



2021 Annual Report

Minnesota Freight Advisory
Committee

State of Freight



About MFAC

Established in 1998 as the first state-level freight advisory committee in the country, the Minnesota Freight Advisory Committee (MFAC) continues to serve as a model for other states.

A partnership between government and business, MFAC meets quarterly to exchange ideas, advise the Minnesota Department of Transportation (MnDOT) on the current and future condition of the state's multimodal freight transportation system, and recommend freight-related policy and actions. MFAC provides a focal point for freight transportation expertise in Minnesota.

MFAC also plays a critical role in the continued development and implementation of the Minnesota Statewide Freight System and Investment Plan and its Freight Action Agenda. MnDOT produced the plan in partnership with public- and private-sector freight stakeholders throughout the state.

MFAC's membership roster (see page 12) includes broad representation from the public and private sectors. The committee also serves as a conduit for other freight industry and business contacts.

In 2020, MFAC updated its strategic plan, reinforcing its mission and refining its strategies and tactics.

MFAC Strategic Plan

Mission

To advise MnDOT and other public agencies and officials on the current and future condition of Minnesota's multimodal freight transportation system; and to recommend freight policies, programs, and investments that support the state's economic competitiveness and enhance safety.

Goals

- Provide active industry leadership in the development and implementation of the Statewide Freight Plan
- Engage agency leaders and elected and appointed officials to affect decision-making on freight issues
- Bring value to members and reflect the diversity of stakeholders that have an interest in the movement of freight into, out of, and within Minnesota



Supply-Chain Disruptions Reinforce Freight's Importance



Stacks and stacks of containers at ports. Ocean carriers surrounding the Ports of Los Angeles and Long Beach. These images filled the mainstream media in 2021. Hard-to-find inventory. Delayed shipments. Increasing prices. Those realities hit consumers hard.

Suddenly the invisible nature of the freight network became very visible, and the important role that freight plays to the economy, to people, became crystal clear.

The economic recovery from the pandemic resulted in a shock to the supply chain, which couldn't absorb such a significant spike in consumer spending. A story on page 2 takes a closer look at current supply-chain dynamics and their implications for the state.

Those in freight — whether truckers, rail workers, shippers, logistics staff, or personnel on ocean carriers or at ports, terminals, and airports — continue their hard work and long hours to keep products moving.

Here in our state, the Minnesota Freight Advisory Committee supports the freight industry by exploring mode and freight system solutions and innovations, as well as by facilitating collaboration between private industry and the Minnesota Department of Transportation.

This partnership helps maximize the impact of federal and state infrastructure dollars as the two work together to identify the investments that offer the greatest benefits to Minnesotans and the state's economic health. It generates a place to look at initiatives that require both public and private support to work. This report includes examples of both efforts, with updates on the Minnesota Freight Highway Program and sustainability planning.

It's true that many states look to MFAC as a model for their own freight advisory committees. Through MFAC, we — who represent the diversity of the freight industry — can stay in touch, share updates, reach out to other states, and respond quickly. And that is no easy task during a pandemic.

Fortunately, MFAC has great support: My personal thanks to Andrew Andrusko from MnDOT and Claire Johnson, previously with the Center for Transportation Studies, for making our committee meetings successful in the challenging virtual environment. As always, we are grateful for all the contributions of CTS and MnDOT staff.

On behalf of MFAC, a special thank you to MnDOT Commissioner Margaret Anderson Kelliher for her support of MFAC. She has regularly attended our meetings, generously offering her time to update us and listen to our concerns. She has shown a true openness to working together, and we are grateful for her commitment.

To our MFAC members and those involved in the freight industry, your contributions are most valued. You continue to make a difference for all Minnesotans.

— **Jason Craig**, Chair (2020–2021), Minnesota Freight Advisory Committee

“Minnesota’s freight industry plays a critical role in the state’s economic health. MFAC has been essential in helping us better understand the challenges of freight, wisely use our resources, and partner for good long-term solutions.”

— Margaret Anderson Kelliher, MnDOT Commissioner





Supply-Chain Woes Cause Widespread Impacts

By now, most Americans are familiar with the sight: What seems like fleets of ocean carriers anchored off-shore, waiting for access to the Ports of Los Angeles and Long Beach, both jammed with endless stacks of shipping containers.

