Freight

DEPARTMENT OF TRANSPORTATION

MnDOT estimates $30-33 billion in available funding for the state highway system over the next 20 years. A minimum of $23.5 billion is needed to manage highest risks and meet legal requirements. This folio provides information on potential Freight investment strategies, funding levels, and outcomes for the estimated $7-9 billion of remaining investment.

1 | WHAT IS FREIGHT?

The Freight investment category within MnSHIP includes investments to improve the reliability, efficiency, and safety of freight movement on the state's highway network.

GOAL AND OBJECTIVES OF INVESTMENT

The goal of the Freight investment category is to improve the efficient and safe movement of freight throughout the state. The objectives of this investment include improving the reliability of travel times for truck freight movement, reducing fatalities and serious injuries from freight-related crashes, and addressing major freight bottlenecks on the highway network.

TYPES OF IMPROVEMENTS

Many freight improvements are made through the National Highway Freight Program. These include addressing freight bottlenecks, freight safety and mobility improvements, first-last mile connections, and intermodal freight improvements. Investments in freight also include preservation and upgrades for truck weigh stations, at-grade rail crossings on the state highway system and truck parking at the state's rest areas.

HOW DOES MNDOT CURRENTLY SELECT FREIGHT IMPROVEMENTS?

MnDOT currently selects freight improvement projects through a variety of programs and project types. Highway freight projects are selected through the Minnesota Highway Freight Program (MHFP), which allocates federal funding authorized through the Infrastructure Investment and Jobs Act (IIJA). The MHFP selects projects through a solicitation process that includes three project categories: safety, congestion/efficiency improvements, and first/last mile connections. Allocation of funds between these three categories is based on the investment direction in the Minnesota Statewide Freight System and Investment Plan.

Projects related to weigh stations and weight enforcement projects are selected through the Weigh Station Capital Improvement Program, a specialty program in which projects are solicited through MnDOT District offices and through input from the Weight Enforcement Unit of the Minnesota State Patrol. Projects are identified and prioritized for the Capital Improvement Program based on a number of scoring criteria, including condition, geographic coverage, freight considerations, roadway characteristics, and enforcement and safety criteria.

Trunk highway rail crossing projects are selected through the Railway-Highway Crossings program which solicits projects annually from local road authorities, railroads, and MnDOT districts. The program includes three project categories: closures/consolidations, antiquated equipment, and grade crossing control.

2 | WHY IS INVESTING IN FREIGHT IMPORTANT?

Investment in freight transportation improvements supports several of the official state transportation goals, as identified in state statute. These include:

- Minimizing fatalities and injuries for transportation users throughout the state
- Providing multimodal and intermodal transportation facilities and services to increase access for all persons and businesses, and to ensure economic well-being and quality of life without undue burden placed on any community
- To enhance economic development and provide for the economical, efficient, and safe movement of goods to and from markets by rail, highway and waterway
- To provide for and prioritize funding of transportation investments that ensure that the state's transportation infrastructure is maintained in a state of good repair

Minnesota's broad range of industries include manufacturing, food production, computer and electronics, fabricated metal, machinery, and medical devices. Many of these industries require safe, reliable, and efficient highway system to connect to customers, to import raw materials, and to deliver goods and services. In 2012, trucks moved 630 million tons of freight in Minnesota. By 2040, the amount of freight tonnage moved by trucks is predicted to nearly double.

Demand for freight movement on Minnesota highways is likely to continue to increase. In addition to growth in the state's population, which recent Census data indicates added roughly 400,000 residents in the last decade, there are trends toward the increasing prevalence of e-commerce, which will increase the need for direct-to-consumer shipments. One byproduct of this growth is an increased need for truck parking along the state's highways. Trends toward increased truck freight volumes, along with hours-of-service restrictions for drivers and rising expectations for productivity and on-time delivery of shipments, are indicative of an increased need for truck parking along major trade routes.

Through engagement as a part of the Minnesota Statewide Freight System and Investment Plan, the most common highway infrastructure issues identified by freight industry respondents were poor pavement conditions, inefficient interchanges and inadequate roadway capacity. Other priorities included a need for enforcement of weight standards and improved safety at highway-rail grade crossings.

HOW DOES MNDOT MEASURE PERFORMANCE, CONDITION, OR OUTCOMES?

MnDOT identified a performance measure and target to monitor and identify investment needs to maintain weigh station building condition. Building condition is evaluated once every three years and scored on a scale of excellent to poor. MnDOT identified the target of no more than 15% of buildings in poor condition.

Truck Travel Time Reliability Index is another performance measure that MnDOT monitors and is a required federal performance measure. TTTRI measures the variation in commercial truck travel times on the Interstate system. An index value of 1 is the lowest possible score and indicates the highest level of travel reliability. In 2020, the most recent data available, Minnesota's TTTRI was 1.21. The COVID-19 pandemic caused fewer people to be on the road and resulted in lower TTTRI and better travel time reliability than in previous years.

3 | OPTIONS FOR INVESTING OVER THE NEXT 20 YEARS

National Highway Freight Program/State Highway Freight Program

The **minimum level** MnDOT would invest in these programs is **$359 million**. At this level, no freight bottlenecks would be addressed, 40 to 70 first/last mile or safety improvement projects would be funded, and the state's truck reliability would likely increase.

