



MnDOT District 1 Freight Plan

Advisory Committee Meeting

CPCS Team
September 14, 2018
Duluth, MN

Presentation Map



Review Work Plan and Role of Advisory Committee

Freight Transportation System Profile

Economic Profile

Initial Assessment of Issues and Needs

Stakeholder Outreach

Welcome to the Advisory Committee

Help us keep the “Big Picture” in mind

- Provide context and strategic guidance
- Aid the consultants with local coordination
- Provide written or verbal comments during Plan development

Please introduce yourself:

- Name, organization
- State one goal or desired outcome of the Freight Plan



Management consultants specializing in transportation

- Project management
- Sector needs analysis
- Performance assessment
- Strategy
- Outreach



MN-based planning and engineering firm

- Conceptual design
- Cost estimating
- Outreach
- Offices in Duluth, Virginia, and Grand Rapids

Project Motivations

Need to provide a clear understanding of the multimodal freight system, how local industries use the system and their needs and issues, so MnDOT's policy and programming decisions can be better informed in the District

Challenging Terrain



Heavy Snowfall, Long Winters



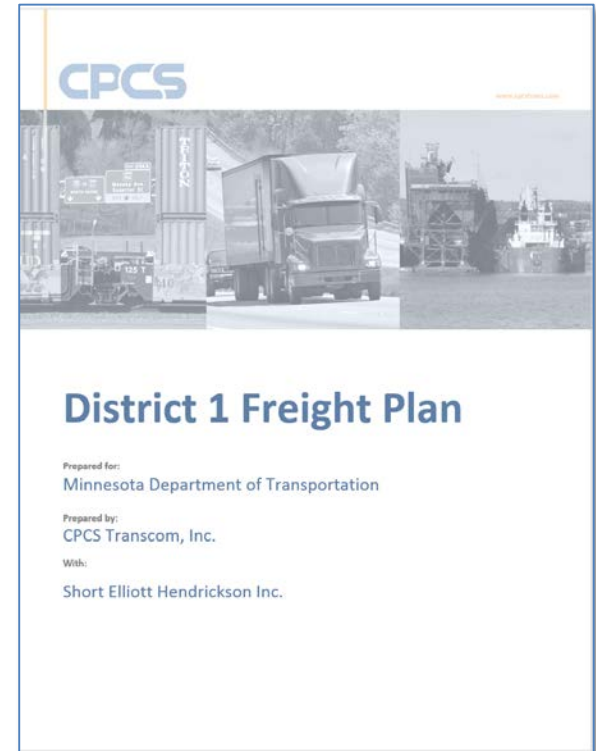
Unique Natural Resources



Image sources: Minnesota Department of Transportation, CPCS Transcom.

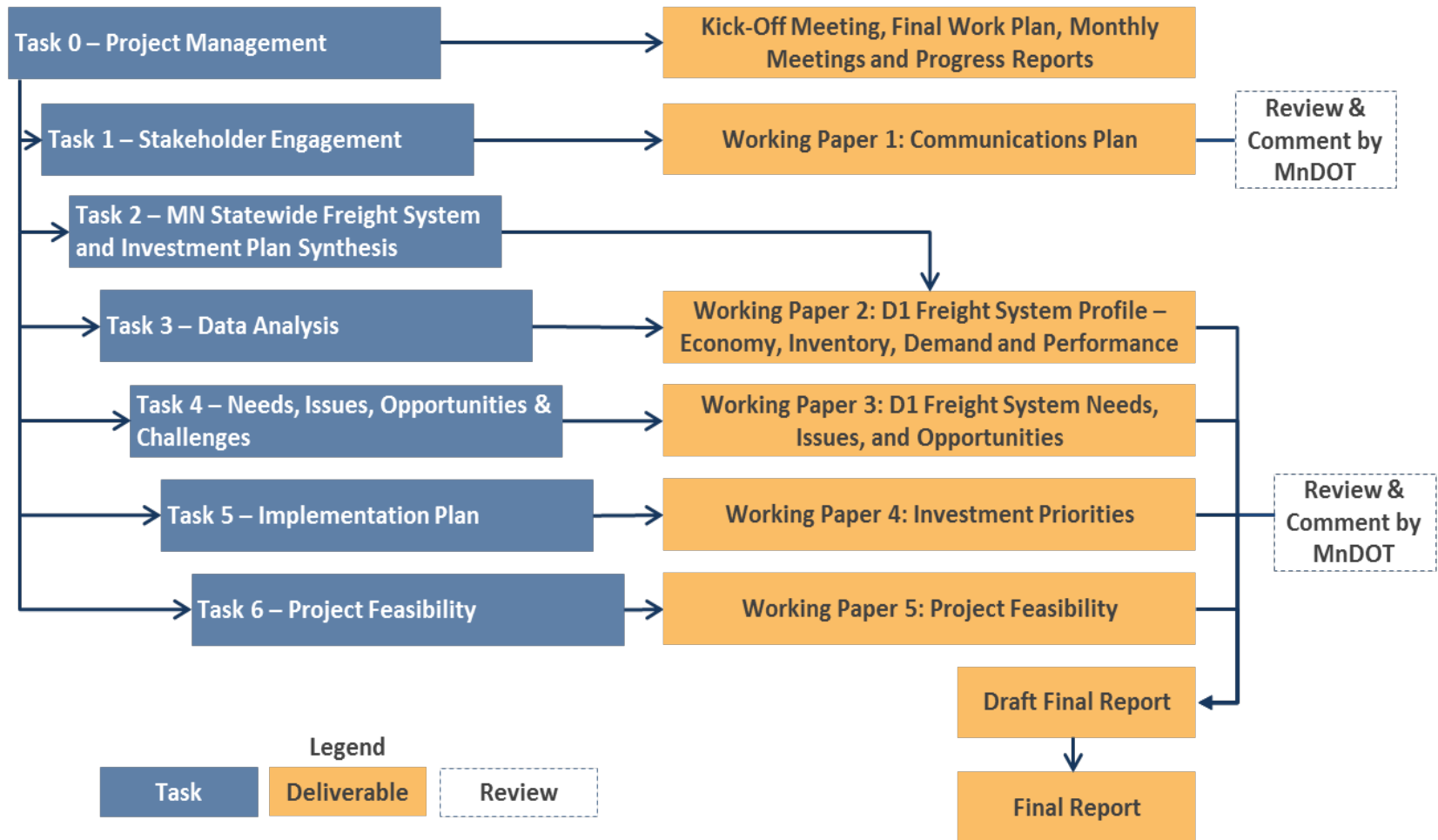
Expected Work Products

- 5** Working Papers
- 1** Executive Level Final Report
- 1** GIS Database
- 1** Stakeholder Outreach Program



Guidance to aid in project implementation

Work Plan Overview



Looking forward...

*Work will be conducted over 12-months,
through June 2019*

Meeting 1 Agenda (Month 3)

- Review Work Plan
- Confirm Plan Goals
- Freight system profile

Meeting 2 Agenda (Month 5)

- System condition and performance eval.
- Stakeholder findings – needs, issues & opportunities

Meeting 3 Agenda (Month 11)

- Present major findings and Plan deliverables
- Receive feedback

Task 1 – Stakeholder Engagement

Key Questions:

- Who are freight system stakeholders and how should they be engaged?
- What are the needs and issues of these stakeholders?



Task 2 – District 1 Plan Synthesis

Key Questions:

- How should previous planning processes be applied to District 1?
- What findings from previous plans and studies are relevant in District 1?
- What should be further explored and advanced in the District 1 Freight Plan?



+

Other Plans
& Initiatives

+

New Data
Analysis

+

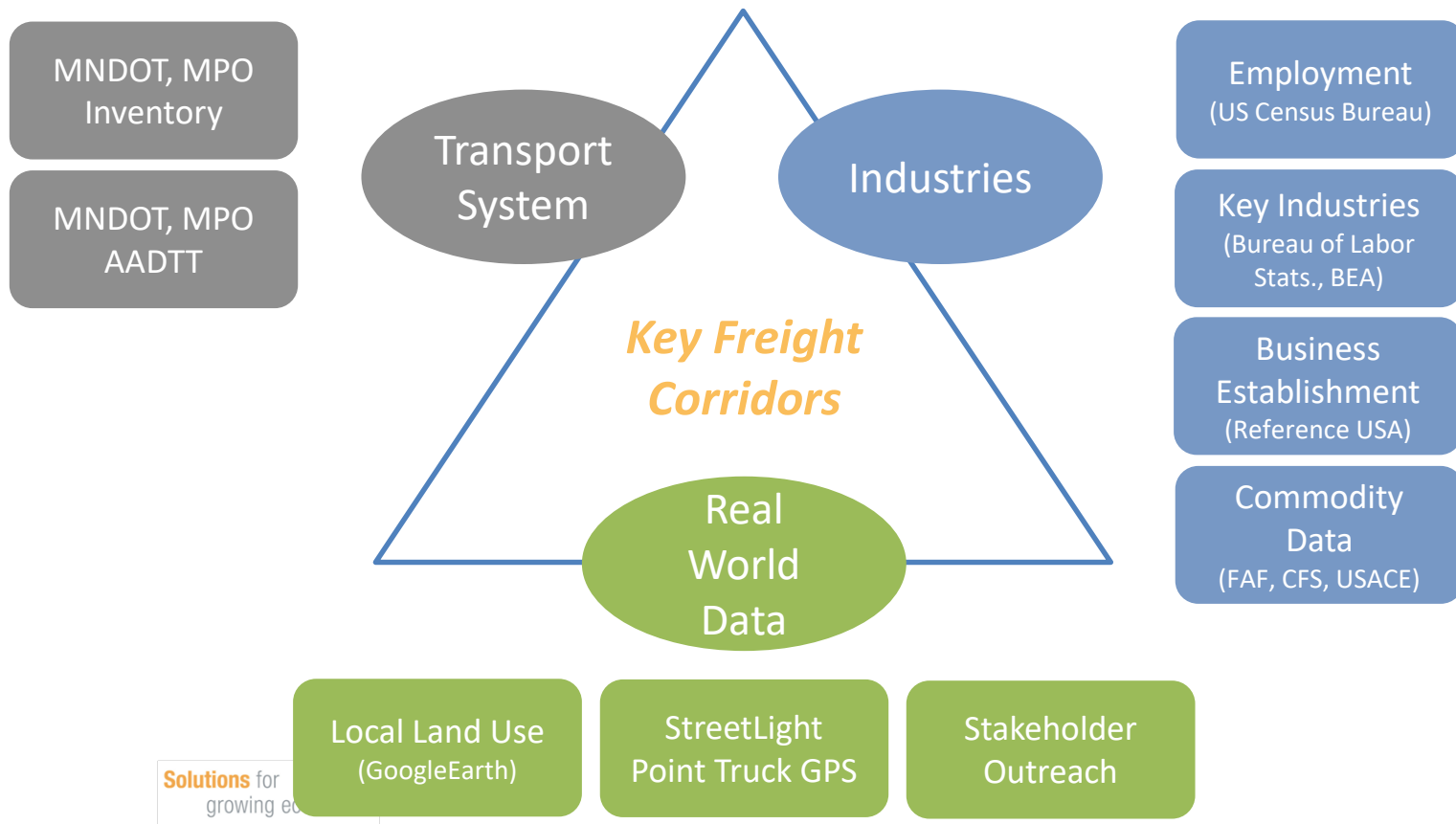
Stakeholder
Outreach

Solutions for
growing economies

Task 3 – Data Analysis

Key Questions:

- What is District 1's economic and industrial profile?
- What is District 1 infrastructure and key corridors/assets profile?
- What is the condition and performance of these assets?
- What major trends could impact these assets in the future?



Task 4 – Needs Issues, Opportunities and Challenges

Key Questions:

- What are the common needs, issues, opportunities, and challenges?
- What strategies should be advanced to mitigate the threats and weaknesses, and take advantage of the strengths and opportunities, of District 1's freight system?

