The Economic Driver Known as Freight

In so many ways, commerce depends on the movement of goods—often the fastest possible movement of goods. Freight helps drive our economy by facilitating that movement of goods and, as such, plays a key role in commerce, business, and overall economic health.

Performance of the freight system affects our economic competitiveness. The Minnesota economy relies on the system to move raw materials, partially processed products, and finished goods between businesses and to consumers. Accessible and flexible freight options offer a strategic advantage in attracting new business and growing existing businesses, in generating new jobs, and in bolstering the ability to compete in national and global markets.

So how well is Minnesota served by its freight system? Clearly, Minnesota benefits from its central location and its comprehensive multimodal freight system. The system includes an extensive network of state and local roads, the eighth largest rail network in the country, ports on both the Mississippi River and Great Lakes waterways, extensive air cargo service, and numerous pipelines.

The freight system in Minnesota is planned, built, and operated by a wide variety of public agencies and private businesses working together in partnership. These partnerships help strengthen the ability of businesses in the state to efficiently and reliably move goods and to position Minnesota for the future.

But our aging infrastructure continues to pose a serious challenge to the flow of commerce in the state and across the nation. Moreover, the scope of the problem does not just apply to roads and bridges—our railroads, ports, airports, and pipeline facilities also are aging. Other challenges include improving the connections between modes and eliminating congested bottlenecks.

With an engaged freight community, Minnesota stands ready to tackle its challenges and enhance its opportunities. While it is easier to look at one mode, it is critical to consider all modes and the entire system. That big-picture perspective paves the way for new options and optimal solutions.

Public-private partnerships are key to identifying concerns and maximizing opportunities and add great value in the quest to keep Minnesota’s economy strong. The Minnesota Freight Advisory Committee (MFAC) brings tremendous expertise as a group with members ready to assess the impact of trends and policy decisions on freight and Minnesota’s economy.

This report takes a closer look at the ways that freight drives and can drive economic growth throughout Minnesota. Through stories and updates, it shows the important role that freight plays, highlights a number of issues, and presents actions that are making a difference.

MFAC looks forward to contributing to a greater understanding of freight in the state, the trends that will impact the future of freight, and solutions that will keep the state of freight at its healthiest, preserving a powerful engine for future growth.

William (Bill) E. Goins, Chair, Minnesota Freight Advisory Committee
Why MFAC?

Since becoming one of the first states to form a freight advisory committee nearly two decades ago, Minnesota has grown into a national leader in freight policymaking through a truly collaborative, forward-thinking process. Designed as a true public-private partnership with representatives from private sector shippers and carriers, industry associations, and public agencies, MFAC offers a collective voice for freight concerns and considerable experience in identifying solutions and their impacts.

The Minnesota Freight Advisory Committee (MFAC) was established in 1998 to ensure that planning, research, investment, and operations of the transportation system addressed the needs of the state's freight transportation industry. Now, years later, many other states are exploring a similar path. In 2015, when the federal government passed FAST Act legislation to help fund state transportation projects, it encouraged states to establish a state freight advisory committee.

Since its start, MFAC has contributed to the state's freight planning efforts, including helping to shape the Minnesota Statewide Freight System Plan (for more, see page 4). The committee's early accomplishments include recommending a set of measures for freight performance, spearheading the development of data about freight facilities and services, and raising the profile of freight issues within the state.

Any work to retain, grow, and attract business helps Minnesota's economy thrive. The close relationships among freight, infrastructure, and the economy only enhance the importance of MFAC as a multimodal, public-private partnership group that keenly understands the issues and shares ideas and perspectives to strengthen Minnesota's freight system.

Thanks to forward thinking, the state can tap MFAC as a well-established resource on the leading edge of key freight issues.

QUICK LOOK

**MFAC mission**

Advise the Minnesota Department of Transportation (MnDOT) and other public agencies and officials on the performance and importance of Minnesota's freight transportation system to support the state's economic competitiveness

**Objectives**

- Support the development of the Statewide Freight System Plan and other plans, policies, and action to improve the performance of the freight transportation system
- Provide a forum for the discussion of freight industry trends, issues, and needs
- Provide input on recommended actions, strategies, and resources to improve the state's transportation system
- Facilitate a quick response to freight questions and issues for policymakers and others
Value of All Freight Modes: The Big Picture

Efficient freight movement often involves more than one type of mode. What are the modes in Minnesota, and how important is a network of modes to the state?

