



# MNDOT DISTRICT 3 FREIGHT PLAN

ADVISORY COMMITTEE MEETING #1

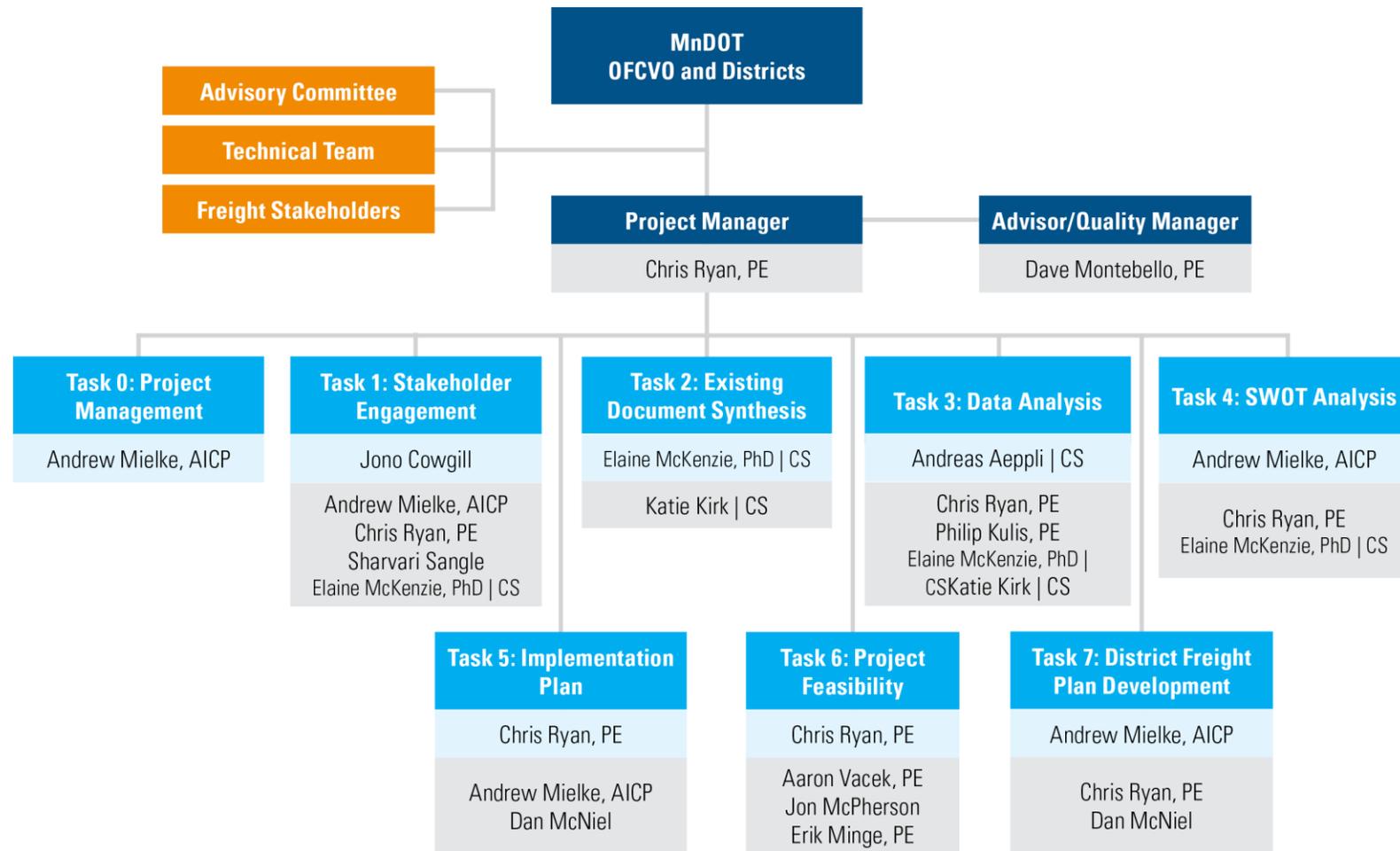
SEPTEMBER 30, 2019

# Introductions

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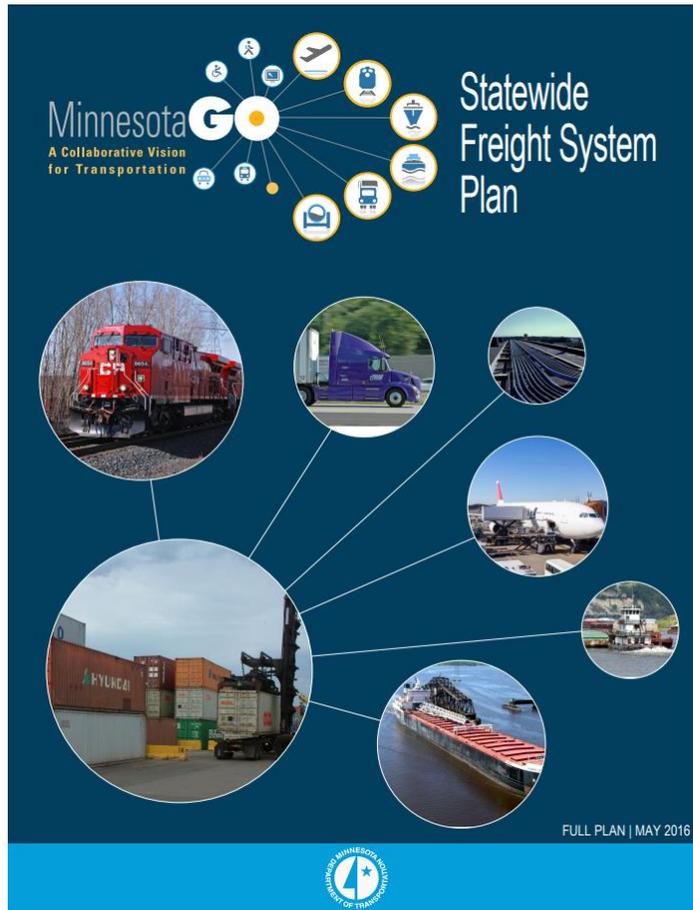
- Andrew Andrusko: Project Manager, Freight Office
- Steve Voss: District 3 Planning Director
- Stephanie Castellanos: District 3 Public Engagement Coordinator
- Consultant Team: SRF Consulting, Cambridge Systematics
- Advisory Committee Members

# Project Organization Chart





# MnDOT Freight Planning Overview



- State Freight Plan Completed in 2016
- Developed as part of Minnesota Family of Plans within the Minnesota GO 50-year Statewide Vision
- Freight Action Agenda outlined steps for MnDOT and freight stakeholders to advance freight performance in Minnesota
- 30 strategies identified
- Updated in 2018 as Minnesota Statewide Freight System and Investment Plan

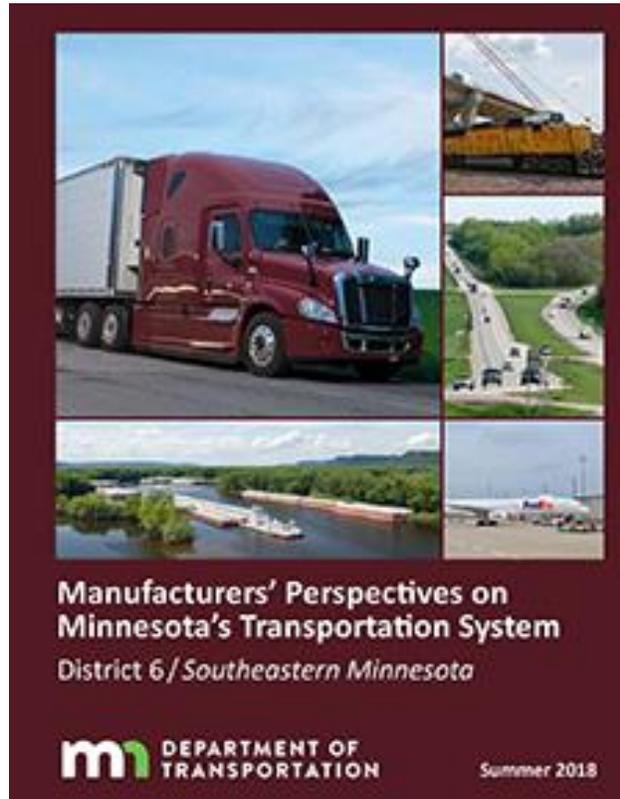
# MnDOT District Planning Effort

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- 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

# Connection to District 3 Manufacturers' Perspectives Study



- Goal 1: Connect and build relationships with manufacturers and shippers
- Goal 2: Obtain actionable information to inform MnDOT's work
- Method:
  - Identify industries – Industry cluster analysis
  - Conduct approximately 150 interviews with businesses
  - Analyze, report, implement feedback
- Schedule
  - Interviews occurring over next 8-10 weeks
  - Report in Summer 2020

# Plan of Work

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- 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

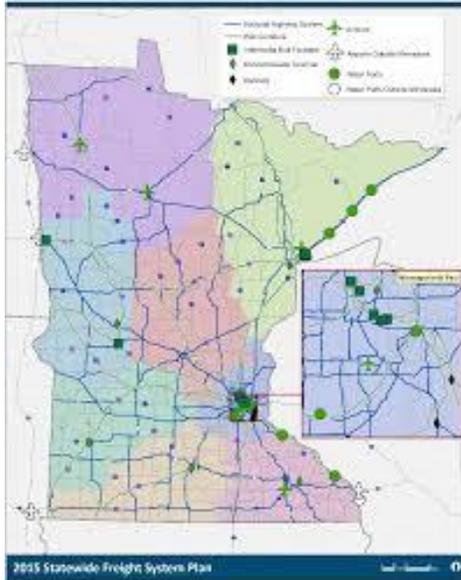
# Task 1: Stakeholder Engagement

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- **Communications Plan**
  - Guide stakeholder and public engagement Efforts
- **Advisory Committee**
  - Mix of public and private stakeholders
  - Will provide strategic direction
  - 3 meetings planned
- **Technical Advisory Committee**
  - Will provide guidance on technical analysis
- **Freight Industry Focus Groups and One-on-One Consultations**
- **Social Media Engagement**
  - Promote the study, advertise for meetings
- **Passive Engagement**