Meanwhile, consumers also wait — often weeks and months — for orders, wondering what happened to the near instant fulfillment they once enjoyed.

“There’s been a huge spike in demand as the economy recovered, stimulating increased spending,” said Stephen Burks, professor of economics and management at the University of Minnesota Morris. “It always takes some time for the supply chain to adjust to a spike in demand, and this is a really big one.”



Many moving parts, many challenges

The supply chain consists of many intricately connected parts: ocean carriers, containers, ports, warehouses, intermodal terminals, trucks, trains, airplanes, and all the logistics and infrastructure that supports them. When one of those parts struggles, it can impact the whole system.

“We have always had challenges with the supply chain,” said Bruce Abbe, trade and transportation advisor to the Specialty Soya and Grains Alliance and CEO of his consulting firm Abbe Communications. But the pandemic has accelerated existing challenges, such as a struggling ocean carrier industry and infrastructure issues.

“We are seeing more of the issues now at the ports,” Abbe said, pointing out that the weakest link in any chain can reverberate throughout the system. Difficulties at the ports translate into delays, particularly for truck drivers and terminals and warehouses without enough capacity.

Trouble on the high seas

Well before the pandemic, the ocean carrier industry was struggling economically, resulting in service cutbacks and industry consolidation, Abbe said. The 16 major carriers shrunk to 11 through mergers, and only three vessel-sharing alliances formed among the top 10.

During the early days of the pandemic, ocean carriers took ships out of rotation to avoid losses. When demand for consumer goods rose, the tables began to turn. With less capacity and an increased need for services, the fate of

ocean carriers changed dramatically.

“By contracting and expanding so fast, no one could keep up with it, and all of a sudden, the ports are coming back and seeing all these volumes coming through at a record pace,” said Dan Miller, global container lead at Cargill.

In fact, ocean freight rates set new highs in 2021, with some shippers paying as much as \$25,000 to import a 40-foot container from Asia, up from less than \$2,000 two years ago. Miller estimates that the rate hikes wiped away the last 10 years of debt or losses in one quarter.

Impact on state's exports

Imported consumer goods, nearly 90% of which spend time in a container, are not the only current supply-chain casualty. Minnesota's agricultural sector saw warning signs for its export business in 2020, when businesses started to scramble to find containers.

Specialty Soya and Grains Alliance members export specialty grains worldwide and rely on trucks, rail, and ocean carriers to transport containers to Asian ports from Minnesota and other states.

Instead of making containers available for exports, some shippers instead decided to send empty containers back to pick up higher-value imports. “Our biggest concern of late is the reluctance to accept exports,” Abbe said. “Our members are shipping half of what they could.”

“It always takes some time for the supply chain to adjust to a spike in demand, and this is a really big one.”

— Stephen Burks, University of Minnesota Morris

Potential solutions

The federal government has begun to explore some options, including around-the-clock operation of West Coast ports. Since that change proves challenging for the rest of the supply chain, especially trucking and rail, a phased approach likely will result, Abbe said.

To expand capacity, companies have ordered more container ships, likely to hit the ocean in 2023. Much-needed investments in the West Coast ports can help them improve their efficiency, Abbe explained.

In addition, the U.S. House of Representatives recently passed the Ocean Shipping Reform Act, which gives the Federal Maritime Commission more authority to enforce guidelines and encourage competition in the ocean carrier industry. It still requires Senate approval.

The commission also is looking at how to improve the flow of supply-chain information to avoid costly situations.

“You pick up a container or get ready to turn it back to the port, and all of a sudden, the date changes and you have

Trucking Roadblocks



The pandemic's impact has thrown some roadblocks in the way of the trucking industry, such as long wait times at ports and obstacles to obtaining credentials or a vehicle title.