GREAT FIT: A look at the network of modes

Transportation of goods depends not only on the viability and reliability of transportation modes but also on the ability of shippers to intermix modes, which allows them to move product as efficiently and cost-effectively as possible.

“There are trucks, trains, boats, planes, and pipelines,” says Chip Smith, advisor for Bay and Bay Transportation, a Minnesota-based trucking transportation and logistics services company. “Those are the ways to move product.”

Shippers look at all modes and their connections to maximize the transport of goods. “It’s really the cost, the transit time, and capacity for moving the product,” he says. Access to all modal options helps increase supply-chain flexibility and can mean either a competitive advantage or disadvantage to businesses—ultimately affecting cost and availability to consumers.

Freight movement for a product may start with a truck that delivers it to a railroad, which carries the load to a location where another truck transports it to its scheduled destination. Or other combinations may involve trucks, ocean carriers or river transport, or truck and air transport.

With different stops along the way, the terminals that connect modes also play an important role, he says. Places to transfer or store goods help businesses take advantage of intermodal movement.

Minnesota benefits from its central location. “We have proximity and access to the rest of the country,” Smith says. “That’s an advantage for modes and increases flexibility.”

The state also faces some challenges in its network. For example, a lack of cost-effective intermodal access to the largest U.S. ports at Long Beach and Los Angeles in California puts some Minnesota industries at a competitive disadvantage. Improvements, Smith says, such as more terminals and better access to them, improved truck parking, and public-private partnership projects for specific shipper projects, offer opportunities to strengthen the network—and, in turn, help the state’s economy.

“The network—and how well it works—is critical because shippers often determine where they will locate facilities in large part based on freight access,” Smith says. “Shippers with access to competitive options have a cost advantage and more flexibility to serve their customers.”
OPPORTUNITIES MISSED: Mode solutions that support economic expansion

Minnesota is the fourth largest agricultural exporting state in the country and ranks fifth among all states in total agricultural cash receipts, according to 2015 statistics from the Minnesota Department of Agriculture.

In short, agriculture remains crucial to the state, and Minnesota agriculture depends on freight to export its products.

“All modes are vital to what we are doing,” says Bruce Abbe, executive director of the Midwest Shippers Association. The association was originally established through a grant from the Minnesota Legislature in the early 2000s to help spur growth in the specialty grain industry.

The specialty grain industry depends on intermodal containerized shipping to distribute its product throughout the world, which means it requires trucks and rail to reach ports. Inefficiencies in transportation, such as congestion, can disrupt the industry because of the reliance on multiple modes.

Shipping specialty grains depends upon the availability of shipping containers. These containers must be transported by rail from ocean ports to Minnesota, where import cargo is offloaded and then specialty grains are loaded. Much of the state’s specialty grain exports are headed to Asian markets, currently through ports in Seattle, Washington, and Vancouver, Canada. But the largest numbers of containers—almost 50 percent—come through the ports in Los Angeles and Long Beach, California.

The lack of a direct rail route to Southern California ports makes it difficult for Minnesota specialty grain and soy producers to compete, due to increased costs to reach Asian ports that serve huge, growing middle-class markets. “It is a competitive disadvantage for us,” Abbe says, “and other areas of the country are in a better position—notably Chicago and Kansas City, where major, state-of-the-art intermodal rail facilities have been built.”

“We know we could grow and export more,” he says, especially with the addition of railroad intermodal routes and related handling facilities. Facilities such as warehouse and distribution centers help serve imports more cost-efficiently.

Minnesota benefits from its current multimodal system, including two Class 1 railroads that provide intermodal container service, Abbe says. But expansion of the system to include additional railroads and more direct services would offer additional benefits, such as improved access for other types of shippers generating additional jobs. “Distribution and warehouse facilities create good jobs and enable us to strengthen our international trade capacity,” he says.

The globalization trend will continue, with implications for the Minnesota economy. “Nothing is stopping globalization and global trade, and transportation is part of it,” Abbe says. “We need to make sure we have full-force intermodal transportation to ensure our spot and help our economy grow.”

