



Manufacturers' and Urban Freight Perspectives on Minnesota's Transportation System

John Tompkins, Metro District Freight Operations

Acknowledgement to Donna Koren, District
Operations

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Key areas in presentation

- Greater Minnesota Manufacturer's Perspective Study
- Urban Freight Perspective Study
- Urban Freight Project Delivery
 - I-94 Rethinking Freight Study (EJ component)

Drivers for MFP & UFP Studies

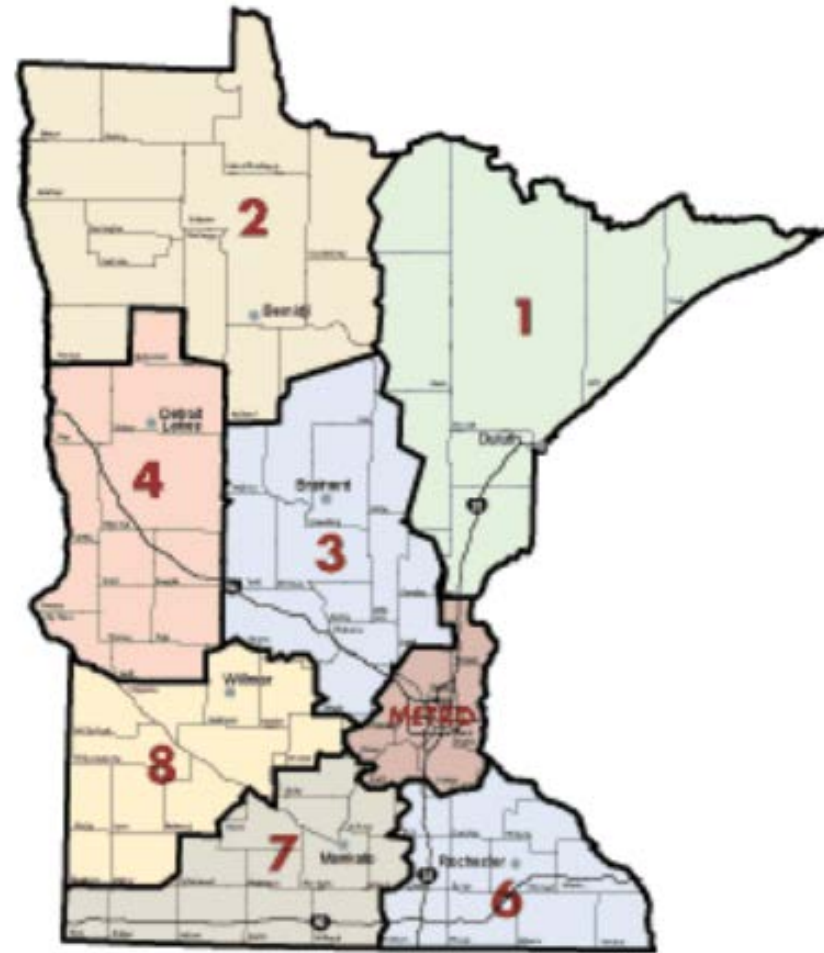
- Manufacturing industries bring economic resources and stable, well-paying jobs
- Commercial trucks transport 85% of all manufactured tonnage moved in Minnesota - Minnesota Trucking Association
- By 2040 freight tonnage will grow 80% / 63% Trucking – Statewide Freight System Plan
- Demanding increased capacity and efficiency in all freight mode of transportation impact mostly the metropolitan areas of the state – Statewide Freight System Plan

Challenge:



MFP & UFP studies

- Manufacturers and shippers inform MnDOT's regional and statewide network
- Business perspective and priorities for transportation
- Relationship building addressing shippers' needs
- Supports on-going input from these customers



