DEPARTMENT OF TRANSPORTATION

District 7 Freight Plan

Draft Plan

March 2022

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Chapter 1: Where Are We Going?

Chapter 1: Vision for the Future

About the District 7 Freight Plan

The Minnesota Department of Transportation's (MnDOT) District 7 Freight Plan has been developed to provide a clear understanding of District 7's multimodal freight system, how the system serves District 7's economy, and the transportation issues and needs of businesses in the District. MnDOT will use this freight transportation information to help inform policy and programming decisions in District 7.

District 7 serves south-central Minnesota, which includes 13 counties: Blue Earth, Brown, Cottonwood, Faribault, Jackson, Le Sueur, Martin, Nicollet, Nobles, Rock, Sibley, Waseca, and Watonwan. The Mankato/North Mankato Metropolitan Planning Organization (MAPO) also provides planning support for portions of the area.

Interstate 90, US Highway 169, and Minnesota Highway 60 provide key truck routes connecting the region to South Dakota, the Twin Cities area, and I-35. Rail connections provide the backbone of grain and heavy commodity movements. In addition, the area is host to substantial agricultural and manufacturing industries, which rely on freight transportation to support their operations. Figure 1 illustrates the extent of the District's freight network and connections to neighboring regions

Since MnDOT is one of the largest stewards of Minnesota's transportation system, MnDOT and its local partners need to have access to recent, relevant, and easily-updated data and tools that provide insights into the District's freight transportation issues and needs. In addition to informing planning, investment, and operations at the District level, findings from the District 7 Freight Plan will help inform the next Minnesota Statewide Freight System and Investment Plan (State Freight Plan).

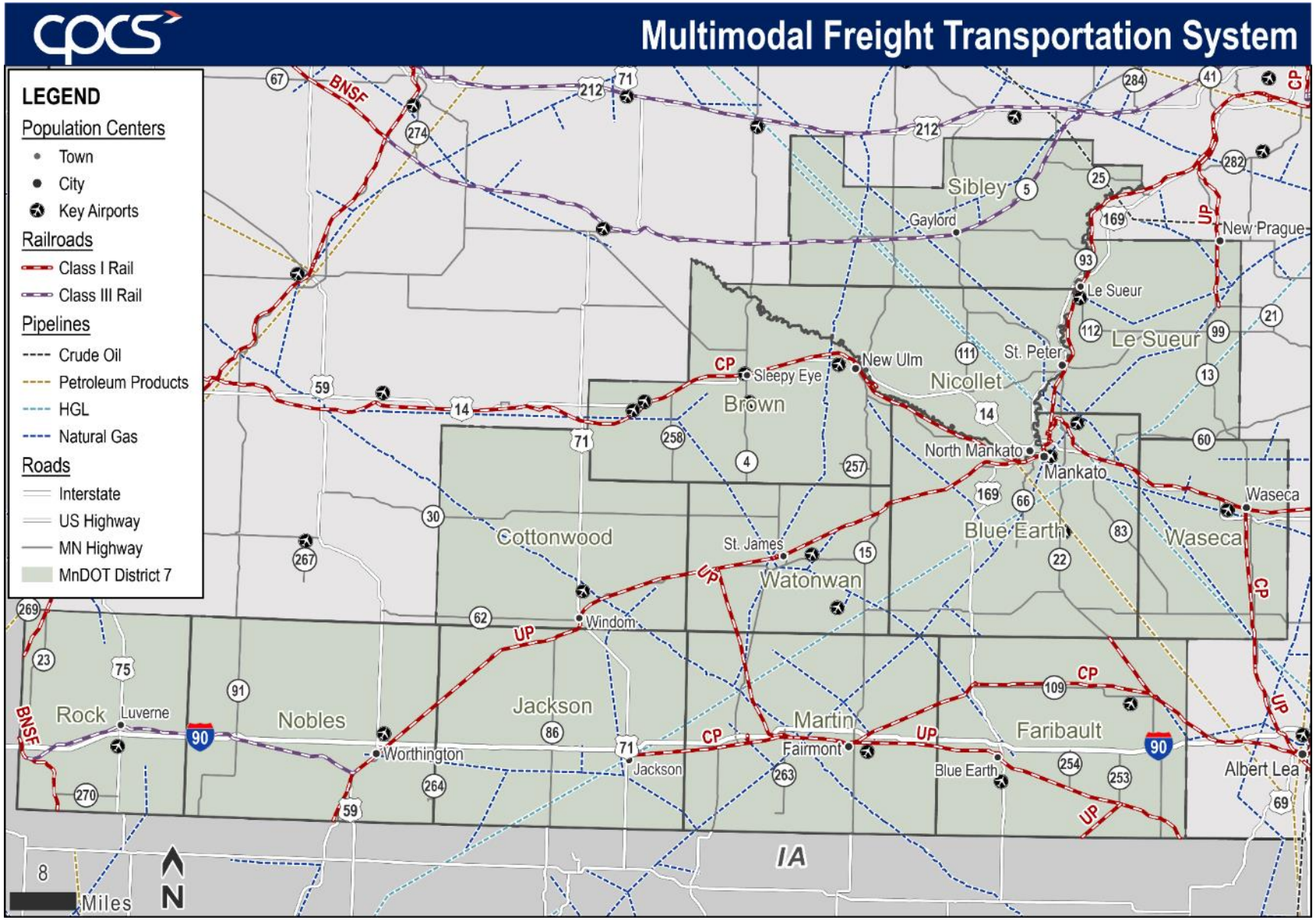
MnDOT will use the District 7 freight plan to inform future policy and programming decisions in the District.

This Plan's Relationship to Other Plans

MnDOT has created individual plans for each mode of transportation in Minnesota, as well as multimodal plans for the transportation system as a whole. These plans aid in the management, maintenance, and development of the transportation system in both the near- and long term. In particular, the Minnesota GO plan provides a vision for the Statewide Multimodal Transportation Plan, which is Minnesota's high-level policy plan for transportation. More specific plans, such as the State Freight Plan, and State Rail Plan are aligned with the vision and goals established in Minnesota GO.

Since MnDOT's plans and studies align with higher-level vision and guidance, previous statewide plans and studies were used to guide the development of the District 7 freight plan. In particular, the State Freight Plan provided a framework for the evaluation of issues and needs, and the statewide freight policy and goals were applied at the District level to ensure the District 7 plan aligns with statewide policies. Figure 2 shows the process used to develop the District 7 Freight Plan, which ensured that District 7's freight recommendations were linked to overarching state-level guidance.

Figure 1: District 7's Multimodal Freight Network



Source: CPCS analysis of National Transportation Atlas data. 2022.

Figure 2: "Connecting the Dots" between Statewide Guidance and District 7 Freight Plan Recommendations

Source: MnDOT.

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 7 Freight Plan:

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

District 7 Freight Plan Development and Data Sources

The District 7 Freight Plan was developed using five key sources of information which are profiled below. Public feedback was key to the plan's development: 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.

Previous Studies and Plans: An initial step for this plan was an in-depth review and synthesis of needs and issues identified in previous plans and studies. A particularly important study was the 2019 *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 7 Freight Plan.

Analysis of Data: Evaluations of safety, mobility, and condition were completed using data provided by MnDOT. Examples of data sources include historic road crash data, vehicle counts, vehicle speed data, and infrastructure condition records.

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 7 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. Five meetings with both groups were conducted between 2021 and 2022.

Stakeholder Consultations: 22 phone and in-person consultations with private and public freight stakeholders were conducted between July and October 2021. The results of these consultations were synthesized with other findings on needs and issues.

Online Survey: The project team created and distributed an online created using MnDOT's MetroQuest public outreach platform. The purpose of this interactive survey was to supplement feedback from other sources and provided the general public with an opportunity to comment on freight needs and issues.

Open Houses: Feedback from public and private stakeholders was collected during online open houses held in September 2021 and March 2022.

Additional Resources

The development of this freight plan was supported by the creation of six intermediate Working Papers, which provide a greater level of detail on District 7's freight assets, issues and needs, 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 7 Freight Plan website:
https://www.dot.state.mn.us/ofrw/freight/districtfreightplan/d7.html

Chapter 2: Where Are We Now?

Chapter 2: Existing System Conditions

The Importance of Freight to District 7

District 7's freight transportation system is a critical component, driver, and facilitator of its economy. 37 percent of the District's employment and 39 percent of the District's GDP are associated with "freight-related" industries, which are industries that depend on freight transportation to support their core operations. The largest freight-related industries in District 7 are manufacturing and agriculture. Figure 3 displays District 7's freight-related employment broken down by industries other than agriculture.

Figure 3: District 7's Freight-Related Industry Employment

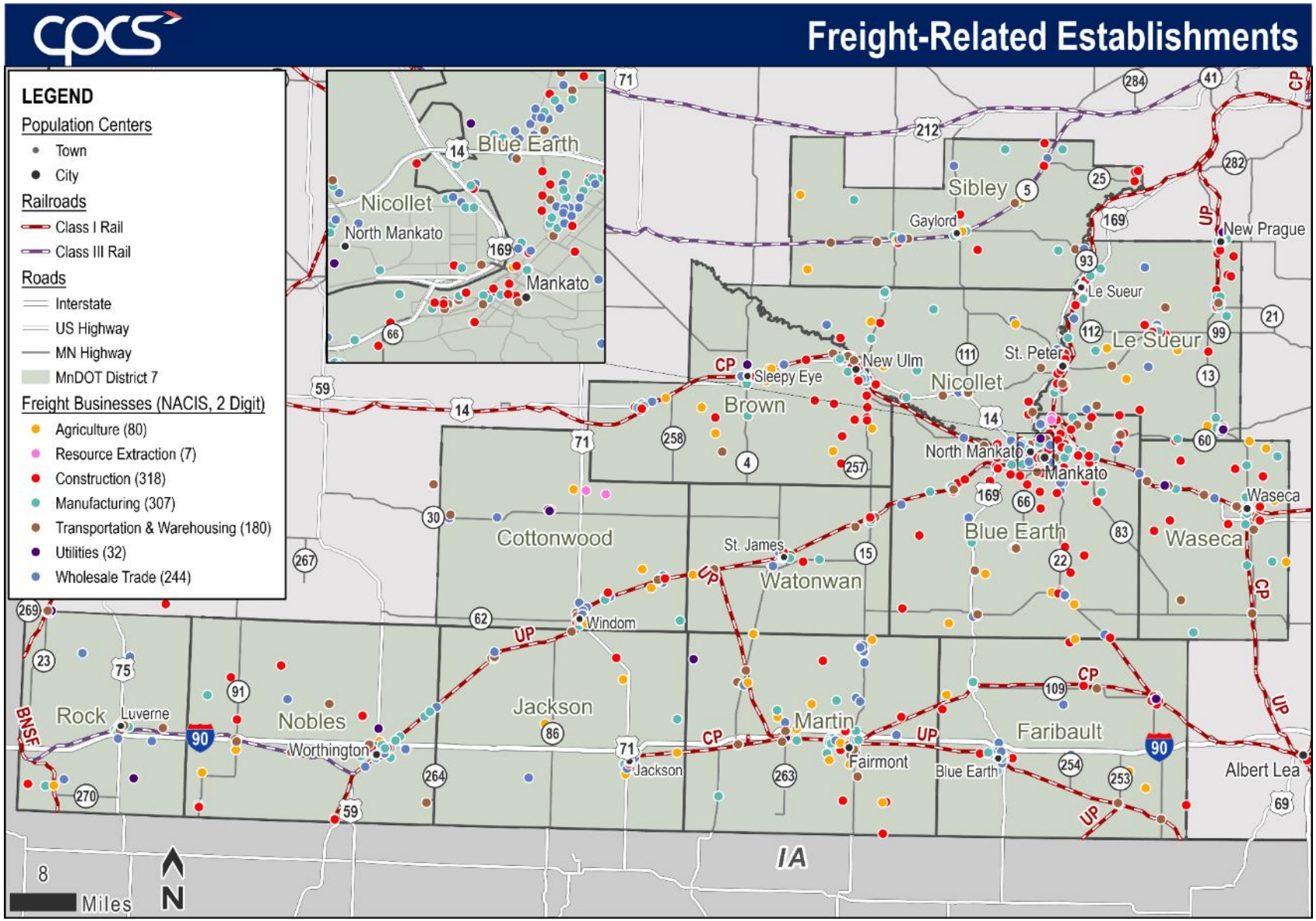
Source: CPCS analysis of Full-Time and Part-Time Employment by NAICS Industry 2019, Bureau of Economic Analysis; 2019 Census of Agriculture. 2021.

District 7 Freight-Related Industry Locations

District 7's freight transportation system is important to communities of all sizes across the District. Figure 4 displays the locations of freight-related businesses and establishments with 20 or more employees in District 7. Many of the establishments are positioned along key highway corridors, particularly along US-169 that provides access to I-90 and the Twin Cities, US-14, which runs east-west across the District and MN-60. Additionally, many of the businesses are located along rail lines, including the east-west Union Pacific line running from south Nobles County through to Mankato.

District 7's freight transportation system is an important economic asset for businesses and communities throughout the region.

Figure 4: District 7 Freight-Related Businesses

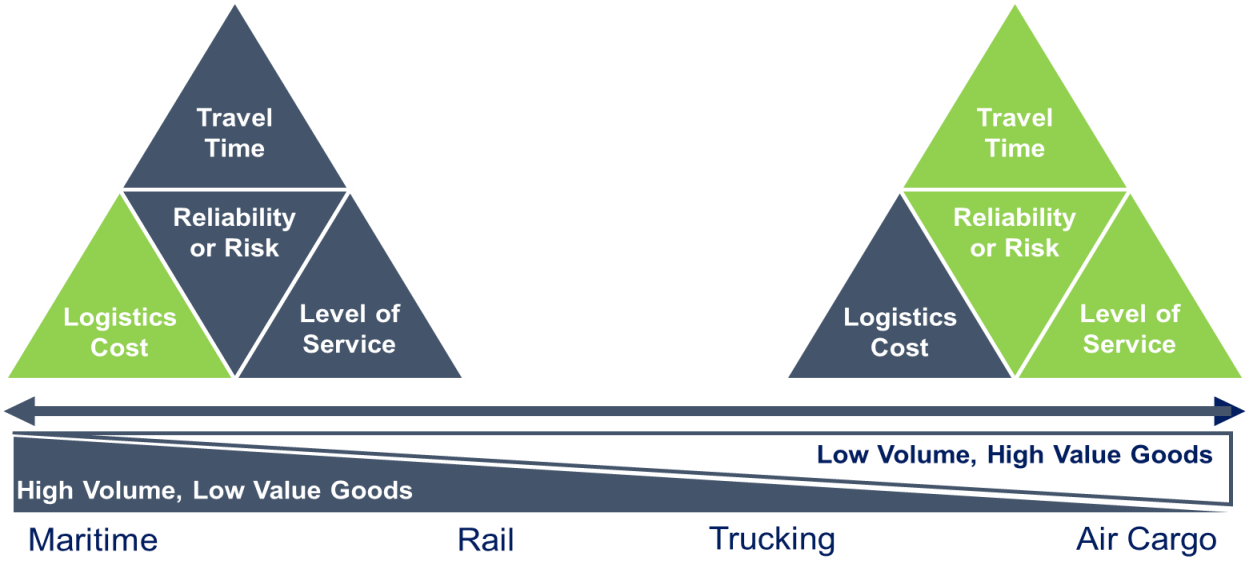


Source CPCS analysis of Data Axle data. 2021.

