



m DEPARTMENT OF
TRANSPORTATION

District 8 Freight Plan

December, 2020

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Front Cover Image: Trucks queuing at Minnesota grain elevator Source: istock

Back Cover Image: District 8 ethanol plant Source: Erika Witzke

Chapter 1: Where Are We Going?

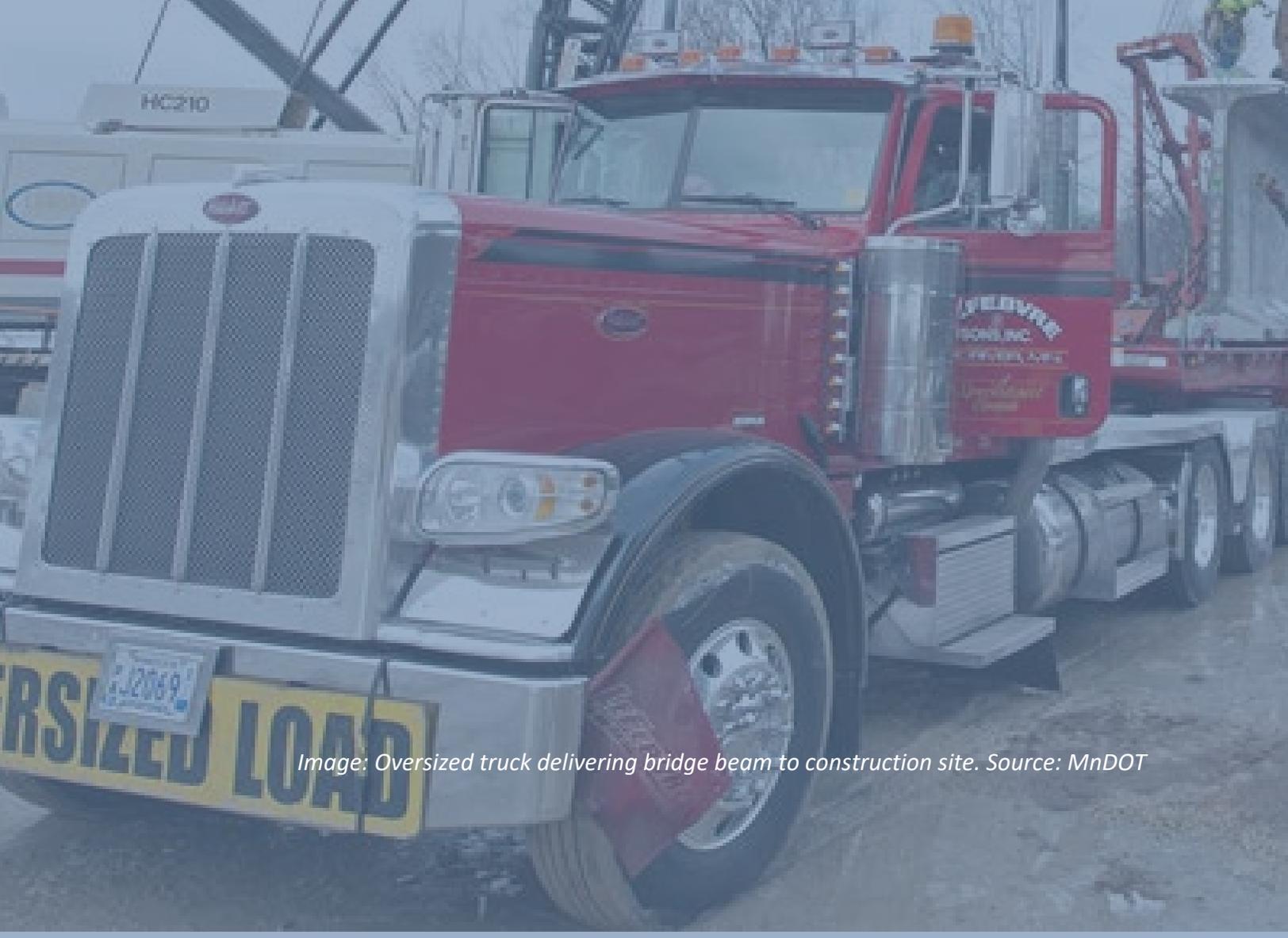


Image: Oversized truck delivering bridge beam to construction site. Source: MnDOT

Chapter 1: Vision for the Future

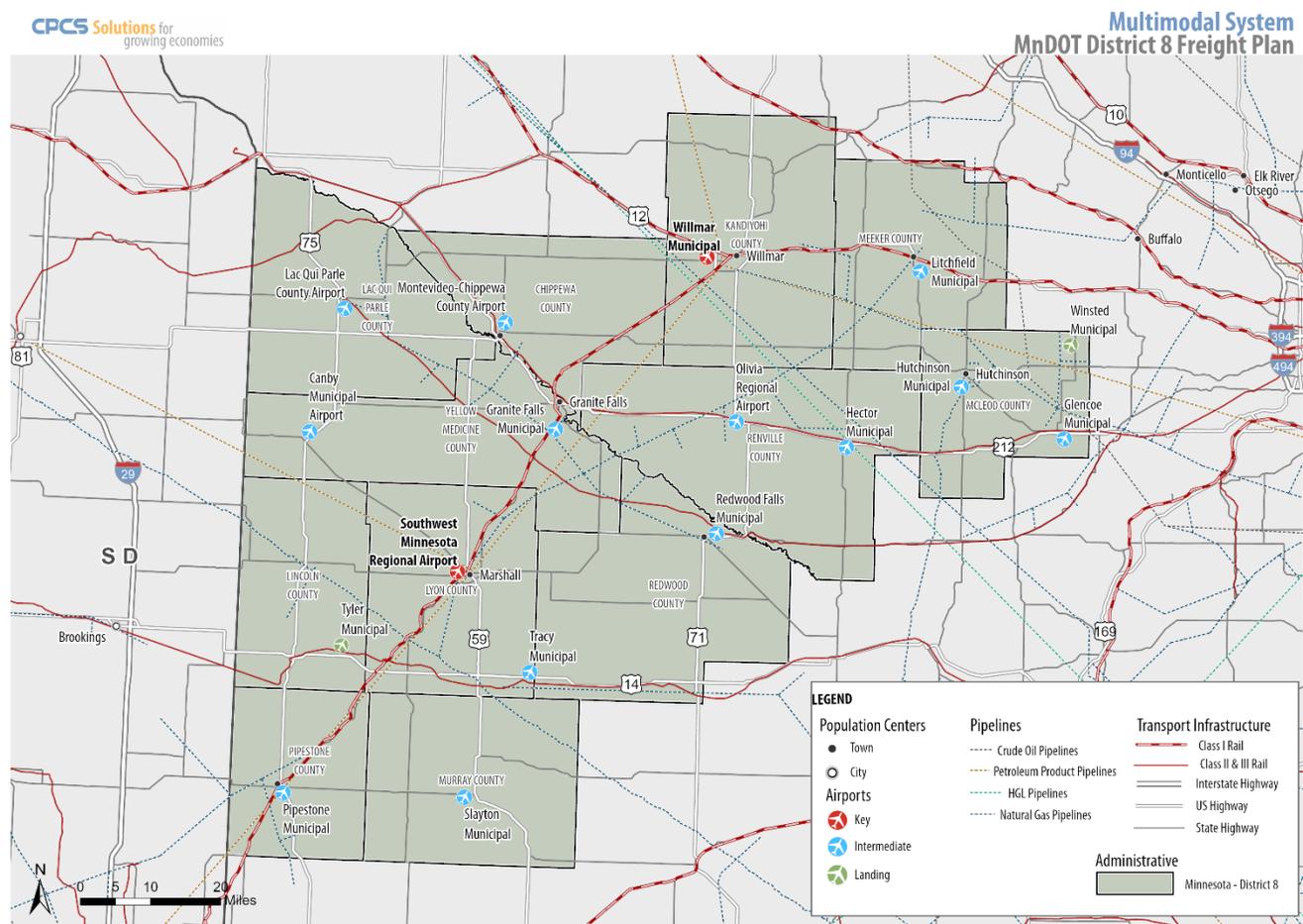
About the District 8 Freight Plan

The Minnesota Department of Transportation’s (MnDOT) District 8 Freight Plan has been developed to provide a clear understanding of District 8’s multimodal freight system, how this system is connected to the District’s economy, and what the transportation needs and issues of the District’s industries are. This understanding will assist MnDOT in making well-informed policy and programming decisions in District 8.

The MnDOT District 8 is made up of 12 counties: Chippewa, Kandiyohi, Lac qui Parle, Lincoln, Lyon, McLeod, Meeker, Murray, Pipestone, Redwood, Renville, and Yellow Medicine. Together, these 12 counties make up about 10.4 percent of Minnesota’s land area, and hold about 3.2 percent of its population.

Figure 1 illustrates the extent of the District’s freight network and connections to neighboring regions.

Figure 1: District 8’s Multimodal Freight Network



Source: CPCS Transcom Inc.

In order for MnDOT and its partners to provide a transportation system that attracts new businesses while enabling existing ones to maintain and grow their presence in the region, it is essential that MnDOT and its local partners have access to recent, relevant, and easily-updated data and tools that provide insights into the Districts' key industries.

The District 8 Freight Plan will provide information and guidance so MnDOT's policy and programming decisions can be better informed in the District.

In addition to informing planning, investment and operations at the District level, findings from the District 8 Freight Plan will help inform the next Minnesota Statewide Freight System and Investment Plan.

Relationship to Other State and District Plans

To aid in management, maintenance, and development of the transportation system, MnDOT creates plans individually for each mode, as well as together for the multimodal system as a whole. In particular, the Minnesota GO plan provides a vision for the Statewide Multimodal Transportation Plan, which is Minnesota's highest-level policy plan for transportation. More specific plans, such as Minnesota Statewide Freight System and Investment Plan (State Freight Plan) or State Rail Plan are oriented toward the vision and goals set forth in Minnesota GO and the Statewide Multimodal Transportation Plan.

Therefore, some of MnDOT's previous plans and studies were used to provide guidance for the development of the District 8 Freight Plan. In particular, the State Freight Plan provided a guiding framework for the evaluation of needs and issues and the creation of recommendations, and the statewide freight vision (policy) and goals were applied at the District level to ensure that the District assessment was in sync with statewide guidance. Figure 2 shows the process used to develop the District 8 Freight Plan, which ensured that District 8's freight recommendations were linked to overarching state-level guidance.

Figure 2: "Connecting the Dots" between Statewide Guidance and District 8 Freight Plan Recommendations



Source: CPCS Transcom Inc.

The State Freight Plan statewide freight vision is to:

Provide an integrated system of freight transportation in Minnesota – highway, rail, water, air cargo, and intermodal terminals –that offers safe, reliable and competitive access to statewide, national and international markets.

The State Freight Plan also identified five goals to reflect those aspects of the multimodal freight system that are most important to the public and private sector freight stakeholders in the state. These goal areas remain the focus for the District 8 Freight Plan:

- Support Minnesota’s Economy
- Improve Minnesota’s Mobility
- Preserve Minnesota’s Infrastructure
- Safeguard Minnesotans
- Protect Minnesota’s Environment and Communities

District 8 Freight Plan Development and Data Sources

The District 8 Freight Plan was developed using five main sources of information. A comprehensive stakeholder engagement process was conducted to ensure every voice was heard during Freight Plan development, including public and private sector freight system interests.



Advisory Committee and Technical Team Meetings: The Advisory Committee was comprised of public and private system stakeholders, and was created to provide “big picture” guidance in the development of the District 8 Freight Plan. The Technical Team was smaller, made up of agency and partner organization staff, and provided guidance on how the plan will be used to inform investment decisions. Appendix A lists the membership of these two groups. Meetings with both groups were conducted in June, September, and December 2019, and June 2020.



Stakeholder Consultations: 27 phone and in-person consultations with private and public freight stakeholders were conducted between May and November 2019. The results of these consultations were synthesized with other findings on needs and issues.



Online Survey: The project team created and distributed two online surveys to supplement meetings and consultations. One survey was tailored for Advisory Committee members who were unable to attend meetings, and a second was created to solicit feedback from the general public and freight community at large.



Analysis of Data: Evaluations of safety, mobility, and condition were completed using data provided by MnDOT. Examples of data sources include historic road accident data, road crash risk assessments, railroad grade crossing risk assessments, vehicle counts, and vehicle speed data.



Previous Studies and Plans: In addition to providing guidance for planning processes, previous plans and studies were reviewed to collect qualitative and quantitative information specific or relevant to District 8. An in-depth review and synthesis of needs and issues identified in previous plans and studies was conducted. A particularly important study was the 2014 *Manufacturers' Perspectives Study*, for which MnDOT staff conducted their own in-depth stakeholder consultations. Appendix B provides a list of the additional plans that were used to provide input for the District 8 Freight Plan.



Open Houses: Feedback from public and private stakeholders were collected during an online open house held in October 2020..

Additional Resources

The development of this final report was supported by the creation of six intermediate Working Papers, which provide a greater level of detail on District 8's freight assets, needs and issues, project prioritization, project feasibility, and other analyses. These Working Papers include:

- Working Paper 1: Communications Plan
- Working Paper 2: Existing Document and Process Synthesis
- Working Paper 3: Freight System Profile – Economy, Inventory, Demand, and Performance
- Working Paper 4: Freight System Needs, Issues and Opportunities
- Working Paper 5: Investment Priorities
- Working Paper 6: Pre-Feasibility Assessment

These Working Papers can be found on MnDOT's District 8 Freight Plan web site, at:

<https://www.dot.state.mn.us/ofrw/freight/districtfreightplan/d8.html>

Chapter 2: Where Are We Now?



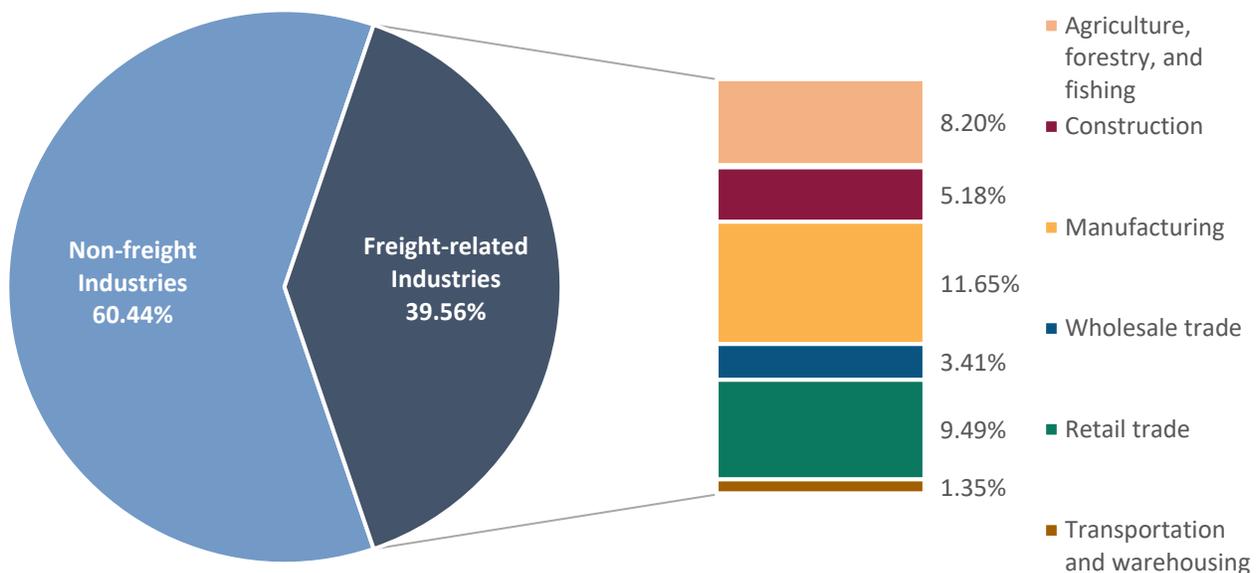
Image: District 8 processing facility Source: Erika Witzke

Chapter 2: Existing System Conditions

The Importance of Freight to District 8

District 8’s economy is heavily supported by industries that rely on the transportation of physical goods to support their operations. These “freight related” businesses employ nearly 40 percent of the District’s workforce. In particular, agriculture and manufacturing stand out as important freight-related industries in District 8. An aging and shrinking population and workforce are trends that could potentially affect the District’s economy and transportation system in the future, as employees may be increasingly difficult to find.

Figure 3: District 8’s Freight-Reliant Industry Employment



Source: CPCS analysis of Bureau of Economic Analysis data. 2019.

District 8 Freight-Related Industry Locations

Figure 4 highlights the location freight-related businesses with more than 20 employees in District 8. Most of these businesses are congregated close to railroads (especially in Willmar and Marshall), as well as major highways such as US-212 and MN-23. The majority of shuttle loaders, ethanol manufacturing plants, and feed product origins are located next to BNSF’s Marshall Subdivision which runs across the District.

Construction businesses are primarily clustered in McLeod, Redwood, and Kandiyohi Counties while some industry concentration also exists in Montevideo (Chippewa County) and Litchfield (Meeker County).

Freight-Related Industry Transportation Requirements

Shippers have a range of modal options to consider when moving freight, including trucks, railroads, air freight, and barge or ship service. However, the true range of choices is limited by the availability of access to each of these modes, as well as the characteristics of the cargo being moved. In particular, the value per ton of the cargo plays an important role: shipping costs can make up a larger share of the overall cost of low-value cargoes, while higher-value cargoes can “absorb” a greater transportation cost. Therefore, shippers of low-value, bulk cargoes may place a higher emphasis on transportation cost. In addition to shipping cost, additional shipping considerations that influence modal choices include shipping speed, and reliability of shipping service.

Each mode of transportation has its own set of characteristics, and together, modes make up a “spectrum” of service. In addition to these modes, select liquid or gas commodities may be moved by pipelines.



Maritime transportation (such as barge service) is best suited for the long-distance movement of bulk low-volume goods. These can include raw materials such as grain, oil, chemicals, and aggregates. Maritime can also be suitable for long-distance movement of higher-value manufactured goods when fast service is not required.



Railroad shipping has a similar service profile to maritime shipping: it is capable of moving large volumes of lower-value goods effectively, and common loads include grain, aggregates, forest products, and oil. Additionally, higher-speed rail service (such as intermodal container service) for higher-value goods is available in select areas.



Trucking is important because road connections may be the only immediate modal connections that many establishments have. Therefore, trucking is often a key element in the first- and last-mile movement of goods. However, trucking costs are higher and capacity is lower relative to rail. Therefore, trucking can only move lower-value goods short distances for transloading to other modes. However, truck service is a viable and common option for moving moderate- and higher-value goods longer distances in shorter periods of time.

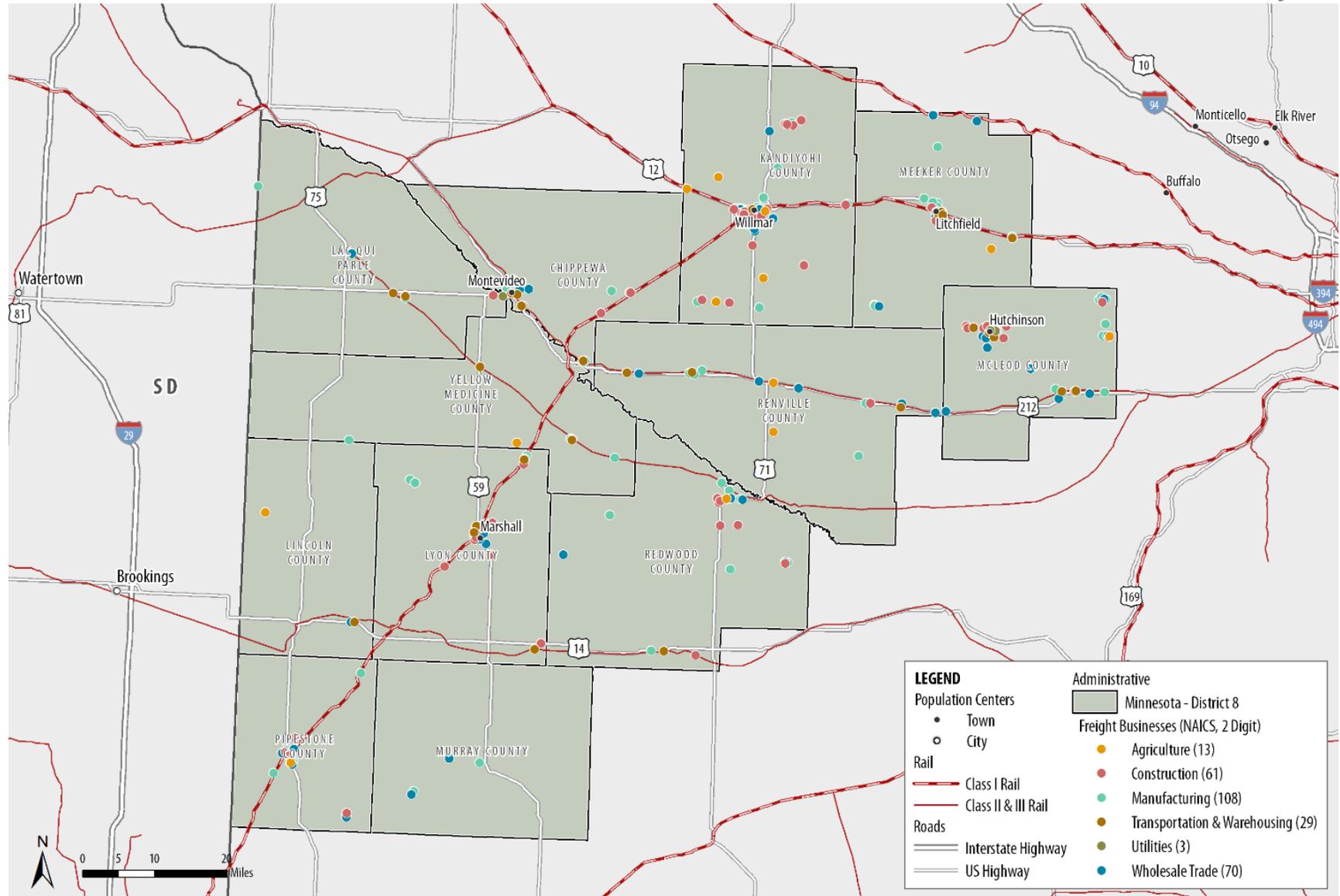


Air freight is the most expensive modal choice, on a ton-per-mile basis, and is generally only used for high-value, low-volume, time-sensitive goods, such as pharmaceuticals, electronic components, and parcel service.