Qualitative, structured interviews

Infrastructure

- Pavement
- Shoulders
- Intersections
- Acceleration and passing lanes

Maintenance & Operations

- Snow and ice
- Traffic peaks, congestion

Communications

Policy and Permitting

Safety



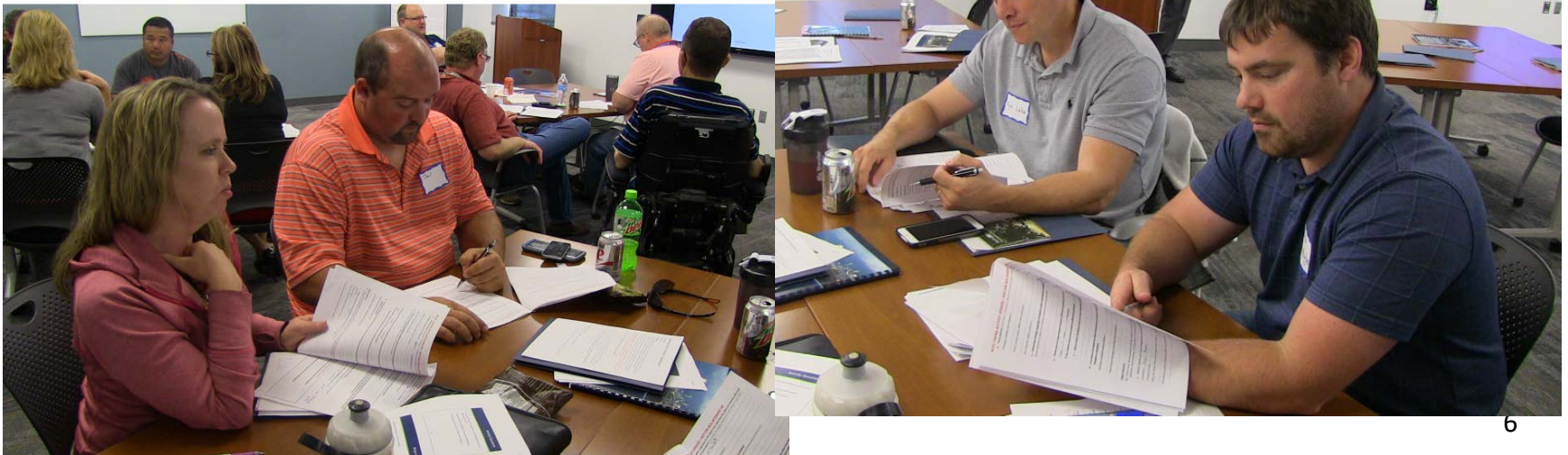
Data collection model

Cross-organization interview teams

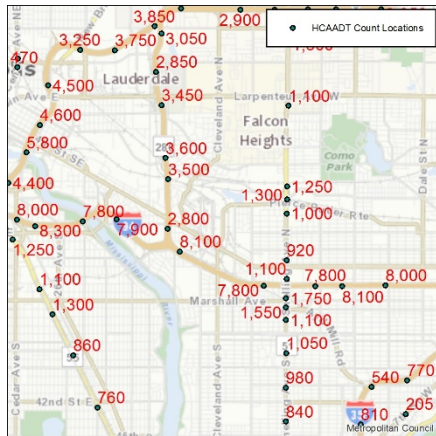
MnDOT District staff: engineers, planners, OS/OW and other staff