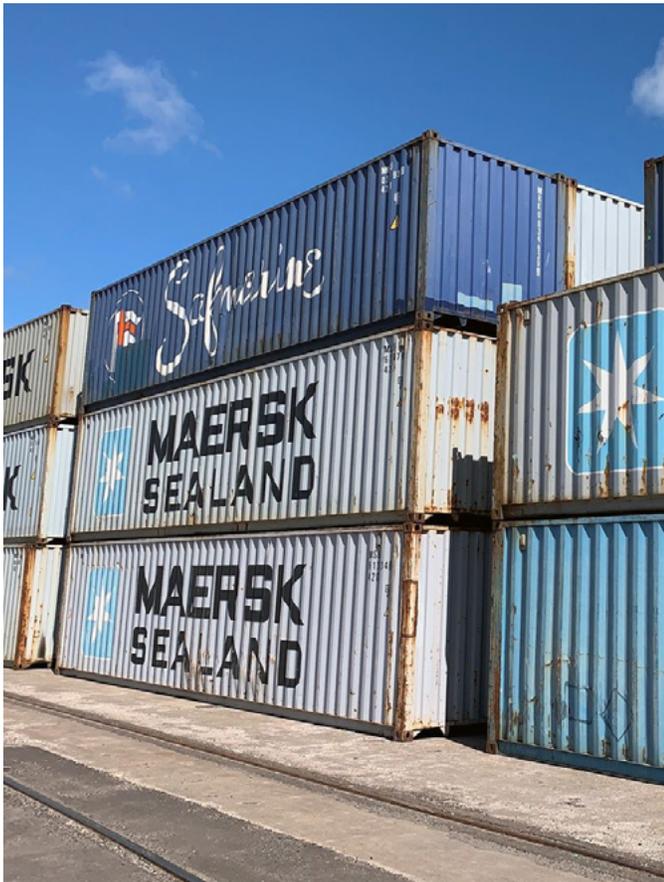
“Anything that slows down our current driver force can negatively impact the supply chain,” said

John Hausladen, president of the Minnesota Trucking Association. “Virtually everything spends some time on a truck. In fact, 96% of Minnesota-manufactured tonnage is transported by truck.”

Supply-chain shortages also hurt the trucking industry directly, with new truck deliveries delayed in 2021 and some orders for 2022 cancelled, steep increases in the base cost of trucks and trailers, a tight used-truck market, and defective road chassis.

“Workforce is the number one challenge we face,” Hausladen said. The MTA expects the significant shortage of truck drivers only to grow. The 2021 Infrastructure Investment and Jobs Act includes truck driver apprenticeship provisions as one way to address the issue. It also helps trucking with funding for the nation's roads and bridges.

Despite the challenges, the trucking industry is resilient. “Trucking carried this nation through the pandemic and won't stop serving the citizens and businesses that depend on us,” Hausladen said.



a driver sitting there, looking at the gate,” said Miller, who serves on the National Shipper Advisory Committee that the FMC recently established. The committee hopes to define a project or recommendation to improve supply-chain data integrity.

Many manufacturers also rely on just-in-time deliveries. They stock less product and depend on the supply chain to deliver, making them vulnerable to major supply-chain shake-ups, Abbe said. But they may need to adjust by increasing inventory and storage.

Minnesota’s contribution

Closer to home, Minnesota also can explore what the state might need to improve its options, including new intermodal facilities and rail routes, Abbe said.

Tapping other ports throughout the U.S. also offers potential, as long as shippers can access those ports efficiently and cost-effectively.

In October, the Duluth Seaway Port Authority announced expanded maritime container capability at Duluth’s Clure Public Marine Terminal. Through recent investments in infrastructure and capabilities to ensure homeland security compliance, Duluth has become only the second U.S. port on the Great Lakes–St. Lawrence Seaway system and the only port west of Cleveland, Ohio, capable of handling containers by direct water connection.

The increasing awareness about supply-chain woes and their impact is important for the state as it pursues possible solutions.

“We need to understand how important this system is,” Abbe said. “We have a major stake in it for our economy and economic health.”

Border Restrictions

In a study that looked at the impacts of border restrictions between the U.S. and Canada during the pandemic, Minnesota freight fared far better than visitor travel.

The study included eight regions and analyzed the data for three Minnesota ports of entry — places to lawfully enter a country — at International Falls, Baudette, and Grand Portage, as well as for the Port of Duluth-Superior.

