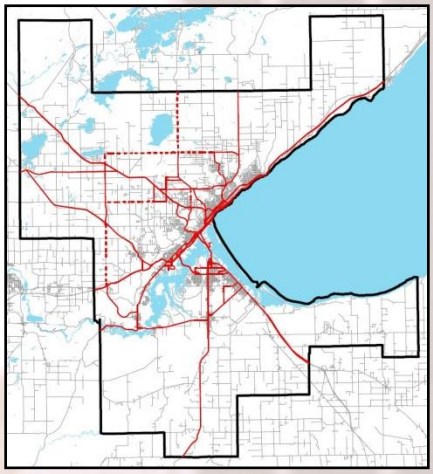
# Duluth-Superior Area



# Study Update

# Final Report




Duluth-Superior Metropolitan Interstate Council

**DRAFT FINAL**
**January, 2019**

TITLE PAGE

# DULUTH-SUPERIOR METROPOLITAN INTERSTATE COUNCIL

**Member, Staff, and Advisory Committee Listing**
**December 2018**

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Ed Anderson – City of Superior Citizen Rep
Nick Baker – Douglas County Board *(WI Co-chair)*
Warren Bender – Superior Common Council
Wayne Boucher – City of Hermantown
Mike Casey – Duluth Transit Authority
Earl Elde – St. Louis County Suburban Townships
Renee Van Nett– Duluth City Council
Frank Jewell – St. Louis County *(MN Co-Chair)*
Phil Larson – City of Proctor
Rosemary Lear – Douglas County Board
Dan Olson – Superior Common Council
Bob Quade – City of Rice Lake
Pete Clark – Douglas County Board
Sam Pomush – Douglas County Board
Barb Russ – Duluth City Council
Jenny VanSickle – Superior Common Council
Jim Filby Williams – Duluth Citizen Rep

### Transportation Advisory Committee

Bryan Anderson – MnDOT
Chris Belden – Duluth Transit Authority
David Bolf – City of Hermantown
Mark Casey – City of Proctor
Jim Foldesi – St. Louis County
Shawna Mullen – Bike/Pedestrian Rep
Jason Jackman – Douglas County Engineering
Todd Janigo – City of Superior Engineering *(Chair)*
Jenn Moses – City of Duluth Planning
Chris Lee – City of Duluth Planning
John McDonald – MnDOT
Cari Pedersen – City of Duluth Engineering
Dena Ryan – WisDOT
Jason Serck – City of Superior
Deb DeLuca – Duluth Seaway Port Authority
Cindy Voigt – City of Duluth Engineering
Tom Werner – Duluth Airport Authority
Vacant – MN Dept. of Economic Dev.

### MIC Staff – ARDC

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James Gittemeier, Principal Planner
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Ricky Sarran, GIS Specialist
Rondi Watson, Communications Coordinator
Mike Wenholz, Senior Planner

### MIC Staff - NWRPC

Sheldon Johnson, MIC Deputy Director

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# INTRODUCTION

Trucks are an essential part of everyday life in the Duluth-Superior area. Trucks are an important means of sustaining the community by delivering products to stores for purchase, transporting raw materials and finished products for industries, hauling materials for the construction of roads, schools, businesses, and homes, and serving other vital functions. Trucks provide our economy with the most time-sensitive, flexible mode of transportation to move large quantities of goods.

The MIC conducted a Truck Route Study (TRS) in 1990 to examine truck route needs in the Duluth Superior Area. Due to a number of changes in the roadway system over the following ten years, another Truck Route Study was completed in 2001 to examine if the truck route system was still serving its purpose. The goal of the 2001 study was to identify a truck route network that provides for the safe, effective, and efficient movement of goods and services within and through the Duluth-Superior area – consisting of a study area square almost entirely within a portion of the MIC area. A map depicting the 2001 study area and a full listing of 2001 study goals and objectives are on pages 3 and 4 of the *Duluth-Superior Area Truck Route Study, April 2001*.

This current update was commenced in 2017. As prior to the 2001 TRS update, there have been significant changes in the local roadway system since 2001 that impact the trucking industry. The following are examples of significant changes since the 2001 study was completed:

- The Trunk Highway 53 – Piedmont Avenue realignment and reconstruction to the Miller Hill Mall area was completed.
- Portions of the Interstate 35 – Trunk Highway 53 – Interstate 535 interchange have been unavailable to some trucks due to significant load or size restrictions. The currently planned Twin Ports Interchange project will address many of these issues. Additionally, load restrictions on the Blatnik Bridge are likely to lessen (i.e. heavier loads allowed) when it is reconstructed – which is anticipated within the next 10 years.
- There were no roundabouts in the MIC area in 2001. Roundabouts are now installed in two locations in the MIC area. One is at the US Hwy 2 – Belknap Street – Garfield Avenue intersection just east of the Bong Bridge in Superior. The other is at the intersection of Midway Road and Maple Grove Road in Hermantown.

This update is intended to consider these changes, along with current input from trucking companies and other partners, to determine if the designated truck route network is still serving its purpose, and to carry out the purpose, goal, and objectives listed earlier in this report. The study area for this update was expanded to include the entire MIC area, and is depicted in Map 1.

This report serves as an update to the 2001 study, rather than a completely new stand-alone study.

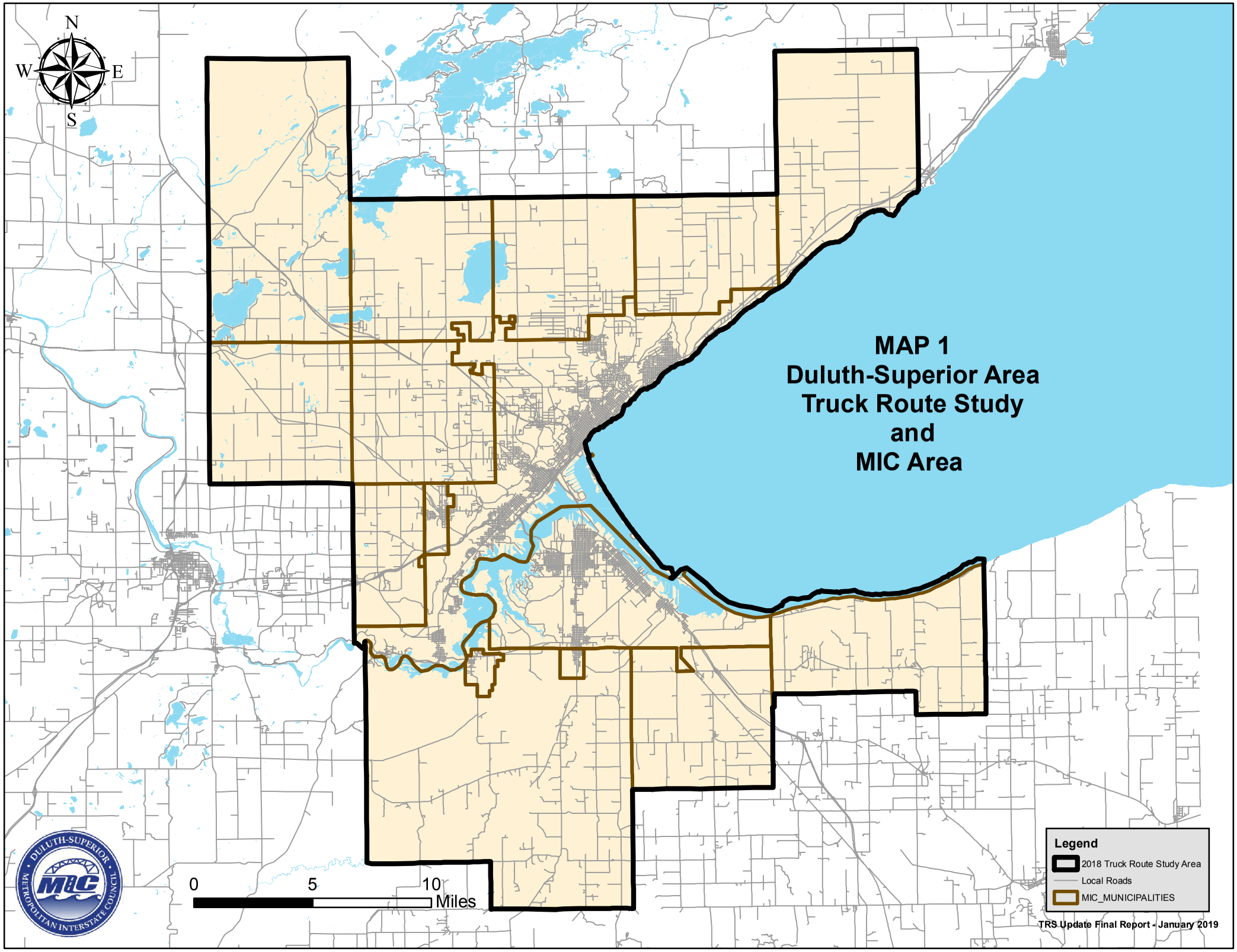
*What is a Designated Truck Route?*

There are many roadway segments upon which trucks are legally allowed to operate. However, designated truck routes are the route options local authorities prefer trucks use out of the entire set of roadways trucks are legally allowed to operate on. Given this, it may be more appropriate to refer to these designated routes as “preferred truck routes”, as it is a more accurate description of what these routes are.

While trucks may use a number of roadways that are not designated as truck route, as described above, designated truck routes have value and purpose. One, being designation helps elevate these segments in importance and priority, which can increase scoring for funding proposals. Two, these designations can better connect parts of the network.

This report includes data collected and information gathered over the past two years, as well relevant background information. Together it was used to develop the recommendations and suggestions for additional study, both listed in the "Recommendations" section of this report. Supplemental data in Appendix 4 is from an effort completely separate of the TRS Update, but relates to this report. It is included as it provides some useful perspective regarding truck use and impact in the Duluth area that supports some of this report's recommendations, and will be useful in considering many of the "2018 Suggestions for Additional Study" listed at the end of the "Recommendations" section.

It is believed that employing an implementation strategy to carry out the recommendations of this report will continue to maintain and improve a viable truck route network in the Duluth-Superior area that moves goods and services through the area in the most efficient, safest, and least disruptive manner possible.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## TRUCK ROUTE STUDY UPDATE COMMITTEE

A TRS committee was organized to assist in the development of the TRS update. Representation was sought for Duluth, Hermantown, Proctor, Superior, St. Louis County, Douglas County, MnDOT, WisDOT and the trucking industry. From these jurisdictions and agencies, representation from a variety of perspectives was sought. A preliminary list of people was made and invitations were extended to people to participate on the Committee. The following list represents those people who accepted the invitation to participate as Duluth-Superior Area Truck Route Study Update Committee (Committee) members:

| Name | Organization |
|---|---|
| Jenn Moses | City of Duluth Planner |
| Cari Pedersen | City of Duluth Engineer |
| David Bolf | City of Hermantown Engineer |
| Mark Casey | City of Proctor Administrator |
| Robert Quade | City of Rice Lake Councilor |
| Todd Janigo | City of Superior Public Works |
| Jason Serck | City of Superior Planner |
| Jason Jackman | Douglas County Highway Commissioner |
| Vic Lund | St Louis County Traffic Engineer |
| Bryan Anderson | MnDOT Planner |
| Dena Ryan | WisDOT Planner |
| Dan Bieberitz | WisDOT Planner |
| Buck Hammann | Halvor Lines |
| Leo Naumann | Jeff Foster Trucking |
| Dakota Kivi | Kivi Brothers |
| Alan Redding | ATS Projects/Anderson Trucking |
| Peter Kramer | Duluth Cargo Connect |
| Scott Kyrola | Northland Constructors |
| David Gibbs | Ulland Brothers |
| Brian Johnson | Sappi |
| Gary Erickson | Sappi |
| Jenny Van Sickle | Community Action Duluth |
| Dean Thesing | UPS |

The Committee met five times to carry out the purpose, goal, and objectives listed above. The committee meetings were held May 4, 2017, August 24, 2017, January 23, 2018, August 2, 2018, and December 10, 2018. The meeting summaries for each can be viewed on our website via the following link: **https://dsmic.org/study/truckroute/**. Additionally, all Committee members and others were invited to participate in a Duluth-Superior Area Truck Route Study Update Open House on October 9, 2018.

## PURPOSE, GOAL, AND OBJECTIVES

*Purpose*

Plan for efficient, safe, and effective movement of trucks in the Duluth-Superior area.

*Goal*

Identify the most efficient, safest, and least disruptive truck route network within and through the Duluth-Superior area for the movement of goods and services via trucks, and support the inclusion of the identified network into local plans.

*Objectives*

Form and work with an advisory committee consisting of a diverse group of trucking-related stakeholders to meet the goal.

Identify specific truck route-related issues and topics that need to be addressed.

Determine whether or not the existing truck route network, including the infrastructure that supports it, meets the goal. If not, identify what alternatives will.

Ensure the final truck route network will support all trucks in the study area.

Determine if there are potential existing and/or future land use conflicts with the truck route network.

Determine if any changes to existing policies, regulations, traffic signals, or signage are needed to meet the goal.

Collect the data necessary to meet these objectives, using the most useful collection methods (traffic counts, air photos, analyzing data bases, surveys, etc.).

Conduct public input activities in accordance with the MIC Public Involvement Plan.

Promote the incorporation of the final identified truck route network into local plans.

## TRUCK ROUTE REGULATIONS

*General Regulations & Designated Truck Routes*

There are many highway segments upon which trucks are legally allowed to operate. These roadway-types are mentioned in the Minnesota and Wisconsin sections below. Designated truck routes are the route options local authorities prefer trucks use out of the entire set of roadways trucks are allowed to operate on. Given this, it may be more appropriate to refer to these designated routes as "preferred truck routes", as it is a more accurate description of what these routes are.

Regulations limit the operation of trucks on roads which trucks are allowed to legally operate. The purposes of the regulations are for safety and to prevent deterioration and damage to roadways, which represent significant public investment. Typical regulations limit or restrict the weight of trucks and load; the width, height, or length of trucks and loads; and time or seasonal operation of trucks.

Map 2 displays the roads which trucks are allowed to legally operate on within the MIC area. Map 3 displays the existing designated truck route network within the MIC area.

Given the extensive roadway closures and traffic disruptions due to significant rain events in recent years in Superior and northwest Wisconsin, it was determined additional truck route detour options should be considered. Two proposed truck detour routes have been drafted in Douglas County, Wisconsin, and are included in Appendix 1.

*Minnesota-Specific Regulations*

- Minnesota truck route and truck limit regulations are generally in Chapter 169 of Minnesota Statute, but mostly within Subch. 169.80.
- It appears that "Truck Route" is only defined, explained, or mentioned in Minnesota Statute once – s. 169.87 Subd. 1(e).
- A reference in Statute granting authority to local jurisdictions to establish truck routes was not found, nor was known to TRS Committee members.
- Highways in Minnesota that trucks are by law automatically allowed to operate on include U.S. Trunk Highways (UST), Minnesota Trunk Highways (MNT), County State Aid Highways (CSAH), and Municipal State Aid Streets (MSAS).

*Wisconsin-Specific Regulations*

- Wisconsin truck limit regulations are in Chapter 348 of Wisconsin Statute.
- It does not appear that "Truck Route" is defined, explained, or mentioned in Wisconsin Statute.
- A reference in Statute granting authority to local jurisdictions to establish truck routes was not found, nor was known to TRS Committee members.
- Highways in Wisconsin that trucks are by law automatically allowed to operate on include U.S. Trunk Highways (UST), Wisconsin Trunk Highways (WIT), State Trunk Highways (STH), and County Trunk Highways (CTH).

