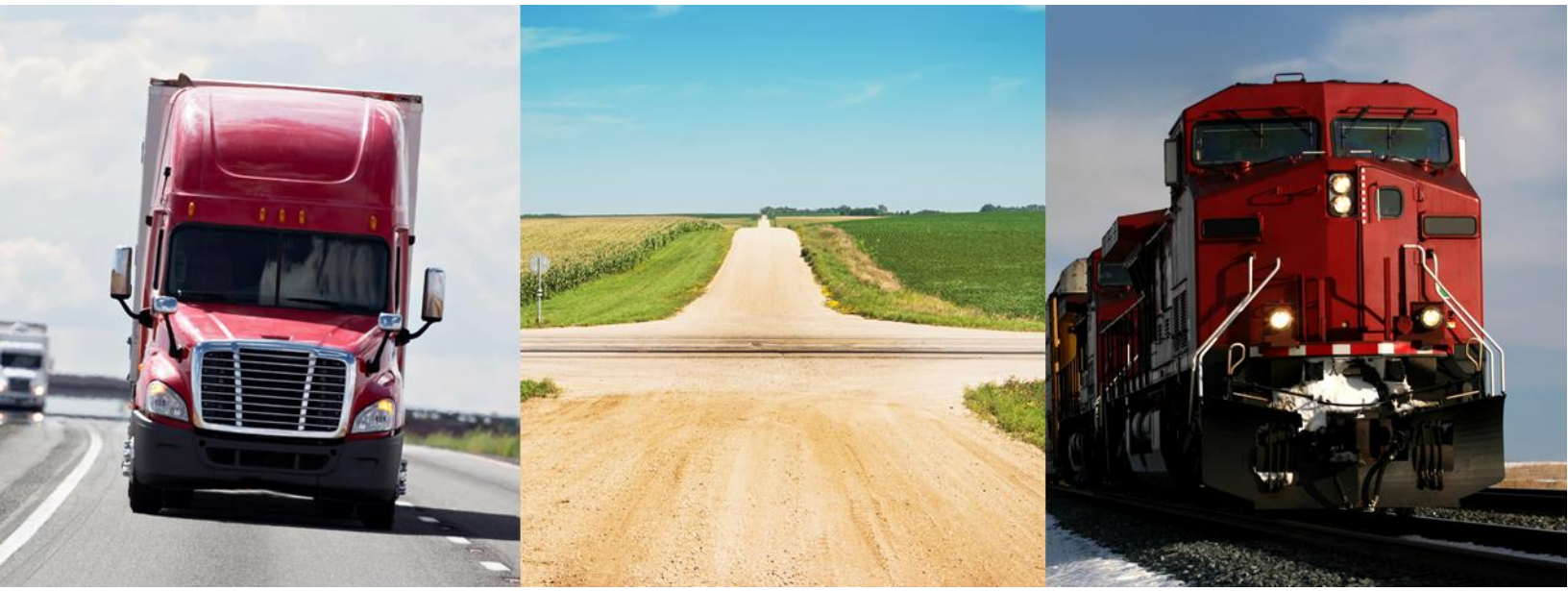

Minnesota Department of Transportation District 4 Freight Plan

Working Paper 4: Freight System Needs, Issues and Opportunities

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Acronyms and Abbreviations

Abbreviation	Definition
BNSF	Burlington Northern Santa Fe Railway
CHIP	Capital Highway Improvement Plan
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
HCAADT	Heavy Commercial Annual Average Daily Traffic Locations
HOS	Hours of Service
LPP	Local Partnership Program
MHFP	Minnesota Highway Freight Program
MnDOT	Minnesota Department of Transportation
MRSI	Minnesota Rail Service Improvement Program
MPO	Metropolitan Planning Organization
NDDOT	North Dakota Department of Transportation
NHFP	National Highway Freight Program
OFCVO	Office of Freight and Commercial Vehicle Operations
OSOW	Oversize-Overweight
STEEP	Social, Technological, Environmental, Economic, and Political
STIP	State Transportation Improvement Program
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TPIMS	Truck Parking Information Management System
TZD	Toward Zero Deaths
VMT	Vehicles Miles Traveled

Executive Summary

Minnesota Department of Transportation (MnDOT) District 4 is made up of 12 counties in West-Central Minnesota: Becker, Big Stone, Clay, Douglas, Grant, Mahnomen, Otter Tail, Pope, Stevens, Swift, Traverse, and Wilkin. The District is home to 4.5 percent of Minnesota's population but makes up 12.4 percent of its land area. The District 4 Freight Plan is currently under development to provide MnDOT with a clear understanding of the regional multimodal freight assets, performance, and connection to the District's economy. This understanding will assist MnDOT in making well-informed policy and programming decisions in District 4.

This Working Paper is the fourth in a series of six Working Papers contributing to the District's Freight Plan and provides information on the needs, issues, and potential improvements for freight transportation in the District. A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis is also provided with potential programs, projects, policies, and partnerships that MnDOT may consider to improve freight movement in District 4.

Freight Needs and Issues

District 4's freight network is mainly made up of roads and railroads spread across urban and rural areas, which both have a variety of needs and issues identified through this Working Paper analysis. As MnDOT can primarily influence the investment and operation of the road and highway network, a majority of this analysis is focused on road- and highway-related needs and issues.

One common consideration mentioned by stakeholders was the need for safety improvements, especially the addition of traffic signals and turn lanes at some intersections to allow for truck traffic to pass safely and enter or exit trunk highways. Stakeholder and online survey feedback also raised pavement condition and bridge condition issues for traveling on rural roads.

While congestion was not a major issue raised for District 4, heavy traffic outside the region, particularly in the Twin Cities and Fargo area, was noted as affecting travel times within District 4. Additionally, seasonal traffic causing congestion during fall harvest and summer vacation periods was noted, with some calls for widening I-94. Feedback on mobility constraints around the downtown Moorhead area due to non-local traffic avoiding congestion on I-94 was also noted.

Other needs and issues included widespread shortages of truck drivers, a desire for harmonized truck weight limits with surrounding states, as well as potential website improvements for truck permitting information that MnDOT provides.

In regard to the rail network, stakeholders identified some safety and mobility grade crossing needs and issues-largely related to rail lines around the growing downtown area of Moorhead where rail intersects with local traffic. Additionally, infrastructure needs and issues related to preserving track throughout District 4 were raised, especially for track owned by short line rail.

Freight Strengths, Weaknesses, Opportunities, and Threats

An inventory of District 4's freight relevant Strengths, Weaknesses, Opportunities, and Threats (SWOT) was created based on a combination of identified needs and issues from the data analysis and prior plans, feedback from stakeholders including online survey responses and the Advisory Committee, and an assessment of external factors. This SWOT analysis informed the development of preliminary recommendations for District 4. Key strengths of District 4 include access to 4-lane highways such as I-94 and US-10 as well as rail assets which support a strong base of agriculture and manufacturing industries. However, a key weakness is the need to continually and adequately maintain road and rail assets in the face of uncertain funding sources or levels.

Leveraging District 4's Freight Opportunities

District 4's freight transportation system has several advantages and opportunities for future improvement. A key opportunity for MnDOT is to prioritize safety improvements on higher-volume routes in the District, improve roundabouts and some intersections that restrict the mobility of freight, as well as improvements to pavement and bridge conditions.

The needs and issues in District 4 were mapped along with programmed projects from the State Transportation Improvement Program, Capital Highway Investment Plan, and county investment plans. Based on the overlap between needs and issues and programmed projects, a list of "gaps" – needs and issues not covered by upcoming projects – was identified. These gaps identified as not being covered by upcoming projects are shown in Figure ES-1. Notable themes for gaps included:

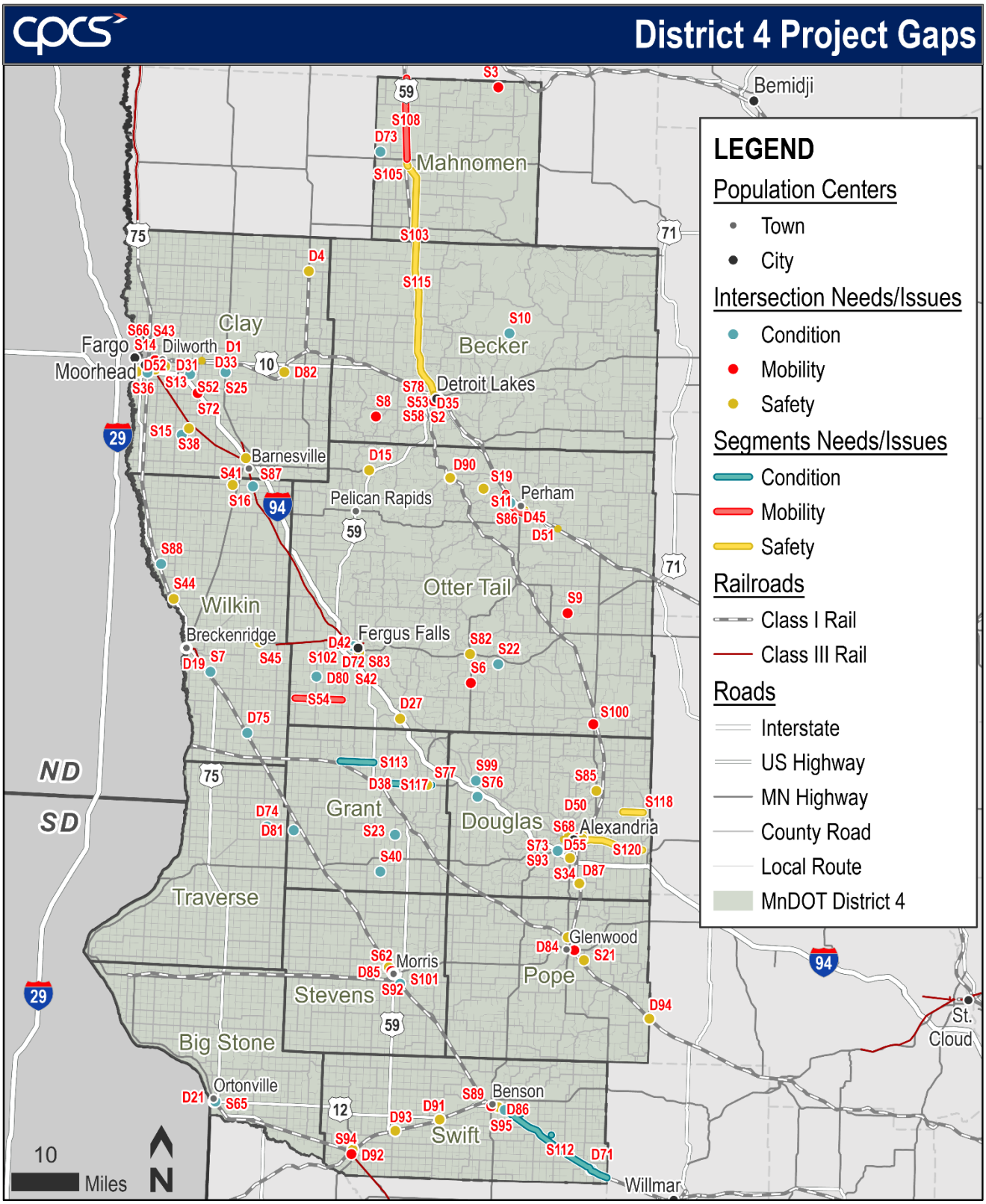
- **Safety** gaps were the most common gaps and made up about one-half of gaps. These were distributed across almost all areas of the District, but we particularly focused on higher-volume routes in the District and urban areas.
- **Mobility**-related gaps were the second most common. These needs and issues focused on the difficulty of moving trucks through roundabouts, some challenging intersections and interchanges, and the potential for improved routing or route signage.
- **Condition** gaps made up the remaining share of identified gaps. Almost all of these comments are related to pavement conditions.

Finally, funding uncertainty and shortfalls in transportation funding in the District, as well as Minnesota as a whole, remains a challenge for planning and maintenance considerations. The funding shortfall has been growing due to rising maintenance costs, and while federal funding and grant programs have provided some support, slowing revenue growth could pose a major threat to the good maintenance of District 4's transportation network in the future.

Next Steps for the District 4 Freight Plan

The project gaps identified in this Working Paper will be reviewed by the District, and advanced for further evaluation, scoring and ranking following a prioritization process developed for all District freight plans. Potential solutions for priority freight needs will be selected with the intention of advancement to pre-engineering feasibility studies. The goal of the pre-engineering work will be to provide potential solutions to top unaddressed freight needs and issues in the District and create project concepts that can compete for funding in future freight-related solicitations.

Figure ES-1: District 4's Project Gaps



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

1 Future Outlook

Key Findings

While freight planning in District 4 will rely largely on stakeholder inputs and data analysis to influence factors within MnDOT's control, it is important to ground this assessment in a broad view of trends that will affect the future of the District, State, and region as a whole. Some external factors to consider for the future of the District 4 freight system include demographic changes, climate change – especially relevant for the District's key agriculture industry, rise in ecommerce demands as well as funding or policy changes related to the gas tax or Vehicle Miles Traveled.

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

Freight supply chains and industry operations reflect market conditions that are determined by a myriad of potential factors. Understanding major freight factors can help planners anticipate potential freight changes in the future.

External factors are often categorized using the "STEEP" terminology which tracks potential changes based on Social, Technological, Environmental, Economic, and Political considerations. Each of these factors has a role in influencing freight system operations and provides insight into future freight system needs, issues, and opportunities. The following subsections provide some examples of how historic STEEP trends and current developments may impact the District 4 freight system in the future. Note that these examples are provided for context and are not intended to be exhaustive. Instead, these examples show how the STEEP framework can be applied to understand a variety of potential changes to the freight system.

1.1 Social Factors and Trends

Social factors include demographics, income, consumption patterns, and population location and density. An example of social trends for District 4 are **Aging Population and Out-Migration in Rural Areas**. The population of the district as a whole is growing older, especially as compared to Minnesota overall. Additionally, the population of rural counties in District 4, such as Traverse, Wilkin, Big Stone, Swift, and Grant is shrinking, compared to population growth in metropolitan areas around Moorhead, Alexandria, and Detroit Lakes. While the overall population in the district has grown, out-migration from rural areas and aging of the labor force could create labor shortages for key labor-intensive industries like agriculture and manufacturing. Additionally, rising housing costs in the District may further increase out-migration or reduce in-migration. These labor shortage factors may influence freight transport in the District as businesses may need to relocate, existing shortages of truck drivers may worsen, and population decline might affect the volume of consumer goods shipped to the District.

1.2 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 4's freight network is the **growth of e-commerce**. Over the past decade, e-commerce has captured an increasingly large share of all retail sales, and the development of a new Amazon processing warehouse directly outside the District in Fargo will likely support further growth in e-commerce activity in District 4. In turn, these local and national trends will generate new truck traffic and last-mile movements of goods. Accommodating the growing demands of e-commerce could be a future challenge for the District 4 freight network as increased truck volumes could increase congestion. Other examples of potentially relevant technological factors and trends could also include the shift in energy generation from coal to natural gas, ethanol, and other renewable energy sources and the adoption of new vehicle technologies like automated trucks, as well as alternative power sources for trucks.

1.3 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 4's freight network is **climate change**. A warmer climate in western Minnesota may create additional opportunities for agricultural production by extending the growing season, but may also make it more difficult to plan optimal planting times. Additionally, periods of drought, severe rainfall, and flooding events associated with climate extremes can also damage crops as well as damage infrastructure.[1] A warmer climate, with more freeze-thaw events in fall and spring, may also create more stress on pavement and bridges, increasing the need for frequent maintenance or replacement.

1.4 Economic Factors and Trends

Economic factors may influence overall economic growth (global, regional) or the distribution of that growth and the ability of individuals or businesses to invest or purchase goods or services. An emerging economic trend in District 4 has been the **consolidation of farms and agriculture producers**, as larger farming corporations acquire small and mediums sized operations. This has implications for freight as larger producers have higher yields and often rely on rail transport for bulk loads that ship nationally. Consolidation of grain elevators also can generate increased truck traffic concentrations on select local roads, increasing the potential for infrastructure degradation and damage on first/final mile connections to these facilities. Other potential examples of economic factors include the growing economic development around the Moorhead and Fargo areas as well as the Twin Cities which can present additional challenges for congestion along key corridors in the District.

1.5 Political Factors and Trends

Political factors may influence the production, sourcing, flow, or trade of goods, or investments in public infrastructure, such as highways. An example of a political factor relevant to District 4 is **funding for transportation investments**. For example, the adoption of more efficient vehicles and electric vehicles may introduce challenges for funding transportation maintenance and investments through established revenue mechanisms like the gas tax. Other examples of potentially relevant factors include impacts of the statewide

[1] Minnesota Department of Natural Resources State Climatology Office

Vehicle Miles Traveled (VMT) targets and other state-level mandates for renewable or zero-carbon energy portfolios. While it is uncertain how VMT reduction policies will affect freight transport in Minnesota, a preliminary goal of a 20 percent reduction in VMT was adopted in March 2021 and is subject to ongoing discussions.[2]

As shown in Figure 1, external STEEP factors like the ones previously described can influence the freight system in several ways, including:[3]

- **Sourcing pattern** factors may impact what raw materials and other inputs are sourced and where they are sourced from (i.e. origination).
- **Flow destination** factors may impact where materials and other goods are destined for manufacturing, consumption, or other uses (i.e. termination).
- **Routing** factors may impact how goods are moved within a region, and if the routing is direct, via a single-mode, and if there are intermediate transfer points on the route.
- **Flow volume** factors may impact the total volume of freight shipped within and through a region.
- **Value density** factors may impact product characteristics and the value of goods shipped.

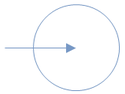
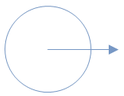
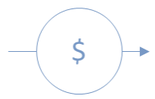
Figure 1: External Factors and Potential Impact on the Freight System

Source: Adapted from Chris Caplice, Massachusetts Institute of Technology

Figure 2 provides a brief overview of how STEEP factors may impact District 4's freight system in the future. This description is not intended to be exhaustive but instead illustrates how STEEP factors intersect with freight transportation operations.

[2] MnDOT "MnDOT adopts recommendations from the Sustainable Transportation Advisory Council" (2021)
[3] Chris Caplice, Massachusetts Institute of Technology

Figure 2: Potential Impacts of STEEP Factors

Potential Impacts	Social Factors	Technological Factors	Environmental Factors	Economic Factors	Political Factors
Source 	Social factors are not expected to have an impact on sourcing patterns.	New e-commerce facilities, such as the new Amazon warehouse in Fargo, North Dakota, may create more through traffic in District 4, and replace some other supply chains for traditional brick and mortar retailers.	If poor planting seasons, droughts or flooding disrupt crop productivity, food product, and biofuel manufacturers may have to source inputs from outside of the District.	A rise in demand for alternative energy sources such as ethanol may result in more ethanol or other renewable fuel facilities sourcing feedstock from District 4.	Sourcing patterns for District 4's manufacturers may change depending on costs relevant to offsetting declining gas tax revenues. For example, if the burden of funding for the freight system is passed on to the manufacturers.
Destination 	The aging population and increasing income in the District may be linked to changes in consumer purchasing patterns, resulting in more goods shipped to urban areas instead of rural areas.	Goods may be purchased at brick-and-mortar stores, but more and more goods will be ordered online and delivered directly to residential doorsteps.	Fueling/charging infrastructure will need to evolve if electricity or alternate fuels are adopted for passenger vehicles and trucks. Declining use of conventional fuel may reduce the volume of fuel shipments to the District's gas stations.	Consolidation of agricultural facilities across the could result in a changing destination for District 4 agricultural outputs. Additionally, changes in trade flows and trade policy globally could influence destinations as markets in the East such as China, India, and Indonesia grow.	Higher transportation costs borne by farmers and manufacturers could reduce overseas demand for District 4's agricultural and manufacturing products.
Route 	Many consumer goods will be shipped internationally via container and unloaded at distribution centers near intermodal hubs such as in the Twin Cities. The demand for Complete Streets, incorporating better foot, bike, and passenger traffic accessibility, may change which routes are accessible to trucks.	Smart technology including in-vehicle electronics may help trucks find efficient routes through the Twin Cities or other metropolitan areas improving trucking productivity in District 4.	More freeze-thaw events in fall and spring may also create more stress on pavement and bridges, requiring more frequent maintenance or replacement, disrupting truck routing. More flooding events may also require trucks to use alternative routes.	Continued congestion at ports and on major railroad lines may result in some freight being shifted from railroad to long-distance trucking.	Restrictions on VMT or emissions may increase volumes of products routed through the District via railroads; or via routes with alternative energy sources (for example electric charging stations).
Volume 	District 4's household incomes and level of educational achievements have increased but this factor is not expected to affect flow volume substantially.	Shipment and delivery of e-commerce goods may increase the volume of freight traffic, especially "last mile" deliveries. Additionally, traffic to new e-commerce facilities such as newly built Amazon facility in North Dakota may increase the volume of through traffic.	Poor planting seasons affected by extreme weather conditions could also create a lower volume of agri-food products shipped.	Growth in metropolitan areas, such as around the Moorhead area, Detroit Lakes, and the Twin Cities, may increase the volume of goods and people traveling along routes within and connecting these areas.	Increased prices for agricultural or manufacturing products due to rising transport costs in District 4 could result in lower production, and lower shipment volume.
Value 	Value impacts from social changes are uncertain.	Additive manufacturing technology may reduce the value-per-ton of shipments, as movement of finished manufactured goods is replaced with movement of raw material inputs for additive manufacturing.	The value of goods traveling along the system may increase in the future with changing transportation costs due to new energy sources. Values may also rise with demand for specialty products (for example organic foods).	The value of goods transported may increase over time, as District 4 (and the US, generally) works to add value to US products so they may more effectively compete internationally.	The value of goods transported may increase as domestic goods replace foreign goods for US consumption.

2 Freight System Needs and Issues

Key Findings

District 4's freight needs are focused on the road and rail system. Many of the identified needs and issues relate to safety at intersections. Specific safety-related improvements mentioned by stakeholders included the need for addition of traffic signals and turn lanes at some intersections to allow for truck traffic to pass safely and enter or exit trunk highways.

Rail issues focused on the growing downtown area of Moorhead, as well as broader economic needs to preserve existing rail lines, especially track owned by short line railroads.

Other commonly noted needs and issues included widespread shortages of truck drivers, a desire for harmonized truck weight limits with surrounding states, and potential improvements for the information that MnDOT provides via truck permitting, 511, and construction project web pages.

2.1 Introduction

District 4's freight needs and issues are complex, and many needs and issues have shared causes or solutions. This complexity and "overlap" can make the categorization of needs and issues difficult. For simplicity, the needs and issues discussed in this Chapter are described on a mode-by-mode basis. Within each mode, needs and issues are placed in three categories that correspond to the performance analysis completed in Working Paper 3. These categories were adapted from the Minnesota State Freight Investment Plan criteria:

- **Safety**, which is primarily related to commercial vehicle crashes, crashes at railroad grade crossings, and MnDOT's previous safety risk factor analyses.
- **Mobility**, which is related to the speed and ease with which freight can move in the region. This includes topics like traffic congestion, weight limits, and bridge clearances.
- **Condition**, which relates to the level of adequate maintenance of roads and bridges.

The information for this summary of needs and issues came from five main sources:

Advisory Committee and Technical Team Meetings: The Advisory Committee is made up of public and private system stakeholders and was created to provide "big picture" guidance in the development of the District 4 Freight Plan. The Technical Team is smaller, made up of agency staff, and provides guidance on how the plan will be used to inform investment decisions. Meetings with both groups are ongoing through the course of the project.

Stakeholder Consultations: The project team conducted 28 phone and in-person consultations with private and public freight stakeholders between July and August 2021. The results of these consultations were synthesized with other findings on needs and issues.

Online Survey Responses: The project team created and distributed two online surveys to supplement meetings and consultations. One survey was tailored for Advisory Committee members who were unable to attend meetings, and a second was created to solicit feedback from the freight community at large. This online survey received 102 responses from 47 respondents from the public outreach.

Analysis of Data: Evaluations of safety, mobility, and condition were completed using data provided by MnDOT.

Previous Studies and Plans: The project team completed an in-depth review and synthesis of needs and issues identified in previous plans and studies. A particularly important study was the 2014 *Manufacturers' Perspectives Study*, for which MnDOT staff conducted their in-depth stakeholder consultations.

It is important to note that this chapter is a summary of major needs and issues and is not a comprehensive inventory of each identified need or issue for District 4's system. Instead, **Appendix A – Stakeholder Identified Needs and Issues**, and **Appendix B – Data Identified Needs and Issues** provide tables listing the geographic location and description of each need or issue that was related to a specific asset of District 4's freight system.

2.2 Roadway Needs and Issues

District 4's freight transportation needs are primarily related to road and trucking-related needs. Trucks carry about 66 percent of Minnesota's freight tonnage and are the most commonly used mode for freight in the state. Additionally, MnDOT and its local partners have the most control over road investments and have the advantage of greater funding availability or flexibility, compared to resources for rail, water, and airport improvements. Road and trucking-related needs and issues are organized into general categories of safety, mobility, and condition.

Road Safety

Between 2010 and 2019, District 4 had the third-lowest count of commercial vehicle-involved crashes among MnDOT Districts. However, safety is still considered an important topic: respondents to the online survey most frequently picked safety as the top challenge for freight transportation in the District and provided feedback on topics such as safety at access points, areas with a frequent history of crashes, and intersections that were perceived to be unsafe. Information such as survey and consultation responses was supplemented by analysis of the District 4 safety plan and records of truck-involved crashes. Discussion of road safety is broken down into two elements: intersection safety and corridor safety.

Intersections

Intersection safety was a commonly mentioned topic among survey responses, Advisory Committee feedback, and consultations. Much of the stakeholder feedback on intersection safety identified specific busy intersections where trucks would be crossing, entering, or exiting fast-moving trunk highway traffic. These points included:

- Problems with left-turning traffic or difficulty making left turns, particularly at I-94 and MN-27 southwest of Alexandria, and 50th Avenue W and MN-29 south of Alexandria.
- Problems crossing high-speed highways, where trucks may have limited gaps of time to cross fast-moving traffic. This was particularly important for some agricultural consultees. Intersections with crossing issues included:
    - US-75 and CH-3 in Wilkin County
    - CH-8 and CH-19 in Wilkin County
    - CH-15 and MN-210 in Wilkin County
    - US-75 and MN-18 north of Moorhead, stakeholders noted they appreciated the existing intersection warning devices at the intersection, shown in Figure 3.

Figure 3: US-75 and Clay County Highway 18 Intersection and Warning Sign North of Moorhead

Source: Google Maps. 2021.

- Access points for major grade-separated highways such as US-10 and I-94 were occasionally mentioned as well, including tight turns on access ramps for MN-336 and I-94, I-94's interchange with 34th street in Moorhead, and the US-10 and MN-78 interchange in Perham.
- Too many access points on major highways traveling through developed areas, such as MN-29 / Broadway in Alexandria.

Analysis of the historic truck-involved crash data identified 29 intersections that had more than two truck-involved accidents in the past two years (2017-2018). Figure 4 shows the location of both stakeholder- and data-identified intersection safety needs and issues.

