



MNDOT DISTRICT 3 FREIGHT PLAN

ADVISORY COMMITTEE MEETING #3

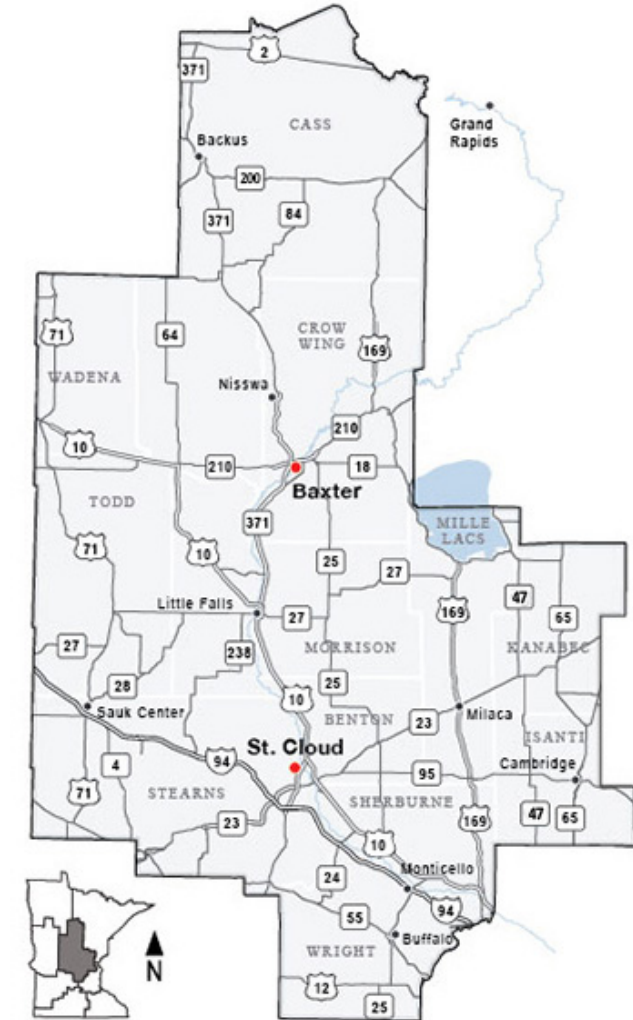
MARCH 16, 2020

Introductions

- Andrew Andrusko: Project Manager, Freight Office
- Steve Voss: District 3 Planning Director
- Jon Mason: District 3 Assistant Planning Director
- Stephanie Castellanos: District 3 Public Engagement Coordinator
- Consultant Team: SRF Consulting, Cambridge Systematics
- Advisory Committee Members

Agenda

- Introductions
- Advisory Committee Meeting #2 Recap
- Project Overview
- Project Schedule
- MN Highway Freight Program Solicitation Update
- Freight Stakeholder Priorities
- Freight Needs
- Freight Gaps
- Freight Opportunities Discussion
- Next Steps



MnDOT District Planning Effort



- Developing District Freight Plans for all Districts
 - Districts 1, 2, 3, and 8 all currently underway or nearing completion
- Pre-cursor effort to prepare for Statewide Freight Plan
- Identify key issues/opportunities for each District
- Consistent approach for each District

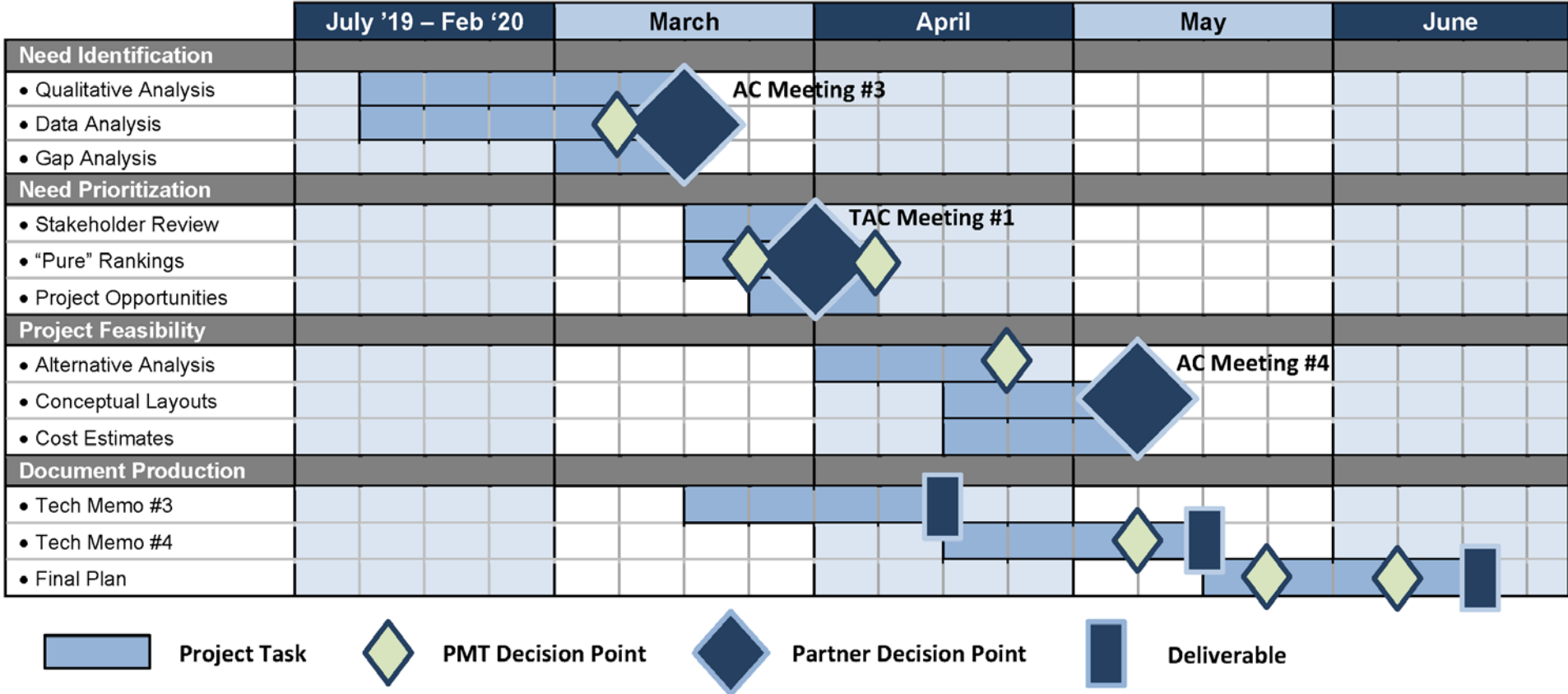
Plan of Work

- Task 1: Stakeholder Engagement
- Task 2: MN Freight and Investment Plan Synthesis
- Task 3: Data Analysis
- Task 4: SWOT Analysis
- Task 5: Implementation Plan
- Task 6: Project Feasibility
- Task 7: District 3 Freight Plan Development

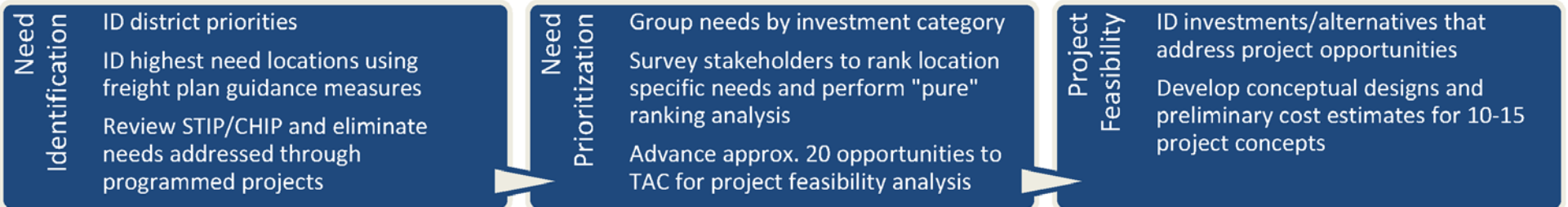


We are here!

District 3 Freight Plan Schedule - March through June



Task Descriptions



Key Project Deliverables

- **Project Management Plan: Complete**
- **Communications Plan: Complete**
- **Document Synthesis Tech Memo: Complete**
- **Data Analysis Tech Memo: Physical System Profile, Freight Demand Profile, Regional Economic and Industry Supply Chain Profile: Complete**
- **SWOT Workshop: Complete**
- **Implementation Plan: Initial analysis complete; tech memo forthcoming**
- Conceptual Drawings, Preliminary Schematics and Cost Estimates (10 Projects)
- Draft and Final District 3 Freight Plan

MN Highway Freight Program Solicitation Update

- ***Information from Andrew***

Project Identification Process

- Review stakeholder priorities
 - Plan Synthesis (Technical Memorandum #1)
 - Strengths, Weaknesses, Opportunities, and Threats (SWOT) per the Advisory Committee
 - District 3 Manufacturers' Perspectives Study
- Identify areas of highest need in the freight network using quantitative data
- Organize MnDOT, St. Cloud APO, and County programmed projects to identify gaps
- Rank the gaps using measures organized by the District Freight Plan Guidance and obtain stakeholder input for prioritization of opportunities
- Finalize top recommended projects and identify a portion of those that will be conceptually designed

Freight Priorities

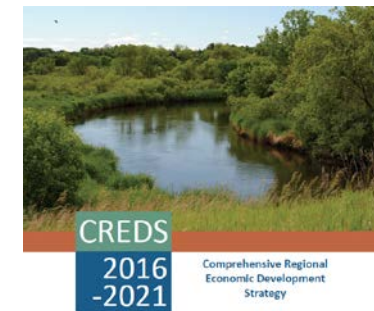
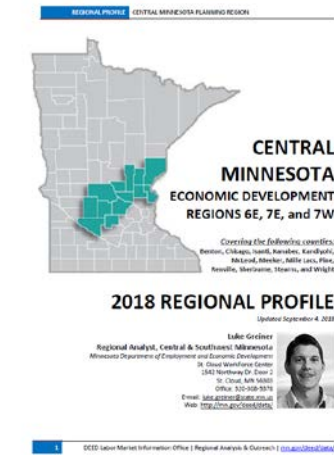
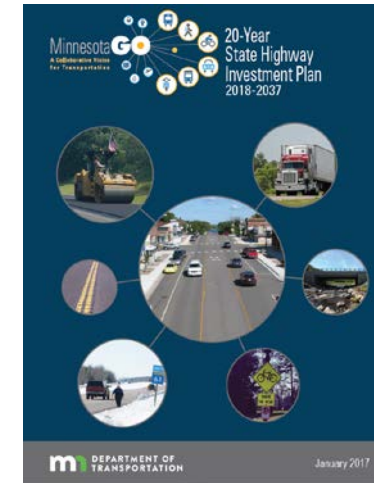
PREVIOUS PLANS | SWOT | MANUFACTURERS' PERSPECTIVES STUDY

Background

- Stakeholder input from District 3 staff, individuals from county and local agencies, and input from the private sector all play a critical role toward informing recommended projects.
- Stakeholder resources reviewed to-date include:
 - Plan Synthesis (Technical Memorandum #1)
 - Strengths, Weaknesses, Opportunities, and Threats (SWOT) per the Advisory Committee
 - District 3 Manufacturers' Perspectives Study

