

# North Dakota State Freight Plan



April 2015

**NDDOT**  
North Dakota  
Department of Transportation

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NDDOT extends a special thank you to Kim Vachal and the staff of the Upper Great Plains Transportation Institute for providing an overview of North Dakota Freight Supply Chains  
(See Appendix L, page 126)

**Links to Freight Plan Executive Summary and Full Freight Plan:**

<http://www.dot.nd.gov/divisions/planning/freight/>



# North Dakota Department of Transportation

Grant Levi, P.E.  
Director

Jack Dalrymple  
Governor

April 24, 2015

Fellow North Dakotans,

In 2012, the North Dakota Department of Transportation (NDDOT) published an update of its statewide strategic transportation plan entitled, ***TransAction III***. The plan stated the North Dakota Department of Transportation's (NDDOT) transportation mission, vision, goals, initiatives, and strategies for achieving improved personal and freight transportation mobility. While developing ***TransAction III***, North Dakota was experiencing a period of unparalleled population and economic growth. The entire state was suddenly challenged to respond to the need for new schools, additional housing, water and sewer system expansions, social services, expanded law enforcement, recreational opportunities, and health care facilities. The common connection among all of these elements was the business community and public's demand for an improved transportation system; one capable of moving both people and freight safely, securely, and efficiently.

Building on the foundation provided by ***TransAction III***, NDDOT embarked on the development of a plan to advance a freight transportation system that would meet North Dakota's unique freight challenges while complementing the goals of the National Freight Network. By reaching out to our stakeholders, the general public and surrounding states and provinces, freight system trends, issues, and needs have been identified. A "snapshot" of the state's freight system has been taken giving us a baseline comparison for evaluating system improvements over time. Strategies for improving the state's freight transportation system have been incorporated into NDDOT's statewide planning, project scoping, and programming processes. Perhaps most importantly, the role of freight in promoting our economy is better understood and more appreciated.

As we move forward with the implementation of ***TransAction III*** and *North Dakota's Freight Transportation Plan*, we pledge to work with our stakeholders to facilitate a freight system that allows the state to continue to be globally competitive.

Sincerely,

A handwritten signature in blue ink that reads "Grant Levi".

Grant Levi, P.E., Director

17/rjg/sas

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## NORTH DAKOTA FREIGHT PLAN - PREFACE

In October 2012, the North Dakota Department of Transportation (NDDOT) published *TransAction III* - North Dakota's Statewide Strategic Transportation Plan. The following excerpt from *TransAction III*'s preface provided the context and direction for the development of North Dakota's State Freight Plan.

“Today, unlike any time in its history, North Dakota is uniquely positioned. We are experiencing unparalleled growth in all sectors of our economy: agriculture, energy, tourism, and manufacturing. Our population is growing as people are coming to our state seeking a brighter, more prosperous future. As a result of this growth, people and businesses are expecting more of our transportation system; both infrastructure and services. They want more four-lane highways, wider roads, greater load-carrying capacity, expanded hours of snow removal, additional rural and urban transit services; and above all, they want safe and secure transportation.

While the expectations of people and businesses have been rising, transportation revenues from traditional sources such as the federal highway trust fund have either been flat or decreasing. Higher mileage vehicles, more people using public transit, increased reliance on non-motorized forms of transportation (pedestrian and bicycles), and most notably, the impact of inflation on highway construction costs have reduced the funding available to state and local governments to build and maintain their transportation systems.<sup>1</sup>

During the development of this plan, people and businesses told us the transportation system should be safe, secure, sustainable, efficient, reliable and responsive. They envisioned a future transportation system that is multimodal, offering a variety of services, strategically developed and globally integrated. They identified goals, initiatives, and fundamental values to guide the development of our transportation system.”

Building on the guidance provided by *TransAction III*, the *North Dakota State Freight Plan* represents the next chapter in NDDOT's ongoing efforts to develop and maintain a world-class transportation system that is safe, secure and provides efficient freight mobility.

Like *TransAction III*, the *North Dakota State Freight Plan* is a policy plan that defines NDDOT's freight planning process. Implementation of the freight plan will consist of four components: (1) infrastructure projects that eliminate freight bottlenecks and delays, (2) new or modified operational strategies, (3) planning and feasibility studies, and (4) the application of innovative technologies to improve the safe, secure and efficient movement of freight.<sup>2</sup>

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<sup>1</sup> During the last two legislative sessions the ND Legislature has provided one-time funding which offset some of the impact of inflation on state and local roadway construction budgets

<sup>2</sup> See, Freight Plan Implementation, page 25.

## **NORTH DAKOTA FREIGHT PLAN - PURPOSE, SCOPE & USE**

### **Purpose**

Define the process NDDOT uses to promote safe, secure, sustainable, and reliable freight mobility to enhance a diversified and vibrant economy.

### **Scope**

The Scope of North Dakota's Freight Plan is **multimodal**; with primary emphasis on highways and secondary emphasis on last mile connections to railroad, pipeline transload and air cargo freight facilities.

The Scope of North Dakota's Freight Plan is **comprehensive**; inclusive of immediate and long-term freight planning activities and investment strategies at the state level while being cognizant and supportive of local, tribal, and private sector freight roles and responsibilities.

### **Use**

1. Promote dialogue on the importance of safe, secure and efficient movement of freight
2. Provide a framework for public decision-making and investment
3. Promote public/private partnerships
4. Identify freight trends, needs, issues, and bottlenecks
5. Identify freight facilities critical to the state's economic growth and competitiveness
6. Identify state's freight transportation system
7. Identify potential freight infrastructure projects, operational and regulatory changes, and Intelligent Transportation System applications.
8. Qualify North Dakota for federal freight-related funding

## NORTH DAKOTA FREIGHT PLAN - STRATEGIC TRANSPORTATION GOALS

In October 2012, the North Dakota Department of Transportation (NDDOT) published its state's statewide strategic transportation policy plan, *TransAction III*. During the development of the Plan, people and businesses indicated they wanted a transportation system that was safe, secure, sustainable, efficient, reliable and responsive. They envisioned the state's future transportation system as multimodal, offering a variety of services, strategically developed, and globally integrated. They identified goals and fundamental values to guide the development of our transportation system for **both personal and freight mobility**. The strategic transportation goals identified in *TransAction III* are also the goals for the state's freight transportation system.<sup>3</sup>

The following excerpt is from *TransAction III*

### *TransAction III* – North Dakota's Transportation...

**Mission** – North Dakota will provide a safe, reliable, and sustainable transportation system.

**Vision** – North Dakota's multimodal transportation system is strategically developed and globally integrated.

**Goals** – North Dakota's personal and freight transportation mobility goals are interdependent, mutually supportive, and apply to our transportation system's infrastructure and services.

**Safe and secure transportation**, whether related to personal or **freight** mobility, **is North Dakota's Number One Goal**.

Goal 1 - Safe and secure transportation

Goal 2 - Sustainable and reliable mobility

Goal 3 - Diversified and sufficient funding

Goal 4 - Communication and cooperation

Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts

Section 1118 of Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) requires a state freight plan to include a description of how the plan will improve the ability of the state to meet the national freight goals established in 23 U.S.C. 167. See Appendix A – *TransAction III* North Dakota's Strategic Transportation Plan Goals Complement National Freight Goals- *North Dakota State Freight Plan*.

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<sup>3</sup> See Appendix B North Dakota's Goals and Priorities for Freight Transportation Infrastructure and Operations

## NORTH DAKOTA FREIGHT PLAN – STRATEGIC FREIGHT SYSTEM

While all of the state’s roads, rail lines, airports, and pipelines are important in the movement of freight, strategically some are obviously more important than others. For example, Interstate I-29 is strategically important since it carries substantial amounts of freight and connects North Dakota with domestic and foreign markets. While each road, rail line, airport and pipeline is important, the various elements of the freight infrastructure system may be compared to a river system – small streams feed larger tributaries which combine to become a river. Local roads and rail road branchlines are the small streams for intrastate freight movements which in turn are the tributaries feeding the river of interstate and international freight movements.

To facilitate public discussion regarding the designation of a Strategic Freight System (SFS), NDDOT developed an index consisting of three levels called the “**North Dakota Strategic Freight System Index**” (see Table 1). The index classified freight transportation infrastructure necessary to sustaining the state’s economic growth and competitiveness relative to International/Interstate, Regional/Intrastate, and Local movements of freight.<sup>4</sup> Next, NDDOT developed a matrix analyzing segments of the State Highway System in comparison to the components of the SFS. While no segment of the State Highway System exhibited all of the components of the SFS, enough segments exhibited multiple components to identify a SFS. The SFS focuses on the state roadway system and coordinates with local freight plans as they become available.<sup>5</sup> The Strategic Freight System for Highways map may be found on page 5. Maps of the railroad, airports and pipeline portions of the SFS are shown on pages 6, 7 and 15, respectively.

**Table 1 - North Dakota Strategic Freight System Index**

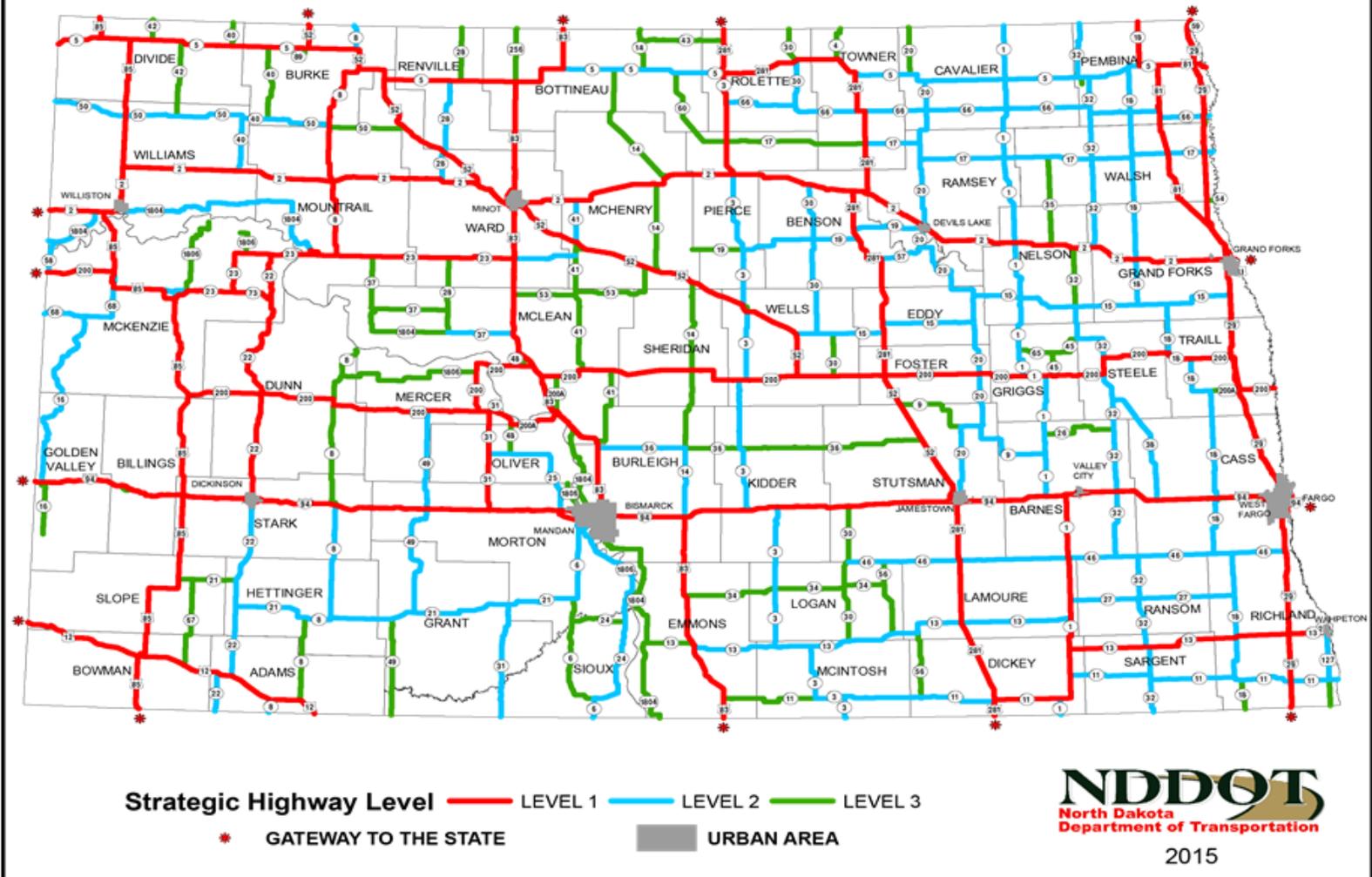
<b>Freight Mode</b>	<b><u>Level One</u> Critical Rural Freight Corridors International/Interstate</b>	<b><u>Level Two</u> Regional/Intrastate</b>	<b><u>Level Three</u> Local</b>
<b>Roads</b>	<b>Interstate &amp; Interregional Highways Congressional Designated High Priority Corridors STRAHNET National Truck Network Energy/Agricultural Access Corridors High Truck Volume Principal Arterials</b>	<b>State Corridors District Corridors  Limited County Major Collectors City Principal Arterials</b>	<b>District Collectors  Some County, City, Township and Tribal Roads</b>
<b>Rail</b>	<b>Class I Mainlines STRACNET</b>	<b>Branchlines capable of carrying 286,000 lb. cars</b>	<b>Branchlines capable of carrying 268,000 lb. cars</b>
<b>Air</b>	<b>Commercial Airports Air Force Bases</b>	<b>General Aviation Airports</b>	<b>Public Use Airports Private Airports</b>
<b>Pipeline</b>	<b>Interstate Transmission Pipelines</b>	<b>Gathering Pipelines</b>	<b>Distribution Pipelines</b>

<sup>4</sup> See Appendix C for a list of the variables examined to designate the State’s Strategic Freight System components.

<sup>5</sup> NDDOT will work cooperatively to coordinate the linkage of the state freight system with locally designated freight systems of the state’s urban areas, counties, townships, MPOs, neighboring states and Canadian provinces.

# STATE STRATEGIC FREIGHT SYSTEM - HIGHWAYS

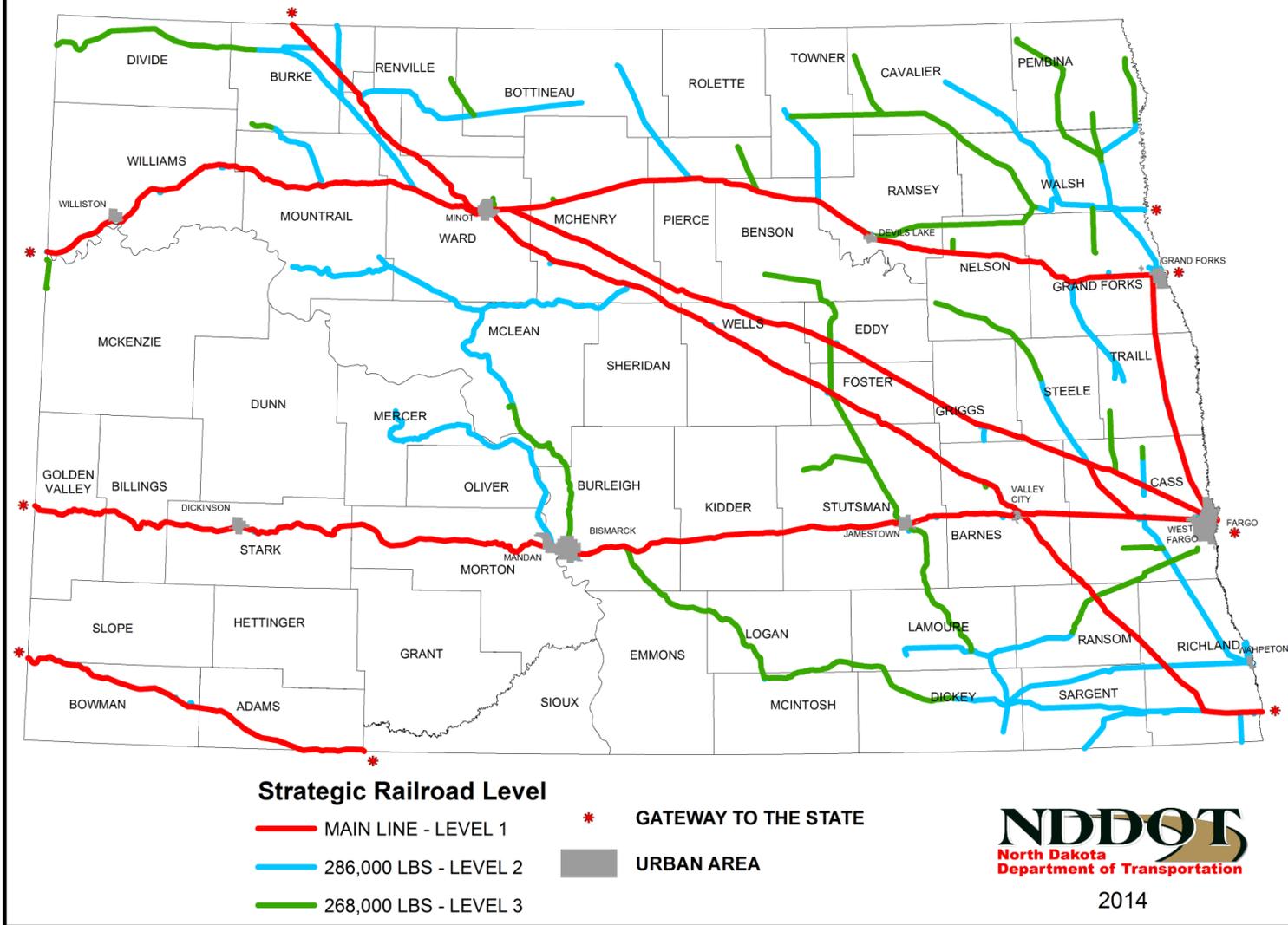
FIGURE 1



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# STATE STRATEGIC FREIGHT SYSTEM - RAILROADS

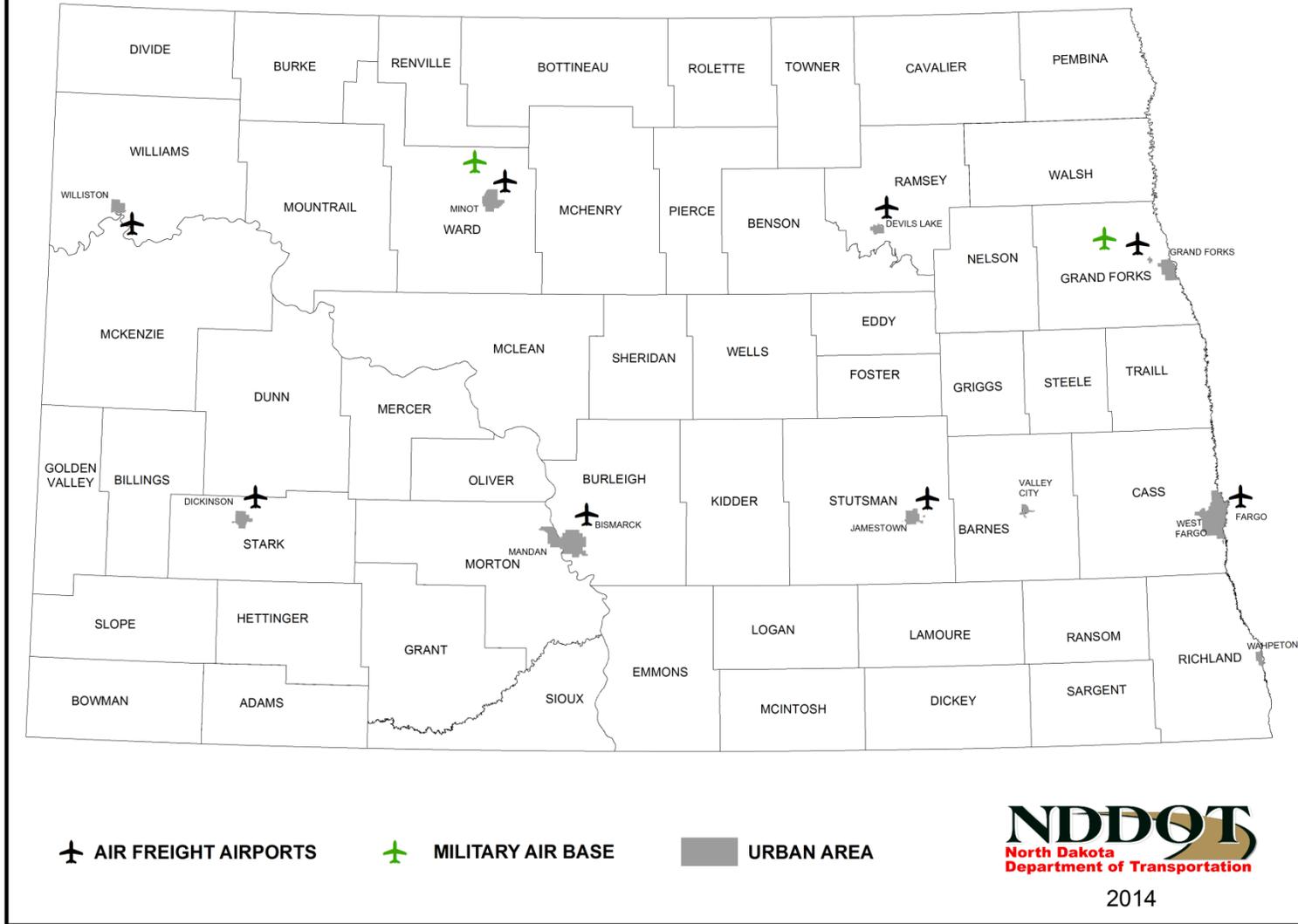
FIGURE 2



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# STATE STRATEGIC FREIGHT SYSTEM - AIRPORTS

FIGURE 3



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Source: North Dakota Aeronautics Commission



**Table 2 - Freight Facility Traffic Generator Index (continued)**

<b>Mode</b>	<u><b>Level One</b></u> <b>Critical Rural Freight Corridors International/Interstate</b>	<u><b>Level Two</b></u> <b>Regional/Intrastate</b>	<u><b>Level Three</b></u> <b>Local</b>
<b>Air</b>	<b>Air Freight Delivery Services Commercial Airline Freight US Air Force Bases Large to Mid-sized Cities</b>	<b>Crop Sprayers Air Taxi Services  Mid-sized to Small Cities</b>	<b>Crop Sprayers  Small Cities and Hamlets</b>
<b>Rail</b>	<b>Shuttle Bulk Grain Elevators Non-Shuttle Elevators Intermodal COFC/TOFC Facilities Transload Facilities (Frac Sand, Pipe, Oil, Coal) Large to Mid-sized Cities</b>	<b>Shuttle Bulk Grain Elevators Non-Shuttle Elevators  Transload Facilities (Frac Sand, Pipe, Oil, Coal) Mid-sized to Small Cities</b>	<b>Non-Shuttle Elevators  Small Cities and Hamlets</b>
<b>Pipeline</b>	<b>Pipeline Terminals Pipeline Tank Farms Natural Gas Processing Plants</b>	<b>Pipeline Terminals Pipeline Tank Farms Natural Gas Processing Plants</b>	

### **Highway, Road & Street Infrastructure**

Figure 4 depicts the state’s roadway infrastructure which is owned and maintained by state, tribal and federal governments, counties, municipalities, and townships.<sup>6</sup> Table 3 – Roadway Mileage and Ownership, shows the roadway mileage owned and maintained by the various levels of government. The freight volumes carried, and the level of service provided by the state’s roadway system varies significantly from the fully-controlled, multi-lane Interstates to unmaintained prairie trails.

