



# Urban Freight Perspectives on Minnesota's Transportation System

Metro District / Greater Twin Cities



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# EXECUTIVE SUMMARY



# FREIGHT PERSPECTIVES FOR MnDOT

Manufacturers and other freight-related businesses are an important customer segment for the Minnesota Department of Transportation (MnDOT) and a critical component of the economy for the state and the Twin Cities area. Within MnDOT's 8-county Metro District alone, there are thousands of manufacturing firms, plus warehouses, distribution centers, and other freight-related companies. For these reasons, MnDOT engaged in a 2018-19 Urban Freight Perspectives (UFP) study involving semi-structured, in-person interviews with manufacturing and other freight-related businesses in the Twin Cities region.

For the interviews, MnDOT concentrated mostly on businesses in targeted zones with high concentrations of freight-related firms located in the heart of the metro area along Interstate 94, which carries significant freight movement between Minneapolis and Saint Paul. In this way, the study primarily reflects business transportation impacts along the area of MnDOT's Rethinking I-94 project between those two central cities' downtowns<sup>1</sup>. The interviews allowed MnDOT to systematically collect and analyze customer information and develop relationships with freight-related firms, in order to better understand their transportation perspectives and priorities and simultaneously provide the businesses with information about metro area construction projects with significant freight impacts.

This report presents the findings from that 2018-19 UFP study, based on MnDOT interviews with 48 businesses that generate or carry freight.<sup>2</sup> The business classifications for those 48 firms include Manufacturing (19), Wholesale Trade (18), and Transportation and Warehousing (11) consisting mostly of businesses engaged in general and specialized freight transportation. Of the 48 businesses interviewed, 11 are freight carriers and 37 are freight generators, including five that handle all their own shipping, 19 that use their own trucks but also ship through carriers, and 13 that use only carriers to ship their freight.

During the interviews, MnDOT staff captured many suggestions and requests for location-specific actions to improve routes and transportation in the Twin Cities area. Subsequently, the project staff compiled location-specific comments that MnDOT is reviewing, categorizing, prioritizing, and considering for possible short-term action or for longer-term work plans and project scoping.



<sup>1</sup> See Rethinking I-94 Area Map on page 11.

<sup>2</sup> Two additional MnDOT interviews were conducted with passenger transportation companies (for a total of 50 business interviews), yielding useful ideas and suggestions regarding the Twin Cities area transportation system but not relating directly to freight transportation. See page 12 for additional details on businesses interviewed.

# STEPS TOWARD CONTINUOUS IMPROVEMENT IDEAS FOR FREIGHT TRANSPORTATION



The comments from freight-related businesses in the Metro District offered support for – and validation of – much of MnDOT’s work and priorities. Businesses also provided useful input to inform and enhance both existing efforts and future initiatives. Based on analysis of the interview comments, MnDOT’s Central Office and the Metro District might consider the following to help drive continuous improvement:



**Address useful suggestions** pulled from the interview notes and compiled as potential items for short-term action and longer-term planning and project scoping.



**Continue to invest** in and focus on effective congestion management to ameliorate problems such as bottlenecks and the costs that congestion poses for freight-related businesses.



**Keep freight-related businesses well informed about construction projects** and pursue strategies that lessen the adverse impacts of construction on their operations.



**Consider adding more dynamic, electronic signs** and make the messages conveyed on those signs as clear as possible.



**Explore opportunities for partnerships** with city and county governments to address items such as truck parking challenges and safety improvements for bicyclists and pedestrians sharing the road with trucks, where appropriate.



**Continue MnDOT’s general communication and 511 information efforts**, perhaps with an expanded focus on outreach to freight-related businesses and efforts to promote and increase awareness of the 511 mobile-based application and 511’s Truckers’ webpage portal.



**Build upon the 2018-19 UFP study** and its interviews to strengthen relationships with freight-related businesses going forward.

# THEMES AND FINDINGS FROM BUSINESS INTERVIEWS

In all cases, the guides that MnDOT staff used for the UFP interviews included questions about the topics featured below. The full 2018-19 UFP report provides more detail about each of these areas, presents additional findings, and covers several additional topics not noted in this executive summary, including pavement conditions, distracted drivers, rail transportation, policies for trucks and drivers, and unauthorized roadside encampments for homeless people.

## Congestion's Impacts on Shipping, Receiving, and the Last Mile

Congestion problems, including “last mile” issues, stand out as a key topic for freight-related firms. Different businesses talked about congestion creating challenges for shipping products out, receiving supplies in, scheduling trucks and drivers, and the “last mile” of delivery to both their customers’ locations and their own. Businesses said congestion increases their costs and requires adjustments in delivery routes, timing, and the number and size of their loads. Some businesses said congestion affects their plans, with a few noting that congestion and last mile issues will or might prompt them to relocate. A few noted, too, that increased congestion is a sign of more people and a stronger economy, both of which expand their customer base.

## Congestion Management

MnDOT asked businesses with trucks about two congestion management methods: metering on highway entrance ramps and MnPASS. With regard to ramp metering, over half the businesses that expressed opinions generally supported ramp meters and said they are useful. Only a few mentioned not liking ramp meters. Nonetheless, a number of businesses discussed concerns about ramp meters, saying the ramps are too narrow and short, MnDOT activates meters inappropriately or inconsistently, and passenger vehicles ignore the ramp meters and drive incorrectly in metered lanes.

When it comes to MnPASS lanes, about two-thirds of the businesses that talked about this congestion management option said they do not use the lanes. The reasons cited by businesses included that they operate on routes where there are no MnPASS lanes, they operate on shorter routes where MnPASS would have only limited impacts, they operate trucks that weigh more than the MnPASS weight limit, or they were unaware that trucks weighing less than 26,000 pounds are permitted to use MnPASS lanes.

## Construction

The vast majority of the businesses talked with MnDOT about construction projects. A number of businesses called for more MnDOT information in advance of construction – from notice of plans as far as 10 years out to shorter-term alerts about developments three to six months ahead of time. Many businesses commented on the adverse impacts of construction, including delayed deliveries, routing challenges, reduced access to their facilities, and financial costs. Among the businesses that talked specifically about weekend and nighttime work by MnDOT construction crews, about three-fourths said it works better for their operations than weekday disruptions. A few businesses said MnDOT exacerbates the impacts of construction when it carries out projects on parallel routes, further complicating rerouting efforts. A few businesses also noted that while construction projects cause problems for their operations, those projects are necessary to maintain and improve the roadway system.

## Snow and Ice Removal

Nearly three-quarters of the businesses that discussed snow and ice during their interviews said MnDOT is doing a good job of removing them from its routes. Many of these businesses used strong, positive adjectives to describe MnDOT’s efforts, including “fantastic,” “phenomenal,” and “very well prepared.” Several businesses called on MnDOT to improve snow and ice removal, and a few others with generally positive opinions of MnDOT’s efforts still offered suggestions for how to make them better. Overall, businesses that called for improvements said routes need to be cleared of snow and ice more quickly than they currently are. Other suggestions for improvement included more pre-treatment of roads in anticipation of weather events and better removal of compacted snow and ice.

## Interchanges



Nearly two-thirds of all the businesses interviewed discussed interchanges. A number of businesses noted challenges with cloverleaf designs, citing them as dangerous and prone to causing accidents. In addition, a few businesses discussed diverging diamond interchanges, saying they are useful but challenging to navigate. A number of businesses brought up problems with executing zipper merges – problems they say cause accidents. Most who talked about the zipper merge suggested MnDOT should educate the public on the proper approach for this procedure.

## Intersections

Just over half of the 48 businesses talked with MnDOT about intersections. Most of this group offered opinions – mostly negative ones – about roundabouts. Businesses cited problems for trucks navigating roundabouts, including issues with small and difficult turning radiuses, narrow lane widths, and poor visibility.

Other businesses expressed positive opinions. A few businesses said that they like J-turns, an intersection design that reduces the potential for conflict and crashes by having drivers who otherwise would turn left across fast-moving traffic instead turn right and then execute a U-turn to head in their intended direction.

## Lanes

Over half of all the businesses interviewed discussed lane widths, truck-climbing lanes, truck lanes, and turn and acceleration lanes. The majority of the businesses that talked about lane width said they have no issues

with current lane widths and no preference between 11- and 12-foot widths. Just over half of the businesses that discussed truck-climbing lanes indicated these lanes are useful. Several businesses urged MnDOT to allow all trucks to travel in MnPASS lanes or create truck-only lanes, separate from general traffic. A few businesses said truck-specific turn lanes and wider left-turn lanes would increase safety for non-truck vehicles. A few, too, said longer acceleration lanes would help trucks reach highway speeds prior to merging.

## Signage

Many businesses talked about MnDOT signage, noting possible improvements and offering generally positive opinions about dynamic, electronic signs. Businesses commented on the importance of clear signage at interchanges and of advance warning for traffic challenges or changes, including lane shifts and restrictions, variations in speed limits, congestion, and sharp turns. A few businesses called for better signage to mark truck routes. A great majority of the businesses that commented on MnDOT's dynamic, electronic overhead signs viewed them positively, with some noting that the information on the signs helps drivers select better and faster routes. A number of businesses urged MnDOT to install more of these signs. Some businesses had positive comments, too, for a specific type of dynamic, electronic sign that MnDOT uses to alert truck drivers prior to curves that pose high risks for rollovers. Several noted that these curve signs are particularly helpful for new drivers and out-of-state drivers unfamiliar with the roads in the Twin Cities area.



## Truck Parking

Some businesses discussed problems with truck parking, including parking for deliveries and parking for stopovers and sleepovers. A number of businesses cited inadequate parking for trucks that make deliveries in dense, urban areas, especially within Minneapolis and Saint Paul.

Several other businesses cited issues with trucks – from other businesses, not their own – parking on streets in industrial areas and frontage roads near their facilities, making travel on those streets difficult to navigate, reducing visibility, and sometimes blocking access to their business driveways and loading docks.

## Bike and Pedestrian Safety Issues and Infrastructure

The UFP interview guides for carriers and businesses with their own freight shipping trucks included questions about truck travel on roads with bikes and pedestrians, even though most of these shared roadways in the Twin Cities area are local rather than MnDOT routes. A number of businesses expressed concerns about the danger posed by mixing motor vehicles and bikes on roads. Bike lanes drew both negative and positive comments. Businesses cited problems with them, including safety issues at intersections, reduced traffic lanes for motor vehicles, narrower lane widths for trucks, increased congestion, and inappropriate bike lane locations.

Some businesses noted benefits from having dedicated, marked bike lanes, including increased visibility and safety for bikers. A few businesses offered suggestions for improved pedestrian and bike infrastructure, including rumble strips to mark the edges of bike and pedestrian areas, more visible markings for those areas, and different material for crosswalk markings because some existing crosswalk surfaces are slippery and make braking difficult.

## MnDOT Communications and 511

Staff recorded interview comments about MnDOT's communications and its 511 traveler information system in a great majority of the business interviews. Just over half the businesses interviewed reported they have heard of the 511 system, but much smaller shares said drivers use it for information about winter roads, construction projects, congestion, or crashes. A number of businesses mentioned the usefulness of 511's live camera view for assessing road conditions. Among the

businesses that offered general remarks about how well MnDOT keeps them informed, there were as many that made positive comments as negative ones. The most commonly cited communications issue specific to construction projects was the need to have MnDOT provide advance notice of plans and developments earlier than it currently does. MnDOT might consider outreach efforts to freight businesses about 511 and other communication channels because a number of businesses were unaware of what MnDOT currently offers, such as the 511 smart phone application, 511's Truckers' webpage portal, and sign-up options for electronic push-notifications about specific routes and projects of interest to specific users.

## Weight Restrictions

A few businesses noted adverse impacts from weight restrictions, including inefficient shipping, problems finding useable routes, and delays from unnecessary weigh-station stops and inspections. Two businesses objected to lower than normal weight restrictions on a section of Interstate 35E in Saint Paul, and one noted that state's weight restrictions create problems for Minnesota businesses that ship products in from neighboring states with higher limits.



# FREIGHT PERSPECTIVES FOR MnDOT



## OVERVIEW: MnDOT MANUFACTURERS' PERSPECTIVES PROJECTS



Manufacturers and other freight-related businesses make up an important customer segment for the Minnesota Department of Transportation (MnDOT). For this reason, MnDOT has carried out semi-structured, in-person interviews since 2013 primarily with manufacturing firms in Greater Minnesota to gather feedback on the state's transportation system. Manufacturing businesses often provide high-quality jobs for their communities. The transportation system gives manufacturers and other freight-generating businesses access to supplies, allows workers to reach jobs at those companies, and permits goods to reach customers. A well-maintained transportation system, aligned with business needs, can increase efficiencies, lower costs, and boost productivity, contributing to healthy, stronger state and regional economies.

# MnDOT METRO DISTRICT URBAN FREIGHT PERSPECTIVES STUDY

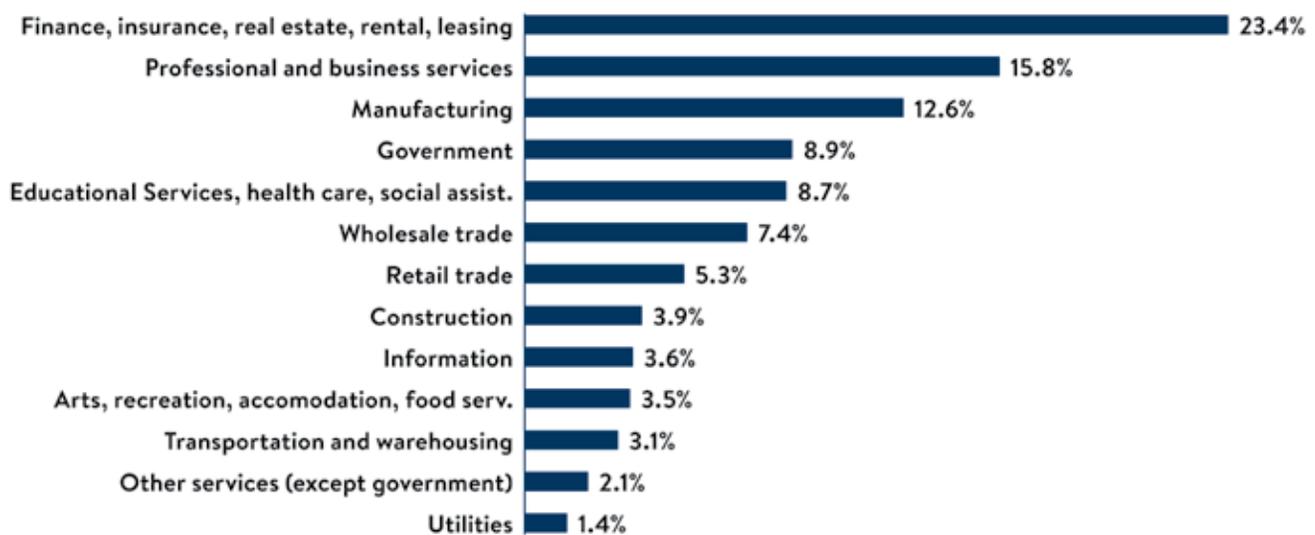
## Metro District Background

MnDOT’s Metro District sees freight movement as a major component of transportation that is critical to the state’s economy. With a projected 80 percent increase in freight tonnage statewide,<sup>3</sup> the Twin Cities will be affected the most.