*Local economic development organizations

*University of Minnesota SLPP and Extension

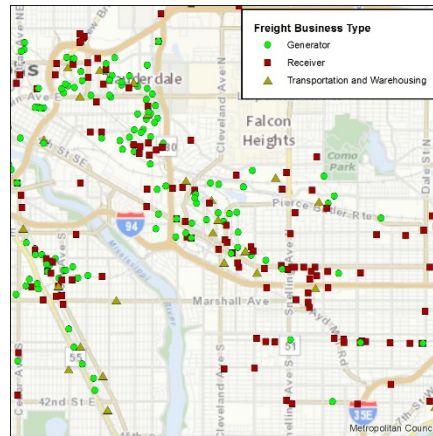


Data Sources and Limitations



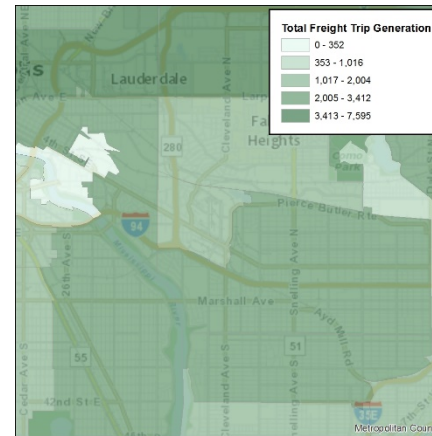
HCAADT Count Locations

- Accurate Information
- Limited locations



InfoUSA Data

- Establishment-level accuracy
- Not a complete sample



Zip Code FTG Estimates

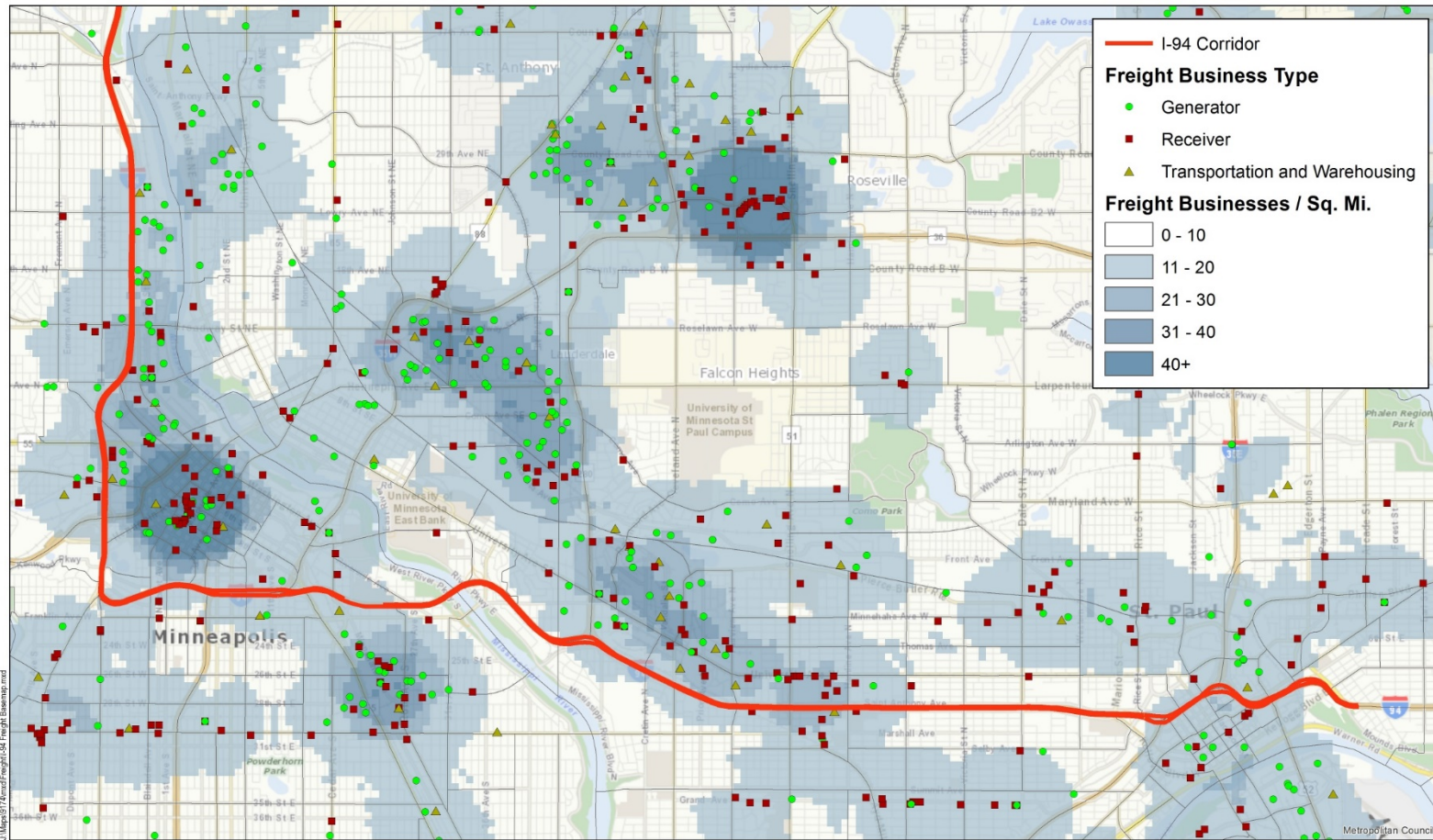
- Based on Census Business Patterns
- Large geographies