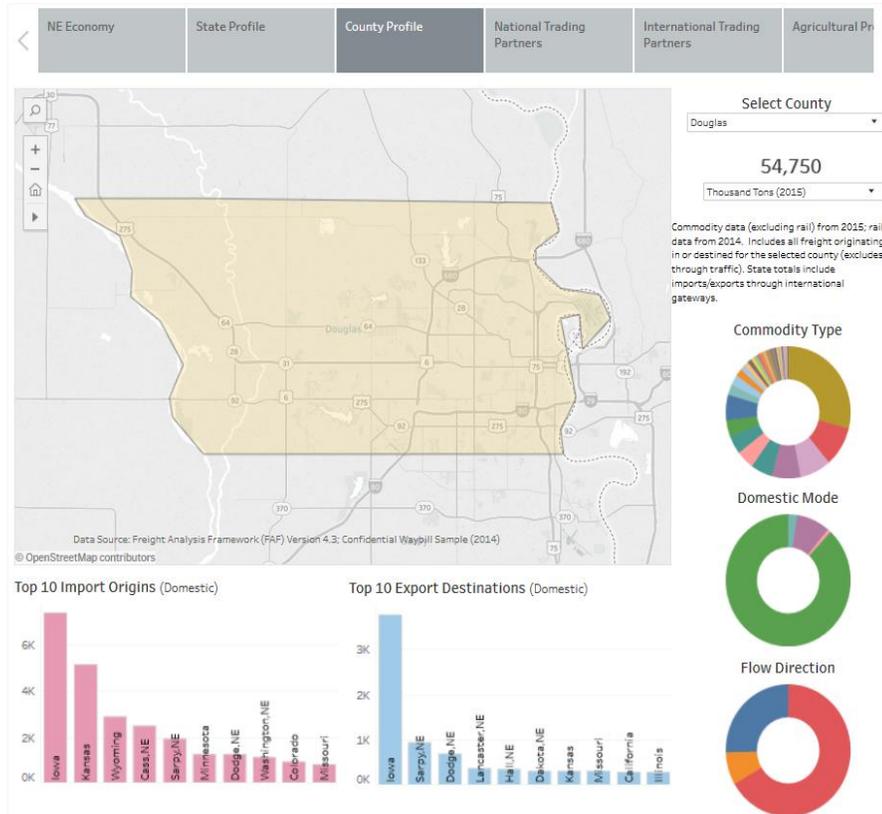
# Task 2: MN Freight and Investment Plan Synthesis



- Review previous plans and documents relevant for District 3
  - Statewide Freight Plan
  - State Highway Investment Plan
  - State Rail Plan
  - Others as necessary
  
- Review/Synthesize freight network maps, data, and trends



# Task 3: Data Analysis

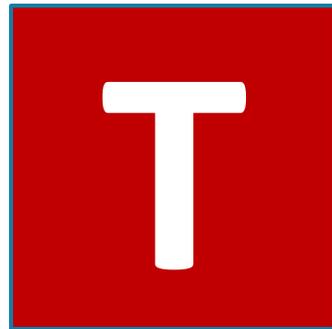


- Combination of input from stakeholders and data sets
  - Physical conditions – road and railroad track conditions, capacity, etc.
  - System usage – HCADT, GPS travel pattern data
  - System Performance – truck travel times, safety/crash data
  - Economic and Demographic Trends – population forecasts, land use info, etc.
  
- Develop key deliverables
  - Physical System Profile
  - Highway Freight Demand Profile
  - Economic and Supply Chain Profile

Source: 2018 Nebraska State Freight Plan

# Task 4: SWOT Analysis

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SWOT

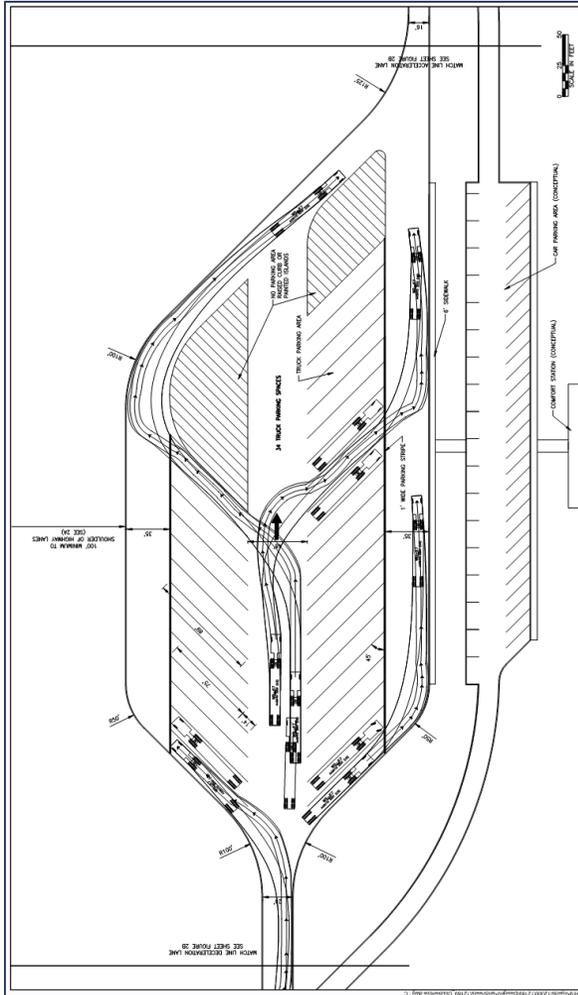
- Categorize freight system needs, issues, and opportunities, and mitigation strategies
- Results of SWOT analysis will become roadmap for identifying priorities
- Will engage stakeholders in an interactive, data-informed process
- Considers internal and external factors
- Includes the following:
  - District Leadership
  - Policy Advisory Committee
  - Technical Team
  - Other key stakeholders

# Task 5: Implementation Plan

Project Title	Project Description
TH 169 SUE in Elk River	The Contractor will perform Subsurface Utility Engineering (SUE) for both underground and overhead utilities on a project located on T.H. 169 in Sherburne County in the City of Elk River. All utilities will be located to Quality Level B Designating along with up to 100 hours of Quality Level A locates as directed by the Project Manager. Pre-Qualification Announcement Spring of 2019.
TH 210 Corridor Study in Baxter	Conduct corridor study for MN 210 from the west Baxter city limits near Cass CR 36 to the east Baxter city limits near Baxter Drive that will identify traffic conditions and a design feasibility assessment to assist the State in identifying a preferred access improvement concept for MN 210 in Baxter. PreQual Direct Select in 2019
Geometric Layout, Environmental Documentation, and Wetland Services for 7703-16. TH 27 Reclamation with shoulder widening.	MN 27, from JCT Douglas CSAH 82 in Osakis to JCT US 71, Reclamation with shoulder widening; and Replace Wobegon Trail Bridge# 758 and Bridge# 92372 with new box culvert 0.1 mi N of JCT CSAH82; and Replace Bridge# 8915 with new box culvert 0.4 mi E of JCT CSAH37; and Replace Culvert# 867915 with new box culvert 0.6 mi N of JCT CSAH82. Pre-Qual. with anticipated start in April 2019.
Plans/Design Pre- and Final-Design) and Environmental Documentation for SP 0504-20 TH 23 UBCO and Roundabout Construction	Unbonded concrete overlay on TH 23 from 6th St. in Foley to the Rum River bridge west of Milaca. Includes pipe replacements, box culvert replacements and extensions, guardrail replacements, widening for several rural turn lanes, new curb and storm sewer in Foley and construction of a round-a-bout at 8th Ave. in Foley. Letting for project in spring of 2022. RFP process.

- Identify a list of projects and freight system improvements within District 3
- Recommendations from MnDOT staff, Policy Advisory Committee, Technical Committee, and freight stakeholders
- Review existing investment and prioritization information for District 3

# Task 6: Project Feasibility



- Review proposed investments and identify existing project examples
- Resolve potential freight issues/concerns associated with typical layouts
- Provide enhanced layouts for freight accommodations
- Develop preliminary cost estimates for design and construction

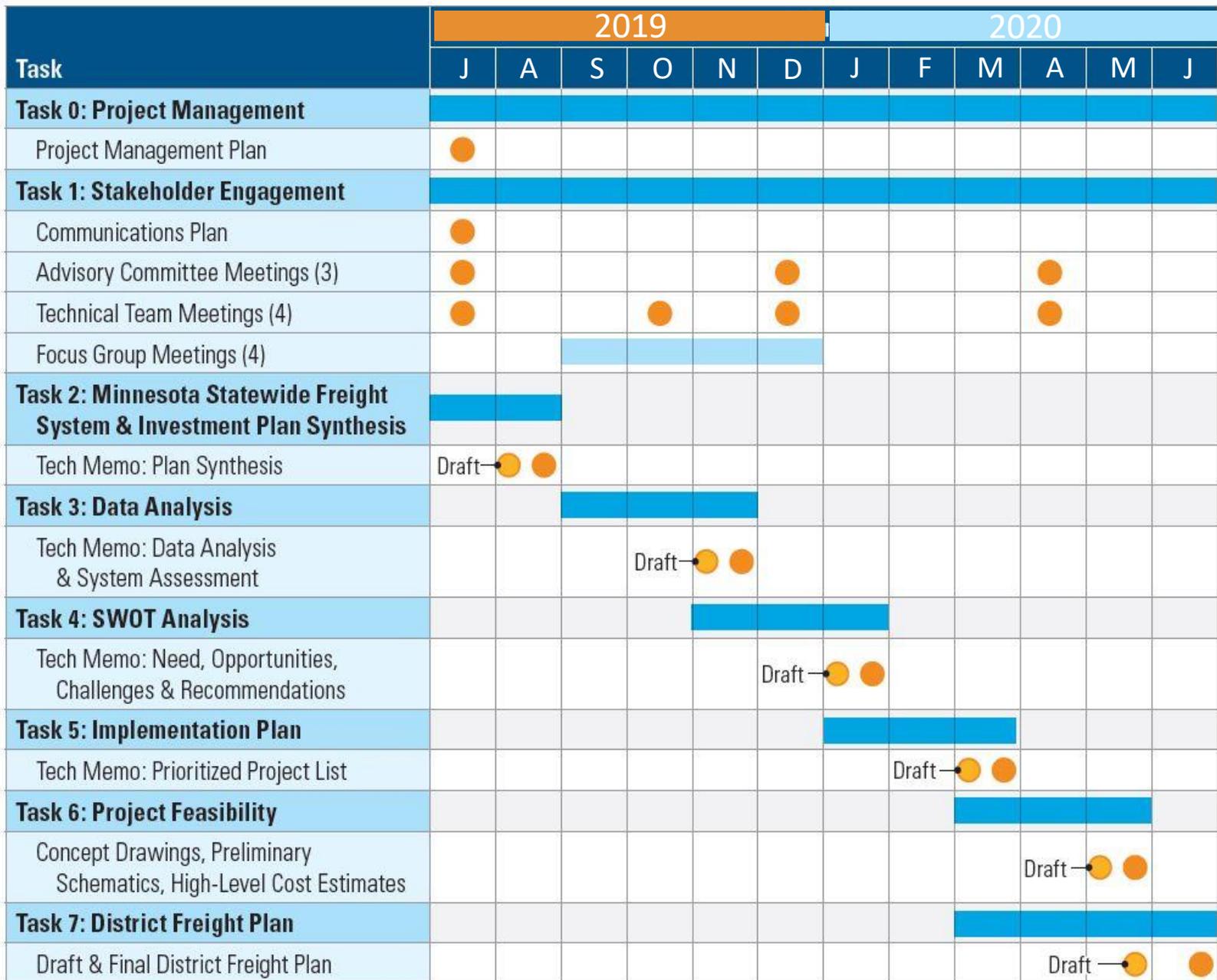
# Task 7: District Freight Plan Development

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- Develop Draft District Freight Plan for comment and review by MnDOT staff, Policy Advisory Committee, Technical Committee, and others as necessary
- Submit Final District Freight Plan