The broader Twin Cities region benefits from a diverse economy, as demonstrated in Figure 1, which shows federal data for 2017 economic output by sector in the Twin

Cities area, including the eight counties within MnDOT’s Metro District and eight others linked economically to those counties.

**Figure 1:** Shares of economic output by industry for the Twin Cities region<sup>4</sup>



For this report, the three sectors of interest and their shares of economic output for the broader Twin Cities region are Manufacturing (12.6 percent), Wholesale Trade (7.4 percent), and Transportation and Warehousing (3.1 percent). Combined, these three sectors account for almost a quarter of the region’s economic output.

MnDOT’s Metro District serves the counties of Anoka, Carver, Chisago, Dakota, Hennepin, Ramsey, Scott, and

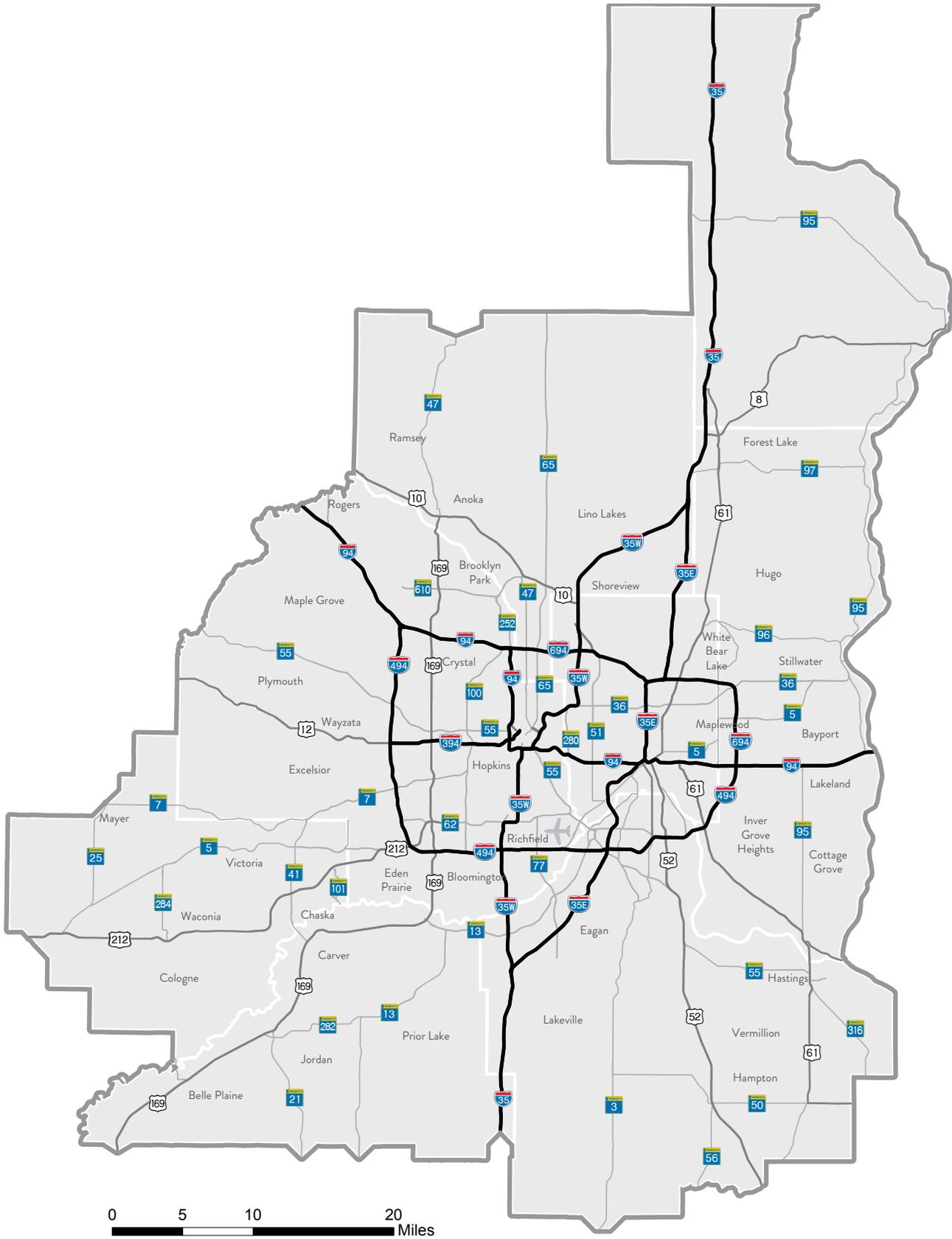
Washington (see map on next page). Minnesota’s two largest cities – Minneapolis and Saint Paul – are within the Metro District, which is home to more than half the state’s population – an estimated 3.1 million of Minnesota’s 5.6 million residents. Although the Metro District covers only 4.1 percent of Minnesota’s land area, it includes 29.8 percent of Minnesota’s interstate highway system miles and 14.0 percent of the state’s trunk highway miles.<sup>5</sup>

3 Based on freight demand for modes other than rail from the Federal Highway Administration’s Freight Analysis Framework (version 3.5), which uses a 2007 base year with synthesized 2012 values and a 2040 forecast.

4 From calculations by the Management Analysis and Development of Minnesota Management and Budget based on U.S. Bureau of Economic Analysis (BEA) data for gross domestic product by metropolitan area. Two industries, each accounting for 0.2 percent of the metropolitan area’s economic output, are not included in the figure: 1) Agriculture, Forestry, Fishing, and Hunting, and 2) Mining, Quarrying, and Oil and Gas Extraction. The BEA uses the federal Office of Management and Budget’s definition for the Minneapolis-Saint Paul-Bloomington metropolitan area, which includes 16 counties: Hennepin, Ramsey, Dakota, Anoka, Washington, Scott, Wright, Carver, Sherburne, Chisago, Isanti, Le Sueur, Mille Lacs, and Sibley in Minnesota, and St. Croix and Pierce in Wisconsin.

5 For more facts and figures about the Metro District, see [mndot.gov/information/factsheets/metro-district-fact-sheet.pdf](http://mndot.gov/information/factsheets/metro-district-fact-sheet.pdf).

Figure 2: Map of MnDOT Metro District



## The 2018-19 Urban Freight Perspectives Study

For the Metro District's 2018-19 Urban Freight Perspectives (UFP) study, MnDOT engaged in semi-structured, in-person interviews with freight-related businesses using a process similar to that used for its Manufacturers' Perspectives studies done in MnDOT districts in Greater Minnesota.

MnDOT interviewers and data collectors conducted separate interviews with key contacts at each of 50

businesses. Most of the businesses were located in or near 10 targeted Twin Cities areas identified as Freight Zones with high concentrations of businesses generating or receiving freight and located within the heart of the metro area along Interstate 94, which carries significant freight movement between Minneapolis and Saint Paul<sup>6</sup>. In this way, the study primarily reflects business transportation impacts along the area of MnDOT's Rethinking I-94 project between those two central cities' downtowns, shown in Figure 3 below.

**Figure 3: MnDOT Metro District's Rethinking I-94 Project Area**



### The primary purposes for the UFP business interviews were to:

- Support statewide continuous improvement for enhancing transportation systems and practices to support freight movement.
- Meet with freight-related businesses to understand their perspectives and priorities for the transportation system, and improve MnDOT's knowledge of industries that depend heavily on the system's reliability.
- Systematically collect and analyze customer information to inform practical, near-term decision-making for planning and operations, policy development, and investment.
- Build relationships between MnDOT and freight-related businesses to sustain short-term and ongoing transportation system improvement.
- Provide businesses with information about significant MnDOT projects with freight impacts that were happening in the Twin Cities area during the 2018 construction season and discuss impacts on business operations.

<sup>6</sup> See Appendix A on page 55 for more details about this study and the research methods used and Appendix B on page 61 for a list of the businesses interviewed. See Appendix C on page 65 for a list of those who carried out the interviews or otherwise assisted with the study and Appendix D on page 69 for a list of interview questions.

# BUSINESSES INTERVIEWED

MnDOT staff, consultants from the Management Analysis and Development (MAD) division of Minnesota Management and Budget, and researchers from the University of Minnesota's State and Local Policy Program drew from a variety of sources to identify potential freight-related businesses for interviews and to compile background information about those companies.

MnDOT interviewed 50 businesses, including two passenger transportation companies – a charter bus business and a chauffeur service. Those two companies were excluded from the analysis and findings for this report, which focuses only on transportation issues for freight-related businesses, but MAD categorized relevant excerpts from those interviews with the passenger transportation services and highlighted them for internal use by MnDOT. The following are notable breakdowns for the 48 freight-related businesses interviewed during the UFP study:

## The 48 freight-related businesses by freight role:

- Freight generators that use only their own trucks for shipping (5)
- Freight generators that contract with carriers for shipping but also use their own trucks (19)
- Freight generators that only contract with carriers and do not have trucks they use for shipping (13)<sup>7</sup>
- Freight carriers, hired by other businesses to handle shipping (11)

## The 48 freight-related businesses by industry, using the Census Bureau's North American Industry Classification System (NAICS):

- Manufacturers (19)
- Wholesale Trade (18)
- Transportation and Warehousing (11) – for this study, businesses mostly involved in general and specialized freight transportation, but with a few primarily offering courier service for small parcels only

## Potential Action Items

During the interviews, businesses made many suggestions and requests for location-specific MnDOT actions to improve routes and transportation in the Twin Cities area. MnDOT staff captured these comments, and the Metro District is reviewing, categorizing, prioritizing, and considering them. This list of potential action items includes location-specific suggestions and issues that MnDOT Metro might be able to address in the short term, might factor in to longer-term planning, and might contemplate for broader, long-range strategic action.

MAD provided MnDOT with many of the potential short-term action items in 2018, compiled as the interviews were taking place. A number of these potential action items concern local infrastructure, issues and roads and, consequently, are relevant to city and county governments, rather than MnDOT. MnDOT Metro officials will share relevant local action items with the appropriate city and county transportation officials.



<sup>7</sup> A few of these businesses owned one truck but said they do not use it for shipping. In the report, these businesses are included as businesses "without trucks" because they have no trucks for shipping.

STEPS TOWARD  
CONTINUOUS  
IMPROVEMENT  
FOR FREIGHT  
TRANSPORTATION



**Through the 2018-19 UFP study, MnDOT gathered extensive and useful data from freight-related businesses about freight transportation and the Twin Cities area transportation system. Comments, ideas, and suggestions from freight-related businesses in the Metro District affirm much of MnDOT's work and confirm or validate many current priorities and approaches of the agency and district. Feedback from the businesses also provides useful input to inform and enhance both existing efforts and future initiatives.**

Based on analysis of the interview comments, MnDOT's Central Office and the Metro District might consider the following actions to drive continuous improvement:

**Address useful and feasible suggestions pulled from the interview notes and compiled as potential items for short-term, location-specific action as well as longer-term plans and project scoping.**

Businesses identified both problems and opportunities for improvement in areas that include pavement conditions, signage, traffic flow, snow and ice removal, intersection safety challenges, interchange infrastructure and design, and other important topics. The Metro District has formed a working group to review potential action items from the businesses and determine the best approach for incorporating appropriate items into the district's ongoing work and plans.

**Continue to invest in and focus on effective congestion management to ameliorate problems, such as bottlenecks and costs, that congestion pose for freight-related businesses.**

A range of adverse effects from traffic congestion in the Twin Cities area, including higher costs for operations, was identified by businesses. While congestion is a constant challenge in dense, urban areas, MnDOT works hard to manage the challenge. The 2018-19 UFP interviews include suggestions for improving ramp metering

infrastructure and operations on entrances to major Twin Cities' area highways during rush hours. Also based on the interview findings, MnDOT could help freight-related businesses with smaller trucks cope with congestion by spreading the word that trucks under 26,000 pounds gross vehicle weight can use MnPASS lanes even during rush hours.

**Keep freight-related businesses well informed about construction projects and pursue strategies that lessen the adverse impacts of construction on their operations.**

Construction projects lead to long-term improvements for the transportation system but create routing problems and congestion while in progress. Based on the interview data, MnDOT helps many freight-related businesses better cope with construction by timing work for nights and weekends and informing businesses about plans and detours long before construction begins. Business also suggested greater coordination between MnDOT and transportation agencies within local government to ensure adequate alternative routes when major thoroughfares are under construction.

**Consider adding more dynamic, overhead electronic signs and make the messages conveyed on signs as clear as possible.**

Most of the businesses interviewed expressed positive opinions about MnDOT's dynamic, overhead signs, and many said more of the signs would be useful. The businesses that offered negative or mixed opinions about those signs said the messages needed to be clearer and more direct. In addition, all the businesses that talked about MnDOT's dynamic warnings for places where curves pose high rollover said those signs are useful as well.

**Explore opportunities for partnerships with city and county governments to address items such as truck parking challenges and safety improvements for bicyclists and pedestrians sharing the road with trucks and other vehicles, where appropriate.**

MnDOT covered topics of bike and pedestrian infrastructure and shared roadways in its interviews with businesses that operate trucks, even though bike and pedestrian challenges more often relate to local roads than MnDOT routes. A number of businesses shared concerns and suggestions about truck travel on roads with bikes and pedestrians. MnDOT might explore these topics with transportation officials at the local level.



**Continue MnDOT's general communication and 511 information efforts, perhaps with an expanded focus on outreach to freight-related businesses and efforts to promote and increase awareness of the 511 mobile-based application and 511's Truckers' webpage portal.**



Many businesses were aware of MnDOT's communication channels and tools and used them, but others were unfamiliar with options for attaining important, up-to-date MnDOT information about road conditions and construction developments. For example, a number of businesses suggested that MnDOT offer push notifications and a smart phone app – communication options that the agency already offers. Usefully, businesses also suggested MnDOT inform the general driving public about important topics for their operations, including zipper merge etiquette and safe spacing for cars ahead of trucks to allow adequate time for trucks to stop if necessary.