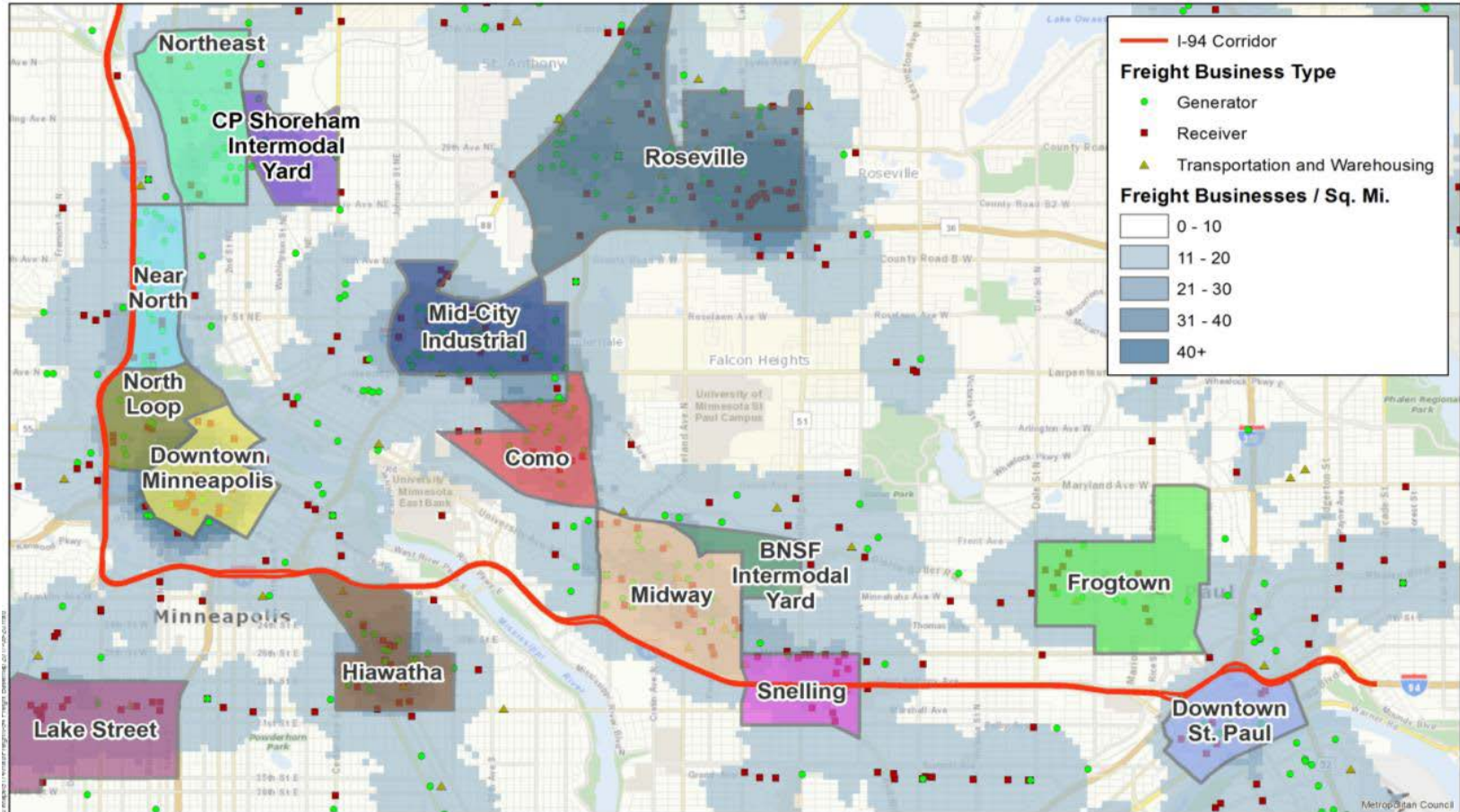
INRIX Travel Patterns

- Individual trip-level data
- Relative/absolute data
- May miss some key industries/areas