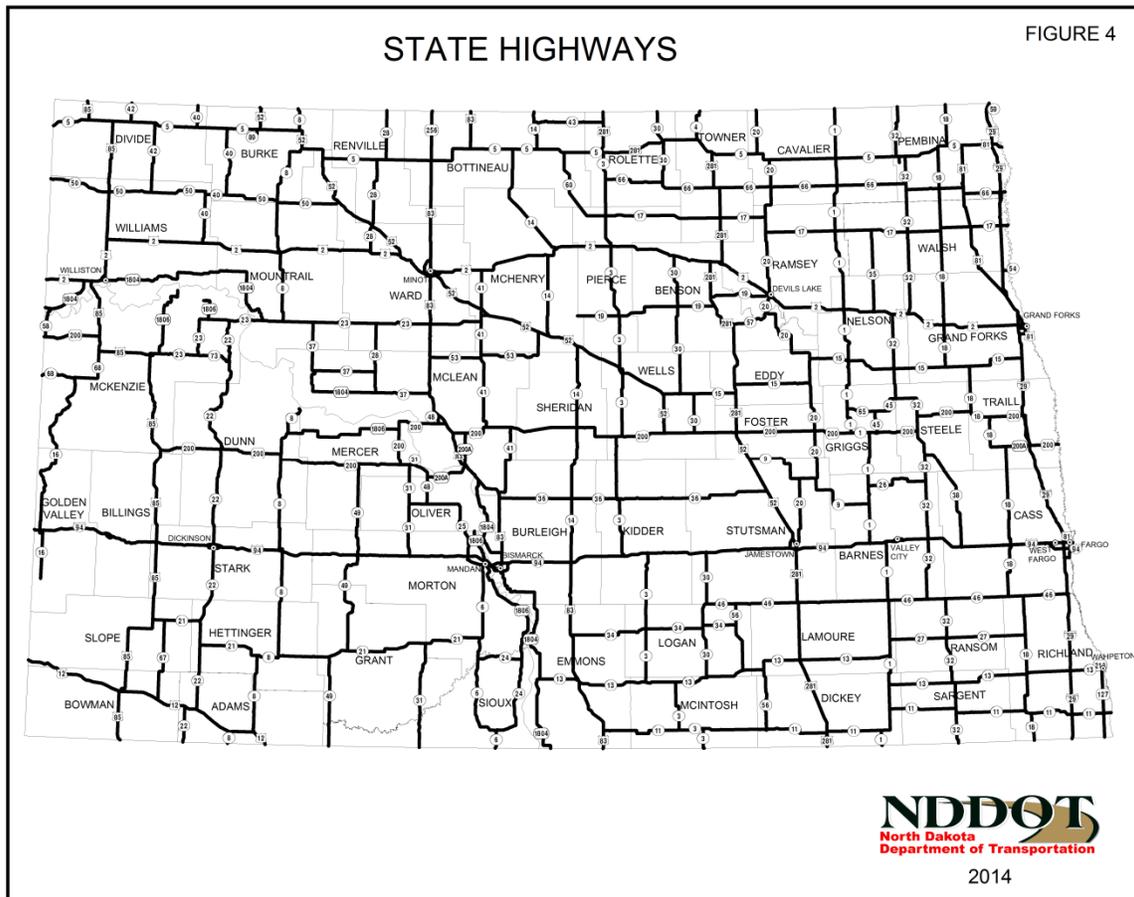
Unlike many other states, in recent years North Dakota has continued to see an increase in Vehicle Miles Traveled (VMT). In 2012, North Dakota’s highways, roads, and city streets carried a total of 10.1 billion vehicle miles traveled (VMT). State highways accounted for 6.7 billion, or 66.1% of all VMT. Truck traffic on state highways accounted for 1.5 billion VMT. With 55.4% of NDDOT’s total roadway miles, the Interstate, Interregional and State Corridors accounted for 87.7% of the total truck VMT on the State Highway System.<sup>7</sup>

Between 2000 and 2012, daily truck VMT on the State Highway System grew from 1.8 million VMT to 4.1 million VMT, a 130% increase. During this same period of time the percentage of

<sup>6</sup> Appendix F - Statutory Authority and Constitutional Restraints on Freight-Related Investments

<sup>7</sup> Interstate, Interregional and State Corridors are highway levels in NDDOT’s Highway Performance Classification System (HPCS)

trucks as a percent of total VMT increased from 14.7% to 22.4%. It is assumed a similar increase in truck VMT on the state's local roads occurred.



North Dakota's truck VMT increase is primarily attributable to increased freight traffic associated with its rapidly expanding energy, agricultural and manufacturing sectors. From January 2007 to January 2014, oil production in the state increased from 122,470 to nearly 933,130 barrels per day, and exceeded a million barrels per day in April 2014.<sup>8</sup> Agricultural production in the state increased from 30.3 billion tons in 1980, to 89.4 billion tons in 2010. Farmers shifting to higher yielding crops (e.g. wheat acres to corn) coupled with literally hundreds of thousands of Conservation Reserve Program acres being converted to agricultural production are the primary causes of increased agricultural production. Also contributing to increased truck traffic is the state's growing manufacturing sector.<sup>9</sup> North Dakota was also only one of three states to experience an increase in manufacturing between 2000 and 2012.

<sup>8</sup> Department of Mineral Resources, Oil & Gas Division

<sup>9</sup> Through 2008, North Dakota was one of only three states whose manufacturing employment had increased (+2,100) since 2000 (the other two states were Alaska and Nevada).

**Table 3  
Roadway Mileage and Ownership**

<u>Ownership</u>	<u>Mileage</u>
<b>State Highways</b>	<b>7,377</b>
<b>Other State Owned Roads</b>	<b>19</b>
<b>County Roads</b>	<b>18,762</b>
<b>Municipal Streets</b>	<b>3,905</b>
<b>Township Roads</b>	<b>56,753</b>
<b>Federal Roads (includes BIA roads)</b>	<b>1,546</b>
<b>Tribal Roads</b>	<b>51</b>
<b><u>Trails/Unmaintained</u></b>	<b><u>18,257</u></b>
<b>Total North Dakota Road Mileage</b>	<b>106,670</b>

Source: NDDOT

### **Railroad Infrastructure**

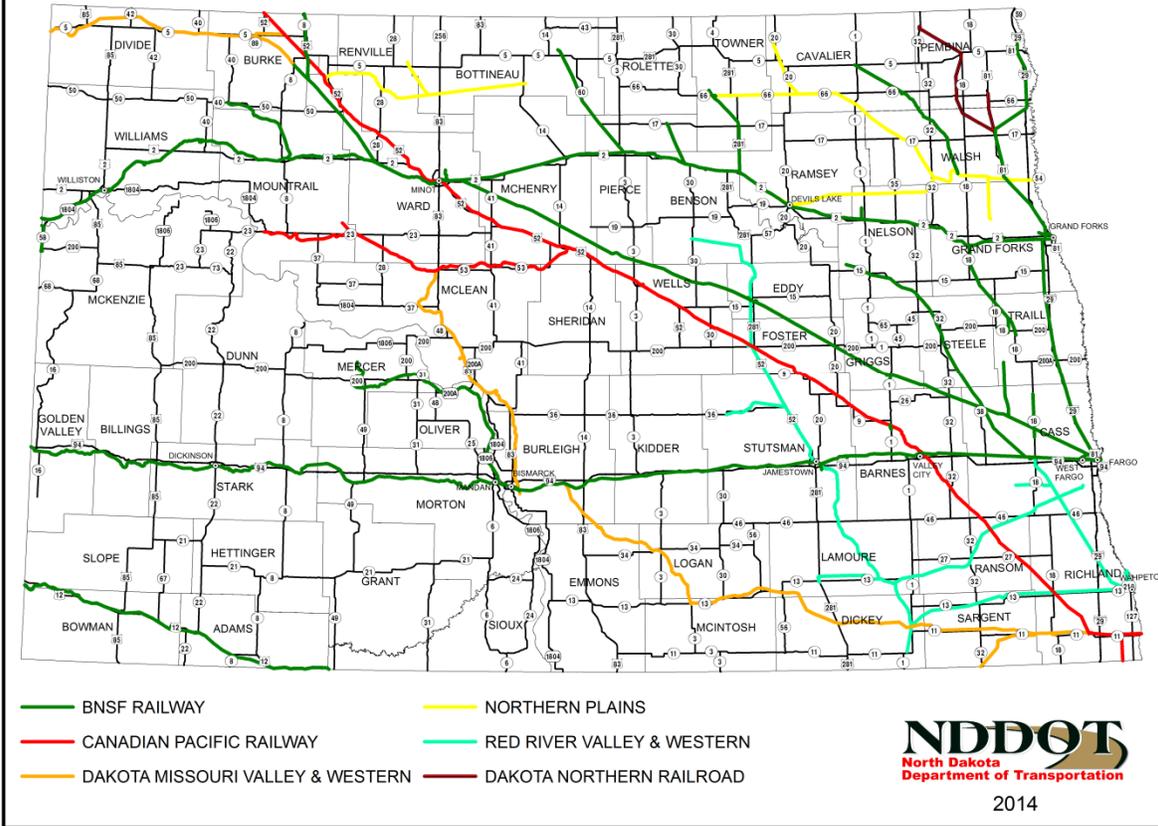
The state’s railroad system is privately owned, maintained, and operated by two Class I Railroads, three Regional Railroads, and one Short Line Railroad (see Figure 5). The two Class I Railroads, (BNSF Railway and CP Railway) that serve the state operate systems that extend beyond North Dakota’s borders. These railroads traverse the state linking sea ports to major urban areas, resource production areas such as North Dakota’s rich agricultural region to food processors, the Bakken Oil Formation to out-of-state refineries, and the state’s manufacturers to domestic and international consumers. The Regional and Short Line railroads serving North Dakota primarily operate within the state, however, all of them except the Dakota Northern Railroad also operate on track in adjacent states. In the case of the Northern Plains Railroad, it operates on track in another state in order to access its affiliated Class I Railroad.

Like highways, rail lines are subject to weight limitations based on gross carload weight. The current standard for rail cars comprising unit trains is 286,000 lbs. Lines not capable of carrying 286,000 lb. cars are more likely candidates for abandonment or in need of substantial upgrades (see Table 4).

Rail traffic in the state has grown substantially due to the same factors: growth in energy, agricultural, and manufacturing production. A summary of public waybill data shows rail freight originating in North Dakota doubled between 2000 and 2011. Between 2000 and 2011, the daily number of trains on BNSF’s Glasgow Subdivision increased from 20 to 38. Train traffic through Fargo, ND has increased from 68 trains per day in 2008 to 100 daily trains in 2014 (Source: BNSF). Increased rail freight traffic has resulted in a upswing in at-grade rail crossing incidents, and requests for crossing improvements, signalized crossings and additional rail quiet zones. Table 5 indicates the number of public railroad at-grade crossings on North Dakota’s rail system.

# RAIL OWNERSHIP

FIGURE 5



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**Table 4**  
**Railroad Mileage – Mainline & Branchline 286,000 lb. & 268,000 lb.**

Railroad	Mainline Mileage	286,000 lb. Branchline Mileage	268,000 lb. Branchline Mileage	Total Mileage
BNSF	1,112	451	134	1,697
CPR	359	124	0	483
DMVW	0	157	237	394
DN	0	0	51	51
NPR	0	104	190	294
RRVW	0	189	223	412
<b>Totals</b>	<b>1,471</b>	<b>1,025</b>	<b>835</b>	<b>3,331</b>

Source: BNSF et al.

**Table 5**  
**Railroad Public Crossings<sup>10</sup>**

<b>Railroad</b>	<b>Signalized<sup>11</sup></b>	<b>Stop Signs</b>	<b>Crossbuck/Yield</b>	<b>Over/Under</b>	<b>Total</b>
<b>BNSF</b>	<b>368</b>	<b>27</b>	<b>1,182</b>	<b>126</b>	<b>1,703</b>
<b>CPR</b>	<b>98</b>	<b>18</b>	<b>404</b>	<b>19</b>	<b>539</b>
<b>DMVW</b>	<b>30</b>	<b>8</b>	<b>365</b>	<b>4</b>	<b>407</b>
<b>DN</b>	<b>16</b>	<b>1</b>	<b>95</b>	<b>0</b>	<b>112</b>
<b>NPR</b>	<b>22</b>	<b>0</b>	<b>330</b>	<b>2</b>	<b>354</b>
<b>RRVW</b>	<b>53</b>	<b>3</b>	<b>440</b>	<b>5</b>	<b>501</b>
<b>Total</b>	<b>587</b>	<b>57</b>	<b>2,816</b>	<b>156</b>	<b>3,616</b>

Source: BNSF et al.

Crude oil production in the state has increased at phenomenal rates and the pipeline industry has struggled to keep pace. Since the state has lacked adequate pipeline capacity (see Table 6), this created an opportunity for the state's Class I Railroads to transport oil by tanker cars. Even though rail transportation of crude oil is approximately three times more expensive than pipeline, rail crude oil transportation shipments has grown from 30,000 barrels per day in 2008, to 700,000 barrels per day in 2014<sup>12</sup>. In September 2014, rail tanker cars carried approximately 60% of the crude oil produced in North Dakota.

In addition to available pipeline capacity, the transportation of crude oil by pipeline versus rail is largely driven by economics. Other factors affecting the choice of mode for shipping North Dakota crude oil include the product's ultimate destination since rail transportation offers access to areas of the country that cannot be reached via pipelines. In 2013, the state had 15 rail oil transload facilities on BNSF rail lines and five on CP rail lines.

<sup>10</sup> In addition to public rail crossings, there are 1,219 private crossings on North Dakota's rail system.

<sup>11</sup> Signalized crossing numbers also include four-quadrant gates and flashers

<sup>12</sup> Figures obtained from the North Dakota Department of Mineral Resources, Oil and Gas Division

**Table 6**  
**Daily Rail & Pipeline Crude Oil Transportation Capacity (barrels per day)**

US Williston Basin Crude Oil Export Options - November 7, 2013

	Year End System Capacity, Barrels Per Day									
	2007	2008	2009	2010	2011	2012	2013	2014*	2015*	2016*
Butte Pipeline	92,000	104,000	118,000	118,000	145,000	160,000	160,000	160,000	160,000	160,000
Butte Loop (Late 2014)	-	-	-	-	-	-	-	110,000	110,000	110,000
Tesoro Mandan Refinery	58,000	58,000	58,000	58,000	58,000	68,000	68,000	68,000	68,000	68,000
Enbridge Mainline North Dakota	80,000	110,000	110,000	161,500	185,000	210,000	210,000	210,000	210,000	210,000
Enbridge Bakken Expansion Program (Q1-11/Q1-13)	-	-	-	-	25,000	25,000	145,000	145,000	145,000	145,000
Plains Bakken North (Up to 70,000 BOPD)	-	-	-	-	-	-	-	40,000	40,000	40,000
Enbridge Sandpiper* (Q1 2016)	-	-	-	-	-	-	-	-	-	225,000
TransCanada Keystone XL* (2015)	-	-	-	-	-	-	-	-	-	100,000
Dakota Prairie Refinery (Q4 2014/Q1 2015)	-	-	-	-	-	-	-	-	20,000	20,000
Thunder Butte Refinery (2015)	-	-	-	-	-	-	-	-	20,000	20,000
Hiland Partners Double H Pipeline (Q3 2014, Up to 100,000 BOPD)	-	-	-	-	-	-	-	50,000	50,000	50,000
Koch Dakota Express Pipeline* (2016)	-	-	-	-	-	-	-	-	-	250,000
<b>Pipeline/Refining Total</b>	<b>230,000</b>	<b>272,000</b>	<b>286,000</b>	<b>337,500</b>	<b>413,000</b>	<b>463,000</b>	<b>583,000</b>	<b>783,000</b>	<b>923,000</b>	<b>1,398,000</b>
EOG Rail, Stanley, ND (Up to 90,000 BOPD)	-	-	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000
Dakota Plains, New Town, ND	-	-	-	20,000	30,000	30,000	30,000	80,000	80,000	80,000
Various Sites in Minot, Dore, Donnybrook, Gascoyne, and Stampede (est)	-	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Inergy COLT Hub, Epping, ND (Q2 2012)	-	-	-	-	-	120,000	120,000	120,000	120,000	120,000
Hess Rail, Tioga, ND (Up to 120,000 BOPD)	-	-	-	-	-	60,000	60,000	60,000	60,000	60,000
Bakken Oil Express, Dickinson, ND	-	-	-	-	100,000	100,000	100,000	100,000	100,000	100,000
Savage Services, Trenton, ND (Q2 2012 Unit Trains)	-	-	-	-	-	90,000	90,000	90,000	90,000	90,000
Enbridge, Berthold, ND (Q4 2012)	-	-	-	-	-	10,000	80,000	80,000	80,000	80,000
Great Northern Midstream, Fryburg, ND (Q1 2013)	-	-	-	-	-	-	60,000	60,000	60,000	60,000
Musket, Dore, ND (Q2 2012)	-	-	-	-	-	60,000	60,000	60,000	60,000	60,000
Plains, Ross, ND	-	-	-	-	20,000	20,000	65,000	65,000	65,000	65,000
Plains - Van Hook, New Town, ND	-	-	-	-	-	35,000	65,000	65,000	65,000	65,000
Global/Basin Transload, Zap, ND (Estimate Not Confirmed)	-	-	-	-	20,000	40,000	40,000	40,000	40,000	40,000
Mountrail Rail - Palermo, ND	-	-	-	-	-	-	-	160,000	160,000	160,000
Northstar Transloading - Fairview, MT (Q1 2014)	-	-	-	-	-	-	-	100,000	100,000	100,000
<b>Rail Only Total</b>	<b>-</b>	<b>30,000</b>	<b>95,000</b>	<b>115,000</b>	<b>265,000</b>	<b>660,000</b>	<b>865,000</b>	<b>1,175,000</b>	<b>1,175,000</b>	<b>1,175,000</b>
<b>All Transportation Total</b>	<b>230,000</b>	<b>302,000</b>	<b>381,000</b>	<b>452,500</b>	<b>678,000</b>	<b>1,123,000</b>	<b>1,448,000</b>	<b>1,958,000</b>	<b>2,098,000</b>	<b>2,573,000</b>

\*Project Still in the Review or Proposed Phase

Source: North Dakota Pipeline Authority

**Intermodal Rail Container Service** – North Dakota does not have any rail facilities that offer dedicated intermodal container service. North Dakota Port Services in Minot and the Northern Plains Commerce Center in Bismarck both provide shippers access to non-dedicated intermodal service.

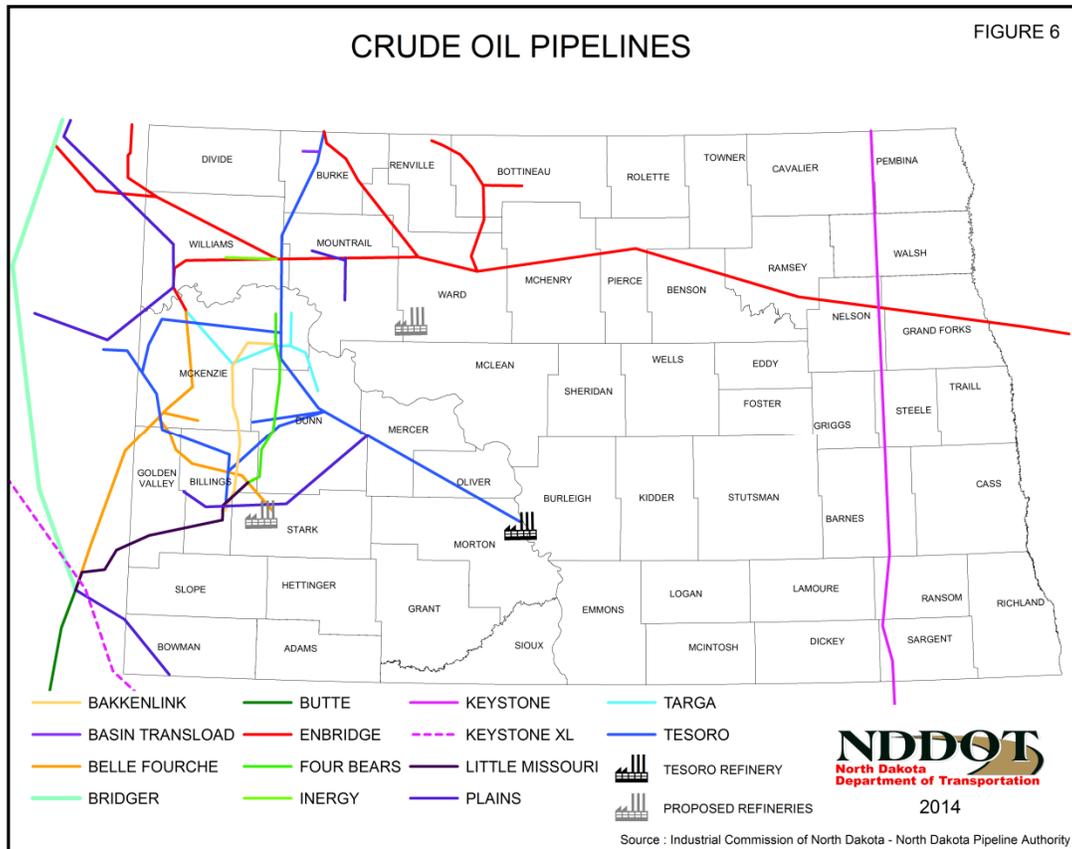
The nearest dedicated intermodal rail container service available to North Dakota is:

- BNSF Railway – St. Paul, MN, Chicago, IL, Omaha, NE, and Denver, CO
- Canadian Pacific Railway – Minneapolis, MN, Regina, SK, and Winnipeg, MB
- Canadian National Railroad – Chicago, IL, Winnipeg, MB, and Saskatoon, SK
- Union Pacific Railroad – Chicago, IL, Council Bluffs, IA, and Denver, CO

### Pipeline Infrastructure

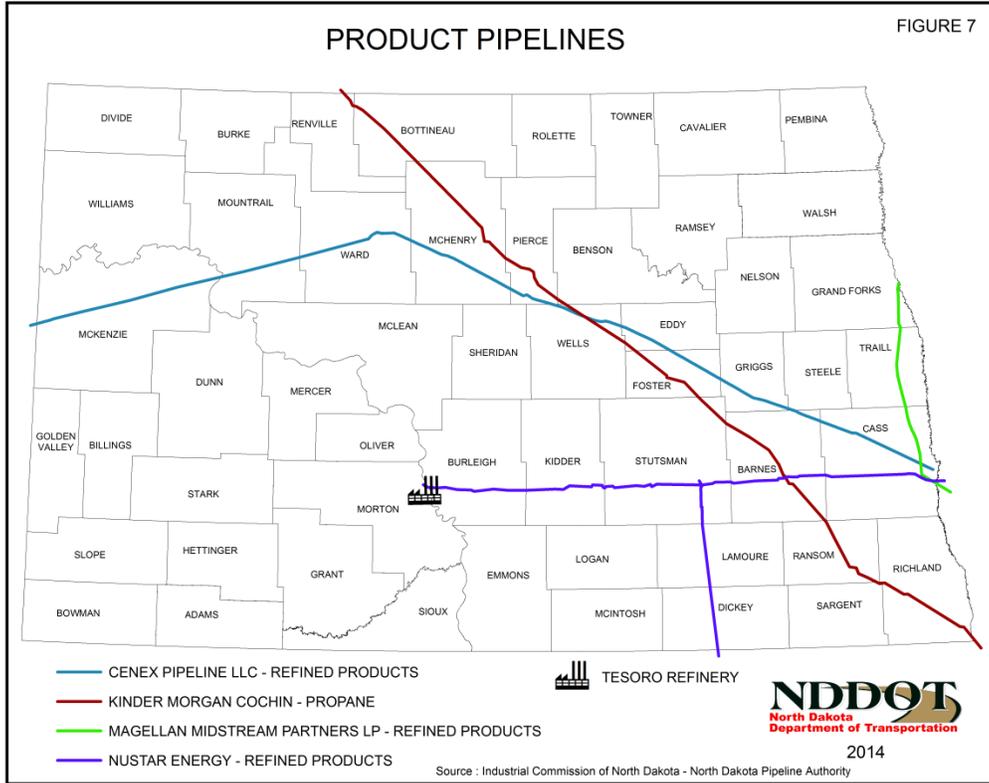
North Dakota's pipeline system is comprised of three levels of pipelines: Interstate Transmission, Gathering, and Distribution. In 2013, a total of 47 companies owned and operated 17,540 miles of transmission pipelines in North Dakota (see Table 7 on pages 17 and 18). Pipelines serving the state transport several commodities including: crude oil, oil products, natural gas, carbon dioxide and other gases, and water. The state freight plan only considers Interstate pipelines used to transport energy-related commodities (see Figures 6, 7 & 8).

North Dakota's tremendous increase in crude oil and natural gas production has made it difficult for pipeline companies to keep pace with demand. Between 2008 to September 2014, crude oil production increased from 122,470 barrels to 1,184,635 barrels per day, and natural gas production increased from 380 MCF<sup>13</sup> to 1,403 MCF per day. In 2013, the state's crude oil pipeline capacity was 583,000 barrels per day which is up from 230,000 barrels per day in 2007. In the case of natural gas, processing plant construction has lagged behind production due to large supplies and depressed market prices. Currently, nearly 30% of the natural gas produced in North Dakota is flared; the remainder is being transported by pipelines.

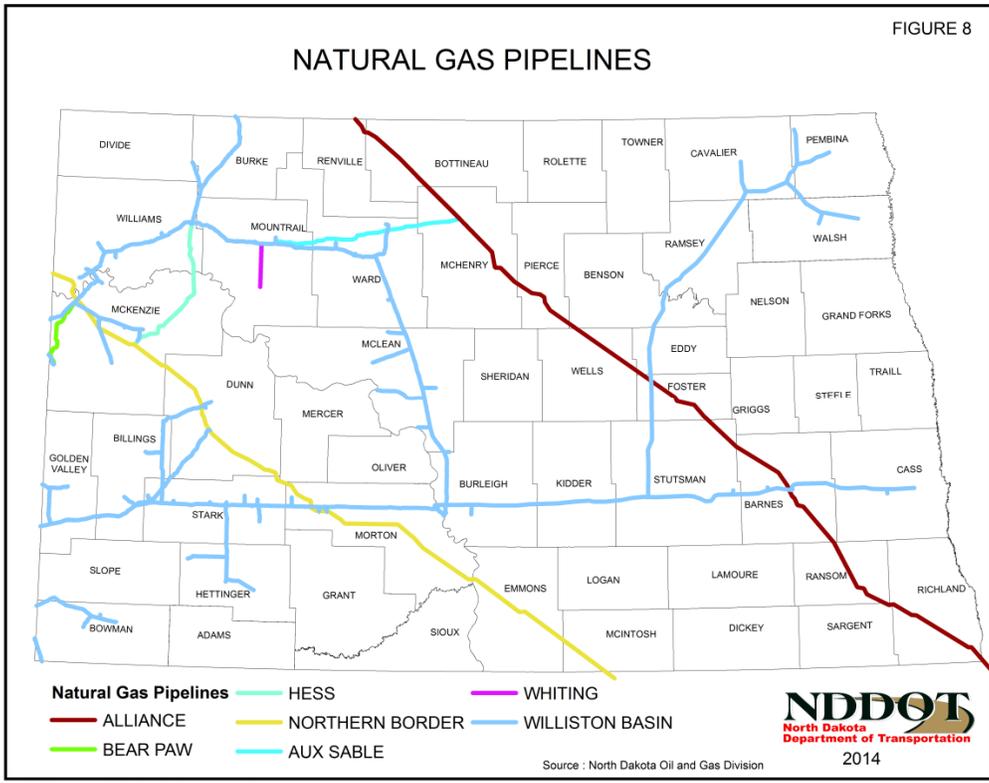


Source: North Dakota Pipeline Authority

<sup>13</sup> MCF abbreviation denotes a thousand cubic feet of natural gas.



