

FREIGHT INVESTMENT PLAN



“A prosperous, equitable, and resilient region with abundant opportunities for all to live, work, play, and thrive.” The statement builds off of the regional values and goals set by the Met Council to guide our policy work.

Regional core values

Equity | Leadership | Accountability | Stewardship

Regional goals

Our region is equitable and inclusive

Racial inequities and injustices experienced by historically marginalized communities have been eliminated; and all residents and newcomers feel welcome, included, and empowered.

Our communities are healthy and safe

All our region’s residents live healthy, productive, and rewarding lives with a sense of dignity and wellbeing.

Our region is dynamic and resilient

Our region meets the opportunities and challenges faced by our communities and economy including issues of choice, access, and affordability.

We lead on addressing climate change

We have mitigated greenhouse gas emissions and have adapted to ensure our communities and systems are resilient to climate impacts.

We protect and restore natural systems

We protect, integrate, and restore natural systems to protect habitat and ensure a high quality of life for the people of our region.



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Introduction

A safe and efficient freight transportation system is essential to the economic well-being of the region and the state. Manufacturers rely on the system to receive raw materials or parts to produce or assemble their finished products, retailers depend on the system to receive goods at distribution centers and retail outlets, and consumers rely on it to stock their favorite stores or to deliver their orders directly to their homes. In fulfilling these roles, the freight system allows the region to stand out as an important global business and transportation hub.

Throughout the evolution of the Twin Cities' robust freight transportation system, the region's residents have been provided access to the goods and materials they need to live and work. Without an effective freight system, businesses would be unable to distribute their goods to customers or receive shipments needed to manufacture products.

The growth of the Twin Cities region has been historically tied to its function as a major shipping center. While the region does not carry a major share of through-moving freight on a national scale when compared to coastal shipping ports like Seattle and New York, or mid-American rail hubs like Chicago and Kansas City, the region is the primary freight hub for Minnesota. The metro region continues to serve as the major distribution center for goods produced and consumed in Minnesota, and portions of Wisconsin, North Dakota, and South Dakota, including many products that serve a global market.

Because the majority of freight interactions statewide move to or through the Twin Cities, this region's specific mobility and access issues impact the overall efficiency of freight movements for the entire state. To account for this interactive relationship, the Metropolitan Council works closely with the Minnesota Department of Transportation (MnDOT) and other transportation partners in support of a healthy regional freight system that makes a thriving and sustainable economy possible for the entire state.

Relationship to 2050 goals and objectives

Planning for and investing in freight-supportive infrastructure helps to advance the region's goals and related Imagine 2050 Transportation Policy Plan objectives. This freight plan directly ties back to three key regional goals. Each goal sub-section describes how work carried out in response to this plan helps advance the transportation plan objectives that are represented in quotes.

Our region is dynamic and resilient

The region invests in roadway, bridge, and traffic management system improvements on Regional Truck Freight Corridors, which are the highways most relied upon by the trucking industry to move the region's freight and goods. These investments help to assure that "...businesses can rely on predictable and cost-effective movement of freight and goods" by:

- Addressing excessive highway delay through projects that provide, for example, spot mobility improvements or that coordinate and optimize corridor traffic signals to facilitate freight movements, and
- Improving travel time reliability through corridor mobility projects, including managed lane investments (for example, E-ZPass) that allow light- or medium-duty commercial trucks and delivery vans to access during congested times for a fee and attract more transit and carpool riders further removing vehicles and reducing overall congestion.

In addition, transportation investments can help to assure that "...businesses trust that transportation infrastructure and services will withstand and recover quickly from natural and human-caused disruptions" by:

- Minimizing the impacts of non-recurring delays caused by crashes or mechanical breakdowns through incident management programs (such as MnDOT’s Freeway Incident Response Safety Team), and
- Continuing to maintain a grid network of principal arterials that create redundancy in the regional highway system with multiple options for detours on nearby parallel highways.

We lead on addressing climate change

The transportation sector is the largest net contributor to climate change in Minnesota, producing about 26% of overall greenhouse gas emissions from vehicles. Freight transportation is a large contributor to the overall share, largely through privately owned and operated transportation companies. One significant industry sub-sector that can be influenced through regional policies is the e-commerce last-mile distribution system (see detailed discussion under “Planning guidance for e-commerce, last-mile distribution”). The light- and medium-duty trucks, vans, and cars that comprise the majority of vehicles delivering goods to businesses and consumer households have the highest potential for converting to electrification and alternative fuels. Within this realm of influence, this plan can help facilitate “the region’s transportation system [to] minimize its contribution to climate change,” help the region reach its 2050 goal to “reduce vehicle miles traveled by 20% per capita below 2019 levels,” and move toward achieving federal and state targets for reducing transportation related greenhouse gases by:

- Promoting electrification of e-commerce delivery fleets and personal vehicles through planning and investments in public charging infrastructure,
- Identifying and promoting more sustainable shopping, purchasing, and delivery practices that businesses and residents can take to minimize vehicle miles traveled and greenhouse gas emissions, and
- Assisting in planning (in coordination with MnDOT) for the implementation of National Zero Emission Freight Corridors as envisioned by the federal Joint Office of Energy and Transportation.

Our communities are healthy and safe

For all freight transport modes, funding programs are prioritized for projects that proactively or reactively address safety issues. As it specifically relates to freight moved by trucks, there are several mechanisms for improving safety so that “people feel safer, more comfortable, and do not die or face life-changing injuries when using any form of transportation.” These include:

- Prioritizing safety in transportation funding processes,
- Ensuring that Complete Streets planning processes fully consider and account for the safe movement and delivery of freight and goods within the context of providing and integrating safe facilities for vulnerable road users and passenger transportation modes, and
- Improving real-time safety information relating to inclement weather, vehicle crashes, or pavement conditions to advise drivers to take precautionary measures or to reroute to a suitable detour.

Private sector and public sector roles

The Twin Cities region is served by five modes of freight transportation, each having its own role in moving goods to, from, through and within the region. These modes include:

- Trucks carrying freight on roadways,
- Railroads moving heavy bulk goods and containerized freight,
- Barges moving bulk freight along the Mississippi River Waterway system,
- Air freight services for shipping smaller, lower-weight and high-value items, and

- Pipelines transporting liquid fuel and chemical products.

Several freight transportation modes and much of their accommodating infrastructure are owned and operated by private sector businesses. Railroads and pipelines, for example, are entirely owned and operated by private corporations. In addition, most freight terminals that serve to store, manage, and distribute freight shipments for a single transport mode or between two modes (intermodal) are operated by private companies. Due to this dominance by the private sector in owning, operating, and maintaining infrastructure for these non-highway freight transportation modes, and the relatively low level of direct influence the Met Council has on how they are operated, the investment direction section of this plan focuses on highway freight transportation.

Public sector government agencies are responsible for developing, managing, and maintaining highways and roads, including, federal, state, and/or local agencies. Airport terminals and runways are managed by special government districts like the Metropolitan Airports Commission for Minneapolis-St. Paul International Airport. The federal Army Corps of Engineers maintains and operates the Mississippi River Waterway system, including the Minnesota River to the Ports of Savage. They are responsible for maintaining and updating locks and dams and for maintaining river depth through extensive channel dredging operations. As part of this system of barge transportation, the Saint Paul Port Authority owns and leases land along the Mississippi River to private barge terminal operators.

Government agencies also play a significant role in regulating freight transportation operations and infrastructure, particularly in areas with potentially high risks of public safety impacts. The pipeline industry is regulated by the U.S. Department of Transportation and U.S. Department of Energy through the Pipeline and Hazardous Materials Safety Administration and the Federal Energy Regulatory Commission, respectively.

Other sections of this plan describe future public investments in infrastructure to support two of the five freight modes: highways and aviation (see the Highway Investment Plan [insert link] and Aviation System Plan [insert link]). In addition, the 2022 [Transportation System Performance Evaluation](#) contains more information and statistics about freight movement in the region.

Existing Metropolitan Freight System

The existing metropolitan freight system is shown in Figure 1. It consists of several interconnected networks and regional freight terminals that facilitate the movement and transfer of freight within and between freight transportation modes. One regional freight terminal was added in Washington County through the process for updating Regional Truck Freight Corridors, described later in this investment plan.