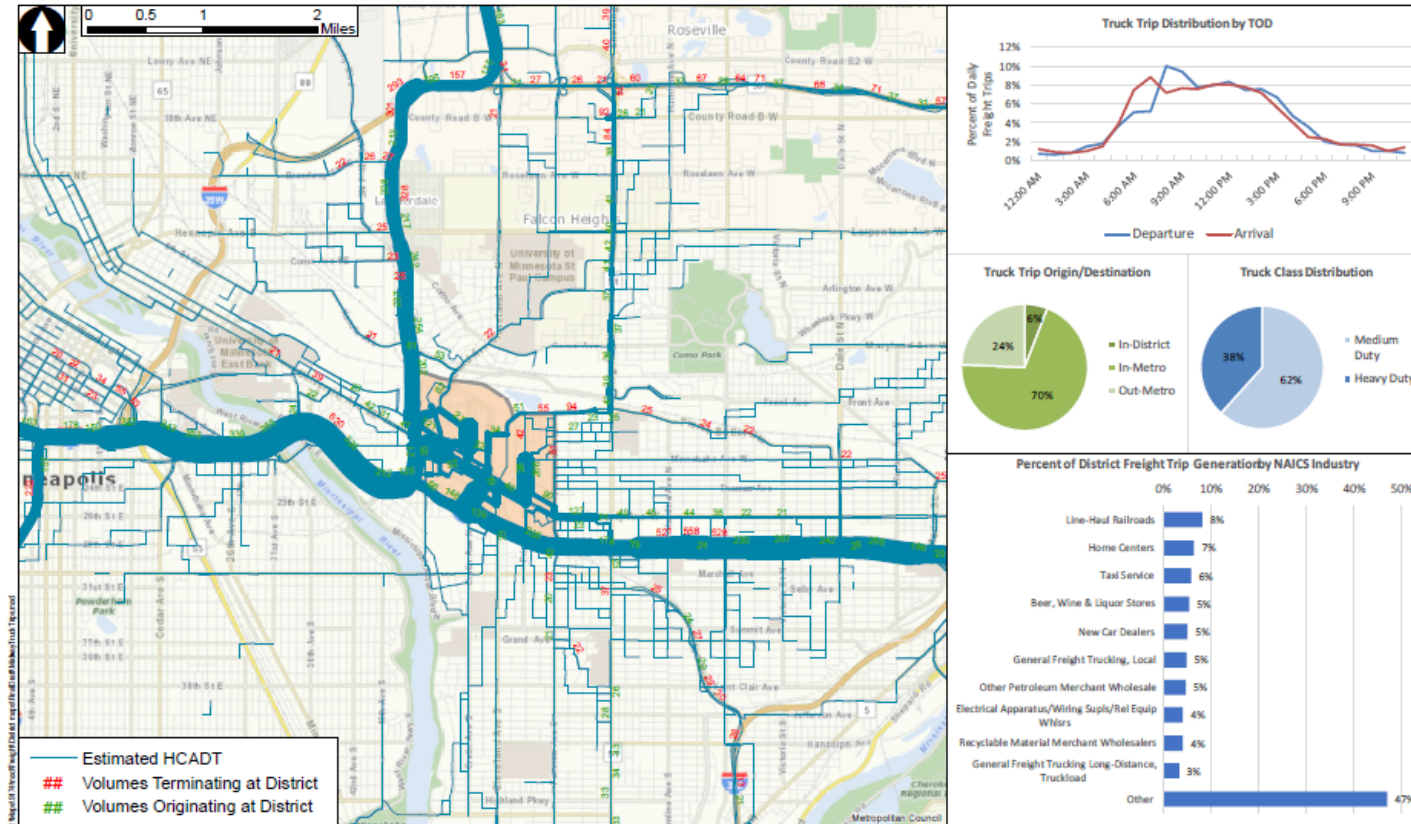
Map of Freight Business Density



Freight zones affected by I-94 projects

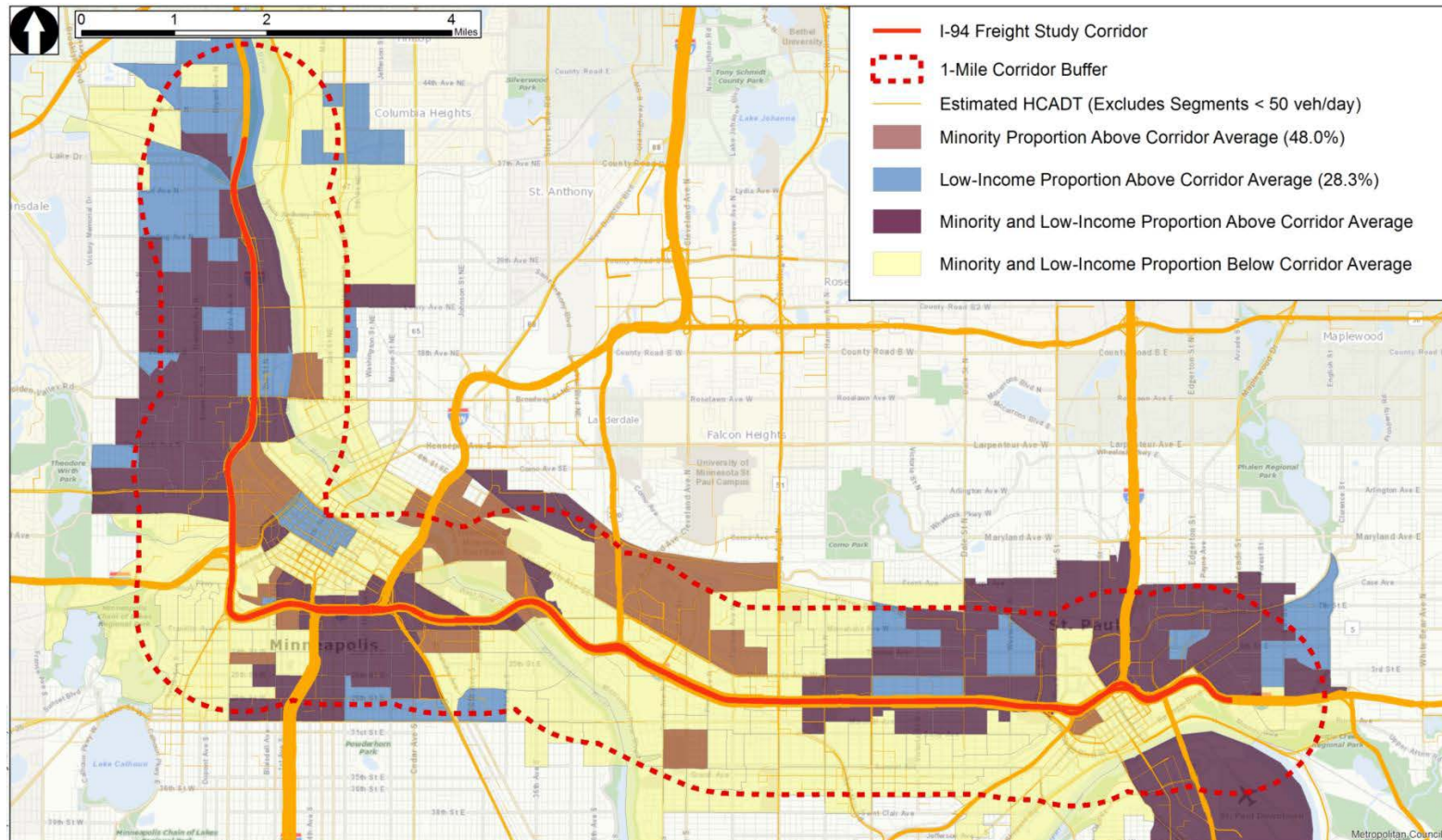


I-94 Rethinking Freight Study Midway Freight District



SRP Consulting Group Inc. Estimated Truck Trips Originating from or Terminating at Midway Freight District
Rethinking I-94: Urban Freight Study
Minnesota Department of Transportation

I-94 Rethinking Freight Study EJ analysis





Project FINDINGS



Smooth pavement mitigates:

- ▶ Truck/equipment damage
- ▶ **Driver fatigue**
- ▶ Product damage (e.g., breakage, scratches, dents)
 - **Compressors**
 - **Machine components**
 - **Electronics, gaming equipment, other fragile products**
 - **Livestock, food products**
 - **Garage doors**