Freight-Related Industry Transportation Requirements

Shippers may have a range of transportation options to consider when moving their goods, such as trucks, railroads, air freight, and barge or ship service. However, the true range of choices is limited by the availability of these modes, and the characteristics of the cargo being moved. In addition to availability, shippers must balance a set of trade-offs between shipping cost, shipping speed, level of service, and reliability when selecting freight modes and routes. Each mode of transportation has its own set of characteristics, and together, modes make up a "spectrum" of logistics trade-offs, which is illustrated in Figure 5.

Figure 5: The Freight Modal "Spectrum" of Trade-Offs



Source: CPCS. 2022.

As shown in the spectrum, for higher-value goods such as pharmaceuticals and electronics, the cost of shipping often makes up a relatively small portion of the good's cost, increasing the shippers' willingness to pay for a faster and more reliable freight option such as air cargo or truck. On the other hand, for goods with relatively low per-ton values (such as oil, grain, aggregate, and other minerals), high logistics costs can significantly affect the market prices, therefore forcing shippers to prioritize low shipping costs over fast and reliable delivery. Goods like these are often moved by rail, barge, or ship, which can carry higher volumes of heavier goods at relatively lower prices.

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

Understanding the transportation tradeoffs listed above is important because these tradeoffs inform how different industries approach freight transportation, and what topics they consider to be important freight issues and needs. Two industries that ship and receive freight are profiled on the following page.

Agriculture

Minnesota is ranked the fifth most productive state in terms of total agricultural production ($16.7B in 2019). About 26 percent of the cash receipts in the state's agricultural market are associated with corn, 19 percent with soybean production, and 16 percent with hog farm activities.[1] Agriculture is a major industry in District 7, with corn, soybeans, and dry beans as the top produced and processed crops. For example, in 2019 409.5 million bushels of corn were harvested in District 7, about 17 percent of Minnesota's total corn production. In addition to this significant corn production, the District's counties produced 95 million bushels of soybeans in 2019. Figure 6 illustrates how agricultural activity is important for all of District 7. This figure also illustrates the location of ethanol and biodiesel plans in the District, which can produce more than 701 million gallons of biofuel per year and are an important user of agricultural products in the District.[2]

Manufacturing

Manufacturing is the most-competitive freight-related industry in District 7, and manufacturing has consistently made up a greater share of District 7's gross domestic product relative to manufacturing's share of Minnesota's GDP as a whole. Some uniquely important manufacturing industries in the District include printing in Nicollet County, metal product manufacturing in Le Sueur County, Faribault County, and Blue Earth County, and machinery manufacturing in Martin and Nicollet counties.

Figure 7 provides a map of the distribution of manufacturers across District 7, revealing where employment in manufacturing is concentrated. Blue Earth, Brown, Nicollet, Waseca, and Watonwan Counties stand out as particularly important centers for manufacturing employment, with cities such as Mankato, New Ulm, Sleepy Eye, and Waseca hosting the greatest concentrations of manufacturing jobs. District 7's manufacturing businesses are clustered close to major highways such as Highway 169, Highway 14, and the major Class I rail lines served by Union Pacific and Canadian Pacific.

Other Industries

In recent years, District 7 has become a hub for warehousing and distribution center facilities, particularly in and around Mankato. In 2015, Walmart built a $75 million, 450,000 square-foot distribution center in Mankato that stores and distributes cold and frozen products to Walmart and Sam's Club locations in Minnesota, Iowa, South Dakota, and Wisconsin.[3]

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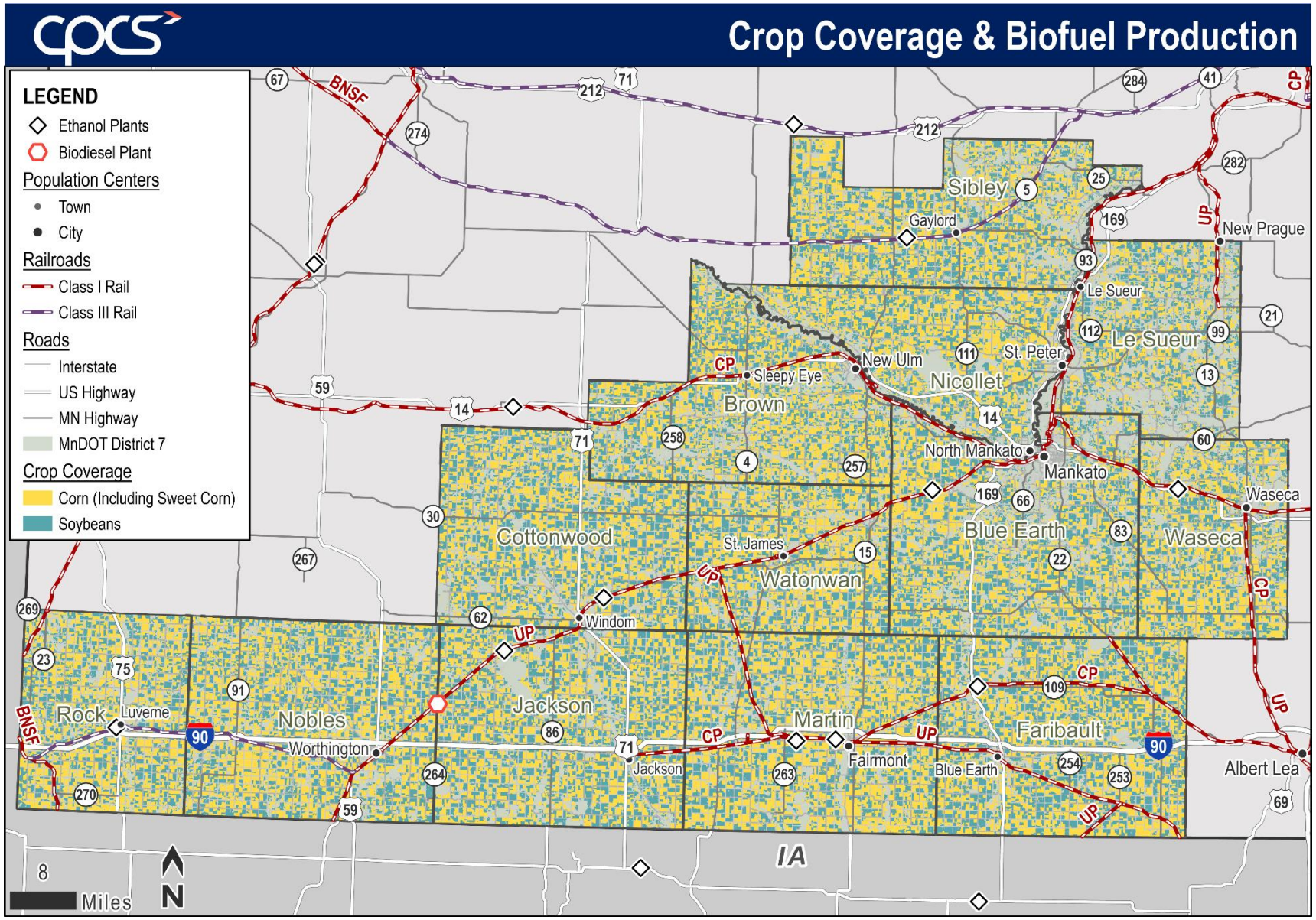
[1] The state's soybean production share has declined by 2% since 2017. Source: Minnesota Agricultural Profile, Minnesota Department of Agriculture, 2019: https://minnesota.agclassroom.org/educator/materials/profile.pdf

[2] CPCS analysis of Biofuel Atlas data. National Renewable Energy Laboratory. 2021.

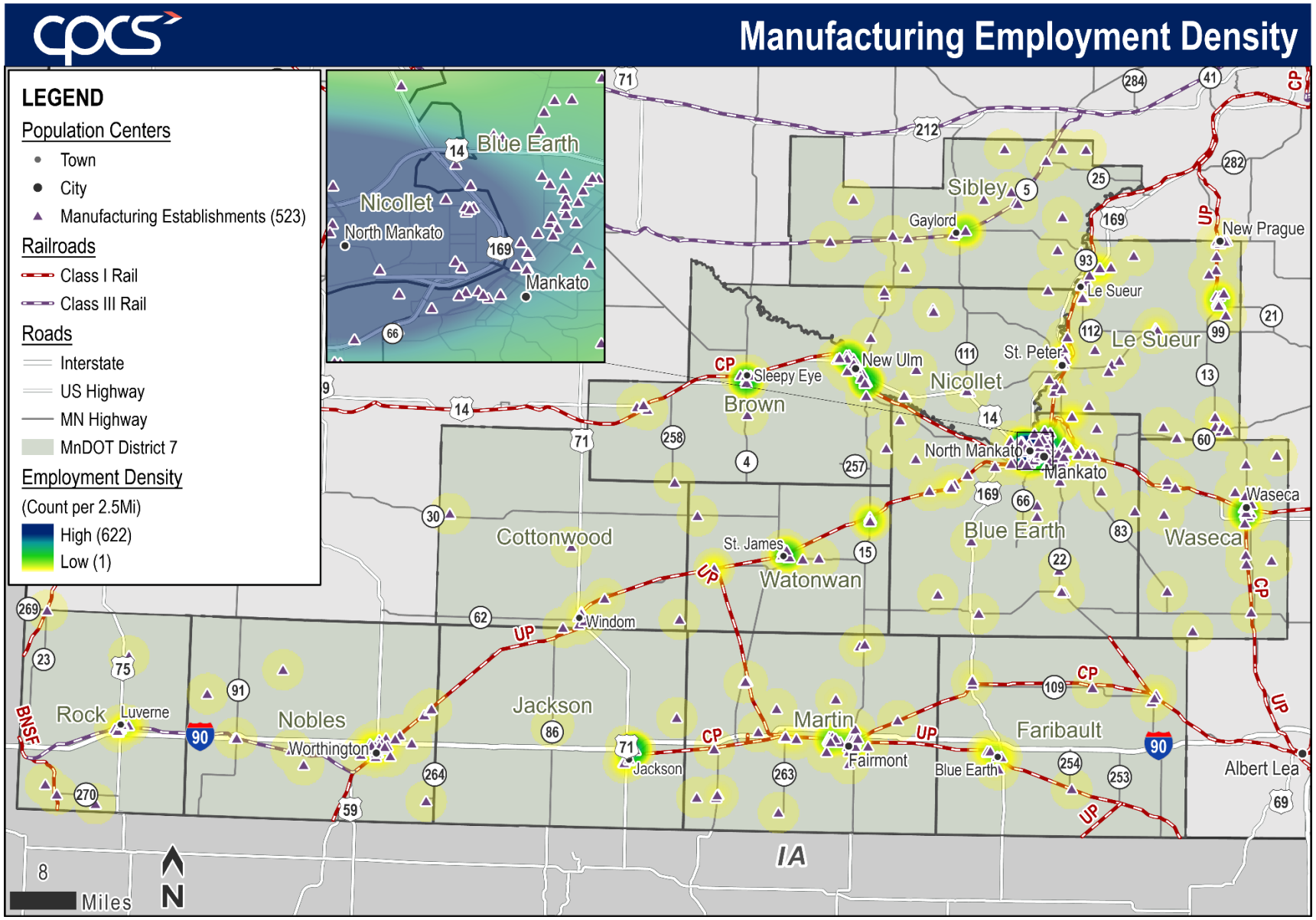
[3] https://www.mankatofreepress.com/news/wal-mart-distribution-center-holds-a-rousing-grand-opening/article_b6929fa2-4b56-11e5-b01d-bf74287cdebd.html

Figure 6: Crop Production Locations and Biofuel Production Plants in District 7 (2019)



Source: USDA Cropscape, 2019; US Energy Information Administration Biofuels Atlas. 2021.

Figure 7: Manufacturing Industry Business Concentration in District 7 (2021)



Source: CPCS Analysis of Data Axle data. 2021.

District 7's Multimodal Freight System

District 7's 13 counties make up nearly 15 percent of Minnesota's total land area and about 5 percent of Minnesota's population. The District's counties are notably strong in agriculture and manufacturing. Some of the larger communities in the District include Mankato, St. Peter, New Ulm, Fairmont, and Worthington.

A safe, efficient, and accessible freight transportation system is critical for In District 7's continued economic prosperity.

Highways such as I-90, US-14, US-169, and MN-60 serve as key routes connecting the District's communities with the Twin Cities and other destinations outside of the District. The District's rail network includes three Class I railroads, the Union Pacific, Canadian Pacific, and Burlington Northern Santa Fe Railway. District 7 also has two short line railroads, the Ellis & Eastern Railroad (trackage owned by the Buffalo Ridge Regional Rail Authority) and Minnesota Prairie Line (trackage owned by the Minnesota Valley Regional Rail Authority). District 7 supports 869 miles of pipeline transporting natural gas, crude oil, and other petroleum products. For air transportation, the District has 4 commercial airports, 13 intermediate airports, and 2 landing strips. Larger airports and intermodal and barge services are located outside the District in the Twin Cities. Figure 9 on the following page shows District 7's freight transportation assets, and their connections to nearby regions.