**Build upon the 2018-19 UFP study and its interviews to strengthen relationships with freight-related businesses going forward.**

Many of the businesses thanked MnDOT staff for visiting their facilities, seeking their input, and sharing information about construction projects and other topics. The interviews proved useful for extending MnDOT's connection with freight-related businesses, an important customer segment for the agency. Plans for additional UFP interviews and studies in other, targeted zones within the Twin Cities area likely will benefit both MnDOT and the businesses.



FINDINGS FROM  
INTERVIEWS  
WITH FREIGHT-  
RELATED  
BUSINESSES  
IN THE  
METRO DISTRICT





**interviewers sought feedback from almost all businesses of every type about safety concerns and communications, along with Twin Cities’ area congestion, construction, interchanges and intersections, pavement conditions, signage, and snow and ice removal.**

Additional questions about MnDOT’s congestion management tools, lanes, bike and pedestrian infrastructure, and size and weight restrictions were included in two separate versions of the UFP guides used for interviews with the 35 businesses with trucks – 11 carriers and the 24 freight-generating businesses – but were not in the interview guide for the 13 businesses without trucks. Some businesses commented on other issues and concerns aside from the ones included in the interview guides, but not surprisingly the findings from the interviews focus primarily on topics covered in the guides because those drew the most comments.

The findings that follow cite the number of times businesses commented on the different issues and topics covered. These counts convey a sense for the interest

level in these topics among the 48 freight-related businesses interviewed. However, potential variations in the research process for gathering and analyzing interview data the counts can affect the counts.

In any qualitative research effort that uses semi-structured interviews, it is possible and likely interviewers may not ask all the questions of every business or may ask the questions somewhat differently in some cases.

In addition, the data collectors may fail to record relevant comments, and researchers might inadvertently introduce inconsistencies when coding interview notes. For these reasons, it is important to consider the counts included in the sections that follow as general guides for the level of interest among the businesses, rather than strict counts for the absolutely number of businesses commenting on the topics based on consistent questions asked in every interview.

8 This findings section uses quotes from interview notes, presented in italics. When possible, these quotations are verbatim from the notes, as recorded by the interviewers, but they may not be verbatim quotes from the interviewees. Researchers edited the quotes for spelling, grammar, and clarity when necessary.

# CONGESTION'S IMPACT ON SHIPPING, RECEIVING AND THE LAST MILE

Congestion problems, including “last mile” issues, stand out as a key topic for the businesses. All but two of the 48 freight-related businesses interviewed made comments about congestion recorded and coded by staff involved in the UFP project, and almost all of them talked about the strategies they use to cope with the challenge and about the adverse impacts on their business operations. The different businesses talked about congestion creating challenges for shipping products out, receiving supplies in, scheduling trucks and drivers, and the “last mile” of delivery to customers’ locations and their own.



“ [T]here’s never a day it doesn’t back up. I don’t think the cause is just one thing. The grid was built for a smaller population. There’s the booming economy. There are not enough trucks on the road to account for the change. More people are just trying to get to work. The suburbs are expanding. More people are commuting. It’s a combination of all kinds of things.

## Effects of Congestion

Businesses of all types talked about adverse impacts from congestion, including businesses that contract out with freight carriers to handle their shipping needs. Many businesses mentioned strategies they use to cope with congestion. Notable findings include the following:

### FINDING

About two-thirds of the businesses that discussed congestion (30 of 46) said they have made adjustments to help cope with congestion, including shifts in schedules to avoid peak traffic hours, route changes in advance or in real time, and increases in the number of shipments made combined with decreases in shipment sizes.

A few reported staying out of certain areas in the Twin Cities altogether to avoid traffic bottlenecks.

“ We have to make adjustments due to congestion on some days. We work with customers to change timing, use courier services, or pay overtime ... We don’t deliver east of downtown Saint Paul, as [that] route would throw the whole day off.

### FINDING

Almost half the businesses that discussed congestion (22 of 46) said it adversely affects their deliveries to customers.

A number of businesses said delivery delays undermine customer relations. Several of the businesses reported that congestion-related delays leave customers waiting for time-sensitive items and may even cause customers to shut down production. One business said it pays fees to customers when deliveries arrive late.

### FINDING

About a third of the businesses commenting on congestion (17 of 46) noted that congestion increases their costs, with a number of them citing added hours and overtime for drivers and a few mentioning that they must operate more trucks in order to handle timely deliveries on congested routes.

A number of the businesses that talked about congestion-related costs said congestion also lowers revenues – for carriers because they pick up less freight than they otherwise could without congestion-related delays, and for freight generators because congestion decreases the amount of product the trucks can deliver on any

given day or because they provide discounts to customers when deliveries arrive late.

“ *We sometimes end up paying drivers overtime. We don't mind that if work is getting done, but we don't like to do it if they are just sitting in traffic. Trucks cost [a lot] to run.*

#### FINDING

A few businesses (3) that said congestion causes safety issues, including inadequate stopping distances for semi-trailer trucks and large straight trucks, and aggressive behavior by drivers in passenger vehicles.

#### FINDING

A few businesses (4) said congestion has only limited impacts on their operations, with some of them noting this is because they have made adjustments to avoid congested travel times.

In addition, a few businesses serving local markets noted an upside to increased congestion: more customers and sales because congestion stems from population growth and economic growth.

#### FINDING

Asked if congestion's effects vary depending upon its causes, about a quarter of the businesses that commented on congestion (12 of 46) mentioned weather, with half of them (6 of 12) saying weather delays are less of an issue because customers are more understanding about delays when weather is the cause.

A few businesses noted construction-related congestion as problematic, and some of these businesses said construction has significant impacts because it creates congestion for long periods. However, several businesses said the cause of congestion does not alter its impacts on their operations.

## Planning for Congestion

The interview guide included several questions about congestion's impacts on business plans. Findings include the following:

#### FINDING

Almost half businesses that commented on the topic (12 of 25) said congestion has no or very little impact on their plans for the future.

Some of these businesses said they plan to stay at their current locations despite increased traffic congestion because their locations offer other advantages, including close proximity to customers.

#### FINDING

A number of businesses (10) said congestion does affect their business plans, with close to half of them (4) saying congestion challenges may prompt them to relocate their facilities.

One business said it is searching now for an alternative location site because of congestion, and several others said they might relocate all or parts of their operations for that reason. Several businesses said they might establish additional locations in the Twin Cities area to improve efficiency in light of congestion problems.

#### FINDING

In response to a question in the interview guide, several businesses (9) requested information from MnDOT to help them plan for congestion – information about future construction projects, about MnDOT plans more generally, and about routes where congestion is expected to get worse.

“ *We would like to be aware of what MnDOT is planning, like the outlook or five-year vision for highway work. Early notification of MnDOT's plans would be very helpful.*

## New Roadway Capacity

### FINDING

When discussing congestion, several businesses (5) expressed support for adding new lanes or otherwise expanding the current state highway transportation system.

Most of these businesses have 10 or more trucks. Although they supported new capacity throughout the Twin Cities area, these businesses highlighted certain routes as particularly in need of expansion, including the following:

- The Interstate 694 and Interstate 494 loops
- Highway 36 from its start in Saint Paul through to Interstate 694
- Routes between Minneapolis and St. Cloud<sup>9</sup>
- Routes between the Twin Cities and Duluth

“ Our biggest challenge isn’t construction; it’s a lack of a solid system in volume and freight capacity. In contrast, Phoenix built three [highway] rings around the city in the same time as we did the 35W Crosstown Commons [project]. We can get anywhere in Phoenix in 25 minutes, but we can’t get anywhere here in 35 minutes.



<sup>9</sup> Interstate 94 construction projects scheduled to start in 2019 will affect a major route between Minneapolis and St. Cloud and includes new additional lanes.

# CONGESTION MANAGEMENT



Given the impacts of congestion, the interview guides for carriers (11) and businesses with their own freight shipping trucks (24) included a few questions about MnDOT ramp metering and MnPASS lanes as congestion management approaches potentially helpful to business operations. The interview guide for businesses without trucks (13) included a question about MnPASS tags for employees commuting to work. A great majority of the total number of businesses interviewed (40 of 48) discussed ramp metering or MnPASS or both.

## Ramp Metering

Many businesses (32) discussed ramp metering during their interviews. Notable findings include the following:

### FINDING

More than one-third of the businesses that discussed ramp metering (13 of 32) expressed concerns, including that the ramps are too narrow and short, that MnDOT activates meters inappropriately or inconsistently, and that passenger vehicles ignore the ramp meters or drive incorrectly in metered lanes.

Most of the businesses that discussed concerns about the metered ramps said they are too narrow and short. Businesses cited width as an issue when more than one truck is using the ramp. Businesses said shorter metered ramps make it difficult for trucks to accelerate to highway speeds prior to merging. In terms of concerns about passenger vehicles and ramp meters, several businesses mentioned that motorists commonly disobey ramp meter lights, straddle both ramp meter lanes, and

do not allow trucks to merge onto the highway from a metered ramp.

A few businesses said MnDOT activates some ramp meters when little or no traffic is present and that some ramp meters are activated while others are not despite being in close proximity to each other. One business said that the timing between some lights is too short to allow trucks to accelerate past their light before the next light turns green.

“ Ramp meters make it very hard for trucks to get up to highway speeds. There is not enough runway from the meter to the highway for trucks to get up to 55 mph.

### FINDING

A few businesses (4) expressed mixed feelings about ramp meters, noting that their opinion depends upon the location in question, whether the ramp meters are activated appropriately, and the impact of the meters on fuel usage, driver frustration, and other operational considerations.

The businesses that discussed mixed feelings about ramp meters were more varied than those that either like or do not like ramp meters. The group with mixed feelings was more likely to include carriers with more than 10 trucks. Given this difference, MnDOT may consider outreach to freight carriers with large fleets to gather additional input on ramp metering.

#### FINDING

A quarter of businesses that discussed ramp meters (8 of 32) noted specific locations, with just over half of them (5 of 8) noting places where ramp meters do not work well.

A few of the businesses requested that ramp meters not be added around their businesses or on frequently traveled routes, including Interstate 35W, Highway 36, Interstate 94, and southbound Highway 52 to westbound Interstate 494. A few businesses also discussed ramp meters currently in use that do not work well, including those located at Coon Rapids Boulevard and Interstate 694, and at East River Road and Interstate 694. One business noted that the meters on Interstate 169 north and Highway 62 east work particularly well.

The businesses that provided negative feedback on ramp meter locations were more likely to be carriers with large fleets than those that provided positive feedback. Given that carriers with larger fleets had ideas for where ramps do not work well, MnDOT, again, might consider outreach to these businesses to gather additional input.

#### FINDING

Several businesses (7) talked with MnDOT about impacts from the ramp meters but said the meters have no impact on their operations, most commonly because their fleets operate during non-peak hours.

#### FINDING

Most of the businesses that explicitly offered opinions about MnDOT's use of ramp meters (11 of 19) said that ramp meters are useful and expressed general support for them.

Only a few of the other businesses that discussed their opinions mentioned not liking ramp meters.

## MnPASS Lanes

Many the businesses (33) discussed MnPASS during their interviews. A number of these businesses (13) expressed support for the system, and none said that they dislike MnPASS lanes. Notable findings include the following:

#### FINDING

About two-thirds of the businesses that discussed MnPASS (21 of 33) reported not using the lanes, most commonly because they operate on routes where there are no MnPASS lanes, they operate on shorter routes where MnPASS would have only limited impacts, they operate trucks that weigh more than the MnPASS limit of 26,000 pounds, or they were unaware that trucks weighing less than 26,000 pounds are permitted to use MnPASS lanes.

“ The MnPASS lanes aren't necessarily advantageous for us. We spend more time outside of the MnPASS areas.

#### FINDING

Of the businesses that discussed MnPASS, one-third (11 of 33) either talked about potentially using the lanes for commercial vehicles or discussed the option of providing employees with MnPASS tags for their commutes to work.



Several businesses mentioned that they would consider using MnPASS for their trucks. Several, too, discussed whether they would provide MnPASS tags to employees, with three of five saying they would consider it. A few businesses said that they would not consider providing tags to employees, because either many of their employees already have tags or because there are no MnPASS lanes near their facilities.

### FINDING

More than one-third of the businesses that talked about MnPASS (13 of 33) discussed the impact of the lanes on their business, of which most said the lanes have no effect; only a few said the lanes help ease congestion.

Common reasons for a lack of impact included fleets operating during non-peak times, fleets being over the allowed weight limit, and not having MnPASS lanes in their areas of operation.

“ I think MnPASS lanes would help people get through congestion quicker. From a cost

standpoint, I just try to work the non-peak hours when I can, but I can see how these lanes would be helpful for people.

Among the businesses that said MnPASS has no impact, a couple also said that they were not aware that their trucks weighing less than 26,000 pounds are allowed on MnPASS lanes. This suggests that additional MnPASS outreach to freight-related businesses could increase MnPASS use by trucks.

“ We were not aware that we could use the MnPASS lane with trucks under 26,000 [gross vehicle weight], maybe because it's not on the signs anywhere.

### FINDING

Several of businesses (5) that discussed MnPASS suggested additional locations for lanes.

Businesses suggested including MnPASS lanes on Interstate 94 and other major arteries between the downtowns of Saint Paul and Minneapolis.



# CONSTRUCTION



A great majority (41) of the businesses interviewed noted the importance of advance information from MnDOT about construction plans, suggested ideas to reduce problems, commented on specific current and past projects, or talked about the impact of Metro District construction projects on their operations.

“ Minnesota does a really good job of maintaining their roads. Overall, the state has a really good system. MnDOT does a good job developing, improving, [and] expanding so I am pretty impressed with MnDOT overall.

## Nighttime and Weekend Construction

If time allowed, MnDOT interviewers asked businesses their opinions about MnDOT construction crews that work on weekends and during the night in order to reduce construction-related congestion. Findings include the following:

### FINDING

In three-quarters of the interviews where staff involved in the UFP study recorded opinions (12 of 16), the businesses said weekend and nighttime construction clearly works better for their operations, and a few of them noted this is true even when the weekend and nighttime work shuts down entire routes.