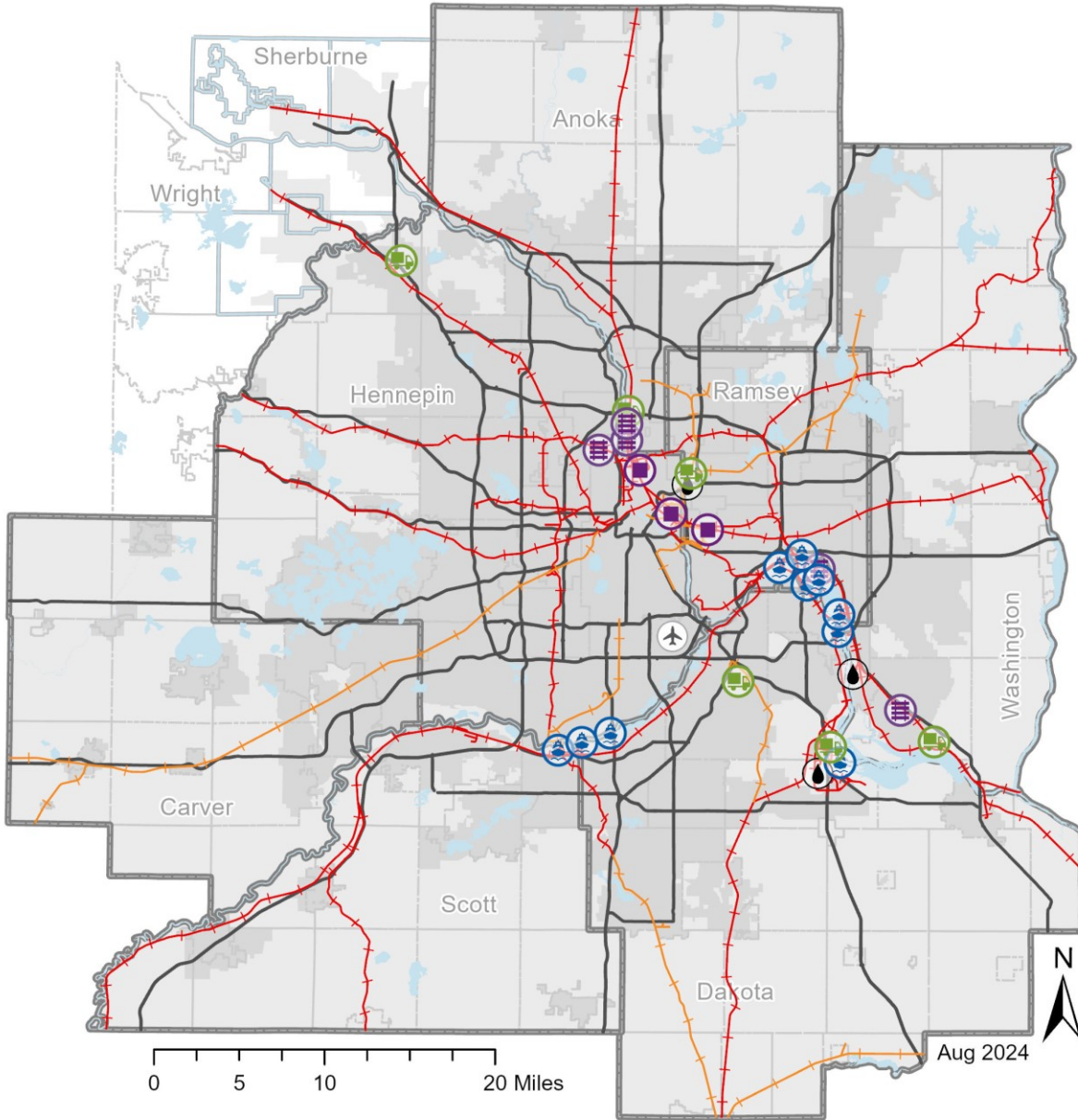
Freight transportation modes

Freight has a system of interconnecting transportation modes, some of which are unique to freight and some which overlap with passenger travel modes. The five modes of freight transportation that make up the overall metropolitan freight system are detailed in this section.

Trucks on highways

Within this region, freight continues to move primarily by truck, and the region's highways continue to be a critical element of the freight transportation system. The regional highway system of principal arterials, which include interstate freeways, and minor arterials which are mostly county highways, provide a redundant and reliable network to support the movement of goods within the metropolitan region. Interstates and other principal arterials provide vital connections to the other major economic centers within the state and beyond. Trucks moving freight destined to or originating from the region's riverports, rail yards, warehouse and distribution facilities, and freight-dependent industries, as well as local businesses and consumer households, all rely on first-and-last-mile connections to fulfill their trips. First-and-last-mile connecting roadways often are local city streets or county roads that may have limited capital budgets for road maintenance and reconstruction.

Figure 1. Metropolitan freight system



Freight Terminal Types

- Airport Terminal
- Pipeline
- Rail Terminal - Container
- Rail Terminal - Non Container
- River Terminal
- Trucking Terminal / Warehouse

Railroad Class

- Class I Railroads
- Class III Railroads

Reference Layers

- Principal Arterials
- Rivers and Major Lakes
- County Boundaries
- City Boundaries
- MUSA 2040
- MPO Area

Railroads

In the early 20th century, rail lines were built to connect between a few large cities and were mostly located outside of urban areas. With steady in growth population and employment through the first half of the 20th century and followed by accelerated growth in the 1960s and 1970s came the development and growth of suburban and rural communities along rail corridors. Railroads then grew their systems to serve the growing communities along their lines. In the 1980s, the technology of intermodal container-based shipping was introduced. This innovation greatly increased system efficiency by increasing train capacities through the ability to run double-stacked containers and eliminating the need to repack goods with each transfer between modes. Containerized intermodal freight is now the predominant rail service today and has contributed to the steady growth in demand for freight rail service. The Twin Cities has three container intermodal terminals serving the region:

1. Burlington Northern Santa Fe Midway Hub terminal in St. Paul,
2. Shoreham Yard run by the Canadian Pacific Kansas City railroad in northeast Minneapolis, and
3. Union Pacific intermodal yard in Minneapolis' Southeast Manufacturing Industrial area.

Today, there are four Class I railroads that collectively operate more than 500 miles of track in the metro region: the Burlington Northern Santa Fe, Canadian National, Union Pacific, and the Canadian Pacific Kansas City, which resulted from the 2023 merger of two Class I railroads. Class I railroads connect the region to major national markets and carry large quantities of cross-continental freight that moves through the region.

There are also four Class III or short line railroads, the Minnesota Prairie Line, Progressive Rail, Twin Cities & Western, and Minnesota Commercial, that operate about 160 miles of track within the region. Class III railroads handle many local rail freight transfers, generally within 100 miles of the core cities. The railroads continue to be an increasingly important part of the region's freight system, especially for heavy bulk goods and containers, and serve national markets and international trade through east and west coast ports.

Barges on rivers

Barges provide water transportation over the Mississippi River Waterway System. They offer lower-cost, high-volume shipping options compared to other modes, which brings a particular advantage for hauling bulk freight over long distances. Portions of the Mississippi and Minnesota rivers in the region are navigable by barge through channels and locks maintained by the U.S. Army Corps of Engineers. Barges carry bulk commodities like grain, minerals, fertilizer, and aggregate to domestic and international markets. There are two major river ports in the Twin Cities metro region, the Saint Paul Port Authority on the Mississippi River and the Ports of Savage on the Minnesota River. In addition, there are multiple private barge terminals in Burnsville and along the Mississippi River between St. Paul and Hastings.

Bulk freight is hauled by barge more than 1,800 miles downriver from the Twin Cities to the Port of New Orleans where it is loaded onto ocean-going ships for export to global markets. Also, sand for fracture mining of natural gas and oil is being shipped by barge down the Mississippi and up the Ohio River to river terminals closer to Pennsylvania oil and gas fields. In 2018, the region had roughly 30 active freight terminals that collectively handled about 7.6 million tons of barge-hauled freight.

Air freight

High-value, low-weight, and/or time-sensitive goods are able to afford higher shipping rates and are typically well positioned to benefit from air freight transportation, especially when moving over long distances or when the shortest possible transit times are urgent. The region's high-tech and biomedical

companies rely most on air freight service to make timely shipments of medical supplies to hospitals throughout the nation.

Minneapolis-St. Paul International Airport (MSP) handles air freight for the Twin Cities metro region, most of Minnesota, and for some adjacent areas in Wisconsin, North Dakota, and South Dakota. Major air freight carriers include Federal Express (FedEx), Amazon, UPS, and the U.S. Postal Service, as well as commercial airlines. The region continues to take advantage of belly freight opportunities for shipping freight in the baggage compartments of passenger aircraft. Goods shipped by passenger aircraft represent between 20% and 24% of overall air freight tonnage moving through MSP with the remaining tonnage shipped through the four major air freight carriers. More detailed statistics on air freight moved through MSP can be found in the 2023 [Transportation System Performance Evaluation](#).