146	1,126	514	2,928	14	879
Miles of Interstate	Miles Trunk Highways	Miles of Rail	Bridges over 10 feet	Public Airports	Pipelines

Roadways

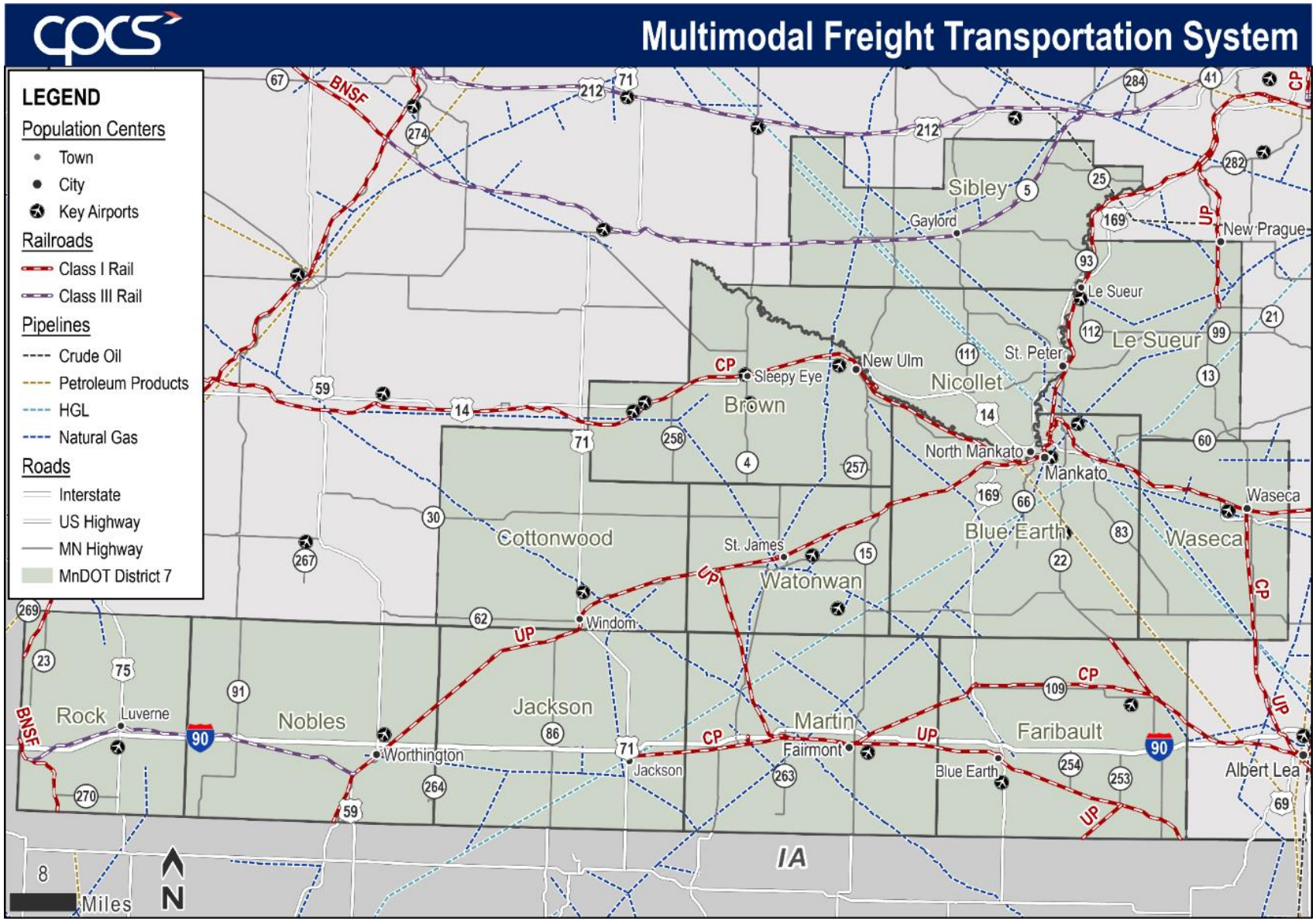
District 7's network consists of one interstate highway (I-90), five US highways (US-169, US-14, US-71, US-75, and US-59), and many state, county, and local highways and roads. The District's road network is a critical component of freight movements as it provides last-mile access for businesses, as well as access to other key markets (such as the Twin Cities) and other modes of transportation. Figure 8 lists the mileages of some of the regionally-important elements of the District's system.

Figure 8: District 7 Road System Mileages

	District 7	Minnesota
Interstate	143	913
Trunk Highways	1,126	10,805

Source: MnDOT District 7 Fact Sheet. 2020.

Figure 9: MnDOT District 7 Freight Transportation System



Source: CPCS analysis of FHWA Data. 2021.

Commodity tonnage information specific to District 7 is not available beyond 2012, as this information was calculated as part of the prior State Freight Plan development. However, recent statewide truck tonnage information provides insight into broad trends regarding the movement of freight by truck on the District's roads. In 2017, trucks carried 66 percent of the total tonnage and over 72 percent of total freight value in Minnesota. As seen in Figure 10, cereal grains were the top commodity carried by trucks in Minnesota in 2017, comprising over 22 percent of total truck tonnage. Gravel and other agricultural products were also top commodities moved by truck in Minnesota in 2017.

Figure 10: Major Commodities Carried by Trucks (2017)

Top Commodities	Tonnage Carried by Trucks in 2017	Percent of Total
Cereal Grains	172,681,700	22.46%
Gravel	110,912,500	14.43%
Other Agriculture Products	86,033,180	11.19%
Nonmetal Mineral Products	54,815,570	7.13%
Gasoline	50,116,900	6.52%
Animal Feed	34,977,770	4.55%
Other Foodstuff	32,385,590	4.21%
Coal	24,604,210	3.20%
Waste/Scrap	19,572,380	2.55%
Nonmetallic Minerals	19,544,310	2.54%
Mixed Freight	18,268,740	2.38%
Fuel Oils	17,737,510	2.31%
Logs	17,178,830	2.23%
Natural Sands	13,146,370	1.71%
All Other	96,889,483	12.60%
Total	768,865,043	100%

Source: Federal Highway Administration Freight Analysis Framework 5. 2022.

While statewide and District-level commodity tonnage data are available for different periods (District-level totals were last estimated in 2012), comparing the data provides some insight into the distinctions in commodities moved on District 7 and Minnesota's statewide road network. These differences include:

Cereal Grains are the top commodities transported by truck in both District 7 and Minnesota. However, cereal grains made up 51 percent of District 7's truck tonnage in 2012, which is more than two times the statewide share in 2017. The high percentage of cereal grain movement in District 7 is likely due to agriculture being a dominant local industry.

Animal Feed is the second-highest commodity volume transported by truck in District 7, contributing 10 percent of its total truck tonnage in 2012. On the other hand, the share of animal feed 2017 truck tonnage statewide was only 4.5 percent in 2017. This further reflects the importance of the agriculture industry in District 7.

Gravel made up 3 percent of District 7's truck tonnage in 2012, which was significantly lower than gravel's 14.43 percent share of truck tonnage statewide. The low activity within the District is likely due to limited construction activity because of minimal population growth in District 7.

The Federal Highway Administration estimates that Minnesota will see a continued increase in truck-carried tonnage of cereal grains, animal feeds.[4] In particular, animal feed tonnages are expected to increase by 94 percent between 2017 and 2050, while agricultural products are expected to increase by 12 percent. These goods are among the top commodities moving on District 7's road network, so truck tonnages in District 7 will likely increase in the future.

Truck tonnages in District 7 will likely increase in the future.

Key Corridors and Facilities

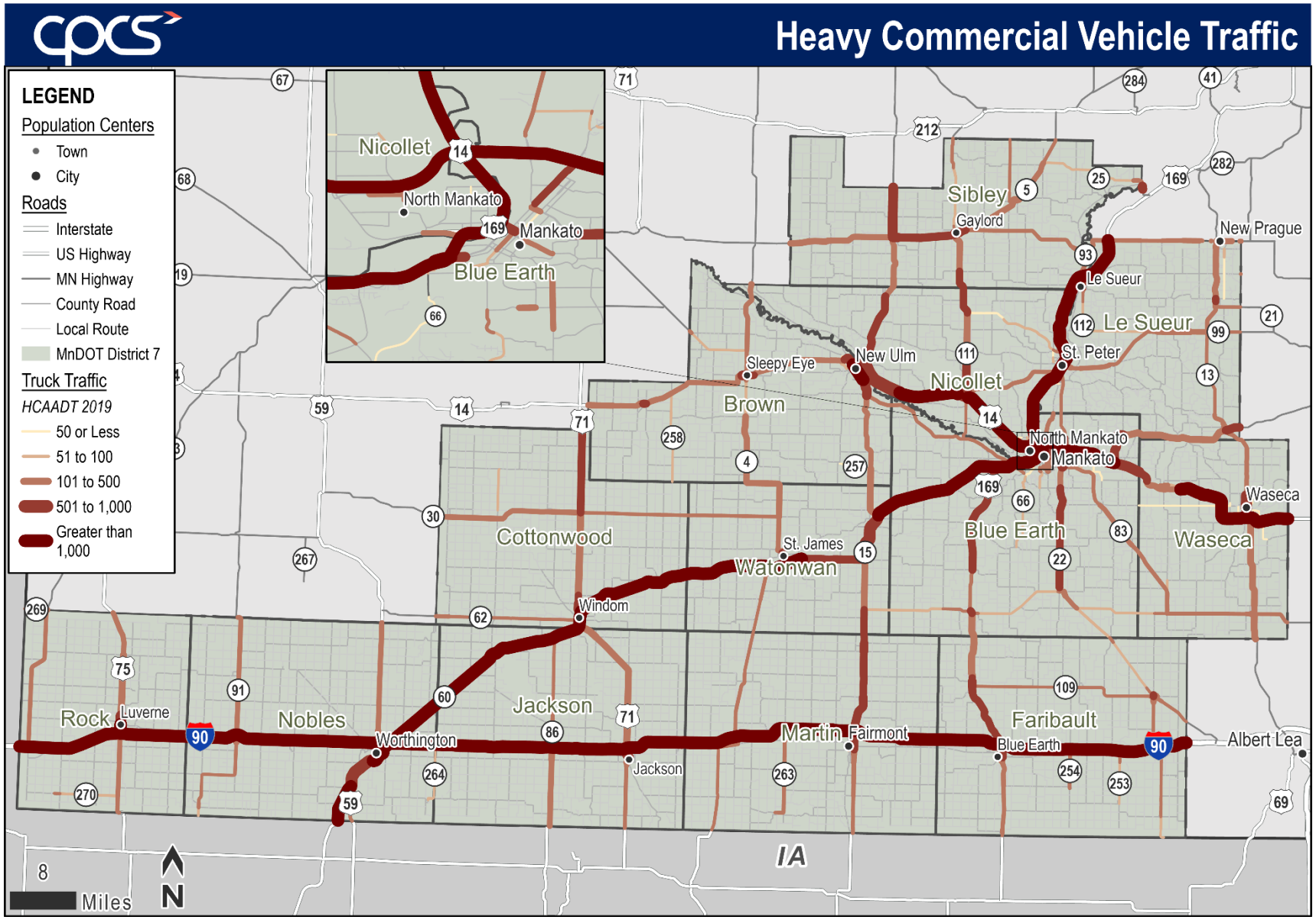
Trucking activity is concentrated on select corridors within District 7, and these corridors often correspond to routes either connecting the District's communities, or routes connecting the District with other regions. Figure 11 provides an overview of truck-specific traffic volumes in Districts and illustrates which routes are most important for truck traffic. The heaviest truck traffic is focused on I-90 and MN-60. US-14 and US-169 also see heavy truck traffic around Mankato.

Information on common origins and destinations of heavy-duty truck trips is also available through data purchased by MnDOT and can illustrate communities and areas that generate large counts of truck trips. Figure 12 illustrates the locations where truck trips start in District 7 and Figure 13 illustrates the end point of truck trips in the District. Based on analysis of the figures, some key points emerge:

- The origins of heavy truck trips beginning in District 7 tend to be along major highway segments like I-90, US-169, and US-14 where agricultural, manufacturing, retail, and other businesses are strategically located.
- The Mankato area is a hot spot for truck trips ending in the district largely due to a high presence of freight-oriented businesses. US-169 and US-14 are the road facilitators for trucks moving into and through the Mankato area.
- Out-of-state destinations for truck trips beginning in District 7 tend to be west and south of the District in North Dakota, South Dakota, and Iowa. Some notable destinations include:
    - Northeast Sioux Falls, which is the site of a large industrial park and truck stop
    - Southeast Albert Lea, which has multiple food production facilities and truck stops

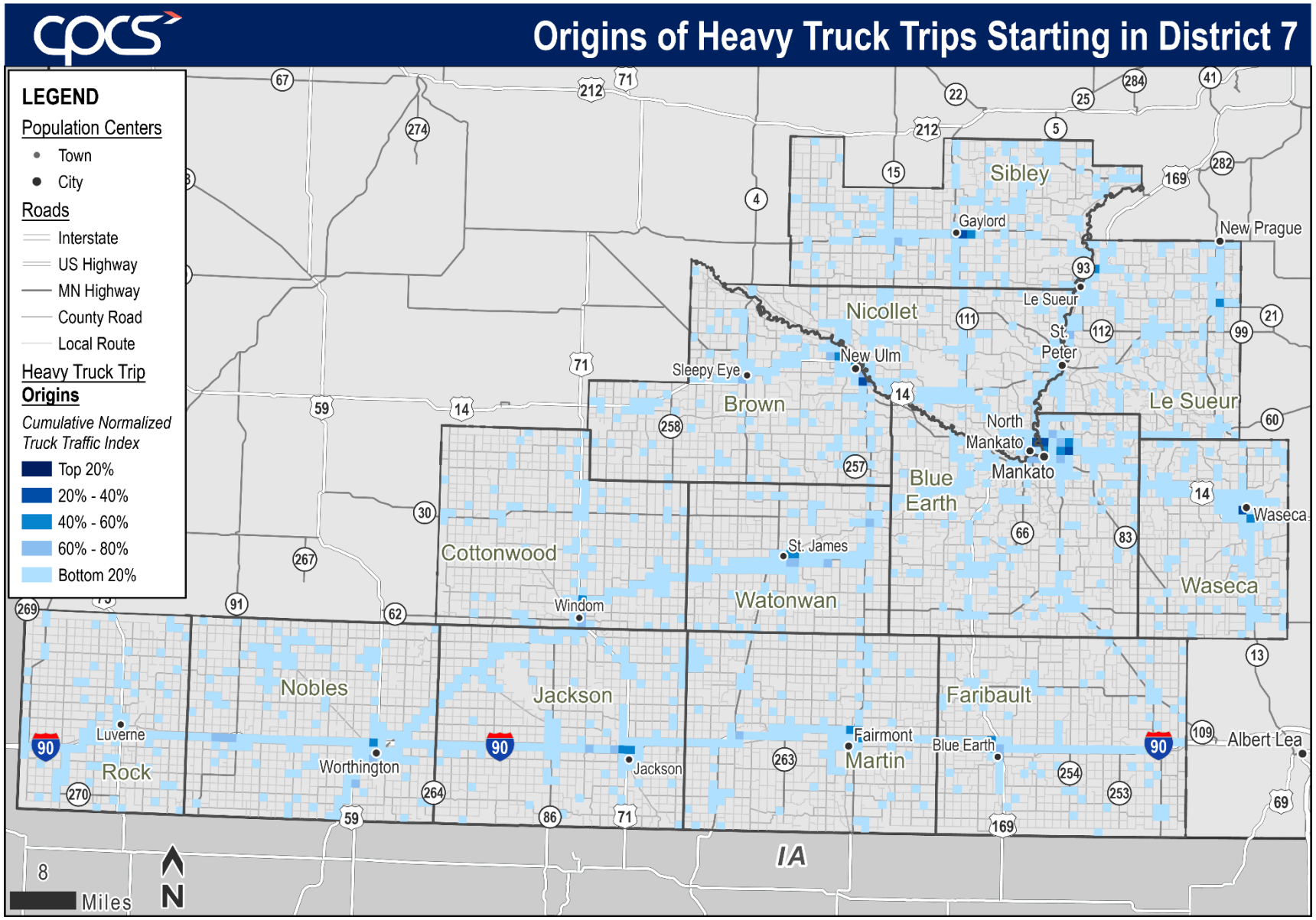
[4] Freight Analysis Framework 5. Federal Highway Administration. 2022.