Identified Needs from Recent Plans

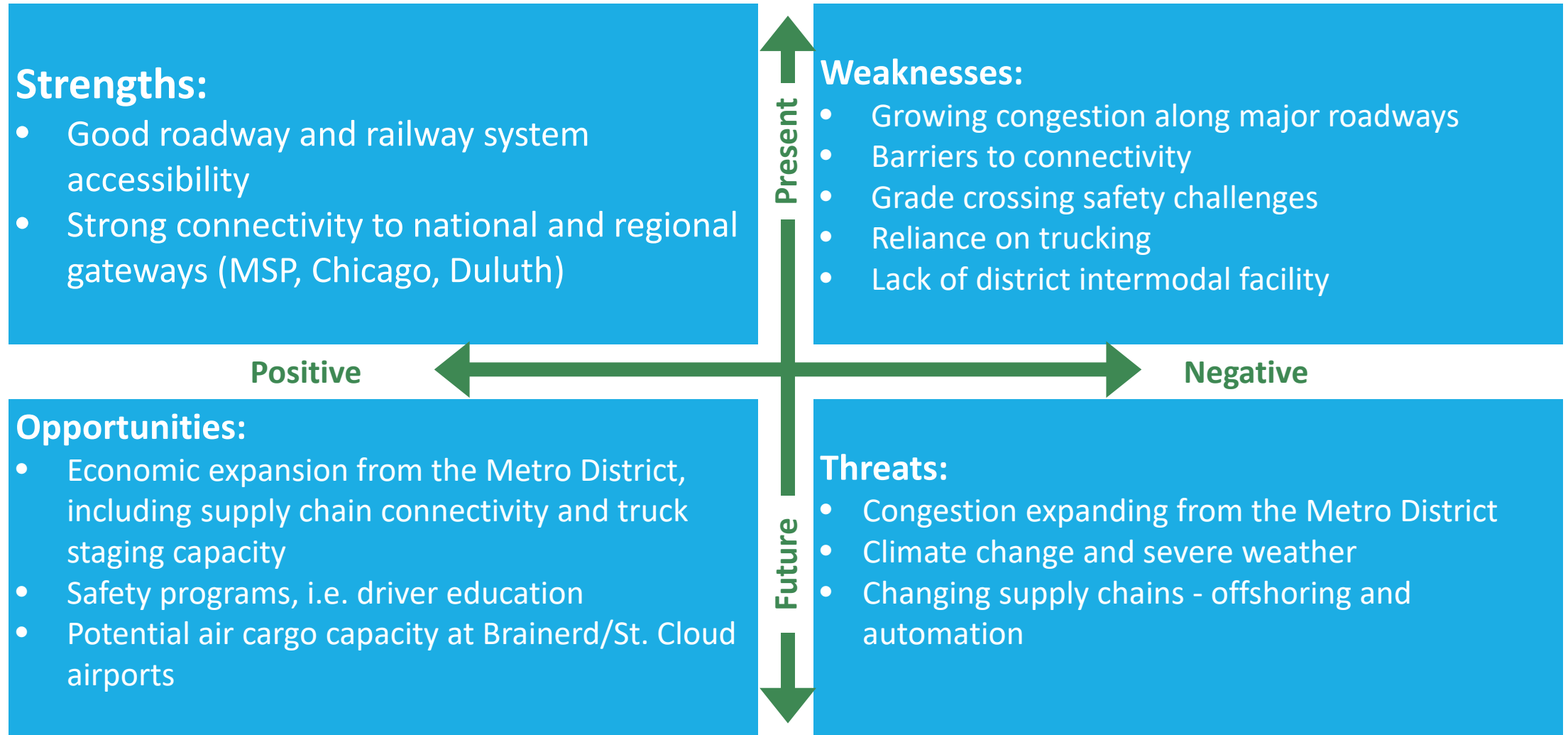
- Increased freight demand due to population increases and rapid logistics/industrial growth along the I-94 corridor
- Congestion/slow speeds, especially on I-94
- Truck parking challenges on interstates and staging for the Minneapolis – St Paul area
- At-grade crossing safety with increasing train volumes
- Lack of intermodal rail facilities
- Poor pavement condition in areas of several major freight corridors, including US 10, US 12, and TH 25



SWOT Update

- Obtained feedback from the Advisory Committee in the second meeting held in December regarding the District 3 transportation network's:
 - **Strengths:**
 - What are District 3's freight-related assets?
 - What makes District 3 a strong place for freight transportation?
 - **Weaknesses:**
 - What are the freight-related areas where other Districts have stronger freight transportation?
 - What freight-related elements does District 3 currently lack?
 - **Opportunities:**
 - What are current trends that District 3 could take advantage of to strengthen its freight transportation?
 - What are "easy wins" to make the freight transportation system more effective in District 3?
 - **Threats:**
 - What are freight-related trends that could negatively impact District 3?
 - What possible disruptions to District 3's freight transportation system do you see?

SWOT Update



D3 Manufacturers' Perspectives Study

- Contacted 465 businesses in District 3
 - 53 carriers
 - 139 North manufacturers
 - 273 South manufacturers
- Completed 125 interviews
 - 21 carrier
 - 44 north
 - 60 south
- Analysis of feedback from the 125 interviews will be completed in late-April

Key MPS Updates

- Businesses between St. Cloud and the Metro often reference congestion as an ongoing concern
- Construction along I-94 (and other roadways) is a common issue raised; this includes communicating construction updates to businesses
- Various location-specific issues have been raised by manufacturers
 - Segments that routinely need additional snow/ice control
 - Problematic intersections due to congestion, traffic signals, and turn lanes
 - Selected comments on signage, advanced warning signs, and bridge clearance
- Selected comments desiring an additional river crossing between Clearwater and Monticello to connect I-94 and US 10
- Other input from MnDOT staff?

MPS Short-term Action Item Examples

■ Mobility

- Signal timing improvements for TH 23 in St. Cloud
- Low bridge on Wright CR 109 just west of TH 55

■ Safety

- TH 55 from Buffalo to Kimball
- TH 25 & Wright CR 113 – limit use of right-turn lane as bypass
- TH 25 & Crow Wing CR 2 – improve site lines and warning of oncoming traffic/stop signage
- TH 371 & Veterans Street (Jenkins) – add right-turn lane or limit use of center lane as bypass
- Crow Wing CR 3 & CR 4 – improve warning of oncoming traffic/stop signage
- Implement “Trucks Entering” or other warning signs at multiple business locations

Key Takeaways

Freight Mobility and the Economy

D3 Priorities

- *Mobility improvements*
- *Intermodal facilities*
- *System resiliency*

Findings ...

- Mobility improvements are needed to sustain continued population and economic growth in the region.
- District 3's proximity to the Metro District is both a positive and negative; District 3 should work to capture benefits while minimizing negative impacts, i.e. congestion on I-94
- The District should explore opportunities for multimodal gateways (Brainerd/St. Cloud airports, intermodal facilities) to reduce reliance on trucking and facilities outside the district.
- The District does a good job preparing for and responding to weather. MnDOT should promote resiliency by continuing to improve its management of severe weather and climate change.

Key Takeaways

Freight Infrastructure

D3 Priorities

- *Connectivity*
- *Condition*

Freight Safety

D3 Priorities

- *At-grade rail crossings*
- *Safety programs*

Findings ...

- E/W and N/S connectivity and connections across some natural barriers are lacking, such as Mississippi River crossings connecting US10 and I-94.
- Adequate pavement condition for trucks on key routes helps keep freight moving.

Findings ...

- Additional investment in grade-crossing safety improvements is needed, especially along US10 corridor.
- Safety programs (i.e. safe driver training) are also opportunities to improve roadway safety.

Freight Needs Identification

AREAS OF HIGHEST NEED IN THE FREIGHT NETWORK

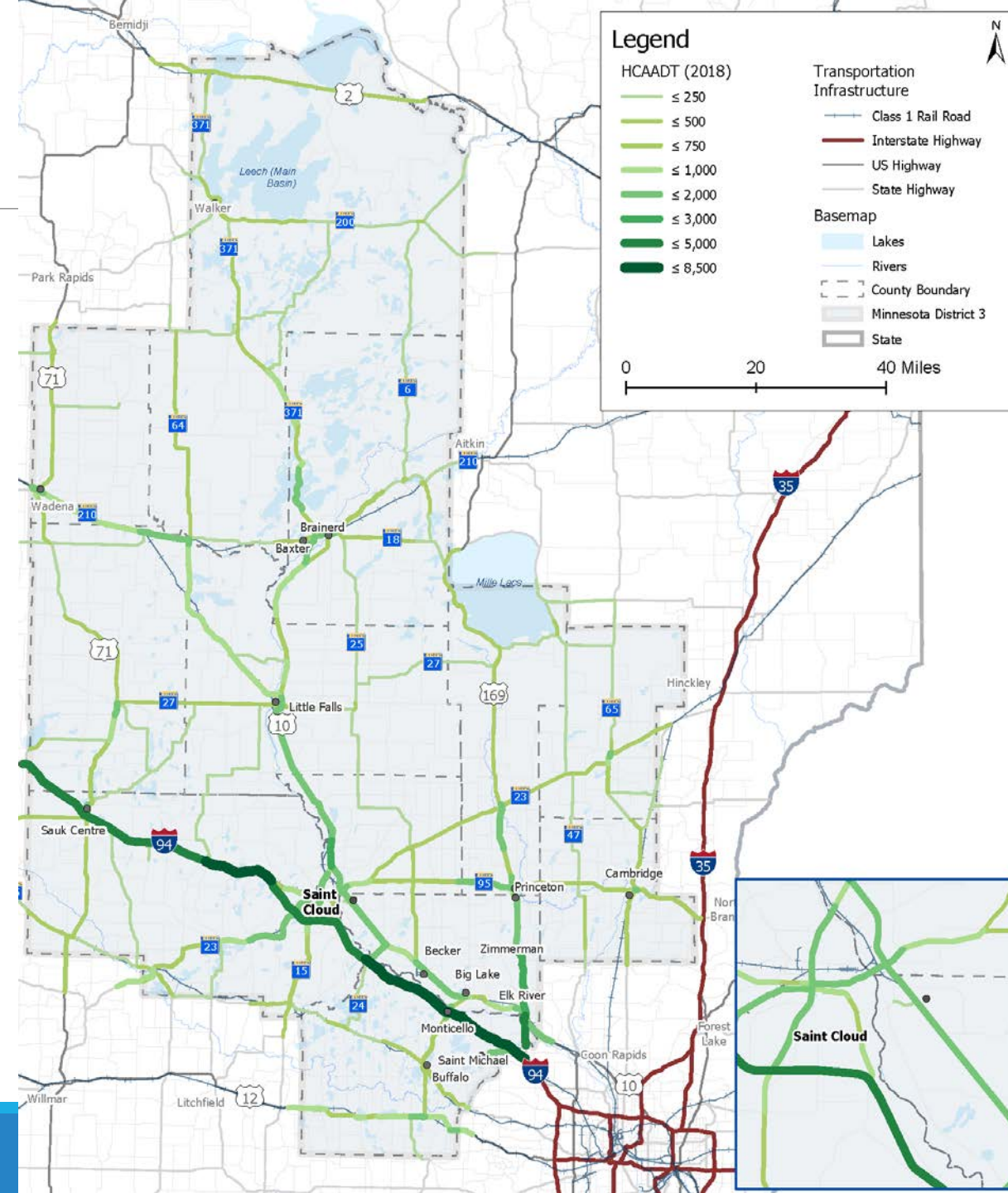
Need Analysis

- Identification of the highest-need areas across the following measures:
 - Heavy Commercial Average Annual Daily Traffic (HCAADT)
 - Heavy Commercial Vehicle Percent (HCAADT/AADT)
 - Truck Crash Frequency per Segment
 - Segment Safety Risk Rating (D3 District Safety Plan)
 - High-Risk At-Grade Railroad Crossing
 - Truck Travel Time Reliability
 - Bridge Clearance Restrictions
 - Bridge Weight Restriction
 - Bridge Condition

- Each of these represent a measure for MnDOT's District Freight Plan Guidance and how freight improvements are reviewed statewide

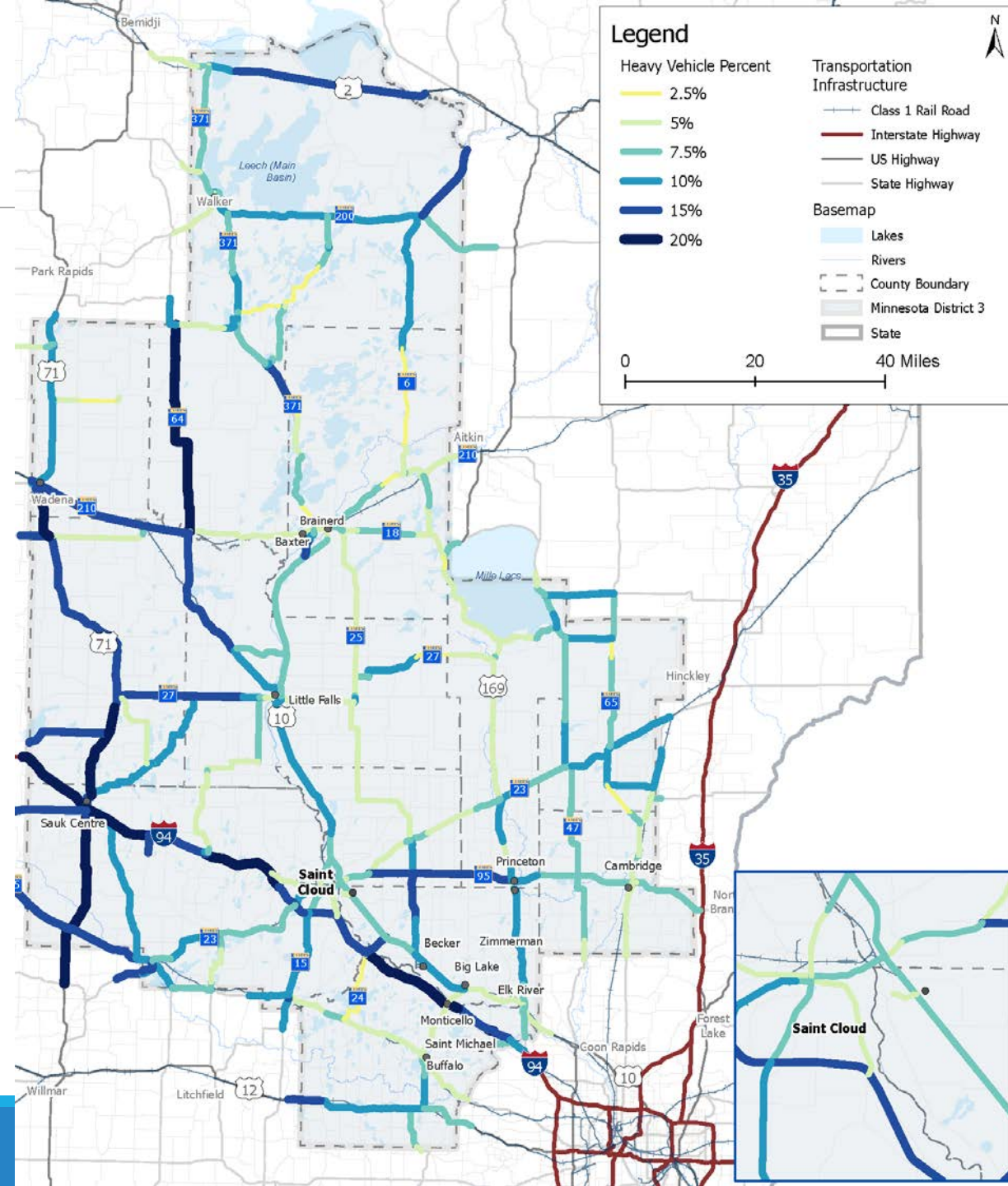
Average Daily Traffic (Heavy Commercial)