# Project Schedule

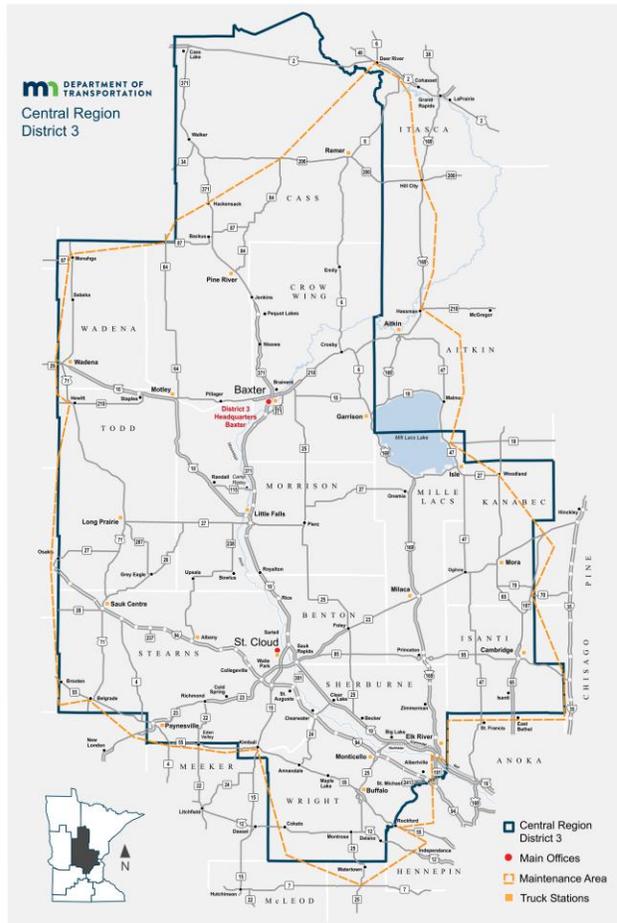


# Key Project Deliverables

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- **Project Management Plan: Complete**
- **Communications Plan: Complete**
- **Document Synthesis Tech Memo: Draft Complete**
- Data Analysis Tech Memo: Physical System Profile, Freight Demand Profile, Regional Economic and Industry Supply Chain Profile
- SWOT Workshop
- Implementation Plan
- Conceptual Drawings, Preliminary Schematics and Cost Estimates (1-3 Projects)
- Draft and Final District 3 Freight Plan

# Overview of District 3 Freight System



- District 3 serves 13 counties in Central Minnesota:
  - Aitkin, Benton, Cass, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison, Sherburne, Stearns, Todd, Wright, and Wadena
- 2<sup>nd</sup> highest freight flows in the state (Twin Cities is 1<sup>st</sup>)
- Infrastructure
  - 1,607 centerline miles of roadways
  - 423 bridges
  - 367 miles of rail
    - Six BNSF subdivisions
    - One CP subdivision
    - Northern Lines Railway
  - Access to navigable waterways:
    - Mississippi River System via truck through Saint Paul
    - Great Lakes-Saint Lawrence Seaway via truck through Duluth
  - Brainerd Lakes Regional Airport and St Cloud Airport

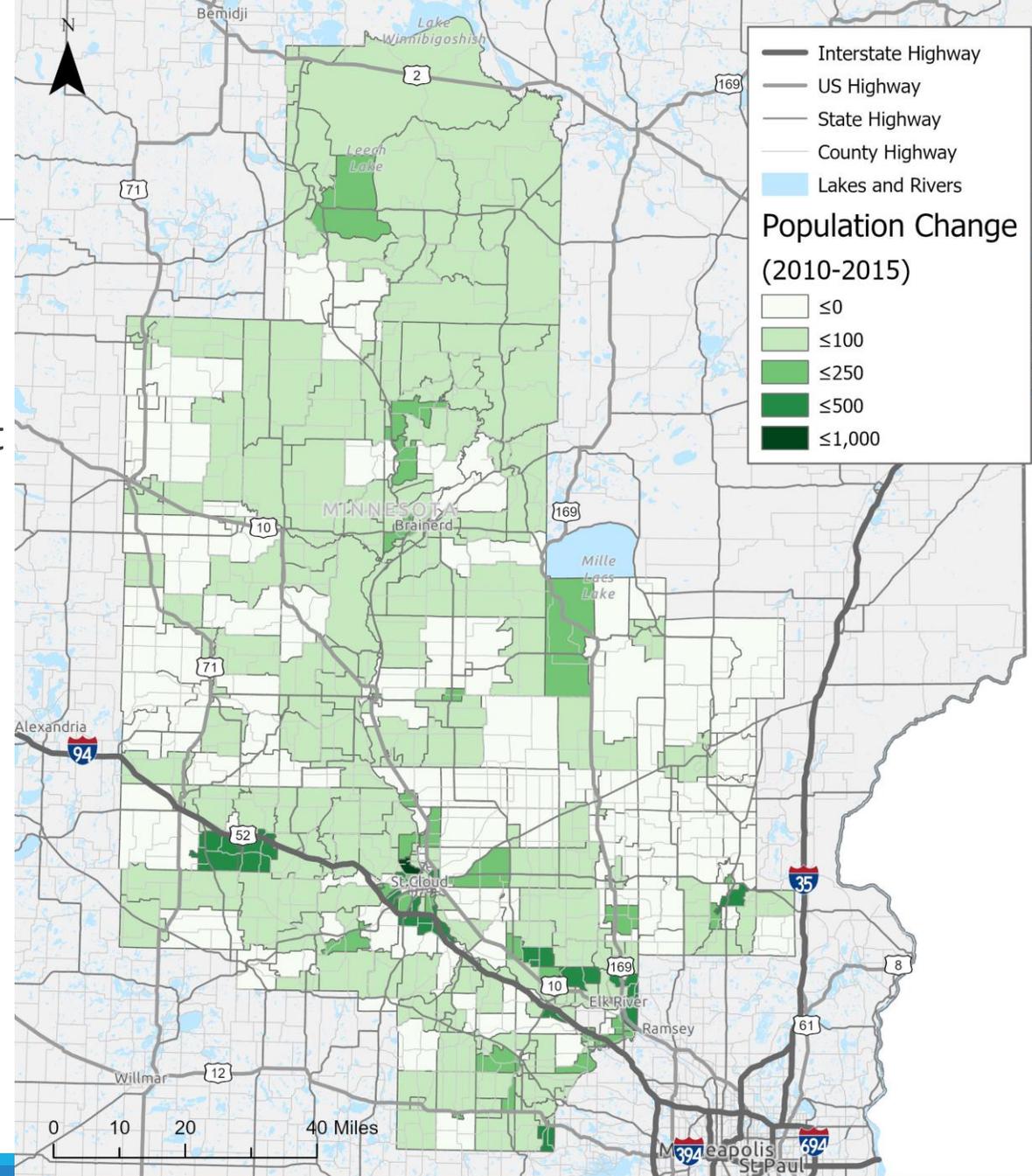
Source: MnDOT Regional Information

[http://www.dot.state.mn.us/d3/images/d3mainhighways\\_2\\_4lanes.pdf](http://www.dot.state.mn.us/d3/images/d3mainhighways_2_4lanes.pdf).

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# Demographics

- 2017 Population Estimate: 593,625
  - 12.8% of state total
- Largest population concentrations located in Saint Cloud and in communities near Twin Cities Metro



# District 3 Freight Based Economy

Key Sectors: healthcare and manufacturing

Specialized freight industries: animal and aquaculture, forestry and logging, wood product manufacturing

Industry	NAICS Code	Mean Location Quotient	Major District Employer	Employer Location	Employment
Animal production and aquaculture	112	7.07	Wilmar Poultry	Foley	37
Forestry and logging	113	5.06	Sylva Corp	Princeton	30
Wood product manufacturing	321	4.12	Woodcraft Industries	Foreston	200

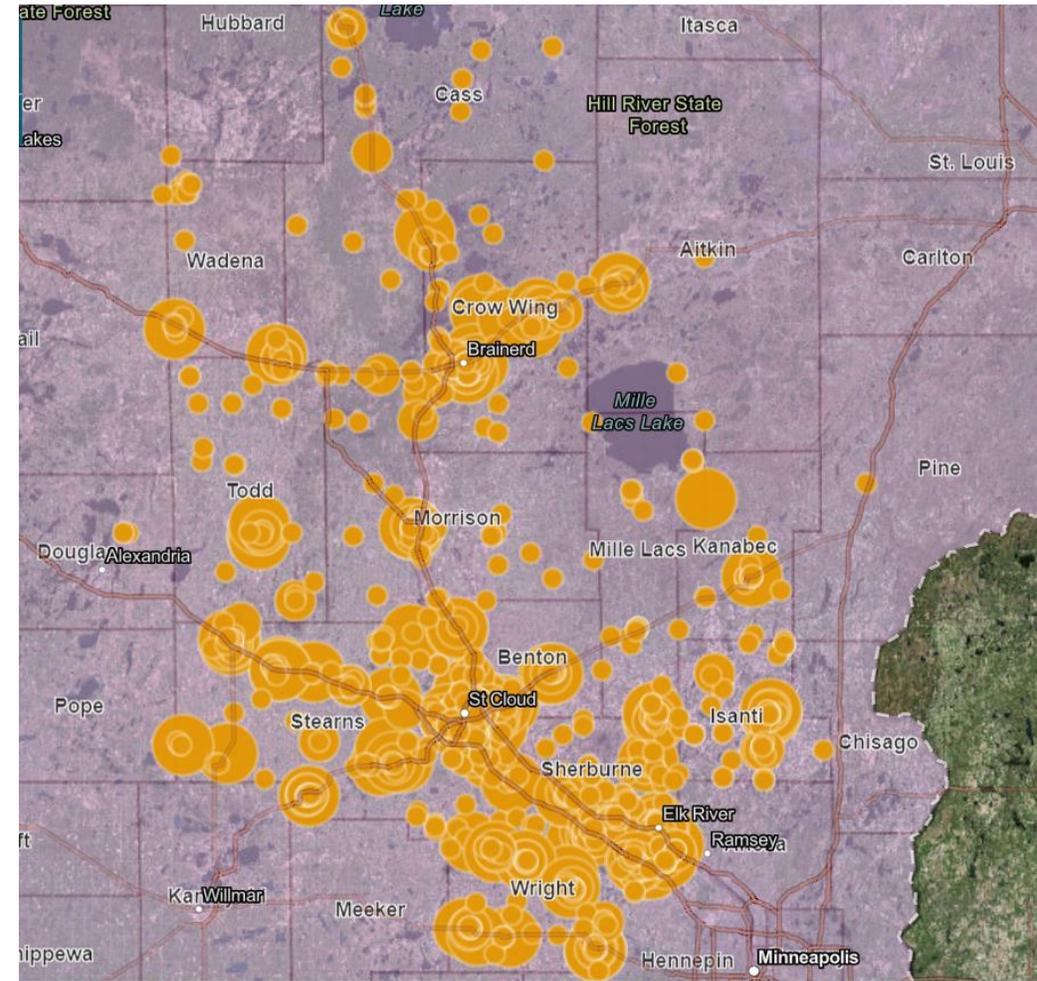
Note: A location quotient is a measure of the concentration of an industry relative to the rest of the State or nation. A value greater than one indicates a higher concentration than the larger area.