*Local Jurisdiction Truck Route Regulations*

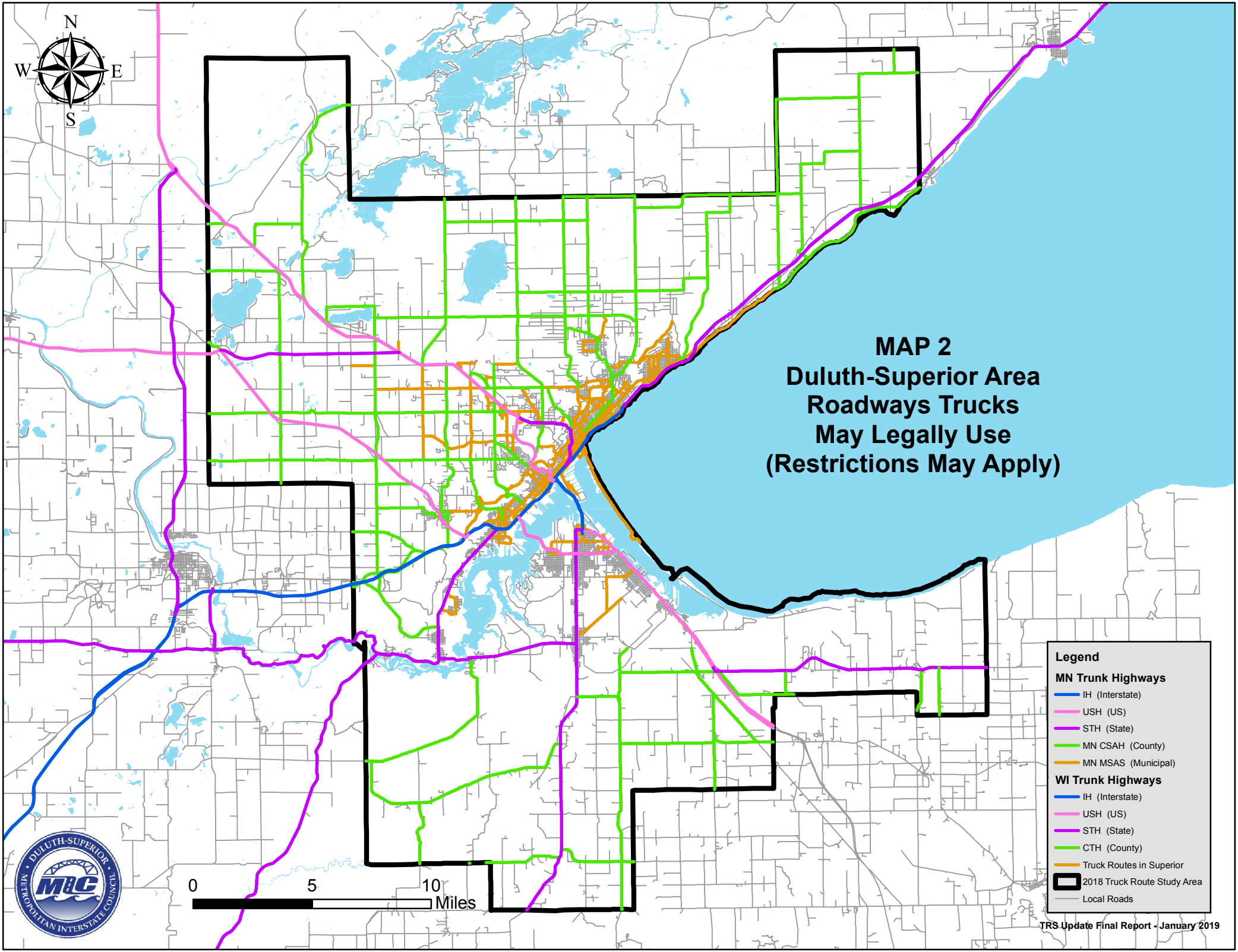
The Cities of Duluth, Superior, and Hermantown include truck route regulations in their ordinances. Each of these jurisdictions includes basic truck route language in their ordinances that is similar and equivalent to the others, including:

- The City Council may, by resolution, establish truck routes within the city and may add or modify such routes.
- The director of public works for the city shall keep and maintain accurate maps showing the current truck routes. These maps shall be available to the public.
- Truck routes shall be identified by appropriate signs.
- The city shall post signs notifying users of highways trucks may be driven on.
- When truck routes have been established and identified, no person shall drive a truck on any street or highway other than a designated truck route, except where it is necessary to traverse other streets or highways to get to a destination for the purposes of loading or unloading property, and then only by the minimal deviation from the truck route as is reasonably necessary.
- Special temporary truck routes may be established and posted on a project basis, as needed.

St. Louis County Ordinance No. 13 references Chapters 163.02 and 169.87 of Minnesota Statute in regard to its authorization to establish seasonal and other weight and load restrictions on all highways under the county's jurisdiction.

Douglas County Ordinance 5.01 adopts by reference Chapters 110, 340-348, 350, and s. 23.33 of Wisconsin Statute. Unlike St. Louis County, Douglas County does not have any county highways designated as truck routes.

Truck route-related ordinances of the MIC-area jurisdictions are listed in Appendix 2.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MAP 2
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Roadways Trucks
May Legally Use
(Restrictions May Apply)
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MN Trunk Highways
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MN CSAH (County)
MN MSAS (Municipal)
WI Trunk Highways
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Truck Routes in Superior
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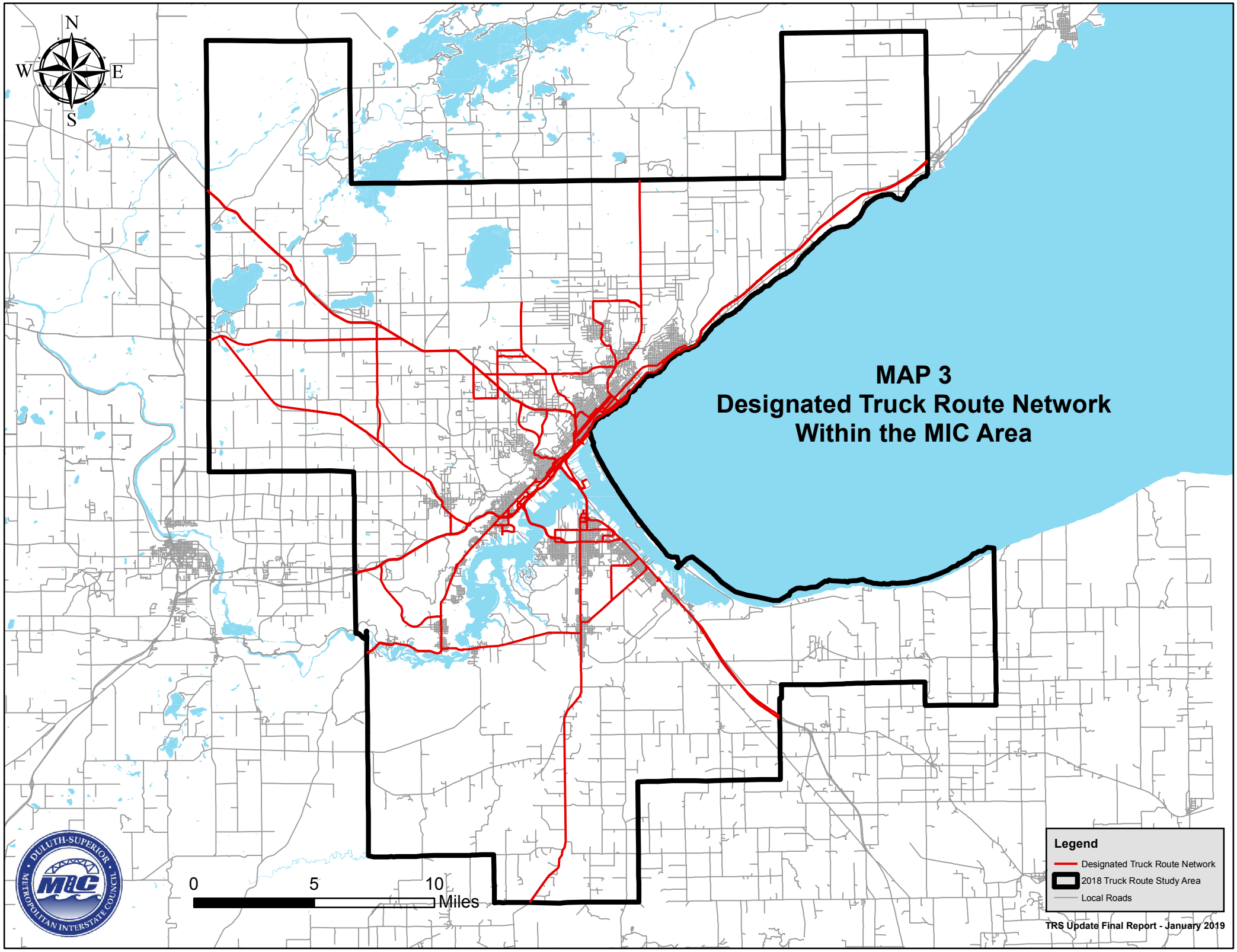
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## DULUTH-SUPERIOR AREA OVER-SIZE / OVER-WEIGHT TRUCK ROUTES

The over-size / over-weight (OSOW) route through the Duluth-Superior area represents a path of least resistance for trucks hauling OSOW loads. Permits from responsible roadway jurisdiction authorities are required to move any OSOW load. The current OSOW route is displayed in Map 4.

In Superior, the route follows US Trunk Highways 53/2 from the southeast city limits to and follows US Trunk Highway 2 over the Bong Bridge. In Duluth the route becomes more indirect following 46th Avenue West from the Bong Bridge to Grand Avenue. The route follows Grand Avenue to Carlton Street and then to Superior Street. It follows Superior Street to Piedmont Avenue and then follows the high-clearance route described below.

*High-Clearance Routes*

Periodically, the port terminal on Rice's Point receives loads of large equipment bound for destinations in Northern Minnesota, the northern plains of the United States, and Canada. Many of these loads move by truck out of the port and up the hill in Duluth. At this point, many obstacles exist for loads that are 20 feet high or taller. Bridges, overhead signs, utility lines, and traffic lights impede or prohibit the movement of high clearance loads on I-35 and other area roads.

The 1990 Truck Route Study identified the need for a route in which high-clearance loads (as high as 22.5 feet) could move through the Duluth area. The 2000 Duluth-Superior Landside Port Access Study process included three meetings of local stakeholders to discuss possible solutions to the high clearance OSOW route problem. The 2001 TRS continued identifying this high clearance route, while recognizing a change in the identified roadway connections was coming in the near future. The 2001 TRS provides greater details of the history of establishing the high clearance OSOW routes. Following the realignment of Piedmont Avenue and US Trunk Highway 53, the high clearance route that has been used differs from that identified in the previous TRSs, by necessity. The new routing allows clearance for loads up to 25 feet in height. The high clearance routes are a subset of the overall OSOW route network.

The current identified high clearance route begins at the port terminal on Rice's Point and runs along Helberg Drive or Port Terminal Road to Garfield Avenue. The route follows Garfield Avenue to Superior Street where it crosses onto Old Piedmont Avenue. It continues up Piedmont Avenue to US Trunk Highway 53 back to a segment of Old Piedmont Avenue (where the orange barrels sit across the road) to 24th Avenue W to Piedmont Avenue (CSAH 54) north to Morris Thomas Road (CSAH 56) west. From here high clearance loads can go one of two ways. One is to continue west to US Trunk Highway 2. The other is to continue west to Lavaque Road (CSAH 48) north to Maple Grove Road (CSAH 6) west to Midway Road (CSAH 13) north to Trunk Highway 194. From here, the high-clearance loads can access most highways in northern Minnesota either moving west or north to Canada, with one additional high clearance segment. To avoid the limited clearance of the overpass bridge at the Trunk Highway 2 – Trunk Highway 33 interchange, high clearance loads going west on US Trunk Highway 2 should go to Saginaw Road (CSAH 46) north to Seville Road (County Road 694) west to Trunk Highway 33.

There is one additional high clearance route. Following the same route mentioned above from Rice's Point to 24th Avenue W, high clearance loads then follow Piedmont Avenue (CSAH 54) south to Trunk Highway 53 north to Arlington Avenue (CSAH 90) north which turns into Rice Lake Road (CSAH 4) north.

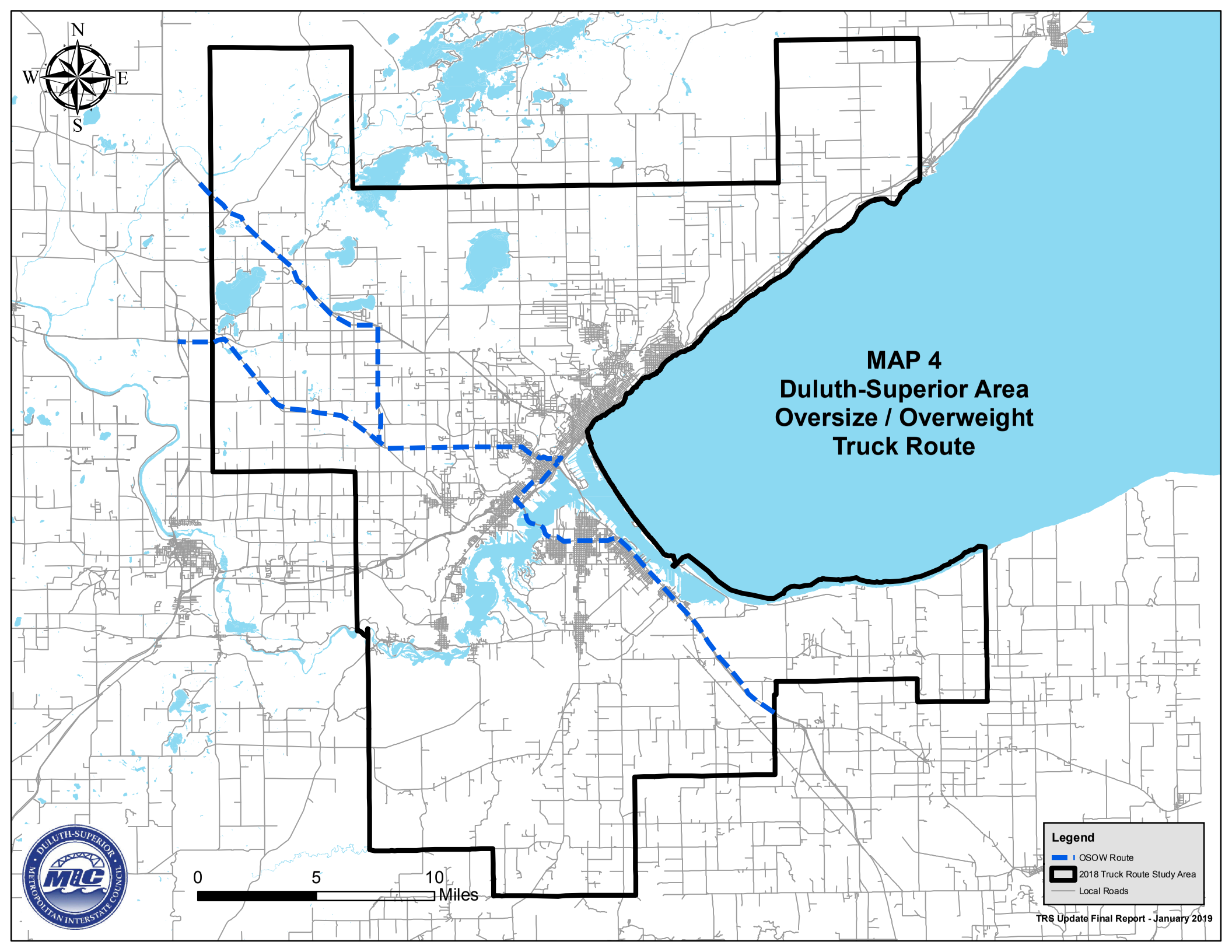
It needs to be noted that the section of Old Piedmont Avenue from 3rd Street up to US Trunk Highway 53 was removed from the State Aid system a few years ago due to neighborhood complaints about trucking from the Port. However, since the roadway was built for and to handle oversized loads, oversized permitted loads are allowed.

The high clearance OSOW route in Superior, Wisconsin is Tower Avenue (STH 35). On STH 35, there are two railroad overhead signals across Tower Avenue that are likely lower than 20 feet. However, depending on how long the load is, the vehicle may be able to take the approach at a slight angle and go in between the overheard signals. Also, there are quite a few traffic signal mast arms that are like lower than 20 feet. Trucks might be able to go into the opposing lanes, with police escorts, to get around the signal mast arms. In the worst case, one of WisDOT electricians would have to move or swing the overhear mast arms. If that is the case, the trucking company is usually charged for that mast arm adjustment.

The major obstacle in utilizing the high clearance OSOW routes the presence of overhead power, telephone and cable television lines. The presence of these overhead lines requires the carrier to work with the local power, telephone and cable companies to dispatch crews to lift or take down the lines each time a high-clearance load moves through this area. These efforts are expensive and inconvenient for all parties involved, including local residents who may have power interruptions caused by the disconnection of the power lines.

Besides the roadways themselves, two significant investments into the high clearance OSOW routes include the construction of the 300-ton capacity bridge on Garfield Avenue over I-35, and swing-away stoplights at the Six Corners intersection. The 300-ton bridge was built to prevent I-35 from becoming a barrier to moving over-size loads out of the port. The swing-away lights at Six Corners intersection are designed to move to the side to allow high-clearance loads to pass through the intersection.

There are several benefits of maintaining OSOW routes with high clearance. The economic impact of the port on the region is well documented. This route adds to the reputation of the port as a trans-shipper of large loads. Two 90-ton gantry cranes are present at the port terminal, which provide the Duluth-Superior port with a competitive advantage in moving heavy loads. Other ports on western Lake Superior have to bring in portable cranes to be able to unload large loads. Being the farthest inland port in North America also provides an advantage over other ports as water transportation is cheaper and more efficient than land transportation. Large cargoes have less distance to travel overland if they are shipped here. Having and maintaining this added service option allows additional shipping opportunity. And every additional ship that calls on the port produces economic benefits that have a positive impact on the regional economy.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MAP 4
Duluth-Superior Area
Oversize / Overweight
Truck Route
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OSOW Route
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## RECENT TRUCK COUNTS

Truck counts are a tool for analyzing truck usage on measured roadways. Further, truck counts can be used to determine the percentage of total traffic along a roadway that is trucks. Both of these measures are useful in addressing the purpose and goal of the TRS.

For the purposes of this report, vehicle classes 5-13 were considered trucks. Thus, all count data from vehicle classes 5-13 at each location were summed together to represent truck counts. Table 1 in the 2001 TRS details the vehicle classifications.

Truck count data came from Wisconsin DOT, St. Louis County, Carlton County, and Douglas County. As such, not all data is identical in nature, but it was determined by the TRS Committee it is all related sufficiently enough to be integrated together and used as one set.

