



District 2 Freight Plan

WORKING PAPER #1: EXISTING DOCUMENT SYNTHESIS

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Introduction

The Minnesota Department of Transportation (MnDOT) is currently in the process of updating freight plans for multiple regional districts. This document represents Working Paper #1, Document Synthesis, as shown in Figure 1.

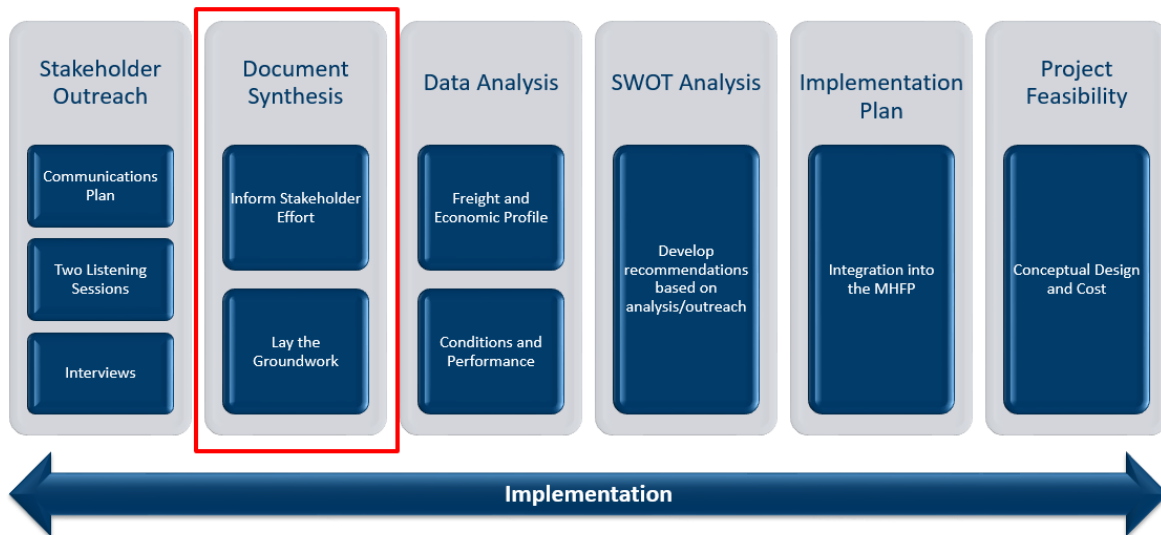


Figure 1: MnDOT District 2 Freight Plan Development Process

MnDOT Freight Planning

In January 2018, MnDOT completed the Minnesota Statewide Freight System and Investment Plan (SFSP). Among the plan's key recommendations was for MnDOT to work with each region of the state to create more detailed regional plans that would identify improvements to connect with the Minnesota Highway Freight Program.

The MnDOT District 2 Freight Plan outlines how the District, and its public and private sector freight stakeholders could improve freight mobility in Northwest Minnesota. Specifically, the plan will prioritize freight-related projects and develop conceptual design/cost estimates for high priority projects. The intent of the District 2 Freight Plan is to leverage, validate and expand upon existing studies and plans with relevant and current data analysis. This plan will:

- Provide an up-to-date assessment of freight needs and issues specific to District 2;
- Identify a list of strategies to improve freight mobility in the District; and
- Roll up long-term planning and programming into the next Statewide Freight System Plan.

The District 2 Freight Plan also needs to integrate with state wide freight planning and the flow chart below depicts the steps to identify needs and ultimately recommendations to advance to become part of the Minnesota Highway Freight Program.



Figure 2: MnDOT Freight Planning Process

MnDOT District 2

MnDOT is divided operationally into eight regional districts. Each district plans, designs, constructs, and maintains the state and federal highways within that respective district. Additionally, the districts manage the aid and assistance provided to local governments that qualify for state and federal transportation funding for roadways, bridges, trails, and transit systems.

District 2 is located in Northern and Northwest Minnesota and consists of following the counties of Kittson, Roseau, Lake of the Woods, Marshall, Beltrami, Polk, Pennington, Red Lake, Clearwater, Norman, Hubbard, parts of Cass, Itasca, Mahnomon (maintenance only) and Koochiching.

Outside of being a mostly rural district, it has several unique attributes, including:

- No interstate highways
- 185 roadway miles in tribal areas
- 35 percent of the District's highway have substandard shoulders
- 5 US/Canada border crossings
- Non-National Highway System (NHS) routes make up 62 percent of the District's responsibility

In alignment with the Minnesota Highway Investment Plan priorities and the Minnesota GO Vision, the District's top highway priorities are to preserve the existing road and bridge systems and to make cost-effective safety improvements. The District's construction program emphasizes pavement and bridge repair and replacement, in addition to low-cost safety improvements.

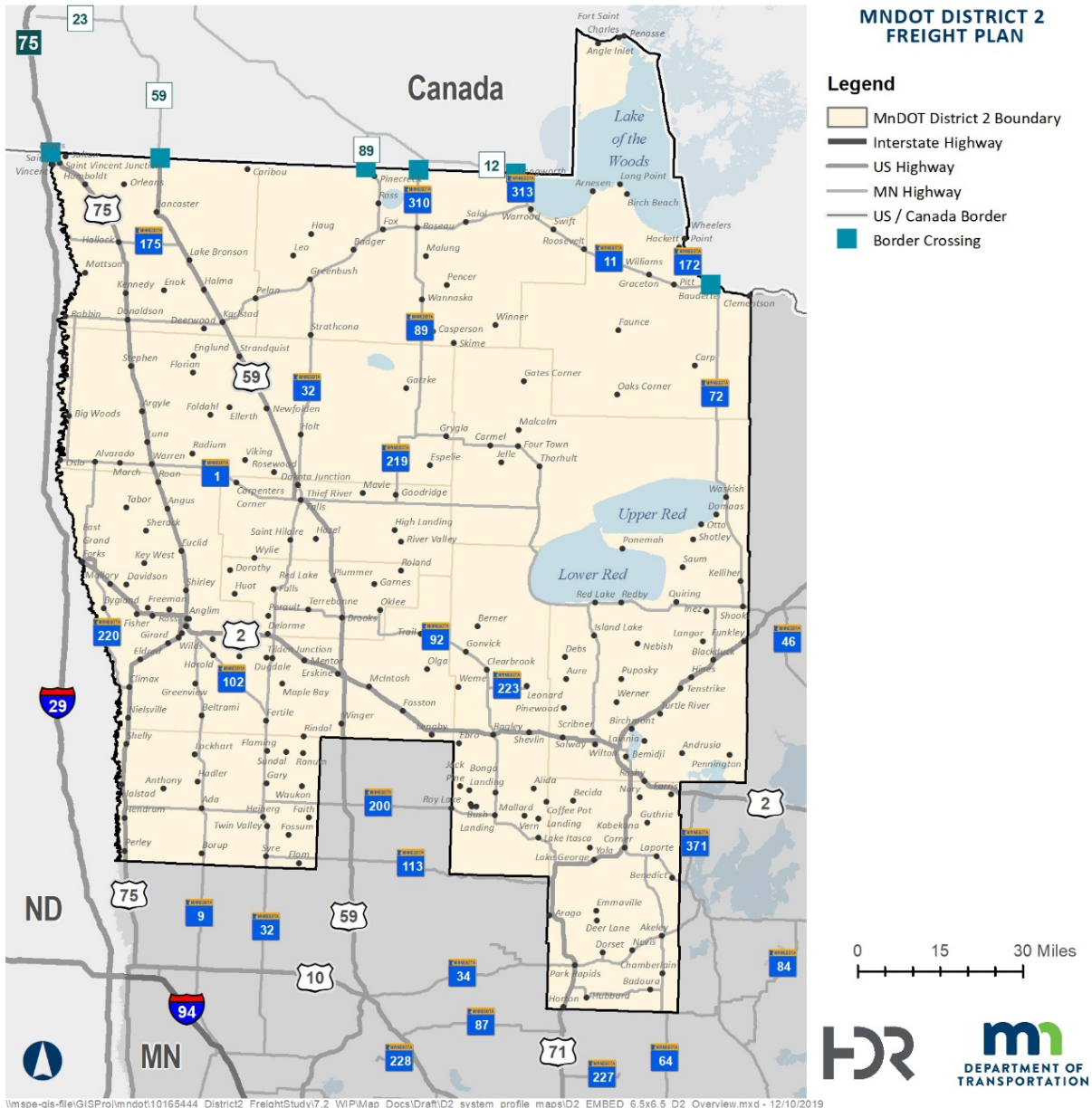


Figure 3: MndOT District 2

Building Upon Past Work

A key component of this District Freight Plan is to capture existing relevant work undertaken by MnDOT and their partners. By doing so, the plan can build upon those past efforts and analyze already identified issues at greater depth.

The review of previous plans undertaken for this District Freight Plan identified several relevant past efforts, with the five most relevant documents summarized below. This chapter explores and synthesizes key takeaways from these documents. A complete review of all these documents is available in Appendix A.

Table 1: Relevant Documents Reviewed

Geographical Focus	Document Titles
National/Statewide	Statewide Freight System & Investment Plan
National/Statewide	State Rail Plan
National/Statewide	Statewide Truck Parking Study
National/Statewide	Minnesota TS&W Project
National/Statewide	Minnesota State Highway Investment Plan
National/Statewide	Freight Rail Economic Development Study
National/Statewide	Rail Grade Crossing Safety Project Selection
National/Statewide	FHWA Cross-Border Scenario Planning Report
Regional	Develop Minnesota 2016
Regional	Greater Minnesota Mobility Study Final Report & Scoring Sheets
Regional	Great Northern Corridor (x6)
Regional	Western Minnesota Regional Freight Study
Regional	Northern Minnesota / Northwestern Wisconsin Regional Freight Plan
District	D2 - Manufacturers’ Perspectives on Minnesota’s Transportation System
District	D2 Capital Highway Investment Plan
District	Grand Forks - East Grand Forks MPO 2045 LRTP & 2019 TIP
District	Headwaters Region 2016 Comprehensive Economic Development Strategy
District	Headwaters Region 2016 Comprehensive Economic Development Strategy
District	Northwest MN 2016 Comprehensive Economic Development Strategy
District	Local Community Improvement Plans

Overall, there is a general awareness of the importance of freight and goods movement in Minnesota and an awareness of the importance of freight activity in supporting the state’s economy. Similarly, there is also an awareness that the broader transportation infrastructure system – most notably highways, but to a lesser degree rail, ports and air, are also crucial to goods movement.

Many of the documents reviewed discuss transportation and to some degree freight, but largely at a very high programming and policy level, often in terms of economic development or at the statewide needs determination level. However, there are a few documents at the district or corridor level specifically related to freight movement topics such as freight rail, rail at grade crashes and truck weights limits.

While the overarching takeaways demonstrate the need for the District 2 Freight Plan, the following sections detail key components from other plans that were used to inform the development of the District 2 Freight Plan.

Minnesota Statewide Freight System Plan

The 2018, Minnesota Statewide Freight System and Investment Plan (SFSP) describes the state’s multimodal transportation system and its role in the state’s economy, current and emerging industry trends, the performance of the freight transportation system, and current and future issues and needs.