Source: North Dakota Pipeline Authority



Source: North Dakota Pipeline Authority

**Table 7**  
**Pipeline Company Mileage & Product**

<u>Oil Pipeline Companies</u>	<u>Mileage</u>	<u>Product</u>
BakkenLink Pipeline, LLC	96.7	Crude Oil
Belle Fourche Pipeline	367.9	Crude Oil
Bridger Pipeline LLC	743.0	Crude Oil
Cenex Pipeline Company	386.0	Products Line
Enbridge Energy, LP	168.4	Crude Oil
Enbridge Pipelines Bakken, LP	12.0	Crude Oil
Enbridge Pipelines ND LLC	839.2	Crude Oil
Enbridge Pipelines Southern Lights LLC	28.0	Crude Oil
Hawthorn Oil Transportation	5.5	Crude Oil
Hiland Crude, LLC (1) (formerly Banner Transportation)	514.7	Oil trunk lines/gathering
Independent Trading and Transportation (1)	0.0	Oil gathering
Kinder Morgan Cochin LLC	333.3	Condensates Pipeline
Magellan Pipeline Company LLC	88.6	Products Line
NuStar Pipeline Operating Partnership, L.P.	263.8	Products Line
ONEOK Bakken Pipeline, LLC	67.0	Oil
Plains Pipeline LP	275.8	Oil trunk lines/gathering
Tesoro High Plains Pipeline	654.0	Crude Oil
<u>TransCanada Keystone Pipeline, LP</u>	<u>218.08</u>	Crude Oil
<b>Total</b>	<b>5,062.0</b>	
<u>Natural Gas Companies</u>	<u>Mileage</u>	<u>Product</u>
Alliance Pipeline Ltd.	403.8	Natural Gas
Bison Pipeline, LLC	126.9	Natural Gas
Northern Border Pipeline	280.3	Natural Gas
Viking Gas Transmission	0.6	Natural Gas
<u>WBI Energy Transmission, Inc.</u>	<u>1,412.3</u>	Natural Gas
<b>Total</b>	<b>2,223.9</b>	

Source: North Dakota Pipeline Authority

**Table 7 (continued)**  
**(Pipeline Company Mileage & Product)**

<u>Gathering Companies</u>	<u>Mileage</u>	<u>Product</u>
Amerada Hess (excl. TGC)	170.0	Gathering oil & gas
Archer Daniels Midland Company	40.9	Gathering gas
Arrow Pipeline, LLC	447.1	Gathering oil & gas
Aux Sable Midstream, LLC	83.4	Gathering gas
Brigham Oil & Gas, LP	254.8	Gathering oil & gas
Dakota Gasification Company Pipeline	167.6	Natural Gas
Hiland Partners, LP	1,149.0	Gathering oil & gas
Inergy Dakota Pipeline, LLC (formerly Rangeland)	21.0	Gathering oil
Meadowlark Midstream Company LLC (formerly Bear Tracker)	309.9	Gathering oil & gas
ONEOK Rockies Midstream, LLC	4,994.2	Gathering oil & gas
Pecan Pipeline (ND) LLC	297.1	Gathering gas
Petro Hunt Corporation LLC	140.6	Gathering oil & gas
Petro Hunt Corporation LLC et al	5.3	Gathering oil & gas
QEP Field Services Company	34.4	Gathering oil & gas
Red River Energy, LLC (1)	16.5	Gathering product
Roughrider Pipeline Co.	32.1	Gathering product
Sterling Energy Investments, LLC	30.9	Gathering gas
Targa Badlands, LLC (formerly saddle butte)	334.3	Gathering oil & gas
Amerado Hess Tioga Gas Plant Pipeline	984.2	Gathering oil & gas
Whiting Oil & Gas Corporation	585.1	Gathering oil & gas
<u>XTO Energy, Inc. - Nesson Gathering System</u>	<u>120.7</u>	Gathering oil & gas
<b>Total</b>	<b>10,219.1</b>	

<u>CO2 Pipeline</u>	<u>Mileage</u>	<u>Product</u>
Dakota Gasification Company – Synthetic NG Pipeline	34.7	CO2

**Miscellaneous & Loading Facilities**

ND Land Holding, LLC	0.0	Rail Loading
<u>Prairielands Energy Marketing</u>	<u>0.0</u>	
<b>TOTAL PIPELINE MILEAGE</b>	<b>17,539.7</b>	

Source: North Dakota Pipeline Authority

**Natural Gas Processing**

	<u>2008</u>	<u>2014</u>
Number of Gas Processing Plants	12	24
Processed Natural Gas in Million Cubic Feet Per Day	380	1403

Source: North Dakota Pipeline Authority

## **Airport Infrastructure**

North Dakota has 89 airports that are publicly owned and operated by municipal, county, and township governments. The airport at Fort Yates, North Dakota is owned and operated by the Standing Rock Sioux Tribe. The state also has 220 privately owned airports, and two Air Force Bases at Minot and Grand Forks owned by the US Department of Defense.

Two air freight companies serve the state; United Parcel Service (UPS) and Fed Ex. UPS flies freight directly to eight North Dakota cities (Fargo, Grand Forks, Devils Lake, Jamestown, Minot, Bismarck, Williston and Dickinson) from its regional facility located in Sioux Falls, SD. Fed Ex flies directly in to six cities (Grand Forks, Fargo, Minot, Bismarck, Williston and Dickinson). UPS also delivers air freight from Grand Forks via truck to Fargo, Devils Lake, and Jamestown; truck deliveries are also made from Fargo to Jamestown. Additionally, the commercial airlines operating in North Dakota transport air freight and several small air service companies deliver air freight in addition to their passenger service. Large volumes of specialized military freight, and in rare instances emergency relief related freight, are delivered to the state's two air force bases by the US Air Force.

Although air freight constitutes the least amount of total freight by weight and volume, the corresponding value of air freight tends to be quite high and very important to a segment of the state's economy. As North Dakota's economy continues to grow and diversify, air freight, and in particular, overnight air freight is increasingly becoming more important in North Dakota. A wide variety of air freight is transported daily into and out of North Dakota. Commonly shipped items include: parts for oil field equipment and electrical power plants, sophisticated computer software and hardware, medical supplies and laboratory equipment, pharmaceuticals, human and livestock vaccines, parts for automobile, truck and farm equipment, and a host of other time-sensitive or high value freight. One of the more unusual air freight movements out of the state has been the air shipment of cattle to Kazakhstan which is done to reduce animal mortality associated with long transit times.

## NORTH DAKOTA FREIGHT PLAN – STAKEHOLDER AND PUBLIC INPUT

Stakeholder and public input is a vital component of NDDOT’s planning and project development processes. To develop the *North Dakota State Freight Plan*, NDDOT employed a series of three surveys soliciting input from more than 350 stakeholders representing all levels of government, economic sectors, businesses, industry associations, and individuals. The first survey solicited stakeholder opinions on significant trends and issues affecting the future of freight movements. The second survey was designed to identify the needs of North Dakota’s freight system. The third survey’s questions were asked to identify freight bottlenecks, freight generators with transportation problems, and conditions that cause freight delays.

In addition to being included as stakeholders responding to the three-part survey mentioned above, the states and provinces surrounding North Dakota were asked to complete a fourth survey regarding cross jurisdictional issues affecting freight movements including bottlenecks, gateways and corridors, and future freight system infrastructure needs. This survey was conducted electronically. All of North Dakota’s neighboring states (Minnesota, South Dakota, and Montana) and Canadian provinces (Manitoba and Saskatchewan) responded. Full results of NDDOT’s stakeholder and public input process may be found in Appendix J – Stakeholder and Public Involvement Freight Plan Survey Responses, and Appendix K – Freight Trend Survey Responses Surrounding States and Provinces.

North Dakota freight stakeholder comments were evaluated to formulate freight related goals for the North Dakota State Freight Plan. After an analysis of comments it was determined that the stakeholder identified Needs had strong correlation with the public comments used to formulate North Dakota’s long range transportation plan, *TransAction III*, as displayed in Table 8. Ultimately it was determined to use the goals from the State’s long range transportation plan given the strong similarities.

**Table 8  
Freight System Needs**

Stakeholder/Public Identified Need	<i>TransAction III</i> Goal
Access to competitively-priced intermodal container rail service	Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts
Additional interstate pipeline capacity to export North Dakota crude oil	Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts
Expansion of the crude oil and natural gas pipeline gathering system	Goal 1 - Safe and secure transportation Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts
First/Last mile connections linking freight generators to the state’s strategic freight system	Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts
Targeted highway improvements to eliminate freight impediments (load restrictions, overhead structures, etc.) to the movement of freight	Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts
Additional mainline railroad capacity and safety enhancements at rail crossings	Goal 1 - Safe and secure transportation
Upgrading some short line railroad branch lines to carry 286,000 lb. rail cars	Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts
An access management program for the State Highway System	Goal 1 - Safe and secure transportation Goal 2 - Sustainable and reliable mobility
A statewide, coordinated system (state & local roads), for permitting and routing of oversize/overweight vehicles, similar to the existing permitting system for state routes	Goal 4 - Communication and cooperation Goal 3 - Diversified and sufficient funding
Improved harmonization of truck size and weight regulations with neighboring states and provinces	Goal 4 - Communication and cooperation

## **Survey 1 - Freight System Trends and Issues.**

The following identified trends and issues are listed in random order.

**Trend/Issue 1** North Dakota's oil and natural gas production is expected to double by 2017, and to continue to rise for the next 10 to 15 years. Additional freight system capacity (highway, rail and pipeline) will be necessary to meet this challenge.

**Trend/Issue 2** While the volume of ND crude oil moved by rail may increase; downward pressure on world crude oil prices coupled with increased pipeline capacity will lower rail's share of total movements.

**Trend/Issue 3** North Dakota is experiencing unprecedented population growth resulting in increased volumes of inbound consumer-related freight; most of this freight will be transported by trucks.

**Trend/Issue 4** North Dakota's increasing agricultural production will result in higher volumes of freight; in-bound seed, fertilizer, machinery, fuel, etc. and outbound bulk commodities, processed agricultural products, etc.

**Trend/Issue 5** While the number of licensed grain elevators may decline, total elevator storage and throughput capacity will increase.

**Trend/Issue 6** Spin-off industries producing equipment, supplies, and technology supporting the state's growing agricultural, manufacturing and energy sectors will create new freight movements and significantly increase the volume of freight.

**Trend/Issue 7** Worldwide demand for high value-added food products will continue to grow. Reaching consumers will require North Dakota's freight system to be globally integrated, service and rate competitive, and technologically advanced.

**Trend/Issue 8** Worldwide, many industries participate in an economy that is reliant on time-definite transactions, production flexibility and speed; air freight will play an ever increasing role meeting these demands.

**Trend/Issue 9** North Dakota's agricultural producers and manufacturers, reacting to their customer's demands, will require containerized rail service that is accessible and affordable.

**Trend/Issue 10** Differences in truck size and weight regulations between North Dakota and neighboring states and provinces hamper the region's economic competitiveness. Industries dependent on trucking would benefit significantly from harmonization of regulations.

## **Survey 2 - Strategic Freight System Needs.**

The following identified needs are listed in random order.

- Need 1**      Access to competitively-priced intermodal container rail service
- Need 2**      Additional interstate pipeline capacity to export North Dakota crude oil
- Need 3**      Expansion of the crude oil and natural gas pipeline gathering system
- Need 4**      First/Last mile connections linking freight generators to the state's strategic freight system
- Need 5**      Targeted highway improvements to eliminate freight impediments (load restrictions, overhead structures, etc.) to the movement of freight
- Need 6**      Additional mainline railroad capacity and safety enhancements at rail crossings
- Need 7**      Upgrading some short line railroad branchlines to carry 286,000 lb. rail cars
- Need 8**      An access management program for the State Highway System
- Need 9**      A statewide, coordinated system (state & local roads), for permitting and routing of oversize/overweight vehicles, similar to the existing permitting system for state routes
- Need 10**     Improved harmonization of truck size and weight regulations with neighboring states and provinces

## Survey 3 - Conditions Creating Freight Bottlenecks and Delays

### Conditions Creating Freight Bottlenecks

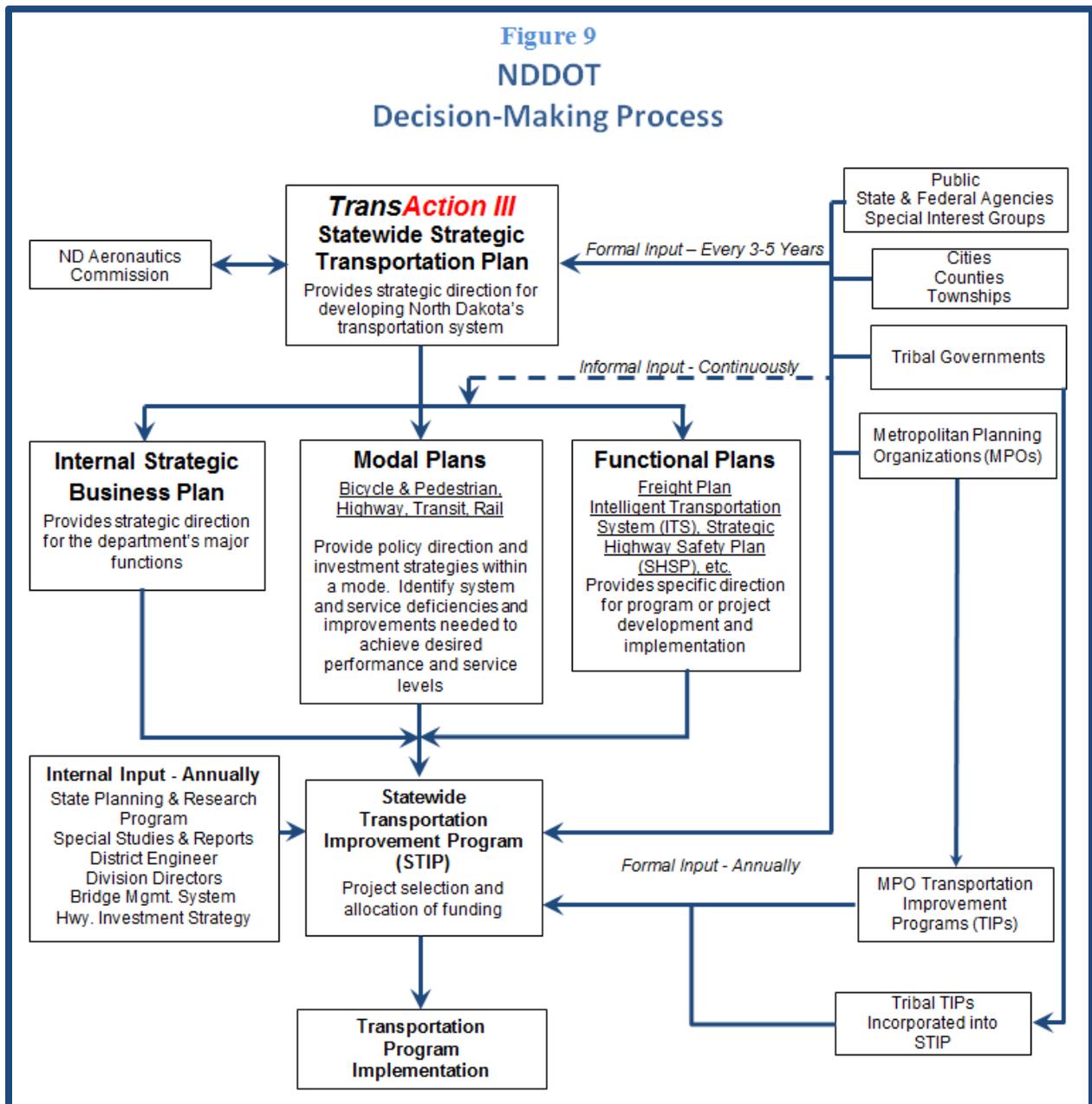
1. **Deficient Infrastructure**
  - a. Load Restricted Segments (Seasonal and/or Year-Round)
  - b. Height/Width Restricted (Structures & segments)
  - c. Bridge Restrictions (Height, Width, Load)
  - d. Speed Restricted Segments
  - e. Capacity/Congested Segments
  - f. Non-Friendly Truck Segments
  - g. Weather Impacted Segments (Flooding, Snow Blockage, Crosswinds, Etc.)
  - h. High Truck Volume Intersections
  - i. Safety Issues
2. **Inadequate Modal Connections** – bottlenecks exist where freight movement exchanges between transportation modes occur due to inadequate infrastructure and operational issues
3. **Lacking “First and Last Mile Connections”**
  - a. State Highway System – Local System (Differing Standards)
  - b. Traffic generators built on inadequate roads
4. **Lacking Access to Dedicated Intermodal Container Service**

### Conditions Creating Freight Delays

1. **High Truck Volume Highway Segments (number and/or percent)**, particularly in the state’s oil producing region, is resulting in:
  - a. Real and perceived traffic safety issues (increased crashes, limited passing opportunities, over-sized movements on narrow roadways, etc.)
  - b. Slower overall traffic speeds and longer trip times (congested segments, traffic backing up due to an absence of left hand turns, platooning of trucks, intersections with inadequate turning radii, lack of passing and acceleration lanes, etc.)
  - c. Truck/Automobile conflicts in communities lacking truck reliever routes
2. **At-Grade Rail Crossings** – blocked crossings due to the increased number and length of trains is resulting in:
  - a. An increase in the requests for crossing improvements – signals, separations, Quiet Zones, etc.
  - b. Concerns regarding cross rail access for emergency response units (police, fire, ambulance, etc.)
3. **Construction Work Zones**
4. **Inadequate Inter-Jurisdictional Coordination**
  - a. Infrastructure (construction schedules, differing design characteristics, etc.)
  - b. Operations (snow removal, trip permitting, etc.)
  - c. Intelligent Transportation System applications
  - d. Land use/transportation plan
5. **Inadequate Incident/Emergency Response** (vehicle crashes, derailments, pipeline spills, incident response, etc.)

## NORTH DAKOTA FREIGHT PLAN – NDDOT FREIGHT IMPROVEMENT DECISION-MAKING PROCESS

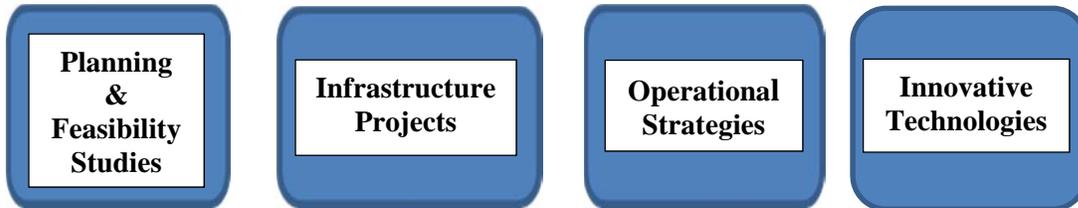
NDDOT’s decision-making process is guided by *TransAction III*, the State’s strategic transportation plan (see Figure 9). Within the context and direction provided by *TransAction III*, NDDOT develops modal and functional plans, such as the State Freight Plan, which are implemented through actions defined in the Department’s Strategic Business Plan (SBP). In addition to *TransAction III*, NDDOT’s freight investment strategies are guided by Section 24-01-03.1 of the North Dakota Century Code which states, “To the extent possible, the department of transportation shall implement the highway performance classification plan.”



## Freight Plan Implementation

*North Dakota's State Freight Plan* will be implemented using four components consisting of: (1) planning and feasibility studies, (2) infrastructure projects that eliminate freight bottlenecks and delays, (3) new or modified operational strategies, and (4) the application of innovative technologies to improve the safe, secure, and efficient movement of freight.

### Freight Plan Implementation Components



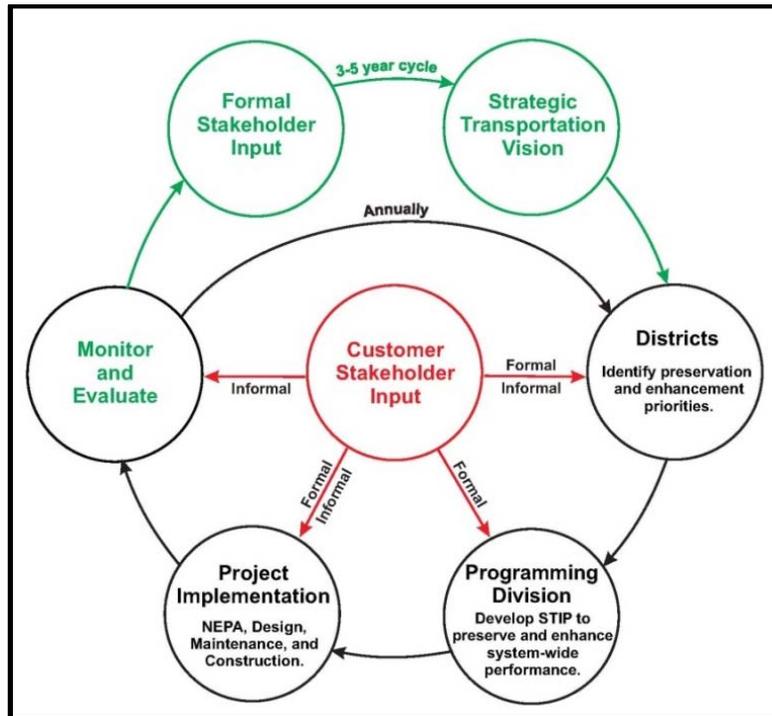
### Planning & Feasibility Studies

NDDOT will conduct and support planning studies to improve the safe, secure, and efficient movement of freight. NDDOT's Planning/Asset Management Division (P/AM) will annually analyze the highway portion of the State Strategic Freight System to identify the location of potential freight bottlenecks. P/AM will use the conditions creating freight bottlenecks identified in Survey No. 3 to guide its analysis. P/AM will share the information it develops with the department's district engineers for their use to develop their annual list of project priorities. NDDOT's Planning/Asset Management and Materials and Research Divisions will also consider including freight-related studies as they develop their annual State Planning and Research Programs. NDDOT's Safety Division will consider freight safety as it develops the Highway Safety Plan, and the Local Government Division will consider supporting freight-related planning studies conducted by Metropolitan Planning Organizations and local governments. Internally, the development of other modal plans, such as the State Rail Plan, will be coordinated with the State Freight Plan. Externally, NDDOT will coordinate with the North Dakota Aeronautics Commission when updating the State Aviation System Plan. The Department will also cooperatively work with the state's tribal governments, institutions of higher learning, the consulting industry, and other states through pooled fund studies.

### Infrastructure Projects

The development of freight-related projects is a cyclical and ongoing process (see Figure 10). Potential freight-related improvement projects may be identified by NDDOT's internal planning and engineering processes and by the department's customers and stakeholders. Annually, each of the department's eight district engineers will consider freight-related projects as they develop their list of project priorities to preserve and/or enhance the State Highway System. NDDOT district engineers submit their prioritized project lists to the department's Programming Division for consideration in the development of the annual Statewide Transportation Improvement Program (STIP). Generally, freight-related projects will typically enhance the State Highway System's functional capacity by eliminating conditions that create freight bottlenecks and delays, improve safety, or expand the operational efficiency of existing infrastructure.

**Figure 10  
Freight Project Development Process**



In addition to NDDOT’s investment strategies and legislative guidance, the Programming Division considers numerous factors including available funding, statewide system needs, and workload type to annually develop the STIP.<sup>14</sup> Projects identified in the STIP are engineered, designed, and constructed. Opportunities for meaningful customer and stakeholder input, both formal and informal, are available at each step of the freight project development process.<sup>15</sup>

***Monitoring and Evaluating through Performance Measurement***

Once constructed, freight-related projects are monitored and evaluated to determine their effectiveness for eliminating freight bottlenecks and delays, and improving safety and operational efficiencies. Data generated during the monitoring and evaluation phase is analyzed and incorporated into NDDOT’s planning and engineering processes. A map identifying freight constraints on the state’s roadway network may be found here:

<http://www.dot.nd.gov/divisions/planning/freight/docs/NDFreightConstraintsMap.pdf>.

Currently, the NDDOT measures the state’s highway infrastructure capabilities and bottlenecks via a trending report of the Highway Performance Classification System (HPCS). Many resources including elements from the Highway Performance Monitoring System (HPMS) build the data for trends in this report. The HPCS analysis examines three main components (and

<sup>14</sup> The Statewide Transportation Improvement Program also includes projects in the Transportation Improvement Programs of the state’s Metropolitan Planning Organizations and the Bureau of Indian Affairs Great Plains Regional Office.

<sup>15</sup> NDDOT’s current investment strategy annually establishes expenditure targets for increasing the highway system’s functional capacity inclusive of projects to eliminate freight bottlenecks and delays.

combinations thereof): ride, distress, and load carrying capacity (load) on five levels of highways: Interstate, Interregional, State Corridor, District Corridor, and District Collector. The HPCS strives to balance the system's performance while maintaining the infrastructure through an investment strategy differentiated by the level of highway.

Based on characteristics identified by stakeholders, the NDDOT has drafted a functional capacity related performance measure to assess when and where improvements may be necessary to meet the needs of its customers. Functional capacity is an asset class that provides a network measure of roadway functional restrictions. Functional restrictions are defined as factors that impede traffic flow such as load restrictions, high traffic flow, and roadway width, etc.

