



# **Blatnik Bridge Replacement Project** *for Duluth Superior MIC TAC and Board Meetings*

**September 18 and 19, 2024**

**Patrick Huston, P.E. | MnDOT Major Projects Engineer**

**Jeff Knudson, P.E., PTOE | SRF Transportation Engineer**



# Agenda

- General project update – what is new?
- Traffic modelling and mitigation strategies during construction/closure



# General Project Update

# Project Purpose and Need

## Purpose Statement

“Provide an interstate highway connection across the St. Louis Bay that does not restrict the movement of freight and provides local, regional, and international movement in a reliable and efficient manner.”



## Needs

- Poor condition of the bridge
- Bridge conditions hinder vehicle and freight mobility
- Design deficiencies impair traffic operations
- High crash rates on the bridge, approaches and access interchanges
- No bicycle or pedestrian facilities on the existing bridge

# Bridge Condition

- The Blatnik Bridge is in “poor” condition with deterioration rates anticipated to accelerate until **eventual closure, which is predicted to occur by 2030.**
- The bridge is currently ranked as the number one risk of service interruption in MnDOT’s Bridge Inventory
- The proposed project will replace the deteriorating bridge and return the facility to a “good” condition rating.

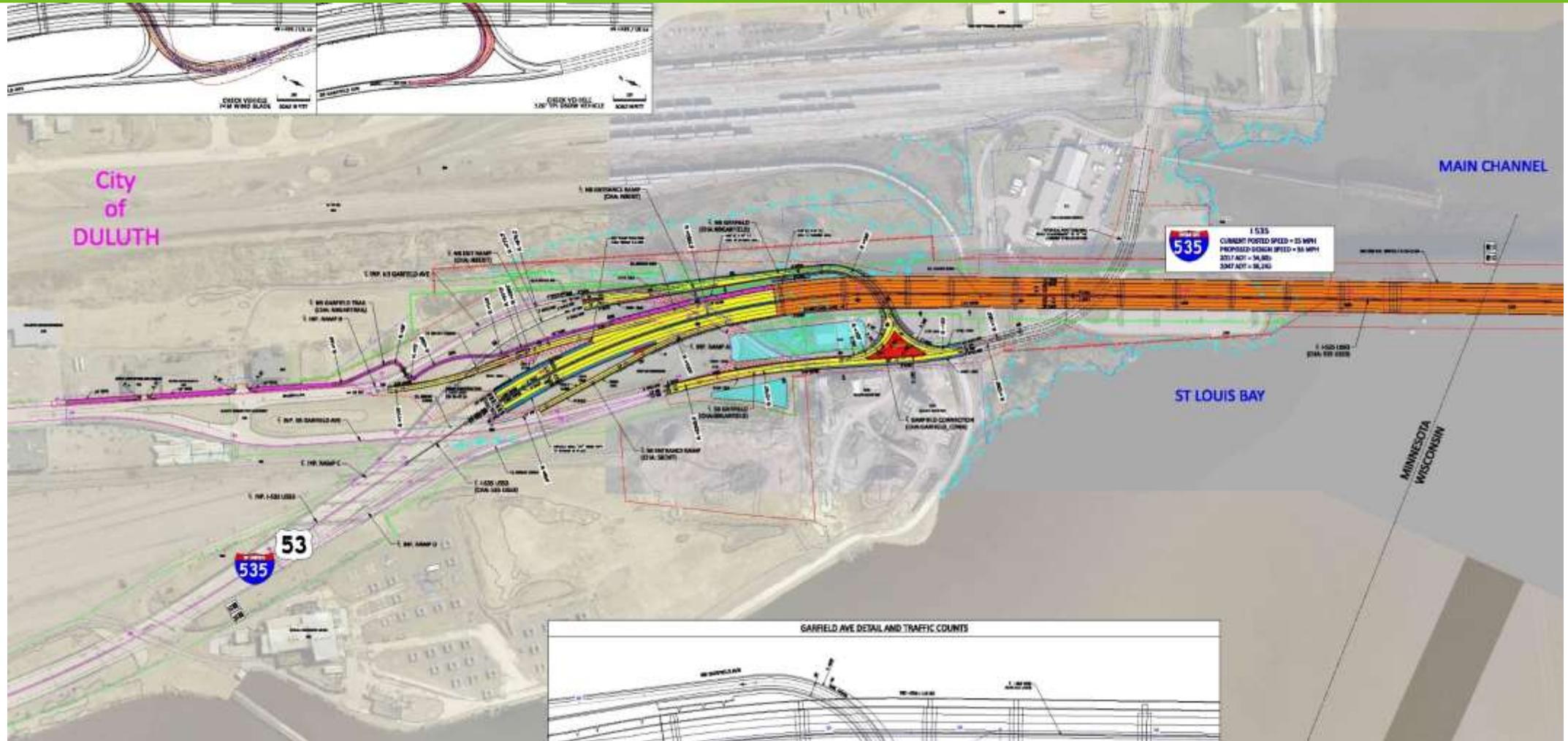
FIGURE 2: CORROSION IN TRUSS MEMBERS AND CONNECTIONS  
Photos from recent inspections showing significant deterioration.



# Project Plans – General Layout



# Project Layout – Minnesota Approach





# Project Layout – Proposed Wisconsin Interchange

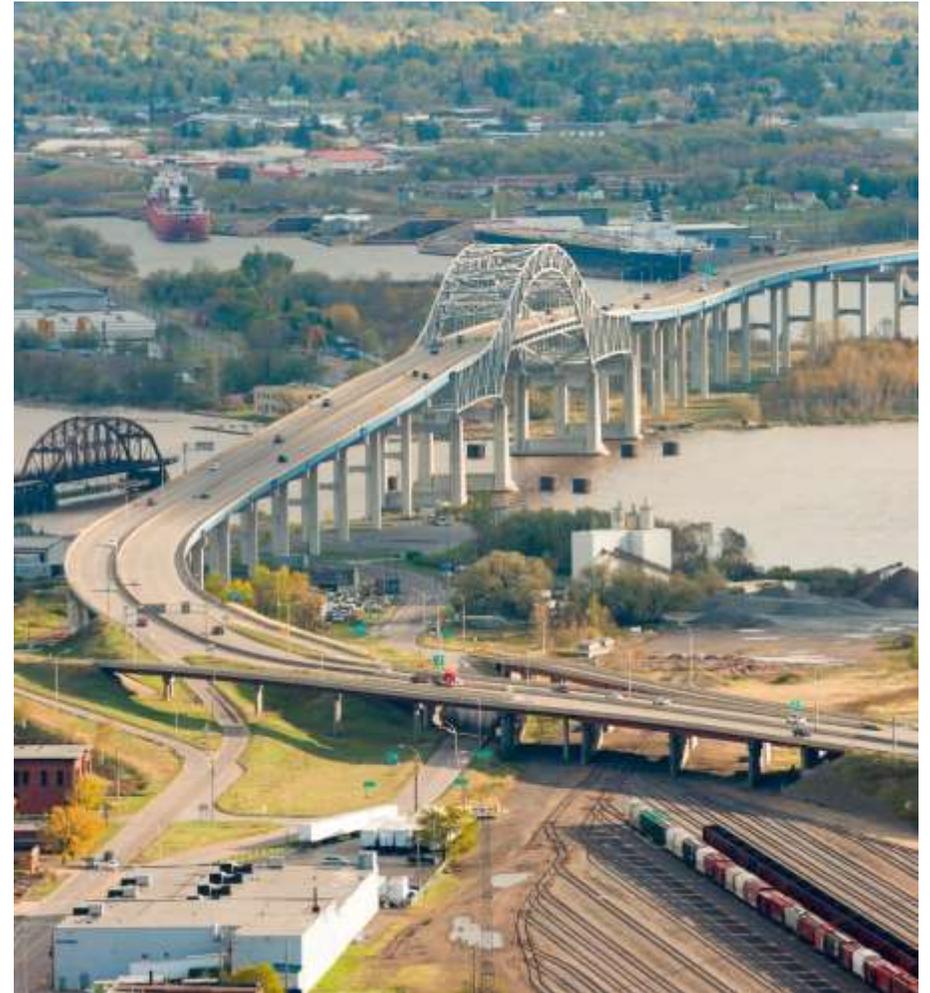
## City of Superior USH 53/IH535 Interchange

- Offset RAB Interchange
- Pedestrian connections
- OSOW Compliant



# Why was the existing alignment selected?

- **Minimizes impacts** to property and wetlands
- Allows for one phase construction, providing the **shortest overall construction duration**
- **Provides the greatest schedule acceleration opportunity** since crews can work on any portion of the project at any time
- Closing the existing bridge **eliminates risk** of construction next to traveling vehicles
- Provides the **lowest cost alternative**



# Bridge Type Option 1: Tied Arch



# Bridge Type Option 1: Tied Arch



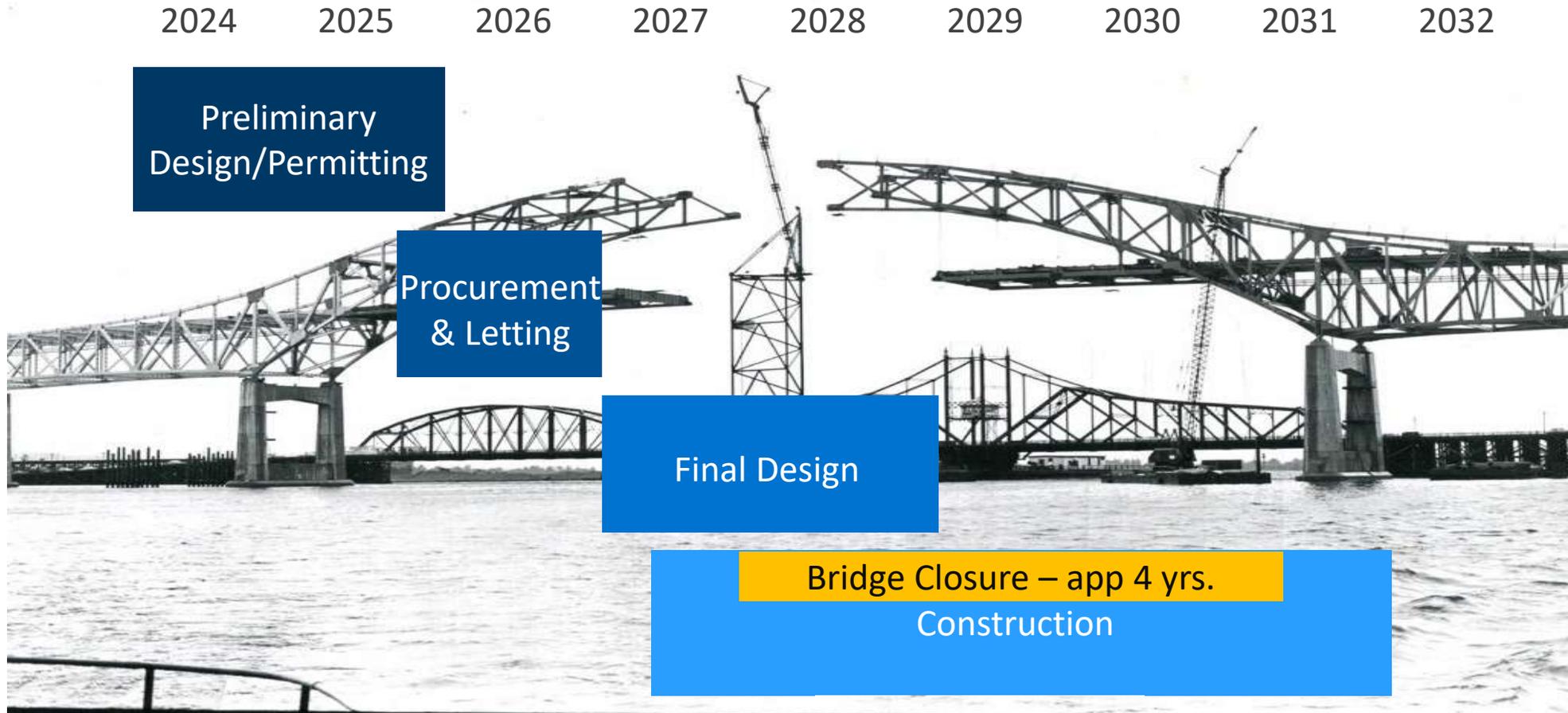
# Bridge Type Option 2: Cable Stay



# Bridge Type Option 2: Cable Stay



# Project Schedule

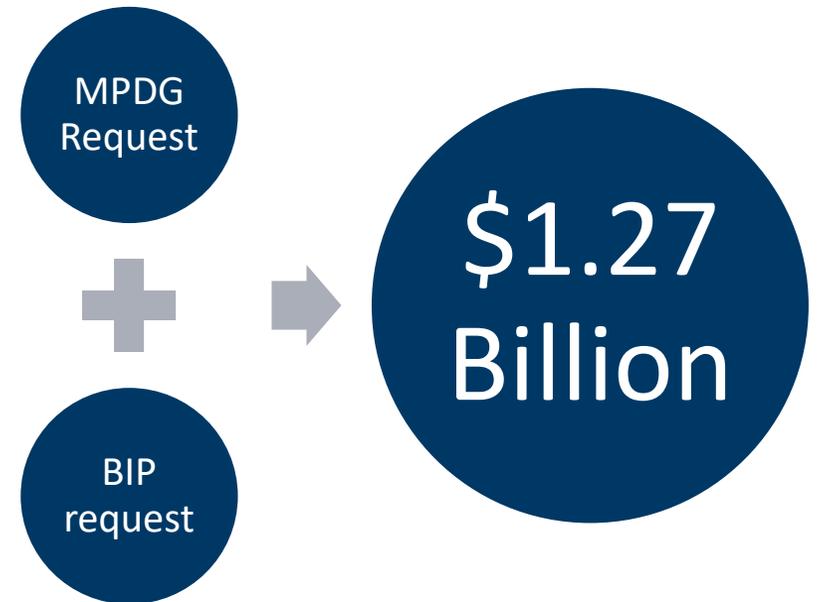


# Project Cost and Funding (in round numbers)

- **\$1.8 billion: Current estimated total project cost**
  - \$400 million: Current WisDOT commitment (June 2023)
  - \$400 million: Current MnDOT commitment (May 2023)
  - \$1.06 billion: 2023 Multimodal Project Discretionary Grant Program (MPDG) Grant award (INFRA)
- \$216 million: 2024 Bridge Investment Program (BIP) grant request

# Paired Grant Application Strategy

- Blatnik Bridge Replacement Project eligible for two major programs:
  - Multimodal Project Discretionary Grant Program (MPDG) – submitted August 2023
  - Bridge Investment Program (BIP) – submitted August 2022, November 2023, and July 2024
- Applied for paired funding from two concurrent programs
- Cost of grant applications.....