Pipelines

Pipelines represent an extensive infrastructure network developed to efficiently transport liquid fuel and chemical products for consumption by transportation, heating, and manufacturing industries in the Twin Cities. While less obvious than other modes, as all pipelines are buried underground, they play an important role in freight transportation by significantly reducing the volume of trucks that would otherwise be required to travel on the region's highways. Although not absent of some risk, pipelines are a relatively safe mode of transport compared to other modes. For example, pipelines do not require transfers between multiple surface transport modes and they remove the risk of physical crashes with other vehicles for long-distance product distribution. Major pipelines in the region serve the region's two petroleum refineries located in St. Paul Park and Rosemount, and to the Magellan pipeline terminal in Roseville.

Related Freight Plans and Studies

The region works in close collaboration with MnDOT's Office of Freight and Commercial Vehicles to develop plans and conduct related studies for advancing freight transportation across Minnesota and the Twin Cities region. MnDOT freight-specific plans and two freight-specific planning studies are described below.

Minnesota Statewide Freight System and Investment Plan

The Minnesota Statewide Freight System Plan was last updated by MnDOT in 2017. At the time of writing this plan, an update to the statewide plan was under development.

The 2017 plan provided a policy framework and strategies to guide future investments in Minnesota's freight system through a freight action agenda that identified key steps for advancing strategies to improve the efficiency, safety, and reliability of the region's freight system. The statewide plan works in coordination with the Transportation Policy Plan by providing broad guidance, while allowing for informed decision making at the regional level.

The Minnesota State Freight Investment Plan was amended into the statewide system plan and renamed the [Minnesota Statewide Freight System and Investment Plan](#) in 2018. It identified freight investments within Minnesota resulting from freight-specific federal funding provided under the Fixing America's Surface Transportation (FAST) Act of 2016. The forthcoming Freight System and Investment Plan will serve to coordinate federal, state, and local investments on the National Multimodal Freight Network for the 2024-2043 plan horizon.

MnDOT Metro District Freight Plan

A MnDOT Metro District Freight Plan for the Twin Cities region was under development at the time of this plan's writing. The new metro district plan will provide a resource to analyze freight needs, issues,

and opportunities. The plan will in an updated picture of regional freight movements and trends by building off the 2013 Twin Cities Metro Area Freight Study and the 2019 Urban Freight Perspectives Study. During plan development, input will be obtained from freight stakeholders as part of a new Metro District Freight Advisory Committee. Plan completion is expected in 2025.

Minnesota State Rail Plan

An update to the 2015 [State Rail Plan](#) was under development at the time of writing this plan. The purpose of this rail plan is to guide the future of freight and intercity passenger rail systems and services across the state. The plan identifies rail issues and system bottlenecks and provides guidance for rail initiatives and investments, including a vision for the effective utilization and development of the state's rail network.

Minnesota Statewide Ports and Waterways Plan

An update to the 2014 [Statewide Ports and Waterways Plan](#) was under development at the time of writing this plan. The statewide plan includes an overview and history of Minnesota's waterways, industry shipper profiles, and an inventory of facility conditions for metro region port terminals and locks. It also offers strategies designed to preserve and enhance Minnesota's ports and waterways system and describes the system's economic benefits, financial support, and future opportunities and challenges.

Twin Cities Metropolitan Region Freight Study

The [Twin Cities Metropolitan Region Freight Study](#) was a collaborative effort led by the Met Council and MnDOT in 2013. It highlighted the importance of freight transportation and its role in maintaining a healthy and sustainable regional economy and developed the framework for a regional freight planning and implementation strategy. This strategy was further developed in the Statewide Freight Plan which described and prioritized critical freight transportation planning activities. Given that the needs of freight transportation and the manufacturing and retail sectors it supports have continued to grow and evolve over the last decade, an update to this study has been added as a Transportation Policy Plan Work Program item.

National Zero-Emission Freight Corridor Strategy

The [National Zero-Emission Freight Corridor Strategy](#) was released by the Biden Administration in early 2024. It was developed by the Joint Office of Energy and Transportation as a guide for deploying zero-emission medium- and heavy-duty vehicle charging and hydrogen fueling infrastructure over the 2024 to 2040 period. The goal of the strategy is to prioritize investments along the National Highway Freight Network (described later under "Funding Programs") to accelerate the adoption of commercial zero-emission vehicles. The U.S. Department of Transportation is applying a phased implementation timeline that identifies segments of the highway freight network. Deployment of charging and fueling infrastructure of Zero-Emission Freight Corridors on the highway freight network in Minnesota (as well as in neighboring Upper Midwest states) won't begin until Phase 3 (2030 – 2035) of the strategy. However, planning and strategizing to prepare for \$2.5 billion in forthcoming competitive grants to build alternative fueling infrastructure nationwide, will need to begin earlier. Ultimately, the full zero-emission freight corridor network will extend to the vast majority of the National Highway Freight Network by 2040.

Urban Freight Perspectives Study

The Urban Freight Perspectives Study, completed by MnDOT for the metro district in 2019, focused on enhancing freight mobility by improving communication with public and private sector freight stakeholders and integrating freight considerations into the district's project development process. The study also created a GIS database tool to assist project managers in identifying and addressing key freight issues during the project design process and construction.

Urban Freight Distribution Study on E-Commerce Impacts and Opportunities

Met Council led the [Urban Freight Distribution Study](#) in 2023 with a specific focus on e-commerce online purchasing trends and the impacts and opportunities of last-mile parcel deliveries. The study's scenarios and key findings only apply to this specific, yet significant, aspect of e-commerce activity.

E-commerce has the potential to be a “win-win-win” opportunity that can extend benefits to consumers through convenience and choice, to businesses by offering greater market reach, and to the environment through reducing regional vehicle miles traveled and greenhouse gas emissions by replacing potentially modest portions of personal shopping trips. The following sub-sections summarize three key study focus areas: e-commerce sustainability impacts, opportunities for advancing curbside management, and emerging technologies for last-mile deliveries.

E-commerce sustainability impacts

Since 2010, online consumer retail sales have grown at an average rate of about 11% per year, nationally, and in 2023 represented about 15.4% of total retail sales which was up from just under 5% in 2011. The study projects that e-commerce will continue to grow in total sales and in its share of overall retail, nearing 35% of retail sales by 2050.

A key research question from the Urban Freight Distribution Study was “To what extent does e-commerce parcel delivery increase or decrease this region’s vehicle miles traveled and greenhouse gas emissions?” Through detailed analyses, the study found that:

- While the vehicle miles traveled from last-mile delivery vehicles is significant, it represents less than 1% of total regional shopping vehicle miles traveled and only about 1.4% of greenhouse gas emissions associated with the region’s total personal shopping trips (Met Council’s 2021 Travel Behavior Inventory).
- One package ordered online might add about one-third of a mile traveled by delivery vehicles, compared to an average of about 10 miles traveled for a single shopping trip. This means that in theory, and to the extent that shopping trips are replaced by e-commerce at-home deliveries, personal shopping trips to physical stores could have an impact factor as high as 25 times compared to ordering online and receiving deliveries at home.
- Given that the e-commerce share of total retail sales is projected to increase to nearly 35% by 2050, there is reasonable potential to significantly reduce the region’s shopping-related vehicle miles traveled and related greenhouse gas emissions through increasing efficiencies in e-commerce parcel delivery systems.

E-commerce last-mile parcel delivery scenarios

This study developed four e-commerce specific future scenarios to compare relative impacts to regional vehicles mile traveled and greenhouse gas emissions. Of the four scenarios analyzed, the two demonstrating the most potential for significant vehicle miles traveled and greenhouse gas reductions include:

- **E-commerce scenario 1: techno-freight revolution scenario** assuming high adoption levels of automation for freight distribution that drives lower shipping costs with a rapid upsurge in e-commerce relative to overall retail sales. These factors are likely to be accommodated by:
 - A large increase in parcel deliveries across the region
 - A rapid shift by delivery providers to zero tailpipe-emission vehicle fleets and more efficient routing/delivery scheduling practices
 - A continued decline in shopping at physical retail stores leading to fewer overall personal shopping trips and reductions in associated vehicle miles traveled.

