5. Multimodal System

This chapter discusses the existing multimodal transportation system in the Duluth-Superior area, its performance and its challenges and opportunities.

Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050

5. Multimodal Network *continued*

MIC Area Transportation System

The Duluth-Superior urban area is the regional trade center of the Northeast Minnesota-Northwest Wisconsin region. It is the primary regional hub for retail, trade, employment, education, healthcare, entertainment and tourism. This urban area draws people from a wide area and a large number of daily trips are coming into the urban area from across Minnesota, Wisconsin and the larger region.

This chapter covers all modes of transportation in the Duluth-Superior Metropolitan Area, including airways, railways, roadways, and waterways as well as the facilities that support travel on foot, by bicycle and by transit. Map 5.1 displays the MIC area's transportation assets.

Challenges and Opportunities

Over the next 25 years, the challenges and opportunities in urban areas generally, and by the Duluth-Superior area transportation system specifically, are anticipated to multiply in quantity and complexity.

Challenges

- Auto-centric system that prioritizes private motor vehicle use
- Climate change impacts in this region, bigger and more frequent storm events, impacting culverts, bridges, and waterfront infrastructure.
- Old infrastructure is coming due for replacement.
- More infrastructure per capita, larger size and scale.
- Struggle to maintain the existing system, including more striping for cyclists and pedestrians and more maintenance, sweeping and snow clearing, all the while improving traffic flow, filling potholes, rebuilding streets, and more.
- Demographics—more seniors, more students and more people in poverty, particularly those with children.
- Environmental, historical and cultural impacts, creating long term costly mitigation.

Opportunities

- Designing streets with boulevards that allow for snow storage, and provide a buffer distance from motorized traffic.

Sustainable Framework

Developing a model where the infrastructure put in place is sustainably covered by revenues generated.

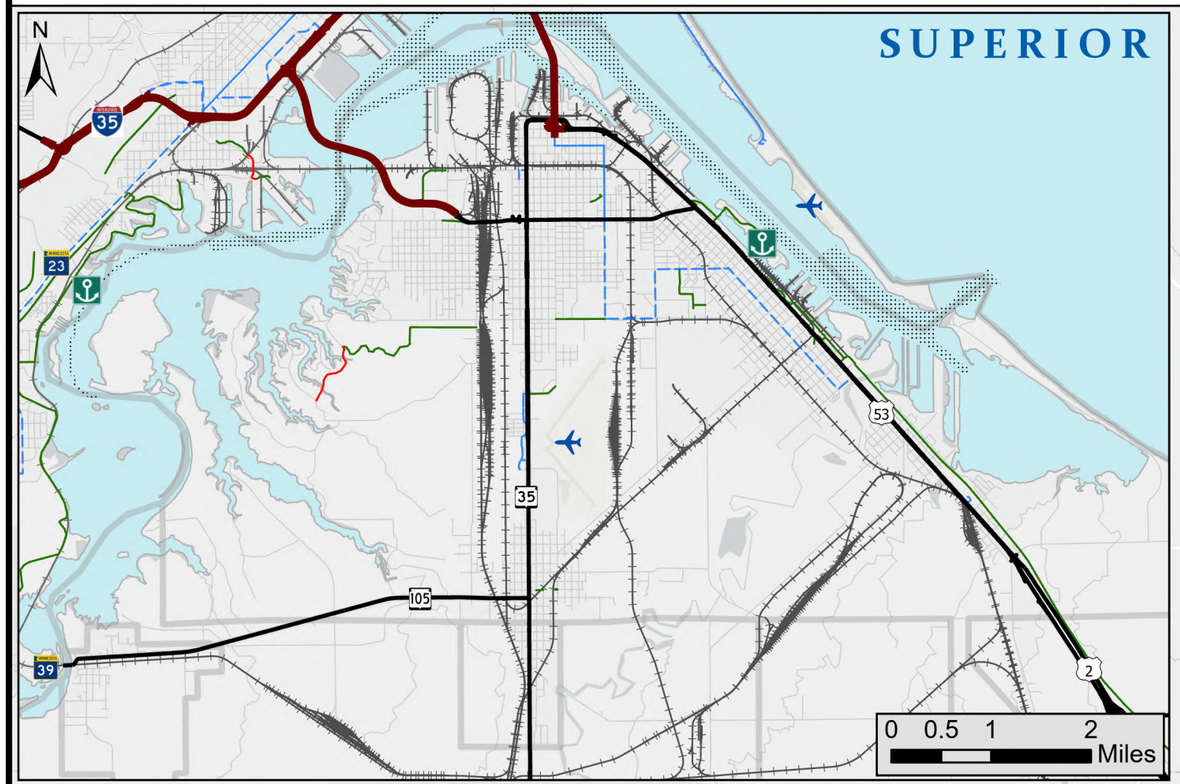
- Maximize return on public infrastructure investments
- Minimize undermining these investments
- Reduce externalities, costs and impacts that come from these investments and will have to be mitigated later.
- Understand the cost burdens placed on jurisdictions as well as citizens.
- Maintaining and rebuilding critical infrastructure.

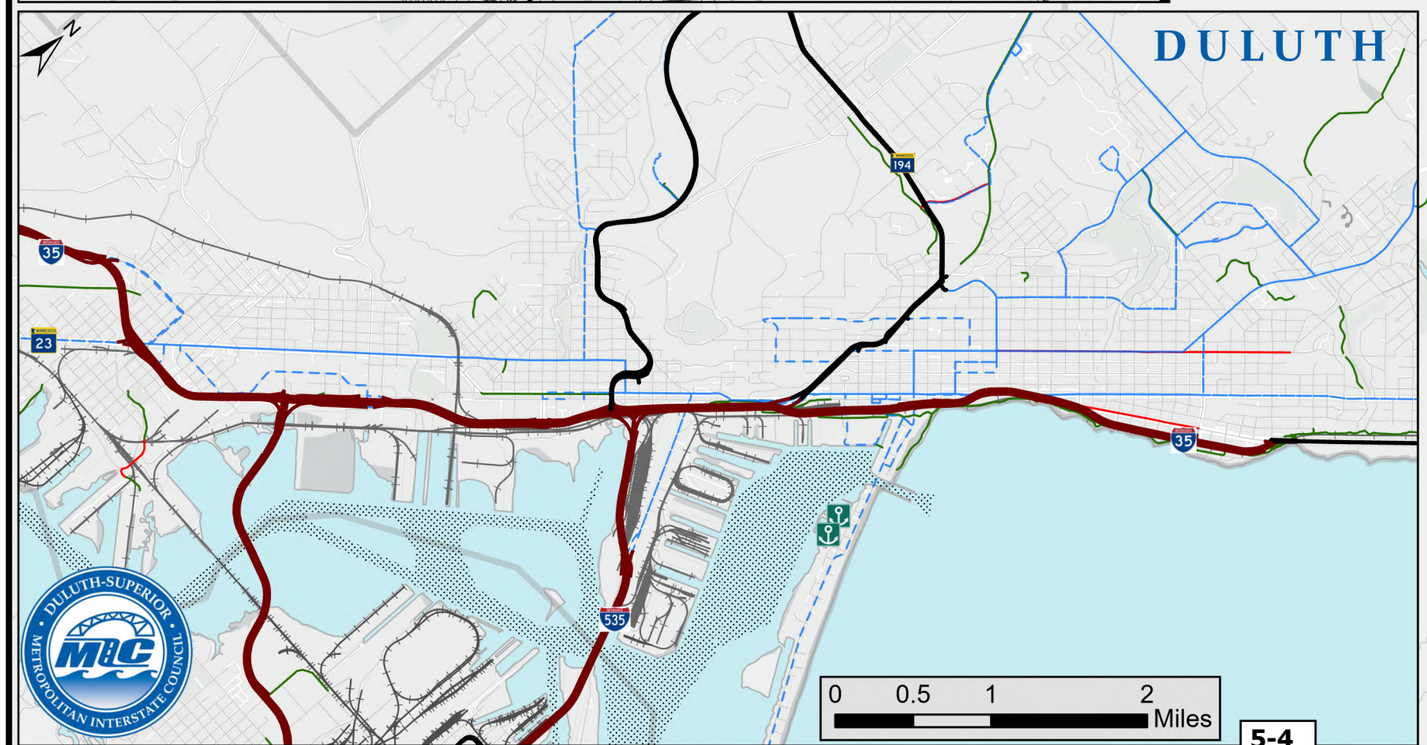
Map 5.1

MIC Area Transportation Assets

Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050





DULUTH-SUPERIOR METROPOLITAN INTERSTATE COUNCIL

- Infrastructure reconstruction is coming due—opportunity to re-think.
- Technological changes in how people interact with each other (less in person) and order transportation through apps on their phone.
- Changing public attitudes/desire to driving, including teenagers delay in getting driver's licenses.
- Public health benefits extend beyond physical activity, including social cohesion, safety, stress reduction, improved environmental health and more.
- Public support for transportation investment.
- Willingness to try new approaches.
- Real-time data & messaging.
- New micro mobility/light individual transport vehicles.
- Growing sharing economy—ride share, e-scooters, car share, etc.

Tourism

Tourism is placing increasingly more traffic demands on the system today. Trips up the North Shore create congestion through Duluth on the weekends and at Glensheen Mansion on London Rd. Special events like Grandma's Marathon, Bentleyville, concerts at Bayfront Park, and other events in the Waterfront District create predictable backups even onto the major thoroughfares. Major events at UMD as well as good weather Summer "beach" days, particularly on Saturdays create traffic congestion that can last for hours.

Security and Emergency Preparedness

Additional measures have been taken to improve security and emergency preparedness for major events, including both those that are planned community events, such as Grandma's Marathon as well as the unplanned, unexpected disasters such as the refinery explosion in 2018 in Superior, Wisconsin which created an evacuation.

Re-Thinking the System

With stagnant transportation revenues available to cover infrastructure costs and growing long-term needs and impacts, there is a critical need to do more than preserve the system "as is." It is imperative to re-think the system to get more out of the future infrastructure investments:

- More independent mobility for all, regardless of age, ability or income.
- More access to housing, education, healthcare, and jobs.
- More economic returns on infrastructure investment for jurisdictions and for citizens to be able to build wealth.
- More infrastructure designed to accommodate large freight movements thru the Twin Ports and the intermodal needs at the Port.
- More environmental benefits, reducing costly mitigation of impacts later.
- More human health and social connections creating stronger communities in the long run.
- More understanding of the dynamic nature of human travel behavior and the interplay between modes as people travel around the urban area.
- As a part of a comprehensive understanding of the current roadway transportation system there should be a consideration of the current functional classification system.

Mobility, Access and Mode Choice

Ensuring mobility and access into and across this urban region is important. Travel distance is a key determinant of travel modes. For distances 2 miles and greater, the most viable transportation mode currently available is the private motor vehicle. However, there are an increasing number of alternatives to driving, including inter-regional bus service and Twin Ports- to- Twin Cities shuttle service. Additionally, the Northern Lights Express (NLX) passenger rail service is planned for travel between the Twin Ports area and the Twin Cities.

Within the urban area, destinations are largely in close proximity to each other, and the majority of all trips taken are of shorter distances. These trips are typically less than 2 miles and are made frequently throughout each day. Within shorter distances, walking, cycling, ride-sharing, taking transit or

combining those modes are viable options to make a trip, depending on the trip purpose and geographic location.

Multimodal System Improvements

Many improvements to the built environment have recently been made to right-size the system and to develop a viable multimodal system.

As traffic patterns have changed due to changes in infrastructure, technology, and land use patterns, the configuration of the system has changed as well. A number of roadways have received 'road diets,' i.e., reductions from 4 lanes to 3 or 2 lanes, because the amount of traffic does not support the size of the road, and offers the opportunity to create space for other uses and modes.

Re-thinking One-way Streets

The one-way street system was designed and implemented largely in the 1950s as a response to a massive increase in private motor vehicle usage, coupled with a commercial (retail & office) development pattern that was primary located in densely developed areas.

These areas, including the downtowns of Duluth and Superior and other activity nodes including West End (now 'Lincoln Park'), West Duluth and the Belknap corridor in Superior, became congested and difficult to access by motor vehicle. The solution at the time was to create a system of one-way streets to move motor vehicular traffic more efficiently.

Since that time, commercial (retail and office) and institutional (schools and churches) venues have largely moved out of the central business districts and into outlying areas. Therefore, the density of uses has spread out and the traffic demand by motorists has greatly diminished in these areas.

Re-thinking the one-way system has resulted in some streets being converted back to two-way, with others currently under consideration.

In addition, removing traffic signals where they are no longer warranted, installing technology to improve traffic signal operations, and installing roundabouts are all measures that have been taken to adapt the transportation system to meet present-day demands.

Re-thinking the Streets: Road Diets/Right Sizing

Reconfiguring these streets, where their role has changed in the system, has been undertaken or is being considered:

Road Diets Undertaken

- 21st Ave E—London Rd to Woodland Ave
- London Rd—10th—21AE
- Grand Ave—Carlton Ave to 59AW
- Tower Ave—52nd to 69th
- Hammond Ave—Belknap St to 21st St.

Road Diets Under Project Development

- 6th Ave East—2nd St to Central Ent
- Woodland Ave - Snively Rd to Anoka St, with Bike Lanes
- 40th Ave West—Superior St to Haines Rd

Multimodal system improvements within the past ten years:

- Development of a primary east-west bicycle transportation corridor along the waterfront in Duluth with the Lakewalk and Cross City Trail;
- Addition of bike lanes on Tower Avenue in Superior;
- Improved highway connections to the Miller Hill area;
- Construction of a new access road to Port facilities;
- Dock wall stabilization in the Duluth and Superior harbor;
- New transit centers at the University of Minnesota-Duluth and in downtown Duluth;
- Runway reconstruction and construction of a new terminal at the Duluth International Airport.

In addition, there are numerous programs and policies in place, including:

- The DTA's U-Pass program (allowing students enrolled at UMD to ride DTA transit free of charge);
- Ongoing bicycle and pedestrian count program;
- Land use and built environment policies that encourage multimodal-friendly development;
- Educational and encouragement activities to promote and support the multimodal system.

