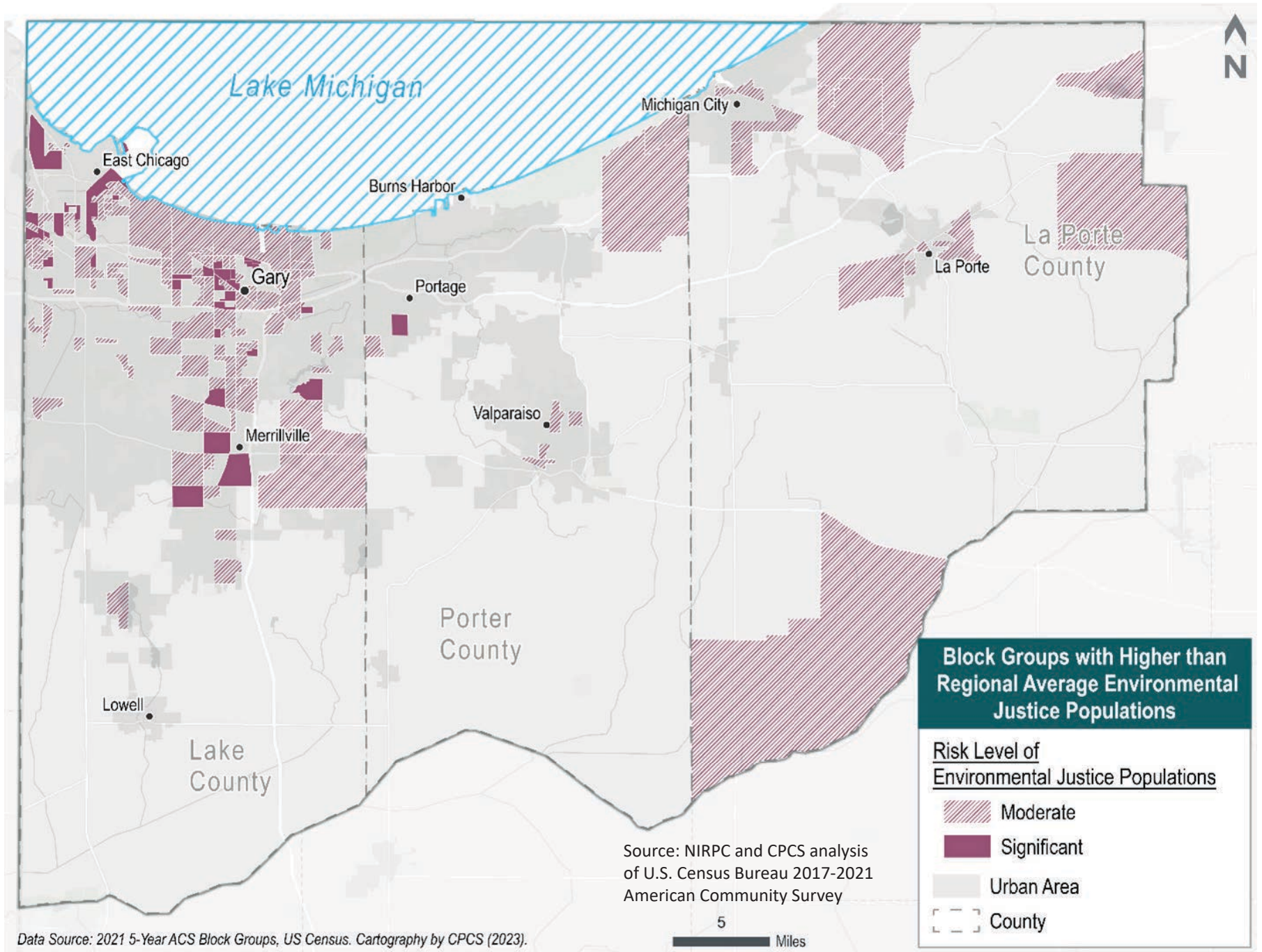


Figure 6-21: Environmental Justice Status of Census Block Groups in Northwestern Indiana