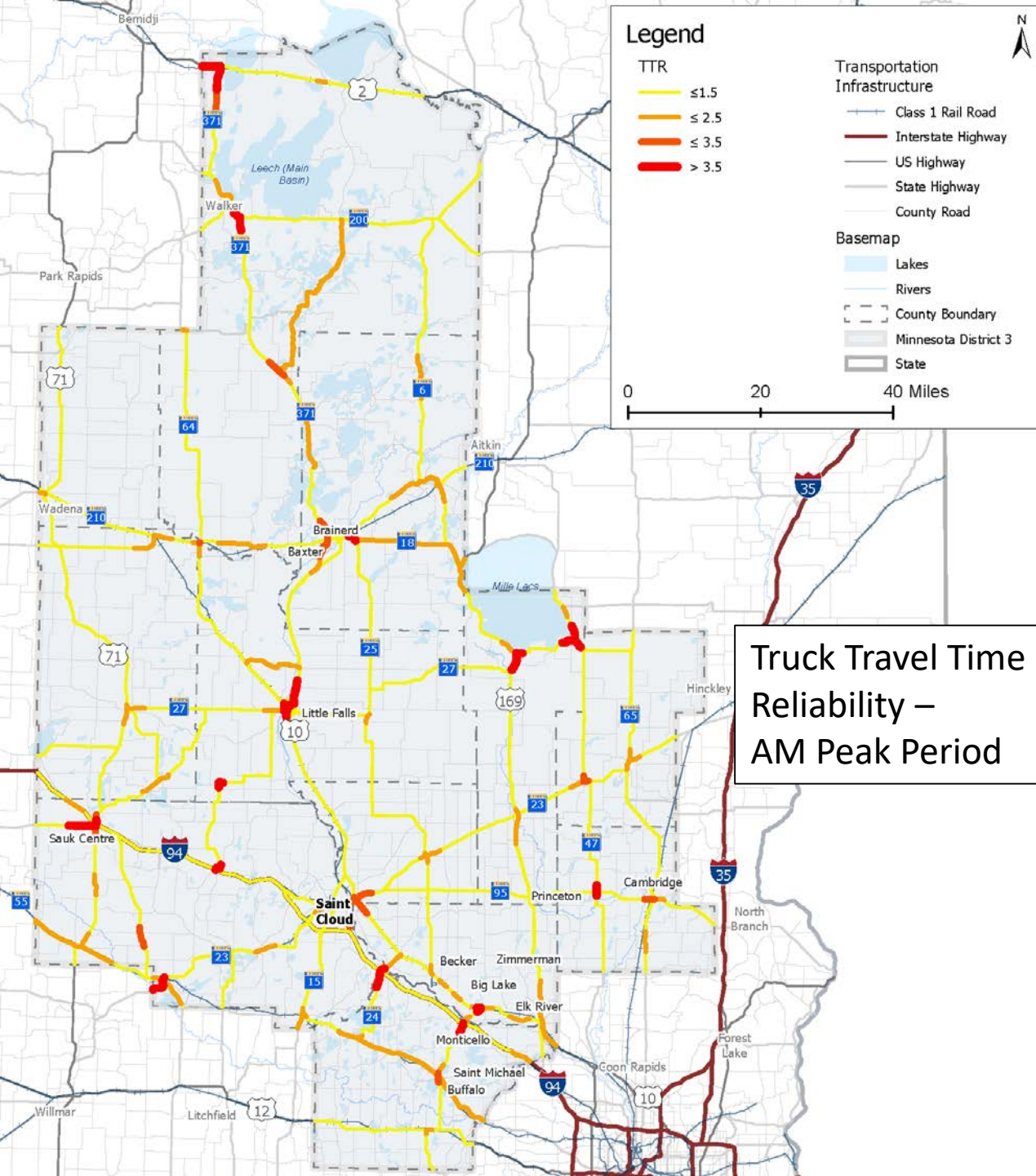
Roadway	HCAADT Range
I-94	3,800 – 8,500
TH 101	2,900 – 3,300
TH 169	200 – 2,900
TH 10	700 – 2,200
TH 23	300 – 2,000
TH 15	440 – 1,800
TH 24	40 – 1,700
TH 371	100 – 1,600
TH 241	1,300 – 1,400
TH 25	60 – 1,400



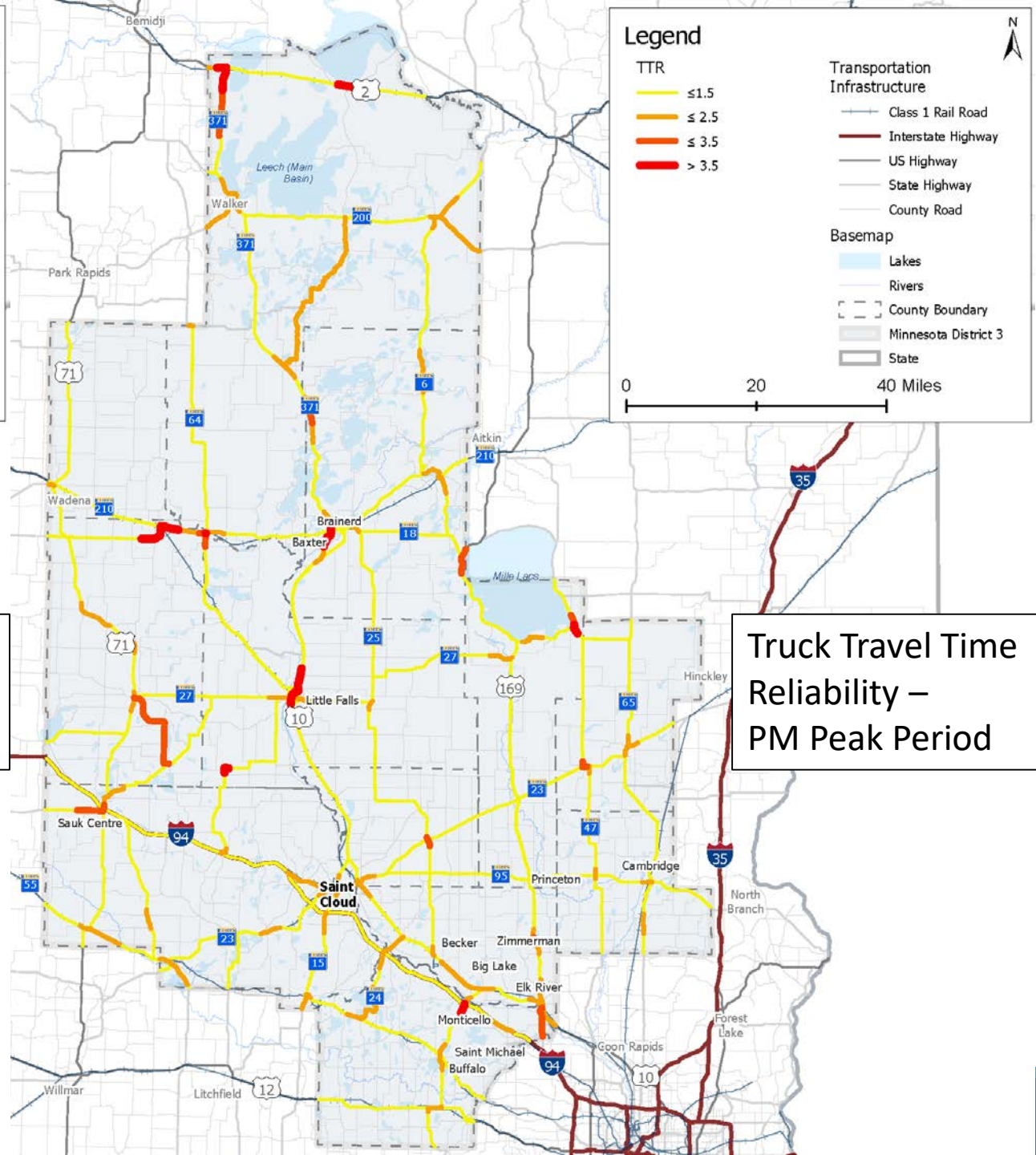
Heavy Vehicle Percentage

Roadway	Heavy Vehicle %
I-94	11% – 20%
TH 64	15% – 19%
TH 71	5% – 18%
TH 2	5% – 14%
TH 28	4% – 14%
TH 23	5% – 13%
TH 55	3% – 13%
TH 25	3% – 13%
TH 27	3% – 13%
TH 95	4% – 12%





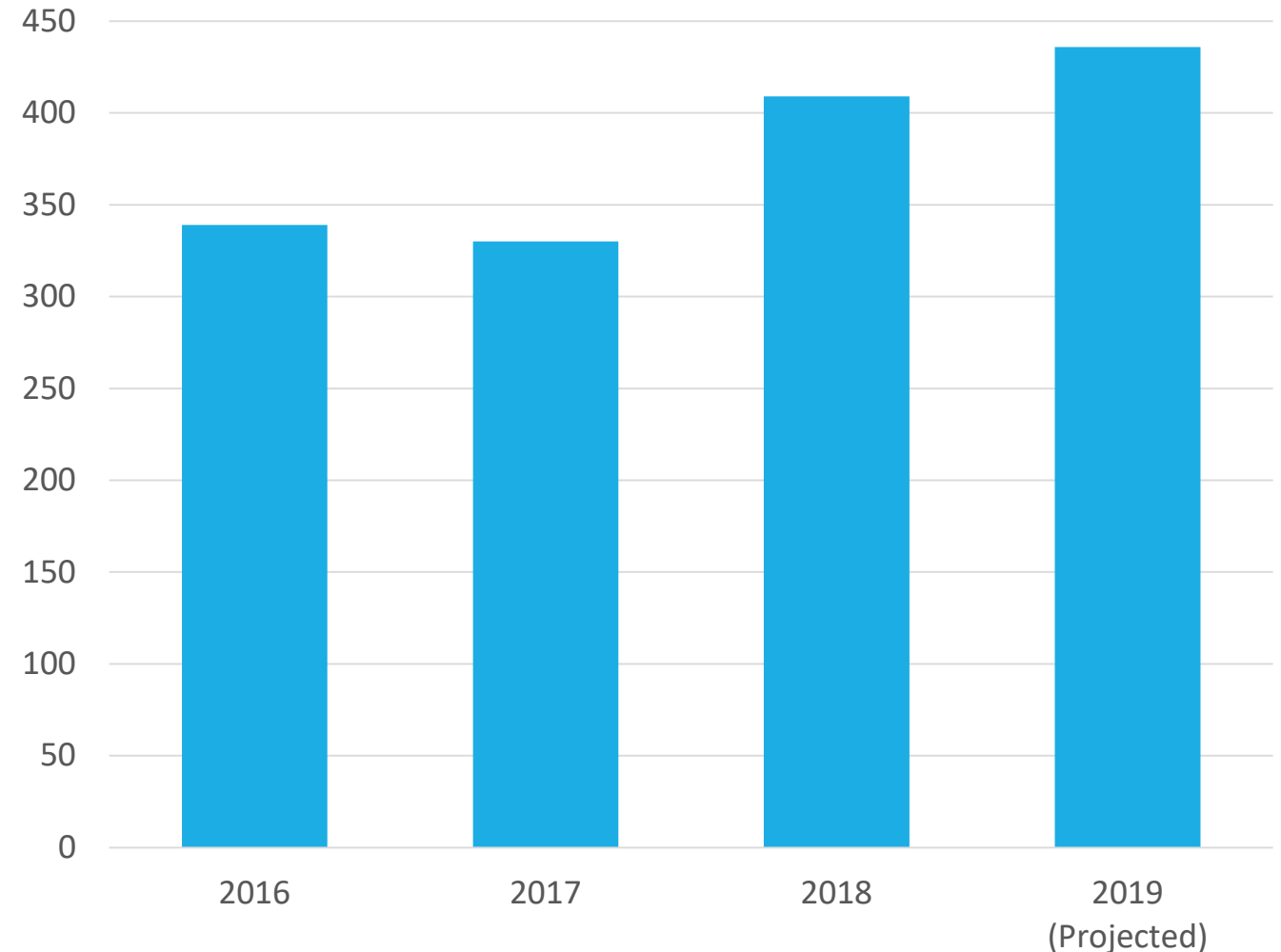
Truck Travel Time Reliability – AM Peak Period