The SFSP defines MnDOT’s vision for Minnesota’s freight future. To achieve this vision, MnDOT developed five freight planning goals to reflect those aspects of the multimodal freight system that are most important to the public and private sector freight stakeholders in the state (Figure 4).



Figure 4: State Freight System Plan Goals (2018)

Minnesota’s Freight Action Agenda

The SFSP also includes Minnesota’s Freight Action Agenda for MnDOT and its partners to advance a number of strategies that will improve the efficiency, safety and reliability of the freight system. The Action agenda identified 30 short and medium term items that need to be undertaken to advance freight performance statewide (Table 2). All 30 strategies will play a role in developing the key recommendations of the District 2 Freight Plan.

Table 2: Minnesota Freight Action Agenda

ID	Strategy Concept	Description
1	Education	Educate the public on the critical role freight plays in the economy and everyday life of Minnesotans.
2	Partnerships	Engage and partner with Minnesota's public agencies and with producers, shippers/receivers, carriers and other private-sector freight stakeholders to address Minnesota’s freight issues together. Engage and partner with neighboring states to address regional freight issues together.
3	Ongoing Freight Forum	Convene an ongoing dialog between public- and private-sector freight stakeholders to keep freight topics front and center.
4	Advocacy	Public and private freight stakeholders advocate together for advancing critical freight partnerships, strategies, investments, and continued funding for freight investments. The FAST Act established the first dedicated source of funding for freight infrastructure at the national level.
5	Traveler Information	Provide freight-specific traveler information, such as truck parking availability, expected travel time and roadway conditions.
6	Workforce Development	Programs in cooperation with community colleges and private sector to ensure workforce is available for industry needs (e.g., truck drivers).

ID	Strategy Concept	Description
7	Corridor Preservation	Actively manage preserved rail corridors held in the State Rail Bank and evaluate for possible future transportation uses.
8	Truck Routes	Coordination of truck routes/planning in industrial and urban areas with restrictions and enforcement in adjacent residential areas.
9	Complete Streets	Treatments that consider truck movements as part of total vehicle traffic, which can include time-of-day delivery windows to reduce conflicts with other street users, design guidelines for curb pullouts that can be used at different times for bus pullouts, truck parking, and others.
10	Land Use	Planning and Policies Land use planning and policies to ensure freight development areas are designated and preserved, and that development occurs adjacent to existing infrastructure.
11	Freight as a Good Neighbor	Programs and projects that maintain Minnesota's high quality of life by balancing the local negative impacts of freight transportation with the National benefits provided.
12	Advanced Technology	Monitor development of advanced technologies and their applications for freight. Apply and fund as appropriate.
13	Integrate Freight into All Planning Projects	Consider freight in overall project planning across modes (highway, rail, water and air). Regularly engage the private sector and consider their perspectives during freight system planning.
14	Investments on the Principal Freight Network	Apply multimodal solutions that ensure a high return on investment, given constrained resources, and that complement the unique social, natural and economic features of Minnesota.
15	First-/Last-Mile Connections	Freight connections including highway access and rail spurs to local businesses.
16	Targeted Freight System Investments	Make targeted infrastructure investments (corridor and spot improvements) to support and enhance the multimodal freight system.
17	Intermodal and Multimodal Facilities	Intermodal and multimodal facility development to allow goods to shift between modes such as truck, rail and water. Includes cargo handling equipment provision.
18	Urban Goods Movement Programs	Projects and programs in urban centers focused on mitigating congestion caused by rush-hour traffic, incidents, work zones or other factors where high volumes of freight and passenger traffic must coexist.
19	Truck Size and Weight	Improved routing for over dimensional and overweight vehicles. Consistency of regulations between Minnesota and neighboring states. 20 Modal Options/ System Redundancy Modal alternatives (e.g., truck, rail and water) in spot locations and modal redundancy within key corridors so companies have access to a variety of cost-effective and competitive freight modes to ship their goods. Address captive shipper issue.
21	Evaluate and Restructure Existing Freight Funding Programs	Restructure MnDOT's programs to more adequately address freight needs.
22	Freight Data	Improved data collection (e.g., truck counts) and use of innovative sources to help the public sector do better freight planning.
23	Freight System Performance Measures	Utilize freight system performance measures to monitor and report system condition and identify investment needs for key transportation infrastructure.

ID	Strategy Concept	Description
24	Freight System Investment Plan	Develop a detailed FAST Act compliant prioritized investment plan that aligns multimodal freight system projects and available sources of funding so they can be implemented.
25	Prioritize Maintenance on the Principal Freight Network	Prioritize bridge/pavement maintenance on these shared routes to ensure ability to handle freight rail and truck, as well as passenger, traffic.
26	Design for Freight Safety	Design and implement geometric features that improve vehicle safety such as the use of rumble strips/strips, wider shoulders, and other features where appropriate.
27	Truck Parking	Conduct assessment of truck parking and plan for expansion, as warranted.
28	Incident Management and Emergency Response Plans	Develop emergency plans to ensure critical supply chain connectivity and proactively route hazardous materials.
29	Rail Crossings	Assess grade-crossing safety and implement policies, programs and investments related to safety of at-grade crossings and seek funding for implementation.
30	Rail System Vulnerabilities	Develop and implement a comprehensive plan that addresses key safety vulnerabilities across Minnesota’s rail network.

District 2 Capital Highway Investment Plan

The 2018 District 2 Capital Highway Investment Plan (CHIP) details how the District plans to invest over \$500 million in highway infrastructure improvements over the next decade. The CHIP is updated annually and feeds into the larger Minnesota State Highway Investment Plan (MnSHIP). Investment decisions are based on the following overall strategies. Figure 5 highlights four overall objectives and specific areas of focus while Figure 6 represents how future programming plans align with those strategies and the relative investments dedicated to them.

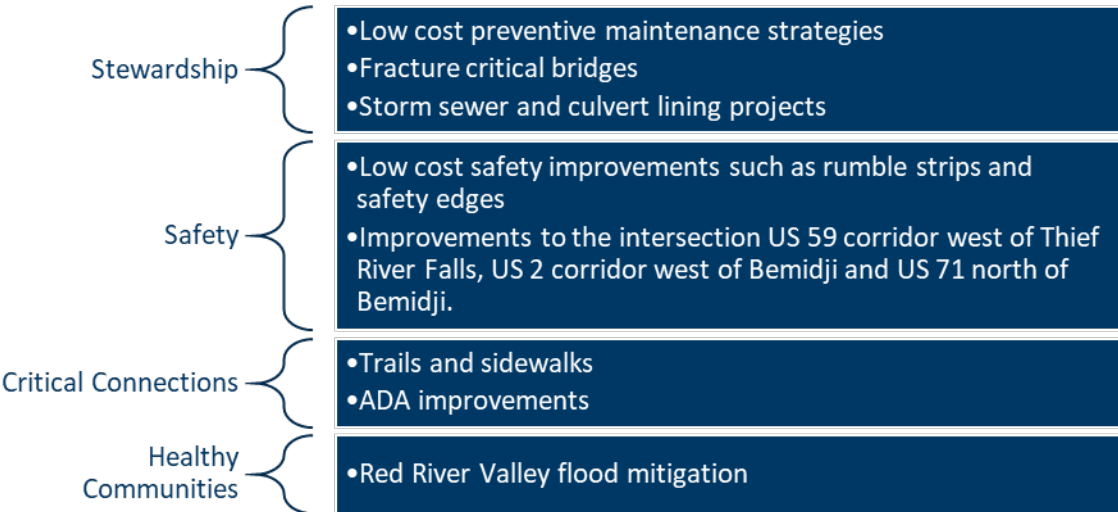
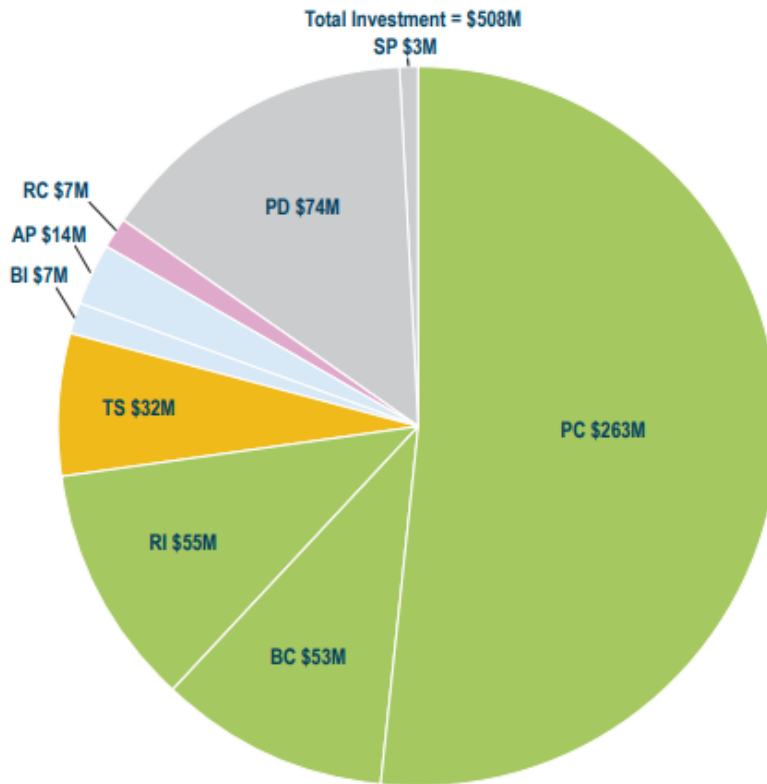


Figure 5 District 2 CHIP Investment Strategies and Highlighted Initiatives



Note: No investment for Jurisdictional Transfer, Facilities, Freight or Greater MN Mobility

System Stewardship	Critical Connections	
PC	TC	Traveler Safety
BC	GM	Regional + Community Improvement Priorities
RI	FR	Project Delivery
JT	BI	Small Programs
FA	AP	

Figure 2-3: District 2 10-Year CHIP, Total Investment Per Year (millions of dollars)

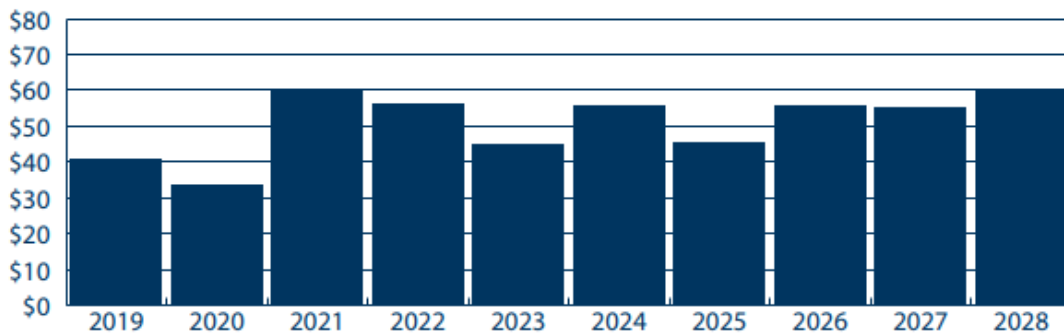


Figure 6: District 2 CHIP Investment Plan Summary

Greater Minnesota Mobility Study

The Greater Minnesota Mobility Study evaluated mobility investment needs on the National Highway System (NHS) throughout Greater Minnesota. Specifically, the study identified locations with the greatest mobility or reliability issues and identified low-cost spot mobility improvements to address the needs identified. Due to the limited funding available and the many and varying needs across the state, the study focused on low-cost, high-benefit improvements. District 2 had two locations identified as high priority mobility challenges: US 2 from the North Dakota Border to 2nd St. NW and MSAS 120 from MSAS 102 (10th St. NW) to US 2.