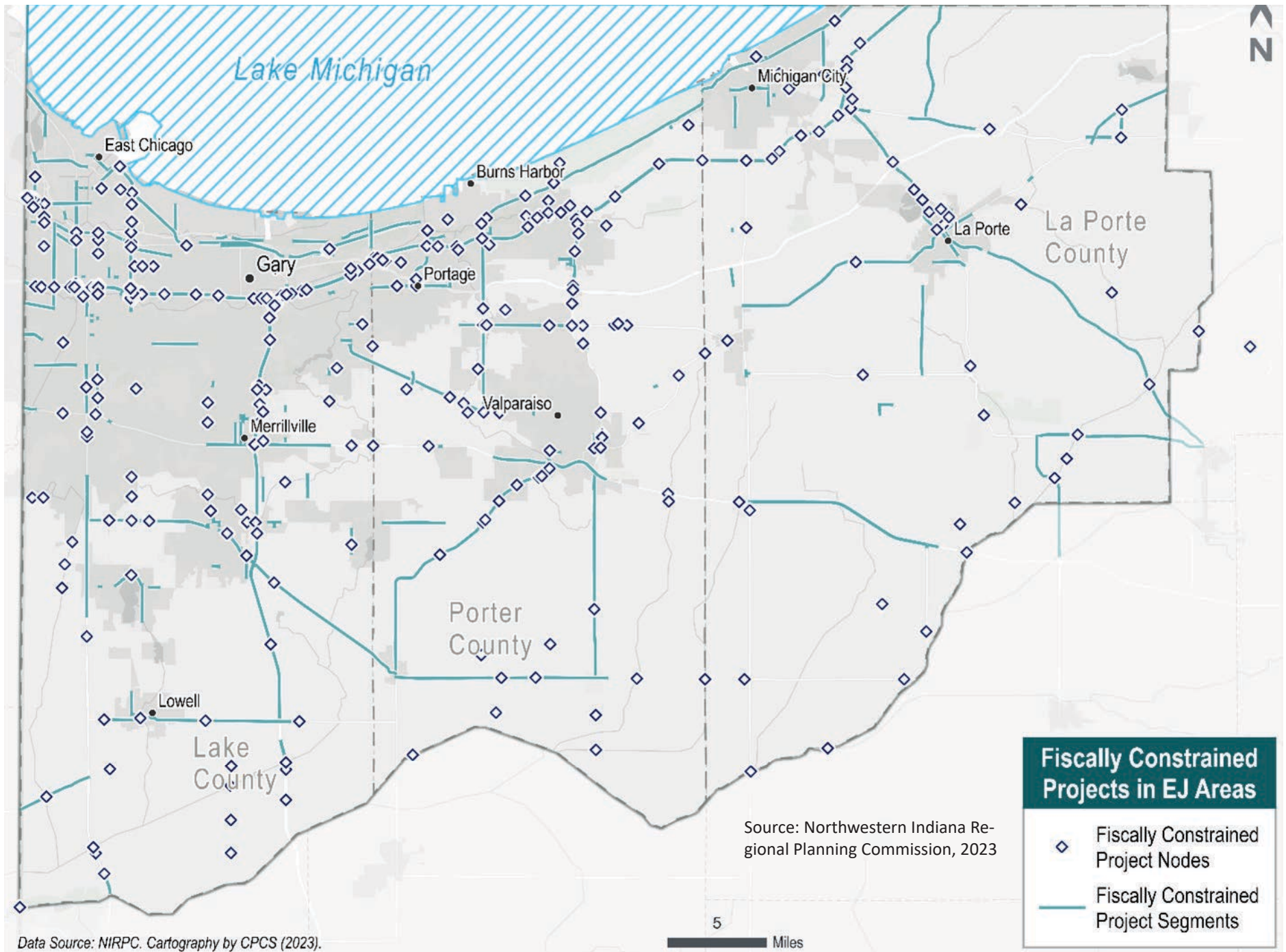


Figure 6-22: FY 2024-2028 TIP Projects Overlaid on Environmental Justice Map in Northwestern Indiana

Safe

NWI 2050 does not explicitly feature a vision for a Safe Northwestern Indiana region. Feedback from the planning and public involvement processes in the NWI 2050+ development effort led to a vision for a Safe Northwestern Indiana region as, reduce and mitigate roadway safety and security risks. In the context of roadways, NWI 2050+ formulates a goal to address this vision as, “ensure that the region’s roadways operate as safely as possible, with the guiding principle that any fatality on the roads or highways is one too many.” NWI 2050+ distills this goal into three objectives:

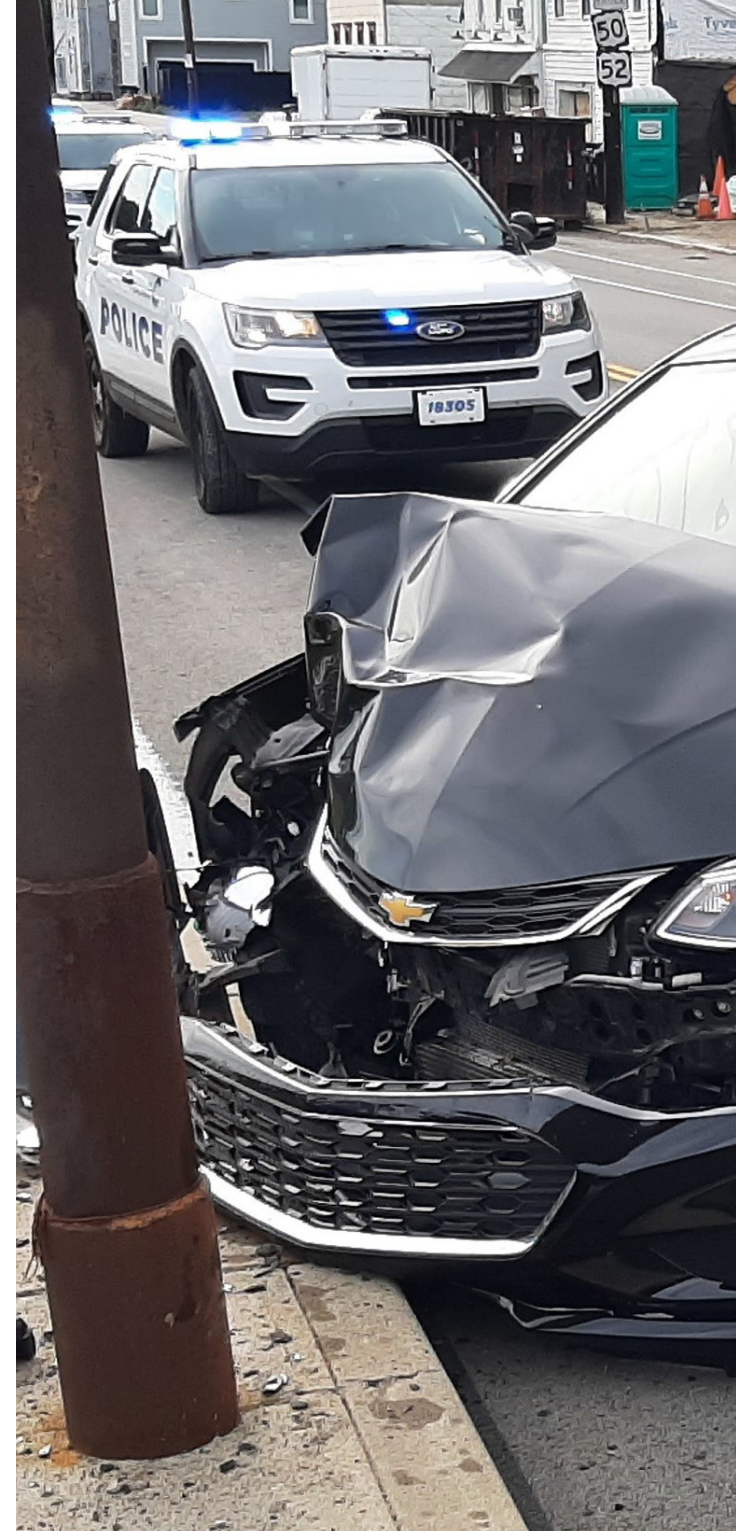
1. Leaders seek to reduce crashes on the region’s roadways.
2. Leaders seek to reduce injuries on the region’s roadways.
3. Leaders seek to eliminate fatalities on the region’s roadways.

Objective #1: Leaders seek to reduce crashes on the region’s roadways.