 - **Fenders**
 - **Custom-made cabinets, granite countertops**



Lanes and shoulders

Acceleration, turning, passing and bypass lanes important for safety and efficiency

“[Lack of] passing lanes slows down trucks, impacts deliveries”

Wide / paved shoulders are perceived as a crucial safety feature

New MnDOT shoulder program



Intersections

Advance warning signs, other lighted flashing signals preferred

Review signal timing on freight corridors

Stoplights important for trucks entering high-speed corridors



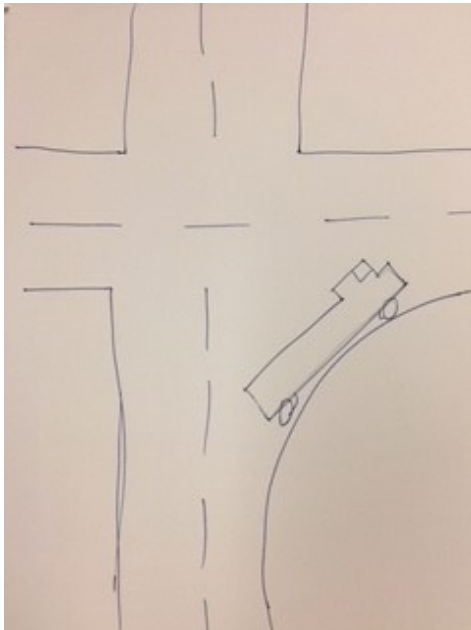
“Anywhere there is a stop light in the county, there needs to be an advance warning light. Especially in the winter, they help you make better decisions. It would help save lives.”