- **E-commerce scenario 2: eco-conscious consumer scenario** assumes consumers will reduce the vehicle miles traveled and greenhouse gas emissions impact of their deliveries through a combination of:
 - More efficient ordering through consolidating purchases and deliveries, and reducing necessary item returns
 - Reducing vehicle miles traveled impact of personal shopping trips by combining trips, shopping closer to home, and shifting to non-automobile modes
 - Shifting to purchasing and/or leasing of zero-emission vehicles

Key findings of vehicle miles traveled and greenhouse gas analyses

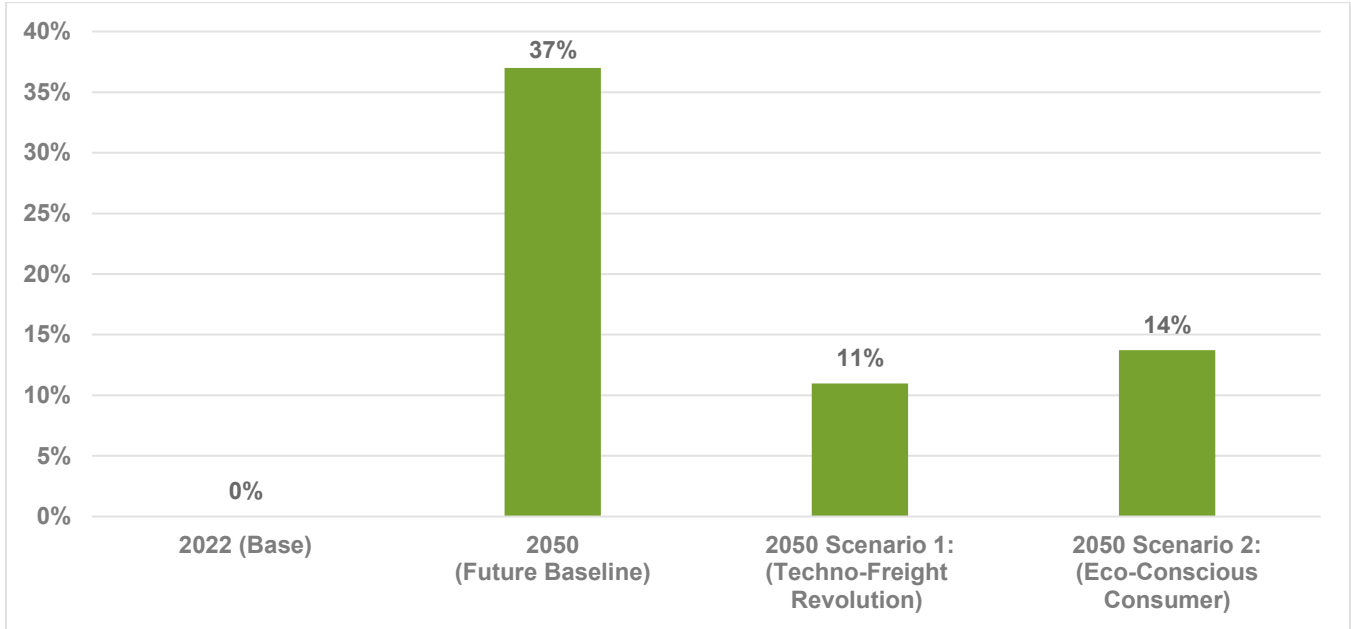
For the scenarios described above, comparative analyses were done to illustrate their highest theoretical limits in potential reduction of vehicle hours traveled. These theoretical total reduction scenarios are shown in Figure 2 (along with the projected year 2050 baseline regional vehicle miles traveled) as percent change in vehicle miles traveled compared to the region's estimated 2022 overall vehicle miles traveled. Scenarios 1 and 2 have the maximum potential, in theory, to hold down growth in overall regional vehicle miles traveled to 11% and 14%, respectively, compared to estimated 2022 overall regional vehicle miles traveled. The scenarios also compare favorably to the projected 37% growth in vehicle miles traveled from 2022 to the 2050 baseline case.

Note that the results from the scenarios analysis do not reflect what is necessarily achievable, but rather, the direction and highest theoretical potential impact assuming:

- Scenario 1 (techno-freight revolution) with complete deployment of technology including lower- and zero-emission modes (electric and hydrogen fuel cell powered vehicles) and last-mile micro modes (air drones, robots, cargo e-bikes, and other non-motorized means)
- Scenario 2 (eco-conscious consumer) with a full shift to optimal shopping and receiving practices by consumers and delivery providers

Note that these results only apply to the specific segment of e-commerce relating to last-mile parcel deliveries.

Figure 2. E-Commerce future scenarios: relative change in projected regional vehicle miles traveled compared to base year 2022 and 2050 baseline conditions*

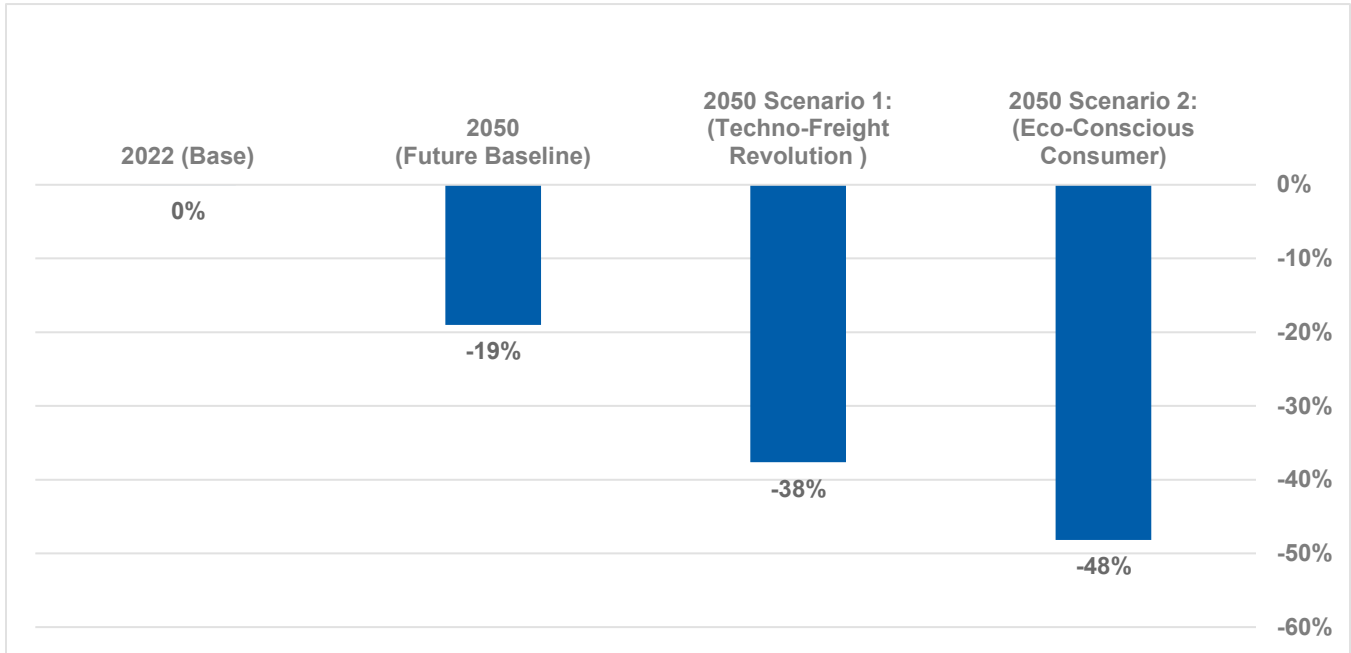


Source: CPCS Transcom, Inc.

* Note that the scenarios only reflect the direction and highest theoretical potential impact with complete deployment of technology and/or a full shift to optimal shopping, delivery, and receiving practices and are not intended to depict achievable results.

Through a similar comparison of the future scenarios on potential greenhouse gas emission impacts and based on the same overall regional vehicle miles traveled projections, figure 3 demonstrates the theoretical potential for greenhouse gas emission reductions of 38% and 48%, respectively, for future Scenarios 1 and 2 compared to the 2022 base year. This represents potential greenhouse gas emissions reduction factors of two times and 2.5 times the projected 2050 baseline emissions for Scenarios 1 and 2, respectively. Again, note that the greenhouse gas analysis carries the same caveats as described above for the vehicle miles traveled analysis in terms of representing only theoretical potential maximum reductions.

Figure 3. E-Commerce future scenarios: relative change in projected regional greenhouse gas emissions compared to base year 2022 and 2050 baseline conditions*



Source: CPCS Transcom, Inc.

* Note that the scenarios only reflect the direction and highest theoretical potential impact with complete deployment of technology and/or a full shift to optimal shopping, delivery and receiving practices and are not intended to depict achievable results.