Truck counts were measured at 69 locations between 2016-2018, however data from two City of Duluth locations was of questionable quality, so they were not used. Additionally, there was insufficient data collected at one of the Carlton County sites, so this data was not used. The truck count locations and data used for the TRS Update are listed in Tables 1 and 2. Truck count data was collected in a number of time lengths, including 7-day, 5-day, 2-day, 1-day, and a couple of others. However, all the data was "normalized"/averaged, as needed, to represent counts over a 24-hour or daily period.

The number of trucks at each of the truck count locations is displayed in Map 5. For comparison with some common values from Minnesota DOT, Map 6 displays the number of trucks at each of the truck count locations and local Heavy Commercial Annual Average Daily Traffic (HCAADT) values together. The percentage of trucks at each of the truck count locations is displayed in Map 7. Comparing the number of trucks versus the percentage of trucks at each location helps to better fully understand truck use on these roads.

The recent truck counts support the existing and recommended designated truck routes.

The TRS Committee supports the existing designated truck routes in the MIC area, and do not believe any of these segments need to be eliminated. Further, the Committee believes adding the segments listed in Recommendation 1 below to the designated truck route network is appropriate, and would improve and better connect the network. Data collected here does not support Morris Thomas Road being a part of the designated truck route at this time.

Data collected here supports the roadways in Minnesota connecting County Highway 45 in Cloquet and County Highway 4 (Military Road) at the Wisconsin border be considered for official designation as truck routes at some point in the future. At the least, additional study should be made to consider this. While not within the MIC area, this route definitely impacts roadways and freight and especially lumber load hauls within the MIC area.

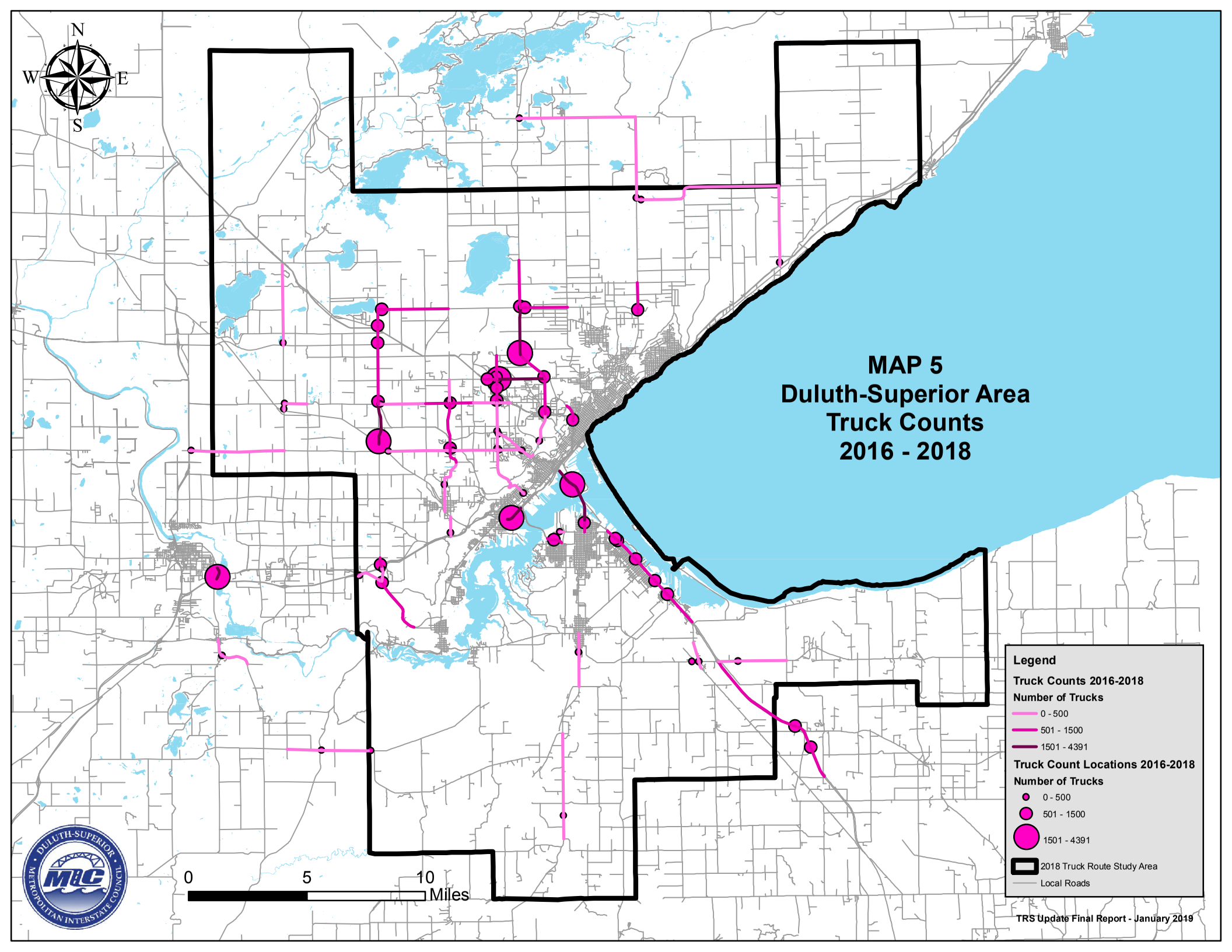
Table 1. Truck Count Locations in Minnesota

| Location | Municipality | # Trucks | Total Traffic | % Trucks |
|---|---|---|---|---|
| Becks Road E of Carlton County Line | Midway Township | 151 | 908 | 16.6 |
| Becks Road S of CSAH 13 (Midway Road) | Midway Township | 512 | 4202 | 12.2 |
| Midway Road S of I-35 Ramp | Midway Township | 477 | 3996 | 11.9 |
| Midway Road N of I-35 Ramp | Midway Township | 1207 | 7653 | 15.8 |
| Boundary Avenue N of I-35 | C of Proctor | 359 | 3661 | 9.8 |
| Lavaque Road N of CR 696 (St. Louis River Road) | C of Proctor | 142 | 2996 | 4.7 |
| Morris Thomas Road E of TH 33 | | 68 | 915 | 7.4 |
| Maple Grove Road E of CSAH 98 (Canosia Road) | Solway Township | 22 | 338 | 6.5 |
| Canosia Road N of US 2 | Solway Township | 328 | 1330 | 24.7 |
| Canosia Road N of TH 194 | Solway Township | 259 | 1070 | 24.2 |
| Martin Road E of CSAH 13 (Midway Road) | Canosia Township | 702 | 3087 | 22.7 |
| Midway Road N of US 53 | Canosia Township | 756 | 5201 | 14.5 |
| Midway Road N of TH 194 | C of Hermantown | 871 | 4884 | 17.8 |
| Midway Road N of CSAH 6 (Maple Grove Road) | C of Hermantown | 1381 | 7080 | 19.5 |
| Morris Thomas Road E of US 2 | C of Hermantown | 173 | 1483 | 11.7 |
| Midway Road N of US 2 | C of Hermantown | 1855 | 9945 | 18.7 |
| Maple Grove Road E of CSAH 13 (Midway Road) | C of Hermantown | 463 | 4470 | 10.4 |
| Lavaque Road N of CSAH 56 (Morris Thomas Road) | C of Hermantown | 566 | 3248 | 17.4 |
| Morris Thomas Road E of CSAH 48 (Lavaque Road) | C of Hermantown | 110 | 2921 | 3.8 |
| Maple Grove Road E of CSAH 48 (Lavaque Road) | C of Hermantown | 702 | 7269 | 9.7 |
| Lavaque Road N of CSAH 6 (Maple Grove Road) | C of Hermantown | 293 | 3440 | 8.5 |
| Haines Road N of Grand Avenue | C of Duluth | 249 | 5074 | 4.9 |
| Piedmont Avenue E of CSAH 56 (Morris Thomas Road) | C of Duluth | 106 | 2501 | 4.2 |
| Morris Thomas Road E of CSAH 91 (Haines Road) | C of Duluth | 118 | 3296 | 3.6 |
| Haines Road N of CSAH 56 (Morris Thomas Road) | | 292 | 7436 | 3.9 |
| Piedmont Avenue E of CSAH 91 (Haines Road) | C of Duluth | 230 | 6490 | 3.5 |
| Haines Road N of CSAH 54 (Piedmont Avenue) | | 422 | 11150 | 3.8 |
| Maple Grove Road E of CSAH 91 (Haines Road) | C of Duluth | 305 | 10964 | 2.8 |
| Haines Road N of CSAH 6 (Maple Grove Road) | | 528 | 10110 | 5.2 |
| Haines Road N of US 53 | | 985 | 9018 | 10.9 |
| Arrowhead Road E of CSAH 90 (Haines Road) | C of Duluth | 2062 | 14008 | 14.7 |
| Arrowhead Road E of US 53 | C of Hermantown | 953 | 12066 | 7.9 |
| Haines Road N of CSAH 32 (Arrowhead Road) | | 1438 | 8859 | 16.2 |
| Rice Lake Road N of CSAH 32 (Arrowhead Road) | C of Duluth | 1256 | 10349 | 12.1 |
| Arlington Avenue N of TH 194 | C of Duluth | 858 | 10051 | 8.5 |
| Arlington Avenue N of US 53 | C of Duluth | 235 | 7022 | 3.3 |
| Rice Lake Road N of TH 194 | C of Duluth | 1308 | 13584 | 9.6 |
| Rice Lake Road N of Airport Road | C of Duluth | 3194 | 12699 | 25.2 |
| Rice Lake Road N of CSAH 9 (Martin Road) | C of Rice Lake | 680 | 6978 | 9.7 |
| Martin Road E of CSAH 4 (Rice Lake Road) | C of Rice Lake | 532 | 5828 | 9.1 |
| Normanna Road E of CSAH 4 (Rice Lake Road) | | 148 | 1557 | 9.5 |
| Jean Duluth Road N of CSAH 43 (Zimmerman Road) | | 311 | 2255 | 13.8 |
| Zimmerman Road E of CSAH 37 (Jean Duluth Road) | Lakewood Township | 350 | 1823 | 19.2 |
| Jean Duluth Road N of CSAH 10 (Martin Road) | C of Duluth | 799 | 6301 | 12.7 |
| Jean Duluth Road N of Glenwood Street | C of Duluth | *[1] | *[1] | *[1] |
| Snively Road E of CSAH 9 (Woodland Avenue) | C of Duluth | *[1] | *[1] | *[1] |
| McQuade Road N of TH 61 | Lakewood Township | 142 | 1136 | 12.5 |
| I35 / US 2 E of Central Ave (MSAS 107) | C of Duluth | 2711 | 52120 | 5.2 |
| I535 SW of Garfield Ave (MSAS 149) | C of Duluth | 2552 | 35843 | 7.1 |
| Cnty 45 just north of I-35 | Carlton County | 4391 | 10506 | 41.8 |
| Cnty 1 at Sunrise Drive | Carlton County | 498 | 2023 | 24.6 |
| Cnty 4 at Cnty 1 | Carlton County | *[2] | *[2] | *[2] |
| Cnty 4 just east of Hwy 23 | Carlton County | 229 | 427 | 53.6 |

*[1] = Data at this site was of questionable quality, so it was not used *[2] = Insufficient data collected, so it was not used

Table 2. Truck Count Locations in Wisconsin

| Location | Municipality | # Trucks | Total Traffic | % Trucks |
|---|---|---|---|---|
| WI 35 N of Cnty B | Superior Township | 157 | 2583 | 6.08 |
| WI 35 between 69th and 74th | V of Superior | 203 | 5408 | 3.75 |
| Winter St just E of Maryland Ave | C of Superior | 243 | 1464 | 16.6 |
| US 53 just S of interesction with US 2 | Amnicon Township | 825 | 6184 | 13.34 |
| US 2/53 just N of 2/53 split | Amnicon Township | 1433 | 12086 | 11.86 |
| WI 13 just E of intersection with US 2/53 | Parkland Township | 92 | 1729 | 5.32 |
| I535 just N of North 5th Street | C of Superior | 1227 | 20119 | 6.1 |
| US 2 Just W of Garfield roundabout | C of Superior | 1097 | 16346 | 6.71 |
| Cnty E and Cnty Z | Parkland Township | 128 | 2591 | 4.94 |
| US 2/53 at 2nd Ave E | C of Superior | 845 | 19181 | 4.41 |
| US 2/53 at Belknap Street | C of Superior | 1124 | 24954 | 4.5 |
| US 2/53 at 18th Ave E | C of Superior | 1190 | 26491 | 4.49 |
| US 2/53 at 31st Ave E | C of Superior | 1041 | 26636 | 3.91 |
| US 2/53 at 39th Ave E | C of Superior | 978 | 26146 | 3.74 |
| CTH C East of State Line | Douglas County | 160 | 845 | 18.9 |
| CTH Z West of CTH E | Douglas County | 655 | 1989 | 32.9 |


N
W
E
S
MAP 5
Duluth-Superior Area
Truck Counts
2016 - 2018
Legend
Truck Counts 2016-2018
Number of Trucks
0 - 500
501 - 1500
1501 - 4391
Truck Count Locations 2016-2018
Number of Trucks
0 - 500
501 - 1500
1501 - 4391
2018 Truck Route Study Area
Local Roads
0
5
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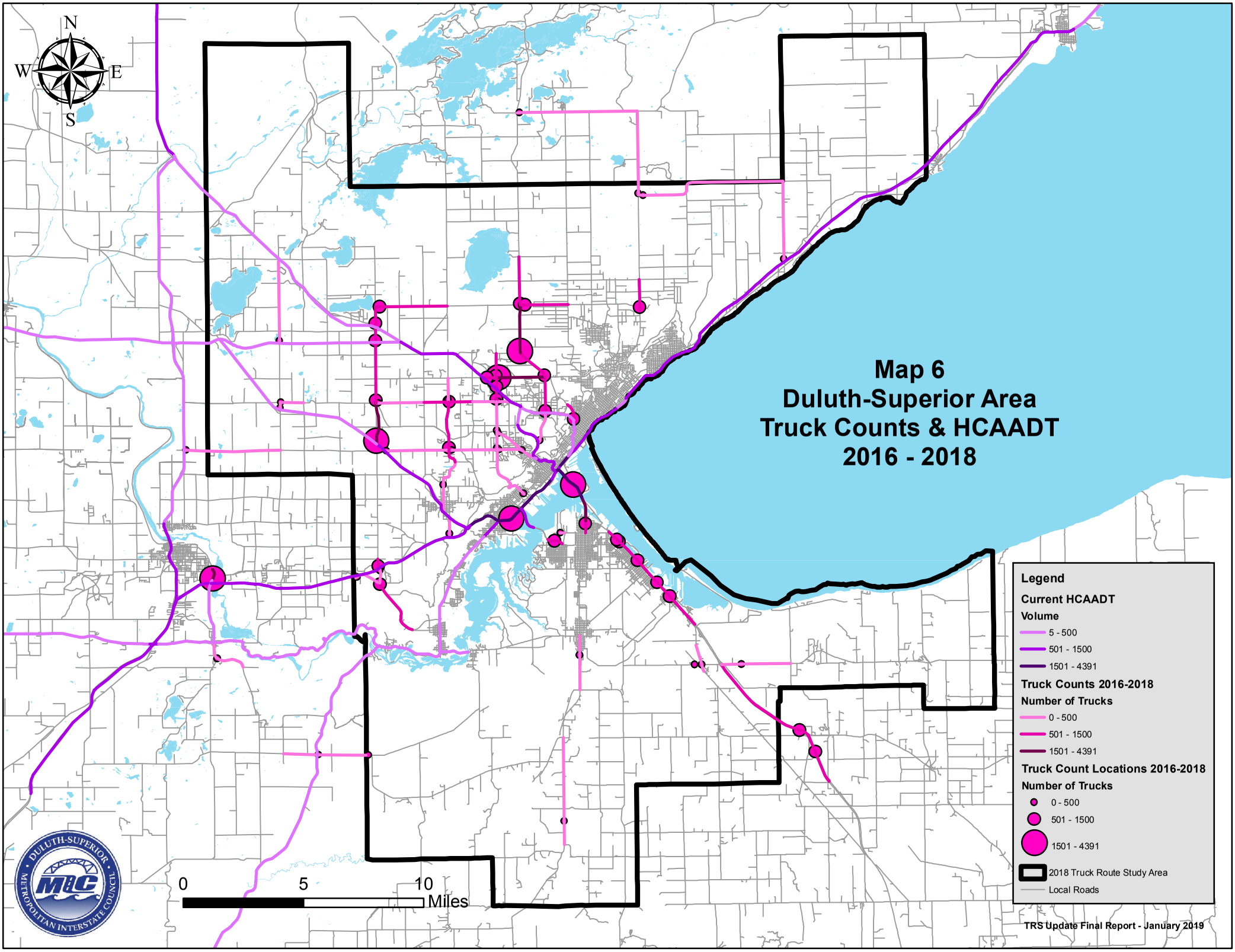
Miles
DULUTH-SUPERIOR METROPOLITAN INTERSTATE COUNCIL
MIC
TRS Update Final Report - January 2019