Various signage requests, such as:

- Directional signage to businesses for trucks
 - GPS, Google Maps errors common for some businesses
- **Signs for truck traffic-truck routes, bypass routes**
- Road designation changes, e.g., from state to county, may need additional signage
- **Trucks entering/exiting signs to warn other traffic**
- Electronic message boards to communicate road conditions/cautions
- **Signs to warn truck drivers of severe bumps in the road**



Intersections and interchanges



- High traffic volumes (“cars, cycles, and semis”)
- Fast-moving traffic on interstates

Need for acceleration lanes, longer turn lanes, and other highway-to-highway features that facilitate large, slow-moving truck merges

Hours of service impacts

Truck parking and Safe Rest Areas

“There are not many private, large truck stops in Minnesota to provide enough parking. Need more places like Flying J, Pilot truck stops. Not enough State facilities. Use facilities like weigh stations or unused areas for truck parking. This will become a bigger issue once Electronic Log Devices (ELD) are mandated [in 2018].”

Winter

Areas of the region that are hilly and curvy are perceived as particularly hazardous when snow-covered or icy, and when windy

Roads in hills and valleys can stay icy as they get little sun

Weather cited as one of the biggest concerns affecting employee commutes (large labor shed)

Winter weather/road closures affect JIT production schedules



Congestion

Local

- Manufacturing physically clustered
- Shift changes



“More e-signage would be useful to warn of highway congestion, particularly around Rochester. It would also be nice to have [smart] lane indicators that show which lanes are closed/open from a crash, like the Metro has. This would help drivers prepare better.”

Twin Cities Metro

“Our top costs are wages, fuel, and insurance – congestion adds to all of those.”

Road construction

Well-managed road construction project experience:
Accurate information, good signage, traffic management

Coordination with local jurisdictions/projects

Keep in mind oversize loads when designating detours

“We also have drivers report construction detours that then detour again from another construction project. Can the Metro District stage construction projects so that there aren’t detours around detours? Our truck drivers cannot keep up with multiple detours or detours that are often changing.”

Project Delivery - Scoping

Integrate freight analysis project in to scoping

- Finding from manufacturer's and/or urban freight perspective
- Freight reports/plan/studies
 - Public and private
 - FAC, MAFC, ATRI etc....
- Environmental Justice concerns

Project Delivery First and Last Mile State Highway 47

TH 47 Project - University Ave Resurfacing

Repairs will run from 27th Ave in Minneapolis to 40th Ave in Columbia Heights (up to 500 truck a day , rail crossing impediment)

- Reclamation
- Incentive for early completion
- Construction time: from 6 months to 2 month
- Signal timing adjustment during and after construction
- Outreach meeting and teleconferences

Trucking - Drayage

Participation of intermodal carrier group
Assistance with project staging
Allowed MnDOT participation at carrier safety meetings
Carrier partnership established

Rail – CP

Participation in intermodal carrier group
Provided list of drayage carriers servicing CP
24 hour operation during construction
Early implementation of electronic gate system
Additional processing line

2 hour notice on train departure and arrival times.

State Highway 47 con't

STAGE 1

44th Ave NE to 40th Ave NE including intersection of 40th Ave NE CLOSED

Intersection of 37th Ave OPEN

STAGE 2

40th Ave NE to 37th Ave NE

- Sarna's and local traffic open

Intersection of 37th Ave CLOSED

Intersection of 40th Ave OPEN

STAGE 3

37th Ave NE to 32nd Ave NE to include the intersection of 32nd Ave NE

- Half intersection 32nd Ave (northern portion) will be completed ASAP to open Hwy 47 north movement
- Half intersection 32nd Ave (southern portion) will be closed and completed with stage 4