Grand Forks-East Grand Forks Metropolitan Transportation Plan

Grand Forks-East Grand Forks Metropolitan Planning Organization is the federally recognized regional transportation agency covering the cities of Grand Forks, ND and East Grand Forks, MN as well as surrounding urbanized areas and those areas anticipated to be urbanized in the next 20-years in Grand Forks County, ND and Polk County, MN.

The MPO's Metropolitan Transportation Plan's existing conditions chapter shares extensive information on freight and truck routes, presented truck volumes, discussed safety issues and discussed rail lines and identified major freight businesses. Furthermore, the agency's Transportation Improvement Program (TIP) integrates freight criteria in its project selection process. These criteria include:

- Increase in Accessibility and Mobility Options Available to People and Freight
- Enhance the Integration and Connectivity of the Transportation System Across and Between Modes for People and Freight

Through the use of these freight-specific criteria, the MPO recently funded the replacement of the Washington Street underpass of the mainline BNSF rail line. This project will allow the roadway to be widened to better operate for all transportation users.

The key planning themes and project needs will be integrated into the final District 2 Freight Plan.

2016 District 2 Manufacturers' Perspectives Study

MnDOT is currently conducting a series of Manufacturers' Perspective Studies focused on interviewing freight dependent businesses and building relationships through coordinated outreach. The businesses were identified using a traded-industry cluster analysis, as well as input from local economic development organizations, with a focus on identifying manufacturers and related businesses. The goal was to get first hand feedback and understand their specific freight transportation requirements. The District 2 Manufacturers' Study collected and analyzed input to:

- Better understand their unique and collective business perspectives and priorities.
- Build relationships, to better align the transportation system with shippers' needs.
- Support continuous improvement at MnDOT with on-going input from this customer segment.

The 2016 District 2 Manufacturers' Study interviewed 68 businesses. Overall their feedback focused on safety, expediency and cost-effectiveness, dependability, and creating accessible traffic information. The specific needs from this study will be evaluated and included in further long term capital planning analysis for inclusion in a ranked list of freight specific needs. Additionally, the study identified several factors for the development of the District 2 Freight Plan including:

- Safety: Intersections, lanes, shoulders, snow removal (timing), snow control, truck parking
- Expediency and Cost-Effectiveness: Truck size and weight, deadhead miles, signage, multi-lane highways (no interstates), speed
- Dependability: Carrier availability, pavement quality
- Accessible Information: 511 (24/7 – especially in the winter)

Bridge Needs

The study identified the need for new river crossings. However, companies expressed concerns about the timing of construction of new or improved bridges. Specifically, they articulated that recent construction related closures detoured employees and cost them several hours of extra travel time as compared to their normal route(s) to work – largely due to the rural nature of the District.

Intersection Needs

Businesses identified the importance of signalized intersection – especially during the beet harvest. However, freight stakeholders also identified signals that regularly cause delay, including TH 200 and 371. Other identified problem intersections included: Moberg St./Highway 2, Highway 71/Summit Ave. (Blackduck), Highway 89/Center St. (Roseau), Highway 9/200 (Ada), Highway 89/MC Highway 54 (Grygla).

Travel Lane Needs

District 2 freight stakeholders identified several low cost, high value improvements that would help improve overall flow along the District’s road network. (See Table 3).

Table 3: Manufacturers’ Study Lane Related Improvements

Category	Location
Acceleration	Highway 2, Moberg Street (Bemidji)
Acceleration	Highway 11 and 89 w/18th Ave (Roseau)
Passing	Highway 11 – between Greenbush and Warroad
Passing	Lone Pine Ridge (east of Warroad)
Passing	Highway 59 – between Erskine to Detroit Lakes
Passing	Highway 371
Bypass	Highway 71 and Hubbard County Highway 15 (Park Rapids)
Bypass	Highway 32 (Thief River Falls)
Turning	Highway 11 Greenbush to Roseau, especially Lone Pine Ridge on Highway 11 west of Warroad
Turning	From Highway 1 turning onto 220th Avenue Northeast east of Thief River Falls
Turning	Highway 371 In addition, businesses requested modifications to existing turn lanes to improve safety:
Turning	Lengthen turn lane on Highway 11/89 eastbound coming toward 18th Avenue Northwest in Roseau
Turning	Widen right turn lane from Highway 2 onto Park Avenue Northwest in Bagley

Safety and Shoulder Needs

Stakeholders identified various location-specific safety needs (Table 4). Among the issues, shoulder widths and steep ditch slopes were a common theme.

Table 4: Manufacturers' Study Safety Needs

Category	Location
Safety	Highway 6 and 89 – steep ditches
Safety	Highway 6 – difficult to navigate between Big Falls and Deer River – hilly, curvy terrain, blind spots and narrow shoulders
Safety	Highway 89 – local control of judicial ditches which result in narrow roadways and step ditches
Shoulders	Highway 89 – (from Fourtown through the Red Lake Reservation)
Shoulders	Highway 87 (90-degree turns present additional issues)
Shoulders	Highway 59 (Lancaster to Canadian border; Detroit Lakes to Erskine)
Shoulders	Highway 200 east of Highway 92 (narrow shoulders add to complicated winter driving conditions)
Shoulders	Highway 172 at Wheelers Point (blind curve, guardrail, and narrow shoulders make the area unsafe for pedestrians)
Shoulders	Highway 6 (narrow shoulders provide little room for error in navigating hills and curves)

Signage

Truck drivers reported that they often have GPS navigation issues in the District due to the lack of interconnectivity coverage by cell phone towers and/or GPS systems. They believed that improved and increased signage could help drivers confirm navigation decisions. In particular, truck traffic signs. Additionally, stakeholders suggested deploying electronic message boards to communicate road conditions, especially during inclement weather.

Multilane Highways

Stakeholders pointed out that there are no interstates that transverse District 2. Additionally, that there is no direct, multilane route to Fargo or the Twin Cities from District 2. Portions of major trunk highways, such as Highway 71 and Highway 2, open up to four lanes in some areas but do not maintain a four-lane connection to an interstate. Stakeholders requested a four-lane option to the Twin Cities and Duluth, and the following corridors:

- Highway 11 from Badger to Roseau.
- Highway 71 in Bemidji.
- Connect Roseau to Highway 71 to create a four-lane route to Jackson, Minnesota, near the Iowa border.

Note that given the geographic reach of this project, it will be completed in coordination with Districts 1, 3, and 4.

Appendix A: Complete Document Synthesis

Overall, as gathered from the documents, there seems to be a general awareness of the importance of freight and goods movement in Minnesota and an awareness of the importance of that activity to the state's economy and wellbeing. Similarly, there is also an awareness that the broader transportation infrastructure system – most notably highways, but to some degree rail, ports and air, are also crucial to that movement and the commensurate wellbeing. Many of the documents reviewed discuss transportation and to some degree freight, but largely on a very high programming and policy level, often in terms of economic development or at statewide needs determination level.

While there are a few documents specifically related to freight rail, rail at grade crashes, truck weights limits, and some other topics, many take on an overall larger statewide perspective. While this is valuable for an overall understanding of how transportation and freight are viewed at the highest levels, and for the setting of statewide goals and acting as a foundational documents for understanding the “big” transportation policy picture, there is an overall lack of details regarding specific freight-related needs, and especially a lack of identified freight specific projects, even across the state. There is also little guidance and documentation of goals, objectives, funding levels, or projects that relate to freight and specifically to District 2.

Beltrami County: Capital Improvement Plan

This document comes from the 2018 Budget Book developed by Beltrami County and details expenditures for 2019 to 2023 for County State Aid Highways (CSAH) and County Roads. According to the document, the “Transportation Improvement Plan (TIP) provides a multi-year guide and strategy to maintain and improve our road system.” According to the document, the TIP is expected to be updated on an annual basis as part of the County's budgeting process. The TIP presents a 5 year construction summary schedule with details of each proposed project. In all, the County expects to spend more than \$54M from 2019 to 2023.

Many of the projects include activities primarily related to pavement, such as resurfacing, mill and overlay, grading and aggregate base, grading and bituminous surfacing, seal coating and micro surfacing. There are however other types of projects such as bridge, replacement, roundabouts and pavement markings.

Generically, this identifies roadway improvement projects to roads that handle freight traffic making travel surface, bridge and various roadway operational roadway improvements to improve the flow of freight, especially trucks in the County. It does not identify specific freight improvements per se, but it is implied that the routes targeted for improvement will provide benefits for all vehicles, including trucks. As Beltrami County is part of MnDOT District 2, this provides a snapshot of what local agencies are planning on doing as far as projects are concerned which is useful as background information for the freight plan.

District 2: Capital Highway Investment Plan

The Capital Highway Investment Plan (CHIP) is ten year planning document, development by the MnDOT Office of Transportation System Management. It identifies roughly \$508 million in investments in state highway projects in District 2.

According to the document, the majority of projects will address pavement and bridge condition. However, MnDOT also will address other needs such as the condition of roadside infrastructure - signage, culverts, and lighting, as well as implement new safety improvements, address pedestrian infrastructure that does not

comply with the Americans with Disabilities Act, and make limited investments in bicycle infrastructure. District 2 investment peaks in 2021 and again in 2028 at roughly \$60 million. Investment fluctuates annually between roughly \$34 and \$60 million. It does not identify specific freight projects per se in any of the years, but it is implied that the routes and projects targeted for improvement will provide some material benefits for all vehicles, including trucks. This document provides good background information for the overall types of projects the District is investing in which can be useful as background and foundational information for the District 2 Freight Plan.

District 2: Manufacturers' Perspectives Study

MnDOT self-identified that the Minnesota-based manufacturers that ship their products via Minnesota roads and other transportation modes to state, national, and international markets are among the most important customer segments in the state. Further, when appropriately aligned with the needs of these manufacturers, the transportation system can contribute significantly to state and regional economic vitality. This realization led MnDOT to seek feedback on Minnesota's transportation system from the businesses that create and sustain high-quality jobs and bring resources into the state. Since 2013, MnDOT has gathered feedback from these manufacturers on a region-by-region approach and completed a series of interviews.

This document focused on feedback obtained from manufacturers in MnDOT District 2 through a series of interviews focusing on a Regional Industry Cluster analysis that identified key industries and manufacturers in the District.