Since most passenger vehicles fell into the category of non-essential travel, passenger vehicle travel plummeted by 97% during the border-restriction period, said Monica Haynes, director of the Bureau of Business and Economic Research at the University of Minnesota Duluth. The bureau conducted the research for the Minnesota region.

Truck traffic that moves across the border at one of those three points of entry only experienced a 5% decline during the restrictions, partly because it was considered essential travel, Haynes said.

In 2020, the Port of Duluth saw a 30% reduction in Canadian shipments, due mostly to shifts in consumer demand and supply-chain issues, she said. New data from this year shows recovery. “The port has been doing very well this year, basically returning to the levels from 2019.”



Industry Explores the Path to Sustainability

In 2016, transportation became the leading source of greenhouse gas emissions in Minnesota. The following year, MnDOT adopted the state's overall greenhouse gas emission reduction goals for the transportation sector.

"Medium- and heavy-duty trucks generate almost 40% of the transportation carbon pollution in Minnesota, and about 10% of all carbon pollution in the state," said MnDOT interim sustainability program supervisor Siri Simons.

Annual recommendations from MnDOT's Sustainable Transportation Advisory Council offer the potential to impact the freight industry, whose environmental footprint varies depending on mode.

The STAC consists of representatives from business, nonprofits, local and state government, and community groups, who are offering ideas and guidance on carbon reduction to MnDOT. Each year, MnDOT responds to STAC recommendations with a report on related MnDOT activities and proposed actions.

"STAC is tasked with helping the agency achieve our statutory and agency goals to reduce carbon pollution and promote economic development, transportation equity, and safety," MnDOT assistant commissioner for sustainability and public health Tim Sexton told MFAC in June when he outlined STAC recommendations.

"The freight industry plays an important role in shaping statewide planning efforts," Simons said. "MnDOT

is committed to collaborating with MFAC to integrate the freight perspective into MnDOT sustainability efforts."

The freight industry can work toward sustainability in different ways, she explained. The trucking industry is already looking at ways to improve fuel efficiency, such as reducing vehicle idling, lowering fuel consumption, and optimizing routes. Replacing older diesel vehicles and deploying clean fuels like electricity also will help lower emissions. Other freight industry segments are exploring their own sustainability approaches.

In addition, MnDOT leads the transportation team of the governor's Climate Change Subcabinet, which brings state agencies together to identify strategies and policies that move Minnesota closer to statewide carbon pollution reduction goals.

In September, MFAC also hosted a special meeting on sustainability where small groups discussed key priorities and concerns. The meeting offered MnDOT an opportunity to hear freight community perspectives and to pave the way for ongoing dialogue.

MnDOT staff will continue to share plans and seek ongoing opportunities for engagement with MFAC, Simons said.

Find more about MnDOT sustainability efforts, STAC recommendations, and MnDOT responses at dot.state.mn.us/sustainability/advisory-council.html.

2020 STAC Recommendations

Fueling and powering of transportation

1. Develop a clean fuels policy.
2. Establish rebates for electric vehicles, including dealership support and consumer rebates.
3. Increase investment in charging infrastructure, beyond existing Volkswagen settlement investments.

2021 STAC Recommendations

Fueling and powering of transportation

1. Lead by example by transitioning state fleet to zero-emission vehicles.
2. Support the medium- and heavy-duty electric vehicle market.
3. Take a proactive leadership role in working with other states to establish a Midwest direct current (DC) fast-charging network.

VMT reductions and transportation options

1. Adopt a statewide goal of reducing vehicle miles traveled by 20% by 2050.
2. Stop expanding highway capacity to reduce congestion.
3. Prioritize transit and high-occupancy vehicles on MnDOT owned right-of-way.

VMT reductions and transportation options

1. Implement the vehicle miles traveled reduction goal and incorporate it into major transportation projects.
2. Partner with the Metropolitan Council and other MPOs to adopt a similar VMT reduction goal.
3. Build public and local support for providing transportation choices for travelers and reducing VMT.



Freight Sustainability at Work: Mode Examples

Duluth Seaway Port Authority

Mode efficient: Cargo ships travel 670 miles on a gallon of fuel, compared to 202 miles on a gallon of fuel for a locomotive, and 59 miles on a gallon of fuel by truck, roughly 90% less carbon.