Source: Minnesota Statewide Freight System Plan (Bureau of Labor Statistics Location Quotient Data, 2013).

- Major freight commodities: nonmetallic minerals, farm products, food products, cut stone, and paper products
- Two industry clusters
  - Granite in the St. Cloud area
  - Tourism in Grandview
- Region 5 Comprehensive Regional Economic Development Strategy initiatives:
  - Quality of roads
  - Access to broadband

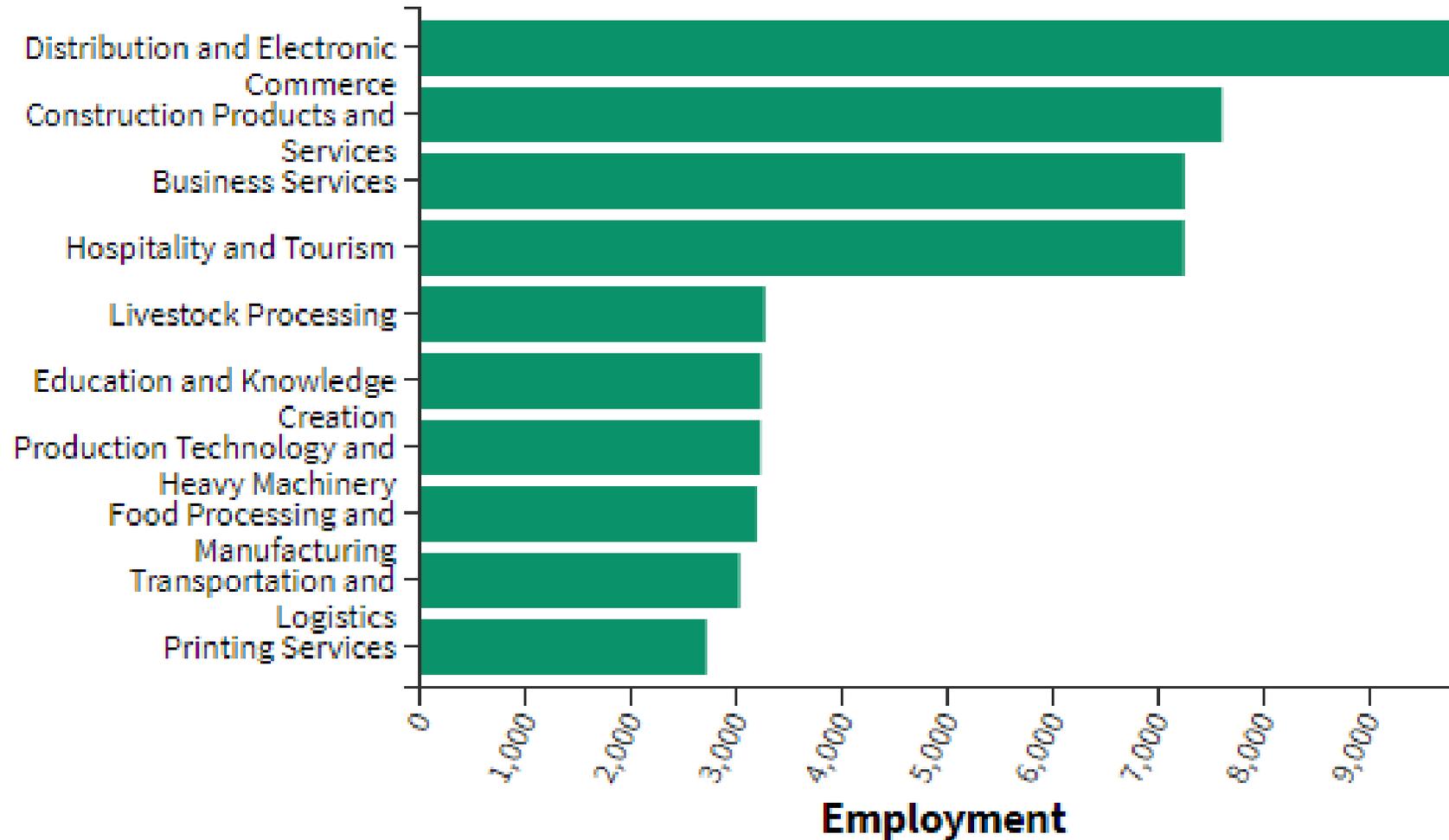
# Location of Manufacturing Businesses

- NAICS codes 31-33
- Heavy concentration of manufacturers located along I-94
- Second highest concentration along Highway 210 in Brainerd/Baxter
- Number of employees
  - 100+
  - 50-99
  - 10-49



Source: University of Minnesota SLPP

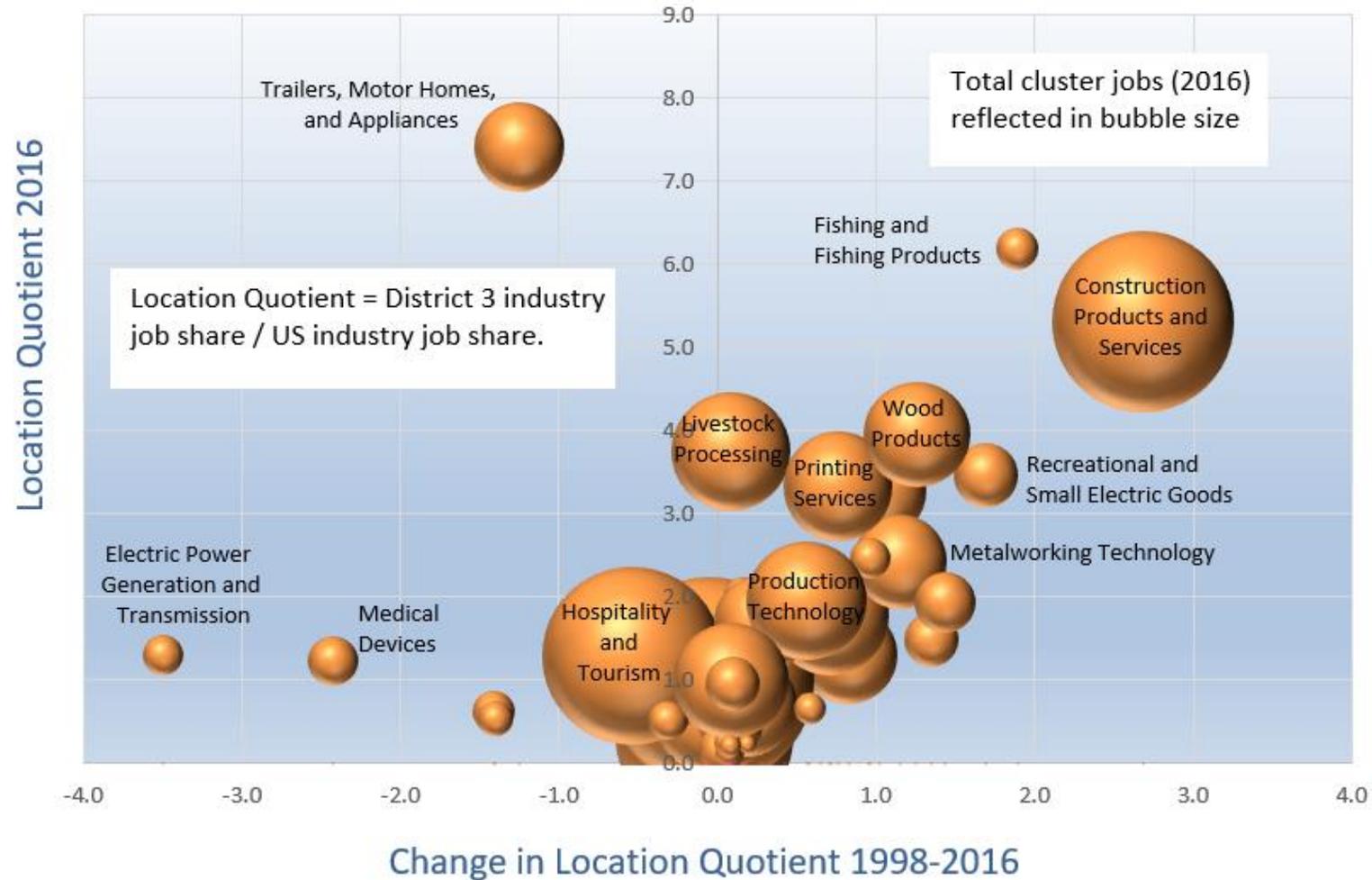
# Top Clusters by Employment



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Source: University of Minnesota SLPP

# District 3 Traded Clusters



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Source: University of Minnesota SLPP

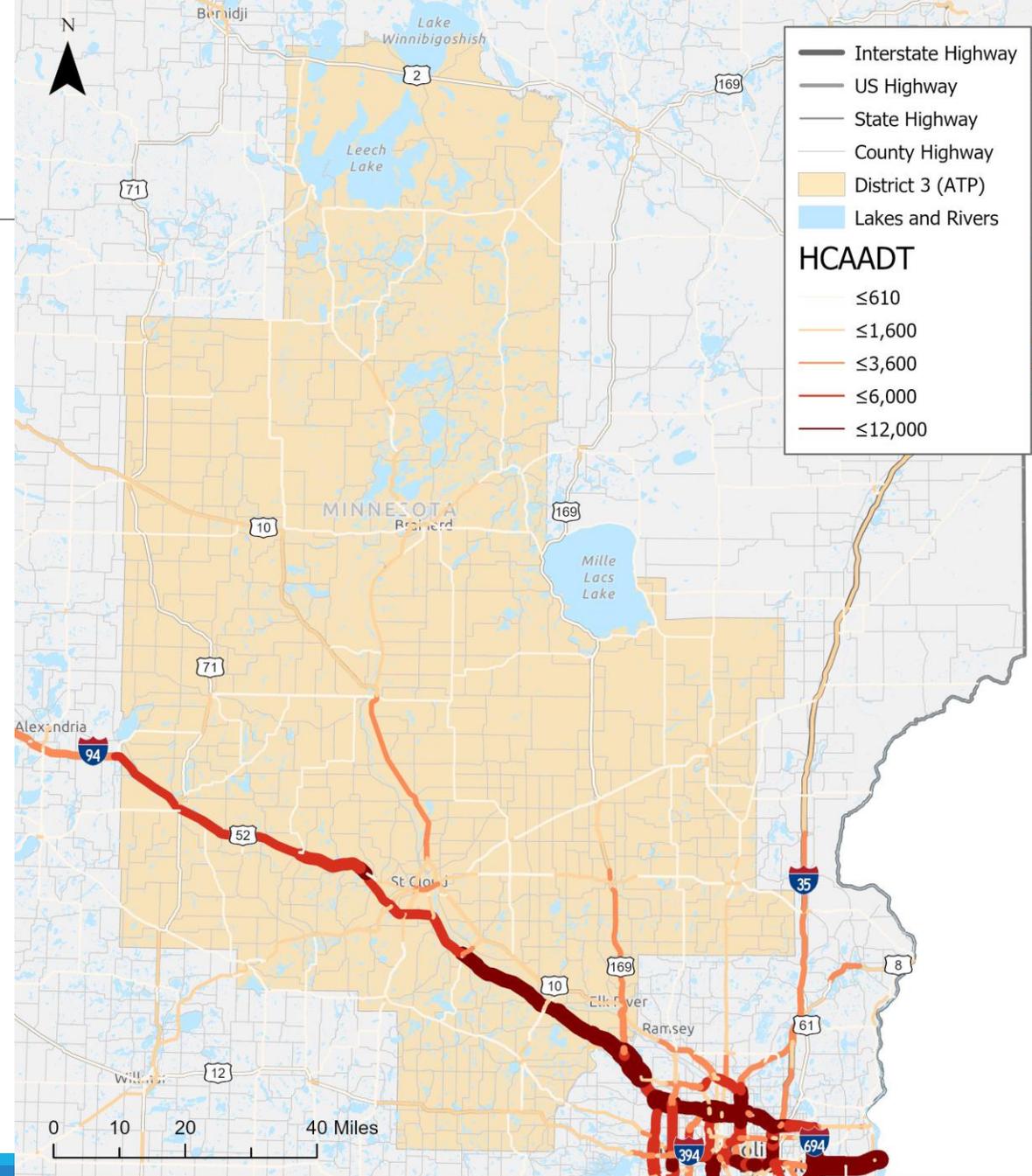
# Preliminary Freight System Profiles

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- Highway
  - CUFC
  - CRFC
- Rail
- Airports
- Pipelines
- Connections to Navigable Waterways
- Connections to Intermodal Freight Facilities