Transportation needs are supply chain specific



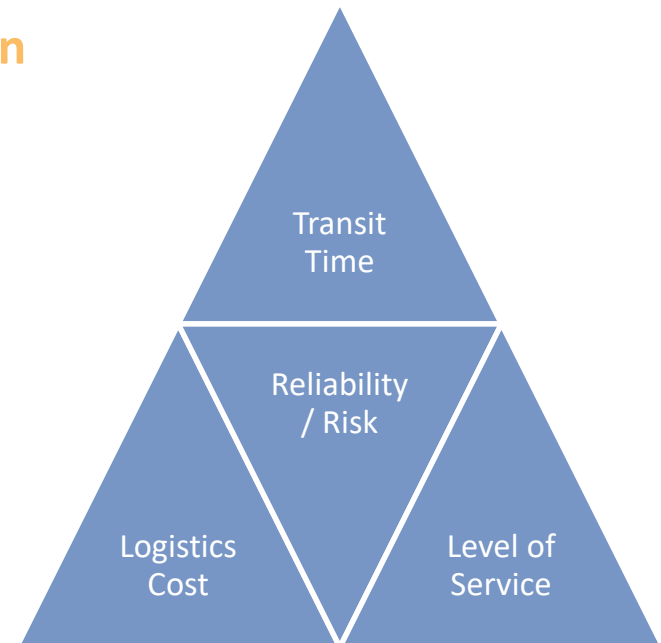
Favors lowest transportation cost, reliability (integrity)



Favors transit time, level of service



Favors lowest transportation cost

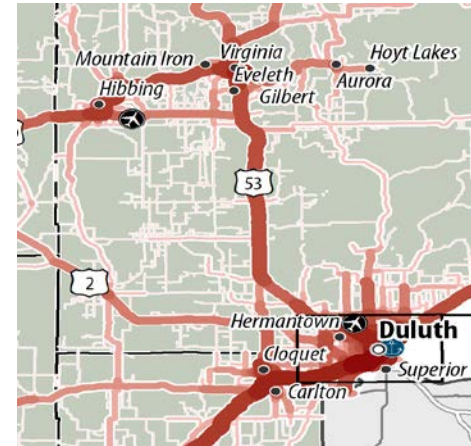


Process to Identify D1 Freight Issues and Needs

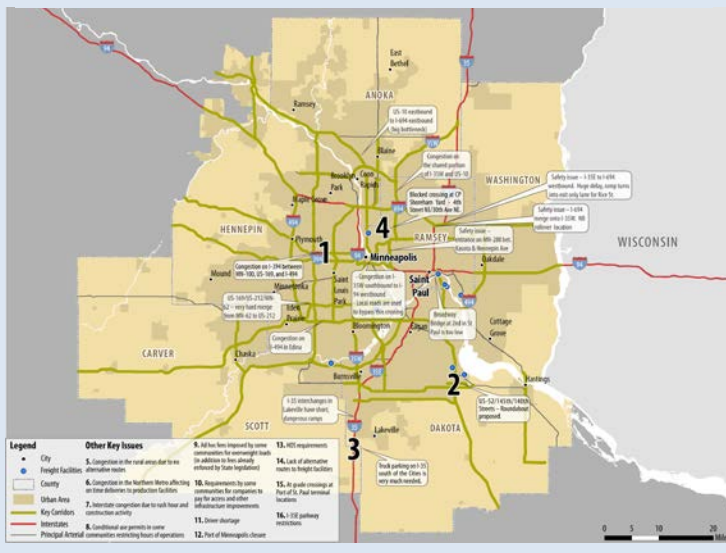
Freight-Dependent Clusters



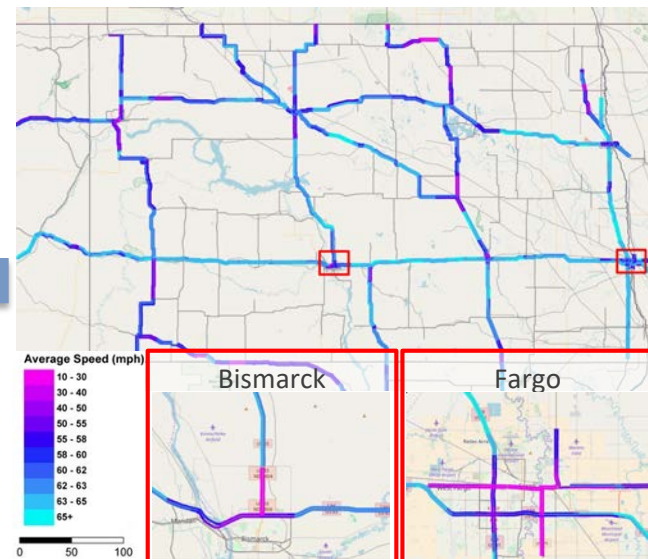
Key Corridors



Freight Issues and Needs



Condition and Performance



Task 5 – Investment Plan

Key Questions:

- How can MnDOT’s current process to evaluate or compare freight projects be used, or be improved, for District 1 evaluation?
- Which specific projects meet District 1’s overall goals, address the needs and issues identified, and/or leverage/unlock opportunities in District 1?
- What project concepts warrant advancement to pre-feasibility and scoping?

MN State Freight Plan Investment Criteria: Lenses for Evaluating Projects

Truck
Volume

Safety

Freight
Mobility

Freight
Facility
Access

Cost-
Effective

Project
Readiness

Task 6 – Project Feasibility

Key Questions:

- How feasible are the top projects?
- What are the potential environmental, social, economic, and engineering challenges associated with each of these projects?
- What are the order of magnitude costs of these projects?



Image: MnDOT, SEH

Open Discussion

- Is the Work Plan clear?
- Which of our activities are most important to you?