N
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Map 6
Duluth-Superior Area
Truck Counts & HCAADT
2016 - 2018
Legend
Current HCAADT
Volume
5 - 500
501 - 1500
1501 - 4391
Truck Counts 2016-2018
Number of Trucks
0 - 500
501 - 1500
1501 - 4391
Truck Count Locations 2016-2018
Number of Trucks
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501 - 1500
1501 - 4391
2018 Truck Route Study Area
Local Roads
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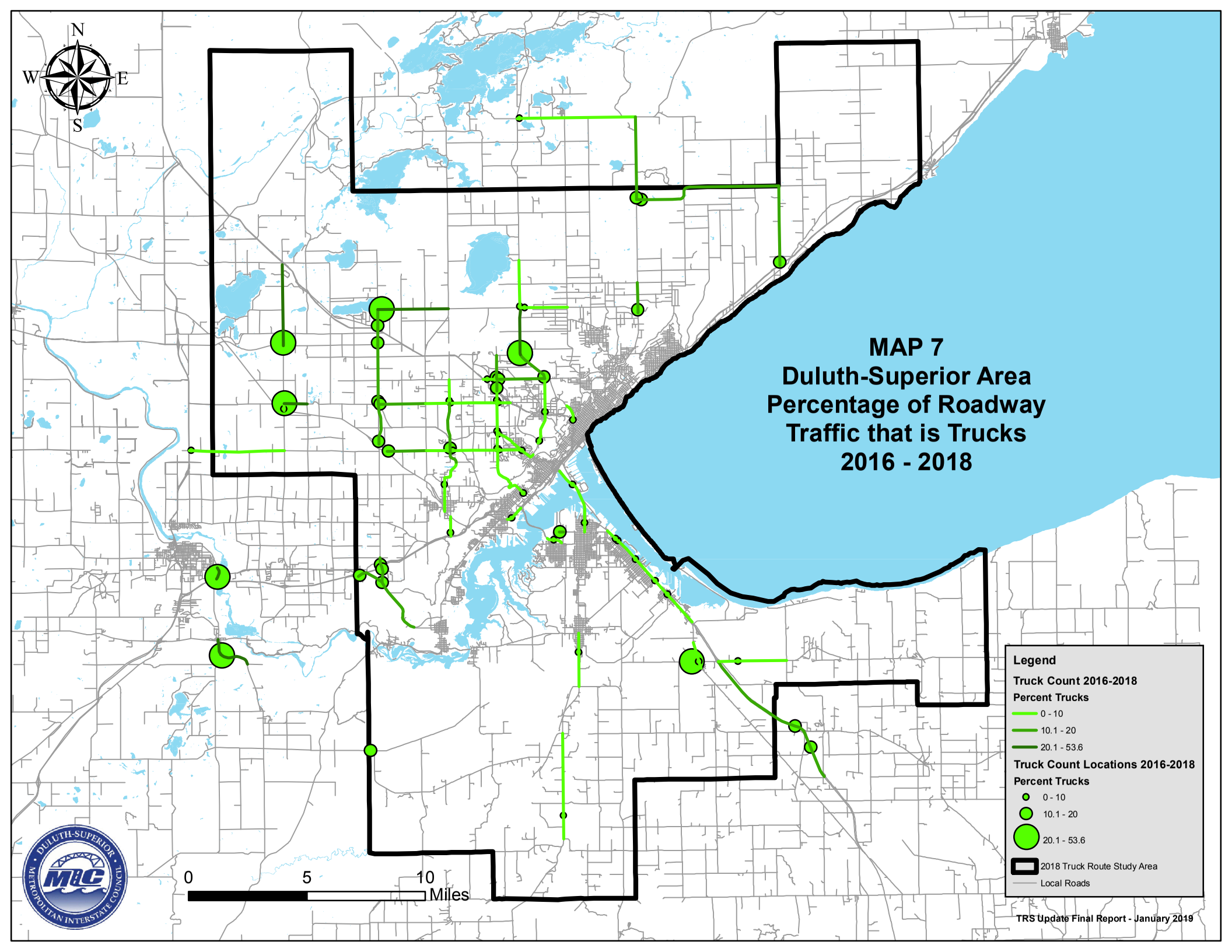
DULUTH-SUPERIOR METROPOLITAN INTERSTATE COUNCIL
MIC
TRS Update Final Report - January 2019


N
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MAP 7
Duluth-Superior Area
Percentage of Roadway
Traffic that is Trucks
2016 - 2018
Legend
Truck Count 2016-2018
Percent Trucks
0 - 10
10.1 - 20
20.1 - 53.6
Truck Count Locations 2016-2018
Percent Trucks
0 - 10
10.1 - 20
20.1 - 53.6
2018 Truck Route Study Area
Local Roads
0
5
10
Miles
DULUTH-SUPERIOR METROPOLITAN INTERSTATE COUNCIL
MIC
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## SURVEY AND RESULTS

In an effort to provide the most useful recommendations possible in the TRS Update Report, the MIC sought input from those working in the trucking industry. One way the MIC sought input was through a survey that was administered as part of this update. The target audience for the survey was those working directly in the trucking industry (and especially drivers), as well as those who work on crews that maintain truck network roadways.

The purpose of the survey was to:

- Seek input from those in the trucking industry or maintaining truck route roadways.
- Provide the most useful study recommendations possible.

The survey was open February 21 – April 30, 2018.

The survey included 11 questions and was administered both via SurveyMonkey and a paper version. Respondents were also able and encouraged to provide location-specific comments via a web map-based application. 42 people responded to/submitted at least some survey questions. Only two responses were received via the web map-based application.

All responses were kept anonymous.

The following is a short summary of the primary survey results:

- The majority of respondents (64 %) have no problem with regulations or enforcement.
- Unless otherwise recommended (see the Recommendations section below), the majority of respondents (94 %) said no change to truck route signage is needed.
- The majority of respondents (86 %) see no need for changes to traffic signals.
- There are two primary widespread and common infrastructure-related issues: 60 % of respondents believe resurfacing is needed and 50 % of respondents believe additional turning lanes are needed.

A number of comments made in the survey are included in the "*2018 Suggestions for Additional Study"* within the Recommendations section below.

All survey results are listed in Appendix 3.

## ADDITONAL DATA AND INFORMATION

The following information comes directly from the *DRAFT Mn DOT District 1 Freight Plan – Working Paper 2: Freight System Profile – Economy, Inventory, Demand and Performance* (CPCS Ref: 17575), November 16, 2018, prepared by CPCS Transcom Inc., and is relevant to this Update. While the plan is for the entire Mn DOT District 1 area, some details for the Duluth area are mentioned. The information represents the Minnesota portion of the MIC area only, and does not include any information from the Wisconsin portion of the MIC area.

Key points that relate to this TRS Update are provided below. Additional details and explanations of this data taken from the CPCS Working Paper 2, including several figures, are included in Appendix 4.

*Peak Travel Time Speed, Congestion, and Reliability*

The average speed on the District's major road corridors is high, suggesting that there are no major problems with truck congestion at a system-wide level.

Low truck speeds at peak times is likely not related to overall traffic congestion, but rather to the fact that heavy trucks are slower to accelerate, decelerate, climb hills, or turn relative to general traffic. This finding lends further support to conclusions from the area's Manufacturer's Study, which noted needs for improved passing, climbing, acceleration, deceleration, and turning lanes in the District.

Travel times across the District are consistent, even during peak-time congestion. The only exceptions are more variable times around I-35 and US-53 in Duluth.

Ultimately, this truck peak travel time speed, congestion, and reliability analysis suggests that congestion and unreliable travel speeds are generally not an issue in District 1, a couple of key roadways in Duluth being among the exceptions. This finding aligns with previous plans and literature on the District's freight system performance, which did not note any significant problems with truck speed or congestion. Instead, mobility issues are more closely related to general performance characteristics of trucks, such as their slow speed and heavy mass, and the need for infrastructure such as turning lanes and passing lanes to support safe truck movements.

*Commercial Vehicle Crashes*

Generally speaking, commercial vehicle crashes are concentrated around two things: **Population centers**, such as Duluth, Grand Rapids, and the Range Cities, and **Major highways**, including I-35, US-2, US-53, and US-169.

Not surprisingly, commercial vehicle-involved crashes are concentrated in areas with higher traffic volumes and more roadway intersections. However, severe and fatal crashes are distributed across the system more "randomly."

## RECOMMENDATIONS

This section is divided into three sections: 2001 recommendations that were implemented, 2001 recommendations that were not implemented, and 2018 recommendations, which include some of the 2001 recommendations that were not implemented.

*2001 Recommendations That Were and/or Are Being Implemented*

1. Monitor areas of increased truck activity in order to incorporate this information into design considerations of reconstruction projects. This is a continuously ongoing recommendation.
2. Focus on good access management practices as a tool to reduce congestion and accidents, preserve road capacity, and reduce travel times for the delivery of goods and services. Departments of Transportation, counties, cities, and townships should work cooperatively to ensure land use decisions consider the impact on transportation facilities. This is a continuously ongoing recommendation.
3. Establish an over-size load route from the port terminal area to Trunk Highway 2 utilizing Garfield Avenue, Piedmont Avenue, and Morris Thomas Road to Trunk Highway 2. Seek to relocate utility wires either underground or establish a minimum height overhead. Work with stakeholders to find a solution to this issue. Incorporate designed changes for Piedmont Avenue reconstruction and realignment projects into this route. This route is likely to have some revisions to it in the future.
4. Identify at-grade rail crossings where truck/train conflicts are problematic. Prioritize crossings by looking at truck traffic, train traffic, crossing warning devices, functional classification of roadway, and other roadway characteristics. Provide this information to the Departments of Transportation for inclusion in their rail planning efforts. This has been and continues to be done on a case-by-case, as needed basis.
5. Improve signal coordination in Miller Hill area.
6. Improve turning radii in industrial/commercial areas such as Winter Street and Susquehanna Avenue in Superior.
7. Improve truck route connection to Trunk Highway 2/53 at the intersection of 23rd Avenue East in Superior. Examine alternatives such as:
   - Route truck traffic over to 18th Avenue East to take advantage of existing stoplights;
   - Installing traffic light at the intersection of 23rd Avenue East and Trunk Highway 2/53;
   - Moving truck route connection to 22nd Avenue East and installing a traffic signal at that intersection.

*2001 Recommendations That Were Not Implemented*

1. Add the following roadway segments to the official truck route system:
   - Midway Road – I-35 to TH 2
   - Maple Grove Road – Midway Road to Stebner Road
   - Midway Road – TH 53 to Martin Road
   - Martin Road – Midway Road to Woodland Avenue
   - Rice Lake Road – Martin Road northerly
   - Arlington Avenue – Arrowhead Road to Central Entrance

Trucks are presently using the roadways listed in the first six bullets and the addition of these routes probably will not increase truck traffic in these areas. All of the additions to the system on the Minnesota side are on CSAH routes and as such cannot prohibit trucks.

2. Connect Waseca Industrial Boulevard to Grand Avenue to provide another truck entrance to the Waseca Industrial area. Examine the need for extension of Waseca Industrial Boulevard to Grand Avenue if future growth increases truck traffic on Raleigh Street. Trucks currently accessing the Waseca Industrial area from the southwest along Grand Avenue use Raleigh Street to enter this area. Alternate routes would force trucks into the West Duluth Business District or other residential streets. Extending Waseca Industrial Boulevard would provide direct access for trucks to Grand Avenue.

3. Study the feasibility of an east-west connection from Trunk Highway 53 to Trunk Highway 61. Examine the extension of Martin Road from Jean Duluth Road east to Trunk Highway 61.

4. Formalize and sign a route for through truck traffic to use the National Network of Truck Route roadways. This would move through truck traffic from the Bong Bridge and Belknap Street in Downtown Superior to the Blatnik Bridge and Trunk Highway 53. The new through route would be more compatible with current land use and avoids the Central Business District in Superior. Utilize a consistent signage scheme in both states such as the National Network of Truck Routes signs, which could have a message added to the bottom that says "Through Route". The City Superior would like to do this, but it is too expensive to implement under current and past budgets.

5. Utilize more consistent signage on area roads where weight limits are imposed. Consider using signs R 12-1, R 12-2, and R 12-4 (see below)


*R 12-1*


*R 12-2*


*R 12-4*

It has been determined by the TRS Committee that these are not needed, and should no longer be listed as a recommendation. Consistent signage is required, and truckers have no issue with these, which is supported by the TRS survey results.

6. Improve turning radii in industrial/commercial areas such as 40$^{th}$ Avenue West and Oneota Street in Duluth. While not a bad idea, this has not been a high enough priority to include in City of Duluth workload.

*2018 Recommendations*

Truck routes are vital to maintain the economic integrity of the Duluth-Superior area. Efficient movement of goods via trucks is fundamental to the function of our economy. From a community perspective truck routes should be compatible with adjacent land uses where feasible. The following recommendations attempt to strike a balance between the efficient movement of goods and truck routes that are compatible with a variety of urban land uses.

1. Add the following roadway segments to the official designated truck route network in the MIC area (Map 8):

    - Midway Road – I-35 to TH 2
    - Maple Grove Road – Midway Road to Stebner Road
    - Midway Road – TH 53 to Martin Road
    - Martin Road – Midway Road to Woodland Avenue
    - Rice Lake Road – Martin Road northerly
    - Arlington Avenue – Arrowhead Road to Central Entrance

    Even though trucks are presently using these roadway segments, designating them as truck routes is anticipated to have value and purpose. The introduction describes why designating truck routes are beneficial. Further, the designation of these routes is not expected to increase truck traffic in these areas.

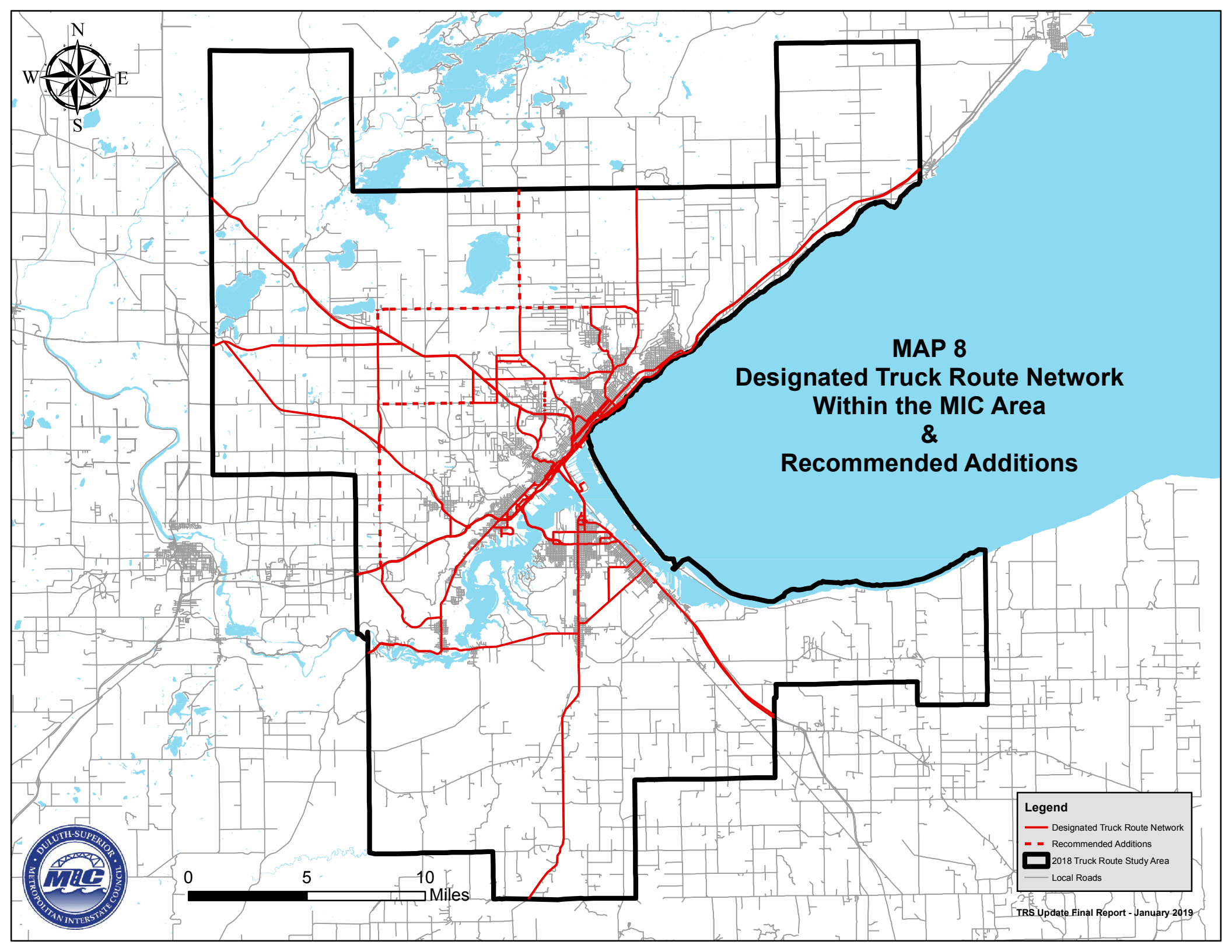
    The TRS Committee believes adding the segments listed above to the designated truck route network is appropriate, and would improve and better connect the network.

    Data collected as a part of this study update does not support Morris Thomas Road being a part of the designated truck route at this time.

    Data collected as a part of this study update supports the roadways in Minnesota connecting County Highway 45 in Cloquet and County Highway 4 (Military Road) at the Wisconsin border being considered for official designation as truck routes at some point in the future. At the least, additional study should be made to consider this. While not within the MIC area, this route definitely impacts roadways, as well as freight and especially lumber load hauls within the MIC area.