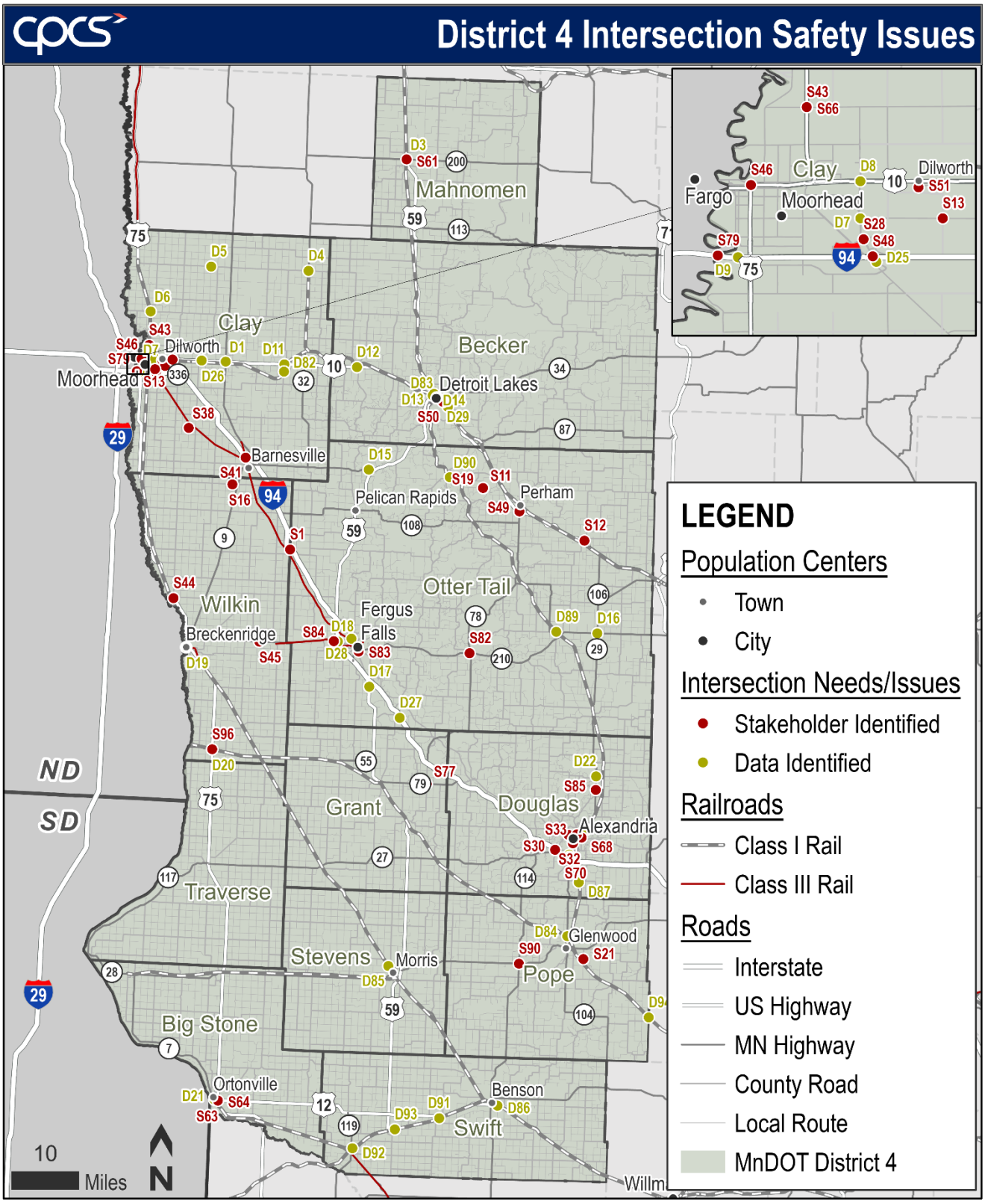
Intersection safety needs and issues are most commonly found in areas with higher traffic volumes or more densely developed areas.

Corridors

The most commonly mentioned safety improvements for corridors were the need for additional passing lanes and improved roadway shoulders. Adequate passing lanes are an important safety improvement to give general traffic sufficient space to overtake slower trucks, or for trucks to overtake slower vehicles such as farm equipment. The main needs identified by stakeholders were the need to expand major highways, such as I-94, from 2 to 3 or 4 lanes or more, and to widen and improve certain county and township roads to widen shoulders and lanes, and safely allow more than one truck on the same road.

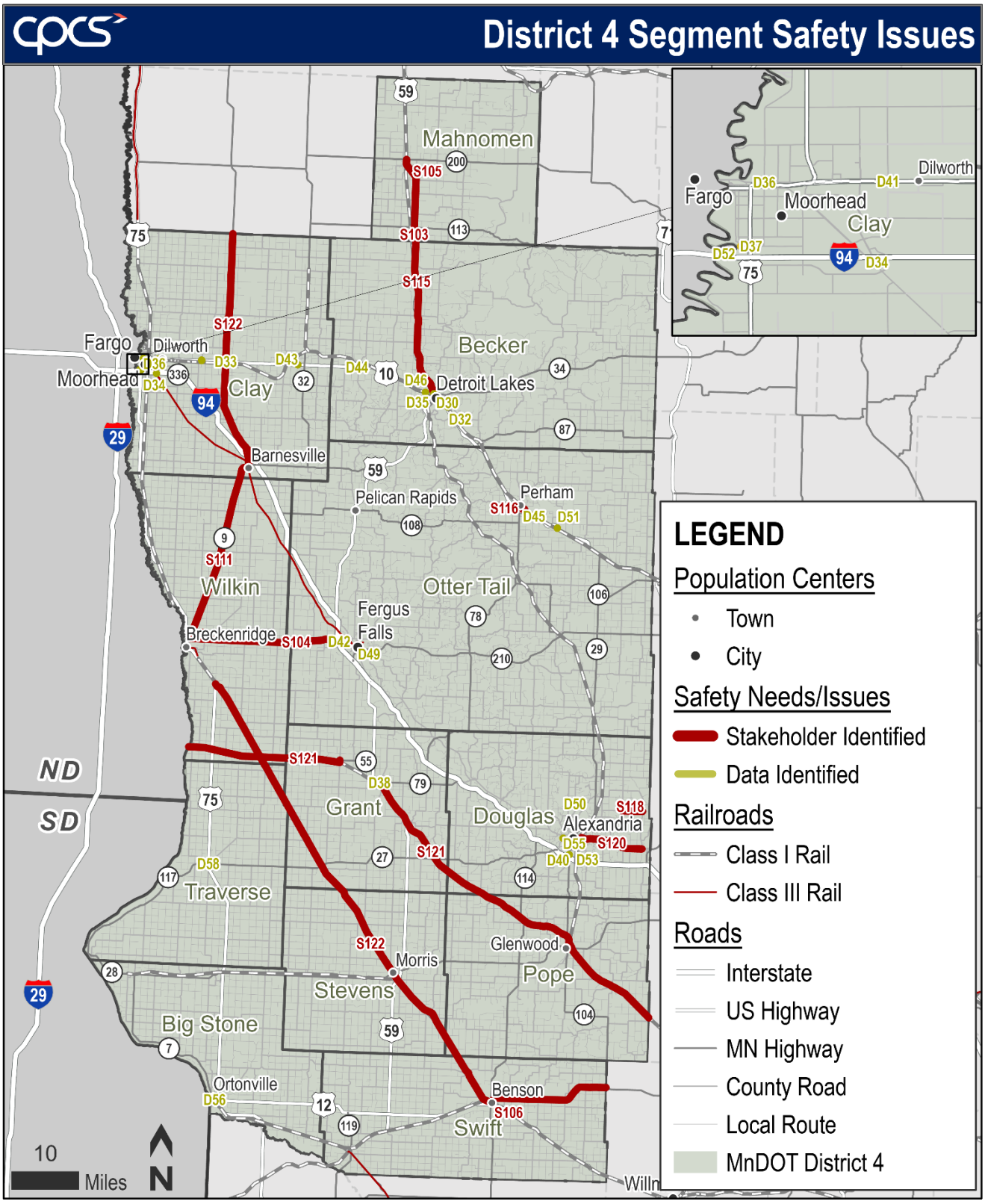
With regard to highway corridors, one stakeholder noted that congestion on I-94 in the winter months is dangerous and has led to accidents. Analysis of the data further reflects truck crashes are concentrated around major highways and high traffic corridors, such as I-94, US-10, and US-59. Figure 5 illustrates the location of corridor-related safety concerns in the District, including segments that analysis of MnDOT crash data indicated had a relatively high rate of crashes.

Figure 4: District 4 Intersection Safety Issues



Source: CPCS analysis of MnDOT vehicle crash data and District 4 stakeholder feedback. 2021.

Figure 5: District 4 Segment Safety Issues



Source: CPCS analysis of MnDOT vehicle crash data and District 4 stakeholder feedback. 2021.

Agricultural routes on county and township roads were often noted as narrow gravel roads, with steep ditches, tight turning radiuses, and blind spots. One stakeholder acknowledged that it may be cost-prohibitive to widen these roads, but recommended granting legal authority to townships to address these needs at the local level.

Weigh Stations and Commercial Vehicle Enforcement

Weigh station and commercial vehicle concerns were not raised in consultations or survey responses, however, it is noted that the 2018 MnDOT Weight Enforcement Investment Plan identified the need for inspection buildings at the Red River Weigh Station and two locations for improved utilization of Weigh-In-Motion stations around Moorhead. Under the Weigh Station and Commercial Vehicle Safety Enforcement Program, MnDOT allocates $2 million per year towards ensuring commercial vehicle enforcement and safety.

Grade Crossings

The topic of grade crossing safety is discussed in the railroad section later in this chapter.

Truck Parking

Truck parking was also occasionally raised as an issue for truck drivers on long-haul routes, mostly on I-94 between the Twin Cities and Fargo. Due to hours of service (HOS) restrictions, truck drivers need ample options to safely stop for both short and long rest breaks. One stakeholder noted that technology used at truck stops to provide real-time data on truck parking availability was very useful for truck drivers.

Road Mobility

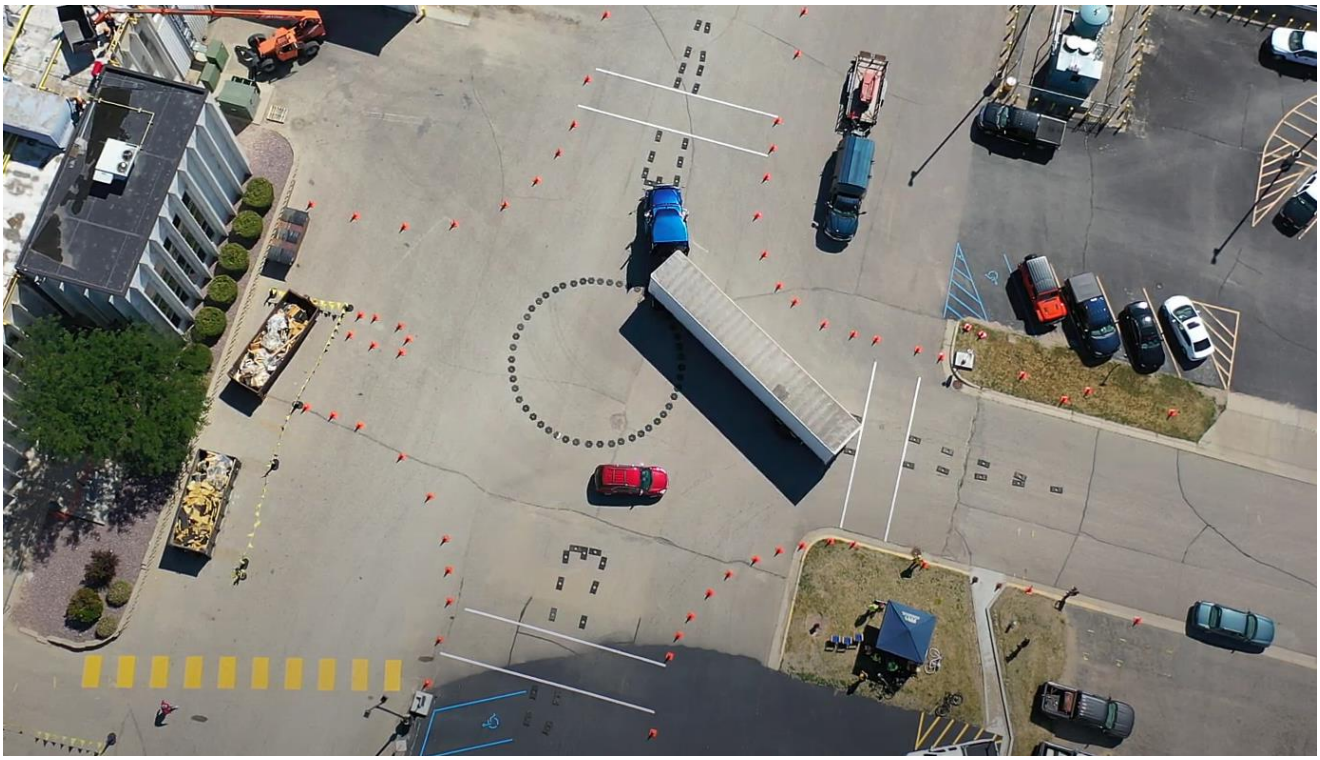
Mobility considerations include topics that affect the ease or efficiency with which trucks can move through District 4. These topics include things like traffic congestion, truck routing, bridge clearances, and weight limits. As noted in the safety section, many of the mobility considerations also have strong relevance to safety. Based on evaluations of truck speeds and travel time reliability (available in Working Paper 3: Freight System Profile), congestion is not an issue for District 4. Therefore, this section focuses on other impediments to mobility, such as geometric constraints for trucks, low bridges, and weight limits.

Intersections

In addition to the safety considerations identified in the previous section, the leading intersection mobility need and issue identified by stakeholders were issues related to trucks navigating through roundabouts. Roundabouts can pose challenges for trucks to navigate through due to “tight” turning clearances, shifting or tipping of loads when trailers mount curbs on tight roundabouts, and lack of clearance on inside curbs for low clearance trailers. One stakeholder appreciated MnDOT’s engagement with oversize-overweight (OSOW) truck operators on piloting the design of new roundabouts and encouraged continued consultations with trucking operators when creating roundabouts on major freight routes. An example of this engagement is shown in Figure 6, from MnDOT’s complete streets demonstration work in Pelican Rapids. Some stakeholders did raise concerns about the use of two-lane roads for new roundabouts being constructed around the District, for example, those recently added on US-59 around Detroit Lakes. One stakeholder noted that their OSOW loads may require them to find routes to avoid US-59 due to the tight turns around the roundabouts.

Ensuring proper roundabout design for truck moves is an important issue for District 4’s trucking stakeholders.

Figure 6: Mini Roundabout Demonstration Session in Pelican Rapids



Source: MnDOT.

Regional Connectivity

Stakeholders consulted for this study raised the issue of heavy traffic outside the region affecting operations in the District, particularly impacts of congestion in the Twin Cities and the Fargo area. One stakeholder estimated routes going around the Twin Cities adding up to 2 to 3 hours to their truck trips. This subject of metro congestion and its impact on Greater Minnesota is discussed further in the Minnesota Freight Advisory Committee's December 2020 white paper: *Urban and Rural Freight Interdependence: Challenges and Opportunities in Minnesota.*

As with other Districts in Minnesota, District 4's freight stakeholders noted that they are often impacted by congestion in the Twin Cities area.

Comments received from the online survey further noted that non-local traffic avoiding congestion on I-94 on the eastern side of the Fargo-Moorhead metro area has also impeded mobility in downtown Moorhead. Additionally, while traffic congestion in the District was generally not a concern, stakeholders did note seasonal peaks for traffic during the fall harvest period and summer vacation period. This strong regional interdependency creates some mobility needs and issues that are not always within the control of the District.

Truck Weight Restrictions

Another commonly noted issue in District 4 is the asymmetry in weight restrictions between different states. In Minnesota, loads that exceed a weight of 80,000 pounds require an OSOW permit, as compared to 105,500

pounds in North Dakota.[4] This difference in weight limits means that trucks traveling over state borders may be sub-optimally loaded. District 4's shared border with North Dakota made this issue relevant for stakeholders doing business across the two states, however, the issue was raised by some stakeholders with operations across the region and the US as a whole. Stakeholders also noted that raising Minnesota's weight limits to align with neighboring states would help them cut down on the number of truck trips, save on transportation costs, and make their businesses more competitive. However, rail stakeholders interviewed for the study expressed their concern for any adjustments to truck weight restrictions and the implications of a weight limit change for the use of rail in the District. With higher weight limits, trucks would be more competitive with railroads and have the potential to shift business away from rail.

Minnesota's relatively lower weight limits compared to neighboring states was a commonly mentioned issue for truck users, particularly agricultural firms.

Route Restrictions

In addition to the needs and issues that affect the ease or efficiency of truck movements, there are physical constraints that can make it impossible or illegal for trucks to travel portions of District 4's freight network. Overall, stakeholders reported noticing significant improvements in Minnesota's route restrictions over the past 15-18 years and noted they have considerably fewer issues navigating weight-restricted routes in Minnesota as compared to other states.

In considering areas to improve, a common issue that was raised by stakeholders was weight restrictions on county roads and some bridges, as these limits can affect the efficient movement of agricultural products. During the harvest season trucks hauling away from farms have limited routing options for carrying heavy loads before getting onto highways. A resulting issue is that unpermitted loads can cause significant damage to local roadways, with stakeholders noting that after the harvest season county roads get "pretty beat up." Specific stretches, such as CH-112 in Otter Tail County, were requested to be further overlaid to allow for higher weight loads. Additionally, county stakeholders noted a few gaps remain for the ten-ton route network.

One stakeholder noted a new underpass in Detroit Lakes at Roosevelt Avenue underneath US-10 was troublesome for trucks due to low clearance and required re-routing to get onto US-10. The Main Avenue underpass under construction in Moorhead was also noted as running behind schedule, however once complete it will allow better routing which would be a large cost saving for stakeholders.

Permitting and Licensing Considerations

Some stakeholders mentioned OSOW truck permitting policies as barriers to freight mobility in the District. In particular, one stakeholder noted fertilizer does not qualify as an agriculture commodity and thus is not eligible for the agriculture permit allowed for higher weight loads on interstate highways. As many agriculture stakeholders in the District rely on trucks to supply fertilizer, the additional weight limitation has led to more trips between farm and fertilizer facilities.

Some stakeholders also raised challenges with navigating MnDOT websites for freight weight permits. Permitting requirements are fairly complex and include several exceptions and provisions based on commodity types, configurations, and travel plans which also may change or see updates from year to year. One stakeholder noted that commercial licensing was the biggest obstacle, as it was difficult to stay abreast of

[4] https://dotsc.ugpti.ndsu.nodak.edu/TWC/MNHome.aspx

changes in licensing requirements when permit needs are seasonal. With in-person facilities closed due to COVID-19, seeking answers to permitting questions has also become more challenging.

Snow Removal and Snow Fencing

Stakeholders were complimentary overall of MnDOT's efforts in snow removal operations and appreciated the snow fence program which is easing operations along highways in the winter season, especially on the I-94 corridor. One stakeholder remarked that Minnesota has been proactive in this area, contributing to improved safety and saving millions of dollars in safety-related costs. One concern, however, was expressed by a stakeholder that felt that the formula for snow removal compounds has not been as effective as in the past.

Upcoming Freight Investments: Additional Snow Fences

District 4 is scheduled to receive $1.5 million dollars in 2023 for additional snow fence installation on I-94 at Moorhead, Downer, and Fergus Falls. This investment is an important safety improvement for a significant freight corridor. Funding is being provided by the Minnesota Highway Freight Program, which is discussed later in this Working Paper.

Roadway Construction Coordination

Many stakeholders were appreciative of MnDOT's efforts and resources to communicate about upcoming projects or changes that could affect truck operations. Specific construction stretches around US-59 as well as on routes from Minneapolis were noted to add some delays, but drivers were able to work around the construction and were aware of what to expect. Coordination on roadway construction projects was not a major issue, however, stakeholders did note that notices of county and local level construction projects were less accessible and some mentioned challenges keeping up with these local projects.

Shortage of Qualified Truck Drivers

A majority of stakeholders indicated truck driver shortages as having the greatest impact on their business and operations in District 4. This shortage has remained a growing problem for businesses over the years and is a large contributor to increased freight costs. The aging demographic of truck drivers in the District also adds to the shortage as retiring drivers become difficult to replace. While this problem is largely outside of MnDOT's control it is important to note because a trucking shortage for private businesses can make it more difficult for MnDOT to hire drivers for its own operations, or for construction firms to hire drivers.

Minnesota District 4 is being impacted by the nationwide shortage of truck drivers. This shortage can affect businesses' ability to affordably or reliability move goods and can impact MnDOT's ability to hire drivers as well.

One stakeholder noted relying on seasonal workers to drive trucks during busy harvest periods. The long wait time for acquiring proper licensing for truck drivers was a challenge to plan for, and a recommendation was provided to increase MnDOT's licensing support services, including offering expedited licensing services in lead up to the busy harvest season.

Infrastructure Condition

Infrastructure condition is important for two reasons. First, poorly maintained infrastructure can damage vehicles and cargo, or force trucks to travel at slower speeds, effectively increasing travel costs for District

businesses. As infrastructure ages, the risk of critical links failing also increases which results in longer routes. Second, structurally deficient infrastructure may necessitate lower weight limits, which could result in longer routes for trucks. The discussion of infrastructure condition in District 4 is broken down into two parts: pavement condition and bridge condition.

Pavement Condition

Pavement condition is important for freight movements because rough or uneven pavements can damage trucks and trailers, and cause loads to bump or shift. While pavement conditions of the major trunk and interstate highways were found to be in relatively good condition, county-level roads and highways had several issues identified. As shown in Figure 8, pavement surfaces of almost all major trunk and interstate highways in District 4 have been assessed as in fair or good condition. Online survey results noted several pavement condition issues throughout the District, mainly found on country roads or rural areas. To further support these findings, one stakeholder consulted was generally pleased with highway conditions around the District, noting that highways such as MN-28 were good and the improvements to the highways made in response to feedback provided to MnDOT were appreciated. Other stakeholders mentioned condition issues for trucks traveling on rural roads and gravel roads throughout District 4, especially during harvest season.

Bridge Condition

Bridges in poor condition may have low weight limits imposed, which may force trucks to take long detours. The data collected in Working Paper 3 indicated that 68 bridges were designated as deficient in District 4, with a majority of those bridges located on county and township roadway systems. A bridge is considered "deficient" based on scoring of structural and functional factors, including the condition of the bridge deck, superstructure, and substructure, as well as appraisal of deck geometry, under clearance, and condition of the approaching roadway.

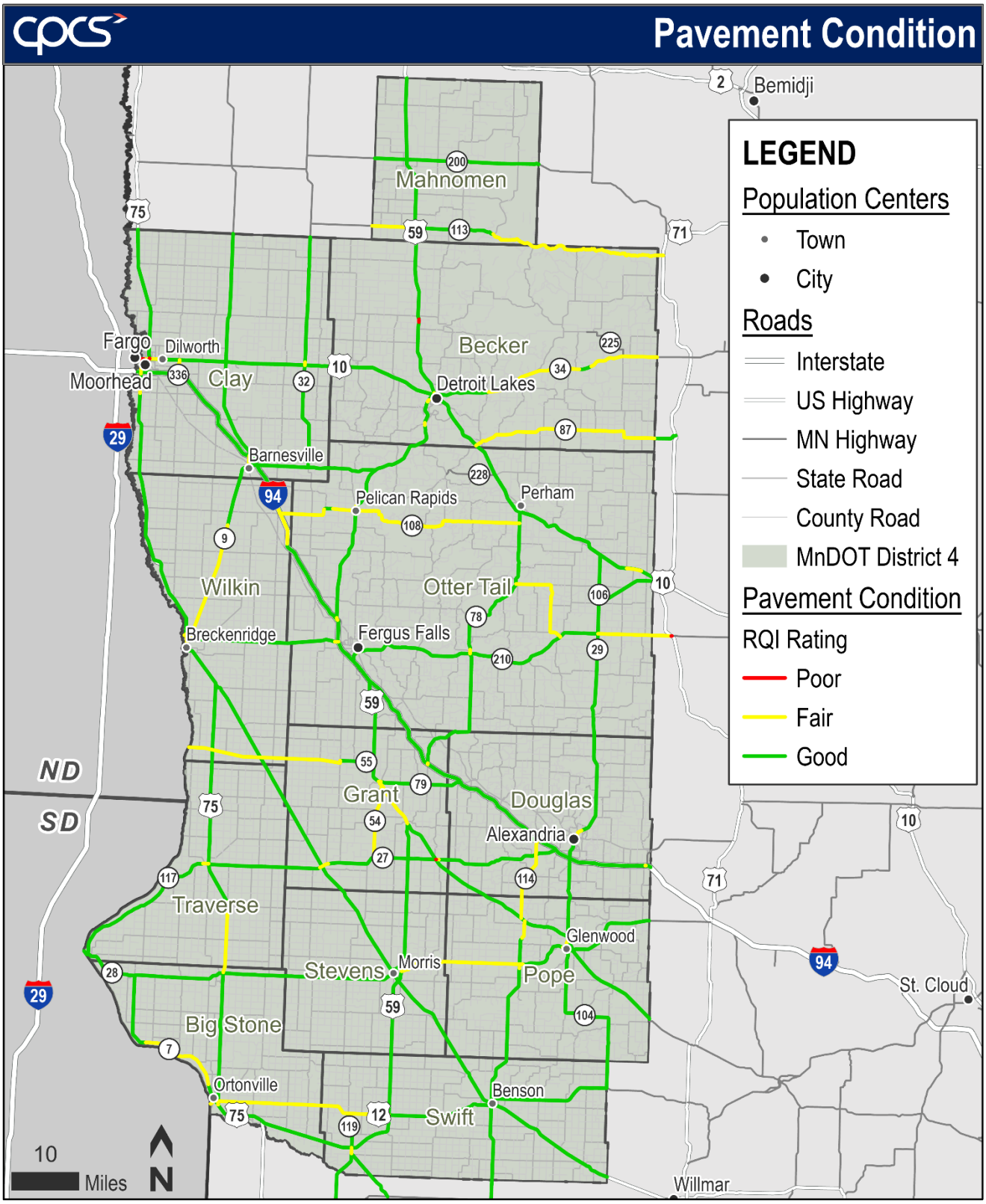
As with pavement condition, concerns about bridge condition and their impact on freight transportation are mostly limited to less-traveled routes off of the trunk highway network.

Stakeholders did not cite many examples of bridge condition issues in the district, likely reflecting bridge condition issues being isolated to less-traveled routes. One bridge condition issue raised was regarding the CH79 bridge crossing the South Branch of the Buffalo River, near the I-94 / MN-336 junction. Due to the deteriorating bridge condition, loaded trucks are restricted to a 15mph speed limit, which causes congestion issues with local traffic. Stakeholders have no viable route to avoid the bridge and noted that bridge improvements to allow faster speeds would significantly improve their mobility.

Figure 7: Clay County Highway 79 Bridge over the Buffalo River

Source: Google Street View. 2021.

Figure 8: District 4 Interstate and Trunk Highway Pavement Conditions



Source: CPCS analysis of MnDOT data. 2021.

2.3 Railroad Needs and Issues

Rail plays an important role in moving freight for District 4's agriculture and manufacturing sectors. Rail freight accounts for nearly 25 percent of freight tonnage moved in Minnesota and 14.5 percent of the State's total track miles are located in District 4.[5,6] Some top rail-related topics mentioned by stakeholders included the need to preserve existing rail infrastructure, opportunities for growth of rail-served industries in some areas, and opportunities for improved grade separation on busy lines.

Rail Safety

District 4 has 618 public grade crossings that are potential points of conflict for road and railroad users. Therefore, the safety of these crossings is an important consideration for freight safety as well as the safety of the general public. Relatively few grade crossing improvements at specific locations were noted by stakeholders, which echoes findings from Working Paper 3's safety analysis, which determined District 4 had an average crash rate compared to other MnDOT districts at both passively controlled and actively controlled public grade crossings.

Working Paper 3 noted that crossing incidents appeared somewhat "random" in their occurrence but were concentrated on higher-volume rail lines, particularly BNSF's Morris subdivision between Wilmar and Moorhead, which aligns with stakeholder feedback received. The data also indicated that for both actively and passively-protected crossings in the District, the BNSF line in Otter Tail County and the Canadian Pacific line in Pope, Douglas, and Grant Counties have relatively higher levels of risk. This concentration is expected as these lines have higher operational speeds and higher traffic volumes compared to other rail lines in District 4. Figure 10 and Figure 11 illustrate high-risk passively- and actively-protected grade crossings respectively, and Figure 12 lists the location of the highest-risk crossings in the District.