Figure 11: District 7 Annual Average Daily Truck Traffic Volume (2019)



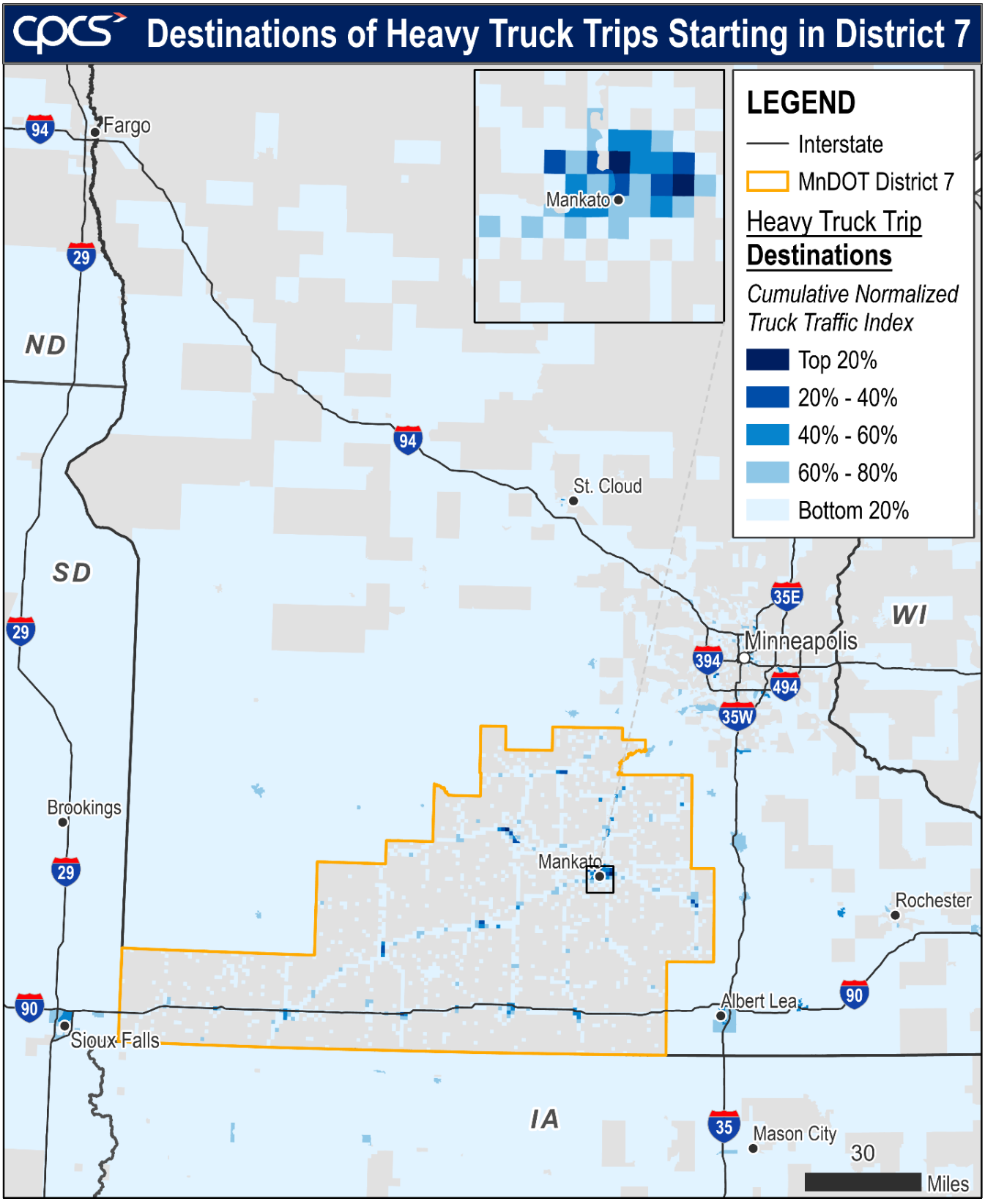
Source: CPCS analysis of MnDOT and NTAD data. 2021.

Figure 12: Origins of Heavy-Duty Truck Trips Starting in District 7 (2019)



Source: CPCS Analysis of StreetLight Data. 2021

Figure 13: Destinations of Heavy-Duty Truck Trips Starting in District 7 (2019)



Source: CPCS Analysis of StreetLight Data. 2021.

Railroads

Minnesota has 4,613 miles of rail lines and ranks 8th in the US for rail mileage. Of all the freight moved in Minnesota, 25 percent is transported via rail. District 7 has 503 miles of rail line, which accounts for over 11 percent of statewide totals. These miles are owned and operated by three Class I and two Class III (also referred to as short line) railroads. Class I railroads are major railroads serving large portions of the US, with thousands of miles of track. Short line railroads are rail networks that generally run short distances, carry correspondingly smaller tonnages, and provide shippers with access to larger freight railroads. Generally, businesses in District 7 rely on access to rail as a low-cost option to move bulk goods easily. Railroads are also relevant to the road network, as District 7 has 549 rail crossings, 153 of which are actively protected with signals.[5]

514	11.1%	148	390	3	2
Miles of Track	of the State's Total Track Miles	Actively-Protected Public Crossings	Passively-Protected Public Crossings	Class I Freight Rail Operators	Short Line Railroads

The Class I rail operators in District 7 are Burlington Northern Santa Fe Railway (BNSF), Canadian Pacific, and Union Pacific Railway (UP). The two short line railroads are the Minnesota Prairie Line railroad (MPL), which operates a track that runs through Sibley County, and the Ellis & Eastern short line railroad, which operates track in Nobles and Rock County. Both short line railroads connect manufacturing, agricultural, and other bulk commodity businesses to Class I rail lines. Figure 14 displays the number of miles and railroad crossings owned by each railroad company, while Figure 15 and Figure 16 show the rail network and its general speed and use.

Figure 14: Freight Railroad System in District 7

Railroad	System Miles in District 7	Public Road Crossings
UP	221	226
CP	186	209
BNSF	18	12
Ellis & Eastern (track owned by the Buffalo Ridge Regional Rail Authority)	41	54
Minnesota Prairie Line (trackage owned by the Minnesota Valley Regional Rail Authority)	37	45

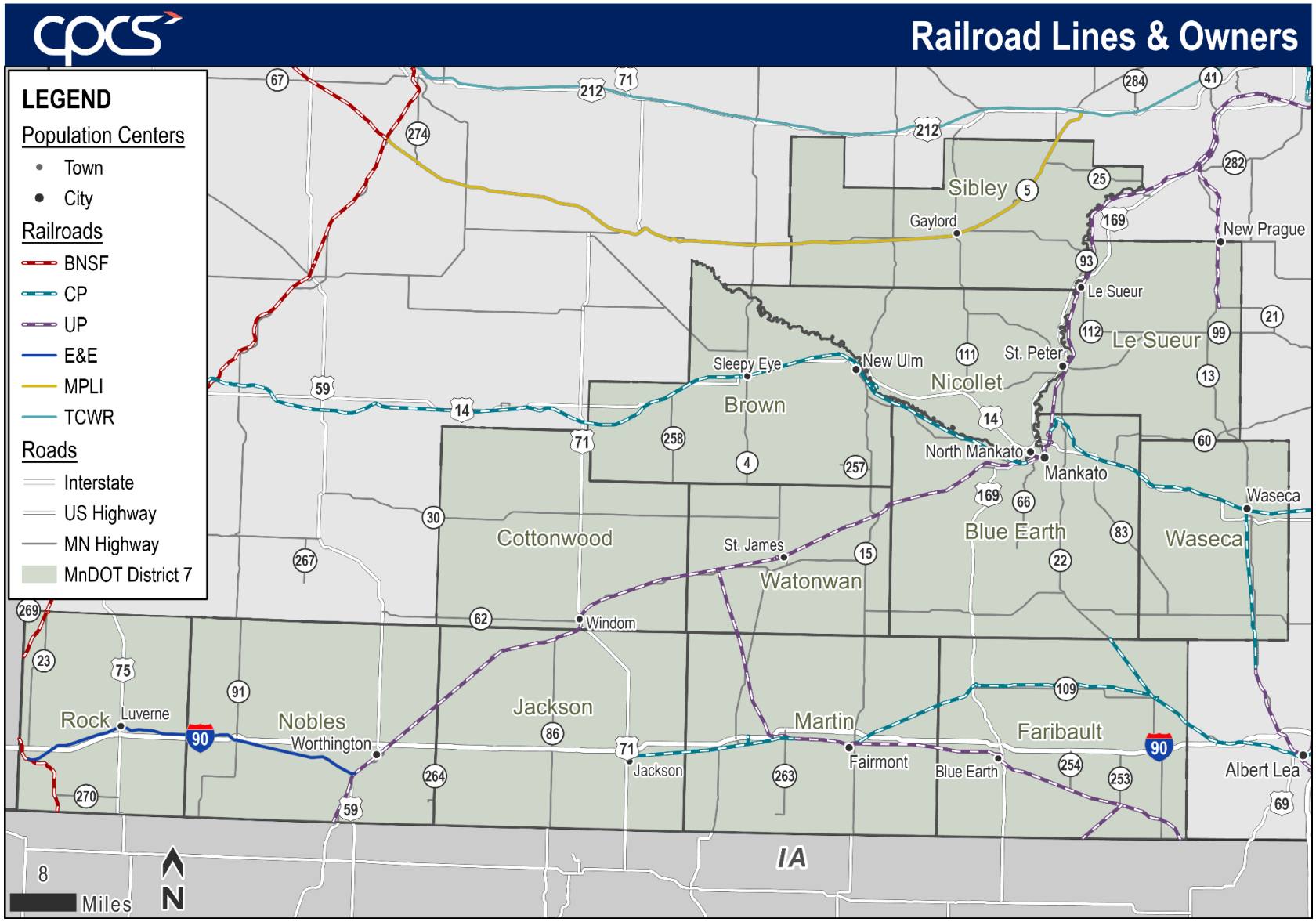
Source: Minnesota State Rail Plan, 2015. FRA Grade Crossing Safety Data, 2021. National Transportation Atlas Database. 2021.

Information on the tonnages of specific rail-borne commodities carried within District 7 is unavailable. However, rail lines in Minnesota carried more than 88.2 million tons of cargo in 2017. The state's rail freight tonnage is anticipated to grow by about 2.6% to more than 90.5 million tons in 2050.[6]

Cereal grains held the highest share of tonnage carried by rail in the state, followed by metallic ores, coal, natural sands, and other agriculture products. Railroad shipping's role in handling agricultural cargo is particularly important for District 7's agricultural producers.

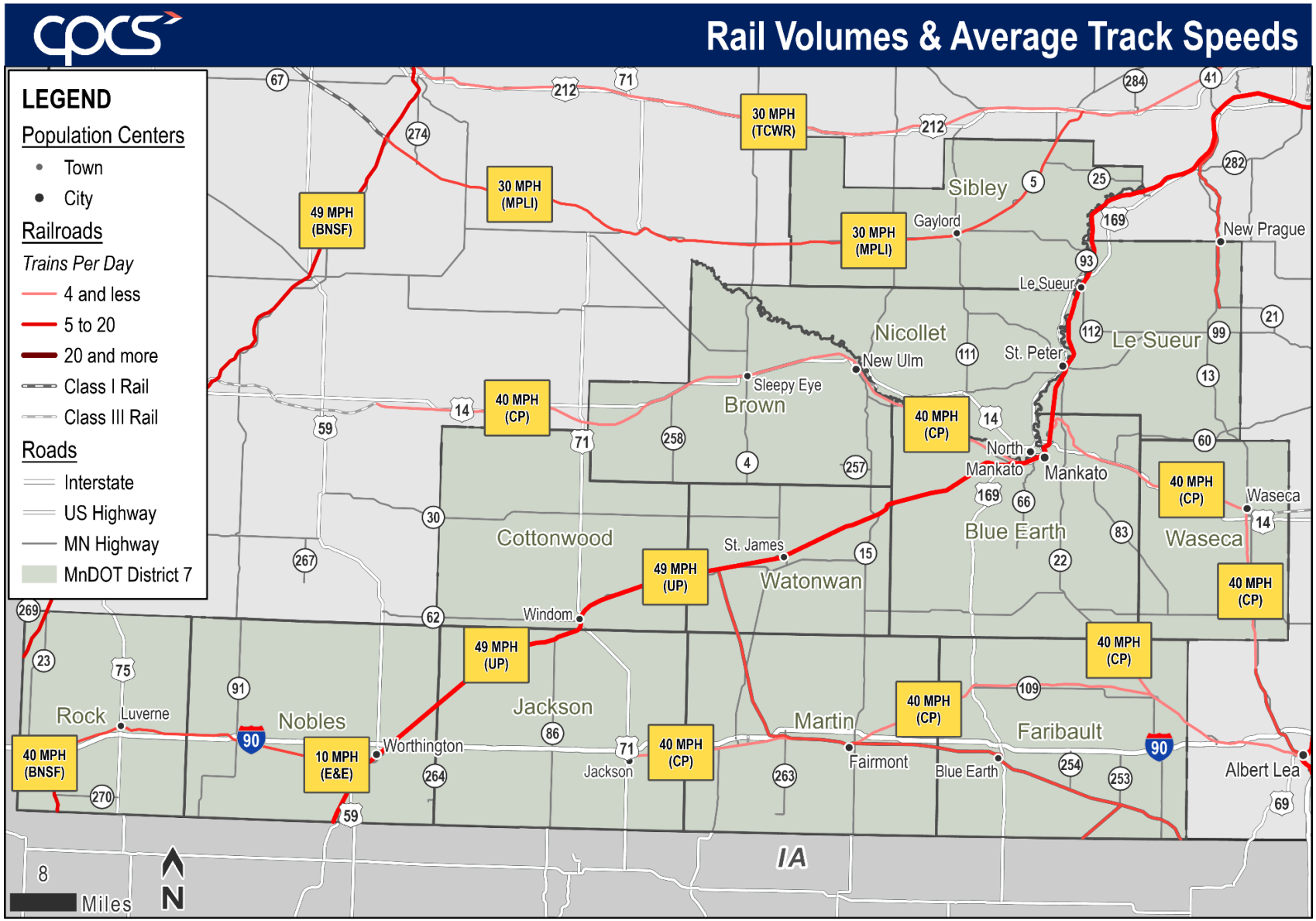
[5] MnDOT District 7 Fact Sheet, 2020.
[6] Freight Analysis Framework 5. Federal Highway Administration. 2022.

Figure 15: District 7 Railroad Lines and Operators



Source: CPCS analysis of National Transportation Atlas Database. 2021.

Figure 16: District 7 Rail Volumes and Average Track Speeds



Source: CPCS analysis of National Transportation Atlas Database and MnDOT Freight Railroad Map. 2021.

Aviation

Compared to other modes of freight transportation in Minnesota, air shipping accounts for a small portion of freight movements. However, air freight is still critical to the economy as it handles high-value goods and commodities, and provides rapid service. In Minnesota, air freight moves a wide variety of products, including precision instruments, plastics/rubber, electronics, and machinery, among many others.

District 7 has four key commercial airports (Mankato Regional, New Ulm Municipal, Fairmont Municipal, and Worthington Municipal). Additionally, the District has 13 intermediate airports and two landing strips. Intermediate airports serve as landing facilities for flight training, aircraft maintenance, and general aviation/business jets.

There are a few airports in District 7 that handle cargo. The Worthington Municipal Airport facilitates just-in-time shipments for local businesses, such as Ralco Nutrition, Mainstream Holdings, and Hitchdoc.[7] Also, the New Ulm Municipal Airport supports just-in-time shipments for August Schell Brewing Company, Christensen Farms, SpecSys Inc, Anderson Custom Processing, and Heartland Corn Products. Lastly, the Fairmont Municipal Airport provides just-in-time shipments for Kahler Automation, Bevcomm, 3M, Hy-Vee, and Mayo Health. Finally, the closest major international airport to District 7 is the Minneapolis-St. Paul Airport, which has a high volume of air cargo and serves as a connection and access point to businesses and consumers in the District.