Safety is the single most important priority in planning for and investing in the region’s roadways. Crashes occur too often on roadways in Northwestern Indiana, and planners and leaders owe it to the public to better understand the contributing factors to crashes in order to prioritize which contributing factors they should address to reduce the number of crashes. Figure 6-23 shows a heat map of where crashes most often occurred between 2015 and 2019 on Northwestern Indiana roadways.

The overall pattern shows that crashes more often occurred in areas with more roads and more traffic, and also near major intersections and interchanges. Not surprisingly, the western portion of the region, especially northwestern Lake County, saw the highest concentration of crashes. Rural areas, by contrast, saw much fewer crashes than urban areas.

While it is important to understand where crashes tend to occur, it is also critical for region leaders to plan for reducing crashes. In February 2023, the Cities of Hammond, East Chicago, and Gary were awarded Safe Streets and Roads for All (SS4A) grant program funds from the U.S. Department of Transportation collectively totaling \$468,480. Planners in these cities will use the SS4A funds to develop Safety Action Plans to equip them with the understanding, strategy, and leadership capacity to make their roadways safer for all users. While NIRPC sets performance measure targets annually for a variety of safety measures, it is critical that more communities and regional planners follow the lead of these three cities in northern Lake County to commit more strongly to reducing crashes.



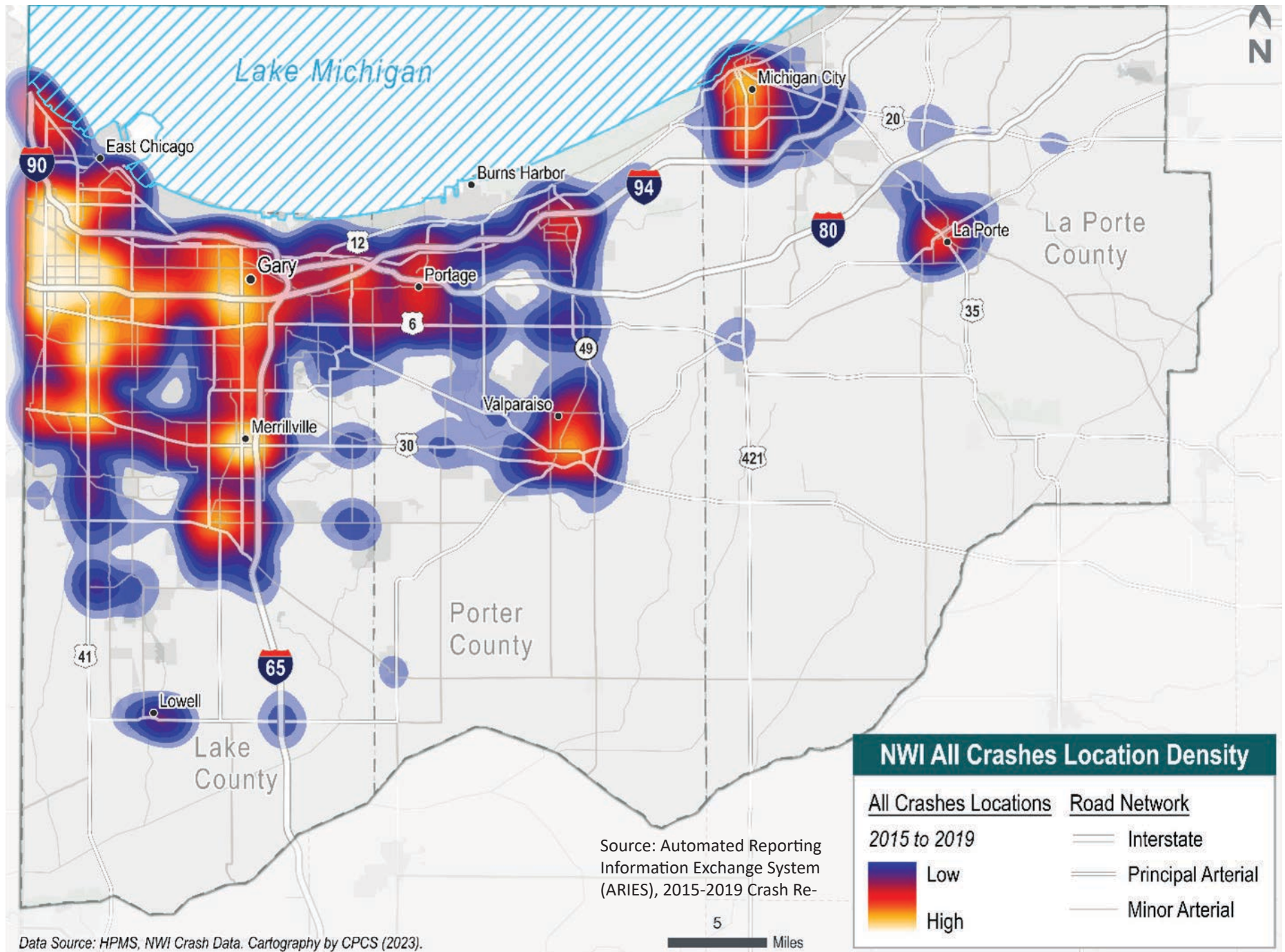


Figure 6-23: Heat Map of Crashes on Northwestern Indiana Roadways

Objective #2: Leaders seek to reduce injuries on the region's roadways.