Grade crossing safety and congestion may be a future issue in Dilworth, directly outside of Moorhead, where a stakeholder noted that Main Street's crossing at the BNSF mainline may be frequently blocked as trains are switched at the nearby railroad yard. This potential for blockage is a concern because it can create local traffic congestion, or force local drivers to take longer routes to reach bridges over the BNSF mainline. There is also a potential safety concern with worries about impatient drivers ignoring lowered crossing gates, however, lane dividers at the crossing prevent some drivers from bypassing the gates. The potential for conflict or congestion at this crossing could increase if the area's population continues to grow and traffic volumes increase.

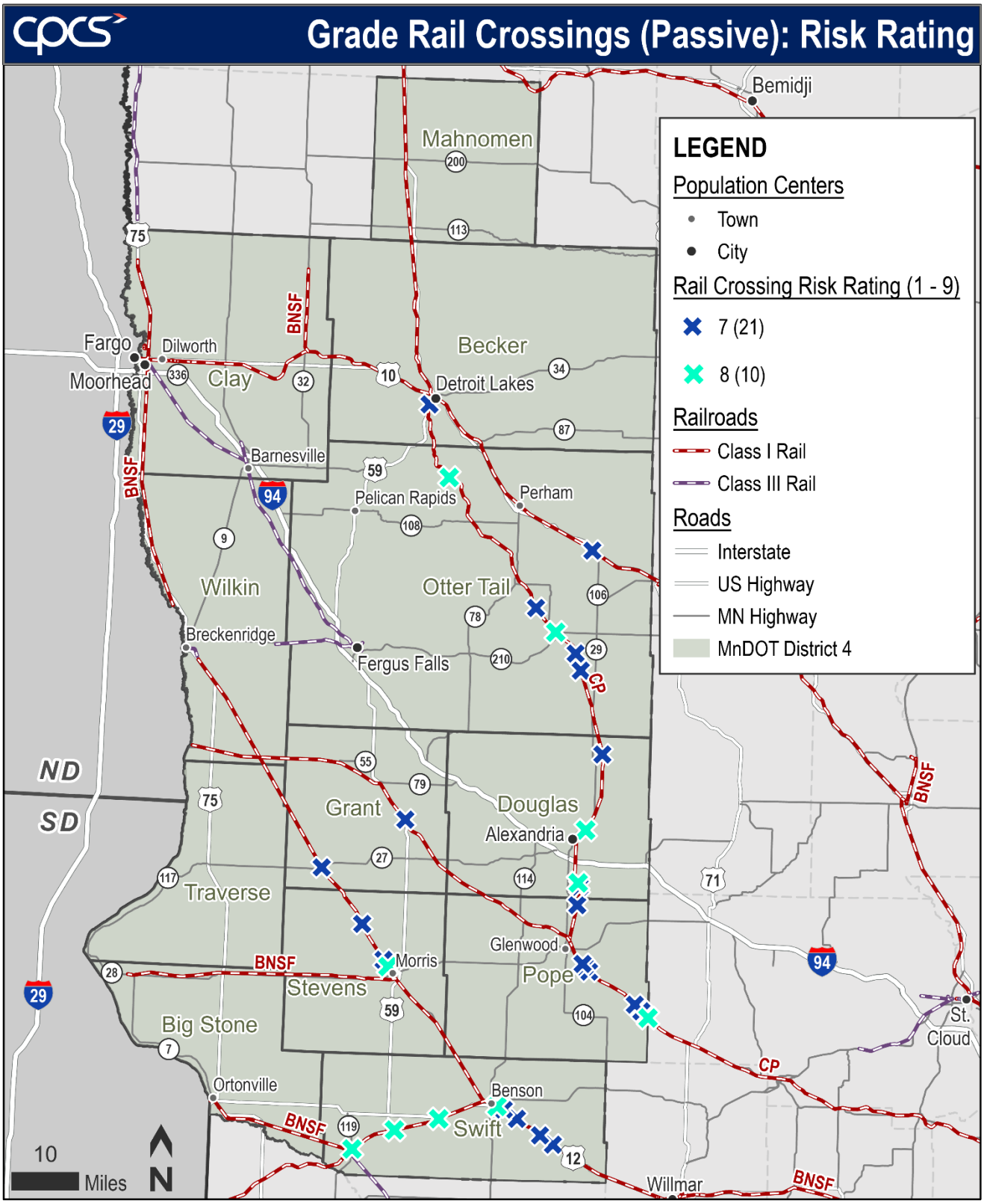
Figure 9: Dilworth Main Street Grade Crossing

Source: Google Maps. 2021.

[5] MnDOT District 4 Fact Sheet, 2020.

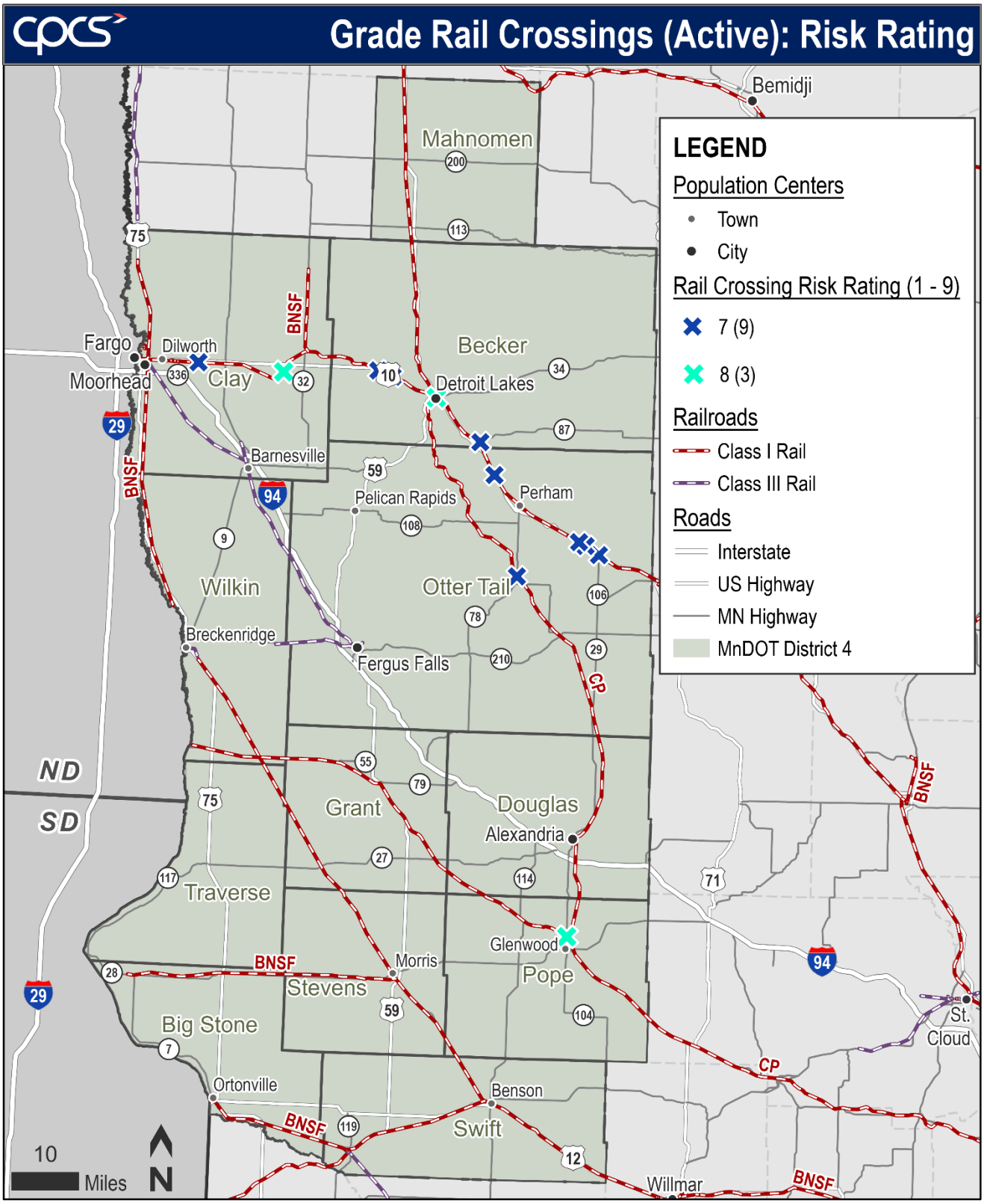
[6] MnDOT, State Rail Plan, 2015.

Figure 10: District 4 Passively-Protected Crossings with High Risk Ratings



Source: CPCS analysis of MnDOT Rail Grade Crossing Safety Data.

Figure 11: District 4 Actively-Protected Crossings with High Risk Ratings



Source: CPCS analysis of MnDOT Rail Grade Crossing Safety Data, 2021.

Figure 12: Grade Crossings with a Risk Rating of 8 in District 4

Protection	Street	City	Railroad
Active	230th Street S.	Hawley	BNSF
	Washington Ave.	Detroit Lakes	BNSF
	TH 29	Glenwood	CP
Passive	Northridge Dr.	Morris	BNSF
	20th Ave. SE	Benson	BNSF
	4th St. SE	Forada	CP
	Birch Ave.	Alexandria	CP
	Marshall Ave.	Henning	CP
	South Town Line Rd.	Vergas	CP
	Front St.	Danvers	BNSF
	Hering St.	Appleton	BNSF
	E Corp Limits.	Holloway	BNSF
	493rd Ave.	Brooten	CP

Rail Mobility

Rail mobility issues can include impediments to efficient railroad operations, access to railroad service, and railroad operations' effect on road traffic and travel time. The topic of rail mobility at grade crossing and access to railroad service came up in consultations and prior literature review.

Regarding rail mobility, the area around Moorhead was again identified as an area where rail and road traffic face growing constraints. The Moorhead area has a large density of crossings on a highly-used mainline in a relatively highly developed area. To improve safety, some crossings have been closed, but crossing closures also impact residents' local mobility. To reduce the noise from train whistles, additional grade crossing safety equipment such as extra crossing gates with longer activation times have been installed in accordance with federal "quiet zone" requirements. While these improvements are beneficial for local residents' quality of life by lowering the noise associated with train operations, the longer crossing gate timings also increase local congestion. Looking toward the future, upcoming projects in Moorhead such as proposed underpasses to eliminate additional grade crossings are likely to further improve rail and road mobility in the area.

Regarding businesses' access to railroad service, stakeholders noted that a transload facility in the Moorhead area could be an area for future rail-served business development, especially if the area around the spur grows and if rail to truck transload services become more important as an approach to limit truck congestion. Another opportunity for potential development in the future may be the Otter Tail Valley Railroads' track around Fergus Falls.

While not an immediate concern, one stakeholder noted that major railroads have been increasing the length of their trains. This trend towards longer trains could impact mobility at crossings in the future as longer trains create longer delays at railroad grade crossings. Additionally, finding space to store longer trains in existing yard infrastructure is a potential challenge that rail stakeholders are examining.

Rail Condition

Specific comments and findings concerning rail condition were limited, however, some local and statewide railroad stakeholders raised concerns about aging tracks and the need for ongoing maintenance. This is a particular concern for Class III (also referred to as short line) operators which move relatively smaller volumes

of freight, but still must maintain extensive rail infrastructure. Short line rail operators interviewed have been able to keep up with improvements including installation of more modern rail or upgrade of tie and ballast condition with the help of grants and the Federal Short Line Tax Credit program, however, they have limited capacity to make large-scale improvements and upgrades.

Stakeholders emphasized the importance of continued and expanded funding programs, such as the Federal Short Line Tax Credit and the Minnesota Rail Service Improvement (MRSI) grants and loans. These programs allow rail owners to fund improvements they would not be able to make without assistance.

3 Freight System Strengths, Weaknesses, Threats, and Opportunities

Key Findings

Synthesizing this planning project's major findings into the categories of Strengths, Weaknesses, Opportunities, and Threats provides a framework for discussing potential actions that MnDOT can take to improve freight transportation in District 4. A foundational strength of District 4 is its interstate highway and rail assets which support the strong agriculture and manufacturing sectors. However, a foundational weakness is the need to maintain these assets in the face of uncertain funding sources or levels.

3.1 Strengths, Weaknesses, Opportunities, and Threats

A strengths, weaknesses, opportunities, and threats assessment – referred to as a SWOT assessment and shown in Figure 13 – provides a structured means of exploring the topic of freight transportation in District 4. To better organize the varied information collected during freight plan development, District 4's freight system SWOT's were assessed based on the information presented in this Working Paper (Needs, Issues, and Opportunities), Working Paper 3 (Freight System Profile), Working Paper 2 (Existing Document Synthesis) and feedback from the Advisory Committee and Technical Team.

Figure 13: Strengths, Weaknesses, Opportunities, and Threats Table

	Helpful (to achieving goals)	**Harmful** (to achieving goals)
Internal (attributes of system)	**Strengths**	**Weaknesses**
External (attributes of environment)	**Opportunities**	**Threats**

Specifically, for the District 4 SWOT Assessment, the factors reviewed include:

- **Strengths** – Internal factors that give the District and its communities and businesses an advantage over others. These were broadly presented in Working Paper 3 as part of the District's economic and freight system profile.
- **Weaknesses** – Internal factors that place the District and its communities and businesses at a disadvantage relative to others. These were broadly described in Chapter 2 of this working paper. District 4's weakness can be described as its needs and issues.

- **Opportunities** – External factors that the District and its communities and businesses could capitalize on to its advantage. These were broadly described in Chapter 1 (Future Outlook) of this working paper.
- **Threats** – External factors that could create challenges for the District and its communities and businesses. These were broadly described in Chapter 1 of this working paper.

This SWOT Assessment is organized in line with the Minnesota Statewide Freight System Plan's five goals, which 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 topics are:

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

A separate SWOT Assessment was conducted for each of these five goal areas, which are also the primary goals of the District 4 Freight Plan.

Economy

Broadly defined, the Minnesota Statewide Freight System Plan's economic goal is to **Support Minnesota's Economy.** Specifically, the economic goals for the freight system are to provide a system that:

- Operates efficiently.
- Connects to the rest of the world.
- Responds and adjusts to changing economic conditions.

These elements informed the economic-related SWOT assessment summarized in Figure 14. During the assessment common topics emerged, several of which apply to multiple SWOT (freight plan goal) areas:

- **Strong Agricultural and Manufacturing Industries**, which have been long-term elements of District 4's economy. However, some of these industries, particularly agricultural are also subject to changes in commodity prices and other global trade trends outside of the District's control.
- **Growth around Moorhead and Fargo**. Continued freight-related development on the northwestern end of the District could create new opportunities for the establishment of additional freight-related firms. As an example, the development of the Amazon warehouse outside of Fargo may spur growth in commodities shipped in and out of the region.
- **Difficulty Finding or Retaining Employees**. The District has experienced relatively low population growth, especially in rural areas. This, combined with the District's aging population, could jeopardize future economic growth if insufficient workers are available to support workforce needs. Some consultees have noted that a lack of employees is becoming a problem in the District.
- **Industry Consolidation**. The consolidation of some industries or facilities, such as the creation of large grain shuttle terminals, can put stress on select elements of the District's transportation network.
- **Opportunities to Improve Backhaul.** Some consultees and previous studies noted that District 4's businesses ship more goods out than they receive. As a result, there may be opportunities to utilize empty trucks traveling to the District to obtain favorable inbound trucking rates.
- **System Maintenance**. While District 4 has an extensive road and rail network, maintenance of this system must be done continuously, and poor condition or performance could hurt economic competitiveness. This topic of maintenance is discussed in greater detail in the "Infrastructure" SWOT Assessment.

Figure 14: District 4 Economy SWOT

Strengths	Weaknesses
• A long-standing agricultural and manufacturing sector • Well-connected road and rail freight assets • Ample room for future growth	• Industries vulnerable to economic forces outside of District and Minnesota • Aging population, with low population growth
Opportunities	**Threats**
• Growth for freight-related industries around Moorhead and Fargo area • MnDOT can be proactive in working with the private sector to identify improvements and mitigate the impacts of construction projects	• Difficulty finding and retaining workforce, including qualified truck drivers • Maintenance and upgrades to freight transportation assets to adequately serve industry needs • Market forces, commodity prices, and tariffs • Growth in e-commerce traffic

Mobility

The Minnesota Statewide Freight System Plan seeks to **Improve Minnesota's Mobility** because a freight system with impaired mobility (such as congestion), is unattractive for industries, and may place them at a competitive disadvantage. Therefore, the freight plan established two general objectives:

- Access for all freight users.
- Reliable service with minimal chokepoints.

These elements informed the mobility-related SWOT assessment summarized in Figure 15. During the assessment, 11 common mobility topics emerged:

- **Low Congestion**. There is very little truck congestion in District 4, supported by 4-lane highways such as I-94 and US-10. Stakeholders find these major routes to be fast and reliable in the District, although congestion outside of the District is a concern.
- **A Need for Local Transloading Facilities**. Some stakeholders and previous studies have noted that a lack of truck-rail transload facilities in District 4 means that the District's businesses must rely on intermodal or transloading facilities in the Twin Cities to access rail shipping. One stakeholder observed a transload facility in the Moorhead area could be useful for businesses as that area continues to grow.
- **Impacts of Twin Cities Congestion**. Many of the businesses in District 4 ship or receive goods through the Twin Cities. Congestion in these areas is a threat because it can negatively impact the efficiency of trucking operations in the District.
- **Local seasonal traffic.** While overall congestion is low, stakeholders noted that travel speed and safety can be reduced in the winter months due to heavy snowfall. There are also seasonal congestion issues in some communities associated with tourist traffic in the summer, and agricultural traffic during harvest seasons.
- **"Single-Use" Planning Focuses**. Public agency stakeholders noted that plans for walkable and bike-able downtowns could conflict with freight operations and that holistic planning for all modes of transportation (rather than just trucks, or just bikes) may be needed.
- **Snow and Ice Removal**. Snow and ice can be a threat to the reliable and safe movement of freight and employees for freight-related businesses, but stakeholders also note that MnDOT has managed to

adequately maintain trunk highways. MnDOT's program for snow fences was also noted as a useful improvement by stakeholders.

- **OSOW Permitting Challenges.** Many stakeholders noted that statewide OSOW regulations were complex and the use of MnDOT's website presented challenges for those unfamiliar with the system.
- **Licensing and Permitting.** Additionally, some stakeholders mentioned the license and permitting processes were lengthy and not well equipped to support surge demand cycles, such as around the harvest season.
- **Truck Weight Limits.** A common concern expressed by stakeholders was that Minnesota's relatively lower truck weight limits made it less competitive, such as with North Dakota, for the development of industries that ship or receive heavy truckloads. Conversely, rail stakeholders are concerned that increases in increases in truck weight limits could negatively impact the competitiveness of railroads.
- **Bridge Clearances**. As noted in Working Paper 3, the District has a variety of low-clearance bridges which are a mobility weakness because they can impede the movement of oversized freight.
- **Truck Driver Shortage**. Several stakeholders noted that the growing national truck shortage is a threat to the District's firms that rely on truck shipments, as firms must pay more to retain drivers, and a lack of drivers could affect the reliability of service.
- **Limited Truck Parking**. Consultees and previous studies have noted constraints in available truck parking, especially for long-haul transport along I-94 between Fargo and the Twin Cities. The continued expansion of the TPIMS system was also supported by stakeholders to provide truck drivers with real-time capacity information for required truck stops along their routes.
- **Local Partnership Program**. MnDOT has a Local Partnership Program (LPP) that can be used to help make improvements on locally-owned (not state-owned) highways that are mutually beneficial. Tools like these can help MnDOT improve freight mobility needs and issues on first/final mile connections on local roads.

Figure 15: District 4 Mobility SWOT

Strengths	Weaknesses
• Very little traffic congestion • Good snow and ice removal on trunk highways • Snow fence program helping to keep trunk highways clear	• Potential lack of truck-rail transloading facilities • Many freight corridors used by stakeholders are narrow, poorly maintained rural roads • Poorly-optimized OSOW services • Licensing and permitting challenges • Low clearance bridges can impede truck movement • Local seasonal traffic • Some truck parking limitations
Opportunities	**Threats**
• Spot mobility improvements during programmed maintenance (addition of turning lanes, passing lanes, traffic signals) • Improve 1st/last-mile connections to the Trunk Highway system • Expansion of the TPIMS system to assist truck drivers with parking-related decisions • LPP available for potential mobility improvements	• "Single-Use" plans for infrastructure, such as bike-friendly city plans • Congestion in the Twin Cities affects trucking operations in the District • Current and worsening truck driver shortage

Infrastructure

The Minnesota Statewide Freight System Plan seeks to **Preserve Minnesota's Infrastructure** in the face of increasing traffic volumes through two areas for strategic improvements:

- Ensure critical segments and connections are available
- Ensure these segments and connections are in a good state of repair

These elements informed the infrastructure-related SWOT assessment shown in Figure 16. During the assessment, three common topics emerged:

- **Road Condition**. A strength of the District is the fact that major freight corridor condition on trunk highways is generally favorable. However, the condition of the county and local roads and bridges is relatively lower and could be improved.
- **Rail Network Preservation.** District 4's extensive rail network could be used to help attract businesses that require rail service, however preservation of short line track and additional construction of industrial sidings may be needed. Preservation of service requires financial support to
- **Funding Availability**. With this freight plan, the District has the opportunity to identify freight improvements that could be addressed through existing maintenance and safety improvement programs, rather than dedicated freight funding programs. This ability to potentially address freight needs through other funding mechanisms is important because a lack of reliable freight funding is a threat to the maintenance of the District's system.

Figure 16: District 4 Infrastructure SWOT

Strengths	Weaknesses
• Relatively well-maintained trunk highways and bridges	• Poor condition of county and local roads and bridges
Opportunities	**Threats**
• Opportunity to identify freight projects that can help improve other aspects of the system (e.g., safety) and leverage non-freight funds (e.g., safety) to make improvements	• Lack of reliable, flexible freight funding • Trunk highway condition is expected to decline in the absence of additional funding • Short line rail track upgrade and improvements are capital-intensive and require ongoing funding support

Safety

The Minnesota Statewide Freight System Plan seeks to **Safeguard Minnesotans** in two ways:

- Enhance freight system safety
- Ensure plans are in place to protect areas where freight activity and the public interface

These elements informed the safety-related SWOT assessment shown in Figure 17. District 4's Safety SWOT indicates some areas for improvements, however, conditions were noted to be good overall. The District ranked low for the number of severe crashes relative to other Districts and similarly, stakeholders identified relatively few areas of safety needs and issues. At the same time, District 4's active grade crossing crash rate compares favorably to other Districts but District 4 has a relatively high number of crashes at passively-protected crossings. A safety-related opportunity is the potential to address freight issues when making safety-related improvements such as rebuilding intersections or adding shoulders. During the assessment, the following common topics emerged:

- **Intersection Improvements.** Stakeholders identified specific busy intersections where safety improvements are needed, such as better signals or lighting where trucks would be crossing, entering, or exiting faster-moving trunk highway traffic.
- **Rail Grade Crossing Improvements.** In addition to potential improvements identified by the grade crossing risk analysis, stakeholders identified potential crossings for improvement in the Moorhead. Analysis of the data also indicated a heightened risk of rail grade crossing incidents around higher volume lines and metro areas.
- **Challenges with County Roads**. Many of District 4's agriculture stakeholders rely on narrow county highways and roads. Some of the more traveled routes would benefit from improvements including wider shoulders and turning or passing lanes, as well as enhancements to support heavy loads.
- **Incorporating freight into Toward Zero Deaths (TZD) and other safety outreach**. MnDOT already performs safety outreach and education, particularly through its TZD program. The District and local education partners may have the opportunity to improve additional safety education through freight-specific outreach such as truck blind spot demonstrations.

Figure 17: District 4 Safety SWOT

Strengths	Weaknesses
• Relatively low road crash rate compared to other districts • Average at-grade crossing incidents rate compared to other districts	• Higher volume and higher-speed rail lines such as lines around the Moorhead area are potential areas for greater crash risk
Opportunities	**Threats**
• Safety improvements (signals at intersections, redesigned intersections, passing lanes, turn lanes, improved rail grade crossings, etc.) can provide freight benefits • Investment in quiet zones can improve grade crossing safety, reduce rail-related noise, and improve community livability • Incorporate freight into TZD and other safety education programming	• Limited funding available for safety improvements

Environment and Community

Finally, the Minnesota Statewide Freight System Plan seeks to **Protect Minnesota's Environment and Communities**. The Freight Plan's goal for the environment and communities is:

"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."

This goal informed the environmental and community-related SWOT assessment shown in Figure 18. During the assessment common topics emerged:

- **Increased Freeze-thaw Cycles.** Greater fluctuations in temperature increase the amount of freeze-thaw cycles which may contribute to premature degradation of pavement and bridges.
- **Flooding Events.** Flooding events are increasingly likely to disrupt road connections, particularly on local roads.
- **Truck Routes through Towns**. District 4's freight network has many two-lane roads that are routed directly through the downtown of local communities. This truck routing through urban areas can be a

threat and a weakness, as trucks may move more slowly, be subject to localized congestion, and potentially be at greater risk for a collision. The increase of e-commerce related deliveries may also contribute to first/last mile issues within towns.

- **Water Quality**. A potential weakness of snow and ice removal efforts in the District is their impact on ground and surface water, as the use of salt and other deicing solutions can contaminate water and could be subject to greater regulation in the future. Water quality is particularly important for agricultural and food manufacturing firms in the District.

Figure 18: District 4 Environment SWOT

Strengths	Weaknesses
• Relatively little conflict between land uses	• Snow and ice control methods have a negative impact on water quality (not freight-specific) • Truck routing through downtowns
Opportunities	**Threats**
• Need to balance freight movement with other modes (pedestrians, bicycles) for livable communities	• Increased e-commerce related deliveries • Greater freeze-thaw cycles degrade pavement and bridges faster • Flooding events may disrupt road connections and damage infrastructure • Truck routing through downtowns

4 Freight System Opportunities

Key Findings

District 4's freight system has many needs and issues, but it also has many potential advantages and opportunities. This chapter provides a deeper dive on four types of potential opportunities: projects, programs, policies, and partnerships. Particular attention is paid to project opportunities, which were identified by comparing the location of needs and issues against planned investments on the road network. Key project opportunities identified include safety improvements on higher-volume routes in the District, improvements to roundabouts and some intersections that restrict mobility of freight, as well as improvements to pavement condition.

4.1 Summary of Freight System Opportunities

MnDOT and its stakeholders have four types of tools to improve the freight system:

- **Projects** including infrastructure maintenance, improvement, and expansion.
- **Policies** to govern the development and operation of the freight system.
- **Partnerships** with local stakeholders to better understand needs and issues, and implement or advance strategies to improve the system.
- **Programs** designed to fund improvements for freight operations in the District.

Each of these "4 P's" has a different role in improving the system. While projects may appear to be the most important because they produce tangible results, proper selection and funding of specific projects would not be possible with partnerships to gather feedback, policies to guide investment, and established programs to allocate funding.

This chapter presents a series of strategic opportunities within each "P" category. Information for each of the categories comes from the analysis of this Working Paper and Working Paper 3, as well as stakeholder feedback, and recommendations from previous studies, including the Manufacturers' Perspectives study.

This slate of preliminary opportunities is conceptual and will be further explored with the Advisory Committee and Technical Team to understand the completeness of opportunities identified. Opportunities may be added to or deleted from this list before formalizing freight plan recommendations.

4.2 Projects: Initial Slate of Project Opportunities

State and County programmed road projects may overlap with needs and issues identified as part of this Working Paper's analysis. Where needs and issues, and programmed projects overlap, there may be the opportunity to improve the District's freight network with non-freight dollars. This section provides an overview of the overlap and gaps between programmed MnDOT and County investments and identified needs and issues.