Presentation Map

Review Work Plan and Role of Advisory Committee



Freight Transportation System Profile

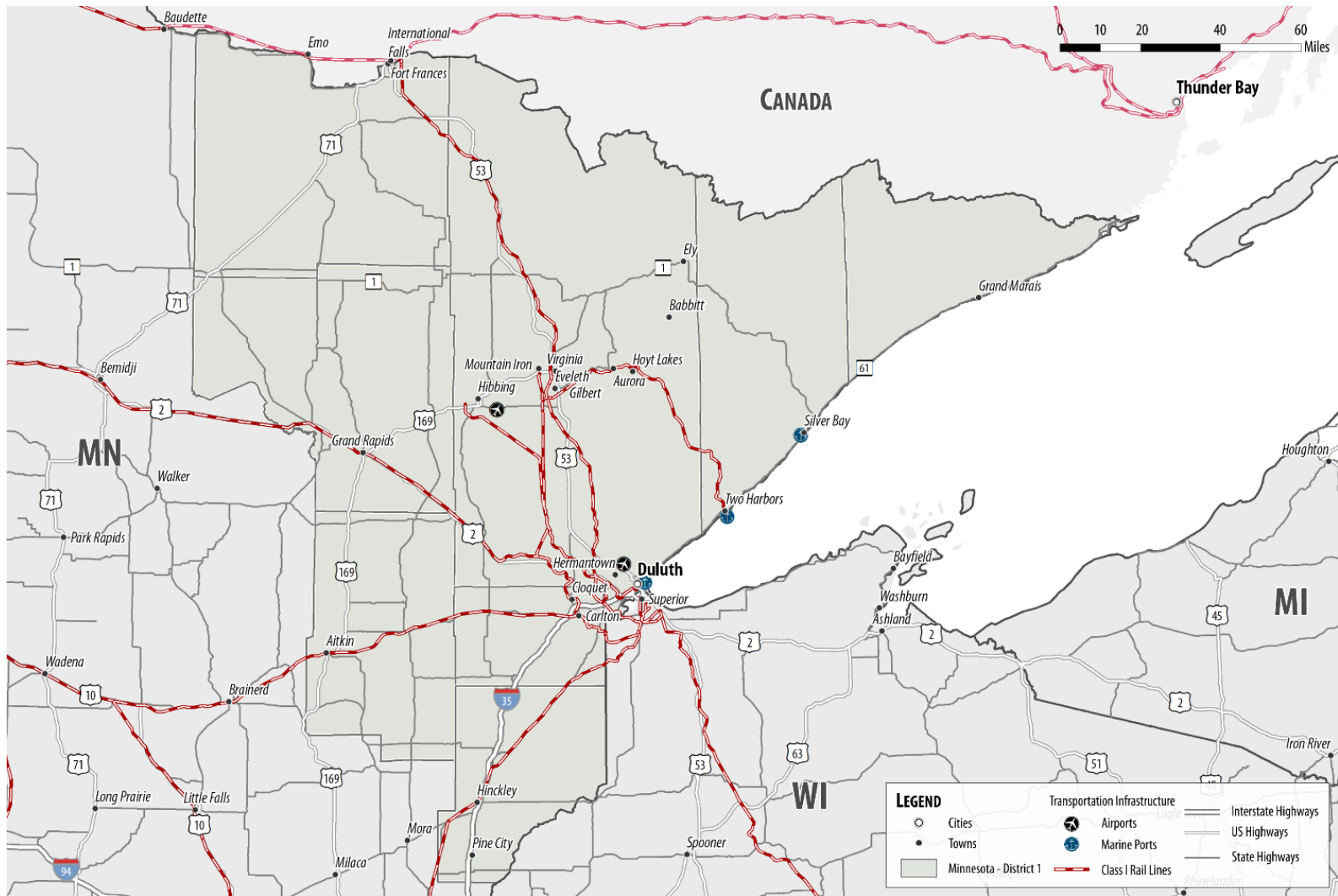
Economic Profile

Initial Assessment of Issues and Needs

Stakeholder Outreach

System Overview: The Multimodal System

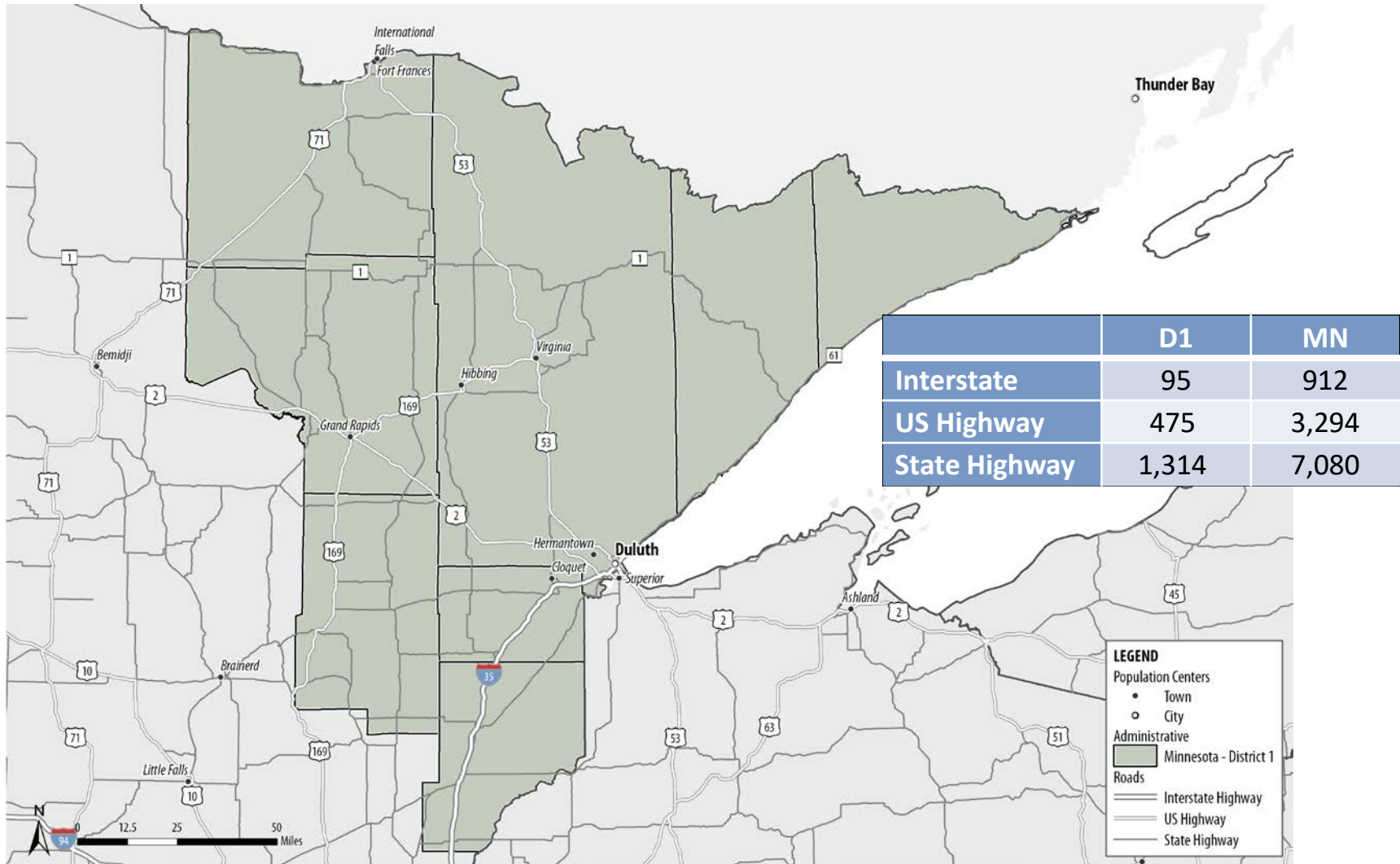
A Conduit for Economic Activity



Source: CPCS analysis of National Transportation Atlas Database

System Overview: Roads

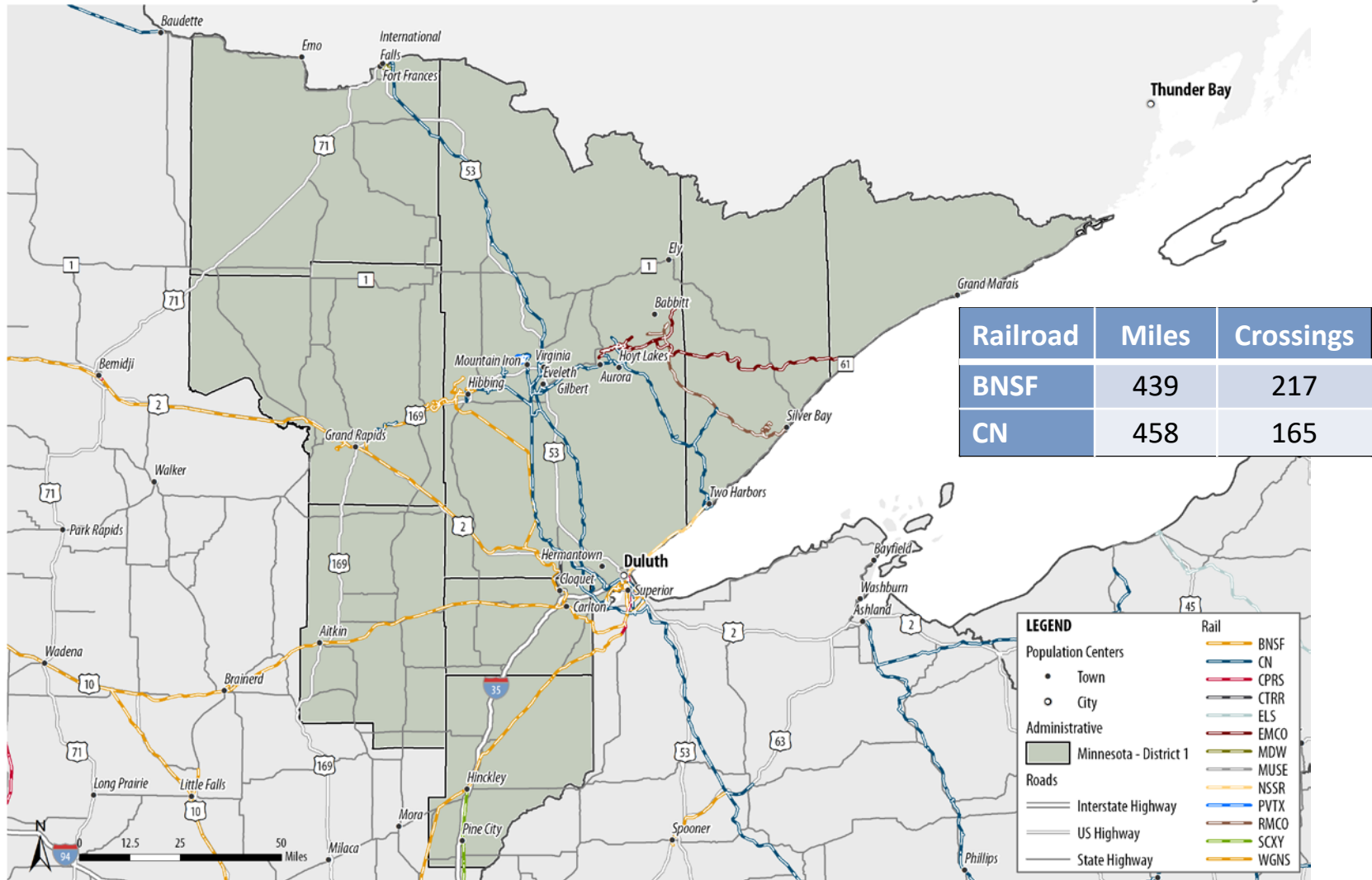
Connections to MN, WI, and ON



Source: CPCS analysis of National Transportation Atlas Database

System Overview: Key Railroads

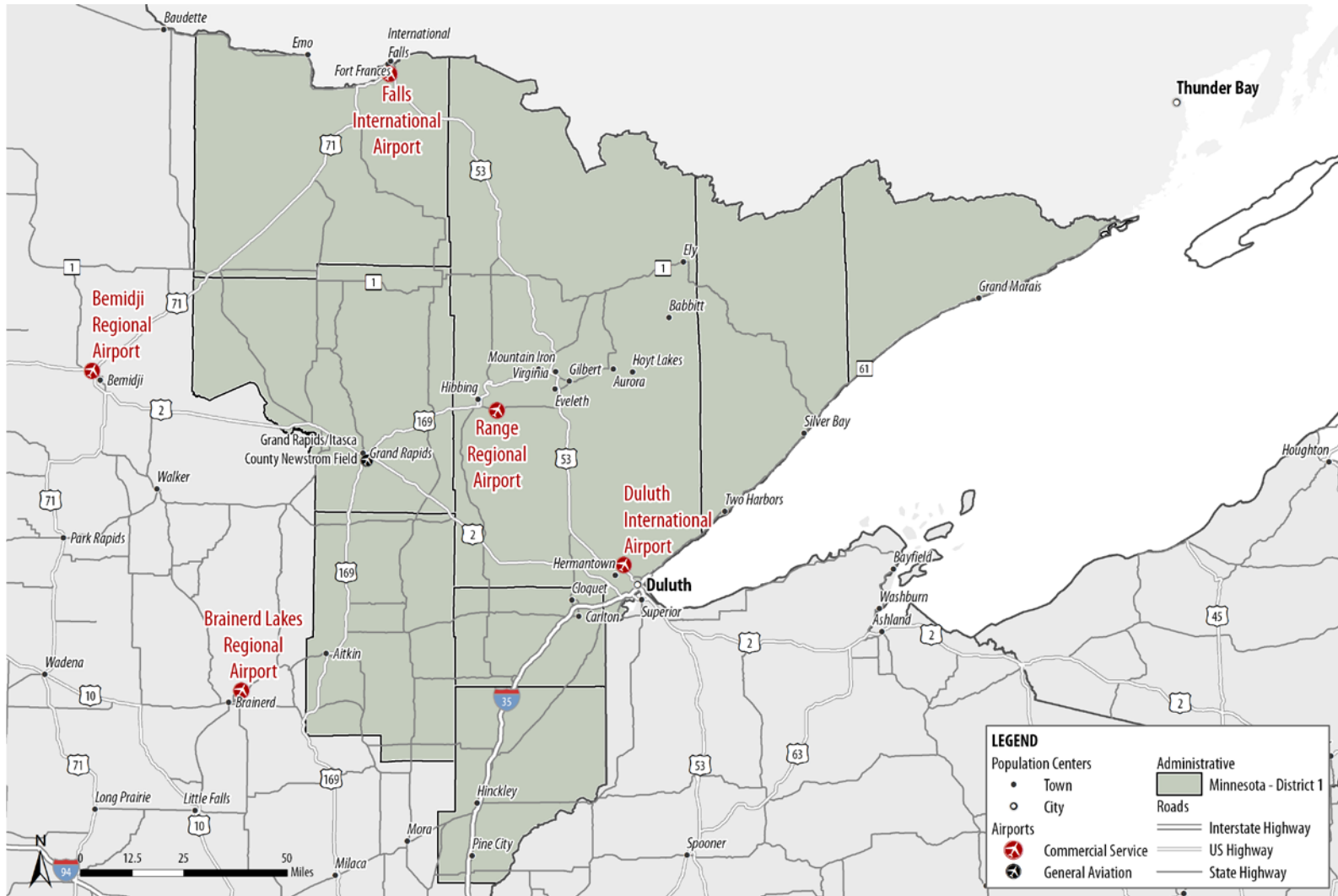
Connections to the Midwest and Nation



Source: CPCS analysis of National Transportation Atlas Database

System Overview: Airports

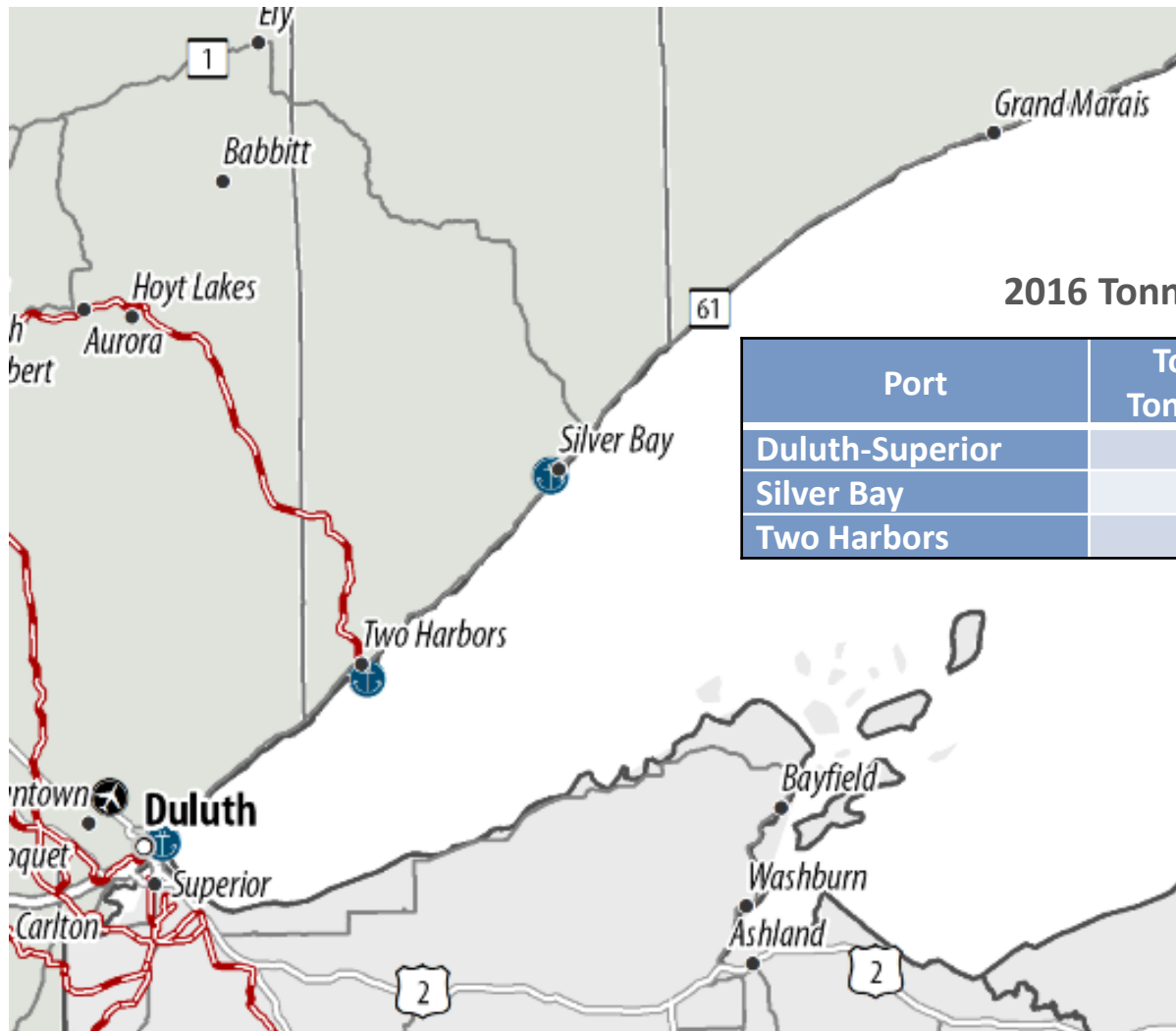
High Speed Service for Low-Weight, High-Value Goods