# Highway

- 1,607 Centerline Miles (4,001 lane miles) of State, US, and Interstate highways
- 423 Bridges
- 7 Roundabouts
- 9 Reduced Conflict Intersections
- 38 Dynamic Message Signs



# Critical Urban/Rural Freight Corridors

**Table 6.8 Critical Urban Freight Corridors**

AUTHORITY	ROUTE	FROM	TO	LENGTH (MILES)
MnDOT District 3	MN Highway 101	I-94 near Rogers	US Highway 169	6.82
MnDOT District 3	US Highway 169	MN 101	Sherburne CR33 (205 <sup>th</sup> Ave NW)	3.50

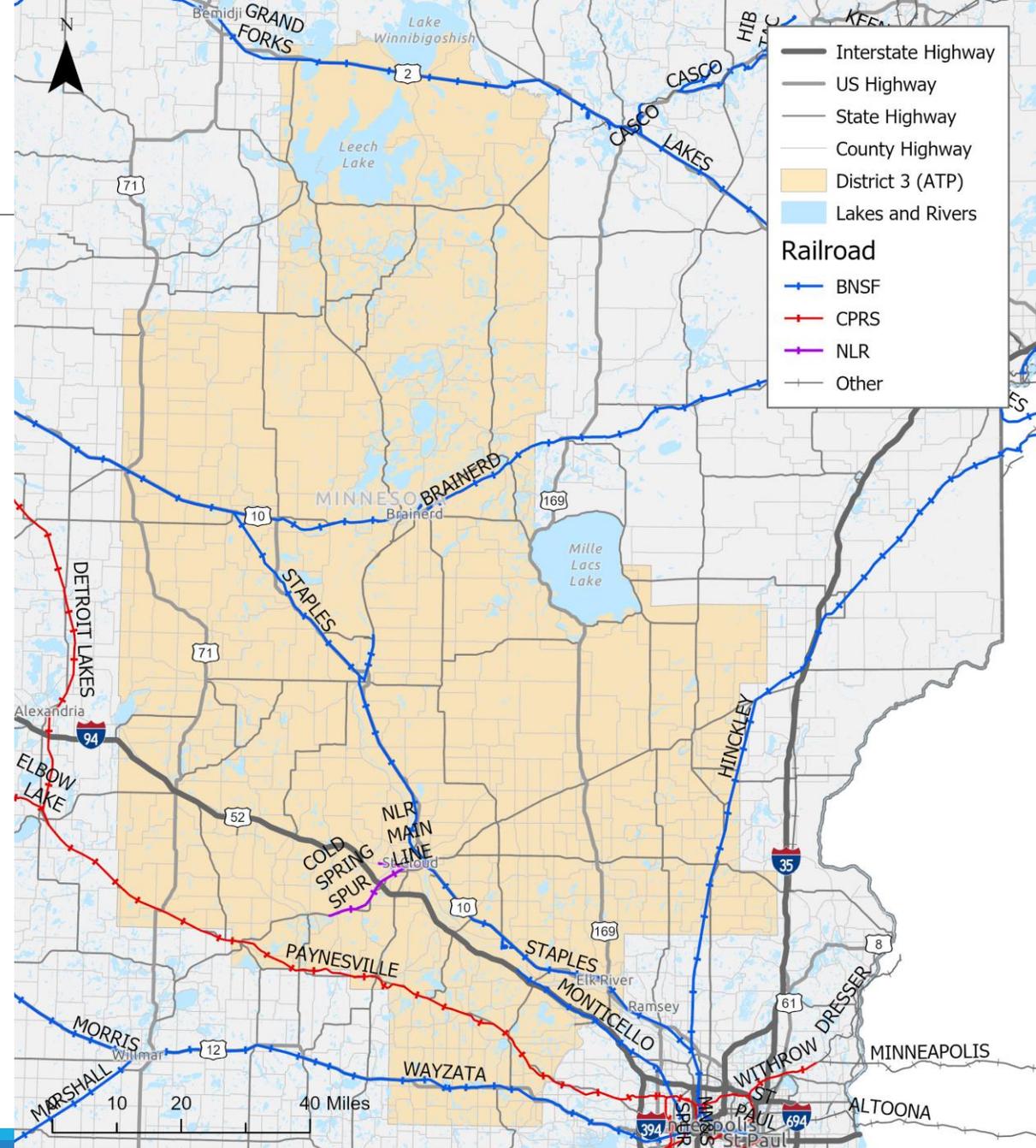
**Table 6.9 Critical Rural Freight Corridors**

AUTHORITY	ROUTE	FROM	TO	LENGTH (MILES)
MnDOT District 3	US Highway 169	205th Ave NW in Elk River	South Rum River Dr	18.9
MnDOT District 3	MN Highway 24	I-94 near Clearwater	Sherburne CSAH 8	1.71

Source: Minnesota Statewide Freight System and Investment Plan

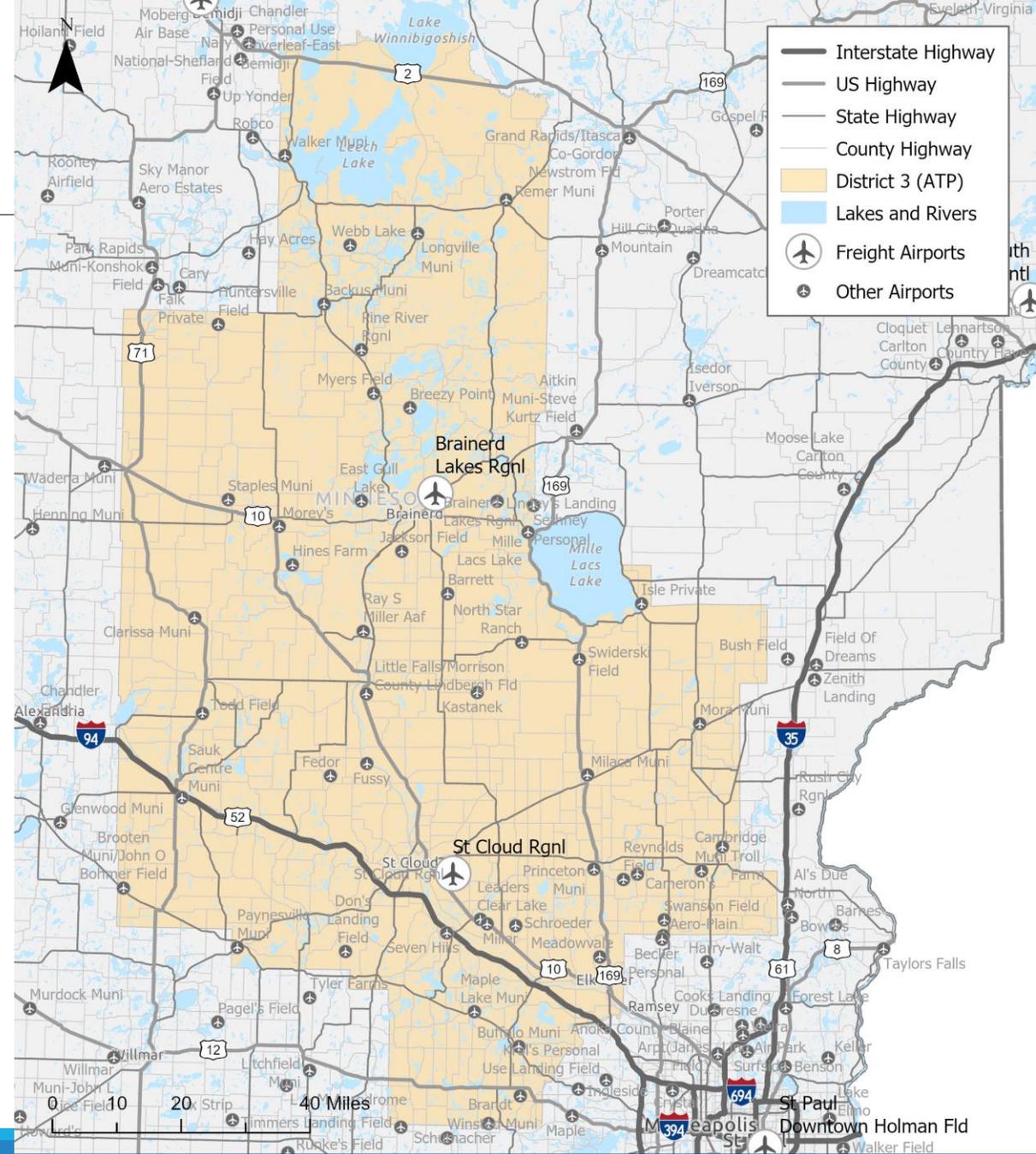
# Railroad

- 367 Miles of Rail
  - Six BNSF Subdivisions
  - One CP Subdivision
  - Northern Lines Railway