“Distribution and warehouse facilities create good jobs and enable us to strengthen our international trade capacity.”

—Bruce Abbe
ON THE TABLE: Current and future approaches

**Minnesota Statewide Freight System Plan: Next steps**

The 2016 Minnesota Statewide Freight System Plan offers a path to help preserve and improve the freight transportation system in Minnesota.

Together with public and private partners such as MFAC, the Minnesota Department of Transportation (MnDOT) is advancing the freight plan through an action agenda, which includes five key actions:

- Integrate freight into transportation planning and project development
- Develop a freight system investment plan
- Use a performance-based approach to making strategic investments on Minnesota’s Principal Freight Network
- Use advanced technology to provide better information and operate the system cost-effectively
- Advocate for freight projects and dedicated freight funding

“Our freight transportation system is vital to the state’s economy,” says Bill Gardner, director of the MnDOT Office of Freight and Commercial Vehicle Operations. “Freight tonnage is expected to grow significantly by 2040, demanding improvements in the condition and capacity of freight infrastructure, including roads and bridges, rail lines, and ports.”

Moreover, MFAC continues to serve a critical role in the process by reviewing the needs and strategies in the freight plan and providing input about priorities and actions for implementation.

“The plan’s action agenda outlines the next steps that MnDOT and its freight industry partners can take to keep pace with the expected growth,” Gardner says. “A public-private partnership helped shape the state freight plan, and public-private partnerships will help move the action agenda forward.”
Here are examples of actions in support of the Minnesota Statewide Freight System Plan:

- Currently under development, a Freight Investment Plan will guide the investment of first-ever federal formula freight funding provided to Minnesota, approximately $17–20 million per year for five years. Investments will be made in projects with demonstrated freight benefits, in consultation with both public agencies and freight industry stakeholders. This new program will improve the performance of the state’s freight transportation system, particularly roads and bridges. Anticipated projects include expanded truck parking at rest areas, replacement of bridges with limited vertical clearances, and improved pavement.

- Truck parking for long-distance truckers continues to be a challenge—rest areas with truck parking are frequently overcrowded. As part of a multi-state deployment, MnDOT is installing a rest area real-time truck parking availability information system. Advanced technology detects and communicates parking information to truckers directly, so they can make more informed decisions that affect their safety and compliance with limits on truck-driving hours.

- Minnesota also is working with other states in the upper Midwest to address regional freight bottlenecks across all modes of transportation. In Minnesota, two-thirds of the freight tonnage moving in the state crosses one or more of our state borders. Bottlenecks include congestion hot spots, deficient infrastructure, and inadequate terminals for intermodal transfers. Improving the regional freight system benefits Minnesota shippers and carriers by lowering costs and improving service reliability.

- MnDOT is implementing a variety of rail safety improvement initiatives, particularly on rail corridors that transport significant amounts of hazardous materials. These include rail-corridor renewal, grade-crossing protection systems, and increased inspections of rail lines and train equipment. MnDOT, federal agencies, railroads, and communities all are involved in these efforts.

Aging infrastructure affects those modes and ports as well. For example, the 50-plus-year-old dock walls of the Duluth-area port need replacing. “That’s a huge capital expense,” Coda says, “but the dock walls have a huge impact to the public good.”

As a key strategy, the port leverages its resources, including state and grant funding, as much as possible, while also preparing for growth. “Our infrastructure is one of our most important strengths,” he says, “and we need to update it.”

**Rails: Regulations and more**

Minnesota railroads help carry much of the state’s agricultural tonnage—and the freight of many other industries—to destinations throughout the state, region, country, and beyond. The extensive rail network in Minnesota includes four of the seven Class I railroads in the United States as well as 20 small regional and short line Class II and III railroads.

Railroads in the state operate under variable market conditions. For example, railroads can face unpredictable shipping schedules, according to Twin Cities and Western Railroad president Mark Wegner. In times of high market demand, railroads run at full capacity—but they also must take into account times of lower market demand. “We try to do a good job in being responsive to market needs, so we are ready when they are ready,” he says.