Any crash on one the region's roadways is bad, no matter how minor. Roadway crashes that result in injuries, whether to occupants of a single vehicle, occupants in other vehicles on the road, or to non-motorized users, are much worse. Transporting the injured person(s) to the appropriate hospitals or trauma centers becomes a critically time-sensitive decision that first responders face. The injured and their loved ones are saddled with potentially financially ruinous medical bills and the uncertainty of the course of recovery. Planners should make every effort to understand how the roadway network may contribute to injury crashes. Figure 6-24 shows a heat map of injury crashes that occurred on Northwestern Indiana roadways between 2015 and 2019.

The pattern where injury crashes tend to occur most often, shown in Figure 6-24, is very similar to the overall pattern of crashes in Figure 6-23. It does appear that injury crashes are slightly more pronounced near intersections and on higher speed roads and highways. The area of Hammond around and just north of I-80/94 near the Illinois State Line was the area that experienced the highest concentration of injury crashes between 2015 and 2019. This area represents not only the most heavily traveled stretch of I-80/94 in the region, but it also involves a high density of intersections near the merging and exiting traffic as well as along major arterials such as Calumet Ave (US 41), Indianapolis Blvd (SR 152), and Kennedy Ave. The Broadway Ave (SR 53) corridor in Gary and in Merrillville also stands out as having experienced a high concentration of injury crashes, and the areas of US 30 near its intersections with I-65 in Merrillville and US 41 in Schererville also stand out. The Lincolnway corridor in Valparaiso also experienced a higher concentration of injury crashes than anywhere else in Porter or LaPorte Counties.

Reducing injury crashes is a major focus of NIRPC staff in its State Fiscal Years 2023-2024 Unified Planning Work Program, as there is a task to conduct Road Safety Audits, which will help communities be better equipped to understand where injury crashes occur and to proactively plan for roadway improvement fixes.