Source: CPCS analysis of National Transportation Atlas Database

System Overview: Ports

Bulk Service for the Great Lakes and International Markets



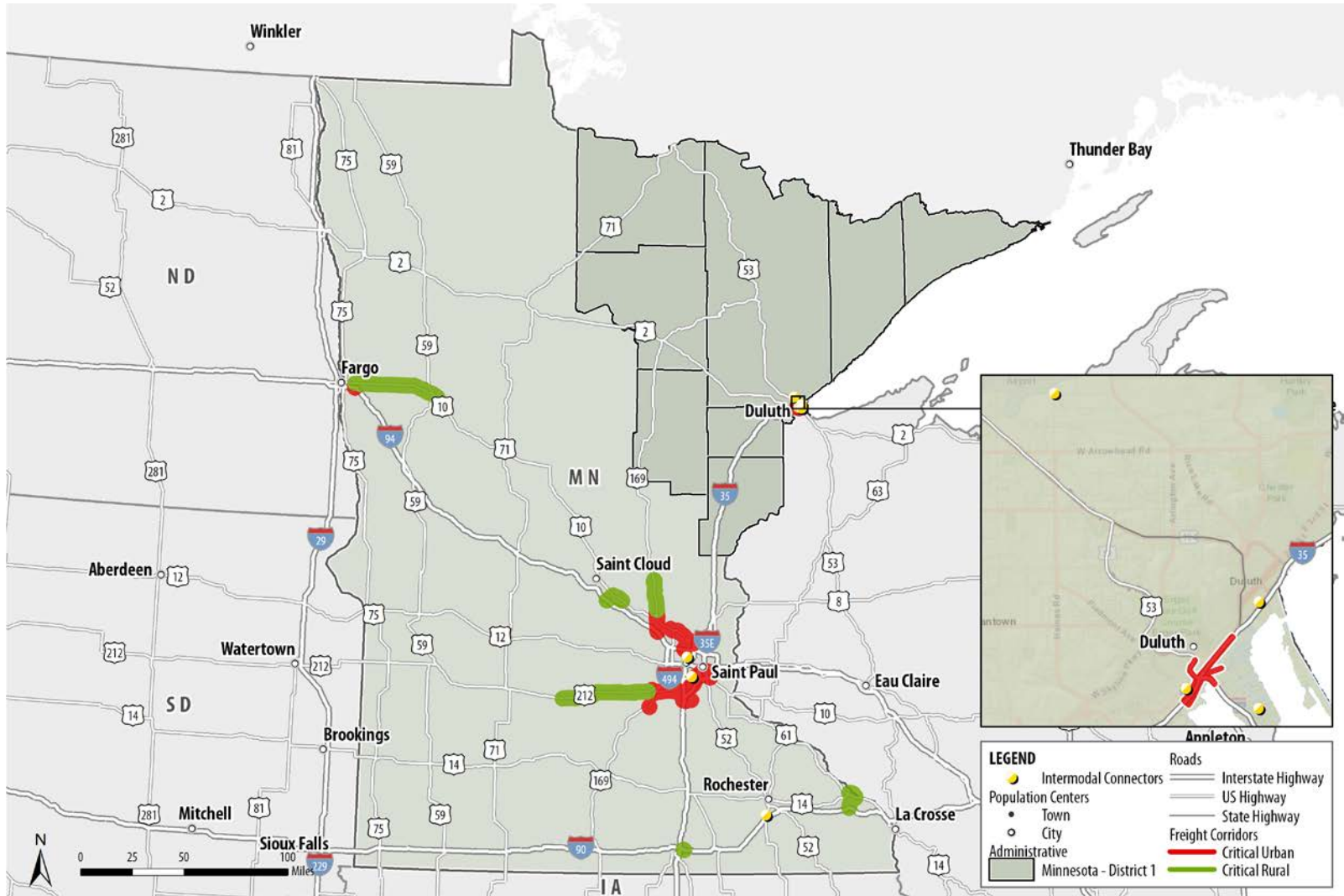
2016 Tonnage (Millions)

Port	Total Tonnage	Domestic Tonnage	Foreign Tonnage
Duluth-Superior	30.3	22.6	7.6
Silver Bay	3.4	3.4	0.0
Two Harbors	15.4	15.0	0.4

Source: CPCS analysis of National Transportation Atlas Database, Waterborne Commerce Statistics Center