Freight shippers must balance shipping costs against faster or more reliable service.

An example of modal considerations can be seen in District 8’s agricultural and food industries. Grain produced in the district has a relatively low value per ton, so it is trucked from fields to grain elevators, where it can be loaded onto rail for more cost-effective long-distance shipping.

Figure 4: District 8 Freight-Related Business Clusters



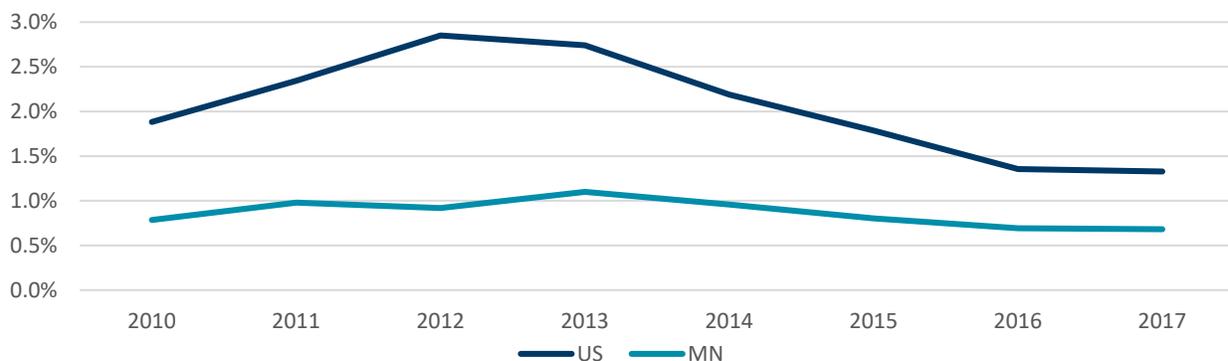
Source: CPCS Transcom Inc. analysis of Reference USA Data 2018

Agriculture

Minnesota is ranked as fifth among all US states in terms of total agricultural production. 26 percent of the cash receipts in the state’s agricultural market are associated with corn, and 21 percent with soybeans production.¹ Although county-level GDP-by-industry data is not available, the majority of the corn and soybeans farms in the state are congregated in central, southern, and western counties. Corn and soybean production and processing businesses are distributed among all counties in District 8.

As Figure 5 shows, the agricultural industry became increasingly important for the state’s economy between 2010 and 2013. However, the industry has seen a steady decline in contribution to GDP and is expected to continue this trend.² The majority of this decline can be linked to the decline in the average corn yields both in Minnesota and across the country. Minnesota’s cornfields in the south and west (including District 8 Counties) have seen a significant drop in yields primarily due to severe rain.

Figure 5: Agriculture Industry Share of GDP (2010-2017)



Source: BEA GDP Data 2010-2017.

Minnesota is ranked first in sugarbeet, second in corn, and third in soybean production across the nation.³ Agriculture is a major industry in District 8 with corn, soybeans, and sugarbeets as the top three crops. The following map shows the concentration of farmlands across District 8. As Figure 7 shows, while corn and soybeans farms are almost uniformly distributed across the District, sugarbeet production is concentrated in Chippewa, Kandiyohi, Redwood, and Renville counties.

Manufacturing

Manufacturing is the most competitive freight-related industry in District 8. Activities within the manufacturing industry can be broken into Local Clusters (firms that trade internally with other businesses in the region) and Traded Clusters (firms that trade with businesses outside the region).

District 8’s manufacturing firms tend to be engaged in traded clusters, bringing trade into the region from other states and other countries. And a “shift share” analysis showed that Minnesota’s GDP is more reliant on the manufacturing industry than the US as a whole. Figure 6 shows that Minnesota’s manufacturing industry is slightly more represented by durable goods compared to the rest of the country.

¹ “Minnesota Agricultural Profile”, Minnesota Department of Agriculture (2017).

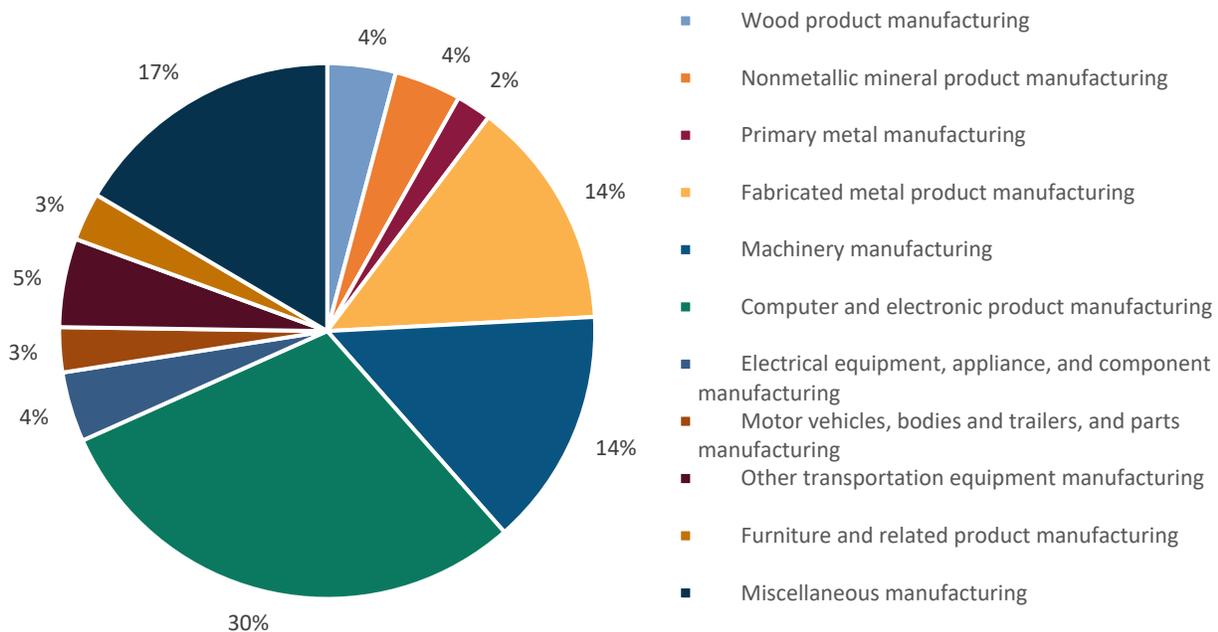
<https://minnesota.agclassroom.org/educator/materials/profile.pdf>

² USDA Crop Production Report 2018-19. <https://www.usda.gov/topics/farming/crop-production>

³ USDA Crop Production Report 2018-19. <https://www.usda.gov/topics/farming/crop-production>

Minnesota’s manufacturing share of GDP has remained relatively steady between 14.0 and 15.0 percent between 2010 and 2017, while the US’ manufacturing share of GDP represents between 11.15 and 12.0 percent of GDP.

Figure 6: Breakdown of Nondurable Goods Manufacturing Industries in Minnesota – 2017



Source: BEA GDP Data, chained to 2009 dollars, 2010-2017.

Figure 8 provides a map of the distribution of manufacturers across the District, and shows where employment in manufacturing is concentrated. Chippewa, Kandiyohi, Meeker, McLeod, and Renville counties stand out as particularly important centers for manufacturing employment, with towns such as Montevideo, Willmar, Litchfield, and Hutchinson hosting the most concentrations of manufacturing jobs.

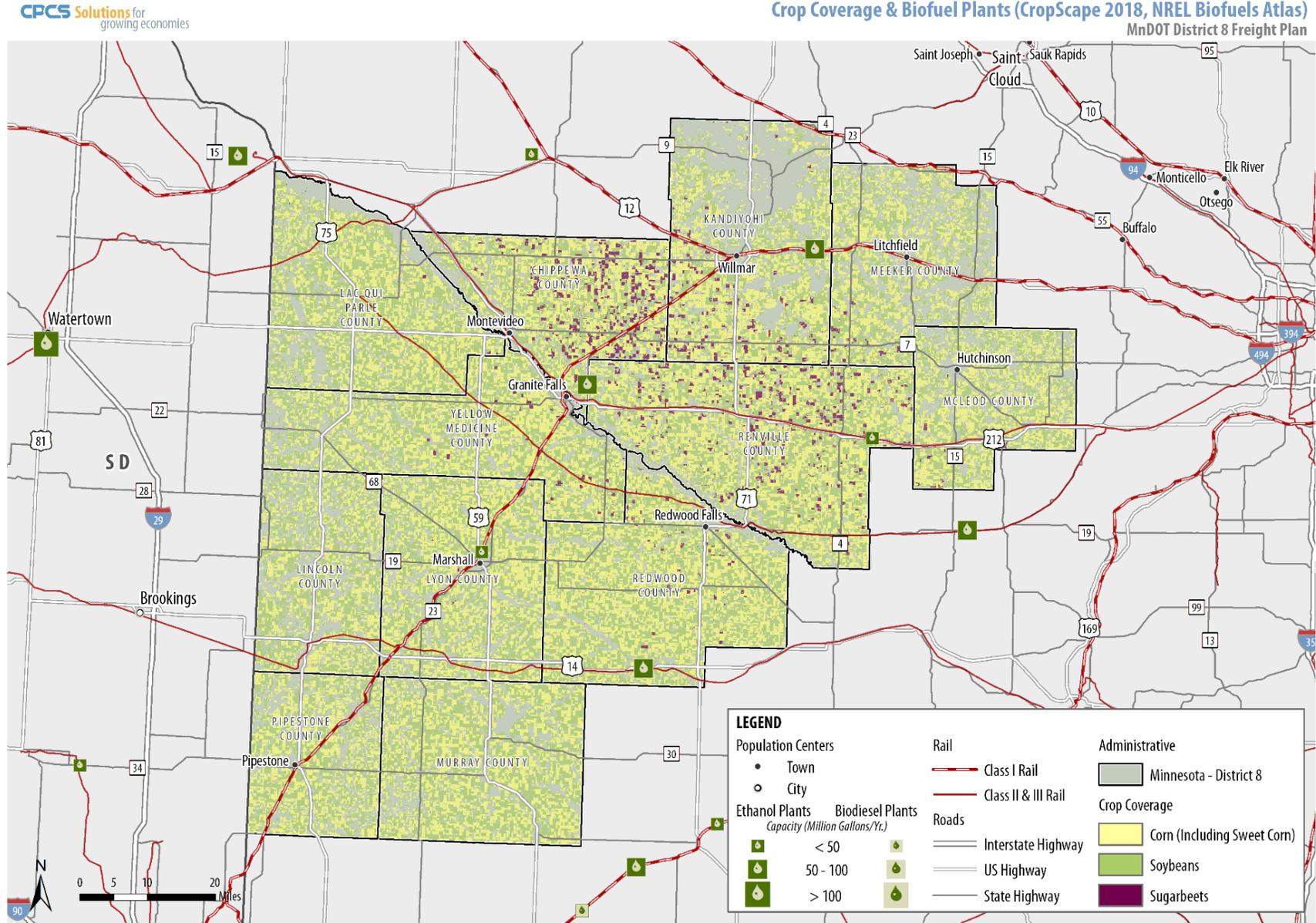
The manufacturing industry’s freight needs are varied due to the wide variety of products. In general, manufacturing businesses are clustered in close proximity to major highways such as Highway 212 and Highway 12, as well as BNSF’s Marshall Subdivision stations.

Wind Component Manufacturing

Wind power generation in Minnesota started in 2000, offering around 897,000 megawatt hour (MWh) capacity, which increased by more than 12 times to 11,346,000 MWh by the end of 2018. In 2018, nearly 18 percent of the total electricity generation in the state was from wind turbines.

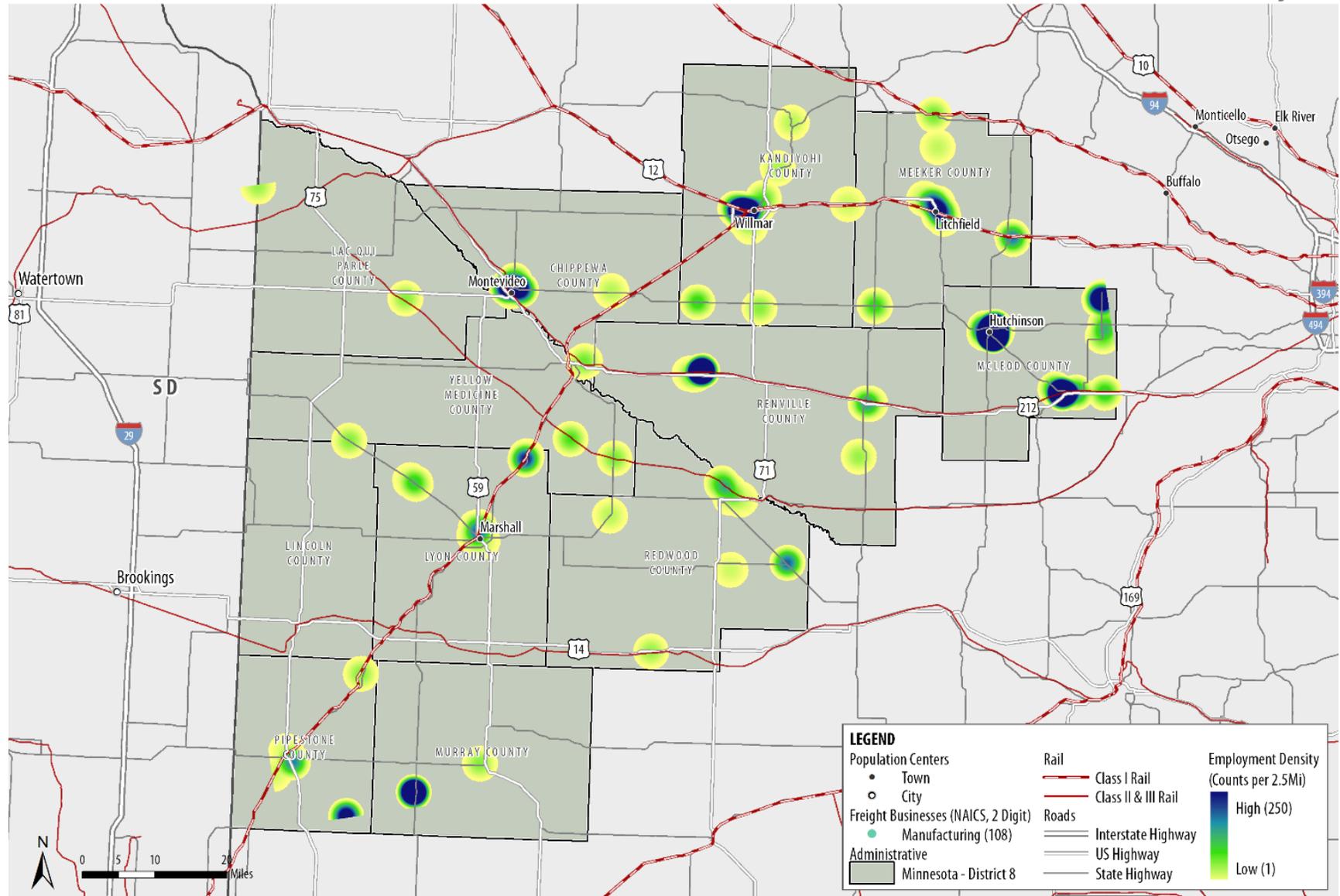
Wind turbines are typically installed in plains and hills that offer a desirable annual average speed of the wind to turn the blades. As Figure 9 shows, the majority of counties in the south and west of Minnesota provide ideal conditions for wind farms. However, the state’s wind turbine manufacturing facilities are currently located in St. Cloud and Minneapolis. Also, the Port of Duluth and Wisconsin are important points of entry for wind turbine parts imported from other states or countries.

Figure 7: District 8 Crop Production Locations and Biofuel Production Plants



Source: National Agricultural Statistics Service data of 2018 and the Biofuel Atlas, accessed 2019.

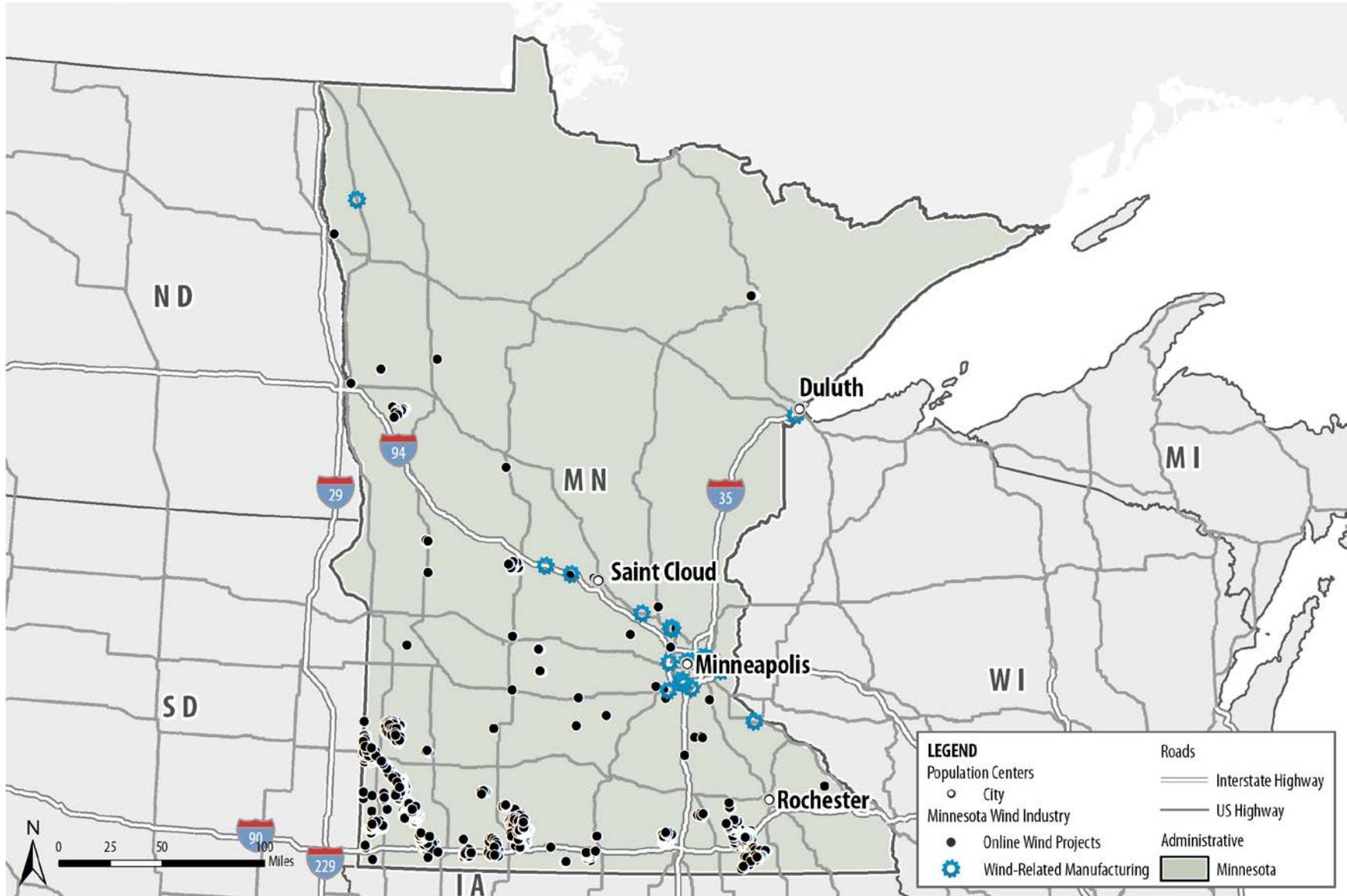
Figure 8: District 8 Manufacturing Establishment Locations and Employment Density



Source: CPCS Transcom Inc. analysis of Reference USA Data

Figure 9: Wind Turbine Capacity and Part Production Factories in Minnesota

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Source: CPCS Transcom Inc. analysis of US Wind Turbine Database, 2019.