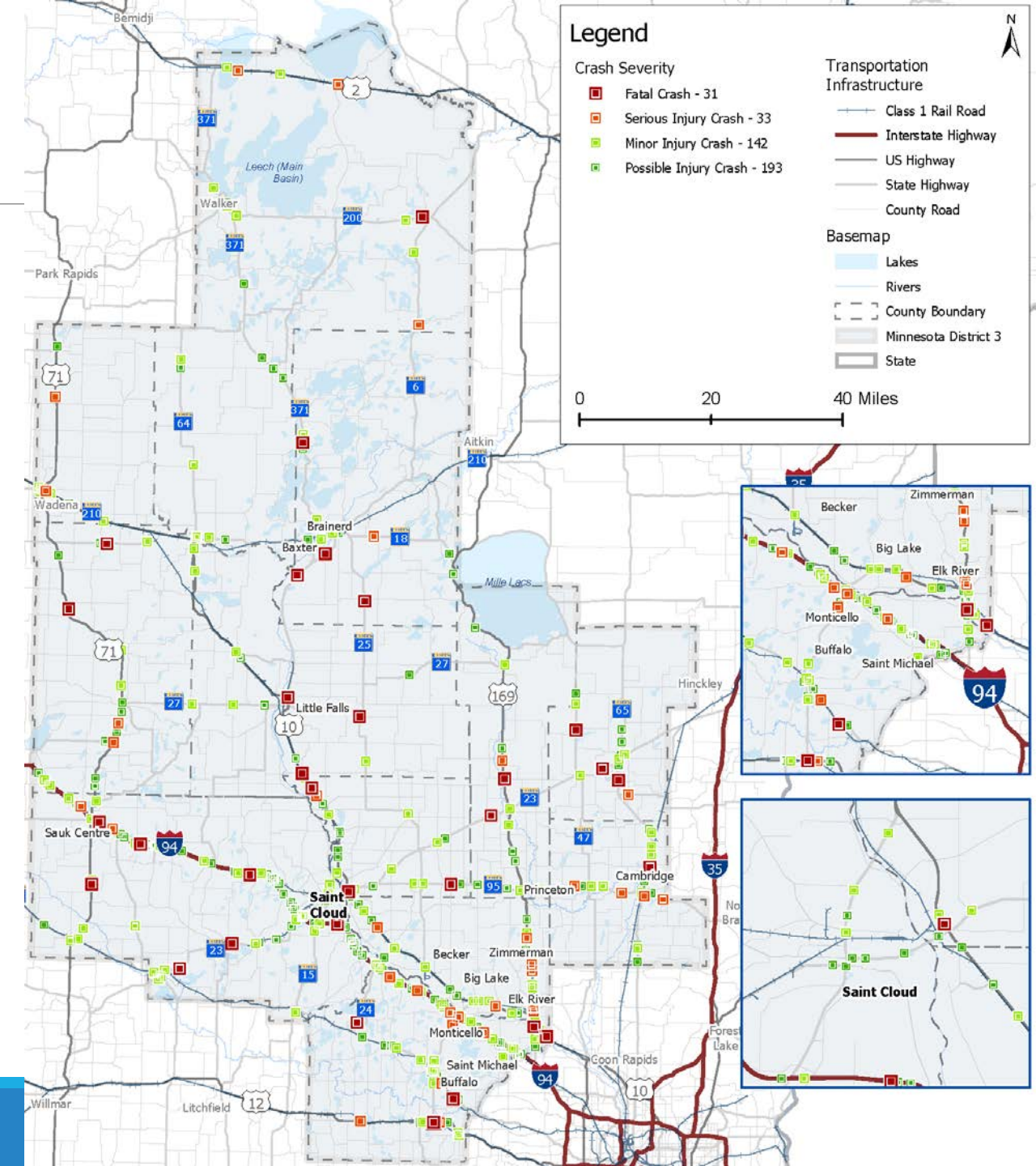
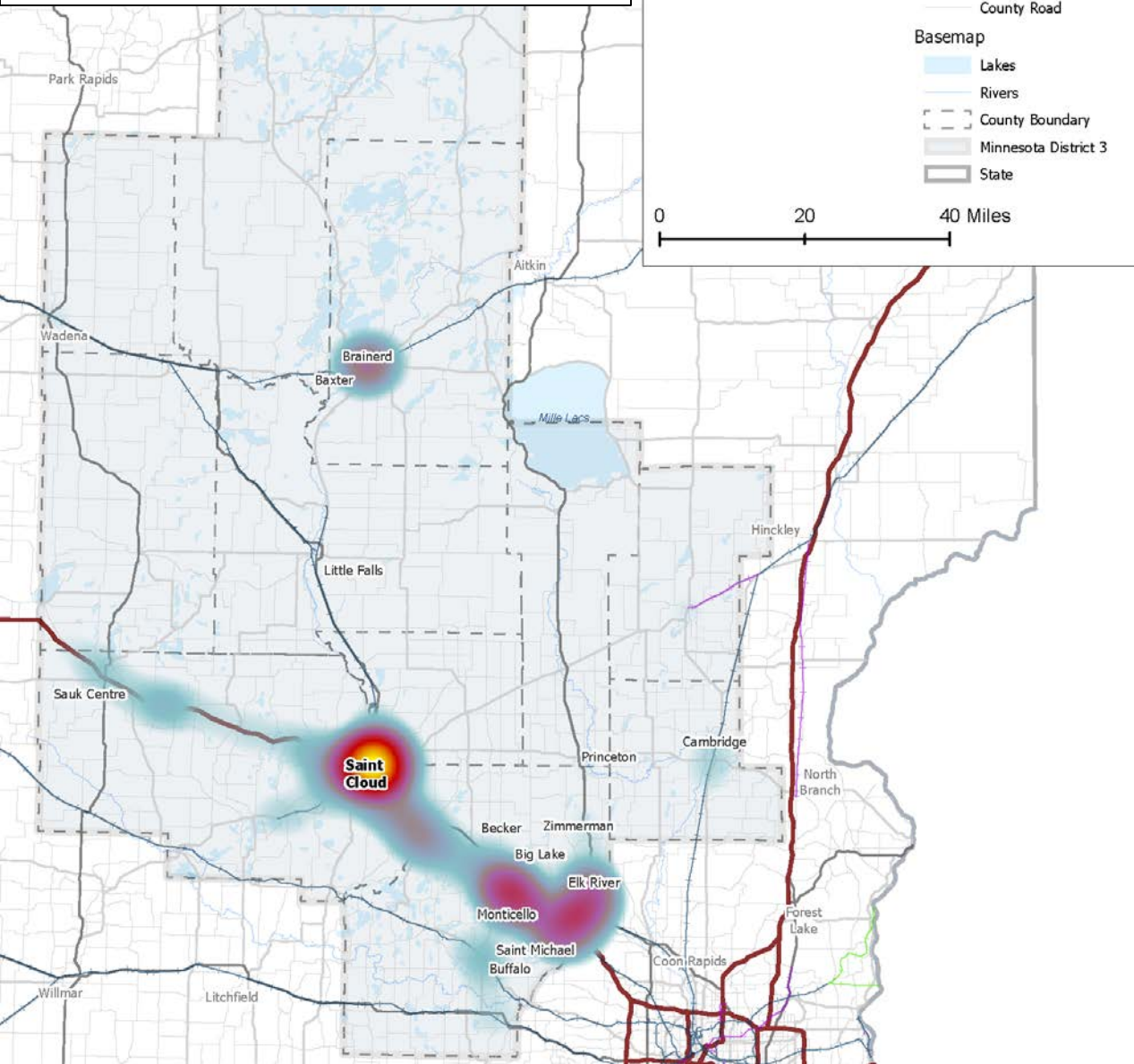
Truck Travel Time Reliability – PM Peak Period

Truck Crashes in District 3

- Crash data from MnDOT's Crash Mapping Analysis Reporting Tool (CrashMART)
 - Data from January 1, 2016 through October 11, 2019
 - Involving only trucks of various sizes
 - Analysis included all State highways and above
- Total crashes decreased from 2016 to 2017, but have since trended upward
- The remainder of 2019 was calculated using the average number of crashes per day in 2019 to develop the annual forecast
- **1,416 crashes total**



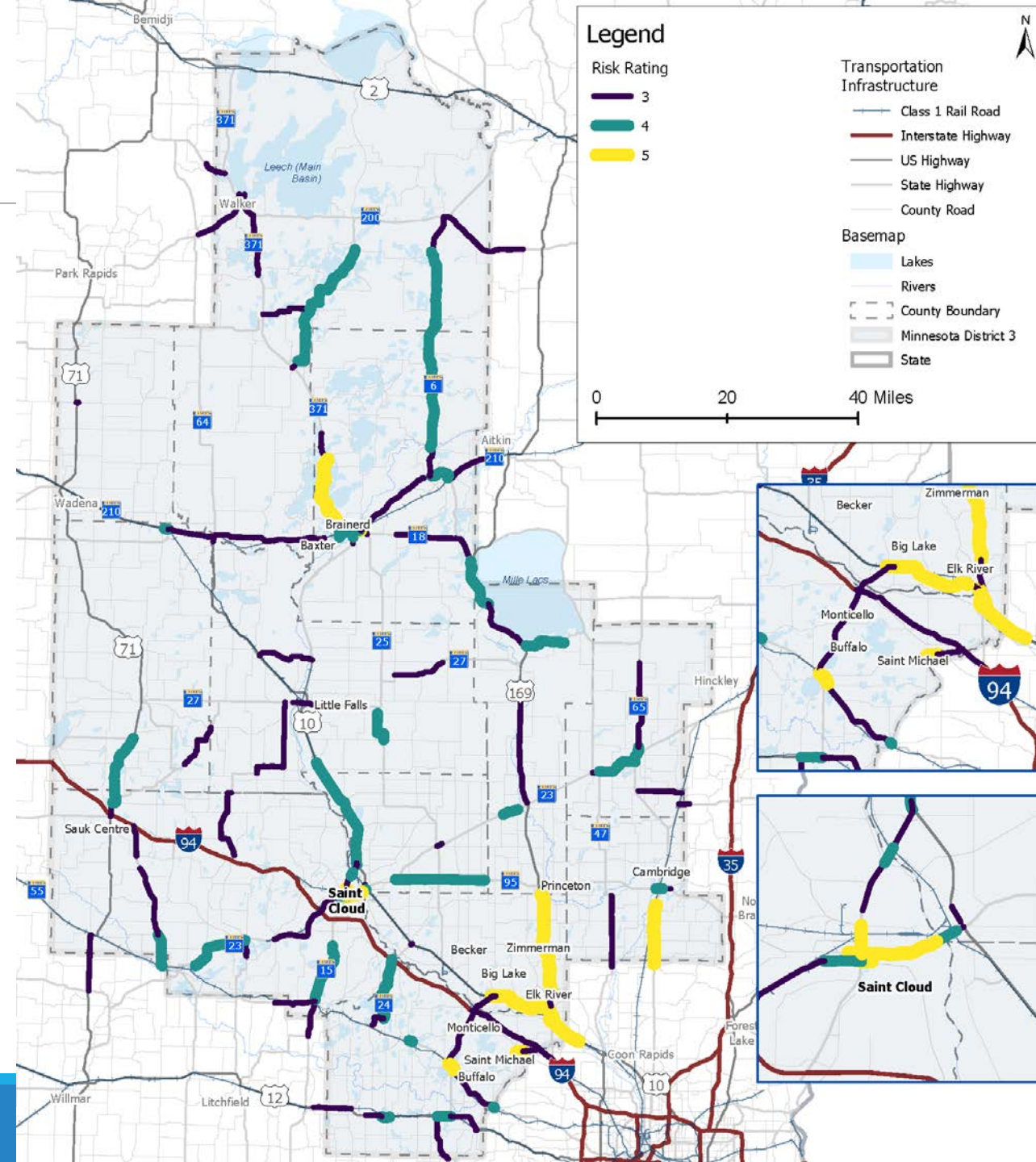
Truck Crash Frequency



Roadway Segment Safety Risk Rating

- Using the segment risk analysis performed as a part of the District 3 Safety Plan (2016)
- Eight high-risk segments** in District 3 of half are in urban areas