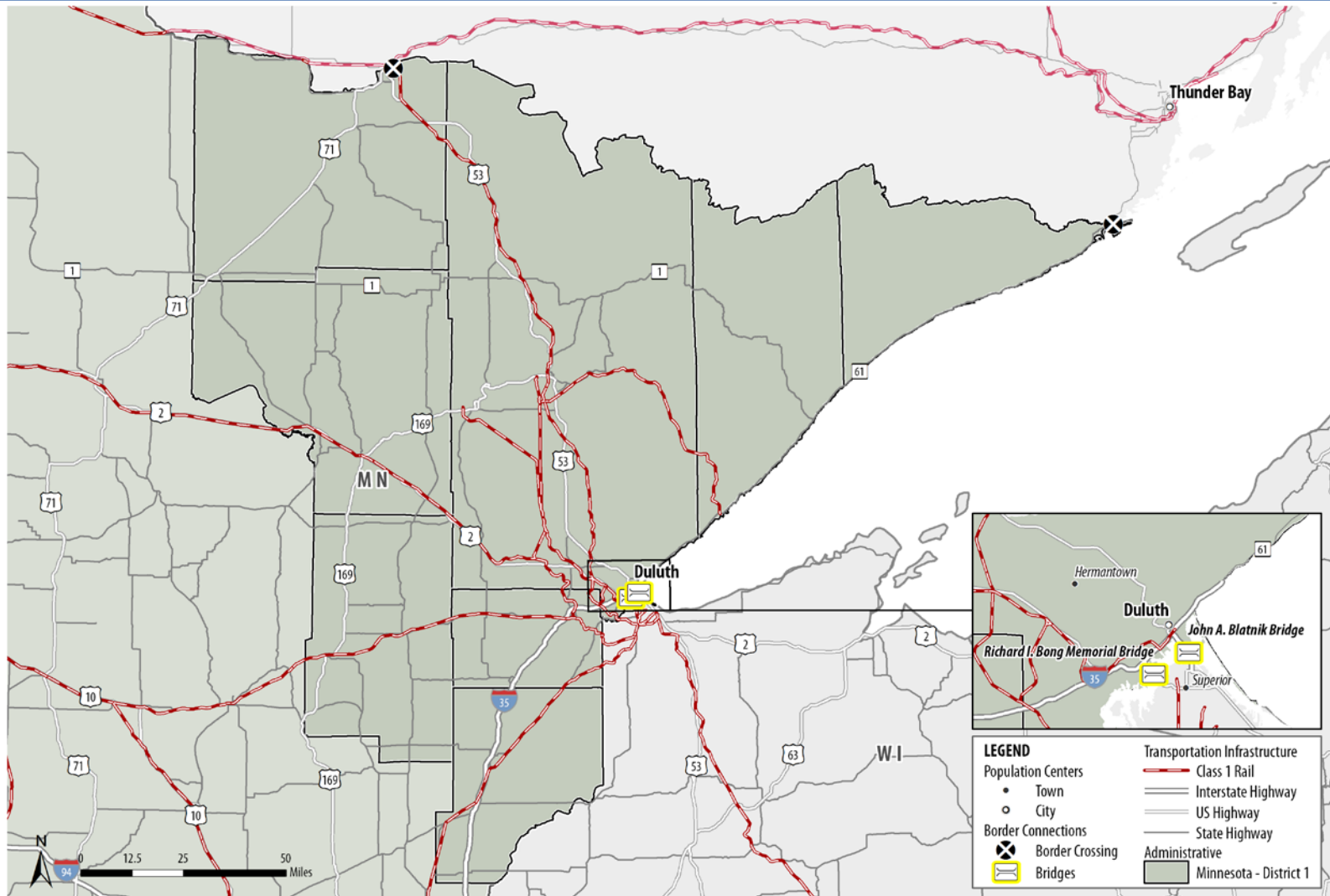
System Overview: Multimodal Connections

Critical Rural and Urban Connections



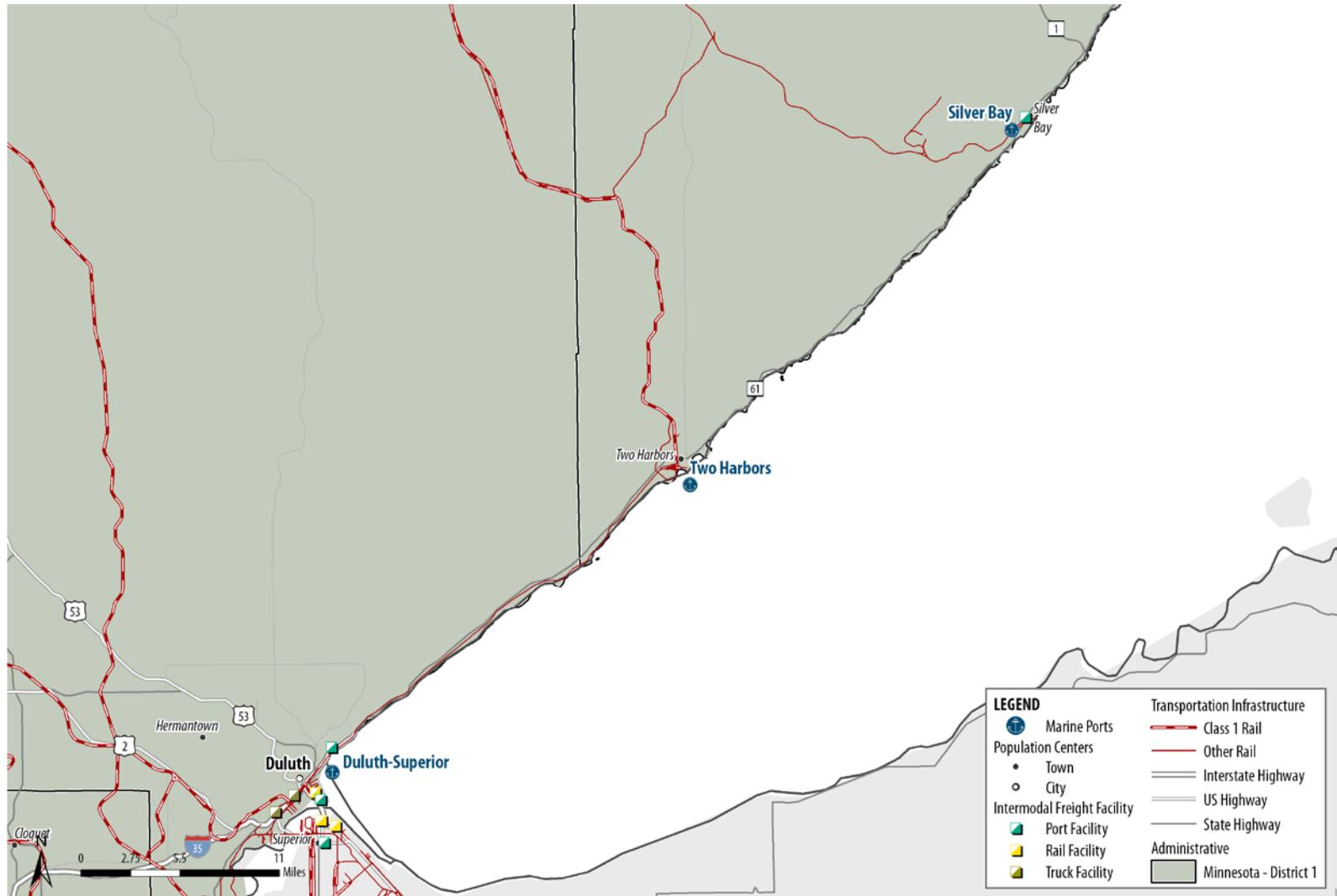
Source: MnDOT

System Overview: Regional, International Connections



Source: CPCS analysis of National Transportation Atlas Database

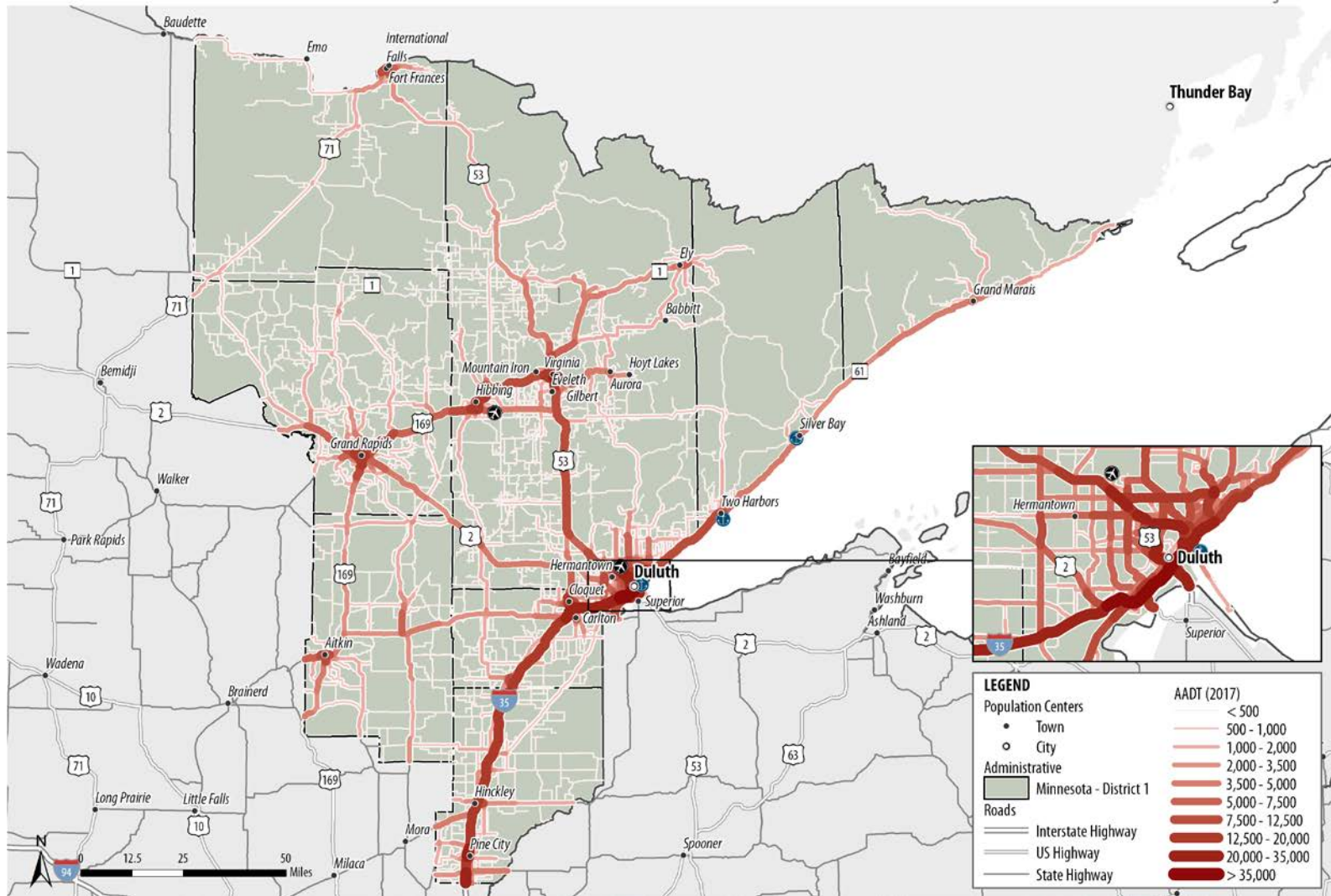
System Overview: Intermodal Connections



Source: CPCS analysis of National Transportation Atlas Database

System Overview: Key Highways and Roads

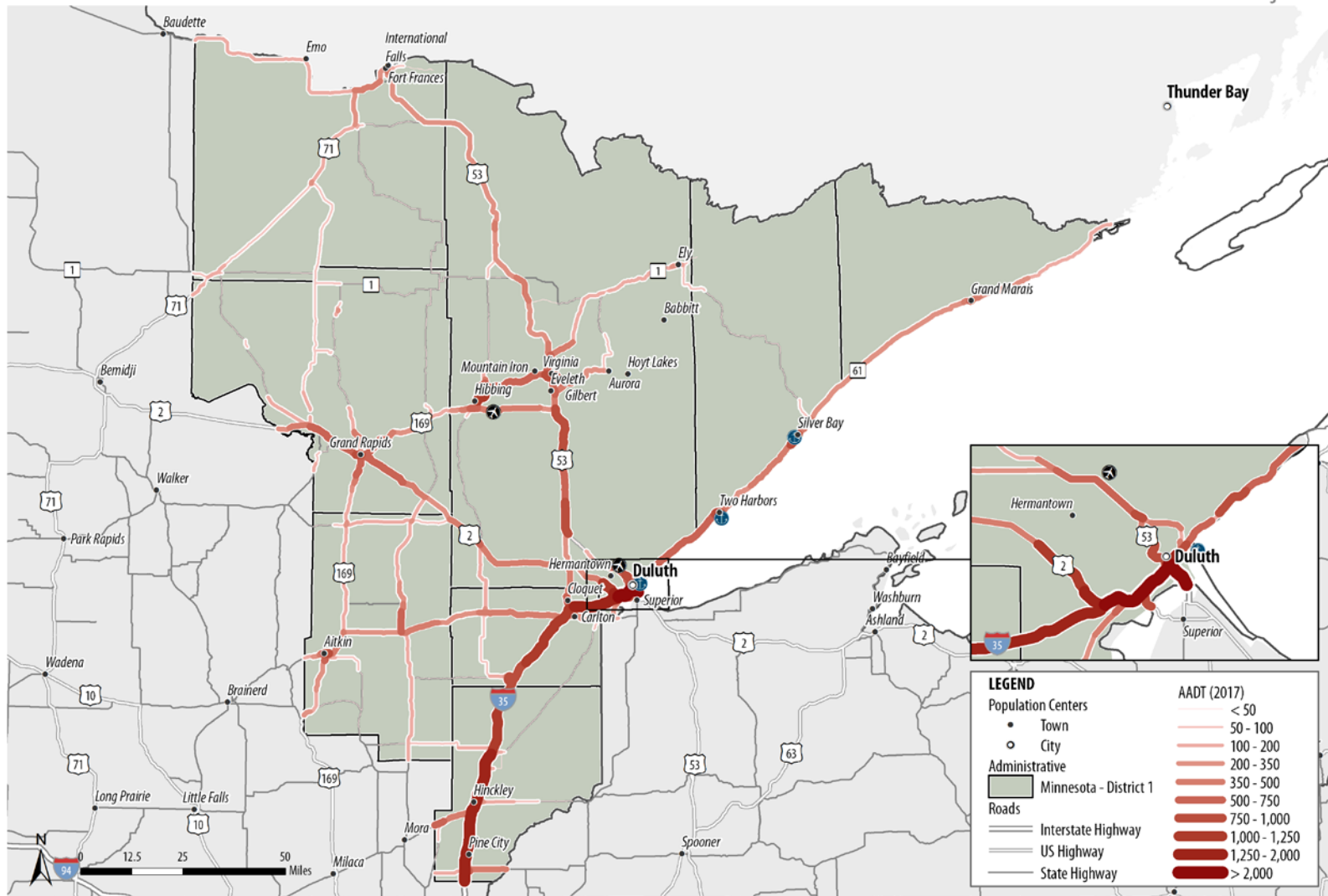
Total Traffic Volume



Source: CPCS analysis of National Transportation Atlas Database, MnDOT traffic data

System Overview: Key Highways and Roads

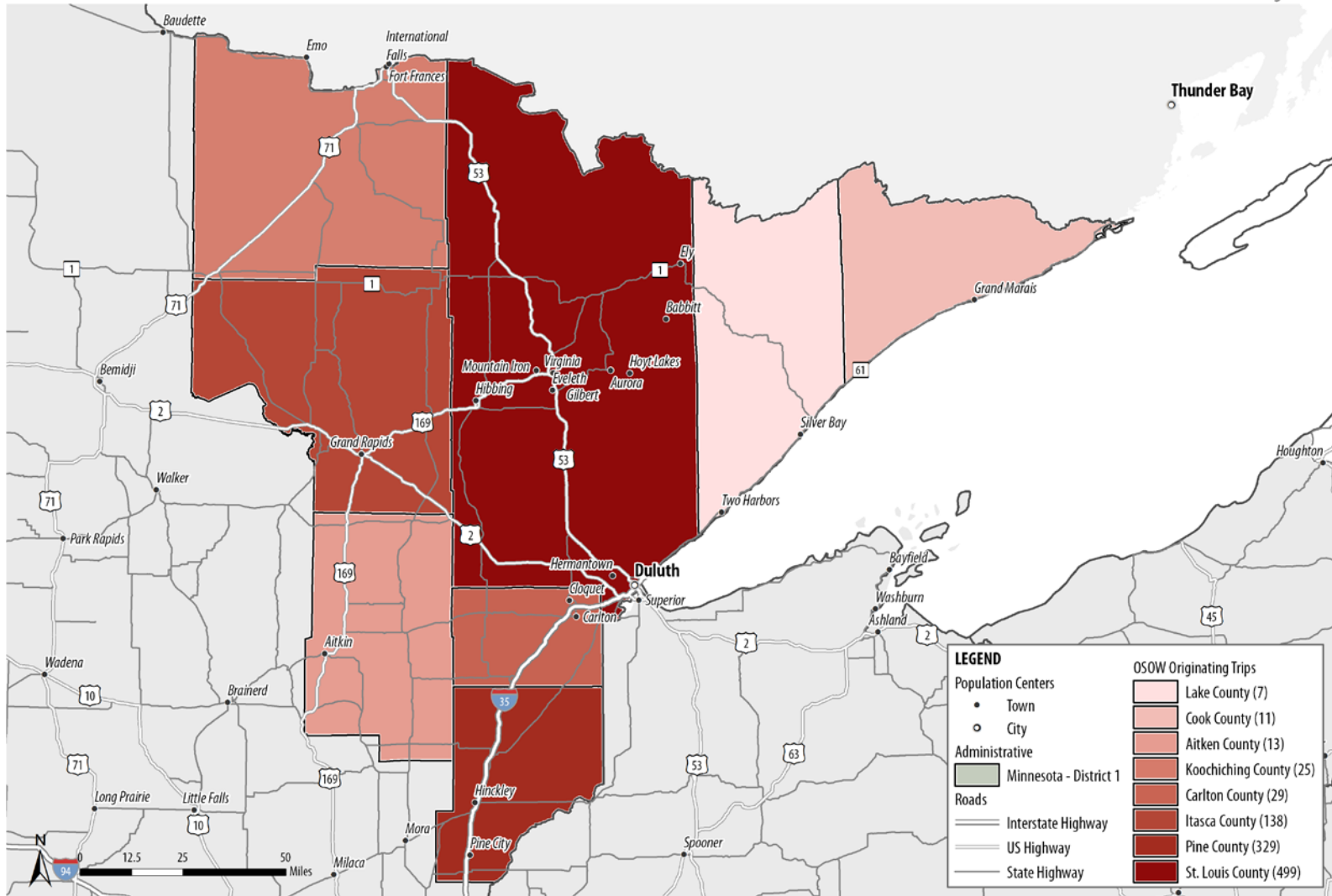
Truck Traffic Volume



Source: CPCS analysis of National Transportation Atlas Database, MnDOT traffic data