# Blatnik Grants Timeline

BIP = Bridge Investment Program (Large)  
MPDG = Multimodal Project Discretionary Grant

2022

**AUGUST**  
BIP Application #1 Submitted

2023

**MAY**  
MnDOT Commits \$400m

**JUNE**  
WisDOT Commits \$400m

**NOVEMBER**  
BIP Application #2 Submitted

**AUGUST**  
MPDG Application Submitted

**JANUARY**  
BIP Application #1 Announcements: Not Awarded

2024

**JULY**  
BIP Application #3 Submitted

**JANUARY** ★  
MPDG Application Announcements: Successful, Awarded \$1.058b

**JULY**  
BIP Application #2 Announcements: Not Awarded (but highly recommended)



# Blatnik Bridge Formal Outreach Summary



## Project Advisory Committee (PAC)

The PAC was formed in September 2020 to assist MnDOT and WisDOT with stakeholder engagement on key project decisions, provide knowledge of local conditions and potential impacts, better understand local needs and interests, and guide alternatives decision-making during the National Environmental Policy Act (NEPA) phase of the Blatnik project.

In March 2024, the Finding of No Significant Impact (FONSI) was issued, confirming the project's preferred alternative and awarding more than \$1 billion in federal INFRA grant funds. With the NEPA phase complete, the project moved forward with engineering, and the PAC ceased meeting.



# Engagement Stats

68

Touchpoints or  
Events from  
2020-2024

38

Stakeholder  
Meetings

8

Public  
Open Houses

25+

Local, State,  
and Federal  
Agencies  
Engaged

# Agency Technical Working Group

- 60 minute bi-monthly meeting with all agencies (state and federal) that touch the project
- Purpose: Keep everybody up to date/confer on issues as we go
- First half of meeting is a project update; second half used to discuss technical needs
- Sometimes result in subsequent 1:1 or small group meetings
- THIS HAS BEEN AN EXCELLENT TOOL.



US Army Corps  
of Engineers®



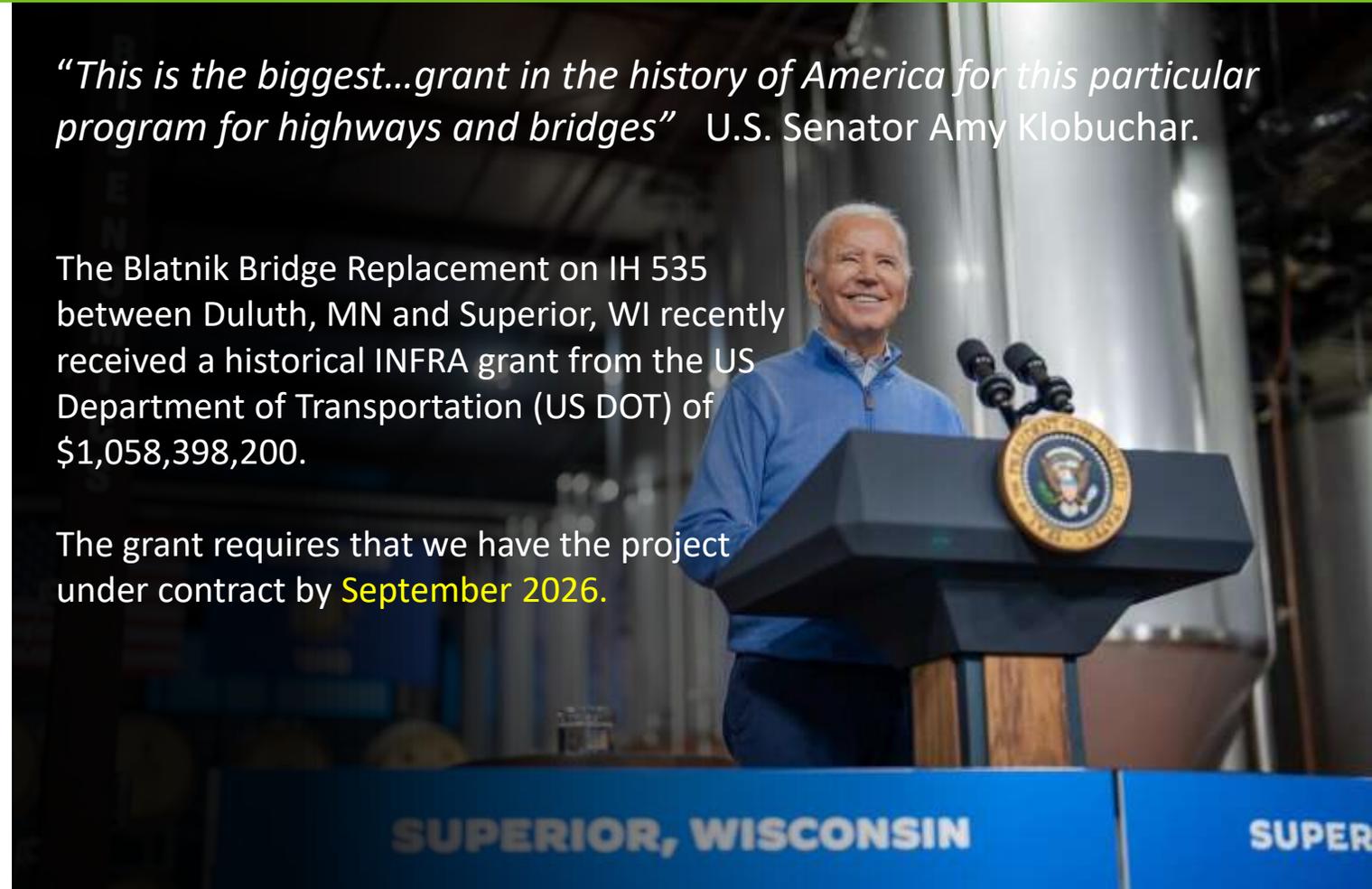
# Project Subcabinet

- Largest interstate bridge project between MN and WI
- First Joint D-B project between MN and WI
- Requirement to be under contract by September 2026
- WI currently D-B program in pilot stage.

*“This is the biggest...grant in the history of America for this particular program for highways and bridges”* U.S. Senator Amy Klobuchar.

The Blatnik Bridge Replacement on IH 535 between Duluth, MN and Superior, WI recently received a historical INFRA grant from the US Department of Transportation (US DOT) of \$1,058,398,200.

The grant requires that we have the project under contract by **September 2026**.



# Project Subcabinet Creation and Purpose



## Some ways we may need to engage with this group:

- Helping resolve multi-state challenges
- Addressing timely reviews of permits and submittals in order to keep the project on schedule
- Bringing resources and focus to aid in addressing workforce issues
- Providing leadership in addressing issues relating to cultural resources on the project
- Helping to develop a multi-state workforce safety plan
- Providing leadership to address potential issues or conflicts between states created by the Design Build procurement type

# Subcabinet Engagement

## Formal Engagement

- Quarterly meetings
- Bi-monthly reports
- Project tour – August 2024

## Informal Engagement

- Ad-hoc meetings as needed

### • Subcabinet Members - Wisconsin

- \* WisDOT Secretary, Craig Thompson
- \* WisDOT Deputy Secretary, Kristina Boardman
- \* WisDOT Division of Transportation System Development Administrator, Rebecca Burkel
- \* WisDOT Northwest Region Director, Jerald Mentzel
- \* WisDOT Northwest Blatnik Project Co-Director, WisDOT, Paul Conlin
- \* WisDOT Business Development, David Hubbard
- WI Department of Administration Deputy Secretary, Paul Hammer
- \* WI DNR Director of Environmental Analysis and Sustainability, Greg Pils
- \* WI Economic Development Corporation, Regional Director, David Wierzba
- Governor Evers Office, Senior Policy Advisor, Jacob Pankratz
- \* Federal Highway Administration Wisconsin Division, Administrator Glenn Fulkerson
- Federal Highway Administration Wisconsin Division, Deputy Administrator Linda Swann

### • Subcabinet Members - Minnesota

- \* MnDOT Commissioner, Nancy Daubenberger
- \* MnDOT Deputy Commissioner, Jean Wallace
- \* MnDOT District Engineer, Duane Hill
- \* MnDOT Project Director, Pat Huston
- \* MN Pollution Control Agency, Assistant Commissioner Dana Vanderbosch
- MN Department of Natural Resources, NE Regional Director, Shelly Patten
- \* MN Department of Employment and Economic Development, Ama Akakpo / Mike Lang / Mark Majors

- MN Department of Human Rights, Equity and Inclusion Supervisor Tyler Bishop
- \* MN Department of Labor and Industry, Commissioner, Nicole Blissonbach
- Mn Management and Budget, Exclusive Budget Officer Nick Lardinois
- MN Department of Administration, P/T Contracts Manager - Office of State Procurement Rachel Dougherty
- MN Information Technology, Chief Business Technology Officer Bob Bennet
- MN Office of State Archaeologist, Amanda Gronhoyd
- Minnesota Indian Affairs Council, Chair Robert Larsen
- Mn State Historic Preservation Office, Division Director & Deputy State Historic Preservation Officer Amy Spong
- \* Federal Highway Administration Minnesota Division, Administrator, Wendall Meyer
- \* Federal Highway Administration Minnesota Division, Deputy Administrator, Susan Wimberly
- Governor Walz Office Deputy Chief of Staff, Cabinet Affairs, Anne O'Connor
- Governor Walz Office Cabinet Affairs, Dana Montgomery
- Governor Walz Office Cabinet Affairs, Craig McDonnell
- Governor Walz Office Assistant Chief of Staff Policy, Admin and Fed Affairs, Sasha Bergman
- Governor Walz Office Policy Advisor, Brandon Kasprick

\* Denotes Member in Attendance



# Subcabinet – August 12, 2024, Project Area Tour

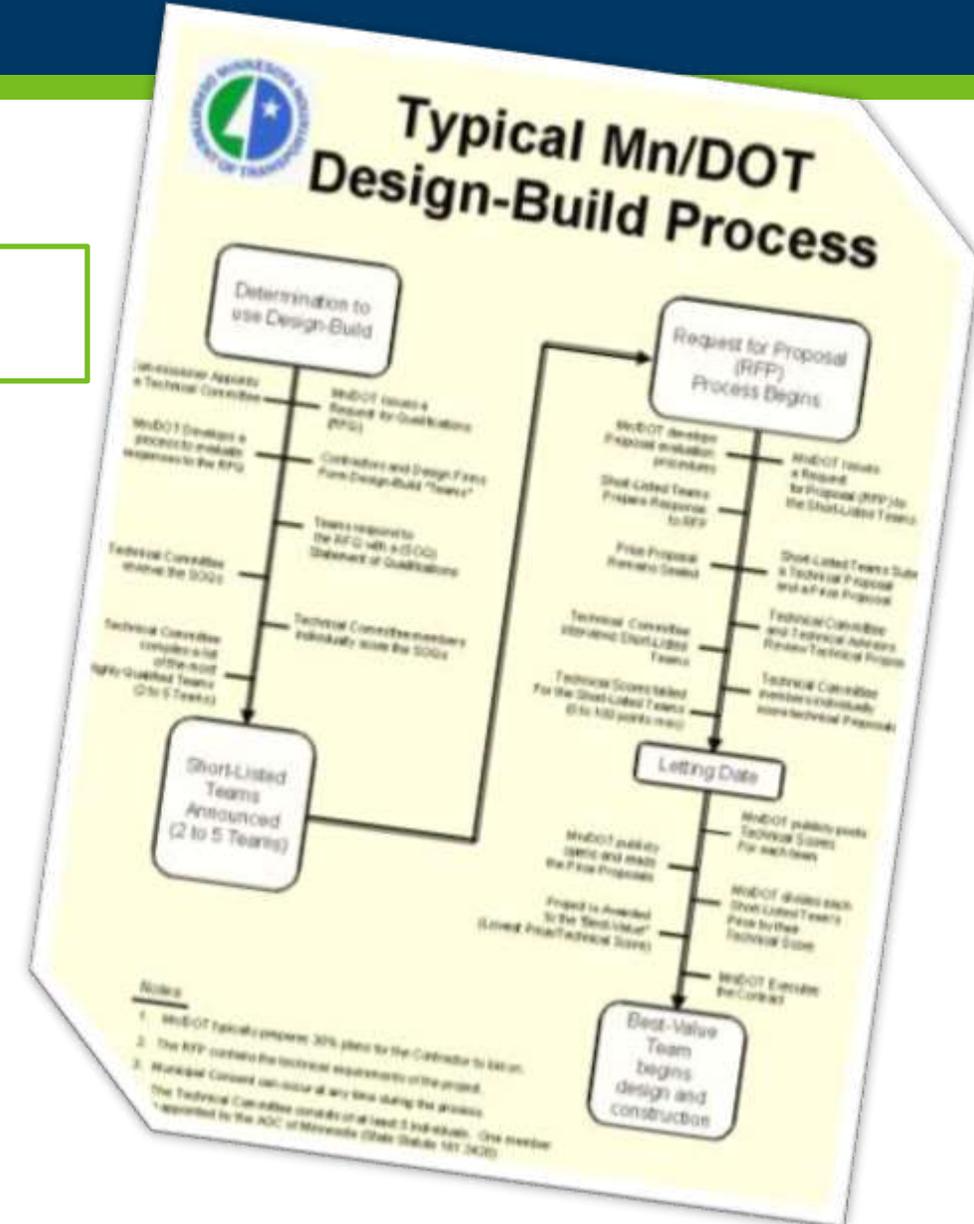


# How to Deliver?

## Delivery Method

*A standardized system for **who** completes construction, design, and other operations on a project and **who** takes the risks.*