Of the 68 businesses, 54 were manufacturers, 13 were shippers and distributors, and 1 was connected to hospitality and tourism. As documented in the interviews, manufacturers described their transportation priorities, and generally wanted access to shipping that is safe, expedient, cost-effective, and dependable. They also identified a need to have access to timely, accurate information allowing them to more effectively use the transportation system and adapt as conditions changed, especially during the winter. About half of the interviews mentioned safety, including discussion of intersections, lanes and shoulders, snow and ice conditions, and rest areas, especially space for trucks to park at them. Other topics included:

- Expediency and Costs Effectiveness
- Dependability
- Accessible Information

Perhaps more importantly, manufacturers also identified specific locations within the District that needed improvement. Since this was a targeted outreach effort aimed at manufacturers, or businesses that rely on freight movements to stay competitive, the outreach effort, results and the actual questionnaire used to collect the qualitative and quantitative data are very relevant to this current effort. Although this was conducted in 2016, many of the same issue identified are likely to be the same or very similar in 2019/2020 for this new effort. Although where and how frequently the issues occur may have changed somewhat due to the implementation of new/recent projects. The questionnaire used for this effort could be adapted and used in new outreach activities and results compared longitudinally to those gathered in 2016 to see what is and is not important and how, and if the priorities and feedback has changed.

Develop Minnesota 2016 (DevelopMN)

The DevelopMN Plan was a collaborative effort of the members that make up the Minnesota Association of Development Organizations (MADO). It was developed in order to align strategic economic development efforts throughout Greater Minnesota, and leverage resources at all levels for a greater overall development impact. DevelopMN created a common framework for regional economic development, and identified strategies to address the special challenges and opportunities of Greater Minnesota. The plan focused on four areas, including:

- Human Capital
- Economic Competitiveness
- Community Resources
- Foundational Assets

Call to action items regarding Transportation fit into the Foundational Assets category and included a focus on state highways as the primary means for moving freight. According to the plan, the specific call to action was as follows

“Economic growth and trade depend on safe and reliable transportation networks. Virtually no production can take place unless raw materials, manufactured products, labor and fuel can be moved to and from different locations.”

The document further identified a \$16.3 Billion dollar gap in funding from 2018 to 2037 in order to provide a transportation system that adequately addresses congestion and meets the need of Minnesota businesses. In order to address that gap, the plan identified one SMART goal and 5 strategies that specifically relate to transportation, and loosely to freight:

Overall Goal

Increase the percentage of Greater Minnesota’s fair quality-rated roadways in the next 20 years. This includes arterials and collectors under both state and local jurisdictions. To support this goal, the document outlines the following specific strategies.

- Define a significant and coherent priority network of roads, ranking the most critical connections to maintain over the next 20 years.
- Offer assistance to local units of government with their long-range planning to address transportation sustainability and resiliency.
- Encourage state and local units of governments to use all available options that increase transportation funding.
- Standardize baseline ranking and project prioritization throughout the state.
- Prioritize transportation projects that connect regional economic hubs.

While the plan lacks a specific mention of freight, it is largely implied that the projects on the highway system will target this mode and the benefits derived from improvements will have a positive impact on freight and the freight system. Although this is a high-level foundational document, it offers some insight into how the need for economic competitiveness hinges on the ability of movement, especially on the roadway system at all levels.

2015 Minnesota State Rail Plan (DRAFT)

This document is the 2015 update to the Minnesota Comprehensive Statewide Freight and Passenger Rail Plan, first developed in 2010. The plan was updated to guide the future of both freight and passenger rail systems and rail services in the state. The development of the plan was jointly undertaken by the Minnesota Department of Transportation's Office of Freight and Commercial Vehicle Operations (OFCVO), and the Passenger Rail Office. The plan followed the six-chapter structure required by the Federal Railroad Administration (FRA) for state rail plans. The 2015 version built upon the technical analyses and findings of the initial 2010 plan, incorporated information on changes between 2010 and 2015, and reflected the most current state of the system and stakeholder comments. Although largely rail centric, the document is relevant to freight and does provide some insights into trucking / highway / intermodal issues, largely in the realm of intermodal rail to truck operations:

The plan noted, that in its present form, rail intermodal (the haulage of containers and trailers) services available in Minnesota are geographically and capacity limited. Only the Twin Cities area has existing terminals, and they exist to provide direct service connections to Chicago and the Pacific Northwest. It noted that previous efforts to provide service in other parts of the state were not successful, with a public terminal opening and closing in the western part of the state at Dilworth, and a private intermodal operation at Montevideo handling grain products, but only intermittently.

Conversations with stakeholders revealed a strong desire for additional terminal capacity in the Twin Cities area and access to intermodal service in other parts of the state. According to the document, service from the Twin Cities to regions other than Chicago and the Pacific Northwest are either unavailable or circuitous, or add significant costs when empty containers need to be positioned. Another key element is the desire for public ownership of intermodal terminals, which is contrary to the need of railroads to control their own terminals and operations as a private industry.

All of these factors has essentially made intermodal a relevant and economical choice for only a small subset of shippers, as detailed by the document. The plan also identified other "barriers" to the establishment of expanded intermodal services, but noted that despite the impediments, expansion is important and that collaborative effort(s) would be needed among stakeholders (public and private) to achieve that.

While this document is largely focused on rail, it does provide some insights into how highways and trucks can coordinate with rail and provides some insight into what policies, programs and investments are need to better coordinate interaction between the modes. It specifically mentions comments received related to intermodal investments, such as a need to:

- Make highway improvements to access roads for trucks entering and leaving the two Twin Cities intermodal rail yards.
- Intermodal rail service needed to give Minnesota and the Twin Cities area access to LA/Long Beach container shipping ports. This includes, Union Pacific (UP) container rail service on the Spine Line through the Kansas City area to southern California.

FHWA Cross-Board Scenario Planning Project

The "Scenario Planning of Future Freight and Passenger Traffic Flows Across the US/Mexico and US/Canada Borders" report was a cooperative effort between the Federal Highway Administration, and Transport

Canada along with the Mexican Secretariat of Transportation and Communications. Collectively, the agencies developed U.S.-Canada and U.S.-Mexico projections of future freight and passenger volumes over the next 30 years (2015 – 2045) from a North American framework and a regional border perspective. The study developed national macro-level data projections between the U.S. and Canada and the U.S. and Mexico borders and regional micro-level data projections along and within the border regions of the U.S. to provide stakeholders in the United States, Canada, and Mexico with a common set of scenario-based, binational traffic forecasts for use in planning. These new scenarios built upon current research on long-term scenario planning for freight and passenger flows and provided likely ranges of the same.

The study looked at 6 regions across the US – Mexican border and 6 across the US – Canadian border. Region 9, which covers Minnesota, with the US – Canadian border being most relevant. It evaluated four (4) scenarios. The scenarios serve to illustrate and describe the key driving forces and critical uncertainties that form the basis of the underlying scenarios. Originally designed for freight transportation planning, they can be adapted for a wide variety of different planning purposes and provide a range of passenger and freight flows and the implications thereof. Conclusions of the study, relevant to freight and to Minnesota include:

Freight crossings for all scenarios and all regions are expected to increase over time – what differs is the rate at which they increase. Scenarios such as Naftastique show rapid front loaded growth; while the Global Marketplace scenario results in nearly the same amount of increase in freight crossings by 2045, but takes much more time to reach those numbers. In a Naftastique future, there is a greater sense of urgency in addressing the needs of increased demand, whereas there is more time available to respond to the trends in Global Marketplace. The One World order scenario shows the least amount of growth while the Millions of Markets scenario is very similar to FHWA’s FAF4 baseline forecast.

The following table represents that range of overall goods movement across the US – Canadian border by scenario. The forecasts are further broken down by region, but lack specificity on a micro level that would contain geo-location (where) or mode (how - rail, truck, pipeline, etc.) specific data, which would provide an entirely different level of information more relevant to localized planning. At a gross level, these scenarios are useful for determining ranges of flows at a macro level.

Table 5: Table of Future Freight Goods Movement Scenarios to 2040

Scenario	Mode	Thousands of Tons						
		2015	2020	2025	2030	2035	2040	2045
Naftastique	Air	230	389	654	751	871	1,058	1,196
	Multiple	9,692	14,880	22,736	24,434	26,605	29,376	32,744
	Unknown	438	696	1,089	1,245	1,456	1,699	1,945
	Pipeline	224,520	309,850	385,707	389,572	396,844	383,094	386,039
	Rail	104,191	146,504	201,822	213,225	232,246	245,255	266,497
	Truck	128,718	193,904	290,346	312,894	342,759	376,246	419,011
	Water	110,432	146,850	188,704	181,340	176,929	172,341	173,196
Global Marketplace	Air	230	297	394	495	631	851	1,052
	Multiple	9,679	11,652	14,371	16,997	20,330	25,213	30,772
	Unknown	438	559	721	900	1,136	1,486	1,863
	Pipeline	225,021	262,571	284,067	312,039	335,299	366,290	402,735
	Rail	104,299	120,972	141,077	162,936	189,910	226,561	269,210
	Truck	128,644	154,309	188,632	222,832	266,066	327,928	399,625
	Water	110,405	118,232	125,807	132,761	141,098	155,219	171,391
One World Order	Air	231	286	358	429	527	689	821
	Multiple	9,706	11,183	12,998	14,636	16,806	20,131	23,712
	Unknown	438	535	650	771	934	1,179	1,426
	Pipeline	224,017	248,634	253,304	263,581	270,368	284,087	301,128
	Rail	104,083	115,048	126,412	138,557	154,475	177,511	203,422
	Truck	128,793	147,692	170,196	191,317	219,189	260,907	306,893
	Water	110,458	112,864	113,040	113,340	115,413	122,448	130,378
Millions of Markets	Air	230	293	373	464	576	755	903
	Multiple	9,692	11,520	13,694	15,963	18,483	22,203	26,206
	Unknown	438	555	692	848	1,032	1,304	1,580
	Pipeline	224,520	262,027	275,731	295,349	302,492	317,394	336,497
	Rail	104,191	120,347	136,134	153,877	171,824	197,430	226,428
	Truck	128,718	152,851	180,370	209,576	241,643	288,212	339,589
	Water	110,432	117,228	120,463	124,822	127,770	135,770	144,782

Final Greater Minnesota Mobility Study Scoring Sheets

According to the document – “The Greater Minnesota Mobility Study evaluated mobility investment needs on the National Highway System (NHS) throughout Greater Minnesota. The 2017 Minnesota State Highway Investment Plan identified the NHS as the priority network for mobility investments in Greater Minnesota. There are about 4,500 centerline miles of NHS roadways in Greater Minnesota. These roads are critical to the nation’s economy, defense and mobility and are the centerpiece of the Federal Highway Administration’s and MnDOT’s commitment to provide a safe, modern, and efficient transportation system. The goal of the Greater Minnesota Mobility Study was to identify locations with the greatest mobility or reliability issues on the NHS and identify low-cost spot mobility improvements to address the needs identified. Due to the limited funding available and the needs across the state, the study focused on low-cost, high-benefit improvements.”