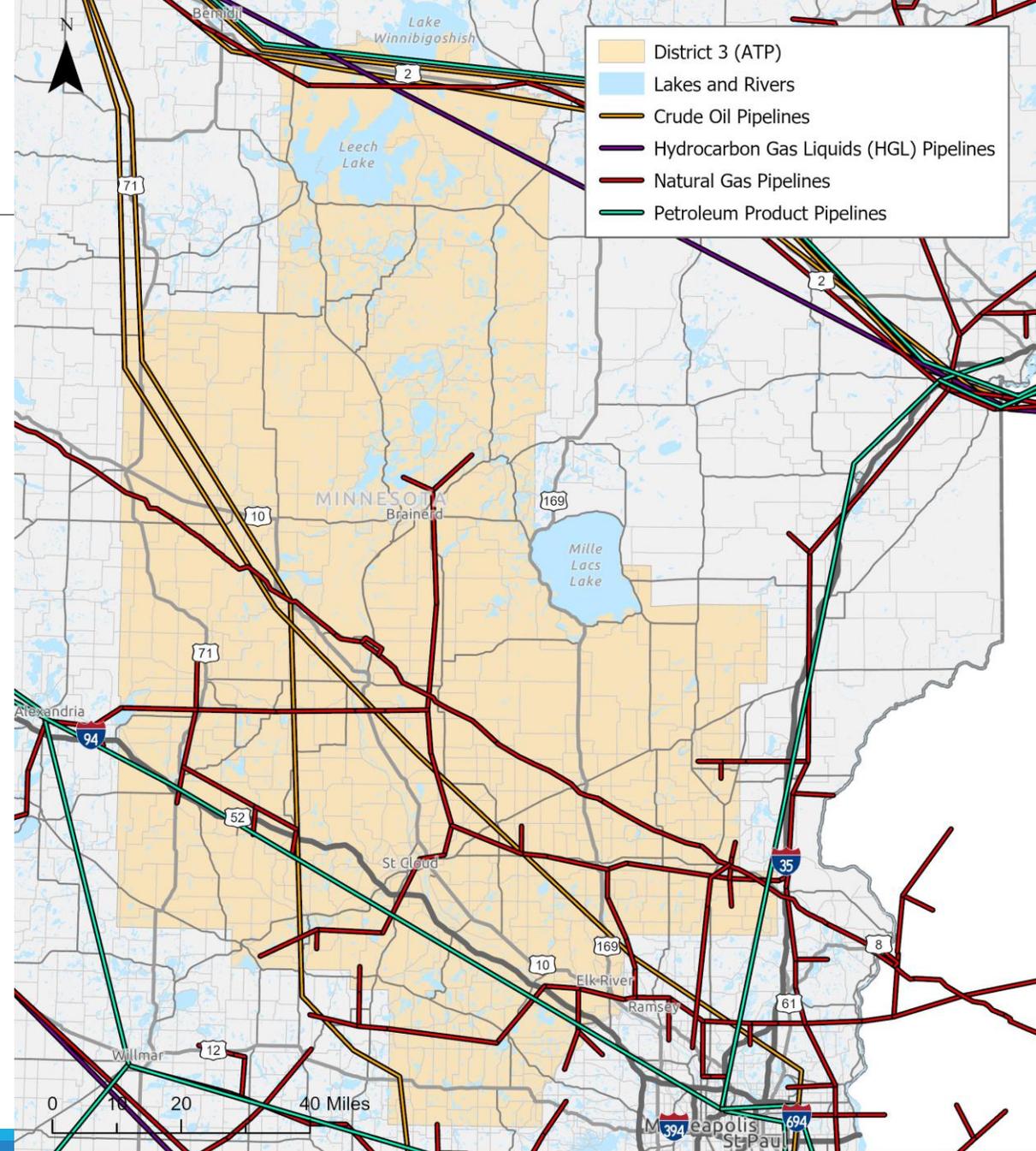
# Airports

- Two Airports with Freight Service
  - Brainerd Lakes Regional
  - St Cloud Regional



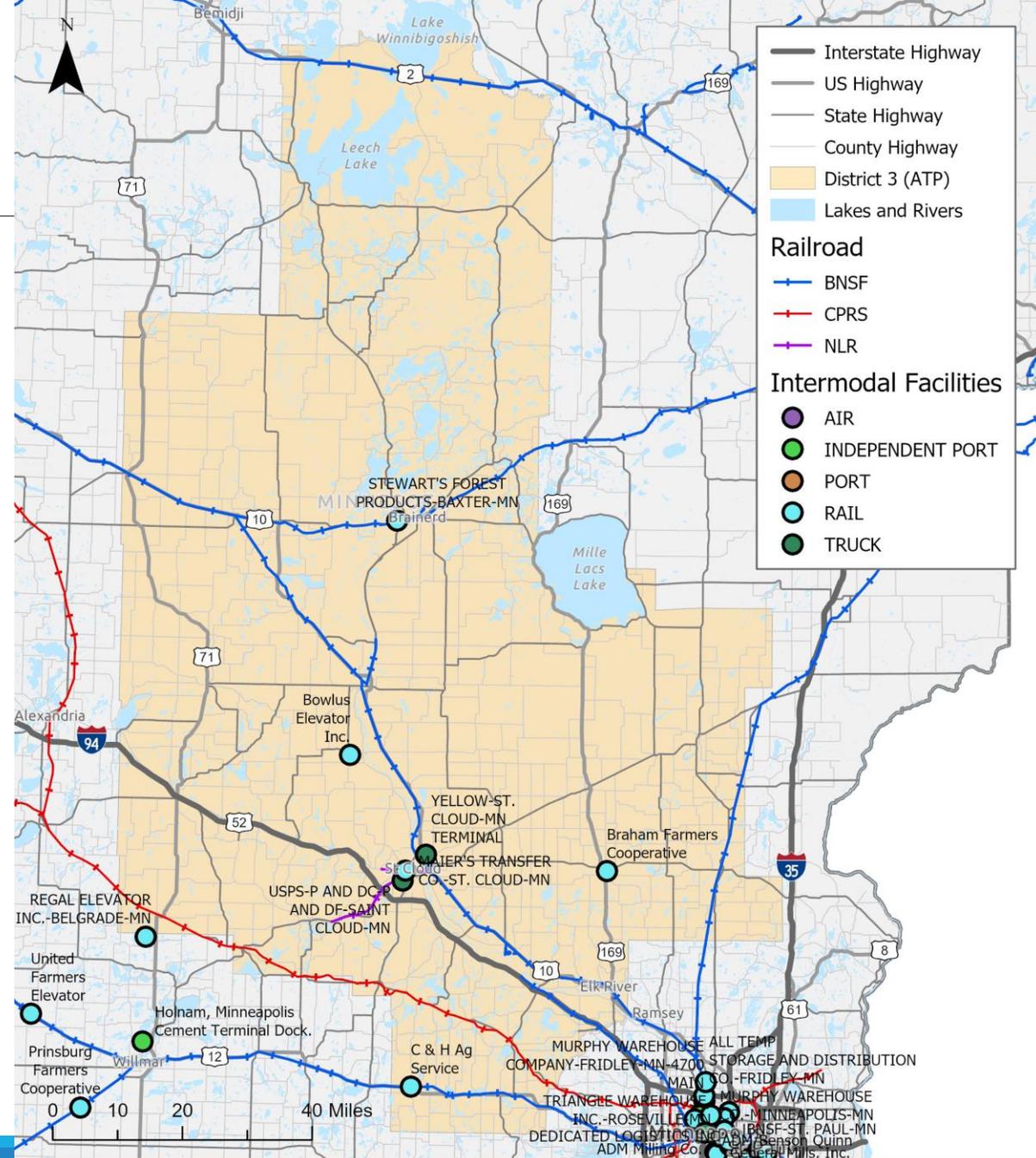
# Pipelines

- Detailed maps not available
- Pipeline Types
  - Crude Oil
  - Hydrocarbon Gas Liquids (HGL)
  - Natural Gas
  - Petroleum
- Minnesota Pipe Line carries crude oil between terminal in Clearwater County, MN and the Twin Cities

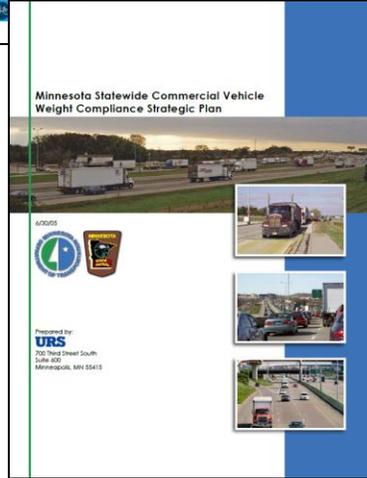
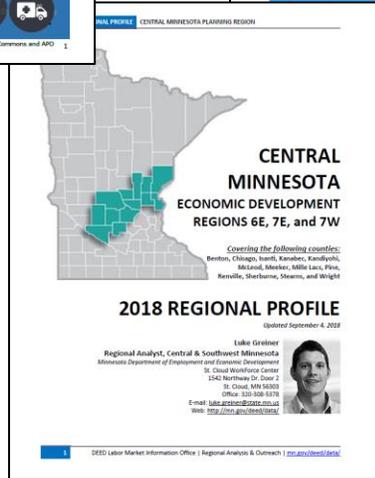
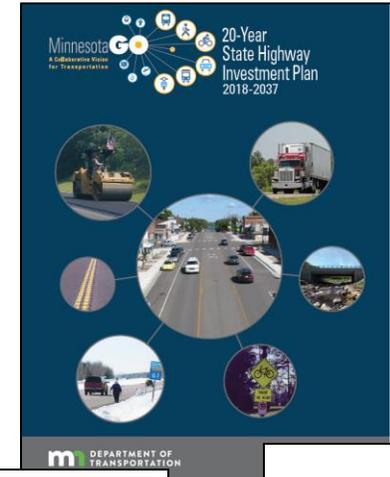
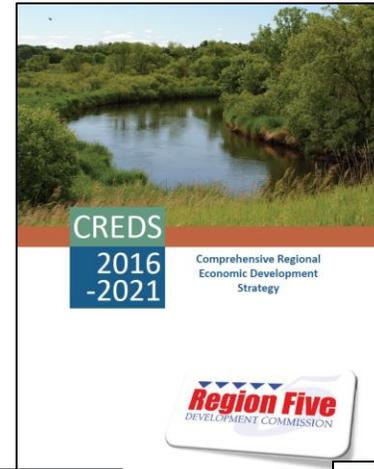
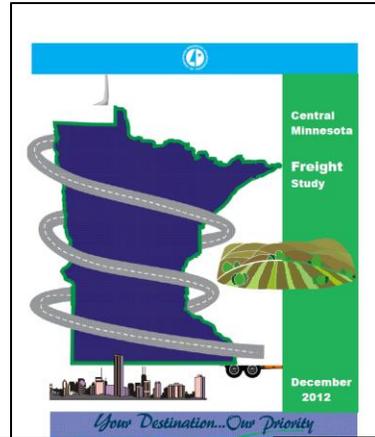
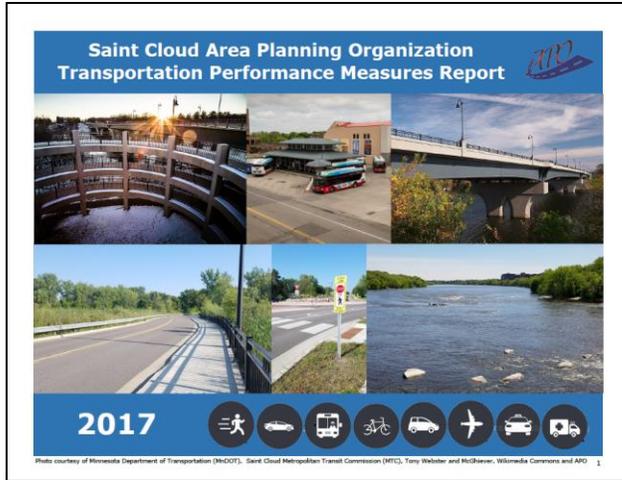