2. Monitor areas of increased truck activity in order to incorporate this information into design considerations of reconstruction projects. This is a continuously ongoing recommendation.

3. Focus on good access management practices as a tool to reduce congestion and accidents, preserve road capacity, and reduce travel times for the delivery of goods and services. Departments of Transportation, counties, cities, and townships should work cooperatively to ensure land use decisions consider the impact on transportation facilities. This is a continuously ongoing recommendation.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MAP 8
Designated Truck Route Network
Within the MIC Area
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Recommended Additions
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Designated Truck Route Network
Recommended Additions
2018 Truck Route Study Area
Local Roads
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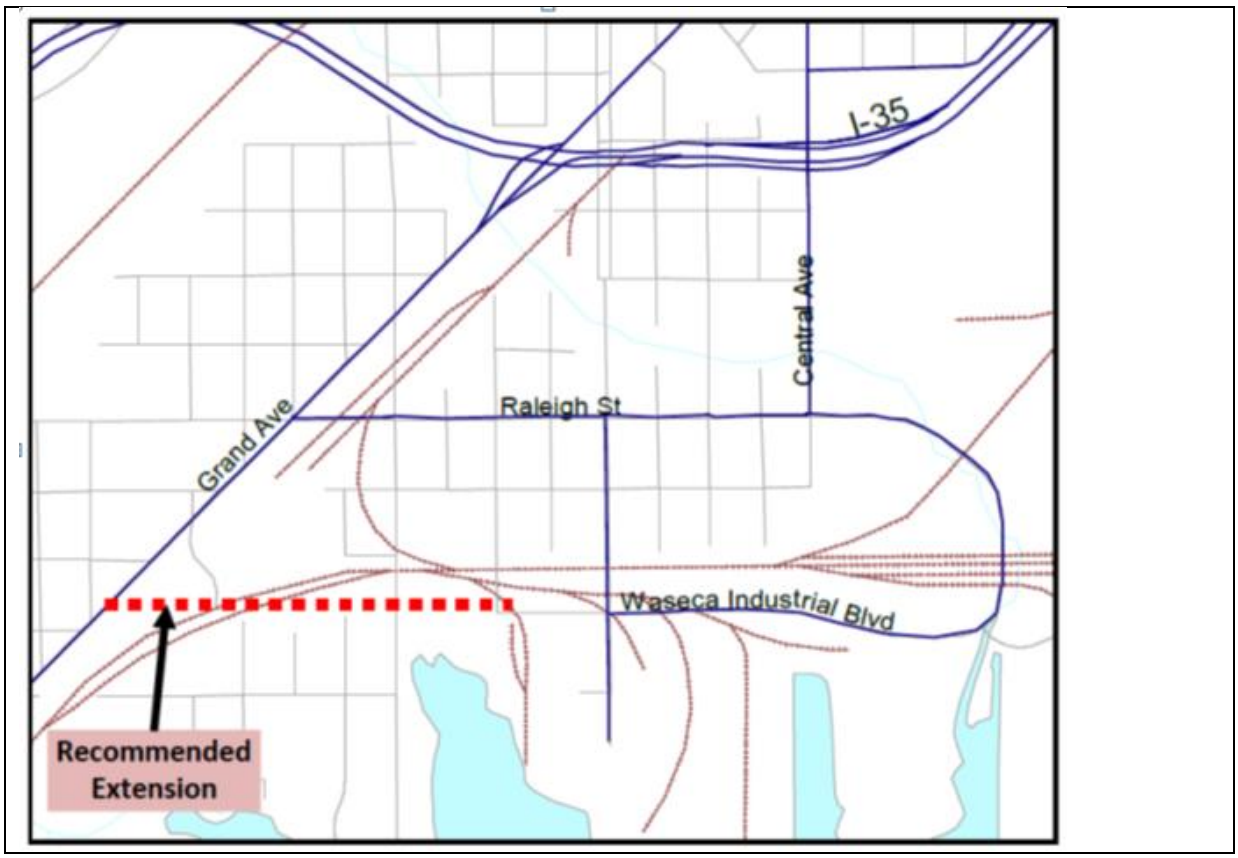
4. Connect Waseca Industrial Boulevard to Grand Avenue to provide another truck entrance to the Waseca Industrial area (see below). Examine the need for extension of Waseca Industrial Boulevard to Grand Avenue if future growth increases truck traffic on Raleigh Street. Trucks currently accessing the Waseca Industrial area from the southwest along Grand Avenue use Raleigh Street to enter this area. Alternate routes would force trucks into the West Duluth Business District or other residential streets. Extending Waseca Industrial Boulevard would provide direct access for trucks to Grand Avenue.




5. Identify at-grade rail crossings where truck/train conflicts are problematic. Prioritize crossings by looking at truck traffic, train traffic, crossing warning devices, functional classification of roadway, and other roadway characteristics. Provide this information to the Departments of Transportation for inclusion in their rail planning efforts. This has been and continues to be done on a case-by-case, as needed basis.

6. Formalize and sign a route for through truck traffic to use the National Network of Truck Route roadways. This would move through truck traffic from the Bong Bridge and Belknap Street in Downtown Superior to the Blatnik Bridge and Trunk Highway 53. The new through route would be more compatible with current land use and avoids the Central Business District in Superior. Utilize a consistent signage scheme in both states such as the National Network of Truck Routes signs, which could have a message added to the bottom that says “Through Route”. The City of Superior would like to do this, but it is too expensive to implement under current and past budgets.

7. The "No Truck" sign on Piedmont as you turn right from Superior Street should be placed before climbing up towards the bridge connecting it to US 53. The sign is visible only after you are already in a residential area. While the existing sign is at a legal location, it could be helpful to place an additional sign sooner to help prevent trucks from getting too far into the area where it is difficult to turn around and maneuver.

8. Install a "Merging Trucks" flashing sign on the Blatnik Bridge for traffic traveling north/west (towards Duluth) prior to the merging ramp from Port Terminal Road unto I535. Trucks entering from this steep ramp cause merging problems, and is a safety issue due to a blind merge. *NOTE: This will no longer be a problem with the completion of the Twin Ports Interchange project planned for the coming years.*

9. Address numerous issues of merging lanes, blind spots, load restrictions, and more in the Interstate 35 – Trunk Highway 53 – Interstate 535 (Can of Worms) interchange. Note that it takes a truck time to get up to travel speed when loaded. It has been noted that traffic on I535 merging with traffic from Hwy 53 onto I35 North cannot see each other until the end of the merge due to solid guard rails. *NOTE: This will no longer be a problem with the completion of the Twin Ports Interchange project planned for the coming years.*

10. Address the crown or dip near the US Highway 53 and Midway Road intersection. This is unsafe for all drivers and a significant problem for low-boy truck trailers.

11. Repair the over-size and over-weight (OSOW) route along old Piedmont Avenue. Address the hump at the intersection with W. 1st Street, which is a major challenge for longer loads. Additionally, this segment of roads could use repairs.

12. Ensure regular inspection and maintenance of the I35 tunnels, including drainage issues.

13. Roundabout concerns:
    - Need better signage at the US Hwy 2 – Belknap Street – Garfield Avenue intersection roundabout just east of the Bong Bridge in Superior to prevent accidents involving trucks. One suggestion is to place "Trucks Use Both Lanes" signs at these locations.
    - Make sure design and modeling considers likely use by not just standard 53-foot trailers, but also longer trailers and low-boy trailers. If the case for installing the roundabout is made despite these truck limitations, then alternate truck routing options should be considered, planned for, and implemented.

14. The Blatnik Bridge needs to be replaced as it is reaching the end of its design life. The details of exactly what needs to be done will require much design, planning, discussion, and input. Planning and design should consider the needs of trucking.

*2018 Suggestions for Additional Study*

The following should be considered for future study and formal discussion, including the economic feasibility of each, based on concerns or observations shared during this update:

a. Determine whether or not traffic volumes, crash data, and other factors warrant adding additional and/or wider turning lanes at the Midway Road and Martin Road intersection in Canosia Township, and at the Rice Lake Road and Martin Road intersection in Rice Lake.
b. Determine whether or not turns are too tight along Martin Road in Minnesota, and if so, where, and what measures should be taken to alleviate the problem.
c. Improve turning radii in industrial/commercial areas such as 40th Avenue West and Oneota Street in Duluth. These should be considered on an as needed basis, with proper study to consider needs and appropriate solutions.
d. Determine whether or not traffic is consistently congested and turns too tight at the Woodland Avenue and Arrowhead Road intersection in Duluth, and if so, what measures should be taken to alleviate the problems.
e. It has been reported that it is difficult to plow the Arrowhead Road and Highway 53 intersection in Hermantown. It has been suggested the reason is due to the islands. Study this intersection to determine if adding additional turning lanes, removing the islands, or some other measures will help alleviate the problem.
f. Determine the problems associated with the bridge just west of the US Hwy 2 and MN Highway 194 intersection, and identify potential solutions to alleviate them. It has been suggested that warning lights for incoming traffic from Hwy 2 should be installed.
g. Continue to determine the problems associated with the low railroad bridge west of County Highway E on County Highway Z in Wisconsin, and identify potential long-term solutions to alleviate them. Blinking warning lights were installed several years ago. Funding has been secured to install a beacon in the near future.
h. Determine whether or not it is necessary to install solid railings at the I-535 ramp into I-35 south. *NOTE: This will no longer be a problem with the completion of the Twin Ports Interchange project planned for the coming years.*
i. If industry expands off of Central Avenue in Duluth, use traffic volumes, crash data, and other data to determine if there will be a need to alleviate problems for trucks trying to exit and enter I35 at N. Central Avenue.
j. Determine which road surface is most appropriate for Grand Avenue in Duluth between Gary New Duluth and I-35. It is suggested that black top does not hold up to the heavy volume and heavy loads that use this road daily, and that instead concrete should be used.
k. Determine whether or not the Tower Avenue and Winter Street intersection in Superior is too narrow, not providing sufficient room to make a safe turn, and if so, what measures should be taken to alleviate the problem. It has been stated that trucks often use two lanes and almost hit traffic coming in the opposite direction when traveling south on Tower and turning right (west) onto Winter.

l. Use traffic volumes, crash data, and other data to determine if there are problems needing to be alleviated and/or a need to install traffic lights on the east end of Winter Street (Hwy 2 truck route in Superior) where it meets Hwy 53 on East Street in Superior. It was suggested it is very difficult to enter traffic there with a truck.
m. Use traffic volumes, crash data, and other data to determine if there are consistent congested traffic problems needing to be alleviated along Highway 61 North at 40th Avenue East in Duluth.
n. Determine if larger truck-related signage is needed. It was mentioned the vast majority of people say they never see the signs.
o. Determine whether or not weight restrictions need to be posted more. It was suggested weight restrictions are not posted enough. If so, it would need to be determined how often and how far apart they need to be posted.
p. Determine whether or not installing more swing-away lights at intersections along the OSOW route would ease and benefit the movement of freight.
q. Determine the viable or optimum turning radius for trucks in roundabouts. It was suggested the turning radius of existing roundabouts is too tight.

## IMPLEMENTATION STRATEGY

To support the implementation of the recommendations of this TRS Update Final Report, the TRS Committee, or a subset thereof, should consider reconvening to develop an implementation strategy. An implementation strategy does not need to be very long nor overly detailed, but it should be sufficiently detailed to help bring specific clarity, focus, and direction for implementing each of the recommendations. The TRS Committee can determine how detailed it needs to be. It is useful for an implementation strategy to list each recommendation, as well as include a summary table for quick reference. An example generic Implementation Strategy Summary Table is below.

| Report Recommendation # | Identified Lead Role(s) | Priority L M H* | Anticipated Completion Date |
|---|---|---|---|
| | | | |
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* L = Low, M = Medium, H = High

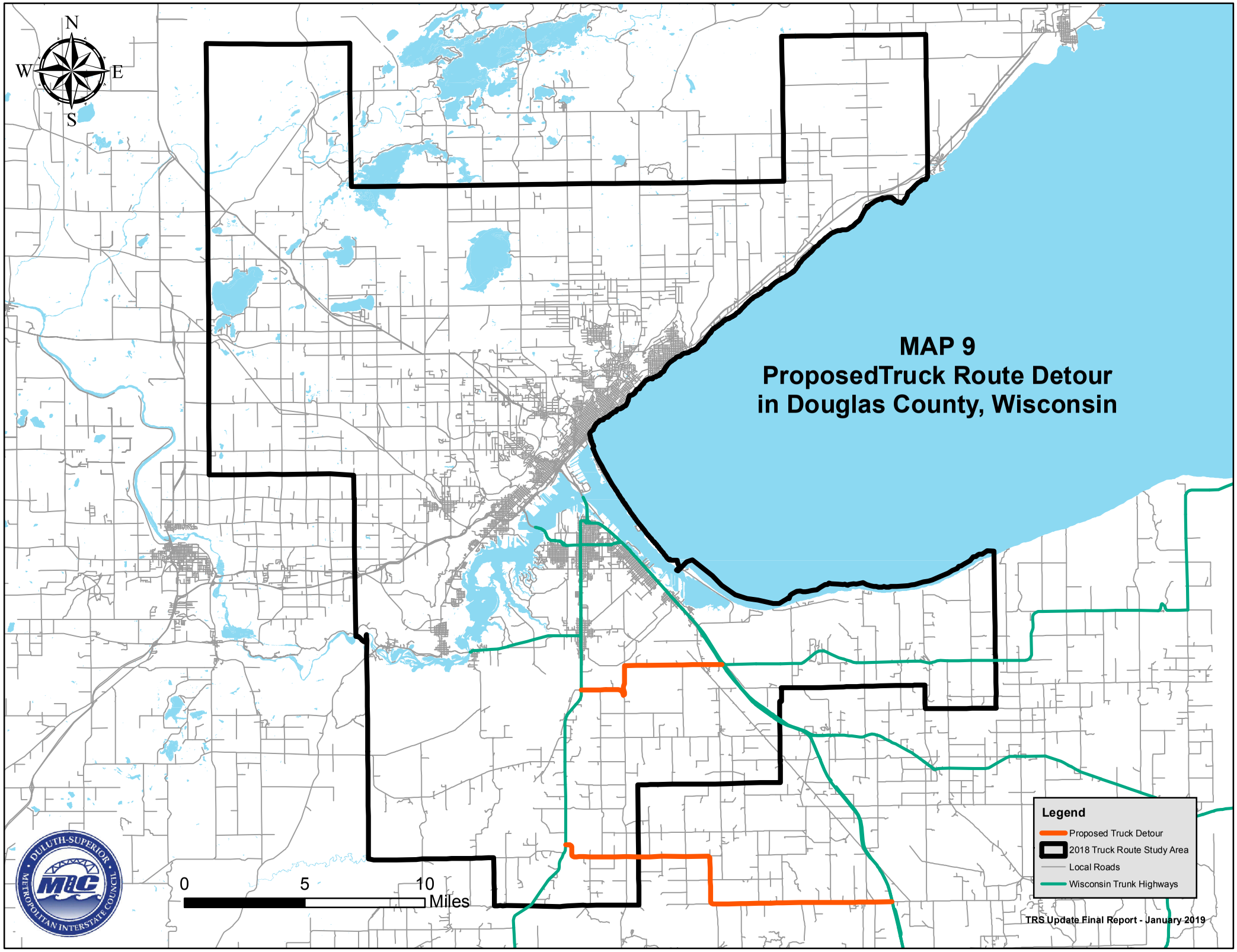
Whether or not an implementation strategy is produced, one form of implementing the TRS Update Final Report is ensuring it is distributed to each of the local jurisdictions within the MIC area, with the suggestion and intent that, as appropriate, it's identified routes and recommendations are rolled into their plans, as appropriate. This in and of itself would be included as one recommendation within an implementation strategy.

Finally, an implementation strategy also allows for periodic or regular check-ins to learn of recommendations being planned or completed. In a more advanced way, it can be used as a basis to gauge level of implementation in a "report card" or similar manner that all partners may find useful.

# APPENDICES

## APPENDIX 1

## PROPOSED TRUCK DETOUR ROUTES IN SUPERIOR AND DOUGLAS COUNTY, WISCONSIN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in Douglas County, Wisconsin
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2018 Truck Route Study Area
Local Roads
Wisconsin Trunk Highways
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# APPENDIX 2

# LOCAL TRUCK ROUTE-RELATED ORDINANCES

*St. Louis County*

ORDINANCE N0. 13

AN ORDINANCE GOVERNING WEIGHT AND LOAD RESTRICTIONS ON HIGHWAYS WEIGHT AND LOAD RESTRICTIONS ORDINANCE

An ordinance relating to seasonal and other weight and load restrictions on all highways under the jurisdiction of St. Louis County.

Be it ordained and enacted by the County Board of the County of St. Louis, of the State of Minnesota:

Section 1 - Pursuant to Minnesota Statutes 1969, Section 163.02, Subdivision 3, Minnesota Statutes 1969, Section 169.87, Subdivision 1, and Chapter 425, Laws of 1969, the St. Louis County Engineer is authorized to impose season weight and load restrictions and other weight and load restrictions on all highways under the jurisdiction of St. Louis County.

Section 2 - The County Engineer is authorized to exempt school buses, public utility vehicles used under emergency conditions, and other vehicles used in an emergency of any nature from weight and load restrictions imposed under this ordinance.

Section 3 - Should any part of this ordinance be held invalid by a court of competent jurisdiction, the remaining parts shall be severable and shall continue to be in full force and effect.