District 8’s Multimodal Freight System

District 8 covers 12 counties in West Central and Southwestern Minnesota, and together these counties hold nearly 10 percent of Minnesota’s total land area and approximately 5 percent of the population. Some of the major cities and towns in the District include Hutchinson, Marshall, and Willmar, all of which are involved in the manufacturing and shipping of agricultural goods and heavy machinery.

In order for District 8 to remain economically prosperous, it is important for transportation systems to be well-aligned and work in conjunction with one another in order to continue to provide key freight services to the District.

Some of the key regional corridors include MN-23, US-212, and US-12, which provide access to larger metropolitan areas such as the Twin Cities and St. Cloud, key interstates (i.e. I-35, I-494), and other modes of transport not present in the District itself (i.e. marine transport via the Great Lakes or inland river system). The Burlington Northern Santa Fe Railway (BNSF) is the most extensive Class I rail operator within the District, though there are a number of short line railroads, as well as the Canadian Pacific Railway that are vital in serving District 8. Another key component of the District’s freight system is a system of shuttle terminals, which facilitate in the movement of grain across modes. These shuttle terminals are important because grain is the largest commodity produced in the District, and is a key part of the region’s economy. In District 8 alone, there are thirteen grain shuttle terminals, with the remainder of the state’s shuttle terminals heavily located in the West Central and Southwestern regions of Minnesota. Figure 10 shows the District’s freight transportation assets, and their connections to nearby regions.

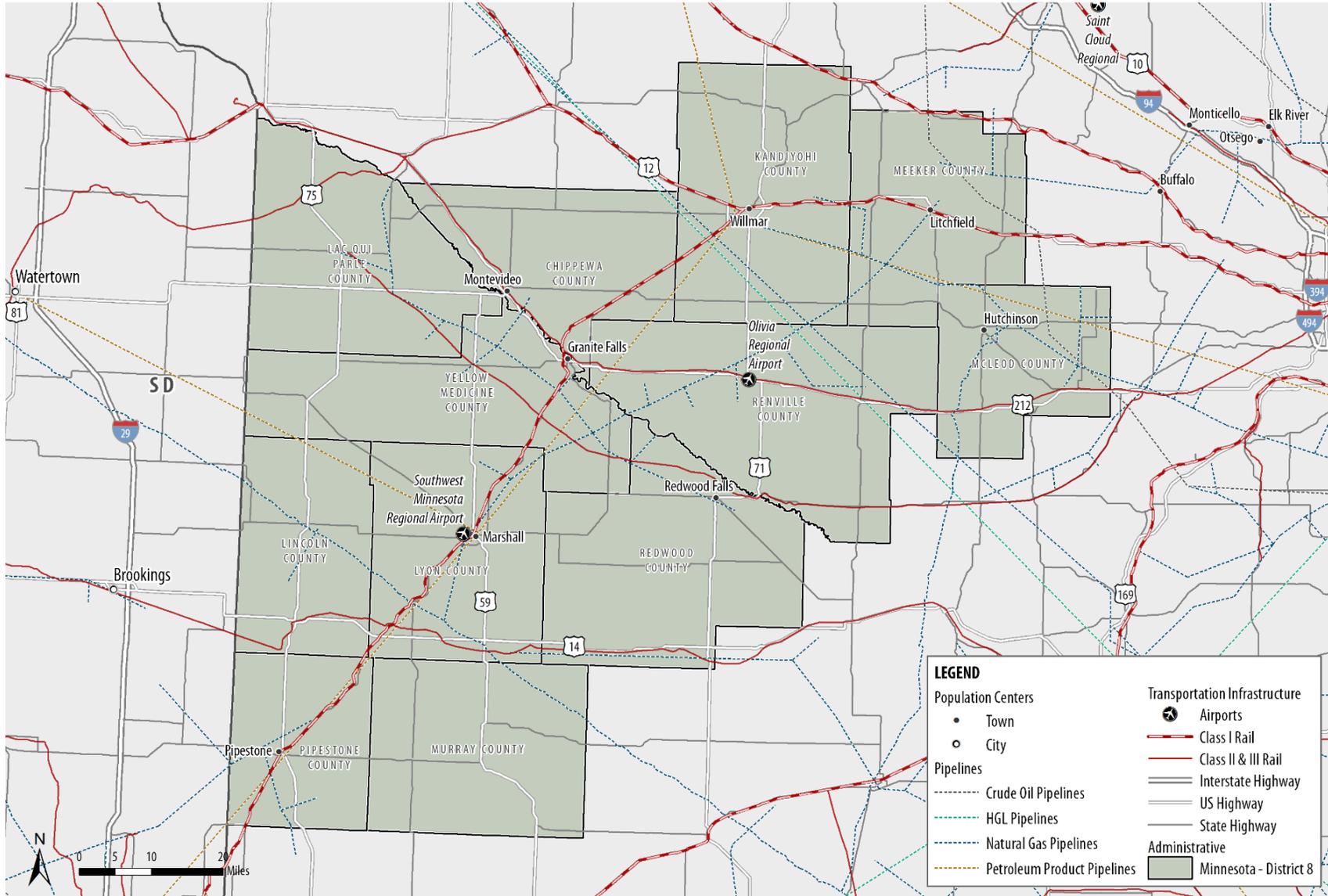
0	1,416	580	353	17	858
Miles of Interstate	Miles of US and State Highways	Miles of Rail	Bridges	Public Airports	Miles of Pipelines

Roadways

The District's road network consists of a variety of road types, including US highways, state highways, and county roads. However, unlike most other Districts, District 8 lacks interstate highway mileage. The road network plays an important role because it provides direct connections not only to rail within the District and to all of the District’s businesses, but also to other modal systems located beyond District boundaries. Figure 10 provides a visual overview of the routes within the system and Figure 11 lists the mileages of some elements of the District’s roads.

Due to the absence of interstate highway in the District, there is a strong reliance on US and state highways to provide connections to much of the District. County roads also play an important role in the region.

Figure 10: The District 8 Multimodal Freight Transportation System



Source: CPCS Transcom Inc. analysis of National Transportation Atlas Database

Figure 11: District 8 Road System Mileages

	District 8	Minnesota
Interstate	0	912
US Highway	544	3,294
State Highway	846	7,080

Source: CPCS Transcom Inc. analysis of FHWA Data

District 8’s commodity profile from the State Freight Plan provides insight into the unique qualities of the District’s transportation system. Specific differences between District 8 and Statewide commodities include:

- **Cereal Grains** made up a larger portion of District 8’s truck tonnage (41 percent) than the share within all of Minnesota (27 percent). This is likely due to the high levels of agricultural activity within the District relative to the entirety of the State.
- **Animal Feed** made up 13 percent of District 8’s truck tonnage, but only 7 percent of Minnesota’s truck tonnage. Again, this difference likely reflects the fact that District 8 is heavily involved in agricultural activity and various crop production.
- **Gravel** makes up 9 percent of Minnesota’s truck tonnage, but only 4 percent of District 8’s. The minimal aggregate activity occurring by truck within the District is likely due to the expense attached to trucking gravel great distances in combination with the remoteness and minimal population growth of the District.
- **Non-metal Mineral Products** made up 7 percent of Minnesota’s truck tonnage, but 0 percent was identified in District 8.

The FHWA’s projections anticipate a 56 percent increase in the cereal grain tonnage, 104 percent increase in animal feed tonnage, 153 percent increase in agricultural products tonnage, and 21 percent increase in gravel tonnage carried via trucks by 2040.⁴ Excluding the “All Others” commodity category, these commodities are the top four types of goods moving on District 8’s road network. It is likely that truck tonnages in this District will increase in the future, although they may do so at a rate slower than Minnesota as a whole, given District 8’s historically flat population growth.

It is likely that truck tonnages in District 8’s will increase in the future, although their growth may be slower than Minnesota’s overall truck tonnages due to slow population growth.

⁴ MnDOT “Statewide Freight System Plan” (2016). <https://www.dot.state.mn.us/planning/freightplan/pdf/mn-statewide-freight-system-plan.pdf>

Figure 12: District 8’s Major Commodities by Total Truck Tonnage, 2012

Commodity	Tonnage	Percent	Percent (%) Originating in D8
Cereal Grains	25,181,939	41%	51%
Animal Feed	7,916,521	13%	43%
Other Agricultural Products	4,027,701	6%	51%
Gravel	2,210,740	4%	26%
Gasoline	2,156,431	3%	50%
Waste/Scrap	2,146,823	3%	66%
Other Foodstuffs	2,090,693	3%	63%
Motorized Vehicles	1,845,853	3%	84%
Coal – not elsewhere classified	1,838,020	3%	58%
Base Metals	1,646,764	3%	73%
All Others	11,010,578	18%	52%

Source: MnDOT Statewide Freight System Plan Technical Memo 3.

Key Corridors and Facilities

Because interstates are non-existent within the District, trucking activity is reliant on US Highways and State Routes, primarily US-12, US-212, and MN-23. These corridors are important because they support freight movement between densely populated areas both inside and outside the District.

Figure 13 provides an overview of truck-specific traffic volumes in the region and help to show which routes are most important based on volume. In particular, the figure shows how the road network and truck traffic is anchored to the Northeast portion of the District. MN-23 acts as a key artery in connecting the District to the surrounding Interstates, and US-212 provides a link to the Twin Cities. US-14, US-71, and US-75 also provide links to other sections of the District, though volumes carried along these corridors are relatively lower.

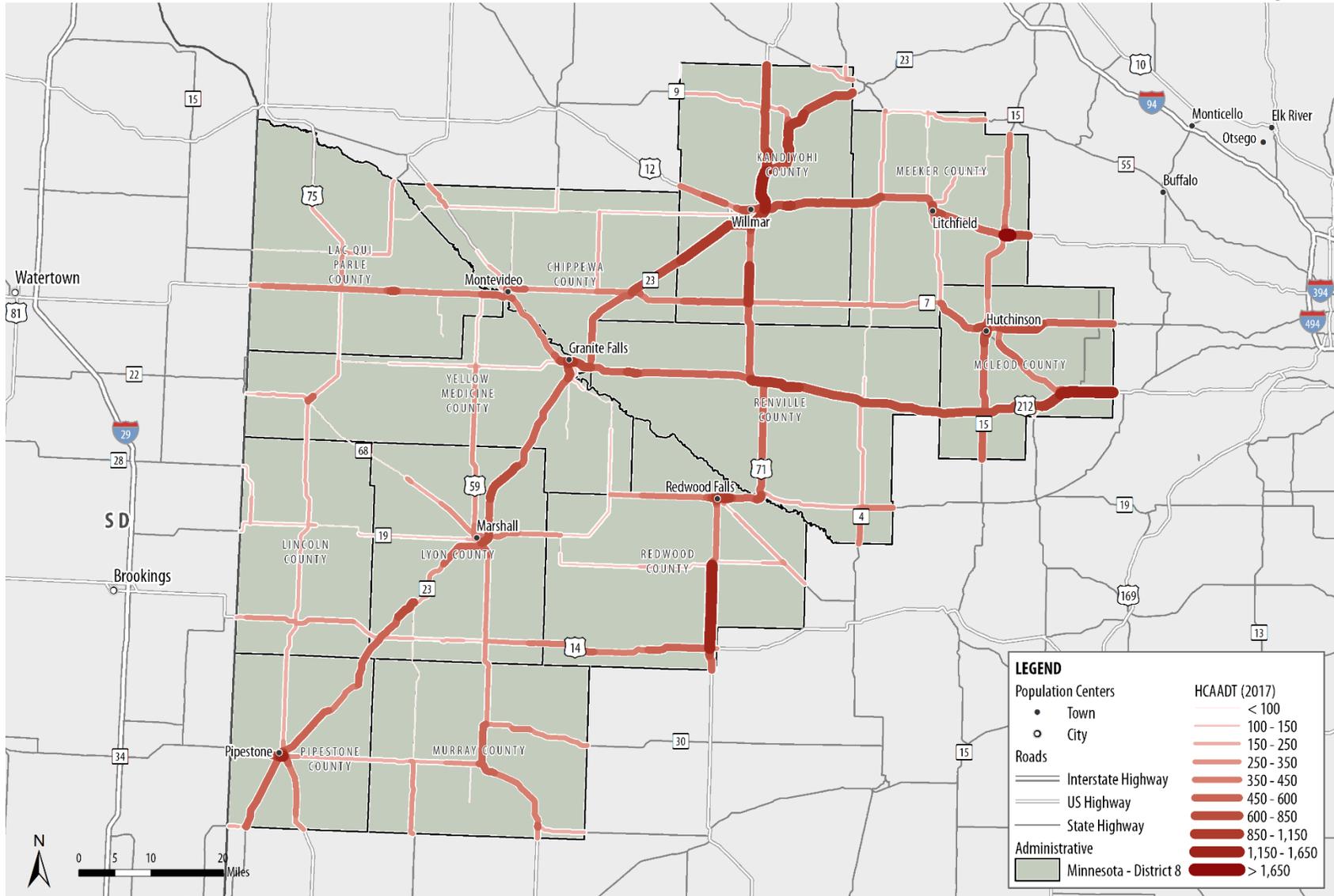
Information on common origins and destinations of truck trips in District 8 was derived from vehicle

tracking data and is shown in Figure 14 and Figure 15. Based on analysis of the figures, some key points emerge:

- The majority of tracked truck trips start and end entirely within District 8.
- Trip origins are strongly concentrated on manufacturing centers.
- Trip destinations are also focused on major manufacturing centers, but also include major grain elevators and agricultural facilities.

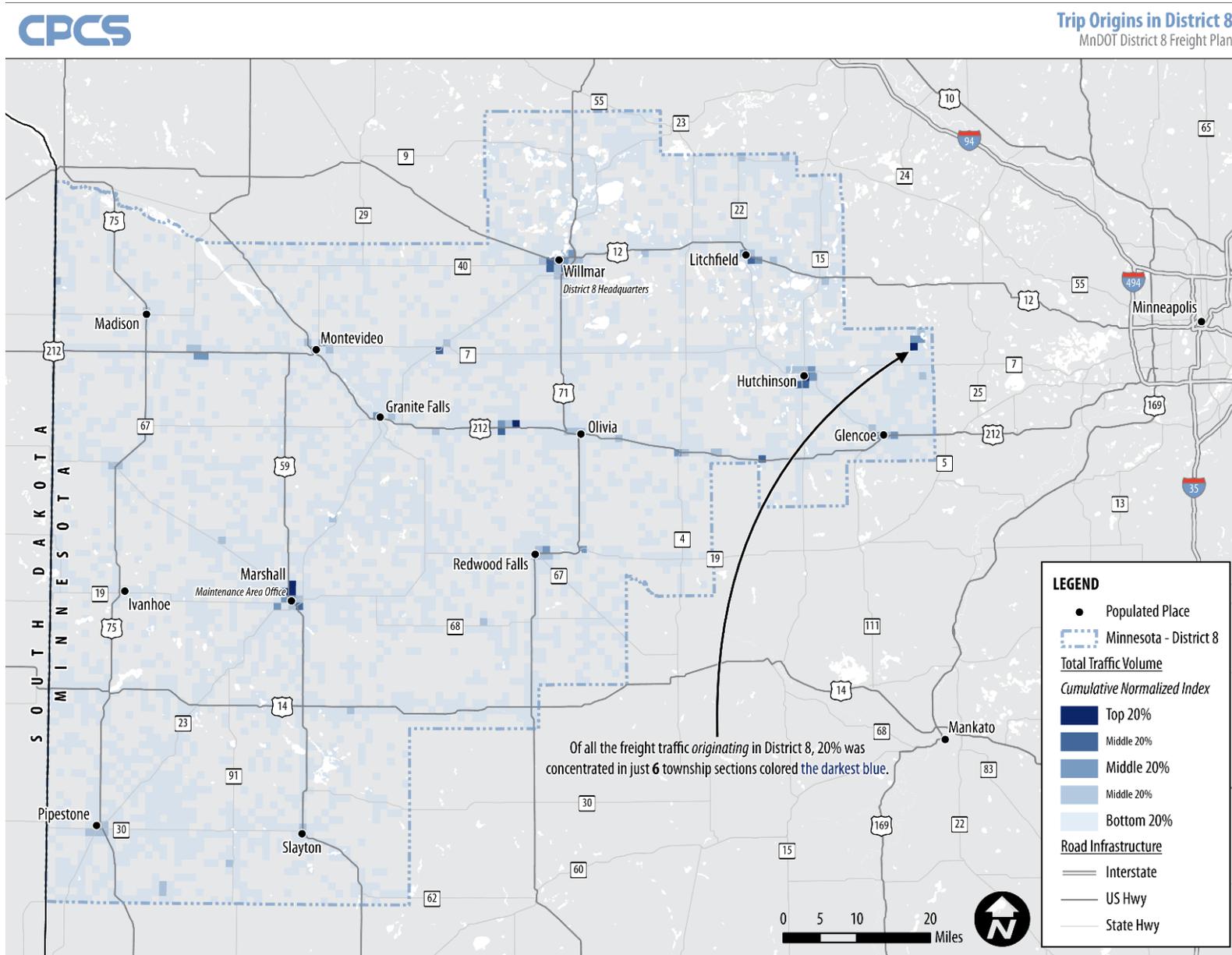
Truck origin and destination analysis highlight the District as a key agricultural area, where short truck trips carry products from farms to local storage and processing areas.

Figure 13: District 8 Annual Average Daily Truck Traffic Volume



Source: CPCS Transcom Inc. analysis of MnDOT and NTAD data. 2017.

Figure 14: Origins of Truck Trips Starting in District 8

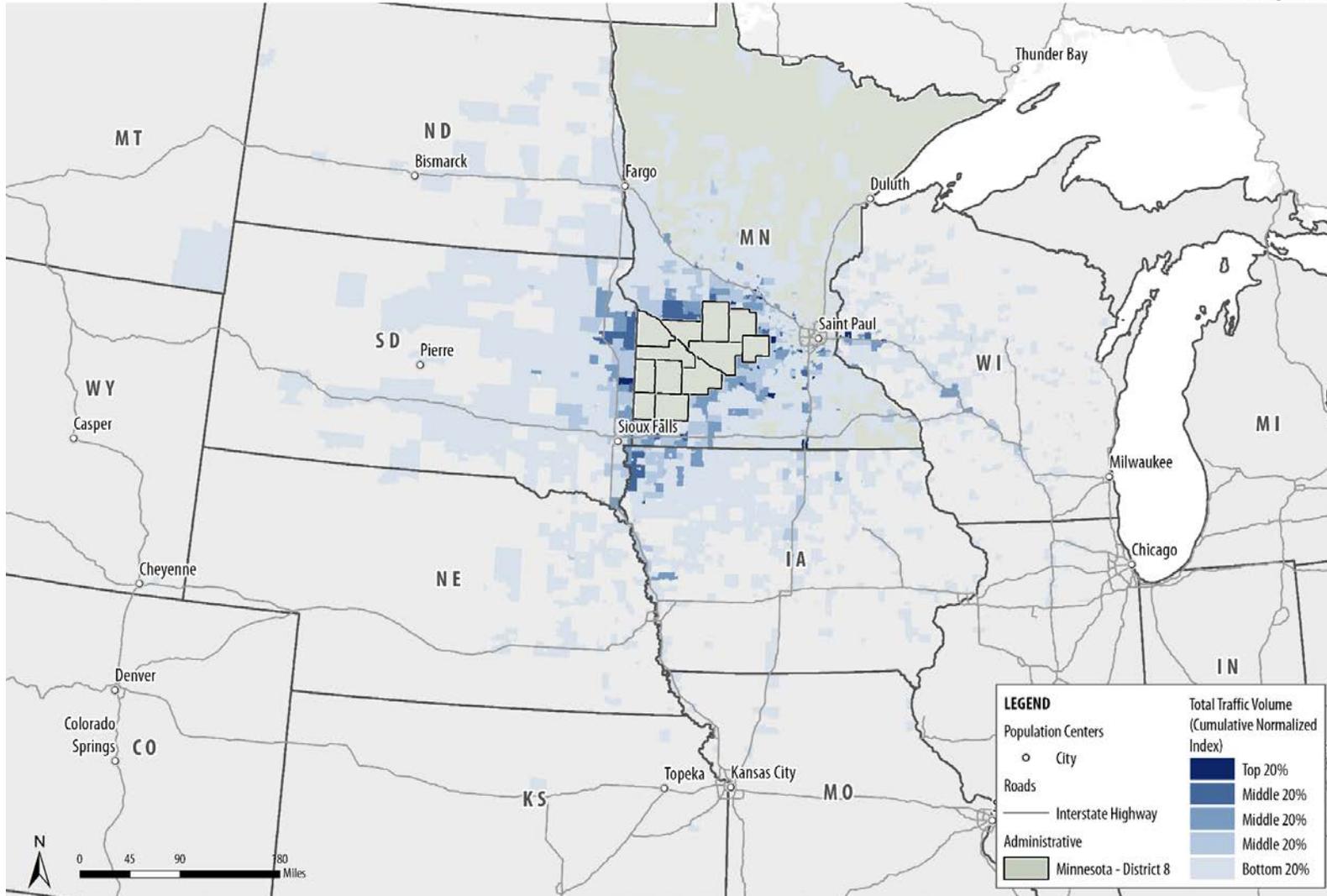


Source: CPCS Transcom Inc. analysis of MnDOT StreetLight Data

Figure 15: Destinations of Truck Trips Starting in District 8

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Truck Trip Destinations: Beyond District 8
MnDOT District 8 Freight Plan



Source: CPCS Transcom Inc. analysis of MnDOT StreetLight Data.