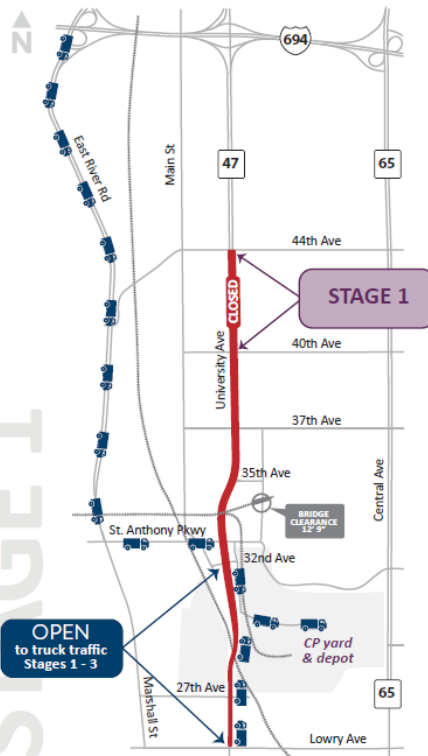
Intersection of 40th and 37th Ave OPEN

STAGE 4

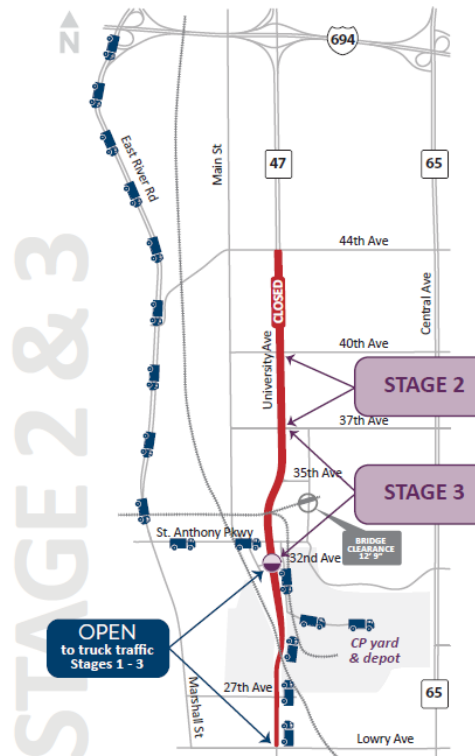
32nd Ave NE to 27th Ave NE including intersection of 27th Ave NE

Intersection of 40th, 37th and 32nd Ave OPEN.

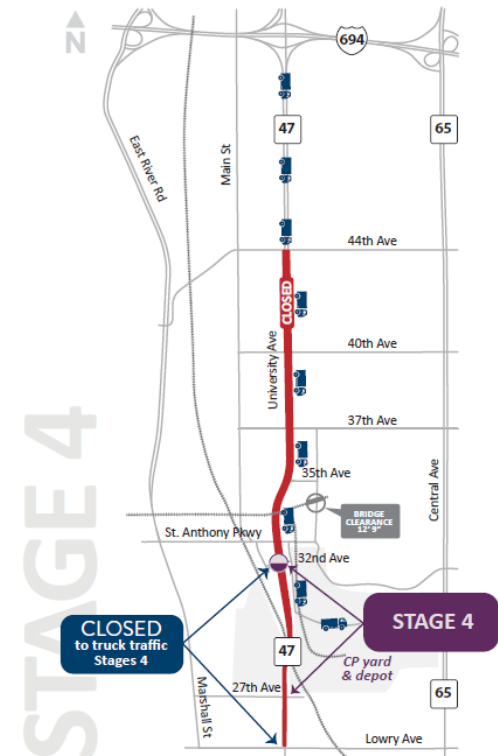
For construction staging dates please check website for updates



9/6/2018



mndot.gov/



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Minnesota 511 Truckers Page

DEPARTMENT OF TRANSPORTATION

Truckers' Info [NEED HELP?](#) [Highway Info](#) [Streamlined Version](#)

Text Size **A A A** [Text Only](#) [Future Info:](#)

Trucker Reports, Flooding, Other Reports, Weigh Stations

- Menu
- Personalize your 511
- Trucker Reports**
- Other Reports
- Traffic Speeds
- Cameras
- Weather Stations
- Plow Cameras
- Metro Traffic Map

Road conditions are updated Mon - Fri, 3-6 am and 3-6 pm, and as conditions change. After normal business hours, weekends and holidays, conditions are updated as they change.

Conclusions

Relatively low-cost changes can have significant impact on business costs

Business preferences can vary depending on what they do and where they are

Low-cost method to optimize freight movement

Directly connects MnDOT's planning and budgeting to business and community needs