A number of the businesses said they are closed on weekends and at night and therefore construction work during those times does not affect their operations. One business said weekend closures are welcome if in fact they reduce the overall time required to complete a construction project.

“ Nighttime and weekend construction doesn't delay our shipments or employees getting to work.

## FINDING

A few businesses (3) said weekend or nighttime construction work has only minimal positive impacts, while one business said it operates overnight and therefore MnDOT should not assume that overnight closures reduce disruptions.



## Information Sharing

When discussing construction, a number of businesses called for more information from MnDOT to help them understand, plan for, and route around projects.

“ This freight [study] project is a good start, connecting faces with names and MnDOT as a whole. We could use this project to start a dialogue to keep us updated and to begin using relevant MnDOT tools.

## FINDING

The businesses (8) that called for more MnDOT information in advance of construction cited needs ranging from notice of long-term plans as far as 10 years out to shorter-term alerts three to six months ahead of time for upcoming developments.

“ For construction, it’s important to get the information as much in advance as we can.

## Construction Suggestions

## FINDING

Several businesses (7) offered specific ideas for actions MnDOT could take to reduce adverse construction impacts. Business suggestions included the following:

- MnDOT should open MnPASS lanes up to general traffic in corridors under construction and affected by lane closures.
- MnDOT, the City of Minneapolis, and Hennepin County should better coordinate construction efforts because at present the local agencies seem unaware of MnDOT’s plans.
- MnDOT is better off focusing resources on a few major construction projects – or even just one – to get them done quickly, rather than taking on many projects at the same time.
- Good signs with helpful information can mitigate construction problems for truck drivers.
- MnDOT crews should only block off roads when they are actually doing construction work on them and should shorten the sections that are blocked off.

## Specific Construction Projects

Project staff recorded comments – both positive and negative – from some businesses (18) about current and recent construction projects. The following are brief examples for projects discussed during the interviews:

## FINDING

A business located near Interstate 94 said it faces challenges whenever MnDOT closes that route for construction.

## FINDING

One business said that the tight temporary lanes south of downtown Minneapolis for the project on Interstate 35W at Interstate 94, along with the concrete barriers on either side of them, creates a “scary” situation for semi-trailer trucks traveling that route and a potentially unsafe environment for nearby passenger vehicles.

## FINDING

One business cited as helpful the construction schedule timelines that MnDOT shared with businesses in advance of the 2018 Highway 47 project during a targeted outreach, and that business said it was helpful as well that the project finished a month ahead of schedule.

## Impacts of Construction Projects

Many businesses (19) of all types – from carriers to those that contract out for shipping – talked about how construction affects their operations, mostly discussing adverse impacts. Notable findings include the following:

### FINDING

The businesses most commonly cited delays (8) and routing challenges (6) as specific adverse impacts of construction on their business operations.

Businesses noted problems with delays for both inbound freight and outbound deliveries. In terms of rerouting for construction, businesses mentioned their efforts to plan in advance and talked also about the real-time adjustments that drivers make using mapping apps.

“ Right now, our biggest transportation challenge is probably construction. It delays everything.

### FINDING

A few businesses (3) noted that construction projects can limit access to their facilities for trucks bringing supplies, for customers coming to their locations, and for emergency vehicles.

Other challenges cited included construction-related unloading and loading issues, noise and dust, delayed arrivals for workers, and difficulties maneuvering trucks through detours and in tight construction zones.

### FINDING

A few businesses (3) tied the adverse impacts of construction to costs and losses, citing higher outlays for transportation when construction delays mean longer hours of service for drivers or higher charges from carriers.

### FINDING

A couple businesses (2) noted that construction-related congestion has prompted them to adopt earlier start-times for deliveries in order to avoid the morning rush hour.

### FINDING

A few businesses (3), however, said construction has only limited impacts on their operations.

“ Construction doesn't have much impact for local deliveries. If we are aware of construction, we plan for it. We are used to it.

### FINDING

A few businesses (4) said that MnDOT exacerbates the impacts of construction on their businesses when it carries out projects on parallel routes, further complicating rerouting efforts.

One business recognized this is a challenge for MnDOT, given the limited construction season in Minnesota. Another of the businesses interviewed said MnDOT generally does a good job of avoiding this issue.

### FINDING

A few businesses (3) noted that while construction projects cause problems for their operations, those projects are necessary to maintain and improve the roadway system.

“ As much as we hate what is happening now with so much construction, it was much worse when the state was neglecting infrastructure. There is some understanding that construction is needed to maintain and improve infrastructure.



# PAVEMENT CONDITIONS



A great majority (34) of all the businesses interviewed discussed pavement conditions, in response to questions about this topic included in all the interview guides.

## FINDING

Many of the businesses that discussed pavement (20 of 34) said that MnDOT routes were in good condition and that MnDOT maintains its roads well.

“MnDOT does a really good job. Once you’ve traveled this country and have seen other states’ roads, you know how good we have it in Minnesota.”

A few of these businesses noted that local roads, rather than MnDOT routes, have pavement problems. A few businesses said they have noticed pavement conditions improving on MnDOT routes over the past few years.

## Areas for Improvement

Although many of the businesses that discussed pavement conditions provided positive feedback, a number of them discussed specific areas for improvement.

## FINDING

Some of the businesses that discussed pavement conditions (10 of 34) identified specific routes where MnDOT could improve pavement quality, including both state and interstate highways.

Examples include issues with decreased traction in wet weather because of new surfacing on Highway 169 in Maple Grove, and rough pavement both on Interstate 94 at the entrance to the Lowry Tunnel in Minneapolis and on the entrance ramp to eastbound Interstate 94 from Interstate 35E in Saint Paul. MnDOT is reviewing location-specific pavement issues and suggestions from business for possible action.

## FINDING

Several businesses (5) commented on road resurfacing, with most noting a preference for concrete over asphalt.

One business said that compared to concrete surfaces, asphalt ones are slipperier when wet from rain, snow, and ice.

## Effects of Rough Pavement

Nearly half of the businesses that discussed pavement conditions (16 of 34) commented on the effects rough pavement has on their businesses, with some citing adverse impact but others noting no impacts.

### FINDING

Just over half of the businesses that discussed effects from rough pavement (9 of 16) said it adversely impacts their businesses, most commonly because of wear and tear on trucks, product damage, and packing that comes loose.

“ With poor pavement, the delivery of drums of liquid can be difficult. Sometimes the movement of the drums due to road conditions ... break[s] the strapping that holds them in place, and it can take many ... hours to fix spilled drums.

### FINDING

The rest of the businesses that discussed the effects of rough pavement (7 of 16) said it did not adversely affect their businesses, most commonly because the businesses have no issues with product damage.



# SNOW AND ICE



**A great majority (40) of the businesses interviewed discussed snow and ice removal, in response to questions about this topic included in all the interview guides.**

## Snow and Ice Removal

Businesses were asked for their feedback on MnDOT's current snow and ice removal performance. Notable findings include the following:

### FINDING

Nearly three-quarters of the businesses that discussed snow and ice (29 of 40) said MnDOT is doing a good job of removing both from their routes.

Many of these businesses used strong, positive adjectives to describe MnDOT's efforts, including "fantastic," "phenomenal," and "very well prepared." Some of the businesses also noted that MnDOT does a good job compared to snow and ice removal efforts in surrounding states. Several businesses noted that while snow and ice can be a problem on local streets, MnDOT routes are cleared quickly and completely.

“ MnDOT snow and ice action? I think it's some of the best. Once or twice a year we get caught where we're unprepared, maybe due to bad forecasting, but that's the way it is. I'm not complaining ... It's Minnesota and that's the way it is. I'm impressed at how quickly the [snowplow] drivers are out there getting the roads cleaned and salted.

## FINDING

A few businesses (4) said that MnDOT's snow and ice removal efforts were generally good but offered suggestions for improvements, including more pre-treatment of roads in anticipation of weather events and better removal of compacted snow or ice.

## FINDING

Several businesses (7) said MnDOT needed to improve its snow and ice removal efforts, with the businesses most often suggesting better timing by MnDOT crews.

Most of these businesses have larger fleets of 10 or more trucks, and a higher proportion of them were carriers compared to the businesses that offered positive feedback about MnDOT's snow and ice removal. Overall, businesses that called for improvements said routes need to be cleared of snow and ice more quickly than they currently are. Some businesses cited a need for greater removal efforts both during and after weather events. Others focused more on MnDOT efforts during weather events themselves, saying that MnDOT's removal efforts after weather events are sufficient.

Only a few businesses discussed safety concerns related to snow and ice removal, with one mentioning several accidents caused by winter conditions at times when the interviewee did not feel road conditions should have been an issue.

“ Snow plowing doesn't seem to be as fast anymore. They don't always get out in time when it rains and then turns to ice and snow.

## Priority Routes

### FINDING

Several businesses (5) that discussed snow and ice identified priority routes for removal.

Examples include sections of Highway 47, Interstate 94, Interstate 694, Highway 610, as well as the Wakota Bridge, a 10-lane bridge carrying Interstate 494 over the Mississippi River between South Saint Paul and Newport, Minnesota. MnDOT is reviewing location-specific suggestions from the interviews for improved snow and ice removal.

## Impacts on Businesses

### FINDING

A few businesses (4) that discussed snow and ice also mentioned the impacts that winter road conditions have on their operations, including wear and tear on their vehicles, delayed deliveries, and workers arriving late or missing work.

“ Snow events can have a huge impact on our deliveries. Winter is our busiest season ... This ends up having a direct impact to the reputation of our customers who get their [products] from us.

Only one business said that winter road conditions have no impact because their shipments are not time sensitive.



# INTERCHANGES

Nearly two-thirds of all the businesses interviewed (30 of 48) discussed interchanges, mostly in response to questions in interview guides about this infrastructure feature.



Notable findings include the following:

## FINDING

Nearly one-third of the businesses that discussed interchanges (9 of 30) noted challenges with cloverleaf designs, citing them as dangerous and prone to causing accidents.

These businesses often discussed mobility issues at interchanges on the Interstate system, mostly commonly Interstates 494, 694, and 94 interchanges. A few businesses also said trucks need longer acceleration lanes to reach highway speeds prior to merging.

“ The [94/494/694] interchange in the east Metro is extremely poorly designed ... It's always congested. We avoid it like the plague. It is extremely dangerous for drivers in personal vehicles, let alone in a truck. You have to merge across people trying to get to the exit ... I'm very surprised there haven't been more fatal accidents there.

## FINDING

Several businesses (5) also discussed challenges with interchanges on Interstate 94, including issues with accidents, merging, and poor turning radiuses.

Almost all of these businesses have 10 or more trucks. The most commonly cited interchange locations included Interstate 94 at Interstate 35E in Saint Paul, Interstate 94 at Interstate 394 in Minneapolis, and Interstate 94 at Interstate 494/694 in the east Metro.

## FINDING

A few (3) businesses discussed diverging diamond interchanges, noting that they are useful but challenging to navigate.

One business said that education about diverging diamond interchanges would be helpful.

“ There's a weird intersection [diverging diamond] on 35W, north of here at Highway 96. We need education on how these new interchanges work and how drivers should best navigate them.

## FINDING

Nearly one-third of the businesses that discussed interchanges (9 of 30) mentioned problems with executing zipper merges as a cause of accidents.

Zipper merging involves drivers using their own lanes up to the point where two lanes merge and all drivers then taking alternating turns to combine traffic from the two lanes. All the businesses that mentioned zipper merges in their UFP interviews were freight generators and most suggested that MnDOT educate the public on the proper approach for zipper merging. This topic was not included in the interview guides, so the businesses brought it up on their own repeatedly.

“ In terms of safety concerns, the biggest issue is zipper merges. We get feedback from the public at least once a month on our drivers cutting people off at the merge spot when they are in fact following the zipper merge procedure. Our driver cuts in at the end of the merging lane – which is legal and encouraged – but other drivers call and complain about being cut off. Car drivers misunderstand the situation. MnDOT could better inform the public on zipper merge etiquette to avoid future mishaps.

# INTERSECTIONS



A few more than half of all businesses interviewed (26 of 48) discussed intersections, in response to questions about this topic included in all the interview guides.

## FINDING

More than two-thirds of the businesses that discussed intersections (18 of 26) provided opinions about roundabouts, of which the majority (11 of 18) said that roundabouts were challenging and that they did not like them.

Businesses cited problems for trucks navigating roundabouts as the most common reason for disliking this intersection feature. For example, businesses cited issues with small turning radiuses, narrow lane widths, and poor visibility. A few businesses said that roundabouts are particularly challenging to navigate when they are placed one right after another. One businesses noted that roundabouts can cause their loads to shift, while another said that roundabouts are okay for city streets, but not highways.

“Drivers hate the roundabouts. Nobody knows what to do. Drivers will say, “I have to sit there and wait because nobody will let me go.” I used to take the Flying Cloud/101 roundabout, which is just a disaster. Other motorists will just floor it to get through

the intersection. It seems to me it’s more dangerous with roundabouts. I could see the time savings in non-peak hours, but in peak hours, the [stop]lights may be better.

Among the businesses that expressed opinions about roundabouts, about one-third said they like them. A few businesses said that although they like roundabouts in general, they do encounter challenges, such as narrow lane widths, single-lane roundabouts that are hard to navigate, and other motorists not knowing how to use them.

“We love roundabouts. We used to have to go [through] Highways 8 and 61 with a stoplight. Now with roundabout, there’s hardly any delay in traffic. Yes, it took a while for people to get used to it. They seem to be a lot less intimidating now than stoplights.

## FINDING

A few businesses (4) discussed safety concerns, including challenges with other motorists and with pedestrians.

In terms of safety concerns related to other motorists, a few businesses mentioned that many motorists do not know how to use roundabouts and that cars sometimes use the truck apron as another lane. One business said it is dangerous to build roundabouts on MnDOT routes that many pedestrians use.

“ Personally, I have seen five or six people nearly get “smoked” and the reason is because they are walking. When you have a pedestrian crossing the roundabout and traffic entering the roundabout, by the time [drivers] are at the spot where they see the pedestrian walking ... it’s sometimes almost too late. When you have an area with heavy pedestrian traffic and you put a roundabout there, you’re asking for trouble.

### FINDING

A couple businesses (2) said that they like J-turns, an intersection design that reduces the potential for conflict and crashes by having drivers who otherwise would turn left across fast-moving traffic instead turn right and then execute a U-turn to head in their intended direction.

“ J-turns ... save lives, especially for keeping cross-traffic separated.

### FINDING

A number of businesses (10) said they like advanced warning lights.