The measure will assess the state network for restrictions over time and assist the NDDOT in identifying possible treatments to alleviate the restrictions. Using this measure and following trends over time will ultimately provide statistics as to the effects of the implemented improvement on the functional service provided to the system users. Once implemented, the functional capacity measure is expected to help guide future freight-related investment decisions at NDDOT.

### **Operational Strategies**

Through its internal business planning process NDDOT will review its major functions to identify operational strategies for improving the movement of freight at the district and division level. Ultimately, activities such as snow removal operations will be reviewed to improve the reliability of freight movements, and the project scoping process will be expanded to consider freight-friendly alternatives such as intersections designed to accommodate trucks movements.

NDDOT will also collaboratively work with its public and private sector stakeholders to identify and implement operational strategies to improve the safe, secure, and efficient movement of freight. Partnerships with businesses, local and tribal governments will be explored, as will cross-border initiatives with surrounding states and provinces. Some operational strategies may require advancing proposals to change state and federal laws and regulations.

### **Innovative Technologies**

NDDOT will employ the use of innovative technologies and best practices to advance the safe, secure, and efficient movement of freight. In particular, the Maintenance Division will consider the expanded use of freight-related innovative technologies in the update of the Department's Intelligent Transportation System Plan. Additionally, NDDOT is launching an Innovation Program (infrastructure projects and operations) designed to improve system safety and reliability benefitting both personal and freight movements.

Other innovative technologies are outlined in the NDDOT Statewide ITS Draft three-year Plan, anticipated for adoption by early 2015 and include:

- Pre-trip Travel Information;
- En-route Driver Information;
- Traffic Control devices;

- Incident Management;
- Commercial Vehicle Electronic Clearance Capability;
- Commercial Vehicle Administrative Processes to include electronic purchase of credentials, automated mileage and fuel reporting and auditing, and international border electronic clearance;
- Hazardous Material Security and Incident Response Service;
- Emergency Notification and Personal Security Functionality;
- Archived Data Function in Information Management; and
- Maintenance and Construction Operations Functions to include fleet management, traffic monitoring, work zone management and more.

The NDDOT will continue to work with partners and stakeholders to identify new technologies and priorities into the future.

A summary of the current NDDOT ITS Inventory may be found beginning on page 12 of this linked document:

<http://regional.atacenter.org/northdakota/downloads/NDReportUpdate.pdf>

**APPENDIX A**

***TRANSACTION III***

**NORTH DAKOTA'S STRATEGIC TRANSPORTATION PLAN GOALS  
COMPLEMENT NATIONAL FREIGHT GOALS**

The five strategic transportation goals identified in North Dakota’s Statewide Strategic Transportation Plan, *TransAction III* complement the six National Freight Policy Goals stated in Section 1115 of MAP-21. The following is a discussion of how North Dakota’s Strategic Transportation Goals improve the ability of the State to meet the national freight goals established under 23 U.S.C. 167.

<u>National Freight Policy</u>	
<b>Goal 1 - Improving the contribution of the freight transportation system to economic efficiency, productivity and competitiveness</b>	
<p><i>TransAction III</i> <u>Goal 1</u></p> <p>Safe and secure transportation</p>	<p>Safe and secure transportation contributes to economic efficiency, productivity and competitiveness. A safe transportation system generates fewer crashes, deaths, injuries, property losses, and lower operating costs. Secure transportation allows businesses to participate in supply chains that require product identity preservation or protection from theft and vandalism.</p>
<p><i>TransAction III</i> <u>Goal 2</u></p> <p>Sustainable and reliable mobility</p>	<p>Sustainable and reliable mobility allows businesses to participate in just-in-time supply chains by reducing costs associated with inventory warehousing. Reliable mobility allows businesses greater certainty in scheduling staffing and maintenance of infrastructure and equipment.</p>
<p><i>TransAction III</i> <u>Goal 3</u></p> <p>Diversified and sufficient funding</p>	<p>Diversified and sufficient funding minimizes any single mode or business’s financial responsibility for maintaining the transportation system. Sufficient funding allows transportation agencies and businesses the ability to plan, construct, and maintain transportation infrastructure appropriately, which in turn lowers their operating costs and improves their economic efficiency, productivity and competitiveness.</p>
<p><i>TransAction III</i> <u>Goal 4</u></p> <p>Communication and cooperation</p>	<p>Timely communication of interruptions to the transportation system minimizes negative impacts by allowing businesses to change scheduled service and re-route freight movements. Communication between transportation agencies, or agencies and businesses may result in cooperative agreements that benefit all parties.</p>
<p><i>TransAction III</i> <u>Goal 5</u></p> <p>Strong economic growth with consideration of environmental, cultural, and social impacts</p>	<p>Early consideration of environmental, cultural, and social impacts result in transportation projects that are well-designed, enhance customer access and freight delivery, avoid lawsuits, reduce costly delays, and result in strong economic growth.</p>

<u>National Freight Policy</u>	
Goal 2 - Reducing congestion of the freight transportation system	
<p><i>TransAction III</i> <u>Goal 1</u></p> <p>Safe and secure transportation</p>	<p>Safe and secure transportation lowers the number of crashes and other congestion producing system disruptions requiring incident response. Installing Vehicle and Cargo Inspection System (VACIS) equipment at land ports of entry increases security and expedites cross-border freight movements. Building “last mile connections” lowers truck volumes and improves highway safety by allowing the efficient transfer of freight from highways to rail.</p>
<p><i>TransAction III</i> <u>Goal 2</u></p> <p>Sustainable and reliable mobility</p>	<p>Sustainable and reliable mobility results in fewer failures of the freight system by improving travel time reliability. Reliable mobility allows businesses to route and schedule freight movements minimizing delays and participate in “just-in-time” supply chains.</p>
<p><i>TransAction III</i> <u>Goal 3</u></p> <p>Diversified and sufficient funding</p>	<p>Transportation funding from a diversity of funding sources supports the development of a multi-modal transportation system and freight options that reduce congestion. Sufficient funding allows transportation agencies and private sector businesses to develop capital improvement programs that meet the demands for added system capacity and infrastructure maintenance.</p>
<p><i>TransAction III</i> <u>Goal 4</u></p> <p>Communication and cooperation</p>	<p>Communication and cooperation reduce congestion of the freight transportation system. Traveler information systems provide businesses with real time information on roadway conditions and traffic volumes which can be used to avoid congested areas by re-routing freight shipments. Government agencies working cooperatively with companies to understand business models and freight timetables can effect changes to maintenance and construction schedules that reduce freight congestion.</p>
<p><i>TransAction III</i> <u>Goal 5</u></p> <p>Strong economic growth with consideration of environmental, cultural, and social impacts</p>	<p>Government transportation and land use agencies working cooperatively with businesses can achieve desirable land access and development densities that reduce freight transportation congestion.</p>

	<p><b><u>National Freight Policy</u></b></p> <p><b>Goal 3 - Improving the safety, security and resilience of the freight transportation system</b></p>
<p><b><i>TransAction III</i></b> <b><u>Goal 1</u></b></p> <p><b>Safe and secure transportation</b></p>	<p>A safe and secure transportation system experiences fewer disruptions to the movement of freight and is inherently more resilient. Well-constructed and maintained transportation infrastructure that is supported by incident management response units reduces the length of time freight movements are impeded by system disruptions such as traffic crashes and natural disasters.</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 2</u></b></p> <p><b>Sustainable and reliable mobility</b></p>	<p>A sustainable transportation system produces fewer disruptions requiring remedial response. Establishing guidelines and procedures for re-opening transportation infrastructure that is closed due to natural disasters, acts of terror, crashes, maintenance operations, and construction results in a more resilient freight system.</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 3</u></b></p> <p><b>Diversified and sufficient funding</b></p>	<p>Revenue from multiple sources coupled with funding flexibility improves the capacity of transportation providers to react to emergency situations. Sufficient funding helps maintain transportation infrastructure in a state of good repair lessening the need to respond to emergencies.</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 4</u></b></p> <p><b>Communication and cooperation</b></p>	<p>Good communication systems supported by cooperative attitudes improves the resilience of the freight transportation system. Enabling legislation, rules, regulations, and policies endorsing cooperation between governmental agencies and private sector transportation providers are essential. Adoption of cross-jurisdictional and multi-modal communication protocols is critical to rapidly re-establishing the movement of freight.</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 5</u></b></p> <p><b>Strong economic growth with consideration of environmental, cultural, and social impacts</b></p>	<p>Modifying regulations on the movement of freight during emergency situations helps maintain economic activity while reducing negative impacts on environmental and cultural resources, and improving the ability of the freight transportation system to provide for human needs.</p>

<u>National Freight Policy</u>	
Goal 4 - Improving the state of good repair of the freight transportation system	
<p><i>TransAction III</i> <b><u>Goal 1</u></b></p> <p>Safe and secure transportation</p>	<p>A state of good repair is achieved when transportation infrastructure is safe, reliable and keeps its customers satisfied. Planned inspections and routine maintenance, regularly scheduled capital investments and other proactive actions are important components to achieving a state of good repair. Enforcement of size and weight restrictions and other operating regulations complements infrastructure asset management.</p>
<p><i>TransAction III</i> <b><u>Goal 2</u></b></p> <p>Sustainable and reliable mobility</p>	<p>Developing a sustainable transportation system implies building and maintaining transportation infrastructure and services that balance public demand and the amount of available resources to achieve the “right fit.” Overbuilding the capacity of the freight transportation system is not sustainable just as not providing the capacity demanded of the freight transportation system does not provide reliable mobility.</p>
<p><i>TransAction III</i> <b><u>Goal 3</u></b></p> <p>Diversified and sufficient funding</p>	<p>To achieve a state of good repair the transportation system needs reliable and sufficient levels of funding. Diversified funding helps safeguard against revenue swings and makes it easier to match revenue projections with system needs. Reliable funding allows better quality long-range asset management – both capital investment and maintenance. Diversified funding also implies the development of public/private partnerships as a method to achieve a state of good repair.</p>
<p><i>TransAction III</i> <b><u>Goal 4</u></b></p> <p>Communication and cooperation</p>	<p>Transportation agencies must effectively communicate the condition of their systems and the amount of revenue needed to maintain and improve their systems if they expect public and stakeholder support. Private transportation businesses face similar challenges when communicating with their customers. Cooperative efforts between transportation agencies and private businesses can achieve mutual benefits and improve the condition of the freight system.</p>
<p><i>TransAction III</i> <b><u>Goal 5</u></b></p> <p>Strong economic growth with consideration of environmental, cultural, and social impacts</p>	<p>Maintaining the freight transportation system in a state of good repair is critical for economic growth and a competitive business environment. Early consideration of environmental, cultural and social impacts in the planning of freight transportation projects can reduce costs, expedite project development, and result in satisfied customers.</p>

	<p align="center"><b><u>National Freight Policy</u></b></p> <p align="center"><b>Goal 5 - Using advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system</b></p>
<p><b><i>TransAction III</i></b> <b><u>Goal 1</u></b></p> <p><b>Safe and secure transportation</b></p>	<p><b>Safe and secure transportation employs the application of Intelligent Transportation Systems, implementation of innovative best practices, competition, and operational accountability and maintenance of the freight system.</b></p>
<p><b><i>TransAction III</i></b> <b><u>Goal 2</u></b></p> <p><b>Sustainable and reliable mobility</b></p>	<p><b>Sustainable and reliable mobility is enhanced by the use of advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system.</b></p>
<p><b><i>TransAction III</i></b> <b><u>Goal 3</u></b></p> <p><b>Diversified and sufficient funding</b></p>	<p><b>Diversified and sufficient funding supports the use of advanced technology, performance management, innovation, competition, and accountability to operate and maintain the freight transportation system.</b></p>
<p><b><i>TransAction III</i></b> <b><u>Goal 4</u></b></p> <p><b>Communication and cooperation</b></p>	<p><b>Communication and cooperation are key components of knowing when and how to use advanced technology, performance management, innovation, competition, and accountability to operate and maintain the freight transportation system.</b></p>
<p><b><i>TransAction III</i></b> <b><u>Goal 5</u></b></p> <p><b>Strong economic growth with consideration of environmental, cultural, and social impacts</b></p>	<p><b>Using advanced technology, performance management, innovation, competition, and accountability to operate and maintain the freight transportation system supports strong economic growth. The consideration of environmental, cultural and social impacts helps transportation system managers select appropriate technologies; performance management tools, innovative techniques and forms of competition to operate and maintain the freight transportation system.</b></p>

<p><b><u>National Freight Policy</u></b></p> <p><b>Goal 6 - Reducing adverse environmental and community impacts of the freight transportation system</b></p>	
<p><b><i>TransAction III</i></b> <b><u>Goal 1</u></b></p> <p><b>Safe and secure transportation</b></p>	<p>All modes of transportation offer examples of adverse impacts associated with freight movements: highways – increased truck traffic, aviation – aircraft noise levels, pipelines – spills, railroads – at-grade vehicular conflict. The goal of safe and secure transportation implies reasonable efforts must be made to mitigate the adverse impacts associated with freight movements. Mitigating the adverse impacts of freight movements can best be accomplished by applying a combination of “best practices” from the “4 Safety E’s: Engineering, Education, Emergency Services, and Enforcement.”</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 2</u></b></p> <p><b>Sustainable and reliable mobility</b></p>	<p>The goal of sustainable and reliable freight mobility implies reasonable efforts must be made to mitigate the adverse impacts associated with freight movements by applying 4E Best Practices.</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 3</u></b></p> <p><b>Diversified and sufficient funding</b></p>	<p>Revenue from diverse sources coupled with funding flexibility improves the ability to mitigate adverse environmental and community impacts associated with freight movements. Sufficient funding allows mitigation efforts to proceed in a timely manner.</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 4</u></b></p> <p><b>Communication and cooperation</b></p>	<p>Communication and cooperation are key elements of any effort aimed at reducing the adverse impacts of freight movements. Clearly articulating the cause, nature and degree of impact, roles and responsibilities of the various involved parties, sources of funding for mitigation actions, mitigation timelines and other factors are essential to developing a cooperative solution.</p>
<p><b><i>TransAction III</i></b> <b><u>Goal 5</u></b></p> <p><b>Strong economic growth with consideration of environmental, cultural, and social impacts</b></p>	<p>Early consideration of environmental, cultural and social impacts in the planning of freight transportation projects can reduce costs, expedite project development, and result in satisfied customers.</p>

**APPENDIX B**

**NORTH DAKOTA'S GOALS AND PRIORITIES FOR FREIGHT TRANSPORTATION  
INFRASTRUCTURE AND OPERATIONS**

## North Dakota's Goals and Priorities for Freight Transportation Infrastructure & Operations

The following excerpt from *TransAction III*, North Dakota's statewide strategic transportation plan, details the state's goals and priorities for freight transportation infrastructure and operations.

### Mission

North Dakota will provide a safe, reliable, and sustainable transportation system

### Vision

North Dakota's multimodal transportation system is strategically developed and globally integrated.

### Goals

North Dakota's transportation personal and freight mobility goals are interdependent, mutually supportive, and apply to both infrastructure and services.

Goal 1 - Safe and secure transportation

Goal 2 - Sustainable and reliable mobility

Goal 3 - Diversified and sufficient funding

Goal 4 - Communication and cooperation

Goal 5 - Strong economic growth with consideration of environmental, cultural, and social impacts

### Fundamental Values

Since it is impossible to accurately predict all of the future events and circumstances that will influence the development of our transportation system, *TransAction III* also identifies six fundamental values that will be used to guide decision-making in regard to developing new programs, investment strategies, and selecting infrastructure projects. These fundamental values apply to both personal and freight mobility.

**Safety & Security** – Transportation safety and security is our Number One Priority. Reasonable efforts will be made to plan, design, build and operate a transportation system that allows travelers and freight to move safely and securely. Motorized and non-motorized forms of transportation should be considered equally. Conflicts between modes should be minimized. Safety partnerships that incorporate engineering, education, emergency services, and enforcement should be encouraged.

**Maintainable & Sustainable** – The transportation system should be strategically developed considering long-term investment versus short-term demands. The use of transportation resources should be prioritized and desired levels of service to be provided defined. The system should not be over-built or under-built. Preserving and maintaining the system should be emphasized over new construction. However, some system additions will be necessary and are vital to the well-being of our residents, economy, and quality of life. The transportation system should support other public goals such as promoting economic competitiveness; good stewardship of our cultural and natural resources, and positive social impacts.

**Reliable & Predictable** – Today’s fast-paced lifestyles and globally integrated economy require a transportation system that is reliable and predictable. Technological advances, larger and more efficient equipment, the evolution of shuttle trains, and “just-in-time” manufacturing emphasize reliability and predictability of travel time and cost. Government should employ tools like Travel Demand Management to minimize congestion and invest in technology upgrades that streamline delivery of essential services to businesses and the public. Multiple modal options (highway/rail, rail/pipeline, etc.) should be promoted to improve reliability and predictability.

**Accessible** – Transportation infrastructure and services should be accessible to a wide variety of system users. Accessibility encompasses the ability to access and use infrastructure and services regardless of geography, disability, language, and income.

**Connectivity & Continuity** – The most important road to everyone is the road in front of his or her home or business. That being said, not all transportation services and infrastructure are equally important. Highways, rail lines and other transportation infrastructure and services that allow access to international markets, connect key regional centers, intermodal facilities, and multiple modes of transportation should be a higher priority than neighborhood streets and railroad branchlines. Routes that provide consistent levels of service (weight or height restrictions, travel speeds, etc.) and minimal delays are vital to the state’s economic competitiveness and quality of life. Coordination between the public and private sectors and across jurisdictional boundaries should be emphasized to realize more efficient projects and services.

**Integrated and Multimodal** – Transportation infrastructure projects and services that result in multiple uses and modes, extend limited resources, and broaden benefits should be promoted. Programs that reduce “red tape,” expedite implementation, enhance modal efficiencies, harmonize regulations, and promote system efficiencies should be supported. Public/private partnerships that result in achieving mutual benefits should be pursued.

## Initiatives & Strategies

The initiatives and strategies stated in *TransAction III* provide broad direction to all levels of government and private sector entities to develop specific actions designed to reach the state's transportation goals.

**Initiative 1** Strategically prioritize the use of transportation resources and define the levels of service to be provided and maintained

- Strategy 1 Promote and integrated, multi-modal transportation system
- Strategy 2 Periodically review and appropriately update transportation priorities and defined levels of service to be provided
- Strategy 3 Continue to research and develop options to protect, enhance and improve the transportation system – both infrastructure and services
- Strategy 4 Develop investment strategies to guide project and program decision-making
- Strategy 5 Develop transportation asset management programs

**Initiative 2** Enhance communication and coordination between and within governmental units, modes of transportation, and the public and private sectors

- Strategy 1 Regularly review transportation planning, programming, and project development processes for opportunities to improve communication
- Strategy 2 Facilitate and promote interaction between members of North Dakota's transportation community
- Strategy 3 Communicate and cooperatively work with surrounding states and provinces to improve the safe, secure, and efficient flow of people and freight
- Strategy 4 Expand awareness campaigns to inform the public of transportation issues
- Strategy 5 Communicate with and involve in the transportation planning and project development processes, Native Americans and other minorities, people with limited English proficiency, disabled individuals, low-income, elderly, immigrants and others who may be transportation disadvantaged.

**Initiative 3** Improve the performance of the transportation system – both infrastructure and services

- Strategy 1 Monitor key trends and issues affecting personal and freight mobility
- Strategy 2 Improve traffic modeling and forecasting capabilities
- Strategy 3 Upgrade and streamline the delivery of essential services to businesses and the general public
- Strategy 4 Support land use and transportation planning
- Strategy 5 Develop an Access Management Program for the State Highway System
- Strategy 6 Promote a systemic approach to enhance transportation safety and security
- Strategy 7 Support the development of intermodal facilities and service
- Strategy 8 Promote personal mobility
- Strategy 9 Promote freight mobility
  - Identify the state's strategic freight network
  - Develop a statewide freight management plan

- Periodically review and evaluate the performance of priority freight corridors
- Continue working toward regional uniformity of truck size and weight regulations and permitting
- Pursue the development of a statewide routing and permitting system for overweight and over-dimension movements
- Promote infrastructure (pipelines and rail) to reduce roadway impacts
- Improve highway load carrying capacity

Strategy 10 Develop personal and freight mobility performance measures

**Initiative 4** Consider safety, security, economic viability and competitiveness, environmental, cultural, social impacts, and other significant factors when developing plans, projects, and programs.

Strategy 1 Examine planning, programming, and project development processes to ensure significant factors are considered.

Strategy 2 Support the development and implementation of projects and programs that positively affect the state.

Strategy 3 Evaluate and explore new opportunities to enhance transportation infrastructure and services.

**Initiative 5** Implement appropriate new and innovative techniques and solutions that support enhanced safety, security, and mobility.

Strategy 1 Research, analyze and implement new and innovative funding options, technologies, and construction/maintenance methods.

Strategy 2 Examine planning, programming, and project development processes to ensure appropriate geometric enhancements (roadway width, truck turning radii, passing lanes, etc.) are considered.

**Initiative 6** Promote public/private sector partnerships that improve the transportation system

Strategy 1 Define the conditions, criteria, and types of transportation initiatives that merit public/private sector partnerships.

Strategy 2 Strengthen cooperative relationships that lead to beneficial public/private sector partnerships.

**Initiative 7** Promote and actively participate in regional, national, and multi-national transportation initiatives, programs, studies, and projects.

Strategy 1 Participate in initiatives, programs, studies, and projects that strengthen the development of North Dakota's transportation system and economic competitiveness.

**APPENDIX C**

**STRATEGIC FREIGHT SYSTEM  
DESIGNATION COMPONENTS**

NDDOT considered the following components to designate the State's Strategic Freight System:

- 1) Interstate or Interregional Highways - NDDOT's Highway Performance Classification System (HPCS)
- 2) Congressional Designated High Priority Corridors
- 3) National Truck Network
- 4) STRAHNET (Department of Defense's (DoD's) Domestic Operations)
- 5) State Highways Functionally Classified as Principal Arterials
- 6) State Highway Segments Greater than 500 TAADT
- 7) 24 Hour Land Ports of Entry with Animal, Plant Health Inspection Services (APHIS) and Veterinary Services
- 8) Approved (w/Permit) Heavy Truck Routes – 200k and 250k GVW
- 9) State Highway System Load Restrictions
- 10) Highway Energy Corridors Accessing Exploration, Development, Installation, or Production Areas
  - a. Oil Wells
  - b. Natural Gas Processing Plants
  - c. Crude Oil Rail Loading Facilities
  - d. Rail Transload Facilities – Frac Sand & Pipe
  - e. Saltwater Disposal Sites
  - f. Freshwater Depots
- 11) STRACNET (Rail lines important to national defense and service to defense installations)
- 12) Rail Track Capacity
- 13) Rail Abandonments
- 14) Accessing Areas of Agricultural Production
- 15) Grain Elevators, Shuttle Facilities and Licensed Storage Capacity
- 16) Sugar Beet Plants and Transfer Piles
- 17) Coal Mines and Electrical Generation Plants
- 18) Ethanol & Biodiesel Plants

Other Items Considered:

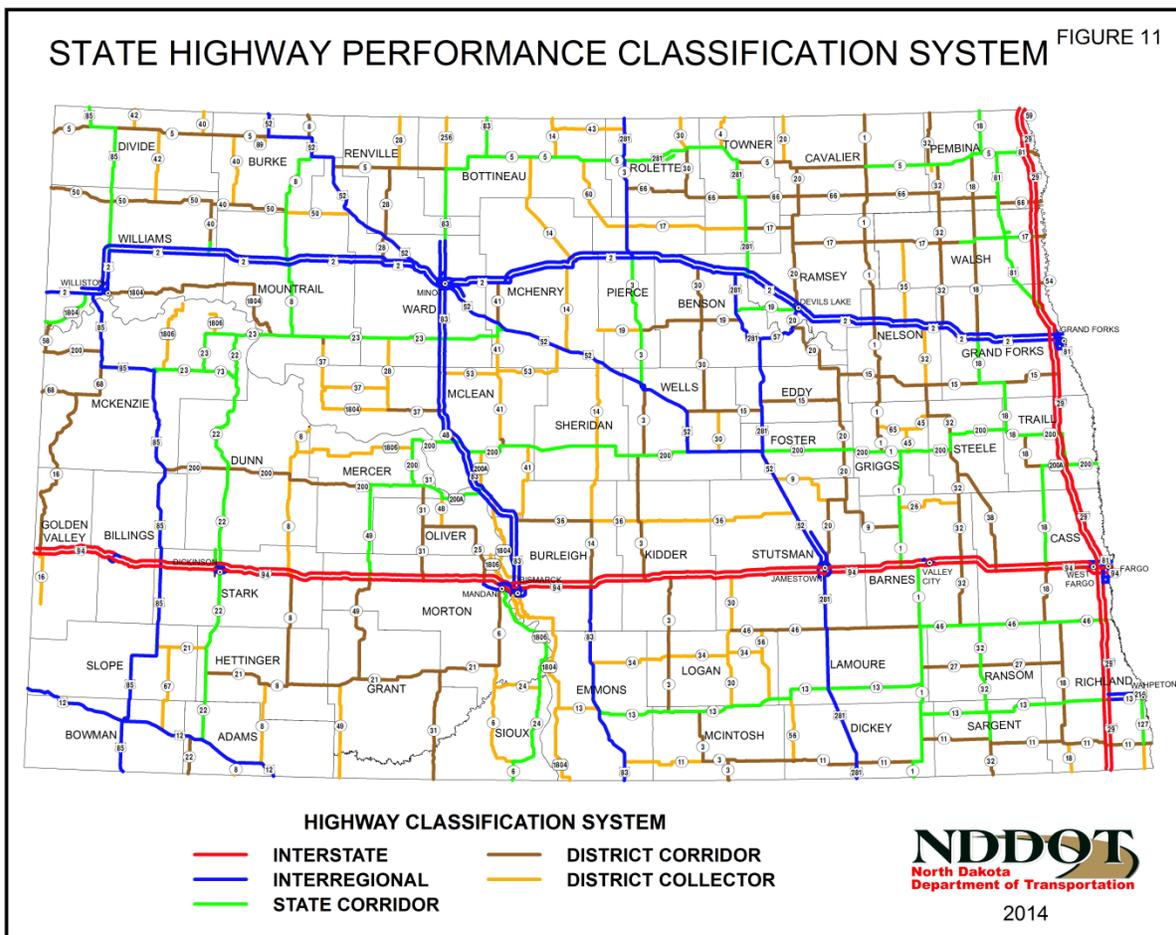
1. State Highways providing urban connectivity
2. State Highways providing air cargo airport connectivity
3. Corridors and gateways to neighboring states and Canadian provinces
4. 2007 Freight tonnage (Freight Analysis Framework)

Additional information and maps on each of the variables is presented on subsequent pages.