This information on overlaps and gaps will help District 4 and its county partners understand how their currently programmed investments could affect freight transportation. Furthermore, this examination of gaps will aid in the prioritization and selection of projects for advancement to a pre-engineering feasibility assessment. This prioritization process will be described in Working Paper 5. Information on District 4's programmed projects came from the following sources:

- The **State Transportation Improvement Program** (STIP) identifies a schedule and funding amount for transportation projects over the next four years. The detailed project list in the STIP includes all state and

local projects with federal highway or transit funding, as well as state-funded highway projects. The STIP also contains freight and rail investments, for reference. Figure 19 illustrates District 4's STIP projects.

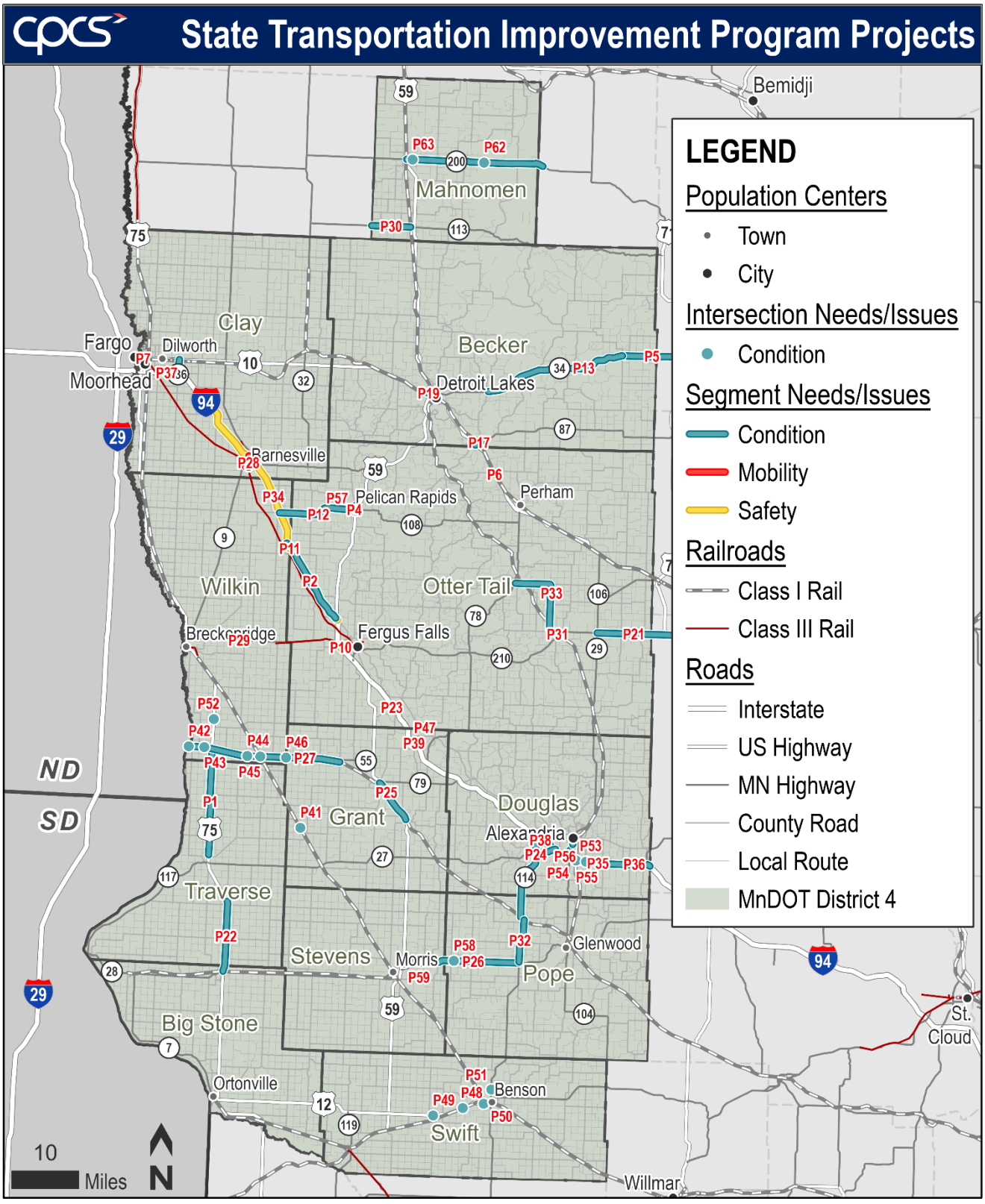
- MnDOT's **Capital Highway Investment Plan** (CHIP), which lists 10 years of highway investments for the trunk highway network. The CHIP includes STIP projects, as well as planned investments for additional years after the scope of the 4-year STIP. These longer-term plans for projects are not guaranteed to be constructed but are listed in the CHIP to aid in coordination and planning. Figure 20 illustrates District 4's CHIP projects.
- **County Improvement Plans** list between one and five years of upcoming road and bridge projects on county-managed road networks. Figure 21 illustrates the location of all of these county projects.

Figure 22 shows the coverage of all projects combined. The points on these maps are listed in Appendices C and D, respectively. Figure 23 highlights where there are gaps between listed projects and identified needs and issues. As shown in Figure 23 notable gaps between programmed projects and needs and issues include:

- Safety gaps such as areas of high crash frequency, or locations identified by stakeholders with safety concerns were the most common gap and made up 52 percent of all identified gaps. Safety gaps were focused on higher-volume routes in the District and urban areas.
- Mobility-related gaps were the second-highest number of gaps. These needs and issues were primarily identified by stakeholders, who provided comments regarding difficulty moving trucks through roundabouts, some challenging intersections and interchanges, and potential from improved truck routing or route signage.
- Condition gaps made up the remaining share of identified gaps and all identified condition gaps came from stakeholder comments. Almost all of these comments are related to pavement conditions.

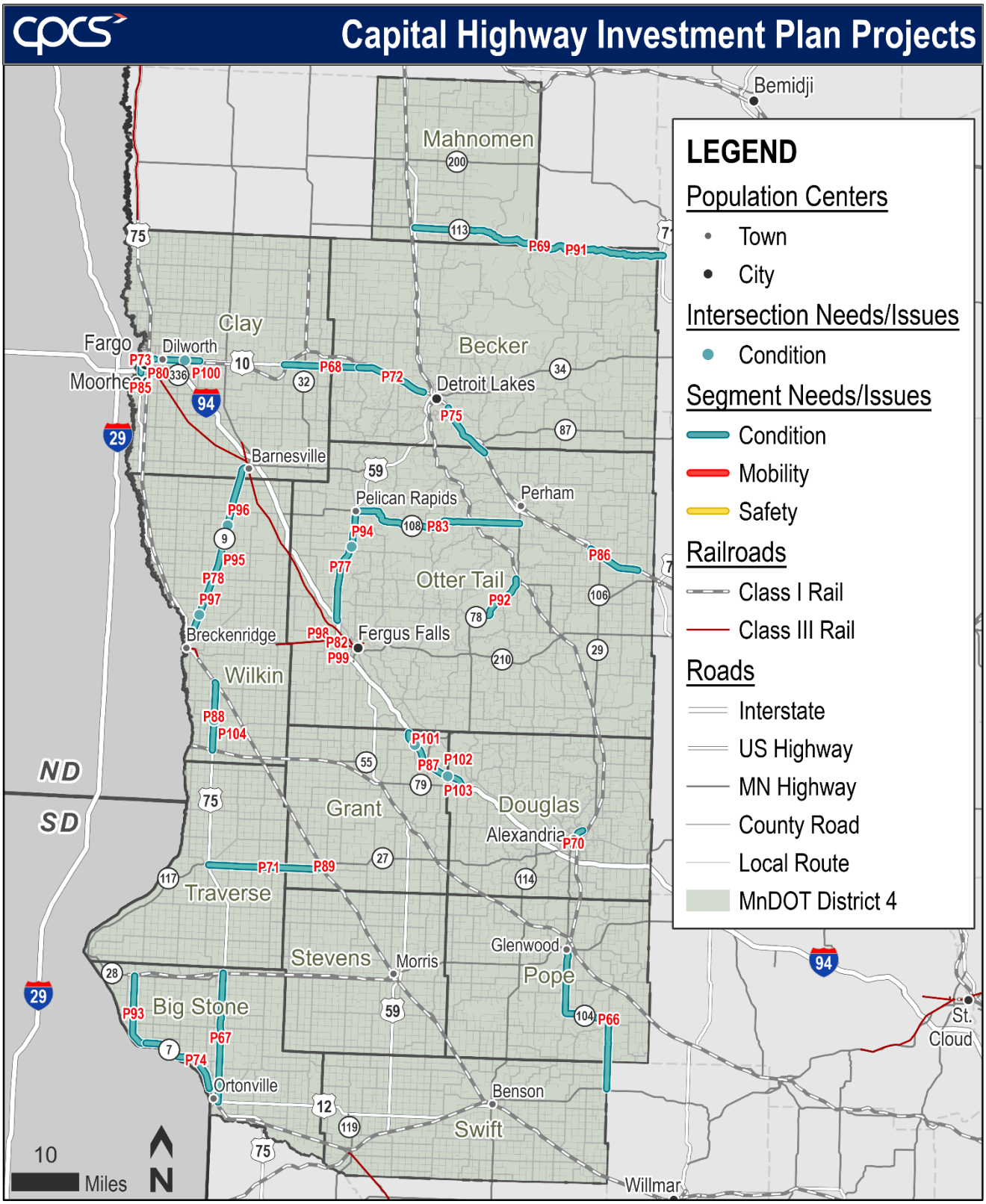
Many types of already-programmed highway projects provide benefits for freight transportation.

Figure 19: District 4 STIP Projects



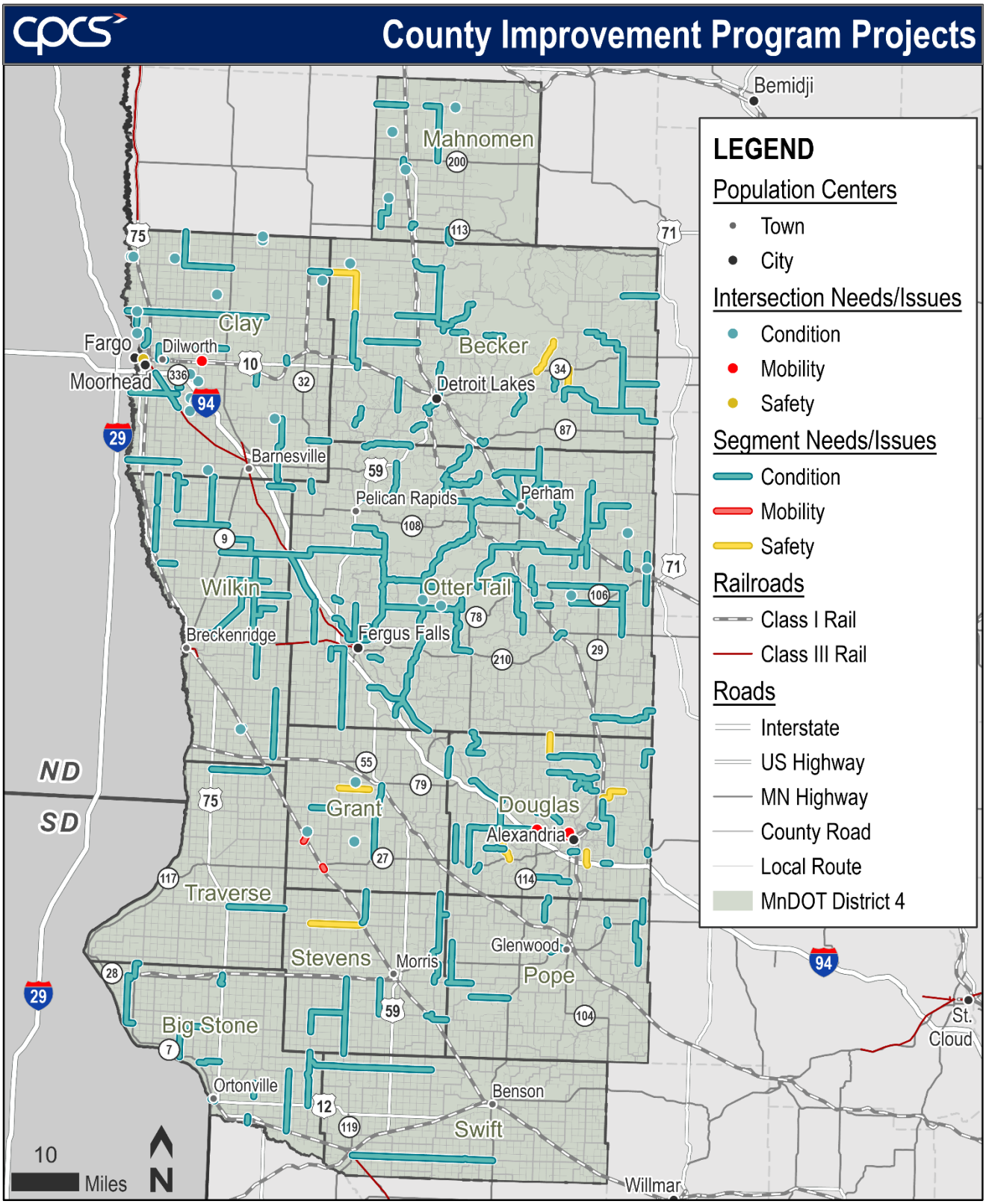
Source: CPCS analysis of MnDOT 2021 STIP data. 2021.

Figure 20: District 4 CHIP Projects



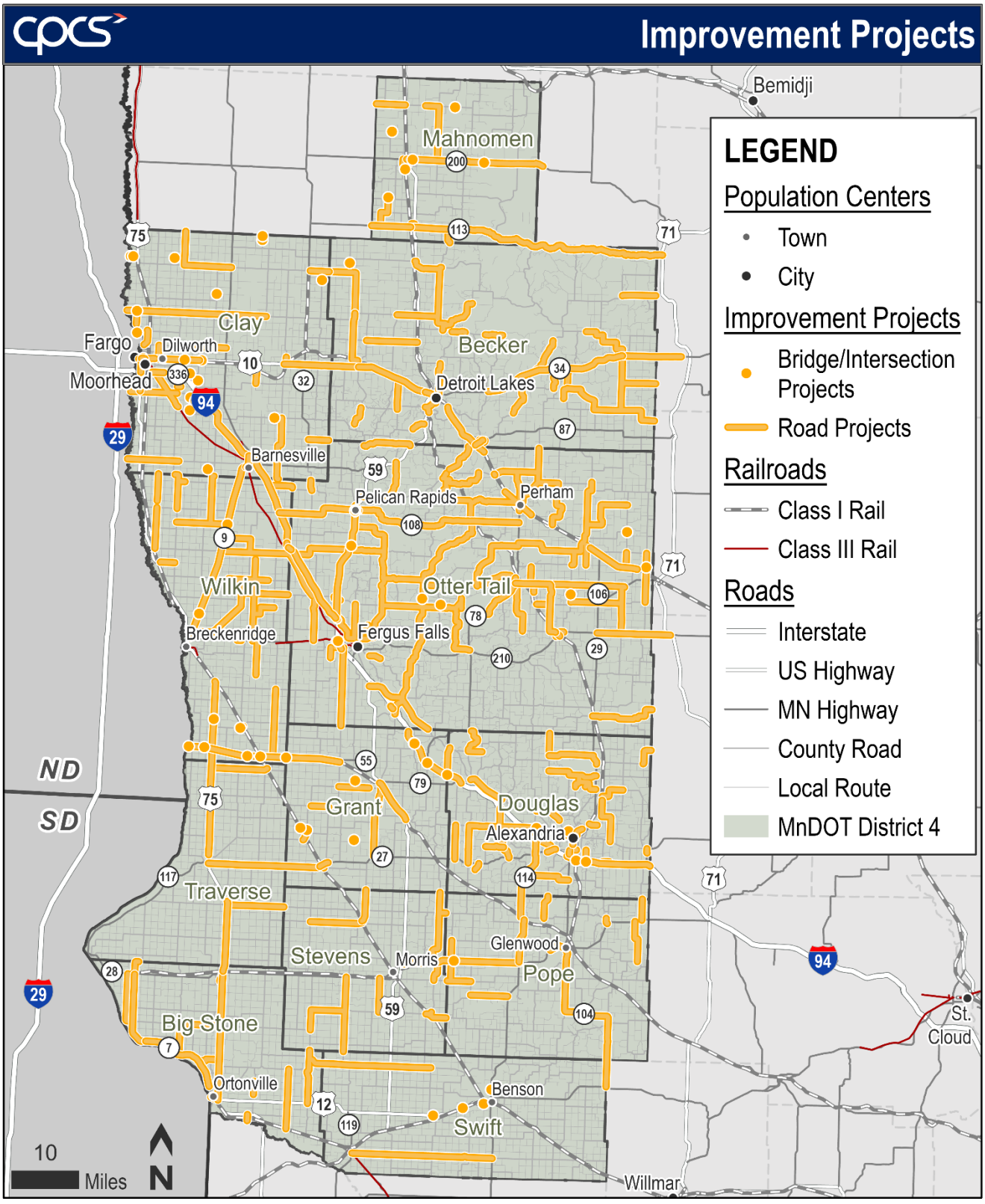
Source: CPCS analysis of MnDOT 2021 CHIP data. 2021.

Figure 21: District 4 County Projects



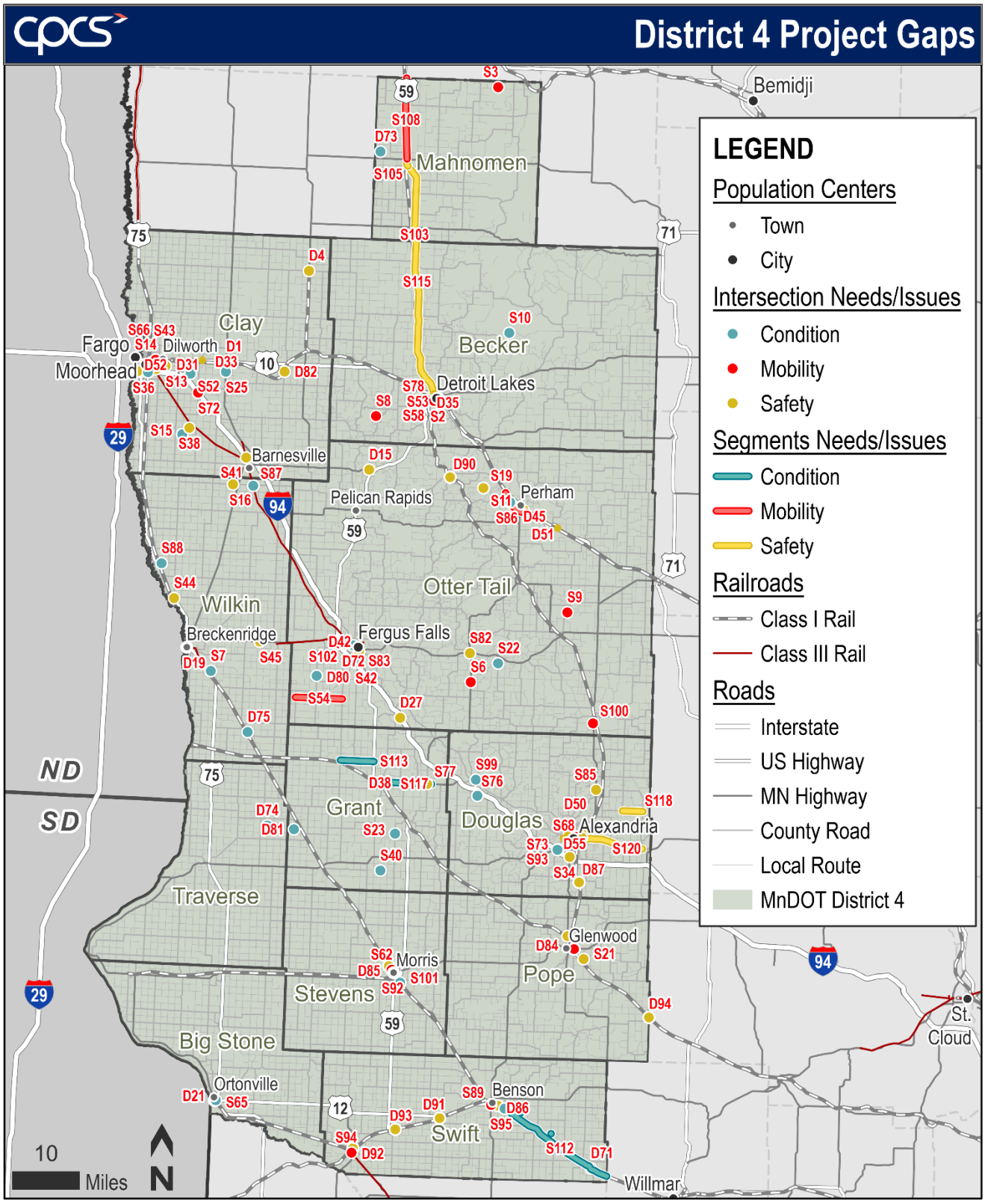
Source: CPCS analysis of county planning data. 2021.

Figure 22: District 4 Projects Combined



Source: CPCS analysis of MnDOT and county planning data. 2021.

Figure 23: District 4 Project Gaps



Source: CPCS analysis. 2021.

Appendix D (Potential Gaps to Address) provides a detailed listing of these gaps shown in Figure 24. This list will be used as a starting point to begin to conceptualize project recommendations and has been aligned with potential non-freight-specific funding options in Figure 24. It is assumed that these will be the primary funds for roadway-related freight projects going forward. Many projects fall into multiple categories, and some projects were assigned to multiple categories in Figure 24. Therefore, the number of projects listed in the figure is higher than the number of gaps.

Figure 24: 2018-2037 MnSHIP Investment Objectives and Categories Aligned with District 4 Freight Needs

Investment Objective	Investment Category	Applicable D4 Freight System Need	Number of Project Types Identified in Gap Analysis
System Stewardship	Pavement Condition	Pavement Condition	14
	Bridge Condition	Bridge Condition	8
	Roadside Infrastructure	• Signage • Traffic Signals/Controls • Other Technology and Information Management Systems	8
	Jurisdictional Transfer	N/A	N/A
	Facilities	Weigh Station and Commercial Vehicle Enforcement	2*
Transportation Safety	Traveler Safety	• Sustained Crash Locations • Rail-Highway Crossings	66
Critical Connections	Twin Cities Mobility	N/A	N/A
	Greater Minnesota Mobility	• Intersections • Passing or Turning Lanes • Corridors • Roundabouts	40
	Freight	**N/A**	**N/A**
	Bicycle Infrastructure	N/A	N/A
	Accessible Pedestrian Infrastructure	N/A	N/A
Healthy Communities	Regional and Community Improvement Priorities	First and Last-Mile Connections	1
Other	Project Delivery	N/A	N/A
	Small Programs	N/A	N/A

Note: This evaluation assumes that a dedicated freight investment category will not be available in the future.
*The two weigh stations identified in previous Commercial Vehicle Enforcement/Safety Studies were classified as facilities investments.

It is acknowledged that while freight projects could potentially align with MnSHIP funding categories, this does not mean there will be funding available to advance all projects due to the overall state transportation funding shortfall. However, the information in this Working Paper is intended to be an opening to a broader conversation on freight project funding; specifically, that many different types of transportation projects provide freight benefits, and that coordination with freight stakeholders, including MnDOT's Office of Freight and Commercial Vehicle Operations, should be part of statewide investment planning.

Project Concept Prioritization Methodology

The gaps identified will be analyzed further to determine whether or not that need or issue should undergo pre-engineering analysis. The purpose of this exercise is to identify a select number of needs and issues that will receive additional attention to develop proposed solutions. Gaps will be scored and ranked according to 10 criteria, and relative scores will be used to determine which projects advance for pre-engineering analysis. Additional in-depth information on this scoring and ranking process will be provided in Working Paper 5.

Figure 25: Freight Categories and Measures

Category	Ranking Score Measure
Truck Activity	Heavy Commercial Annual Average Daily Traffic (HCADT
	Truck percent (%) of total vehicles
Safety	Addresses a sustained crash location (Y/N)
	A safety issue identified in a district or county safety plan (provide risk rating)
	Addresses at-grade crossing safety risk
Freight Mobility	Truck Travel Time Reliability
	Addresses a vertical clearance restriction
	Addresses a weight limited bridge
Condition	Bridge condition rating (one element less than 5)
Stakeholder Need	Y/N if this issue overlaps with a stakeholder identified need

4.3 Policies

Policies, programs, and partnerships were identified to support the advancement of projects. Generally, policies are established to inform project and program investments, and partnerships are required for effective implementation.

Potential policy opportunities for MnDOT's Office of Freight and Commercial Vehicle Operations and District 4 include:

- **Use this plan's information to incorporate freight considerations into existing planning processes**. This plan provides MnDOT with detailed information on the specific location and nature of freight needs and issues in District 4. District and Central Office staff should use this information to screen specific CHIP, STIP, and county projects for potential freight benefits or impacts. Including these freight considerations in existing planning or project work may help District 4 address freight transportation needs and issues with the aid of existing funding streams.
- **Prioritize maintenance of existing assets over the construction of new assets**. The policy reflects the fact that funding shortfalls are expected in the future, and maintaining existing infrastructure with limited funding will be difficult. Creating new infrastructure will increase the potential size of this funding shortfall and therefore should be avoided unless it provides a clear and significant safety or mobility benefit.
- **Collect information on potential impacts of weight limit changes.** Many trucking stakeholders in District 4 as well as other MnDOT Districts have expressed interest in harmonizing MnDOT's weight limits with the higher limits used in neighboring states. Weight limits are defined by legislation, so MnDOT cannot change them directly. However, MnDOT may wish to maintain information about stakeholder groups that wish to have weight limit changes made, and the expected impacts these changes would produce on the

road network. Collecting and archiving this information may assist with legislative discussions related to weight limit changes in the future.

- **Ensure freight transportation needs are considered in the implementation of complete streets projects**. Many planning and development agencies in District 4 and elsewhere in Minnesota have mentioned that they would like additional information or guidance on how to appropriately balance freight transportation needs with the needs of bicycles and pedestrians, particularly in the context of "complete streets" highway projects in community downtown areas. MnDOT should make sure that basic information about truck mobility, such as lane width, turning radius, or alternate truck routing is considered during the development of these projects.
- **Continue participation in ongoing corridor-wide research on electric, autonomous, and connected vehicles**. MnDOT and NDDOT are members of the North/West Passage Coalition, a group of states that collaborate on research related to transportation challenges on I-94 and I-90. This organization has produced outreach on a variety of freight topics that are relevant to District 4, such as truck parking and connected vehicle operations on I-94. In the future, groups such as this may be able to provide information on other technological changes that stakeholders have noted are important to the District – such as the need for electric charging infrastructure on I-94.

4.4 Partnerships

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. Many of these opportunities relate to education or knowledge sharing with planning partners as well as the public. Potential partnership opportunities include:

- **Outreach and information sharing for state and federal legislators.** State and federal funding for transportation programs is critical for addressing District 4's freight needs and issues. Much of this funding is created or allocated through legislative action. Therefore, MnDOT should provide state and federal legislators with information about the freight needs and issues present in each District, information on how existing freight-related programs have improved safety and mobility in the District and information on outstanding freight transportation needs. This information can be used to help generate support for continued or additional freight funding in the future. In particular, MnDOT should seek to encourage state and federal lawmakers to develop stable funding policies and sources for freight, and the transportation system in general.
- **Continue outreach to freight stakeholders**. MnDOT District 4 and Central Office staff already engage with freight stakeholders through functions like public outreach events and attendance at industry meetings. Participation at these types of events can be a valuable source of further information on freight needs and issues, and an opportunity for MnDOT to demonstrate how it has addressed noted needs and issues in the past. Potential topics of interest for further outreach could include improvements to OSOW permitting, commercial driver licensing systems, and railroad maintenance improvements.