Pipelines

Pipelines are an important mode of freight transportation in Minnesota as they are a high-volume, low-cost option for critical oil and gas movements. Minnesota has no petroleum or natural gas resources, and therefore it primarily imports crude oil, natural gas, and other petroleum products from domestic and international sources. The state has two oil refineries near the Twin Cities that mostly process crude oil transported from North Dakota and Canada and is dispersed throughout the state and nearby markets. It is also important to note that pipeline operations for the transmission and distribution of natural gas and refined petroleum products are supplemented with truck and rail transportation. In particular, the road network serves as an important final-mile link in gasoline, diesel, and propane supply chains from pipeline terminals to retail establishments such as gas stations and propane dealers.

In District 7, there are 879 miles of active pipeline, most of which is dedicated to natural gas distribution and transmission lines, and hydrocarbon gas liquids transmission pipelines which handle products like propane. Figure 17 summarizes the pipeline coverage, by type, within the District and Figure 19 illustrates the pipeline network in District 7.

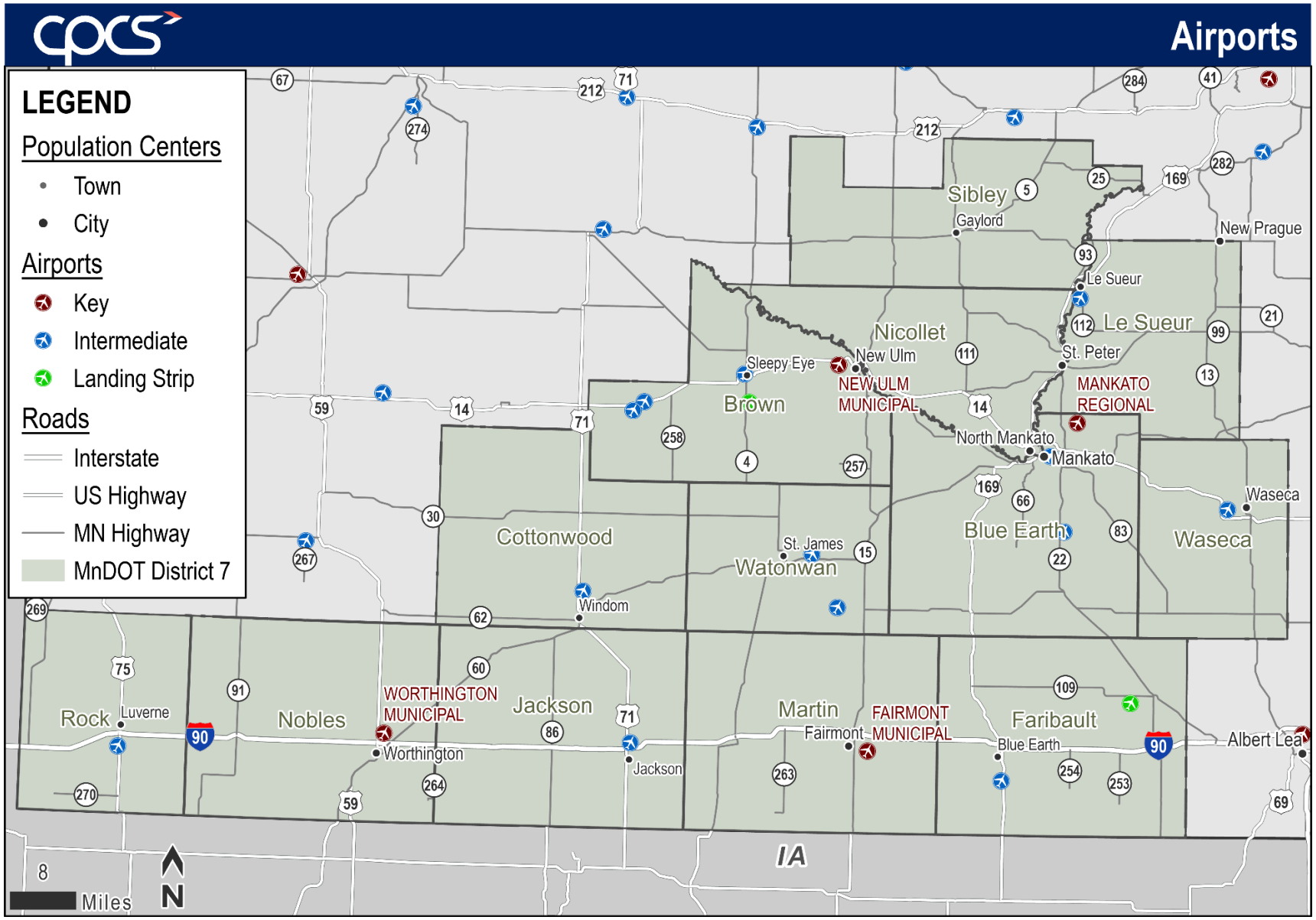
Figure 17: District 7 Pipeline Coverage

Commodity	Length (Miles)	Percent of State Total
Crude Oil	8.4	0.6%
Hydrocarbon Gas Liquids (HGL)	186.6	27.3%
Natural Gas	650.8	16.7%
Petroleum Products	33.2	2.3%

Source: US EIA. 2020.

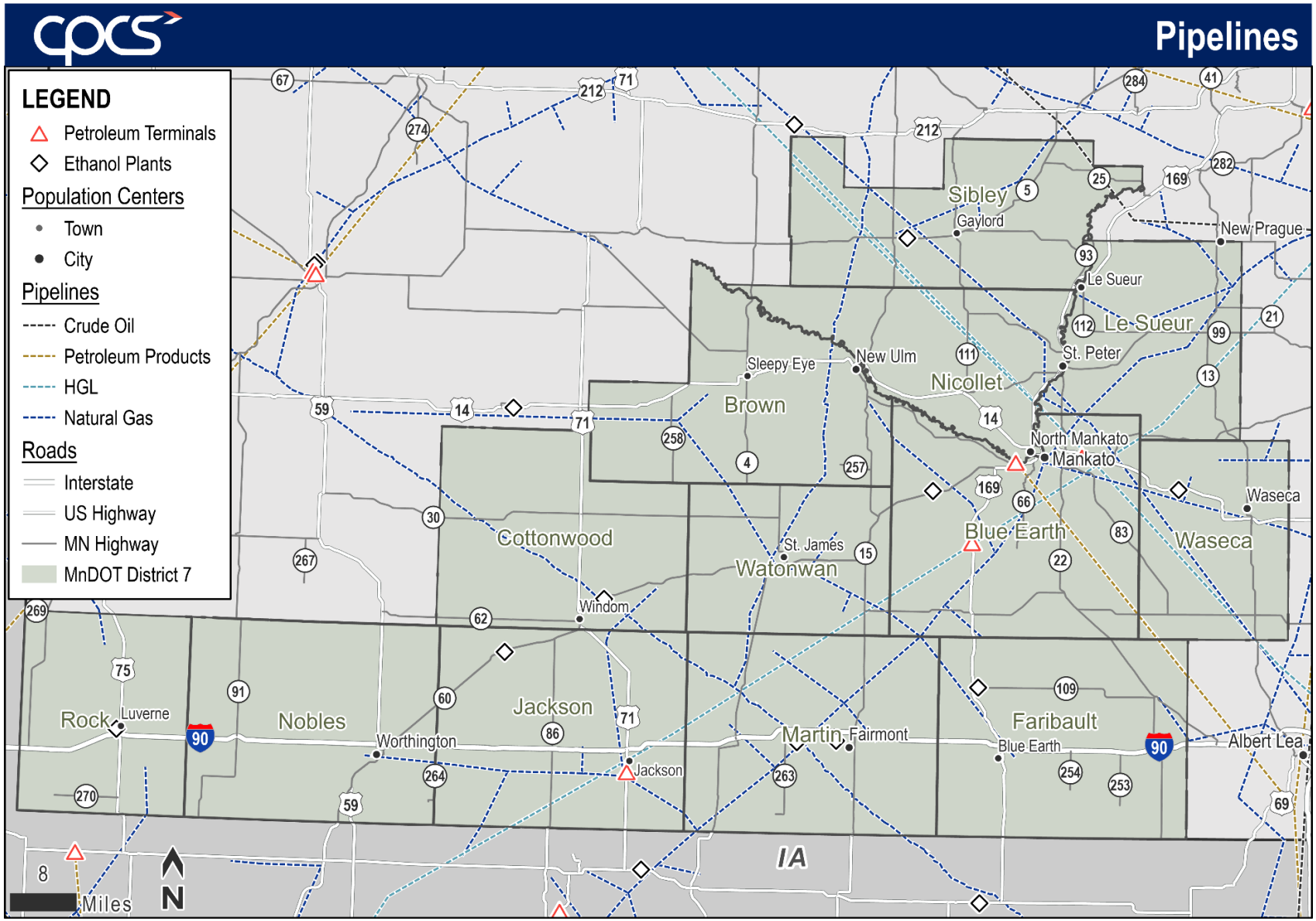
[7] Minnesota Statewide Airport Economic Impact Study, 2019.

Figure 18: Airports in District 7



Source: National Transportation Atlas Database. 2021.

Figure 19: Pipelines in District 7



Source: CPCS analysis of EIA data. 2021.

Chapter 3: How is District 7 Changing?

Chapter 3: Key Issues, Needs, and Challenges

District 7 Freight System Needs and Issues

The District 7 freight plan process has created significant documentation of freight transportation issues and needs, and MnDOT can use this information to address these issues and needs in its future planning and construction work. This Chapter describes the District's notable issues and needs on a mode-by-mode basis. Within each mode, needs and issues are placed in three categories that were adapted from the State Freight Plan's criteria:

Safety, which is primarily related to truck-involved crash rates for the road network as well as railroad grade crossings, and MnDOT's previous safety risk factor analyses.

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

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

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

Analysis of quantitative data from MnDOT

Review of findings from previous plans and studies

Stakeholder consultations

Advisory Committee and Technical Team feedback

Online surveys

Feedback received at an online open house

The key issues, needs, 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 7, and more detailed analysis is available in Working Paper 4: Strengths, Weaknesses, Opportunities, and Threats Analysis.

Roadways

Road and trucking-related issues and needs make up the majority of District 7's freight transportation needs and issues. This majority share reflects the fact that trucking is the most commonly used mode for freight transportation, carrying over 60 percent of Minnesota's freight tonnage.[8] At the same time, road-related issues and needs 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.

[8] Freight Analysis Framework 5. Federal Highway Administration. 2022.

MnDOT has the greatest opportunity to address freight transportation issues and needs associated with the road network.

Safety

Developing and improving a safe transportation system is one of MnDOT's most important missions, and a variety of data sources were combined with stakeholder feedback to understand the most pressing safety needs in District 7. This topic is particularly important for the District: between 2010 and 2019, District 7 had the third-highest count of commercial vehicle-involved crashes among districts in Greater Minnesota. Many of the stakeholder-identified road safety issues were related to concerns about intersections on trunk highways. Discussion of road safety is broken down into two elements: intersection safety and corridor safety.

Intersections

MnDOT crash data, prior studies, and stakeholder feedback indicated that highway safety and intersection safety in particular is relevant for freight in District 7. In addition to issues identified by MnDOT crash history or risk assessment data, stakeholders noted a few locations where intersection safety is an issue for trucks entering and exiting major highways. The need for added turn signals, turning lanes, or passing lanes was suggested at some specific locations where respondents noted safety concerns, particularly related to right-angle crashes. Examples of some intersections with safety concerns or needed improvements included:

- MN-15 at Torgerson Drive in Fairmont, which provides access between truck parking at a nearby Speedway gas station and I-90 and was the site of two or more truck-involved crashes between 2018 and 2019.
- MN-22 at MN-83 and Stadium Road in Mankato, which is the first signalized intersection many drivers headed on northbound MN-22 will encounter when approaching Mankato. This location had multiple truck crashes reported between 2018 and 2019.
- MN-4 and US-14 (W Main Street) in Sleepy Eye, which is located in a relatively densely developed area and the junction of multiple locally important roads. Stakeholders expressed concern about traffic speed around the intersection, and it was the site of two or more truck-involved crashes between 2018 and 2019.

Corridors

The main needs or solutions that stakeholders identified to address District 7 corridor issues include lane expansion and the addition of passing and bypass lanes. Lane expansions and passing lane additions can significantly improve corridor safety and mobility issues. Many stakeholders mentioned that they prefer to route their trucks along four-lane highways rather than two-lane routes. Respondents felt that four-lane highways have fewer crashes and are easier to navigate when inclement weather such as snow is present. Stakeholders in the 2019 Manufacturers Perspective Study broadly identified the need for more four-lane roadway sections on US-169, US-14, and MN-60.

There are opportunities to improve both freight safety and mobility through the addition of passing lanes and the widening of existing lanes on select trunk highways.

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 safety enforcement in District 7 were identified:

- A need for a virtual enforcement presence along US-169 in Nicollet County north of St. Peter.
- Additional cameras at the weigh-in-motion site #27 along MN-60 in Watonwan County, which is a key truck corridor linking I-90 to the west with the Twin Cities through Mankato

Mobility

Mobility considerations include topics that affect the ease or efficiency of truck movements in District 7. Impediments to freight mobility can include things like traffic congestion, weight limits, bridge clearances, or other obstacles that force trucks to take longer routes. Based on evaluations of truck speeds and travel time reliability, congestion is not an issue for District 7. Therefore, this section focuses on other impediments to mobility, such as geometric constraints for trucks, weight limits, and truck parking. As noted in the safety section, many of these mobility issues and needs have a strong connection or relevance to traffic safety.

Roundabout Design

Ensuring roundabouts are designed to accommodate large truck traffic has been a common theme for feedback in District 7, as well as Minnesota as a whole. Consultees mentioned that roundabouts can be difficult for trucks to drive through and increase the risk of loads shifting or tipping if wide-swinging trailers encounter curbs or aprons with steep angles. In the case of some OSOW loads, particularly ones with lowboy trailers, roundabouts with raised center curbs or islands can be almost impossible to navigate. Therefore, roundabouts that are expected to accommodate large volumes of truck traffic must be designed with wide enough lanes to accommodate trucks, or lower-profile center islands that can be easily mounted by trailer wheels. District 7 has been making design adjustments to address concerns, and some improvements are profiled in Chapter 5.

Truck Parking

Many stakeholders mentioned the need for additional truck parking facilities in District 7, as existing public and private parking facilities are not considered sufficient to meet parking demand. Parking concerns were frequently mentioned in the Mankato area along US-169 and US-14, which have experienced significant development in truck-served warehouses and distribution centers. The MnDOT 2019 Statewide Truck Parking Study highlighted two opportunities for truck parking improvements pertinent to District:

- Mankato's zip code (56001) has the 13th highest demand to capacity ratio out of all zip codes in Minnesota. This ratio compares existing parking demand to existing parking capacity. Mankato's ratio of 10.8 means that the demand for truck parking in Mankato outweighs the capacity by 10.8 times. In this area, there has been concern about trucks parking in residential areas, or on the shoulders of some highways.
- The I-90 Corridor was identified as a heavy truck corridor with limited parking availability. The study recommended that MnDOT implement a Truck Parking Information Management System (TPIMS) along the corridor to allow truck drivers to share parking availability information. Some District 7 stakeholders mentioned a need for additional truck parking in the Worthington area, which aligns with that study's findings and recommendations.