These results from the future scenarios analysis provide the basis for the e-commerce related planning guidance described in the Freight Investment Plan. More details on the vehicle hours traveled and greenhouse gas analyses can be found in the study’s [E-Commerce Trends and Sustainability Impacts](#) sub-report.

Opportunities for advancing curbside management for urban deliveries

One element of the Urban Freight Distribution Study assessed best practices in curbside space management relating to last-mile urban parcel deliveries. Details on these topics, including numerous examples of cities’ experiences with curbside management, can be found within the [Curbside Management and New Technologies for Last-Mile Deliveries](#) sub-report. This study element provides a comprehensive review of curbside management programs in diverse cities across the United States and Canada.

Curbside space management is seen by practitioners as a means to transform the last mile of freight delivery. Studies have shown that urban delivery drivers spend around 80% of their time loading and unloading goods or walking to final delivery destinations. Delivery drivers are often forced to park in unauthorized spaces, cruise for parking, reroute their vehicles, or double park and wait for parking to become available. In turn, this increases vehicle miles traveled and greenhouse gas emissions and creates longer delivery times. Also, insufficient curb access can create negative impacts on people walking, biking, rolling, or using transit from excessive vehicle emissions and increased risk of conflicts leading to traffic-related crashes. Therefore, the availability of short-term curbside parking is a critical safety and efficiency factor for urban deliveries and passenger transportation users alike. A few concept strategies for advancing curbside management are described in the Freight Investment Plan section.

Emerging technologies for last-mile deliveries

The Urban Freight Distribution Study also researched the status and promise of new and emerging technologies related to reducing vehicle miles traveled and greenhouse gas emissions associated with last-mile deliveries. Specific details on this research can be found in the [Curbside Management and New Technologies for Last-Mile Deliveries](#) sub-report.

The study reviewed and documented the following technologies relative to last-mile deliveries:

- Electric delivery vehicles
- Hydrogen fuel cell electric vehicles
- Micro-delivery modes including cargo e-bikes, e-scooters, and e-carts
- Air-based drones
- Sidewalk delivery robots
- Autonomous delivery vans

Electric delivery vehicles and cargo e-bikes are relatively mature technologies, having benefited from significant improvements in speed, battery life, and adoption rates. Newer and emerging technologies such as air-based drones, sidewalk delivery robots, and autonomous delivery vans are in the early stages of development and are undergoing pilot testing trials. They also face some regulatory and infrastructure-related hurdles. Constraints affecting full deployment of delivery robots, for example, include street permit requirements in some cities, and the absence of continuous smooth sidewalks in many others. Other technology issues remain, such as the battery weight and operating range limitations for air-based drones.

Cargo e-bikes and e-scooters rely on well-developed bicycle and pedestrian facilities and networks. In many cases they also will require access to nearby off-street sites for managing package consolidation and parcel pickups and drop-offs. These locations are also known as last-mile distribution microhubs. Cargo e-bikes and e-scooters have smaller carrying capacities and shorter ranges of operation than their motorized vehicle counterparts, and thus require frequently placed microhubs along major delivery routes. As parcel deliveries by e-bikes and e-scooters continues to expand, there is a growing need to provide access to specific wattage-appropriate chargers for these micro-delivery modes.

The suitability of delivery technologies for urban, suburban, or rural communities was also assessed. Micro-delivery modes such as e-carts, cargo e-bikes, e-scooters, and sidewalk delivery robots are best suited to dense urban settings due to the higher delivery frequency potential from within their shorter ranges of operation. Autonomous delivery vans and electric delivery vehicles, given their larger capacities and longer ranges, are well suited to serve suburban and rural communities in addition to serving more densely developed urban areas. Air-based drones have the potential for serving anywhere in the region. In suburban and rural settings where shopping trips are longer and were found to represent up to half of the region's shopping-related vehicle miles traveled, the use of drones could be an effective method in reducing vehicle miles traveled and greenhouse gas emissions.

Urban areas present unique challenges for drone deliveries, but also significant opportunities. Higher densities can pose navigational issues for drones with more above-ground obstructions from development. Drones can also be constrained by limited drop locations, such as rooftops higher than the maximum 400-foot flight limit set by the Federal Aviation Administration. Aside from these constraints in urban areas, the higher frequency of deliveries in high-density neighborhoods and the ability to bypass traffic congestion offer air drones an efficiency advantage for delivering small parcels.

The study's findings on the potential of new and emerging technologies to further reduce regional vehicle miles traveled and related greenhouse gas emissions are the basis for related planning guidance described in the Freight Investment Plan.

Freight Investment Plan

This section of the regional freight investment plan provides direction for prioritizing roadway and bridge projects that benefit freight moved by trucks. The purpose and application of designated Regional Truck Freight Corridors are described in relation to regional transportation investments that are determined through the Regional Solicitation, as well as for other state and federal transportation programs administered by MnDOT. References to detailed technical information are provided through links to the underlying regional planning studies and interactive online maps.

Planning guidance for e-commerce, last-mile distribution

The following planning guidelines were developed in response to the technical findings of the Urban Freight Distribution Study described above and adapted from its recommendations. The guidelines apply to Met Council and its transportation partner agencies except where additional or specific agencies or agency types are mentioned. These guidelines most directly support objectives of the climate change goal previously discussed in the introduction to this plan.

Support for electrification of delivery vehicles

Providing widely accessible and reasonably spaced e-charging stations will increase their visibility to businesses and transportation system users, thereby growing confidence in the ability and convenience of recharging vehicles. This, in turn, can help accelerate the adoption rates for electric vehicles by consumers and for conversions to electrified delivery fleets by commercial carriers. In addition to charging stations for electric cars, vans, and trucks, lower-voltage chargers for e-bikes and e-cargo bikes are needed in proximity to stores and other commercial businesses where goods are delivered.

The increased visibility of e-charging facilities may also signal a growing general level of acceptance that further promotes the concept. To advance toward this outcome, Met Council and its transportation partners should promote electrification through planning and investments in public charging infrastructure.

Promote and facilitate last-mile parcel distribution microhubs

In addition to vehicle miles traveled efficiencies gained from home deliveries compared to traditional shopping models, the Urban Freight Distribution Study found a few opportunities that could potentially further reduce regional vehicle miles traveled. For example, the opportunity to locate microhubs or consolidated distribution and pickup centers and stations nearer to the customer (like parcel pick-up and drop-off lockers in grocery stores) could significantly reduce vehicle miles traveled and/or transfer final deliveries to zero-emission modes. Microhubs placed in or near dense neighborhoods can replace personal trips by motor vehicles, or delivery trips by truck, with walking, biking, e-scooters, or other human-powered or zero-emission modes.

To support new efficiencies and minimize impacts of last-mile deliveries through the distribution microhub concept, government agencies, particularly cities with dense urban or suburban activity centers, should seek opportunities to lead and/or partner with private sector companies and academic institutions on pilot studies and/or projects that promote and facilitate parcel distribution microhubs for last-mile deliveries.

Promote actions to minimize vehicle miles traveled and greenhouse gas emissions

Residents and businesses should be reminded that their individual and company shopping decisions have an impact on climate change and are encouraged to take actions like bundling orders, combining multiple trips into one, using non-automobile or zero-emission travel modes, and shopping closer to home when possible. Private sector delivery providers can adopt and promote more efficient and climate-friendly order fulfillment options for their customers. To encourage a collective shift toward more

efficient consumer behaviors and business practices, the region's transportation, health, and environmental agencies should develop educational materials to inform the public and to promote more sustainable shopping, purchasing, and delivery practices that residents and businesses can adopt to minimize vehicle miles traveled and greenhouse gas emissions.

Improve data collection, develop metrics to track progress in meeting sustainability goals

Private e-commerce carriers and delivery service providers should be encouraged to report summary data on delivery fleet vehicle types, delivery vehicle miles traveled, and other measures undertaken or planned to reduce overall vehicle miles traveled and greenhouse gas emissions. The data can then be aggregated for analyzing progress toward meeting regional and statewide goals. To further this important initiative, Met Council and MnDOT should encourage major e-commerce parcel carriers to provide summary data related to delivery vehicle fleets and vehicle miles traveled and should develop aggregated data metrics to help track progress in meeting regional and statewide goals.

Opportunities for advancing curbside management for urban deliveries

Curbside access for deliveries is important for optimizing freight operations and essential for sustaining a vibrant local economy. As the demand for curb space by business establishments and residences for receiving parcels continues to increase, maintaining adequate curbside access will become increasingly critical. A few concept strategies from the Urban Freight Distribution Study are listed below that local agencies and/or Met Council can apply to advance more effective curbside management practices and new technologies for last-mile deliveries. These strategies will be most applicable to cities with defined business districts, neighborhood commercial zones, or developed commercial or mixed commercial and residential areas that lack sufficient off-street parking or docks for loading and/or unloading goods.