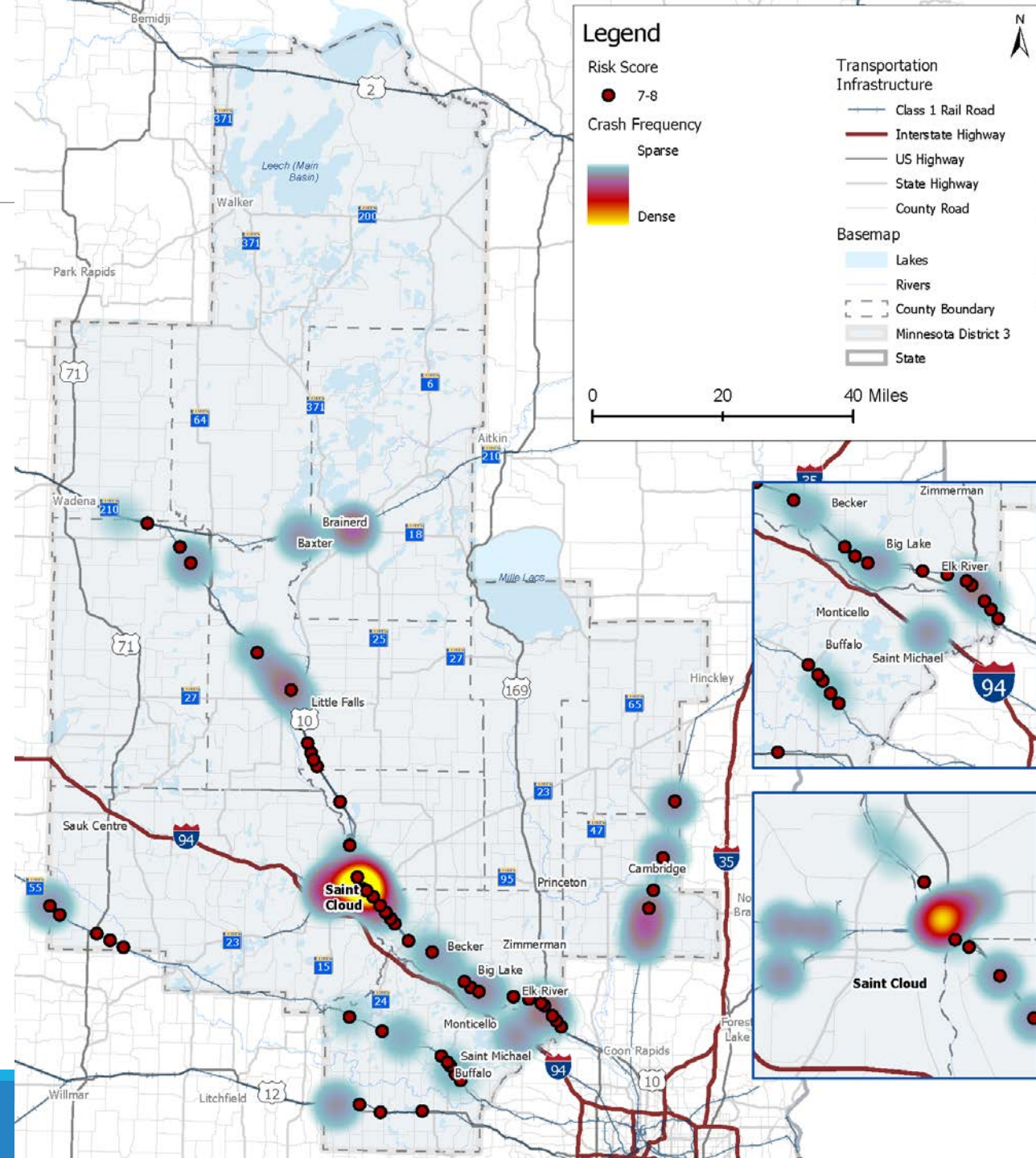
Roadway	Location
US 10	TH 25 to D3 Boundary
US 169	Elk River to TH 95
TH 65	TH 95 to D3 Boundary
TH 371	Baxter to Nisswa
TH 23	St. Cloud section
TH 55	Buffalo section
TH 210	Brainer section
TH 241	Saint Michael section



At-Grade Railroad Crossing Safety

- Uses the grade crossing risk factors developed and scored as a part of the MnDOT Rail Grade Crossing Safety Report (2016)
- Rating of 7+ equals high-risk
- Highest crash frequency in urban areas
- **52 high-risk crossings** in District 3 (sum of both active and passive crossings)

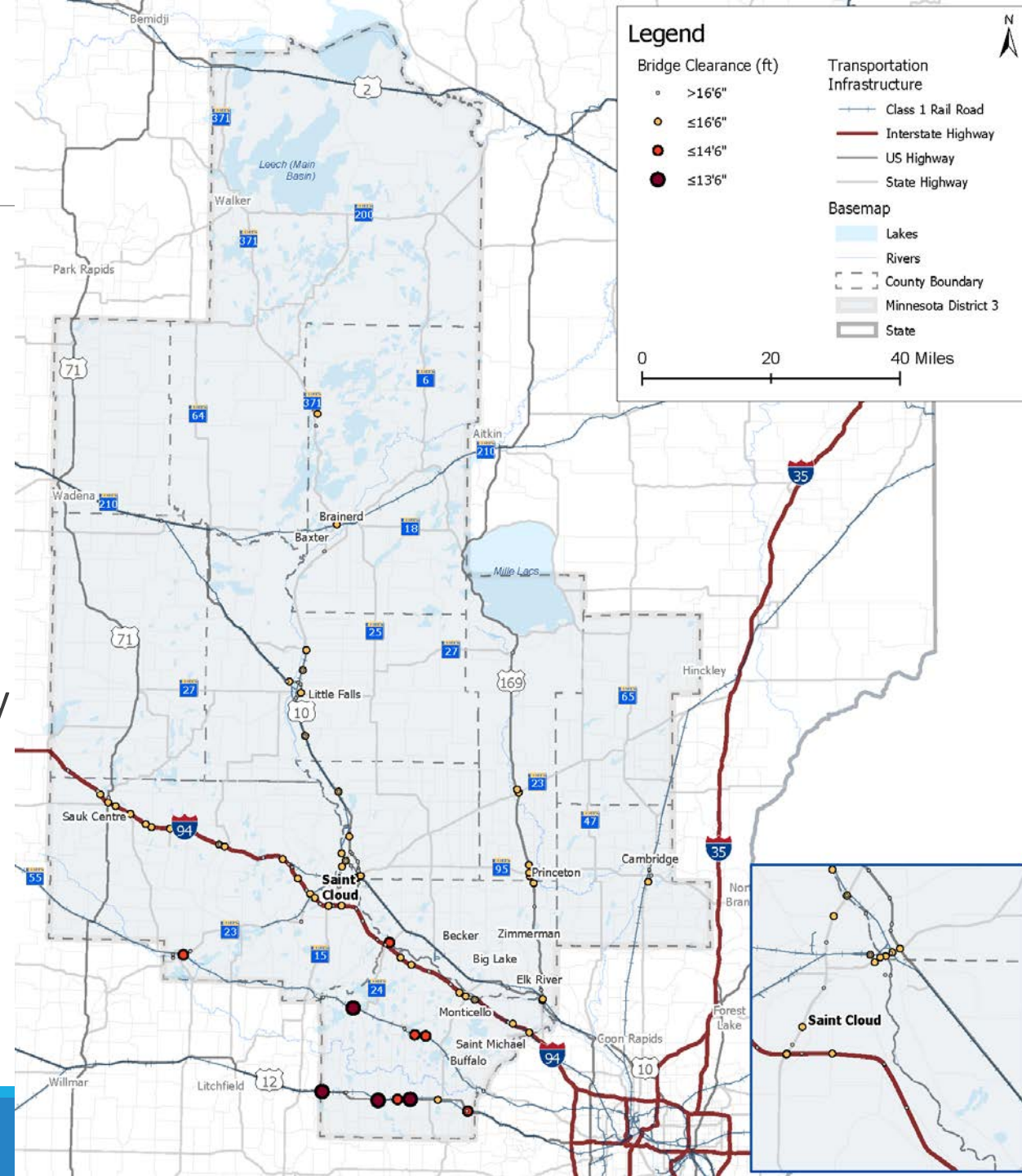
Adjacent Roadway	# of High-Risk Crossings
US 10	30
TH 55	12
TH 65	4
US 12	3
TH 210	1
Other CRs	2



Bridge Clearance Restrictions

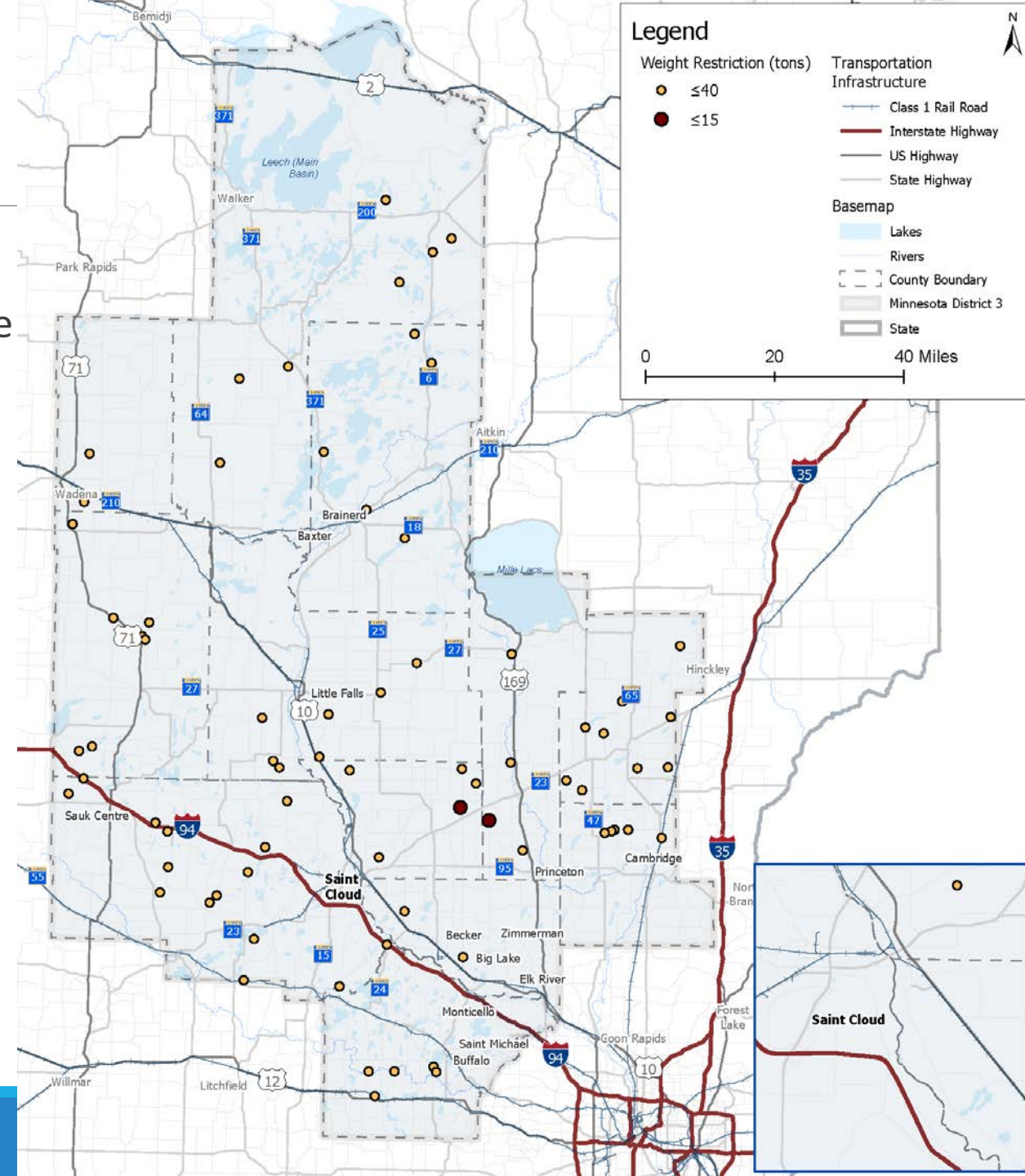
- MnDOT uses the following guidance for bridge clearance:
 - 16'6" for all OSOW/Superload corridors
 - 16'4" for all other trunk highways
 - Less than 14'6" is an issue due to trucks of that height are no longer required to submit an OSOW permit
- Ten bridges are less than 14'6"** which could affect freight movement, all of which are county roads or below