Adequate truck parking is an emerging concern in Mankato and could continue to be a problem as additional warehouses and distribution centers develop.

Truck Driver Shortage

District 7's manufacturers, trucking companies, agricultural businesses, petroleum suppliers, and other freight stakeholders are concerned about the lack of truck drivers available for hire. The truck driver shortage is not solely a District 7 concern; it is a nationwide issue. According to an American Trucking Association report, at the end of 2018, the trucking industry needed 60,800 more truck drivers to fully meet demand.[9]

Truck Size and Weight Regulations

Some District 7 manufacturers and businesses indicated that Minnesota's truck weight limit (80,000 pounds on five or more axles) is too low relative to neighboring states. This difference in weight limits between states means that trucks traveling across state lines must be loaded with less cargo than the maximum weights allowed by neighboring states. Some trucking and manufacturing stakeholders felt that this "under-loading" prohibits their ability to ship their products by truck cost-effectively. Additionally, some stakeholders noted that weight restrictions on county and local roadways force them to ship smaller loads or send their trucks on longer routes over other highways.

Another concern regarding truck size and weight was related to inefficiencies or inconsistencies during spring load restrictions. In Minnesota, heavy trucks are prohibited from operating on certain roadways during the spring when the ground is thawing. This is because pavement conditions can be weak and additional damage can be incurred from heavy truck movements. During the spring load restriction period, manufacturers are forced to transport smaller loads or make added truck trips, which adds to overall transportation cost.

Oversize-Overweight (OSOW) Truck Considerations

OSOW movements in District 7 are growing with the rising demand for wind energy infrastructure and other types of freight that require OSOW trucks. OSOW stakeholders in District 7 identified the need to address the following operational, planning, and safety issues:

- **A more-versatile OSOW routing system is desired**. It is difficult for carriers to accurately mark their origin, stops, and destinations along the planned trip route to obtain a permit from MnDOT's existing system.
- **OSOW considerations need to be included in construction planning**. Occasionally, pavement-related construction projects that require detours do not provide adequate detour routes that can accommodate OSOW trucks.
- **Additional truck parking for OSOW trucks.** A few OSOW trucking stakeholders mentioned that more truck parking is needed specifically for OSOW loads. Many of the existing truck parking facilities have limited or no spaces for OSOW trucks.
- **Bridge clearances**. Bridges over I-90 with vertical clearances less than 16' may be an issue for OSOW movements with over-height loads, as I-90 is designated as a Minnesota OSOW Superload Corridor by MnDOT. These bridges are high enough to accommodate normally-sized truck movements, which are less than 13'6".

[9] https://www.trucking.org/news-insights/ata-releases-updated-driver-shortage-report-and-forecast

The unique characteristics of OSOW loads mean they may have unique mobility issues and needs, but addressing these is key to supporting some industries such as wind energy.

Snow Removal

District 7 stakeholders identified two issues related to snow removal. First, some stakeholders said snow and ice should be removed earlier in the day on high-capacity trucking routes, including US-169, US-14, US-71, and US-75, and MN-60, MN-13, MN-22, and MN-30. Slow snow removal can lead to safety concerns for trucks traveling along these corridors. Stakeholders also noted that certain unplowed roadway segments cause further issues for trucks and jeopardize safety. These segments include areas where roads are flat and exposed to drifting snow, icy conditions located along curved areas, and intersections that are not plowed thoroughly. It is important to note that while there are suggested snow removal improvements, stakeholders generally believe MnDOT does a good job removing snow and preparing for icy conditions.

Roadway Infrastructure Condition

Maintaining roadway infrastructure is vital to maximizing freight safety and efficiency. Poor infrastructure along roadways and bridges can damage vehicles and cargo, reduce truck speeds, and lead to unsafe driving conditions. Structurally deficient infrastructure may also force lower trucking weight limits along select highway segments, which could result in longer trips.

Smooth pavement condition is important to freight mobility and safety. If pavement condition is poor due to rough or uneven surfaces, truck cargo can shift, or trucks and trailers can be damaged. Stakeholder consultations and the online survey identified potential condition problems at MN-60 near Mankato, MN-22 between Wells and Mapleton, MN-4 north and south of St. James, and on some isolated county roads. Many of these condition problems will be addressed by upcoming projects, such as the resurfacing of MN-22 between Wells and Mapleton.

In regard to bridge condition, most of the District's deficient bridges are located on county or township roads, and roadways critical to regional truck movements generally do not have bridge condition issues.

Railroad Needs and Issues

Railroad Safety

The topic of grade crossing safety is very relevant for District 7; between 2010 and 2019, District 7 ranked first among all Districts in the number of crashes at passively protected grade crossings (13 between 2010 and 2019), or grade crossings that lack "active" protection such as lights, bells, and gates. However, District 7 did have the third-lowest count of crashes at actively protected crossings during the same time. In addition to this data, Advisory Committee members identified railroad grade crossing safety as a general freight-related concern for District 7.

Potential crash risks at passively protected rail grade crossings in District 7 are a major concern.

Rail Mobility and Access

Access to railroad shipping can be beneficial because it provides businesses with greater transportation options and opportunities to reduce transportation costs or improve transportation reliability. Some of District 7's freight stakeholders feel that District 7 needs more rail spurs to directly connect to businesses and a local intermodal facility. In particular, agricultural businesses indicated they would strongly consider using more rail to transport their products as a cheaper alternative to trucking. A few of the agricultural stakeholders noted that being able to ship their products in intermodal containers would make their businesses more competitive in their industry and mitigate some of the truck size and weight issues mentioned earlier in this chapter.

Another rail mobility issue mentioned in stakeholder consultations was the consolidation of grain elevators in District 7. Currently, Class I railroads are running more long-haul grain trains of 100 cars. A few stakeholders noted that mega-elevator complexes that store large volumes of grain and allow for ease of Class I rail access have caused smaller local elevators to shut down. This has the potential to increase the distance of local truck trips from field to elevator. Conversely, mega-elevator complexes may lead to more favorable prices for suppliers and manufacturers and provide terminal operators with the benefit of fewer facilities to actively maintain.

Rail Condition

District 7 stakeholders provided relatively little feedback on issues related to rail track conditions. However, two comments were made regarding this topic:

- **Future concern for track conditions along publicly owned and short line rail lines.** Generally, track condition on Class I railroads is not an issue. However, track condition along smaller and branch lines continues to be an ongoing issue. Poor track condition can result in lower speed limits, and limits on the weight of loaded railcars (below the industry-standard 286,000-pound railcars) on certain segments of the track. Therefore, poor track conditions can result in less reliable and inefficient rail service for customers.
- **Continued support and additional funding for the Minnesota Rail Service Improvement Program.** Funds provided by this statewide program can help upgrade public rail line assets, including track. More information on this program can be found in Chapter 4.

Anticipating and Interpreting Future Changes

The demand for freight transportation services is reactive to a variety of factors, such as commodity supply and demand, economic changes, and political decisions. These factors are always changing, and freight transportation demand and characteristics evolve and adapt to these changes over time. Many freight system trends and changes are based on external factors outside of the control of most individual freight stakeholders, including MnDOT.

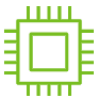
Since freight transportation demand is affected by numerous factors, it can be difficult to anticipate the future characteristics of freight movement. However, there are certain external factors and trends that MnDOT can examine to plan for the future of freight movement in District 7. These external factors fit into five general "STEEP" categories: Social, Technological, Environmental, Economic, and Political. Examples of some significant trends relevant to District 7 are profiled below.

Social Factors and Trends

Social factors include demographics, income, consumption patterns, and population location and density. Examples of social trends for District 7 include an **aging population and slow population growth.** District 7's population is growing older, and the District's population growth is slower than

Minnesota's overall. These two factors could introduce labor shortages in key industries like agriculture and manufacturing and may worsen the existing truck driver shortage.

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 7's freight network is **the increasing size of wind energy infrastructure in Minnesota.** In District 7, aging wind turbines need replacement, and wind turbine operators are replacing them with longer blades and taller turbines that are more efficient than older models. These larger components may result in greater numbers of larger-sized oversize-overweight truck loads traveling through District 7.

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 7's freight network is **climate change**. A warmer or more variable climate in Minnesota may make it more difficult to plan optimal planting times. Drought and severe rainfall events associated with a warmer climate can also damage crops and infrastructure.[10] Agriculture is a dominant local industry in District 7, making these threats particularly relevant for the District. More frequent freeze-thaw events associated with milder winters also add stress to pavement and bridges, meaning more frequent maintenance or replacement is required.

Economic Factors and Trends

Economic factors and trends, such as **labor shortages or supply chain bottlenecks** can have significant and rapid impacts on the operation of the freight system. Over 2020 and 2021, the District's freight stakeholders have been worried about the short and long-term impacts of the COVID-19 pandemic on the economy and supply chain. The pandemic led to rising transportation and commodity prices and delays in the shipping of numerous goods. These trends make it difficult for manufacturers and carriers to set reasonable prices and commit to on-time or "just-in-time" shipping. Supply chain delays elsewhere in the global economy have also impacted MnDOT's construction operations. The lack of construction workers or access to supplies needed to complete construction projects can cause project delays or postponement.

Political Factors and Trends

Political decisions can often lead to changes in supply and demand, and businesses' competitive advantages and disadvantages. An example of a political factor is the **increasing political pressure to reduce transportation-related carbon emissions**. The drive to reduce vehicle emissions may increase the demand for domestic biofuels, which could increase the volume of biofuel produced and shipped by companies in District 7.

[10] Minnesota Department of Natural Resources State Climatology Office

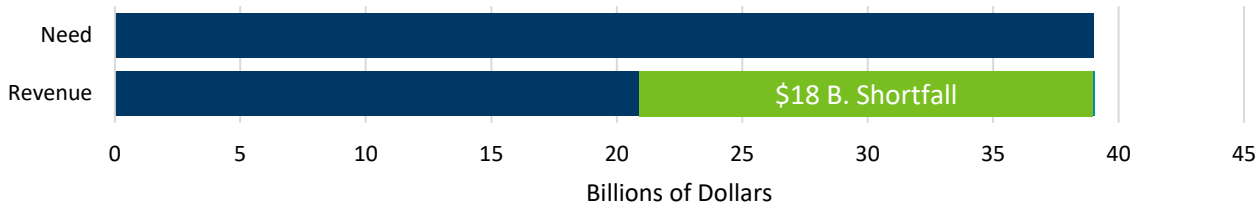
Chapter 4: How Will We Guide Ourselves Moving Forward?

Chapter 4: Project Funding and Prioritization

MnDOT's Funding Context

In addition to the freight-specific issues and needs previously discussed, it is important to acknowledge the financial limitations that MnDOT faces when investing in the transportation system. 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. This revenue gap is important to consider because it requires MnDOT to emphasize stewardship of existing assets over the construction of new ones.

Figure 20: Minnesota Highway Investment Need and Forecasted Revenue, 2017-2037



Source: Adapted from Minnesota State Highway Investment Plan, 2017.

MnDOT's highway investments are primarily focused on the preservation of existing assets, instead of the creation of new assets.

Freight-Specific Funding

MnDOT has a history of providing grant and loan funding for freight-related projects as shown in Figure 21. 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.

Figure 21: Overview of MnDOT Freight-Related funding Programs Relevant to District 7

Source	Funding Available	Eligible Uses
Minnesota Highway Freight Program (MHFP)	$56.9 million total available between 2023-2025	Program funds are broad and include improvements such as truck parking, grade separations, active signals and signs, and truck lanes.
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.

Source	Funding Available	Eligible Uses
Minnesota Railroad Service Improvement Program (MRSI)	$4 million appropriated in the 2020 bonding bill, funding is 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 rail system – a mode 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 a regular basis (e.g., yearly), nor guaranteed they will be available in the future.

The Minnesota Highway Freight Program (MHFP) is a particularly relevant tool for addressing Minnesota's pressing freight issues and needs. As part of the National Highway Freight Program, MnDOT is apportioned approximately $20 million per year from the Federal Highway Administration and has determined its own process for selecting projects to receive the funding. MnDOT has chosen to score and evaluate submitted projects through a competitive process that uses criteria including a project's truck volume, safety benefits, mobility improvements, facility access improvements, and other factors.

MnDOT selected its 2022-2025 MHFP recipients in 2020 and none of the selected projects were in District 7. In total, 34 applications were received requesting over $178 million. 16 projects were selected amounting to approximately $61 million, again indicating that freight transportation system needs far outweighs available funds. Only one project in District 7 applied for MHFP funding, which was the Cottonwood County CSAH 2 Pavement Enhancement Project.

The MHFP is not a guaranteed future program and may not continue in the future, as these funds may not be again authorized at the Federal level. Additionally, MnDOT's Office of Freight and Commerce Vehicle Operations may elect to use a different process to select projects (e.g., through state and District freight system planning efforts).

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

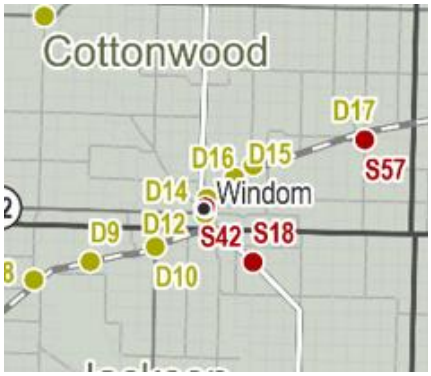
Approach to Freight Project Selection and Prioritization

The District 7 Prioritization Process (Needs)

The MHFP provided a starting point for establishing a scoring and ranking method for identified system issues in needs in District freight plans. Lessons learned from the statewide MHFP solicitation were used to help guide the development of this district-level 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. Figure 22 provides a visual overview of the gap identification process, with the evaluation process described below.

Figure 22: Gap Identification Process

1. Map issues and needs



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 7) 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.

Figure 23 lists the categories and measures for District 7'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 23: Categories and Measures for Gap Evaluation

Category	Ranking Score Measure/Performance Indicator	Safety	Mobility	Condition
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 gaps for the District to address, as well as sub-rankings of gaps that, if addressed, were deemed to provide the greatest benefits to freight system safety, condition, and mobility. Appendix C provides a list of all scored gaps in order of "pure rank. A subset of ranked projects was selected for advancement to pre-feasibility assessment, which is described in Chapter 5. This decision-making process also included consideration of key freight projects that were not highway infrastructure-related and may not have been prioritized during evaluation (e.g., projects that are on the rail network, or related to other highway facilities –like truck parking).

While this Plan "ranks" issues and needs, it is ultimately up to District 7 and its partners to determine which projects may be in the best interest of the region to advance.

Chapter 5: What Comes Next?