- Common risks
  - Soil conditions and Contamination
  - Constructability
  - Utilities
  - Construction Quantities
  - Design Performance
- Allowed Delivery Methods
  - Traditional Design-Bid-Build
  - Design-Build
  - Construction Manager / General Contractor (CMGC)



# Blatnik Contracting Risks

## Risks or Opportunities Possibly Affected by Delivery

- Design of major bridge
- Constructability of major bridge
- Soil conditions: contamination and/or cultural resources
- Bidding competition
- Conformance with standards, permits, and regulations in two states
- Quality construction practices



# Design-Build Method

- Why was this method chosen for the Blatnik Bridge project?
  - Efficient coordination between the design team and the construction team is especially important for the shipping channel.
  - Design-Build projects typically result in lower cost growth after construction begins, fewer construction claims, and less delays.
  - Allows for alternative design and construction innovation.
- Other recent Design-Build projects at major river crossings:
  - I-35W Mississippi River Bridge (St. Anthony Falls)
  - Hastings Bridge Replacement
  - I-35W Minnesota River Bridge



# 2024 Field Investigations

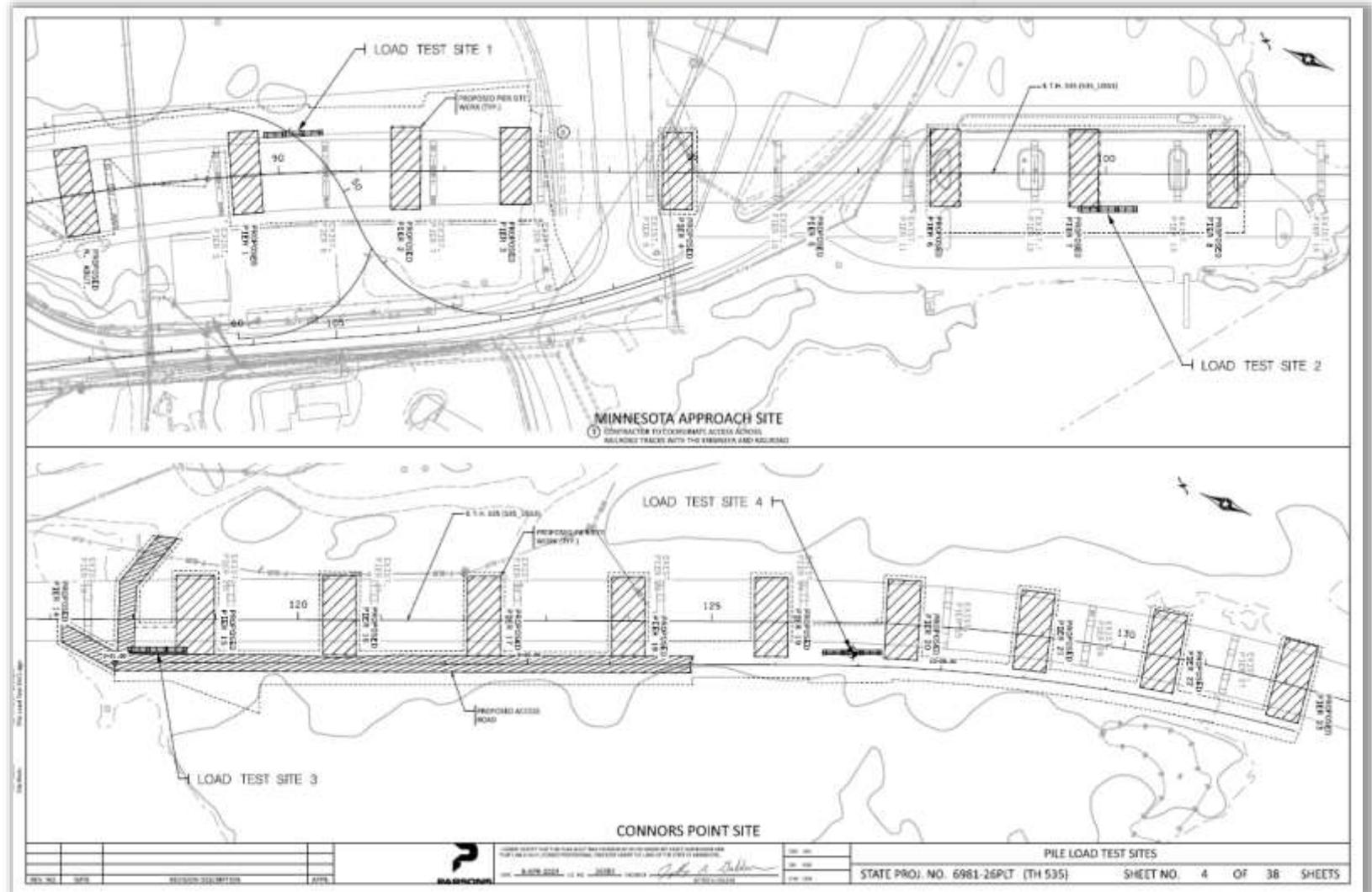
- Pile Load Test program at six different locations
- Excavation of select future proposed pier locations for the new bridge
- Construction of a permanent access road on Connor's Point
- Schedule
  - June – December 2024
- Geotechnical borings
- Contaminated material borings



# 2024 Field Investigations

## Foundations:

- Investigation this summer – 22 locations
- Footing designs will be “perched” as much as possible rather than fully buried to minimize interaction with contaminated soil and water



# Upcoming Engagement

- September 26: WEDC/US Small Business Administration outreach event for contracting opportunities
- September 26: Business outreach meeting #2 (traffic mitigation)
- October 15: Blatnik Open House