Establish curbside use inventories and promote sharing of curbside use data

Curb use data are a crucial element of effective curbside management programs. The first step in developing curb use policies is to conduct curbside inventories. Local agencies in the region can leverage new technologies in curbside data collection and allow sharing of any findings or strategies with other cities and Met Council to begin developing a local knowledge base. Municipalities with defined business districts, or areas with densely developed commercial or mixed commercial and residential streets are encouraged to: 1) establish curbside use inventories, 2) investigate and apply new technologies for collecting data on multimodal curbside use (including commercial delivery activities), and 3) share local data and trends with partner agencies and the public.

Facilitate industry engagement and coordination

Engaging with industry representatives in the process of resolving curbside challenges to take advantage of their operational experience and perspectives will result in better and more cost-effective solutions. Industry stakeholders are directly affected by curbside issues and can bring a pragmatic, front-line perspective to the table. Commercial delivery service providers in particular have the closest and most consistent on-the-ground experience to notice potential safety issues and offer ideas for potential solutions. Municipalities are encouraged to include e-commerce industry representatives in street planning and design processes and in discussions to resolve everyday curbside challenges.

Ensure freight delivery needs are integrated into Complete Streets planning

Complete Streets initiatives seek to prioritize safe mobility and access for the full range of street users, including people biking, walking, or rolling. Freight delivery vehicles are often not well represented in such planning processes and, as a result, can be underprioritized. This potential oversight is significant as freight deliveries are critical to local commerce and make use of the curbside in unique ways compared to other vehicles and non-motorized transportation modes.

Streets should be designed to serve the delivery needs of businesses and residents adequately and in concert with the needs of people walking, biking, rolling or using transit. Streets designed without fully considering the needs of all users will only increase conflicts among them. Addressing conflicts (such as unloading trucks blocking bicycle or bus lanes or trucks taking more turns across bike lanes and crosswalks while searching for parking) through a Complete Streets process should result in designs that improve safety and convenience for all transportation users.

Complete Streets planning processes should address the anticipated daily use by freight delivery vehicles, including goods delivered through new technologies and methods, and preferably as conceived through a curbside management plan. Cities involved in planning street projects in commercial districts using Complete Streets principles should consider developing a curbside management plan as part of the pre-design planning process. This strategy applies to the regional transportation Work Program [future link] item to develop a Complete Streets Local Implementation Guide.

Advance new technologies in last-mile delivery systems through pilot studies

The acceptance and adoption among the public of new and emerging technologies for last-mile deliveries are best advanced through demonstration pilot projects and test trials. These first steps are essential to establishing a technology's commercial viability. They are also needed to grow confidence within a community that full implementation of the new delivery mode will result in safe operation and will enhance convenience or efficiency for a reasonable cost. The creation of public-private partnerships has proved to be an effective approach for carrying out pilot studies by leveraging the diverse strengths of both sectors. Whenever possible, it is helpful to include academic institutions as a project partner or participant.

To help expedite the acceptance and adoption of new zero-emission delivery technologies, government agencies should pursue opportunities to lead and/or partner with private sector companies and academic institutions on pilot studies / projects that test, evaluate, and demonstrate to the public the potential benefits and costs of last-mile delivery technologies.

Investment direction

Regional Truck Freight Corridors

Description and purpose

Regional Truck Freight Corridors were developed through the [Regional Truck Highway Corridors Study \(2017\)](#) and adopted in the 2018 update to the 2040 Transportation Policy Plan. They are defined as the set of the region's principal and minor arterial highways that are most heavily relied on by the trucking industry for delivering the region's freight and goods. One important distinction about these corridors is that they are not intended to represent officially established or planned truck routes, but rather, they provide a snapshot in time of how trucks are using the existing highway system based largely on heavy commercial average daily traffic counts and locations of major freight centers. These freight-dependent corridors are used to plan and prioritize highway improvement projects and are used as criteria in regional and state project funding processes.

Regional freight terminals are an official component of the metropolitan freight system (previously shown in Figure 1) and are one of the criteria used in prioritizing the Regional Truck Freight Corridors.

Update process

Regional Truck Freight Corridors are updated to make use of the most recently available truck volume data from MnDOT and other sources. The Met Council reviews and updates these corridors about every two years in close coordination with state and local highway transportation agencies and ahead

of each Regional Solicitation cycle for distributing federal transportation funds. (See [Regional Truck Corridors Update](#) for the most recent review.) The updated corridors were adopted in 2022 as shown in Figure 4, which reflects the addition of 11 newly approved corridors.

During the update process, local agencies are given an opportunity to propose new or extensions of existing corridors based on the availability of more recent heavy commercial annual average daily traffic counts. A future update may include an overall reassessment of the heavy commercial traffic counts at a regional scale. New truck corridor roadway segments must meet one of the following thresholds:

- A minimum annual average of 300 heavy commercial daily trucks
- A minimum annual average of 200 heavy commercial daily trucks AND a heavy truck volume percentage of average total daily traffic of at least 10%

Newly proposed Regional Truck Freight Corridors are evaluated across four primary data factors that include:

- Heavy commercial annual average daily traffic (truck volumes)
- Percent of annual average daily traffic represented by heavy commercial trucks
- Proximity to freight industry economic centers
- Proximity to regional freight terminals (as designated within the previously shown metropolitan freight system map in Figure 1)

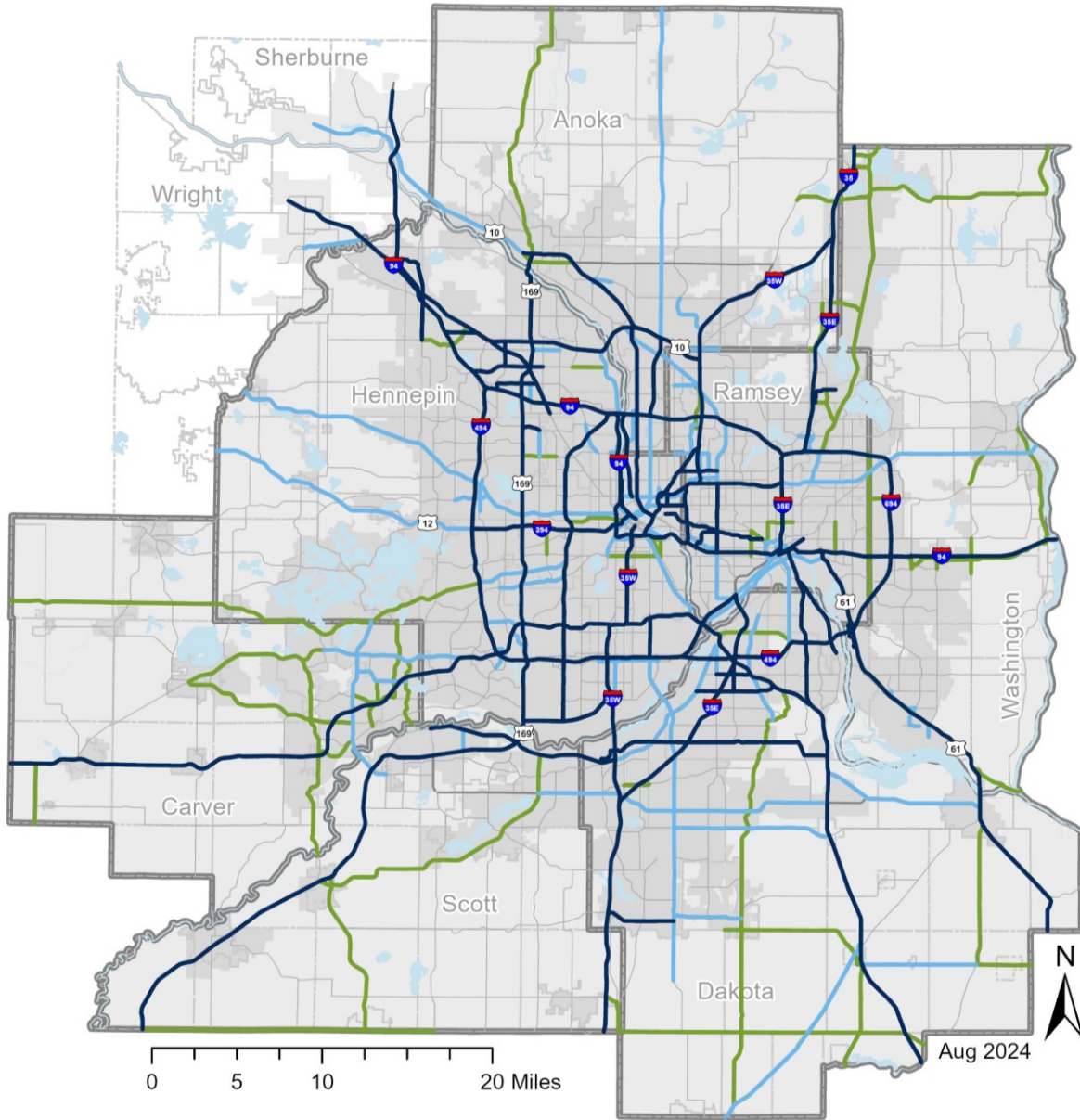
Regional Truck Freight Corridors are assigned to one of three priority tiers based on these data factors that are used to determine composite scores for all existing and new corridors. Other considerations for tier assignments include natural breaks in the corridor composite scores, the distribution of corridor miles across the three tiers compared to the original corridor tiers, and roadway functional class. Table 1 shows the distribution of Regional Truck Freight Corridor centerline miles among the priority tiers and across highway classification groups.

