Northern and Western Minnesota and NW Wisconsin Regional Freight Study
Purpose

- Examine regional and local issues
- Document existing freight transportation system
- Identify industry- and region-specific issues
- Plan for improvements to freight movements
- Strengthen freight considerations in public project planning and investment decision-making
## Study Partners

<table>
<thead>
<tr>
<th>Partners</th>
<th>Mn/DOT Districts</th>
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<td>ARDC/MIC</td>
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<tr>
<td>FM COG</td>
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<td>NWRDC</td>
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<td>GF-EGF MPO</td>
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<td>Mid-MNDC</td>
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<td>ATPs</td>
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Regional Freight Profile

- Northeast Minnesota produces over 80% of iron mined in the US
- The Lake Superior ports ship substantial tonnage of coal arriving by rail for the Mountain states
- The Duluth-Superior ports are the primary gateway for oversize freight into the central US
- Minnesota harvested 104.4 million bushels of wheat in 2008
- Minnesota leads the US in sugar beet production
- Highway 2 connects northern grain terminals to Duluth port and I-94 connects central grain terminals with port on the Mississippi river system
Regional Freight Profile

- Large manufacturers and parts providers for snowmobiles and ATVs
  - Arctic Cat
  - Polaris
  - BTD Manufacturing
  - TEAM Industries

- Major Regional Utility and National Agri-Processors
  - Otter Tail Power Company
  - The Schwan Food Company
  - Jennie-O
  - American Crystal Sugar Company
  - Limited Sugars Corporation
Key Issues List

a) Duluth Intermodal Service Feasibility
b) Duluth Port Expansion/Capacity
c) Joint Harbor Commission
d) Intermodal Improvements at Dilworth
e) Truck Size and Weight Harmonization
f) Designated Super Haul Corridors
g) Western Truck Route
h) Lancaster Border Crossing
i) Designated Truck Network
j) 10-Ton Roadways
k) Regional Freight Advisory Committees
Public Forum Rankings

- Duluth Forum
  - Port capacity/access
  - Roadway design improvements / 10-ton roads
- Willmar Forum
  - Policy to integrate road and rail
  - Public funding for rail
- Fargo Forum
  - Regulations/continuity/harmonization
  - Dilworth intermodal facility
- Marshal Forum
  - Interregional connectivity corridor
  - Truck route to Sioux Falls
1. Duluth Port Development
Explore options to strengthen coordinated planning efforts between Duluth and Superior regarding port facilities.

2. Dilworth Intermodal Service
Examine previous studies and explore alternative operating models from other locations in the U.S.

3. Truck Size and Weight Harmonization
Explore the differences in trucking weight/dimension laws between states in the region. Examine potential impacts that harmonization could provide for shippers in the region.

4. Tiered Truck Network
Develop a tiered truck network based on HCADT volumes and define specific thresholds and routes for each tier.
Program Analysis

5. Commercial Commodity Corridor Routes
Analyze a freight-tiered trunk highway system to serve as commercial commodity corridors based on key freight factors.

6. Super Haul Truck Corridors
Conduct an analysis of best routes for moving heavy or over-dimension freight.

7. Regional Freight Advisory Committees
Establish Committees to expand stakeholder partnerships, input on needs, etc.

8. Freight Safety and Information Strategies
Review ITS strategies that can address freight safety and information needs, as expressed by key stakeholders.
Duluth/ Superior Port Development

- Develop Garfield C & D docks
- Continue to invest in removal of overhead clearance obstructions along this route
- Superior, WI should re-establish the Harbor Commission
- Encourage continued participation by stakeholders in HTAC planning activities
- Continue support for research projects funded by the Great Lakes Maritime Research Institute
Dilworth Terminal Service

Recommendations

- Coordinate activities with North Dakota and local jurisdictions
- Investigate opportunities to balance the traffic lane with inbound mfg. supplies
  - New Holland, Bobcat, Polaris, Arctic Cat
- Explore the possibility of a rail drayage service to Dilworth on the Red River Valley and Western?
  - Discuss possibility of RRVW trackage rights between Casselton and Dilworth with BNSF
Truck Size & Weight Uniformity

- Seek harmony on the routes with the most flexibility:
  - Since federal National Network (NN) Routes restrict vehicle size limits and weight—so focus on non-NN routes for uniformity
  - Next step is to map NN routes in adjacent states
Truck Size & Weight Uniformity