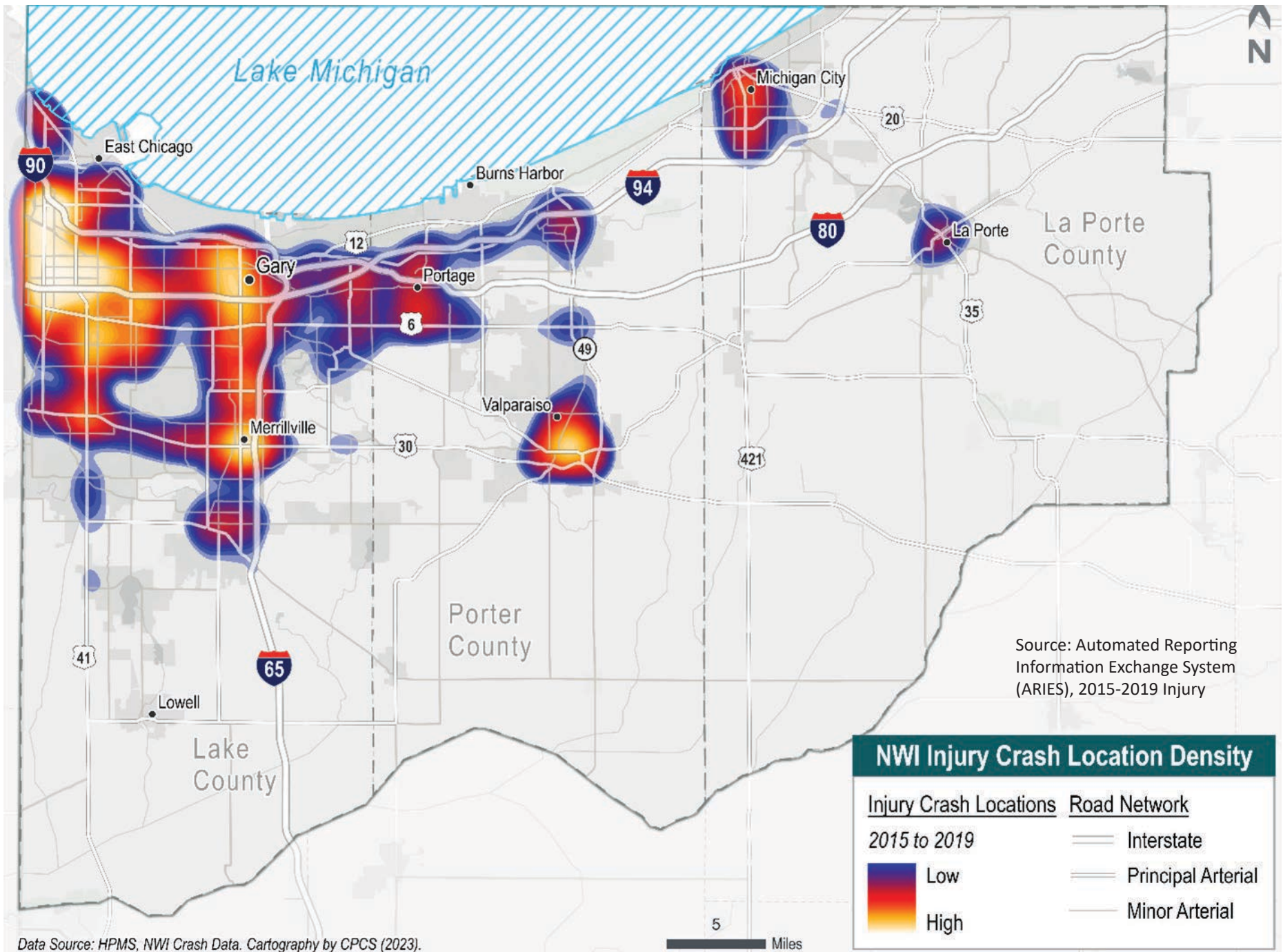


Figure 6-24: Heat Map of Injury Crashes on Northwestern Indiana Roadways

Objective #3: Leaders seek to eliminate fatalities on the region’s roadways.

No one should be killed as a result of traveling on a road. The Federal Highway Administration boldly adopts the “Vision Zero” principle first introduced in Sweden in 1997 by setting as a goal that there should be zero fatalities on the nation’s highway system (<https://highways.dot.gov/safety/zero-deaths>). As administrators of sub-allocated Federal Highway Administration funding, NIRPC should build consensus with region leaders that Vision Zero should become the abiding principle. However, Vision Zero has no hope of becoming reality in Northwestern Indiana unless planners of the roadway network better understand how the roadway network may be contributing to the likelihood of fatal crashes. Figure 6-25 shows a heat map of fatal crashes that tragically occurred on Northwestern Indiana roadways between 2015 and 2019.

The pattern in Figure 6-25 could not be clearer that fatal crashes are more likely to occur near busy interchanges and intersections as well as near roadway curves and oblique intersection angles. It is imperative that planners and engineers seek to design interchanges that discourage high speeds and minimize difficult merging and exiting maneuvers. Also, oblique intersections should be either converted to roundabouts or right angles with appropriate traffic control devices whenever possible. Ultimately, the Road Safety Audit task will help NIRPC staff begin to make more of an effort to equip communities with the tools they need to eliminate fatal crashes, but it will take an undivided commitment from all involved, including planners, engineers, community leaders, advocacy groups, civic institutions, and families and households to make Vision Zero possible.