# Traffic Management Plan/Traffic Mitigation

# Traffic

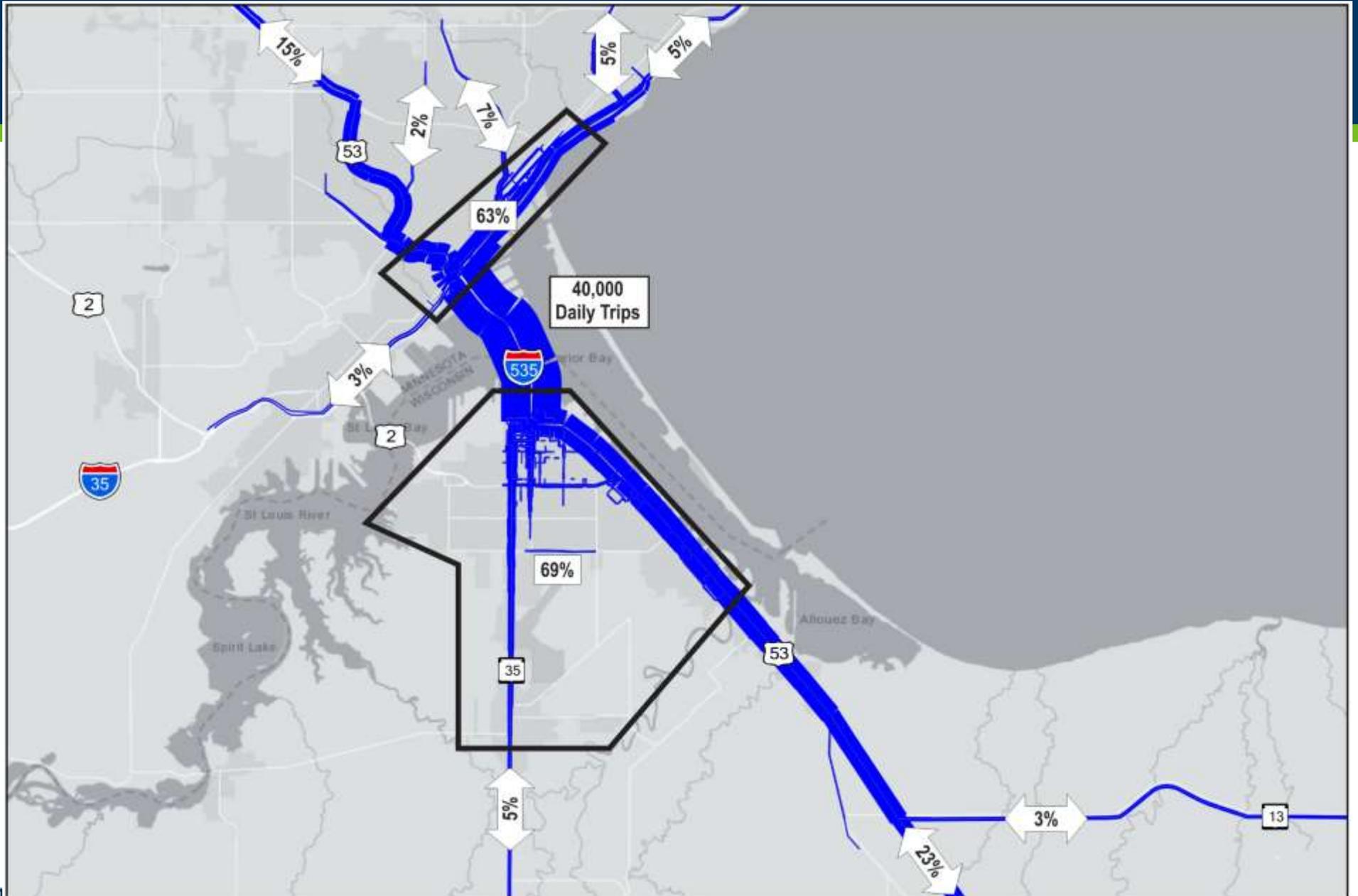


# Volumes

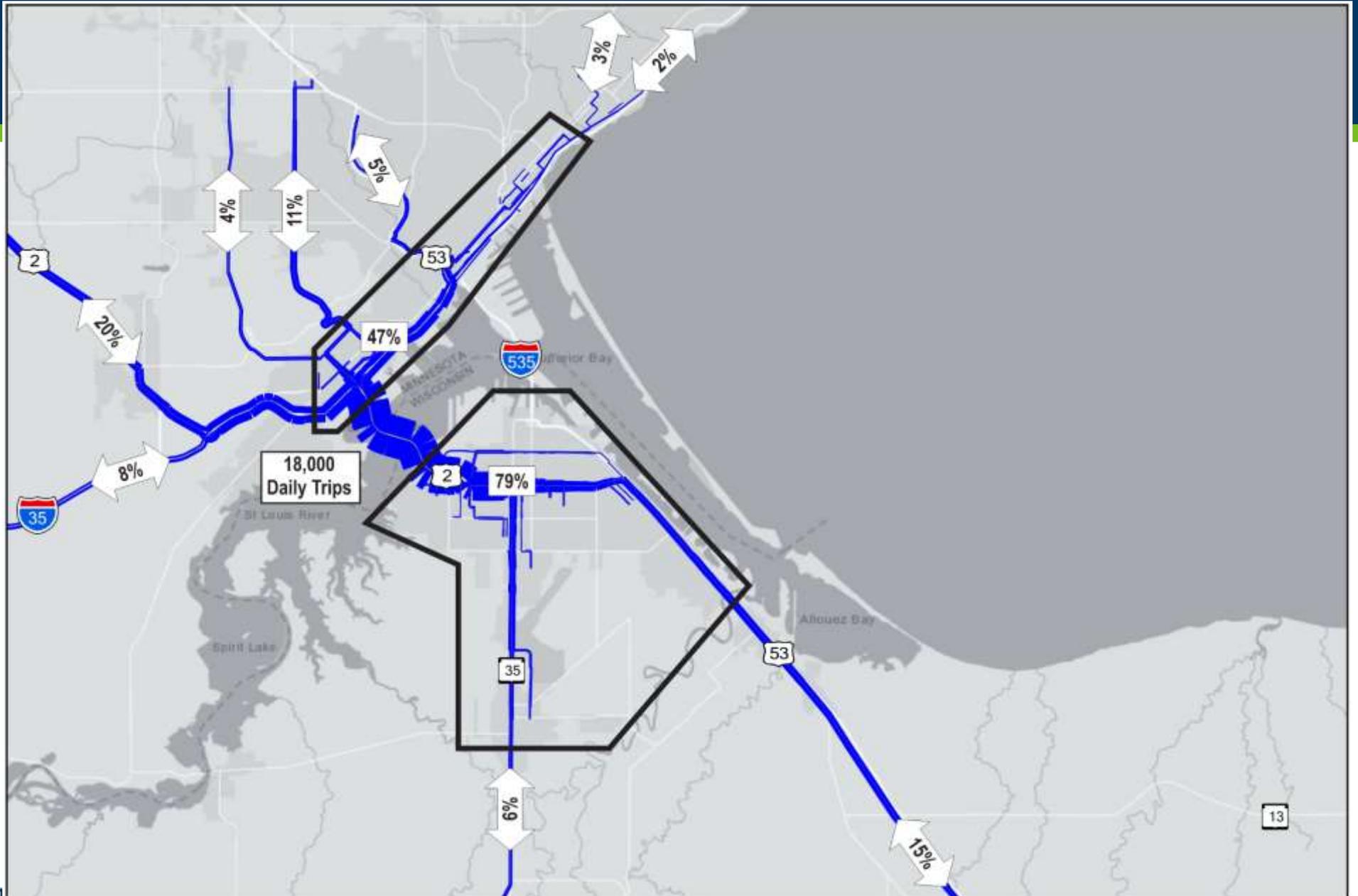


# Patterns

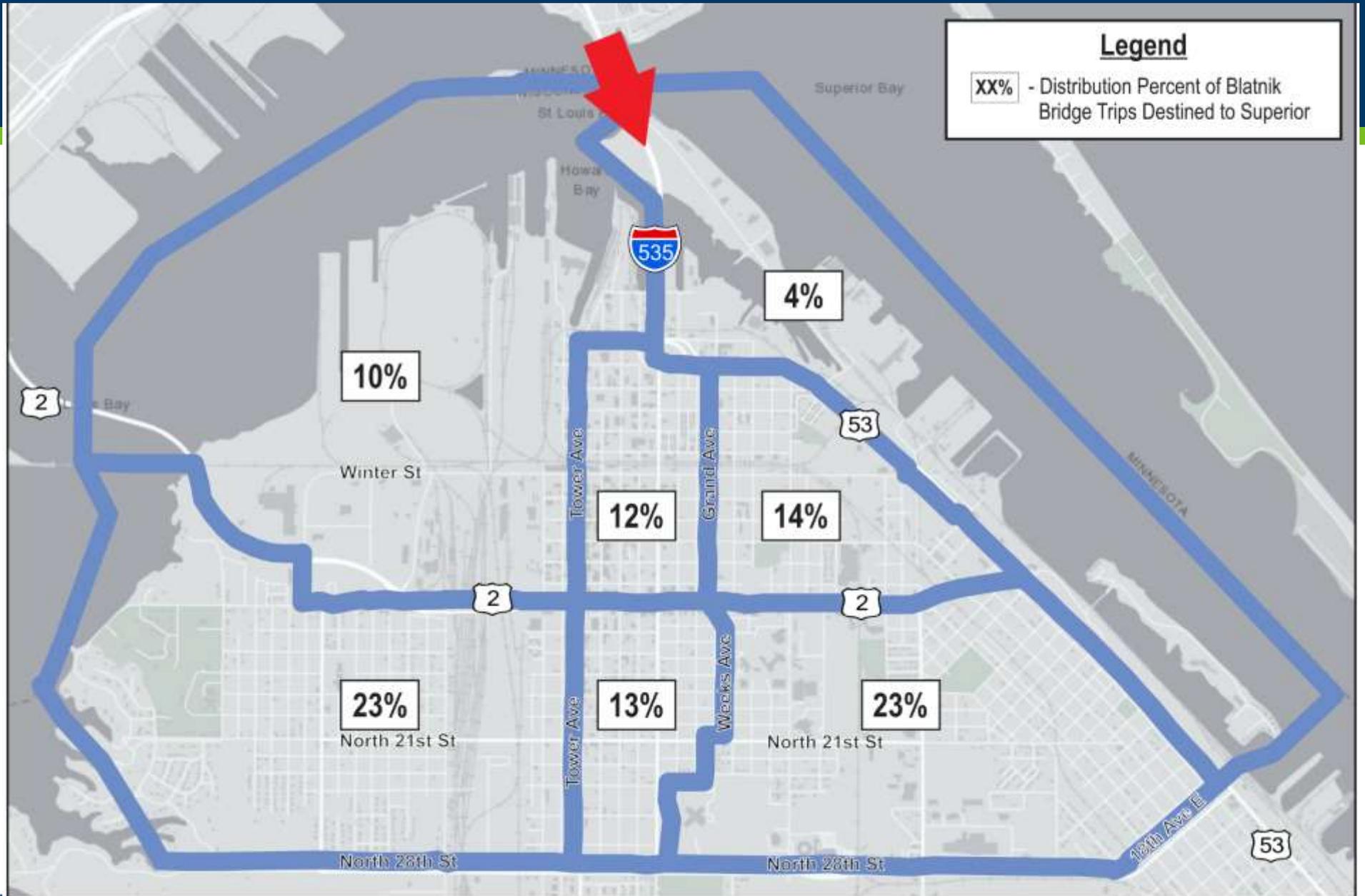
2017/2018 INRIX  
Data Study



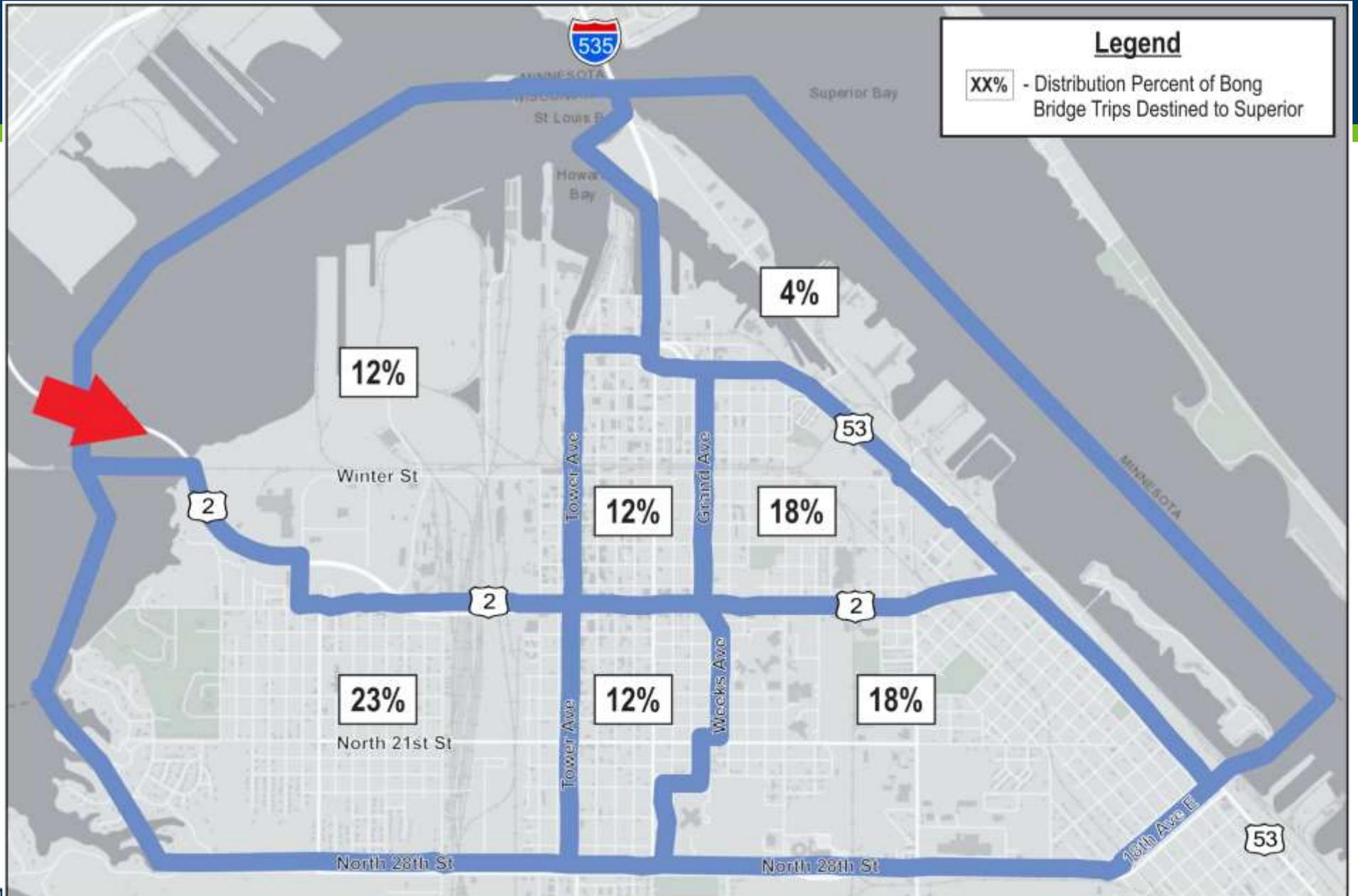
# Patterns



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# Patterns



# Volumes and Patterns

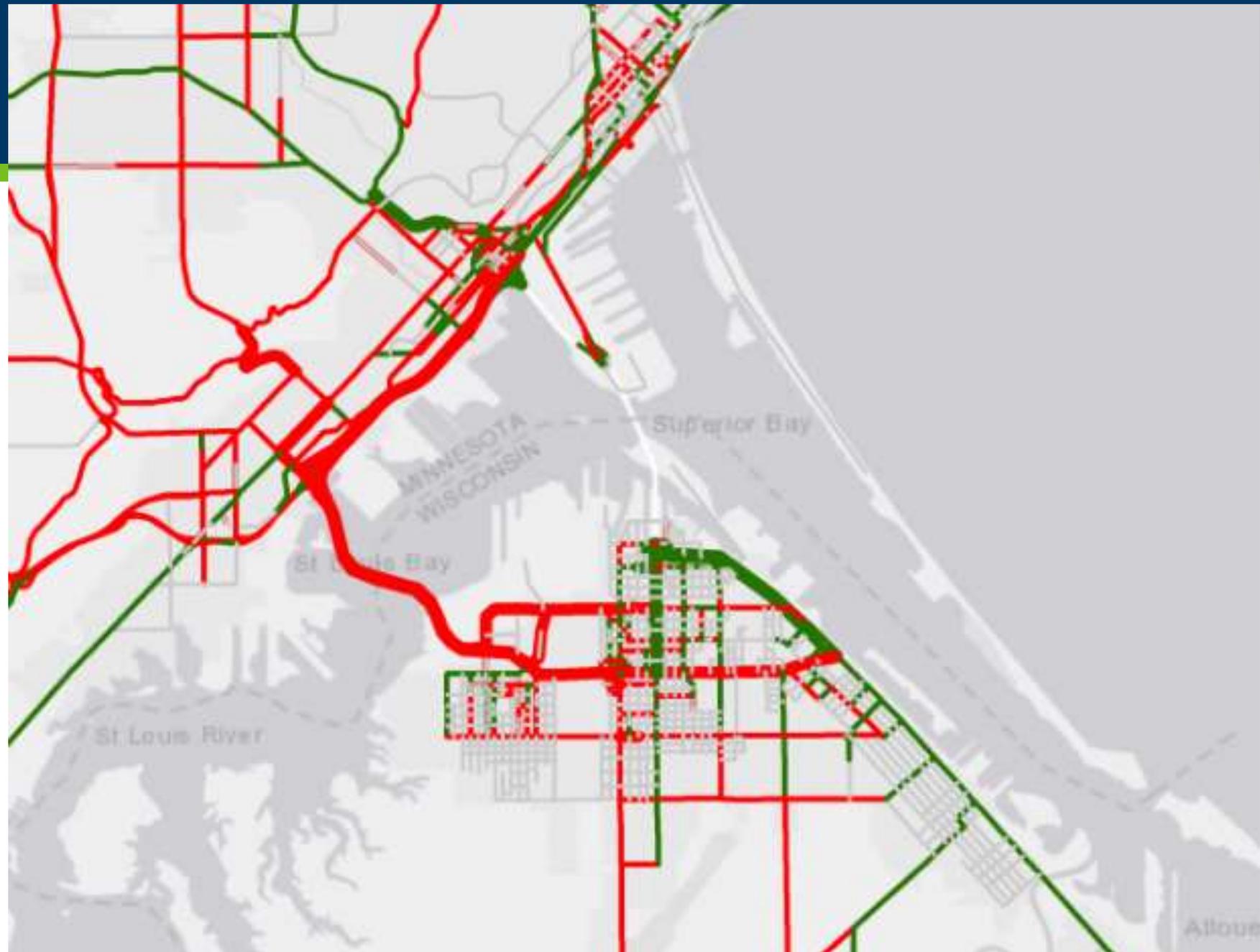
- 2018 WisDOT Study reviewing Superior diversion impacts of full closure
  - US 2/Belknap Street to get bulk of diversion. Volumes up 50-80%.
  - Winter/21<sup>st</sup>/28<sup>th</sup> will get significant increase also
  - Initial analysis showed the Superior system had overall sufficient capacity to handle the new patterns if traffic used full system.
- Since then, TPI diversions have shifted traffic.