“ Flashing lights and advanced warning systems are very beneficial to commercial trucks, particularly in the winter.



# LANES



Over half of all the businesses interviewed (25 of 48) discussed driving lane widths, truck-climbing lanes, truck lanes, and turn or acceleration lanes, mostly in response to questions in the two interview guides for carriers and businesses with freight-shipping trucks (but not in the guide for businesses without trucks).

## Driving Lane Width

A number of the businesses that discussed lanes (10 of 25) talked about lane width, responding to a question about 11-foot lanes versus 12-foot lanes that interviewers asked only businesses with trucks if time allowed.

### FINDING

Just more than half of the businesses that discussed lane width (6 of 10) said they have no issues with current lane widths and no preference between 11- and 12-foot widths, while the rest said they prefer 12-foot widths.

The businesses that said they have no preference for lane widths were more often carriers, compared to the businesses that preferred 12-foot widths. The businesses that preferred 12-foot lane widths – all freight generators – mostly cited safety reasons relating to such factors as winter driving and the size of commercial vehicles.

## Truck-Climbing Lanes

In response to a question in the interview guide (for businesses with their own freight shipping trucks), a number of the businesses that talked about lanes (11 of 25) did also discuss truck-climbing lanes

## FINDING

Just over half of the businesses that discussed truck-climbing lanes (6 of 11) indicated that these lanes are useful, with only a couple businesses (2) noting no significant impacts from this feature and a few businesses (3) stating that the lanes are not needed.

Carriers were more likely than other businesses to say truck-climbing lanes are useful. In addition, the businesses that provided positive feedback were more likely to be businesses that said their drivers use those truck-climbing lanes. Businesses that said truck-climbing lanes are not needed noted that their trucks are able to keep up with traffic on an incline, that they only use smaller box trucks, and that they are generally carrying lighter loads.

These three businesses also have smaller fleets of less than 10 trucks, while the other businesses commenting on truck-climbing lanes tended to have larger fleets with more than 10 trucks.

“*Truck climbing lanes are good for us. Our trucks only go so fast, so the lanes are good for the general public [traffic].*”

## Truck Lanes

### FINDING

Several businesses (5) urged MnDOT to create truck-only lanes or allow all trucks to travel in MnPASS lanes, separate from general traffic – not topics that the interview guide covered and consequently ideas that the businesses offered on their own.

One business suggested semi-trailer trucks be allowed to use the MnPASS and high-occupancy vehicle lanes because traffic in those lanes is relatively light. Another business suggested a truck-only lane for a stretch of Interstate 35E north of Saint Paul in the area of Highway 96.

“*Has MnDOT every explored having truck-only lanes? With more conversation happening around autonomous trucks, we wonder if there will be specific lanes for those trucks.*”



## Turn and Acceleration Lanes

### FINDING

A few businesses (3) discussed the need for improvements to turn lanes – including truck-specific turn lanes and wider left-turn lanes – in order to increase safety for other motorists.

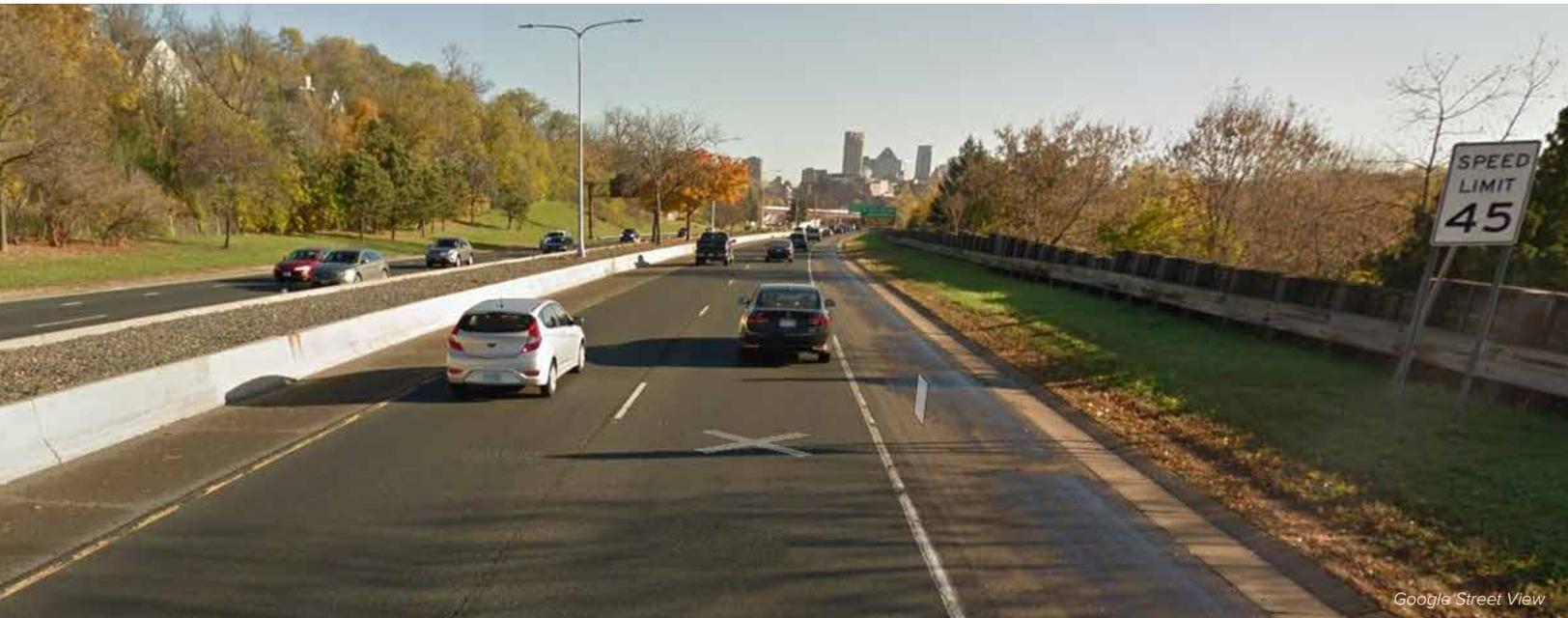
“*Tight left turn lanes are really problematic in congested traffic ... In busy, tight corridors, it is really hard for big trucks to make left turns. It's unsafe for everyone involved, especially during rush hour.*”

### FINDING

A couple businesses (2) said that longer acceleration lanes would help trucks reach highway speeds prior to merging into traffic.

One business said a longer acceleration lane would be helpful at eastbound County Road 42 and southbound Highway 52, and the other mentioned lengthening acceleration lanes at the cloverleaf interchange of Interstate 35W and Interstate 694.

# INTERSTATE 35E WEIGHT AND SPEED RESTRICTIONS



Several businesses (6) – nearly all of which have more than 10 trucks – cited issues with weight and speed restrictions on parts of Interstate 35E in Saint Paul and with that interstate’s inaccessibility for freight haulers. Notable findings include the following:

## FINDING

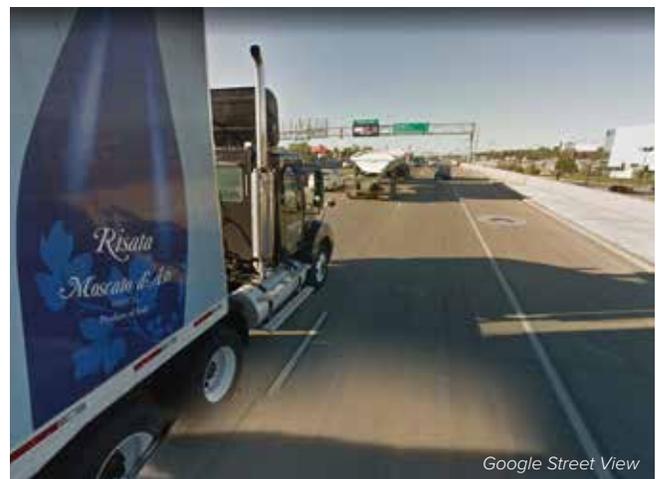
Several businesses (5) cited negative impacts from Interstate 35E weight restrictions or the potential for positive impacts on freight haulers if those weight restrictions were to be lifted.

One business cited issues with the lower speed limit along parts of Interstate 35E in Saint Paul, while another business noted problems with both speed and weight restrictions on Interstate 35E in Saint Paul. A business that makes frequent deliveries to Minneapolis-Saint Paul airport said opening up Interstate 35E to truck traffic would have a huge and positive impact on its operations.

“ We don’t use I-35E much because it connects to the parkway [portion of it in Saint Paul] where trucks can’t drive. So, we get complaints from residents sometimes about our trucks being on local streets.

## FINDING

A few businesses (3) discussed the impact Interstate 35E’s weight and speed restrictions have on their business and surrounding communities, including the need to find alternative routes and thus increased truck traffic on nearby county or city roads.



# SIGNAGE



Many businesses (39) of all types and sizes commented on MnDOT signage, noting possible improvements for signage and offering generally positive opinions about dynamic, electronic overhead signs and newer electronic signage for sharp curves.

## Dynamic, Electronic Overhead Signs

Many businesses shared opinions, comments, and ideas about MnDOT’s dynamic, electronic overhead signs, mostly in response to a question included in the interview guides for carriers and businesses with freight-shipping trucks (but not in the guide for businesses without trucks), asking whether MnDOT is using enough of these signs or too many. Several of the businesses were emphatic about the need for more of these signs.

Notable findings include the following:

### FINDING

Of the 34 businesses that expressed opinions about MnDOT’s dynamic, electronic overhead signs, a great majority (28) viewed them positively, and the most commonly cited reason for those positive opinions was that information from the signs helps drivers select faster routes.

That said, several businesses – those with both positive and negative opinions about these overhead signs – noted that their drivers regularly use Google Maps, Waze, and MapQuest to determine the best routes to follow.

“ We really like the overhead message boards for early notification. The traffic or construction details are shared between [our] drivers and the dispatcher. Everyone seems to be in the know about what’s going on [and] where, before it’s a problem for them.

### FINDING

Among the few businesses (4) with negative opinions of the dynamic, electronic overhead signs and the couple (2) with mixed reactions, almost all said the messages lacked clarity about the situations ahead and about what routes drivers should take to avoid them.

As examples, one business objected to signs that warn of construction ahead but do not say if the road is closed. Another business said signs telling drivers to take an alternate route need to specify what route they should use.

#### FINDING

About two-thirds of the businesses that offered comments about the number of dynamic, electronic signs (16 of 23) called for more of them, while about another third (7) said enough were in use now.

### MnDOT Signage about Curves and Rollover Risks

The interview guide for businesses with trucks included a question about the specific type of dynamic, electric sign that MnDOT uses to alert truck drivers prior to curves that pose high risks for rollovers warning signs (but the guide for businesses without trucks did not).

Some businesses had positive comments for these signs, which use overhead cameras to detect trucks and then light up with a warning. At the time of the interviews, MnDOT had installed such curve warning signs at the Lowry Tunnel and at the merge point for Interstate 694 and Interstate 94.

#### FINDING

All the businesses (17) that offered opinions of this new signage said it was useful for warning about curves and potential rollovers, with a few (4) also noting that the signs are particularly helpful for new drivers and out-of-state drivers unfamiliar with the roads in the Twin Cities area.

““ *The newer signs about curves are beneficial to the drivers. We've had trucks roll over due to weather.*

### Signage Suggestions

In discussing signage during the interviews, some businesses offered suggestions to MnDOT about types of signage and locations. In general, the following are of note:

#### FINDING

A number of businesses (13) identified specific locations for new dynamic, electronic overhead signs and for dynamic curve signs warning trucks of rollover risks, information that MnDOT has incorporated into a longer list of potential action items culled from the interviews.

#### FINDING

Several businesses (7) commented on the importance of early and advance warning for challenges or changes, including lane shifts and restrictions, variations in speed limits, congestion, and sharp turns.

A few businesses called for advance signage a mile or even five miles ahead of major developments along routes.

#### FINDING

Several businesses (5) suggested clear signage at interchanges, including information about exits, merge points, and speed limits.

One business that imposes strict penalties for its drivers who speed said advance warning of changes in the speed limit from one route to another at an interchange could reduce the chances that truck drivers will accidentally exceed the limit.

#### FINDING

A few businesses (4) called for better signage to mark truck routes, and a couple others (2) said better signs are needed to identify prohibited routes for trucks or trucks carrying hazardous materials.

#### FINDING

A few businesses (3) called for more or clearer detour signs.

““ *Signs could be more descriptive, especially for detours.*

## DISTRACTED DRIVERS



Several businesses (8) mentioned unsafe behavior by drivers in passenger cars.

### FINDING

Among the comments recorded about other drivers, distracted driving was noted by the largest number of businesses (5), and most specifically cited cell phone use as the issue.

As for other safety concerns related to motorists, a few businesses said drivers in passenger cars ignore traffic rules, and one business that said other drivers make unsafe moves around large trucks because they do not realize how long it takes truck drivers to stop their vehicles.<sup>10</sup>

“ It's other people's driving that's a concern to us.

<sup>10</sup> For more on other safety concerns, see the sections in this report about congestion on page 19, interchanges on page 32, intersections on page 33, lane width on page 35, and bike and pedestrian issues on page 41.

# BIKE AND PEDESTRIAN SAFETY ISSUES AND INFRASTRUCTURE



Many businesses (28) commented about truck travel on roads with bikes and pedestrians. They talked about safety concerns and driving challenges both on the roads with bike lanes and on the roads without, and they offered opinions and ideas about pedestrian and bicycling infrastructure. Questions about these topics were included in the interview guides for carriers and businesses with their own freight shipping trucks (but not in the guide for businesses without trucks). MnDOT solicited feedback from businesses on these topics even though much of the bike and pedestrian infrastructure in the Twin Cities' area is on local roads rather than MnDOT routes.

## Sharing the Road with Bikes and Pedestrians

Staff involved in the UFP study recorded comments in response to a question about roads where trucks, cars, and bikes share the space, without separate bike lanes. Some businesses talked, too, about trucks sharing space with bikes on roads with bike lanes. Notable findings include the following:

### FINDING

Several businesses (7) expressed concerns about the safety of bicyclists and the danger posed by a mix of trucks, other motor vehicles, and bikes on shared roadways.

A few businesses specifically cited problems with bike traffic on routes heavily traveled by industrial vehicles and on busy city streets. A few businesses said that

combining trucks, cars, bikes, and pedestrians on roadways makes for difficult driving conditions and creates congestion.

“ My role is the safety leader. I try to mitigate risk at all costs. When you put bikes in and mix them all together, it is a recipe for disaster.