Challenges: Climate change and the frequency and intensity of storms, aging infrastructure, high cost to achieve energy transition.

International Maritime Organization goal: 40% reduction in carbon intensity by 2030 and a 50% reduction by 2050 compared to 2008 levels.

Industry leader: Founding member of Green Marine, a voluntary certification program to reduce environmental footprint in marine operations.

High grades: "We use it [the certification program] as a benchmarking tool to measure performance against ourselves year over year and against other port authorities," said Deb Deluca, executive director of the Duluth Seaway Port Authority and incoming MFAC chair.

Medtronic

Goal: Carbon neutral in global operations by 2030.

Progress: Cut operational carbon emissions by 36% in the past seven years, aiming to reduce them by 50% or more by 2025.

Strategies: Working with core carriers, improving network design and location of distribution nodes, consolidating orders.

Measures: CO₂ calculations from freight auditor and annual CO₂ report from carriers.

Partnership benefit: "When our transportation partners make improvements in carbon reduction, we benefit," said Michael Loney, Medtronic senior logistics manager.





BNSF Railway

Inherent efficiency: Rail is three times more efficient than trucks.

Progress: Cut carbon intensity in half over the last 40 years.

Aim: Move toward zero emissions target.

Strategies: Reduce the amount of fuel through technology and improvements in operations, transition to lower carbon intensity diesels, invest in new technology for rail yards, explore battery electric and hybrid technologies.

Proof of concept: Successfully tested battery electric locomotive.

Next steps for hybrid locomotive: "As we look to the future, we're hoping to get larger energy storage sizes and get the technology to a point where we're confident that we can run it every day all day in regular service," said Michael Cleveland, senior manager for emerging technologies, BNSF Railway.

Electric Trucks: Barriers and Benefits

Electric trucks hold great promise as the trucking industry increasingly looks for more sustainable options. But what will it take to get them into service?

University of Minnesota associate professor of civil, environmental, and geo- engineering Alireza Khani researched that question for MFAC, focusing especially on the benefits that electric trucks offer.

Khani found some of the biggest challenges for electric trucks involve infrastructure and cost:

- Electric trucks require an infrastructure that includes readily available charging stations and easily accessible maintenance options.
- Charging time is another factor that could cut into on-the-road time.
- Utilities also would need to increase their capacity.
- The initial cost for an electric truck runs about \$86,000 higher than a diesel truck, with additional costs for battery replacement every three to seven years.

That initial cost, however, eventually turns into savings because the operating costs of electric trucks average 13% less than diesel trucks.

"Although there is a higher initial cost, in the long run this could lead to much bigger savings and potentially higher revenue because of the operational advantages," Khani said.

Cost and energy incentives, preferred route incentives, and an extended operation time window also could help offset barriers.

"Proper policies and incentives, along with fast building of infrastructure," Khani said, "are the keys to massive and successful adoption of electric freight vehicles."

Publication of an MFAC white paper by Professor Khani on the benefits and barriers to freight electrification is forthcoming.



Careful Planning Helps Maximize Minnesota's Freight Investments

A snow fence installation on I-94 by the cities of Moorhead, Downer, and Fergus Falls will help improve safety and trucking reliability, as will an expansion of truck parking spots at the Burgen Lake Rest Area. Reconstruction and modernization of 117th St. in Inver Grove Heights looks to improve the movement of first- and last-mile deliveries.

The second round of funding from the Minnesota Highway Freight Program will move these projects — along with 14 others — forward.

“For the first time in late 2015, Congress decided that there was going to be actual dollars available for freight-specific improvement plans,” said Andrew Andrusko, MnDOT freight planner. In the first round of funding, MnDOT distributed \$90 million for freight projects on the National Highway Freight network — Minnesota interstates, highways, or designated critical urban or rural freight corridors — during the five-year period from 2016 from 2020. The second round of funding for MHFP projects totaled close to \$60 million.

MnDOT used a competitive solicitation process to

identify potential projects and expanded its outreach to make more cities, counties, tribal governments, airports, ports, rail, and other groups aware of available funds.