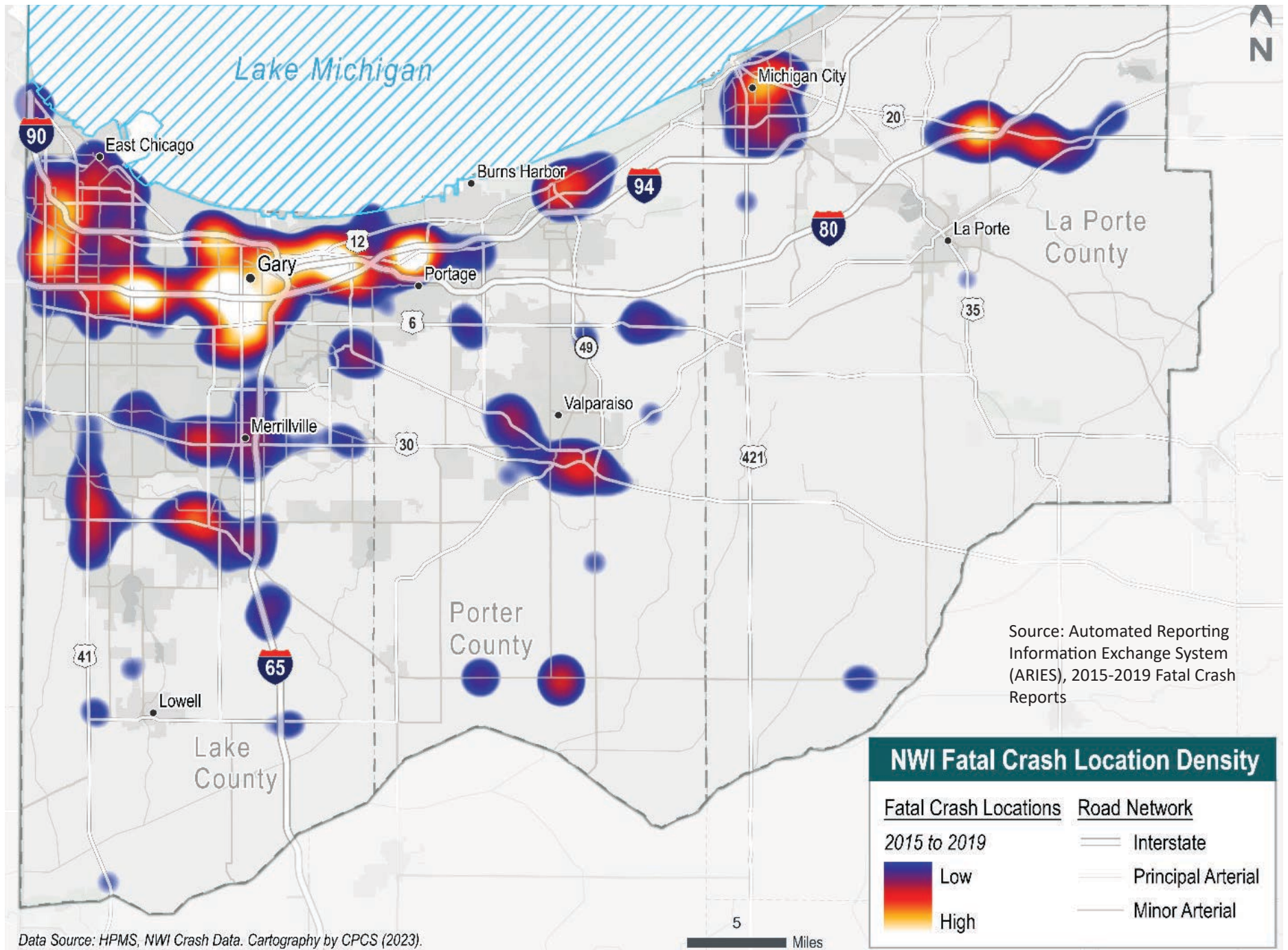


Figure 6-25: Heat Map of Fatal Crashes on Northwestern Indiana Roadways