Railways

Rail has historically played a large role in District 8’s freight system, as it has for all of Minnesota. It has the eighth highest number of rail miles in the nation and rail accounts for nearly 25 percent of all freight tonnage moved within the state.⁵ Especially important for District 8 is the role that rail plays in moving bulk commodities, namely agricultural products, which drive the District’s economy. Today, rail still serves as a key mode in the District and provides connections to markets such as Chicago and the Pacific, Atlantic, and Gulf coasts.

Burlington Northern Santa Fe (BNSF) and Canadian Pacific (CP) are the two Class I railroads that own trackage in the District. CP railroad also owns an operational short line that is utilized by the Rapid City, Pierre & Eastern (RCPE) in Redwood County through use of trackage right agreement. Figure 16 and Figure 17 highlight the trackage and crossings held by the BNSF and CP, and Figure 18 shows the train volumes and speed limits on each Class I line.



Figure 16: Freight Railroad System of the District

Railroad	System Miles in the District	Number of Mainline Tracks	Public Road Crossings
BNSF	225	1	241
CP	41	1	0
Rapid City, Pierre & Eastern Railroad (RCPE)	46	1	24
Twin Cities & Western Railroad (TCWR)	161	1	107

Source: Minnesota State Rail Plan, 2015. MnDOT Grade Crossing Safety Data, 2015. National Transportation Atlas Database, 2017.

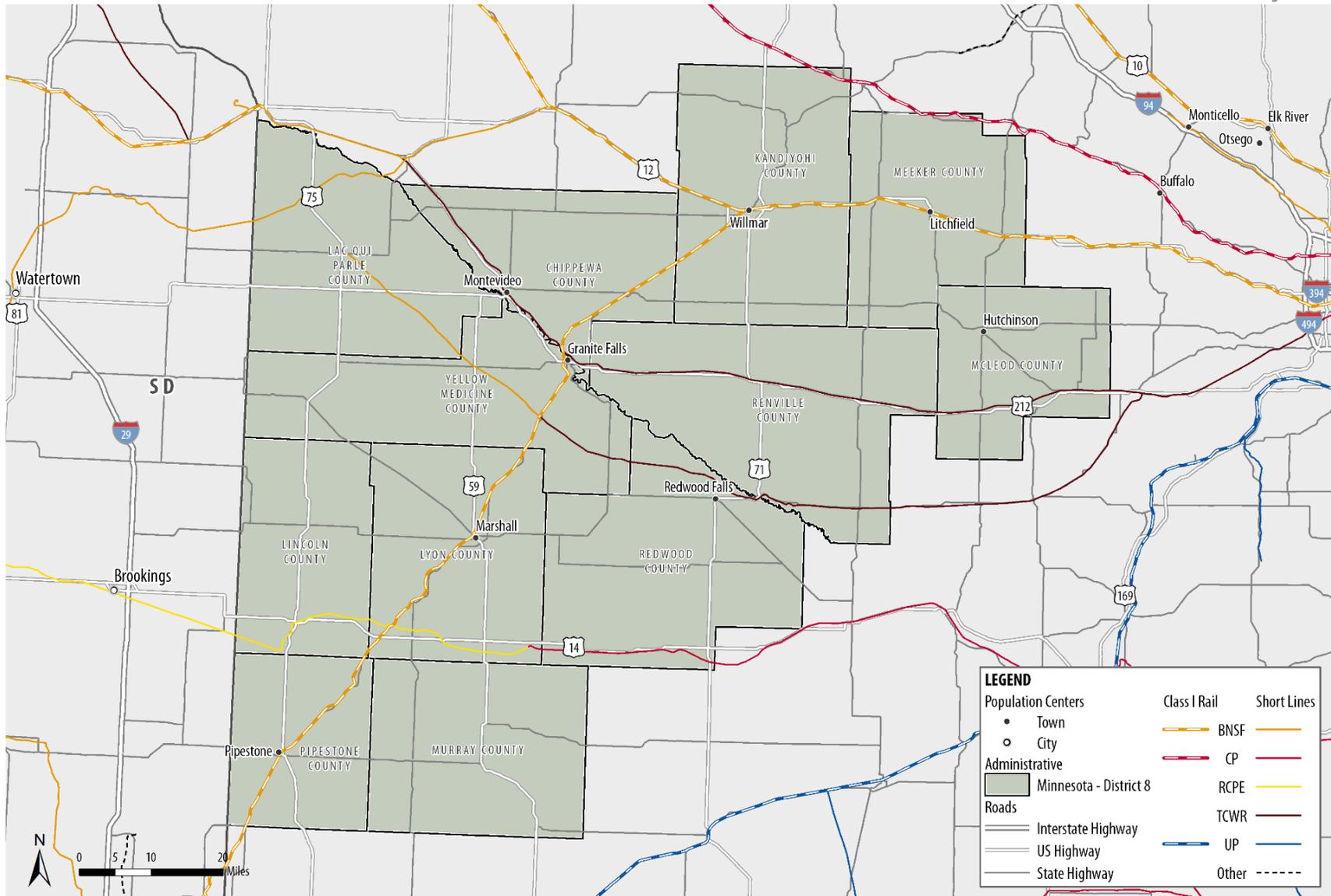
Information on the tonnages of specific rail-borne commodities carried within District 8 is unavailable. However, rail lines in Minnesota carried more than 250 million tons of cargo in 2012, 93 percent of which was carried in rail cars while the remainder was carried in intermodal containers. The state’s rail freight tonnage is anticipated to grow by 83 percent to more than 460 million tons by 2040, 90 percent of which is expected to be carried in carloads and the remaining 10 percent is expected to be carried in intermodal containers.⁶

Cereal grains held the highest share of tonnage carried by rail in the state and are estimated to grow by 232 percent by 2040. The large volume of grain moving in District 8, combined with this growth will mean that the overall freight moved on the District’s rail system will increase significantly. A 2015 study also indicated that delays in railroads shipping for Minnesota corn, soybean, and wheat farmers cost nearly \$100 million due to poor delivery caused by bottlenecks and loss of market responsiveness, however these issues do not appear to be present at the moment.

⁵ MnDOT “Minnesota State Rail Plan” (2015). <http://www.dot.state.mn.us/planning/railplan/resources.html>

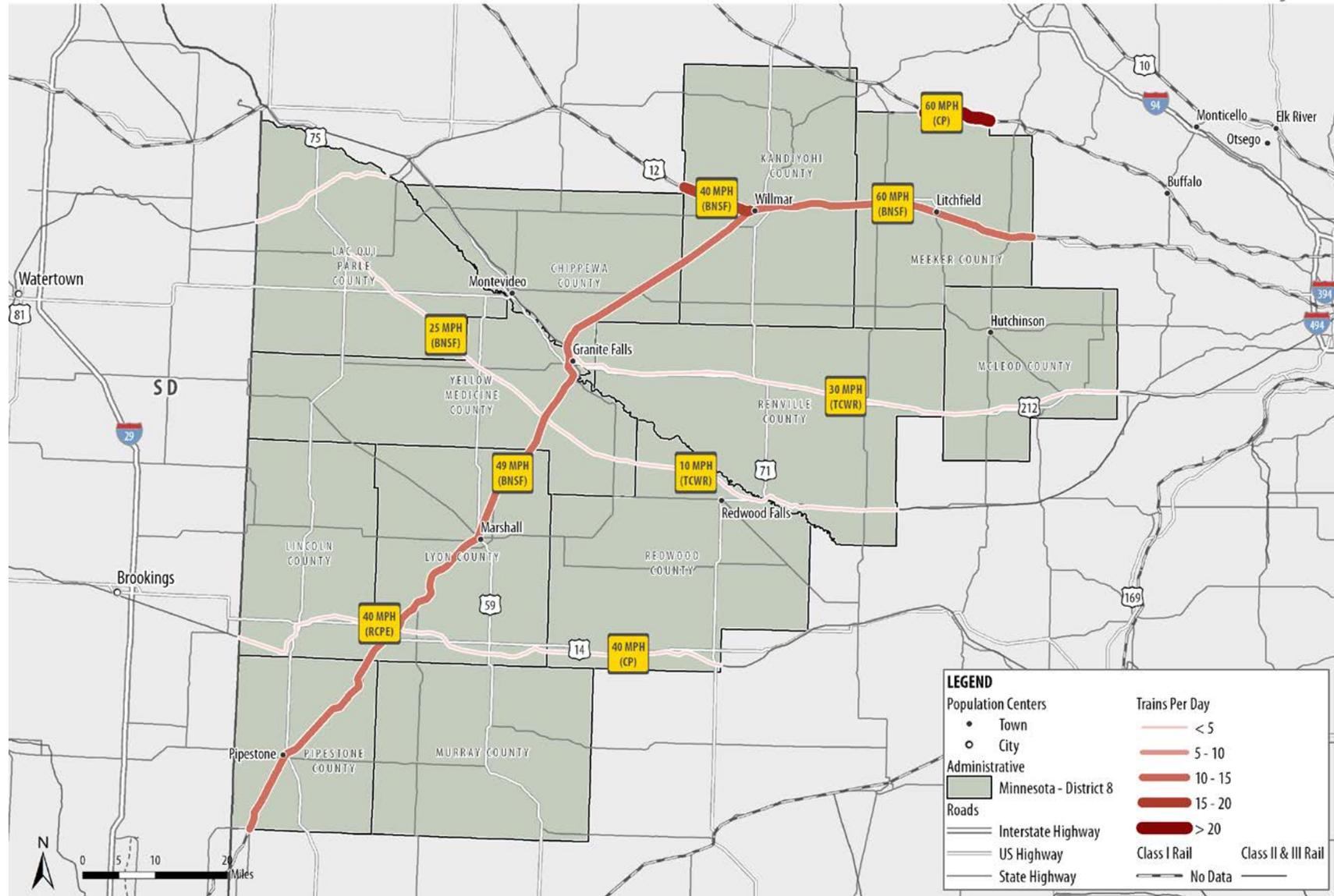
⁶ MnDOT “Minnesota State Rail Plan” (2015). <http://www.dot.state.mn.us/planning/railplan/resources.html>

Figure 17: District 8 Railroad Lines and Owners



Source: CPCS Transcom Inc. analysis of National Transportation Atlas Database. 2017.

Figure 18: District 8 Rail Volumes and Average Track Speeds



Source: CPCS Transcom Inc. analysis of National Transportation Atlas Database. (2017) and MnDOT Freight Railroad Map.

Willmar Wye Project

Kandiyohi County has been known as a rail hub for many years, as BNSF has trains moving into and out of the county in all directions. Notably, the Willmar Switching Yard is the only one of its type within the District. The rail yard is operated and owned by BNSF, largely handling commodities such as coal, petroleum, and grain. The Willmar Wye project, a joint initiative between the State of Minnesota, Kandiyohi County, City of Willmar, and BNSF, is currently underway. It was originally proposed in an effort to move freight more efficiently through the city of Willmar by decreasing the number of trains required to pull into the rail yard in the downtown area. Increased multimodal opportunities for shippers, economic growth, and delay savings have been identified in the Federal Railroad Administration's (FRA) Environmental Review as additional project benefits, all of which have important implications on freight movements occurring within the District.

The project will consist of constructing a new railway connection between the Marshall and Morris Subdivisions of the existing BNSF railway network, as well by providing direct freight rail access to the City of Willmar's industrial park. Surrounding roadways will also be modified in order to accommodate for the new rail connections, namely US-12, and MN-40.

Increased multimodal opportunities for shippers, economic growth, and delay savings have been identified as additional Willmar Wye project benefits, all of which have important implications on freight movements occurring within the District.

During past increases in rail shipments from surrounding regions, for example the Bakken fields of North Dakota, the current network capacity was unable to "keep up" with peaking demand. With a lack of pipeline as an alternative transportation option, investments into the rail network within the District may be necessary to accommodate future demand peaks. Trains pass through District 8 that are destined to local refineries as well as those in the Gulf, while coal is being directed largely the ports of the Great Lakes. Additionally, during past oil peaks, grain trains within the area had been delayed, increasing the aches experienced by the many farmers in Central Southwest Minnesota. Once complete, the Willmar Rail Connector will be able to ease many of the issues currently experienced at this chokepoint within the District. It will also improve safety for residents of Willmar, as it will reduce the volume of trains carrying hazardous materials passing through the center of town.

Aviation

Freight shipped by air accounts for a small portion of the freight carried by other modes. However, air freight is still important to the economy as the cargo carried by air is typically high value and time sensitive. Figure 20 shows there are a total of 18 publicly owned airports in District 8 that receive state funding. There are no commercial airports located within the District, but there are two regional general aviation airports.

Southwest Minnesota Regional Airport

South West Minnesota Regional Airport (MML), also known as Marshall/Ryan Field, is a regional airport in Lyon County, located 1 mile west of Marshall. The airport is mostly used for general aviation, with the occasional cargo shipment. Some of MML's common uses range from public (fire-fighting efforts), medical (aircraft medical transport), personal (recreation), and agricultural use (spraying, crop inspection).

Olivia Regional Airport

Olivia Regional Airport (OVL) is another regional airport, located in Olivia of Renville County. Known as the corn capital of the world, agricultural flying comprises a large component of the airport’s activity, with a “taxi-thru” hangar that is solely dedicated to loading crop dusting planes.

Other than these two regional airports located in the District, the area is close to St. Cloud Regional Airport (St.C) and the Mankato Lakes Regional Airport (MKT). Outside of the state, Brookings Regional Airport (BKX) is also nearby. Minneapolis-St. Paul International Airport (MSP) is the closest international airport to the District, and is among the busiest commercial airports in the US.

Pipelines

Pipelines offer a high-volume, low-cost option for transporting large amounts of liquids and gases, and this quality means they are key elements of transportation network for liquid fuels. Minnesota has no petroleum or natural gas resources and primarily imports crude oil, natural gas, and other petroleum products. Minnesota has two oil refineries that process crude coming from Canada and North Dakota. Both of these refineries are located near the Twin Cities metro area. In District 8 there are 690 miles of active pipeline, most of which is dedicated to natural gas, as summarized in Figure 19 and Figure 21.

Figure 19: District 8 Pipeline Coverage

Commodity	Length (Miles)	Percent of Total
Crude Oil	40.37	6%
Hydrocarbon Gas Liquid	47.99	7%
Natural Gas	546.77	79%
Petroleum Products	55.69	8%

Source: US EIA (2018).

In the last decade, increased oil production in Canada and North Dakota due to technological advances in hydraulic fracturing have required capacity increases at Minnesota’s refineries and expansion of pipelines across the state to carry crude oil to other refineries in US and Canada. The Minnesota Pipeline System (MPL) is a crude oil pipeline system that passes through McLeod and Meeker County, the north-eastern portion of District 8. While there are no refineries found within District 8, the Magellan Pipeline Company does make use of a refined petroleum product terminal that is located in Marshall.

The majority of pipelines found within District 8 are moving natural gas, totaling nearly 550 miles of network. The Northern Border Pipeline

connects to the existing TransCanada Pipeline, moving liquids interstate across the Midwest eventually into Illinois. The Alliance Pipeline also moves natural gas from Canada (British Columbia, Alberta) and North Dakota into the Chicago market hub. A Minnesota local natural gas pipeline, owned by Hutchinson Utilities, enters McLeod County from the south in order to supply both power plants and distribute natural gas to customers.

The Hydrocarbon Gas Liquid (HGL) pipeline crossing District 8 is the Kinder Morgan Cochin Pipeline. Condensates move westbound from north-eastern Illinois to the Kinder Morgan terminal facility located in Fort Saskatchewan, Alberta.

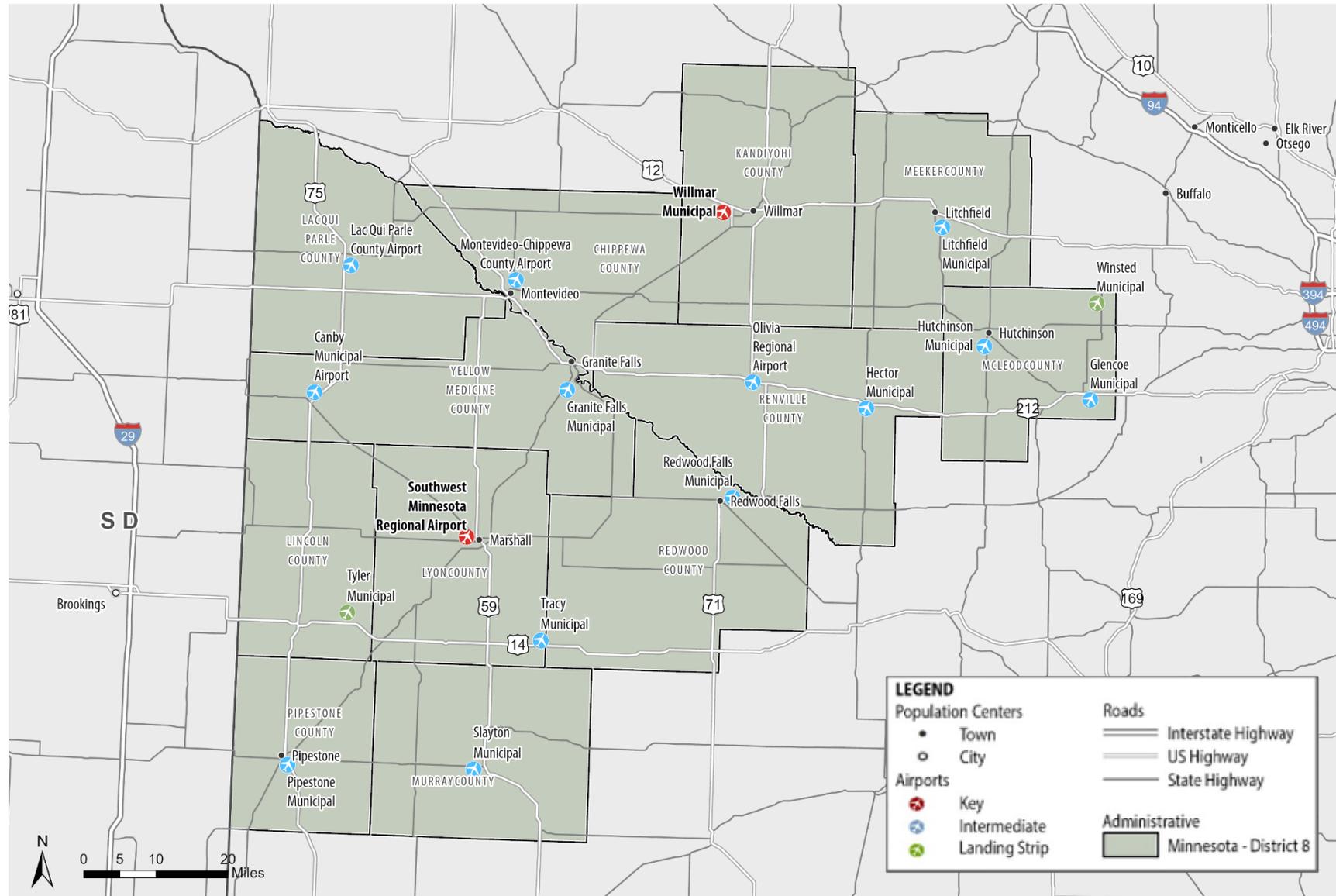
In addition to the pipelines and petroleum refinery located within the District, there are also five ethanol plants (representing over 25 percent of ethanol plants within the entire State). Combined, the plants in District 8 alone maintain a yearly capacity of 233 million gallons produced, accounting for nearly 20 percent of all ethanol produced in Minnesota. Statewide, it was reported by the Energy Information Administration (EIA)

that Minnesota produced more than 1.3 billion gallons of ethanol in 2017.

*Policy and financial backing
have allowed for production*

*capacity of ethanol to grow
substantially over the last
three decades.*

Figure 20: District 8 Public Airports



Source: CPCS Transcom Inc. analysis of National Transportation Atlas Database (February 2018)

Chapter 3: How is District 8 Changing?



Image: Buffalo Ridge wind farm Source: istock

Chapter 3: Key Needs, Issues and Challenges

District 8 Freight System Needs and Issues

District 8’s freight needs and issues are complex, and many needs and issues have shared causes or solutions. This complexity and “overlap” can make categorization of needs and issues difficult. For example, the need for additional passing lanes on the District’s two-lane freight corridors is related to both the issues of mobility and safety: slower-moving trucks can reduce the free-flowing speed of traffic, and passenger vehicle drivers may attempt to pass on two-lane roads, increasing the potential for collisions.

For simplicity, the needs and issues discussed in this Chapter are described on a mode-by-mode basis. Within each mode, needs and issues are placed in three categories that were adapted from the Minnesota State Freight Investment Plan criteria:



Safety, which is primarily related to crash rates for roads as well as railroad grade crossings, and MnDOT’s previous safety risk factor analyses.



Mobility, which is related to the performance of the system and the speed and ease with which freight can move in the region. This includes topics like congestion, weight limits and bridge clearances.



Condition, which relates to the level of adequate maintenance of roads and bridges.