Future Focus Areas

There has been recent consideration and public interest in how the historic impacts from the division created by the I-35 corridor could potentially be mitigated to better connect the neighborhoods in downtown Duluth/Central Hillside and in the Spirit Valley commercial and residential district in west Duluth. The community's ideas about a possible reconfiguration of the highway and/or land use changes to improve access to green space and spur economic development will be developed as part of an upcoming planning process, led by the City of Duluth and funded by the Reconnecting Communities federal grant program.

Additional focus areas for the future include urban context street design, parking policies, green infrastructure, and return on investment (ROI) economic policies.

MIC Area System Profile

Surface Transportation

The predominant part of the transportation system in the MIC area, as is in much of the United States, is the network of streets, roadways and highways that primarily carry automobiles and trucks. This includes two very large bridges connecting the communities on each side of the St. Louis River. These roadways accommodate the travel needs of residents, businesses, and travelers as well as freight needs.

The Duluth-Superior area has an extensive and well-connected network of federal, state and local roadways, including major bridge crossings. The system has a significant amount of redundancy giving the system good connectivity for the movement of motor vehicles with few gaps.

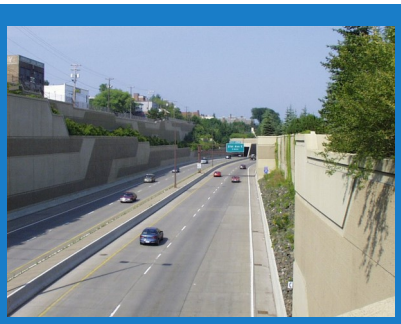
Streets serve as corridors for the conveyance of people, goods, and services and must accommodate an ever-expanding set of needs. They must be safe, sustainable, resilient, multi-modal, and economically beneficial, all while accommodating traffic and serve as community gathering spaces.

Challenges & Opportunities

- Network connectivity—issue of major throughways are disjointed.
- Climate change impacts—bigger storm events, that will necessitate a need for larger culverts and bridges, and improved street stormwater management.
- Pavement condition—lack of resources to maintain and reconstruct local roadways.
- Short but intense peak hours.
- Much of the system has available capacity.
- Real time data available—congestion on Google Maps.
- Intersection controls—roundabouts and improved signal timing.
- Connected and autonomous vehicles—passenger and truck.
- Major infrastructure maintenance, repair, and reconstruction coming due.

Pavement and Bridge Condition

Federal transportation legislation has placed emphasis on maintaining the National Highway System (NHS) in good condition, which in turn resulted in less federal funding for the



Major thoroughfares designed for the quick and efficient movement of motor vehicles:

- I-35 & I-535
- WI Hwy 35
- US Hwy 2 (in MN & WI)
- US Hwy 53 (in MN & WI)
- MN Hwy 23
- MN Hwy 194
- WI Hwy 105
- Midway Rd
- Martin Rd
- Lower Michigan St
- Central Entrance
- Becks Road
- Woodland Avenue
- Arrowhead Road
- Arlington Road
- Maple Grove Road

Areas of Congestion

- Lake Ave at Superior Street
- London Rd at 40th Ave East
- 24th Ave West at Piedmont Ave

Major Network Gaps

- Kenwood Ave to 6th Ave E
- Martin Rd to MN Hwy 61
- Joshua Ave to Arrowhead/Rice Lake Rd

other roadways. While the largest amount of traffic travels on the NHS system, the vast majority of roadway mileage is the non-NHS system.

In addition to maintaining miles of roadways, the area's jurisdictions maintain 300+ bridges. Bridge structures are some of the most expensive infrastructure assets and while the majority of the bridges are less than 60 years old, as they age increasing investment will be needed for repairs and full replacement of some in the future. Removal of many of the bridges associated with the Twin Ports Interchange project will help alleviate part of this problem in the long term.

Performance measures for pavement and bridge condition have been established by the IIJA/BIL and are detailed later in this chapter, on pp. 5-31 and 5-35 –5-42 -along with the MIC's adopted targets.

However, for tracking purposes, pavement condition data is not readily available at this time across all roadway authorities. Part of the MIC's implementation work for the 2050 MTP will be to develop a process where pavement conditions are routinely collected in a comparable and trackable format.

Active Transportation

Cities have existed for thousands of years as primarily walkable, human centered spaces. However, for the past 100+ years, our roads and public spaces have primarily been allocated to transportation via privately-owned, single-occupancy automobiles.

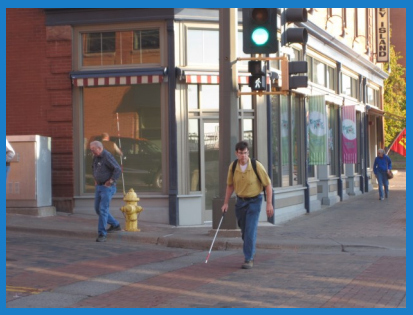
Given that the transportation system is the foundation of the urban economy, the transportation network must meet the needs of the people that it serves, including those who use active transportation modes — walking, bicycling and taking the bus. A safe, well-developed, well-connected multimodal transportation system will support independent mobility for all people, regardless of age, ability, or income.

Short Trip Generator Analysis

The Short Trip Generator Analysis (shown in Map 5.2, and described in Appendix B) identifies areas where a high number of short (one-mile and three-mile) automobile trips are currently made, to give us a picture of key locations of latent demand for active transportation (in other words, where more people might choose to take these trips by walking, biking and transit).

In maps 5.3, 5.4, and 5.5, the short trip areas are overlaid with the locations of targeted demographic factors (i.e., people with special transportation considerations, also discussed in Appendix B). They identify areas to prioritize for future pedestrian, bicycle, and transit improvements, as well as locations where future housing development (affordable and otherwise) could be targeted to ensure that accessible transportation options are available to residents in those areas:

- Map 5.3 shows a strong correlation between short trip locations and areas of high minority and low-income populations, especially in the Central Hillside neighborhoods and in downtown Superior, WI.
- Map 5.4 shows a strong correlation between short trip locations and areas of low car ownership, again in the Duluth Central Hillside neighborhoods and in downtown Superior, WI.



Active Transportation

Pedestrians and cyclists are the most important users of the transportation system, particularly because these are users who do not, or cannot depend on a motor vehicle.

In shared spaces with motor vehicles, it is important to limit exposure to risk. Strategies to reduce exposure risks include:

- Reducing pedestrian crossing distances (rate of exposure)
- Reducing vehicle speed with traffic calming measures.
- Create buffer zone between sidewalks and multi-use paths and motor vehicles.
- Installing dynamic signage (RRFB's, bike signals, etc.)
- Creating separated bikeways

Education, Encouragement & Evaluation—Annual Efforts

- Winter Bike to Work Day—February
- Bus, Bike, Walk Series—April-June
- Bike to Work Day—May
- Building Great Places event—May
- Walk/Bike to School Day—October

- Map 5.5 shows that the DTA's new 'Better Bus Blueprint' route structure serves all of those areas of high demand very well in most cases. The exception is the Short Trip Generator area on the upper side of Highway 53, where several retail locations could not easily accommodate transit and maintain the targeted 15-minute headways of the green 'Go Line' route.

Overall, this analysis demonstrates and supports the ongoing need for an expanded, connected, multimodal transportation network, not only to tap into the latent demand for active transportation modes, but also to recognize and meet the needs of historically underserved areas throughout our region.

Active Transportation – Walking

A pedestrian is defined as a person who walks or rolls with the use of a wheelchair or other mobility assistive device. This mode is essential to transportation and is key for the economy and for public health.

The key infrastructure element of the pedestrian network is sidewalks. Sidewalks provide necessary walking connections to homes, businesses, transit services, and other activities. The MIC region has an extensive network of public sidewalks and stairways in place. While most public streets in the region have sidewalks, there are gaps in the sidewalk network.

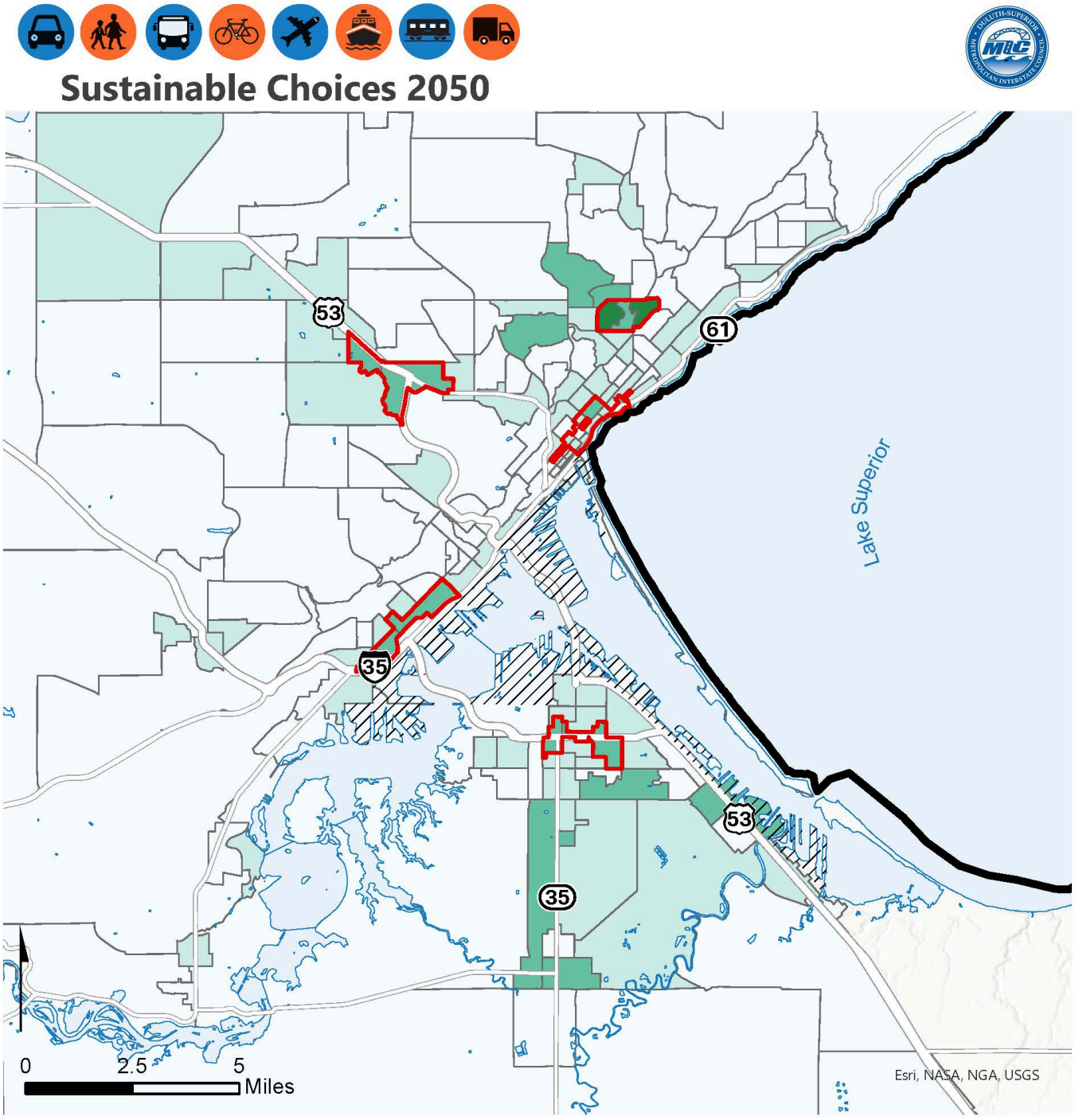
Unlike public streets and trails, sidewalk maintenance is largely the responsibility of the adjacent property owners. This can create challenges, as property owners can vary greatly in their ability or desire to maintain sidewalks.

The design of sidewalks plays an important role in extent of their use. Design elements that encourage pedestrian usage include curb extensions, enhanced street crossing, and reduced vehicle lane width.

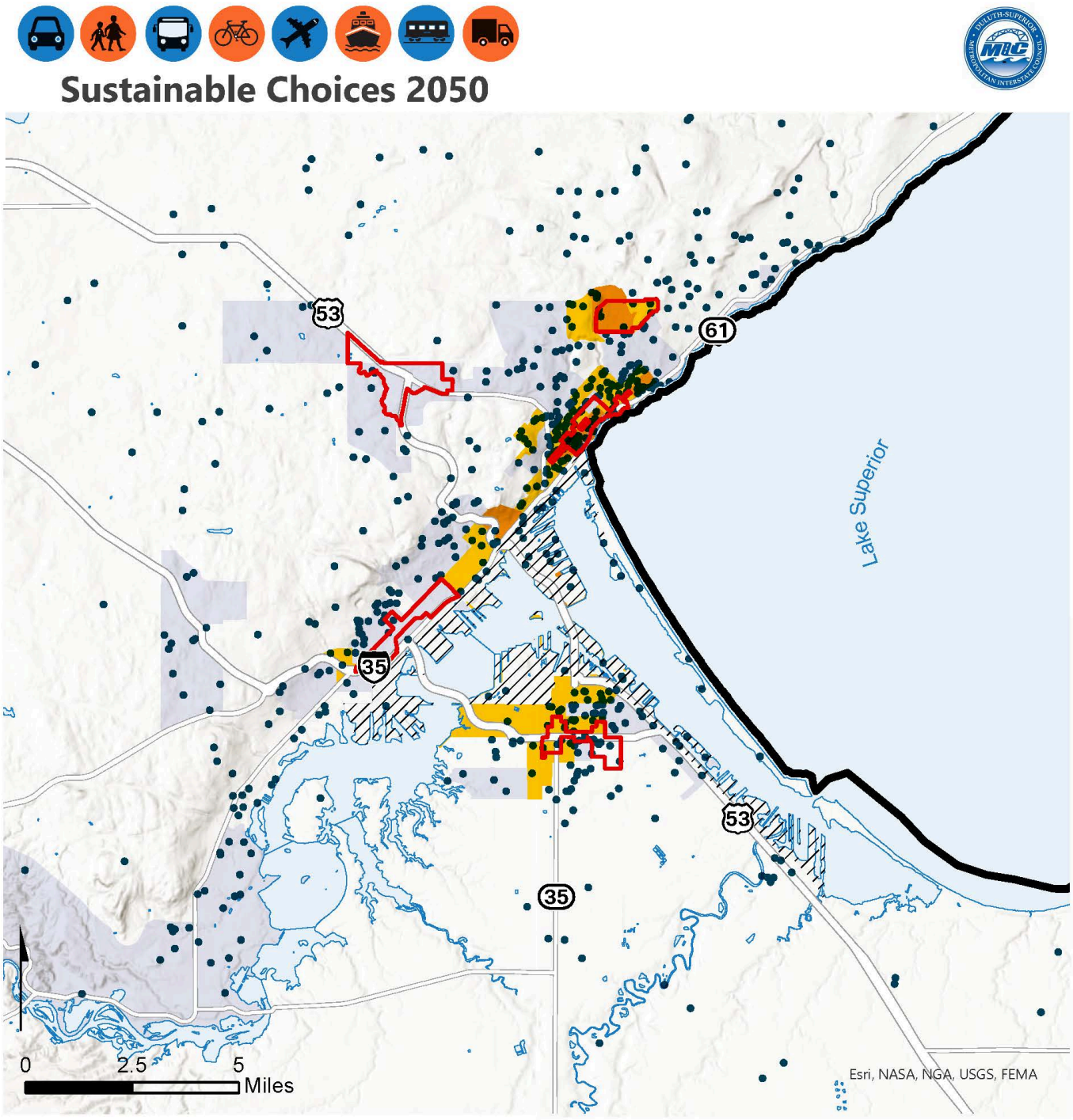
Challenges & Opportunities

- Sidewalk condition (snow clearing, repair, brush removal/ clearance).
- Vehicle yield for pedestrians crossing issues.
- Vulnerable users—reducing exposure to risks.
- Sidewalk network continuity (gaps).
- Steep topography, especially when snow/ice is on streets and sidewalks there is no hill climbing alternative.