# Navigable Waterways/ Intermodal Connections

- No barge service north of Port of Saint Paul as of 2015
- Navigable waterways
  - Mississippi River System via truck through Saint Paul
  - Great Lakes-Saint Lawrence Seaway via truck through Duluth
- Intermodal container service in Minneapolis (CP) and Saint Paul (BNSF)



# Review/Synthesis of Previous Plans and Findings

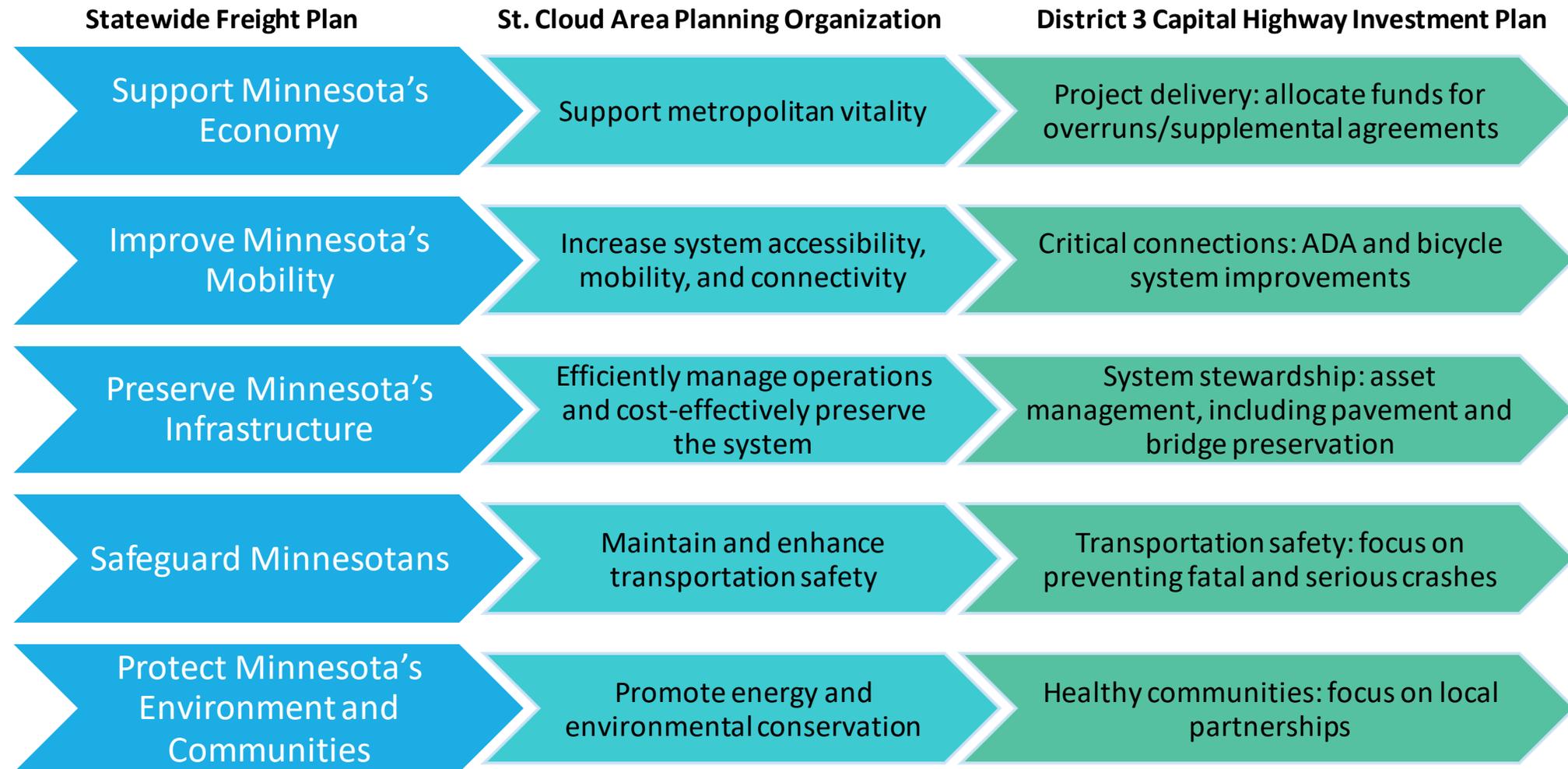


# Review of Existing Plans

- Capture statewide and regional freight goals and priorities
- Refresh existing understanding of the freight network
- Overview trends affecting the freight network in the District
- Identify policy-level recommendations from other plans and studies
- Review strategies in neighboring states facing similar freight issues as Minnesota and District 3

National/Statewide	Regional and District
Minnesota Statewide Commercial Vehicle Weight Compliance Strategic Plan (2005)	Region Five: Comprehensive Regional Economic Development Strategy (2016)
Minnesota Statewide Aviation System Plan (2012)	St. Cloud Area Planning Organization Transportation Performance Measures Report (2018)
Minnesota Statewide Ports and Waterways Plan (2014)	Central Minnesota Economic Development: 2018 Regional Profile (2018)
Transportation Planning to Support Economic Development: An Exploratory Study of Competitive Industry Clusters and Transportation in Minnesota (2015)	Central Minnesota Freight Study (2012)
Minnesota State Rail Plan (2015)	
A Comprehensive System for Assessing Truck Parking Availability (2017)	
Minnesota Statewide Freight and Investment Plan (2018)	
MnDOT 20-Year State Highway Investment Plan: 2018–2037 (2018)	
MnDOT Weight Enforcement Investment Plan (2018)	

# Statewide and Regional Transportation Goals and Priorities



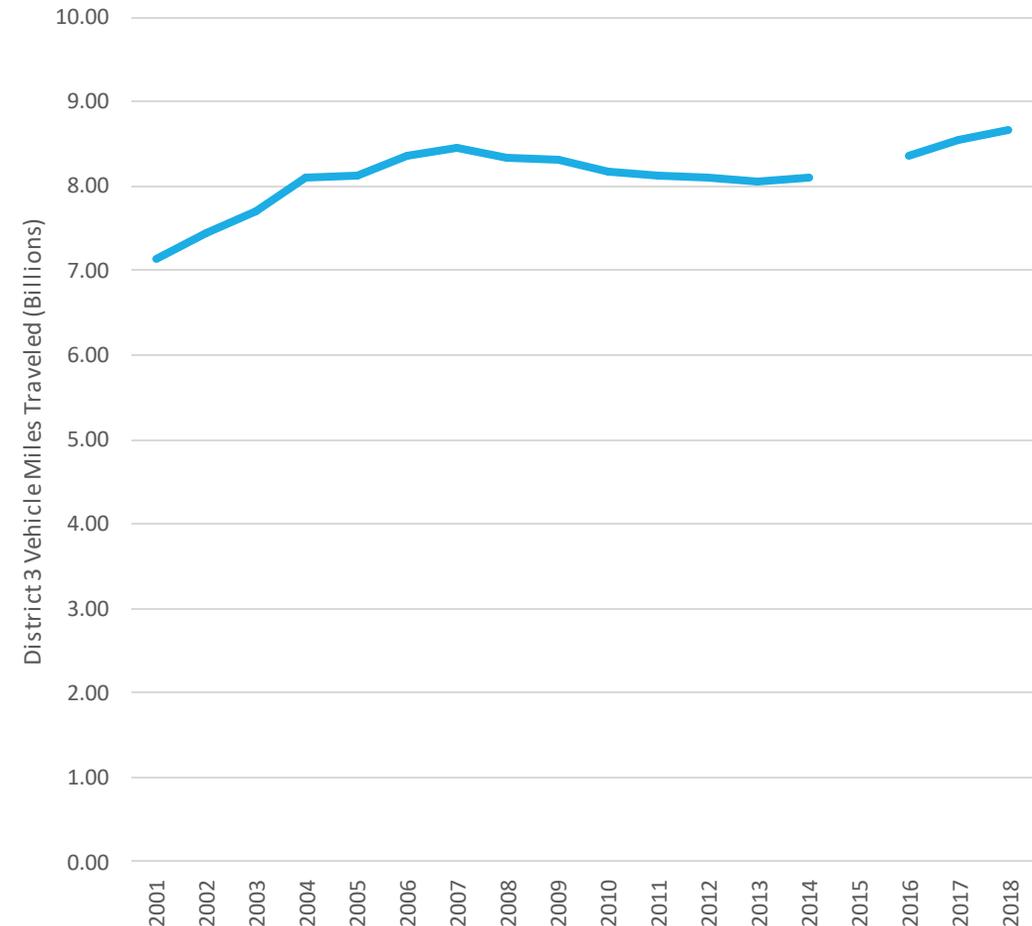
# Highlighted Trends and Freight Issues in District 3

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- Increased freight demand due to population increases
- 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
- Freight rail congestion and lack of facilities

# Increased Freight Demand

- Freight flows in District 3 are second only to the Metro District among Minnesota districts
  - The *Minnesota Statewide Freight and Investment Plan (2018)* forecasts 80 percent growth in freight tonnage by 2040.
- Exurban growth in the Metro district is spilling over into District 3 and influencing the region's development
- High population and VMT growth in the District increases freight and non-freight activity
  - High population growth: 24% increase from 2000 to 2017
  - Six counties with VMT growth exceeding 50% from 1992 to 2009
  - Increasing trend of commuters living in District 3 and commuting to the Twin Cities, adding traffic to roads heavily used by freight traffic, such as I-94

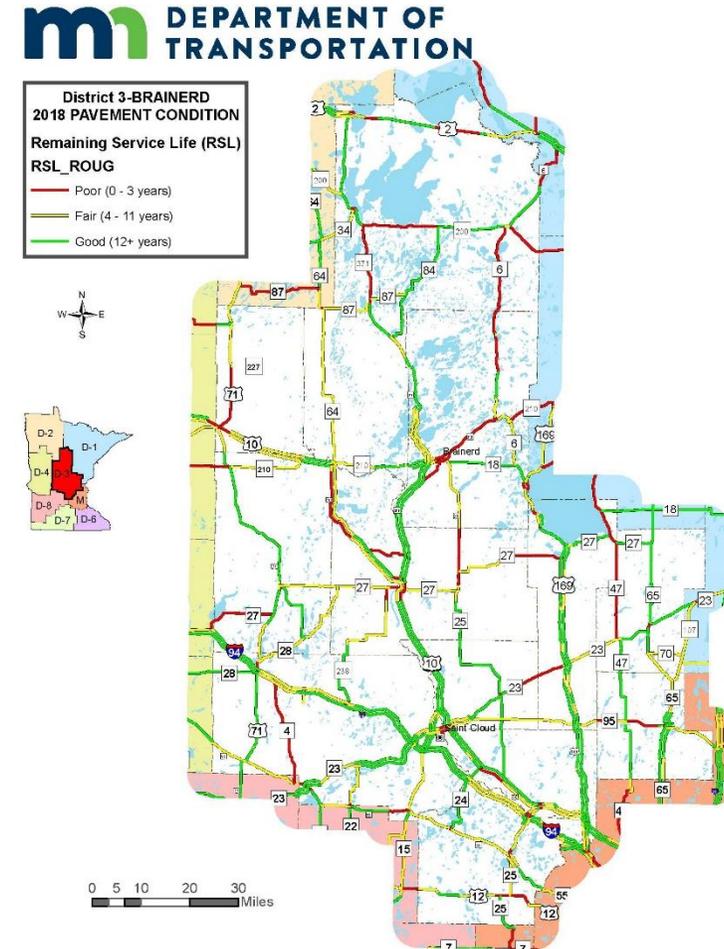


Source: MnDOT Roadway Data, <https://www.dot.state.mn.us/roadway/data/data-products.html#VMT>.