Identification of needs, issues, and challenges was accomplished using six sources of data, described in Chapter 1 of this report:



Analysis of quantitative data from MnDOT



Advisory Committee and Technical Team feedback



Review of findings from previous plans and studies



Online surveys



Stakeholder consultations



Feedback received at an online open house

The key needs, issues, and challenges in this section reflect findings from all data sources. It is important to note that the topics discussed here are only the “top” issues for District 8, and more detailed analysis for Needs, Issues, and Challenges is available in Working Paper 4: Freight System Needs, Issues and Opportunities.

Roadways

Road and trucking-related needs and issues make up the majority of District 8's freight transportation needs and issues. This majority share reflects the fact that trucking is the most commonly used mode for freight transportation, carrying about 63 percent of Minnesota's freight tonnage. At the same time, road-related needs and issues are also more easily addressed: MnDOT and its local partners have the most control over

road investments and most of their funding is available for road investments.

Road improvements are the area where MnDOT can exert the greatest effort to address freight needs and issues.

Safety

Between 2009 and 2013, District 8 was ranked as the fourth-highest region in terms of the highest number of severe crashes, and third highest in number of severe crashes at intersections. 14 percent of severe intersection crashes, 21 percent of severe high-crash location crashes, and 22 percent of severe high-crash intersection crashes of the State have occurred in District 8.⁷ Despite District 8's relatively high rate of crashes compared to other Districts in Greater Minnesota, stakeholders did not identify many safety concerns on the District's freight network, instead, most insights on specific system safety needs and issues came from District 8's safety plan, and records of truck-involved crashes.

Intersections

Much of the stakeholder feedback on intersection safety related to the fact that trucks are slower and less maneuverable than passenger vehicle traffic. Therefore, feedback focused on intersections of county or local roads and trunk highways, where slow-moving trucks would be crossing, entering, or exiting faster-moving trunk highway traffic. While stakeholder-identified intersection safety needs and issues were spread across the District, a large cluster was noted around Marshall, and many related to busy intersections in the area. This clustering reflects the fact that the Marshall area is a local hub for truck traffic, thanks to its large manufacturing and agricultural industrial base. These points included:

- **US-59 and Erie Road**, where many trucks had difficulty crossing lanes with high-speed traffic.
- **CSAH-33 and MN-68**, where an acceleration lane was recommended to allow trucks to reach highway speeds.

- Vehicles passing through traffic lights on **MN-23** at unsafe speeds.

Outside of Marshall, there were no other intersections that multiple stakeholders identified as problematic. A similar pattern of wide distribution can be seen in data-identified intersections. Analysis of historic truck-involved crash data identified 23 intersections that had more than two truck-involved crashes in the past two years (2017-2018). These intersections were distributed across the district but were focused on the trunk highway network.

Intersection safety concerns were centered on the intersection of trunk highways and smaller county or local roads.

⁷ MnDOT "District Safety Plans Update" (2016).

In addition to identifying specific safety locations of concern, many stakeholders voiced support for additional investment in warning devices at high-risk rural intersections, such as warning lights, flashing stop signs, and intersection conflict warning systems (ICWS). These systems were seen as lower-cost options to improve safety through increased driver awareness of intersections, particularly at night, however, MnDOT has found that these types of safety systems may not be effective, and may not use them as widely in the future.

Corridors

There are two major types of needs and issues related to roadway corridors: improved roadway shoulders, and added passing lanes. The comments and concerns about these two infrastructure elements fell into both of the categories of safety and mobility, but safety was a more-commonly mentioned concern overall.

Shoulders provide truck drivers with additional room to maneuver, helping them to accommodate other road users or avoid collisions. At the same time, wider shoulders can also make over-sized freight movements easier by providing additional room for wide loads. By contrast, unpaved, narrow, or non-existent shoulders were considered a safety issue because they eliminated room for maneuvering, and created a tipping hazard for trucks or trailers that drift off of the roadway. Stakeholders generally noted a need for wider or harder shoulders on less-traveled trunk highways and county highways, including multiple mentions of shoulders needed on MN-40 west of Willmar, and MN-68. However, details provided by stakeholders were often vague: respondents often noted that all or most of a route needed improved shoulders or passing lanes.

New or lengthened passing lanes were a second key safety and mobility consideration. Adequate

passing lanes were seen as important safety improvements because they gave general traffic sufficient space to overtake slower trucks, or for trucks to overtake slower vehicles such as farm equipment. At the same time, added or longer passing lanes were also considered mobility improvements because they reduce the amount of time drivers must spend traveling at slower speeds “stuck” behind slower vehicles. The main needs and issues related to passing lanes were (1) a lack of any passing lanes on certain trunk highways, and (2) passing lanes that were too short for trucks to overtake other traffic. Commonly mentioned areas for potentially improved passing lanes included US-12 from Willmar to the Twin Cities, MN-23 from Marshall to Pipestone, and TH-59 from Marshall to Worthington. A related topic to passing lanes was the expansion of highways from 2 to 4 lanes, a topic that is discussed further in the mobility section of this chapter.

Corridor safety needs are primarily focused on areas where shoulders and passing lanes could be improved.

Weigh Station and Commercial Vehicle Enforcement

MnDOT administers a Weigh Station and Commercial Vehicle Safety/Enforcement Program and allocates \$2 million per year towards maintaining/improving commercial vehicle enforcement and safety. As part of the program’s *Weight Enforcement Investment Plan*, two needs for improved enforcement in District 8 were identified:

- **US-71/MN-23** in Kandiyohi County north of Willmar needs increased enforcement due to the shipping of heavy sugar beets and generally heavy truck traffic.
- Additional review is needed to upgrade a Weigh-In-Motion site on **US-212** in Renville County, east of Olivia.

Mobility

Mobility considerations include topics that affect the ease or efficiency with which trucks can move through District 8. These topics include things like traffic congestion, truck routing, bridge clearances, and weight limits. As noted in the safety section, many of the mobility considerations also have strong relevance to safety. Based on evaluations of truck speeds and travel time reliability, congestion is not an issue for District 8. Therefore, this section focuses on other impediments to mobility, such as geometric constraints for trucks, low bridges, and weight limits.

Traffic congestion is generally not a mobility need or issue for District 8, but truck operations are affected by congestion in the Metro District.

Intersections

Intersection mobility needs and issues related to trucks' ability to navigate through roundabouts and j-turns. Stakeholders were divided on the topic of roundabouts: some were firmly opposed to the creation of roundabouts, while others commended MnDOT for engagement with oversize-overweight (OSOW) truck operators on the design of new roundabouts. Commonly mentioned mobility problems with roundabouts included:

- Shifting or tipping loads when trailers mount curbs on the inside of tight roundabouts.
- A lack of clearance on inside curbs for lowboy trailers.
- "Tight" turning clearances.
- General passenger traffic does not understand how to "share" two-lane roundabouts with long trucks.
- Wayfinding signage is not posted far enough in advance of a roundabout, making navigation more difficult.

In response to these concerns, stakeholders noted that MnDOT should consult with trucking operators when creating roundabouts on major freight routes. In particular, roundabout designs should include soft curbs and shoulders, and be large enough to accommodate trucks. Stakeholders cited roundabouts on MN-22 and MN-60 in Worthington as examples of well-designed roundabouts for truck operations.

Intersection mobility concerns are primarily focused on areas where trucks may not be able to turn easily, such as roundabouts and j-turns.

An additional area of concern for intersection mobility was J-turns, particularly on MN-23 in Marshall. Stakeholders had concerns that the truck movements associated with j-turns could be "awkward" due to the need to make sharp turns. There were also concerns about trucks blocking traffic when navigating j-turns, however MnDOT notes that these j-turns were designed specifically to accommodate freight

Regional Connectivity

Many stakeholders consulted for this project and the previous Manufacturer’s Perspectives study noted that District 8 can be heavily affected by traffic operations outside of the region, particularly in the Twin Cities, and to a lesser extent, I-94 near St. Cloud, and I-90. This strong regional interdependency created some mobility needs and issues that are not always within the control of the District.

- Congestion in the Twin Cities affects the efficiency of trucking operations in the District. For example, one stakeholder noted that their trucks were capable of making two trips per day to terminals in the cities, but traffic congestion could reduce this to one trip per day, as drivers would spend much of their time in slow-moving traffic. This problem has been exacerbated by the implementation of Electronic Logging Devices (ELDs), which eliminate a driver’s “wiggle room” to keep driving for 15-30 minutes after they have driven for their maximum number of hours.
- Many stakeholders in District 8 have long advocated for the expansion from 2 to 4-lanes on US 212 just east of the District 8 boundary in Carver County, as it greatly impacts the movement of goods from District 8 into the Metro and beyond.
- MN-23 in St. Cloud was noted as another area with congestion that was highly relevant to District 8, as the many traffic lights in the area reduced the efficient flow of truck traffic.
- Truck parking was occasionally mentioned as a problem because there is very little truck parking west of the Metro district, and there are very limited places where OSOW loads can safely stop. Stakeholders suggested exploring ways to expand truck parking options on the southern and western sides of the Twin Cities.

Due to the fact that many of District 8’s businesses trade goods with the Metro District, and points east, congestion and truck parking concerns in the Metro District are highly-relevant to efficient and safe trucking operations in District 8.

Route Restrictions

In addition to needs and issues that affect the ease or efficiency of truck movements, there are physical constraints that can make it impossible or illegal for trucks to travel through elements of District 8’s freight network. A key barrier is height limits imposed by railroad bridges over roadways, which were identified by both stakeholders and data. 14’6” is the minimum height recommended by the FHWA for truck clearances, so bridges under this threshold are flagged in red. During consultations, one stakeholder that shipped oversize freight noted that concerns about low bridges and a maximum height limit of 13’6” on select roadways meant they had to obtain specialized lowboy trailers in order to ship loads from Minnesota to South Dakota. In general, four bridges were commonly mentioned as

problematic, due to their location on higher-volume routes:

- US-59/MN-7 north of Milan
- MN-30 west of MN-23 in Pipestone
- US-212/MN-67 on the west side of Granite Falls
- US-71 in Sanborn

Low-clearance railroad bridges over roads are one of the key truck mobility impediments in District 8, particularly for oversized truck loads.

OSOW Issues

Many stakeholders consulted as part of the development of this freight plan and the previous Manufacturers' Perspectives study noted that OSOW truck policies were a barrier to freight mobility in the District. In particular, many stakeholders felt that statewide policies did not reflect the operational context of the district, and were unnecessary impediments to OSOW operations in District 8. Common feedback included:

- **Need for Context-Sensitive Curfew Areas:** curfews on OSOW movements on Fridays and Sundays in the summertime, and on select additional weekends such as fishing openers were seen as not relevant to District 8 because the District does not see heavy weekend traffic like the Twin Cities, or more tourism-oriented areas. This curfew was seen as particularly confusing since OSOW movements were allowed to move in the Metro District during rush hour, and respondents asked that OSOW policies be modified by district, or changed to reflect the volume of traffic moving on specific routes. There was also interest in being able to move OSOW loads through construction zones after work hours, which could make trucking operations more efficient by eliminating potentially-lengthy detours.
- **Movement of Manufactured Homes.** One of District 8's unique OSOW exports is finished manufactured homes, which are often exported to other states including South Dakota and Iowa. Producers and carriers of these homes noted that OSOW truck drivers may choose to encroach the centerline when there is no contraflow or passing traffic, to avoid driving on rumble strips or soft shoulders. They suggested that enforcement of "encroachment of the centerline" regulations be done with this context in mind, especially since there are narrow bridges in the District that require OSOW loads to cross the centerline. Shippers also noted that the requirement for four or more pilot cars between loads is unnecessary when loads of three or more structures travel in close convoys. Respondents noted that it was common for convoys of manufactured structures to travel in close proximity, as drivers assist each other with issues such as tire changes and plastic repairs, making the addition of a fourth pilot car unnecessary.
- **Ease of Permitting Relative to Other States.** Multiple stakeholders noted that MnDOT's OSOW permit and routing software is inefficient and difficult to use relative to other states. Respondents suggested that MnDOT study permitting at other states in the US to identify potential usability improvements.

District context-sensitive OSOW regulations were a commonly-mentioned freight mobility need, as some statewide OSOW rules were not seen as relevant to District 8's operational context.

Snow Removal

Across Minnesota, winter snow and ice can be major impediments to freight mobility and safety. In general, stakeholders noted that plowing operations on trunk highways were adequate, but plowing of county and town roads was often inadequate. No particular areas were identified as needs or issues for snow removal, but some common responses included:

- Stakeholders appreciated having operations contacts at MnDOT to get information on plowing operations or obtain plow assistance in emergencies.
- Snow removal is also important for staffing: businesses that operate 24/7 need reliable snow removal to provide access for their employees, and a lack of on-time staff can create major production problems.

- Some stakeholders suggested that road-maintenance should happen off-hours, with a focus on early morning and frequent snow removal. Another comment was that District 8’s plowing operations shut down more “easily” or earlier than plowing operations in the Twin Cities.

Construction Coordination

Construction operations can create seasonal barriers to truck mobility, particularly for oversize loads. Some stakeholders noted that MnDOT has been good at communicating with industry about upcoming projects or changes that could affect truck operations. Additionally, stakeholders also urged that MnDOT continue considerations about how construction schedules will affect trucking, especially when long detours are needed, or access to freight facilities may be reduced.

Other Mobility Needs and Issues

In addition to the needs and issues profiled, some less common but important mobility topics included:

- A lack of truck parking or truck stops in the District, particularly for overnight truck parking.
- Occasional flooding creates temporary barriers to truck operations, particularly on more local roads.
- The need to increase the speed limit from 55 to 60 MPH on rural roads, since most users are not observing the current 55 MPH speed limits.

Infrastructure Condition

Infrastructure condition is important for two reasons. First, poorly maintained infrastructure can damage vehicles and cargo, or force trucks to travel at slower speeds, effectively increasing travel costs for District businesses. Second, structurally deficient infrastructure may necessitate lower weight limits, which could result in longer routes for trucks. This discussion of infrastructure condition is broken down into two parts: pavement condition and bridge condition.

Pavement Condition

Pavement condition is important for freight movements because rough or uneven pavements can damage trucks and trailers, and cause loads to bump or shift. Unlike considerations of safety and mobility, stakeholders did not identify specific elements of District 8’s road network where the condition was particularly poor. Instead, a common comment was that trunk highways were adequate, but last-mile connections on local roads were in relatively poor condition.

Based on this mapping work, most of District 8’s trunk highway network is identified as a quality of “good” or better. Notable exceptions include segments of “poor” pavement in Lac Qui Parle

County, Murray and Lyon Counties, and around Granite Falls. Areas of poor condition on trunk highways were incorporated into needs and issues mapping, but are unlikely to emerge as projects for further study because MnDOT programs pavement maintenance investments based on condition, and anticipates addressing areas of poor quality in the near future.

Generally, trunk highway pavement condition is adequate, while local roads may be in poorer condition.

Bridge Condition

Bridge condition is important because well-maintained bridges are needed to support heavy truck movements and bridges in poor condition may have low weight limits imposed. In turn, these low-limit, or “posted” bridges may force trucks to take long detours. While stakeholders and data analysis identified bridge *clearances* as potential needs and issues for freight movement, relatively little feedback was received on bridge *condition*. This lack of feedback likely reflects that the majority of deficient bridges in the District are on county and township routes while the freight-critical trunk highways have relatively well-maintained bridge structures.

Railroads

Rail Safety

During the stakeholder outreach conducted for this project, stakeholders did not identify grade crossings as areas in need of improvement. This lack of feedback echoes study findings which determined that fatal rail grade crossings were relatively rare and somewhat “random” in their occurrence. Therefore, grade crossing risk ratings were mapped and examined, as a way of understanding areas where safety improvements may be needed. From a strictly data-driven perspective:

- Historic grade crossing incidents were concentrated on the BNSF’s Marshall Subdivision, as well as the MPL line to Redwood Falls.
- Most of District 8’s actively-protected crossings have moderate levels of risk or lower.
- District 8’s passively-protected grade crossings exhibit higher levels of risk, by virtue of their lack of active protection.

Grade crossings with “high” levels of risk (scores of 7 or 8, identified by prior MnDOT grade crossing

studies) were incorporated into needs and issues analysis for further evaluation. The discrepancy in findings between stakeholder feedback (no problems identified) and data analysis (some problems identified) is likely due to the fact that actual grade crossing incidents are relatively rare, and a hazard that can easily be mitigated by attentive truck drivers. Therefore, grade crossings would be less of a concern compared to other topics such as intersections or passing lanes. By comparison, the risk analysis evaluates the risk for all types of vehicles including passenger traffic and seeks to identify areas of high risk, rather than simply looking at previous incident locations.

Stakeholders did not identify any grade crossing needs or issues in the District, but there are some actively- and passively-protected crossings with relatively high levels of assessed risk.

Rail Mobility

Mobility needs and issues primarily relate to access to rail services, and affordable provision of rail services. As with grade crossing safety, stakeholders had relatively less feedback on rail mobility relative to road mobility, since not all stakeholder utilized rail shipping. Key feedback was:

- **The need for competitive access and services:** stakeholders served by one rail line, particularly Class I rail lines thought that having additional railroads provide service would be valuable because it would

introduce competition and reduce rail service rates. This feedback is not unique to District 8, or Minnesota as a whole.

- **A lack of sufficient transload connections** - some stakeholders noted that much rail freight needs to be brought into the cities before it is offloaded to a truck, creating additional truck congestion when it is shipped into District 8. However, some expanded facilities such as unit train facilities have been constructed in the District.
- **A lack of grain cars at harvest time** was noted in South Dakota counties bordering District 8 but was not specifically mentioned by District 8 stakeholders.
- **The importance of the Federal Short Line Tax Credit**, which allows rail service to avoid raising prices too high to fund improvements, and continue to remain competitive with trucks.

MnDOT and BNSF have partnered on a new wye in Willmar, with MnDOT altering road routes and BNSF constructing new track. The project will improve rail mobility and safety by creating a direct connection for BNSF trains to move between the Morris and Marshall subdivisions

Rail Condition

Comments and findings in regard to rail condition were limited, and focused on lines in the District not owned by Class I operators, and include:

- Unit trains are hard on rail joints and have necessitated upgrades to welded rail on branch lines.
- Short line railroads need public support to continue investments in maintenance and line upgrades, but funding sources are limited.
- The Minnesota Prairie Line has undergone significant replacement of its original rail laid in 1912, and the section of line between Norwood Young America and Winthrop is now rated for 286,000-pound railcars. However, the remainder of the system requires upgrades in order to support 286,000-pound

cars. In particular, replacement of the Morton Trestle over the Minnesota River will be necessary to support expanded 286,000-pound railcar movements on the Minnesota Prairie Line.

Rail condition is primarily a concern on Class II and III operators, but condition has been improving with continued investment in rail and infrastructure upgrades.

Anticipating and Interpreting Future Changes

The freight transportation system is made up of a variety of actors such as shippers, brokers, and carriers. These actors make choices in response to a variety of external factors, including economic or political changes. Therefore, the operation of freight itself is fundamentally reactive to a variety of factors that lie well outside of the control of MnDOT and other agencies that build and maintain the transportation system. Additionally, the freight system is continually changing. It can be difficult to determine exactly how it will change in the future because the specific factors that influence demand are numerous and difficult to forecast. However, there are a number of “lenses” through which MnDOT can interpret or anticipate future freight changes including Social, Technological, Environmental, Economic, and Political considerations.

Social Factors and Trends



Social factors include demographics, income, consumption patterns, and population location and density. An example of a social trend for District 8 is **Declining and Aging Population**. The population of most counties in District 8 is shrinking, and the population as a whole is growing older as well. Minimal in-migration and aging of the labor force could create labor shortages, which affect labor-intensive industries like agriculture and manufacturing.

Technological Factors and Trends



Technological factors include those advancements that may generate new (alternative) products or services, increase the availability or lower the cost of current products or services, or change the nature of production processes, transportation and distribution activities, and information flows. A good example of technological trends that could affect District 8's freight network is the **development of larger and more efficient wind turbines**. The development of higher-capacity wind turbines has opened up new areas of District 8 to wind development, while simultaneously generating new truck and rail movements of larger components like turbine blades, which can exceed 200'. Accommodating larger wind turbine components could be a future challenge for the District 8 freight network. Other examples of potentially relevant technological factors and trends could include the adoption of new vehicle technologies like automated trucks, as well as alternative power sources for trucks.

Environmental Factors and Trends



Environmental factors may influence the demand for or the production of goods and services, either positively or negatively, and may also impact how and when goods are shipped. A good example of an environmental factor that will affect District 8's freight network is **climate change**. A warmer climate in southwestern Minnesota may create additional opportunities for agricultural production by extending the growing season, but may also make it more difficult to plan optimal planting times. Additionally, severe rainfall and flooding events associated with a warmer climate can also damage crops as well as damage infrastructure.⁸ A warmer climate, with more freeze-thaw events in fall and spring may also create more stress on pavement and bridges, requiring more frequent maintenance or replacement.

Economic Factors and Trends



Economic factors and trends may affect the location of goods or services production, and the ability of individuals or businesses to invest or purchase goods or services. An emerging economic trend in District 8 has been the **consolidation of agricultural facilities**, including large-scale grain elevators meant to serve unit trains, and the creation of "mega-dairies" in Minnesota and South Dakota. These facilities can operate very profitably thanks to economies of scale, but the very high concentration of freight activity created by these consolidated facilities can place new stress on specific elements of the road and rail network, which may not have been designed to accommodate high volumes of heavy trucks or railcars. Other potential examples of economic factors include re-shoring of manufacturing from overseas.