This is the scoping sheet from the overall larger study that is specific to District 2. It scored seven (7) roadway segments / projects across the District which was used in December 2018 to determine which roadways and segments / projects in District 2 should be advanced into further project development under the guise of the study criteria and methodology. The focus was on a weighted measure score which used the following data:

- Level of travel time reliability (LOTTR) – 20 percent
- Speed index score – 20 percent
- Mobility bonus – 20 percent
- Fatal and serious crash rate score – 15 percent
- Heavy commercial annual average daily traffic (HCAADT) – 6 percent
- Railroad crossings – 1 percent

The measure most related to freight is HCAADT, which is a determination of truck traffic volumes relative to total traffic. After the scoring of the projects, two (2) projects were candidates for advancement: (1) D2-5 which is on US 2 B from the ND Border to 2nd St. NW and (2) D2-6 which is on MSAS 120 from MSAS 102 (10 St NW) to US 2.

The projects identified provided a snapshot list of projects related to commercial vehicles / freight needs in District 2. These projects are obviously important to one or more stakeholders as they have been identified and ranked in this process. The list can be useful in putting together future freight related and perhaps priority projects in District 2.

Grand Forks – East Grand Forks Metropolitan Planning Organization: 2045 Street / Highway Plan

The document is part of the Grand Forks/East Grand Forks (GF/EGF) MPO's Metropolitan Transportation Plan (MTP) and identified existing and future needs to maintain a robust regional, multimodal transportation system in the near- and long-term. The plan was developed through collaboration among Grand Forks, East Grand Forks, Polk County, Grand Forks County, North Dakota Department of Transportation (NDDOT), Minnesota Department of Transportation (MnDOT), the Cities Area Transit (CAT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), citizens and business throughout the region, and the Grand Forks-East Grand Forks Metropolitan Planning Organization. With input from these stakeholders, the Metropolitan Transportation Plan outlined outcomes and standards to advance the locally identified issues, vision, goals, and performance targets.

Chapter 3, the Existing Conditions Chapter, has a section specifically dedicated to freight. This section identified freight and truck routes, presented truck volumes, discussed safety issues and discussed rail lines and identified major freight businesses. The development of the proposed projects was financially constrained as prescribed by current laws and planning practices. Appendix F, contains a listing of the proposed financially constrained projects that are related to the Minnesota and would be undertaken by the Minnesota Department of Transportation (MnDOT). Those projects are largely state of good repair (SGR) projects that are more maintenance related rather than capacity adding. The figure below shows projects – Projects of Significance – that are in Minnesota.

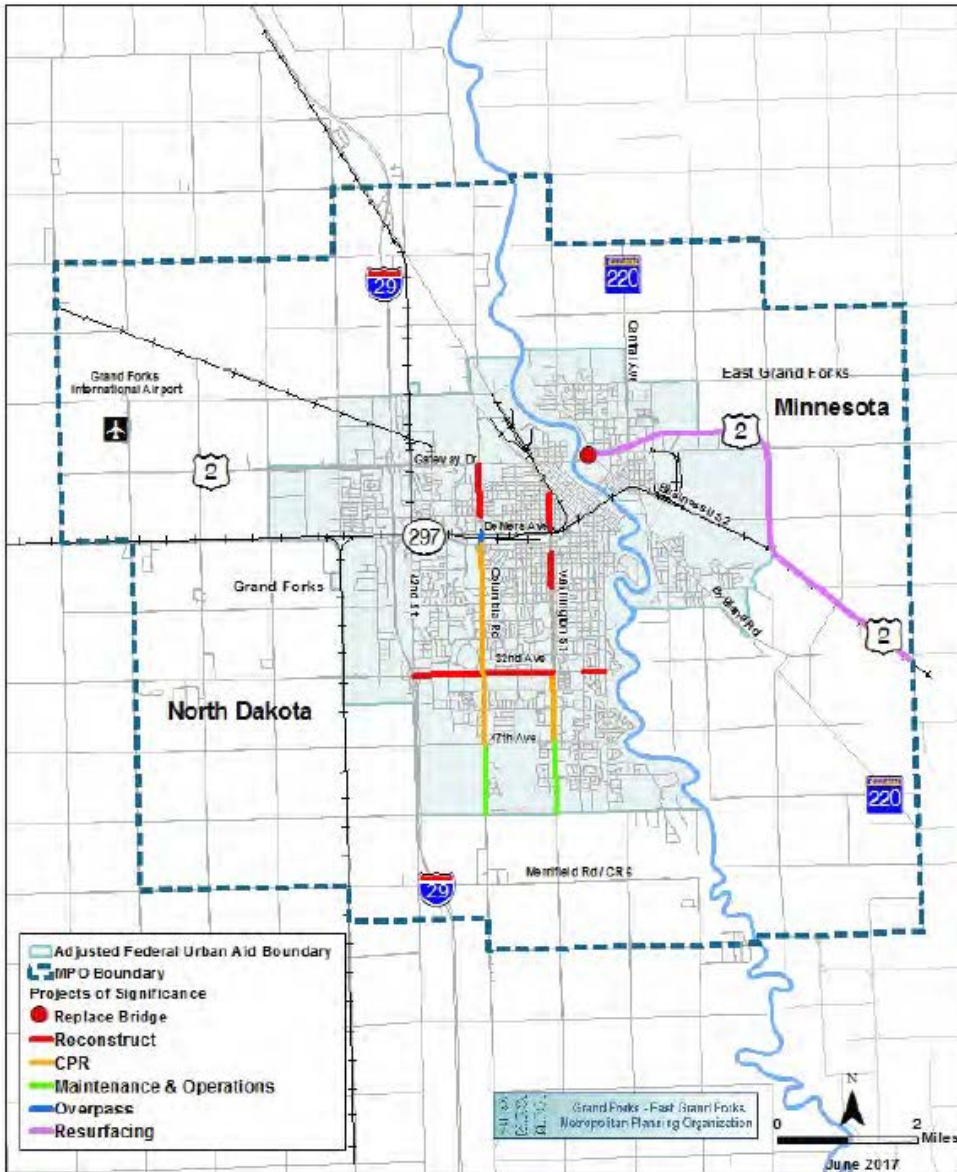


Figure 7: Map of Grand Forks Transportation Projects of Significance

More “illustrative” projects that were also identified but were not included in the revenue or financially constrained scenario were also identified. Those projects are in Appendix G, beginning on page 602.

This document is relevant for two reasons: (1) it provides some “snapshot” regional existing conditions with regard to freight, and (2) provides some listing or identification of projects that could be undertaken in Minnesota that are potentially related to freight and have been identified by stakeholders in this process.

Grand Forks – East Grand Forks Area Transportation Improvement Program

The Transportation Improvement Program (TIP) for the Grand Forks - East Grand Forks area listed the transportation system improvements to be implemented during the four year period from 2019 – 2022. TIP

projects tend to be more about maintenance, bridge painting, pavement rehabilitation, installing traffic signals, purchasing vehicles, providing operating capital for transit programs, and executing minor enhancements (ADA ramps, sidewalks, etc.), that are quicker to execute, and are typically smaller in dollar value and less about capacity adding, which tends to be more capital intensive and takes longer to come to fruition.

The TIP is submitted under the Fixing America's Surface Transportation (FAST) Act, which authorized the federal transportation programs through 2020. Federal requirements stipulate each State must develop a Statewide Transportation Program (STIP), and utilize a project selection process in cooperation with the MPOs. Likewise, local TIP's must be developed in cooperation with the States. The TIP is updated annually, and encompasses a 4-year time period. Projects programmed for 2019 are considered the Annual Element, and the outlying years 2020, 2021 and 2022, respectively are designated as Future Year projects.

Planning factors 4 and 6, directly relate to freight and have a project mentioned encompassing the same:

- Factor 4 - Increase in Accessibility and Mobility Options Available to People and Freight
- Factor 6 - Enhance the Integration and Connectivity of the Transportation System Across and Between Modes for People and Freight – (with the named project below).

This scoring framework supported the replacement of the Washington St underpass of the mainline BNSF rail line will allow the roadway to be widened to better operate for the all transportation users involved. Additionally, there are a three projects shown in the TIP that are under the jurisdiction of MnDOT. They are smaller scale rehabilitation jobs to highways and bridges, and include:

- US 2 in East Grand Forks, from 5th Avenue NW to 0.3 miles E of Polk CSAH 15 – resurfacing
- US 2 in East Grand Forks, BR 900 – Kennedy Bridge over the Red River – bridge rehab / redecking
- US 2 in East Grand Forks, from 0.5 miles west of the west junction of MN 220 to 0.3 mile east of Polk CSAH 15 – crack and overlay

Other than the three projects above, there are no others that pertain to MnDOT. Since the TIP is made up of short range projects, this document probably has little bearing on MnDOT in the long term and very little impacts for freight other than the trucks that might use and benefit from completed projects on US 2.

Legislative Report on Freight Rail Economic Development (FRED) Study

This is the summary document presented to the Minnesota Legislature regarding the freight policy study which was undertaken by MnDOT along with the Minnesota Department of Employment and Economic Development (DEED). It has an economic development bent, as is evident in the title. The overall study and this Report was legislatively mandated to comply with Minnesota Statute, Section 174.03. With the goals being laid out as follows:

The commissioner of transportation, in cooperation with the commissioner of the Department of Employment and Economic Development, shall conduct a freight rail economic development study. The study will assess the economic impact of freight railroads in the state and identify opportunities to expand business development and enhance economic competitiveness through improved utilization of freight rail options.

Findings from the study shall be incorporated as an amendment to the statewide freight and passenger rail plan.

As detailed by the report, key findings included:

- Freight rail is vital to Minnesota
- Class 1 and short line railroad partnerships are valuable
- Private rail infrastructure is under-recognized
- Public perception of freight and rail suffers from low visibility and poor understanding
- Multimodal transportation policy needs flexibility and enhancements

Six areas of opportunity were also examined, with some comprehensive applications and agency initiatives identified in order to strengthen the state's position in the industrial marketplace. Those included:

- Education and Communications
- Collaboration
- Enhancements to MnDOT programs
- Enhancements to DEED programs
- Integrate freight rail into the MnDOT/DEED Transportation Economic Development program
- Funding strategies
- Think "big" perspective and policies

The findings of this study were to be amended into the Minnesota Statewide Comprehensive Freight and Passenger Rail Plan.

2013 Freight Rail Economic Development (FRED) Study

This is the full technical documentation of the freight policy study was undertaken by MnDOT along with the Minnesota Department of Employment and Economic Development. It was legislatively mandated to comply with Minnesota Statutes, Section 174.03. According to introductory pages in the document, "the purpose of this effort is for MnDOT and DEED, with the support of the Minnesota Regional Rail Association, to cooperatively conduct a study to identify ways to increase rail-related business development within the state. Nine tasks were undertaken to examine action opportunities for rail growth. These tasks included:

1. Define rail-oriented business development
2. Host a 10-state peer review to benchmark best practices in rail preservation and program development
3. Map rail freight movements to and from Minnesota for key industries
4. Evaluate current effectiveness
5. Coordinate with Minnesota DEED
6. Prepare a Rail Shipper Tool Kit
7. Review legislative programs to aid in rail development
8. Conduct outreach efforts
9. Prepare a final report of findings and recommendations.