Adjacent Roadway	# of Low Bridges
US 12	5
TH 55	4
TH 24	1



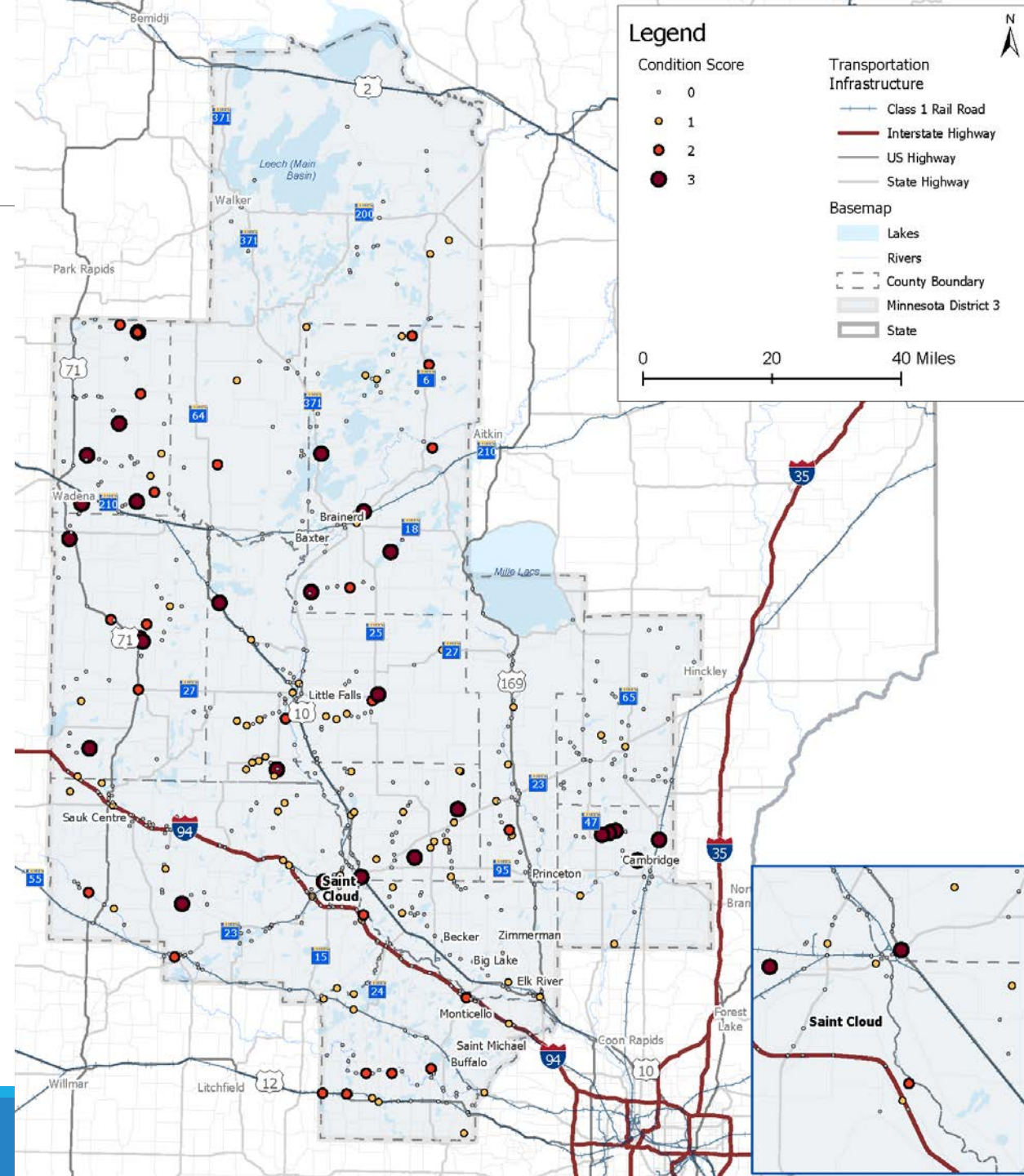
Bridge Weight Restrictions

- No weight-restricted bridges exist along freight corridors in the District and nearly all are off the trunk highway network
- **71 bridges** with posted weight limit of less than 40 tons
- **Two bridges** are limited to less than 15 tons
- **One weight restricted bridge along a trunk highway:**
 - TH 47 at Ann Lake (just north of TH 23)
 - Scheduled for replacement in the 2020 MnDOT STIP



Bridge Condition

- Scored using the condition ratings of the bridge deck, superstructure, and substructure
- Score methodology:
 - 3 = Condition score of 5 or less in all three ratings
 - 2 = Condition score of 5 or less in two of three ratings
 - 1 = Condition score of 5 or less in one of three ratings
- **30 bridges** scored a 3
 - One on the trunk highway system – TH 23 bridges at US 10 interchange (planned for replacement)
- **27 bridges** scored a 2
 - Two on the trunk highway system
 - US 71 at TH 27
 - TH 25 at I-94



Key Needs Identification Takeaways

■ Safety

- Greatest need regarding at-grade railroad crossings – specifically adjacent to US 10
- Roadway segments with the highest risk are concentrated in urban areas or along higher-volume, four-lane roadways with at-grade intersections: US 10, US 169, TH 65, and TH 371

■ Performance

- Bridge-focused as it relates to clearance and weight restrictions that limits freight movement
- Limited congestion district-wide, though a few key areas for performance improvements at intersections of major roadways (ex. TH 24 and I-94)

■ Condition

- Bridge-focused with a number of high-need locations across District 3

Freight Gaps Identification

IDENTIFYING FREIGHT GAPS IN THE DISTRICT

Background

- Reviewed programmed projects per MnDOT STIP and CHIP, St. Cloud APO TIP, and County CIPs
- Identified overlapping locations where a need was identified but would be resolved by a future project or improvement
- Gaps ranked using District Freight Plan Guidance measures (previous needs slides) and respective scoring criteria
- The highest-scoring locations regarding safety, performance, and condition were assigned an ID classifier
- ID'd locations will be presented to the Advisory Committee for confirmation and distillation of high-priority locations

MnDOT STIP (2020-2023)

■ Safety

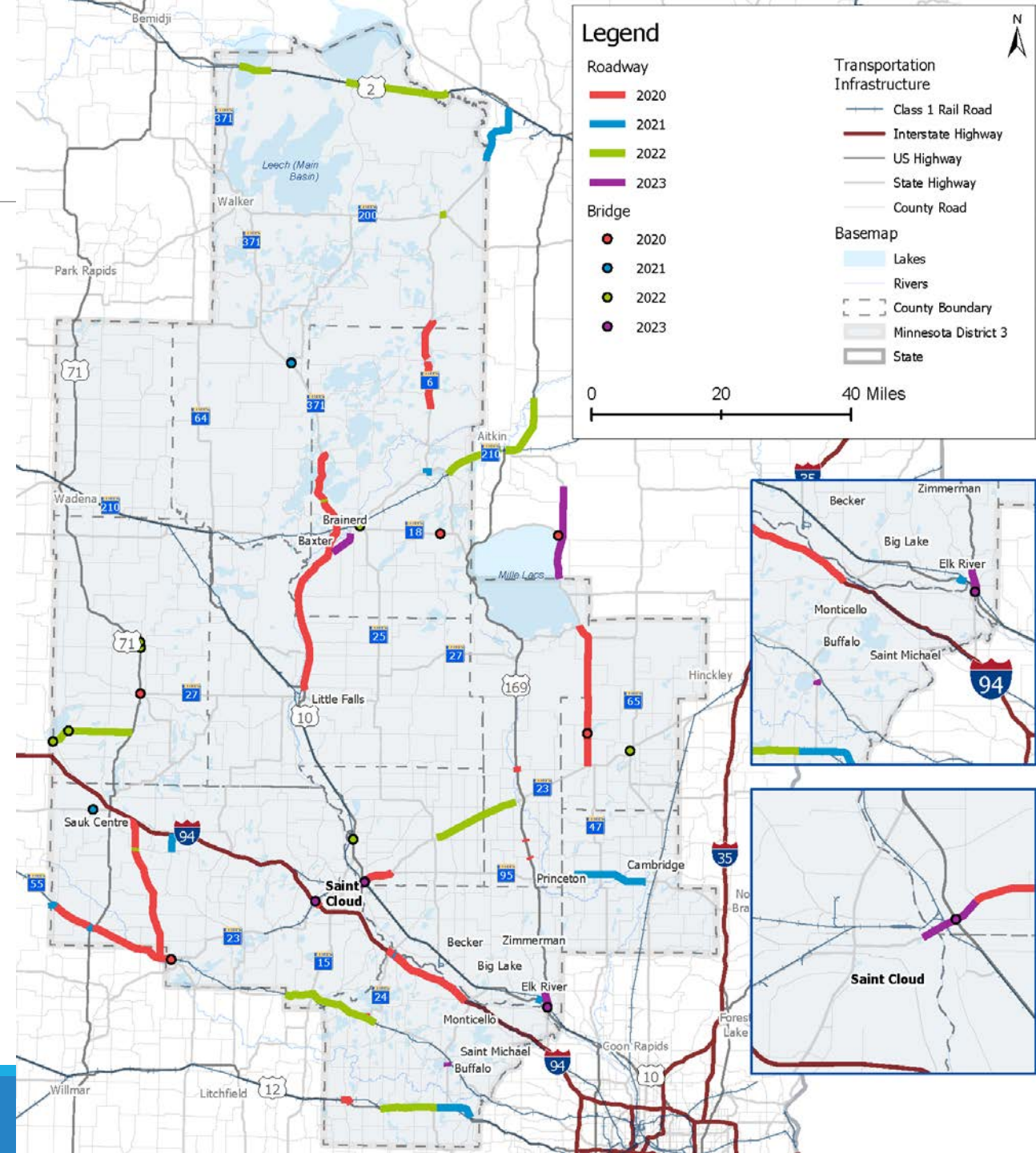
- Reduced Conflict Intersection (RDI)
 - TH 371 @ CR 125 and CR 126 (north of Baxter)
 - US 169 @ CR 11, CR 12, and CR 13 (Mille Lacs County)
 - TH 23 and CR 8 (east of St. Cloud)
- Shoulder expansion
 - TH 27
 - TH 87

■ Performance

- I-94 expansion: Wright CR 39 to TH 24
- TH 23 expansion: Paynesville to Richmond
- US 169 upgrade to freeway: Elk River
- I-94/TH 23 interchange improvements
- US 10/TH 23 interchange improvements

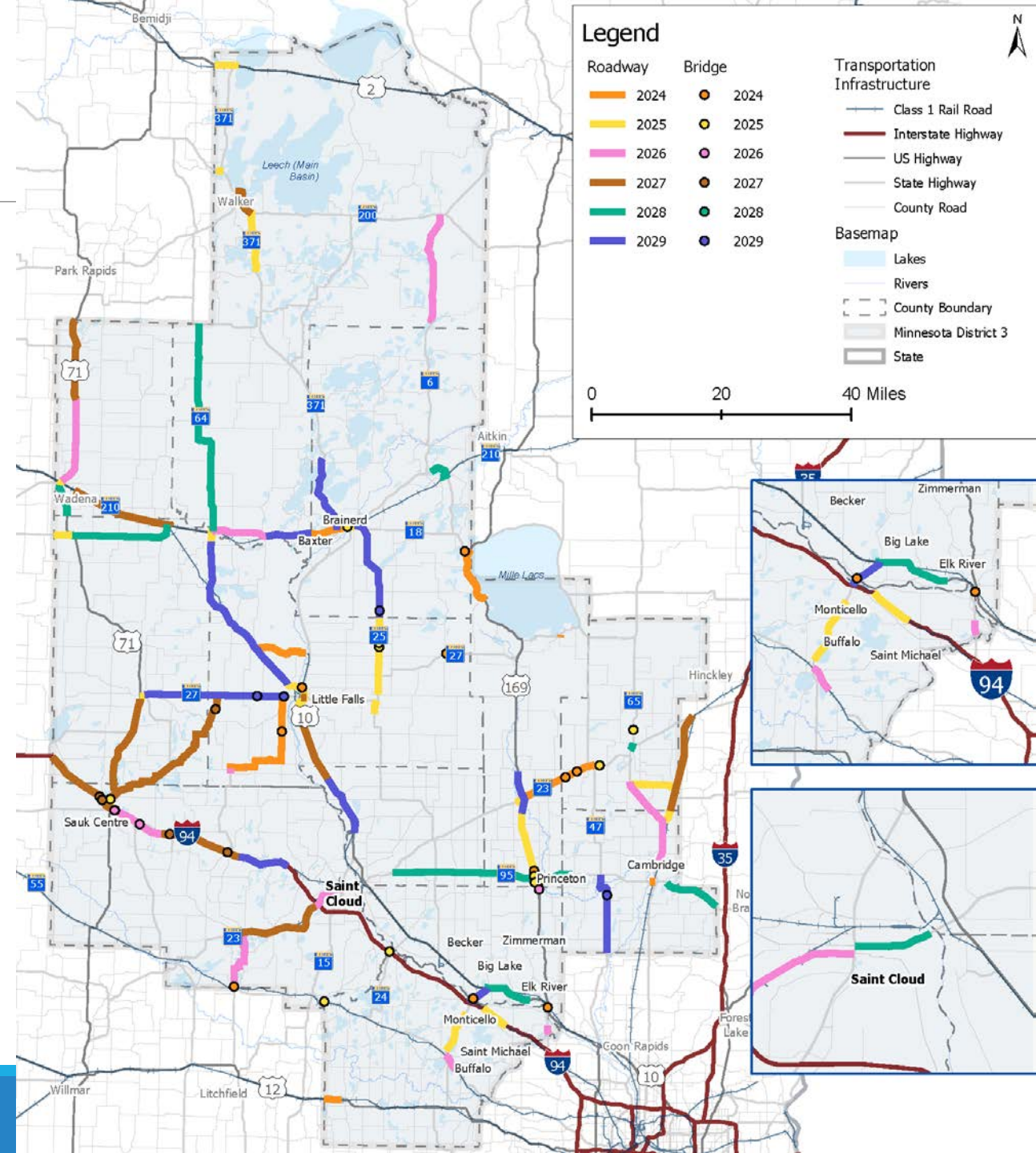
■ Condition

- TH 23 bridges @ US 10
- US 169 bridges @ US 10
- TH 47 @ Ann Lake
- TH 27 @ Sauk River