### FINDING

Several businesses (7) said bicyclists make a dangerous situation worse by engaging in unsafe maneuvers and ignoring traffic rules.

These businesses include a few that also talked about safety issues on shared roadways.

“ Bikers who routinely do not obey traffic laws add to the potential for serious accidents, especially at intersections.

## FINDING

A couple businesses (2) reported no problems sharing the road with bikes, and another spoke well of MnDOT's efforts to create safe streets for different modes of travel.

“ MnDOT is on track with ‘Complete Streets’ – to safely accommodate all [types of] traffic when possible.

## Bike and Pedestrian Infrastructure

Some businesses (20) commented on infrastructure, such as dedicated, marked bike lanes and curb bump-outs, designed to increase safety for bikes and pedestrians on shared roadways. As with the remarks about shared roadways in general, these comments about infrastructure related to all types of routes, not MnDOT roads specifically. Notable findings include the following:

## FINDING

Bike lanes drew both negative and positive comments from businesses; a number of businesses (11) cited problems with these lanes, including safety issues at intersections, reduced traffic lanes for motor vehicles, narrower lane widths for trucks, increased congestion, and inappropriate bike lane locations, while several businesses (8) noted benefits from the bike lanes, including increased visibility and safety for bikers.

A few of these businesses offered both positive and negative comments about bike lanes.

“ Many placements of bike lanes don't make sense ... [But] any sort of delineation for a biker between a shoulder and traffic [is] good. If there is even just a line, it makes it a lot easier for trucks or cars to know where they should be and where the biker should be.

## FINDING

Among the businesses that talked about pedestrian infrastructure or pedestrian and bike infrastructure in general, a few (4) had negative reactions – citing, for example, adverse impacts on deliveries and travel or calling the infrastructure unnecessary; a few others (3) made positive comments, noting increased visibility for pedestrians, for example.

A few businesses said the infrastructure does not have an impact on their operations.

“ Bump-outs and barriers are useful to keep specific types of travel in designated areas.

## FINDING

A few businesses (3) offered suggestions for improved pedestrian and bike infrastructure, including rumble strips to mark the edges of bike and pedestrian areas, more visible markings for those areas, and different material for crosswalk markings because some of the existing crosswalk surfaces are slippery and make braking difficult.

One business said the City of Minneapolis has the right idea in creating bike routes separate from roads with motor vehicles and urged broader efforts to separate out bike traffic entirely.



# TRUCK PARKING



Some businesses (21) discussed problems with truck parking, including its availability but also the difficulties created by trucks parked on streets near their facilities. Truck parking has drawn attention lately because of federal restrictions on hours of service for drivers and recent federal requirements for electronic tracking of those hours. (For more on hours of service, see the following section about Policies on page 44.) For almost all of these interview comments about parking, businesses raised challenges relevant to local streets rather than MnDOT routes. Fewer businesses (17) said they have no parking issues than said they did.

Notable findings from the truck parking comments include the following:

## FINDING

A number of businesses (10) cited inadequate parking for trucks that make deliveries in dense, urban areas, especially within Minneapolis and Saint Paul.

Several businesses reported that truck drivers in city locations have little choice but to block traffic lanes in order to make deliveries, and a few said they consider any resulting parking tickets an acceptable cost of doing business. A few said, too, that even when the delivery sites have loading docks, city traffic sometimes makes it difficult for trucks to use them or that passenger cars park in the dock space, blocking truck access.

“ The biggest complaint from truck drivers is that there are not enough places for delivery vehicles, especially in downtown. Delivery spots are taken up by other vehicles. Drivers may need to park two blocks from where the delivery is. We don’t want to double park and block traffic, but we sometimes have to. The roads need more bump-outs. Delivery zones are needed in downtown or near downtown.

## FINDING

Several other businesses (6) cited issues with trucks – from other businesses, not their own – parking up the streets near their facilities overnight and sometimes for days, making travel in their industrial areas and on frontage roads difficult, reducing visibility, and sometimes blocking access to their driveways and loading docks.

Businesses that contract out for all their shipping made up half the total count that talked about challenges from trucks parking on nearby streets, whereas none of these types of businesses complained about truck parking in dense, urban areas.

# POLICIES: HOURS OF SERVICE FOR DRIVERS AND WEIGHT RESTRICTIONS FOR TRUCKS

Businesses talked about policies that track and restrict hours of service by drivers and commented on policies that restrict truck weights. A number of businesses (13) commented about restrictions on hours of service for drivers and the e-logs now required for tracking those hours. MnDOT interviewers did not ask specifically about hours of service, so businesses raised this topic on their own, many of them when responding to a question about truck parking included in the interview guides.

## Hours of Service Restrictions for Drivers

The federal government in late 2017 began requiring truck drivers to use electronic logging devices (ELDs), or e-logs, that synchronize with truck engines and record driving time automatically.<sup>11</sup> The requirement, part of federal highway safety legislation, creates more accurate records for enforcement of rules that prohibit truck drivers from driving more than 11 hours during a period of up to 14 hours on duty and also require 10 hours of rest. Among the 13 businesses that commented on hours of service and e-logs, only one was a carrier.

A few businesses noted the value of the rules and the importance of compliance with those rules, even as they talked about the challenges.

### FINDING

A number of businesses (11) talked about the adverse effects that hours of service requirements and the stricter ELD record keeping have had on their operations, including higher shipping costs, shipment delays, and general disruptions and logistical challenges.

“*Electronic logging requirements have made a big difference. Drivers are struggling to meet scheduled appointments and deadlines due to hours-of-service requirements now tracked electronically.*”

## Weight Restrictions

All the UFP Interview guides included questions about weight restrictions for trucks, drawing comments on this topic from some businesses (17), including almost half of the carriers interviewed for this study (5 of 11) and a disproportionate share of businesses known to have more than 20 trucks (6 of 8).

### FINDING

Among the businesses that commented on weight restrictions, a few businesses (4) noted adverse impacts, including inefficient shipping, problems finding useable routes, and delays from unnecessary weigh-station stops and inspections.

One business asked for flexibility on Minnesota’s weight restrictions, noting higher limits in South and North Dakota and problems the lower limits in Minnesota create when businesses ship products in from those states.

“*[W]ith weight restrictions ... it feels like we’re shipping air. An increase would save costs, produce less wear and tear ... and make things safer, with one less truck on the road.*”

### FINDING

A couple businesses (2) said weight restrictions have little or no effect on their operations, and a couple (2) expressed concern only about potential impacts if restrictions were to increase.

### FINDING

A couple businesses (2) objected to lower than normal weight restrictions on a section of Interstate 35E in Saint Paul.

For more on Interstate 35E, see this report’s section on page 37 about truck travel along parts of that route.

<sup>11</sup> For more on ELDs, see the Federal Motor Carrier Safety Administration website at [www.fmcsa.dot.gov/hours-service/elds/electronic-logging-devices](http://www.fmcsa.dot.gov/hours-service/elds/electronic-logging-devices).

# USE OF RAIL AND OTHER NON-HIGHWAY FREIGHT TRANSPORTATION



All interview guides included questions about non-highway transportation modes. While all 48 of the freight-related businesses MnDOT interviewed use truck transportation, 14 said they also use rail, six also use air transportation, and three use rivers and barges to ship freight. Only rail drew numerous and relevant comments, with one-quarter (12) of the 48 businesses interviewed referencing rail transportation, although not all of them currently use it.

Notable findings about rail include the following:

## FINDING

Among the businesses (8) that offered opinions about rail transportation, half (4) expressed negative views, one expressed positive views, and a few others (3) expressed both.

## FINDING

A few of the businesses (4) with critical comments about rail transportation talked about railyard congestion problems, and a few (4) said rail was unreliable.

One food processing business said it used rail years ago for supplies but stopped because uncertain delivery times did not work for those perishable inputs. Another business noted that back-ups from railyard congestion

are a problem nationwide, not just in the Twin Cities area.

“ The condition and reliability of the railroad infrastructure nationwide is our largest challenge. In addition, congestion at the railyards is a challenge – getting trucks in and out is a major issue. It is forcing more and more freight to be delivered by truck.

## FINDING

Businesses that offered positive comments about rail transportation cited it as low-cost and efficient, and they expressed interest in better access to it.

“ We would like to use more rail and more barge. We would like to get away from using trucks, for sure. It's a lot cheaper to haul material in a rail car than it is in a truck. This is a long-term business plan [for us].

# MnDOT COMMUNICATIONS AND 511



Staff involved in the UFP study recorded comments about communications in a great majority (41) of the freight-related business interviews. Generally offered in response to questions in the interview guides, the comments about MnDOT’s communications covered a range of topics, from the website and mobile app for the agency’s 511 traveler information system, to its communications about construction projects, to suggestions for improved communications.

## MnDOT’s 511 Traveler Information System

Many businesses of all different types and sizes said they were aware of MnDOT’s 511 traveler information system, which provides updates via the 511mn.org website and smart phone app, as well as over the phone, and offers access to live traffic and plow cameras. The 511 updates cover weather-related road conditions, roadwork, commercial vehicle restrictions, road closures, construction, detours, traffic congestion, crashes and other travel information. The website and app allow users to personalize their information, save their routes, and get alerts about those routes. Notable findings from the interviews include the following:

### FINDING

Just over half of the businesses interviewed (25 of 48) reported they have heard of MnDOT’s 511 system, but much smaller shares said drivers use it for information about winter roads (13), construction projects (9), congestion (7), and crashes (7).

More interviewees said “no” than “yes” to questions about whether they or their truck drivers use 511 for information about these four travel challenges. Relatively large numbers – ranging from 17 to 21 – offered no answer to questions about 511 winter roads, construction, congestion, and crashes, often because they were uncertain if their drivers use the 511 system. One business was unaware of 511 and excited to learn about this source of information.



“ Our company safety guy monitors all 511 information in regards to construction, congestion, and adverse weather, and he tells the drivers of conditions they need to be aware of.

Notes from the interviews indicated that a MnDOT 511 outreach effort might be useful. For example, a number of the businesses suggested that MnDOT add capabilities that the 511 system already offers, including a smart phone app and the ability to push out alerts about specific routes of interest to specific users.

“ We’re familiar with the 511 product, but not currently using it. We do use several other systems to monitor conditions, congestion, and construction.

#### FINDING

A number of businesses (10) mentioned the usefulness of 511 camera shots, including visuals of snowy road conditions taken from cameras mounted on MnDOT snowplows and showing stretches of specific MnDOT routes.

“ I use MnDOT’s [511] website for the cameras. I like the ones that show the [view from the] plows as they plow, too. It’s great. Even if you’re home in the morning and watching the news and they say there’s an accident in a certain location, you can get on the website and click on that camera and see it.

#### FINDING

Staff involved in the UFP study recorded only one business saying it was aware of MnDOT’s new Truckers’ Info page on the 511mn.org website, indicating a potential need for significant MnDOT outreach about this resource.

The interview guide for businesses with trucks included a specific question about the Truckers’ Info page, while the guide used for businesses without trucks did not.

### MnDOT Communications Efforts Overall

All the interview guides included questions about MnDOT communication generally, beyond the 511 traveler information system. Notable findings include the following:

#### FINDING

Among the businesses (16) that offered general remarks about how well MnDOT keeps them informed, as many businesses made positive comments (8) as negative ones (8).

A few businesses praised MnDOT for the quality, timeliness, and accessibility of its communications. The negative comments from a few businesses about MnDOT communications overall again indicated a lack of awareness for the types of communication MnDOT offers now. As was true for criticisms of the 511 system, these businesses that raised issues with MnDOT communications overall also faulted MnDOT for failing to offer such communications channels as push notifications and a smart phone app, both of which MnDOT currently provides. This again indicates a potential need for MnDOT to engage in outreach to freight-related businesses about agency communications.

#### FINDING

When it comes to MnDOT information about construction projects specifically, the number of businesses that made positive comments (11) just exceeded the number offering negative comments (10); the most commonly cited communications issue was the need for more advance notice of construction plans and developments.

Businesses that offered positive comments about MnDOT communications for construction projects cited the agency’s website, its project-specific email alerts, and information from MnDOT disseminated broadly to the public via local news outlets.

“ I don’t think it is hard to find information about construction. I haven’t experienced any issues about not knowing things about road closures and construction projects. Through the website and the news, you do a good job.

Among the businesses offering negative comments, most said MnDOT does not share information soon enough to let them adequately plan for construction disruptions or adjust to changes in routes and detours during construction projects. One business suggested MnDOT consider highway billboards as a means to keep trucker drivers informed about projects. (Comments from other businesses about what more they would like to see from MnDOT – as distinct from negative comments – also included calls for MnDOT to provide advance notice about construction sooner than it current does and calls for information about long-range plans.)

“ We need, as a business, to know the long-range plan for transportation in the metro area to support our needs. Incorporating other means of mass transit to lessen the number of cars on our roadways, in theory, should help our commercial traffic situation.

#### FINDING

A few businesses (3) suggested that as part of its communication efforts MnDOT conduct outreach to the general driving public about issues important for truckers, including proper merging techniques at interchanges and the long distances that truckers need in order to bring their vehicles to a stop.

“ The more communication the better. You can’t over communicate.

## Other Information Sources for Businesses and Truck Drivers

Some businesses (19) talked about other sources of route and traffic information when discussing the 511 traveler information system and MnDOT communications. Notable findings include the following:

#### FINDING

A number of businesses (12) talked about non-MnDOT mapping apps used for route and traffic information, with most citing Google Maps and Waze.

Businesses also mentioned MapQuest and T-Mobile’s SyncUp Fleet. A few other businesses mentioned GPS apps generally, without specifying what its drivers use. In addition to mapping apps, a few businesses cited weather apps and websites as important information sources for routing.

#### FINDING

Several businesses (6) cited TV, radio, and newspapers as important sources of route and traffic information.

#### FINDING

A few businesses (4) that cited non-MnDOT sources indicated they use only those other sources and not MnDOT information, while a few other businesses (3) said they use 511 and the non-MnDOT sources as well.

“ My drivers rely on Google in their trucks. They use 511 before they go out on deliveries.



# UNAUTHORIZED ENCAMPMENTS



Google Street View

If time allowed, MnDOT interviewers asked businesses about unauthorized roadside encampments of homeless people, and several businesses (9) discussed them.

## FINDING

Just over half of the businesses that discussed homeless people and their unauthorized encampments (5 of 9) said they have no impact on their business, while the others cited issues with trespassing, litter, and slow traffic caused by encampments.