The document provides more technical details than the FRED Study Legislative Summary, but in most instances provides the same policy related highlights and conclusions. It has other information pertaining to

the rail freight industry, including a review of peer state programs. It also showed inbound and outbound tonnage maps and provided a FRED Study data set, video, and Rail Shippers Tool Kit.

The peer review process also developed some specific recommendations that Minnesota should consider. Again, many of them are policy related but others deal with improved communications, awareness / education and funding.

This document, being similar in nature to the FRED Legislative Summary provides more in-depth information and analysis and provided more information about the rail industry in Minnesota that can be used for developing the freight rail component of that plan for sections of all class railroads that operate in District 2.

Greater Minnesota Mobility Study Final Report

As stated in the Executive Summary, “the Greater Minnesota Mobility Study considered vehicle and freight mobility investment needs on the National Highway System (NHS) throughout Greater Minnesota. The NHS consists of roadways important to the nation’s economy, defense and mobility. As such, the priority and importance placed on this system is high, supported by both federal performance measures and investment direction in the Minnesota State Highway Investment Plan.

The primary goal of the Greater Minnesota Mobility Study was to identify locations on the NHS in Greater Minnesota with the greatest mobility or reliability issues and develop a toolbox of low-cost, high-benefit solutions for future investment consideration.”

The study relied on third party speed data, including LOTTR to develop the planning and prioritization process, and developed a list of project locations based on the analysis. Key inputs from the study for future planning were identified as follows:

1. Incorporate the study findings into transportation policy and investment plans
2. Support project funding decisions
3. Provide a reference for local planning

Section 3.2.2 specifically dealt with projects and analysis in District 2. The scoring sheets were summarized above. However, the document provides more details about the project, including a map of the project locations, and a more detailed project fact sheet for each project District 2 beginning on page 24.

This document identified in more detail the data and methodology for determining the snapshot list of projects related to commercial vehicles / freight needs specifically in District 2. The projects identified are important to one or more stakeholders as they have been documented and ranked in this process. The list can be useful in putting together future freight related and perhaps priority projects in District 2.

Great Northern Corridor Coalition

Modeled somewhat after the I-95 Corridor Coalition on the east coast, the GNC is a regional cooperative comprised of eight states, numerous ports, BNSF Railway, and other interested stakeholders along the Corridor.

The Coalition’s purpose is to promote regional cooperation, planning, and shared project implementation for programs and projects. Its objective is to improve multimodal transportation system management and

operations along the corridor in a framework matching the Multimodal Corridor Operations and Management (MCOM) Program.

SWOT Analysis Action Plan

The GNC SWOT Action Plan is a short, four (4) page document that supplements the final report reviewed and summarized below. The overall project is the culmination of the ten month study of the GNC as requested by the Coalition. The action plan illustrated policy centric next steps for the Coalition to take to further their goals and advance the strategic position at out lined by the Final Report. Pulled directly from the document, the actions included:

- **Review Coalition Organizational Structure and Leadership Vision:** The GNC Coalition organizational structure should be reviewed and a shared vision of the operating structure established among Coalition leadership.
- **Develop Coalition Advocacy and Marketing Program:** Awareness of the importance of the Corridor and the role of the Coalition as a catalyst for improvements needs to be more widespread to obtain support for proposed projects and initiatives.
- **Recognize the GNC as a Corridor of Strategic Importance:** The Coalition should take steps to have the Corridor formally recognized as an Essential/Strategic Public Facility of National Significance at the Local, State and Federal levels.
- **Develop a More Comprehensive Project List:** To make the evaluation process most effective, the Coalition should develop a comprehensive list of projects on the Corridor that is more inclusive of state and local projects within Corridor boundaries and areas of influence. This more inclusive list could then be re-evaluated using the methodology developed in Phase I.
- **Broadly Solicit Project Proposals:** The Coalition could do a “Call for Projects” to identify projects that may be submitted to the next round of TIGER grants, or similar funding programs. The goal is to identify Corridor projects that are “shovel ready” for the Coalition to champion for funding when special grant programs are published.
- **Evaluate and Prioritize Initiatives:** The Members of the Coalition should consider prioritizing the long-term sustained efforts for particular goals (referred to as “initiatives”) identified by the SWOT Analysis that the members would like to further define and develop a long-term plan in Phase II.

This is very much an overall policy document specific to the SWOT actions of the corridor members, of which Minnesota is a part of. It provides some high level actionable items that the members need to undertake. The overall perspective of the SWOT action items is something to be taken into account as the District 2 Freight planning process evolves. It would be valuable to note which initiatives have been undertaken and what progress has been made on them so that information can be incorporated into the District 2 efforts.

Great Northern Corridor Coalition SWOT Analysis Final Report

Per the abstract, the GNC SWOT Analysis Final Report is the culmination of a ten-month study of the Great Northern Corridor as requested by the GNC Coalition. The Final Report combines the key messages of the previous five Technical Memoranda, which provided a snapshot of the existing conditions and addressed the following: Corridor’s Infrastructure and Operations, Freight and Commodity Flows, SWOT Analysis and Scenario Planning Workshop, Economic and Environmental Impacts Analysis, and Project Prioritization. The report tells the story of the Corridor today and how it can strategically position itself for continued and improved performance, access, safety, and reliability in the future.

Overall, the document presents a large amount of background and foundational information about the corridor, most of which tends to be factual operations oriented data geared towards understanding the corridor so that policy oriented actions can be developed. Given this context and that only a smaller subset of the corridor actually flows through Minnesota and relates to District 2, not all of the information is readily applicable to the MnDOT District 2 Freight Plan. However, high level policy type initiatives identified for consideration by the Coalition, are informative and included:

- Grade Crossing Safety and Mobility Initiative
- Corridor-Wide Environmental Planning Initiative
- Comprehensive Corridor Project List
- Unified Corridor Investment Program
- Coalition Advocacy and Marketing Program for the GNC

These initiatives could be considered for the District 2 Freight Plan and some of the data is also helpful. Also, what progress the GNC has made / is making since late 2014, on these and other action items could, along with study results, be incorporated into the current District 2 planning process.

Great Northern Corridor Coalition Corridor SWOT Analysis - Minnesota Profile

This is a follow on to the previous GNC, representing Phase 2 of the work for the study effort. This document focuses on snapshot information assembled in August 2016 regarding Minnesota. It provides demographic information, trade information with Canada, border crossing information, truck route information, a listing of grant projects and awards, and highlights the progress of identified initiatives. Overall, the summary reinforces the importance of freight mobility to the economic vitality of Minnesota.

This is a specific subset of information regarding Minnesota that is part of a larger planning effort. It provides some foundational information regarding freight and trade activities in Minnesota per the guise of the GNC. The background information and progress documentation is valuable for the current planning effort regarding District 2.

Great Northern Corridor Coalition Corridor SWOT Analysis Phase (Summary)

This document represents Phase 2 of the study's work. The document focuses on the SWOT analysis from Phase 1. Phase 2 of the study expanded the research on some key trends and issues first identified in Phase 1 and took steps to establish and implement a business model and several procedural and programmatic initiatives aimed at membership, governance, and communications to sustain forward movement. Those included:

- Creating a Sustainable GNC Coalition – focused on: full membership, associate members, friends of the Coalition, and governance
- GNC Phase 2 SWOT Findings / Recommendations – focused on: GNC modal integration and facilitating North American trade, initiatives to advance opportunities and address weaknesses
- Project Advancement – focused on: Federal funding guidance, environmental requirements
- Next Steps – focused on: Coalition values and goals

This document is again at a high level focused on policy, governance, communication and education of the members of the GNC Coalition. As such it can be used to provide similar guidance for the development of the MnDOT District 2 planning process and outcomes.

Great Northern Corridor Coalition Corridor SWOT Analysis Phase (Full Report)

This document focused on: (1) the analysis from several white papers and technical memoranda focused on addressing to what extent does the GNC act as an international trade conduit between the GNC state and Canada, and (2) updating progress on three programmatic corridor wide initiatives, including – grade crossing safety, environmental planning and unified investment.

The summary of the papers regarding international trade with Canada included profiles for several ports, including truck traffic for Superior and Duluth, Minnesota among other information. With regard to overall conclusions, the analysis found that:

- While trade with Canada is an important economic catalyst for the economies of GNC members, there is no compelling evidence that the GNC acts as a significant facilitator for cross border trade.
- The busiest gateways appear to be congested and future trends in travel time should be monitored closely as 90 percent of all trade taking place is at five specific gateways: Pembina, North Dakota; Blaine, Washington; Sweet Grass, Montana; Portal, North Dakota; and Sumas, Washington.

With regard to the three programmatic, corridor wide initiatives, the document pointed to specific policy oriented action items the GNC could take to address the initiatives. Most are programmatic in nature and included establishing benchmarks and performance measures, information sharing, consultation with stakeholders, monitoring activities, and participation in rule making.

Headwaters Region Comprehensive Economic Development Strategy

The Headwaters Regional Development Commission (HRDC) is a regional development organization that serves the five counties of Beltrami, Clearwater, Hubbard, Lake of the Woods, and Mahnommen in north central Minnesota. The HRDC exists to help communities, and the region as a whole, be successful.

According to the 2016 Comprehensive Economic Development Strategy (CEDS), the HRDC prepared the plan through an ongoing process involving research, input from businesses, non-profits, educational institutions and government agencies, and continual analysis of local conditions. The plan used the MADO DevelopMN Plan as its organizing framework. The DevelopMN framework provided a common outline for regional economic development, and identified approaches to address the special challenges and opportunities of Greater Minnesota. DevelopMN identified the following cornerstones as key components of strong regions and communities:

- Human Capital
- Economic Competitiveness
- Community Resources
- Foundational Assets

As can be expected, this document is heavy on socioeconomic and economic information. In the Foundational Assets SWOT component, there is a discussion about air service and the existing road system being important to economic needs. Similarly, a Foundational Cornerstone having to do with transportation infrastructure was identified as follows:

- Prioritize infrastructure investments so they support a strategic emphasis on innovation.
- Identify long term transportation needs, including air, road, and rail.
- Encourage and support LGU's in their development of capital improvement programs that serve to enhance infrastructure.
- Advocate for funding at both state and federal levels for critical infrastructure projects.

Similar to other documents reviewed, this document is very policy oriented, and has an economic development emphasis. It does touch peripherally on transportation infrastructure, but in a broad sense. While it lacks some depth and does not discuss individual projects, it is useful from a policy perspective in as much as it relates county level aspirations.

Hubbard County 5 Year Project Map (2019 – 2023), Hubbard County, November 2018

This is a one page graphic / map depicting the location and types of projects throughout the county colored coded by respective years; 2019 through 2023. This provides a snapshot plan of the type of projects programmed where and by what year of the 5 year period. It provides some notion of the type of investments the County intends to make, although they are not necessarily specific to freight per se. It is of some value for project identification so there isn't duplication in the District 2 plan if it ultimately includes projects.

2019 – 2023 Road and Bridge Construction Plan for Marshall County

This is a one page graphic / map depicting the location and type of projects throughout the County as adopted by the Board and colored coded by respective years; 2019 through 2023.

This provides a snapshot plan of the type of projects programmed where and by what year of the 5 year period. It provides some notion of the type of investments the County intends to make, although they are not necessarily specific to freight per se. It is of some value for project identification so there isn't duplication in the District 2 plan if it ultimately includes projects.