Section 4 - All ordinances, resolutions, or parts of ordinances or resolutions conflicting with the provisions of this ordinance are hereby repealed.

Section 5 - This ordinance shall take effect and be in force from and after March 13, 1972.

Commissioner Priley moved for the adoption of this ordinance and it was declared adopted upon the following vote:
Yeas - Commissioners Priley, Donaghy, Shannon, Hoff, Barrett and Chairman Anderson - 6
Nays – None

Attest: Clerk of County Board Chairman of County Board

*Douglas County*

5.01 DOUGLAS COUNTY TRAFFIC ORDINANCES

THE DOUGLAS COUNTY BOARD OF SUPERVISORS DOES HEREBY ORDAIN AS FOLLOWS:

SECTION I. INTENT
Pursuant to the authority of Wisconsin Statutes Section 349.06, the traffic regulations for which the penalty is solely a forfeiture set forth in Wisconsin Statutes Chapters 110, 340 to 348, 350, and Wisconsin Statutes Section 23.33, and including all existing and future amendments made thereto, are adopted by reference and made part of this ordinance. For the traffic regulations adopted herein, see Wisconsin Statutes Chapters 110, 340 through 348, 350, and Wisconsin Statutes Section 23.33.

SECTION II. PENALTIES
A. The penalty for violation of any provision of this section shall be a forfeiture as hereinafter provided in the Douglas County Traffic Citation Fee Schedule, together with any and all costs authorized pursuant to Wisconsin Statutes Section 345.27.
B. The forfeiture penalties provided in the Douglas County Traffic Citation Fee Schedule are adopted by reference to the statutory provisions set forth in Wisconsin Statutes Chapters 110, 340 to 348, 350, and Wisconsin Statutes Section 23.33, and shall be in strict conformity with the forfeitures permitted by state law, including all existing and future amendments and increases made thereto.

SECTION III. ENFORCEMENT
A. This ordinance shall be enforced according to those provisions in Wisconsin Statutes Chapters 110, 340 to 348, 350 and 799.
B. Any person cited for a violation of this ordnance may make a deposit of money as directed by the citing officer. The citing officer shall orally or in writing inform any person issued such a citation of the following:

1. The time at which the alleged violator may appear in court.
2. That if the person fails to appear in court at the time fixed in the citation, the person will be deemed to have tendered a plea of no contest and submitted to forfeiture plus costs not to exceed the amount of the deposit.
3. That if the alleged violator does not make a cash deposit and does not appear in court at the time specified, the County may commence an action against the alleged violator to collect the forfeiture.

SECTION IV. EFFECTIVE DATE
This ordinance shall take effect upon passage and publication.

Amended: October 16, 2003

*City of Duluth*

Chapter 33 – Motor Vehicles and Traffic

Article II. Truck Routes.

Sec. 33-48. Definitions. As used in this Article the following terms shall mean:
Director. The director of public works of the city.
Truck. Any vehicle designed for the transportation of cargo rather than passengers and having three or more axles, or having a licensed gross weight of 26,000 pounds or more. Emergency vehicles are excluded.
Truck route. Any street or highway, as designated herein, over and along which trucks within the city must operate. (Ord. No. 8389, 3-13-1978, ' 1; Ord. No. 9106, 11-16-1992, ' 1.)

Sec. 33-49. Routes established.
The city council may, by resolution, establish truck routes within the city and may add to or modify such routes from time to time. The director shall keep and maintain accurate maps showing the truck routes currently in effect and such maps shall be available to the public. (Ord. No. 8389, 3-13-1978, ' 1.)

Sec. 33-50. Marking of routes. Truck routes shall be identified by appropriate signs erected and maintained by the director. Further, the director shall post at the city limits upon all main traffic routes entering the city, signs notifying users of highways that trucks are only permitted to be driven on marked truck routes. (Ord. No. 8389, 3-13-1978, ' 1.)

Sec. 33-51. Truck travel restricted. When truck routes have been established and identified, no person shall drive a truck on any street or highway other than a designated truck route, except where it is necessary to traverse other streets or highways to get to a destination for the purpose of loading or unloading property, and then only by such deviation from the nearest truck route as is reasonably necessary; provided however, that no person shall, in driving a truck to or from a site where construction or demolition of any structure other than a one or two family dwelling or accessory building is taking place, use any street or highway other than a designated truck route, unless such street or highway has been designated by the director as a special temporary truck route for such project. Upon application by the owner of the site where such a project is taking place, or his agent, the director shall designate at least one temporary truck route for such project. (Ord. No. 8389, 3-13-1978, ' 1.)

Sec. 33-52. Exemptions. The operation of trucks in connection with Western Lake Superior Sanitary District operations or with the repair, maintenance or construction of streets or highways, sidewalks or public utilities shall not be deemed to be covered by the provisions of this Article. (Ord. No. 8389, 3-13-1978, ' 1; Ord. No. 8868, 12-10-1987, ' 1.)

Sec. 33-53. Detours. The operation of trucks upon any officially established detour in any case where such truck could be lawfully operated on the street for which such detour is established is permitted. (Ord. No. 8389, 3-13-1978, ' 1.)

Sec. 33-54. Conflict with other provisions. No designation of a truck route which consists in whole or in part of any state, county or federal highway, shall be construed as permitting use of said route in

violation of any order or rule of the agency having jurisdiction over such highway. (Ord. No. 8389, 3-13-1978, ' 1.)

*City of Hermantown*

APPLICABLE EXCERPTS FROM CHAPTER 8. TRAFFIC REGULATIONS

Contents

Section 800 - Unreasonable Acceleration and Exhibition Driving
Section 810 - Truck Traffic
Section 820 - Regulation of Snowmobiles and All-Terrain Vehicles
Section 830 - Parking
Section 840 – Unsafe Traffic Movements

Section 800 -Unreasonable Acceleration and Exhibition Driving

800.01 Purpose. Exhibition driving and unreasonable acceleration of a motor vehicle is a public nuisance.

800.02 Definitions.

800.02.1. “Exhibition driving” shall mean the operation or halting of any motor vehicle in a manner so as to cause excessive engine noise, tire squealing, skids or slides upon acceleration or stopping; or in a manner as to simulate a race or temporary race, or to cause the vehicle to unnecessarily sway or turn abruptly, or to impede traffic.

800.02.2. “Unreasonable acceleration” shall mean the acceleration of any motor vehicle carelessly or with disregard of the rights of others, or in an unreasonable manner than endangers or is likely to endanger any property or person, including the driver or passenger of the vehicle.

800.03 Prohibited Operation. No person shall operate or halt any motor vehicle upon any public or private road, street, parking lot, alley or way within the City in a manner as to constitute either exhibition driving or unreasonable acceleration, as defined in this section.

Section 810 -Truck Traffic

810.01 Definitions. As used in this section, the following terms shall mean:

810.01.1. “Superintendent” shall mean the Superintendent of Public Works of the City.

810.01.2. “Truck” shall mean any vehicle designed for the transportation of cargo rather than passengers and having three or more axles, or having a licensed gross weight of 26,000 pounds or more. Emergency vehicles shall be excluded.

810.01.3. “Truck route” shall mean any street or highway, as designated in this section, over and along which trucks within the City shall operate.

810.02 Routes Established. The City Council may, by resolution, establish truck routes within the City and may add to or modify the routes from time to time. The Superintendent shall keep and maintain accurate maps showing the truck routes currently in effect and the maps shall be available to the public.

810.03 Marking of Routes. Truck routes shall be identified by appropriate signs erected and maintained by the Superintendent. Further, the Superintendent shall post at the City limits upon all main traffic routes entering the City, signs notifying users of highways that trucks shall only be permitted to be driven on marked truck routes.

810.04 Truck Travel Restricted. When truck routes have been established and identified, no person shall drive a truck on any street or highway other than a designated truck route, except where it shall be necessary to traverse other streets or highways to get to a destination for the purpose of loading or unloading property, and then only by the deviation from the nearest truck route as shall be reasonably necessary; provided however, that no person shall, in driving a truck to or from a site where construction or demolition of any structure other than a one- or two-family dwelling or accessory

building shall be taking place, use any street or highway other than a designated truck route, unless the street or highway has been designated by the Superintendent as a special temporary truck route for the project. Upon application by the owner of the site where such a project shall be taking place, or his or her agent, the Superintendent shall designate at least one temporary truck route for the project.
810.05 Exemptions. The operation of trucks in connection with the repair, maintenance or construction of streets or highways, sidewalks or public utilities shall not be deemed to be covered by the provisions of this section.
810.06 Detours. The operation of trucks upon any officially established detour in any case where the truck could be lawfully operated on the street for which the detour is established shall be permitted.
810.07 Conflict with Other Provisions. No designation of a truck route which consists in whole or in part of any state, county or federal highway, shall be construed as permitting use of the route in violation of any order or rule of the agency having jurisdiction over the highway.

Section 830 -Parking

830.02 Council Authority.
830.02.1. The Council may, by resolution, designate and establish upon any street, avenue or road within the City:
830.02.1.1. Certain areas and hours where parking time shall be limited;
830.02.1.2. Loading zones or parking zones; and
830.02.1.3. No parking zones, no stopping zones or no standing zones and the hours within which the restrictions shall apply.
830.02.2. The Chief of Police shall mark or cause to be marked by appropriate signs all zones so established. (Am. Ord. 2009-03, passed 7-6-09)

830.03 Temporary Restrictions. The Police Chief shall be hereby empowered to temporarily prohibit or otherwise restrict parking within the City on account of parades, street or utility repairs, snow plowing, snow removal or other extraordinary conditions by placement of appropriate temporary signs. No such prohibitions or restrictions shall be in force until signs shall have been posted clearly designating the area, the prohibition or restriction and the time period the prohibition or restriction shall be in effect. (Am. Ord. 2009-03, passed 7-6-09)

830.04 Violation and Penalty. No person shall park or stop any motor vehicle or allow any motor vehicle to stand in a fire lane designated and marked under the provisions of 830.01, a zone designated and marked under the provisions of 830.02 in contravention of the designation and marking, or an area posted under the provisions of 830.03 in contravention of the prohibition or restriction designated by the posting. (Am. Ord. 2009-03, passed 7-6-09)

830.05 Owner Responsibility. If any motor vehicle is found parked, stopped or standing in violation of any subsection of this section and the identity of the driver cannot be determined, the owner or person in whose name the vehicle is registered shall be held prima facie responsible for the violation. (Am. Ord. 2009-03, passed 7-6-09)

830.06 Definitions. For purposes of this section, the following words and phrases shall have the meanings ascribed to them in this section:
830.06.1. "Owner" shall mean the person holding the legal title to a vehicle or, in the case of a vehicle subject to a conditional sales agreement or a lease with an immediate right of possession vested in the

conditional vendee or lessee, or in the event a mortgagor of a vehicle shall be entitled to possession, then the conditional vendee, lessee or mortgagor shall be deemed the owner.
830.06.2. "Parking" shall mean the standing of a vehicle, whether occupied or not, upon a street, road or highway, other than temporarily for the purpose of and while actually engaged in loading or unloading or in obedience to traffic regulations, signs or signals.
830.06.3. "Roadway" shall mean that portion of a highway, street or road improved, designed or ordinarily used for vehicular travel. In the event a highway includes two or more separate roadways, "roadway" shall refer to any such roadway separately but not to all such roadways collectively.
830.06.4. "Truck" shall mean any vehicle that is more than 9,000 pounds gross vehicle weight; any vehicle that has an overall length of more than 25 feet or a width at any point of more than six feet; any trailer, semitrailer, truck-tractor or combinations thereof; any bus; any vehicle used for hauling any hazardous materials, such as gasoline, fuel, chemicals or explosives; or any vehicle designed, used or maintained for towing other motor vehicles or equipment.
830.06.5. "Vehicle" shall mean every device in, upon or by which any person or property may be transported upon a highway, except devices moved by human power.
830.06.6. "Commercial vehicle" means any vehicle that is more than 26,000 pounds gross vehicle weight and that has commercial motor vehicle license plates.
(Ord. 2004-20, passed 1-7-05; Am. Ord. 2009-03, passed 7-6-09)

830.07 Parking More Than 24 Consecutive Hours Prohibited. No vehicle shall be left standing or parked more than 24 consecutive hours on any street or highway within the City.
(Am. Ord. 2009-03, passed 7-6-09)

830.08 Removal of Illegally-Parked Vehicles. When any police officer finds a vehicle standing upon a highway in violation of any of the provisions of this section, the officer shall be authorized to move the vehicle, require the driver or other person in charge of the vehicle to move the same or to provide for the removal of the vehicle to the nearest convenient garage or other safe place.
(Am. Ord. 2009-03, passed 7-6-09)

830.09 Removal of Vehicles to Facilitate Snow Removal. When the City Street Superintendent or any of his or her duly authorized agents find a vehicle standing upon a highway that creates or causes an obstruction to the plowing, moving or removal of snow and ice, whether or not the obstruction constitutes a violation of this section or any other Code provision or ordinance of the city, the City Street Superintendent or his or her duly authorized agent shall be authorized to move the vehicle, require the driver or other person in charge of the vehicle to move the same, or to provide for the removal of the vehicle to the nearest convenient garage or other safe place. (Am. Ord. 2009-03, passed 7-6-09)

830.10 Redemption by Owner. Whenever a vehicle has been moved or removed pursuant to the authority created by this section, the vehicle shall not thereafter be released, restored or delivered to the owner thereof until he or she shall have established that he or she is the owner thereof and shall have paid to the person entitled thereto the costs and expenses involved and incurred in connection with the moving, removing or storage of the vehicle. In addition to the payment of the costs, the owner of any vehicle removed or stored for violating any provision of this section shall, before the vehicle shall be surrendered to the owner, pay the amount of any fine as may be imposed by the Court for the violation. (Am. Ord. 2009-03, passed 7-6-09)

830.11 Truck Parking.

830.11.1 Unlawful Parking. It shall be unlawful for any person owning, driving or in charge of a truck to cause or permit the parking or continuous standing of the truck on any public street, alley or other roadway regulated or supervised by the City.
830.11.2 Exceptions. 830.11.1 shall not apply to any truck being used by a public utility, delivery company, moving company or similar company while it is actually being used in the furtherance of the business of the company or any truck used in conjunction with an authorized construction site during a period that construction shall be actually taking place including non-working hours and holidays.
830.11.3 Purpose and Intent. The purpose of this subsection shall be to regulate the parking of large vehicles on public streets, alleys or roadways regulated or supervised by the City because the vehicles can create a nuisance and can be detrimental to the public health, safety, prosperity, good order and general welfare by obstructing the view of drivers of operating vehicles or by interfering with orderly passage of traffic on streets and other public properties regulated or supervised by the City or by otherwise adversely affecting public roadways regulated or supervised by the City.
(Am. Ord. 2009-03, passed 7-6-09)

830.12 Commercial Vehicles Parking Prohibited in Residential Zone Districts.
830.12.1 Prohibition. No person shall park or allow to stand on any public or private property a commercial vehicle in the R-3 or R-3a zone district of the City, except for the purpose for loading and unloading of passengers or freight and then only for a period, not to exceed two hours, no longer than is necessary for the loading or unloading of such passengers or freight, provided, however, that the provisions of this section shall not apply to the parking of commercial vehicles of public bodies or public utilities which are used for providing emergency repair service. (Am. Ord. 2004-20, passed 1-3-05; Am. Ord. 2009-03, passed 7-6-09)

830.13. Citations.

Section 840 –Unsafe Traffic Movements
840.01 Definitions.
840.01.1. “Roadway” shall mean that portion of a highway or street improved, designed or ordinarily used for vehicular travel, including the shoulder.
840.01.2. “Unsafe traffic movements” shall mean the operation of any vehicle contrary to the traffic control signal on any roadway, any intersection or other place where it is allowed to be operated.
840.01.3. “Vehicle” shall mean every device in, upon, or by which any person or property is or may be transported or drawn upon a roadway, including Snowmobiles or ATV’s as defined in Section 820 of this Code.
840.02 Prohibited Operation. No person shall operate or halt their vehicle upon a roadway within the City in a manner so as to constitute an unsafe traffic movement.
840.03 Violation. A person convicted of a violation of this Section is guilty of a petty misdemeanor.
(Am. Ord. 2015-02, passed 3-16-15)

*City of Superior*

Sec. 112-33. - Heavy traffic (truck) route.

(a) *Definition.* For purposes of this section, heavy traffic shall be defined as:

(1) All vehicles not operating completely on pneumatic tires; and

(2) All vehicles or combination of vehicles having a gross vehicle weight of more than 26,000 pounds GVWR (gross vehicle weight rating). (Ord. No. 2366, 7-1-86; Ord. No. 91-2588, 4-3-91)

(b) *Routes designated.* Heavy traffic (truck) routes are designated in "Schedule P - Heavy Traffic (Truck) Route," which is made part of this section by reference.