Table 1. Highway centerline miles by Regional Truck Corridor priority tier and roadway class




Priority tier	Interstates	Principal arterials (non-interstate)	Minor arterials	Total	Percent of total
Tier 1	254	121	229	604	47%
Tier 2	0	153	192	345	27%
Tier 3	0	31	308	339	26%
Total	254	305	729	1288	100%

All the interstate highway miles in the region are designated as tier 1 truck corridors, which is consistent with their recognized importance to overall regional trucking. Principal arterials, designated for longer and higher-speed trips through the region, make up nearly 40% of the non-interstate mileage for the tier 1 and tier 2 truck corridors. Minor arterials, more closely associated with first-and-last-mile connections to freight centers, make up 73% of the tier 2 and tier 3 truck corridor miles combined. The proportionate mileage shares for tiers 1 through 3 (shown in the right-hand column of table 1) are notable because they are one of the factors used in determining the priority tiers in future corridor updates.

Figure 4. Regional Truck Freight Corridors



Regional Truck Freight Corridor Tiers

-  Tier 1
-  Tier 2
-  Tier 3

Reference Layers

-  Principal Arterials
-  Minor Arterials
-  Rivers and Major Lakes
-  County Boundaries
-  City Boundaries

Regional investment priorities

Regional Truck Freight Corridors (Figure 4) are designated as regional priorities and provide an additional context for evaluating projects considered for receiving transportation funds. Proposed projects that address safety, congestion, or roadway preservation on segments of Regional Truck Corridors should be given priority in regional and state-administered transportation funding programs. In addition, because this region's freight transportation system touches the majority of freight movements within the state or between Minnesota and other states, other MnDOT funding programs, including the Minnesota Highway Freight Program, should prioritize funds for freight-beneficial projects within the region.

Other highway funding priorities that benefit freight

The Highway Investment Plan [future link] describes general highway funding programs across various project categories. Investments in several areas provide direct or indirect benefits for trucks moving freight on highways.

Operations, maintenance, and preservation of highway assets

Funding for highway operations and maintenance is critical for moving freight by trucks safely and efficiently. Snow and ice removal during winter months is especially important to ensure safe and timely, all-weather freight delivery. Ongoing maintenance and replacement of bridges and road pavement are also essential for transporting freight. Weight-restricted bridges due to poor conditions can greatly impact truck movements by forcing trucks to detour to alternative crossings which adds time and fuel costs. Poor pavement quality is often raised as a key concern in surveys of freight operators and deficient highway pavement has been found to damage cargo like precision instruments and high-tech machinery, in addition to damaging trucks.

Regional highway mobility improvements are also important for trucks. The implementation of traffic management technologies on highways, including traveler information systems, incidence response programs, corridor traffic signal coordination, and queue warning systems may reduce breakdowns in traffic flow. These technologies benefit freight by helping to maintain on-time reliability for freight deliveries and by improving overall safety for trucks and other vehicles.

The provision of adequate facilities for overnight truck parking is a current deficiency nationally and locally and relates directly to overall safety in the trucking industry. The Federal Motor Carrier Safety Administration established hours-of-service regulations generally allow up to 11 hours of driving per 24-hour period which can impact long-haul truckers in need of a place to park and rest. Providing well lit, secure, consolidated areas to park and rest are essential for truck drivers to stay awake and alert while driving. More parking facilities are needed so that drivers don't have to resort to parking in areas that can create additional safety issues, like along freeway on-ramps, off-ramps, and shoulders.

For some locations implementing spot mobility improvement projects may be the most cost-effective options to relieve congestion. Examples of these project types may include things like on-ramp and off-ramp extensions or auxiliary lanes that allow for the slower acceleration and deceleration speeds of trucks. Projects like these can be effective in alleviating bottleneck congestion associated with trucks and may also improve safety for all highway users.

Managed lane system investments

The system of existing and planned managed lanes, including the existing managed lanes along I-394, I-35W and I-35E, provides benefits to local and regional freight moved by truck. Managed lanes can directly benefit shipments made by single-unit commercial vehicles (dual-axle trucks weighing less than 26,000 pounds), delivery vans, and cars when they pay to use these lanes otherwise reserved for transit and high-occupancy vehicles. This is especially beneficial to freight carriers like FedEx and UPS

that transport goods for biomedical, high-tech, and other industries that rely on expedited deliveries of high-value, time-sensitive products.

The development of a managed lane system may also benefit traditional freight movements by larger trucks. Managed lanes can effectively free up some capacity, creating more reliable traffic flows for freight traveling in general purpose lanes. Managed lanes can also improve the safety and reliability of freight by helping to reduce the number and duration of crash-related breakdowns, minimizing total hours of corridor congestion for trucks. Similarly, greater use of managed lanes by transit (the primary beneficiary for managed lane investments) further reduces the number of passenger vehicles and creates more reliable travel times for freight-hauling trucks and other delivery vehicles.

Funding programs

Regional Solicitation

The Met Council and the Transportation Advisory Board, through the Regional Solicitation process, make specific categories of competitive federal transportation funds available to regional transportation partners for roadway and bridge projects. Historically, there has not been an application category specifically for freight projects. Freight considerations have been addressed through application criteria and measures. The region also has Carbon Reduction Program formula funds that can be used to implement freight-related projects that demonstrate a net carbon reduction benefit.

Funding categories and criteria for these programs will be determined through the Regional Solicitation evaluation work program item that will shape the 2026 Regional Solicitation. About \$250 million is available to the region through the Regional Solicitation and Carbon Reduction Program for every two-year cycle. Freight should continue to be a consideration in project selection moving forward, either through freight-specific application categories or criteria and measures, especially for roadway and bridge categories where freight is a significant user of the facilities.

Federal and state programs

National Highway Freight Program

The 2016 Fixing America's Surface Transportation (FAST) Act established the National Highway Freight Program and was re-authorized under the 2021 Infrastructure Investment and Jobs (IIJA) Act. The IIJA authorized \$7.15 billion over five years for states to invest in freight projects that improve the National Highway Freight Network shown in Figure 5. Projects eligible for funding through this program must contribute to the efficient movement of freight on the network and must be identified in a freight investment plan included in a state freight system plan.