Minnesota Truck Size and Weight (TS&W) Project

This was a 2009 study that sought to investigate potential needed changes to Minnesota's TS&W laws that would benefit the Minnesota economy while protecting roadway infrastructure and safety.

The report points out that Minnesota's industries and economy depend on the multimodal network in the state with nearly \$600 billion in goods being transported annually. The demand for freight and goods movement is only expected to increase. The study noted, that as Minnesota continues to invest in its highway network, it ought to consider proposals to also change TS&W laws to overcome local disadvantages. For instance, nearby states such as North Dakota and South Dakota allow vehicles with weights between 105,500

to 129,000 pounds, while Minnesota typically limits them to only 80,000 pounds. For system designers, there are implications of allowing heavier vehicles for pavements, bridges, and operations / safety.

The study established some guiding principles to examine and eventual recommend potential needed changes. Those provided that any changes would be: in concert with Federal laws; seek to protect highway infrastructure and safety; provide benefit to Minnesota's industries and economy; promote ease and uniformity of application; and seek to cover costs imposed on the system. The study utilized an extensive outreach process including more than 35 meetings with stakeholder organizations touching about 140 stakeholders, culminating in the Northstar Workshop held on October 25, 2005.

According to the Executive Summary, key findings of the outreach process were:

- Variations in TS&W laws across Minnesota road systems work against freight productivity. A more extensive "10-ton" road system is needed.
- Complexity of TS&W laws results in added cost to industry and complicates compliance. TS&W laws need to be simplified and industry training provided.
- Lack of consistency among states creates barriers to cross-border freight movement.
- Enforcement of TS&W laws, and the permitting process for heavy trucks, is inconsistent across jurisdictions; a centralized system may be needed.
- Spring load restrictions cause circuitry of travel and loss of business.
- There needs to be increased flexibility of weight limits and vehicle configurations to allow greater payloads.
- There are concerns about the infrastructure impacts of increased weight limits, particularly on local roads and bridges.
- There are safety concerns about proposed increases in truck weight or length.
- There needs to be more investment in infrastructure and improved operations to achieve a more productive freight system.
- The proliferation of exemptions, exceptions, and tolerances in TS&W laws creates inequities and adversely impacts enforcement and infrastructure.

The key finding of the technical analyses was that four heavier truck configurations were found feasible and generated net statewide benefits. A set of changes to spring load restrictions and other related TS&W regulations were also developed and found to offer net benefits, as outlined by the table on the next page. The changes were recommended to be advanced by the MnDOT for legislative consideration as these would have a material positive impacts to Minnesota's economy and competitiveness.

Although perhaps a dated study, this document proposed specific technical policy changes related to truck weights that could be codified into state law to allow heavier vehicles. This broad policy change was shown to be beneficial to Minnesota's economy. The larger outreach effort also afforded an opportunity to identify and discuss issues with a variety of stakeholders who are specifically listed in Appendix G on page G-2. This section also details the question asked, mainly pertaining to weights. This policy change could be part of the MnDOT District 2 effort, although a policy change of this magnitude is really a statewide issue and not one pertaining to a single District. The list of stakeholders could also be valuable as part of similar efforts for District 2.

Minnesota 20 Year State Highway Investment Plan (MnSHIP) 2018 - 2037

In the introductory letter to citizens, (now former) Commissioner Charles Zelle states that “MnSHIP directs capital investment for Minnesota’s state highway system over the next twenty years. This fiscally constrained plan identifies investment priorities given current and expected funding. MnSHIP describes how MnDOT will use capital investments to repair, replace and improve the 12,000-mile state highway system. The plan also includes an estimate of the investment needs for the highway system based on the costs required to meet performance-based targets and other key system goals. MnDOT takes into account many factors in developing MnSHIP, including federal and state laws, MnDOT policy and current and projected conditions of the state highway system.”

The letter further points out that the plan focused on maintaining the existing state highway system while making limited mobility investments. Despite the fact that funding changed for some spending categories the existing plan represented a \$21 billion investment over the 20 year time horizon. However, as pointed out this is/was \$18 billion short of actual needs.

The table on the following page presents the original MnSHIP investment direction and the actual direction due to legislative and other impacts. It specifically has a category for freight projects with a funding level at \$580 million, which is 2.8 percent of the total plan expenditures.

Table 6: MnSHIP Investment by Category

Investment Categories	Original 20-Year MnSHIP Investment Direction	Percent	Expected MnSHIP Investment Direction Based on Legislative Impacts	Percent	Difference in Dollars	Difference in Percentage
Pavement Condition	\$10.31 B	49.4%	\$10.09 B	48.3%	-\$220 M	-1.1%
Bridge Condition	\$2.38 B	11.4%	\$2.30 B	11.0%	-\$80 M	-0.4%
Roadside Infrastructure	\$1.60 B	7.7%	\$1.71 B	8.2%	\$110 M	0.5%
Jurisdictional Transfer	\$90 M	0.4%	\$90 M	0.4%	\$0 M	0.0%
Facilities	\$80 M	0.4%	\$85 M	0.4%	\$5 M	0.0%
Traveler Safety	\$680 M	3.2%	\$740 M	3.5%	\$60 M	0.3%
Twin Cities Mobility	\$230 M	1.1%	\$830 M	4.0%	\$600 M	2.8%
Greater Minnesota Mobility	\$25 M	0.1%	\$25 M	0.1%	\$0 M	0.0%
Freight	\$610 M	2.9%	\$580 M	2.8%	-\$30 M	-0.2%
Bicycle Infrastructure	\$130 M	0.6%	\$120 M	0.6%	-\$10 M	-0.1%
Accessible Pedestrian Infrastructure	\$530 M	2.5%	\$500 M	2.4%	-\$30 M	-0.2%
Regional and Community Improvement Priorities	\$310 M	1.5%	\$330 M	1.6%	\$20 M	0.1%
Project Delivery	\$3.27 B	15.6%	\$3.06 B	14.7%	-\$210 M	-1.0%
Small Programs	\$620 M	3.0%	\$430 M	2.1%	-\$190 M	-0.9%
Total	\$21 B	100.0%	\$21 B	100.0%	\$25 M	0.0%

Freight is identified as one of the Critical Connections, and to respond to that importance, MnDOT established a new Freight category for MnSHIP. The Freight category included projects that are eligible for

funding as part of the National Highway Freight Program and included improvements such as climbing lanes, traffic signal optimization, and railway-highway grade separation.

The plan pointed out that the Fixing America's Surface Transportation (FAST) Act created a dedicated source of \$12 billion Federal dollars for the National Highway Freight Program of which Minnesota can expect to receive \$20 million per year. The plan also prioritized the National Highway System (NHS) as the priority network for freight based on usage and flows.

As pointed out on page 57, MnDOT did not estimate its 20-year needs for freight on the state highway system. Rather, the investment in the Freight category identified in MnSHIP reflects the amount provided for the National Highway Freight Program as part of the FAST Act. Needs related to freight movement have been identified in other investment categories so there is no separate need category for freight in this MnSHIP update. The plan points out that the forthcoming Minnesota Freight Investment Plan will identify priorities for spending money for freight improvements.

In terms of planning initiatives discussed, the plan states a need to complete the Freight Investment Plan, which will provide a fiscally constrained list of priority projects important to freight. It does present some high level programming information related to freight, and as such broadly identifies the types of investments that MnDOT will make over the 20 year time horizon. That included dollar amounts by category. It does not identify specific projects or make other recommendations besides high level ones, it does provide some statewide foundational guidance, especially expressed preferences and issues of stakeholders related to freight that are useful for the District 2 planning efforts.

Comprehensive Economic Development Strategy (CEDS) for Northwest Minnesota

A Comprehensive Economic Development Strategy (CEDS), is a locally-based regionally driven planning process designed to enhance the economic growth of the region. The NWRDC, as the designated agency to coordinate the type of planning and economic development activities necessary to develop CEDS in Kittson, Marshall, Norman, Pennington, Polk, Red Lake and Roseau Counties, produced the study.

As noted in the introduction, "CEDS provides a mechanism for coordinating the efforts of individuals, organizations, local governments, and private industry concerned with economic development." The planning and data collection activities for this document began in 2016 with public input derived through one-on-one visits, phone conversations, emails, and in-person meetings. The Northwest Regional Enterprise Fund, Inc., served as the CEDS planning committee and provided stakeholder input and direction for the formation of the CEDS document.

The 2017 plan identified Transportation as a broad Foundational Asset. More specifically, it points out that economic growth, production and trade all depend on safe and reliable transportation networks, and that county and state highways are the primary means for moving freight. It reiterates the fact that Minnesota has a funding deficit of over \$16 billion in needed transportation funding from 2018 to 2037. A goal articulated by the plan that directly relates to transportation and freight to "increase the percentage of the northwest region's good quality-rated roadways in the next 20 years and increase/maintain the region's ten ton network. In terms of specific strategies related to that goal, it points out these:

- Define a significant and coherent priority network of roads, ranking the most critical connections to maintain over the next 20 years.
- Offer assistance to local units of government with their long-range planning to address transportation sustainability and resiliency.
- Encourage county and local units of governments to use all available options that increase transportation funding.
- Standardize baseline ranking and project prioritization throughout the region.
- Prioritize transportation projects that connect regional economic hubs.
- Identify freight generators and map a county network of freight routes.
- Advocate for railroad funding at state and federal levels.
- Support safety, mitigation and planning initiatives

The plan is a high level economic development oriented goals and objectives document. It has minimal transportation or freight specific information beyond the goals, objectives and strategies pointed out above. It can however be useful to provide background and foundational information for the development of the District 2 Freight Plan.

MnDOT Rail Grade Crossing Safety Project Selection Study

This was a study to determine how well the two prediction crash prediction models used by MnDOT staff actually fit Minnesota's data and was an attempt to identify a set of grade crossing risk factors that would support an improved statewide systemic evaluation. The study determined that both the FRA Accident Prediction Model and the Texas Hazard Index were poor fits when paired with actual Minnesota's crash data. The study also identified an improved / new set of volume, speed, design and surrounding area features that were proven to be superior to existing ones that tend to over-represent crashes.

Consistent with many research studies, the work performed included a literature review, review of grade crossing characteristics, cataloging of suggested risk factors, the results of the application of the risks factors, study conclusions, next steps and references.

Overall the study found that vehicle train collisions at rail grade crossings are rare. Over the 10-year study period, more than 4,000 public rail grade crossings in Minnesota averaged approximately 45 crashes and 5 fatal crashes per year. During that time, 91 percent of the grade crossings had no crashes at all, while 96 percent had no crashes resulting in injuries, and 99 percent had no fatal crashes.

The study also to a larger degree validated MnDOT Rail Administration staff's concerns about the current use of existing crash prediction models to identify candidate crossing locations for safety investment(s). It found that the crash prediction models' theory that the occurrence of a prior crash at a grade crossing is a good predictor of a future crash at that same location is not consistent with the data for Minnesota. For instance, more than 50 percent of crossings with an injury crash had no prior crashes.