# 1. Interstate or Interregional Highways - NDDOT's Highway Performance Classification System (HPCS)

HPCS is a management tool that defines guidelines for the State Highway System's performance while maintaining system infrastructure through an investment strategy differentiated by the level of highway. HPCS defines five levels of highways: Interstate, Interregional, State Corridor, District Corridor, and District Collector. The Interstate and Interregional HPCS levels provide the highest level of performance and reliability for the movement of freight (see Figure 11).

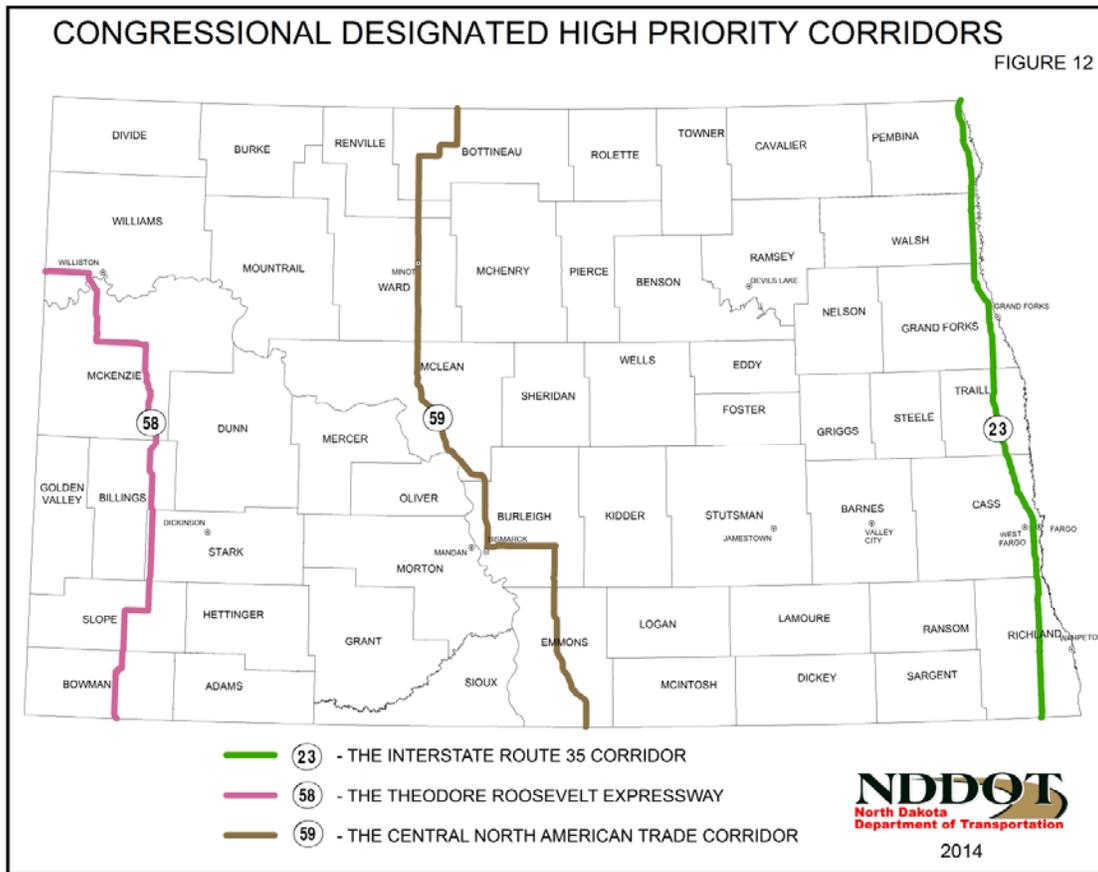
<u>HPCS Level</u>	<u>Roadway Miles</u>	<u>Percent of Total Roadway Miles</u>	<u>Vehicle Miles Traveled (VMT)</u>	<u>Percent of Total VMT</u>
Interstate	1141.8	13.4%	2,131,408,000	32.0%
Interregional	1915.4	22.5%	2,443,395,000	36.6%



## 2. Congressional Designated High Priority Corridors

Beginning with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), corridors have been designated in Federal transportation legislation as high priority corridors on the National Highway System (NHS) for inclusion in the NHS as specific routes or general corridors. These corridors are congressionally designated. No funding for these corridors was provided in MAP-21, the current surface transportation authorization, however previous authorizations either directly or indirectly provided funding for these corridors. Each high priority corridor is numbered but the corridor number does not necessarily coincide with the number of the highway forming the corridor (see Figure 12).

	<b><u>ND Corridor 23</u></b>	<b><u>ND Corridor 58</u></b>	<b><u>ND Corridor 59</u></b>
<b>Center Line Miles<sup>16</sup></b>	<b>217.5</b>	<b>263.0</b>	<b>197.0</b>
<b>Roadway Miles</b>	<b>435.0</b>	<b>408.0</b>	<b>197.0</b>



[http://www.fhwa.dot.gov/planning/national\\_highway\\_system/high\\_priority\\_corridors/](http://www.fhwa.dot.gov/planning/national_highway_system/high_priority_corridors/)

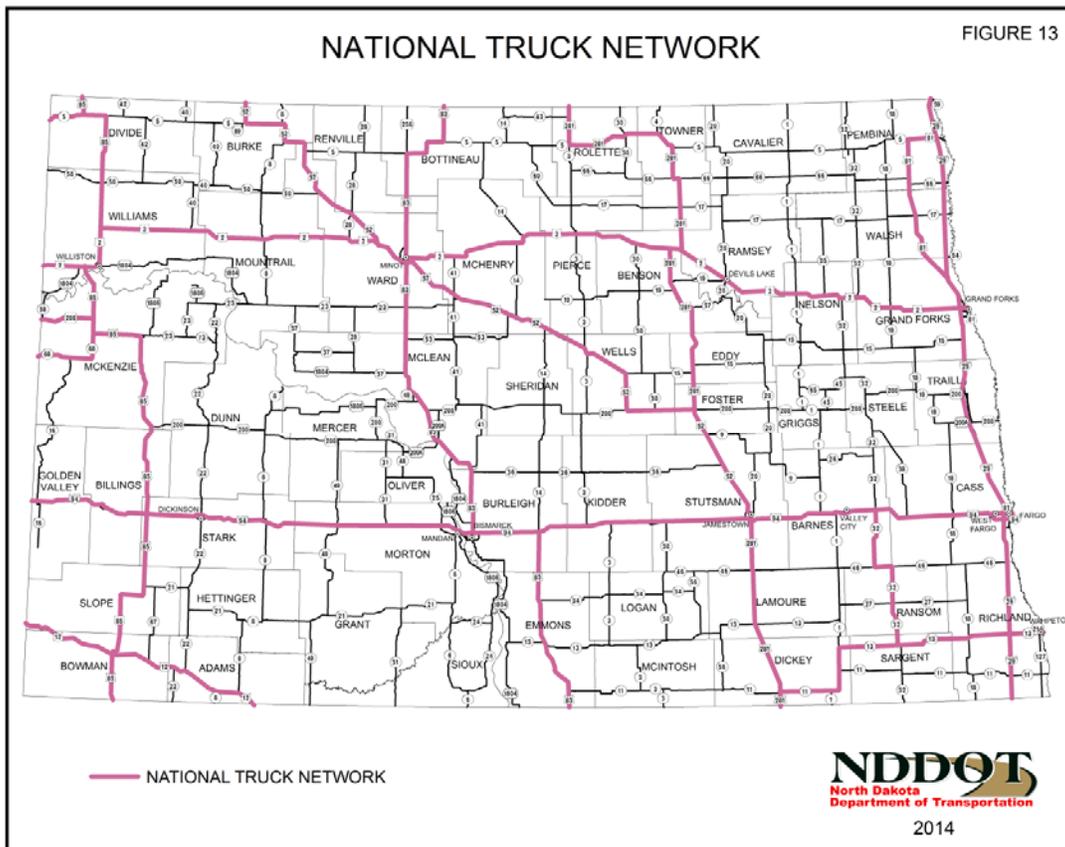
<sup>16</sup> Because there are several ways NDDOT counts mileage we have the following definitions: “Roadway Miles” are used to designate the number of miles of interstate, US highways and state highways used for internal reporting. This definition counts miles in the same manner as centerline route miles except for the divided highways where individual miles are counted for each travel direction. This doubles the reported mileage for the highways such as the interstate, certain segments of US highways, and certain segments of ND highways. This definition recognizes that there is one roadway for two-lane, undivided highways and that there are two roadways for divided highways.

### 3. National Truck Network

The National Truck Network is a network of approved highways for commercial truck drivers in the United States (see Figure 13). NN routes have been designated on the basis of their general adherence to the following criteria.

- The route is a geometrically typical component of the Federal-Aid Primary System, serving to link principal cities and densely developed portions of the States.
- The route is a high volume route utilized extensively by large vehicles for interstate commerce.
- The route does not have any restrictions precluding use by conventional combination vehicles.
- The route has adequate geometrics to support safe operations, considering sight distance, severity and length of grades, pavement width, horizontal curvature, shoulder width, bridge clearances and load limits, traffic volumes and vehicle mix, and intersection geometry.
- The route consists of lanes designed to be a width of 12 feet or more or is otherwise consistent with highway safety.
- The route does not have any unusual characteristics causing current or anticipated safety problems.

	<u><b>ND Center Line Miles</b></u>	<u><b>ND Roadway Miles</b></u>
<b>National Network</b>	<b>2,260.3</b>	<b>3,339.1</b>

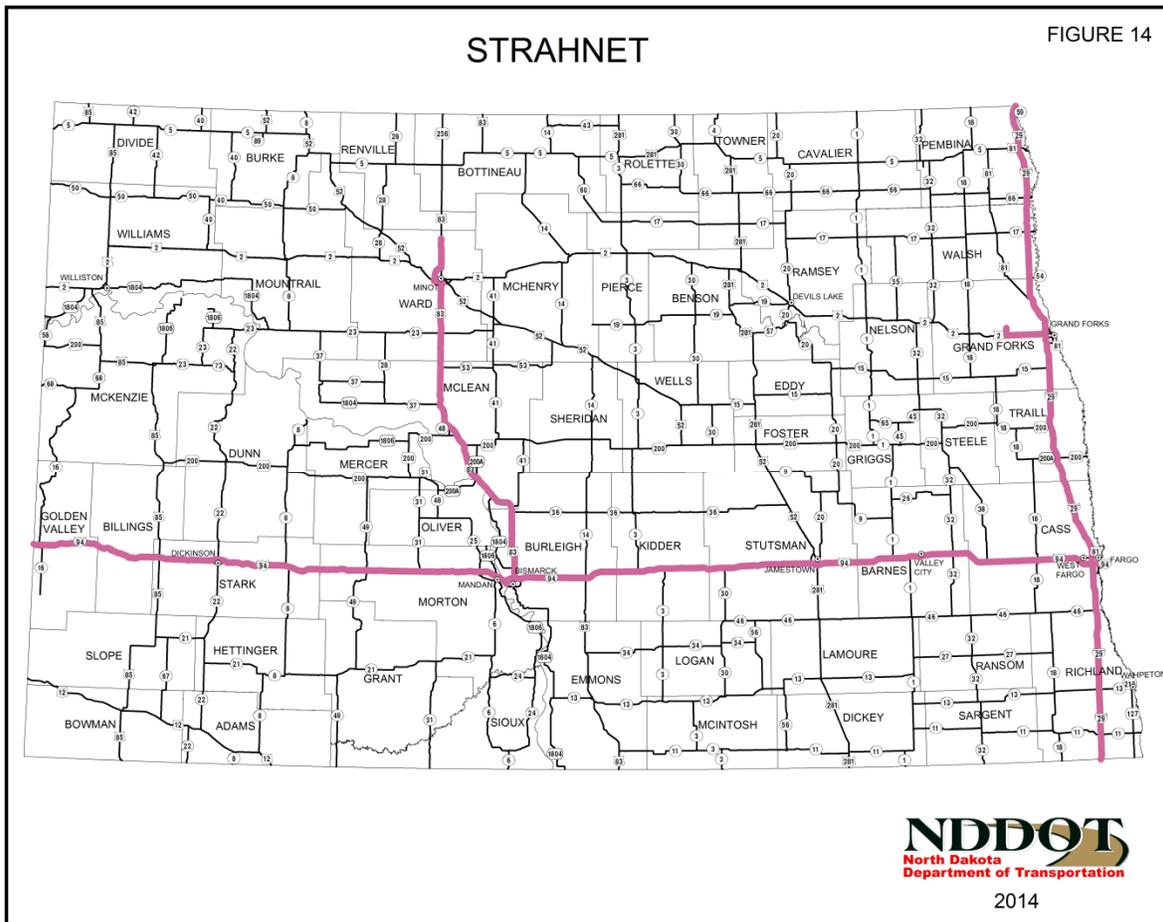


[http://ops.fhwa.dot.gov/freight/freight\\_analysis/nat\\_freight\\_stats/nnhs2009.htm](http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/nnhs2009.htm)

#### 4. STRAHNET

The Strategic Highway Network (STRAHNET) is critical to the Department of Defense's (DoD) domestic operations (see Figure 14). STRAHNET is a 62,791-mile system of roads deemed necessary for emergency mobilization and peacetime movement of heavy armor, fuel, ammunition, repair parts, food, and other commodities to support U.S. military operations. The DoD designated STRAHNET highways in coordination with the Federal Highway Administration (FHWA), and the State transportation departments.

<u>HPCS Level</u>	<u>ND Center Line Miles</u>	<u>ND Roadway Miles</u>
<b>Interstate</b>	<b>570.9</b>	<b>1,141.8</b>
<b>Interregional Corridors</b>	<b>137.7</b>	<b>270.1</b>
<b>Non-State Highways</b>	<b>2.5</b>	<b>2.5</b>



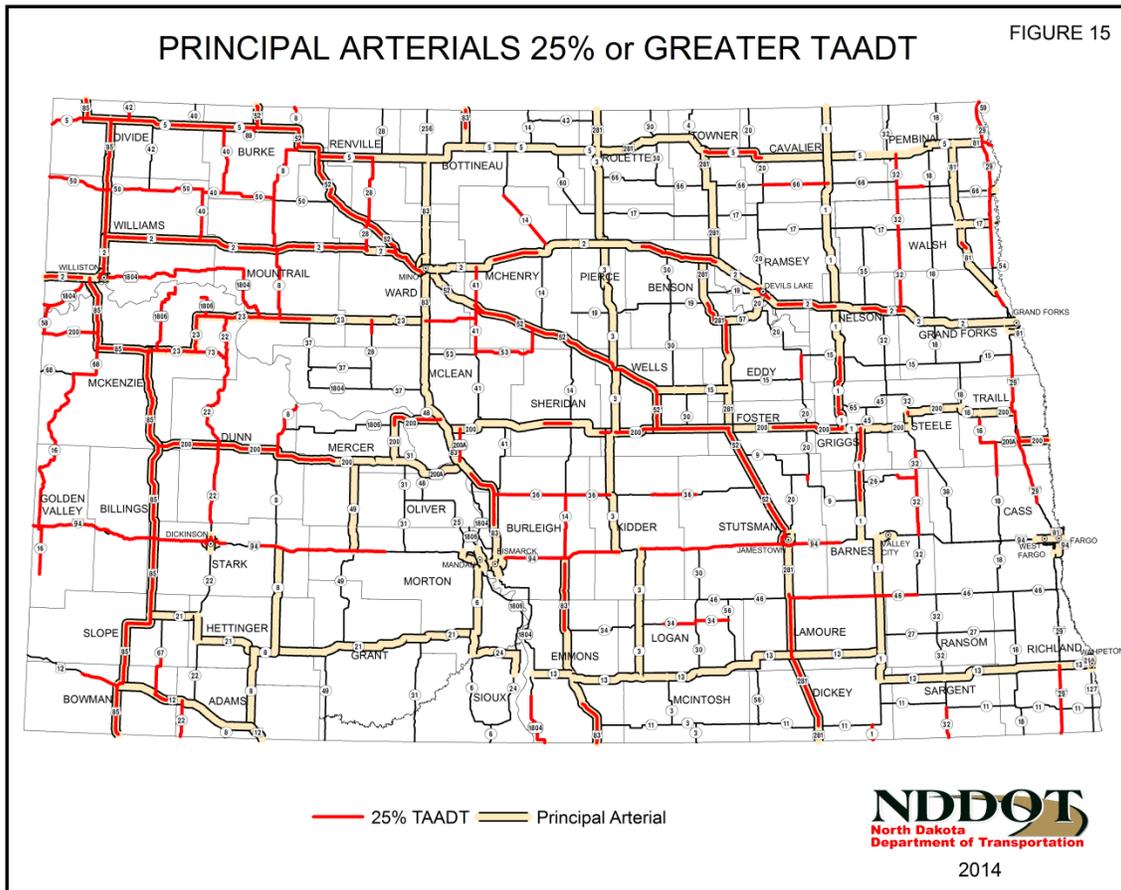
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Source: Federal Highway Administration

## 5. State Highways Functionally Classified as Principal Arterials

The concept of a functional classification system has been helpful to states and their DOTs for many years as a management tool in a variety of areas pertaining to highways. The National Highway Functional Classification study was mandated by Congress in the 1968 Federal-Aid Highway Through legislation of the [Intermodal Surface Transportation Efficiency Act \(ISTEA\)](#) of 1991. The U. S. Department of Transportation recommended that a reclassification study be completed prior to designation of the National Highway System to provide an interconnected system of principal arterial routes that serve major population centers, intermodal transportation facilities, and major travel destinations. In 1993, the functional reclassification was completed, and the [National Highway System](#) was established in November, 1995. The functional classification of 1993 has been routinely updated and is still of benefit today as a useful management tool.

	<u>ND Center Line Miles</u>	<u>ND Roadway Miles</u>
<b>Principal Arterial Highways</b>	<b>3,072.5</b>	<b>3,631.1</b>
<b>Highways with 25% + Trucks</b>	<b>2,415.0</b>	<b>2,896.7</b>
<b>Principal Arterial Highways With 25% Trucks</b>	<b>1,134.9</b>	<b>1,267.1</b>

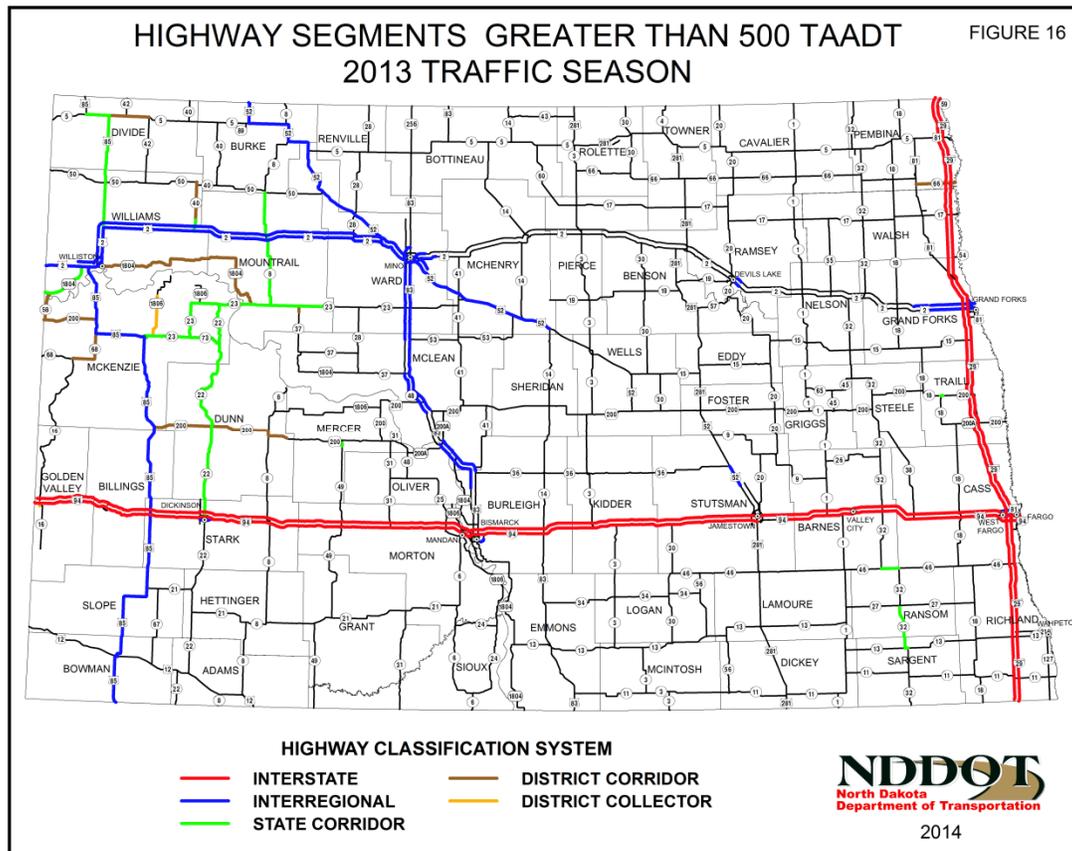


## 6. State Highway Segments Greater than 500 TAADT

NDDOT's eight district engineers were asked what volume of truck traffic was significant from the perspective of roadway impact, congestion and year-round maintenance, and the most common response was 500 trucks per day. It is important to remember the cumulative pavement impact of 500 trucks over a 24 hour period is the same as if those same 500 trucks all traveled during an 8 hour period. However, the congestion and safety impact of 500 trucks during a 24 hour period is less than the impact if those same 500 trucks all traveled during an 8 hour period.