“ [At our business] people camp out on the front lawn and in the street. It used to be worse. We have to move them along, off the property. We also see homeless people at the farmer’s market behind our building. They climb up our back wall and enter our property.

The businesses that expressed concerns about the encampments said the sites delay traffic because motorists slow down to look on, and they said the encampments significantly increase the amount of refuse in and around the affected areas – refuse that needs to be cleaned up. One business noted that homeless

individuals walk along the BNSF railway near Como Avenue and will sometimes wander into the business’s storage areas.

A few businesses mentioned challenges related to the 2018 encampment in Minneapolis, on Hiawatha Avenue off Interstate 94 and Cedar Avenue, which first formed in fall 2018 at the same time MnDOT conducted these business interviews.



Google Street View



# PROFILES ON FREIGHT INDUSTRY ISSUES



## PROFILE:

# BUSINESSES CITE DRIVERS' SHORTAGE AS AN ISSUE



**A shortage of truck drivers drew comment from several businesses during MnDOT's Urban Freight Perspectives interviews, even though the interview guides included no questions about the shortage and the issue is not one for MnDOT to address.**

The drivers' shortage is important to businesses in the Twin Cities and nationwide. In a 2017 report on the issue, the American Trucking Associations (ATA) said the trucking industry would need to hire almost 900,000 new drivers over a 10-year period mostly because many existing truck drivers will retire but also because of increased demand for shipping. In addition, the Owner-Operator Independent Driver Association (OOIDA) is supporting new FMCSA rulemaking to allow for expedited truck driver-training options for obtaining CDLs.

One business in Minneapolis<sup>12</sup>, a wholesaler for products and equipment, cited a shortage of people with commercial drivers' licenses (CDLs) as its biggest transportation challenge. To cope, the company now trains existing employees without CDLs to become drivers and offers bonuses to recruit new CDL drivers.

A freight hauler that serves businesses in the Twin Cities metro area and elsewhere has had great difficulties finding drivers and problems also when it has hired

drivers with CDLs who lack training and experience. Consequently, the company has developed its own truck driving school to train and hire drivers, an official at the company said.

A distribution business in Minneapolis that depends upon carriers for all but a very small fraction of its shipments faces delays for pick-ups and deliveries because freight-dependent companies have a hard time finding drivers. Similarly, another Minneapolis company that depends entirely on carriers for shipping has problems getting trucks to its facility in a timely manner because of the drivers' shortage, resulting in delays for deliveries and upset customers.

A Saint Paul wholesaler has changed operations somewhat to minimize delays that adversely affect its drivers' schedules. For example, the company avoids deliveries and return trips during rush hour whenever possible. "We do this because of the major truck driver shortage," an official there said. "It is getting harder and harder to keep drivers."

<sup>12</sup> This section on the drivers' shortage leaves out the names of the businesses because MnDOT told interviewees at all the businesses that the agency would not publish information for general distribution that connects them or their businesses to the information that they shared.

# PROFILE: SOME FREIGHT-RELATED BUSINESSES FACE ISSUES FROM GENTRIFICATION AND MIXED-USE SETTINGS IN URBAN AREAS

During their interviews for MnDOT's Urban Freight Perspectives study, several businesses cited challenges that they face operating freight-related businesses in gentrifying and mixed-use areas of Minneapolis and Saint Paul. Two of the businesses in these settings said those problems might prompt them to relocate from their current locations.

A few of the businesses in these gentrifying and mixed-use areas noted significant traffic congestion issues.

Their urban settings leave them with few or no good routes for truck traffic, they said. Nearby development of high-density apartments has increased the problem, said one business in the North Loop area of Minneapolis.<sup>13</sup> "For the last two to three years, from the development [boom] in the North Loop and the construction of all these high density apartments, this all has really brought more traffic into the city." Two of the businesses in these urban settings said bike lanes have reduced road space for truck traffic and in this way made congestion worse.

A few of the businesses in these urban areas mentioned access to their facilities as a problem. One business recently relocated to the Mid-city Industrial area of the Twin Cities largely because of difficulties it had moving trucks in and out of its former facility in the North Loop, an area that had long been known as the Warehouse District. Another business still in the North Loop, at least for now, said it faces "[i]ssues with loading and unloading at our facility due to the growth in residential and commercial businesses in the Warehouse District." A business near downtown Saint Paul, said it receives several calls a day from shippers traveling to the facility who are unable to identify a route that allows truck traffic.

Urban planners have long noted difficulties for manufacturers and other industrial businesses located in urban areas with growing residential and commercial development. For example, such development increases land values

and in this way drives up property taxes for the industrial businesses. Industrial businesses in gentrifying areas with mixed-use development also may face challenges purchasing land for expansion because they are unable to outbid residential developers, who enjoy more immediate profits per square foot than industrial users. In addition, industrial businesses in areas with residential development may have to make costly changes to address residents' complaints about, for example, noisy truck traffic, cluttered property around their facilities, and trucks blocking sidewalks during loading and unloading.<sup>14</sup>

For some freight-related businesses, however, proximity to customers may outweigh the disadvantages of the challenges in these urban settings, and their locations might make recruitment of engineers, designers, or other educated and specialized workers easier.<sup>15</sup>



13 This section on challenges for businesses in urban areas leaves out the names of the businesses because MnDOT told interviewees at all businesses that the agency would not publish information for general distribution that connects them or their businesses to the information that they shared.

14 Joan Fitzgerald and Nancey Green Leigh. *Economic Revitalization*, Sage Publications, Thousand Oaks, CA, 2002, pp. 109-10.

15 Alex Sutterer. "Who's Next: Examining the Future of PMD Rezoning in Chicago," no date. (Available at [www.hiffmanblog.com/blog/the-future-of-chicago-pmd-zoning-2017](http://www.hiffmanblog.com/blog/the-future-of-chicago-pmd-zoning-2017)).



# APPENDIX A: MORE ABOUT THE URBAN FREIGHT PERSPECTIVES STUDY AND RESEARCH METHODS

This appendix presents information about the process and methods for the 2018-19 UFP study, in addition to what is included previously in this report's opening section.<sup>16</sup>

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<sup>16</sup> See previous section, The 2018-19 Urban Freight Perspectives Study on page 11 and the section about Businesses Interviewed on page 12.



# DESIGN FOR THE 2018-19 URBAN FREIGHT PERSPECTIVES STUDY

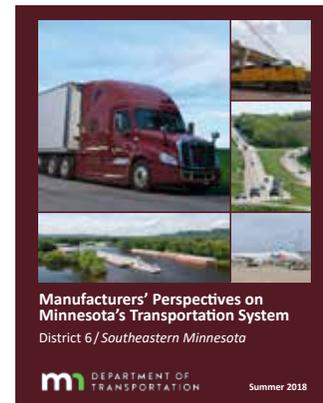
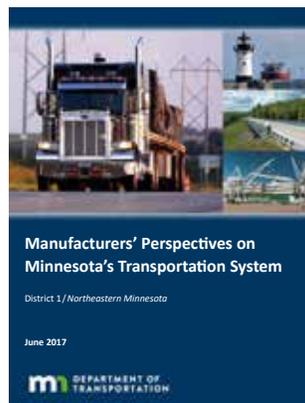
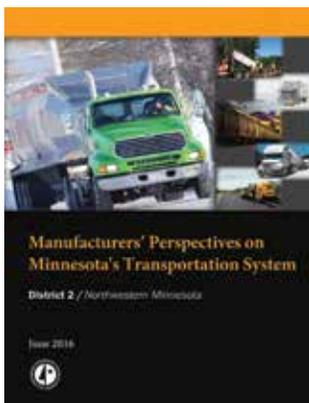
MnDOT solicited in-person interviews with manufacturers, other freight generators, and freight carriers primarily located in the heart of the metro area along Interstate 94, which carries significant freight movement between Minneapolis and Saint Paul. Thus, the study primarily reflects business transportation impacts along the area of MnDOT’s Rethinking I-94 project between those two central cities’ downtowns.

For its 2018 interviews with freight businesses, the Metro District drew from the MnDOT model for Manufacturers’ Perspectives studies already conducted in Greater Minnesota, for five of the agency’s eight districts statewide. However, the Metro District adjusted its approach and scope to scale the effort appropriately for a geographic area that contained thousands of manufacturing firms, rather than the hundreds located in the other MnDOT districts. In addition, the UFP study’s project team significantly revised the interview guides for use in the Metro District in order to cover congestion and other topics important for the Twin Cities area and to include discussions with the businesses about selected major and current construction projects with freight impacts. Metro District officials also purposely sought to collect feedback from freight generators beyond just the manufacturing sector.

After MnDOT engaged in several important pilot efforts and interviews,<sup>17</sup> MnDOT and MAD designed this 2018-19 UFP study as the first phase of potentially several Metro District studies of freight-related businesses in the Metro District.

Most businesses were in or within half a mile of 10 targeted Twin Cities’ area zones with high concentrations of freight-related firms. Those Freight Zones are also areas that were likely to be affected by a several major MnDOT construction projects taking place in 2018 and beyond. MnDOT interviewed two passenger transportation businesses as well.<sup>18</sup> All but one of the 50 interviews took place in person, with the exception conducted over the phone rather than at the business.

MnDOT staff teams of one interviewer and one data collector carried out most of the interviews, which took place from late June through early December 2018. MnDOT staff from the Metro District and the agency’s Central Office volunteered to conduct interviews or collect data during the interviews. MAD trained MnDOT staff for those roles.<sup>19</sup> Senior MnDOT officials participated in some of the interviews, as well.



17 See information on pages 63-64 about 2017 MnDOT interviews with selected, freight-related businesses and MnDOT outreach with businesses affected by a Highway 47 project in Minneapolis and in Columbia Heights.

18 See Appendix B on page 61 for the list of the all businesses interviewed.

19 See Appendix C on page 65 for a list of the people who carried out interviews, collected interview data, or otherwise helped with the study.

## BUSINESSES TARGETED AND INTERVIEWED

The 50 businesses interviewed ranged in size from 13 to 320 workers employed at the facilities where the interviews took place. Most businesses reported fewer than 100 workers at those interview locations. The number of trucks reported to be onsite at those facilities ranged from zero to more than 100, but almost three-quarters of the businesses that shared truck counts with MnDOT (31 of 42) have 10 or fewer trucks.

Most (33) but not all of the interviews with freight-related businesses took place at locations in the targeted Twin Cities area zones with high concentrations of freight-related firms.<sup>20</sup> Eight of the interviews took place outside the zones with freight carriers that serve businesses in and near the zones. The remaining interviews (7) took place outside the zones for a variety of reasons.<sup>21</sup>

MnDOT and MAD identified freight generators and carriers to interview based on the following:

- Before the interviews, MnDOT received from SRF Consulting Group a list of freight-related businesses located in 14 targeted Freight Zones as part of work by MnDOT's Rethinking I-94 Office, and MnDOT then used this list to identify and target freight-related businesses in 10 of the zones expected to be most impacted by five significant and current construction projects.
- MnDOT compiled a list of businesses inside or within one half mile of those 10 zones that the Federal Motor Carrier Safety Administration (FMCSA) reports as having trucks, and MnDOT then identified likely freight generating businesses and carriers on that FMCSA list in order to target them for interviews.

- During interviews with freight generating businesses, staff involved in the UFP project asked the businesses what carriers, if any, they most commonly used to handle shipments of their products.

MAD initially focused interview recruitment efforts on businesses that have their own trucks and on carriers. Later, MAD recruited additional businesses without trucks that depend upon carriers for shipping. To recruit businesses for the interviews, MnDOT and MAD used letters, phone calls, and emails.

Ultimately, MAD contacted 135 businesses to request interviews, after culling the initial lists for businesses not relevant for the study.<sup>22</sup> Unresponsive businesses received at least one phone call and at least two additional phone calls or emails before MAD staff concluded these businesses were uninterested and dropped them from the recruitment list. The response rate for this interview outreach effort was 37 percent, based on all 135 businesses contacted and the 50 interviews conducted. This rate lags that of the five other MnDOT districts that conducted Manufacturers' Perspectives studies over several years prior to the start of the UFP study, likely indicating greater difficulties in recruiting Twin Cities' area firms.<sup>23</sup>

20 SRF Consulting Group identified the Metro District's Freight Zones at MnDOT's request, as part of its Rethinking I-94 project. The following are the 10 targeted Freight Zones (of 14 identified by SRF), with the number of interviewed businesses located in or very near each: Downtown Minneapolis (1), Downtown Saint Paul (2), the Hiawatha Ave. corridor in Minneapolis (1), the Mid-City Industrial area in both Minneapolis and Saint Paul (9), Near North in Minneapolis (2), the North Loop in Minneapolis (5), Northeast Minneapolis (4), Roseville (1), Lake St. in Minneapolis (0), and the CP Shoreham Intermodal Yard in Minneapolis (0 for this Urban Freight Perspectives study because outreach with businesses in this zone was done as part of a 2018 Highway 47 project freight initiative). MnDOT also interviewed eight freight carriers located outside of the targeted geographical areas but handle shipments for businesses in the 10 Freight Zones. The remaining seven businesses were located outside the zones.

21 The seven instances where interviews took place outside and away from the 10 Freight Zones included cases when businesses in the zones referred MnDOT to their key transportation contacts located at affiliated facilities outside the zones; businesses that recently moved out of the zones but agreed to interviews after receiving forwarded correspondence (invitation letter) about the UFP study; and a couple businesses that MnDOT targeted for interviews because they would be affected by upcoming construction on Highway 3 (Robert Street).

22 Business listings deemed not relevant for the study included duplicate listings, businesses that had closed or relocated, businesses initially listed as freight generators that in fact did not generate freight, businesses with transportation operations located outside of the Metro District, and other such circumstances.

23 Compared to the Metro District's 37 percent response rate, other MnDOT districts' response rates (based on numbers of businesses interviewed compared to the total number of relevant businesses contacted for interviews) were as follows for those completed to date: 48 percent in District 1, 52 percent in District 2, 50 percent in District 4, 46 percent in District 6, and 44 percent in District 8.

# RESEARCH METHODS AND ANALYSIS

MnDOT conducted semi-structured interviews using guides. Interviewers used separate but very similar guides for interviews with freight generators who have their own trucks, freight generators who depended upon carriers for all their shipping, and carriers.<sup>24</sup> MAD shared interview questions in advance with contacts at the businesses and asked those contacts to discuss the questions with others at their work places or to include others in the interviews if that would be helpful. In almost all cases, the interviews were scheduled for one hour, although in some cases they ran longer.