# Diversions



# Diversion

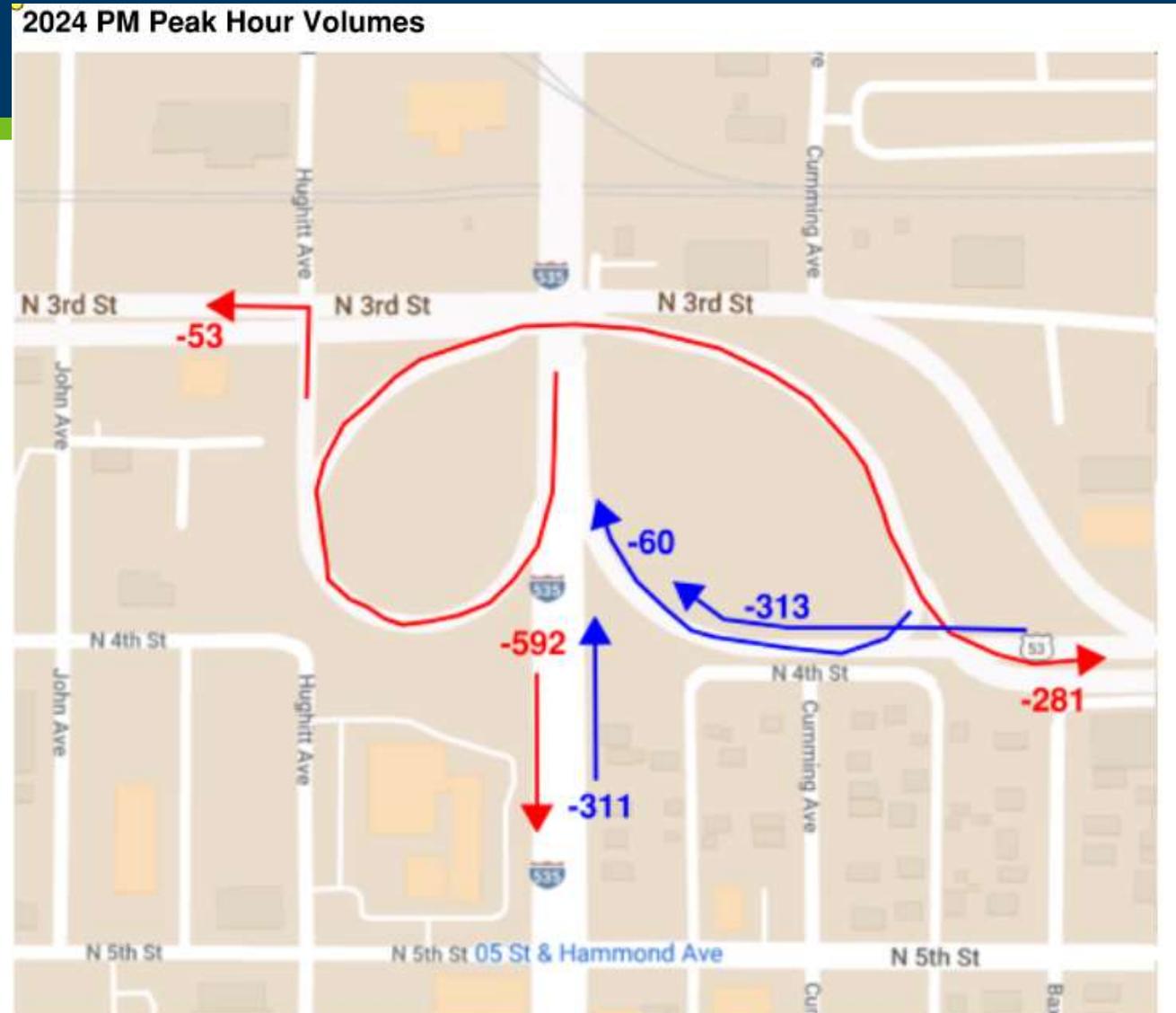
- 2019 MIC Diversion Study
- Confirmed routes of interest during full closure
- Belknap, Winter, 21<sup>st</sup>, 28<sup>th</sup>
- Haines, Highland, Grand, I-35





# Diversion

- Data used to understand diversions
  - Recent counts
  - Streetlight
  - MIC Model

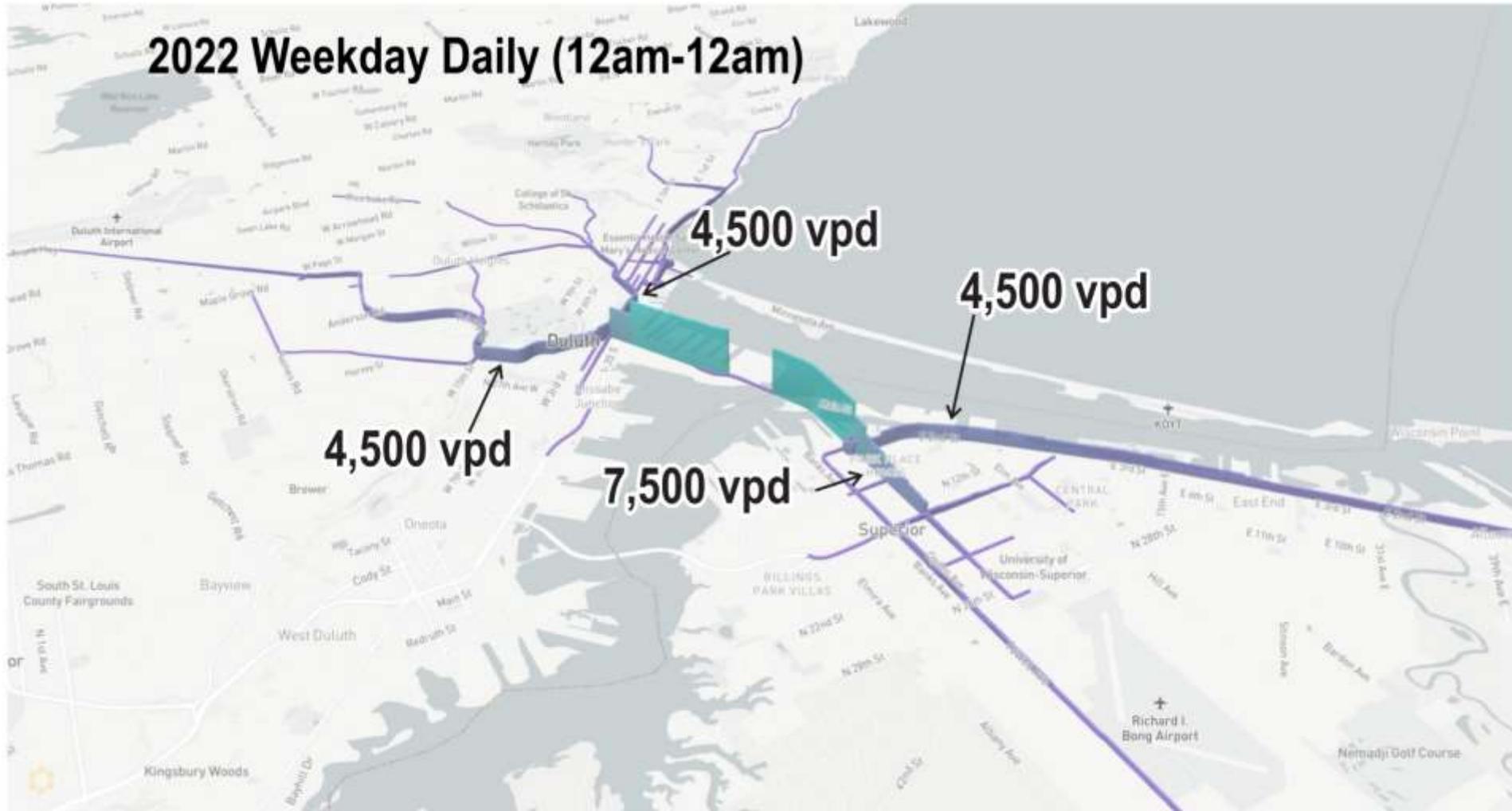


# Recent Counts

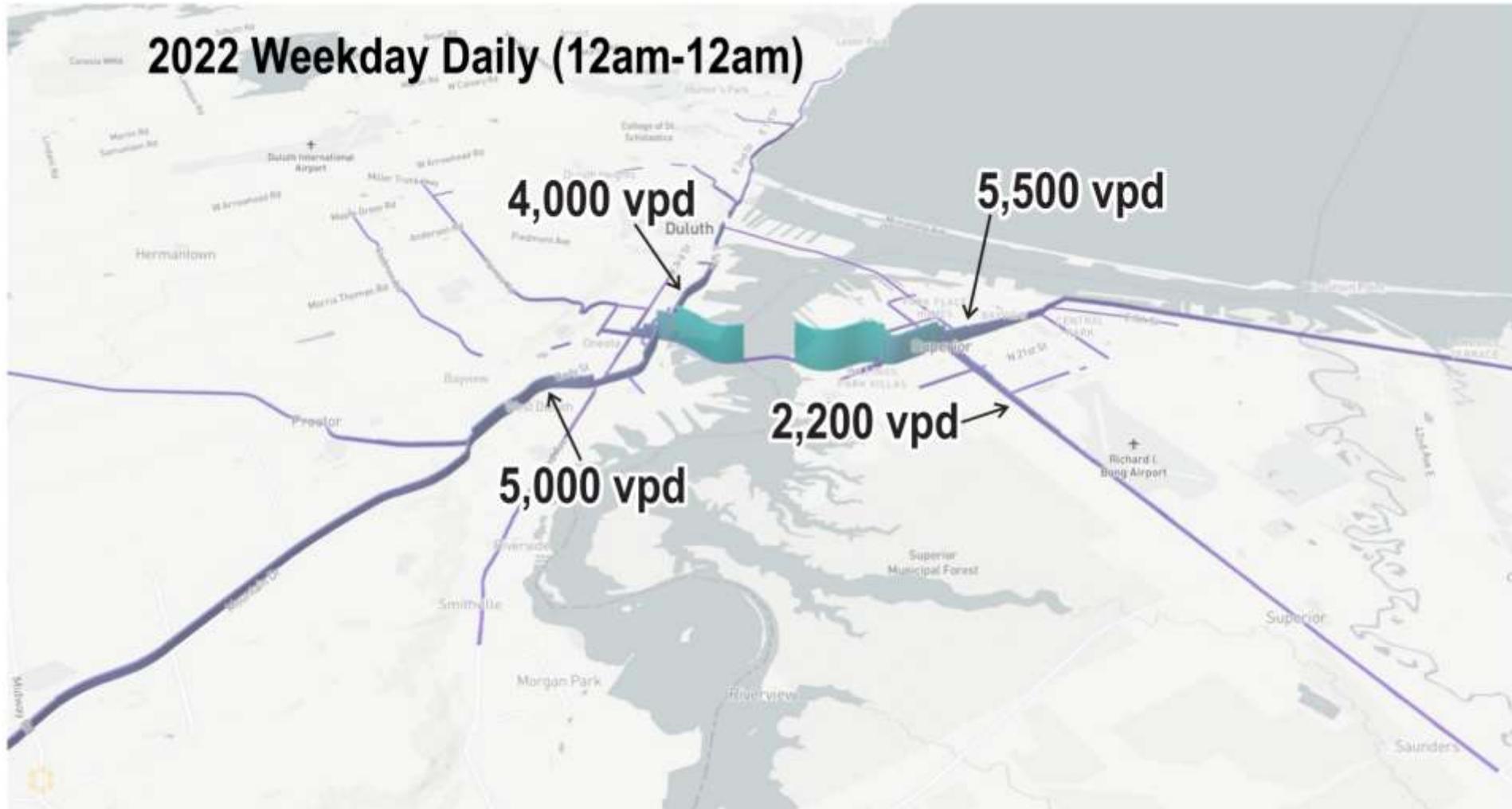
- Blatnik Bridge daily traffic down significantly from 2019
- ~33,000 to ~19,500 vehicles per day
- Most of this seems to have transferred to US 2
- **Already congestion in downtown Superior**