  Another outreach approach MnDOT should consider is **conducting 5- or 10-year updates to the Manufacturers' Perspectives Study**. This would provide the District with additional information that could be used to update the list of needs and issues created in this District Freight Plan.
- **Explore additional opportunities to support the utilization of short line railroads**. Some District 4 stakeholders are interested in the opportunity to improve railroad access for local businesses, particularly as some traditional mainstays of rail traffic, such as coal shipments to power plants, are declining. Increasing utilization of rail assets could provide the business volume needed to ensure rail service remains available in the future, and can provide local businesses with alternatives to trucking. Therefore,

the District may wish to explore opportunities to support the development or rehabilitation of rail spurs or other short line improvements.

- **Continue engagement with North Dakota DOT, South Dakota DOT, and Fargo-Moorhead MPO**. Many freight needs and issues in District 4 are also relevant to neighboring states and communities. Potential topics for collaboration include cross-border highway maintenance, weight limit harmonization, the creation or preservation of oversized-overweight truck corridors, the impact of warehouse and distribution center development in Fargo, and the replacement or rehabilitation of the I-94 Red River Bridge.
- **Offer freight information resources or freight planning assistance to county and local governments.** As previously noted, many freight issues occur off of MnDOT's trunk highway network, so collaboration with local governments may be necessary to solve first- and last-mile freight movement needs and issues. This type of collaboration is also critical to help local planning staff balance the needs of freight transportation with the need for walkable or bikeable infrastructure in communities.

  A good example of existing coordination includes the **Local Partnership Program**, which provides construction funds to counties, towns, and cities for mutually beneficial projects that are not located on MnDOT's own network.
- **Partner with local educational institutions to support truck driver training programs.** Many stakeholders in District 4 are concerned about the ongoing truck driver shortage, and the negative impact it is having on the cost and reliability of transportation. MnDOT should consider partnership opportunities with local educational institutions and industry associations as a way to encourage more people to take up truck driving as a career.
- **Create safety education outreach materials specific to freight**. MnDOT already invests both time and money into safety and education programming, particularly through its Toward Zero Deaths program. The District and Central Office may wish to explore ways that freight-specific safety outreach can be woven into this existing outreach work. For example, some Advisory Committee members noted existing demonstrations of truck blind spots for high school students were valuable outreach efforts.

4.5 Programs

The gaps identified in Section 4.2 can be addressed, but many solutions to these needs and issues require funding. A lack of adequate funding may be the greatest need or issue the District 4 freight system faces, and this problem is not limited to freight, District 4, or even Minnesota. However, it is also important to consider how freight-related improvements can be made using "non-freight funds, and how freight improvements can benefit all system users. This section provides an overview of funding programs that may be relevant to the freight needs and issues for District 4.

Minnesota State Highway Investment Plan

MnDOT's fiscally constrained capital investment program, 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 through 2037, however only $21 billion will be available. As a result, there is an estimated $18 billion funding gap. The revenue gap is relevant to District 4, which has an extensive transportation system but lacks the population (and thus tax base) to support the level of investment needed to maintain the system.

In terms of addressing this gap, the most recent Transportation Bill funding the state's transportation system for the 2022-2023 year maintains funding levels from previous years, with an emphasis on city and local improvements.[7] Funds include $30.93 million for costs of trunk highway and local road projects, including grants

[7] Senate Counsel, Research, and Fiscal Analysis S.F. No. 10 - Transportation Omnibus (1st engrossment)

to local governments to apply for projects; $14 million for local bridge improvements; and $5.5 million for the Local Road Improvement Program.

Additionally, the Federal Infrastructure Investment and Jobs Act, under negotiation at the time of this Working Paper, would inject sizeable funding for overdue investments and maintenance backlog. Funds for Minnesota are estimated to include $4.5 billion for highways and $302 million for bridge repairs.[8]Minnesota would also be eligible to compete for the $12.5 billion Bridge Investment Program for economically significant bridges and nearly $16 billion of national funding in the bill is dedicated for major economic development projects for communities. Other estimates include $818 million over five years to improve public transportation, $68 million over five years to support the expansion of the electric vehicle charging network, and $297 million for infrastructure development for airports in the state.[9]

The Minnesota State Highway Investment Plan outlines the strategic direction for the state and aims to balance competing investment priorities that include enhancing the condition of the existing system and building new infrastructure. Figure 26 and Figure 27 illustrate this investment direction and highlight that the System Stewardship objective, which is focused on strategically building, managing, maintaining, and operating all transportation assets, receives nearly 70 percent ($14.46 billion) of available funds. The Critical Connections objective ($1.55 billion, 7.4 percent) is focused on maintaining and improving multimodal transportation connections, as well as strategically considering new connections. This objective includes a freight-specific investment category ($610 million, 2.9 percent) that is directly linked to the FAST Act-established National Highway Freight Program (NHFP). MnDOT established the Minnesota Highway Freight Program (MHFP) with these funds.

MnDOT's current investment direction strongly favors stewardship of existing transportation assets.

Figure 26: Minnesota's 20-Year Capital Highway Investment Direction

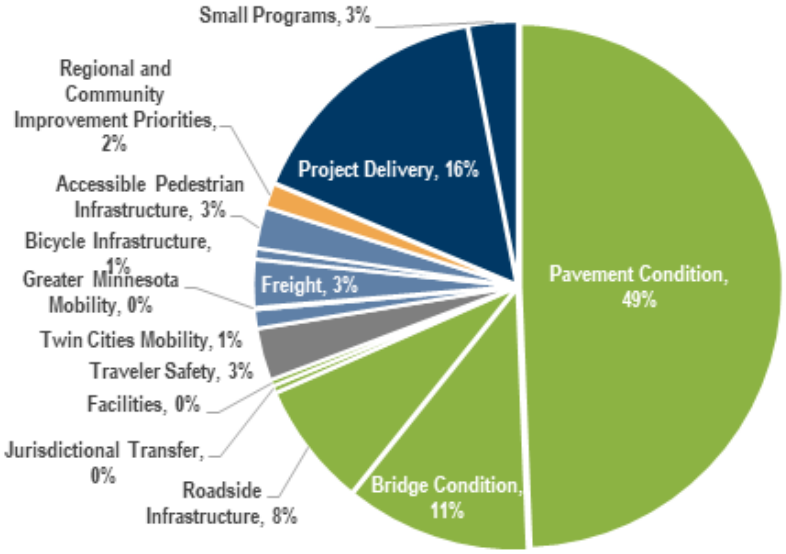
Investment Objective	Investment Category	2018-2037 $ (B)	Percent Share
System Stewardship	Pavement Condition	$10.31	69.2%
	Bridge Condition	$2.38	
	Roadside Infrastructure	$1.60	
	Jurisdictional Transfer	$0.09	
	Facilities	$0.08	
Transportation Safety	Traveler Safety	$0.67	3.2%
Critical Connections	Twin Cities Mobility	$0.24	7.4%
	Greater Minnesota Mobility	$0.03	
	Freight	**$0.61**	
	Bicycle Infrastructure	$0.14	
	Accessible Pedestrian Infrastructure	$0.53	
Healthy Communities	Regional and Community Improvement Priorities	$0.31	1.5%
Other	Project Delivery	$3.27	18.7%
	Small Programs	$0.63	
	Total	**$20.89**	**100%**

[8] MinnPost August 2021, https://www.minnpost.com/national/2021/08/infrastructure-bill-includes-significant-funding-for-minnesotas-electric-vehicle-charging-network/

[9] White House fact sheet, https://www.whitehouse.gov/wp-content/uploads/2021/08/MINNESOTA_Infrastructure-Investment-and-Jobs-Act-State-Fact-Sheet.pdf

Source: Adapted from Minnesota State Highway Investment Plan, 2017

Figure 27: MnSHIP Expenditures by Investment Category ($Billions)



Source: Adapted from Minnesota State Highway Investment Plan, 2017

Freight-Specific Funding

MnDOT has a history of providing grant and loan funding for freight-related projects, which funding options relevant to District 4 are shown in Figure 28. These freight-related funding programs have helped the state address critical freight system needs, however a challenge with these programs is that the level of funding is low compared to the need, and not all funding programs are available on regular basis (e.g., yearly), nor guaranteed they will be available in the future. The remainder of this section provides an overview of funding relevant to freight needs and issues in District 4.

Figure 28: Overview of MnDOT Freight-Related funding Programs Relevant to District 4

Source	Funding Available	Eligible Uses
Minnesota Highway Freight Program (MHFP)	$56.9 million total programmed through 2023-2025	Program funds are broad and include improvements such as climbing lanes, traffic signal optimization, and railway-highway grade separation, among others.
Railroad At-Grade Crossing Safety Program (Section 130)	~$6 million per year, federal and state match	Closures/consolidations of railroad crossings and railroad crossing safety projects at high-risk locations.
Minnesota Railroad Service Improvement Program (MRSI)	~$4 million appropriated in the 2020 bonding bill, funding is not regular	Projects that improve fixed assets such as railroad roadbeds, 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.

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

Minnesota Highway Freight Program

The Minnesota Highway Freight Program (MHFP) is directly linked to the FAST Act-established National Highway Freight Program (NHFP). As part of this Federal program, MnDOT is apportioned approximately $20 million a year and may determine its own process for selecting projects to receive this funding, as long as it is used for freight-related investments. MnDOT elected to select projects through a competitive process and evaluated applicants on criteria that included truck volume, safety, mobility, facility access, and other factors. Approximately 60 percent of the funds are dedicated to the MnDOT Metro District and 40 percent are dedicated to Greater Minnesota and other Districts.

MnDOT selected its 2022-2025 MHFP recipients in 2020, which includes one project in District 4 valued at $1.5 million for the snow fence installation on I-94 at Moorhead, Downer, and Fergus Falls. 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. In previous rounds of MHFP solicitation, District 4 also received $200,000 for the 2019 improvement of Randolph Road in Detroit Lakes.

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

Since 2017, the MHFP has awarded over $159 million to freight-related improvement projects across Minnesota.

Railroad At-Grade Crossing Safety Program

MnDOT administers the FHWA's Section 130 grade crossing safety program funds for Minnesota, which, as of 2019 provides about $4.5 million per year.[10] Closures and consolidation of railroad crossings are the highest priority for the 2021 program and up to $3 million of the program will be dedicated to related projects. Additionally, up to $1.5 million will be available for railroad crossing safety projects at "high risk" locations. These "high-risk" locations were highlighted in MnDOT's *Rail Grade Crossing Safety Project Selection* study completed in 2016.[7] While the cost of new installations has been steadily inflating, the Federal funding has remained relatively static over the last several years, resulting in fewer projects being possible each year.[11]

The 2016 MnDOT study examined its processes for evaluating at-grade rail crossings and prioritizing grade crossing improvement projects. The research found that the density of fatal plus injury crashes is very low and that nearly 91 percent of crossings had no crashes of any kind during the study period.[12] This data, combined with the historic use of crash prediction models to prioritize crossing improvements, indicated to MnDOT that

[10] MnDOT Memo. Grade Crossing Safety Program – Section 130 funding. April 30, 2021.
[11] Draft Minnesota State Rail Plan, March 2015
[12] Rail Grade Crossing Safety Project Selection, June 2016

too much emphasis has been placed on crash history as a factor in making future investments. MnDOT is now using a risk-based approach for statewide crossing evaluation and using the results to work collaboratively with local jurisdictions to advance projects.

MnDOT's approach to rail crossing investment relies on partnerships with local jurisdictions to advance projects.

MnDOT's Office of Freight and Commercial Vehicle Operations (OFCVO), Railroad Safety and Coordination Unit solicits projects annually to advance closures/consolidations of railroad crossings and railroad crossing safety projects at high-risk locations, as identified by the statewide crossing evaluation.

Minnesota Railroad Service Improvement Program

The Minnesota Rail Service Improvement Program (MRSI), established in 1976, helps prevent the loss of rail service on lines by providing both loans and grants to railroads, rail users, and political subdivisions of Minnesota and the federal government.

The MRSI **loan program** continually accepts applications. In 2005, the Minnesota Legislature appropriated $1.5 million in bond funds to the MRSI Program, and again appropriated $2.0 million in 2006. With these initial appropriations, the MRSI loan program now is self-funding with quarterly receipts from previous loans used at the discretion of MnDOT. Each loan is capped at $200,000 per project. Loans must be repaid to the State over 10 years. Loans can be used for the following activities:

- to pay a portion of the costs of rail capital improvement projects such as side tracks, connections between existing lines, construction of loading, unloading, storage, and transfer facilities,
- to acquire, maintain, manage and dispose of railroad right-of-way,
- to pay a portion of the costs of acquiring a rail line by a regional railroad authority,
- to pay the state matching portion of federal grants for rail-highway grade crossing improvement projects, as well as for other purposes.[13]

MnDOT is also currently soliciting for the MRSI **grant program.** In 2020 the Minnesota Legislature appropriated $4.0 million in bond funds for the MRSI grant program. The program does not have minimum or maximum funding requirements, other than what is obligated on a semi-regular basis by the Minnesota Legislature. Grant funds can only be used for direct railroad-related "fixed assets" on the railroad right of way or at railroad facilities, and cannot be used for regular or recurring maintenance activities. Authorized expenditures include:

- Railroad tracks and turnouts (track rehabilitation, new track construction, etc.)
- Railroad bridge construction or rehabilitation (286k upgrades or replacement of bridges that have reached the end of their useful life)
- Fixed railroad loading and unloading facilities which are used primarily for the shipment of goods by rail
- Railroad components of intermodal facilities (i.e. railroad tracks, turnouts, and any fixed assets that facilitate the direct loading and unloading of railcars)

Weigh Station and Commercial Vehicle Safety/Enforcement Program

The Weigh Station and Commercial Vehicle Safety/Enforcement Program has approximately $2 million of state funds available each year. This program is focused on making investments that maintain or improve commercial

[13] Minnesota Rail Service Improvement Program Loan Application

vehicle enforcement and safety. There is currently an estimated $96 million funding gap for weight and safety enforcement needs, of which approximately $48 million are capital needs. The MnSHIP indicates that for facilities (inclusive of weigh stations and general rest areas) there is a $390 million 20-year need, with only $80 million planned investment.

The current MnSHIP indicates that weigh scale and weigh station replacement will not keep up with need, resulting in outdated or inoperable sites in the future.

In District 4, the *Weight Enforcement Investment Plan* identified needs for improved Weigh-In-Motion Utilization and inspection buildings in the surrounding Moorhead area.

5 Conclusions and Next Steps

5.1 Conclusions

District 4's freight system consists primarily of road and rail assets, which provide an extensive range of freight services and support the continued economic well-being of the district, particularly in agriculture and manufacturing. These assets face needs and issues related to mobility, condition, and performance. Some of the biggest issues for the District include safety improvements at intersections, improved maintenance of rural roads, rail improvements in the growing downtown Moorhead area, and the need to maintain the District's extensive road and rail assets in the face of funding uncertainties.

5.2 Next Steps

A key output of this Working Paper is the list of project gaps in Appendix D. The next major step of work will focus on scoring and ranking the identified system gaps, with the purpose of selecting some gaps for advancement to pre-engineering feasibility studies. The goal of this pre-engineering work will be to provide potential solutions to significant unaddressed freight needs and issues in the District and create project concepts that can compete for funding in future freight-related solicitations. The significant next steps for work are:

1. Revision of gap list based on feedback from District staff, Advisory Committee, and Technical Team.
2. Score gaps based on pre-determined measures shown in Figure 29, and rank gaps based on their scores.
3. Based on results of scoring, and feedback from the District and Technical Team, select a set of gaps for advancement to pre-feasibility engineering work.

Figure 29: Gap Scoring Measures

Category	Ranking Score Measure
Truck Activity	Heavy Commercial Annual Average Daily Traffic (HCADT
	Truck percent (%) of total vehicles
Safety	Addresses a sustained crash location (Y/N)
	A safety issue identified in a district or county safety plan (provide risk rating)
	Addresses at-grade crossing safety risk
Freight Mobility	Truck Travel Time Reliability
	Addresses a vertical clearance restriction
	Addresses a weight limited bridge
Condition	Bridge condition rating (one element less than 5)
Stakeholder Need	Y/N if this issue overlaps with a stakeholder identified need

Appendix A. Stakeholder-Identified Needs and Issues

This appendix contains a list of the location-specific stakeholder needs and issues identified through consultations, Advisory Committee and Technical Team feedback, and previous work such as the Manufacturers' Perspectives Study. The fields in the following figure are:

- **ID**: This code refers to the need/issue ID printed on maps in this Working Paper. IDs beginning with "S" denote needs or issues identified by stakeholders, while IDs beginning with "D" denote needs or issues identified by analysis of data.
- **Source**: The source of the comment, such as stakeholder feedback, or analysis of a specific dataset.
- **Type:** point (such as intersection, or bridge), or segment (such as highway corridor)
- **Highway Name or Number**
- **Problem Type**: This field corresponds to the primary need or issue associated with the location. Needs and issues were coded in four ways: safety, condition, performance, or mobility.
- **Additional Information**: where available, additional details from stakeholder comments were noted here. Some fields are marked with "N/A" where MetroQuest survey respondents dropped map pins to indicate problems but did not provide specific comments about the problem.

ID	Source	Type	Hwy	Problem Type	Additional Information
S1	MetroQuest	Point	CSAH 11	Safety	Drivers have concerns about drifting snow, wind.
S2	MetroQuest	Point	Rossman Ave	Mobility	Trucks cannot park or access fast food or restaurants in area.
S3	MetroQuest	Point	110th St	Mobility	N/A
S4	MetroQuest	Point	34th Ave	Mobility	Airport needs enlargement and improvement.
S5	MetroQuest	Point	E Shore Dr	Mobility	Not great shape and tough to move out of DL industrial park.
S6	MetroQuest	Point	MNTH 78	Mobility	N/A
S7	MetroQuest	Point	220th Ave	Condition	N/A
S8	MetroQuest	Point	E Big Cormorant Rd	Mobility	N/A
S9	MetroQuest	Point	CSAH 67	Mobility	N/A
S10	MetroQuest	Point	T-800	Condition	N/A
S11	MetroQuest	Point	385th Ave	Safety	No trail for bikes or peds.
S12	MetroQuest	Point	USTH 10	Safety	County 60 highway 10 has had multiple accidents.
S13	MetroQuest	Point	Marion St	Safety	Needs better signage/paint.
S14	MetroQuest	Point	34th St S	Mobility	Trains through the town impede mobility.
S15	MetroQuest	Point	80th St S	Condition	N/A
S16	MetroQuest	Point	250th Ave	Safety	N/A
S17	MetroQuest	Point	CSAH 15	Condition	N/A
S18	MetroQuest	Point	CSAH 38	Condition	CR 121 is gravel and has lots of travel with clouds of dust. Needs to have pavement.
S19	MetroQuest	Point	460th St	Safety	Unsafe intersection.
S20	MetroQuest	Point	3rd Ave SE	Mobility	Lots of traffic.
S21	MetroQuest	Point	195th Ave	Safety	N/A
S22	MetroQuest	Point	CSAH 5	Condition	N/A
S23	MetroQuest	Point	CSAH 2	Condition	Routine maintenance is needed. Road has cracks.
S24	MetroQuest	Point	MNTH 114	Condition	N/A
S25	MetroQuest	Point	17th Ave S	Condition	Low area in main drive track from constant truck traffic.

ID	Source	Type	Hwy	Problem Type	Additional Information
S26	MetroQuest	Point	70th St S	Safety	Signage for I94 west bound is confusing, leading many drivers to try and turn on to the frontage road instead of the ramp.
S27	MetroQuest	Point	USTH 10	Safety	Uneven road surface. Causes excessive vehicle and trailer bounce causing potential loss of control. Recently patched but not done adequately.
S28	MetroQuest	Point	24th Ave S	Safety	N/A
S29	MetroQuest	Point	90th Ave N	Condition	N/A
S30	MetroQuest	Point	MNTH 27	Safety	It's almost impossible to make a left on to Hwy27 during peak hours off of I-94.
S31	MetroQuest	Point	Broadway St	Mobility	South part of Broadway in Alexandria is very wide, making it hard for pedestrians/bicycles to cross the street at anywhere besides signals.
S32	MetroQuest	Point	Broadway St	Safety	There are many too many accesses along Broadway.
S33	MetroQuest	Point	MNTH 29	Safety	Too many accesses along Nokomis.
S34	MetroQuest	Point	50th Ave	Safety	Left turning traffic from 50th Ave W to Hwy 29S backs up both the turn lane and left lane past Twin Blvd. Accesses and people making left turns onto Twin Blvd make the road feel unsafe.
S35	MetroQuest	Point	ISTH 94	Condition	Some bridge approaches in this area seem to be in poor condition.
S36	MetroQuest	Point	20th St S	Condition	I-94 through Moorhead is rough.
S37	MetroQuest	Point	USTH 10	Mobility	Non-local truck traffic moving through downtown Moorhead, to avoid the I-94 eastbound scale.
S38	MetroQuest	Point	90th St S	Safety	N/A
S39	MetroQuest	Point	USTH 75	Mobility	N/A
S40	MetroQuest	Point	130th St	Condition	N/A
S41	MetroQuest	Point	CR-55	Safety	N/A
S42	MetroQuest	Point	ISTH 94	Condition	Potholes on I-94.
S43	Consultations	Point	USTH 75	Safety	Trucks have difficulty crossing intersection with high speed traffic US-75 and MN-18 (28th Avenue). Should be 4 way stop.
S44	Consultations	Point	USTH 75	Safety	Difficult intersection for trucks to cross in harvest season. US-75 and CH-3 in Wilkin County.

ID	Source	Type	Hwy	Problem Type	Additional Information
S45	Consultations	Point	MNTH 210	Safety	Difficult intersection for trucks in harvest season. "10 mi east of Breckenridge on 210".
S46	Consultations	Point	8th St S	Safety	Intersection in need of reconfiguration; large median is awkward for traffic. US-75 and US-10.
S47	Consultations	Point	ISTH 94	Safety	Exit has very sharp turn off I-94 onto MN336.
S48	Consultations	Point	34th St S	Safety	Interchange was redone to improve speed exiting ramp, but issues persist. I-94 and 34th St.
S49	Consultations	Point	USTH 10	Safety	On/off ramp for taller units is an issue between US-10 and MN-78. Ramps without traffic lights are difficult for truck drivers.
S50	Consultations	Point	USTH 10	Safety	Traffic lights on Randolph Road are short and truck drivers can only get one truck across; leads to red light running issues.
S51	Consultations	Point	Main St S	Safety	Crossing has moderate road traffic, but growing and has to be blocked whenever BNSF needs to sort their rail cars.
S52	Consultations	Point	28th Ave S	Condition	Bridge condition requires that trucks have to go 15mph when loaded. If trucks don't reduce their speed, house nearby has structural issue. No other route and slow speed leads to local traffic congestion.
S53	Consultations	Point	Roosevelt Ave	Mobility	New underpass trucks can't get under so need to re-route to get onto US-10.
S54	Consultations	Segment	150th Ave	Mobility	CH-112 needs to be further overlaid to allow for higher weight loads getting onto state highways.
S55	Consultations	Segment	4th St S	Mobility	Number of busy intersections between rail and road traffic. Area seeing growing delays and congestion will only continue to grow.
S56	Manufacturers' Perspectives Study	Intersection	USTH 10	Mobility	Signage needed for Industrial Park On Highway 10.
S57	Manufacturers' Perspectives Study	Intersection	CSAH 54	Mobility	Would like signal at TH 10/CR 54, but do not Kris Street signal removed. There needs to be a right turn allowed at Kris Street westbound from Highway 10 and eastbound from Randolph. Seems like the delay is longer from Randolph to Kris and Highway 10.
S58	Manufacturers' Perspectives Study	Intersection	USTH 59	Mobility	Roundabouts need to be larger and flatten the curbs on them (an example is Willow Street Roundabout).

ID	Source	Type	Hwy	Problem Type	Additional Information
S59	Manufacturers' Perspectives Study	Intersection	USTH 10	Other	Kris Street at Hwy 10 – They said after a train goes through, they sometime have to wait up to three light cycles before they get a green. They said the wait can be 20 minutes. They noted that it seems better at night.
S60	Manufacturers' Perspectives Study	Intersection	CSAH 54	Mobility	CR 54 is on the east end of Detroit Lakes. Trucks could access the Industrial Park via the CR 54 intersection and travel west on the frontage road on the north side of Highway 10.
S61	Manufacturers' Perspectives Study	Intersection	MNTH 200	Safety	On a 2-lane like at 59 and 200 – cars that come to 200 need to stop farther back – so need to make a big wide swing around them. Maybe more road signs telling the cars where to stop would help.
S62	Manufacturers' Perspectives Study	Intersection	MNTH 28	Mobility	Intersection improvement – Morris, meeting semis turning on 28 & 9.
S63	Manufacturers' Perspectives Study	Intersection	USTH 75	Safety	Need turn lanes and reduced speed on 75. People are blowing the stop signs at the intersection of Hwy 75 and Hwy 12. Recommended putting up flashers or advanced warning signs. Or adding rumble strips.
S64	Manufacturers' Perspectives Study	Intersection	USTH 75	Safety	People running stop signs. Would be nice to have stop light or at least flashing LEDs on the stop signs at this intersection.
S65	Manufacturers' Perspectives Study	Intersection	Ingersoll Ave	Other	There's some congestion at 12 & 7 but not very often—mainly noon at 5 pm.
S66	Manufacturers' Perspectives Study	Intersection	USTH 75	Safety	Fears the new turn lanes may have made the situation worse. Beet trucks back up on Hwy 75 in the turn lanes and people drive through on the main lane. Worried that trucks will turn in front of or into the cars. Add a temporary stoplight during beet season?
S67	Manufacturers' Perspectives Study	Intersection	3rd Ave E	Mobility	Getting through Alexandria is difficult (would like a bypass).
S68	Manufacturers' Perspectives Study	Intersection	CSAH 82	Safety	Dangerous intersection, difficult to enter from north. especially when the traffic from Discovery Middle School, up McKay Ave to the north is present.
S69	Manufacturers' Perspectives Study	Intersection	ISTH 94	Safety	Intersection at MN Hwy 29 is a real problem. Usually goes early to avoid traffic. At noon the intersection is scary.