System Overview: Key Highways and Roads

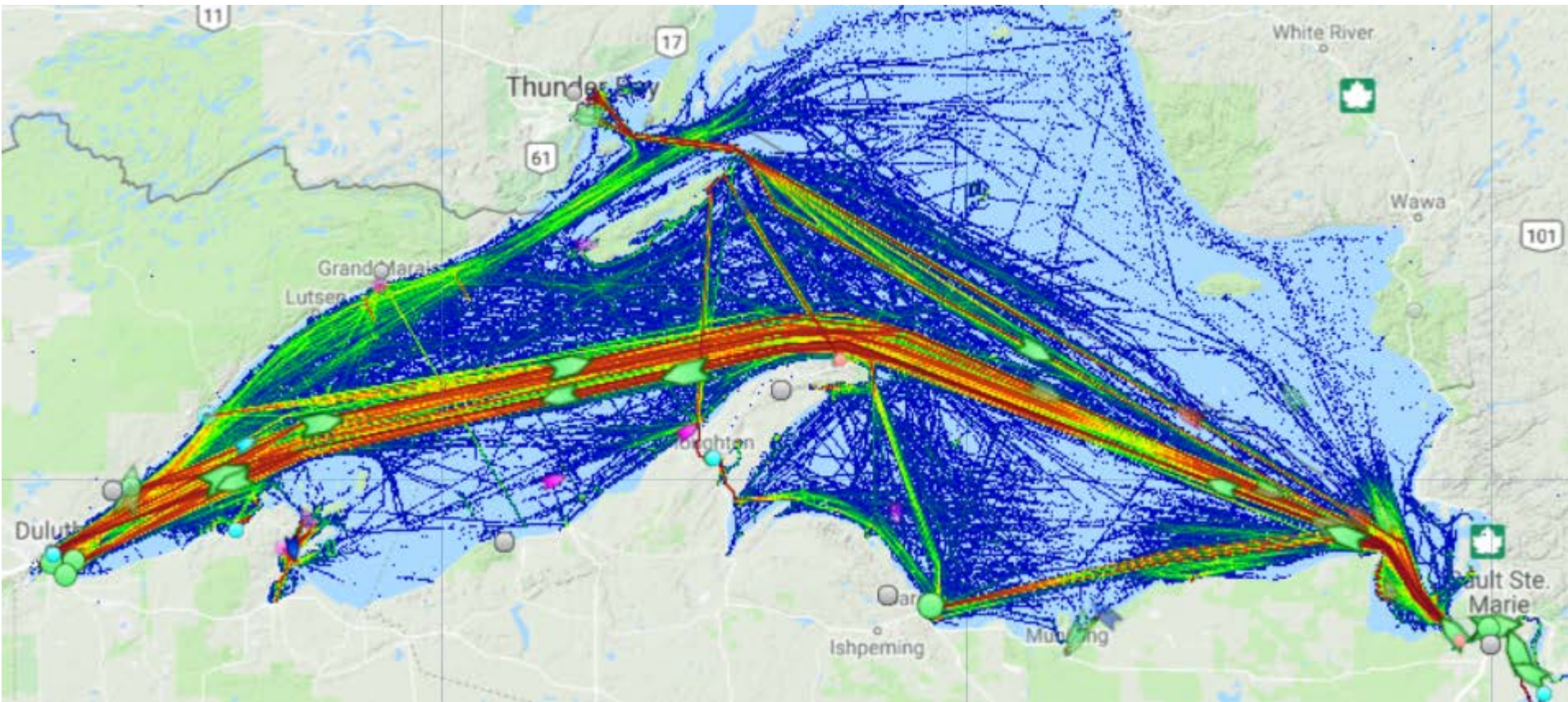
Top OSOW Freight Origins



Source: CPCS analysis of National Transportation Atlas Database, MnDOT permit data

System Overview: Maritime Connections

Critical Service for Bulk and Project Goods



Source: marinetraffic.com

Open Discussion

- What freight system corridors/facilities are most important to you?
- What information do you have that can improve our understanding of the system?

Presentation Map

Review Work Plan and Role of Advisory Committee

Freight Transportation System Profile



Economic Profile

Initial Assessment of Issues and Needs

Stakeholder Outreach

The District's economic makeup drives demand for freight transportation.

Elements of Overview:

- Population
- Employment
- Unique Industries
- Value of Industries

Gross Regional Product:

\$14.9 billion

Wages:

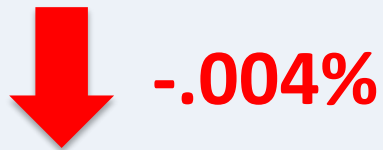
\$12.9 billion

Average Household Income:

\$62,885

Recent District 1 Trends

Population



Between
2010 and 2017

Household Income



Depending on County,
between 2010 and 2016

Education



Bachelor's degrees
between 2010 and 2016

Source: CPCS analysis of US Census Bureau American Community Survey data. 2016. Minnesota State Demographic Center. 2017.

Economic Overview: Employment

Declining unemployment from smaller labor force and increase in number of people employed:

Unemployment Rate

 - 4 points

Between
2010 and 2016

Labor Force

 -2,741

People between
2010 and 2016

Employed

 + 3,788

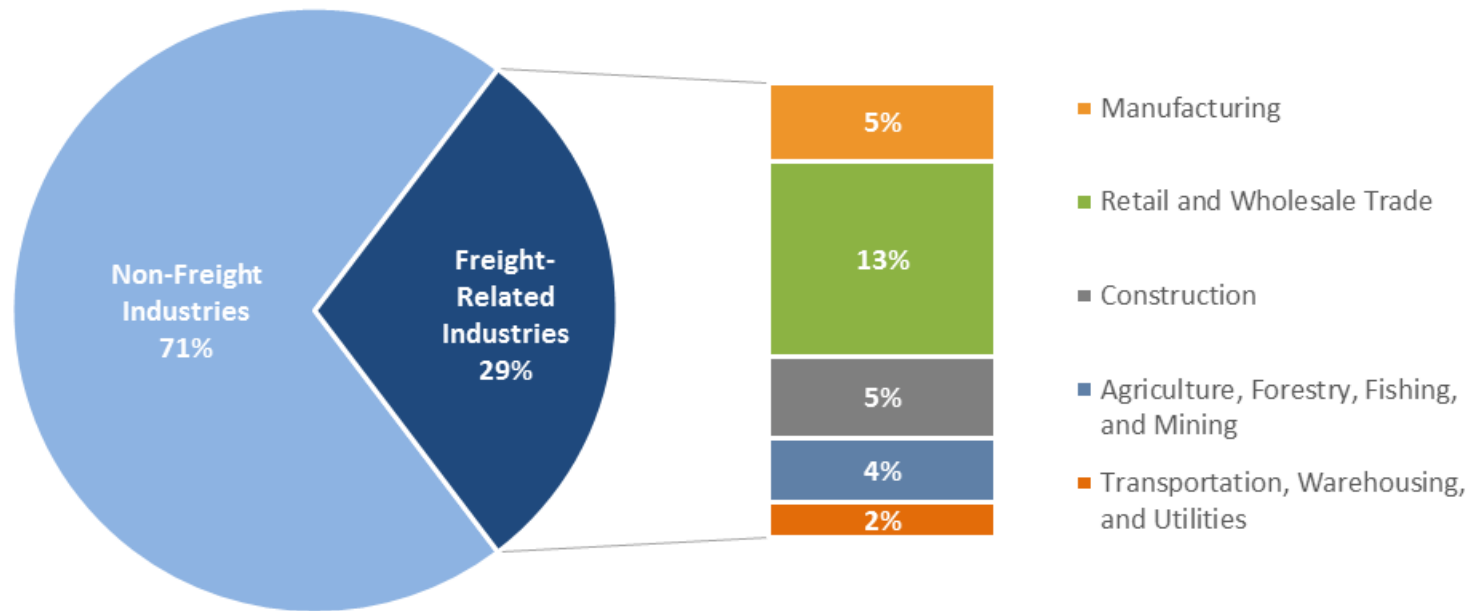
People between
2010 and 2016

Source: CPCS analysis of Bureau of Labor Statistics Local Area Statistics. 2017.

	2017 Unemployment Rate
D1	5.1%
Minnesota	3.5%
United States	4.4%

Economic Overview: Freight Employment

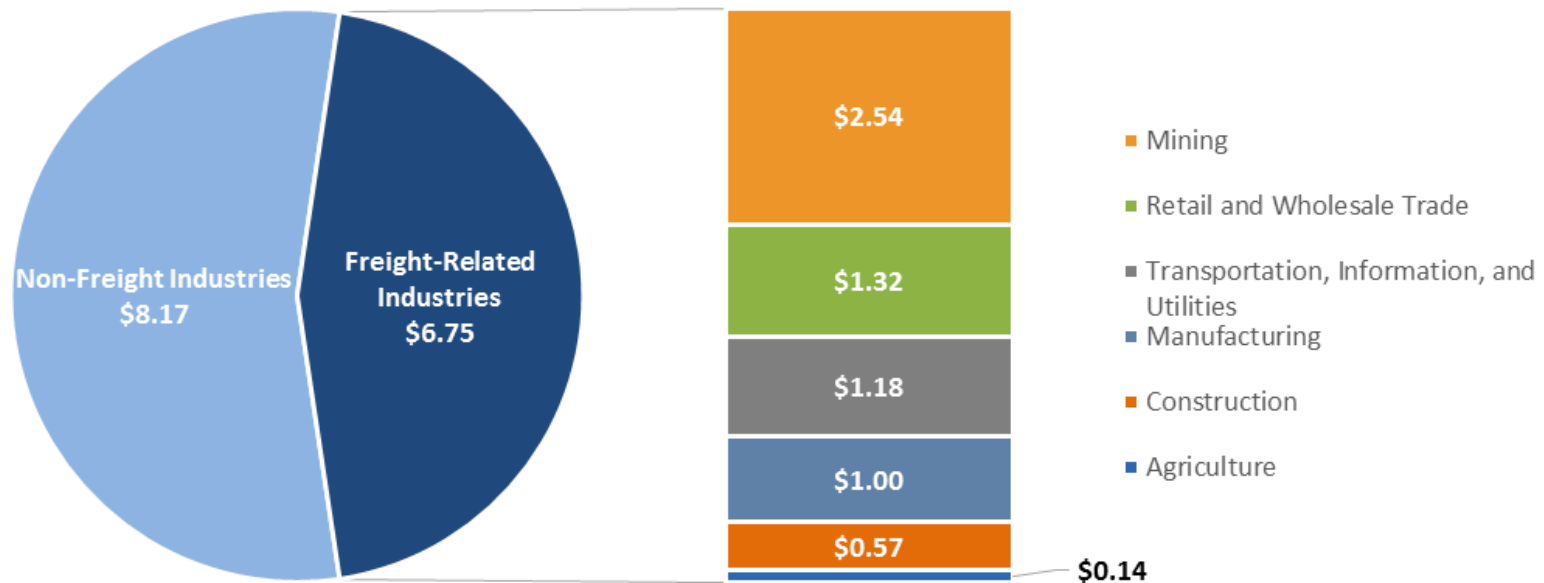
Freight-related industries employ about 56,819 people, or 29% of the District's workforce.