(c) *Prohibited routes.* Heavy traffic is prohibited from using any city street or highway not designated as a heavy traffic route. This section shall not act to prohibit heavy traffic from using a city street or highway:

(1) Which is routed a state trunk highway;

(2) To transport vehicles owned and operated by a public utility directly to the site of any construction, repair or maintenance of any electric, gas or water service;

(3) For the purpose of obtaining orders for supplies or moving or delivering supplies or commodities to or from any place of business or residence which has an entrance on such street or highway and then only by such deviation from the nearest truck route as is reasonable necessary. In making such deliveries, the vehicles shall use heavy traffic routes whenever possible. When it is necessary to leave a heavy traffic route to make a delivery, the vehicle shall use the shortest practical route between the previous delivery point or exit from the heavy traffic route and the next delivery point and shall return to a heavy traffic route whenever possible. The intent of this paragraph is to minimize the disruption to residential areas and damage to residential streets by minimizing delivery vehicles' use of non-heavy traffic routes to the greatest extent possible. (Ord. No. 2366, 7-1-86; Ord. No. 91-2588, 4-3-91)

(d) *Administration.* The department of public works in cooperation with the police department shall administer this section. Administration shall include:

(1) *Posting of signs.* Appropriate signs shall be posted giving notice of this section and of the heavy traffic routes established herein;

(2) *Maps.* Maps of the city showing heavy traffic routes shall be prepared and shall be available upon request by heavy traffic operators and owners;

(3) *Construction equipment.*

a. The director of public works may grant temporary permits to allow heavy construction equipment to use city streets or highways not designated as heavy traffic routes. These permits may be granted only when use of a non-designated route is necessary for the equipment to reach a construction site. No permit may be issued unless the person or corporation owning the equipment agrees to reimburse and hold the city harmless for any damage done to the city street by the equipment and/or any personal injury or property damage caused in part or in whole by the street damage.

b. City owned or operated equipment is specifically excluded from the provisions of this section.

(e) *Enforcement.*

(1) *Penalties.* Any operator, owner, corporation, agent or other person responsible for a heavy traffic vehicle which is operating a heavy vehicle in violation of this section may be required to forfeit not less than $25.00 nor more than $1,000.00.

(2) *Liability.* Any operator, corporation, owner or agent whose heavy traffic vehicle damages any city streets or highways in violating this section shall be liable and required to pay the city the cost of repair or replacement of the damaged street or highway. (Ord. No. 2004, §§ 1—5, 8-2-77; Ord. No. 2200, §§ 1—3, 11-3-82; Ord. No. 2228, § 1, 7-5-83)

(Ord. of 6-2-1998, § 2-4)
State Law reference— Wis. Stats. § 349.17.

SCHEDULE P. - HEAVY TRAFFIC (TRUCK) ROUTE (Sec. 112-33)

DEFINITION. For purposes of this section, heavy traffic shall be defined as:
(a) All vehicles not operating completely on pneumatic tires; and

(b) All vehicles or combination of vehicles having a gross vehicle weight of more than 26,000 pounds GVWR (gross vehicle weight rating). (O86-2366, 7-1-86; O91-2588, 4-3-91)

ROUTES DESIGNATED. The following streets in the City of Superior are hereby designated as heavy traffic (truck) routes:

(1) All of State Highways 2 and 53 including all of Belknap Street and East 2nd Street;

(2) All of State Highway 535, ending on the south at North 5th Street and running north including entrance and exit ramps leading from Highway 535 to Highway 53 and to North 3rd Street. (O86-2366, 7-1-86);

(3) North 3rd Street from Tower Avenue easterly to and including the access road from Highway 53;

(4) North 5th Street from Tower Avenue to Hammond Avenue; (O91-2588, 4-3-91)

(5) Grand Avenue from North 4th Street to North 2nd Street; North 2nd Street from Grand Avenue to Cumming Avenue; Cumming Avenue from North 2nd Street to North 1st Street; North 1st Street from Cumming Avenue to Tower Avenue; (O91-2588, 4-3-91)

(6) Dock Street from the Harbor to North 1st Street;

(7) Winter Street from Susquehanna Avenue to Water Street; Susquehanna Avenue from Winter Street to Belknap Street; Water Street from Winter Street to E Street; E Street from Water to East 5th Street; East 5th Street from E Street to North 12th Street; North 12th Street from East 5th Street to Poplar Avenue; Poplar Avenue from North 12th Street to Belknap Street;

(8) The truck turning lane - service road - parallel to Highway 53 and running from E Street to Winter Street;

(9) The street leading from Winter Street into the Union Oil Company property;

(10) Tower Avenue;

(11) Hill Avenue from Stinson Avenue to North 28th Street. (O87-2412, 12-1-87; O93-2741, 10-5-93; O97-3055, 11-4-97; O97-3064, 12-2-97);

(12) 18th Avenue East from Highway 53 to North 28th Street; North 28th Street from 18th Avenue East to Hill Avenue;

(13) Stinson Avenue from East 21st Street to North 56th Street; North 56th Street from Stinson Avenue to Tower Avenue (FYI-eliminated truck route through East End business district) (O05-3532, 9-6-2005)

(14) North 61st Street west to Tower Avenue;

(15) Hammond Avenue from North 5th Street to Winter Street. (O91-2588, 4-3-91)

# APPENDIX 3

## 2018 DULUTH-SUPERIOR AREA TRUCK ROUTE STUDY SURVEY RESULTS

*Question 1 – What is your role in trucking?*

| Answer Choices | Responses | Percentage |
|---|---|---|
| Truck driver | 25 | 47.2 |
| Warehousing | 1 | 1.9 |
| Trucking industry non-driver | 12 | 22.6 |
| Public Sector | 4 | 7.5 |
| Construction | 10 | 18.9 |
| Other (please specify) | 1 | 1.9 |
| | | |
| Answered by 42 | | |

"Other" = Dispatcher

*Question 2 – What do you pull and/or haul? Check all that apply.*

| Answer Choices | Responses | Percentage |
|---|---|---|
| Standard 53-foot trailer | 16 | 13.6 |
| Extended freight trailer | 0 | 0 |
| Flat bed | 14 | 11.9 |
| Construction Materials | 23 | 19.5 |
| Tanker (liquid or gas) trailers | 8 | 6.8 |
| Logs/lumber | 6 | 5.1 |
| Extended log trailer | 0 | 0 |
| Automobiles | 2 | 1.7 |
| Oversize loads | 18 | 15.3 |
| Heavy haul loads | 17 | 14.4 |
| Hazardous materials | 5 | 4.2 |
| Other (please specify) | 9 | 7.6 |
| | | |
| Answered by 42 | | |

"Other" = Wind Turbine Components, Non-driver Trucking Industry, Bulk Pneumatic, not specified (6)

*Question 3 - Do you have any of the following concerns related to trucking regulations or their enforcement in the Duluth-Superior area? Check all that apply.*

| Answer Choices | Responses | Percentage |
|---|---|---|
| No problems with regulations or enforcement | 25 | 44.6 |
| Regulations are difficult to find | 5 | 8.9 |
| Regulations are confusing or difficult to understand | 6 | 10.7 |
| Regulations between jurisdictions are not uniform | 2 | 3.6 |
| Regulations between trucking types are not consistent | 3 | 5.4 |
| Enforcement of regulations is not consistent | 5 | 8.9 |
| Enforcement penalties are too light (i.e., are not a deterrent) | 2 | 3.6 |
| Enforcement penalties are too severe | 4 | 7.1 |
| Permitting issues | 4 | 7.1 |
| Regulations are difficult to meet (explain): | 0 | 0 |
| | | |
| Answered by 39 | | |

*Question 4 - Are any changes to existing truck route signage needed?*

| Answer Choices | Responses | Percentage |
|---|---|---|
| No | 34 | 94.4 |
| Yes | 0 | 0 |
| Yes (describe location and explain) | 2 | 5.6 |
| | | |
| Answered by 36 | | |

Description:

- Not listed
- YES, larger signs all around would be nice, 90% of people say they never see them.

*Question 5 – Are any traffic signal changes needed?*

| Answer Choices | Responses | Percentage |
|---|---|---|
| No | 30 | 85.7 |
| Yes (describe location and explain) | 5 | 14.3 |
| | | |
| Answered by 35 | | |

Description:

- Not specified (2)
- If industry expands off of Central Ave. in Duluth, getting on and off of I35 may become an issue. Left turn from I35N and a left across to I35S.

- Test
- a stop light on the east end of hwy 2 truck route (Winter St.) where it meet hwy 53 on E street in Superior.

*Question 6 - How common are the following roadway or infrastructure issues along truck routes in the Duluth-Superior area?*

| | Not an Issue | | Common & Widespread | | Issue in a Specific Location | | |
|---|---|---|---|---|---|---|---|
| **Answer Choices** | | **%** | | **%** | | **%** | **Total** |
| A. Road width — too narrow | 15 | 71.4 | 6 | 28.6 | 0 | 0 | 21 |
| B. Shoulder width — too narrow | 12 | 57.1 | 9 | 42.9 | 0 | 0 | 21 |
| C. Turning radius — too tight | 13 | 56.5 | 7 | 30.4 | 3 | 13 | 23 |
| D. Resurfacing needed | 6 | 30 | 12 | 60 | 2 | 10 | 20 |
| E. Regrading needed | 13 | 65 | 7 | 35 | 0 | 0 | 20 |
| F. Turning lane needed | 9 | 40.9 | 11 | 50 | 2 | 9.1 | 22 |
| G. Better water drainage needed | 13 | 65 | 7 | 35 | 0 | 0 | 20 |
| H. Other — describe where and what, in text box below: | 5 | 55.6 | 3 | 33.3 | 1 | 11.1 | 9 |
| Describe specific location(s) and needed improvements: | | | | | | | 6 |
| | | | | | | | |
| Answered by 24 | | | | | | | |

Description (Common & Widespread):

- Weight restrictions not posted enough.

Description (Turning Radius Too Tight in a Specific Location):

- At traffic circles (roundabouts).
- Turn in Superior from Tower Avenue to winter street when traveling south and taking a right onto winter. Not wide enough, trucks often use 2 lanes and almost hit traffic in the opposing turn lane.
- Not specified (1)

Description (Resurfacing Needed in a Specific Location):

- Arrowhead Rd
- Hwy 23 (Grand Ave) which has been done but it was done in black top that doesn't hold up to the heavy volume and heavy loads that are on this road daily. This section between Gary New Duluth and the freeway entrance should be done in concrete.

Description (Turning Lane Needed in a Specific Location):

- Also a turning lane is needed off of hwy 53 at the east end of the hwy 2 truck route where it meets hwy 53.
- Not specified (1)

Description (Other):

- Bridge height – location not specified.

*Question 7 - If there is an especially problematic truck route segment or intersection in the Duluth-Superior area, please identify where it is.*
*Question 8 – What is the problem?*

| Location | Consistent Congested Traffic | Weight Restrictions | Turns Too Tight | Inadequate Turning Lanes | Bridge Height | Other (Describe) |
|---|---|---|---|---|---|---|
| Hwy 61 North | X | | | | | |
| Woodland Avenue and Arrowhead | X | | X | | | |
| Rice Lake Road and Martin Road | | | X | X | | |
| Arrowhead and Hwy 53 turning lanes for plowing. Island makes it difficult to plow and clean up. | | | | X | | |
| MN194 and Hwy 53 | X | | | X | | $X^1$ |
| Tower Avenue to Winter Street | | | X | X | | |
| I35 Tunnels | | | | | X | $X^2$ |
| Can of Worms Intersection | | | | | | $X^3$ |
| Hwy 53 and E Street in Superior | X | | | | | $X^4$ |
| | | | | | | |
| **Total** | 4 | 0 | 3 | 4 | 1 | 4 |
| **Percent** | 44.4 | 0 | 33.3 | 44.4 | 11.1 | 44.4 |
| Answered by 9 | | | | | | |

Description:

$X^1$ = Dangerous turning during high traffic
$X^2$ = Drainage
$X^3$ = Takes time to get up to traffic speed when loaded
$X^4$ = Very difficult to enter traffic with a truck

*Question 9 - If there is another problematic truck route segment or intersection in the Duluth-Superior area, please identify where it is.*
*Question 10 – What is the problem?*

| Location | Consistent Congested Traffic | Weight Restrictions | Turns Too Tight | Inadequate Turning Lanes | Bridge Height | Other (Describe) |
|---|---|---|---|---|---|---|
| Highway 23 | | | | | X | |
| Hwy 2 MN 194 intersection bridge | | | | | X | $X^1$ |
| solid railings at 535 entering I35 south bound | | | | | | $X^2$ |
| | | | | | | |
| **Total** | 0 | 0 | 0 | 0 | 2 | 2 |
| **Percent** | 0 | 0 | 0 | 0 | 66.7 | 66.7 |
| Answered by 3 | | | | | | |

Description:

$X^1$ = Need warning lights for incoming traffic from Hwy 2

$X^2$ = when the traffic from I535 merges with the traffic from 53 south onto I 35 the traffic cannot see each other until the end of the merge due to the solid guard rails

*Question 11 – Do you have any other comments about truck routes in the Duluth-Superior area?*

- More truck hauling signs near gravel Pits.
- Superior does a good job of labeling No Truck Routes. I only drive in a few parts of Duluth and have had no issues. I think the No Truck sign on Piedmont as you turn right from Superior Street could be placed before climbing up towards the bridge connecting it to US 53. Only done that in my car but the sign is only there once you are already in a residential area.

# APPENDIX 4

# ADDITONAL DATA AND INFORMATION

The following information comes directly from the *DRAFT Mn DOT District 1 Freight Plan – Working Paper 2: Freight System Profile – Economy, Inventory, Demand and Performance* (CPCS Ref: 17575), November 16, 2018, prepared by CPCS Transcom Inc., and is relevant to this Update. While the plan is for the entire Mn DOT District 1 area, some details for the Duluth area are mentioned, and the figures include insets of the Duluth area. The information represents the Minnesota portion of the MIC area only, and does not include any information from the Wisconsin portion of the MIC area.

*Peak Travel Time Speed, Congestion, and Reliability*

Examining overall truck speed helps to inform more in-depth measures of truck mobility and system performance. Figure 1 displays the average speed of trucks in the District and Duluth-area. The average speed on the District's major road corridors is high, suggesting that there are no major problems with truck congestion at a system-wide level.

Travel Time Index (TTI) is a measure of the differences in travel times or speeds between peak (AM and PM rush hour) and non-peak times. For this analysis, TTI was calculated for individual segments of the road network using the following formula:

$$Travel\ Time\ Index \quad = \frac{Avg\ Peak\ Time\ Speed\ on\ Weekday\ Mornings\ and\ Evenings\ Free\ Flowing\ Speed}{Flowing\ Speed}$$

In this case, TTI represents the relative "slowness" of peak-time traffic. For example: a TTI value of 0.9 would indicate that peak-time traffic moves at 90% of free flow speeds, and a TTI value of 0.5 would indicate that peak time traffic moves at 50% of free-flow speeds.

Peak Time Speed was defined as the average speed during the combined morning (6-10 AM) and evening (3-7 PM) rush hours on weekdays. Free flow speed was provided automatically from StreetLight, which calculated free-flow as an average of the highest speeds observed for a segment for each day of the year.

Evaluating TTI for the road network is useful because it can reveal areas where traffic congestion may be more likely, particularly at peak times. In turn, this understanding of congestion locations and patterns can help inform policy and operations decisions. Figure 2 shows TTI for heavy trucks in District 1 and the Duluth area.

The worst peak-time congestion in the District is concentrated around select highway segments in Duluth, and a handful of other locations around the District.

In comparison, truck peak-hour congestion does not overlap with personal vehicle congestion and is distributed more widely across the District. Much of this congestion is found on relatively shorter road

segments, and segments at or near road intersections. This concentration of congestion at intersections and the fact that truck congestion and personal vehicle congestion do not overlap suggests that low truck speeds at peak times may not be related to overall traffic congestion. Instead, low truck speeds are likely related to the fact that heavy trucks are slower to accelerate, decelerate, climb hills, or turn relative to general traffic. This finding lends further support to conclusions from the Manufacturer's Study, which noted needs for improved passing, climbing, acceleration, deceleration, and turning lanes in the District.

> NOTE: The issue of need for a truck lane going up hills, such as Thompson Hill, was mentioned in a TRS Committee meeting and during one of the Open Houses, but not to the level of needing any specific recommendations. It should be considered for further study.

Travel Time Reliability (TTR) is a measure of the consistency of travel times, or the degree to which delays are unexpected. TTR is important because businesses and commuters may be able to plan trips to accommodate peak congestion, but unexpected delays cannot be planned for, and can disrupt operations. For this plan, TTR at peak times of day was calculated for both personal vehicles and trucks using the following formula:

$$Travel\ Time\ Reliability = \frac{50th\ percentile\ travel\ speed\ at\ peak\ hours}{95th\ percentile\ travel\ speed\ at\ peak\ hours}$$

With this formula, lower values represent a more reliable travel speed, while higher values represent more variable travel speeds. Therefore, a high TTR value means low reliability. Truck TTR is shown in Figure 3. Travel times across the District are consistent, even during peak-time congestion. The only exceptions are more variable times around I-35 and US-53 in Duluth.

Ultimately, this truck speed, TTR, and TTI analysis suggests that congestion and unreliable travel speeds are generally not an issue in District 1. This finding aligns with previous plans and literature on the District's freight system performance, which did not note any significant problems with truck speed or congestion. Instead, mobility issues are more closely related to general performance characteristics of trucks, such as their slow speed and heavy mass, and the need for infrastructure such as turning lanes and passing lanes to support safe truck movements.