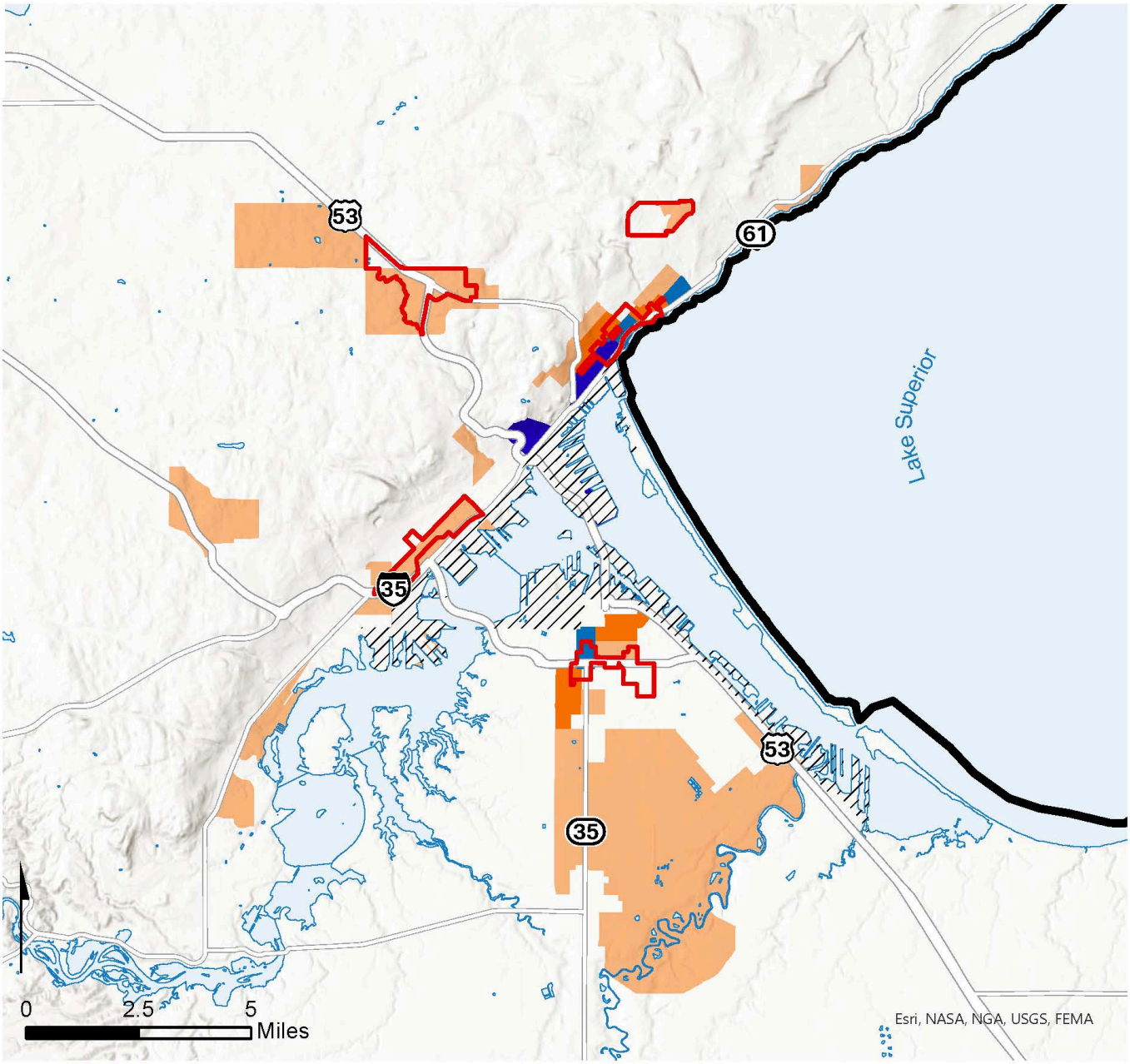
Map 5.2: Short Trip Generating Areas



Map 5.3: EJ Population and Short Trip Generating Areas



Map 5.4: Low Vehicle Access and Short Trip Generating Areas



Low Vehicle Access and Short Trip Generators

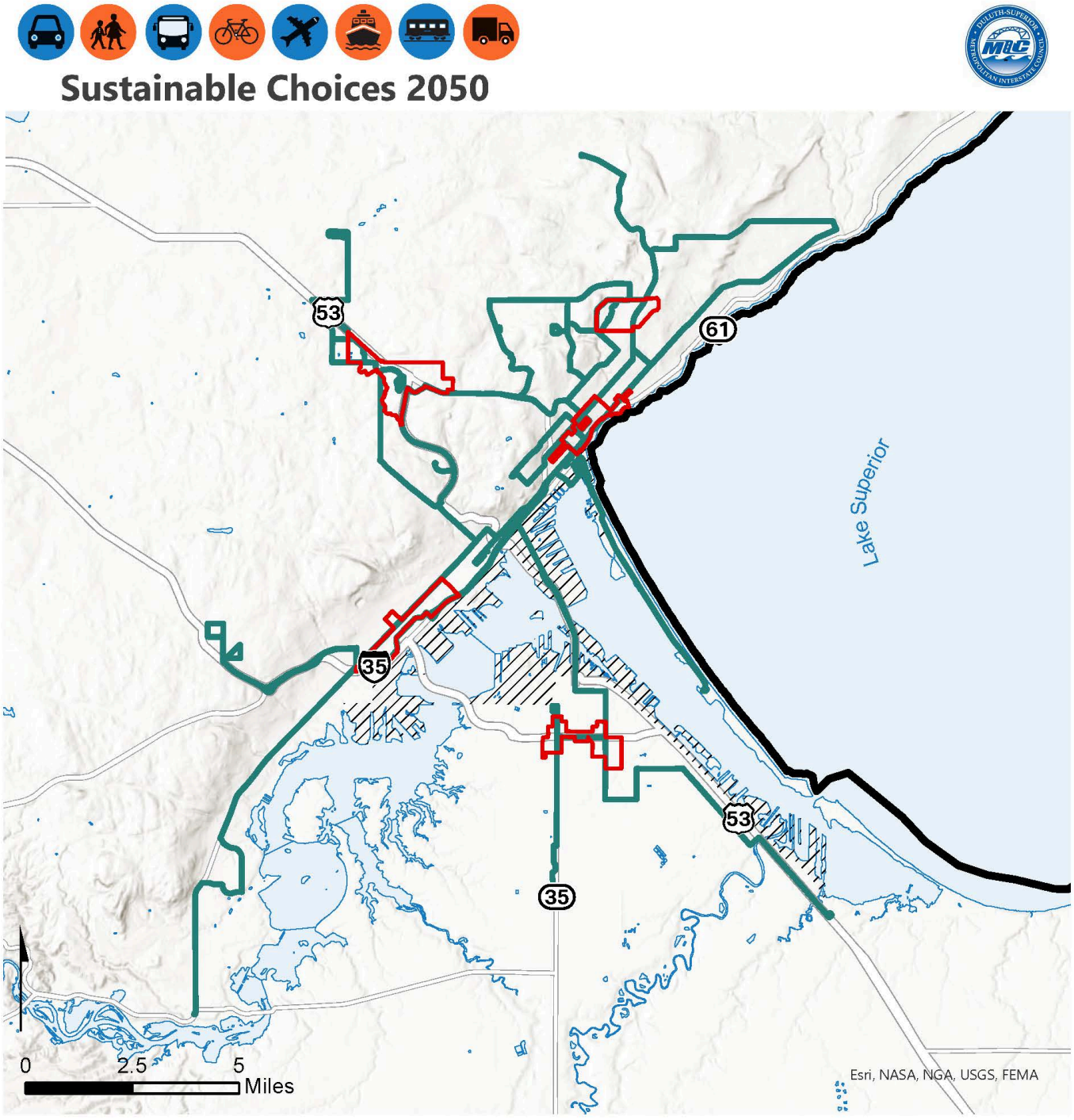
Households Without an Automobile

- 0% - 12%
- 13% - 25%
- 26% - 37%
- 38% - 49%
- 50% - 61%

Short Trip Generators

Port Land

Map 5.5: Transit Access to Short Trip Generating Areas



- High usage of sidewalks by cyclists.
- Increasing use of sidewalks by motorized devices, for example e-scooters and segways.

Active Transportation – Bicycling

The bicycle mode of transportation continues to be under-developed in the MIC area, as there is currently not a fully viable interconnected bikeway system in place. However, national, state and local policy support for developing the bikeway networks does exist. Federal transportation policy clearly states that it is the responsibility of every transportation agency in the United States to improve conditions for bicycling and to integrate bicycling into their transportation system. Agencies are encouraged to not just meet minimum requirements of providing bicycle facilities, but to go beyond minimum standards to provide the safest and most convenient bicycle facilities practicable.

Much planning has been conducted in the Twin Ports over the past 25 years place to address this issue. Following these planning efforts, bike route maps were developed, wayfinding signage was put up, bike racks at K-12 public schools were installed, and in the last 10 years, major off-street multi-use paths and bike lanes have been constructed. In addition, educational, encouragement and evaluation programs have been put into place including bike to school and work days, Bus, Bike, Walk Month series of activities and the establishment of the Bike & Ped Count program.

Challenges & Opportunities

- Lack of a fully interconnected bikeways network.
- Limited options for people of all ages and abilities, particularly those who not the “Strong & Fearless” cyclists.
- Bikeway maintenance (sweeping and snow clearing), cracks and potholes and iterative improvements.
- Steep/hilly topography.
- Traffic signals that do not recognize bicyclists.
- Bikeway wayfinding signage on the Minnesota is largely in place, but not on the Wisconsin side.

Bicycle Trunk Lines are a transportation system handling long-distance through traffic. A main supply channel. The major trunk lines for the active transportation modes in the MIC area include:

Waterfront trunk line

- Munger Trail
- Cross City Trail
- Lakewalk
- Osaugie Trail

Hill climbing trunk lines

- Hermantown/Proctor Trail
- Lincoln Park Drive
- Congdon Park Drive

Possible Future Trunk Lines

- College of St. Scholastica/ University of MN Duluth Corridor (Campus Connector)
- Hammond Corridor
- Miller Hill/Central Ent Corridor
- Blatnik Bridge Corridor

Active Transportation – Transit

Transit service in the Twin Ports area is comprised of a mix of public and private systems which provides access across the urban area, the larger Arrowhead Region and destinations across Minnesota. The region also has several smaller agencies that provide rides to specific groups such as the elderly or disabled and a private commuter bus service from Cloquet.

The DTA is the municipal transit authority for the Twin Ports, has fixed regular routes across Duluth, Hermantown, Proctor and Superior, and serves approximately 3 million rides per year. DTA provides paratransit service, known locally as STRIDE, which is a dial-a-ride service for qualified individuals with disabilities. DTA has several new low emission electric buses, and has established transit hubs in Downtown Duluth, UMD Kirby Center and the Miller Hill Mall.

The Duluth Transportation Center (DTC) is a multimodal center which provides indoor passenger waiting, a Jefferson Lines ticket counter, bike parking and has future capacity to accommodate passenger rail. The DTA also has a successful college service to UMD, CSS, LSC and UWS, has incorporated new technology tools to improve service, has a trolley service in Downtown and Canal Park, and is planning for bus rapid transit (BRT).

There are a number of transit options in addition to the DTA. Arrowhead Transit serves Hermantown and the larger Arrowhead Region of Minnesota. Jefferson Lines serves destinations across Minnesota with direct connections from Duluth to the Twin Cities, the Iron Range, St. Cloud, and Fargo. Groome and Land Line provide shuttle and bus service respectively to the MSP airport. Groome also provides services to select destinations along the I-35 corridor, including Hinckley and a stop near the state capitol in St. Paul.