Blatnik Bridge Automatic Traffic Recorder

# Streetlight Patterns



# Streetlight Patterns

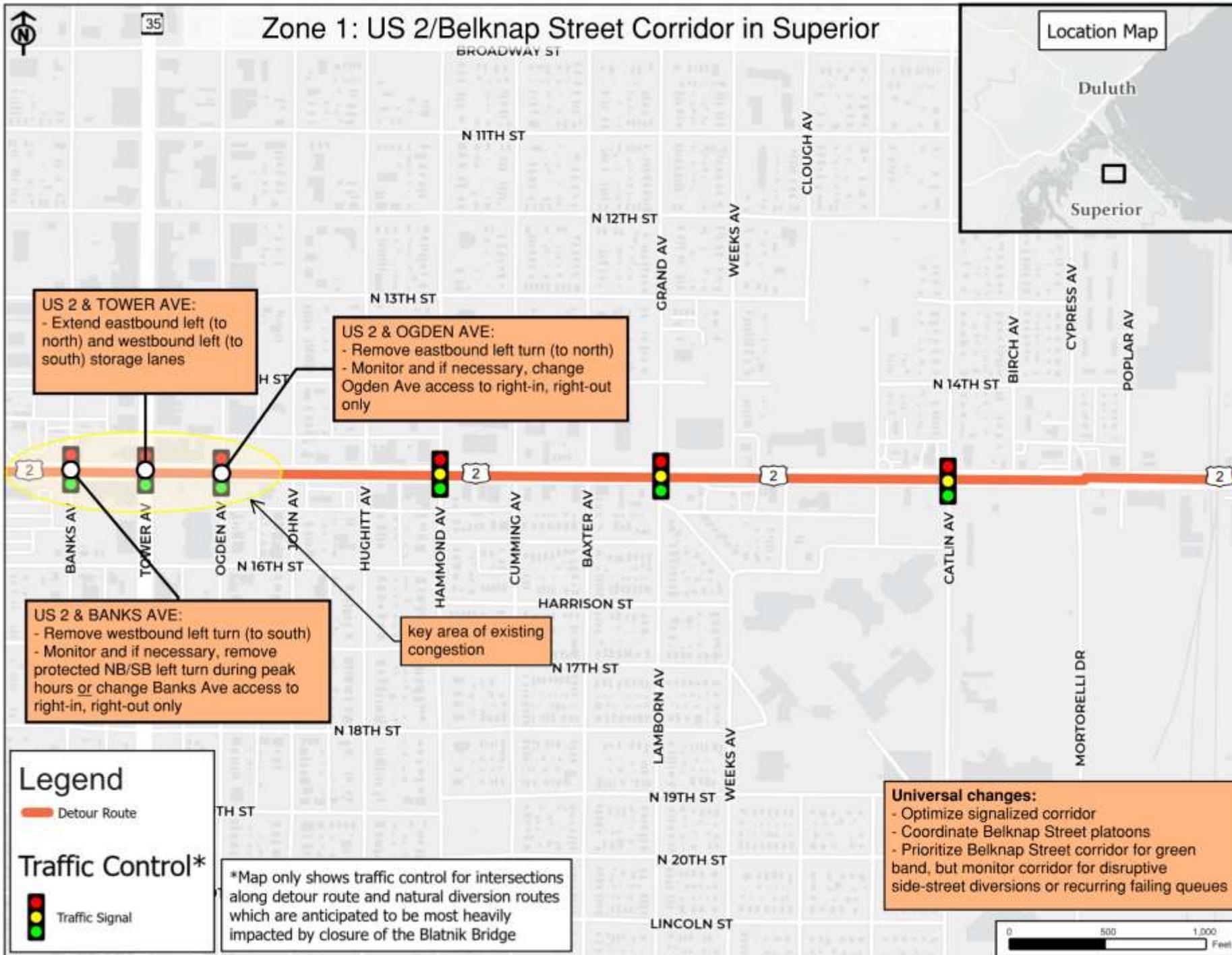


# Improvement Analysis





# Zone 1: US 2/Belknap Street Corridor in Superior



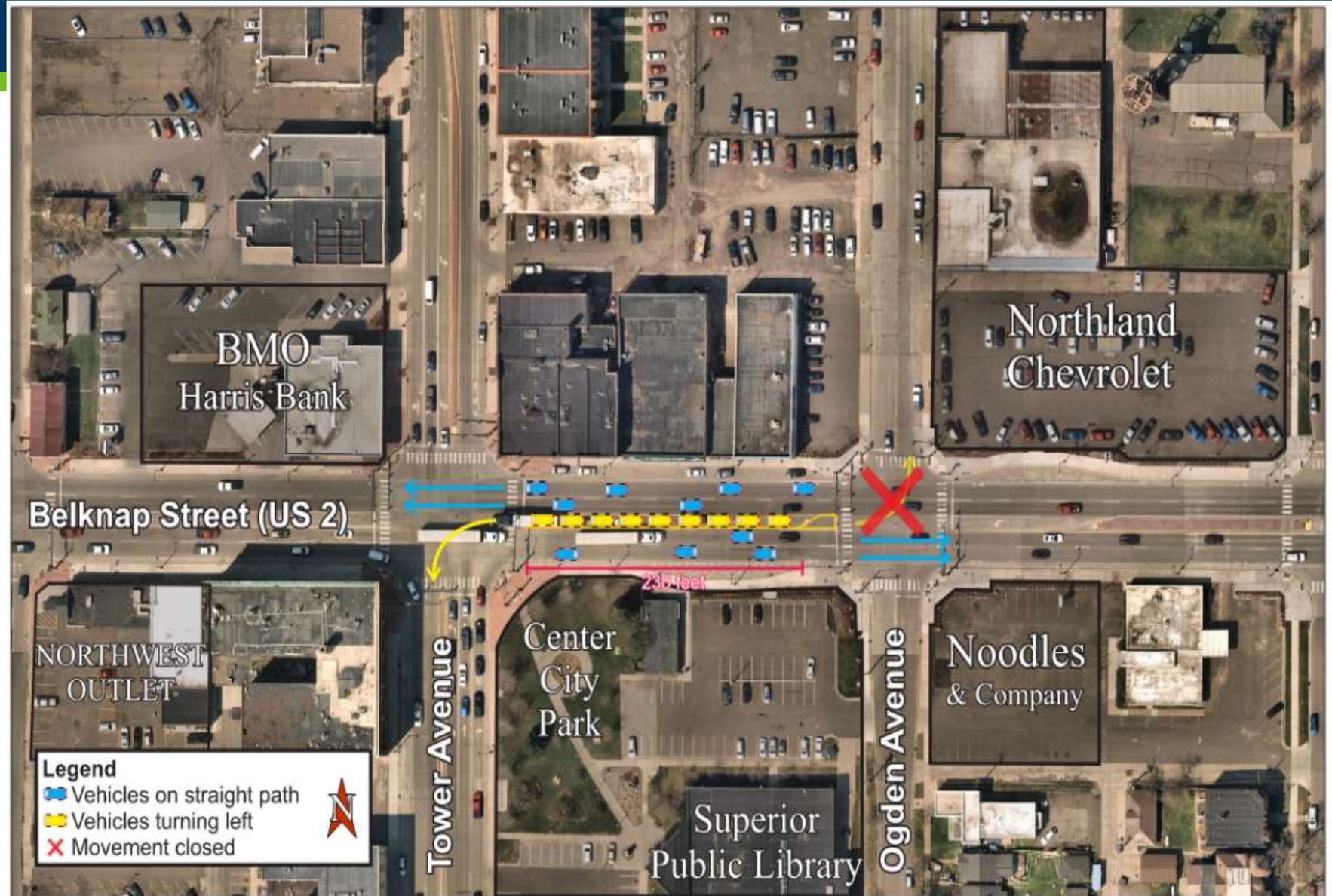
# Belknap



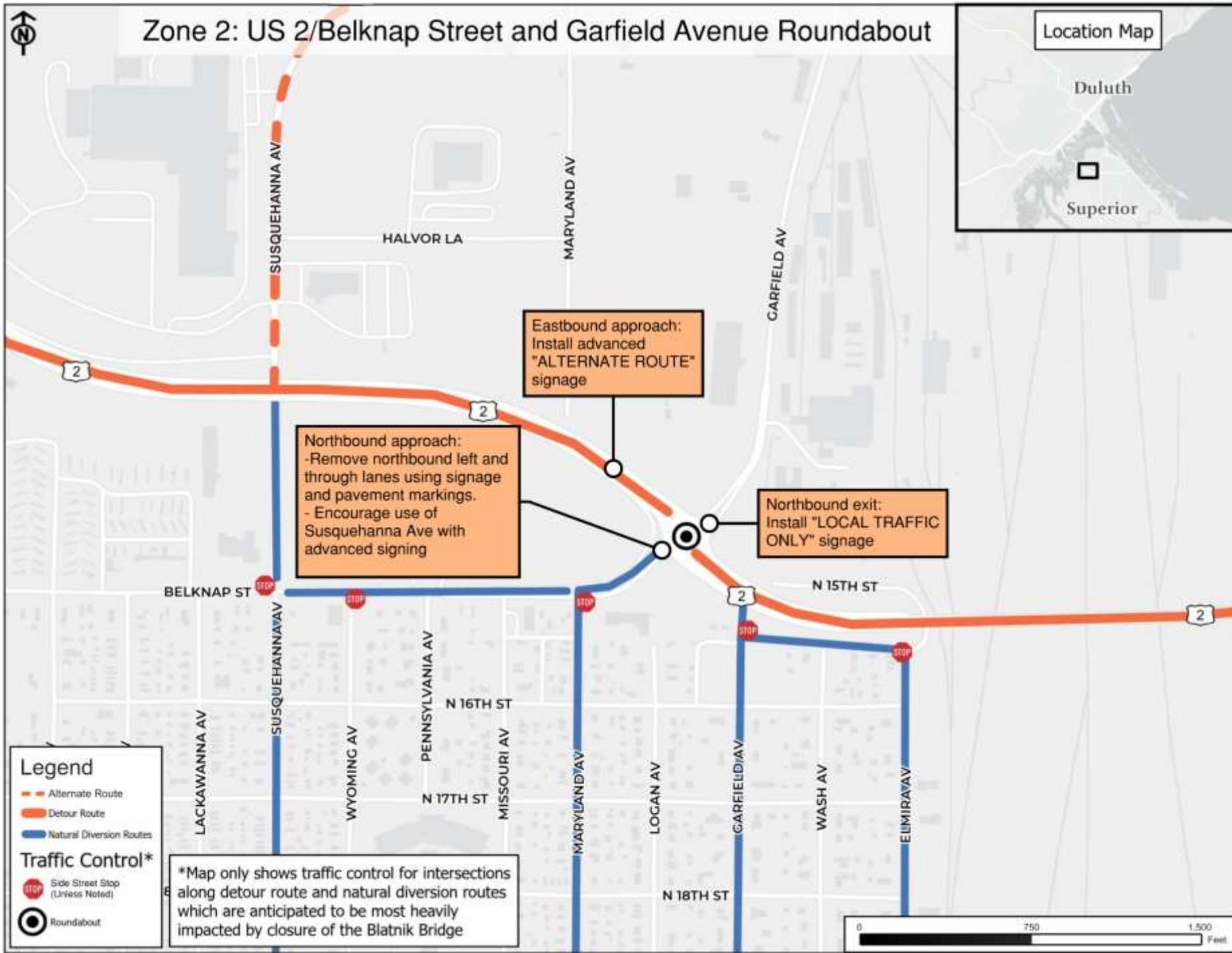
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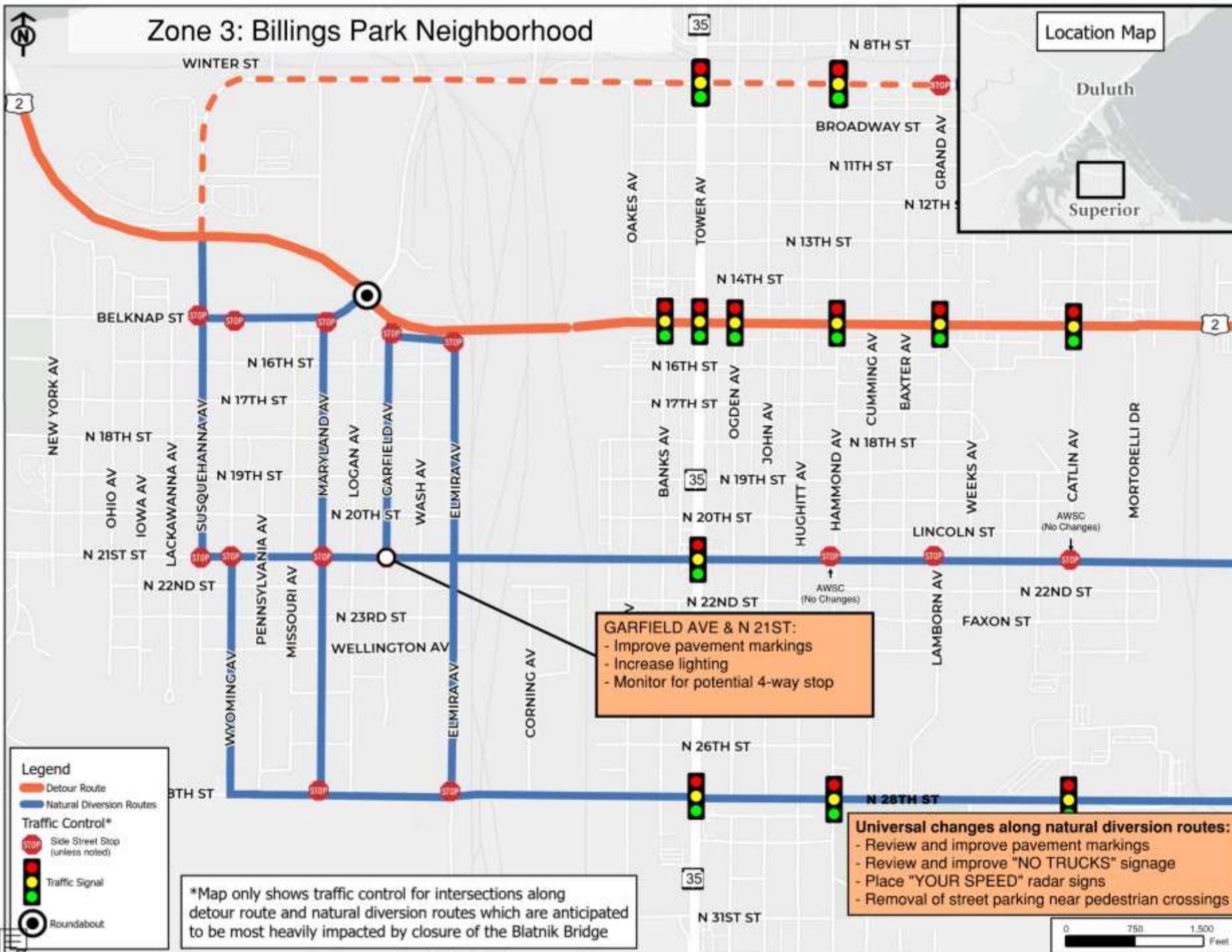
# Belknap



# Zone 2: US 2/Belknap Street and Garfield Avenue Roundabout



# Zone 3: Billings Park Neighborhood



Location Map

Duluth

Superior

**Legend**

- Detour Route
- Natural Diversion Routes

**Traffic Control\***

- Side Street Stop (unless noted)
- Traffic Signal
- Roundabout

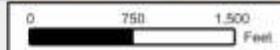
**GARFIELD AVE & N 21ST:**

- Improve pavement markings
- Increase lighting
- Monitor for potential 4-way stop

**Universal changes along natural diversion routes:**

- Review and improve pavement markings
- Review and improve "NO TRUCKS" signage
- Place "YOUR SPEED" radar signs
- Removal of street parking near pedestrian crossings

\*Map only shows traffic control for intersections along detour route and natural diversion routes which are anticipated to be most heavily impacted by closure of the Blatnik Bridge





# Zone 4: Winter Street

**WINTER ST & HAMMOND AVE:**

- Optimize signal timings to ensure acceptable prioritization of the Alternate Route
- Consider installing overhead lane-control traffic signal heads for Alternate Route through movements

**WINTER ST & TOWER AVE:**

- Optimize signal timings to ensure acceptable prioritization of the Alternate Route

**SUSQUEHANNA AVE/WB US 2 ENTRANCE RAMP**

- Improve pavement markings (stop lines).
- Increase intersection lighting.
- Install NB LT storage lane or NB "bypass" lane to allow NBLT and NB Through vehicles to operate independently.

