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
The CPCS Team

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.

<table>
<thead>
<tr>
<th>Challenging Terrain</th>
<th>Heavy Snowfall, Long Winters</th>
<th>Unique Natural Resources</th>
</tr>
</thead>
</table>

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

Task 0 – Project Management

Task 1 – Stakeholder Engagement

Task 2 – MN Statewide Freight System and Investment Plan Synthesis

Task 3 – Data Analysis

Task 4 – Needs, Issues, Opportunities & Challenges

Task 5 – Implementation Plan

Task 6 – Project Feasibility

Kick-Off Meeting, Final Work Plan, Monthly Meetings and Progress Reports

Working Paper 1: Communications Plan

Working Paper 2: D1 Freight System Profile – Economy, Inventory, Demand and Performance

Working Paper 3: D1 Freight System Needs, Issues, and Opportunities

Working Paper 4: Investment Priorities

Working Paper 5: Project Feasibility

Draft Final Report

Final Report

Legend

Task
Deliverable
Review

Review & Comment by MnDOT

Review & Comment by MnDOT
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?
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?

Key Freight Corridors

Transport System

Industries

Real World Data

MNDOT, MPO Inventory
MNDOT, MPO AADTT

Employment (US Census Bureau)
Key Industries (Bureau of Labor Stats., BEA)
Business Establishment (Reference USA)
Commodity Data (FAF, CFS, USACE)

Local Land Use (GoogleEarth)
StreetLight Point Truck GPS
Stakeholder Outreach

Solutions for growing economies
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

- Bismarck
- Fargo

- 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?
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
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System Overview: The Multimodal System
A Conduit for Economic Activity

Source: CPCS analysis of National Transportation Atlas Database

Legend:
- Cities
- Towns
- Airports
- Marine Ports
- Minnesota - Districts
- National Highways
- State Highways
- Railroads
- Interstate Highways

Data validation in process
System Overview: Roads
Connections to MN, WI, and ON

Source: CPCS analysis of National Transportation Atlas Database

<table>
<thead>
<tr>
<th>Type</th>
<th>D1</th>
<th>MN</th>
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<tbody>
<tr>
<td>Interstate</td>
<td>95</td>
<td>912</td>
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<tr>
<td>US Highway</td>
<td>475</td>
<td>3,294</td>
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<tr>
<td>State Highway</td>
<td>1,314</td>
<td>7,080</td>
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Data validation in process
System Overview: Key Railroads
Connections to the Midwest and Nation

<table>
<thead>
<tr>
<th>Railroad</th>
<th>Miles</th>
<th>Crossings</th>
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<tr>
<td>BNSF</td>
<td>439</td>
<td>217</td>
</tr>
<tr>
<td>CN</td>
<td>458</td>
<td>165</td>
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</table>

Source: CPCS analysis of National Transportation Atlas Database

Data validation in process
System Overview: Airports

High Speed Service for Low-Weight, High-Value Goods
System Overview: Ports

Bulk Service for the Great Lakes and International Markets

<table>
<thead>
<tr>
<th>Port</th>
<th>Total Tonnage</th>
<th>Domestic Tonnage</th>
<th>Foreign Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duluth-Superior</td>
<td>30.3</td>
<td>22.6</td>
<td>7.6</td>
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<tr>
<td>Silver Bay</td>
<td>3.4</td>
<td>3.4</td>
<td>0.0</td>
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<tr>
<td>Two Harbors</td>
<td>15.4</td>
<td>15.0</td>
<td>0.4</td>
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</table>

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

Data validation in process
System Overview: Regional, International Connections

Data validation in process
System Overview: Key Highways and Roads

Total Traffic Volume

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

Data validation in process
System Overview: Key Highways and Roads

Truck Traffic Volume

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

Data validation in process
System Overview: Key Highways and Roads

Top OSOW Freight Origins

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

Data validation in process
System Overview: Maritime Connections

Critical Service for Bulk and Project Goods

Source: marinetransport.com
Freight Transportation System Profile

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

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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

Data validation in process
Recent District 1 Trends

**Population**
-0.004%
Between 2010 and 2017

**Household Income**
+3.3% - +13.5%
Depending on County, between 2010 and 2016

**Education**
+1.8%
Bachelor’s degrees between 2010 and 2016

Economic Overview: Employment

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

**Unemployment Rate**
- Between 2010 and 2016
  - 4 points

**Labor Force**
- People between 2010 and 2016
  - 2,741

**Employed**
- People between 2010 and 2016
  + 3,788


<table>
<thead>
<tr>
<th>2017 Unemployment Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
</tr>
<tr>
<td>Minnesota</td>
</tr>
<tr>
<td>United States</td>
</tr>
</tbody>
</table>
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
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*

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


Data validation in process 37
<table>
<thead>
<tr>
<th>Sub-Industry Group</th>
<th>NAICS Code</th>
<th>LQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining (except Oil and Gas)</td>
<td>212</td>
<td>23.4</td>
</tr>
<tr>
<td>Forestry and Logging</td>
<td>113</td>
<td>11.5</td>
</tr>
<tr>
<td>Paper Manufacturing</td>
<td>322</td>
<td>6.4</td>
</tr>
<tr>
<td>Fishing, Hunting, and Trapping</td>
<td>114</td>
<td>3.1</td>
</tr>
<tr>
<td>Water Transportation</td>
<td>483</td>
<td>2.7</td>
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<tr>
<td>Gasoline Stations</td>
<td>447</td>
<td>2.5</td>
</tr>
<tr>
<td>Pipeline Transportation</td>
<td>486</td>
<td>2.3</td>
</tr>
<tr>
<td>Leather and Allied Product Manufacturing</td>
<td>316</td>
<td>2.2</td>
</tr>
<tr>
<td>Wood Product Manufacturing</td>
<td>321</td>
<td>1.9</td>
</tr>
<tr>
<td>Nonmetallic Mineral Product Manufacturing</td>
<td>327</td>
<td>1.8</td>
</tr>
<tr>
<td>Air Transportation</td>
<td>481</td>
<td>1.6</td>
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<tr>
<td>General Merchandise Stores</td>
<td>452</td>
<td>1.4</td>
</tr>
<tr>
<td>Building Material and Garden Equipment/Supplies Dealers</td>
<td>444</td>
<td>1.3</td>
</tr>
<tr>
<td>Sporting Goods, Hobby, Musical Instrument, and Book Stores</td>
<td>451</td>
<td>1.3</td>
</tr>
<tr>
<td>Machinery Manufacturing</td>
<td>333</td>
<td>1.3</td>
</tr>
<tr>
<td>Motor Vehicle and Parts Dealers</td>
<td>441</td>
<td>1.2</td>
</tr>
<tr>
<td>Food and Beverage Stores</td>
<td>445</td>
<td>1.1</td>
</tr>
</tbody>
</table>

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

Industry Profile: Mining


Data validation in process
Industry Profile: Manufacturing


Data validation in process
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
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Past Work and Key Issues in D1

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

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

Review Work Plan and Role of Advisory Committee

Freight Transportation System Profile

Economic Profile

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?*
Next Steps

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

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Questions & Discussion

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