Minnesota Highway Freight Program

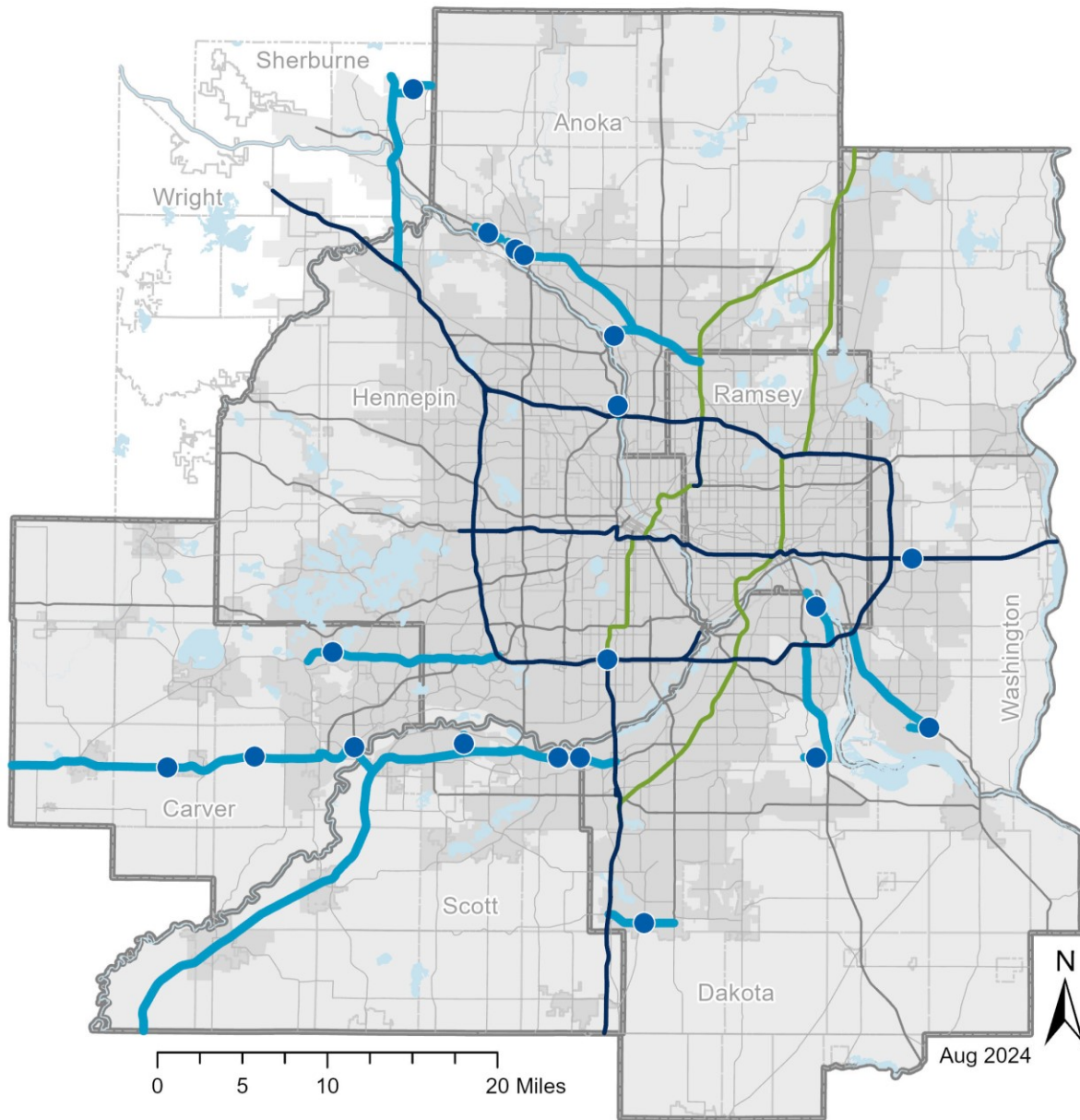
MnDOT created the Minnesota Highway Freight Program based on feedback from local governments, regional planning partners, and freight industry representatives as a new way to invest in key freight improvements across the state. The program is a competitive solicitation open to a wide variety of entities and uses federal National Highway Freight Program dollars. These funds were initially authorized through the FAST Act for improvements within the state to the National Highway Freight Network. This network includes all interstate highways plus intermodal connectors already included on the National Highway System. The state solicits project proposals from eligible transportation agencies every two years in cooperation with its State Freight Investment Advisory Committee. MnDOT has about \$21.6 million per year to fund freight-specific construction projects through this program for state fiscal years 2021 through 2025.

As part of this process, MnDOT and the Met Council are jointly responsible for identifying additional roadways to designate as part of the National Highway Freight Network (the roadway component of the

National Multimodal Freight Network) for the Twin Cities region. This is coordinated with the project selection process for the Minnesota Highway Freight Program through the designation of critical urban freight corridors and critical rural freight corridors. The federal Infrastructure Investment and Jobs Act extended the previously established mileage limits for each state when designating these freight corridors to 150 urban miles (or 10% of primary freight network miles, if greater) and 300 rural miles (or 20% of primary freight network miles, if greater) statewide.

Freight project locations identified for Minnesota Highway Freight Program funding through the 2023 solicitation, along with highway connections to the National Highway Freight Network that are also designated through this process as critical urban freight corridors and critical rural freight corridors, are shown in Figure 5. Table 2 lists the specific termini and lengths of these designated critical freight corridors for the Twin Cities region.

Figure 5. National Highway Freight Network in Twin Cities Region



National Highway Freight Network

- Critical Rural and Urban Freight Corridors
- Primary Highway Freight System
- Non-Primary Highway Freight System Interstates
- Minnesota Highway Freight Program Projects (State FY 2018-2028)

Reference Layers

- Principal Arterials
- Minor Arterials
- Rivers and Major Lakes
- County Boundaries
- City Boundaries
- MUSA 2040
- MPO Area

Table 2. Critical Urban and Rural Freight Corridors in Twin Cities region

Agency	Highway	From	To	Miles	Designation
City of Cottage Grove	US 61	Innovation Blvd	I-494	6.2	New in 2024
Carver County	MN 5	CASH 41	I-494	8.5	New in 2024
City of Coon Rapids	MN 610	MN 610 Mississippi River Bridge	800 ft east of CSAH 1	1.4	New in 2024
City of Inver Grove Heights	US 52	117th St	I-494	7.5	New in 2024
MnDOT	US 10	0.6 miles west of Ramsey Blvd	0.5 mile west of Thurston Ave	3	Previously
City of Inver Grove Heights	117th St	CSAH 71 (Rich Valley Rd)	US 52	1.2	Previously
Sherburne County	CSAH 33	Auburn St	CSAH 13 (Twin Lake Rd)	1.7	Previously
MnDOT	MN 101	I-94 near Rogers	US 169	6.8	
MnDOT	US 169	MN 101	205th Ave NW (Elk River)	3.5	Previously
Dakota County	CSAH 70	I-35E	MN 77 (Cedar Ave)	4	Previously
MnDOT	MN 156	I-494	Annapolis St E	3.5	Previously
MnDOT	MN 13	I-35W	US 169	7.2	Previously
MnDOT	US 169	MN 13	MN 41	7.7	Previously
Scott County	CSAH 83	4th Ave E	US 169	1.1	Previously
MnDOT	MN 41	US 169	Chaska Blvd	2.2	Previously
Carver County	CSAH 61	MN 41	Chaska Blvd	2.6	Previously
Carver County	Jonathan Creek Pkwy	Chaska Blvd	US 212	0.2	Previously
MnDOT	US 212	Jonathan Carver Pkwy	1 mile east of CR 36	4.4	Previously
MnDOT	US 10	I-35W	0.5 mile west of Thurston Ave	14.2	Previously
MnDOT	MN 252	I-694	70th Ave N	0.7	Previously

Nationally Significant Multimodal Freight and Highway Projects program

The Nationally Significant Multimodal Freight and Highway Projects program is closely tied to freight as highway, bridge, intermodal freight, and freight rail projects on the National Highway Freight Network or the National Multimodal Freight Network are directly eligible. The National Multimodal Freight Network is being updated (2024) through the newly established USDOT Office of Multimodal Freight Infrastructure Policy. Its purpose is to assist states in directing resources toward improving system performance, to inform freight transportation planning, and to help prioritize federal investments. Program funding is awarded on a competitive basis and is focused on projects having national or regional significance.

The fiscal year 2023-2024 program provided \$3 billion in transportation project investments. Two major freight-related projects in this region were funded through this program in 2022: the U.S. Highway 212 freight mobility and safety project in Carver County was awarded \$10 million, and the MnDOT led I-494, U.S. Highway 169 to MSP Airport (Project 1) was awarded \$60 million.

Other MnDOT freight-specific funding programs

Port Development Assistance Program

MnDOT programs these state funds to support capital investments at public ports that expedite the movement of commodities, enhance the commercial vessel construction and repair industry and promote economic development in and around ports. This funding program supports development projects at the Ports of Saint Paul and Savage in the Twin Cities region. Eligible projects include facility and infrastructure upgrades, rehabilitations, or expansions. Funding levels vary from year to year, but the 2023 Minnesota Legislature appropriated \$18.1 million for these capital investments, which MnDOT has made available the state's port authorities through its 2023 project solicitation.

Railroad At-Grade Crossing Safety Program

MnDOT distributes about \$6 million per year for safety improvements at railroad-highway surface crossings throughout Minnesota through the federal Railway Highway Crossing (Section 130) Program. These funds are the state's annual apportionment of federal transportation dollars set aside from the Highway Safety Improvement Program and are specifically targeted on eliminating hazards at rail-highway crossings. Top project priorities for funding include at-grade crossing closures, installation of active warning devices (crossing gates with flashing signals) and the replacement of outdated warning systems.

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