**WINTER ST & GRAND AVE | WINTER ST & CATLIN AVE:**

- Consider allowing free flow traffic on Winter St.
- Improve pavement markings
- Increase lighting

**US 53 (2ND ST) & US 2 (BELKNAP ST):**

- Optimize signal timings to prioritize the Alternate Route

**Universal changes along Alternate Route:**

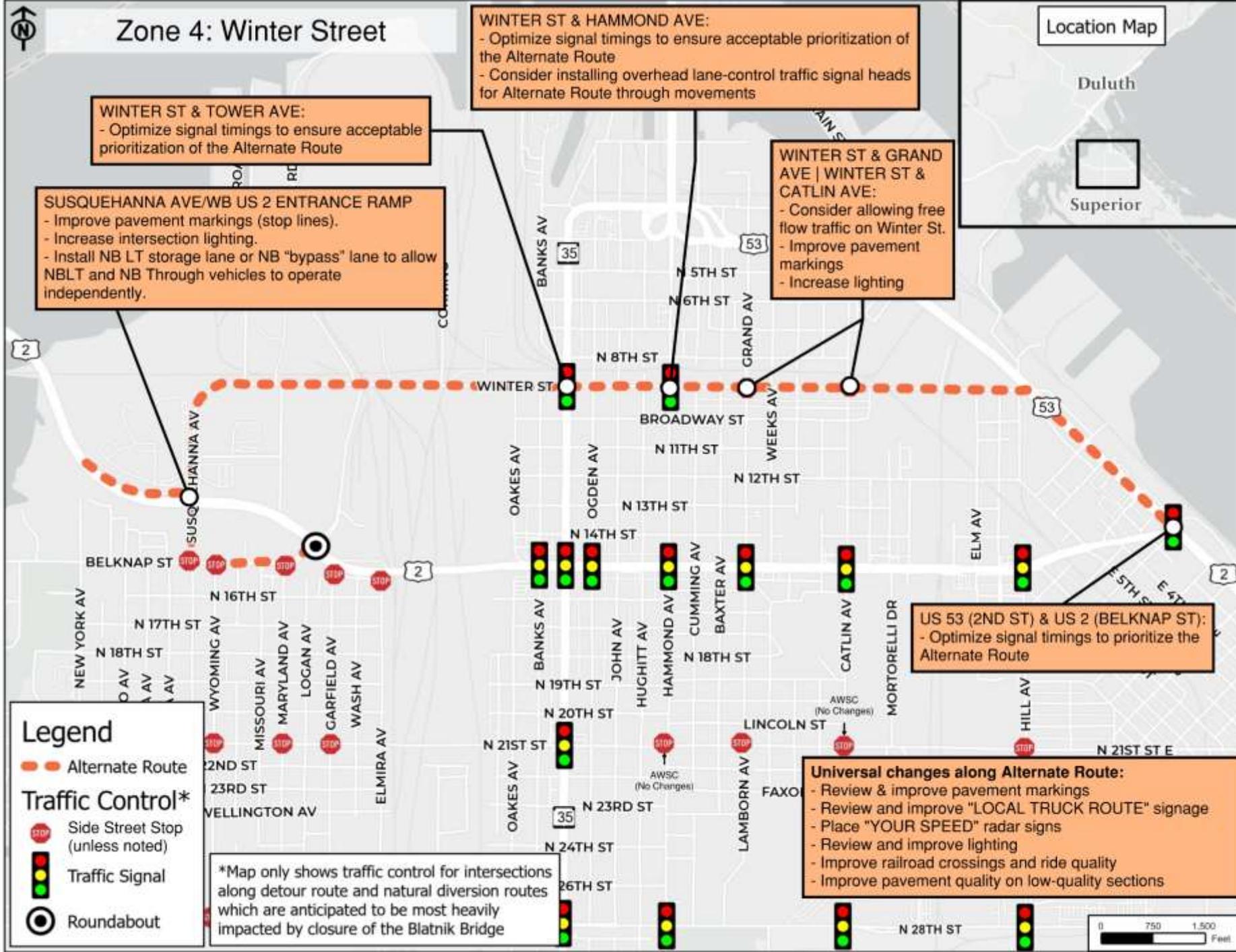
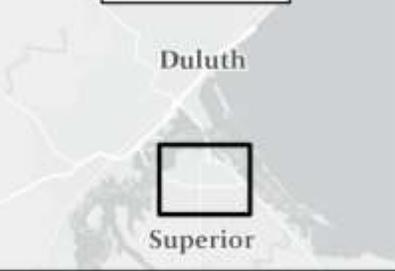
- Review & improve pavement markings
- Review and improve "LOCAL TRUCK ROUTE" signage
- Place "YOUR SPEED" radar signs
- Review and improve lighting
- Improve railroad crossings and ride quality
- Improve pavement quality on low-quality sections

**Legend**

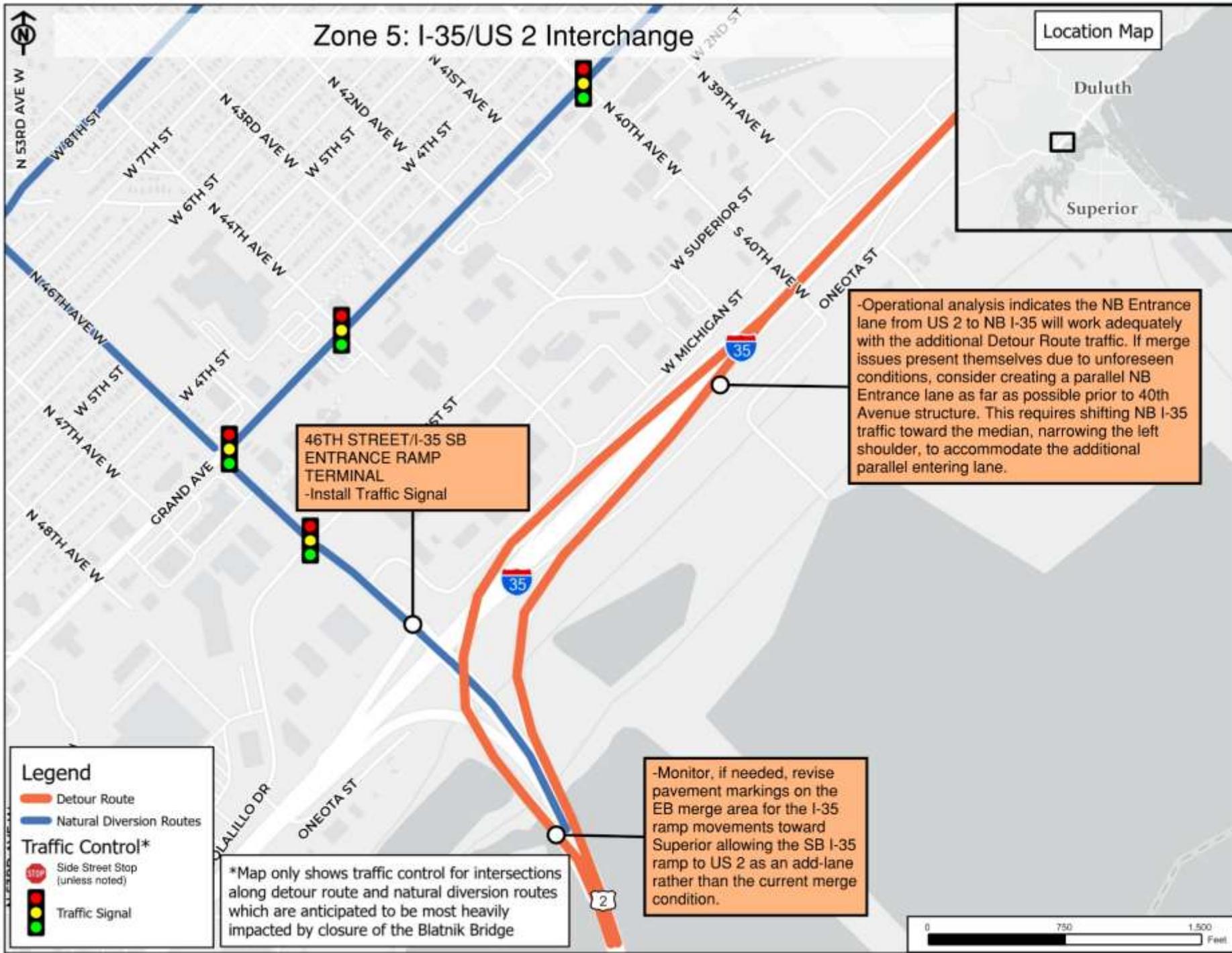
- Alternate Route
- Side Street Stop (unless noted)
- Traffic Signal
- Roundabout

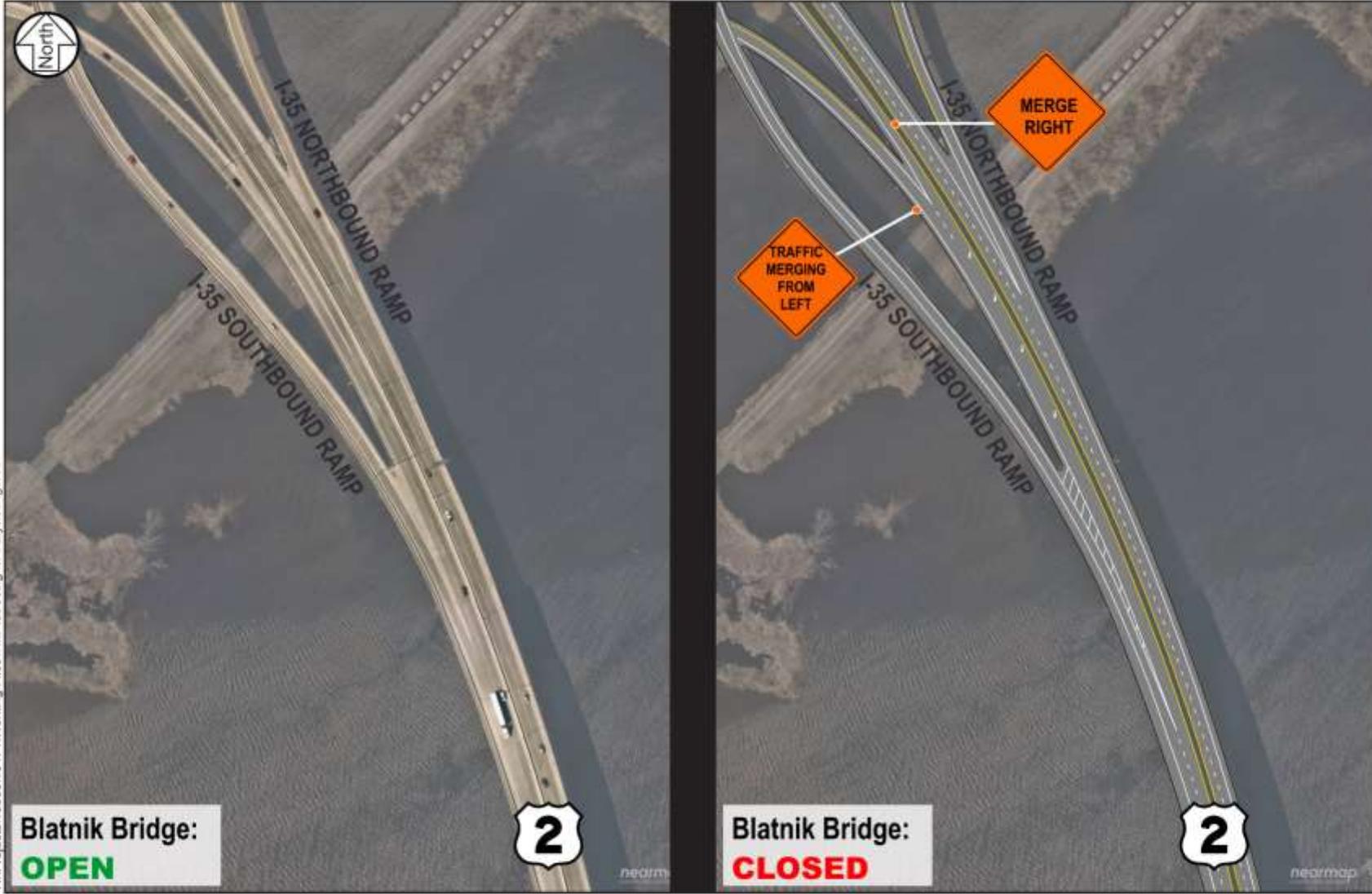
\*Map only shows traffic control for intersections along detour route and natural diversion routes which are anticipated to be most heavily impacted by closure of the Blatnik Bridge