Better Bus Blueprint

The Duluth Transit Authority (DTA) has started, in 2020 an initiative called the "Better Bus Blueprint". After more than 16 months of study, community engagement, and scenario planning, a recommendation for a full network redesign was proposed at the DTA. The implementation of this took some time to prepare, as it included rebranding, completely re-routing, new bus stop signage/wayfindinding, significant changes in stop locations, schedule changes, and much more. In August of 2023, the Better Bus Blueprint transit network

Transit Service in the Duluth-Superior Area

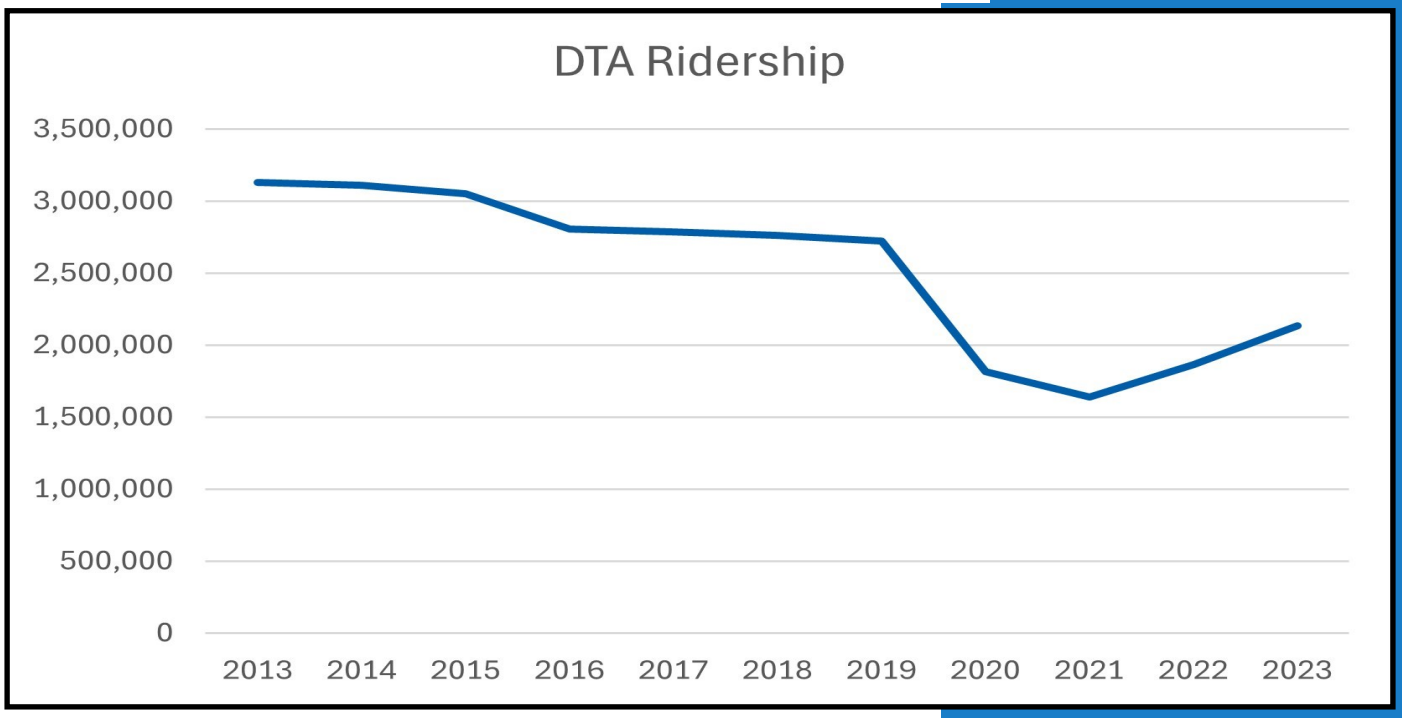
Urban Transit Service

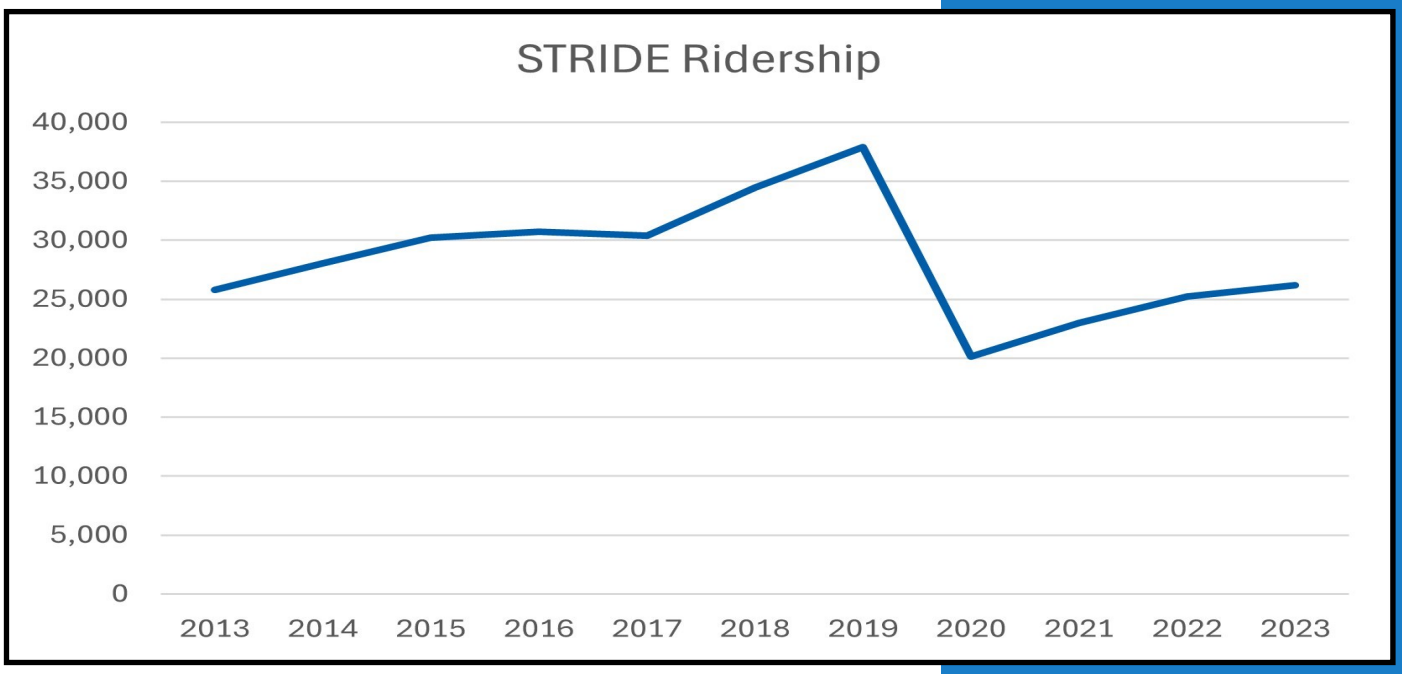
- Duluth Transit Authority
- STRIDE
- Arrowhead Transit
- Employer/School shuttles/ buses (Essentia & Boulder Ridge)
- Human Services shuttles/vans
- Major Events shuttles for Grandma's Marathon, Bentleyville, Glensheen Winter Village, Inline North Shore Marathon, Dragon Boat Festival, etc.

Inter-City Bus & Shuttle Service

- Jefferson Lines—to Twin Cities, St. Cloud, Fargo, & Iron Range
- Indian Trails—to Ashland, Iron River & Milwaukee
- Groome Shuttle (formerly known as Skyline Shuttle) - to Twin Cities and MSP Airport
- Land Line Shuttle—DLH to MSP

Figure 5.1: DTA Annual Ridership & STRIDE Ridership (2013-2023)





was finally launched. After this launch, the outcomes were as follows:

- Less service in outlaying geographic areas with low utilization.
- More frequency on core corridors that had significant demand for more service.
- More service in the evenings and on weekends.
- Consistency in schedules.
- An easy-to-comprehend network with less complexity.
- Significant travel-time savings for users/passengers.
- The introduction of two high-frequency lines that are intended to evolve into arterial Bus Rapid Transit (BRT) lines.

With these improvements, the DTA has seen double-digit increases in ridership, and the DTA is planning for increased line frequency, accessibility, and more. The DTA also plans to incrementally build-out an arterial BRT network, building off of the success of the DTA "GO Lines."

In addition, the following are Challenges and Opportunities, as defined by the DTA, related to public transit in the MIC area, regarding access to transit stops for pedestrians:

Challenges & Opportunities

- High level of use (compared to similar size urban areas).
- High level of regard and support for transit by the public.
- ADA sidewalk improvements are happening.
- Encourage & ensure viable interconnections between transit and all other active transportation modes (walk, bike, etc.).
- Technology—rider access to real time data.
- Connected and Autonomous vehicles (CAV) development.
- Sidewalk condition—limits access to transit buses due to overgrown vegetation, lack of snow clearing, minimal maintenance, major gaps in sidewalk network including along bus routes.
- Lack of shelters, including warming devices in shelters.
- Land use developments happening without a full consideration of transit needs make it difficult to serve via fixed transit route system.
- On-demand—growing expectation for trips.
- Technology providing real-time information (smart phone).

Air Transportation

The Duluth-Superior area has three primary, publicly-owned airports that provide a wide range of services for both general aviation, commercial passenger flights (only available at the Duluth International Airport), and freight transport. Together, the area's airports provide the greater area, the Arrowhead region of Minnesota, northwest Wisconsin and the Thunder Bay, Ontario region with commercial air service, air freight service, general aviation services and float plane capabilities.

The Joint Airport Zoning Board, comprised of representatives of communities surrounding airports, imposes a variety of restrictions on land use through safety zones. This creates challenges for communities, as the regional benefit of the airports and the local community need for tax revenue to cover services can at times conflict.

Air-based transportation is undergoing challenges as well. The Duluth Airport Authority worked to meet post 9-11 security requirements by building a new terminal at Duluth International Airport, and is replacing aging infrastructure by reconstructing runways at Duluth International and Sky Harbor Airports.

For more information on the infrastructure replacement plan at the Duluth International Airport please visit the master plan website at: https://duluthairport.com/master-plan/.

Challenges & Opportunities

- Increased access to national and international destinations particularly with direct service to MSP and to Chicago O'Hare Airports.
- "Leakage"—passengers utilizing MSP instead of DLH.
- Extending cross-runway at DLH.
- Building complementary services around the airport grounds, including lodging, restaurants, day-care, automobile services, etc.).
- Development pressures within airport safety zones.
- Noise impacts on surrounding land uses associated with unconstrained military operations at DLH.

Duluth International Airport (DLH)

- 2 runways (one of which is 10,165 feet in length—2nd longest runway in Minnesota)
- Designated as a Airport of Entry for Customs (24-hour service)
- Approximately 300,000 passengers per year
- 3 commercial passenger airlines (Delta, Sun Country & United)
- Daily flights to Minneapolis-St. Paul & Chicago

Sky Harbor Airport

- 1 runway (rebuilt 2018)
- 2 sea lanes

Richard I. Bong Airport (Superior)

- 2 Runways
- Approx. 50 flights per day

Rail Transportation

Rail lines in the Duluth-Superior area have enjoyed increasing freight loads, as well as renewed efforts to create high(er)-speed passenger rail systems, all while creating safer and quieter crossings in urban areas, improving reliability, and upgrading widespread aging infrastructure.

It should also be noted that, across the region, there are projects (such as on Midway Road), that there are opportunities to leverage funds from the Railroad Crossing Elimination (RCE) grant program that has been put in-place by the current federal administration to improve roadway safety, decrease delays, and make it easier to get around railroad tracks by adding grade separations, closing at-grade crossings, and improving existing at-grade crossings where train tracks and roads intersect.

Freight Rail

Four Class 1 railroads operate within the Duluth-Superior area offering connection to rail lines across North America. For example, Canadian National (CN) offers freight transport from Duluth-Superior to the Pacific Ocean, Atlantic Ocean, and the Gulf of Mexico. Container shipping of freight via rail has increased in the area with the start of Duluth Cargo Connect, an intermodal operation partnership between the Duluth Seaway Port Authority and Lake Superior Warehousing.

Freight rail movement between Duluth and Superior takes place on two bridges, the Grassy Point Draw near the Bong Bridge and the Oliver Bridge along MN Hwy 39/WI Hwy 105.

Passenger Rail—Northern Lights Express (NLX)

Efforts are underway to bring passenger rail service back to the Duluth-Superior area. As the regional trade center and a center for tourism the urban area has growing potential to support and benefit from this planned new service.

Challenges & Opportunities

- Rail line crossing safety restrictions.
- Increased use likely to spur increase in public investment.
- Preserving and/or re-using under-used and/or abandoned rail corridors.
- In Superior, WI numerous rail lines create challenges for crossings, including roadway blockages, motor vehicle traffic delays and barriers to walking and bicycling with limited crossing and/or long distances between crossing

Freight Rail

4 “Class 1 Rail” Companies in the Duluth-Superior Area. “Class 1 Railroad” is defined as having annual carrier operating revenues of $250 million or more.

- BNSF
- CN
- CPKC
- UP

Passenger Rail (proposed)

Northern Lights Express (NLX)

- Service from Minneapolis to Duluth
- Stops in Coon Rapids, Cambridge, Hinckley & Superior.
- Would share use of existing freight rail lines
- Planning for NLX has concluded
- Pursuing funding to upgrade tracks, build/update stations and purchase train cars.

points.

- Reliability challenges with passenger trains sharing tracks with freight trains.
- The passenger rail line would add system redundancy and increased safety factors.

Waterways—Harbor/Port

The Port of Duluth-Superior serves as a full-service, multimodal hub for domestic and international trade. It is the busiest and largest (by tonnage) port on the Great Lakes, and is consistently ranked amongst the top 20 ports in the U.S. Further, the port is a major link to world markets for North America's heartland. A portion of the Duluth Seaway Port Authority's Clure Public Marine Terminal property is designated as a Foreign Trade Zone, which can provide attractive advantages to international shippers. Overall the port remains a significant component of the region's economy, and supports a significant number of good paying and technical jobs.

The movement of freight by water is the most efficient and environmentally friendly way of moving heavy cargoes long distances. Primarily a bulk, natural resources port, docks in the "twin ports" of Duluth and Superior, handle a diversified commodities base ranging from coal, iron ore, grain, and limestone to cement, salt, wood pulp, steel coil, wind energy cargo, other heavy lift/dimensional equipment, containers, and break bulk cargoes.

Integral to the functioning of the port is 19 miles of dredged navigational channels maintained by the U.S. Army Corps of Engineers. These dredged channels are a largely unseen but essential component of the region's transportation network. Figure 5.5 displays the shipping channels.

At the crossroads of three major highway systems and four Class I railroads - BNSF, CN, CPKS, and UP - the port is situated well for moving cargo in and out of the Midwest. These rail lines directly connect the port to multiple ports on the Pacific and Atlantic Oceans and the Gulf of Mexico.