The process reinforced the need for freight investments, drawing 34 applications for more than \$178 million in projects. The recent passage of the Infrastructure Investment and Jobs Act offers some good funding news: It likely paves the way for another round of MHFP funding sometime in the future, potentially \$20 million a year or more for the duration of the act, depending on fund allocation, Andrusko said.

MFAC participated in the Statewide Freight Investment Committee, which manages the MHFP. The committee wanted to broaden the geographical impact, setting a target of 60% investment of funds for metro district projects and 40% for Greater Minnesota projects. The MHFP also developed a way to prioritize and select projects for funding.

“This program was actually one of the first to align with the state Legislature’s desire to have quantitative scoring

Truck Parking Dilemma

Two years ago, the number of truck parking facilities in Minnesota increased from 148 to 212, and truck parking spots increased from 4,266 to 4,834. Still, on any given day in the state, there are nearly ten times the number of semitrucks as parking spots for them.

“Not all of those 44,000 semitrucks need to park at any one time, but it gives you an idea of the scale of truck parking needs out there today,” said MnDOT freight planner Andrew Andrusko.

MnDOT conducted research in 2019 to assess the number and availability of truck parking spots throughout the state. The study also gathered data on truck parking supply, demand, and use as well as identified solutions and opportunities, coordinated public and private stakeholders, and developed goals and strategies for public investment.

The study found more trucks on the road, with an increase of 24% in the goods they carry. The national demand for goods and the supply-chain crisis only adds additional pressures on truck drivers.

“Right now, truck parking is even more strained than it was when we conducted this study,” said Andrusko.



As a result of the research, MnDOT expanded parking at rest stops with regular overcapacity issues, such as the Elm Creek Rest Area and the rest area site in Fergus Falls, as well as making improvements at other rest areas.

The private sector provides 86% of truck parking spaces, with MnDOT owning or operating 14%, making collaborations with groups like MFAC a critical component to finding solutions.

“MFAC can provide advice about novel ways to approach the issue of trucking, such as public-private partnerships,” Andrusko said. “There is no solving this problem alone.”

criteria published and explained to the public,” Andrusko said. Reviewers evaluated projects based on safety, improvements in truck travel-time reliability, and improved access to freight facilities, among other measures.

In addition to contributing to the MHFP, MFAC members also will play a key role in another important initiative.

MFAC will serve as an advisory committee for the upcoming major update of the Statewide Freight Plan, which helps set the agenda for freight investments, actions, and policies. MnDOT completed the last significant update

in 2016. MFAC will help identify current critical issues and possible paths forward.

“We’re looking to MFAC to understand critical issues and to determine what we can do to address them,” Andrusko explained. “MFAC ideas and opinions will help guide the direction we go.”

Fiscal Year	Minnesota Highway Freight Program Projects (2022-2025)	Amount	Category
2022	Metro District Freight Plan	\$450,000	Planning
2022	State Freight Plan Prep Contract — Scope and Data	\$40,000	Planning
2023	State Freight Plan Update	\$560,000	Planning
2023	Rice County — TH19/135 Safety and Mobility Improvements	\$1.1 million	Safety
2023	District 4 — I-94 Snow Fence Installation: Moorhead, Downer, and Fergus Falls	\$1.5 million	Safety
2023	Metro District — I-94 Eastbound Lane Improvement Project	\$8 million	Safety
2024	Koochiching County — US53 and CSAH332 Roundabout	\$1.8 million	First/Last Mile
2024	Sherburne County — Reconstruction and Realignment Project	\$2.5 million	First/Last Mile
2024	District 8 — TH23 and CSAH1 (Kandiyohi County) Left Turn Lane	\$960,000	Safety
2024	Burgen Lake Rest Area Truck Parking Expansion	\$1.5 million	Safety
2024	District 8 — US212 and Morningside Drive Roundabout	\$1.6 million	Safety
2024	Inver Grove Heights — 117th Street Reconstruction and Modernization	\$8 million	First/Last Mile
2024	District 6 — I-90/US52 Interchange	\$10 million	Mobility
2025	District 8 — US212 and TH15 Roundabout	\$2.56 million	Safety
2025	Anoka County — US10/169 Ramsey Gateway Project	\$10 million	Safety
2025	Bloomington — I-494/I-35W Interchange Improvements	\$11.1 million	Mobility

New Freight Optimization Tool

New legislation in Minnesota recently funded the development of a freight optimization tool to better understand freight patterns and help improve the efficiency of freight operations and economic competitiveness.