ID	Source	Type	Hwy	Problem Type	Additional Information
S70	Manufacturers' Perspectives Study	Intersection	MNTH 29	Safety	Need a signal at the intersection of Hwy 27/29.
S71	Manufacturers' Perspectives Study	Intersection	CSAH 82	Safety	Added top light at 22 and 82 was a big help. "Four-way by the YMCA".
S72	Manufacturers' Perspectives Study	Intersection	100th St S	Mobility	How about a ramp off of 94 to county road 17? Especially in the summer, there are big backups. Something coming from the east to avoid downtown would help (bypass).
S73	Manufacturers' Perspectives Study	Intersection	Evergreen La	Mobility	Pilot and 27 and 45, getting into pilot is tricky. Truckers getting confused and making the right turn and/or staying on MN27 when coming from the other direction off I-94, instead of continuing or turning onto CR 45. Entry on MN27 or signage needed.
S74	Manufacturers' Perspectives Study	Intersection	Broadway St	Other	There are too many stoplights in Alexandria.
S75	Manufacturers' Perspectives Study	Intersection	ISTH 94	Other	Coming from the north on 94 and 29 it would be helpful to have some signage – "blue" or "brown" signs; have to depend on private signs
S76	Manufacturers' Perspectives Study	Intersection	CR-55	Other	55 used to have a narrow bridge. Put on an escort. The bridge was updated, but still shows it as narrow, the permitting website wasn't updated.
S77	Manufacturers' Perspectives Study	Intersection	CSAH 10	Safety	We like the flashing stop lights at 79 and 78. A few people died there at Ashby west of Erdahl. We like the flashing stop lights in general.
S78	Manufacturers' Perspectives Study	Intersection	USTH 59	Mobility	The roundabouts south of 75 in Moorhead and Detroit Lakes are a problem because our trucks can't make the curves and still keep our loads balanced.
S79	Manufacturers' Perspectives Study	Intersection	ISTH 94	Safety	Operations are reasonably well; does seem like there are more accidents on I-94 bridge between ND and MN – possibly from automatic deicers; brines tend to leave snow pack on the roads.
S80	Manufacturers' Perspectives Study	Intersection	USTH 10	Other	The changing speed limits from Fargo to The Cities on highway 10. Getting through Detroit Lakes, with the speed limits and stop lights, can slow them down. The worst is the Kris St stop light in Detroit Lakes

ID	Source	Type	Hwy	Problem Type	Additional Information
S81	Manufacturers' Perspectives Study	Intersection	ISTH 94	Other	recommend adding additional signage at Exit 6 on I-94 to notify travelers coming from North Dakota that it is the last turn to get over to Hwy 10.
S82	Manufacturers' Perspectives Study	Intersection	S Lake Ave	Safety	Highway 210 at the major crossing in Battle Lake and Underwood. He said people had been running stop signs there, but he felt that was largely addressed with the upgraded signs.
S83	Manufacturers' Perspectives Study	Intersection	MNTH 210	Safety	The stop lights at Hwy #210 and Hwy #59 while great, could be enhanced by a prepare to stop sign or a prepare to stop flashing sign.
S84	Manufacturers' Perspectives Study	Intersection	MNTH 210	Safety	Need a stop light at Otter Tail County #116 and MN #210. Need emergency gate more west on #210 to point just west of Otter Tail County #116.
S85	Manufacturers' Perspectives Study	Intersection	MNTH 29	Safety	The intersection of Hwy 29/Co Rd 38/Co Rd 46 (old 235) is difficult for trucks. It could be improved.
S86	Manufacturers' Perspectives Study	Intersection	CSAH 34	other	Hwy 10 signage identifying access to KLN companies via Hwy 34 could be improved. Drivers who are not familiar with the area may not be aware that this is Hwy 34 may be a better or alternative access point.
S87	Manufacturers' Perspectives Study	Intersection	CSAH 52	Condition	Rough: one place that is a problem is by Barnesville - the bridge on County Road #88.
S88	Manufacturers' Perspectives Study	Intersection	USTH 75	Condition	Rough Conditions. Bridge on 75 by Kent.
S89	Manufacturers' Perspectives Study	Intersection	Church St S	Mobility	In Benson, at Hwy 29 and US 12—I don't think anything can go through there. They try to route you past the ethanol plant and past Sandy's (café on 29 on south side of Benson).
S90	Manufacturers' Perspectives Study	Intersection	W 7th St	Safety	There have been 3-4 fatalities at 28 & 29. The RR crossing by the lumberyard has no lights, and there were fatalities. They just added a streetlight. more signage identifying hazards.
S91	Manufacturers' Perspectives Study	Intersection	MNTH 28	Other	Confusion as Google Maps labels old 59 as 59, not CR22. Directional signage or road signs at Hwy 28 and at the new Highway 59 intersections with 22 would be helpful. 22 is not identified very well.

ID	Source	Type	Hwy	Problem Type	Additional Information
S92	Manufacturers' Perspectives Study	Intersection	Atlantic Ave	Mobility	It's tough for 100' rig to take that corner on Main & 5th (Hwy 28 & Hwy 9. *Michael Haynes (EDA) said MnDOT is adding a turn lane there and extending the no parking zone.*
S93	Manufacturers' Perspectives Study	Intersection	CSAH 45	Other	The flashing lights on 27 going into Alexandria need to be timed differently. If you see the light you will not make it because you are travelling on open road at highway speed.
S94	Manufacturers' Perspectives Study	Intersection	Minnesota St	Mobility	Would like to see the interchange be redesigned so it is easier for semi traffic to use the intersection. Right turn lanes and possibly a center left turn lane would be a good idea to be looked at in the near future.
S95	Manufacturers' Perspectives Study	Intersection	USTH 12	Other	US 12 and 30th Ave is a very "dark" corner. We've ordered a sign that says "receiving to direct trucks. Many have missed it.
S96	Manufacturers' Perspectives Study	Intersection	500th St	Safety	Also mentioned that the intersection of Hwy 55 and Hwy 75 has had many accidents. MnDOT has added flashing lights, but he still feels it is a dangerous intersection.
S97	Manufacturers' Perspectives Study	Intersection	CSAH 17	Mobility	How about a ramp off of 94 to county road 17? Especially in the summer, there are big backups. Something coming from the eats to avoid downtown would help (bypass).
S98	Manufacturers' Perspectives Study	Intersection	ISTH 94	Other	Feels there are too many exits from I-94 to Fergus Falls; this can be confusing to customers.
S99	Manufacturers' Perspectives Study	Intersection	Gran St	Other	Central Lakes Trail gets driven on by those thinking it is a frontage Rd.
S100	Manufacturers' Perspectives Study	Intersection	MNTH 29	Mobility	Wants to have a turn lane added in front of his business for safety purposes. Would like to have one added to keep his staff and suppliers from getting rear ended. (Location approximate).
S101	Manufacturers' Perspectives Study	Intersection	MNTH 9	Other	Signage for the Morris industrial park.
S102	Manufacturers' Perspectives Study	Intersection	S Tower Rd	Mobility	Probe: Would different signage, to identify truck route designation, be helpful? Yes, Lincoln Avenue, 210 Bypass, and County Road 1 are designated.
S103	Manufacturers' Perspectives Study	Segment	USTH 59	Safety	It would be helpful to add a second lane on each side of 59 between Mahnomen and Detroit Lakes along Hwy 59 since the

ID	Source	Type	Hwy	Problem Type	Additional Information
					speed variations between drivers along the Hwy can cause accidents on the current two way traffic lanes there now.
S104	Manufacturers' Perspectives Study	Segment	220th Ave	Safety	210 frequently covered by ice and drifting snow causing road to be closed. Believe closures are justified but suggest installing snow fence or other de-icing system.
S105	Manufacturers' Perspectives Study	Segment	3rd St	Safety	Add a second lane on each side of 59 between Mahnomen and Detroit Lakes along Hwy 59, speed variations between drivers along the Hwy can cause accidents on the current two-way traffic lanes there now. Planned yard expansion will increase traffic.
S106	Manufacturers' Perspectives Study	Segment	30th Ave SE	Mobility	During shift change at Lorenz, congestion is fairly bad on TH 12. More should be looked at, as far as right turn lanes, center left turn lanes or escape lanes possibly.
S107	Manufacturers' Perspectives Study	Segment	MNTH 28	Condition	Here to Starbucks and west on 282, those roads are tough.
S108	Manufacturers' Perspectives Study	Segment	150th St	Mobility	Highway 59 is very rough, from Detroit Lakes to Thief River Falls, so to avoid using that route the trucks would take highway 32. They did repave a portion of that route this summer, so is getting better. Would like to see highways four lanes.
S109	Manufacturers' Perspectives Study	Segment	MNTH 28	Condition	Highway 75 rough in some spots.
S110	Manufacturers' Perspectives Study	Segment	290th St	Condition	Highway 78 is particularly difficult due to its rough ride even after being resurfaced last year. They often have bolts fall out of lifts when delivering them to the Otter Tail Lake area.
S111	Manufacturers' Perspectives Study	Segment	180th St	Safety	Highway 9 between Breckenridge and Barnesville is a bad road. It's very narrow, no shoulders and in slopes are steep.
S112	Manufacturers' Perspectives Study	Segment	160th Ave SE	Condition	Hwy 12 to Willmar is terrible for rough pavement. 23 took them a while to repave.
S113	Manufacturers' Perspectives Study	Segment	CR-46	Condition	Hwy 55 between Hwy 59 and Wendell, MN. Potholes and rough condition. Ditches are deep and little or no shoulders. This road is in tough shape.
S114	Manufacturers' Perspectives Study	Segment	T-1374	Mobility	Is there a way to open up Hwy 10 by possibly reducing the number of stoplights or putting in a bypass road?

ID	Source	Type	Hwy	Problem Type	Additional Information
S115	Manufacturers' Perspectives Study	Segment	Larson Ave	Safety	It would be helpful to add a second lane on each side of 59 between Mahnomen and Detroit Lakes along Hwy 59 since the speed variations between drivers along the Hwy can cause accidents on the current two way traffic lanes there now.
S116	Manufacturers' Perspectives Study	Segment	CSAH 80	Safety	Narrow and hilly roads by Barrett can be tough in the winter. The worst road in the area is the unpaved portion of Coney St in Perham.
S117	Manufacturers' Perspectives Study	Segment	CSAH 21	Condition	Poor conditions damaging delicate equipment. The area between Erdahl and Elbow Lake will shake the teeth out of you.
S118	Manufacturers' Perspectives Study	Segment	Fadden Rd	Safety	Rumble strips are great too except they throw you on 71. (I think they're referring to County Rd 71 near Alex).
S119	Manufacturers' Perspectives Study	Segment	MNTH 29	Condition	Rumble strips on 29 are on or inside the fog line. Have to drive on rumble strips the whole way.; Tar the shoulders and make them as wide as possible. On 29, some areas are tarred but some are not
S120	Manufacturers' Perspectives Study	Segment	CR-81	Safety	Signage: lack of signage about (slow) trucks entering road for vehicles coming from the west. Turn lane: there is no turning lane for westbound traffic in front of business. Rumble strips: they feel it is hard for motorists to see the rumble strips.
S121	Manufacturers' Perspectives Study	Segment	MNTH 55	Safety	Some of these rural roads (e.g. 55) can shift from a 55 mph zone, to 30 or 35, or to an intersection pretty quickly. It would be good to have more places with flashing warning lights to warn about stops or intersections or speed zone changes.
S122	Manufacturers' Perspectives Study	Segment	MNTH 9	Safety	They narrowed the road 2 feet from each side to slow traffic down, but now it's too hard to see if you're entering Hwy 9 from a side road. By the time you can see, your nose is out into the highway.
S123	Manufacturers' Perspectives Study	Segment	2nd St SE	Other	Weight restriction issues running through Ortonville's main street (2nd Street / Highway 7).
S124	Manufacturers' Perspectives Study	Segment	USTH 10	Mobility	Truck route in Perham is confusing and problematic, better signage along the truck route would help.
S125	Manufacturers' Perspectives Study	Segment	CSAH 31	Mobility	Truckers have trouble taking WB left on TH 10 in busy time but otherwise ok; Is there a way to open up Hwy 10 by possibly reducing the number of stoplights or putting in a bypass road?

Appendix B. Data-Identified Needs and Issues

This appendix contains a list of location-specific needs and issues identified through analysis of data provided by MnDOT. The fields in the following figure are:

- **ID**: This code refers to the need/issue ID printed on maps in this Working Paper. IDs beginning with a "D" indicate needs and issues identified from data analysis.
- **Source**: the data source used to identify the need or issue.
- **Feature Type:** Intersection, or Highway Corridor
- **Issue Type**: This field corresponds to the primary need or issue associated with the location. Needs and issues were coded in four ways: safety, condition, performance, or mobility.
- **Additional Information:** where available, additional details on why the corridor or intersection was identified as having a need or issue.

ID	Source	Feature Type	Hwy	Issue Type	Additional Information
D1	MnDOT CMV Crash Record	Intersection	USTH 10; MNTH 9	Safety	More than 2 truck crashes at this location between 2018-2019
D2	MnDOT CMV Crash Record	Intersection	USTH 10; MNTH 54	Safety	More than 2 truck crashes at this location between 2018-2019
D3	MnDOT CMV Crash Record	Intersection	USTH 59; MNTH 200	Safety	More than 2 truck crashes at this location between 2018-2019
D4	MnDOT CMV Crash Record	Intersection	160th Ave N; 1st St SW	Safety	More than 2 truck crashes at this location between 2018-2019
D5	MnDOT CMV Crash Record	Intersection	160th Ave N; 110th St N	Safety	More than 2 truck crashes at this location between 2018-2019
D6	MnDOT CMV Crash Record	Intersection	USTH 75; 90th Ave N	Safety	More than 2 truck crashes at this location between 2018-2019
D7	MnDOT CMV Crash Record	Intersection	34th St S; S 12th Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D8	MnDOT CMV Crash Record	Intersection	USTH 10; 34th St N	Safety	More than 2 truck crashes at this location between 2018-2019
D9	MnDOT CMV Crash Record	Intersection	USTH 75, I94W	Safety	More than 2 truck crashes at this location between 2018-2019
D10	MnDOT CMV Crash Record	Intersection	MNTH 336; I94 W	Safety	More than 2 truck crashes at this location between 2018-2019
D11	MnDOT CMV Crash Record	Intersection	USTH 10; 230th St S	Safety	More than 2 truck crashes at this location between 2018-2019
D12	MnDOT CMV Crash Record	Intersection	USTH 10; 2nd St	Safety	More than 2 truck crashes at this location between 2018-2019
D13	MnDOT CMV Crash Record	Intersection	US 59TH; MNTH 34	Safety	More than 2 truck crashes at this location between 2018-2019
D14	MnDOT CMV Crash Record	Intersection	US 59TH; USTH 10	Safety	More than 2 truck crashes at this location between 2018-2019
D15	MnDOT CMV Crash Record	Intersection	USTH 34; 215th Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D16	MnDOT CMV Crash Record	Intersection	MNTH 210; MNTH 29	Safety	More than 2 truck crashes at this location between 2018-2019

ID	Source	Feature Type	Hwy	Issue Type	Additional Information
D17	MnDOT CMV Crash Record	Intersection	USTH 59; County Highway 82	Safety	More than 2 truck crashes at this location between 2018-2019
D18	MnDOT CMV Crash Record	Intersection	I94 W; MNTH 210	Safety	More than 2 truck crashes at this location between 2018-2019
D19	MnDOT CMV Crash Record	Intersection	USTH 75; Minnesota Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D20	MnDOT CMV Crash Record	Intersection	USTH 75; MNTH 55	Safety	More than 2 truck crashes at this location between 2018-2019
D21	MnDOT CMV Crash Record	Intersection	USTH 12; MNTH 7	Safety	More than 2 truck crashes at this location between 2018-2019
D22	MnDOT CMV Crash Record	Intersection	MNTH 29; County Road 5	Safety	More than 2 truck crashes at this location between 2018-2019
D23	MnDOT CMV Crash Record	Intersection	I94 W; MNTH 29	Safety	More than 2 truck crashes at this location between 2018-2019
D24	MnDOT CMV Crash Record	Intersection	MNTH 29, Dakota St	Safety	More than 2 truck crashes at this location between 2018-2019
D25	MnDOT CMV Crash Record	Intersection	I94 W; 34th St S	Safety	More than 2 truck crashes at this location between 2018-2019
D26	MnDOT CMV Crash Record	Intersection	USTH 10; Parke Ave N	Safety	More than 2 truck crashes at this location between 2018-2019
D27	MnDOT CMV Crash Record	Intersection	I94 W; Hansel Lake Rest Area	Safety	More than 2 truck crashes at this location between 2018-2019
D28	MnDOT CMV Crash Record	Intersection	MNTH 297; N Union Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D29	MnDOT CMV Crash Record	Intersection	USTH 10; Kris St	Safety	More than 2 truck crashes at this location between 2018-2019
D30	MnDOT CMV Crash Record	Segment	Washington Ave	Safety	Segment with high density crash rates
D31	MnDOT CMV Crash Record	Segment	Parke Ave	Safety	Segment with high density crash rates
D32	MnDOT CMV Crash Record	Segment	East Shore Dr	Safety	Segment with high density crash rates
D33	MnDOT CMV Crash Record	Segment	MNTH 9	Safety	Segment with high density crash rates
D34	MnDOT CMV Crash Record	Segment	34th St S	Safety	Segment with high density crash rates

ID	Source	Feature Type	Hwy	Issue Type	Additional Information
D35	MnDOT CMV Crash Record	Segment	Washington Ave	Safety	Segment with high density crash rates
D36	MnDOT CMV Crash Record	Segment	11th St N	Safety	Segment with high density crash rates
D37	MnDOT CMV Crash Record	Segment	24th Ave S	Safety	Segment with high density crash rates
D38	MnDOT CMV Crash Record	Segment	Central Ave	Safety	Segment with high density crash rates
D39	MnDOT CMV Crash Record	Segment	24th Ave S	Safety	Segment with high density crash rates
D40	MnDOT CMV Crash Record	Segment	Dakota St	Safety	Segment with high density crash rates
D41	MnDOT CMV Crash Record	Segment	CSAH 9	Safety	Segment with high density crash rates
D42	MnDOT CMV Crash Record	Segment	Western Ave	Safety	Segment with high density crash rates
D43	MnDOT CMV Crash Record	Segment	250th St N	Safety	Segment with high density crash rates
D44	MnDOT CMV Crash Record	Segment	2nd St	Safety	Segment with high density crash rates
D45	MnDOT CMV Crash Record	Segment	T-228	Safety	Segment with high density crash rates
D46	MnDOT CMV Crash Record	Segment	T-508	Safety	Segment with high density crash rates
D47	MnDOT CMV Crash Record	Segment	MNTH 34	Safety	Segment with high density crash rates
D48	MnDOT CMV Crash Record	Segment	Western Ave	Safety	Segment with high density crash rates
D49	MnDOT CMV Crash Record	Segment	S Peck St	Safety	Segment with high density crash rates
D50	MnDOT CMV Crash Record	Segment	CSAH 11	Safety	Segment with high density crash rates
D51	MnDOT CMV Crash Record	Segment	T-1679	Safety	Segment with high density crash rates
D52	MnDOT CMV Crash Record	Segment	24th Ave S	Safety	Segment with high density crash rates
D53	MnDOT CMV Crash Record	Segment	MSAS 128	Safety	Segment with high density crash rates
D54	MnDOT CMV Crash Record	Segment	USTH 59	Safety	Segment with high density crash rates
D55	MnDOT CMV Crash Record	Segment	CR-90	Safety	Segment with high density crash rates
D56	MnDOT CMV Crash Record	Segment	Minnesota Ave	Safety	Segment with high density crash rates
D57	MnDOT CMV Crash Record	Segment	CSAH 80	Safety	Segment with high density crash rates
D58	MnDOT CMV Crash Record	Segment	5th St S	Safety	Segment with high density crash rates
D59	MnDOT CMV Crash Record	Segment	Parke Ave S	Safety	Segment with high density crash rates
D60	MnDOT Bridges	Point	'I 94'	Mobility	Bridge clearance over road less than 14.5'
D61	MnDOT Bridges	Point	'CSAH 82'	Mobility	Bridge clearance over road less than 14.5'
D62	MnDOT Bridges	Point	'MN 28'	Mobility	Bridge clearance over road less than 14.5'

ID	Source	Feature Type	Hwy	Issue Type	Additional Information
D63	MnDOT Bridges	Point	'US 10'	Mobility	Bridge clearance over road less than 14.5'
D64	MnDOT Bridges	Point	'US 12'	Mobility	Bridge clearance over road less than 14.5'
D65	MnDOT Bridges	Point	'US 10'	Mobility	Bridge clearance over road less than 14.5'
D66	MnDOT Bridges	Point	'US 75 (8th St S)'	Mobility	Bridge clearance over road less than 14.5'
D67	MnDOT Bridges	Point	'I 94'	Mobility	Bridge clearance over road less than 14.5'
D68	MnDOT Bridges	Point	'I 94'	Mobility	Bridge clearance over road less than 14.5'
D69	MnDOT Bridges	Point	'I 94'	Mobility	Bridge clearance over road less than 14.5'
D70	MnDOT Bridges	Point	'US 10'	Mobility	Bridge clearance over road less than 14.5'
D71	MnDOT Bridges	Point	'TWP 312'	Condition	Bridge Condition < 50%
D72	MnDOT Bridges	Point	'MSAS 116(Mill St)'	Condition	Bridge Condition < 50%
D73	MnDOT Bridges	Point	'TWP 76'	Condition	Bridge Condition < 50%
D74	MnDOT Bridges	Point	'TWP 104'	Condition	Bridge Condition < 50%
D75	MnDOT Bridges	Point	'TWP 95'	Condition	Bridge Condition < 50%
D77	MnDOT Bridges	Point	'I 94 WB'	Condition	Bridge Condition < 50%
D78	MnDOT Bridges	Point	'I 94 EB'	Condition	Bridge Condition < 50%
D79	MnDOT Bridges	Point	'US 75'	Condition	Bridge Condition < 50%
D80	MnDOT Bridges	Point	'CSAH 15'	Condition	Bridge Condition < 50%
D81	MnDOT Bridges	Point	'TWP 98'	Condition	Bridge Condition < 50%
D82	Grade Crossing Risk Ratings	Intersection	230th St S	Safety	Grade crossing risk rating of 8 or higher
D83	Grade Crossing Risk Ratings	Intersection	Washington Ave	Safety	Grade crossing risk rating of 8 or higher
D84	Grade Crossing Risk Ratings	Intersection	MNTH 29	Safety	Grade crossing risk rating of 8 or higher
D85	Grade Crossing Risk Ratings	Intersection	Northridge Dr	Safety	Grade crossing risk rating of 8 or higher
D86	Grade Crossing Risk Ratings	Intersection	20th Ave SE	Safety	Grade crossing risk rating of 8 or higher
D87	Grade Crossing Risk Ratings	Intersection	4th St SE	Safety	Grade crossing risk rating of 8 or higher
D88	Grade Crossing Risk Ratings	Intersection	Birch Ave	Safety	Grade crossing risk rating of 8 or higher
D89	Grade Crossing Risk Ratings	Intersection	Marshall Ave	Safety	Grade crossing risk rating of 8 or higher
D90	Grade Crossing Risk Ratings	Intersection	South Town Line Rd	Safety	Grade crossing risk rating of 8 or higher
D91	Grade Crossing Risk Ratings	Intersection	Front St	Safety	Grade crossing risk rating of 8 or higher

ID	Source	Feature Type	Hwy	Issue Type	Additional Information
D92	Grade Crossing Risk Ratings	Intersection	Hering St	Safety	Grade crossing risk rating of 8 or higher
D93	Grade Crossing Risk Ratings	Intersection	E Corp Lmts	Safety	Grade crossing risk rating of 8 or higher
D94	Grade Crossing Risk Ratings	Intersection	493rd Ave	Safety	Grade crossing risk rating of 8 or higher

Appendix C. Identified Projects

This appendix contains a list of the specific projects identified from MnDOT and County planning documents. The fields in the following figure are:

- **ID:** This code refers to the need/issue ID printed on maps in this Working Paper.
- **Program:** the funding program which listed the project
- **Project Number:** identifier assigned by planning agency
- **Route or Location:** the highway name or number corresponding to the project
- **Year**: first year of programmed work
- **Description**: when available, a description of the work to be performed.

Note: there are some differences in the attributes available for each project or investment plan, and not all fields are populated for each project. Items without a specific route or location listed have still been mapped based on maps and data included with the investment plans.

ID	Program	Project Number	Route or location	Year	Description
P1	STIP Pavement	7806-32	US 75	2025	Resurface from Mustinka River Bridge to railroad crossing north of highway 55.
P2	STIP Pavement	5680-147	I 94	2025	Concrete resurface EB lanes from west of CR 11 to Hwy 59.
P3	STIP Pavement	5618-117	MN 108	2024	Complete streets reconstruction in Pelican Rapids; resurface bridge.
P4	STIP Pavement	5618-117	MN 108	2024	Complete streets reconstruction in Pelican Rapids; resurface bridge.
P5	STIP Pavement	0303-67	MN 34	2024	Resurface and widen shoulders from CR 26/CR 47 to Park Rapids. Funded by District 2 and District 4.
P6	STIP Pavement	5607-44	US 10	2024	Intersection revision at county road 60.
P7	STIP Pavement	1401-177	US 10	2024	Highway 10/75 Moorhead 11th street underpass.
P8	STIP Pavement	2180-111	I 94	2024	Lake Burgen rest area improvements.
P9	STIP Pavement	2180-128	I 94	2024	Vehicular pavement reconstruction, truck parking expansion, ADA and lighting system replacement at the Lake Burgen rest area.
P10	STIP Pavement	5680-152	I 94	2024	Interchange lighting at Exit 38, 55 and 67.
P11	STIP Pavement	5680-152	I 94	2024	Interchange lighting at Exit 38, 55 and 67.
P12	STIP Pavement	5625-20	MN 108	2023	Resurface from I-94 to 9th Street in Pelican Rapids.
P13	STIP Pavement	0303-68	MN 34	2023	Resurface Hwy 34 from Becker CR 29 to Ponsford Road.
P14	STIP Pavement	2102-73	MN 29	2023	Sidewalk construction, signal from 34th Ave to 44th Ave in Alexandria.
P15	STIP Pavement	2101-54	MN 27	2023	Intersection improvements on eastbound ramps at Hwy 27 interchange.
P16	STIP Pavement	4402-22	MN 200	2022	Repair pavement and sidewalk, widen shoulders and construct turn lanes from Hwy 59 to east of Roy Lake. Funded by District 2 and District 4.
P17	STIP Pavement	0306-30	MN 87	2022	Complete streets reconstruction in Frazee, from CR 29 to Otter Tail River bridge.
P18	STIP Pavement	2102-70	MN 29	2022	Local partnership program.
P19	STIP Pavement	0301-75	US 10	2022	Frontage road repair in Detroit Lakes.
P20	STIP Pavement	5618-117	US 59	2024	Complete streets reconstruction in Pelican Rapids; resurface bridge.
P21	STIP Pavement	5604-09	MN 210	2025	Resurface from Hwy 29 to west of Hwy 71.
P22	STIP Pavement	7805-34	US 75	2022	Resurface from just north of Hwy 28 to CR 11 in Dumont.
P23	STIP Pavement	5680-152	I 94	2024	Interchange lighting at Exit 38, 55 and 67.
P24	STIP Pavement	76976	MN 114	2025	Resurface from west of Hwy 55 to Jct north ramp of Hwy 94.
P25	STIP Pavement	2609-28	MN 55	2022	Resurface and widen shoulders from Elbow Lake to Barrett.

ID	Program	Project Number	Route or location	Year	Description
P26	STIP Pavement	6102-25	MN 28	2025	Resurface from Pomme de Terre Bridge near Morris to Starbuck.
P27	STIP Pavement	8404-47	MN 55	2022	Resurface from MN/ND border to southern Jct of CR11 in Wendell; replace 4 box culverts.
P28	STIP Pavement	1409-25	MN 9	2022	Reconstruct and resurface from Barnesville to I-94; includes pedestrian accessibility improvements and local utility replacements.
P29	STIP Pavement	056-070-032	MN 210	2022	Left turn lane at CSAH 33 and highway 210.
P30	STIP Pavement	4407-13	MN 113	2023	Resurface from the Norman/Mahnomen County Line to west of highway 59 in Waubun.
P31	STIP Pavement	5624-20	MN 108	2024	Reconstruction from 4th street in Henning to Jct of Hwy 210.
P32	STIP Pavement	6111-26	MN 114	2024	Resurface from just north of Hwy 28 to east Jct with Hwy 55; includes pedestrian accessibility improvements in Lowry.
P33	STIP Pavement	5624-19	MN 108	2024	Resurface from the south Jct of Hwy 78 to 4th Street in Henning.
P34	STIP Pavement	1480-186/5680-151	I94	2023	Installation of snow fence on I94 from Downer to Fergus Falls.
P35	STIP Pavement	2180-125	I94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges
P36	STIP Pavement	2180-125AC	I94	2025	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges
P37	STIP Pavement	1480-183	I94	2022	Inspection building at Red River Weigh Station.
P38	STIP Pavement	2180-118	I94	2023	Concrete resurface WB lanes near highway 114.
P39	STIP Pavement	2680-50	I 94	2023	Bridge improvement over Pelican Creek near Ashby.
P40	STIP Pavement	1414-12	MN336	2022	Resurface from Hwy 10 to I-94, both directions.
P34	STIP Pavement	1480-186/5680-151	I94	2023	Installation of snow fence on I94 from Downer to Fergus Falls.
P35	STIP Pavement	2180-125	I94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P36	STIP Pavement	2180-125AC	I94	2025	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P37	STIP Pavement	1480-183	I94	2022	Inspection building at Red River Weigh Station.
P38	STIP Pavement	2180-118	I94	2023	Concrete resurface WB lanes near highway 114.