State and federal regulations that require extensive documentation and may overlap tend to increase costs for railroads, further hindering their service capabilities, Wegner says. The lack of limits to liability also poses concerns to the industry. He cites a short line railroad with insurance that went bankrupt after an incident in Canada. And the capital-intensive nature of railroads and the shifts in demand for railroad service make it difficult to move forward with infrastructure and network upgrades.

“We are a private industry that provides public benefits,” Wegner says. “Public and private partnerships can help us improve what we do.”
When Freight Slows: Congestion Impacts

When freight can’t move, what are the consequences? Here’s a closer look at what happens when delays occur and what approaches support better freight flow.

KEY HUBS: Movement throughout Greater Minnesota and the metro area

Each day, trucks carry milk directly from farms throughout Greater Minnesota to processing facilities in the Twin Cities for the member-owned agricultural cooperative Land O’Lakes.

Milk trucks drive on almost all types of roads—from gravel to pavement, from two-lane county roads to multiple-lane freeways. Many of those trucks bring their load to a facility of Dean Foods in Woodbury, which processes the milk for grocery stores. And time is of the essence with a perishable product.

As the trucks move closer to the Twin Cities from co-op member locations in northwestern and southwestern Minnesota and the Albert Lea and Rochester area, traffic can slow on the 694/94 and 494/694 interstate loops as well as on Highway 52, according to Jason Wicklund, transportation manager for Land O’Lakes.

“We are impacted by what is happening with metro traffic,” Wicklund says. “When traffic is congested, it can create an issue.”

During periods of highway construction, the challenges with congestion can increase, he says, but the end result is a positive one. “As construction projects are completed, the added lanes do help. Anything to add lanes helps.”

Population and industry growth in the metro have contributed to increasing congestion. But transit alternatives such as bus and light rail help in adding extra mobility to the entire system as well as offering commuters advantages in time and convenience, he says.

In addition to metro congestion, trucks face challenges in Greater Minnesota with gravel roads. “The more paved roads, the less likely our truck will get stuck,” he says. Traffic congestion also affects some county roads.

Land O’Lakes ships most of its product domestically, and transportation is a key component of its operations. The company looks for new solutions to avoid delays on the road, such as scheduling trucks so they arrive in the metro during off-peak hours. “We are constantly working with drivers transporting our milk to ensure safe and timely deliveries,” Wicklund says.
CARRIERS AND MEDICAL DEVICES: Life-saving movement

In an emergency, no one wants to think about the consequences if a medical device doesn’t arrive. It falls on medical-device shippers and freight carriers to ensure that devices reach their destination on time and undamaged.

“Effective treatment and diagnosis of life-threatening conditions is often the difference between life and death, and time is of the essence,” says Shaye Mandle, president and CEO of the Medical Alley Association, an association of health technology and care organizations in Minnesota.

“If a medical device that is needed to diagnose or treat a patient isn’t available, there can be dire consequences,” he says. “Late compromises health.”

Minnesota ranks as the number one health technology cluster in the world, according to Medical Alley. Its status makes effective freight movement of vital importance to the industry, both in terms of timely access to life-saving technologies for patients and for delivering value through supply-chain efficiencies, Mandle says.

“Our state has done a tremendous job of developing an industry cluster on the medical-device side,” with large global companies as well as mid-size and smaller ones, says Bill Goins, chair of the Minnesota Freight Advisory Committee.

No matter the size, medical-device companies all face the daunting issue of distribution and the challenge of complex supply chains. The reliability of freight movement influences a myriad of decisions, Goins says, such as inventory amount and timing of supply-chain shipments. Congestion, freight availability, and weather all can derail a medical-device company’s competitive positioning as well as its key role in saving lives.

“Freight is severely impacted by congestion and infrastructure,” Mandle says. “Any significant hindrance to the movement of goods affects the medical-device industry. Congestion slows traffic and speeds up infrastructure degradation—each can impact the medical-device supply chains.”

In Minnesota, improving freight movement between the metro area and Rochester, to and from Minneapolis–St. Paul International Airport, and through the infrastructure that connects major population centers and rural Minnesota stands to benefit not only commerce in general, but the medical-device industry in particular, he says.