Harbor-related tourism, including harbor cruises, the William Irvin and SS Meteor ship museums, airplane and helicopter flights offering aerial views of the area, and numerous tourist-based companies offering paddle-based tours of the harbor, estuary, and lake are all examples of tourism business in the

Primary Waterway Commodities

- Iron Ore/Taconite
- Coal
- Grain
- Limestone
- Cement
- Salt
- Wood pulp
- Steel coil
- Wind energy cargo
- Break bulk cargo & containers

Infrastructure

- 33million short tons of cargo
- 775 vessel visits
- 19 miles of dredged shipping channels
- 21 cargo docks

Transportation Improvements with Port-related Benefits

- Helberg Drive
- Twin Ports Interchange
- Blatnik Bridge

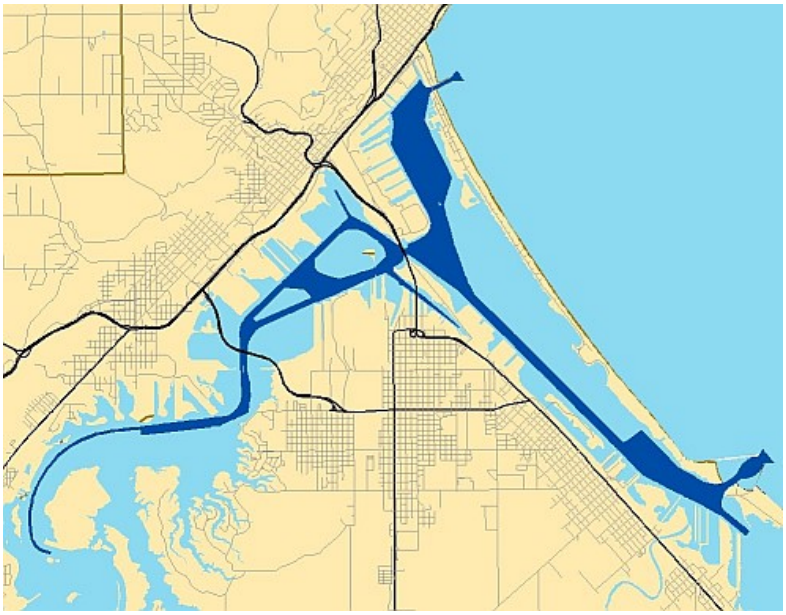
harbor. Additionally, multiple cruise lines offering Great Lakes itineraries have called on Duluth on a regular basis since 2022. All of these tourism services require transportation infrastructure, including dock walls and dredged shipping channels, in and adjacent to the harbor to connect people with these opportunities.

Past port-related transportation projects include the building of Helberg Drive to provide improved access to the docks on Rice's Point in Duluth, especially for over-sized loads out of the port and improved access to the state and U.S. highway system. Major area interstate reconstruction projects that are currently underway (Twin Ports Interchange) and in planning stages (Blatnik Bridge) have been designed with improved port access in mind.

There continues to be tension between competing waterfront land uses along the waterfront. While redevelopment of industrial waterfront properties to commercial, residential, and recreational uses has occurred for decades and this pressure continues, positive data highlighting the importance of the industrial sector to Duluth's economy has been helpful in tempering this tendency. Transportation must be addressed in relation to any of these potential redevelopment scenarios.

Following many years of water quality improvements, contamination removal, and habitat restoration, increased numbers of people are recreating in the river, harbor, and Lake Superior (e.g. motor boat, sailing, personal watercraft, fishing,

Figure 5.2: Dredged Shipping Channels in Duluth-Superior Harbor



Port and Harbor-Related Challenges & Opportunities

- Beneficial re-use placement of dredged materials
- Water level fluctuation
- Long-term sustainability
- Dock wall maintenance and replacement
- Legacy pollution clean-up
- Land use redevelopment pressure for commercial, residential, and recreational uses
- Major bridges (Blatnik, Bong, Oliver, Grassy Point)
- Accommodating cruise ships
- Continuing to grow and expand cargo diversity
- Potential for short sea shipping
- Potential for Great Lakes container shipping
- Potential for expanded multi- and inter-modal freight movement
- Loss of total cargo tonnage and vessel visits as coaluse and shipments continue to decline

canoe, kayak, paddle board, etc.). Given the increase in use, efforts continue to improve awareness of hazards of recreating in these waters and to strive for safe experiences for all users, whether recreational, commercial, or industrial.

Functional Classification

Functional Classification describes roadways based on the type of service they provide. Roadways provide two basic types of service: land access and mobility. The degree to which a roadway provides access and/or mobility determines its functional classification. Map 5.6 displays roadway functional classification across the MIC area.

Principal Arterials roadways primarily serve a mobility function with minimal land access. The primary purpose arterials serve is the rapid movement of people and goods for extended distance. Principal arterials are high capacity, high speed roadways with restricted access.

Minor Arterials interconnect with and augment principal arterials. Minor Arterials within urban areas serve inter-community trips of moderate length. Although the primary use of the minor arterials is mobility, this functional class provides more land access than a principal arterial.

Collectors channel trips between the local street system and the arterials. Collectors serve a balance between mobility and land access. Parking and direct driveway access to the street are typically allowed on collectors. Collectors are usually wider, have higher capacity, and permit somewhat higher speeds than the local street network. Collectors are broken down into two categories Major Collectors and Urban Minor Collectors.

Locals primarily provide local land access and offer the lowest level of mobility. Characteristics of local streets include uncontrolled intersections and few restrictions on parking. Local streets are not a significant consideration in metropolitan planning and this plan does address them in any systematic fashion.

The Federal Highway Administration uses functional classification to determine if a roadway is eligible for federal (gas tax) funds. Federal-aid eligible routes include: Principal Arterials, Major Arterials, Minor Arterials, and Major and Urban Minor Collectors. Local Streets and Rural Minor Collectors are not Federal-aid eligible.

Hierarchy of Roads

Local—low volume, low speed (paved or unpaved).

Collector—collect traffic from local roads, and distribute it to arterials. Traffic using a collector is usually going to or coming from somewhere nearby.

Arterial—major through roads that are expected to carry large volumes of traffic.

Access = refers to the ability to reach desired goods, services, activities and destinations Access is the ultimate goal of most transportation, except a small portion of travel in which movement is an end in itself (jogging, horseback riding, pleasure drives), with no destination.

Mobility = refers to the movement of people or goods. It assumes that "travel" means person- or ton-miles, "trip" means person- or freight-vehicle trip. It assumes that any increase in travel mileage or speed benefits society.

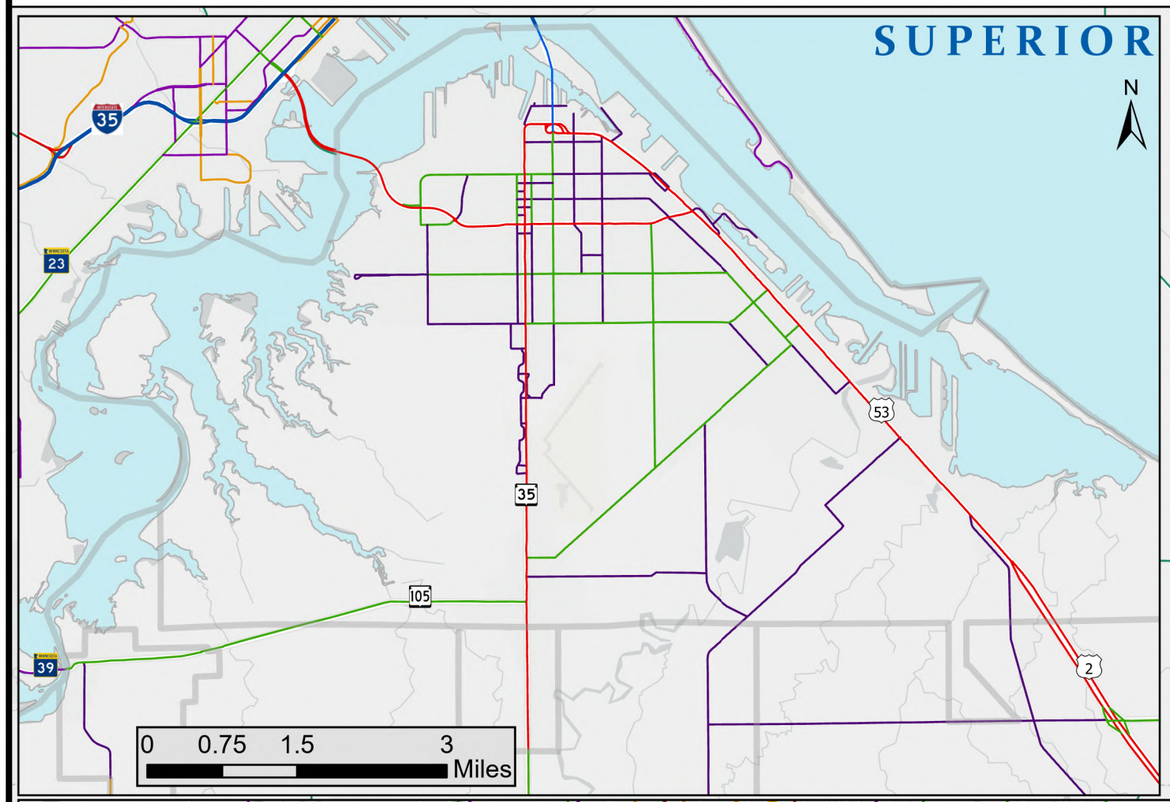
In general, as mobility increases, access decreases, and vice versa. In order to promote increased mobility access has to be limited. To increase the amount of access, mobility has to be limited.

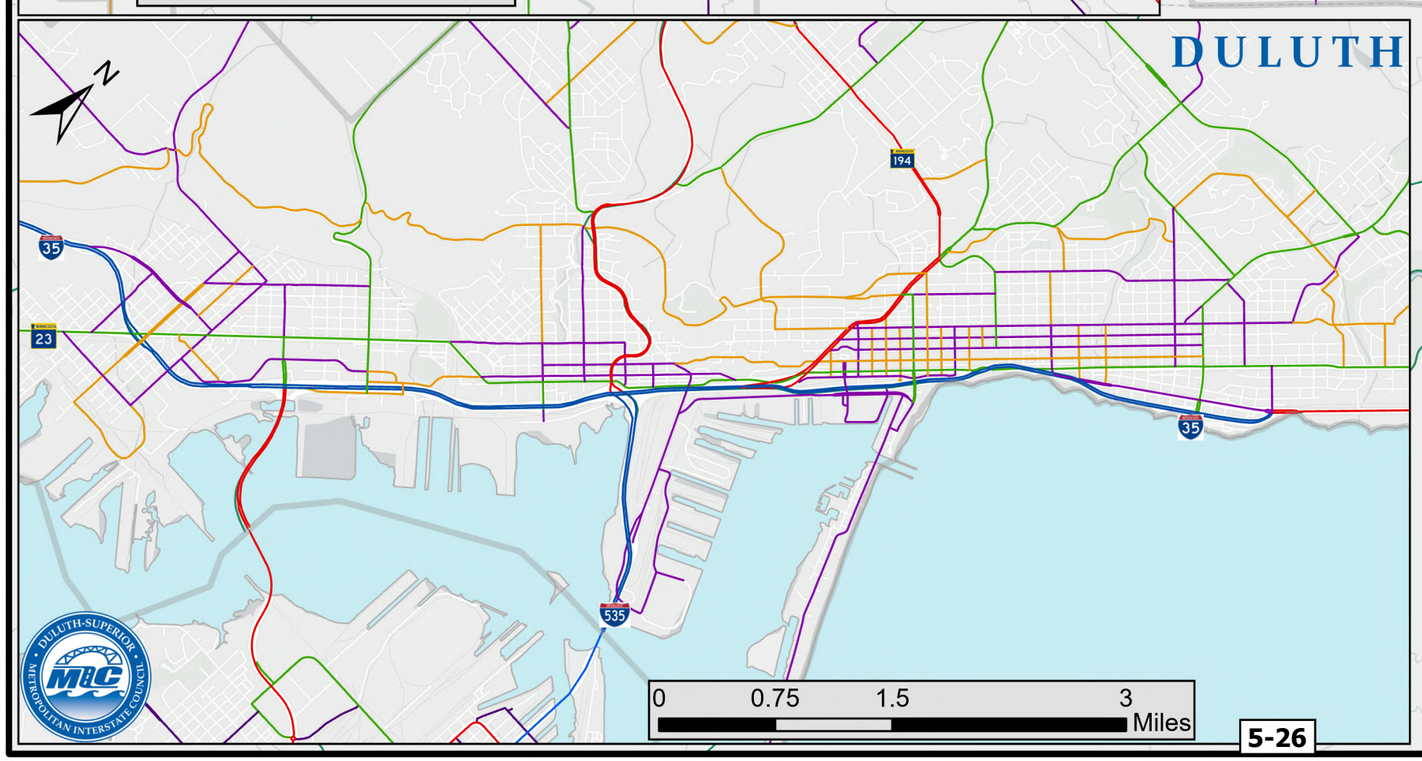
Map 5.6

MIC Area Functional Classification

Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050





Network Performance

In order to improve the transportation system, gaining a greater understanding on the return of public investment, the cost-benefits, the lessons learned from past projects, what worked and what did not, the transportation system is regularly evaluated. Key measures of transportation network performance are traffic volumes, level of service and performance measures, including pavement and bridge condition and crash analysis.

Traffic Volume

Traffic volume counts for all modes are regularly collected. For motor vehicles, transportation planners use average annual daily traffic (AADT) and/or peak hour volumes to measure the use of the roadway system. AADT is an annualized measure of traffic volume on a road segment. AADT numbers are based on traffic counts that local and DOT engineers periodically collect on area roads. Traffic counts provide onetime "snapshot" views of traffic on area roads that traffic engineers then extrapolate into an annualized daily average using a mathematical process.

Traffic volumes for air, cyclists, motor vehicles, pedestrians, ports and transit are also being collected. In the last few years, there has been a shift in methodology for the MIC away from longitudinal studies at various locations, towards a methodology of counting bike and pedestrian traffic at strategically specific locations to capture data before-and-after projects have been completed and implemented. This is to leverage the MIC's limited resources to focus on project-specific data, rather than collect data network-wide, simply for the sake of collecting data.