ID	Program	Project Number	Route or location	Year	Description
P39	STIP Pavement	2680-50	I 94	2023	Bridge improvement over Pelican Creek near Ashby.
P40	STIP Pavement	1414-12	MN336	2022	Resurface from Hwy 10 to I-94, both directions.
P34	STIP Pavement	1480-186/5680-151	I94	2023	Installation of snow fence on I94 from Downer to Fergus Falls.
P35	STIP Pavement	2180-125	I94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P36	STIP Pavement	2180-125AC	I94	2025	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P37	STIP Pavement	1480-183	I94	2022	Inspection building at Red River Weigh Station.
P38	STIP Pavement	2180-118	I94	2023	Concrete resurface WB lanes near highway 114.
P39	STIP Pavement	2680-50	I 94	2023	Bridge improvement over Pelican Creek near Ashby.
P40	STIP Pavement	1414-12	MN336	2022	Resurface from Hwy 10 to I-94, both directions.
P34	STIP Pavement	1480-186/5680-151	I94	2023	Installation of snow fence on I94 from Downer to Fergus Falls.
P35	STIP Pavement	2180-125	I94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P36	STIP Pavement	2180-125AC	I94	2025	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P37	STIP Pavement	1480-183	I94	2022	Inspection building at Red River Weigh Station.
P38	STIP Pavement	2180-118	I94	2023	Concrete resurface WB lanes near highway 114.
P39	STIP Pavement	2680-50	I 94	2023	Bridge improvement over Pelican Creek near Ashby.
P40	STIP Pavement	1414-12	MN336	2022	Resurface from Hwy 10 to I-94, both directions.
P41	STIP Bridges	2601-20	MN 9	2022	Replace bridge over the Mustinka River; grade and resurface.
P42	STIP Bridges	8404-47	MN 55	2022	Resurface from MN/ND border to southern Jct of CR11 in Wendell; replace 4 box culverts.
P43	STIP Bridges	8404-47	MN 55	2022	Resurface from MN/ND border to southern Jct of CR11 in Wendell; replace 4 box culverts.
P44	STIP Bridges	8404-47	MN 55	2022	Resurface from MN/ND border to southern Jct of CR11 in Wendell; replace 4 box culverts.

ID	Program	Project Number	Route or location	Year	Description
P45	STIP Bridges	8404-47	MN 55	2022	Resurface from MN/ND border to southern Jct of CR11 in Wendell; replace 4 box culverts.
P46	STIP Bridges	8404-47	MN 55	2022	Resurface from MN/ND border to southern Jct of CR11 in Wendell; replace 4 box culverts.
P47	STIP Bridges	2680-50	MN 9	2023	Bridge improvement over Pelican Creek near Ashby.
P48	STIP Bridges	7604-26	US 12	2023	Replace bridges over county ditches near Danvers; replace endposts.
P49	STIP Bridges	7604-26	US 12	2023	Replace bridges over county ditches near Danvers; replace endposts.
P50	STIP Bridges	7604-26	US 12	2023	Replace bridges over county ditches near Danvers; replace endposts.
P51	STIP Bridges	7608-21	MN 29	2023	Replace Hwy 29 bridge over the Chippewa River.
P52	STIP Bridges	8406-23	US 75	2023	Replace bridge over the Rabbit River.
P53	STIP Bridges	2180-125	I 94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P54	STIP Bridges	2180-125	I 94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P55	STIP Bridges	2180-125	I 94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P56	STIP Bridges	2180-125	I 94	2024	Concrete resurface from west of Alexandria to the Douglas/Todd county line and redeck bridges.
P57	STIP Bridges	5618-117	US 59	2024	Complete streets reconstruction in Pelican Rapids; resurface bridge.
P58	STIP Bridges	6102-25	MN 28	2025	Resurface from Pomme de Terre Bridge near Morris to Starbuck.
P59	STIP Bridges	6102-25	MN 28	2025	Resurface from Pomme de Terre Bridge near Morris to Starbuck.
P60	STIP Bridges	1401-177	US10	2024	Highway 10/75 Moorhead 11th street underpass.
P61	STIP Bridges	1401-177	US10	2024	Highway 10/75 Moorhead 11th street underpass.
P62	STIP Bridges	4402-22	MN200	2022	Repair pavement and sidewalk, widen shoulders and construct turn lanes from Hwy 59 to east of Roy Lake. Funded by District 2 and District 4.
P63	STIP Bridges	4402-22	MN200	2022	Repair pavement and sidewalk, widen shoulders and construct turn lanes from Hwy 59 to east of Roy Lake. Funded by District 2 and District 4.
P64	CHIP Pavement	1480-182	I 94	2030	Reconstruct both directions from MN/ND border to Hwy 336.
P65	CHIP Pavement	1414-12	MN 336	2031	Resurface from Hwy 94 to Hwy 10.

ID	Program	Project Number	Route or location	Year	Description
P66	CHIP Pavement	6110-23	MN 104	2031	Resurface from highway 9 to Glenwood.
P67	CHIP Pavement	0608-40	US 75	2031	Resurface from Hwy 12 to Hwy 28 in Graceville.
P68	CHIP Pavement	1401-193	US 10	2031	Resurface from CR 31 to Hwy 32.
P69	CHIP Pavement	4405-31	MN 113	2030	Resurface on Hwy 113 from Hwy 59 to Hwy 71.
P70	CHIP Pavement	2102-69	MN 29	2028	Reconstruction from north of 18th Ave. to Jct 8th Ave in Alexandria.
P71	CHIP Pavement	7803-13	MN 27	2027	Resurface from Wheaton to CR 11.
P72	CHIP Pavement	0301-73	US 10	2030	Resurface EB lanes from east of Hwy 32 to west of Airport Road near Detroit Lakes.
P73	CHIP Pavement	1406-76	US 10	2026	Reconstruct Hwy 75 from north of 24th Ave S to Hwy 10/Main Ave, and Hwy 10 from the Red River to east of Hwy 75.
P74	CHIP Pavement	0609-33	MN 7	2026	Resurface from Jct CSAH 53 to Pacific Ave in Ortonville.
P75	CHIP Pavement	0302-89	US 10	2027	Resurface from CR 54 in Detroit Lakes to Acorn Lake.
P76	CHIP Pavement	1406-76	US 75	2026	Reconstruct Hwy 75 from north of 24th Ave S to Hwy 10/Main Ave, and Hwy 10 from the Red River to east of Hwy 75.
P77	CHIP Pavement	5617-31	US 59	2027	Resurface from I-94 to south of 5th Ave in Pelican Rapids.
P78	CHIP Pavement	8409-26	MN 9	2028	Resurface from Hwy210 to Breckenridge; replace 3 box culverts.
P79	CHIP Pavement	1401-182	US 10	2027	Reconstruct EB lanes from 34th Street to east SE 7th Street in Dilworth.
P80	CHIP Pavement	1480-182	I 94	2030	Reconstruct both directions from MN/ND border to Hwy 336.
P81	CHIP Pavement	1401-190	US 10	2026	Reconstruct from 13th Street to 34th Street, both directions.
P82	CHIP Pavement	5601-35	MN 210	2028	Resurface Hwy 210 from west of Hwy 94 to Jct Hwy 94.
P83	CHIP Pavement	5623-38	MN 108	2026	Resurface from east of Pelican Rapids to Hwy 78.
P84	CHIP Pavement	1401-180	US 10	2029	Resurface WB lanes from Dilworth to Glyndon.
P85	CHIP Pavement	1406-79	US 75	2027	Resurface from CR 12 to 46th Ave S.
P86	CHIP Pavement	5605-23	US 10	2027	Resurface eastbound lane from north of Hwy 106 to east of Bluffton.
P87	CHIP Pavement	2680-44	I 94	2029	Rehabilitate concrete on westbound lanes from Grant/Otter Tail County line to Hwy 79.
P88	CHIP Pavement	8406-24	US 75	2030	Resurface from RR north of Hwy 55 to north of Hwy 9 near Doran.
P89	CHIP Pavement	2604-11	MN 27	2029	Reconstruction from 1.1 mi east of CSAH 7 to 0.3 mi east of CSAH 11.
P90	CHIP Pavement	2103-43	MN 29	2029	Reconstruction from 2nd Ave. to north of McKay Ave. in Alexandria.

ID	Program	Project Number	Route or location	Year	Description
P91	CHIP Pavement	0307-100	MN113	2027	Resurface on Hwy 113 from west of county road 4 to highway 71.
P92	CHIP Pavement	5620-26	MN78	2030	Resurface from Wagon Trail to county road 54.
P93	CHIP Pavement	0609-34	MN7	2031	Resurface from highway 28 to county road 53.
P94	CHIP Bridges	5617-31	US 59	2027	Resurface from I-94 to south of 5th Ave in Pelican Rapids.
P95	CHIP Bridges	8409-26	MN 9	2028	Resurface from Hwy210 to Breckenridge; replace 3 box culverts.
P96	CHIP Bridges	8409-26	MN 9	2028	Resurface from Hwy210 to Breckenridge; replace 3 box culverts.
P97	CHIP Bridges	8409-26	MN 9	2028	Resurface from Hwy210 to Breckenridge; replace 3 box culverts.
P98	CHIP Bridges	5601-35	MN 210	2028	Resurface Hwy 210 from west of Hwy 94 to Jct Hwy 94.
P99	CHIP Bridges	5601-35	MN 210	2028	Resurface Hwy 210 from west of Hwy 94 to Jct Hwy 94.
P100	CHIP Bridges	1401-180	US 10	2029	Resurface WB lanes from Dilworth to Glyndon.
P101	CHIP Bridges	2680-44	I94	2026	Resurface and repair bridges from east of Grant/Otter Tail County Line to Hwy 79.
P102	CHIP Bridges	2680-44	I94	2026	Resurface and repair bridges from east of Grant/Otter Tail County Line to Hwy 79.
P103	CHIP Bridges	2680-44	I94	2026	Resurface and repair bridges from east of Grant/Otter Tail County Line to Hwy 79.
P104	CHIP Bridges	8406-24	US75	2030	Resurface from RR north of Hwy 55 to north of Hwy 9 near Doran.
P94	CHIP Bridges	5617-31	US 59	2027	Resurface from I-94 to south of 5th Ave in Pelican Rapids.
P95	CHIP Bridges	8409-26	MN 9	2028	Resurface from Hwy210 to Breckenridge; replace 3 box culverts.
P96	CHIP Bridges	8409-26	MN 9	2028	Resurface from Hwy210 to Breckenridge; replace 3 box culverts.
P97	CHIP Bridges	8409-26	MN 9	2028	Resurface from Hwy210 to Breckenridge; replace 3 box culverts.
P98	CHIP Bridges	5601-35	MN 210	2028	Resurface Hwy 210 from west of Hwy 94 to Jct Hwy 94.
P99	CHIP Bridges	5601-35	MN 210	2028	Resurface Hwy 210 from west of Hwy 94 to Jct Hwy 94.
P100	CHIP Bridges	1401-180	US 10	2029	Resurface WB lanes from Dilworth to Glyndon.
P101	CHIP Bridges	2680-44	I94	2026	Resurface and repair bridges from east of Grant/Otter Tail County Line to Hwy 79.
P102	CHIP Bridges	2680-44	I94	2026	Resurface and repair bridges from east of Grant/Otter Tail County Line to Hwy 79.
P103	CHIP Bridges	2680-44	I94	2026	Resurface and repair bridges from east of Grant/Otter Tail County Line to Hwy 79.
P104	CHIP Bridges	8406-24	US75	2030	Resurface from RR north of Hwy 55 to north of Hwy 9 near Doran.

County Plans

ID	Program	Description
P105	Douglas County Public Works Department Five Year Construction Plan	CSAH 8 - Roundabout
P106	Douglas County Public Works Department Five Year Construction Plan	CSAH 45 - Roundabout
P107	Douglas County Public Works Department Five Year Construction Plan	CR 22 - Roundabout
P108	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 3/4 Elmwood Twp Br 68-2 Bridge Replacement
P109	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 15/16 Elmwood Twp Br 68-1 Bridge Replacement
P110	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 11/12 Elmwood Twp Br 69-5 Bridge Replacement
P111	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 30 Viding Twp Br 106-1 Bridge Replacement
P112	Clay County, Minnesota 2021-2025 Proposed Construction Program	19 Radius Reconstruction
P113	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 15/22 Skree Twp Br 10-3 Bridge Replacement
P114	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 26/27 Glyndon Township Br 17-2 Bridge Replacement
P115	Clay County, Minnesota 2021-2025 Proposed Construction Program	North Broadway Bridge, Bridge
P116	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 1/2 Goose Prairie Twp Br 37-2 Bridge Replacement
P117	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 6 Oakport Twp Br 1-2 Grading
P118	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 19 & 20 Flowing Twp Br 19-7
P119	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 3/10 Elmwood Twp Br 69-4
P120	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 30/19 Georgetown Twp Br 36-2A
P121	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 30/19 Georgetown Twp Br 36-3A
P122	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 16/21 Glyndon Township Br 14-2
P123	Clay County, Minnesota 2021-2025 Proposed Construction Program	3 Railroad Grade Separation
P124	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 5/4 Hagen Twp Br 27-4
P125	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 5/4 Hagen Twp Br 27-5
P126	Clay County, Minnesota 2021-2025 Proposed Construction Program	Sect. 31/30 Barnesville Twp Br 51-4
P127	Grant County Road Program 2018-2022	Replace Bridge over Mustinka River in Conjunction with Lower Mustinka River Study
P128	Grant County Road Program 2018-2022	Replace Mustinka River Crossing
P129	Grant County Road Program 2018-2022	Bridge Replacement of Bridge No. 463
P130	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	Replace Bridge

ID	Program	Description
P131	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	Replace Bridge
P132	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	Replace Bridge
P133	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	Replace Bridge
P134	Otter Tail County 2040 Transportation Plan	Bridge L0923
P135	Otter Tail County 2040 Transportation Plan	Bridge 56505
P136	Otter Tail County 2040 Transportation Plan	Bridge 92516
P137	Otter Tail County 2040 Transportation Plan	Bridge 7266
P138	Otter Tail County 2040 Transportation Plan	Bridge 92517
P139	Proposed 5 Year Construction Program for Wilkin County	Bridge #7145/84535
P140	2021 Becker County Highway Five Year Plan	Culvert Replacement
P141	Clay County, Minnesota 2021-2025 Proposed Construction Program	1 Grading; 1 Paving
P142	Clay County, Minnesota 2021-2025 Proposed Construction Program	11 Mill and Overlay
P143	Clay County, Minnesota 2021-2025 Proposed Construction Program	18 Full Depth Reclamation
P144	Clay County, Minnesota 2021-2025 Proposed Construction Program	18 Mill and Overlay
P145	Clay County, Minnesota 2021-2025 Proposed Construction Program	2 Mill and Overlay
P146	Clay County, Minnesota 2021-2025 Proposed Construction Program	2 Urban Reconstruct
P147	Clay County, Minnesota 2021-2025 Proposed Construction Program	23 Mill and Overlay
P148	Clay County, Minnesota 2021-2025 Proposed Construction Program	26 Mill and Overlay
P149	Clay County, Minnesota 2021-2025 Proposed Construction Program	3 Mill and Overlay
P150	Clay County, Minnesota 2021-2025 Proposed Construction Program	31 Mill and Overlay
P151	Clay County, Minnesota 2021-2025 Proposed Construction Program	33 Urban Reconstruct
P152	Clay County, Minnesota 2021-2025 Proposed Construction Program	34 Mill and Overlay
P153	Clay County, Minnesota 2021-2025 Proposed Construction Program	45 Mill and Overlay
P154	Clay County, Minnesota 2021-2025 Proposed Construction Program	52 Mill and Overlay
P155	Clay County, Minnesota 2021-2025 Proposed Construction Program	6 Mill and Thin Overlay
P156	Clay County, Minnesota 2021-2025 Proposed Construction Program	75 Mill and Overlay
P157	Clay County, Minnesota 2021-2025 Proposed Construction Program	9 Mill and Overlay
P158	2021 Becker County Highway Five Year Plan	Base Stabilization

ID	Program	Description
P159	Grant County Road Program 2018-2022	Berlin Ave Reconstruction with ADA Improvements
P160	Otter Tail County 2040 Transportation Plan	CH 111 Resurfacing; CH 111 Seal Coat
P161	Otter Tail County 2040 Transportation Plan	CH 114 Seal Coat
P162	Otter Tail County 2040 Transportation Plan	CH 120 Seal Coat
P163	Otter Tail County 2040 Transportation Plan	CH 127 Seal Coat
P164	Otter Tail County 2040 Transportation Plan	CH 132 Seal Coat
P165	Otter Tail County 2040 Transportation Plan	CH 135 Seal Coat
P166	Otter Tail County 2040 Transportation Plan	CH 145 Seal Coat
P167	Grant County Road Program 2018-2022	City of Norcross Reconstruction With ADA Improvements
P168	Douglas County Public Works Department Five Year Construction Plan	CR 102 - Reclaim & Bituminous Surfacing
P169	Douglas County Public Works Department Five Year Construction Plan	CR 103 - Reclaim & Bituminous Surfacing
P170	Douglas County Public Works Department Five Year Construction Plan	CR 107 - Reclaim & Bituminous Surfacing
P171	Proposed 5 Year Construction Program for Wilkin County	CR 151 Gravel/Base One/11 miles
P172	Proposed 5 Year Construction Program for Wilkin County	CR 168 Tiling/4 miles
P173	Proposed 5 Year Construction Program for Wilkin County	CR 169 Tiling/5 miles
P174	Proposed 5 Year Construction Program for Wilkin County	CR 169A Tiling/2 miles
P175	Proposed 5 Year Construction Program for Wilkin County	CR 176 Gravel/Base One/4 miles
P176	Proposed 5 Year Construction Program for Wilkin County	CR 182 Gravel/Base One/7.5 miles
P177	Douglas County Public Works Department Five Year Construction Plan	CR 62- Reclaim & Bituminous Surfacing
P178	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	CSAH 1
P179	Douglas County Public Works Department Five Year Construction Plan	CSAH 1 - Reclaim and Bituminous Surfacing
P180	Road & Bridge Improvement Plan 2021-2025	CSAH 1 Bit Mill & Overlay
P181	Road & Bridge Improvement Plan 2021-2025	CSAH 1 Bit Paving
P182	Otter Tail County 2040 Transportation Plan	CSAH 1 Reconstruction
P183	Otter Tail County 2040 Transportation Plan	CSAH 1 Seal Coat
P184	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	CSAH 10
P185	Otter Tail County 2040 Transportation Plan	CSAH 10 Reconstruction
P186	Otter Tail County 2040 Transportation Plan	CSAH 10 Seal Coat

ID	Program	Description
P187	Douglas County Public Works Department Five Year Construction Plan	CSAH 11 - Reclaim & Bituminous Resurfacing
P188	Proposed 5 Year Construction Program for Wilkin County	CSAH 11 Gravel/Base One/7 miles
P189	Otter Tail County 2040 Transportation Plan	CSAH 12 Seal Coat
P190	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	CSAH 13
P191	Douglas County Public Works Department Five Year Construction Plan	CSAH 13 - Grade Widening & Curve Realignment; CSAH 13 - Reclaim & Bituminous Surfacing
P192	Road & Bridge Improvement Plan 2021-2025	CSAH 13 Bit Seal Coat
P193	Otter Tail County 2040 Transportation Plan	CSAH 13 Seal Coat
P194	Douglas County Public Works Department Five Year Construction Plan	CSAH 14 - Grading
P195	Douglas County Public Works Department Five Year Construction Plan	CSAH 14 - Reclaim & Bituminous Surfacing
P196	Potential Road Program 2021-2025	CSAH 14 Bit Mill and Overlay
P197	Otter Tail County 2040 Transportation Plan	CSAH 14 Resurfacing
P198	Potential Road Program 2021-2025; Potential Road Program 2021-2025	CSAH 15 Grading and Base; CSAH 15 Bituminous Paving
P199	Otter Tail County 2040 Transportation Plan	CSAH 15 Seal Coat
P200	Proposed 5 Year Construction Program for Wilkin County	CSAH 15 Tiling/2 miles
P201	Proposed 5 Year Construction Program for Wilkin County	CSAH 15 Tiling/7 miles
P202	Proposed 5 Year Construction Program for Wilkin County	CSAH 16 SFDR - Bit Surfacing/2 miles
P203	Proposed 5 Year Construction Program for Wilkin County	CSAH 16 Thinlay/ 15.5 miles
P204	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	CSAH 17
P205	Potential Road Program 2021-2025; Potential Road Program 2021-2025	CSAH 18 Grading, Base, Bit Paving; CSAH 18 Surfacing & Reconditioning
P206	Potential Road Program 2021-2025	CSAH 18 Surfacing & Reconditioning
P207	Douglas County Public Works Department Five Year Construction Plan	CSAH 19 - Mill & Overlay (Shared w/Grant County)
P208	Otter Tail County 2040 Transportation Plan	CSAH 19 Seal Coat
P209	Proposed 5 Year Construction Program for Wilkin County	CSAH 19 SFDR - Bit Surfacing/ 4 miles
P210	Proposed 5 Year Construction Program for Wilkin County	CSAH 19 SFDR - Bit Surfacing/ 5 miles
P211	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	CSAH 2
P212	Traverse County Capital Improvement Plan	CSAH 20 - TH 75 to TH 9

ID	Program	Description
P213	Road & Bridge Improvement Plan 2021-2025	CSAH 20 Bit Mill & Overlay
P214	Otter Tail County 2040 Transportation Plan	CSAH 20 Resurfacing
P215	Proposed 5 Year Construction Program for Wilkin County	CSAH 20 Tiling/6 miles
P216	Otter Tail County 2040 Transportation Plan	CSAH 21 Seal Coat
P217	5 Year Capital Improvement Plan Swift County	CSAH 22 Grading; CSAH 22 Mill and Overlay
P218	5 Year Capital Improvement Plan Swift County	CSAH 22 Mill and Overlay
P219	Otter Tail County 2040 Transportation Plan	CSAH 22 Seal Coat
P220	Douglas County Public Works Department Five Year Construction Plan	CSAH 23 - Shoulder Widening
P221	Douglas County Public Works Department Five Year Construction Plan	CSAH 24 - Grading
P222	Proposed 5 Year Construction Program for Wilkin County	CSAH 24 Gravel/Base One/2.5 miles
P223	Otter Tail County 2040 Transportation Plan	CSAH 24 Resurfacing
P224	Otter Tail County 2040 Transportation Plan	CSAH 24 Seal Coat
P225	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	CSAH 25
P226	Douglas County Public Works Department Five Year Construction Plan	CSAH 25 - Reclaim & Bituminous Surfacing
P227	Proposed 5 Year Construction Program for Wilkin County	CSAH 26 Thinlay/ 10.3 miles
P228	Otter Tail County 2040 Transportation Plan	CSAH 27 Seal Coat
P229	Potential Road Program 2021-2025	CSAH 3 FDR and Paving
P230	Potential Road Program 2021-2025	CSAH 3 Mill and Overlay
P231	Potential Road Program 2021-2025	CSAH 3 Reconstruct
P232	Otter Tail County 2040 Transportation Plan	CSAH 3 Seal Coat
P233	Proposed 5 Year Construction Program for Wilkin County	CSAH 3 SFDR -Bit Surfacing/ 5.5 miles
P234	Douglas County Public Works Department Five Year Construction Plan	CSAH 31 - Grading
P235	Otter Tail County 2040 Transportation Plan	CSAH 31 Seal Coat; CSAH 31 Resurfacing
P236	Proposed 5 Year Construction Program for Wilkin County	CSAH 32 Aggregate Base & Bit Surfacing
P237	Proposed 5 Year Construction Program for Wilkin County	CSAH 32 SFDR - Bit Surfacing/6 miles
P238	Potential Road Program 2021-2025	CSAH 33 FDR and Paving
P239	Potential Road Program 2021-2025	CSAH 33 Grading and Base; CSAH 33 Bituminous Paving
P240	Otter Tail County 2040 Transportation Plan	CSAH 34 Seal Coat

ID	Program	Description
P241	Otter Tail County 2040 Transportation Plan	CSAH 35 Reconstruction
P242	Otter Tail County 2040 Transportation Plan	CSAH 35 Reconstruction; CSAH 35 Seal Coat
P243	Otter Tail County 2040 Transportation Plan	CSAH 35 Resurfacing
P244	Otter Tail County 2040 Transportation Plan	CSAH 35 Resurfacing; CSAH 35 Seal Coat
P245	Otter Tail County 2040 Transportation Plan	CSAH 35 Seal Coat
P246	Otter Tail County 2040 Transportation Plan	CSAH 36 Seal Coat
P247	Douglas County Public Works Department Five Year Construction Plan	CSAH 38 - Reclaim & Bituminous Surfacing
P248	Douglas County Public Works Department Five Year Construction Plan	CSAH 4 - Reclaim & Bituminous Surfacing
P249	Proposed 5 Year Construction Program for Wilkin County	CSAH 4 Bridge Replace/Road Approach
P250	Otter Tail County 2040 Transportation Plan	CSAH 4 Seal Coat
P251	Proposed 5 Year Construction Program for Wilkin County	CSAH 4 Street Resurfacing
P252	Douglas County Public Works Department Five Year Construction Plan	CSAH 46 - Reconstruction
P253	Otter Tail County 2040 Transportation Plan	CSAH 46 Reconstruction; CSAH 46 Seal Coat
P254	Otter Tail County 2040 Transportation Plan	CSAH 46 Seal Coat
P255	Douglas County Public Works Department Five Year Construction Plan	CSAH 5 - Reclaim & Bituminous Surfacing
P256	Otter Tail County 2040 Transportation Plan	CSAH 50 Reconstruction
P257	Otter Tail County 2040 Transportation Plan	CSAH 50 Seal Coat
P258	Otter Tail County 2040 Transportation Plan	CSAH 51 Resurfacing
P259	Otter Tail County 2040 Transportation Plan	CSAH 52 Resurfacing
P260	Otter Tail County 2040 Transportation Plan	CSAH 53 Seal Coat
P261	Potential Road Program 2021-2025	CSAH 54 Mill and Overlay & ADA
P262	Otter Tail County 2040 Transportation Plan	CSAH 55 Seal Coat
P263	Potential Road Program 2021-2025	CSAH 57 Reconstruct
P264	Otter Tail County 2040 Transportation Plan	CSAH 58 Resurfacing; CSAH 58 Seal Coat
P265	Traverse County Capital Improvement Plan	CSAH 6 - East Dumont Corporate Limits to East County Line
P266	Douglas County Public Works Department Five Year Construction Plan	CSAH 6 - Shoulder Widening; CSAH 6 - Reclaim & Bituminous Surfacing
P267	5 Year Capital Improvement Plan Swift Count	CSAH 6 Grading; CSAH 6 Paving