“A freight optimization tool taps into and leverages data from the private sector to map freight flows in the state and identify opportunities for greater efficiency and synergy,” said Bentley Graves, director of health care and transportation policy for the Minnesota Chamber of Commerce.

Other states already have begun to develop similar optimization tools to help them remain competitive, Graves said. The Iowa Economic Development Authority is using its tool to show companies how locating in

Iowa can reduce their transportation and supply-chain costs compared to other locations.

MnDOT is currently working on a scope of work for the tool and plans to post a request for proposals in 2022.

“This legislation will help state agencies and the transportation and logistics industry reduce inefficiencies and costs in the state of Minnesota’s transportation and supply-chain system,” Graves said. “It will help us to leverage the strengths of our varied, home-grown industries, and it will help to position our state for continued growth in the years ahead.”



Focus on Air Cargo Keeps Freight Flying

In 2020, the Minneapolis–St. Paul Airport moved almost 400 million pounds through cargo-only operations, a slight increase over 2019. The freight that passenger airplanes carried in their bellies, though, dropped sharply.

“In 2020, total cargo tonnage at MSP decreased about 11%,” said Brian Peters, director of air service development for the Metropolitan Airports Commission. “MSP’s cargo-only airlines (FedEx, UPS, Amazon, DHL, and others) increased about 4%. MSP’s passenger airlines (Delta Sun Country, United, Southwest, and others), operating significantly fewer operations than normal due to the pandemic, decreased about 58%, causing MSP’s overall tonnage to decrease.”

E-commerce drives growth

But this past year, MSP noted a significant spike, even from the pre-pandemic levels of 2019.

“In 2021, total cargo tonnage has recovered and through October is tracking about 14% greater than 2020 and will surpass 2019’s level,” he said. “Delta and other passenger airlines also are accommodating more cargo than in 2020 due to their operational recovery that has been occurring in 2021.”

The rise in e-commerce helped drive increases in cargo-only traffic, with FedEx’s cargo growing 4% and UPS’s growing 10%. The most significant growth comes from Amazon at a 115% increase, an upward trend that Peters expects to remain.

“We believe Amazon will continue growing to meet demand for their products in the region,” he said. “Other operators are expected to also grow modestly over the next several years.”

MSP air cargo study supports expansion

Projections for Amazon’s growth were confirmed when MAC also embarked on a milestone in 2021 by undertaking its first comprehensive air cargo assessment for MSP.

“The purpose of the study was to assess current local, regional, and national air cargo trends; inventory MSP’s air cargo facilities; forecast MSP’s air cargo activity through 2040; and identify any facilities’ gap MSP may have to accommodate forecasted growth,” Peters said.

The consultants completed a property assessment of the MSP campus, analyzed U.S. and MSP cargo history, conducted more than 25 stakeholder interviews, developed a 20-year cargo forecast for MSP, compared the forecasted air cargo demand to MSP facility needs, and identified potential expansion possibilities.

The study found a mature and well-served domestic air cargo market at MSP, which ranks among the top 30 of U.S. air cargo airports. All the Midwest airports that ranked higher than MSP are air cargo hubs for a major cargo carrier.

The study projects a solid air cargo compound annual growth rate of 3.6% for MSP through 2040. It noted an opportunity to increase international cargo, primarily through international passenger belly cargo with the

greatest potential from scheduled passenger service to Germany.

According to the study, MSP's infrastructure can accommodate the 20-year forecasted air cargo growth for all operators except for Amazon. Amazon's continued growth requires facility expansion.

MAC is planning to address that need by developing 19 acres of vacant land adjacent to MSP's west cargo ramp near Highway 77, said Peters. MAC also will factor in the study results as part of its MSP Airport 2040 Long-Term Plan.

"To ensure MAC remains current with local, regional, and national air cargo trends, MAC is planning to conduct another study in the next five to seven years, also helping ensure MSP remains current on air cargo infrastructure and opportunities for MSP to support the region," Peters said.