Source: CPCS Analysis of Full-Time and Part-Time Employment by NAICS Industry 2016, Bureau of Economic Analysis

Economic Overview: Freight GRP

*Freight-related businesses generated \$6.75 billion, about 45% of the District's GRP.**



Source: UMD, Implan 2014 data report in 2016 dollars

*Note: Does not include Pine County.

Economic Overview: Unique Industries

Location Quotients indicate which industries are uniquely concentrated in the district

Freight-Related Industry Group	NAICS Code	Location Quotient
Mining, Quarrying, and Oil and Gas Extraction	21	4.5
Agriculture	111, 112, 114, 115	4.2
Utilities	22	3.0
Forestry, Fishing, and Related Activities	113, 114, 1152, 1153	2.3
Construction	23	1.6
Retail Trade	44-45	1.6
Transportation and Warehousing	48-49	1.0
Manufacturing	31-33	0.9
Wholesale Trade	42	0.3

Source: CPCS analysis of US Bureau of Economic Analysis data. 2016.

Economic Overview: Unique Industries

Sub-Industry Group	NAICS Code	LQ
Mining (except Oil and Gas)	212	23.4
Forestry and Logging	113	11.5
Paper Manufacturing	322	6.4
Fishing, Hunting, and Trapping	114	3.1
Water Transportation	483	2.7
Gasoline Stations	447	2.5
Pipeline Transportation	486	2.3
Leather and Allied Product Manufacturing	316	2.2
Wood Product Manufacturing	321	1.9
Nonmetallic Mineral Product Manufacturing	327	1.8
Air Transportation	481	1.6
General Merchandise Stores	452	1.4
Building Material and Garden Equipment/Supplies Dealers	444	1.3
Sporting Goods, Hobby, Musical Instrument, and Book Stores	451	1.3
Machinery Manufacturing	333	1.3
Motor Vehicle and Parts Dealers	441	1.2
Food and Beverage Stores	445	1.1

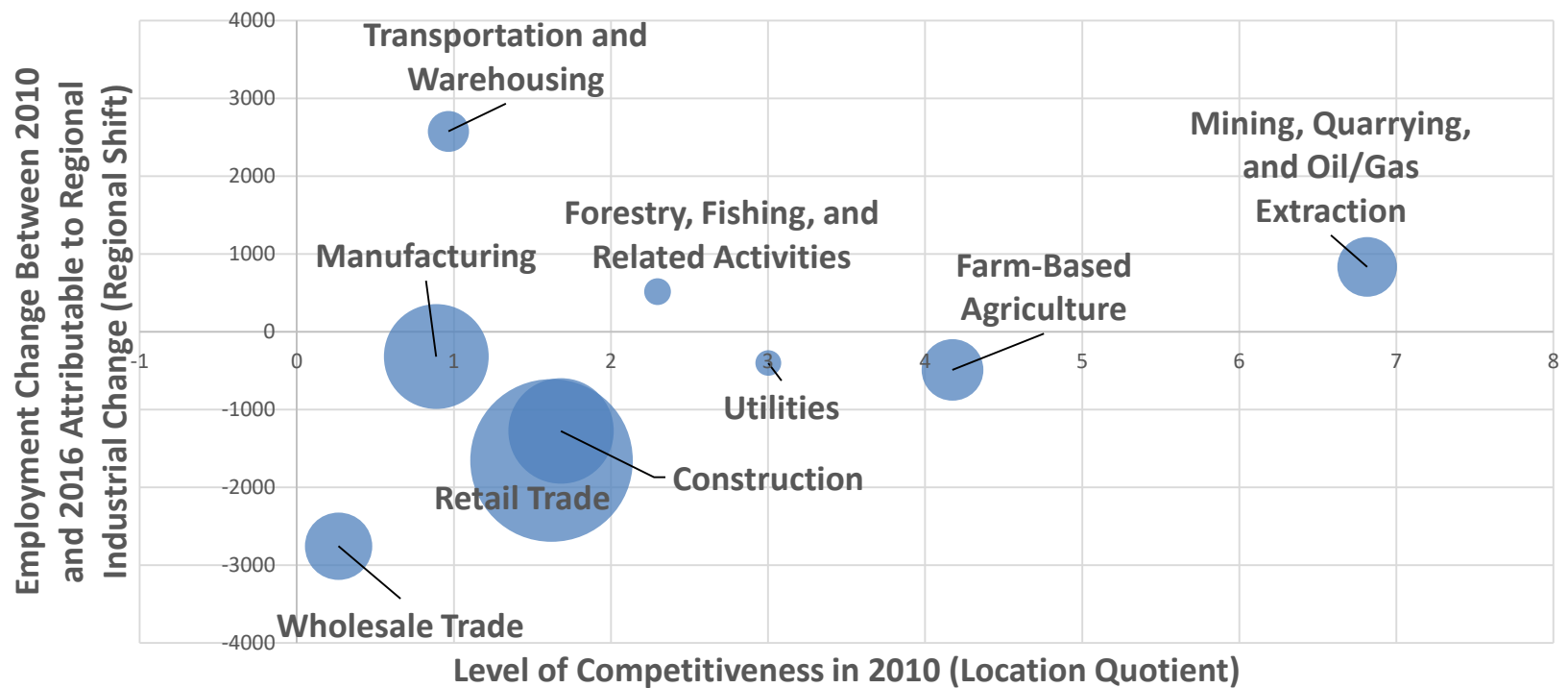
Source: CPCS analysis of US Bureau of Economic Analysis data. 2016.



Solutions for
growing economies

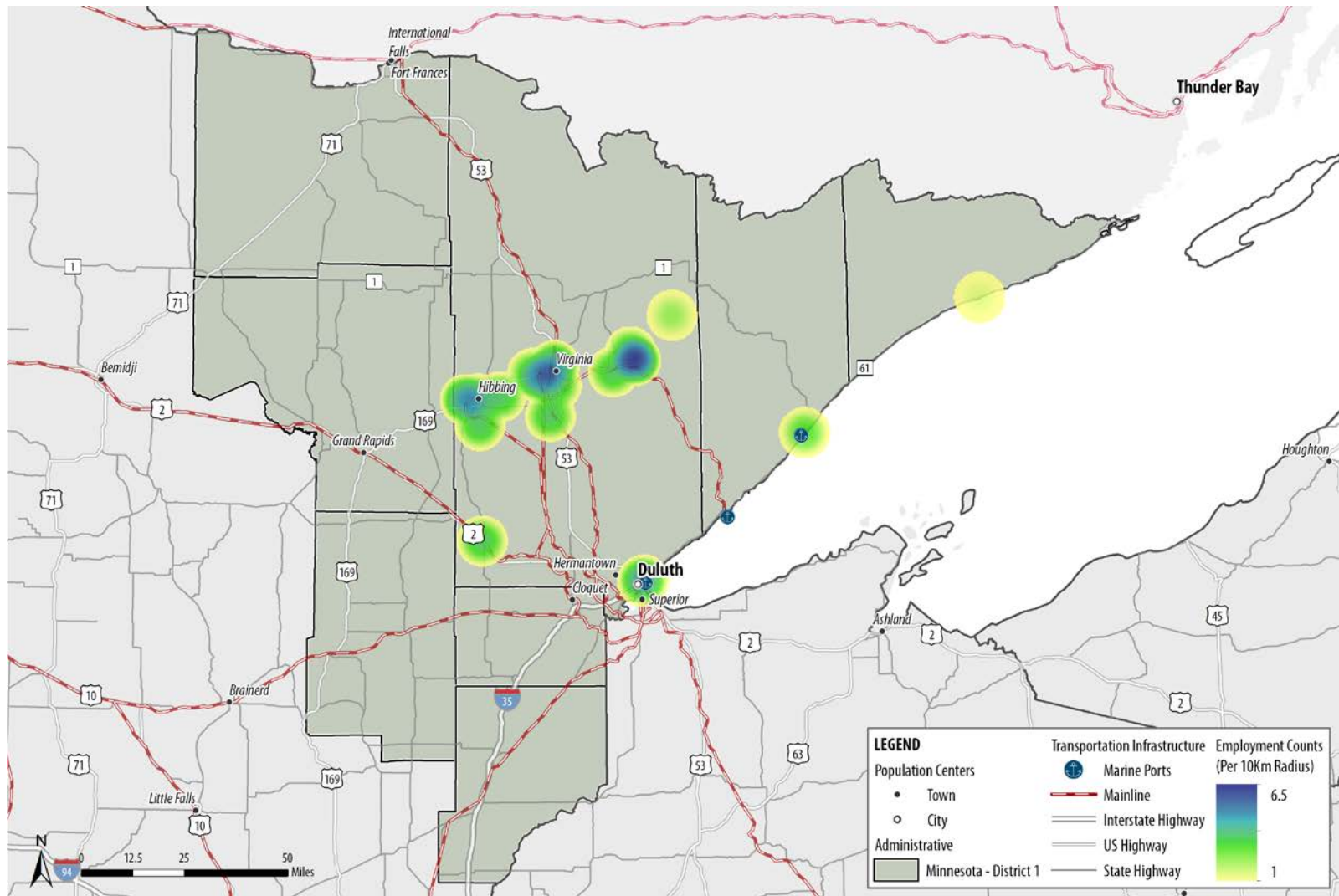
Economic Overview: Competitiveness

Between 2010 and 2016, mining, agriculture, and forestry have grown more competitive, while other industries are becoming less competitive.