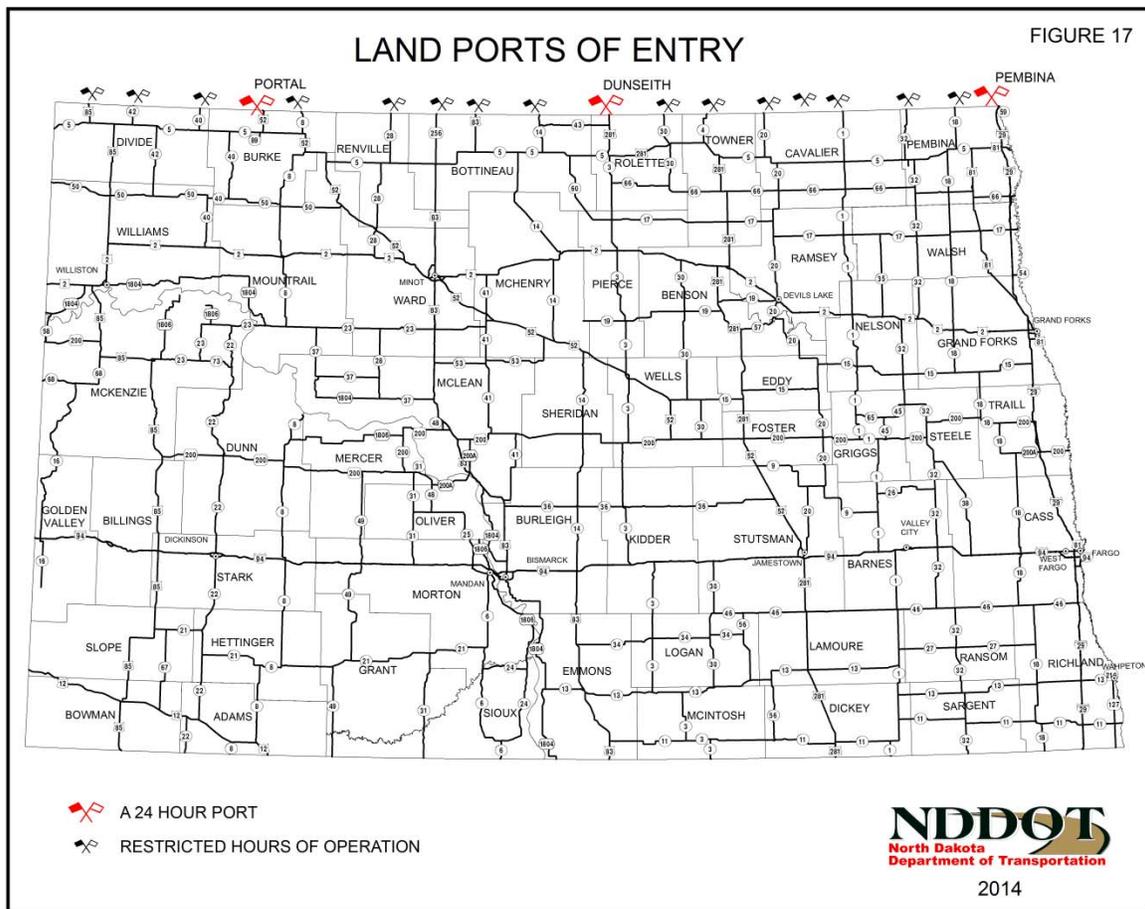
### 500 Trucks Per Day by HPCS Level

<u>HPCS Highway Level</u>	<u>ND Center Line Miles</u>	<u>ND Roadway Miles</u>
<b>Interstate Corridor</b>	<b>561.2</b>	<b>1,131.0</b>
<b>Interregional Corridor</b>	<b>593.5</b>	<b>835.2</b>
<b>State Corridor</b>	<b>306.7</b>	<b>306.7</b>
<b>District Corridor</b>	<b>207.7</b>	<b>207.7</b>
<b>District Collector</b>	<b>15.5</b>	<b>15.5</b>
<b>Totals</b>	<b>1,685.1</b>	<b>2,496.0</b>



## 7. 24 Hour Land Ports of Entry (LPOE) with Animal, Plant Health Inspection Services (APHIS) and Veterinary Services

North Dakota has 18 Land Ports of Entry (LPOE) on its border with Canada; 12 LPOEs with Manitoba and 6 LPOEs with Saskatchewan. Three of the 18 LPOE are 24 hour ports that also have Animal, Plants Health Inspection (APHIS) and veterinary services. Two of the 24 LPOEs are shared with Manitoba; Pembina, ND/Emerson, MB and Dunseith, ND/Boissevain, MB. The third 24 LPOE, Portal, ND/North Portal, SK is shared with Saskatchewan. In 2012, Pembina/Emerson ranked 4<sup>th</sup> (\$17.08B) and Portal/North Portal ranked 7<sup>th</sup> (\$12.3B) in terms of trade value among all US/Canada LPOEs. In 2012, 214,047 trucks and 1,649 trains passed through Pembina/Emerson, and 108,105 trucks and 1,860 trains passed through Portal/North Portal.<sup>17</sup>

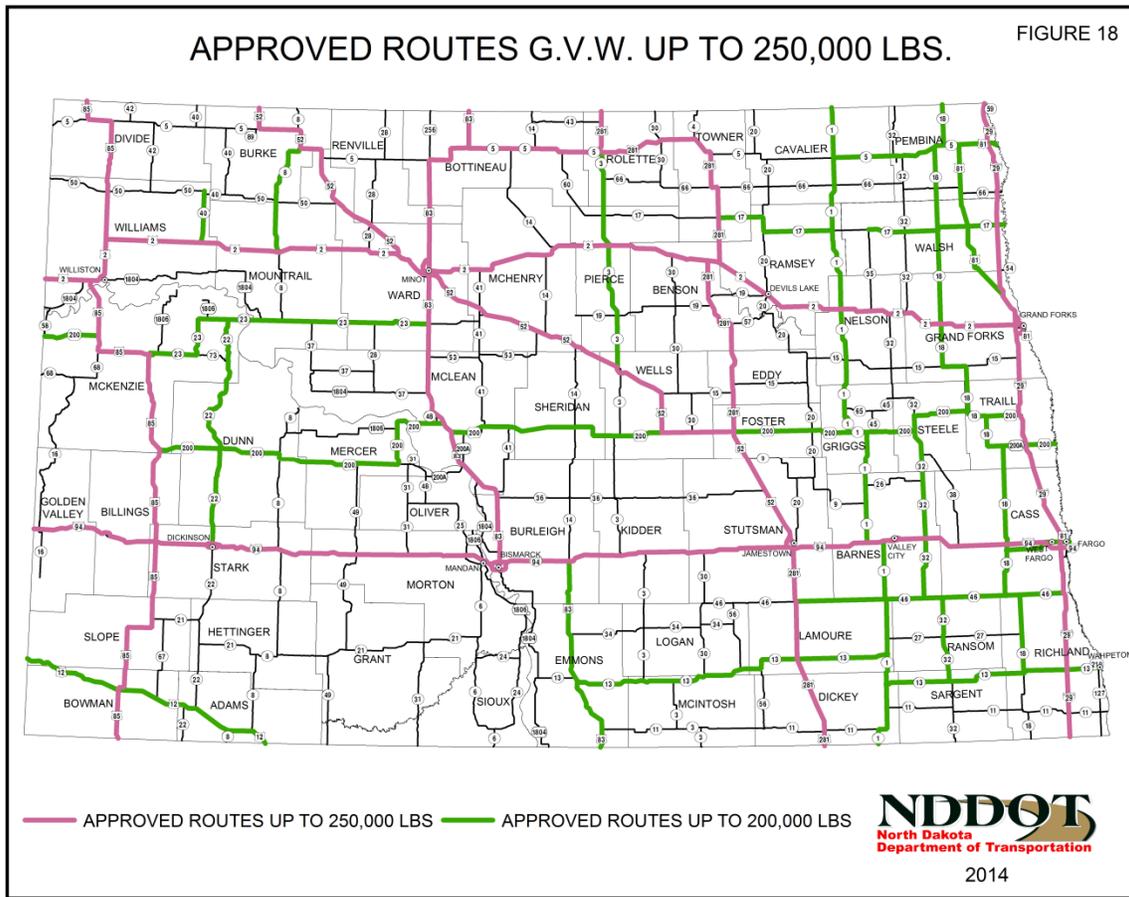


<sup>17</sup> Pembina/Emerson LPOE train volumes include trains passing through Noyes, MN. In 2006, the Noyes LPOE was closed and all Customs and Border Protection (CBP) functions are conducted by CBP staff located at Pembina, ND.

## 8. Approved Heavy Truck Routes (w/Permit) – 200K and 250K GVW

Some state highways are approved to carry non-divisible heavy loads up to 250,000 Gross Vehicle Weight **when permitted**. Permits for non-divisible loads that exceed legal load limits are issued by the North Dakota Highway Patrol.

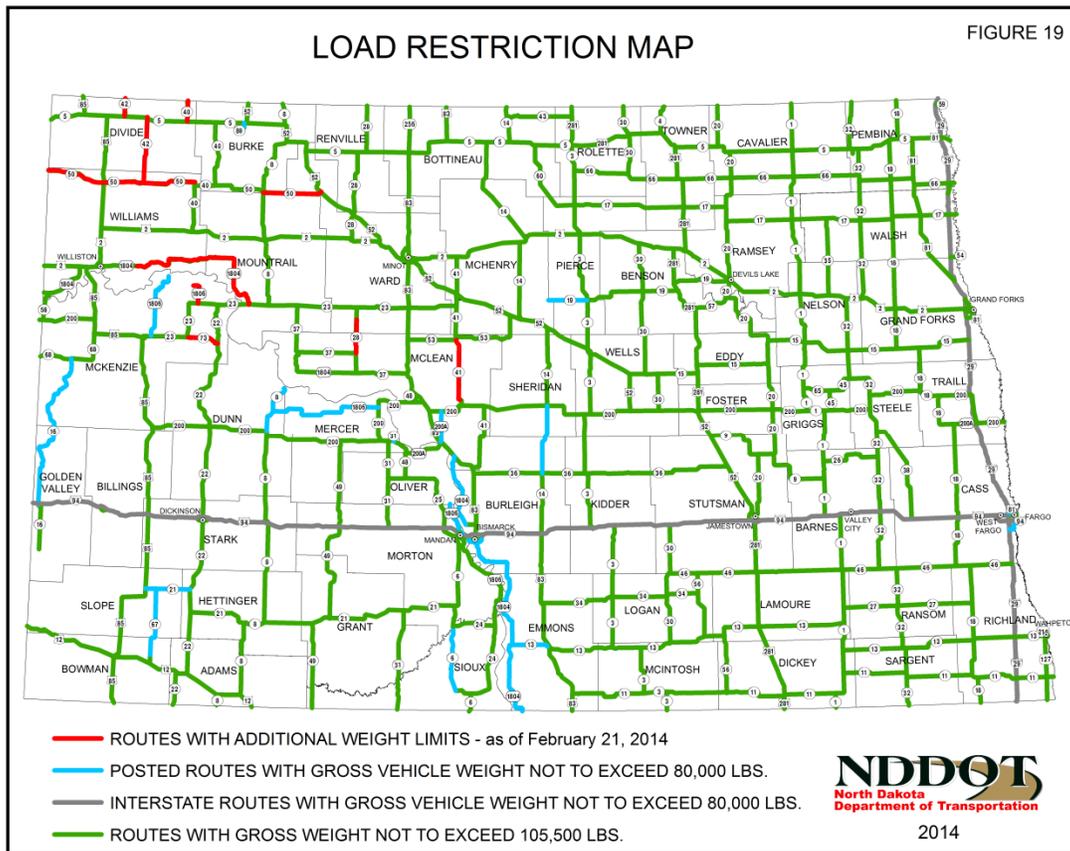
	<u>ND Center Line Miles</u>	<u>ND Roadway Miles</u>
Approved Routes up to 200,000 lbs. GVW	1,798.4	1,825.9
Approved Routes up to 250,000 lbs. GVW	1,968.9	3,048.9



## 9. State Highway System Load Restrictions

The maximum gross vehicle weight (GVW) on state highways is 105,500 pounds unless otherwise posted. On all other highways the maximum GVW is 80,000 pounds unless otherwise posted.<sup>18</sup> NDDOT utilizes load restrictions to prevent and reduce damage to roadways caused by heavy loads. There are two types of load restrictions: Year-Round and Seasonal.<sup>19</sup> NDDOT sets load restrictions as weather and a roadbed condition require and removes restrictions when roadbeds are stable enough to carry legal weight traffic without damage. Axle weights may also be reduced by bridge load limitations. Load restrictions on highways change annually, for current restrictions contact the North Dakota Highway Patrol.

	<u>Center Line Miles</u>	<u>Roadway Miles</u>
<b>Routes w/Additional Limits &lt; 80,000 GVW</b>	<b>227.2</b>	<b>227.2</b>
<b>Routes Posted with 80,000 GVW Limit</b>	<b>410.7</b>	<b>429.0</b>
<b>Interstate Routes with 80,000 GVW Limit</b>	<b>571.0</b>	<b>1,141.8</b>
<b>Routes with 105,500 GVW Limit</b>	<b>6,163.7</b>	<b>6,711.7</b>

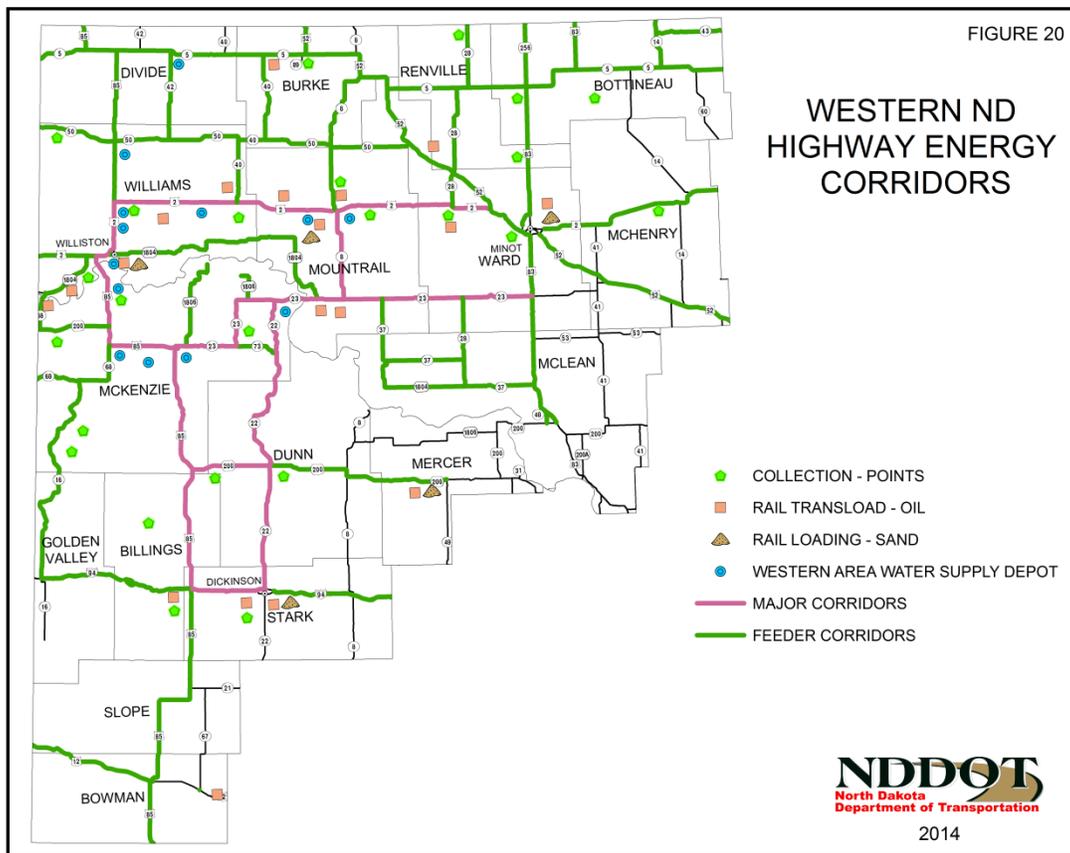


<sup>18</sup> A legal load is a function of the number of axles, axle loadings, axle spacing, Gross Vehicle Weight, etc. For specific information on legal loads in North Dakota contact the North Dakota Highway Patrol at: 701-328-2621, [ndhppermits@nd.gov](mailto:ndhppermits@nd.gov)

<sup>19</sup> Seasonal load restrictions are in place at the time of year when highway pavements are most vulnerable.

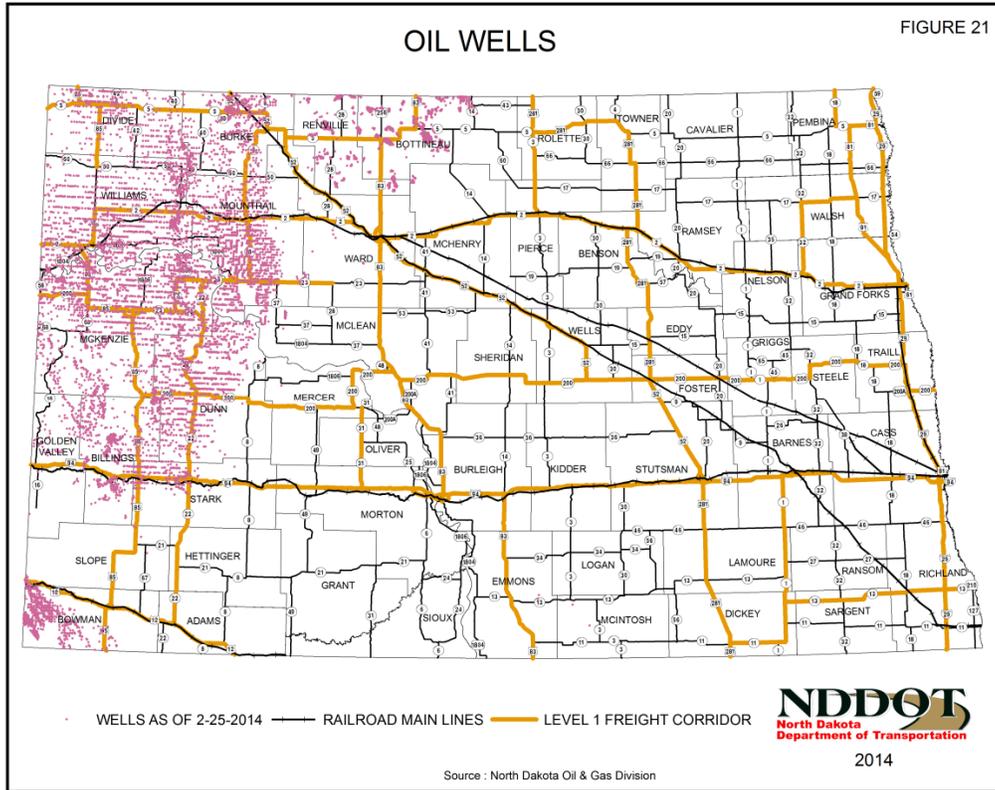
## 10. Highway Energy Corridors Accessing Exploration, Development, Installation, or Production Areas

In 2013, North Dakota became the 2<sup>nd</sup> largest oil producing state. Between 2008 to September 2013, crude oil production increased from 122,470 barrels to 933,130 barrels per day. Accompanying the meteoric rise in oil production has been a phenomenal increase in the amount of energy-related freight. Freight movements of pipe, sand and proppants for fracturing, drilling equipment and parts, chemicals, building materials and other items are making their way into the state by rail, trucks and air. Crude oil, processed natural gas, and the by-products of oil exploration and development are being shipped out of the state by rail, pipelines and trucks. The number of transload facilities handling the various forms of in-bound and out-bound freight has sky-rocketed. In 2008, the state did not have a single rail transload oil facility but by the end of 2013 there were 20 such facilities in the state.

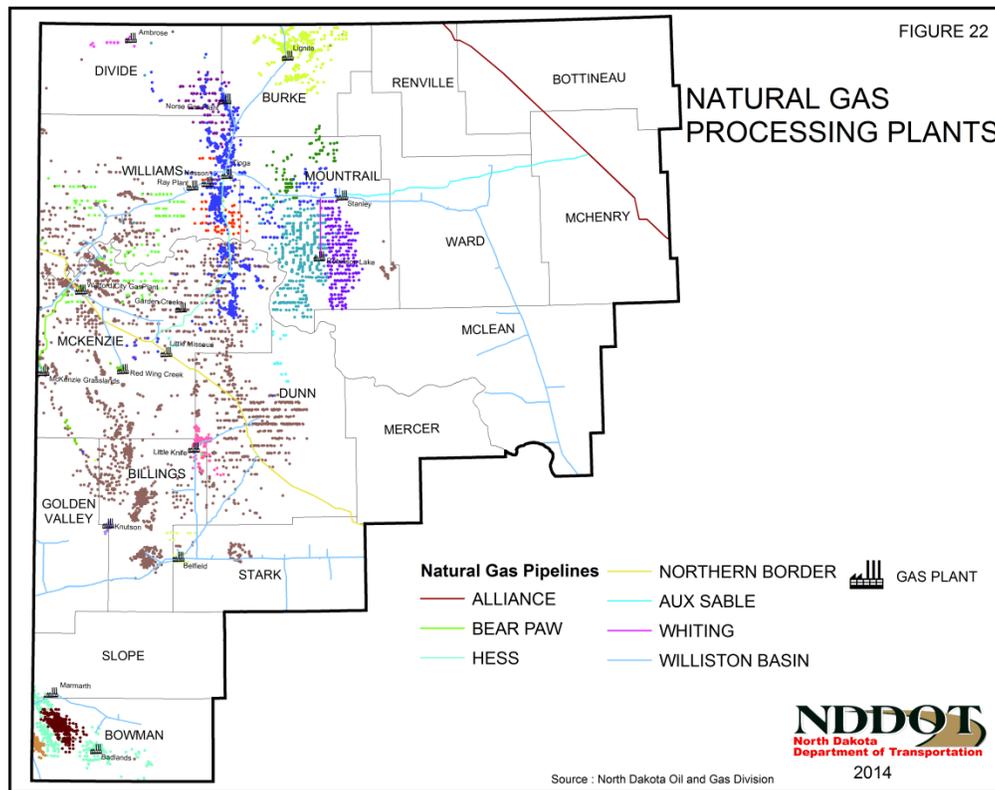


Sources: North Dakota Pipeline Authority, BNSF, et al, and NDDOT

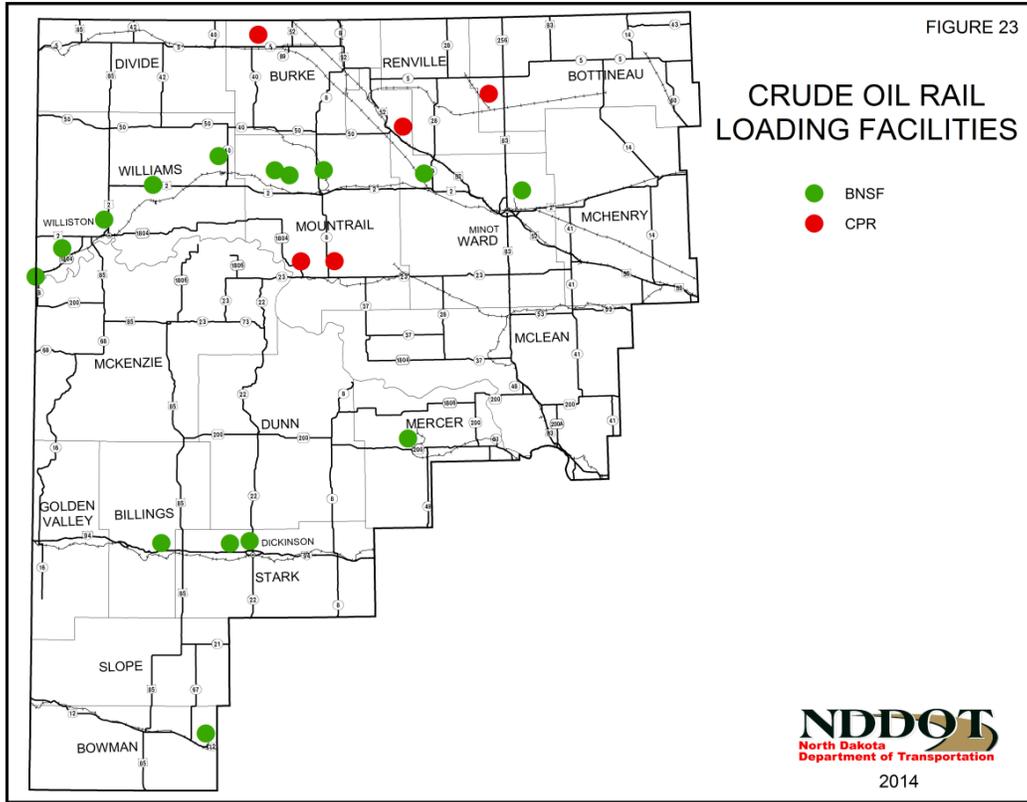
An extensive system of highways, rail lines, and pipelines is necessary to support the freight associated with the exploration, development and production of the state's oil and natural gas industry. On subsequent pages are maps showing the location of the state's oil wells, freshwater depots, saltwater disposal wells, rail oil transload facilities, and natural gas processing plants all of which rely on the Highway Energy Corridors identified in Figure 20.



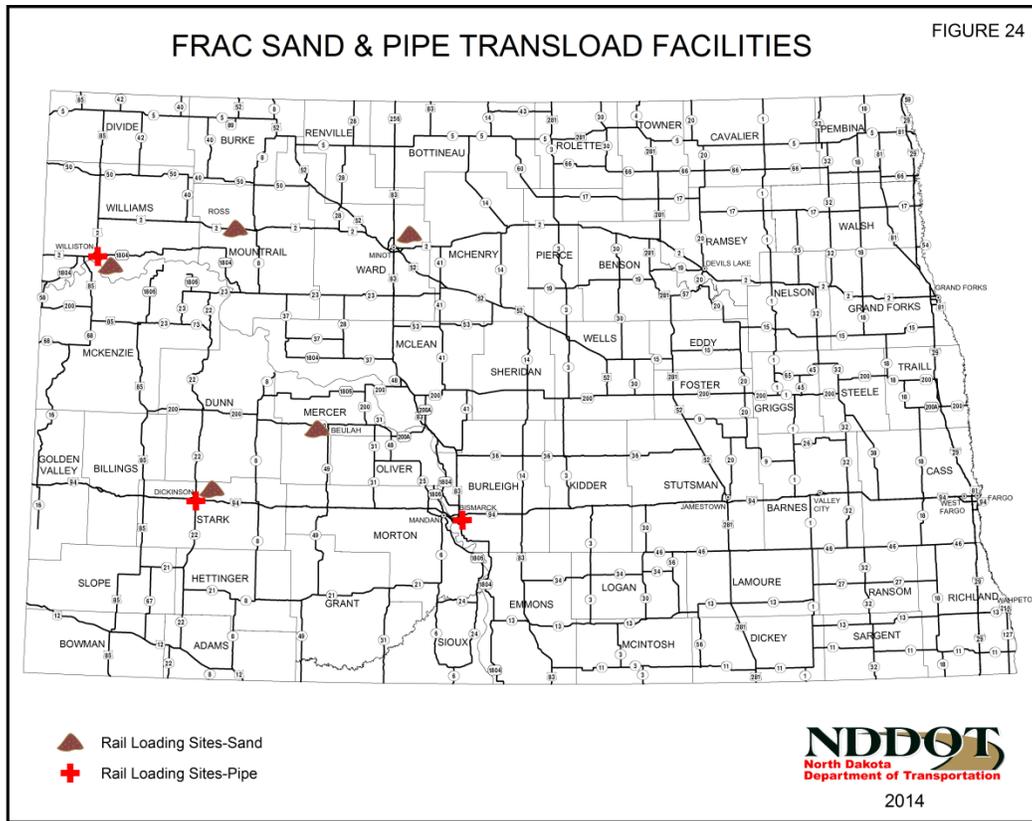
Source: North Dakota Department of Mineral Resources, Oil and Gas Division



Sources: North Dakota Pipeline Authority and ND Department of Mineral Resources, Oil and Gas Division



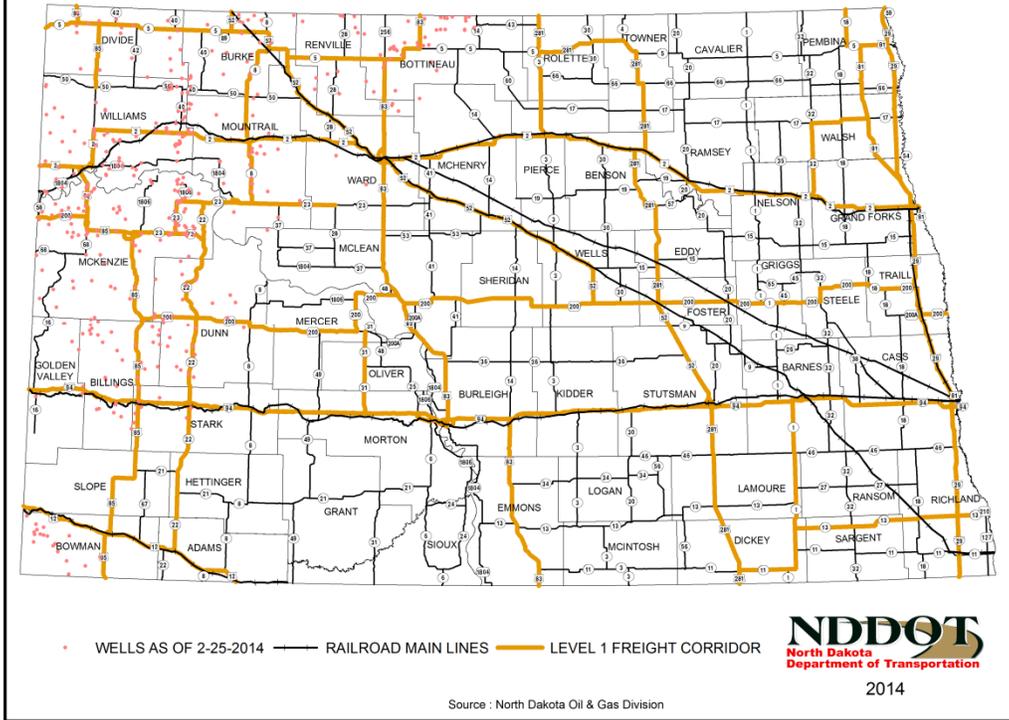
Source: North Dakota Pipeline Authority



Source: BNSF, et al.