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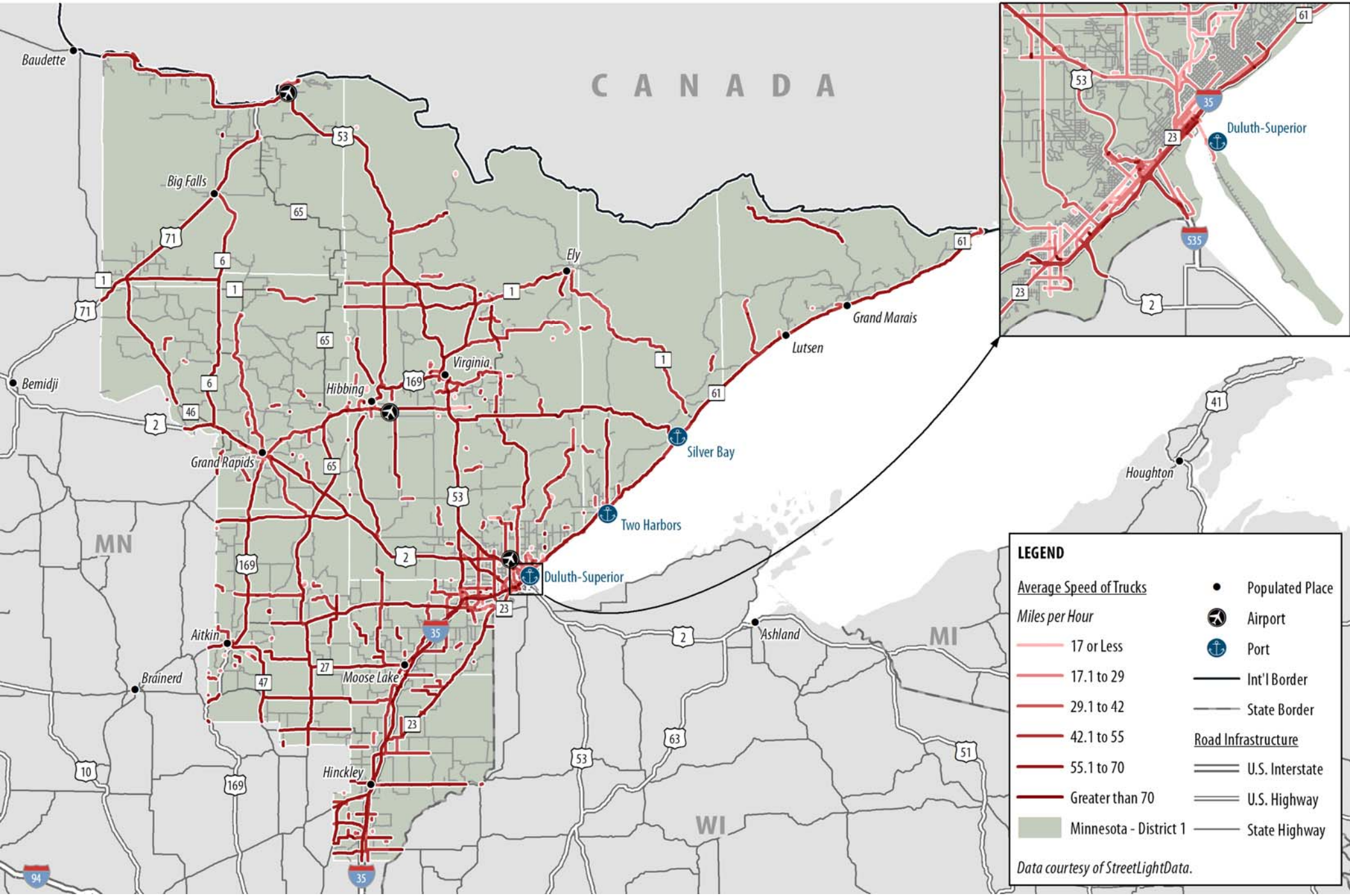
# Peak Hours Average Speed (Heavy Trucks)

## MnDOT District 1 Freight Plan



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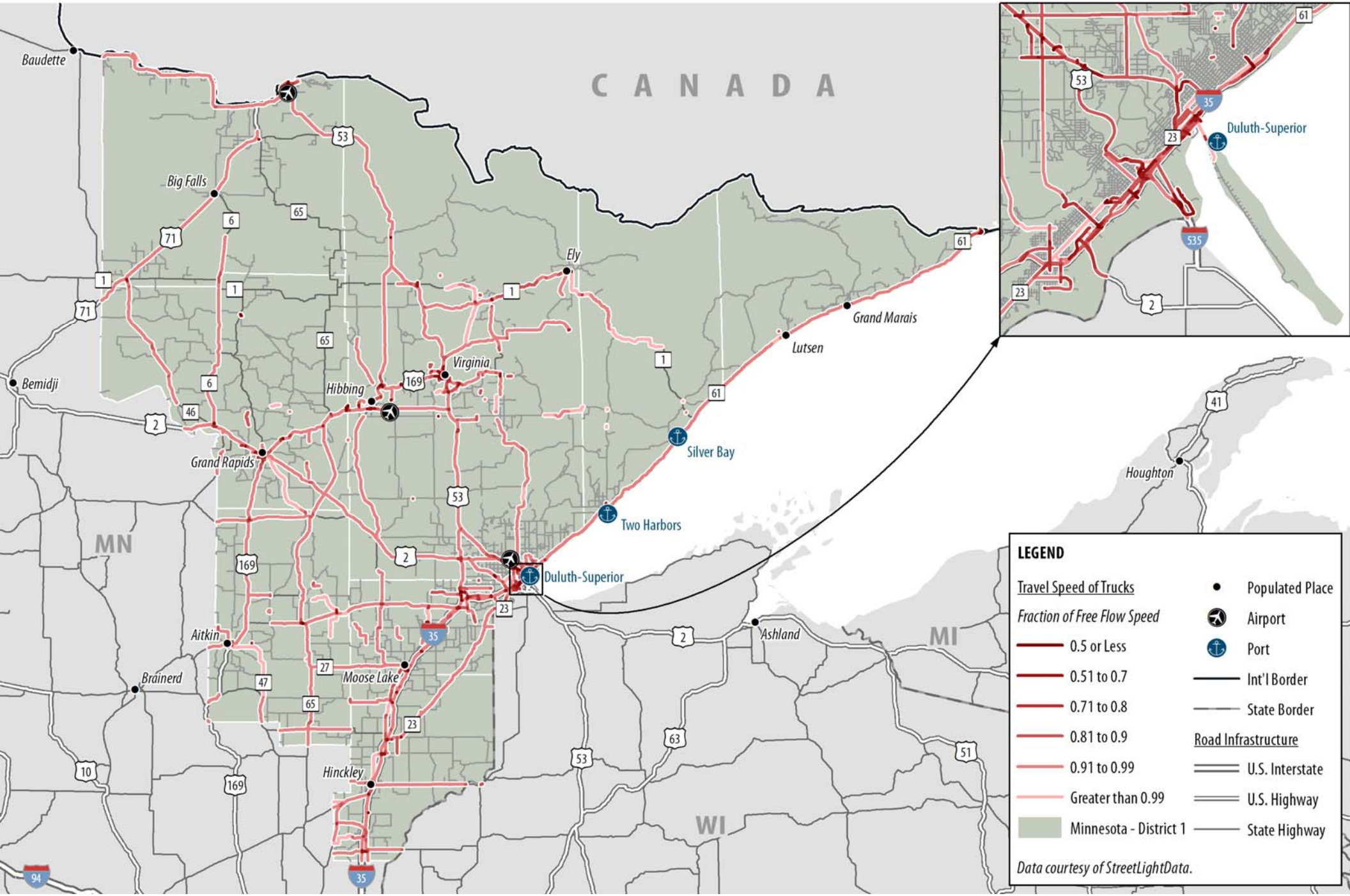
# Peak Hours Congestion (Heavy Trucks)

## MnDOT District 1 Freight Plan



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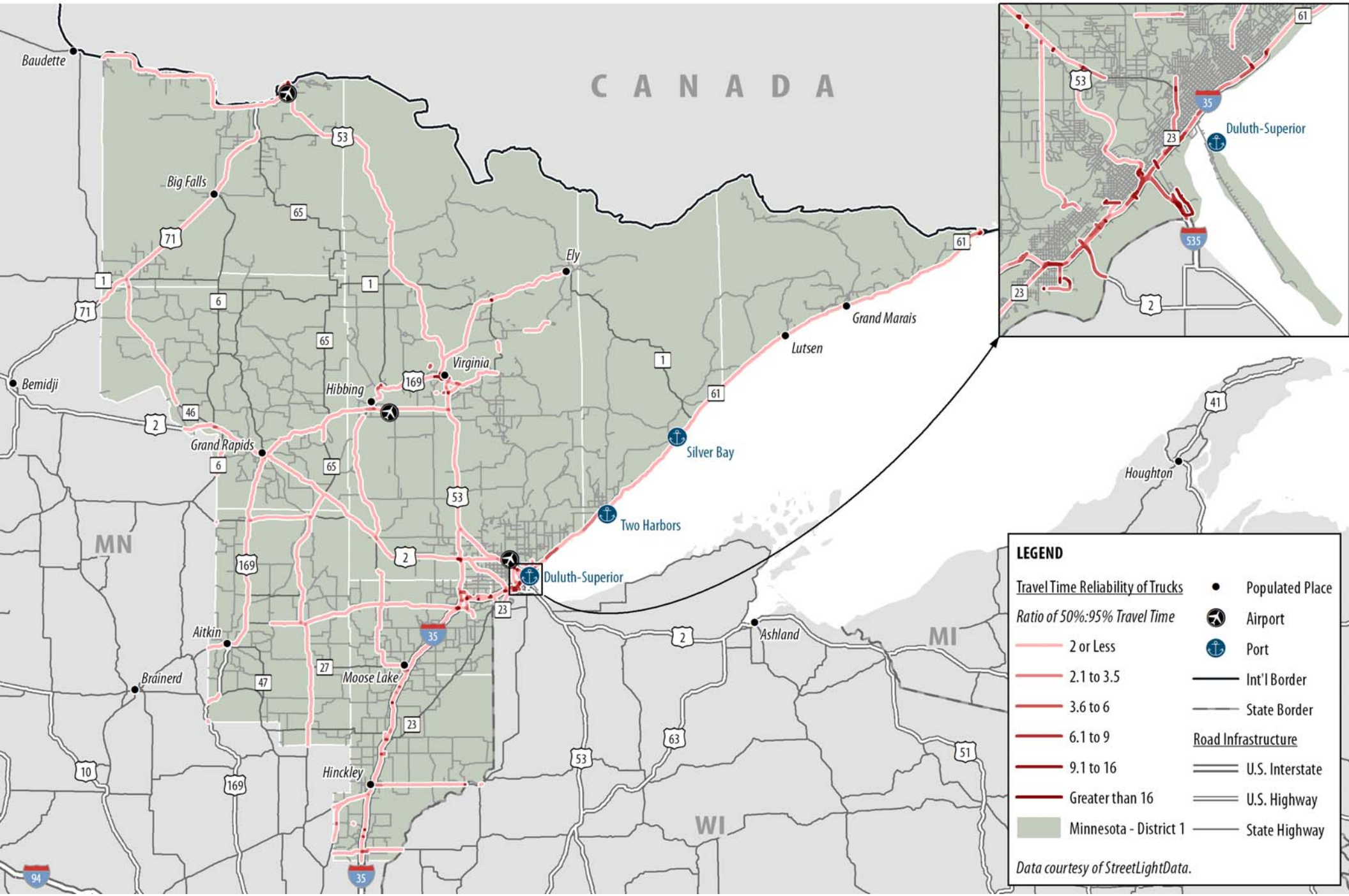
# Peak Hours Travel Time Reliability (Heavy Trucks)

## MnDOT District 1 Freight Plan



*Commercial Vehicle Crashes*

Figure 4 shows the distribution and severity of truck crashes in District 1 in 2016 and 2017. Generally speaking, commercial vehicle crashes are concentrated around two things: **Population centers**, such as Duluth, Grand Rapids, and the Range Cities, and **Major highways**, including I-35, US-2, US-53, and US-169.

A common theme between these population centers and major highways is that they both have high overall traffic volumes and truck traffic volumes relative to the region as a whole. The concentration in crashes in these areas is unsurprising, as traffic numbers rise, so does the potential for traffic incidents. Another common theme is the occurrence of crashes near roadway intersections, where the potential for incidents is increased by the presence of stopping, turning, cross-cutting and accelerating traffic.

Interesting, the severity of crashes does not follow the same pattern as the distribution of overall crashes, and severe injury and fatal crashes appear to be distributed more "randomly" across the District. This phenomenon is noted in MnDOT's District Safety Plans, as a statewide analysis found that approximately 10 percent of severe crashes occur at high-crash locations. For example: three of the District's six fatal crashes occurred on lesser-used county highways, and four of the six fatal crashes occurred in areas where no other crashes were observed. This seemingly-random distribution of fatal and serious injury crashes throughout the region, and throughout the state means that basing safety-related investments on crash occurrences alone might result in sub-optimal investment decisions, as planners could often be "chasing crashes" around the network.

Crashes can be caused by a wide range of factors, many of which (such as weather, time of day, driver behavior, vehicle maintenance) are largely outside of the DOT's control. However, the DOT can strongly influence a particular factor: the design of infrastructure. In response to the apparent "randomness" of crashes and the fact that it can control infrastructure design, MnDOT has adopted a risk factor-based approach to examining and investing in safety improvements. This risk-based approach is intended to be a supplement to more traditional historic high-crash analysis. Figure 5 depicts commercial vehicle crash locations, as well as higher-risk highway segments.

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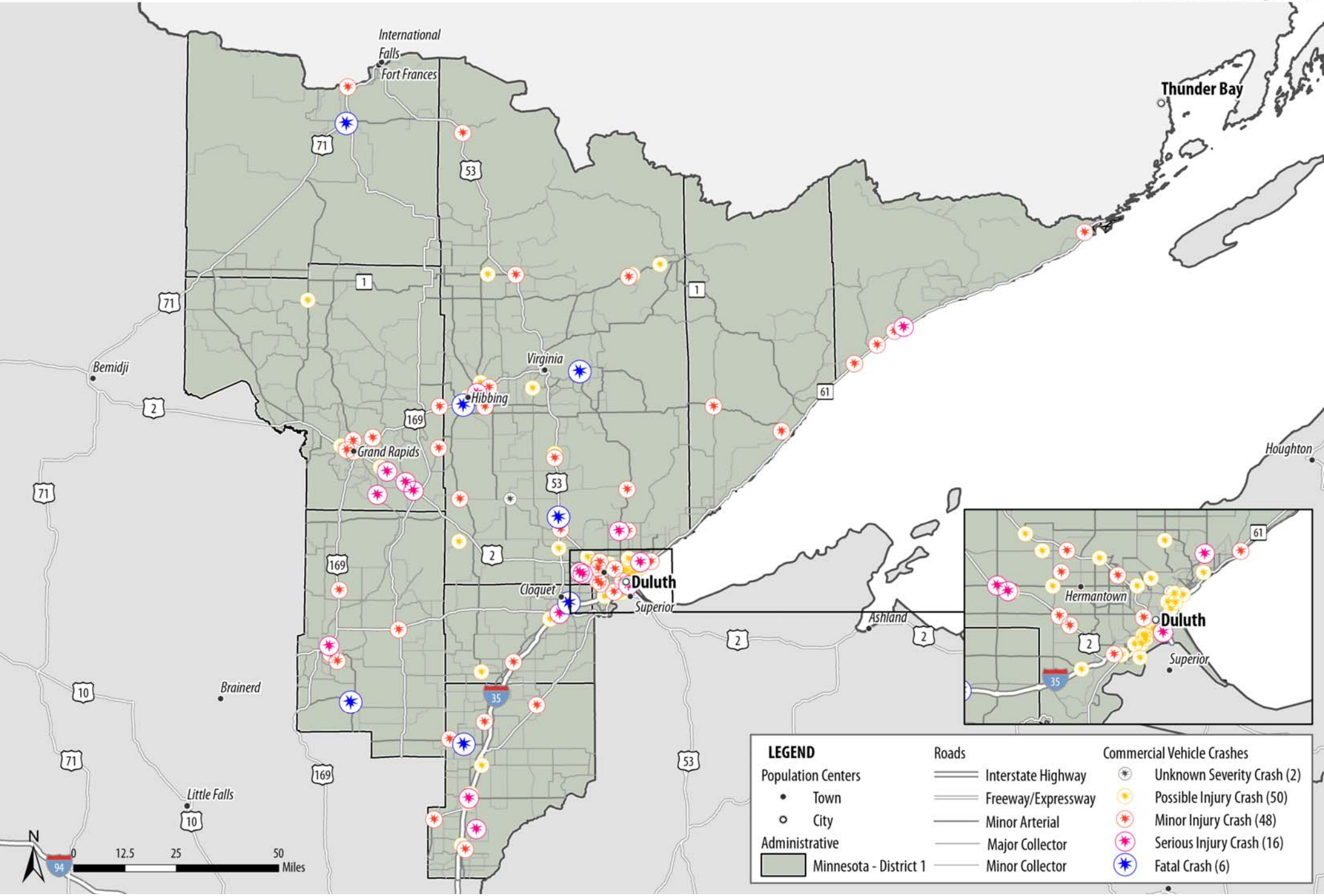
# Road Crash Locations, By Severity (2016 - 2017)

MnDOT District 1 Freight Plan



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# High Risk Road Segments (Top 20)

## MnDOT District 1 Freight Plan