In addition to these concerns, it is noted by the MIC that the MIC organization is anticipating changes in traffic flow and volumes due to the anticipated closure of the Blatnik Bridge during construction. There will be further studies and conversations with the MIC's constituent jurisdictions as to the what the most effective and appropriate measures will be to take regarding these traffic flow changes.

Level of Service

Level of service (LOS) is a measure describing conditions within a motor vehicle traffic stream, based on speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. LOS is determined by calculating the Volume to

Street Network Congestion happens during the routine AM and PM weekday peak time periods and at times during off-peak special events or recreational based trips during off-peak times.

- 23 (or more) hours of the day are largely congestion free.
- "15-minute" rush in AM and PM work-related.
- Around schools as parents are increasingly driving their children to and from school, creating congestion immediately around school sites, particularly during the afternoon school dismissal times.
- Tourism/event/recreational congestion during major events in the Downtown waterfront area, Summer "beach" days along Lake Avenue through Downtown Duluth and Canal Park and along the North Shore Scenic Drive, particularly on the Sunday drive back to the Twin Cities.

Capacity ratio, where the traffic volume, observed or forecasted, is divided by the estimated capacity of the roadway. LOS A represents complete free flow of traffic, allowing traffic to maneuver unimpeded. LOS F represents a complete breakdown in traffic flow, resulting in stop and go travel. With LOS, Level "D" is acceptable traffic conditions. However, expectations in the Duluth-Superior Urban Area are generally higher.

LOS is used to study and better understand congestion; eliminating congestion on all roads is not necessarily a desired goal in the big picture. For example, in high-performing economic districts congestion is a by-product of a strong business district and a place where people want to spend time.

Having a better understanding what type of congestion exists is critical to planning congestion reduction strategies on specific road corridors. Strategies to reduce predictable congestion taking place that is impacting a small part of the network during a limited period of time, due to regular special events, schools, sports, recreation activities, etc. should take into account ways to improve operations, through traffic signal timing, parking and other non-roadway expansion solutions, including shifting trips to non-peak times.

Map 5.7 demonstrates there are very few LOS and congestion problems projected in the MIC area in 2050. That said, the model that projects the LOS does not necessarily capture congestion at intersections. There are intersections in the MIC area that do have congestion problems during peak hours or during significant events. With limited congestion in the Twin Ports, and the vast majority of regular roadway congestion taking place over small time periods (approximately 15 minutes or less) or happening due to isolated or infrequent events or activities, focus should be placed on design and operation improvements and inducing the type and location of the appropriate multimodal demand where the system capacity exists and efficiency can be maximized.

It is important to recognize that LOS is an important factor but has limitations as well. In the MIC area, LOS does not consider those traveling the system via other modes, quality of life factors, or the revenue generated for roadway jurisdictions to cover long-term costs of infrastructure investments. It is generally not cost-effective to expand capacity for short-term

Non-Capacity Expansion Operational Improvements

- Dynamic signal timing
- Enhanced pedestrian crossings, including dynamic pedestrian crossing warning signage, curb extensions to reduce crossing distances, which reduces both motor vehicle delay.
- Placing major motor vehicle parking facilities directly adjacent to car thoroughfares.
- Re-striping /configuring existing roadways.

Twin Ports Congestion Spots

- Lake Ave—Downtown Duluth/ Canal Park
- London Rd—26th Ave E to 40th Ave E
- 1st Street—Downtown Duluth
- Hammond Ave—near Blatnik Bridge
- Kirby Dr on UMD campus
- 24th Ave W—at Piedmont Ave

Map 5.7

2050 Level of Service — MIC Area

Duluth-Superior Long-Range Transportation Plan

Sustainable Choices 2050

N

- Level of Service is determined by comparing model results and AADT to total capacity of road segment.

Legend

A-F LOS 2050

A-B	<50%
C	<70%
D	<90%
E	<110%
F	>110.1%

Hermantown

Duluth

Duluth

Superior

0 0.5 1 2 Miles

peak conditions, given that the resulting capacity is unused for a majority of the time.

Other measures are being developed to determine LOS for other modes to more fully incorporate the varying differences between the modes and other important factors when making transportation decisions. For example, Level of Traffic Stress for bicyclists has been developed as a more appropriate alternative measure to LOS.

Performance Measures

The most recent federal transportation legislation (BIL/IIJA) includes Performance-Based Planning and Programming (PBPP) requirements in the development of this long –range Metropolitan Transportation Plan (MTP—*Sustainable Choices 2050*) and the Duluth and Superior area Transportation Improvement Programs (TIPs).

The MIC, as the designated Metropolitan Planning Organization (MPO) for the Duluth-Superior Metropolitan Area, must establish and use a performance-based approach to transportation decision -making to support national performance goals, by integrating the following performance goals and our adopted targets for the MIC area into our transportation planning processes, goals and objectives.

National Performance Goals

- **Safety**—to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition**—to maintain the highway infrastructure asset system in a state of good repair.
- **Congestion Reduction**—to achieve a significant reduction in congestion on the National Highway System.
- **System Reliability**—to improve the efficiency of the surface transportation system.
- **Freight Movement and Economic Vitality**—to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability**—to enhance the performance of the transportation system while protecting and enhancing the natural environment.

Performance Measures

(3) A description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with § 450.306(d).

(4) A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in § 450.306(d), including -

(i) Progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data; and

(ii) For metropolitan planning organizations that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets.

- **Reduced Project Delivery Delays**—to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Federal Transportation Performance Measures

Performance Measures as established by the Bipartisan Infrastructure Law (BIL)/Infrastructure Investment and Jobs (IIJA) Acts are:

PM 1—Safety

- Number of fatalities
- Fatalities per 100 million vehicle miles traveled
- Number of serious injuries
- Serious injuries per 100 million vehicle miles traveled
- Number of non-motorized fatalities and non-motorized serious injuries.

PM 2—Infrastructure (National Highway System—NHS Pavement and Bridge Condition)

- Percentage of pavements of the Interstate System in good condition.
- Percentage of pavements of the Interstate System in poor condition.
- Percentage of pavements of the non-Interstate NHS in good condition.
- Percentage of pavements of the non-interstate NHS in poor condition.
- Percentage of NHS bridges classified in good condition.
- Percentage of NHS bridges classified in poor condition.

PM 3—System Performance on NHS (NHS Performance and Freight Movement on the Interstate System)

- Interstate travel time reliability measure: percent of person -miles traveled on the Interstate that are reliable.
- Non-interstate travel time reliability measure: percent of person-miles traveled on the non-Interstate NHS that are reliable.
- Freight reliability measure: truck travel time reliability (TTTR) index.

Transit Asset Management (TAM)

- Rolling Stock: the percentage of revenue vehicle (by type) for that exceed the useful life benchmark (ULB).
- Equipment: the percentage of non-revenue service vehicles (by type) that exceed the ULB.

- Facilities: the percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale.

MIC Area Performance Measure Targets

The MIC, as the MPO for the Duluth-Superior metropolitan area, is required to establish performance targets, and has done so by adopting the targets for safety, pavement, bridge, reliability, and freight instead established by Minnesota and Wisconsin and agreeing to plan and program projects so that they contribute to the accomplishment of the targets statewide.

The MIC's approach, to adopt the states' performance targets instead of developing MPO-based measures, was deemed appropriate based on the limited MIC staff resources to develop, maintain and refine performance measures and targets for the MIC area.

As part of implementation of this Plan, the MIC will be fully integrating performance measures into plans, studies and processes and linking investments to targets. To the extent practicable, a description of the anticipated effect of the TIP projects toward achieving targets will be provided. Revising the TIP project selection process and project status reports will be a key action step to achieve this.

Adopted Performance Measure Targets

The MIC's performance measures and related planning information can be found at:

Minnesota: dsmic.org/performance-measures-mn/

Wisconsin: dsmic.org/performance-measures-wi/

The adopted performance measure targets for each state are listed on the following pages, including a brief description of how projects in the MIC area have contributed to accomplishing the performance measure targets.

According to the federal government, "*The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 20 U.S.C. 150 (b) and the general purposes described in 49 U.S.C. 5301 (c)*".

PM 1: Safety—Minnesota Targets (2024)

Measure	Baseline *	2024 Targets
Number of Traffic Fatalities	414.2	352.4
Rate of Traffic Fatalities	0.725 per 100 million VMT **	0.582 per 100 million VMT
Number of Serious Injuries	1676.2	1463.4
Rate of Serious Injuries	2.930 per 100 million VMT	2.470 per 100 million VMT
Number of Non-Motorized Fatalities & Serious Injuries	282.4	258.4

** Baseline = 2018-2022 avg. adopted targets*

*** VMT = Vehicle Miles Traveled*

Progress in Meeting Minnesota PM 1 Safety Targets

The following projects in the Minnesota portion of the MIC area have contributed to accomplishing the performance measure targets above:

- MnDOT's various projects that include redesign to include "reduced conflict intersesctions".
- Various projects by St. Louis County to install "wet reflective epoxy edgeline striping".
- Various projects by St. Louis County that involve sidewalk improvements.
- Various St. Louis County highway safety measures including rumble strips.
- Removal of unwarranted traffic signals in Downtown Duluth.
- Pilot project on London Road for a temporary bump-out pedestrian crossing.
- Pilot project along West Superior Street within the Lincoln Park Craft District to separate bicycle and pedestrian options from driving lanes.
- MnDOT's planned installation of new roundabouts at various locations (including London Rd at 26th Ave E and 40th Ave E).

PM 1: Safety—Wisconsin Targets (2024)

Measure	Baseline	2024 Targets
Number of Traffic Fatalities	556.1	588.8
Rate of Traffic Fatalities	0.914 per 100 million VMT	0.915 per 100 million VMT
Number of Serious Injuries	3023.9	3033.7
Rate of Serious Injuries	4.997 per 100 million VMT	4.726 per 100 million VMT
Number of Non-Motorized Fatalities & Serious Injuries	343.3	371.8

Progress in Meeting Wisconsin PM 1 Safety Targets

The following projects in the Wisconsin portion of the MIC area have contributed to accomplishing the performance measure targets above:

- WisDOT's various USH 53/East 2nd Street intersection safety improvements.
- Various WisDOT restriping projects/improvements (including the Bong Bridge).
- Various rail-highway crossing safety projects.
- Various pavement marking updates/improvements by WisDOT, Douglas County, and the City of Superior.
- Belknap Street full reconstruction with dedicated left turn lanes.
- Traffic mitigation options are currently being examined in preparation of the Blatnik Bridge reconstruction project to reduce conflicts and improve safety for all users of the transportation system in Superior.

PM 2: Infrastructure (NHS Pavement and Bridge Condition) – Minnesota Targets (2023-2025)

Measure	Baseline	2-Year Target	4-Year Target
% of NHS * Bridges in Good Condition	31.8	30	35
% of NHS * Bridges in Poor Condition	5.8	5	5
% of Interstate Pavement in Good Condition	70.9	60	60
% of Interstate Pavement in Poor Condition	0.6	2	2
% of Non-Interstate NHS * Pavement in Good Condition	61.4	55	55
% of Non-Interstate NHS * Pavement in Poor Condition	0.5	2	2

** NHS = National Highway System*

Progress in Meeting Minnesota PM2 / Infrastructure Targets

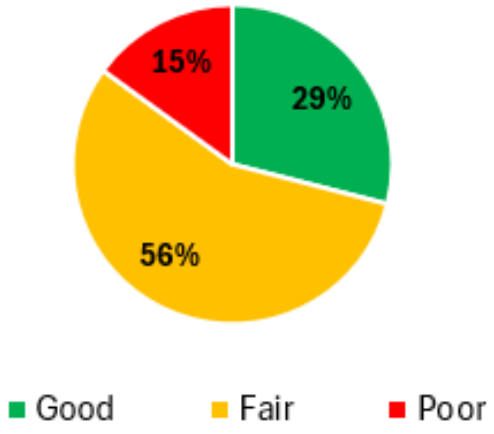
NHS Bridge Condition

Sustainable Choices 2045 noted the condition of the bridges in Minnesota on the NHS, as a percentage of the total number of bridges. 2% of bridges rated in poor condition, 53% of bridges rated in fair condition, and 45% of bridges rated in good condition. At that time the PM2 bridge targets were met.

To compare with 2018, 2023 data show that for total number of bridges in Minnesota on the NHS 8% rated in poor condition, 51% rated in fair condition, and 41% rated in good condition. Thus, the "Good" condition 4-year target is met, but without improvement the "Poor" condition 4-year target will not be met. Given the continued work on reconstructing the Twin Ports Interchange, and bridges associated with travel in and out of Rice's Point it is anticipated the percentage of "good" condition will increase, and the percentage of "Poor" condition will decrease.

Another way to consider bridge condition is to use percentage of bridge deck area, rather than number of bridges. This approach provides a truer picture of the overall condition of bridges, especially for MPOs with very large bridges, such as in the MIC area. Figures 5.3 and 5.4 display Minnesota MIC area NHS bridge condition as a percentage of bridge deck area in 2023.

Figure 5.3: Minnesota MIC Area Bridge Condition as a Percentage of Area of All Non-Border Bridges and Box Culverts on the NHS System in 2023



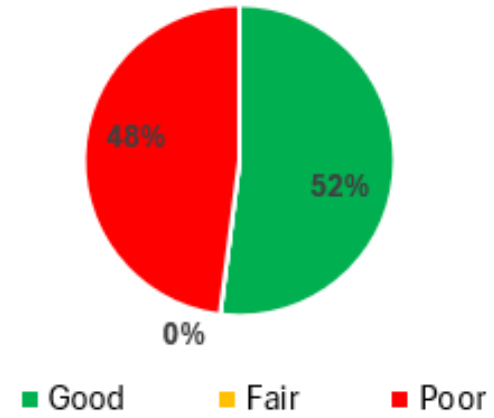
Notes—Fig 5.3

NHS = National Highway System.

The total area of bridges and box culverts on the NHS System in the Minnesota portion of the MIC area equals 1,633,127 square feet.

Data source: MnDOT.