ID	Program	Description
P268	5 Year Capital Improvement Plan Swift County	CSAH 6 Mill & Overlay
P269	Otter Tail County 2040 Transportation Plan	CSAH 60 Resurfacing
P270	Otter Tail County 2040 Transportation Plan	CSAH 61 Reconstruction
P271	Otter Tail County 2040 Transportation Plan	CSAH 67 Resurfacing; CSAH 67 Seal Coat
P272	Otter Tail County 2040 Transportation Plan	CSAH 67 Seal Coat
P273	Otter Tail County 2040 Transportation Plan	CSAH 67 Seal Coat; CSAH 67 Seal Coat
P274	Douglas County Public Works Department Five Year Construction Plan	CSAH 7 - Initial Surfacing; CSAH 7 - Final Surfacing
P275	Douglas County Public Works Department Five Year Construction Plan	CSAH 7 - Shoulder Widening; CSAH 7 - Reclaim & Bituminous Surfacing
P276	Road & Bridge Improvement Plan 2021-2025	CSAH 7 Bit Seal Coat
P277	Douglas County Public Works Department Five Year Construction Plan	CSAH 73 - Reclaim & Bituminous Surfacing
P278	Otter Tail County 2040 Transportation Plan	CSAH 73 Seal Coat
P279	Otter Tail County 2040 Transportation Plan	CSAH 74 Seal Coat
P280	Otter Tail County 2040 Transportation Plan	CSAH 75 Seal Coat
P281	Otter Tail County 2040 Transportation Plan	CSAH 77 Seal Coat; CSAH 77 Seal Coat
P282	Douglas County Public Works Department Five Year Construction Plan	CSAH 8 - Grading; CSAH 8 - Initial Surfacing
P283	Douglas County Public Works Department Five Year Construction Plan	CSAH 8 - Reclaim & Bituminous Surfacing; CSAH 8 - Grading
P284	Douglas County Public Works Department Five Year Construction Plan	CSAH 8 - Reclaim & Bituminous Surfacing; CSAH 8 - Grading; CSAH 8 - Initial Surfacing ; CSAH 8 - Final Surfacing
P285	Road & Bridge Improvement Plan 2021-2025	CSAH 8 Bit Mill & Overlay
P286	Road & Bridge Improvement Plan 2021-2025	CSAH 8 Bit Seal Coat
P287	Otter Tail County 2040 Transportation Plan	CSAH 8 Resurfacing; CSAH 8 Seal Coat
P288	Otter Tail County 2040 Transportation Plan	CSAH 8 Seal Coat
P289	Otter Tail County 2040 Transportation Plan	CSAH 80 Resurfacing
P290	Douglas County Public Works Department Five Year Construction Plan	CSAH 82 - Reclaim & Bituminous Surfacing
P291	Otter Tail County 2040 Transportation Plan	CSAH 82 Seal Coat
P292	Otter Tail County 2040 Transportation Plan	CSAH 83 Seal Coat
P293	Otter Tail County 2040 Transportation Plan	CSAH 88 Seal Coat

ID	Program	Description
P294	Mahnomen County Minnesota 2020-2024 Five Year Construction Improvement Plan	CSAH 9
P295	Douglas County Public Works Department Five Year Construction Plan	CSAH 9 - Final Surfacing
P296	Douglas County Public Works Department Five Year Construction Plan	CSAH 9 - Grading; CSAH 9 - Initial Surfacing; CSAH 9 - Final Surfacing
P297	Douglas County Public Works Department Five Year Construction Plan	CSAH 9 - Reconstruction
P298	Road & Bridge Improvement Plan 2021-2025	CSAH 9 & 18 Grade Widening; CSAH 9 & 18 Bit Paving
P299	Road & Bridge Improvement Plan 2021-2025	CSAH 9 Bit Mill & Overlay
P300	Road & Bridge Improvement Plan 2021-2025	CSAH 9 Bit Seal Coat
P301	Otter Tail County 2040 Transportation Plan	CSAH 99 Resurfacing
P302	Grant County Road Program 2018-2022	Emulsion & Seal Coat from CSAH1 to CSAH 11
P303	2021 Becker County Highway Five Year Plan	Grade & Pave
P304	2021 Becker County Highway Five Year Plan	Grade Widening
P305	2021 Becker County Highway Five Year Plan	Grade Widening; Paving
P306	2021 Becker County Highway Five Year Plan	Mill & Pave
P307	2021 Becker County Highway Five Year Plan	Paving
P308	2021 Becker County Highway Five Year Plan	Reclaim & Pave
P309	Grant County Road Program 2018-2022	Reclaim and Pave of Old TH 54
P310	2021 Becker County Highway Five Year Plan	Reclaim & Pave
P311	Grant County Road Program 2018-2022; Grant County Road Program 2018-2022	Reconstruction & Grade Widening from CSAH 11 to CSAH 25; Paving from CSAH 11 to CSAH 25
P312	Grant County Road Program 2018-2022; Grant County Road Program 2018-2022	Reconstruction & Grade Widening from CSAH 11 to CSAH 25; Paving from CSAH 11 to CSAH 25
P313	Clay County, Minnesota 2021-2025 Proposed Construction Program	Red River to CSAH 11 Mill and Overlay
P314	Big Stone County 5 Year Plan Map	S.A.P. 006-606-0?? Mill\Overlay
P315	Big Stone County 5 Year Plan Map	S.A.P. 006-606-021 Mill\Overlay
P316	Big Stone County 5 Year Plan Map	S.A.P. 006-607-0?? Mill\Overlay
P317	Big Stone County 5 Year Plan Map	S.A.P. 006-610-027 Seal Coat
P318	Big Stone County 5 Year Plan Map	S.A.P. 006-616-008 ADA\Mill\Overlay
P319	Big Stone County 5 Year Plan Map	S.A.P. 006-619-017 Mill\Overlay

ID	Program	Description
P320	Big Stone County 5 Year Plan Map	S.A.P. 006-620-0?? Mill\Overlay\ADA
P321	Big Stone County 5 Year Plan Map	S.A.P. 006-621-0?? Mill\Overlay
P322	Big Stone County 5 Year Plan Map	S.A.P. 006-623-005 Seal Coat
P323	Big Stone County 5 Year Plan Map	S.A.P. 006-625-0?? Mill\Overlay
P324	Big Stone County 5 Year Plan Map	S.A.P. 006-626-00? ADA\Mill\Overlay
P325	Big Stone County 5 Year Plan Map	S.A.P. 006-633-006 Seal Coat
P326	Big Stone County 5 Year Plan Map	S.A.P. 006-638-002 Grading Curve; S.A.P. 006-638-003 Base & Bituminous

Appendix D. Potential Gaps to Address

This appendix contains a list of the location-specific needs and issues that do not appear to be addressed by any currently programmed projects. Similar to the lists provided in Appendix A and B, the fields in the following figure are:

- **ID:** This code refers to the need/issue ID printed on maps in this Working Paper. Those that begin with an "S" were stakeholder-identified, and those with a "D" were identified via data analysis.
- **Source:** the source used to identify the need or issue.
- **Type:** Intersection or Segment of highway.
- **Highway** Name or Number
- **Need/Issue Type:** this field corresponds to the primary need or issue associated with the location. Needs and issues were coded in one of four ways: safety, condition, performance, or other.
- **Additional Information:** where available, additional details from the stakeholder were noted here

ID	Source	Type	Hwy	Type	Additional Information
D1	MnDOT CMV Crashes	Intersection/Bridge	USTH 10; MNTH 9	Safety	More than 2 truck crashes at this location between 2018-2019
D4	MnDOT CMV Crashes	Intersection/Bridge	160th Ave N; 1st St SW	Safety	More than 2 truck crashes at this location between 2018-2019
D7	MnDOT CMV Crashes	Intersection/Bridge	34th St S; S 12th Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D9	MnDOT CMV Crashes	Intersection/Bridge	USTH 75, I94W	Safety	More than 2 truck crashes at this location between 2018-2019
D13	MnDOT CMV Crashes	Intersection/Bridge	US 59TH; MNTH 34	Safety	More than 2 truck crashes at this location between 2018-2019
D14	MnDOT CMV Crashes	Intersection/Bridge	US 59TH; USTH 10	Safety	More than 2 truck crashes at this location between 2018-2019
D15	MnDOT CMV Crashes	Intersection/Bridge	USTH 34; 215th Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D19	MnDOT CMV Crashes	Intersection/Bridge	USTH 75; Minnesota Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D21	MnDOT CMV Crashes	Intersection/Bridge	USTH 12; MNTH 7	Safety	More than 2 truck crashes at this location between 2018-2019
D27	MnDOT CMV Crashes	Intersection/Bridge	I94 W; Hansel Lake Rest Area	Safety	More than 2 truck crashes at this location between 2018-2019
D29	MnDOT CMV Crashes	Intersection/Bridge	USTH 10; Kris St	Safety	More than 2 truck crashes at this location between 2018-2019
D82	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	230th St S	Safety	Active protection rail crossing with risk rating 8 or greater
D83	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	Washington Ave	Safety	Active protection rail crossing with risk rating 8 or greater
D84	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MNTH 29	Safety	Active protection rail crossing with risk rating 8 or greater
D85	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 63	Safety	Passive protection rail crossing with risk rating 8 or greater
D86	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	TWN 192	Safety	Passive protection rail crossing with risk rating 8 or greater

ID	Source	Type	Hwy	Type	Additional Information
D87	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	CSAH157	Safety	Passive protection rail crossing with risk rating 8 or greater
D88	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	M-161	Safety	Passive protection rail crossing with risk rating 8 or greater
D90	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	M-284	Safety	Passive protection rail crossing with risk rating 8 or greater
D91	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 21	Safety	Passive protection rail crossing with risk rating 8 or greater
D92	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 51	Safety	Passive protection rail crossing with risk rating 8 or greater
D93	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 21	Safety	Passive protection rail crossing with risk rating 8 or greater
D94	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 17	Safety	Passive protection rail crossing with risk rating 8 or greater
D60	MnDOT Bridges	Intersection/Bridge	'I 94'	Mobility	Bridge with vertical clearance under 14' 6"
D61	MnDOT Bridges	Intersection/Bridge	'CSAH 82'	Mobility	Bridge with vertical clearance under 14' 6"
D62	MnDOT Bridges	Intersection/Bridge	'MN 28'	Mobility	Bridge with vertical clearance under 14' 6"
D64	MnDOT Bridges	Intersection/Bridge	'US 12'	Mobility	Bridge with vertical clearance under 14' 6"
D67	MnDOT Bridges	Intersection/Bridge	'I 94'	Mobility	Bridge with vertical clearance under 14' 6"
D69	MnDOT Bridges	Intersection/Bridge	'I 94'	Mobility	Bridge with vertical clearance under 14' 6"
D71	MnDOT Bridges	Intersection/Bridge	'TWP 312'	Condition	Bridge with condition under 50%
D72	MnDOT Bridges	Intersection/Bridge	'MSAS 116(Mill St)'	Condition	Bridge with condition under 50%
D73	MnDOT Bridges	Intersection/Bridge	'TWP 76'	Condition	Bridge with condition under 50%
D74	MnDOT Bridges	Intersection/Bridge	'TWP 104'	Condition	Bridge with condition under 50%
D75	MnDOT Bridges	Intersection/Bridge	'TWP 95'	Condition	Bridge with condition under 50%
D80	MnDOT Bridges	Intersection/Bridge	'CSAH 15'	Condition	Bridge with condition under 50%
D81	MnDOT Bridges	Intersection/Bridge	'TWP 98'	Condition	Bridge with condition under 50%
S2	MetroQuest	Intersection/Bridge	Rossman Ave	Mobility	Trucks can not park or access fast food or restaurants in area.
S3	MetroQuest	Intersection/Bridge	110th St	Mobility	N/A

ID	Source	Type	Hwy	Type	Additional Information
S6	MetroQuest	Intersection/Bridge	MNTH 78	Mobility	N/A
S7	MetroQuest	Intersection/Bridge	220th Ave	Condition	N/A
S8	MetroQuest	Intersection/Bridge	E Big Cormorant Rd	Mobility	N/A
S9	MetroQuest	Intersection/Bridge	CSAH 67	Mobility	N/A
S10	MetroQuest	Intersection/Bridge	T-800	Condition	N/A
S11	MetroQuest	Intersection/Bridge	385th Ave	Safety	No trail for bikes or peds
S13	MetroQuest	Intersection/Bridge	Marion St	Safety	better signage/paint
S14	MetroQuest	Intersection/Bridge	34th St S	Mobility	Trains through the town impede mobility.
S15	MetroQuest	Intersection/Bridge	80th St S	Condition	N/A
S16	MetroQuest	Intersection/Bridge	250th Ave	Safety	N/A
S19	MetroQuest	Intersection/Bridge	460th St	Safety	Unsafe intersection
S21	MetroQuest	Intersection/Bridge	195th Ave	Safety	N/A
S22	MetroQuest	Intersection/Bridge	CSAH 5	Condition	N/A
S23	MetroQuest	Intersection/Bridge	CSAH 2	Condition	Routine maintenance is needed. Cracks.
S25	MetroQuest	Intersection/Bridge	17th Ave S	Condition	Low area in main drive track from constant truck traffic.
S28	MetroQuest	Intersection/Bridge	24th Ave S	Safety	N/A
S34	MetroQuest	Intersection/Bridge	50th Ave	Safety	Left turning traffic from 50th Ave W to Hwy 29 backs up both the turn lane and left lane past Twin Blvd. Accesses and people making left turns onto Twin Blvd make the road feel unsafe.
S36	MetroQuest	Intersection/Bridge	20th St S	Condition	I-94 through Moorhead is rough.
S38	MetroQuest	Intersection/Bridge	90th St S	Safety	N/A
S40	MetroQuest	Intersection/Bridge	130th St	Condition	N/A
S41	MetroQuest	Intersection/Bridge	CR-55	Safety	N/A
S42	MetroQuest	Intersection/Bridge	ISTH 94	Condition	Potholes on I-94
S43	Consultation Comments	Intersection/Bridge	USTH 75	Safety	Need identified from consultation
S44	Consultation Comments	Intersection/Bridge	USTH 75	Safety	Need identified from consultation
S45	Consultation Comments	Intersection/Bridge	MNTH 210	Safety	Need identified from consultation

ID	Source	Type	Hwy	Type	Additional Information
S50	Consultation Comments	Intersection/Bridge	USTH 10	Safety	Traffic lights on Randolph Road are short and truck drivers can only get one truck across; leads to red light running issues.
S52	Consultation Comments	Intersection/Bridge	28th Ave S	Condition	Bridge condition requires that trucks have to go 15mph when loaded. If trucks don't reduce their speed, house nearby has structural issue. No other route and slow speed leads to local traffic congestion
S53	Consultation Comments	Intersection/Bridge	Roosevelt Ave	Mobility	New underpass trucks can't get under so need to re-route to get onto US-10
S54	Consultation Comments	Segment	150th Ave	Mobility	CH-112 needs to be further overlaid to allow for higher weight loads getting onto state highways
D30	MnDOT CMV Crashes	Segment	Washington Ave	Safety	Segment with high density crash rates
D31	MnDOT CMV Crashes	Segment	Parke Ave	Safety	Segment with high density crash rates
D33	MnDOT CMV Crashes	Segment	MNTH 9	Safety	Segment with high density crash rates
D35	MnDOT CMV Crashes	Segment	Washington Ave	Safety	Segment with high density crash rates
D38	MnDOT CMV Crashes	Segment	Central Ave	Safety	Segment with high density crash rates
D42	MnDOT CMV Crashes	Segment	Western Ave	Safety	Segment with high density crash rates
D45	MnDOT CMV Crashes	Segment	T-228	Safety	Segment with high density crash rates
D47	MnDOT CMV Crashes	Segment	MNTH 34	Safety	Segment with high density crash rates
D48	MnDOT CMV Crashes	Segment	Western Ave	Safety	Segment with high density crash rates
D49	MnDOT CMV Crashes	Segment	S Peck St	Safety	Segment with high density crash rates
D50	MnDOT CMV Crashes	Segment	CSAH 11	Safety	Segment with high density crash rates
D51	MnDOT CMV Crashes	Segment	T-1679	Safety	Segment with high density crash rates
D52	MnDOT CMV Crashes	Segment	24th Ave S	Safety	Segment with high density crash rates
D54	MnDOT CMV Crashes	Segment	USTH 59	Safety	Segment with high density crash rates
D55	MnDOT CMV Crashes	Segment	CR-90	Safety	Segment with high density crash rates
D59	MnDOT CMV Crashes	Segment	Parke Ave S	Safety	Segment with high density crash rates
S56	Manufacturers Survey	Intersection	USTH 10	Mobility	Signage for Industrial Park On Highway 10
S58	Manufacturers Survey	Intersection	USTH 59	Mobility	Roundabouts need to be larger and flatten the curbs on them(an example is Willow Street Roundabout)

ID	Source	Type	Hwy	Type	Additional Information
S59	Manufacturers Survey	Intersection	USTH 10	Other	Kris Street at Hwy 10 – They said after a train goes through, they sometime have to wait up to three light cycles before they get a green. They said the wait can be 20 minutes. They noted that it seems better at night.
S62	Manufacturers Survey	Intersection	MNTH 28	Mobility	Intersection improvement – Morris, meeting semis turning on 28 & 9
S65	Manufacturers Survey	Intersection	Ingersoll Ave	Other	There's some congestion at 12 & 7 but not very often—mainly noon at 5 pm.
S66	Manufacturers Survey	Intersection	USTH 75	Safety	Fears the new turn lanes may have made the situation worse. Beet trucks back up on Hwy 75 in the turn lanes and people drive through on the main lane. Worried that trucks will turn in front of or into the cars. Add temp stoplight during beet season?
S67	Manufacturers Survey	Intersection	3rd Ave E	Mobility	Getting through Alexandria (would like a bypass)
S68	Manufacturers Survey	Intersection	CSAH 82	Safety	Dangerous Intersection, difficult to enter from north. especially when the traffic from Discovery Middle School, up McKay Ave to the north is present.
S71	Manufacturers Survey	Intersection	CSAH 82	Safety	Added stoplight at 22 and 82 was a big help. "Four-way by the YMCA
S72	Manufacturers Survey	Intersection	100th St S	Mobility	How about a ramp off of 94 to county road 17? Especially in the summer, there are big backups. Something coming from the eats to avoid downtown would help (bypass).
S73	Manufacturers Survey	Intersection	Evergreen La	Mobility	Pilot and 27 and 45, getting into pilot is tricky. truckers getting confused and making the right turn and/or staying on MN27 when coming from the other direction off I-94, instead of continuing or turning onto CR 45. Entry on MN27 or signage needed.
S74	Manufacturers Survey	Intersection	Broadway St	Other	There are too many stoplights in Alexandria.
S76	Manufacturers Survey	Intersection	CR-55	Other	55 used to have a narrow bridge. Put on an escort. The bridge was updated, but still shows it as narrow, the permitting website wasn't updated.

ID	Source	Type	Hwy	Type	Additional Information
S77	Manufacturers Survey	Intersection	CSAH 10	Safety	We like the flashing stop lights, 79 à 78. A few people died there. Ashby west of Erdahl. We like the flashing stop lights in general.
S78	Manufacturers Survey	Intersection	USTH 59	Mobility	The Roundabouts south of 75 in Moorhead and Detroit Lakes are a problem because our trucks can't make the curves and still keep our loads balanced.
S79	Manufacturers Survey	Intersection	ISTH 94	Safety	Operations are reasonably well; does seem like there are more accidents on I-94 bridge between ND and MN – possibly from automatic deicers; brines tend to leave snow pack on the roads.
S80	Manufacturers Survey	Intersection	USTH 10	Other	The changing speed limits from Fargo to the Cities on highway 10. Getting through Detroit Lakes, with the speed limits and stop lights, can slow them down. The worst is the Kris St. stop light in Detroit Lakes
S82	Manufacturers Survey	Intersection	S Lake Ave	Safety	Highway 210 at the major crossing in Battle Lake and Underwood. He said people had been running stop signs there, but he felt that was largely addressed with the upgraded signs.
S83	Manufacturers Survey	Intersection	MNTH 210	Safety	No. However, the stop lights at Hwy #210 and Hwy #59 while great, could be enhanced by a prepare to stop sign or a prepare to stop flashing sign
S85	Manufacturers Survey	Intersection	MNTH 29	Safety	The intersection of Hwy 29/Co Rd 38/Co Rd 46 (old 235) is difficult for trucks. It could be improved.
S86	Manufacturers Survey	Intersection	CSAH 34	other	Hwy 10 signage identifying access to KLN companies via Hwy 34 could be improved. Drivers who are not familiar with the area may not be aware that this is Hwy 34 may be a better or alternative access point.
S87	Manufacturers Survey	Intersection	CSAH 52	Condition	Rough: One place that is a problem is by Barnesville - the bridge on County Road #88.
S88	Manufacturers Survey	Intersection	USTH 75	Condition	Rough Conditions, Bridge on 75 by Kent.
S89	Manufacturers Survey	Intersection	Church St S	Mobility	In Benson HWY 29 and US 12—I don't think anything can go through there. They try to route you past the ethanol plant and past Sandy's (café on 29 on south side of Benson)

ID	Source	Type	Hwy	Type	Additional Information
S92	Manufacturers Survey	Intersection	Atlantic Ave	Mobility	It's tough for 100' rig to take that corner on Main & 5th (HWY 28 & HWY 9.
S93	Manufacturers Survey	Intersection	CSAH 45	Other	The flashing lights on 27 going into Alexandria need to be timed differently. If you see the light you will not make it because you are travelling on open road at highway speed.
S94	Manufacturers Survey	Intersection	Minnesota St	Mobility	Would like to see the interchange be redesigned so it is easier for semi traffic to use the intersection. Right turn lanes and possibly a center left turn lane would be a good idea to be looked at in the near future.
S95	Manufacturers Survey	Intersection	USTH 12	Other	US 12 and 30th Ave is a very "dark" corner. We've ordered a sign that says "receiving to direct trucks. Many have missed it.
S99	Manufacturers Survey	Intersection	Gran St	Other	Central Lakes Trail gets driven on by those thinking it is a frontage Rd.
S100	Manufacturers Survey	Intersection	MNTH 29	Mobility	Wants to have a turn lane added in front of his business for safety purposes. Would like to have one added to keep his staff and suppliers from getting rear ended. (Location approximate)
S101	Manufacturers Survey	Intersection	MNTH 9	Other	Signage for the Morris industrial park.
S102	Manufacturers Survey	Intersection	S Tower Rd	Mobility	Probe: Would different signage, to identify truck route designation, be helpful? Yes, Lincoln Avenue, 210 Bypass, and County Road #1are designated
S103	Manufacturers Survey	Segment	USTH 59	Safety	'It would be helpful to add a second lane on each side of 59 between Mahnomen and Detroit Lakes along Hwy 59 since the speed variations between drivers along the Hwy can cause accidents on the current two way traffic lanes there now.
S105	Manufacturers Survey	Segment	3rd St	Safety	Add a second lane on each side of 59 between Mahnomen and Detroit Lakes along Hwy 59, speed variations between drivers along the Hwy can cause accidents on the current two way traffic lanes there now.; Planned yard expansion will increase traffic.
S108	Manufacturers Survey	Segment	150th St	Mobility	Highway 59 is very rough, from Detroit Lakes to Thief River Falls, so to avoid using that route the trucks

ID	Source	Type	Hwy	Type	Additional Information
					would take highway 32. They did repave a portion of that route this summer, so is getting better. Would like to see highway is four lanes.
S112	Manufacturers Survey	Segment	160th Ave SE	Condition	HWY 12 to Willmar is terrible for rough pavement. 23 took them a while to repave.
S113	Manufacturers Survey	Segment	CR-46	Condition	HWY 55 between Hwy 59 and Wendell, MN. Potholes and rough condition. Ditches are deep and little or no shoulders. This road is in tough shape.
S115	Manufacturers Survey	Segment	Larson Ave	Safety	It would be helpful to add a second lane on each side of 59 between Mahnomen and Detroit Lakes along Hwy 59 since the speed variations between drivers along the Hwy can cause accidents on the current two way traffic lanes there now.
S116	Manufacturers Survey	Segment	CSAH 80	Safety	Narrow and hilly roads by Barrett can be tough in the winter. The worst road in the area is the unpaved portion of Coney St. in Perham.
S117	Manufacturers Survey	Segment	CSAH 21	Condition	Poor conditions damaging delicate equipment. The area between Erdahl and Elbow Lake will shake the teeth out of you.
S118	Manufacturers Survey	Segment	Fadden Rd	Safety	Rumble strips are great too except they throw you on 71 (I think they're referring to County Rd 71 near Alex)
S120	Manufacturers Survey	Segment	CR-81	Safety	Signage: lack of signage about (slow) trucks entering road for vehicles coming from the west. Turn lane: there is no turning lane for westbound traffic in front of business. Rumble strips: they feel it is hard for motorists to see the rumble strips.
S124	Manufacturers Survey	Segment	USTH 10	Mobility	Truck route in Perham is confusing and problematic, better signage along the truck route would help.
D1	MnDOT CMV Crashes	Intersection/Bridge	USTH 10; MNTH 9	Safety	More than 2 truck crashes at this location between 2018-2019
D4	MnDOT CMV Crashes	Intersection/Bridge	160th Ave N; 1st St SW	Safety	More than 2 truck crashes at this location between 2018-2019

ID	Source	Type	Hwy	Type	Additional Information
D7	MnDOT CMV Crashes	Intersection/Bridge	34th St S; S 12th Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D9	MnDOT CMV Crashes	Intersection/Bridge	USTH 75, I94W	Safety	More than 2 truck crashes at this location between 2018-2019
D13	MnDOT CMV Crashes	Intersection/Bridge	US 59TH; MNTH 34	Safety	More than 2 truck crashes at this location between 2018-2019
D14	MnDOT CMV Crashes	Intersection/Bridge	US 59TH; USTH 10	Safety	More than 2 truck crashes at this location between 2018-2019
D15	MnDOT CMV Crashes	Intersection/Bridge	USTH 34; 215th Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D19	MnDOT CMV Crashes	Intersection/Bridge	USTH 75; Minnesota Ave	Safety	More than 2 truck crashes at this location between 2018-2019
D21	MnDOT CMV Crashes	Intersection/Bridge	USTH 12; MNTH 7	Safety	More than 2 truck crashes at this location between 2018-2019
D27	MnDOT CMV Crashes	Intersection/Bridge	I94 W; Hansel Lake Rest Area	Safety	More than 2 truck crashes at this location between 2018-2019
D29	MnDOT CMV Crashes	Intersection/Bridge	USTH 10; Kris St	Safety	More than 2 truck crashes at this location between 2018-2019
D82	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	230th St S	Safety	Active rail crossing with risk rating greater than 7 (8)
D83	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	Washington Ave	Safety	Active rail crossing with risk rating greater than 7 (8)
D84	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MNTH 29	Safety	Active rail crossing with risk rating greater than 7 (8)
D85	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 63	Safety	Passive rail crossing with risk rating greater than 7 (8)
D86	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	TWN 192	Safety	Passive rail crossing with risk rating greater than 7 (8)
D87	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	CSAH157	Safety	Passive rail crossing with risk rating greater than 7 (8)
D88	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	M-161	Safety	Passive rail crossing with risk rating greater than 7 (8)

ID	Source	Type	Hwy	Type	Additional Information
D90	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	M-284	Safety	Passive rail crossing with risk rating greater than 7 (8)
D91	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 21	Safety	Passive rail crossing with risk rating greater than 7 (8)
D92	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 51	Safety	Passive rail crossing with risk rating greater than 7 (8)
D93	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 21	Safety	Passive rail crossing with risk rating greater than 7 (8)
D94	MnDOT Railroad Crossing Risk Ratings	Intersection/Bridge	MUN 17	Safety	Passive rail crossing with risk rating greater than 7 (8)
D60	MnDOT Bridges	Intersection/Bridge	'I 94'	Mobility	Bridge with vertical clearance under 14' 6"
D61	MnDOT Bridges	Intersection/Bridge	'CSAH 82'	Mobility	Bridge with vertical clearance under 14' 6"
D62	MnDOT Bridges	Intersection/Bridge	'MN 28'	Mobility	Bridge with vertical clearance under 14' 6"
D64	MnDOT Bridges	Intersection/Bridge	'US 12'	Mobility	Bridge with vertical clearance under 14' 6"
D67	MnDOT Bridges	Intersection/Bridge	'I 94'	Mobility	Bridge with vertical clearance under 14' 6"
D69	MnDOT Bridges	Intersection/Bridge	'I 94'	Mobility	Bridge with vertical clearance under 14' 6"
D71	MnDOT Bridges	Intersection/Bridge	'TWP 312'	Condition	Bridge with condition under 50%
D72	MnDOT Bridges	Intersection/Bridge	'MSAS 116(Mill St)'	Condition	Bridge with condition under 50%
D73	MnDOT Bridges	Intersection/Bridge	'TWP 76'	Condition	Bridge with condition under 50%
D74	MnDOT Bridges	Intersection/Bridge	'TWP 104'	Condition	Bridge with condition under 50%
D75	MnDOT Bridges	Intersection/Bridge	'TWP 95'	Condition	Bridge with condition under 50%
D80	MnDOT Bridges	Intersection/Bridge	'CSAH 15'	Condition	Bridge with condition under 50%
D81	MnDOT Bridges	Intersection/Bridge	'TWP 98'	Condition	Bridge with condition under 50%