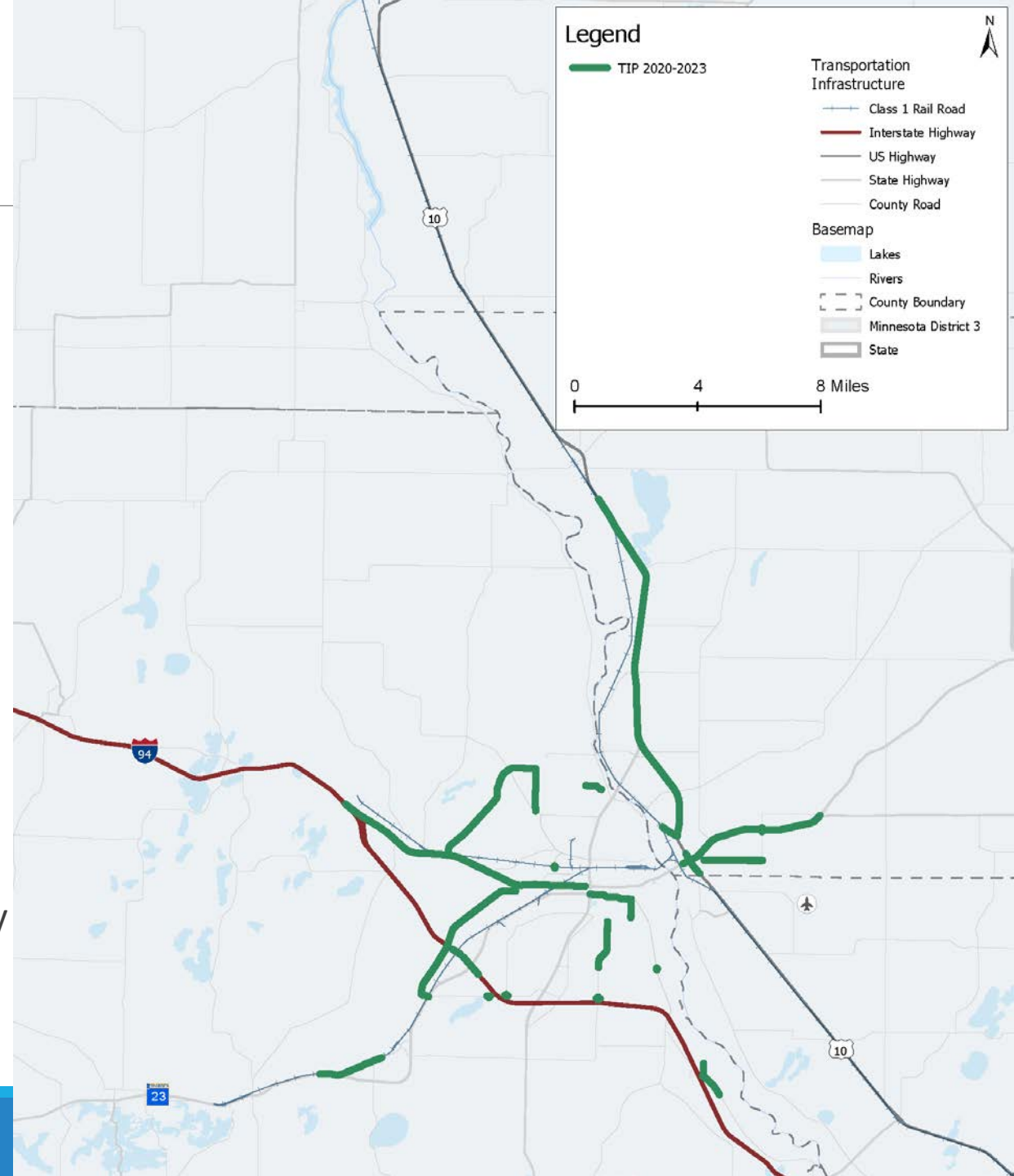
MnDOT CHIP (2024-2029)

- Focus on bridge projects for gap identification
- Other projects are repaving or reconstruction which were not considered as a part of the District Freight Plan analysis



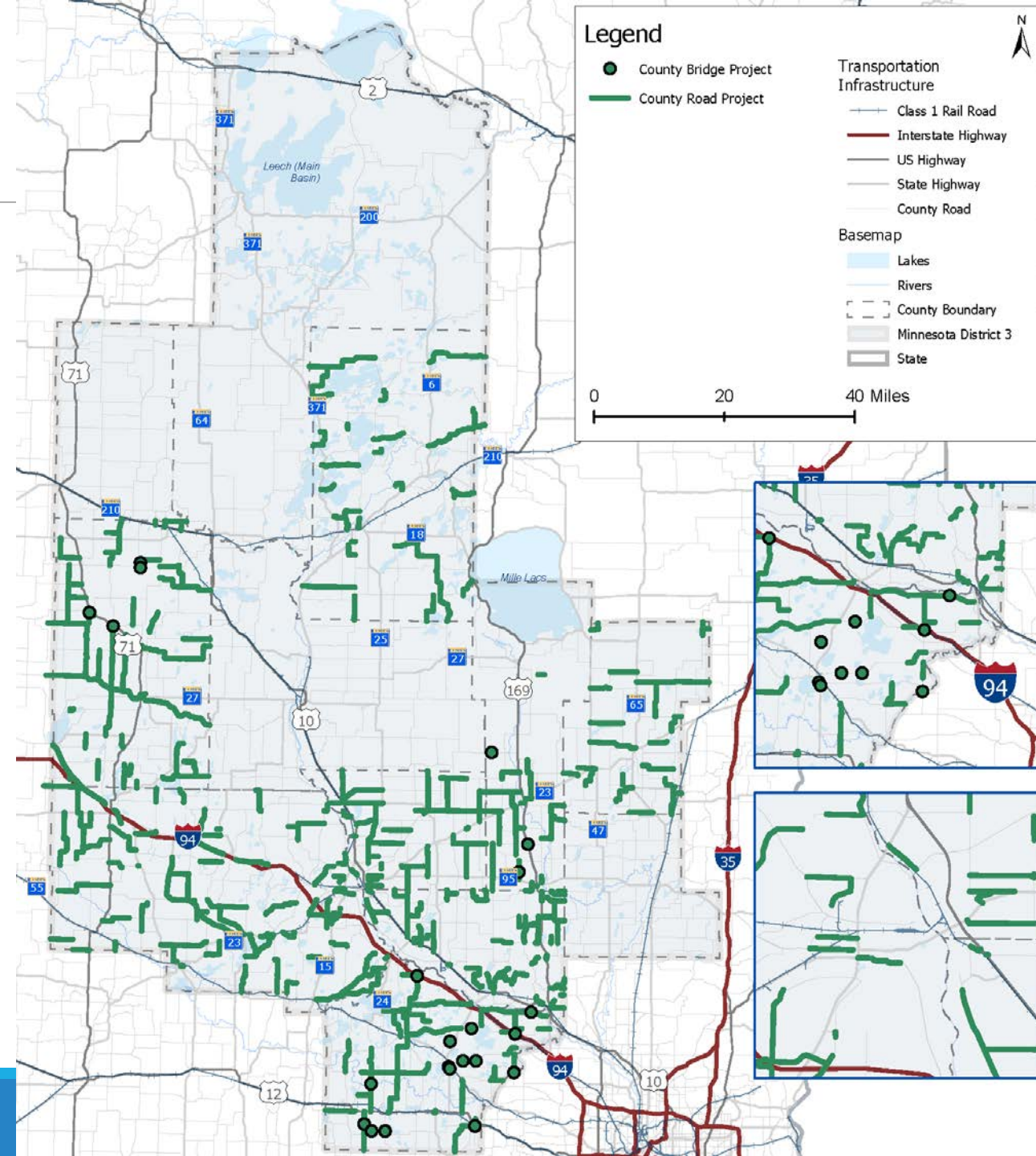
St. Cloud APO TIP

- Transportation Improvement Program (TIP) 2020-2023 projects reviewed
- **Safety**
 - Median cable barrier – US 10 from TH 23 to APO boundary
 - RDI @ TH 23 and Benton CSAH 8 (east of St. Cloud)
 - Railroad gates along BNSF at Stearns CSA 138 in Waite Park
- **Performance**
 - CSAH 75 and 33rd Street intersection improvements
- **Condition**
 - I-94 bridge reconstruction at Northern Lines Railway tracks (just west of TH 23 interchange)



County Capital Improvement Plans (CIP)

- 2020-2024 programmed projects
- Reviewed 8 of the 12 counties in District 3:
 - Benton
 - Cass
 - Crow Wing
 - *Isanti (did not receive)*
 - *Kanabec*
 - Mille Lacs
 - *Morrison*
 - Sherburne
 - Stearns
 - Todd
 - *Wadena (did not receive)*
 - Wright
- Due to limited data, gaps were not reviewed using CIP but will be double-checked upon organization of final recommended projects.



5-minute Break!

Freight Opportunities Identification

OPPORTUNITIES FOR RECOMMENDED PROJECTS

District Freight Plan Guidance

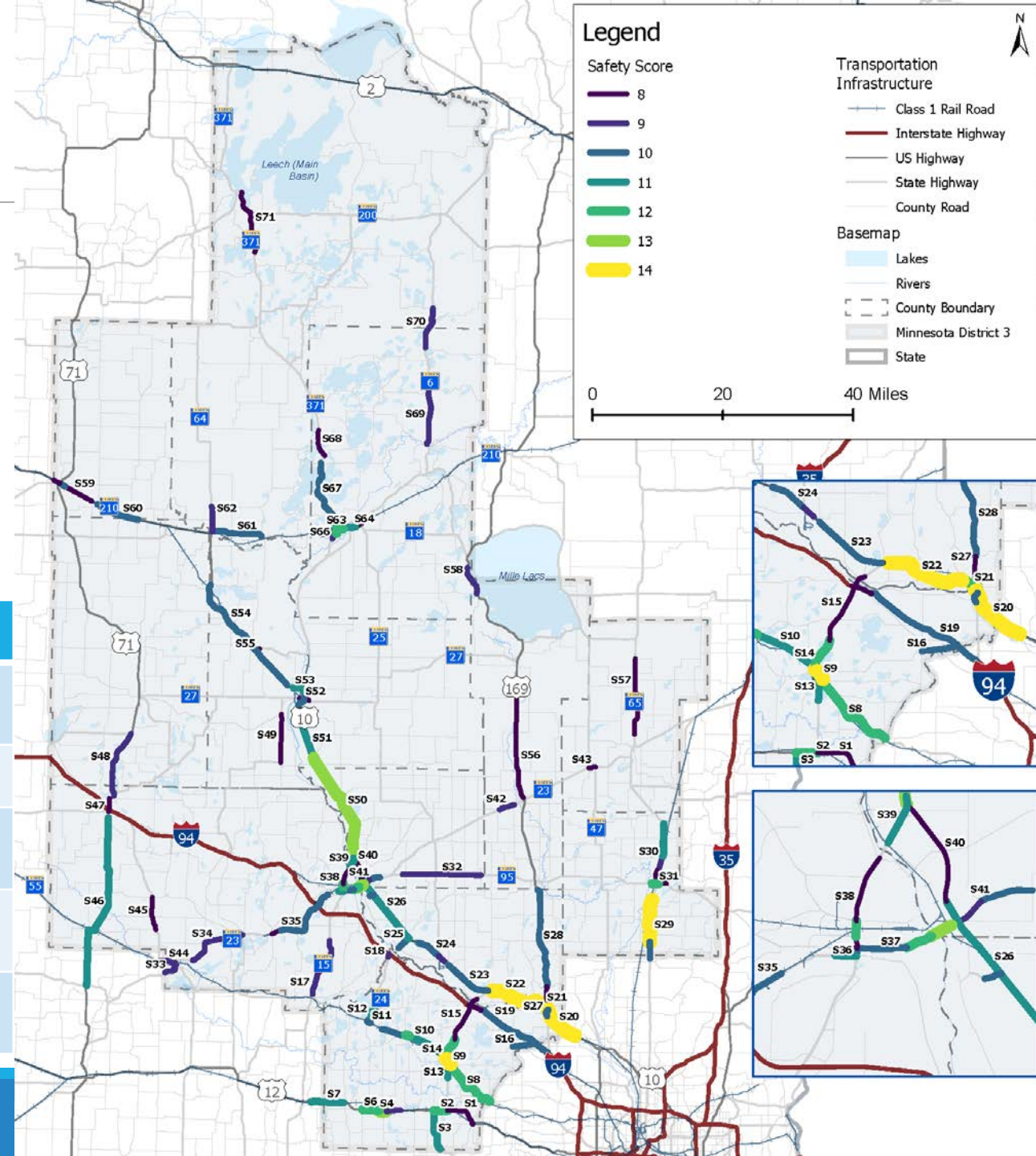
- Developed by MnDOT to synthesize data and ensure consistency of project identification across all districts
- Uses ten quantitative measures to rank high-need locations
- Ranking and prioritization is accomplished in four ways:
 - Safety
 - Performance
 - Condition
 - Overall
- Quantitative and qualitative (SWOT, MPS, AC & TAC feedback) is reviewed to ensure proper prioritization
- Stakeholder feedback plays a central role in organizing final recommended projects