Figure 5.4: MIC Area Border Bridges (Blatnik & Bong) Condition as a Percentage of Deck Area in 2023-2024



Notes—Fig 5.4

The total area of MIC Area border bridges on the NHS System equals 1,048,271 square feet.

All of the "Good" condition is the Bong Bridge, and all of the "Poor" condition is the Blatnik Bridge.

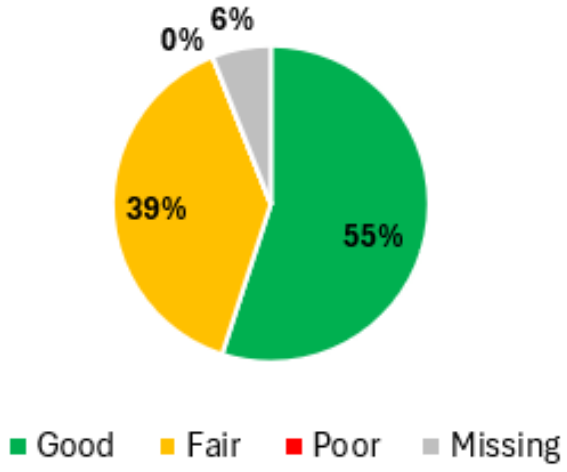
Data source: MnDOT and WisDOT.

Figure 5.3 shows 29% of bridge area is in "Good" condition and 15% of bridge area is in "Poor" condition in 2023, indicated that without improvement neither the PM2 "Good" or "Poor" targets will be met. However, given the continued work on reconstructing the Twin Ports Interchange and bridges associated with travel in and out of Rice's Point, as well as the reconstruction of the Blatnik Bridge in the coming years (considering the entire "poor" condition of a large portion of the MIC area's bridge deck area as noted in Figure 5.4), it is anticipated the percentage of "good" condition will increase, and the percentage of "Poor" condition will decrease.

Interstate Pavement Condition

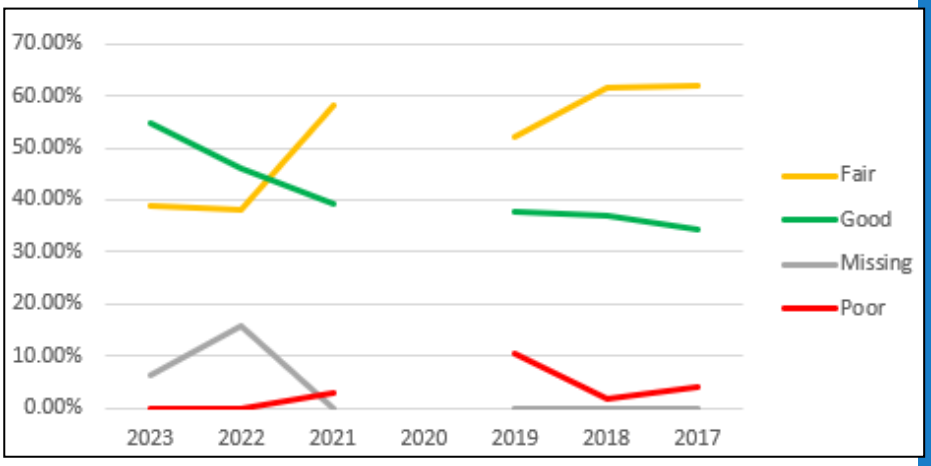
Figure 5.5 shows that in 2023, 55% of Interstate miles within the Minnesota portion of the MIC area were in "Good" condition and 0% were in "Poor" condition. Without improvement the PM2 "Good" target will not be met.

Figure 5.5: Minnesota MIC Area Interstate Pavement Condition as a Percentage of Total Miles of Interstate in 2023



To identify trends in Interstate pavement condition within the Minnesota portion of the MIC area data from 2017-2023 is displayed in Figure 5.6. While the percentage of "Good" Interstate pavement condition did not achieve the PM2 target, it increased annually. The percentage of "Poor" Interstate pavement decreased overall, although it did exceed the PM2 target three years.

Figure 5.6: Interstate Pavement Condition in the Minnesota Portion of the MIC Area as a Percentage of Total Miles (2017-2023)



Notes—Fig 5.5

The total number of miles of Interstate in the Minnesota portion of the MIC area equals 48.27 miles.

Missing" = Interstate under construction, detoured, etc.

Data source = MnDOT.

Notes—Fig 5.6

The total number of miles of Interstate in the Minnesota portion of the MIC area equals 48.27 miles.

"Missing" = Interstate under construction, detoured, etc.

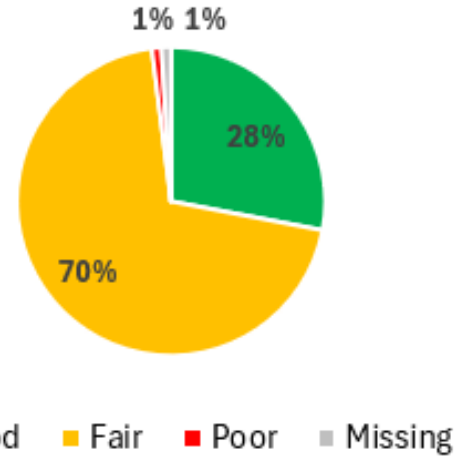
No data was provided for 2020.

Data source: MnDOT.

Non-Interstate NHS Pavement Condition

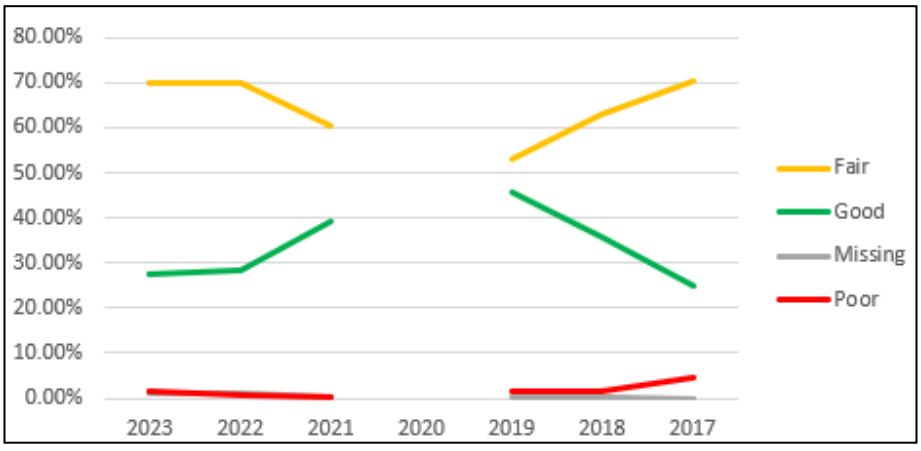
Figure 5.7 shows that in 2023 28% of Non-Interstate NHS miles within the Minnesota portion of the MIC area were in "Good" condition and 1% were in "Poor" condition. Without significant improvement the PM2 "Good" target will not be met.

Figure 5.7: Minnesota MIC Area Non-Interstate NHS Pavement Condition as a Percentage of Total Miles of Non-Interstate NHS in 2023



To identify trends in Non-Interstate NHS pavement condition within the Minnesota portion of the MIC area, data from 2017-2023 is displayed in Figure 5.8. The percentage of "Good" Non -Interstate NHS pavement condition did not achieve the PM2 target, and has been decreasing annually since 2019. The percentage of "Poor" Non-Interstate NHS pavement has remained below the PM2 target since 2017.

Figure 5.8: Non-Interstate NHS Pavement Condition in the Minnesota Portion of the MIC Area as a Percentage of Total Miles (2017-2023)



Notes—Fig 5.7

The total number of miles of Non-Interstate NHS in the Minnesota portion of the MIC area equals 190.65 miles.

"Missing" = Non-Interstate NHS under construction, detoured, etc.

NHS = National Highway System.

Data source = MnDOT.

Notes—Fig 5.8

The total number of miles of Non-Interstate NHS in the Minnesota portion of the MIC area equals 190.65 miles.

"Missing" = Non-Interstate NHS under construction, detoured, etc.

No data was provided for 2020.

NHS = National Highway System.

Data source = MnDOT.

Projects Contributing to Improved Bridge, Interstate, and Non-Interstate NHS Improvements

The following projects in the Minnesota portion of the MIC area have contributed or will contribute towards meeting or being closer to meeting the PM2 targets:

- Blatnik Bridge preservation.
- Future Blatnik Bridge reconstruction.
- Bong Bridge redecking and preservation.
- Twin Ports Interchange reconstruction.
- I-35 maintenance.

PM 2: Infrastructure (NHS Pavement and Bridge Condition) –Wisconsin Targets

Measure	Baseline	2-Year Target 2023	4-Year Target 2025
% of NHS * Bridges in Good Condition	51.3	> 49	>48
% of NHS * Bridges in Poor Condition	2.6	< 3	< 3
% of Interstate Pavement in Good Condition	65.9	> 60	> 60
% of Interstate Pavement in Poor Condition	0.3	< 4	< 4
% of Non-Interstate NHS * Pavement in Good Condition	36.3	> 30	> 30
% of Non-Interstate NHS * Pavement in Poor Condition	4.2	< 10	< 10

* *NHS = National Highway System*

Progress in Meeting Wisconsin PM2 / Infrastructure Targets

NHS Bridge Condition

Sustainable Choices 2045 noted the condition of the bridges in Wisconsin on the NHS, as a percentage of the total number of bridges. 0% of bridges rated in poor condition and 44% of bridges rated in good condition. At that time the PM2 "Poor" bridge target was met, but the PM2 "Good" target was not.

To compare with 2018, 2024 data show that for total number of bridges in Wisconsin on the NHS 11% rated in poor condition, 43% rated in fair condition, and 46% rated in good condition. Thus, without improvement neither the "Good" nor "Poor" condition PM2 targets will be met.

Another way to consider bridge condition is to use percentage of bridge deck area, rather than number of bridges. This approach provides a truer picture of the overall condition of bridges, especially for MPOs with very large bridges, such as in the MIC area. Figures 5.9 and 5.10 display Wisconsin MIC area NHS bridge condition as a percentage of bridge deck area in 2024.

Figure 5.9: Wisconsin MIC Area Bridge Condition as a Percentage of Deck Area of All Non-Border Bridges and Box Culverts with a length over 20 feet in 2024

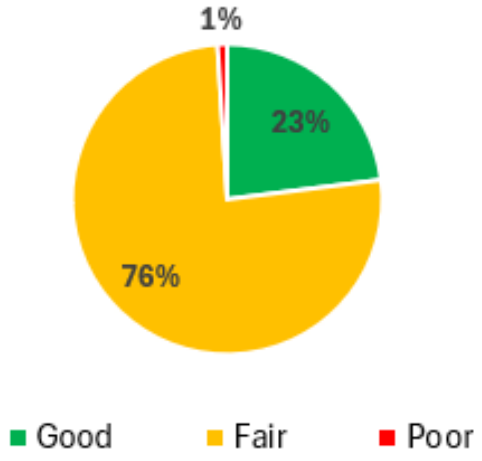


Figure 5.10: MIC Area Border Bridges (Blatnik & Bong) Condition as a Percentage of Deck Area in 2023-2024

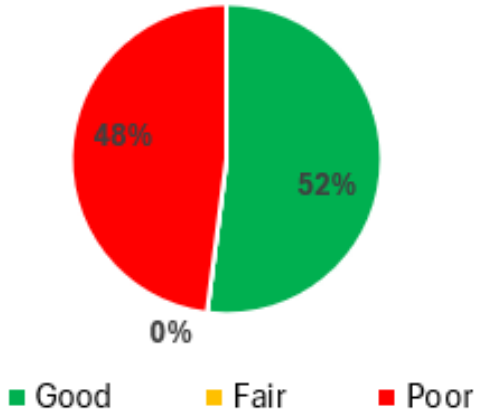


Figure 5.9 shows 23% of bridge area is in "Good" condition and 1% of bridge area is in "Poor" condition in 2024, indicated that without improvement the PM2 "Good" target will be met.

However, given the continued maintenance of the Bong Bridge, as well as the reconstruction of the Blatnik Bridge in the coming years (considering the entire "poor" condition of a large portion of the MIC area's bridge deck area as noted in Figure 5.10) it is anticipated the percentage of "good" condition will increase, and the percentage of "Poor" condition will decrease.

Notes—Fig 5.9

The total area of bridges and box culverts with a length over 20 feet within the Wisconsin portion of the MIC area equals 454,189 square feet.

Data source = WisDOT.

Notes—Fig 5.10

The total area of MIC Area border bridges on the NHS System equals 1,048,271 square feet.

All of the "Good" condition is the Bong Bridge, and all of the "Poor" condition is the Blatnik Bridge.

Data source = MnDOT & WisDOT.

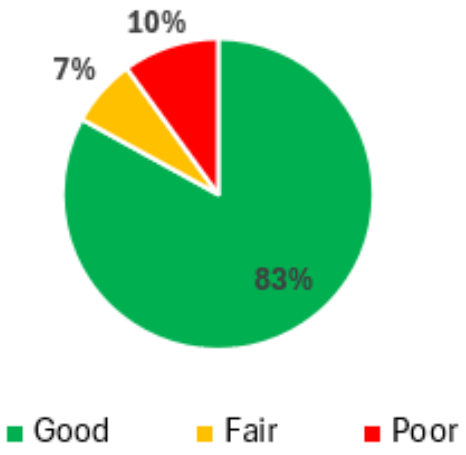
Interstate Pavement Condition

There are 0 miles of non-bridge Interstate pavement in the Wisconsin portion of the MIC area.

Non-Interstate NHS Pavement Condition

Figure 5.11 shows that in 2024 83% of Non-Interstate NHS miles within the Wisconsin portion of the MIC area were in "Good" condition and 10% were in "Poor" condition. Thus, the PM2 "Good" target is easily met and the PM2 "Poor" target is on the edge of being met.

Figure 5.11: Wisconsin MIC Area Non-Interstate NHS Pavement Condition as a Percentage of Total Miles of Non-Interstate NHS in 2024



Notes—Fig 5.11

Notes: The total number of miles of Non-Interstate NHS in the Wisconsin portion of the MIC area equals 65.07 miles.

NHS = National Highway System.

Data source = WisDOT.