Note: 2015 data are not available.

# Freight Roadway Congestion

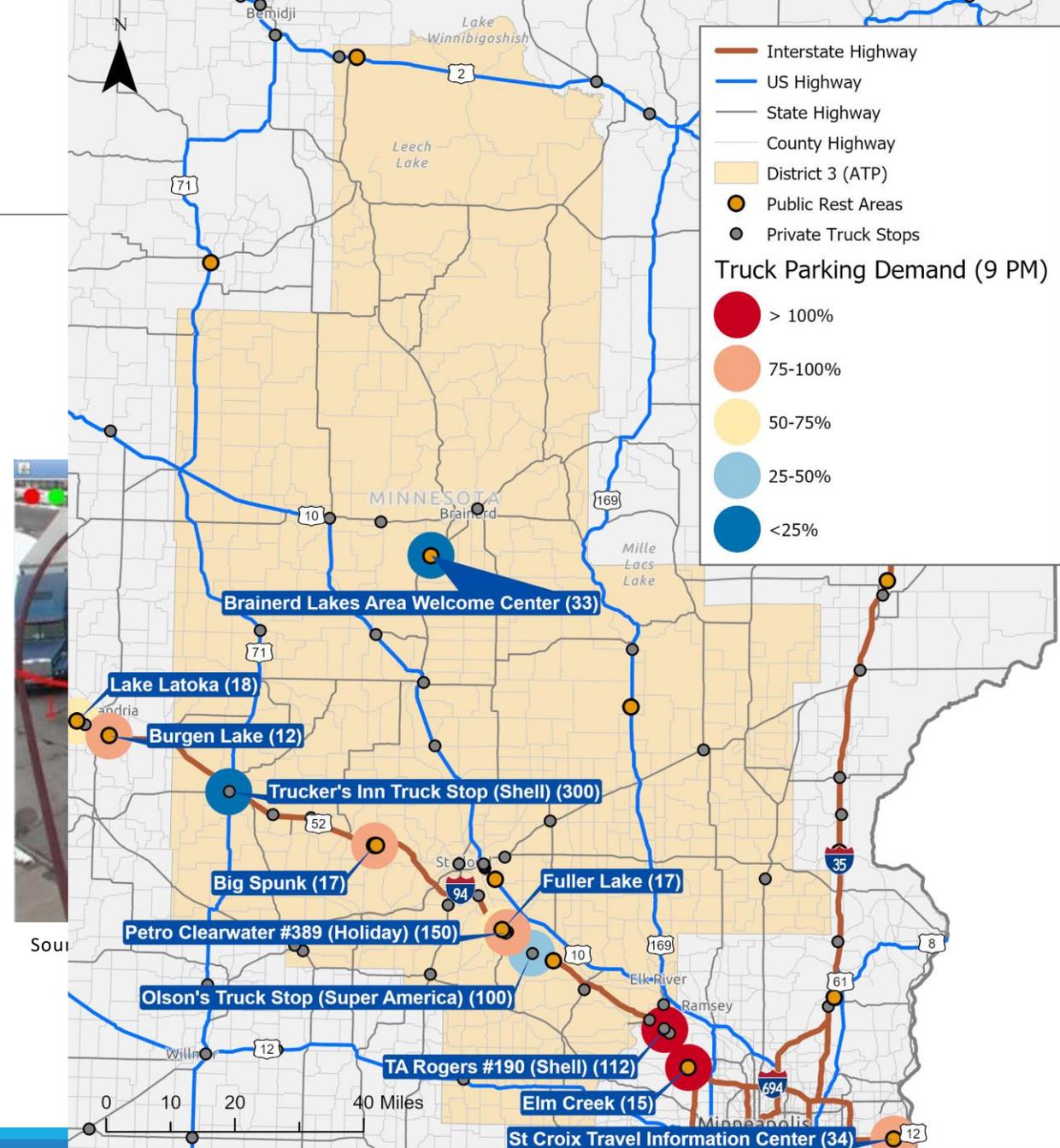
- District 3 has significant freight corridors:
  - Three on the National Highway Freight System: US 169, TH 24, and I-94
  - Additional key freight corridors: US 10, US 12, TH 23, and TH 25
- I-94 is the most congested corridor in the state
  - Truck speeds average around 50 MPH
  - I-94 is expected to continue to perform below performance targets despite planned improvements
- US 10, US 12, and TH 25 have poor pavement conditions, requiring replacement in 0-3 years



Source: [https://www.dot.state.mn.us/materials/maps/pvmtmgmt/D3\\_2018\\_RSL.pdf](https://www.dot.state.mn.us/materials/maps/pvmtmgmt/D3_2018_RSL.pdf).

# Truck Parking

- Trucks need overnight parking for long distance trips, as well as staging for trips into Minneapolis – St. Paul
  - Maple Grove and Rogers are big staging areas, but the need is radiating outward into District 3
- I-94 West corridor has the most congested rest areas in the state
- Truck Parking Information Management System (TPIMS) used to help drivers find parking
  - Multi-state effort to deploy real-time parking information
  - In 2019, the system broadcast parking information in District 3 at two locations, in Albany and Enfield along I-94.



# At-Grade Crossing Safety

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- 344 at-grade crossings (as of 2010) in the region out of the total 4,000+ in the State
- Sherburne County is among the top counties in the State for all crashes and for fatal crashes
- Six at-grade rail crossings that result in truck traffic delays were identified in the *Central Minnesota Freight Study (2012)*
- Three freight rail corridors in District 3 were identified in the *Minnesota State Rail Plan (2015)* as key corridors for crossing safety improvements
  - High volumes of Bakken crude oil unit trains
  - Strategies include closing at-grade crossings, upgrading passive warnings, improving active protection, and creating grade separations



Source: Creative Commons, <https://search.creativecommons.org/photos/5bffe64d-b2c0-4136-9788-ee8dab2bb371>.

# Freight Rail Challenges

- Capacity
  - A study of the granite industry found delays and negative economic impact due to inadequate rail capacity
  - Some industries' products (construction materials and forest products) shifted from rail to truck due to limited rail capacity
  - Historically, delays have occurred when demand for multiple commodities was high (e.g., oil in North Dakota and record harvests in the Midwest)
  - Blocked crossings are an increasing safety concern from traffic growth from longer trains (i.e. emergency services)
- No intermodal rail facilities exist in District 3
  - The *Minnesota State Rail Plan (2015)* cites expansion of intermodal service as a strategy to enhance freight movement by rail
  - The nearest access to intermodal container service is in the Twin Cities



Source: MnDOT State Rail Plan <https://www.dot.state.mn.us/planning/railplan/>

# Neighboring States' Approaches

State	Increased freight demand	Congestion/ Slow Speeds	Truck Parking	At-Grade Crossing Safety	Rail Facilities
<b>Wisconsin</b>	<ul style="list-style-type: none"> <li>• <b>Performance-based</b> needs identification</li> <li>• State-of-the-art <b>prioritization</b> of needs</li> </ul>	<ul style="list-style-type: none"> <li>• Support <b>communications</b> along state highway corridors of freight significance</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Redesign</b> truck parking lots so vehicles don't take up more than one spot</li> <li>• <b>Communicate</b> information in real time to drivers</li> </ul>	<ul style="list-style-type: none"> <li>• Deploy <b>technology</b></li> <li>• Improve emergency response with <b>ITS systems</b> and <b>cross agency collaboration</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Preserve rail corridors</b> for freight service</li> <li>• <b>Acquire rail lines</b> into public ownership to preserve essential service</li> </ul>
<b>Iowa</b>	<ul style="list-style-type: none"> <li>• Right-size the system with <b>cost-effective solutions</b> to address anticipated problems</li> </ul>	<ul style="list-style-type: none"> <li>• Provide <b>real-time information</b> on system conditions</li> <li>• Use new technologies (such as social media) to <b>communicate project information</b></li> </ul>			<ul style="list-style-type: none"> <li>• <b>Explore new rail intermodal facilities</b> to lower cost for businesses</li> </ul>
<b>South Dakota</b>	<ul style="list-style-type: none"> <li>• Participate in <b>multistate freight planning</b></li> </ul>	<ul style="list-style-type: none"> <li>• Improve data at critical freight links through use of <b>ITS infrastructure</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Monitor</b> future truck parking needs at rest areas</li> <li>• Use <b>asset management</b> to maintain rest area security cameras and lighting</li> </ul>		<ul style="list-style-type: none"> <li>• Identify opportunities for <b>improvement</b> or <b>sale</b> or short lines.</li> </ul>
<b>North Dakota</b>	<ul style="list-style-type: none"> <li>• <b>Work with the public and private sector</b> to implement operational strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-trip and en-route <b>travel and driver information</b></li> <li>• <b>Promote multimodal infrastructure</b> (pipelines and rail) to reduce roadway freight impacts</li> </ul>		<ul style="list-style-type: none"> <li>• Improve <b>hazardous material security</b> and incident response service</li> <li>• <b>Provide incentives</b> to close low volume and non-essential public rail crossings</li> </ul>	<ul style="list-style-type: none"> <li>• Support the development of <b>intermodal facilities</b> and service</li> </ul>
<b>Nebraska</b>	<ul style="list-style-type: none"> <li>• <b>Identify and prioritize</b> projects using key Freight Corridors and Critical Freight Corridors</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Identify and mitigate</b> bottlenecks</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and prioritize projects using key Freight Corridors and Critical Freight Corridors</li> </ul>	<ul style="list-style-type: none"> <li>• Implement <b>safety measures</b> (warning lights, gates) or separate road-rail crossings</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Establish</b> cross-agency and business <b>connections</b></li> </ul>

Sources: [Wisconsin Freight Plan](#), [Low-Cost Strategies to Increase Truck Parking in Wisconsin](#), [Wisconsin Rail Plan](#), [Nebraska Freight Plan](#), [Iowa Freight Strategies](#), [South Dakota Freight Plan](#).

# Discussion

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- Is our understanding of District 3's freight issues and challenges correct?
- What is the biggest issue you are dealing with in terms of freight today?
- Are there other trends, issues, plans or resources we should be aware of?
- What would make the District 3 Freight Plan a win for you?
- Do you have any other questions about the plan process?

# Next Steps

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- Short term:

- 1) Analysis of existing inventory, demand, system conditions, bottlenecks, future demand, and trends
- 2) Start an analysis of strengths, weaknesses, opportunities, and threats (SWOT)

- Long term:

- 1) Adopt a consistent approach statewide for project ranking, selection criteria
- 2) Explore other ways to integrate freight, railways and waterways needs into project planning and programming

# Questions

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Office of Freight and Commercial Vehicle Operations  
Minnesota Department of Transportation

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