Chapter 5: Recommended Actions

Recent Progress

Before considering plans for improvement in the District, it is important to recognize recent and ongoing projects or policy changes that have addressed issues identified in previous work, such as the Manufacturer's Perspectives study. This section showcases some of the freight-related or freight-benefitting projects that District 7 has undertaken in the past or is planning to undertake, including roundabout design adaptations and highway corridor expansions. Projects like these also show many highway investments provide benefits for both freight transportation and the general public.

Infrastructure Projects

Four Lane Highway Expansions

The expansion of some regional highways from two lanes to four lanes was a common theme in feedback for both the Manufacturers' Perspectives study and this freight plan. Many stakeholders mentioned that they prefer to route their trucks along four-lane highways rather than two-lane routes. Respondents felt that four-lane highways have fewer crashes and are easier to navigate when inclement weather such as snow is present. Stakeholders in the 2019 Manufacturers Perspective Study and prior research efforts broadly identified the need for more four-lane roadway sections on US-169, US-14, and MN-60. Some of MnDOT's recent highway work is profiled below:

- **MN-60 expansion** In 2018, MnDOT completed a four-lane expansion of MN-60 which addressed some gaps in four-lane service. This project focused on improving 19 miles of two-lane sections between Windom and St. James and was completed in 2018. Notable benefits from the project include better traffic capacity, improved safety with a divided highway design, and improved regional connectivity.
- **US-14 expansion** US-14 is an important freight route for communities in the northern areas of District 7, including New Ulm, Nicollet, Mankato, and Waseca. A four-lane expansion of US-14 between Nicollet and New Ulm will be constructed in 2022 and 2023. Other sections of US-14 have also been expanded thanks to freight-related funding programs. In 2016, an expansion of 14 from Nicollet to North Mankato was completed. This project was made possible due to a funding award from MnDOT's Corridors of Commerce program.

Roundabouts and Intersections

A consistent theme in District 7 and across Minnesota has been the need for intersections that can safely accommodate turning and crossing truck traffic. In particular, many trucking stakeholders have expressed concern about the potential implementation of roundabouts and the negative impact that certain roundabout design elements may have on truck traffic. In response, MnDOT has been investing in designing roundabouts with design elements tailored specifically for truck movement, such as low "mountable" curbs or aprons, and sufficient room for turning movements. Some of District 7's notable intersection work is profiled below:

- **Worthington Roundabouts** In District 7, stakeholders had noted the need for roundabout reconfiguration at MN-60 and US-59 in Worthington, which was needed to accommodate the movement of large trucks and prevent load shifting. Reconfiguration of that roundabout and two other MN-60 roundabouts in Worthington was completed in July 2021, and the updated roundabouts include design elements intended to improve truck mobility.

- **St. James Roundabout** To address ongoing road condition issues and local utility issues, MnDOT reconstructed MN-4 through St. James. This project included the creation of two "mini roundabouts" on 1st Avenue. These mini-roundabouts have low-set centers that allow long truck trailers to pass over them, ensuring sufficient truck mobility is maintained. The creation of these two mini roundabouts was supported by a Federal Highway Administration Accelerated Innovation Deployment grant award.

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:

- **Minnesota Statewide Truck Parking Study**. In 2019, MnDOT completed the Statewide Truck Parking Study. This study was initiated in response to concern about a lack of truck parking across the state, including in the Mankato area. The study identified Mankato as one of the areas of Minnesota with extremely high demand for truck parking relative to capacity. MnDOT is continuing work to identify opportunities for truck parking development in the general area.
- **Highway 169 Corridor Study.** MnDOT was a partner in a corridor study for US-169 that was led by the Mankato / North Mankato Area Planning Organization. This study examined the need for safety and mobility improvements on US-169 between the MN-60 junction in the south and US-14 in the north. Multiple intersections within this corridor were flagged as potential truck safety concerns by Manufacturers Perspectives interviewees and consultees for this freight plan. The 169 Corridor study includes preliminary designs for solutions and an action plan for the implementation of safety and mobility improvements that will address many of these documented safety issues.

Recommendations

While District 7'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 recommendations and have been categorized into 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 25. Generally, there was a high level of overlap between identified freight needs and issues and planned transportation projects. It is important to note that these planned projects are not explicitly intended to address the identified freight needs and issues. Currently, there are 153 identified freight issue and need points on District 7'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. These were about one-fifth of the total count of gaps and included topics such as areas where additional acceleration lanes, turn lanes, or four-lane expansion was requested.
- **Condition gaps** made up the remaining share of identified gaps and primarily consisted of local bridges with identified condition issues and stakeholder feedback on poor pavement conditions.

While these project needs were identified during the 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).

Many types of highway projects are freight-benefitting projects.

Pre-Feasibility Assessment

One of the aims of the District 7 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.

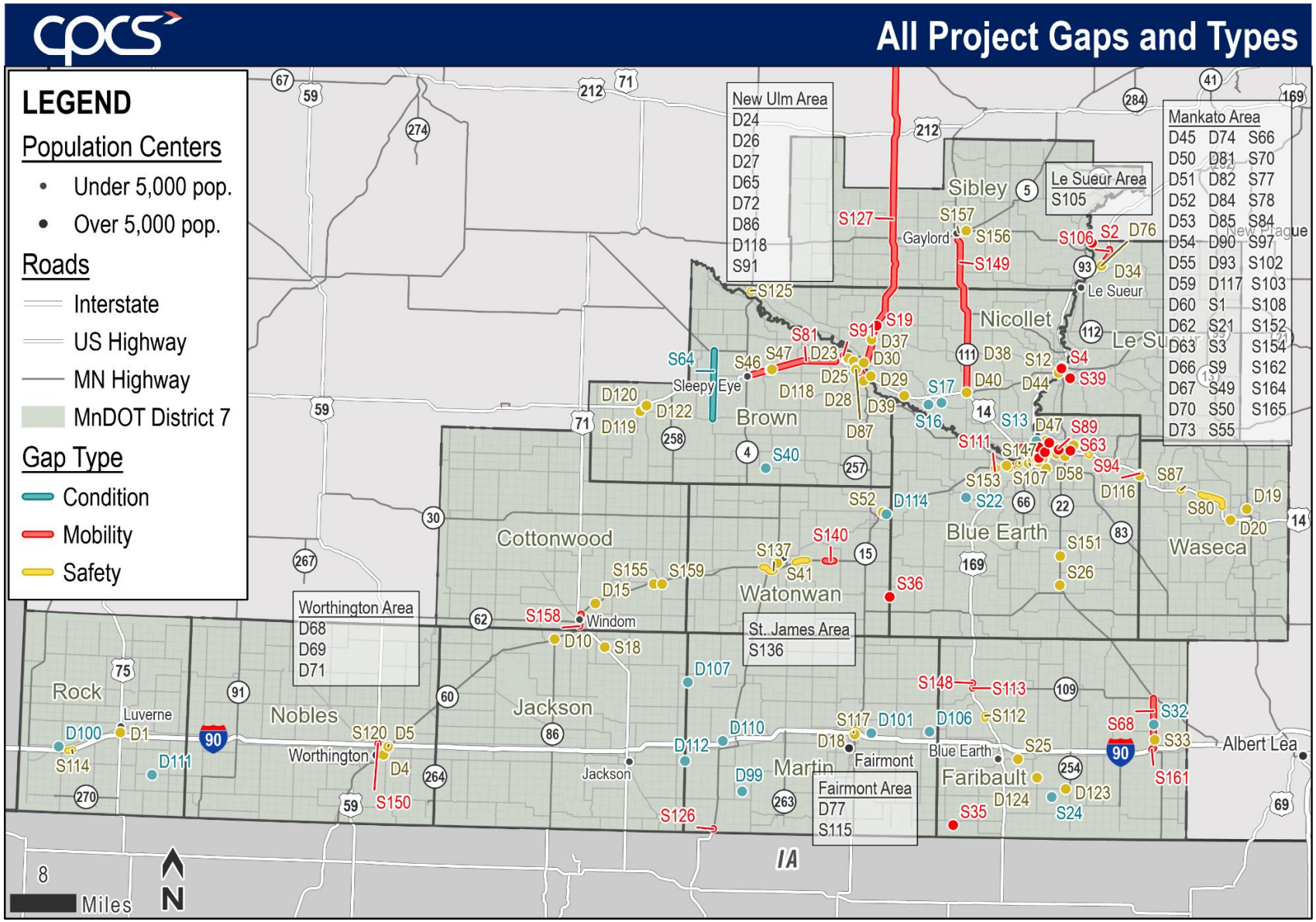
The full slate of 153 unaddressed needs is shown in Figure 25. A subset of these unaddressed needs was advanced to pre-feasibility to determine 1) what the project would entail, 2) one or more conceptual design options that may address the need, and 3) planning level cost estimates for each option. Figure 24 lists the unaddressed needs that underwent pre-feasibility assessment. These projects' locations were selected to represent a range of different need/issue types and to provide a broad geographic representation across District 7. Appendix C has a full list of all gaps shown in Figure 25.

Figure 24: List Unaddressed Needs Included in Pre-Feasibility Assessment

ID	Highway	Location	Type of Need/Issue
S117	I-90 at MN-15	Fairmont	Safety
D18	MN-15 at Torgerson Drive	Fairmont	Safety
S155 and S159	MN-60 intersections with CSAH 1 and 570th Avenue	Mountain Lake	Safety, Mobility
S103 and S49	US-169 and Hawley Street	Mankato	Safety, Mobility
S164	Blue Earth County Highway 120 and US-169	Blue Earth County	Safety

This table may be updated based on ongoing work with SEH.

Figure 25: Map of Pure Ranked "Gaps"



Source: CPCS analysis. 2022.

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.

It is important to note that different stakeholder groups within MnDOT have different roles in implementing the recommendations below, and MnDOT will be unable to address some recommendations itself because the recommendation addresses an issue that MnDOT cannot directly control. Therefore, the figures below list potential leading and supporting roles in recommendation implementation. Some recommendations outside of MnDOT's direct influence are still included because each district freight plan's recommendations help inform topics for further research or engagement in future state freight plan updates, and research by the Minnesota Freight Advisory Committee (MFAC). In addition to District 7, another MnDOT office with significant implementation responsibilities is MnDOT's Office of Freight and Commercial Vehicle Operations (OFCVO).

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 7 are shown in the following figure.

Figure 26: Recommendations to Support Minnesota's Economy

Type	Description	Implementers
Policies	**Incorporate information from the District 7 Freight Plan into existing planning processes and future projects.** This plan provides MnDOT and its partners with detailed information on the specific location and characteristics of freight concerns in District 7. MnDOT should use this information to understand how existing planning or project work may be able to help District 7 address freight transportation needs and issues.	MnDOT District 7
	Educate local planning and economic development partners on information sources for programmed projects. MnDOT publishes information about project and planning schedules online, but some stakeholders have noted that they were not aware this information was readily available.	MnDOT District 7
Programs	**Improve intermodal access**. Explore opportunities to improve District 7's manufacturers' and agricultural firms' access to intermodal shipping. This shipping option is particularly important for westbound export of agricultural products through ports on the west coast.	Lead: MFAC Support: MnDOT OFCVO
Partnerships	**Continue outreach to freight stakeholders.** Continued outreach such as attendance at economic development meetings, targeted consultations during planning work, and solicitations for feedback would provide the District with additional information that could be used to update the list of issues and needs created in this District Freight Plan.	MnDOT District 7

Type	Description	Implementers
	Outreach and information sharing for state and federal legislators. State and federal funding for transportation programs is an important tool for addressing many of District 7's freight issues and needs. MnDOT should continue engagement with state and federal legislators to provide information on freight transportation needs in District 7.	MnDOT OFCVO MnDOT District 7 MFAC
	Continue support for truck driver training. MnDOT should continue its partnership with Minnesota's educational institutions to support truck driver training programs.	MnDOT OFCVO

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 7 are shown in the following figure.

Figure 27: Recommendations to Improve Minnesota's Mobility

Type	Description	Implementers
Policies	**Flooding due to extreme weather and severe rainfall events should be considered in investment and planning decisions**. This flooding affects the efficiency and reliability of trucking, and also impacts road condition.	MnDOT District 7
	Document truck size and weight issues and impacts. Information about truck size and weight impacts on business operations and modal choices will be important information for future legislative discussions about changes to truck weight limits.	MnDOT OFCVO
Programs	**Continue to study potential freight mobility improvements.** District 7 should continue to study potential solutions to this plan's identified freight mobility issues. When possible, the District and its partners should seek freight funding to implement these solutions.	MnDOT District 7
Partnerships	**Continue engagement with Iowa and South Dakota DOTs.** MnDOT coordination and dialogue with the Iowa and South Dakota DOTs is important to stakeholders in District 7. Communication among agencies can improve freight safety and mobility by improving the timing or coordination of projects affecting state highways or interstates that cross state borders.	MnDOT OFCVO MnDOT District 7
	Partner with industry to improve access to Mississippi River transportation. Barge shipping on the Mississippi River is a significant export route for District 7's agricultural producers and improving river access is a potential freight improvement with benefits for many agricultural producers.	MFAC MnDOT OFCVO

Preserve Minnesota's Infrastructure

The expected growth in goods movement 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 7 are shown in the following figure.

Figure 28: Recommendations to Preserve Minnesota's Infrastructure

Type	Description	Implementers
Policies	**Prioritize maintenance of existing assets over the construction of new assets.** MnDOT expects to continue experiencing funding shortfalls in the future and meeting existing maintenance needs with limited funding will become increasingly difficult. Building new infrastructure will add to this maintenance burden, and therefore should only be undertaken when new projects will provide a clear and significant safety or mobility benefit.	MnDOT District 7
Programs	**Support expanding truck parking options.** Support expanding public and private truck parking options in areas of unmet parking demand identified in the 2019 Statewide Truck Parking Study.	Lead: MnDOT OFCVO Support: MnDOT Rest Area Program
Partnerships	**Provide stable funding.** Encourage state and federal lawmakers to develop stable funding policies and sources for freight, and the transportation system in general.	MnDOT OFCVO MnDOT District 7 MFAC
	Continue to consult with trucking operators when creating roundabouts on major freight routes.	MnDOT District 7
	Continue support for short line rail investments. State grant support such as the Minnesota Rail Service Improvement program are important tools for short lines to make capital improvements and maintain service.	MnDOT OFCVO

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 7 are shown in the following figure.

Figure 29: Recommendations to Safeguard Minnesotans

Type	Description	Implementers
Programs	**Continue to address freight safety needs.** District 7 should continue to study potential solutions to this plan's identified freight safety issues. When possible, the District and its partners should seek freight funding to implement these solutions.	MnDOT District 7
	Advance recommendations of MnDOT's Weight Enforcement Investment Plan including improvements to the Worthington weigh station, and additional cameras at the existing site in Watonwan County.	MnDOT OFCVO Department of Public Safety
Partnerships	**Partner with local communities and railroads** to advance grade crossing improvements at key locations.	MnDOT District 7 MnDOT OFCVO

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 7 are shown in the following figure.