For every interview, interviewers covered as many questions as they could from the interview guide in the time available. The interviewers paused their questions about 45 minutes into the sessions to talk with the businesses about a handful of major and current MnDOT construction projects likely to be affecting their businesses, including projects on Interstate 35W and Interstate 94. The interviewers shared handouts with the businesses and informed them of how to sign up for regular updates about construction projects of interest. If time allowed, the interviewers then continued asking additional questions from the interview guides.

Data collectors recorded comments from the interviews and passed their notes along to staff at MAD. MAD reviewed the notes, identified items that might have been of immediate interest to MnDOT Metro staff, and uploaded the notes into a software application for coding and analysis.



It is important to note several limitations to qualitative research projects, such as this UFP study, that use semi-structured interviews to gather data. These include the following:

- Interviewers may not ask every interviewee all the questions or ask each question in the exact same way, even when using an interview guide.
- Data collectors may fail to capture some relevant comments from the interviewees.
- Those coding the interviews notes after the fact, as part of the research and analysis process, might inadvertently introduce inconsistencies.

These potential pitfalls exist in qualitative research projects even with the most committed and well-trained interviewers and data collectors. These issues are important to keep in mind when reading this UFP study report. They are particularly noteworthy when it comes to the number of businesses listed in the findings sections as citing issues or offering opinions. It may not be the case that all the businesses interviewed were asked about each of the particular topics listed in the findings, or that the data collectors captured every relevant comment, or that the coders flagged each comment appropriately for analysis.

<sup>24</sup> See Appendix D on page 69 for a list of several main interview questions, that were shared in advance with the businesses.

# EARLIER METRO DISTRICT BUSINESS OUTREACH SHAPED THE URBAN FREIGHT PERSPECTIVES STUDY

## 2017 Interviews for MnDOT Metro District’s Manufacturers’ Perspectives Pilot Study

In 2017, MnDOT staff interviewed selected businesses (listed in Appendix B) located in the Metro District and involved in freight transportation, all owning their own trucks, in order to consider geographic scope and to test interview topics and questions for the 2018-19 UFP study. Comments from these interviews were compiled and incorporated into a list of potential action items for the Metro District.

This UFP report, however, focuses on the 48 freight-related businesses interviewed in 2018 specifically for the UFP project, and so the findings presented in this report only relate to those UFP interviews.

## Additional 2017-18 Metro District Outreach With Freight-Related Businesses Impacted by Highway 47 Construction

MnDOT Metro District staff conducted strategic outreach in late 2017 through June 2018 with more than 70 freight-related businesses that would be significantly affected by 2018 roadwork along segments of Highway 47 in Minneapolis and Columbia Heights. During these meetings with freight-related businesses, MnDOT discussed some of the topics included later in the questionnaire guides for the 2018-19 UFP interviews. This Highway 47 construction outreach validated the viability of and need to discuss specific construction projects during UFP interviews. More importantly, the Metro District used comments from those business and freight group meetings to help plan and execute the Highway 47 project. Those who provided project input are listed on page 62 in Appendix B.

This UFP report, however, focuses on the 48 freight-related businesses interviewed specifically for the 2018 UFP study, and so the findings presented in this report only relate to those UFP interviews.





APPENDIX B:  
LIST OF  
BUSINESSES  
INTERVIEWED



## 2018-19 URBAN FREIGHT PERSPECTIVES INTERVIEWS

A&M Business Interior Services	InstantWhip Foods
AFPI	International Paper
Alliance Recycling Group	LitinPak
Anchor Paper Company	Magnum LTL
Anderson Produce	Mallard Ink Company. Inc.
Ball Corporation	Monarch Bus Service
Barry and Sewall Industrial Supply Co.	OceanTech
Brin Glass Company	Old Dutch Foods, Ltd.
BW Integrated Systems	Rite•Way Mobile Home Services
C.H. Robinson Worldwide, Inc.	Silva Screen Printing
Cadillac Chauffer Service	Sojos
Captain Ken's Foods	Stark Electronics Inc. and Absolute Quality Manufacturing
CHS Inc.	Steven Cabinets Inc.
Container Experts	Street Fleet
Coordinated Business Systems, Ltd.	Superior Brokerage Services (SBS)
Creative Apparel Concepts	Swanson Meats, Inc.
Custom Business Forms	The Fish Guys, Inc.
Dart Transit Company	TransWood
Dedicated Logistics Inc. (DLI)	Trio Supply Company
Duncan Co	U.S. AutoForce
Falk Paper Co.	Valley Cartage
Gerdau	Viking Electric Supply Inc.
Greyhound Package Express	Walter R Hammond Co.
H. Brooks and Company	Weekes Forest Products Inc.
Hi-Tech Express Inc.	WestRock

*NOTE: The list above includes two passenger transportation businesses interviewed for the 2018-19 UFP study but not included in this report's analysis regarding freight-related businesses.*

# 2017 INTERVIEWS FOR MnDOT METRO DISTRICT'S MANUFACTURERS' PERSPECTIVES PILOT STUDY PROJECT

MnDOT conducted 2017 pilot interviews with the following businesses:

Arctic Glacier

Diversified Manufacturing Corporation (DMC)

Imperial Plastics, Inc.

Innovative Surfaces

Lube-Tech

Rosenbauer Minnesota

Shaw / Stewart Lumber Co.

Sheet Metal Connectors, Inc.

Twin City Hardware (TCH)



## ADDITIONAL 2017-18 METRO DISTRICT OUTREACH WITH FREIGHT-RELATED BUSINESSES IMPACTED BY HIGHWAY 47 CONSTRUCTION

For the earlier 2017-18 outreach efforts regarding the Highway 47 project, MnDOT met with many businesses, including the following:

5 G's Trucking Inc.

BarOle Trucking

Big Blue Intermodal

BNSF Railway

Calhoun Truck Lines

Canadian Pacific Railway

Cargo Solutions, Inc.

C Base

Central States Trucking Co. (CST)

Continental Transport LLC

Cobra Transportation Services

CTX Trucking

Dick's Valley Service

DNJ Intermodal Services

Eckblad Trucking and Shop Services, LLC

Fast Cover Trucking Inc.

J Line Inc.

Koch Trucking Inc.

Kruse Trucking

Midwest Motor Express, Inc. (MME)

Midwest Shippers Association

Pine Breeze Logistics LLC

Multi-Modal Transport

Ruan

Superior Brokerage Services (SBS)

SFE Inc.

Semi Legal Addiction

T-Brothers Logistics

Trailer Transfer

Universal Intermodal

Valley Express



APPENDIX C:  
LIST OF  
PROJECT TEAM,  
INTERVIEWERS,  
DATA  
COLLECTORS,  
AND PROJECT  
PARTNERS



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## MnDOT Urban Freight Perspectives Project Team

Laurie Ryan, Urban Freight Perspectives Project Manager, Operations

John Tompkins, West Area Planner / Freight Operations, Metro District

Donna Koren, Market Research Director, Operations

## MnDOT Staff: Urban Freight Perspectives Interviewers and Data Collectors

Jeanne Aamodt, Public Engagement Manager, Public Engagement and Constituent Services

Andrew Andrusko, Freight Planner, Freight and Commercial Vehicle Operations

Broderick Bell, Administrative Assistant/Community Engagement, Metro District Rethinking I-94

John Bieniek, Maintenance Operations Engineer, Metro District Operations and Maintenance

Kelly Braunig, Administrative Supervisor, Regional Transportation Management Center

Cindy Charles, Team Leader / Workflow Coordinator, Audit

Paul Czech, Planning Director, Metro District Planning, Program, Management and Transit

Tiffany Dagon, Maintenance Operations Engineer, Metro District Operations and Maintenance

Bryan Dodds, Office Director, Metro District Operations and Maintenance

Kaare Festvog, Engineer, Metro District Traffic Engineering Program Support

Travis Fried, Planning Intern, Transportation Systems Management

Nicole George, Freight Planner, Freight and Commercial Vehicle Operations

Bill Goff, Transportation Planner/Community Engagement, Metro District Rethinking I-94

Duane Green, Maintenance Bridge Engineer, Metro District Operations and Maintenance

Rob Holschbach, Permit Technician, Freight and Commercial Vehicle Operations

Lars Impola, Engineer, Metro District Traffic Engineering Program Support

Jason Junge, Engineer, Metro District Traffic Engineering Program Support

Brian Kary, Regional Transportation Management Center Engineer, Metro District Operations and Maintenance

Marcia Lochner, STEM Liaison and Web Coordinator, Public Engagement and Constituent Services

Steve Misgen, Traffic Engineer, Metro District Operations and Maintenance

Gina Mitteco, Multimodal Planning Director, Metro District Planning, Program, Management and Transit

Cameron Muhic, Sr. Transportation Planner, Metro District Planning, Program, Management and Transit

Jessica Oh, Highway Sponsorship Director, Engineering Services

Lizzie Pohl, Market Research Assistant, Public Engagement and Constituent Services

Renee Raduenz, Market Research Manager, Public Engagement and Constituent Services

Laurie Ryan, Urban Freight Perspectives Project Manager, Operations

Karen Scheffing, Transportation Planner, Metro District Program Management and Transit Planning

Garrett Schreiner, Freeway Operations Engineer, Regional Transportation Management Center

**Jim Skoog**, Assistant Ombudsman, Public Engagement and Constituent Services

**Lisamarie Stroschein**, Internal Audit Manager, Audit

**Brenda Thomas**, Planning Director, Metro District Rethinking I-94

**John Tompkins**, West Area Planner / Freight Operations, Metro District

**Marcell Walker**, Project Manager, Metro District

**Chris Wenzel**, Plymouth Subarea Supervisor, Metro District Operations and Maintenance

**Stephanie Wortham**, Accountant, Fiscal Services

**Jennifer Xiong**, Auditor, Audit

**In addition, the following MnDOT senior leadership staff participated in some Urban Freight Perspectives interviews both as observers and to provide additional information about MnDOT and its operations for interviewees:**

**Michael Barnes**, I-94 Corridor Director, Operations

**Scott McBride**, District Engineer, Metro District

**Christopher Roy**, Assistant Division Director, Operations

**The following MnDOT staff – some of whom are also listed above as participants in the 2018 UFP interviews – also participated in interviews for the Metro District's 2017 Manufacturers' Perspectives Pilot Study project:**

**Lynn Bly**, Office Director, Metro District Planning, Program, Management and Transit

**April Crockett**, West Area Manager, Metro District

**Paul Czech**, Planning Director, Metro District Planning, Program, Management and Transit

**Bryan Dodds**, Office Director, Metro District Operations and Maintenance

**Adam Josephson**, East Area Manager, Metro District

**Donna Koren**, Market Research Director, Operations

**Gina Mitteco**, Multimodal Planning Director, Metro District Planning, Program, Management and Transit

**Cameron Muhic**, Sr. Transportation Planner, Metro District Planning, Program, Management and Transit

**Mark Nelson**, North Area Manager (on mobility), Metro District

**Laurie Ryan**, Urban Freight Perspectives Project Manager, Operations

**Jon Solberg**, South Area Manager, Metro District

**John Tompkins**, West Area Planner / Freight Operations, Metro District

## PROJECT PARTNERS

### Management Analysis and Development (MAD), Minnesota Management and Budget (MMB)

Matt Kane, Senior Management Consultant

Ashley Johnson, Senior Management Consultant

### State and Local Policy Program, Humphrey School of Public Affairs, University of Minnesota

Lee Munnich, Senior Fellow

Travis Fried, Transportation Research Associate



# APPENDIX D: INTERVIEW QUESTIONS

The following is the list of questions shared with contacts at freight-generating businesses prior to the interviews. For freight-generating businesses without trucks and carrier businesses, MnDOT sent separate lists of questions excluding some of the questions not relevant to those businesses. MnDOT interviewers used guides with more details for the actual interviews.



# INTERVIEW QUESTIONS FOR MnDOT METRO FREIGHT GENERATORS WITH TRUCKS

For the Urban Freight Perspectives Study, MnDOT staff plan to cover the following questions with you to better understand transportation needs and challenges and to collect your feedback on MnDOT efforts. If some of these questions are best answered by others at your business, please consider consulting with them in advance or including them in the interview. Interviewers will ask follow-ups and additional questions as needed.

- What modes of transportation does your business use?
- What are your business's biggest transportation challenges or concerns?
- How is your business affected by congestion, both in terms of daily operations and plans for the future?
- Based on your company's experience or what you are hearing from drivers, what feedback do you have about the following MnDOT congestion management tools: overhead dynamic message signs, ramp metering, and MnPASS lanes?
- What safety concerns do you have regarding transportation in the metro area and Minnesota?
- What feedback do you have about the following infrastructure and features: pavement conditions, interchanges/intersections, signage, bridge clearances, and truck climbing lanes? (Specific locations?)
- What impact does construction in the metro area have on your company's shipping and receiving and on commuting for your employees? (We will share information with you about several current projects.)
- How well or poorly is MnDOT clearing roads of snow and ice, and are there particular routes that need to be cleared more quickly and completely?
- How well is MnDOT keeping you informed about construction, adverse weather events, and congestion?
- What information from MnDOT would help your business plan for increases in freight volumes and congestion over the next 10 to 20 years?
- How do size or weight restrictions affect your business? What feedback do you have on the restrictions and the permitting process?
- Based on your company's experience or what you are hearing from drivers, what feedback do you have about truck parking – availability, locations, rules and regulations across jurisdictions?
- What information would you like MnDOT to have about your business and its shipping needs when we plan projects?

If you have any questions or comments, please share them with the project manager for this MnDOT initiative, Laurie Ryan at 651-366-3658 or Laurie.Ryan@state.mn.us.

# Know Your Route



## Get the "MN 511 Trk App"



**Plan ahead with the free MN 511 truckers' app or visit the truckers' webpage on [511mn.org](http://511mn.org)**

### Features:

- Hands-free, eyes-free audio notifications of traffic events while you drive
- Zoom-enabled map with selectable icons
- Near real-time updates on winter road conditions, truck restrictions, traffic incidents, construction and road closures
- Travel time delays associated with traffic reports
- Commercial vehicle restriction information
- Snow plow camera images
- Current traffic speeds
- Roadside camera images
- Road weather information
- Locations of roundabouts throughout the state
- Rest area locations including real-time truck parking availability for select state-run rest areas along I-94 and I-35



### **Metro District**

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Roseville, MN 55113-3174  
651.234.7500  
[mndot.gov/metro](http://mndot.gov/metro)

### **Central Office**

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