“It is critical that Minnesota’s infrastructure and strategies for freight movement align with the growth metrics being driven by the health-technology industries,” Mandle says.
OTHER KEY ISSUES: Congestion in a different light

Labor shortages may slow freight movement, and with 68.9 percent of all freight tonnage moving on trucks, truck driver shortages present a particular concern.

According to the 2015 Truck Driver Shortage Analysis by the American Trucking Associations, the trucking industry ran short by 38,000 drivers in 2014. A shortage of 175,000 is possible by 2024 if the situation does not change.

An aging workforce contributes to the problem, combined with more available job alternatives and industry growth that creates greater demand.

John Hausladen, president and CEO of the Minnesota Trucking Association, says driver shortages could possibly lead to disruptions in supply chains. “Already we are seeing increases in driver wages, which will likely continue rising as a shortage continues,” he says. “We also are exploring ways to improve the perception of truck driving as a rewarding career.”
ON THE TABLE: Current and future approaches

Trucking and technology advancements

The trucking industry has a long-standing history of technology adoption, according to Dan Murray, vice president of the American Transportation Research Institute, the non-profit research arm of the trucking industry.

“People think of trucking as a dinosaur industry, but it’s quite the opposite,” Murray says. “We have always been innovative.” A key objective of the industry is continually improving on technology that has been incorporated for decades.

“These systems continue to evolve and become more and more sophisticated and effective,” he adds. Many technologies that trucks adopted early, such as GPS, road stability systems, and collision warning systems, have made their way into automobiles.

The trucking industry also takes part in an even-more cutting-edge technology testing. Recent headlines reported the successful testing of an autonomous truck. In Colorado, a self-driving semi wended along 125 miles of Interstate 25 without a driver behind the wheel—the driver watched the entire three-hour trip from the sleeper berth.

“We are talking far more sophisticated technologies than the ‘driverless’ cars we read about today,” Murray says. These technologies will help change the industry.

Public-private partnerships are critical for technology development and advancement, which helps the industry meet growing economic pressures. “One of the motivations behind these innovations,” he says, “is constant demand for faster and faster delivery.”
MFAC Resources

What MFAC activities support its ultimate goal of developing and promoting safe, productive, and sustainable freight transportation in Minnesota? And what’s next?

CONTRIBUTIONS: Highlights and achievements

MFAC focused its efforts in 2016 in several key areas:

Committee structural changes

MFAC adjusted its membership to better reflect the diversity of freight modes and the many aspects of the freight industry. The new MFAC membership roster includes representatives—the majority of whom are senior-level leaders—from all modes of freight transportation, major industries statewide, and related public-sector organizations. Such diversity and high-level leadership helps position MFAC as a resource to answer questions on freight issues, share insights on industry trends, and offer feedback into state and local freight plans. MFAC also serves as a conduit for other freight industry and business contacts. In addition, MFAC formed an executive committee to provide leadership to the full group.

Minnesota Statewide Freight System Plan

The 2016 Minnesota Statewide Freight System Plan provides a policy framework and strategies for the Minnesota Department of Transportation (MnDOT), MFAC, and other freight stakeholders to guide planning and investment in various transportation modes. MFAC was involved with the development and review of the plan, which includes 30 strategies.

Bottleneck analysis

MFAC members identified perceived bottlenecks for all freight modes and suggested performance measures and indicators. The results will help MnDOT find opportunities for integration as it compares the identified bottlenecks with planned and programmed MnDOT projects.
FUTURE PLANS: Looking forward

MFAC will continue to build on its foundation and past efforts in the upcoming years. Some key activities include the following:

*Statewide plan implementation*

MFAC members are working with MnDOT to prioritize implementation strategies and actions and to support their implementation.

*Facilitate dialogue among key stakeholders*

MFAC will continue bringing together its representatives for discussions about freight issues and to expand its circle of engagement and partnerships.

*White papers*

MFAC is preparing the first in a series of white papers that explore aspects of freight in greater depth.
EXPERTISE

MFAC Executive Committee

Bill Goins (Chair)  Worldwide Account Manager, FedEx
Ron Dvorak (Vice-Chair)  Marketing Director, Lake Superior Warehousing Co., Inc.
Bruce Abbe  Executive Director, Midwest Shippers Association

Jason Craig  Director of Governmental Affairs, C.H. Robinson
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