# SALTWATER DISPOSAL SITES

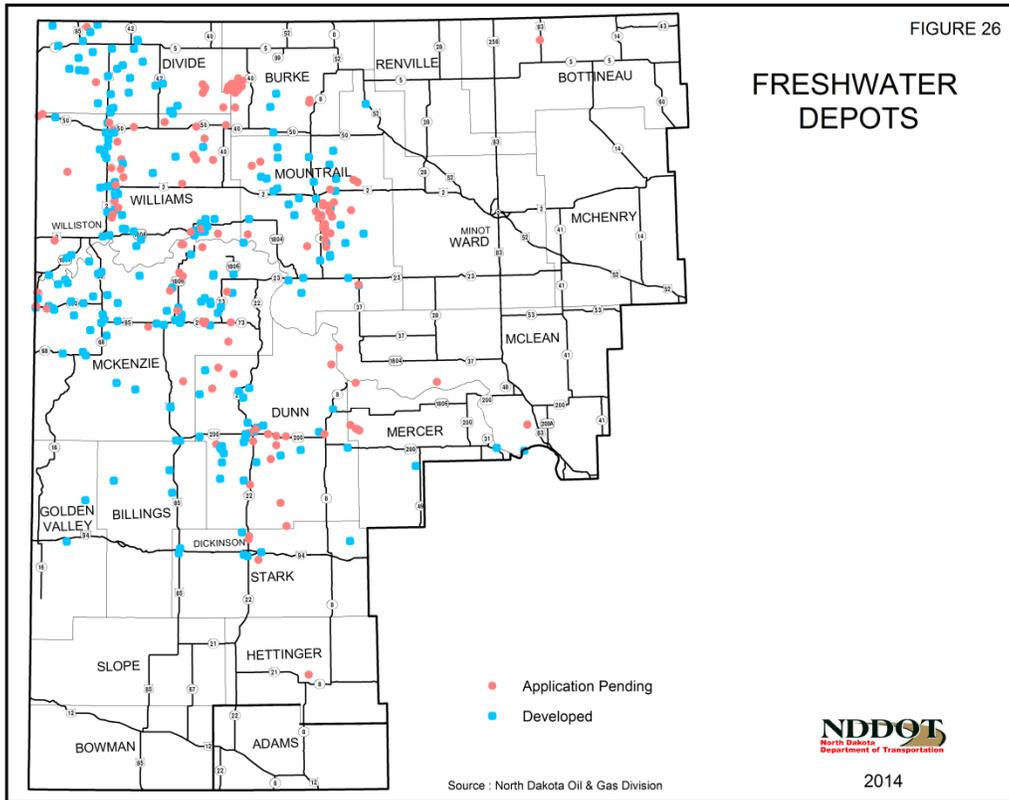
FIGURE 25



Source: North Dakota Department of Mineral Resources, Oil and Gas Division

# FRESHWATER DEPOTS

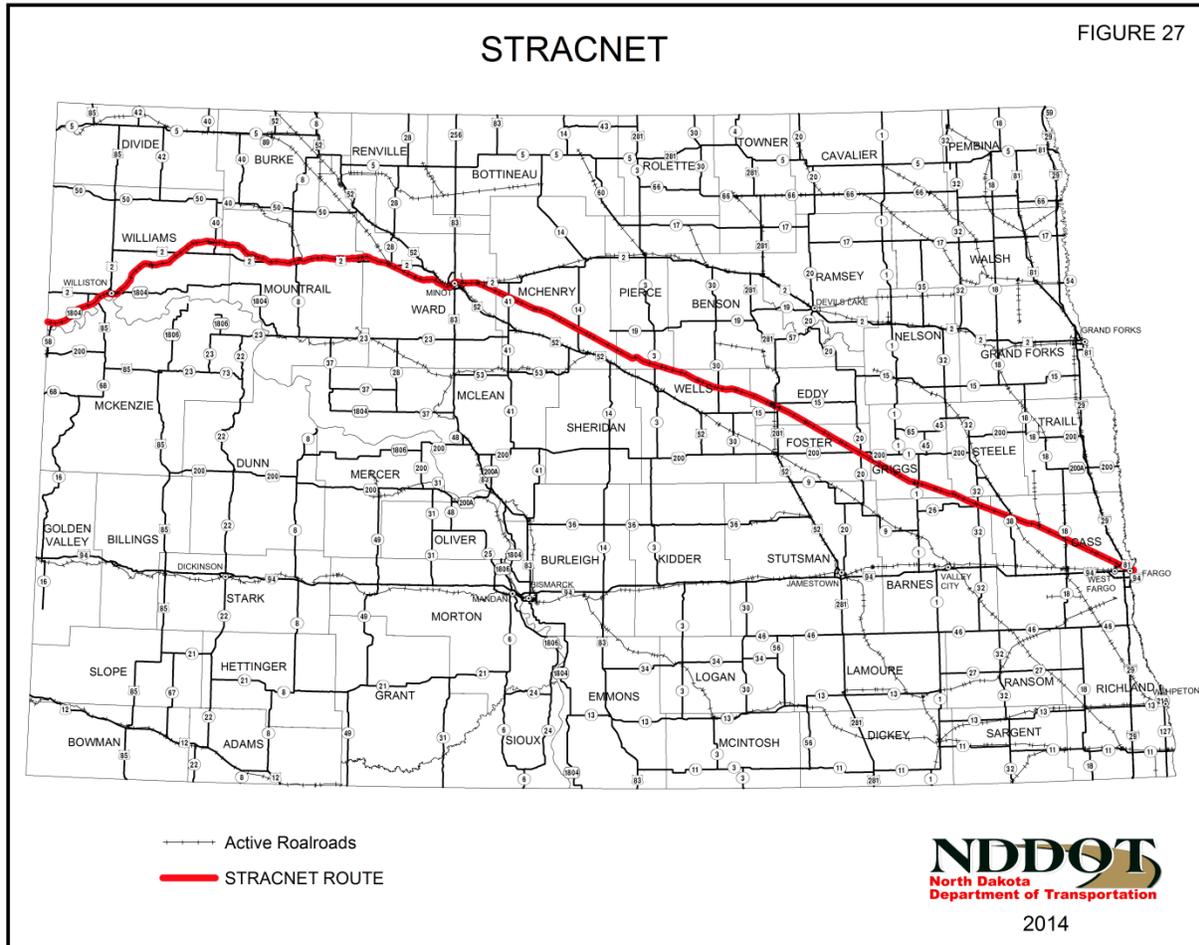
FIGURE 26



Source: North Dakota State Water Commission

### 11. STRACNET (Rail lines important to national defense and service to defense installations)

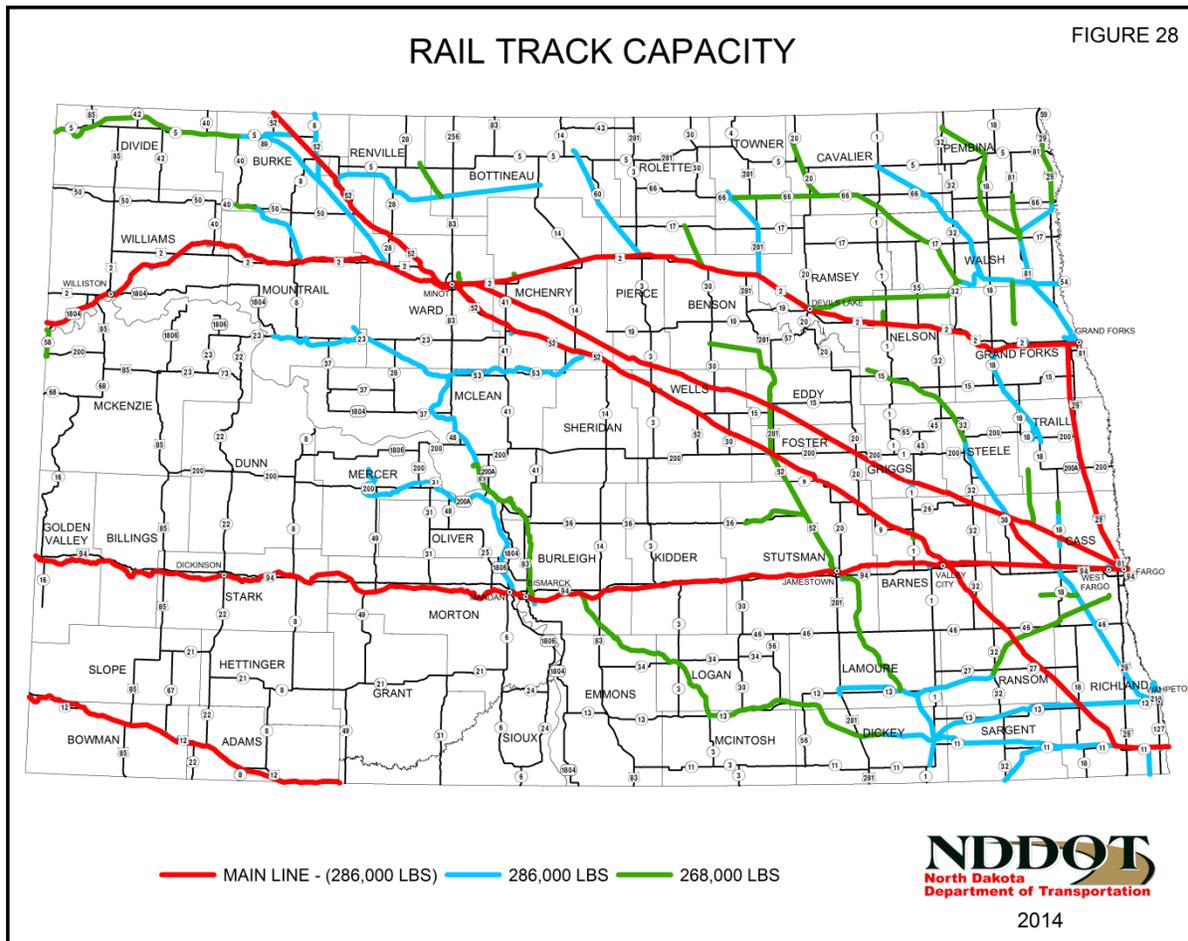
The Strategic Rail Corridor Network (STRACNET) consists of 38,800 miles of rail lines important to national defense and provides service to 193 defense installations whose mission requires rail service.



Source: Federal Railroad Administration

## 12. Rail Track Capacity

Not all rail lines have the same capacity for moving freight. Many variables contribute to a rail line's freight capacity: rail weight, welded or jointed rail, subgrade depth and drainage, and the condition of ties, rail, and ballast. In combination these factors dictate maximum train speed and rail car gross weights. Maximum train speed is also governed by freight making up the train consist. For example, an empty intermodal train travels at higher speeds than a loaded unit grain train. Beginning in the late 1970s, the rail industry began transitioning from 268K to 286K gross weight capable cars. Mainline and higher volume branchlines were upgraded to carry the new 286K while lower volume branchlines were restricted to the 268K cars or 286K cars loaded 100 tons.<sup>20</sup>



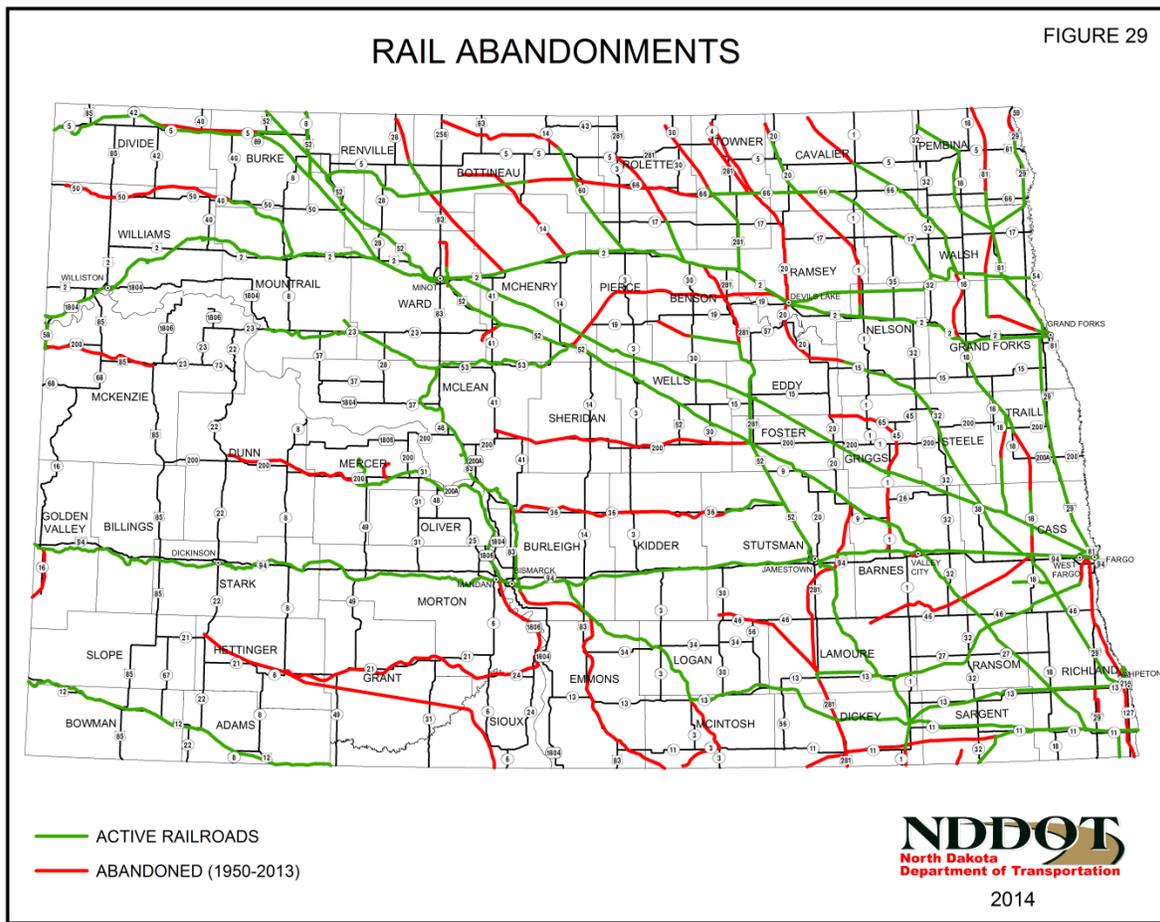
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Source: BNSF, et al.

<sup>20</sup> Rail cars rated at 286K have a TARE weight of 66,000 pounds and payload of 220,000 pounds while 268K rail cars have a TARE weight of 66,000 pounds and a payload of 200,000 pounds.

### 13. Rail Abandonments

Until the 1970s, North Dakota was served by five Class I railroads.<sup>21</sup> Years of deferred maintenance, bankruptcies, mergers, and railroad regulatory reform, resulted in abandonments and a rail system one-third smaller than the system in 1950. The State is now served by 2 Class I railroads and four Short Lines operating a total of 3,331 miles of track. The loss of rail branchlines coupled with the advent of unit trains and shuttle rail facilities has resulted in a large scale shift in the movement of grain.

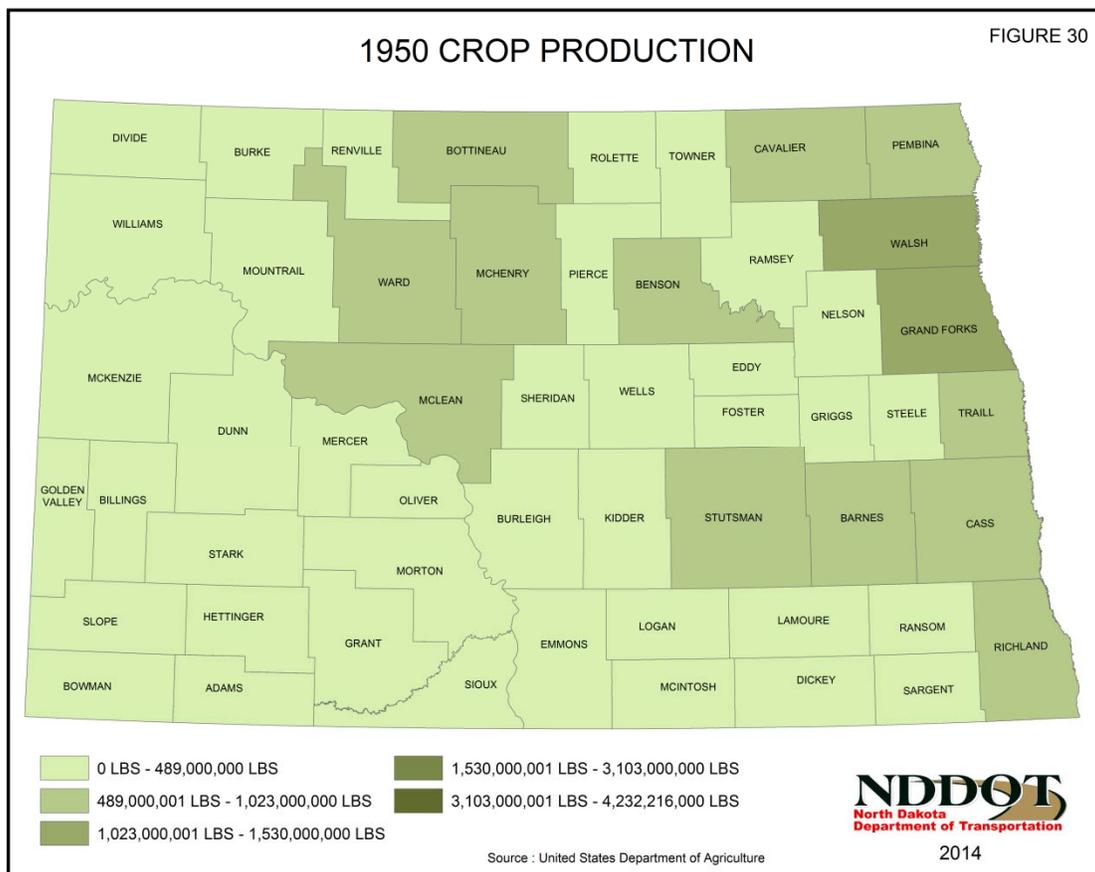


Source: BNSF, et al.

<sup>21</sup> The five Class I railroads operating in North Dakota included the Northern Pacific, Great Northern, Milwaukee Road, Chicago Northwestern and Soo Line.

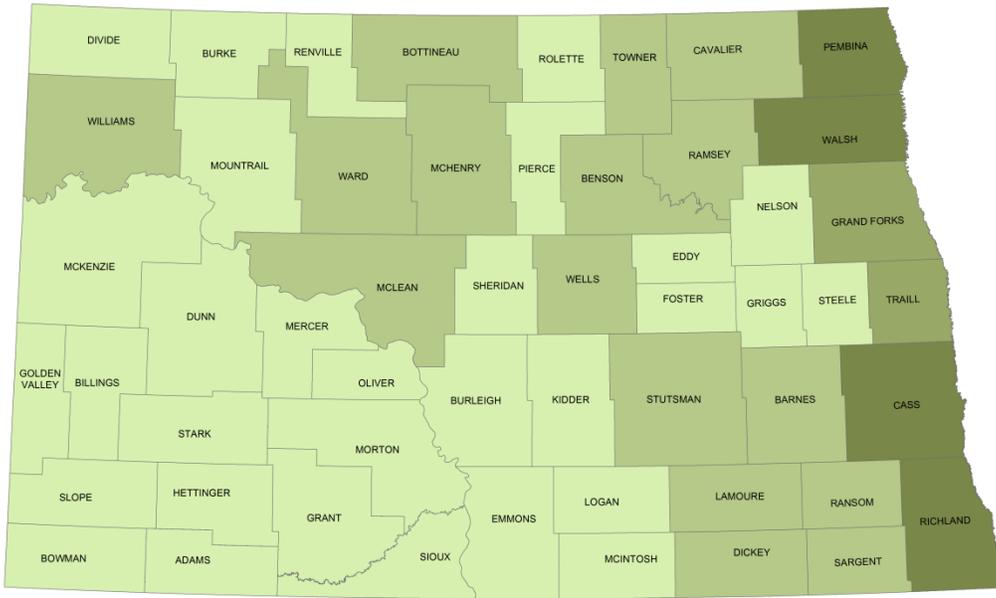
## 14. Accessing Areas of Agricultural Production

In any given year, North Dakota leads the nation in the production of as many as 14 agricultural commodities. Since 1950, agricultural production in the state has increased from 17.1 billion pounds to 30.3 billion pounds in 1980, to 89.4 billion pounds in 2010. Farmers shifting to higher yielding crops (e.g. wheat acres to corn) coupled with literally hundreds of thousands of Conservation Reserve Program acres being converted to agricultural production are the primary causes of increased agricultural production. All of the state's agricultural production makes at least one movement by truck (field to farm, elevator, or processing plant) before making a final movement out of the state by rail or truck.