Figure 30: Recommendations to Protect Minnesota's Environment and Communities

Type	Description	Implementers
Policies	**Balance freight needs in complete streets projects.** Continue to consider freight needs in future complete streets projects and main street projects in a way that balances the needs of all users, including freight.	MnDOT OFCVO MnDOT District 7
Partnerships	**Offer freight information resources or freight planning assistance to county or local governments.** Collaboration with local governments may be necessary to resolve local community impacts of freight transportation operations.	MnDOT OFCVO MnDOT District 7

Appendices

Appendix A. Advisory Committee and Technical Team Membership

Advisory Committee

- Chad Larson – Guardian NRG
- Ryan Vesey – Greater Mankato Growth
- Seth Greenwood – Nicollet County
- Ryan Thilges – Blue Earth County
- Bruce Abbe – Specialty Grains and Soya Alliance
- Wayne Knewtson – Knewtson Soy
- Jay Parker – Taylor Corp.
- Roberta Retzlaff – FHWA
- Jean Cemensky – Minnesota DPS
- Troy Nemmers – City of Fairmont
- Nick Klisch – Cottonwood County
- Julie Rath – Minnesota Valley Regional Rail Authority
- Amanda Bilek – Minnesota Corn Growers Association
- Tom Slunecka – Minnesota Soybean Research and Promotion Council
- David Preisler – Minnesota Pork Board
- Tim Rudnicki – Minnesota Biofuels Association
- Jeff Wetmore – Westwood
- Charles Androsky - MAPO
- Rosemary Bruce-White - SWRDC
- Kristian Braekkan, and Leah Petricka - RNDC
- Greg Ous, Ronda Allis, Sam Parker, Angela Piltaver, Scott Thompson, Nick Ollrich, Andrew Lawver, Lisa Bigham – MnDOT District 7
- Andrew Andrusko and Robert Clarksen - MnDOT Office of Freight and Commercial Vehicles

Technical Team

- Rosemary Bruce-White - SWRDC
- Kristian Braekkan, and Leah Petricka - RNDC
- Greg Ous, Ronda Allis, Sam Parker, Angela Piltaver, Scott Thompson, Nick Ollrich, Andrew Lawver, Lisa Bigham – MnDOT District 7
- Andrew Andrusko and Robert Clarksen - MnDOT Office of Freight and Commercial Vehicles

Appendix B. Previous Plans

Document	Agency	Year
Minnesota Statewide Freight System and Investment Plan	MnDOT	2018
Manufacturers' Perspectives on Minnesota Transportation System – District 7	MnDOT	2019
Southwest Minnesota Regional Freight Study	MnDOT	2007
Minnesota State Highway Investment Plan (MnSHIP)	MnDOT	2017
District Safety Plan Update	MnDOT	2016
Minnesota Weight Enforcement Investment Plan	MnDOT	2018
Minnesota Statewide Truck Parking Study	MnDOT	2019
Minnesota Improvements to Highway-Rail Grade Crossings and Rail Safety	MnDOT	2014
Minnesota State Rail Plan	MnDOT	2015
Rail Grade Crossing Safety Project Selection	MnDOT	2016
Highway 60 Windom Corridor Study	MnDOT	2020
Highway 22 Corridor Study	MAPO	2018
Mankato/North Mankato Area LRTP 2045 Update	MAPO	2020
Region Nine Comprehensive Economic Development Strategy	RNDC	2016
Region Nine Annual Reports	RNDC	2020
SRDC Comprehensive Economic Development Strategy	SRDC	2017
SRDC Annual Report	SRDC	2020

Appendix C. Pure Project Ranks

The following figure lists ranks for each project "gap" identified in District 7. Truck percent was used as a tiebreaker to help determine which projects may be more relevant to freight operations in District 7. The fields in the table are:

- **ID:** This code refers to the need/issue ID printed on maps. 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.
- **Highway Name** or Number (as available)
- **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 issue 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 safety sub-ranking.
- **Mobility:** The mobility sub-ranking.
- **Condition:** The condition sub-ranking

ID	Source	Highway	Rank			
			Pure	Safety	Mobility	Condition
S147	Manufacturer's Survey	MN 60/US 169 at MN 68, Mankato	1	1		
S117	Manufacturer's Survey	I-90 at MN 15, Fairmont	2	5		
S149	Manufacturer's Survey	MN 111/MN 22 btwn Nicollet and Gaylord	3		2	
S108	Manufacturer's Survey	NB US 169 to WB US 169/MN 60	4	2		
S158	Other Consultation	TH-60/TH-71	5		4	
S159	Other Consultation	TH-60/CSAH-1	6	6		
S155	Other Consultation	MN-60 and 570th Ave	7	7		
S78	Manufacturer's Survey	US 14 at Riverfront Dr, Mankato	8		7	
S111	Manufacturer's Survey	US 169 S from Mankato	9		3	
S113	Manufacturer's Survey	US 169 at MN 109 (6th Ave SE) in Winnebago	10		6	
S120	Manufacturer's Survey	MN 60 roundabouts in Worthington	11	10		
S157	Other Consultation	TH-5/TH-19	12	15		

ID	Source	Highway	Rank			
			Pure	Safety	Mobility	Condition
S115	Manufacturer's Survey	MN 15 at I-90, Fairmont	13	16		
S97	Manufacturer's Survey	US 14 EB between Riverfront Dr and Victory Dr, Mankato	14	17		
S137	Manufacturer's Survey	MN 60 curve near St. James	15	4		
S80	Manufacturer's Survey	US 14 west of Waseca by Crystal Valley Coop, where road goes from NB to WB	16	3		
S136	Manufacturer's Survey	MN 60 curve near St. James	17	8		
S12	MetroQuest Survey	S Minnesota Ave	18	14		
S151	Other Consultation	MN-22 and 153rd Street	19	19		
S70	Manufacturer's Survey	Highway 14 in Mankato	20	20		
S89	Manufacturer's Survey	US 14 near Victory Dr, Mankato	20		9	
S49	Other Consultation	USTH 169	21	21		
S77	Manufacturer's Survey	US 14 at Brown CR 10	22	9		
S68	Other Consultation	MNTH 109	23		11	
D18	CMV Crash Data	MNTH 15; Torgerson Dr	24	25		
S66	Other Consultation	Riverfront Drive	25		13	
S3	MetroQuest Survey	N Victory Dr	26	26		
S52	Other Consultation	MNTH 60	27	11		
D38	CMV Crash Data	MNTH 111; MNTH 99	28	28		
D10	CMV Crash Data	MNTH 60; MNTH 86	29	12		
S127	Manufacturer's Survey	MN 15, New Ulm to Hutchinson	30		15	
D39	CMV Crash Data	USTH 14; 502nd St	31	30		
S9	MetroQuest Survey	Webster Ave	32		1	
D15	CMV Crash Data	MNTH 60; 500th Ave	33	22		
D4	CMV Crash Data	USTH 59; MNTH 60	33	22		
S87	Manufacturer's Survey	WB US 14 from Waseca CR 33 (50th St)	34	10		
D40	CMV Crash Data	USTH 169; MNTH 22	35	35		
D44	CMV Crash Data	3rd Ave; Lundin Blvd	36	37		

ID	Source	Highway	Rank			
			Pure	Safety	Mobility	Condition
S26	MetroQuest Survey	Victory Dr	36	24		
S103	Manufacturer's Survey	Hawley St at US 169 NB, Mankato	37	18		
S107	Manufacturer's Survey	US 169 at Hawley St/CR 69, Mankato	37	18		
S148	Manufacturer's Survey	US 169 and MN 109 (1st Ave NW) in Blue Earth	38		5	
D29	CMV Crash Data	MNTH 13; MNTH 99	39	31		
D5	CMV Crash Data	USTH 59; County Highway 35	40	32		
D68	CMV Crash Data	MNTH 60	40	32		
D69	CMV Crash Data	MNTH 60	40	32		
D71	CMV Crash Data	MNTH 60	40	32		
S114	Manufacturer's Survey	I-90 at curve near Beaver Creek	41	13		
S106	Manufacturer's Survey	US 169 from N of Le Sueur to Twin Cities	42		19	
D30	CMV Crash Data	MNTH 13; 320th St	43	38		
D19	CMV Crash Data	Elm Ave W; State St N	44	39		
S140	Manufacturer's Survey	MN 60 at St. James Rest Area	45		20	
D28	CMV Crash Data	USTH 14; MNTH 15	46	40		
S13	MetroQuest Survey	USTH 169	47			2
S91	Manufacturer's Survey	US 14/MN 68 in New Ulm	48		22	
S125	Manufacturer's Survey	MN 4 at CSAH 21, N of Sleepy Eye	49	34		
S162	Other Consultation	US-14	50		10	
D34	CMV Crash Data	MNTH 22; 320th St	51	36		
D76	CMV Crash Data	Forest Prairie Rd	51	36		
S4	MetroQuest Survey	S Minnesota Ave	52		8	
S81	Manufacturer's Survey	US 14 from New Ulm to Sleepy Eye	53		23	
D63	CMV Crash Data	USTH 169; MNTH 99	54	44		
D66	CMV Crash Data	Madison Ave	54	44		
D67	CMV Crash Data	MNTH 22	54	44		
D70	CMV Crash Data	Madison Ave	54	44		

ID	Source	Highway	Rank			
			Pure	Safety	Mobility	Condition
D74	CMV Crash Data	MNTH 22	54	44		
S64	Other Consultation	Brown County Highway 8	55			4
S112	Manufacturer's Survey	US 169 near Riverside Country Club, north of Blue Earth	56	29		
D1	CMV Crash Data	USTH 75; W Gabrielson Rd	57	46		
D37	CMV Crash Data	USTH 14; 4th St	58	38		
S161	Other Consultation	TH-22	59		11	
S32	MetroQuest Survey	MNTH 22	59			3
S164	Other Consultation	US-169	60		12	
D27	CMV Crash Data	USTH 14; 448th St	61	41		
D72	CMV Crash Data	Broadway St	61	41		
D86	CMV Crash Data	Center St	61	41		
D87	CMV Crash Data	Center St	61	41		
S94	Manufacturer's Survey	US 14 at Smiths Mill (W Co Line Rd/CR 37)	62		24	
D23	CMV Crash Data	12th St N; N Valley St	63	50		
D65	CMV Crash Data	20th St N	63	50		
D60	CMV Crash Data	USTH 14; MNTH 60	64	51		
S84	Manufacturer's Survey	WB US 14 at Riverfront Dr, Mankato	65		17	
D84	CMV Crash Data	N 2nd St	66	52		
S92	Manufacturer's Survey	Lookout Dr over US 14, North Mankato	67		25	
S102	Manufacturer's Survey	US 169 at CR 69 (Hawley St), Mankato	68		14	
D77	CMV Crash Data	MNTH 15	69	53		
S150	Manufacturer's Survey	US 59 at Prairie Dr, Worthington	70		16	
D62	CMV Crash Data	MNTH 60; 330th St	71	45		
S18	MetroQuest Survey	USTH 71	72	27		
S19	MetroQuest Survey	MNTH 15	73		18	
D82	CMV Crash Data	Belgrade Ave	74	48		
D20	CMV Crash Data	USTH 14; MNTH 4	75	42		

ID	Source	Highway	Rank			
			Pure	Safety	Mobility	Condition
S156	Other Consultation	TH-5/TH-19	76	23		
D45	CMV Crash Data	USTH 14; 3rd Ave	77	56		
S21	MetroQuest Survey	USTH 14	78		21	
S165	Other Consultation	US-169	79	49		
S47	Other Consultation	USTH 14	80	43		
D85	CMV Crash Data	N Riverfront Dr	81	59		
D24	CMV Crash Data	N German St; 1st St N	82	60		
D25	CMV Crash Data	MNTH 15; Center St	82	60		
D47	CMV Crash Data	E Lafayette St; N 4th St	82	60		
D53	CMV Crash Data	James Ave; Lilly St	82	60		
D59	CMV Crash Data	MNTH 22; Madison Ave	82	60		
D81	CMV Crash Data	N Riverfront Dr	82	60		
S105	Manufacturer's Survey	US 169 NB from Cambria Plant near Le Sueur Rest Area	83	33		
S46	Other Consultation	USTH 14	84	47		
D90	CMV Crash Data	S 2nd St	85	61		
S152	Other Consultation	3rd Avenue (CSAH 5)	86	62		
D52	CMV Crash Data	W Pleasant St; Willard St	87	60		
D54	CMV Crash Data	Warren St; Stadium Rd	87	60		
D73	CMV Crash Data	Cherry St	87	60		
D93	CMV Crash Data	Power Dr	87	60		
S39	MetroQuest Survey	Golf Course Rd	87		26	
S41	MetroQuest Survey	Tiell Dr	87	60		
D119	Rail Crossing Risk Data	MUN 12	88	55		
S17	MetroQuest Survey	491st Ave	88			1
S2	MetroQuest Survey	MNTH 22	88		1	
S24	MetroQuest Survey	60th St	88			1
S33	MetroQuest Survey	130th St	88	55		

ID	Source	Highway	Rank			
			Pure	Safety	Mobility	Condition
S35	MetroQuest Survey	330th Ave	88		1	
S63	Other Consultation	USTH 14	88		1	
D26	CMV Crash Data	MNTH 15; 20th St S	89	64		
D51	CMV Crash Data	E Cherry St; S Broad St	89	64		
S22	MetroQuest Survey	Edgewater Rd	89			5
S25	MetroQuest Survey	110th St	89	60		
S126	Manufacturer's Survey	MN 4 S of Dunnell	90		27	
D122	Rail Crossing Risk Data	CSAH 5	91	62		
D117	Rail Crossing Risk Data	FARM	92	57		
D120	Rail Crossing Risk Data	MUN 38	92	57		
D58	CMV Crash Data	MNTH 22; Adams St	93	54		
S36	MetroQuest Survey	850th Ave	94		28	
S154	Other Consultation	Sibley Parkway	95	58		
D116	Rail Crossing Risk Data	CSAH 37	96	62		
D118	Rail Crossing Risk Data	CSAH 10	97	55		
D50	CMV Crash Data	E Cherry St; S Front St	97	60		
S16	MetroQuest Survey	478th St	97			5
S40	MetroQuest Survey	CSAH 10	97			5
S55	Other Consultation	N Riverfront Dr	97		29	
D123	Rail Crossing Risk Data	CSAH 4	98	62		
D124	Rail Crossing Risk Data	CSAH 13	98	62		
S153	Other Consultation	CR 117 (547th Ave)	99	62		
S1	MetroQuest Survey	Poplar St	100		30	
S50	Other Consultation	USTH 169	100	60		
D101	Bridge Condition Data	'0.6 MI N of Jct TH 90'	101			6
D106	Bridge Condition Data	'0.3 MI S of Jct CSAH 32'	101			6
D107	Bridge Condition Data	'2.8 MI W of Jct CR. 107'	101			6
D112	Bridge Condition Data	'At W CO line'	101			6

ID	Source	Highway	Rank			
			Pure	Safety	Mobility	Condition
D114	Bridge Condition Data	'0.7 MI N of CSAH 3'	101			6
D99	Bridge Condition Data	'0.9 MI E of Jct CSAH 13'	101			6
D55	CMV Crash Data	N Victory Dr; Adams St	102	63		
D111	Bridge Condition Data	'0.1 MI S of Jct CSAH 15'	103			8
D100	Bridge Condition Data	'0.2 MI E of Jct CSAH 25'	104			7
D110	Bridge Condition Data	'1.5 MI E of Jct CSAH 7'	104			7

Appendix D. Public Outreach Summary

Placeholder for outreach summary prepared by ZAN.