Recommendations

• Consider truck size and weight reciprocity agreements with neighboring states
  – ND & MN Canola Plant Example
  – Wisc & Michigan Example

• Consider joining an existing regional permitting compact such as WASHTO – or forming a Midwest regional permit compact
  – Agree upon a vehicle envelope
Tiered Truck Network

- Establish classification scheme
  - Tier 1 Network: HCAADT > 650
  - Tier 2 Network: HCAADT 301 to 650
  - Tier 3 Network: HCAADT < 300
Unique Analysis Methodology

- Used GIS overlays to determine route’s ability to accommodate freight
- Identified route improvement needs for future targeted freight investments
  - Shoulders ≤ 6-feet
  - Congestion ≥ 11,200 ADT
  - Ride Quality Index (good vs. poor)
  - Freight generator proximity to Tier 1 routes
## Unique Analysis Methodology

- **Ride Quality Index**

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<tr>
<th></th>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
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<tr>
<td>Total Miles</td>
<td>1,479</td>
<td>1,742</td>
<td>3,210</td>
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<tr>
<td>Miles Rated “Good”</td>
<td>1,148</td>
<td>1,245</td>
<td>2,176</td>
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<tr>
<td>Percent “Good” Miles</td>
<td>78%</td>
<td>71%</td>
<td>68%</td>
</tr>
<tr>
<td>Miles Rated “Poor”</td>
<td>12</td>
<td>32</td>
<td>89</td>
</tr>
<tr>
<td>Percent “Poor” Miles</td>
<td>1%</td>
<td>2%</td>
<td>3%</td>
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Commercial Commodity Corridors

**Recommendations**

- Work with regional freight advisory committees to map commodity-specific origin to destination routes
- Identify routes for routinely permitted loads to increase productivity
- The prototype for this strategy is the Highway 2 Corridor between Grand Rapids and Duluth
Super Haul Corridors

- **Super-load Corridors** (restricted routes due to low bridges, narrow shoulders, etc)
  - 14-foot height limit
  - 10-foot width limit
  - 110-foot length limit
  - 80,000 lbs weight limit
- **Expanded Envelope** (unrestricted routes)
  - 16-foot height limit
  - 16-foot width limit
  - 8-foot wide axle
  - 130-foot length limit
  - 235,000 lbs weight limit
Recommendations

- Post a web based map of super haul routes
- Develop a schedule or notification process for when these routes are affected by maintenance, construction, or weather
Regional Freight Advisory Committees

- Many issues cross borders and affect supply chain
- Serve as a regional champion
- Establish strong partnerships with key private sector economic leaders in the freight industry
- Ensure that freight needs are considered and that freight growth is addressed throughout Minnesota
- Provide opportunities to exchange information
- Reach consensus among diverse stakeholders on multimodal freight needs and facilitate successful solutions
- Develop a process for feedback
Each ITS strategy identified includes an overview of the need, the issue to be addressed, and a sketch level design / implementation strategy:

- Expand 511
- Advanced parking stall availability at rest areas
- Truck priority at signal lights
- Wildlife collision avoidance
- Alternate route planning
- Advanced warning signalization for intersections and truck entry areas
Potential Northern Region TIP Projects

Recommendations

- Develop intermodal container facility
- Improve RR bridge clearances at Grassy Pointe & Michigan St in terminal area
- Resolve tight turning radius issues/clearance at 40th St & Harbor Rd

Specific improvement projects:
- Shoulder widening, turn lanes, resurfacing

Corridor improvement projects at key intersections:
- Turn lanes, shoulders, acceleration lanes or safety upgrades.
Potential Western Region TIP Projects

Recommendations

- Lancaster Border Crossing - Expand Hours to 24/7
- Relieve Capacity Constraints on US 2
- Advance Warning Alert at Polk CR 21
- Ramp up container shipping operations at Dilworth Intermodal facility
- I-94 Interstate Operations Improvements
- Bridge Height Over RR Issues
- Construct Potential Bypasses
- Construct Potential Bypasses
- Evaluate potential WMTR routes

Potential Freight-Related Projects for TIP Programming

- Specific Improvement Projects
  - Shoulder widening, truck pullouts, resurfacing
  - TH 23 - 4 lane/straighten to I-90
- Corridor Improvement Projects at Key Intersections
  - Turn lanes, acceleration
  - lanes, technology or safety upgrades.