## Location Map



# Zone 5: I-35/US 2 Interchange



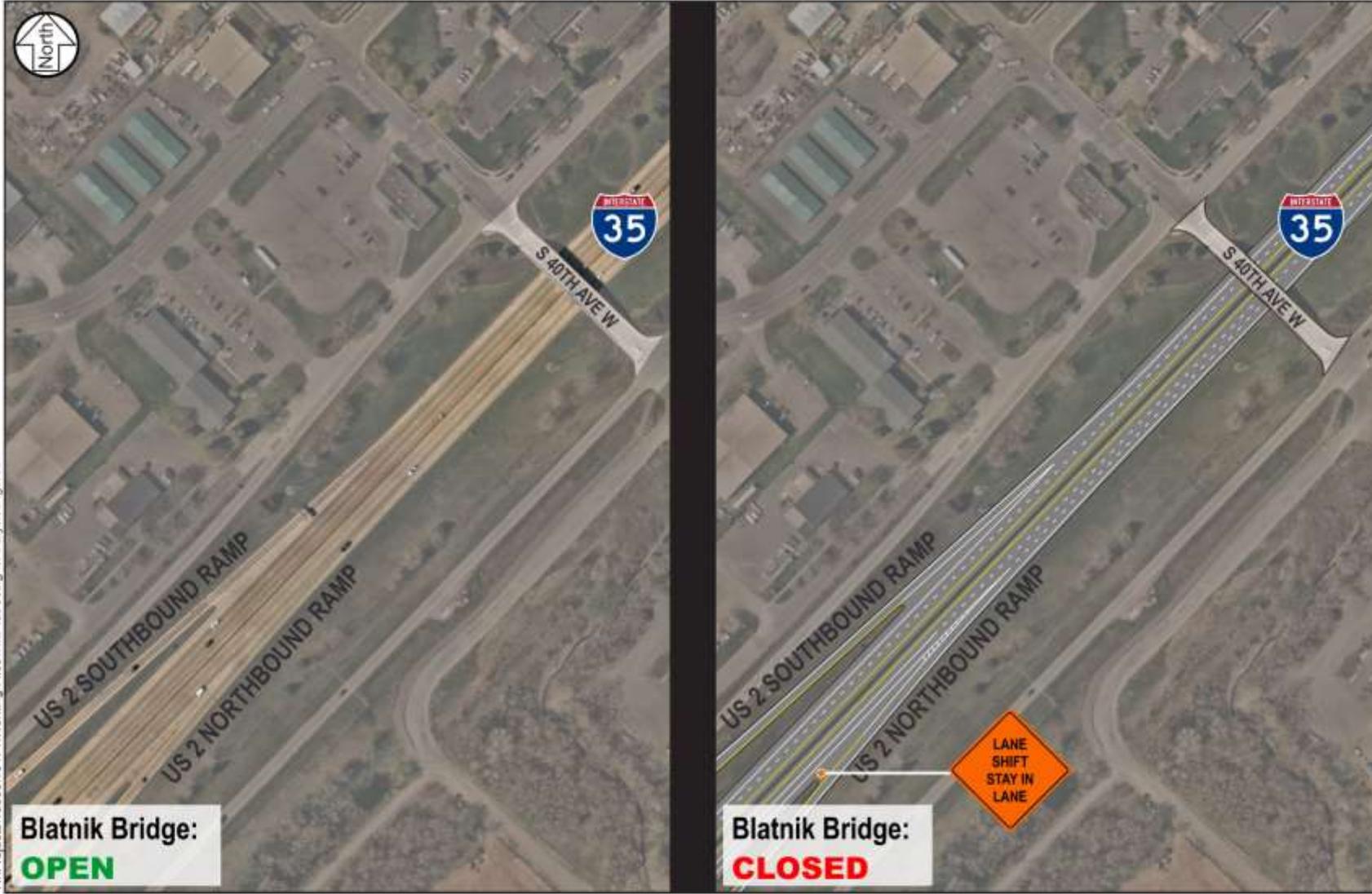


**Consider: Improvements for US 2 and I-35 Interchange - Duluth, MN**

Blatnik Bridge - Traffic Management Plan  
MnDOT and WisDOT

SRF No. 13174  
July 2024





H:\Projects\13000\13174\Working Files\TMP\Streight Analysis\Figures

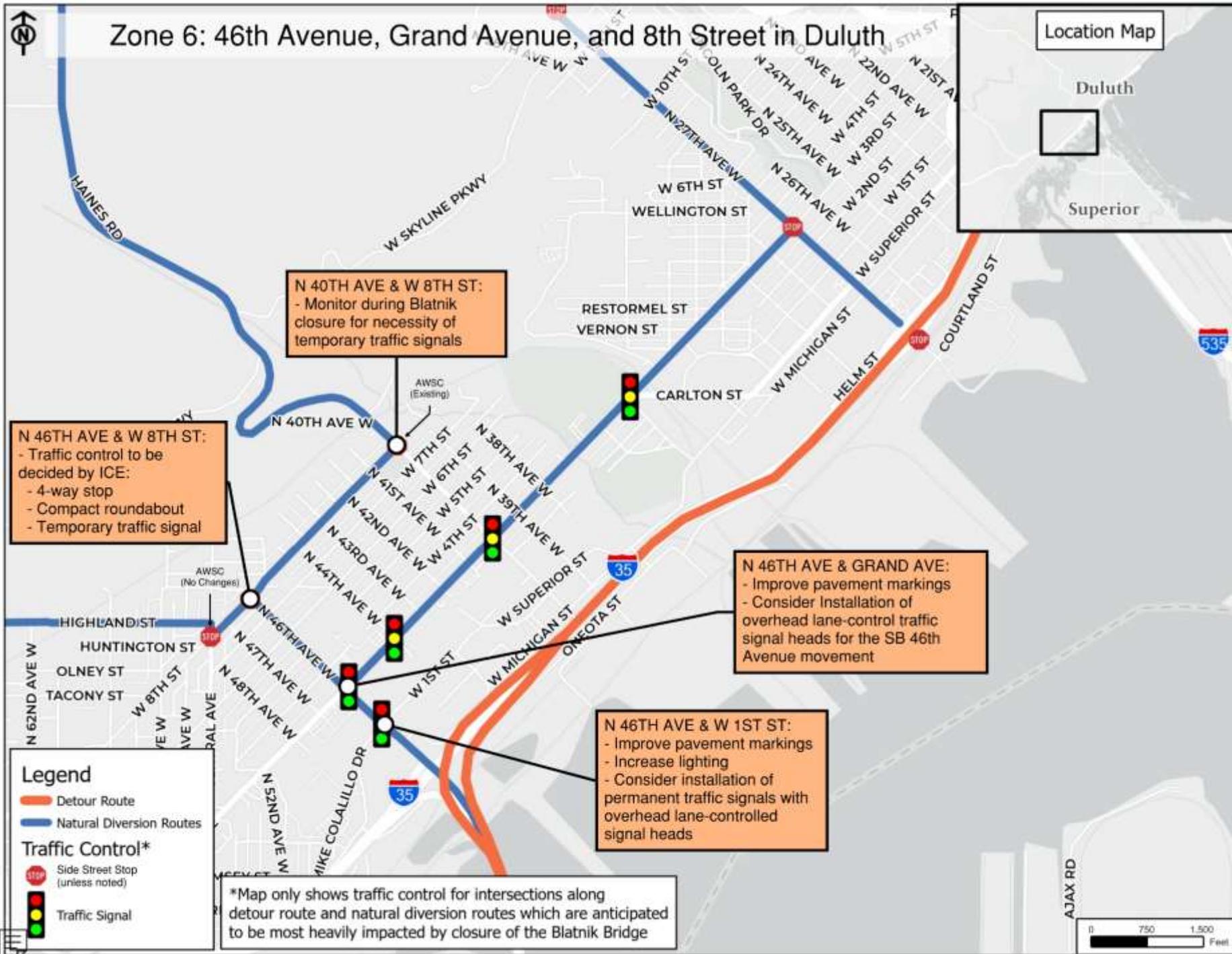


Consider: Improvements for I-35 Merge Condition - Duluth, MN

Blatnik Bridge - Traffic Management Plan  
MnDOT and WisDOT



# Zone 6: 46th Avenue, Grand Avenue, and 8th Street in Duluth



**N 46TH AVE & W 8TH ST:**  
 - Traffic control to be decided by ICE:  
 - 4-way stop  
 - Compact roundabout  
 - Temporary traffic signal

**N 40TH AVE & W 8TH ST:**  
 - Monitor during Blatnik closure for necessity of temporary traffic signals

**N 46TH AVE & GRAND AVE:**  
 - Improve pavement markings  
 - Consider Installation of overhead lane-control traffic signal heads for the SB 46th Avenue movement

**N 46TH AVE & W 1ST ST:**  
 - Improve pavement markings  
 - Increase lighting  
 - Consider installation of permanent traffic signals with overhead lane-controlled signal heads

**Legend**

- Detour Route
- Natural Diversion Routes

**Traffic Control\***

- Side Street Stop (unless noted)
- Traffic Signal

\*Map only shows traffic control for intersections along detour route and natural diversion routes which are anticipated to be most heavily impacted by closure of the Blatnik Bridge



# Stay Connected

- Sign up for email updates on the project website
- Summary of public comments will be posted on the project website
- Look for upcoming events

## I-535 Blatnik Bridge

Duluth, Minn. and Superior, Wis.

[Project Home](#) [Accessibility](#) [Meetings](#) [History](#) [Contacts](#)

### About this project

MnDOT is working toward a future project to address concerns about the John A. Blatnik Bridge, one of two bridges that connects Duluth, Minn., to Superior, Wis. Carrying I-535 over the St. Louis Bay, the Blatnik is an important freight and commercial connection between the Twin Ports.

Jointly owned and managed by MnDOT and WisDOT, it is Minnesota's second longest bridge and serves an average of 33,021 cars traveling between the two cities each day. MnDOT will lead the project, which will address aging infrastructure, improve safety and better accommodate oversize/overweight loads.

For more information on the bridge, [click here](#).

### Project purpose

- Significant deterioration in truss elements



### Schedule

- 2020 to 2024: Preferred Alternative Selection and Environmental Documentation
- 2024 to 2026: Preliminary Design
- 2026 to 2028: Final Design
- 2028 to 2031: Construction

### Location

- I-535 over the St. Louis Bay between Duluth, Minn., and Superior, Wis.

### Benefits

- Improve safety
- Better accommodate oversize/overweight loads

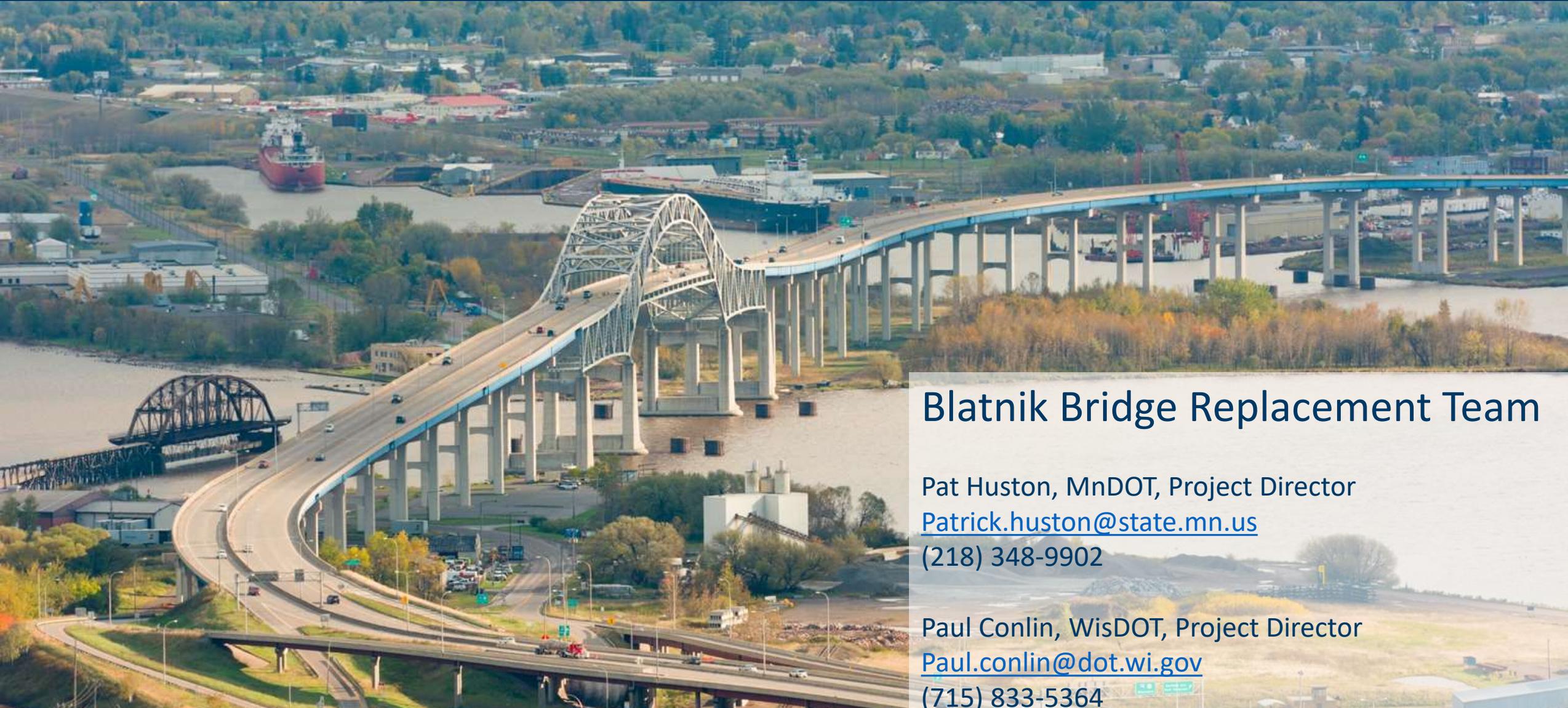
### Cost

- Unknown at this time

### Connect with us

-  Sign up for project email updates
-  Follow us on Facebook

# Thank you!



## Blatnik Bridge Replacement Team

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