⁸ Minnesota Department of Natural Resources State Climatology Office

Political Factors and Trends



Political factors may influence the production, sourcing, flow or trade of goods, or investments in public infrastructure, such as highways. An example of a political factor relevant to District 8 is the United States' **trade conflict with other nations**. For example, continued conflict with China has reduced overseas demand for US soybeans, resulting in reduced demand for some of District 8's agricultural products.⁹ Other examples of potentially-relevant political factors include funding levels for transportation maintenance and state-level mandates for renewable or zero-carbon energy portfolios.

⁹ Ferguson, Dana. Ag leaders talk 'casualties of the trade war' at first day of Farmfest. West Central Tribune. August 6, 2019.

Chapter 4: How Will We Guide Ourselves Moving Forward?



Image: District 8 blocked rail crossing Source: Erika Witzke

Chapter 4: Project Funding and Prioritization

Funding Sources for Freight Improvements

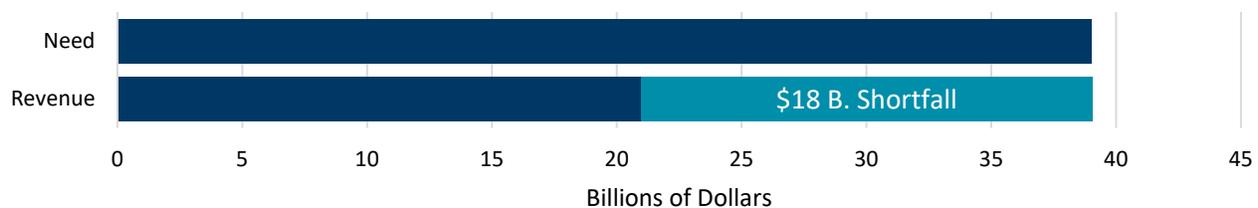
Minnesota State Highway Investment Plan

MnDOT's fiscally-constrained capital investment plan, the 2018-2037 Minnesota State Highway Investment Plan (MnSHIP), estimates that over the next 20 years, \$39 billion of investments are needed to support the state highway system, but only \$21 billion will be available. As a result, there is an estimated \$18 billion funding gap. This lack of funding has two major causes: 1) construction costs

are growing more quickly than revenue is growing, and 2) revenue growth is slowing.

The revenue gap is relevant to District 8, which has an extensive transportation system but lacks the population (and thus tax base) to support the level of investment needed to maintain the system.

Figure 22: Minnesota Highway Investment Need and Forecasted Revenue, 2017-2037



Source: Adapted from Minnesota State Highway Investment Plan, 2017

The Minnesota State Highway Investment Plan outlines the strategic direction for the state and aims to balance competing investment priorities that include enhancing the condition of the existing system and building new infrastructure. Figure 23 illustrates this investment direction and highlight that the System Stewardship objective, which is focused on strategically building, managing, maintaining, and operating all transportation assets, receives nearly 70 percent (\$14.46 billion) of available funds. The Critical Connections objective (\$1.55 billion, 7.4 percent) is focused on maintaining and improving multimodal transportation connections, as well as strategically considering new connections. This objective includes a freight-specific investment category (\$610 million, 2.9 percent) that is directly linked to the FAST Act-established National Highway Freight Program (NHFP).

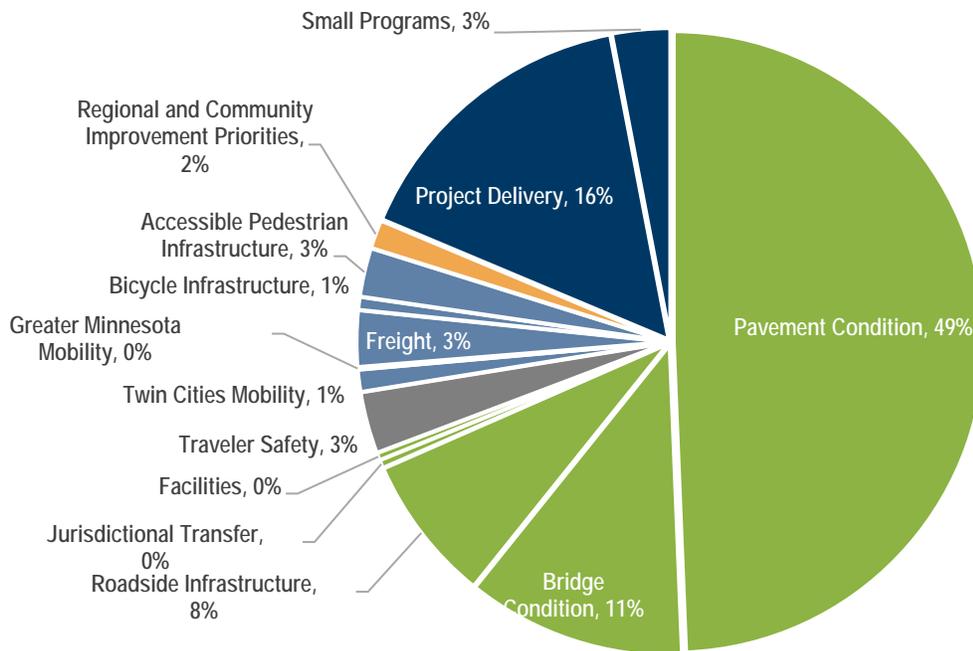
Freight-Specific Funding

MnDOT has a history of providing grant and loan funding for freight-related projects as shown in Figure 24. These freight-related funding programs have helped the state address critical freight system needs, however a challenge with these programs is that the level of funding is low compared to the need, and not all funding programs are available on regular basis (e.g., yearly), nor guaranteed they will be available in the future.

The FAST Act ushered in a new era of freight project implementation by establishing the National Highway Freight Program (NHFP), and MnDOT recognized this by introducing an investment category dedicated to freight in the MnSHIP. As a result of the NHFP, Minnesota has received approximately \$20 million a year to make freight-related improvements to the highway system. And, up to 10 percent of the funds can be used

for public or private freight facilities such as rail, water, and intermodal facilities. Using these funds, MnDOT has established the Minnesota Highway Freight Program (MHFP).

Figure 23: MnSHIP Expenditures by Investment Category (\$Billions)



Source: Adapted from Minnesota State Highway Investment Plan, 2017

Figure 24: Overview of MnDOT Freight-Related funding Programs Relevant to District 8

Source	Funding Available	Eligible Uses
Minnesota Highway Freight Program (MHFP)	\$98 million total programmed through 2022	Program funds are broad and include improvements such as climbing lanes, traffic signal optimization, and railway-highway grade separation, among others.
Railroad At-Grade Crossing Safety Program (Section 130)	~\$6 million per year, federal and state match	Closures/consolidations of railroad crossings and railroad crossing safety projects at high-risk locations.
Minnesota Railroad Service Improvement Program (MRSI)	~\$900,000 per year, not regular	Projects that improve “fixed assets” such as railroad roadbed, tracks, turnouts, bridges, buildings, and fixed loading/unloading equipment.
Weigh Station and Commercial Vehicle Safety/Enforcement Program	\$2 million per year, state funds	Projects that maintain or improve commercial vehicle enforcement and safety.

Source: Adapted from MnDOT Office of Freight and Commercial Vehicle Operations.

These freight-related funding programs have helped the state address critical freight system needs. In particular, MnDOT’s programs have made significant investments in the maritime and rail systems – two modes where traditional highway dollars cannot be applied. However, a challenge with these programs is that the level of funding is low compared to the need, and not all funding programs are available on regular basis (e.g., yearly), nor guaranteed they will be available in the future.

Approach to Freight Project Selection and Prioritization

Minnesota Highway Freight Program

As part of the National Highway Freight Program, MnDOT was apportioned funds and empowered to determine its own process for selecting projects to receive this funding, as long as it is used for freight-related investments. MnDOT elected to select projects through a competitive process and evaluated applicants on criteria that included truck volume, safety, mobility, facility access, and other factors.

MnDOT's freight and rail funding programs have helped address freight system needs where traditional highway system funds could not.

The District 8 Prioritization Process (Needs)

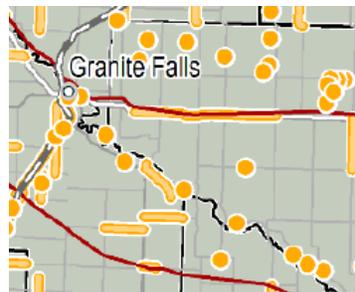
The 2017 Minnesota Highway Freight Program (MHFP) provided a starting point for establishing a District 8-specific scoring and ranking method for identified system needs and issues. Lessons learned from the statewide MHFP solicitation were used to help guide the development of the District 8 methodology. Two primary lessons from the MHFP process were (1) that it prioritized highest-traffic routes including Interstates and Trunk Highways compared to local routes, and (2) that it relied on the availability of data (e.g., truck counts) that may not be available the local level. These were considered in conducting the District 8 evaluation, and emphasis here was placed on making sure that needs and issues were evaluated in the “District,” not statewide context. Figure 25 provides a visual overview of the gap identification process, with the evaluation process described below.

Figure 25: Gap Identification Process

1. Map needs and issues



2. Map planned projects



3. Identify “gaps”: issues not overlapped by planned projects.



The evaluation approach is intended to:

- Evaluate/screen “gaps” (potential project concepts), not concrete, defined projects.
- Focus on regional issues (i.e., known to be important to District 8) vs. those that may be more important to the Metro District or more urban areas.
- Use as much data as available at the local level, as possible.

Process

Figure 26 lists the categories and measures for District 8’s freight “gap” evaluation. In this evaluation process, all measures are weighted equally, and a high overall score is intended to identify what “gaps” (potential project concepts) have the greatest potential to provide freight benefits (referred to in this report as “pure ranking”). A sub-set evaluation was included to highlight needs in safety, condition and performance categories.

Figure 26: Categories and Measures for Gap Evaluation

Category	Ranking Score Measure/Performance Indicator	Safety	First/Last Mile (Condition)	Mobility
Truck Activity	HCAADT	X	X	X
	Truck percent (%) of total vehicles	X	X	X
Safety	Addresses a sustained crash location	X		
	A safety issue identified in a district or county safety plan (provide risk rating)	X		
	Addresses at-grade crossing safety risk	X		
Freight Mobility	Truck Travel Time Reliability			X
	Addresses a vertical clearance restriction		X	X
	Addresses a weight limited bridge		X	X
Condition	Bridge condition rating		X	
Stakeholder Need	Y/N if this issue overlaps with a stakeholder identified need	X	X	X

Evaluation Results

The evaluation resulted in a rank order of priority needs for the District to address, as well as sub-rankings of projects deemed to provide the greatest benefits to freight system safety, condition, and mobility. This decision-making process may also include those key freight projects that were not highway infrastructure-related, and may not have been prioritized during evaluation (e.g., projects that are rail, port or related to other highway facilities –like truck parking). Appendix C provides a list of all scored gaps in order of “pure rank”, as well as safety, condition, and mobility rankings. A subset of ranked projects was selected

for advancement to pre-feasibility assessment, which are described in Chapter 5.

While this Plan “ranks” needs and issues, it is ultimately up to District 8 and key stakeholders to determine which projects may be in the best interest of the region to advance.

Chapter 5: What Comes Next?



Image: Wilmar Yard. Source: Eric Oberhart

ADMX
64103

CAUTION
NO SALT LADDER

BRIDGES & C. CO.
BNSF CO. 1982 21C 8083
CH 3A CLASS C RFL WYLS
18076 DRAFT GEAR

Chapter 5: Recommended Actions

Recent Progress

Before considering future plans for improvement in the District, it is important to recognize recent and ongoing projects or policy changes that have addressed needs and issues identified in previous plans, such as the 2014 Manufacturer’s Perspectives study. The following provides a “showcase” of some of the freight-benefitting projects that have been implemented or are underway in District 8. Many of these projects were originally identified as needs and issues during the development of the District 8 Manufacturer’s Perspectives Study. This study sought to improve MnDOT’s understanding of freight customers’ transportation priorities and challenges, with the ultimate goal of incorporating industry input into planning and project development. The project included meetings with 75 businesses in District 8, and was completed in 2014. The projects, plans, and operational changes noted here provide some examples of the value of the Manufacturers’ Perspectives study, and MnDOT’s commitment to continued engagement to improve freight mobility and safety in the District.

Using feedback from the Manufacturers’ Perspectives Study, District 8 has made changes to planning, project delivery and operational processes to enhance freight movements.

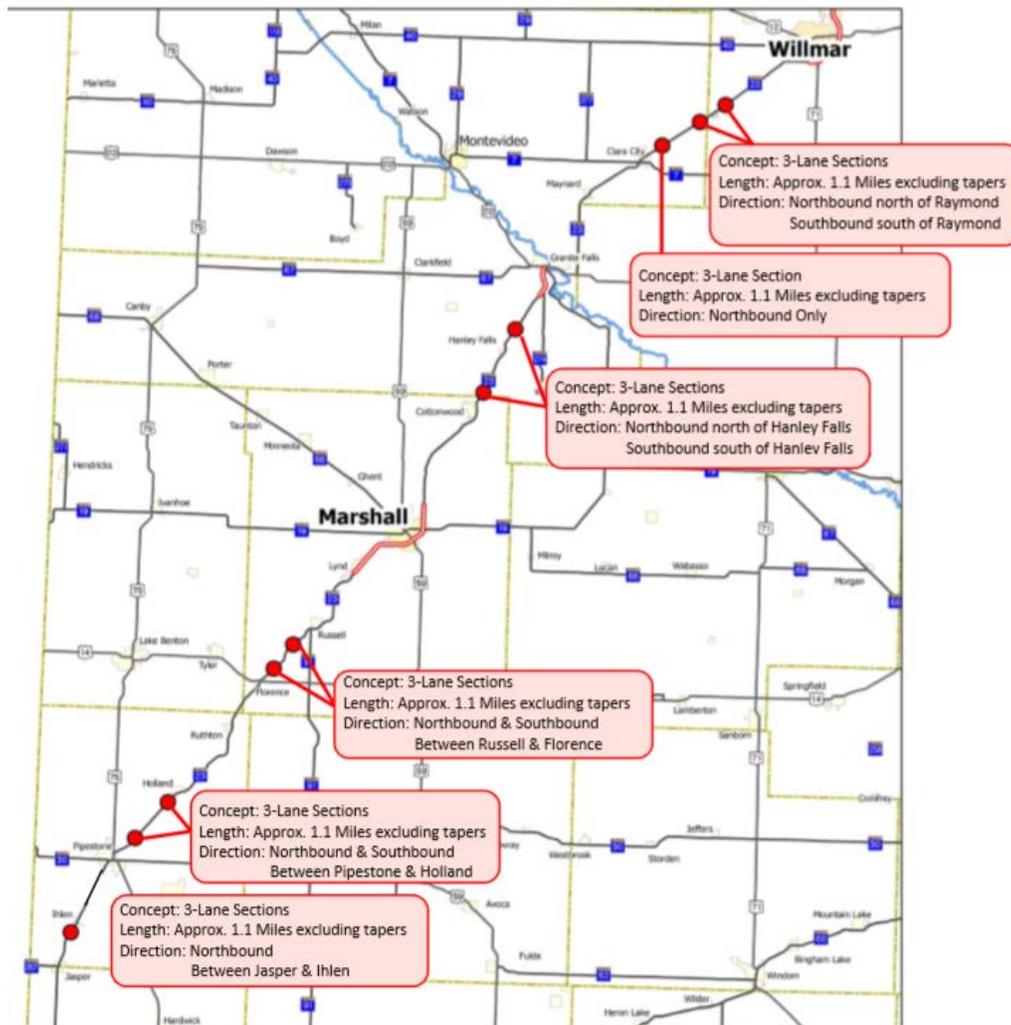
Infrastructure Projects

MN-23 Passing Lanes

MN-23 was identified as a key regional corridor for District 8 in both the District 8 Freight Plan as well as the 2014 Manufacturers’ Perspectives Study. Additionally, both the Perspectives Study, and this freight plan identified potential improvements on this key corridor: a common request was expansion of passing lanes, or creation of four-lane segments. MnDOT conducted an additional Highway 23 Passing Lane Assessment in response to the findings of the Manufacturers’ Perspectives study. This effort included additional outreach to 18 businesses. This feedback was used along with additional mobility and safety data analysis to identify the most effective areas for passing lane creation, and the most effective and safe types of passing lanes to construct. Figure 27 shows the locations where passing lanes were proposed.

In 2013, the Minnesota Legislature created the Corridors of Commerce program, which used bond sales to fund construction, reconstruction, and improvement of trunk highways with the goal of improving capacity at current bottlenecks and improve the movement of freight. After completion of the Passing Lane Study, the Corridors of Commerce program funded the 2016 construction of these passing lanes between Willmar and I-90.

Figure 27: MN-23 Passing Lane Creation



Source: MnDOT District 8.

Willmar Wye

Willmar is a rail chokepoint for the BNSF railway because trains cannot move directly between the Marshall and Morris subdivisions that merge just west of downtown Willmar. The previous Statewide Freight and Rail Passenger Plan had identified the Marshall Subdivision as a particular area in need of investment due to volume and capacity problems. The Willmar Wye project addresses this chokepoint by creating a third track directly connecting the subdivisions and allowing for efficient movement of trains traveling north and south. Additionally, the project reduces the number of trains that must travel through downtown Willmar, reducing traffic delays associated with blocked crossings, and improving local quality of life.

In addition to the construction of a new rail connection on the west side of Willmar, the Willmar Wye project includes realignment and reconstruction of US-12 and MN-40 and construction of two new bridges. The construction of new rail lines, as well as roads and bridges are being financed by public and private stakeholders listed in Figure 28. Construction started in 2019, and is expected to be complete in 2022.

Figure 28: Willmar Wye Project Partners and their Contributions or Commitments.

Project Partner	Contribution / Commitment
BNSF Railway	\$16 million
MnDOT	\$17.5 million
Kandiyohi County	\$459,000 commitment
City of Willmar	\$336,000 commitment of estimate right of way costs
Kandiyohi/Willmar EDC	\$35,000 (for economic development)
Local Road Improvement Program	\$3.77 million
TIGER Grant (USDOT)	\$10 million

Source: MnDOT

MN-7/US-71 Roundabout

The junction of US-71 and MN-7 near Blomkest had a crash rate close to Minnesota’s average, but several of the crashes at the site were severe. Given the severity of incidents at this site, MnDOT allocated \$1.9 million for reconstruction of the intersection. Since both MN-7 and US-71 are important routes for oversized (OSOW) loads, MnDOT consulted with OSOW carriers during design of the roundabout to ensure that the final design could accommodate the movement of OSOW loads.

Milan Bridge Replacement

The old MN-40 bridge over Lac qui Parle Lake (also known as the Milan Bridge) was a through-truss bridge whose design placed limitations on both the width and height of loads traveling through the area. The \$7.7 million 2019-2020 replacement of the bridge will remove height restrictions, expand width restrictions, and improve the potential mobility of OSOW loads on MN-40.

MN-23 J-Turns

As noted above, MN-23 is a key north-south freight corridor for the District, and mobility impediments on this route can negatively impact the operations of many businesses. Given the importance of this route, MnDOT has sought to ensure that mainline freight traffic can keep moving. Therefore, MnDOT has installed J-turns in areas where passenger vehicle cross-traffic could block or otherwise impede mainline traffic. Particular areas include the north side of Willmar, and Marshall.

MN-68 Shoulder Widening

The need for wider shoulders on many roads was a key finding from the Manufacturers’ Perspectives Study, as wider shoulders provide additional safety margins. Therefore, MnDOT has begun expanding shoulders on select routes. MN-68 between Minneota and Marshall will receive approximately 11 miles of expanded shoulders in 2021. Additional shoulder planning work is underway, and described in Section 2.3.

US-212 Resurfacing

Smooth, well-maintained pavement surfaces can be important for freight movement, as rough or uneven roads can cause cargo to shift or break. MnDOT is continually undertaking pavement renewal projects, and

recent examples particularly relevant to freight include resurfacing of US-212 between the state line and US-75, upcoming resurfacing on 212 between Granite Falls and Renville, and upcoming resurfacing of MN-23 between Cottonwood and Granite Falls.

Programs, Plans, and Operational Changes

In addition to the freight-related infrastructure noted, MnDOT has made operational changes and begun planning work in response to industry stakeholder feedback, including:

- Conducting a new shoulder widening study to determine how future funds should be allocated.
- Coordinating snowplow operations in response to Manufacturers' Perspectives study outreach.
- Making improvements to MnDOT's 511 service and website in response to requests for additional information about conditions and construction projects.
- Conducting safety assessments for highways in Marshall, Glencoe, New London, and McLeod County.
- Conducting a MN-23 and MN-7 intersection study for Clara City, which is intended to improve safety and mobility on MN-23.

Recommendations

While District 8's freight system is not without its needs and issues, it also has many advantages, and there are opportunities to improve the system. These opportunities have been cast as recommendation and have been categorized in four groups:

- **Projects** that improve and expand infrastructure.
- **Policies** to govern the development, operation, and maintenance of the freight system.
- **Programs** designed to broadly improve and enhance the freight transportation system.
- **Partnerships** with local stakeholders to better understand each other's needs and issues, and to collaboratively advance strategies to improve the system.