It also found that the FRA's Accident Prediction Model is highly influenced by the occurrence of prior crashes and the most recent application in 2014 was only able to identify 21 crossings (0.8 percent) as a priority and most were ultimately determined to be poor candidates for safety investment. Similarly, the Texas Hazard Index model uses the number and speed of trains, roadway traffic volume, and prior crashes in its predictions. This index was used to develop the Fiscal Year 2017 safety program. However, it was determined

that this model was a poor fit with Minnesota’s crash data based on documentation of relatively low crash density at the identified priority crossings.

The study recommended for consideration, two modified steps in the prediction methodology:

- Consider adopting fatal plus injury crashes as the primary performance measure for the safety program managed by the MnDOT Rail Administration instead of fatal and total crashes (historic approach).
- Consider supplementing the two predictive models with the systemic risk assessment results. The comparison of results for both applications indicates that the systemic risk assessment provides a better fit with Minnesota’s crash data and produces a broader list of potential candidates for safety investment.

In terms of operationalizing mitigation measures, it also recommended to pursue practices that provided increased benefits to include:

- Rewarding local agencies for participating in safety projects that included closing crossing,
- Investigating ways to partner with law enforcement to increase awareness regarding motorist behaviors at crossings that contribute to crashes,
- Considering the replacement of STOP signs with YIELD signs at low-volume intersections,
- Continuing the use of gates at actively controlled crossings,
- Considering a return to a corridor approach to program more comprehensive improvements.

While this study is highly technical, deals with rail freight crashes, and is quite specific, it sets an overall statewide framework policy and methodology framework for identifying and addressing rail / highway safety project needs based on physical and operating characteristics of at rail grade crossings. In terms of applicability to the District 2 effort, the methodology used in this statewide process could certainly be used at the at grade rail crossings locations in District 2 to determine which locations are in most need of upgrades. This methodology and those locations identified by the process would be part of the project identification exercise if there’s a need to identify specific safety related projects in the plan.

Minnesota Statewide Freight System Plan: Strategies and Implementation

This document is a working paper that identified a Freight Action Agenda for Minnesota to integrate, invest in and operationalize the freight system and decision-making within MnDOT to serve a statewide improvement strategy. It also presented ways in which the MnDOT Office of Freight and Commercial Vehicle Operations (OFCVO) could become more integrated with other Offices within MnDOT such as Safety, Performance, Bridge, and Pavement. It also proposed ways to improve communication with and between MnDOT Central Office and the Districts.

The paper pointed out an important challenge and fact - in Minnesota, MnDOT does not specifically identify projects as “freight” projects like it does with other kinds of projects, so there is no definition or standard which sometimes hinders communications and collaboration efforts. Yet, almost all projects that benefit travelers on the highway system more than likely has an implicit freight benefit. Therefore in practice, many types of projects could be consider freight or at least freight related, even if they are not specifically being undertaken to address a freight related need or issue.

The paper proposed:

Freight System Investment Strategies which described physical infrastructure investments needed on the highway and non-highway freight systems, and outlined the types of future freight projects that could provide Minnesota benefits if pursued then in the future.

- Supporting Strategies which cognized that physical infrastructure projects, alone, will not be sufficient to address the numerous needs that exist internal and external to Minnesota. This points to a need for an array of supporting strategies which were identified to address freight system needs and issues related to policy, organization, partnerships and funding.
- Freight Action Agenda which outlined the Minnesota Statewide System Freight Action Agenda and consolidated the recommended strategies in a single place, with roles responsibilities and timelines.
- Next Steps and Implementation which briefly noted how the findings in this paper should be used by MnDOT and Minnesota's public and private sector freight stakeholders.

This paper is an in-depth discussion into freight centric programs, policies and communications strategies at the state level. It clearly lays out ways to improve the outcome of projects across the state in order to have positive benefits for freight and articulates a notion that virtually any highway project, especially those on the National Highway System (NHS), has an implied freight benefit. It also identified in the Appendix, past STIP projects aimed at improving freight conditions throughout the state, largely on the NHS, which identified 436 such projects. It can served as an informative document for the District 2 effort and presents an important paradigm in that almost all projects, especially those on the NHS could be considered a "freight" project.

Minnesota Statewide Freight System and Investments Plan

As stated in the document's Purpose and Scope, the 2017 Minnesota Statewide Freight System and Investment Plan represents an update to Minnesota's first State Freight Plan developed in 2005. This effort was undertaken by MnDOT in partnership with public and private sector freight stakeholders throughout the state. The plan detailed Minnesota's freight transportation system and the role it plays in the state's economy, presented current and emerging freight trends, portrayed the performance of the freight transportation system, and listed current and future issues and needs.

The plan also included Minnesota's Freight Action Agenda for MnDOT and its partners so that they can advance a number of strategies that will improve the efficiency, safety and reliability of the freight system across the state. At a larger scale, the GO Minnesota Statewide Freight System and Investment Plan is part of a "family of plans", and aligned with Minnesota GO and the Statewide Multimodal Transportation Plan, which established Minnesota's overall vision for transportation. The plan also met the freight planning requirements of the federal Fixing America's Surface Transportation Act, or FAST Act.

The plan is composed of 6 chapters. Most of which provided overview and background information of freight and movements of the same in Minnesota. This was covered in Chapters 1 – 3. Chapter 3 identified the goals, needs and issues in the state, while Chapter 4 addressed strategies, Chapter 5 outlined actions and next steps and Chapter 6 articulated an investment plan.

The 2005 Minnesota State Freight Plan clearly articulated the position of MnDOT with respect to freight transportation and introduced the following freight specific policy:

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

The, 2017 Plan affirmed that position, and further clarified the plan Goals as follows:

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

The Plan Objectives were directly pulled from the 2012 Statewide Multimodal Transportation Plan and include:

- Accountability, Transparency, and Communication
- Transportation in Context
- Critical Connections
- Asset Management
- Traveler Safety and System Security

Chapter 4 specifically identified strategies. While the focus was mainly on the highway network, there was some discussion of other modes. This included non-highway system investments in rail, (as stated in the 2016 Minnesota Rail Plan), as well as needs for ports and waterways as identified in 2014 Statewide Ports and Waterways Plan, and for air-related investments outlined in the 2013 Minnesota State Aviation System Plan.

Chapter 5 presented a 30 point Freight Action Agenda with details on the description, the actions, lead agency, partners and time frame. This Chapter also included a description of the Minnesota Freight Advisory Committee (MFAC), the nation’s first DOT Freight Advisory Committee, created in 1998 to provide a forum for the exchange of ideas and for addressing issues between MnDOT and the private sector.

Chapter 6 covered the Investment Plan over ten years – state fiscal years 2018 – 2027. MnDOT decided to have a call for projects and scored and evaluated the project it received across several project criteria, including:

- Truck volumes
- Safety
- Freight mobility
- Freight facility access
- Cost effectiveness
- Project readiness

This document is very freight specific and laid out a clear investment plan over a ten year period. It also identified specific projects, discussed limits and details of what improvements will be made, in what time period and outlined a definitive budget. This is a very useful document that potentially crafts a model for how to craft a specific plan related to District 2.

Western Minnesota Regional Freight Study

The 2009 Western Minnesota Freight Study was a multimodal freight planning effort that included highway (commercial vehicle operations), rail, air cargo, and intermodal transportation. This effort built upon prior planning activities by Fargo-Moorhead Metropolitan Planning Organization, North West Regional Development Commission, Area Transportation Partnerships (ATPs), MnDOT Districts 2, 4, and 8, and MnDOT's Office of Freight and Commercial Vehicle Operations (OFCVO). The purpose of the study was to provide a better understanding of the demands freight was / is placing on the regional transportation infrastructure and to provide a framework that addresses the following goals:

- Examine regional and local issues not captured in previous freight transportation study/planning attempts, including freight issues specific to the region. The primary focus included but was not limited to agriculture, energy, bulk commodities, minerals, timber, manufacturing, global gateways including intermodal and oversize/overweight cargo movements (e.g., super routes), interregional truck routes, and last mile connections.
- Document the existing freight transportation system in Northern Minnesota and Wisconsin, as well as Western Minnesota region, including facilities, service levels and current and projected commodity flows. Identify significant existing and projected needs, bottlenecks, infrastructure and regulatory issues, and other constraints in the region's freight transportation and their implications;
- Identify industry- and region-specific issues and trends as they related to freight transportation and their solutions; and
- Plan for improvements to freight movements specific to this region, through a combination of operating and program efficiencies, infrastructure upgrades and investments, public/private initiatives and innovative funding, regulatory initiatives, and communications; and strengthen freight considerations in project planning and investment decision-making.

Two working papers were produced to inform the study and included details of a Region Freight System Inventory which described the freight transportation networks in the region and a Regional Freight System Analysis which described the nature and characteristics of trade in the region by analyzing commodity flows. Overall, the document is somewhat policy oriented, but does have some specifics regarding projects. Key findings and recommendations included:

- Explore opportunities to expand intermodal services in Dilworth, MN – this included ways to bolster the usage of the facility and partner with BNSF to increase usage
- Establish a regional freight advisory committee (FAC) – this included partnering of MnDOT with other agencies to discuss issues such as: regional truck size and weight harmonization, serving as a forum to discuss, set criteria for selection and prioritize projects among others
- Designate a tiered truck network – this is geared toward heavy commercial annual average daily traffic (HCAADT) with Tier 1 roads being greater than 650, Tier 2 between 301 and 650, and Tier 3 being less than 350. The three tiers form the designated truck network, with Tiers 1 and 2 being the highest priorities for investment.
- Identify commercial commodity corridors – this would ultimately be an undertaking by MnDOT and perhaps others to map the commodity-specific origins / destinations to ultimately decide what routes might be considered under a commerce corridor designation.

- Freight safety and information strategies – this addressed specific freight safety and information needs related to commercial vehicle travel and included: expanded 511, advanced parking information, truck priority at signals, alternate route planning, wildlife collision avoidance, advance warning for intersections and truck entry areas
- Designation of super-haul corridors for permit operations – this would be an expanded initiative to provide ability to move oversized and overweight loads north – south and east-west through the state and connect to the Duluth Port, and to plan projects to better accommodate these types of loads
- Consider policies to improve region size and weight uniformity – this would be an initiative to provide consistency between truck size/weight regulations in states/provinces that border Minnesota, especially on routes on National Network (NN) and non-NN highways, which are codified in CFR Part 658, Appendix A. This may include exploring and ultimately joining a regional permitting compact.
- Undertake a number of quick start projects (less than \$50,000) – there is generally a disconnect between the “long term” planning horizon of business which is typically 2 -5 years and the public sector which is 20 -50 years. As a result, it was identified there might be a “gap” and that the private sector may or may not see results in 2 -5 years, given the public development process. Therefore, it might be better to focus on identifying quick start projects, of the commensurate dollar value, since they can be implemented quickly, to show progress and better engage the private sector.

This plan is still largely a policy oriented plan and document, but it is specific to the portion of the state that contains MnDOT District 2. It provides ways to increase communication and information flows regarding freight in the region in general, ways to improve freight efficiency and make Minnesota companies and shipper more competitive. As such this document is useful to District 2 effort.