District Freight Plan Measures
Heavy Commercial Average Daily Traffic
Heavy Commercial Vehicle Percent
Safety Measures
Truck Crash Frequency
Segment Safety Risk Rating
High-Risk At-Grade Railroad Crossing
Performance Measures
Truck Travel Time Reliability
Bridge Clearance Restrictions
Bridge Weight Restrictions
Condition Measure
Bridge Condition

Safety Ranked

- 15 potential points total
- Illustrates the top scoring segments based upon the three safety measures (crash history, risk score, & RR grade crossing risk)
- Highest ranked segments are in the southern portion of District 3 on roadway segments that are higher volume and adjacent to railroads:

ID	N. Location	To/From	ID	S. Location	To/From
S50	US 10	TH 15 to Benton County Line	S20	US 10	Elk River to county line
S66	TH 371	Baxter	S9	TH 55	Buffalo
S63	TH 210	Crow Wing CR 48 to Baxter	S22	US 10	Elk River to TH 25
S46	US 71	I-94 to county line	S29	TH 65	Cambridge to county line
S51	US 10	Little Falls to Benton Cty Line	S5	US 12	Howard Lake

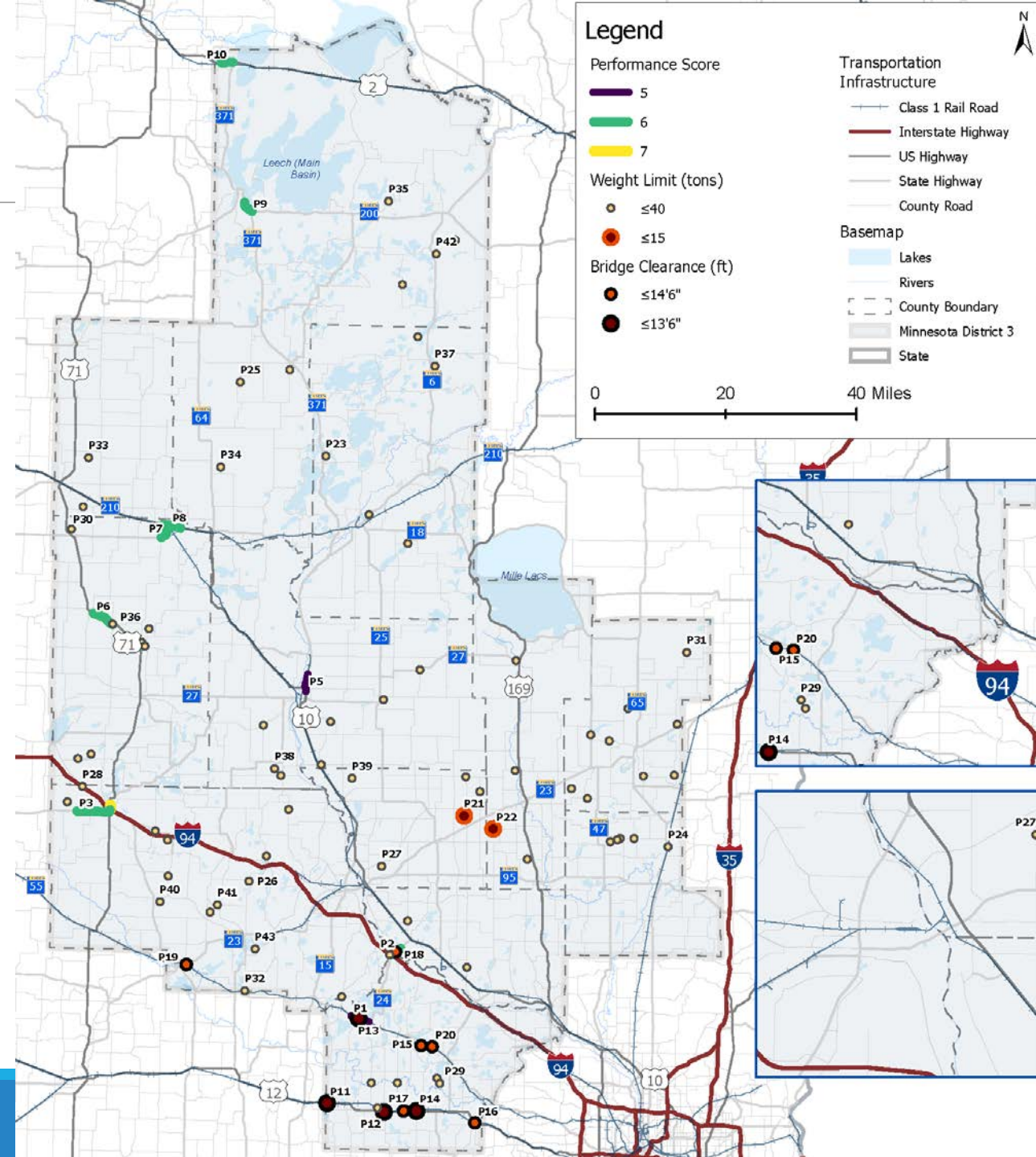


Freight Safety Discussion

- Review the maps and handouts describing District 3 **freight safety needs**
- Ask yourself...
 - Are the right needs identified?
 - Are there gaps or critical issues not identified?
 - What needs should be prioritized for investment?
- On the big map...
 - Use colored stickers to indicate the most critical needs
 - Use the Post-its to provide additional comments or add needs
- Let's spend the next 10 minutes accomplishing this!

Performance Ranked

- 18 potential points total
- Illustrates the top scoring segments based upon the three performance measures (TTTR, bridge clearance, & bridge weight restrictions)
- Highest ranked segments are throughout District 3 and include:
 - US 71/I-94
 - US 10/TH 210
 - TH 371/US 2
- Highest ranked bridges are concentrated along:
 - US 12
 - TH 55
 - TH 23

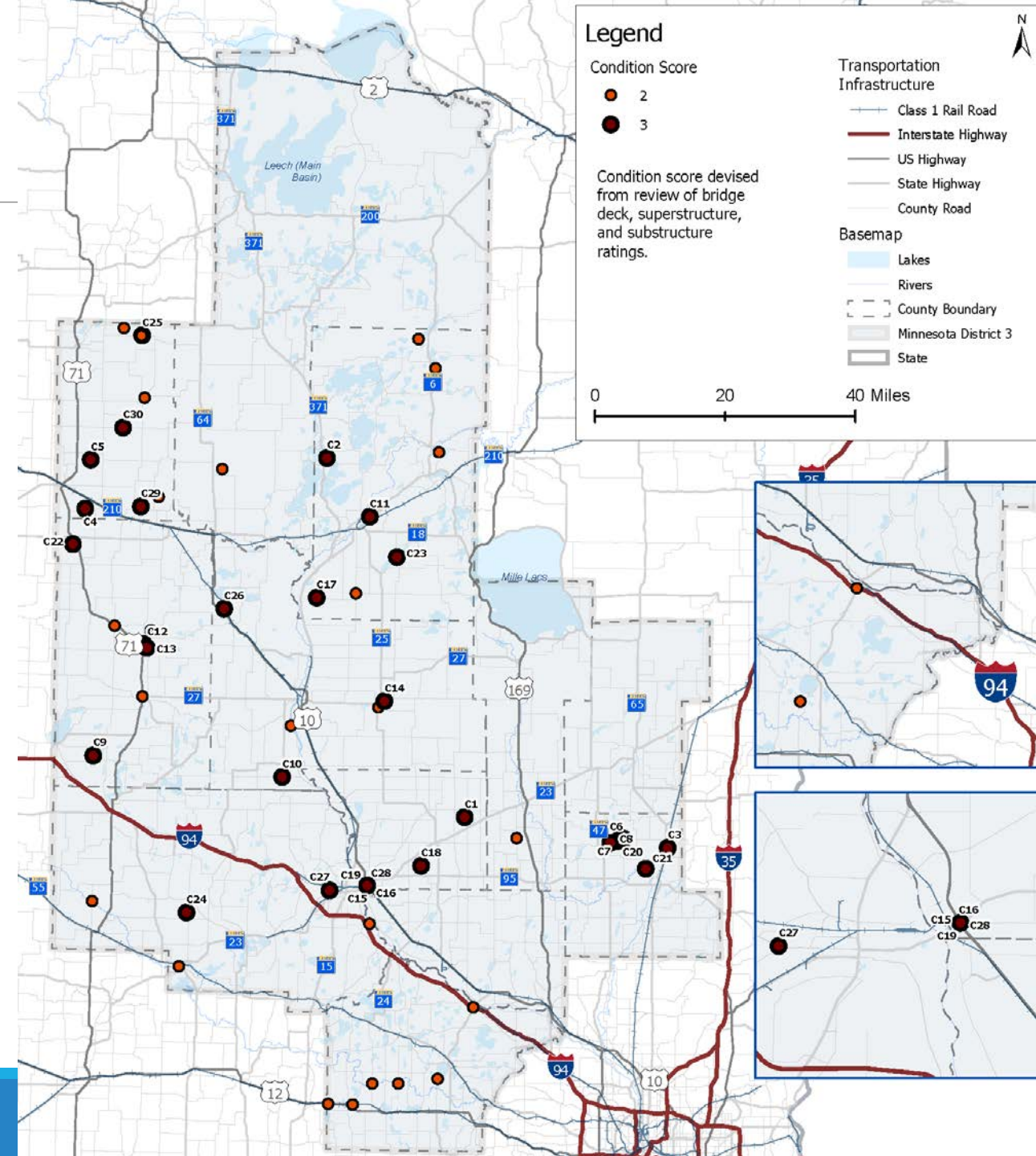


Freight Performance Discussion

- Review the maps and handouts describing District 3 **freight mobility needs**
- Ask yourself...
 - Are the right needs identified?
 - Are there gaps or critical issues not identified?
 - What needs should be prioritized for investment?
- On the big map...
 - Use colored stickers to indicate the most critical needs
 - Use the Post-its to provide additional comments or add needs
- Let's spend the next 10 minutes accomplishing this!

Condition Ranked

- 3 potential points total
- Illustrates the top scoring bridges based upon the bridge condition (deck, superstructure, and substructure)
- Highest ranked bridges are spread throughout District 3 and concentrated on local, township, and county roadways



Freight Infrastructure Condition Discussion

- Review the maps and handouts describing District 3 **freight infrastructure condition needs**
- Ask yourself...
 - Are the right needs identified?
 - Are there gaps or critical issues not identified?
 - What needs should be prioritized for investment?
- On the big map...
 - Use colored stickers to indicate the most critical needs
 - Use the Post-its to provide additional comments or add needs
- Let's spend the next 10 minutes accomplishing this!

What we have heard...

Next Steps

- Technical memorandum of the data analysis to-date
- Identify Project Opportunities
- Present Projects Opportunities to the Technical Advisory Committee
- Produce Project Concepts
- Organize Final Plan in early Summer

Questions

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