Projects

Projects are the area where MnDOT has an opportunity to make impactful physical system changes. An assessment of gaps between freight needs and issues and planned transportation improvement projects is shown in Figure 30. Generally, there was a high level of overlap between identified freight needs and issues and planned transportation projects (although these projects are not explicitly intended to address the identified freight needs and issues). Currently, there are over 120 identified freight needs and issue points on District 8's system that are likely not addressed by programmed projects. Notable gaps between programmed projects and needs and issues include:

- **Safety gaps** were the most common gap, making up about two-thirds of the identified gaps. These were distributed across almost all areas of the District but were particularly focused on higher-traffic areas.
- **Performance-related gaps** included issues related to mobility, and only made up about one-quarter of identified gaps. While these were only ¼ of the total count of gaps, they constitute some of the most pressing needs for the District, including lack of mobility/maneuverability at low-clearance bridges, and areas where additional passing lanes, turn lanes, or four-lane expansion was requested.
- **Condition gaps** made up the remaining share of identified gaps and included 25 bridges on the local road system identified as potentially deficient, as well as four issues identified by stakeholders or previous plans. Interestingly, few pavement condition gaps were found, which supports feedback from MnDOT staff who noted that Districts are proactive in programming improvements to address pavement needs.

Many types of highway projects are in fact freight-benefitting projects.

While these project needs were identified during development of a freight plan, these need categories reflect some of the investment categories and funding available through the Minnesota State Highway Investment Program (MnSHIP).

Pre-Feasibility Assessment

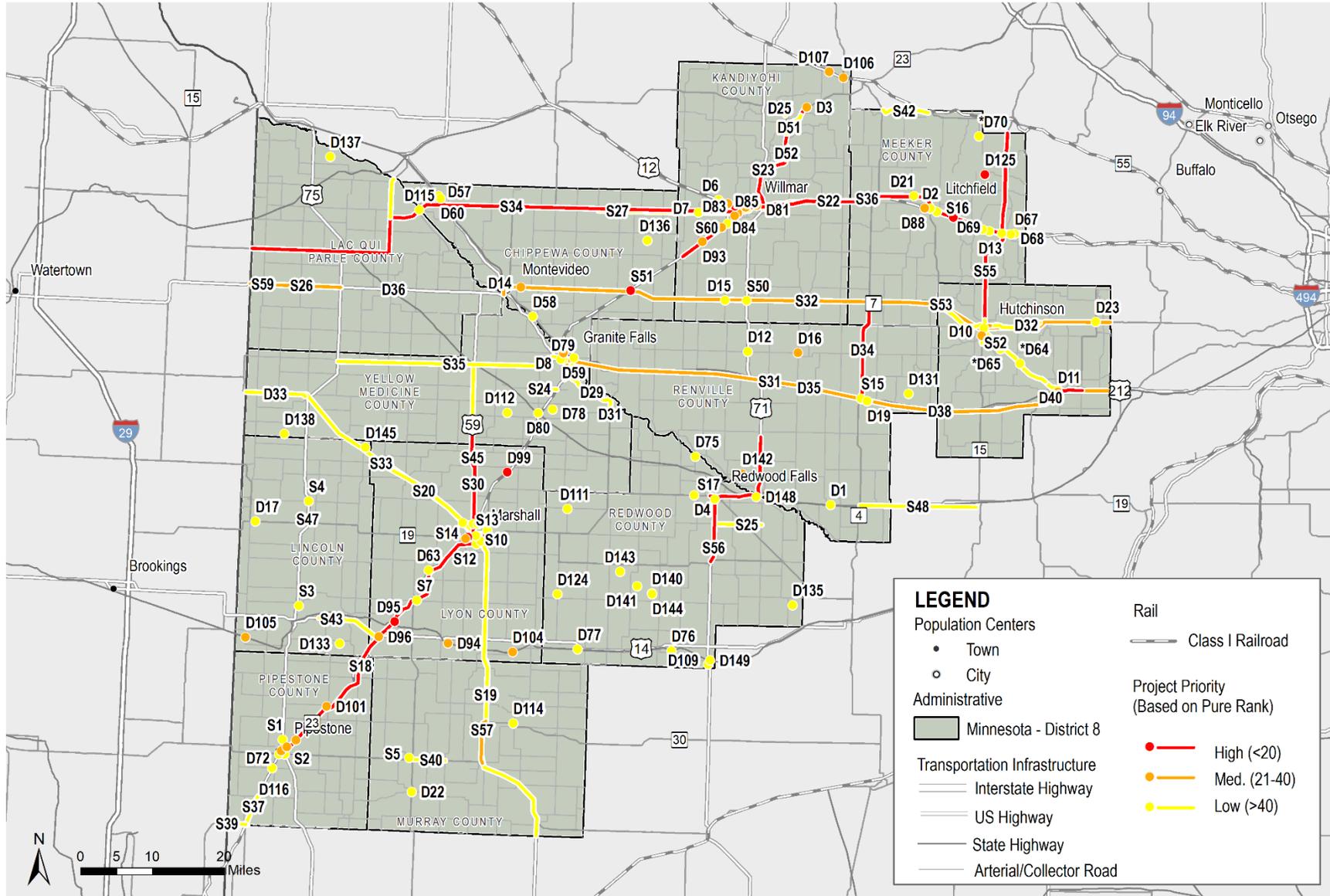
One of the aims of the District 8 Freight Plan is to ensure that the critical needs in the region have the potential to be addressed by future rounds of funding (including dedicated freight, safety, mobility, condition, or other appropriate sources). One way to do this is to take steps to prepare data and information to support the full slate of criteria used in evaluating/scoring projects in the MHFP process. This includes further developing unaddressed “gaps”/project concepts into clear projects/solutions so that they can be scored and considered when future investment decisions are made.

The full slate of 120+ unaddressed needs (out of nearly 180 identified) is shown in Figure 30. A subset of these unaddressed needs were advanced to pre-feasibility to determine 1) what the project would entail, 2) one or more conceptual design options that may address the need, and 3) planning level cost estimates for each option. Figure 29 lists the unaddressed needs that underwent pre-feasibility assessment, and Figure 31 shows these on a map. The projects locations were selected to represent a range of different need/issue types and to provide a broad geographic representation across District 8. Two projects, DXX and DYY, were not identified as part of the plan analysis, but were brought forth by District 8 staff to include in the evaluation. Appendix C has a full list of all gaps shown in Figure 30.

Figure 29: List Unaddressed Needs Included in Pre-Feasibility Assessment

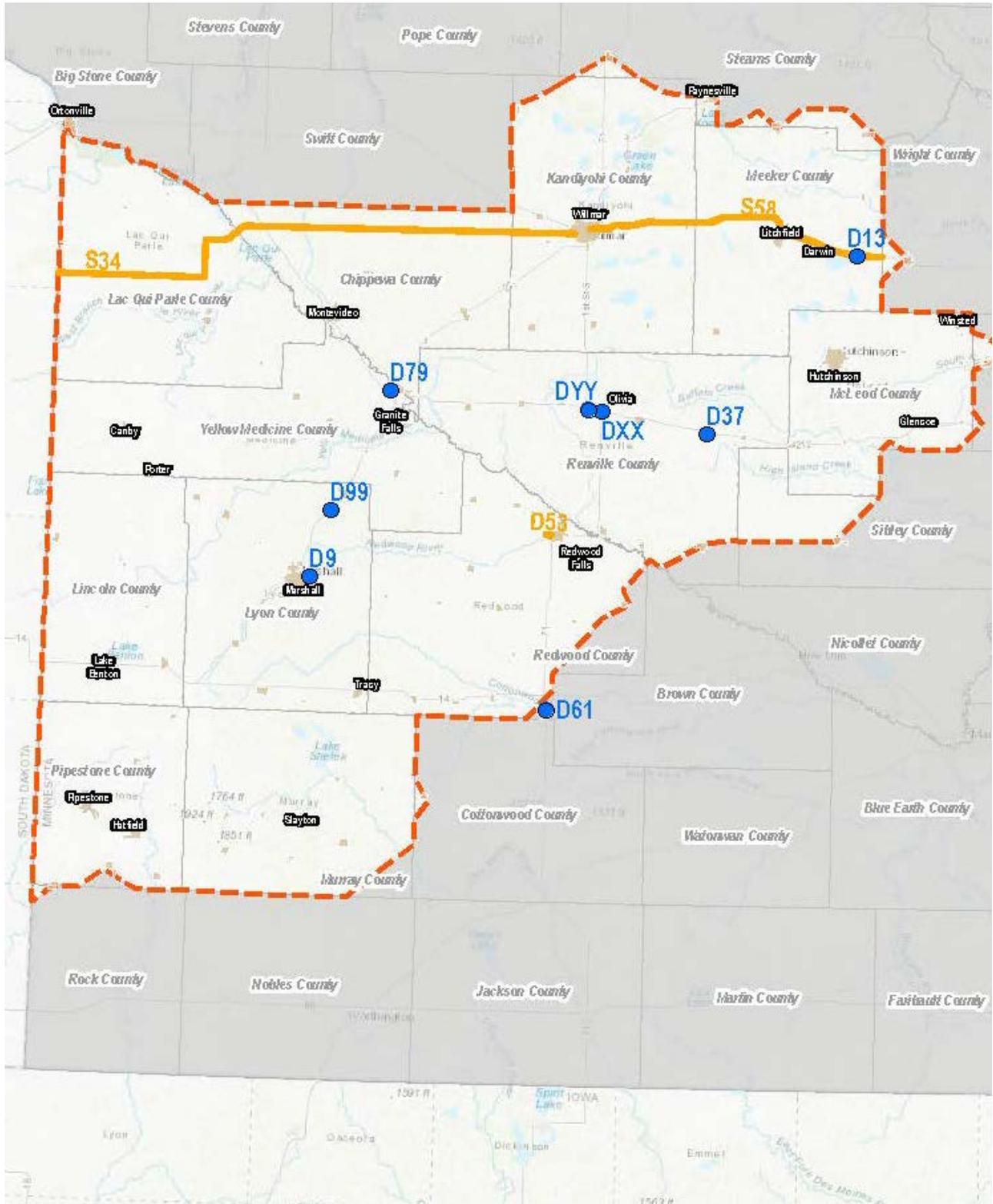
ID	Project Type	Highway	Location	Type of Need/Issue
D9	Intersection	TH 23	Northeast of US 59 in Marshall	Safety
D13	Intersection	US 12	US 12/TH 15 intersection in Dassel	Safety
D37	Intersection	US 212	US 212/TH 4 intersection in Hector	Safety
D53	Highway Segment	TH 19	Laser Ave to US 71 in Redwood Falls	Safety
D61	Railroad Crossing	US 71	Sanborn	Mobility
D79	Railroad Crossing	US 212	West of TH 23 in Granite Falls	Mobility
D99	Railroad Crossing		290TH Ave at TH 23 Southwest of Cottonwood	Safety
DXX	Intersection	US 212	Olivia – US 71/US 212 east intersection	Safety
DYY	Intersection	US 212	Olivia – US 71/US 212 west intersection	Safety
S34	Highway Segment	TH 40	West of Willmar	Safety
S58	Highway Segment	TH 12	TH 12 - Willmar to Darwin	Safety

Figure 30: Map of Pure Ranked "Gaps"



Source: CPCS Transcom Inc.

Figure 31: Map of Project Concepts with Pre-Feasibility Assessment



Source: SEH

Policies, Programs, and Partnerships

To support the advancement of project recommendations, other actions were identified and categorized as policies, programs, and partnerships. Generally, policies are established to inform project and program investments, and partnerships are required for effective implementation. Since MnDOT only has control over a limited portion of the freight network and has limited resources to support maintenance and improvement, partnership with other public agencies and private stakeholders will be an important element of future work on the freight system. Recommended actions are organized by State Freight Plan goal areas in order to link actions to broader statewide aspirations for the multimodal freight transportation system.

Support Minnesota’s Economy

The ability of businesses and industries in Minnesota to compete in the marketplace relies in part on an efficient freight transportation system that effectively moves goods. The freight system that these businesses depend on is multimodal, transports products not only within Minnesota but also throughout the US, and provides connections to trading partners throughout the world. Minnesota’s freight system needs to respond and adjust to changing state, US, and world economic conditions. Recommended actions to support this goal in District 8 are shown in the following figure.

Figure 32: Recommendations to Support Minnesota’s Economy

Type	Description
Policies	N/A
Programs	<ul style="list-style-type: none"> • Manufacturers’ Perspectives Study. Update or “refresh” the Manufacturers’ Perspectives study on a 5 or 10-year basis, to gather relevant feedback and evaluate how freight needs and issues are changing over time. • Minimize Empty Truck Opportunities. Explore opportunities to utilize empty trucks traveling to the District to obtain favorable inbound trucking rates.
Partnerships	<ul style="list-style-type: none"> • Marketing Collaboration for Key Industries. Collaborate with local economic development agencies to market the region’s competitive location and assets. One area to target could be wind energy development. • Truck Driver Training Collaboration. Partner with local educational institutions to support truck driver training programs, with goal to ensure local businesses have enough drivers.

Improve Minnesota’s Mobility

Freight system mobility can be described in several ways. Delay, slow travel speeds, and vertical clearance restrictions are ways to measure mobility, and each translates into a freight transportation system that may have limited maneuverability and not provide a competitive advantage to industry. Minnesota’s freight system needs to offer access for all freight users and reliable service with minimal chokepoints. Recommended actions to support this goal in District 8 are shown in the following figure.

Figure 33: Recommendations to Improve Minnesota’s Mobility

Type	Description
Programs	<ul style="list-style-type: none"> • Develop a District Freight Mobility Program. Develop a freight mobility program in District 8 to systematically address the mobility (performance) issues identified as “unaddressed” (as shown in Figure 30). This program should focus on eliminating vertical clearance restrictions, in order to provide improved system redundancy.

Type	Description
Partnerships	<ul style="list-style-type: none"> • Engage with South Dakota DOT. Engage with South Dakota DOT to ensure that highways critical to freight in District 8 (US-12, US-212, US-14, etc.) are adequately maintained. Other topics for collaboration include weight limit harmonization and the creation or preservation of oversized-overweight truck corridors.

Preserve Minnesota’s Infrastructure

The expected growth in goods movement on all modal networks will stress Minnesota’s transportation infrastructure. Strategic improvements in multimodal freight system infrastructure to ensure critical segments and connections are both available and in a state of good repair are essential for Minnesota to meet expected demand. Recommended actions to support this goal in District 8 are shown in the following figure.

Figure 34: Recommendations to Preserve Minnesota’s Infrastructure

Type	Description
Policies	<ul style="list-style-type: none"> • Incorporate Freight Considerations into Existing MnDOT Funding Programs, or determine the potential freight benefits or impacts of specific CHIP, St.IP, and county projects. Including these considerations may help the District address freight needs and issues without the assistance of a dedicated freight funding program. • Focus on Maintaining the Good Condition of Existing Assets, rather than expanding capacity of the system (primarily roads). The policy reflects the fact that funding shortfalls are expected in the future, and limiting additional maintenance costs for additional infrastructure is in the states’ best interest.
Programs	<ul style="list-style-type: none"> • Develop a Freight Infrastructure Program in District 8 to systematically address the condition issues identified as “unaddressed” (as shown in Figure 30). • Expand Truck Parking Options on the southern and western sides of the Twin Cities. • Conduct Research in Freight Technology Topics, including to understand how the implementation of autonomous trucks may be relevant to freight in the area, and what facilities may be needed to support autonomous vehicle operations.
Partnerships	<ul style="list-style-type: none"> • Provide Stable Funding. Encourage state and federal lawmakers to develop stable funding policies and sources for freight, and the transportation system in general. • Consult with Trucking Operators when creating roundabouts on major freight routes. • Work with Class III Railroads to understand track weight limitations and investment requirements to make the rail system more efficient in the District. In particular, weight upgrades for the MVRRA’s Minnesota River bridge and track between Gibbon and Hanley Falls are needed to improve rail access for local businesses and increase system capacity to accommodate the weight of modern rail cars. These investments also have the potential to divert truck traffic from highway networks, improving the longevity of road surfaces.

Safeguard Minnesotans

Safety is a high priority for both public and private organizations involved in freight transportation. In Minnesota, a multifaceted approach to enhance safety has resulted in a historic trend of decreasing fatalities for both passenger and commercial vehicles. Minnesota needs to enhance freight system safety and ensure plans are in place to protect areas where freight activity and the public interface. Recommended actions to support this goal in District 8 are shown in the following figure.

Figure 35: Recommendations to Safeguard Minnesotans

Type	Description
Policies	N/A
Programs	<ul style="list-style-type: none"> • Develop a Freight Safety Program in District 8 to systematically address the safety issues identified as “unaddressed” (as shown in Figure 30). This could effectively be incorporated in existing District safety activities, with an emphasis on addressing those most pressing freight-related needs (e.g., adding turning, accelerating and passing lanes; improving sight lines and warnings for shot stopping distances; widening and strengthening shoulders). • Make Targeted, Low Cost Safety Investments, which could include warning devices at high-risk rural intersections • Advance District Recommendations of MnDOT’s Weight Enforcement Investment Plan including: 1) US-71/MN-23 in Kandiyohi County north of Willmar needs increased enforcement due to the shipping of heavy sugar beets and generally heavy truck traffic, and 2) additional review is needed to upgrade a Weigh In Motion site on US-212 in Renville County, east of Olivia.
Partnerships	<ul style="list-style-type: none"> • Partner with Local Communities and Railroads to advance grade crossing and low clearance improvements at key locations (as shown in Figure 30). • Public Education on How to Drive Near Trucks. Public education with local law enforcement and media to help public understand how to drive around trucks.

Protect Minnesota’s Environment and Communities

Minnesota’s residents and businesses rely on freight transportation to support their economies; however, freight facilities and services sometimes negatively impact communities and the environment. Some of these impacts relate to air quality and noise, the presence of trucks in neighborhoods, and land use conflicts. Freight may affect Minnesota’s traditionally underrepresented communities, such as racial and ethnic minorities, households without vehicles, and persons with low incomes. It is necessary to plan, design, develop, and preserve the freight system in a way that respects and complements the natural, cultural, and social context and is consistent with the principles of context sensitive solutions. Recommended actions to support this goal in District 8 are shown in the following figure.

Figure 36: Recommendations to Protect Minnesota’s Environment and Communities

Type	Description
Policies	N/A
Programs	<ul style="list-style-type: none"> • Improve Truck Routing. Examine opportunities to minimize truck routing through urban areas/town centers. • Reduce Use of Salt and Deicers. Examine opportunities to reduce the use of salt and other deicing solutions that may contribute to the contamination of local water supply used for agriculture.
Partnerships	<ul style="list-style-type: none"> • Provide Local Assistance. Offer assistance to county and local governments with long-range planning. Many freight issues occur off of MnDOT’s trunk highway network, so collaboration with local governments may be necessary to solve first- and last-mile freight movement needs and issues.

Appendices



Image: MnDOT snow plow. Source: MnDOT

Appendix A: Advisory Committee and Technical Team Membership

Advisory Committee

- Netty Fiedler, Rosemary Bruce-White, Southwest Regional Development Commission
- Chad Kingstrom, Upper Minnesota Valley Regional Development Commission
- Donn Winckler, Kyle Ten Napel Mid-Minnesota Development Commission
- Mel Odens, Kandiyohi County
- Kent Exner, City of Hutchinson
- Dan Coughlin, City of Olivia
- Vicki Schwartz, Schwans
- Chuck Nelson, First District
- Todd Geselius, SMBSC
- Mark Wegner, TC&W Railroad
- Jean Cemensky, DPS
- Melanie Faust, Darica Schneider, Jennie-O Turkey Store
- Ryan Viessman, Viessman Trucking
- Bobbi Retzlaff, FHWA
- Andrew Andrusko, MnDOT Office of Freight
- Lindsey Bruer, Megan DeSchepper, Jon Huseby, Susann Karnowski, Mandi Lightizer-Schmidt, MnDOT District 8

Technical Team

- Andrew Andrusko, MnDOT Office of Freight
- Lindsey Bruer, Megan DeSchepper, Susann Karnowski, MnDOT District 8
- Netty Fiedler, Rosemary Bruce-White, Southwest Regional Development Commission
- Chad Kingstrom, Upper Minnesota Valley Regional Development Commission
- Donn Winckler, Kyle Ten Naple, Mid-Minnesota Development Commission
- Kory Anderson, MnDOT Office of Transportation System Management

Appendix B: Previous Plans

Document	Agency	Year
Minnesota Statewide Freight System and Investment Plan	MnDOT	2018
Manufacturers' Perspectives on Minnesota's Transportation System: District 8	MnDOT	2014
Western Minnesota Regional Freight Study	MnDOT	2009
Minnesota State Highway Investment Plan 2018-2037	MnDOT	2017
District Safety Plan Update	MnDOT	2016
Rail Grade Crossing Safety Project Selection	MnDOT	2016
Statewide Rail Plan	MnDOT	2015
Upper Minnesota Valley Region Comprehensive Economic Development Strategy	UMVRDC	2016
Upper Minnesota Valley Regional Development Commission Annual Report	UMVRDC	2018
Mid-Minnesota Development Commission Comprehensive Economic Development Strategy	MMRDC	2016
Mid-Minnesota Development Commission Annual Report	MMRDC	2017
Comprehensive Economic Development Strategy for Southwest Minnesota	SRDC	2017
Southwest Regional Development Commission Annual Report	SRDC	2018

Appendix C: Pure Project Ranks

The following figure lists ranks for each project “gap” identified in District 8. Truck percent was used as a tiebreaker to help determine which projects may be more relevant to freight operations in District 8. The fields in the table are:

- **ID:** This code refers to the need/issue ID printed on maps in this Working Paper. IDs beginning with “S” denote needs or issues identified by stakeholders, while IDs beginning with “D” denote needs or issues identified by analysis of data.
- **Type:** road, rail or bridge specific
- **Highway Name** or Number (as available)
- **Location**
- **Need/Issue Type:** This field corresponds to the primary need or issue associated with the location. Needs and issues were coded in four ways: safety, condition, or mobility.
- **Pure:** The “pure ranking” is simply the total of all scores, for each measure, for each project concept. Not all project concepts will have scores for each of the measure categories, e.g., a weight limited bridge may not have a safety issues and will not receive a score in the safety category. However, there may be cases where project concepts do receive scores in multiple categories, and as a result will receive a higher score and ultimately will be ranked higher in the evaluation. Truck percent has been used to break ties in ranks, as available.
- **Safety:** The total of all safety-related scores. Truck percent has been used to break ties in ranks, as available.
- **Mobility:** The total of all mobility-related scores. Truck percent has been used to break ties in ranks, as available.
- **Condition:** The total of all condition-related scores. Truck percent has been used to break ties in ranks, as available.