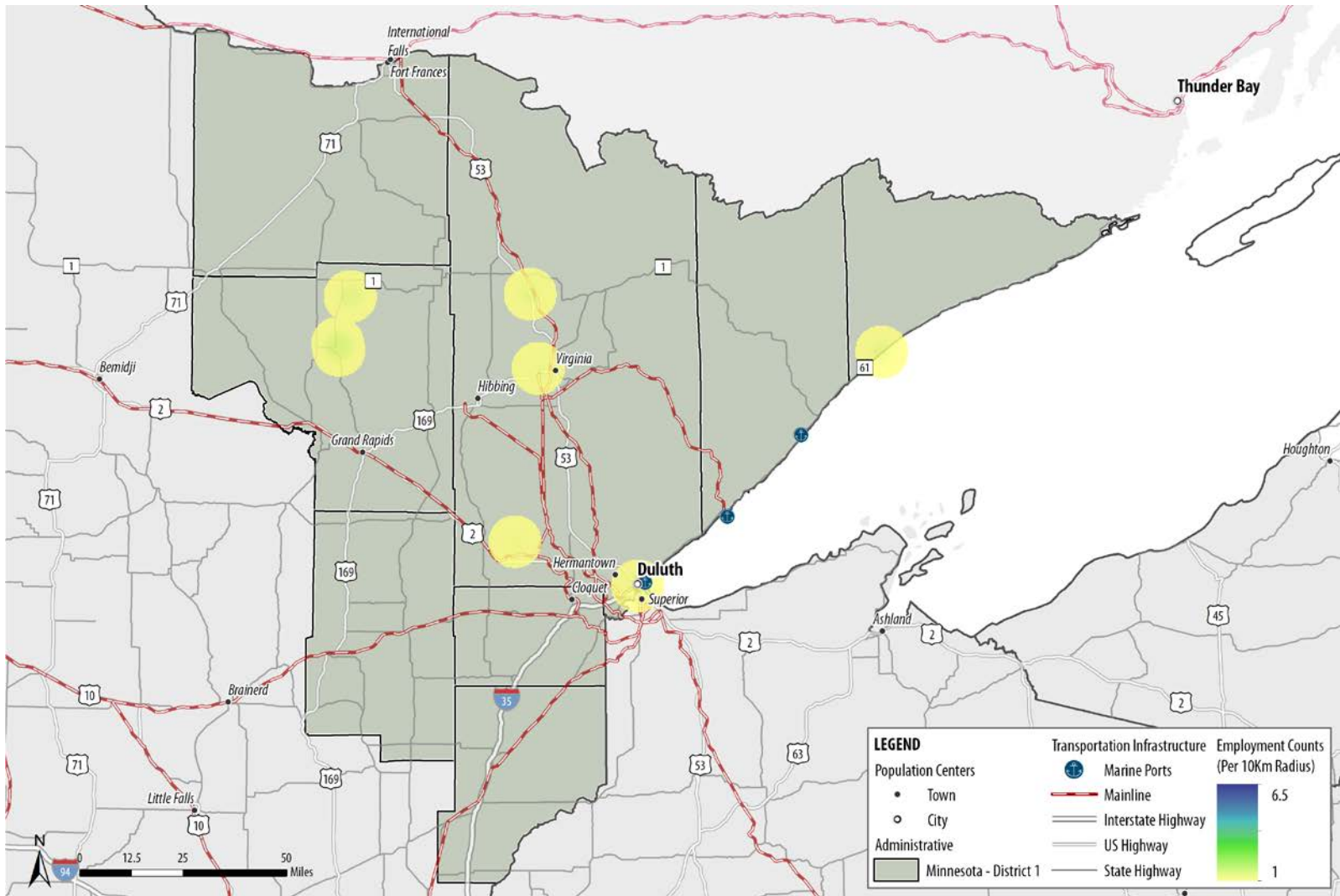
Source: CPCS Analysis of Full-Time and Part-Time Employment by NAICS Industry 2010 and 2016, Bureau of Economic Analysis.

Industry Profile: Mining



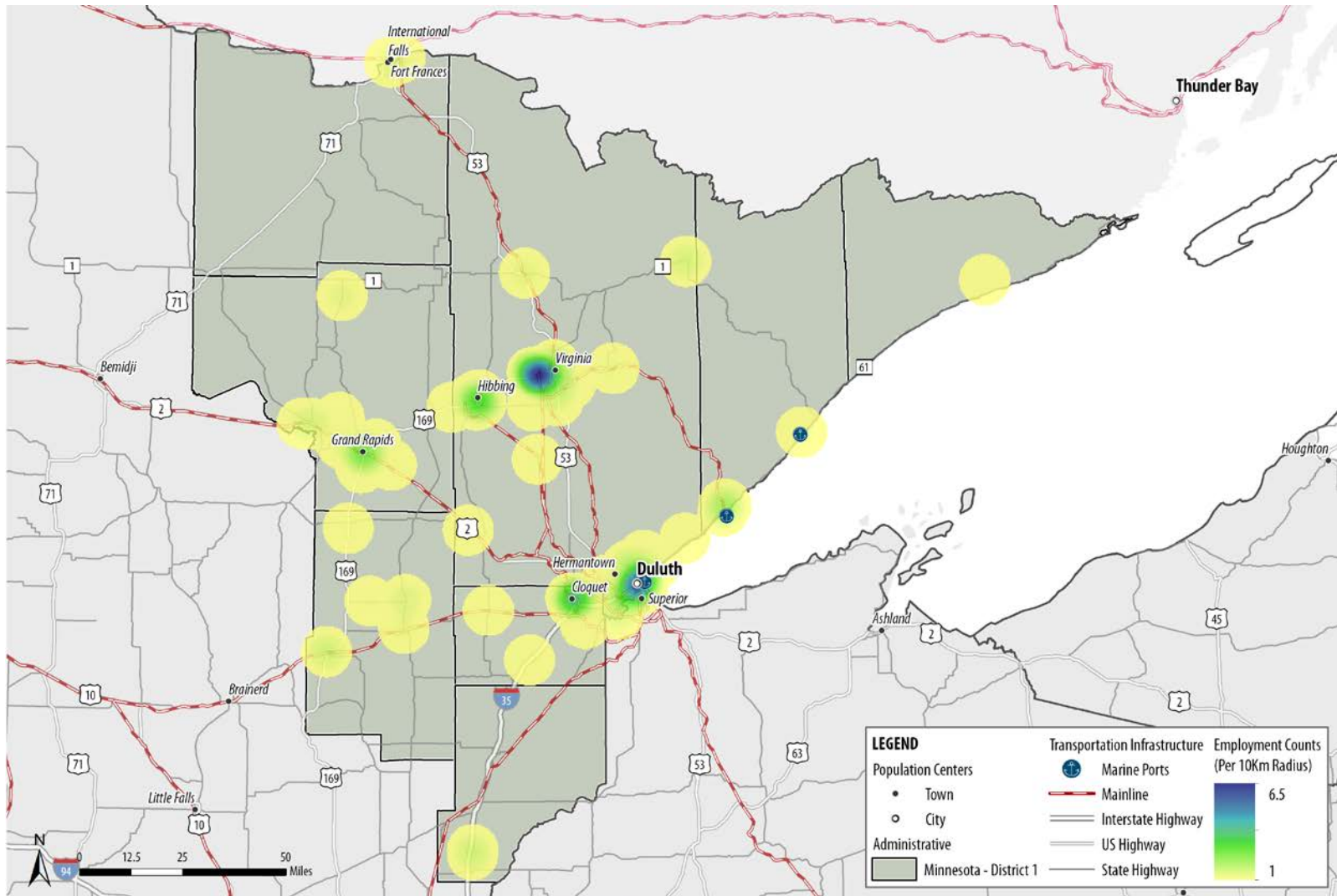
Source: CPCS analysis of ReferenceUSA data. 2017.

Industry Profile: Forestry



Source: CPCS analysis of ReferenceUSA data. 2017.

Industry Profile: Manufacturing



Source: CPCS analysis of ReferenceUSA data. 2017.

Open Discussion

- Is our understanding of the District 1 economy accurate?
- From your perspective, what is most important for us to know about the region's economy?

Presentation Map

Review Work Plan and Role of Advisory Committee

Freight Transportation System Profile

Economic Profile



Initial Assessment of Issues and Needs

Stakeholder Outreach

Past Work and Key Issues in D1

Previous research and plans will inform the approach used for the D1 Freight Plan

Plans and Other Documents Under Review:

Agency	Year	Name
MnDOT	2018	Statewide Freight System and Investment Plan
MnDOT	2017	Minnesota State Highway Investment Plan, 2018-2037
MnDOT	2017	2018-2021 Minnesota STIP
MnDOT	2017	Manufacturers' Perspectives – District 1
ARDC	2017	Comprehensive Economic Development Strategy
MnDOT	2016	Annual Transportation Performance Report
DSMIC	2016	Duluth-Superior Port Land Use Plan
MnDOT	2016	Highway Freight Program Evaluation Criteria
MnDOT	2015	Statewide Rail Plan
U of M	2015	Exploratory Study of Competitive Industry Clusters and Transportation in MN
MnDOT	2014	Statewide Ports and Waterways Plan
DSMIC	2014	Connections 2040 LRTP
DSMIC	2009	Northern MN / Northwestern WI Regional Freight Plan

Past Issues and Findings

1. Road, port, rail, air as regional strengths
2. Asset condition, age, and funding are weaknesses/threats to region

Roads:

- Climbing, bypass, acceleration, and passing lanes needed
- Wider and/or paved shoulders needed
- Conflict between tourists and freight traffic
- Truck weight policy harmonization with ON, WI
- Poor pavement conditions – damage to vehicles and cargo
- Intersection improvements – advance warning, traffic lights, roundabouts



Image source: MnDOT

Past Issues and Findings

Ports:

- Improve OSOW access to Duluth-Superior
- Rebuild Twin Ports Interchange “Can of Worms”
- Preserve land for port land use

Railroads:

- Demand for intermodal service in Duluth
- Lack of reliable rail service, car availability

Airports:

- No major problems or issues noted



Source: MnDOT

Common Recommendations from Prior Plans

- Incorporate feedback from Manufacturer's Study into planning processes
 - E.g., Long-range planning and Roadway design and/or geometry
- Partner with community and build stronger relationships with business
- Use feedback from Manufacturer's Study to:
 - Improve existing systems and planning processes
 - Better understand business needs across the state
- Encourage development of stable funding policies and sources
- Encourage investment in key freight facilities
- Offer assistance to local governments with long-range planning
- Develop intermodal service at Duluth Port

Detailed recommendations will be incorporated into analyses where relevant.

Open Discussion

- What do you perceive as the top freight-related issues and needs in District 1?
- How would addressing these needs improve your business?

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Initial Assessment of Issues and Needs



Stakeholder Outreach

Freight Stakeholder Consultations

Freight stakeholders have an important role in assessing and forming recommendations for the District 1 freight system, and may serve in an implementation role.

Key Activities

- Identify stakeholders
- Develop consultation guide
- Conduct consultations
- Report on findings



*We'd like your
feedback!*

Identify Stakeholders (Preliminary)

What key stakeholders are we missing?

Trucking

- Kivi Brothers Trucking
- Kirscher Transport
- Jeff Foster Trucking
- Halvor Lines

Rail

- BNSF
- CN
- North Shore Mining
- Cloquet Terminal Railroad

Port

- Duluth Seaway Port Authority
- Lake Superior Warehousing
- Hallett Dock

Manufacturers & Shippers

- Arcelor Mittal
- US Steel
- Bend Tec
- Sappi Paper
- Iracore
- Boise Paper
- Kimball Electronics

Public Agencies

- MnDOT – D1, Central Office
- ARDC
- MIC
- County Engineers (select counties)
- City Staff (select cities)
- Economic Development Staff (select groups)
- US Army Corps of Engineers
- US Coast Guard

Develop Consultation Guide

Consultations will focus on two primary topics

1. Key Issues and Obstacles
2. Key Routes

1. Key Issues and Obstacles

- What are top 3 transportation issues in District 1?
 - Physical Infrastructure Issues and Obstacles and Policy Issues
 - How do these impact freight movement?
- What are the top 3 transportation system improvements (solutions) for these issues?
 - How would these help freight movement?
- What are the top 3 non-transportation (freight) issues in District 1?

Develop Consultation Guide

2. Key Routes

- **LONG DISTANCE MOVEMENTS:** What are the most heavily relied-upon corridors (i.e., interstates or other non-interstate principal routes)?
 - Why are these routes important to you?
- **LOCAL DELIVERY:** What are the most heavily relied upon routes for local delivery within District 1 (first/last-mile routes critical to getting to points of drop-off/pick-up)?
 - Why are these routes important to you?
- What are the most critical connections to other modes in District 1?

Other General Comments (as time allows)

- What technology or other trends will impact the freight system?
- Comment on any other issues that may be pertinent to this project.
- Who else should we consult?

What other questions should we ask?

*Work will be conducted over 12-months,
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- Review Work Plan
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- System condition and performance eval.
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Meeting 3 Agenda (Month 11)

- Present major findings and Plan deliverables
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Questions & Discussion



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