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Impact of E-Commerce on Air: More Volume, Same Weight

Total UPS cargo freight in and out of MSP to and from Bemidji declined slightly in 2020 — from 4,819,703 pounds in 2109 to 4,786,176 pounds in 2020. But there is more to the story than weight.

"We are seeing a remarkable increase in volume," said Tracie Walter, vice president and director of operations at Bemidji Aviation at the March MFAC meeting. "We didn't see weight increases but we definitely saw our volume increase. We have had larger airplanes flying and more airplanes flying, but the weight is still approximately the same."

How can you have more volume, but the same weight? The answer lies in the marketplace trend of e-commerce, where consumers buy online and retailers ship the individual packages to them directly.

In the past, one box of 144 products shipped from wholesaler to retailer. "And now we're seeing half of one box go to a retailer, but the other 63 items out of that box are being shipped individually. So, there's very little change in weight, but there's a huge change in volume," Walters said.

The rapid increase in volume and direct-to-consumer shipping has only been exacerbated by the pandemic. "It's very much a consumer mentality," she said. "Where we used to see very much heavier business-to-business cargo, now we're seeing lighter pillow boxes."



Volume vs. Weight: The Case of the Christmas Ornaments

1996

Box of Christmas ornaments on its way to a retailer, 1 case (144 pieces in an 18" x 18" x 12" case) = 3,888 cubic inches of aircraft space

2021

Half case of Christmas ornaments to retailer (72 pieces in an 8" x 18" x 6" case), 63 (6" x 6" x 6" boxes) direct to consumer

25 years of difference

Quantity transported decreases by 9
Parcel count increases from 1 to 64
Freight volume increases from 3,888 cubic inches to 15,552 cubic inches



Freight Expertise

MFAC Executive Committee (as of December 2021)



Jason Craig (Chair)
Director of
Governmental Affairs,
C.H. Robinson



Meg Duncan (Vice Chair)
Director of Operations,
Koch Logistics



Bruce Abbe
Strategic Advisor for
Trade & Transportation,
Specialty Soya & Grains
Alliance



Lydia Bjorge
Executive Director, State
Government Affairs MN/
ND/SD, BNSF Railway



Ron Dvorak
Marketing Director,
Duluth Cargo Connect



Steve Elmer
Planning Analyst,
Metropolitan Council,
Twin Cities' Area
Metropolitan Planning
Organization



Bill Gardner
Director, Office of Freight
and Commercial Vehicle
Operations, Minnesota
Department
of Transportation



Bill Goins
Executive Director,
Access to Solutions



Jon Huseby
District Engineer,
District 8,
Minnesota Department
of Transportation



Neal Young
Economic Analysis
Director, Minnesota
Department of
Employment and
Economic Development

MFAC Members (as of December 2021)

Wesley Arentson, President, Council of Supply Chain Management Professionals–Twin Cities Roundtable

Levi Brown, Director, Office of Tribal Affairs, Advocacy Council for Tribal Transportation

Randy Brown, Vice President, Transportation, Cargill

John Brumbaugh, Transload Services Manager, Canadian Pacific Railway

Kimberly Caron, Supply Chain and Materials Manager, RZ Mask Company

Ron Chicksa, Director, Metropolitan Interstate Council, Greater Minnesota Metropolitan Planning Organizations

Al Cornish, Director, Government Affairs, Target Corporation

Deb DeLuca, Executive Director, Duluth Seaway Port Authority

Travis Dietrich, Director of Truckload Operations, Bay and Bay Transportation

Mariah Ethington, Manager of North American Transportation, Smiths Medical, Inc.

Todd Gilbert, President, Valley Cartage

Kyle Graven, Senior Director of Transportation, The Schwan Food Company

Bentley Graves, Director of Health Care and Transportation Policy, Minnesota Chamber of Commerce

John Hausladen, President, Minnesota Trucking Association

Nicholas Katich, Minnesota Legislative Director, UTU-SMART-TD (Sheet Metal, Air, Rail, and Transit Union)

Wayne Knewtson, President, Knewtson Soy Products, LLP

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