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
D83	Rail		30 th St NW	Safety	1	2		
D86	Rail		W College Dr	Safety	1	2		
D40	Road	Maple	W of CSAH9 (McLeod Ave S) in Plato	Safety	2	4		
D37	Road	Maple	S of TH-212 (Ave E) in Hector	Safety	3	3		
S45	Road	US-59	US-59 N. of Marshall	Safety	4	18		
D95	Rail		150th St	Safety	5	23		
D97	Rail		650th Ave	Safety	5	23		
D99	Rail		290th Ave	Safety	5	23		
S18	Road	MN-23	Marshall to Pipestone	Mobility	6		10	
S29	Road	US-23	SW side of Willmar	Mobility	7		20	
D39	Road	MN-23	E of N JCT TH-71 & 23	Safety	8	5		
D34	Road	Broadway	S of TH-7 (Astro Blvd) in Cosmos	Safety	9	1		
D9	Road	TH 23	NE of TH-59 in Marshall	Safety	10	17		
S13	Road	TH 23	NE of TH-59 in Marshall	Safety	10	17		
S58	Road		US-152	Safety	11	9		
S55	Road		MN-15	Safety	12	15		
S56	Road		US Highway 71 and MN Highway 19/67	Safety	13	16		
D53	Road	280th	W of Swain St. in Redwood Falls	Safety	14	31		
S23	Road	MN-23	Willmar to I-94	Mobility	15		13	
D125	Bridge		0.1 mi. S of jct. CSAH 27	Condition	16			1
S34	Road	MN-40	West of Willmar	Safety	17	6		
D35	Road	Maple	W of E jct. CSAH3	Safety	18	36		

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
S51	Road	TH 23	NE of TH7 in Clara City	Mobility	19		3	
D38	Road	Maple	W of CR57	Safety	20	37		
D47	Road	USt.H 75	NE of N jct. TH75 &23 in Pipestone	Safety	21	25		
S22	Road	US-12	Willmar to Twin Cities	Mobility	22		11	
D36	Road	Maple	W of 2nd St. in Dawson	Safety	23	39		
D54	Road	Maple	23 W of E jct. TH-212 &23	Safety	24	40		
D3	Road	TH 23	NE of N jct. CSAH31	Safety	25	11		
D11	Road	TH 22	N of 9th St. in Glencoe	Safety	26	14		
S57	Road		US 59	Condition	27			NA
D10	Road	TH 15	NE of Franklin St. in Hutchinson	Safety	28	18		
D100	Rail		Dike Rd.	Safety	29	35		
D101	Rail		Washington Ave.	Safety	29	35		
D102	Rail		121st St.	Safety	29	35		
D103	Rail		9th St. NE	Safety	29	35		
D104	Rail		310th Ave.	Safety	29	35		
D105	Rail		CSAH 1	Safety	29	35		
D106	Rail		190th St. NE	Safety	29	35		
D107	Rail		160th St. NE	Safety	29	35		
D81	Rail		Lakeland Dr. SE	Safety	29	35		
D82	Rail		7th St. SW	Safety	29	35		
D84	Rail		Willmar Ave. SW	Safety	29	35		
D85	Rail		30th St. SW	Safety	29	35		

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
D87	Rail		240th Ave.	Safety	29	35		
D88	Rail		CSAH 1	Safety	29	35		
D89	Rail		8th Ave. NE	Safety	29	35		
D90	Rail		E Main St.	Safety	29	35		
D91	Rail		45th St. NW	Safety	29	35		
D92	Rail		45th Ave. SW	Safety	29	35		
D93	Rail		75th Ave. SW	Safety	29	35		
D94	Rail		220th Ave.	Safety	29	35		
D96	Rail		Blaine St.	Safety	29	35		
D142	Bridge		0.3 mi. N of JCT CSAH 2	Condition	30			1
D16	Road	TH 212	E of CSAH5 (Main St.) in Bird Island	Safety	31	48		
D41	Road	13th	E of CSAH5	Safety	32	44		
S26	Road	US-212	SD border to TH-75	Safety	33	8		
S59	Road		US-212	Condition	33			NA
S36	Road	US-12	Willmar to Twin Cities	Safety	34	10		
D43	Road	MNTH 23	S of S JCT TH23 &67 in Granite Falls	Safety	35	38		
S31	Road	US-212	Marshall to Twin Cities	Mobility	36		12	
S32	Road	MN-7	MN-7	Mobility	37		13	
D14	Road	TH 7	0.2 M E of CSAH15 (24th St.) in Montevideo	Safety	38	18		
D45	Road	MNTH 22	22 W of E JCT TH-22 in Hutchinson	Safety	39	19		
D55	Road	MNTH 22	22 W of E JCT TH-22 in Hutchinson	Safety	39	19		
D109	Bridge		0.5 mi. S of JCT CSAH 15	Condition	40			1

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
D131	Bridge		1.6 mi. N of JCT TH-212	Condition	40			1
D133	Bridge		0.4 mi. S of JCT CSAH 9	Condition	40			1
D136	Bridge		1.9 mi. E of JCT CSAH 2	Condition	40			1
D137	Bridge		0.5 mi. W of JCT CR 59	Condition	40			1
D148	Bridge		1.0 mi. S of Morton	Condition	40			1
D22	Road	TH 91	N of Carlton St. in Chandler	Safety	41	46		
D15	Road	TH 7	W of TH71	Safety	42	47		
S50	Road	TH 7	W of TH71	Mobility	42		9	
S60	Road	TH 23	E of CSAH5	Safety	43	69		
D19	Road	TH 212	.7 mi. E of TH4 (Main St.) (E of Hector)	Safety	44	49		
D29	Road	Front	NW of TH67 & CSAH21	Safety	45	7		
D33	Road	MNTH 68	0.47 mi. W of JCT CSAH 15, E of SD border	Safety	46	26		
D79	Bridge			Mobility	47		5	
D8	Road	TH 212	&67 W of CSAH45 (17th St.) Granite Falls	Safety	47	52		
D24	Road	MNTH 119	S of TH40	Safety	48	27		
D30	Road	Front	1 mi. SE of S JCT TH23 &67	Safety	49	28		
D72	Bridge			Mobility	50		6	
S53	Road		MN-22	Safety	51	12		

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
S35	Road	MN-67	Granite Falls to US-75	Mobility	52		23	
S27	Road	MN-40	West of Willmar	Safety	53	13		
S40	Road	TH 30	W of TH267 (W of Slayton)	Condition	53			NA
S19	Road	MN-29	Marshall to Worthington	Mobility	54		24	
S30	Road	US-59	North and South of Marshall	Mobility	54		24	
D51	Road	MNTH 23	N of CSAH40 (4th Ave. S) in New London	Safety	55	30		
D52	Road	MNTH 23	E of N JCT TH71 &23	Safety	56	41		
D13	Road	TH 15	S of TH12 in DASSEL	Safety	57	18		
D48	Road	MNTH 15	N of Miller Ave. SW in Hutchinson	Safety	58	43		
D32	Road	MNTH 7	&22 W of E JCT TH22 in Hutchinson	Safety	59	19		
D44	Road	MNTH 22	&22 W of E JCT TH22 in Hutchinson	Safety	59	32		
S14	Road	TH 19	W of Marlene St. in Marshall	Safety	60	20		
S20	Road	MN-68	West of Marshall	Safety	61	21		
D149	Bridge	TH 71	N of CSAH15 (CENTRAL St.) in Sanborn	Mobility	62		17	
D111	Bridge		0.1 mi. S of JCT CSAH 30	Condition	63			1
D112	Bridge		0.8 mi. NE of JCT CSAH18	Condition	63			1
D138	Bridge		1.5 mi. S of JCT CSAH 36	Condition	63			1
S25	Road	CR-12	Redwood Falls	Mobility	64		18	

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
D31	Road	Front	NW of TH67 &CSAH21	Safety	65	24		
D25	Road	MNTH 9	S of New London NCL	Safety	66	29		
D26	Road	MNTH 9	S of New London NCL	Safety	66	29		
D27	Road	MNTH 9	S of New London NCL	Safety	66	29		
D28	Road	MNTH 9	S of New London NCL	Safety	66	29		
D42	Road	13th	S of TH71 &23 in Willmar	Safety	67	45		
D5	Road	TH 23	N of TH1 (E College Dr) in Marshall	Safety	68	58		
D49	Road	MNTH 15	S of Baltimore Ave. in Hutchinson	Safety	69	42		
S33	Road	MN-68	Highway 68 from Marshall to SD	Safety	70	22		
D115	Bridge		3.8 mi. W of JCT TH 59	Condition	71			1
S3	Road	TH 75	N of CSAH12	Safety	72	68		
S47	Road	US-75	Hwy 75 and Co. 25	Safety	73	70		
S48	Road	MN-19	MN-5 to US-169	Mobility	74		19	
S38	Road	MN 269	Jasper to SD	Safety	75	50		
S2	Road	TH 75	SE of E JCT TH75 &30 in Pipestone	Safety	76	71		
S39	Road	TH 23	N of 10th St. in Jasper	Condition	77			NA
S37	Road	MN-23	Ihlen to Jasper -- Deer Crossing	Safety	78	73		

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
S17	Road	TH 71	S of TH67 (BROADWAY) in Redwood Falls	Safety	79	74		
D20	Road	TH 23	SW of CSAH15	Safety	80	51		
D18	Road	TH 59	S of Ontario Rd. in Marshall	Safety	81	60		
S49	Road	MN-33 and US-59	Marshall	Mobility	81		4	
S9	Road	TH 59	S of ONTARIO Rd. in Marshall	Safety	81	61		
D2	Road	TH 12	&22 S of CSAH11 (5th St.) in Litchfield	Safety	82	66		
D50	Road	280th	&68 SW of W Marshall St. in Marshall	Safety	83	33		
D46	Road	280th	&68 W of MUST.ANG TR in Marshall	Safety	84	34		
D116	Bridge		1.0 mi. S of JCT CSAH 2	Condition	85			1
D135	Bridge		0.6 mi. E of JCT CSAH 2	Condition	85			1
D145	Bridge		0.2 mi. E of JCT CR 116	Condition	85			1
D58	Bridge			Mobility	86		1	
D60	Bridge			Mobility	86		1	
D67	Bridge			Mobility	86		1	
D68	Bridge			Mobility	86		1	
D69	Bridge			Mobility	86		1	
S4	Road	TH 75	2.5 mi. N of TH19	Safety	87	70		
S24	Road	CR-17	Prairies Edge	Mobility	88		21	

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
S1	Road	TH 75	0.5 mi. S of CSAH7 (151St. St.), N of Pipestone	Safety	89	72		
S42	Road	MN 55	Eden Valley to Paynesville	Safety	90	75		
D17	Road	TH 19	E of TH271/CSAH1	Safety	91	53		
D12	Road	TH 71	N of TH212 in OLIVIA	Safety	92	54		
D4	Road	TH 19	&67 W of E JCT CSAH17	Safety	93	55		
D21	Road	TH 12	W of N JCT TH12 &22 (NW of Litchfield)	Safety	94	56		
D6	Road	TH 12	Pennock	Safety	95	57		
S54	Road		MN-22	Mobility	96		14	
S12	Road	TH 23	E of CSAH7 (240TH Ave.) in Marshall	Safety	97	63		
D23	Road	TH 7	E of CSAH1	Safety	98	64		
S16	Road	TH 12	NW of CSAH34 in Litchfield	Safety	99	65		
S52	Road	TH 15	S of Washington Ave. in Hutchinson	Mobility	100		15	
S11	Road	TH 23	SW of TH59 in Marshall	Safety	101	67		
D114	Bridge		0.5 mi. N of JCT TH 30	Condition	102			1
D124	Bridge		0.6 mi. N of JCT CSAH 4	Condition	102			1
D143	Bridge		1.6 mi. E of JCT CSAH 10	Condition	102			1

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
D144	Bridge		0.9 mi. W of JCT CSAH 6	Condition	102			1
D75	Bridge			Mobility	103		1	
D76	Bridge			Mobility	103		1	
D77	Bridge			Mobility	103		1	
D78	Bridge			Mobility	103		1	
S43	Road	US 14	E. and W. of Tyler	Mobility	104		22	
S5	Road	TH 91	SE of TH91 (MN AV) in Lake Wilson	Safety	105	76		
S15	Road	TH 4	N of TH212 (HIGHWAY AV) in Hector	Safety	106	77		
D63	Bridge			Mobility	107		2	
D71	Bridge			Mobility	107		2	
D140	Bridge		1.1 mi. N of JCT CSAH 4	Condition	108			1
D141	Bridge		0.1 mi. S of JCT CR 66	Condition	108			1
D1	Road	TH 19	E of E JCT CSAH3	Safety	109	59		
D7	Road	TH 40	E of CSAH1	Safety	110	62		
D57	Bridge			Mobility	111		8	
D80	Bridge			Mobility	111		2	
S28	Road	Kandiyohi CR-55	West side of Willmar	Mobility	112		25	
S8	Road	TH 68	SE of SE JCT CSAH8 (Collins St.) Ghent	Safety	113	78		

ID	Type	Highway	Location	Need/issue	Pure	Safety	Mobility	Condition
S7	Road	TH 23	E of TH91 in Russell	Safety	114	79		
S10	Road	TH 19	&68 SW of W Marshall St. in Marshall	Safety	115	80		
D59	Bridge			Mobility	116		7	
S21	Road	Kandiyohi CR-9	East of Willmar	Mobility	117		16	
D64	Bridge			Mobility	118		25	
D65	Bridge			Mobility	118		25	
D70	Bridge			Mobility	118		25	

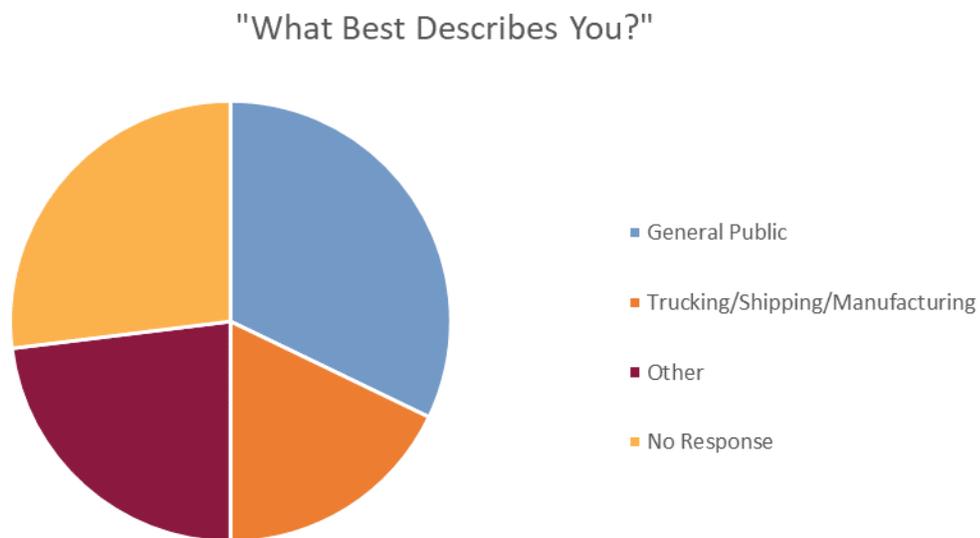
Appendix D: MetroQuest Survey Summary

Public outreach provides MnDOT an opportunity to better understand local infrastructure strengths and weaknesses through the eyes of the general public. For the District 8 Freight Plan, MnDOT used the MetroQuest online survey/outreach platform as a means of gathering public feedback during plan completion. Over 196 respondents provided feedback on the freight transportation system in District 8, including through multiple choice prompts, markers placed on a static map, and as written comments.

Respondent Demographics

Most respondents to the District 8 Freight Plan MetroQuest survey listed that they were a member of the “general public” (32%), but a small amount of respondents were either in the trucking, shipping, or manufacturing fields (18%). Of the latter subset, the majority of workers were in freight related professions, including agriculture. Respondents were also familiar with the study area, with over two thirds calling District 8 their home.

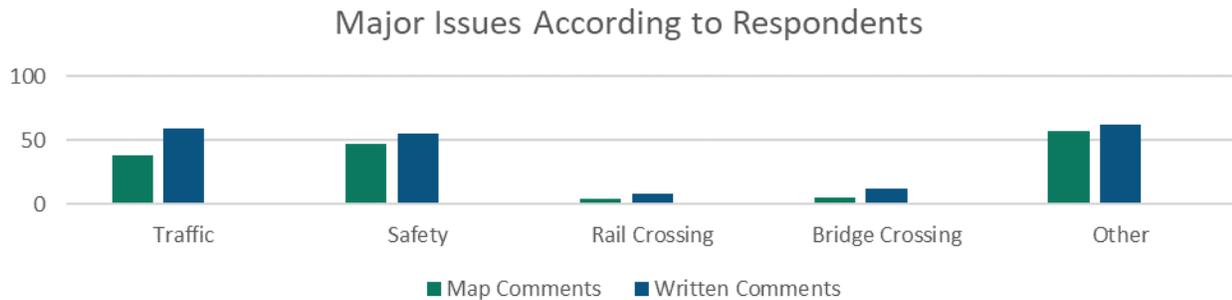
Figure 37: Demographics of Respondents.



Major Types of Needs and Issues Identified

There were five different categories that issues could be classified under: Traffic, Safety, Railroad Crossings, Bridge Crossings, and Other. The figure lists each category’s share of comments from the written comments and interactive map comments.

Figure 38: Major Types of Needs and Issues



Traffic, Safety, and miscellaneous problems with the transportation system were the three most common issues listed. The most common traffic concerns included heavy vehicle congestion, poorly designed intersections, and a desire for two lane highway expansion to four lanes. These problems often overlapped with safety concerns, such as poor sight lines on intersections and narrow roads leading to unnecessary crashes. Railroad and bridge crossings were marked as problematic usually due to being out of date or having low height clearances for larger vehicles. Some other issues mentioned frequently were a desire for more rest stops for truckers, adequate roundabout design to accommodate turning oversized trucks, the need for more truck acceleration lanes off ramps, and concerns regarding truck drivers using county roads instead of trunk highways to avoid police, posing greater risks for collision with farm equipment on these roads.

When respondents were asked to rank freight priorities, the most pressing were assistance for local governance and consistent funding for infrastructure projects. Supporting truck safety and truck driver education were also important, albeit less so. Respondents were least concerned about planning for autonomous vehicles and collaborating with South Dakota on future projects.

Common Locations of Problems, Issues, and Needs

The static map built into the MetroQuest platform provided a way for respondents to select a location within District 8 that they believed had a need or issue, and leave a comment describing said issue. US 212 was the most commonly-mentioned site, and was mentioned eleven times in various comments along its length. Most of the noted issues for US 212 are traffic issues and safety concerns related to poor crossings along the route, where trucks cannot get up to speed fast enough, or calls to increase US 212 from two to four lanes to support more traffic.

There were also clusters of issues identified near Willmar and Glencoe. Running through southern Willmar, Highway 23 was identified as needing expansion to four lanes, with more on and off ramps from smaller roads that link to Willmar proper. The roundabout at US 12 and 30th Street was also identified as a potential problem due to poor design for truck movements. US 212 in Glencoe, also had similar traffic and safety issues identified. Problems range from trucks turning into traffic to complete turns to truckers creating traffic congestion by going through downtown to get to the highway. Both cities have similar issues of managing vehicles exiting to and from the highways near them, and creating safe intersections and speed limits.

Other areas of interest include the region between Granite Falls and Montevideo (passing lane on US 212), the region around Dawson (dangerous intersection at County Highway 119 and 40, antiquated bridges), Hutchinson (roundabouts not supporting large trucks), Highway 23 by New London (dangerous J turn from Highway 23 to County Highway 9), and County Highway 15 from Lamberton to Sanborn (heavy grain truck traffic).



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