LEVEL 1

Outcomes:
60 to 100 first/last mile or safety improvement projects
No freight bottlenecks would be addressed

LEVEL 2

Outcomes:
80 to 130 first/last mile or safety improvement projects
No freight bottlenecks would be addressed

LEVEL 3

Outcomes:
80-130 first/last mile or safety improvement projects
2 bottlenecks in the Metro and 1 in Greater MN addressed

LEVEL 4

Outcomes:
80-130 first/last mile or safety improvement projects
4 bottlenecks in the Metro and 2 in Greater addressed

Weigh Stations and Scales

The **minimum level** MnDOT would invest in weigh stations and scales is **$42 million**. Three stations would become obsolete at this level.

LEVEL 1

Outcomes:
3 weigh stations become obsolete

LEVEL 2

Outcomes:
No obsolete weigh stations, 1-2 Class C and 2-5 Class E weigh stations constructed, technological upgrades

Trunk Highway Rail Crossing Program

The **minimum level** MnDOT would invest in trunk highway rail crossing program is **$32 million**. At this level, antiquated equipment would be replaced at 3 locations per year and one passive crossing would be converted to an active crossing per year.

LEVEL 1

Outcomes:
All equipment replaced on a 20-year cycle (160 locations), 1 passive crossing converted to an active crossing per year

$X.X Total cost of investment level

Portion of remaining $7-9 billion investment for level

Remaining investment available for other priorities

Truck Parking

The **minimum level** MnDOT would invest in truck parking is **$0**. At this level there would be no projects that would expand truck parking outside of those funded through the NHFP.

LEVEL 1

Outcomes:
Expand parking at 8-10 locations, 15-20% increase capacity at existing locations

LEVEL 2

Outcomes:
2-3 new MnDOT-owned facilities, 20% increase capacity at existing locations

4 | FREIGHT RISKS

WHAT ARE THE RISKS OF UNDERINVESTING?

As a part of developing performance levels for various programs and strategies, MnDOT also identified the risk to underinvesting in Freight. Six risks were rated as low to high risks based on investment at the minimum performance level for all Freight strategies. The six risks and their impacts are identified below.

MEDIUM RISKS

Risk: Reduced funding could affect MnDOT's ability to fund freight improvements as part of existing or stand-alone projects
Impact: Freight stakeholders' expectations may not be met and freight mobility may be reduced, affecting overall economic health

Risk: Reduced funding could lead to closing of weigh stations and DPS cannot perform necessary weight enforcement and safety inspections
Impact: Potential increase in commercial vehicle crashes

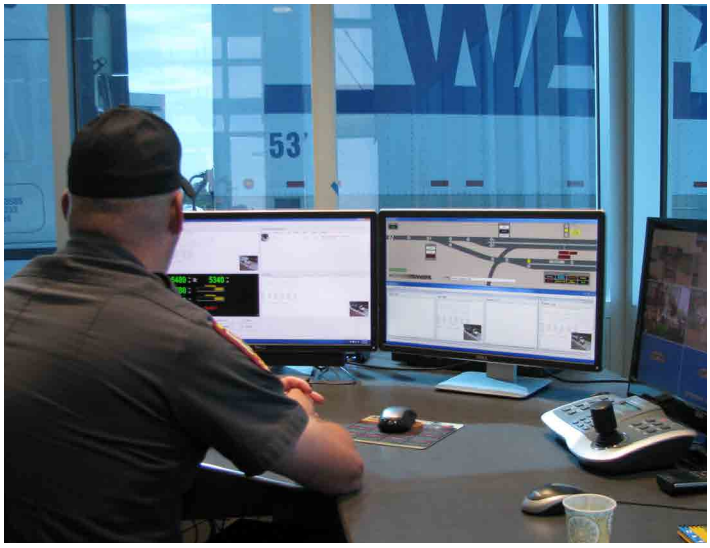
Risk: Investment in weigh stations and weight enforcement may be below federal expectations
Impact: Federal funding could be reduced or redirected due to failure to meet FHWA expectations

LOW RISKS

Risk: Freight intermodal connectors may not be identified and adequately maintained
Impact: Freight movement in Minnesota will be less safe and efficient and the economic vitality of freight-related businesses may suffer

Risk: Lack of funding may affect staffing at new weigh station facilities
Impact: Staffing limitations may delay the opening of new facilities and adversely impact public perception

Risk: Imbalance in freight investment may shift competitive balance among freight modes (truck, port, railroad)
Impact: Economic health and balance of freight industries are threatened



WHAT LEVELS OF INVESTMENT REDUCES THE RISKS' SEVERITY?

The table below provides a summary of how risk levels changed with increased investment in Freight.

RISK STATEMENT	SHIFTS FROM MEDIUM TO LOW RISK
Reduced funding could affect MnDOT's ability to fund freight improvements as part of existing or stand-alone projects	Investment Level 1
Reduced funding could lead to closing of weigh stations and DPS cannot perform necessary weight enforcement and safety inspections	Investment Level 2
Investment in weigh stations and weight enforcement may be below federal expectations	Investment Level 2
Freight intermodal connectors may not be identified and adequately maintained	Already at a low risk level

There are an additional two risks which grow with added investments from Freight. Through additional funding, new and existing weigh station facilities may lack the funding for additional staff and additional funding in highway freight improvements may lead to a shift in competitive balance among freight modes (truck, port, and railroad).

To find out more details about Freight planning and projects, go to:

Freight Planning: www.dot.state.mn.us/ofrw/freight/index.html

Project Selection: www.dot.state.mn.us/projectselection/

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