Projects Contributing to Improved Bridge, Interstate, and Non-Interstate NHS Improvements

The following projects in the Wisconsin portion of the MIC area have contributed or will contribute towards meeting or being closer to meeting the PM2 targets:

- Blatnik Bridge preservation.& future reconstruction.
- US 2 reconstruction and maintenance.
- Bong Bridge redecking and preservation.

PM 3: System Performance (NHS Performance and Freight Movement on the Interstate System) – Minnesota Targets (2023-2025)

Measure	Baseline *	2-Year Target	4-Year Target
% of Reliable Person Miles on the Interstate	94.4	82	82
% of Reliable Person Miles on the Non-Interstate NHS **	96.1	90	90
Truck Travel Time Reliability (TTTR) Index	1.24	1.4	1.4

** Baseline = 2021 data*

***NHS = National Highway System*

Progress in Meeting Minnesota PM3 / System Performance Targets

The following projects in the Minnesota portion of the MIC area have contributed to accomplishing the performance measure targets above:

- Repaving of I-35 from tunnels to 26th Ave East
- Miller Trunk Highway Traffic signal coordination.
- ITS signage usage.

PM 3: System Performance (NHS Performance and Freight Movement on the Interstate System) – Wisconsin Targets

Measure	Baseline	2-Year Target 2023	4-Year Target 2025
% of Reliable Person Miles on the Interstate	96.4	92.5	93
% of Reliable Person Miles on the Non-Interstate	93.9	91	89.5
Truck Travel Time Reliability (TTTR) Index	1.20	1.3	1.3

** NHS = National Highway System*

Progress in Meeting Wisconsin PM3 / System Performance Targets

These can be measured against the baseline targets described in the *Sustainable Choices 2045* document published by the MIC. The following projects in the Wisconsin portion of the MIC area have contributed to accomplishing the performance measure targets above:

- ITS signage usage.
- Installation of roundabout at Belknap Street and US Hwy 2.

Transit Asset Management (TAM) Targets – Duluth Transit Authority

Asset	4-Year Target
Rolling Stock	<10% of active Fixed Route vehicles and <20% of Paratransit vehicles have reached their useful life.
Equipment	<35% of equipment (i.e., service vehicles) have reached their useful life benchmarks.
Passenger/Parking Facility	<10% of passenger/parking facilities have a condition rating below 3 based on FTA's TERM scale.*
Administrative/Maintenance Facility	0% of facility elements within the Administrative & Maintenance Facility have a condition rating below 3.

* *FTA = Federal Transit Administration*

Progress in Meeting TAM Performance Measures

The DTA has a current fleet of 80 fixed-route buses (7-battery-electric) and an additional 12 paratransit vehicles. The DTA received funding for 2 electric buses in 2021 which are planned to be ordered in mid-2024 with an unknown delivery date. The DTA also received funding for the replacement of an additional 9 buses. The purchase orders/agreements for those 9 buses are currently being finalized and should be delivered in 2025. For paratransit, the DTA put in an order for one replacement bus in late 2023 and will be putting in an order for an additional 5 replacement buses in mid-2024. Delivery dates for the paratransit vehicles is unknown but is likely more than a year away.

Based on DTA rolling stock, 17.5% of buses, 100% of cutaways, and 100% of vans are beyond their useful life benchmark. Based on DTA equipment, 40% of automobiles, and 44% of trucks and other rubber tire vehicles are beyond their useful life benchmark. Based on DTA passenger/parking facility and administrative/maintenance facility data, 0% of facilities are beyond their useful life benchmark.

The DTA is committed to planning for the replacement of vehicles across its program offerings. Challenges include funding availability and the Duluth/Superior harsh environment. Availability and awards vary from year to year and relies heavily on federal funding sources. Additionally, supply chain and build times for vehicles has become so long that it is having a negative impact on operations and costs to maintain aging vehicles.

The DTA also deals with an atypical environment of long, harsh winters and steep roadways. The hills and snow/salt have a negative impact on the condition of all vehicles and can result in increased maintenance needs

The following have contributed to accomplishing the above TAM targets in the MIC area:

- Buses are replaced on as much of a regularly set schedule as possible, given the challenges noted above.
- Transit facilities and equipment are regularly maintained.

While DTA is clearly meeting its “Administrative/Maintenance Facility” and “Passenger/Parking Facility” targets, additional improvements will need to be made to meet the “Rolling Stock” and “Equipment” targets.

Public Transportation Agency Safety Plan (PTASP) Targets — DuluthTransit Authority

Safety Performance Targets							
Targets below are based on the previous 5 years of Duluth Transit Authority's safety performance data.							
Mode of Transit Service	Fatalities (Total)	Fatalities (per 100,000 VRM)	Injuries (Total)	Injuries (per 100,000 VRM)	Safety Events (Total)	Safety Events (per 100,000 VRM)	System Reliability (VRM/ Failures)
Fixed Route Bus	**0**	**0**	**3.5**	**0.18**	**5**	**0.26**	**9,200**
ADA/Paratransit	**0**	**0**	**0**	**0.19**	**1**	**0.38**	**188,000**

The Public Transportation Agency Safety Plan (PTASP) regulation requires covered public transportation providers and state DOTs to establish safety performance targets to address the safety performance measures identified in the National Public Transportation Safety Plan. The Duluth Transit Authority's Safety Performance targets were approved August 2023 by the DTA Board of Directors. Based on 2024 coordination and planning efforts between the Duluth Transit Authority and MPO representatives, the PTASP targets are incorporated into the 2050 MTP, as follows:

Progress in Meeting PTASP Performance Measures

The Duluth and Superior Area TIP transit projects are anticipated to contribute positively to the PTASP targets. In order to meet targets, the DTA will be purchasing new buses to replace existing buses and projects are programmed to improve maintenance facilities to keep buses in safe working order.

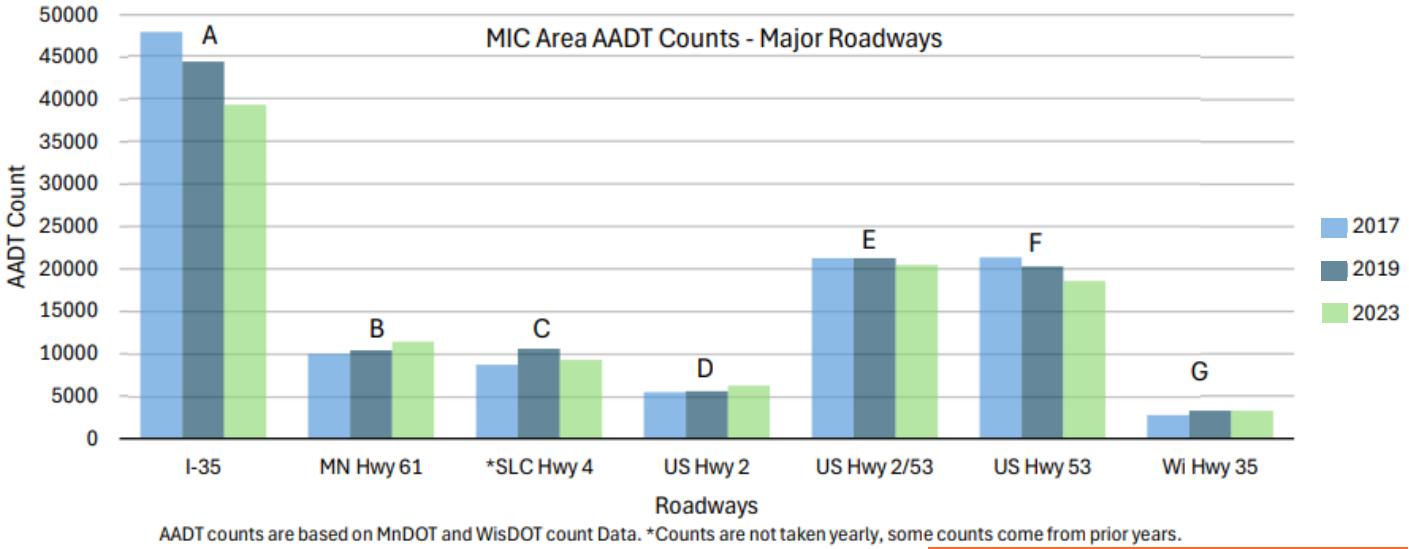
In regard to reliability targets, the DTA is continuing to upgrade technology, including signal programming to reduce delay on the street network and improving fare paying options and the associated technology to reduce time it takes to collect fares when passengers board the buses.

System Performance Report Summary

Since the approval of the last MTP five years ago, resources have been focused on maintaining and improving the operation of the transportation system with a focus on improving year-round reliability of all aspects of the transportation network, including bicycles, micromobility, the pedestrian network, and ongoing maintenance of the motor vehicle network. This also includes improving transit operations and passenger amenities, improving pedestrian infrastructure and improving the under-developed bikeway network.

Arterial Roadways: Maintaining and improving the MIC area arterial roadways has been a major focus, including the NHS and non-NHS arterial system, to ensure these roadways and bridges remain in good condition. More regular re-surfacing and more extensive reconstruction work on I-35, Blatnik Bridge, Bong Bridge, Hwy 53 (Minnesota side), Minnesota Hwy 23 has taken place over the past 5 years. Extensive road closures and traffic rerouting over the past several years has occurred due to the regionally significant Twin Ports Interchange reconstruction project, which remains ongoing. The reconstruction of the Blatnik Bridge within the next 5 years is a major regionally significant project that will have significant impact on travel through and within the MIC area.

Figure 5.12: AADT Counts on MIC Area Major Roadways (2017-2023)



AADT counts are based on MnDOT and WisDOT count Data. *Counts are not taken yearly, some counts come from prior years.

Figure 5.12 shows traffic volumes on the MIC area's major roadways have changed little between 2017 and 2023. Traffic volumes are displayed as average annual daily traffic (AADT).

AADT numbers are based on traffic counts that local and DOT engineers periodically collect on area roads. The only change in AADT noted in Figure 5.12 is a drop over time on I-35. It is likely this is at least partially due to the extensive and lengthy reconstruction along I-35 as part of the ongoing Twin Ports Interchange project.

Intersections: Intersections are now all reviewed through an Intersection Control Evaluation (ICE) study for roundabout potential and other potential safety and operations improvements. The address of intersections by the regional MPO is also being addressed by the MIC-area Safety Action Plan, looking at thousands of intersections, in a variety of contexts across the region.

Transit: Transit has several new low emission electric buses, conducts regular maintenance of transit facilities and equipment, has a successful loop serving UMD, has incorporated new technology tools to improve service, and is planning a bus rapid transit (BRT) study. There are a number of transit service options within the Duluth-Superior area in addition to DTA, including Arrowhead Transit and other local bus service, Jefferson Lines and other inter-city buses and shuttles to and from the Minneapolis-St. Paul International Airport. Effort is being made to maintain and improve good connections between neighboring services.

In addition to these efforts, the DTA has made significant progress in rolling-out their Better Buls Blueprint group of improvements, which include their Ble and Green GO lines. These are high-frequency lines that are intended to be a potential proxy for a future Bus Rapid Transit (BRT) line system.

This DTA system improvement includes new signage for over 700 bus stops and dedicated buses (distinguished with new bus wraps). This also includes the roll-out of the DTA's "Where's My Bus" tool for users to get real-time information about where the bus they might be waiting for is. This high-frequency line change is a significant move in the positive direction for the DTA to provide reliable, and rapid service.

Pedestrians: Pedestrian improvements have taken place in a variety of ways, including updates to the pedestrian infrastructure condition inventory, creation/updates to the jurisdiction's ADA transition plans and the upgrade of pedestrian

infrastructure. Specifically, improvements to pedestrian crosswalks, including utilizing pavement markings more visible to motorists and longer-lasting crosswalk markings, the high-visibility ladder instead of the standard parallel pavement markings, installing Rectangular Rapid Flash Beacons (RRFBs) at intersections and locations that are difficult and/or uncomfortable for pedestrians to cross, installing countdown timers and pro-actively improving curb ramps that line up with direction that pedestrians are to walk or roll.

In addition, separated multiple use paths have been installed to provide a safer environment for cyclists and pedestrians, including multi-use paths along West Superior Street, College Street and Rice Lake Road in Duluth and paved shoulders on Martin Road and Arlington Avenue.

Bicycles: The bicycle mode of transportation continues to be under-developed as there is not a fully viable interconnected bikeway system currently in place. With that said, significant improvements to the bikeways network have begun. Prior MTP's discussed the implementation of bike route wayfinding signage and guide maps. More recently both on-street bike lanes and off-street multi-use paths have seen increased use, improving the conditions for bicycling and integrating bicycling into the transportation system.

NHS: Due to additional required focus on NHS routes there has been less focus on the non-NHS system, particularly the collectors and local streets. While these roadways carry less traffic, they include the largest number of miles and receive the least resurfacing and reconstruction dollars.

Furthermore, the NHS system in the Duluth-Superior area has many massive highway and bridge structures that present long-term maintenance and eventual reconstruction liabilities, particularly for the population and size of the Twin Ports.

The **Blatnik Bridge** is the second largest bridge in Minnesota, and I-35 within the City of Duluth has a series of bridge and tunnel structures that will all consume large funding amounts for maintenance and eventual reconstruction. The timeframe for reconstructing the Blatnik Bridge is estimated to begin in 2027 and be completed in 2031 or 2032. An important aspect of this project, requiring a full closure of the bridge for the entire 4 -5 year demolition and reconstruction phase, is the alternate

routing of the average 33,021 automobiles traveling over the bridge each day. Traffic demand modeling is ongoing to help generate appropriate mitigative options to help motorists, freight haulers, and other users of the transportation system to move in the most efficient, safest, and timely manner possible during the demolition and reconstruction phase.

Much progress has been made to meet the general goal of a local and regional multimodal transportation system, but much work remains. Ongoing and future needs include:

- Full integration of an interconnected multimodal system, with an emphasis on building out the under-developed bikeway system;
- Improvements to transit service, including STRIDE; and
- Maintenance and improvements to harbor infrastructure, such as dock walls and shipping channels.
- During the update to this plan many constructive comments were received with ideas to improve the transportation system. Many of these comments have already been shared with the appropriate agencies, advisory committees, and board, and will be regularly used as they relate to the implementation of the plan.