# 1980 CROP PRODUCTION

FIGURE 31



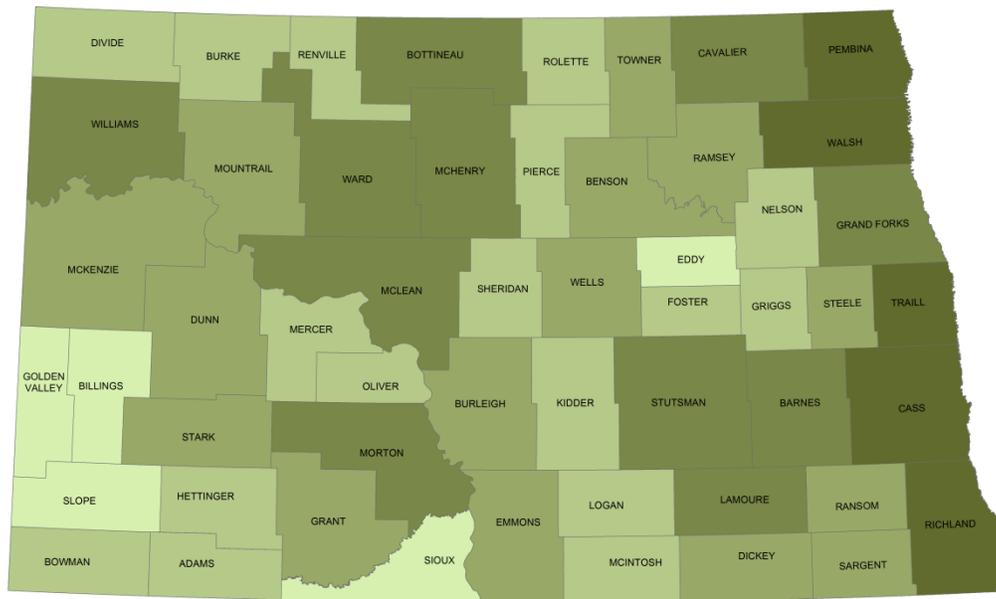
2014

Source : United States Department of Agriculture

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# 2010 CROP PRODUCTION

FIGURE 32



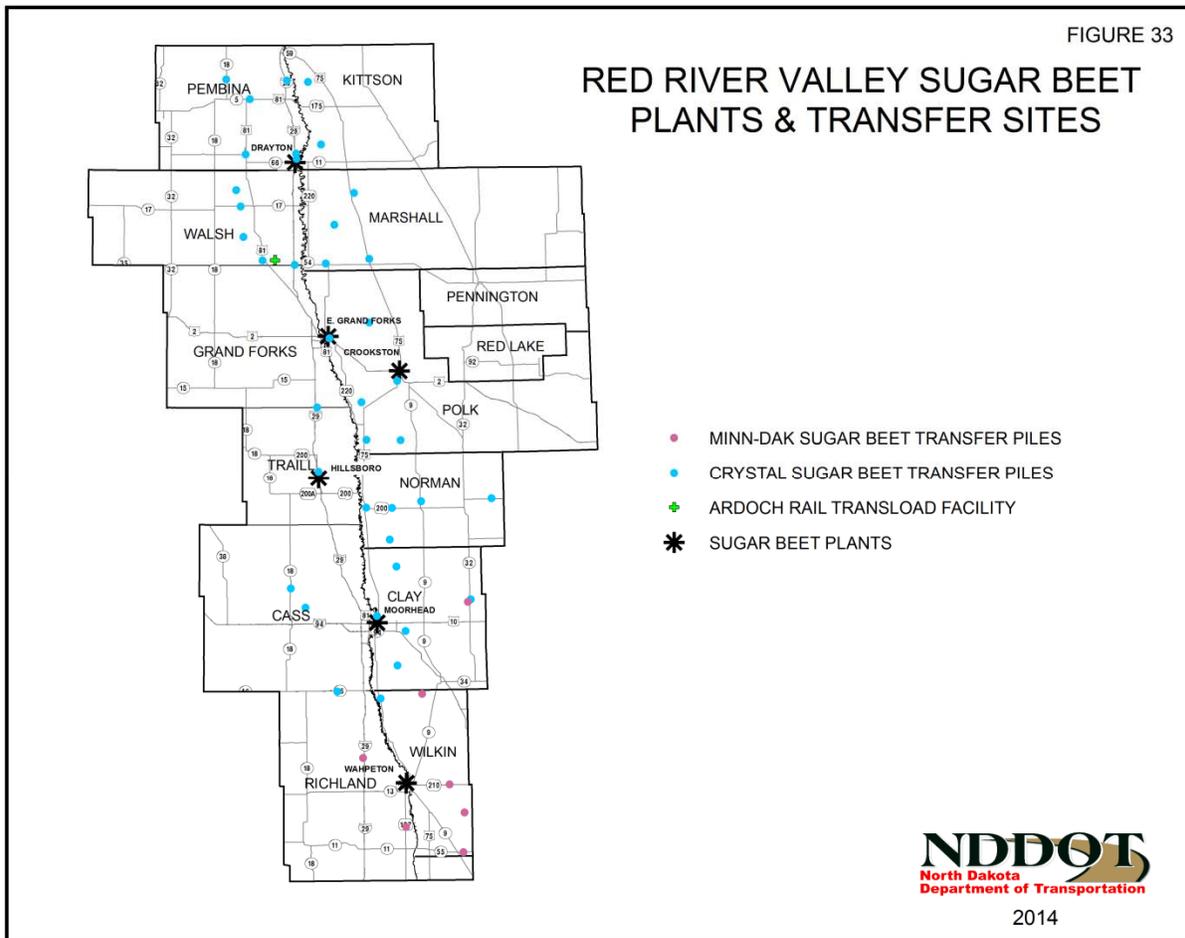
2014

Source : National Agricultural Statistics Service

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## 15. Sugar Beet Plants and Transfer Piles

The growing and processing of sugar beets is an important component of North Dakota, Minnesota and Montana agriculture. As is the case with other perishable agricultural commodities, the sugar beet industry relies on efficient and reliable transportation. Sugar beets are grown on both sides of the North Dakota/Minnesota border in the Red River Valley and on both sides of the North Dakota/Montana border in the Yellowstone River Valley. There are five American Crystal Sugar processing plants in the Red River Valley region and one plant at Sidney, MT.<sup>22</sup> The Min-Dak Farmers Cooperative processing plant is located in Wahpeton, ND. Annually, The Red River Valley region annually produces about 13 million tons of beets and the Yellowstone Valley region produces about 825 thousand tons. Producers on either side of the state boundaries truck their beets to transfer pile locations from which the beets are trucked to the processing plants.<sup>23</sup>



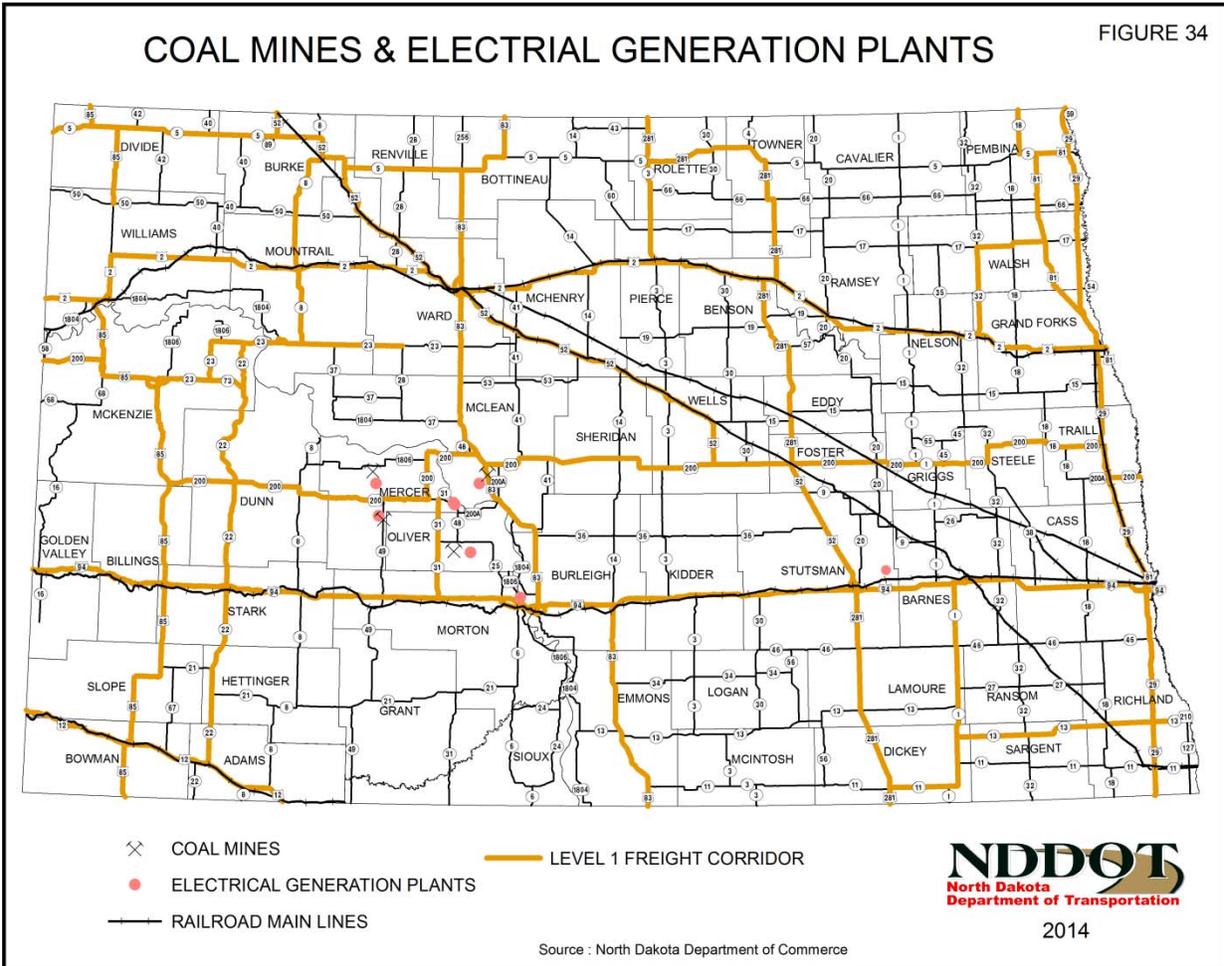
Sources: American Crystal Sugar and the Minn-Dak Farmers Cooperative

<sup>22</sup> The five Red River Valley American Crystal Sugar processing plants are located at Drayton, ND, East Grand Forks, MN, Crookston, MN, Hillsboro, ND, and Moorhead, MN. The Yellowstone Valley American Crystal Sugar processing plant is located at Sidney, MT.

<sup>23</sup> In addition to the transportation of beets, on average nearly 100 truckloads of coal are delivered daily to the five Red River Valley American Crystal Sugar plants from a rail transload facility located at Ardoch, ND.

## 16. Coal Mines and Electrical Generation Plants

Most North Dakota coal mines and electrical generation plants generate several different kinds of freight but most notably these facilities are the origin and destination of large and heavy freight movements.

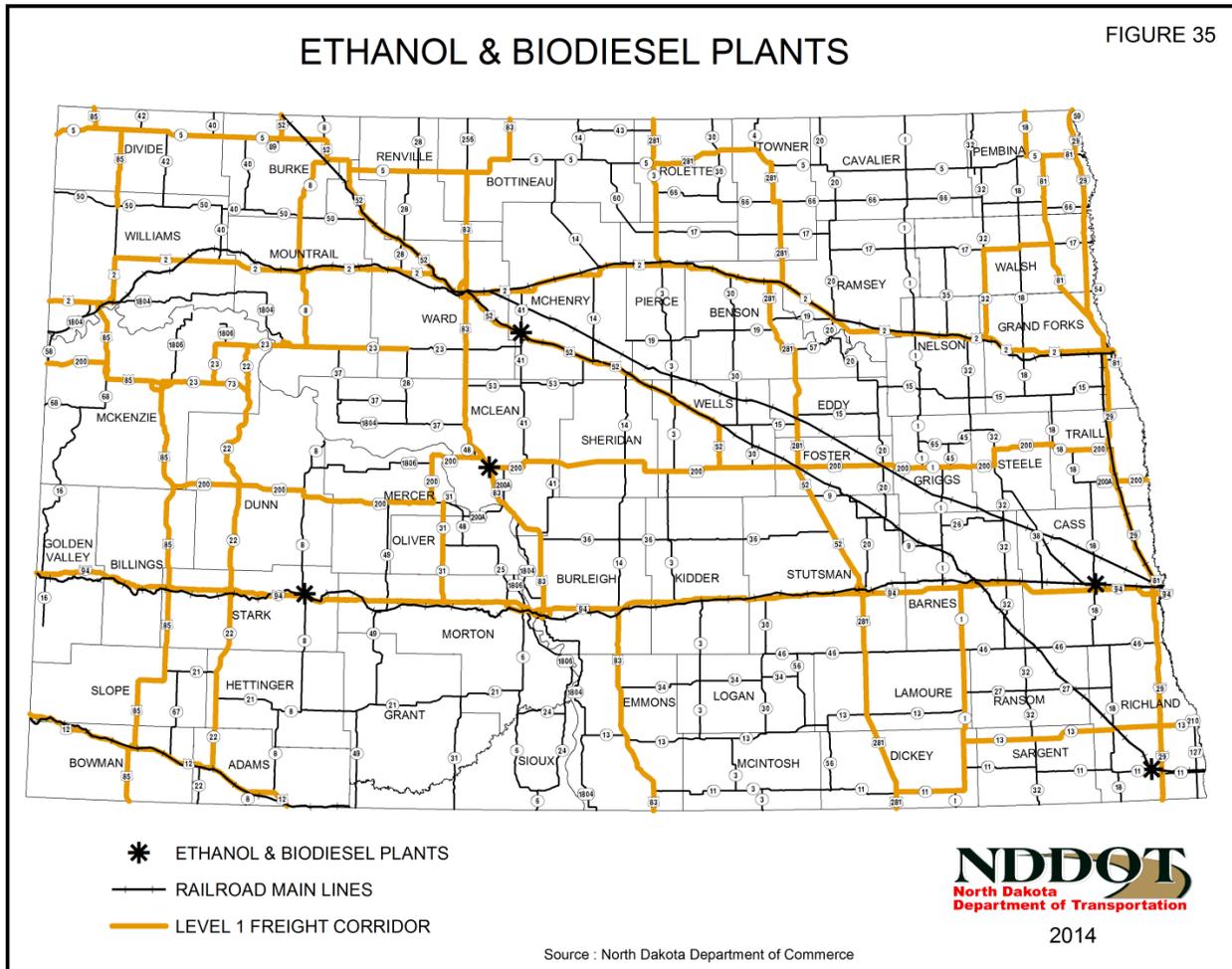


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Source: North Dakota Department of Commerce

## 17. Ethanol & Biodiesel Plants

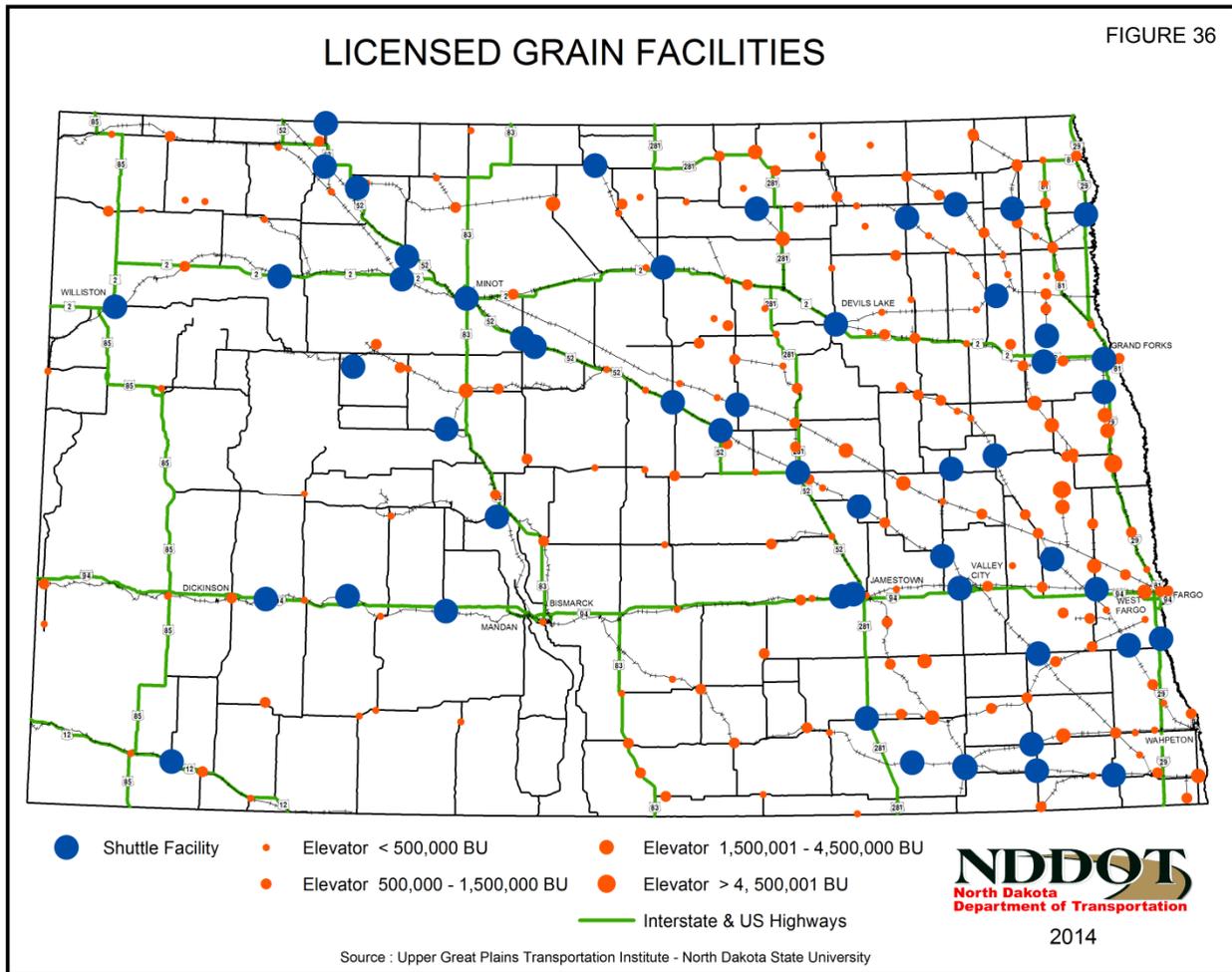
The potential truck traffic associated with an ethanol plant is significant. A 100M gallon ethanol plant will consume about 35.6 million bushels of corn and 300,000 tons of coal per year. It will also produce over 300 thousand tons of distiller grains. Altogether a plant of this size has the potential to generate more than 100 trucks daily.



Source: North Dakota Department of Commerce

## 18. Grain Elevators, Shuttle Facilities and Licensed Storage Capacity

In 1950, the state had 1,025 grain elevators with a total licensed storage capacity of 60,791,000 bushels. By 2013, the number of elevators had dropped to 394 but licensed storage capacity had increased to 418,775,265 bushels; up nearly 680%. Of the 394 licensed elevators in 2013, 52 are considered shuttle facilities capable of loading 75 to 110 car unit grain trains. It takes approximately 475 truckloads of grain to fill a 110 car unit.



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Source: North Dakota Public Service Commission

**APPENDIX D**

**FREIGHT TRANSPORTATION'S ROLE IN NORTH DAKOTA'S ECONOMY**

## FREIGHT TRANSPORTATION'S ROLE IN NORTH DAKOTA'S ECONOMY

### What is freight?

Freight may be defined as the transport of goods from one place to another. As implied by its definition, the movement of freight is dependent on access to infrastructure, a means of conveyance, providers of transportation services, and pricing. In the case of North Dakota, the infrastructure used to transport freight includes: highways, rail lines, airports, and pipelines; common vehicles used for transporting freight include trucks, airplanes, trains, and pipelines. Simply put, **freight is dynamic, time-sensitive, responsive to cost and customer demand, subject to available shipping options, and a host of other variables.**

Freight movements are often governed and influenced by a complex system of local, state, national and international laws, regulations and trade agreements. A myriad of freight service providers exist some of which include transportation companies, freight forwarders, and logistics firms. While some companies transport their own freight, others use “*common*” or “*contract*” carriers to move their freight. Finally, the movement of freight is extremely sensitive to pricing and competition. Lower-value, bulk items tend to move by barge and rail, liquids and gases by pipeline or tanker cars and trucks, while higher-value, lighter weight freight may move by airplanes. Trucks bridge the gap between lower and higher-value freight and are well-suited to provide door-to-door, and first and last mile service.

### Why is the movement of freight important to North Dakota?

Safe, secure, and efficient movement of freight affects our quality of life and is critical to our state and nation's economic vitality and national security. Safe, secure and efficient freight movement results in multiple benefits including reliable sourcing of raw materials, dependable delivery and lower cost consumer products, and a stable environment for economic growth and competitiveness.

Safe, secure and efficient movement of freight is dependent on many factors some of which include:

- ✓ Dependable Shipping Schedules
- ✓ Stable Transportation Costs
- ✓ Modal Infrastructure Sustained in a State-of-Good-Repair
- ✓ Reliable/Consistent Travel Times
- ✓ Availability of Multiple Modal Shipping Options
- ✓ Multiple Carriers Operating in a Competitive Environment
- ✓ Mode to Mode to Connectivity
- ✓ Multi-State Freight Corridors
- ✓ Fair and Consistent Government Regulation
- ✓ Steady Funding for Capital Investment and Maintenance
- ✓ Strong Public/Private Sector Partnerships

Historically, the movement of freight has always been important to North Dakota. Prior to European settlement, the Native American Indian tribes that inhabited the region developed a

sophisticated pattern of trade linking the Plains Indians with Indian tribes across much of what is the central and western portion of the United States and Canada. As the region's tribes began to have contact with French, British and Spanish explorers, access to glass beads and metal axes, knives, cookware, guns and other commodities initiated the development of new trade patterns that supplanted the pre-existing inter-tribal trade patterns.

Enticed by the railroads and availability of cheap land through the Homestead Act of 1862, white settlers came to farm the state's fertile soils. Early German and Scandinavian emigrants were blessed with wheat yields of 15 to 20 bushels per acre. And although an uneasy relationship existed between the railroads and the state's farmers, they needed and depended on each other. The railroads needed farmers to produce a crop (a freight commodity) and farmers needed the railroads to transport their crop to markets.

North Dakota's location in the middle of North America creates a unique set of freight transportation challenges and opportunities; markets, both domestic and international, are distant. Trailing only Texas, North Dakota currently ranks second among the 50 states in the production of crude oil (933,130 barrels per day, January 2014). Annually, North Dakota farmers lead the nation in the production of as many as 14 commodities and the state is one of only a handful to experience an increase in manufacturing since 2000. Today, the freight movement patterns of the state's original inhabitants and early settlers have given way to a sophisticated freight system that is necessary to participate in a globally integrated economy. While North Dakota's economy has changed, it is still heavily dependent on the safe, secure, and efficient movement of freight.

The following excerpt from Business Roundtable<sup>24</sup> not only exemplifies the importance of trade to North Dakota but it also **illustrates the importance of a freight transportation system that is domestically and globally integrated.**

Why Is International Trade and Investment so Important to North Dakota?

- International Trade – both exports and imports – supports more than 100,000 North Dakota jobs. These trade-related jobs are at large and small companies, on farms, in factories, and at the headquarters of North Dakota's globally engaged firms.
- North Dakota exports billions of dollars in goods and services annually, including farm products, oil and gas, agricultural, construction and mining equipment, and freight and travel services. The vast majority of North Dakota exporters are small and medium-sized companies with less than 500 workers.
- Customers in 175 countries around the world buy North Dakota-grown and manufactured goods and services. Top markets like Canada, China and Mexico buy hundreds of millions of dollars of North Dakota products and services annually.
- Imports lower prices and increase choices for North Dakota companies and families. Lower raw material and input costs help North Dakota companies stay competitive in

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<sup>24</sup> "How North Dakota's Economy Benefits from International Trade and Investment" published by Business Roundtable<sup>SM</sup> at [http://businessroundtable.org/sites/default/files/legacy/uploads/studies-reports/trade-relations/BRT-State-Study\\_North-Dakota.pdf](http://businessroundtable.org/sites/default/files/legacy/uploads/studies-reports/trade-relations/BRT-State-Study_North-Dakota.pdf)

global markets, while families can stretch paychecks further as trade agreements reduce the cost of products by eliminating costly barriers to trade.

- Free trade agreements (FTAs) have led to rapid export growth to partner countries. America's FTA partners purchased 24.2 times more goods per capita from North Dakota than non-FTA countries did in 2012.
- Foreign-owned companies invest in North Dakota and employ 11,600 North Dakotans.

Logically, the discussion of freight transportation's future role in our state's economy poses two questions. First, "What is our shared vision of the state's freight system?" And, second "How do we achieve our vision?" The answer to these questions is to develop a freight system that provides user benefits in the forms of increased freight efficiencies (velocity and reliability), improved safety and security (fewer crashes and enhanced transport security), and increased productivity (lower operating costs and more profit).<sup>25</sup> Developing a freight system that achieves the state's transportation vision will allow North Dakota businesses to compete both in domestic and global markets.

**For An Overview of North Dakota Freight Supply Chains see Appendix L, page 126 in the full State Freight Plan.**

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<sup>25</sup> North Dakota's Transportation Vision defined in the state's strategic transportation plan, *TransAction III* states, "North Dakota's multimodal transportation system is strategically developed and globally integrated."

**APPENDIX E**

**MAP-21 SECTION 1116  
PRIORITIZATION OF PROJECTS TO IMPROVE FREIGHT MOVEMENT**

The current federal transportation authorization, **Moving Ahead for Progress in the 21<sup>st</sup> Century**, commonly known as **MAP-21**, provides for an increased federal funding share for projects that meet specific requirements noted below.

#### SECTION 1116 PRIORITIZATION OF PROJECTS TO IMPROVE FREIGHT MOVEMENT

(a) **IN GENERAL.**—Notwithstanding section 120 of title 23, United States Code, the Secretary may increase the Federal share payable for any project to 95 percent for projects on the Interstate System and 90 percent for any other project if the Secretary certifies that the project meets the requirements of this section.

(b) **INCREASED FUNDING.**—To be eligible for the increased Federal funding share under this section, a project shall—

- (1) demonstrate the improvement made by the project to the efficient movement of freight, including making progress towards meeting performance targets for freight movement established under section 150(d) of title 23, United States Code; and
- (2) be identified in a State freight plan developed pursuant to section 1118.

(c) **ELIGIBLE PROJECTS.**—Eligible projects to improve the movement of freight under this section may include, but are not limited to—

- (1) construction, reconstruction, rehabilitation, and operational improvements directly relating to improving freight movement;
- (2) intelligent transportation systems and other technology to improve the flow of freight;
- (3) efforts to reduce the environmental impacts of freight movement on the primary freight network;
- (4) railway-highway grade separation;
- (5) geometric improvements to interchanges and ramps.
- (6) truck-only lanes;
- (7) climbing and runaway truck lanes;
- (8) truck parking facilities eligible for funding under section 1401;
- (9) real-time traffic, truck parking, roadway condition, and multimodal transportation information systems;
- (10) improvements to freight intermodal connectors; and
- (11) improvements to truck bottlenecks.

**APPENDIX F**

**STATE GRANTS & LOAN PROGRAMS AVAILABLE FOR FREIGHT-RELATED  
TRANSPORTATION INFRASTRUCTURE**

## **STATE GRANTS & LOAN PROGRAMS AVAILABLE FOR FREIGHT-RELATED TRANSPORTATION INFRASTRUCTURE**

### **AVIATION**

#### State Air Freight-Related Grant & Loan Programs

Currently, there are no state grants or loan programs specifically available to pay for freight-related transportation infrastructure improvements to North Dakota's aviation system. However, the North Dakota Aeronautics Commission (NDAC) does administer a grant program that supports airport capital improvement projects. Applications for a wide variety of airport improvements are accepted annually. Although funding through the NDAC's grant program is not specific to projects benefitting the movement of air freight, many projects, such as the extension of a runway, may indirectly benefit air freight movement. For more information on the NDAC's Airport Grant Program go to: <http://www.nd.gov/ndaero/airport/funding.html>

#### Federal Air Freight-Related Grant & Loan Programs

There are no federal grants and loan programs specifically available to pay for freight-related transportation infrastructure improvements to North Dakota's aviation system. The Airport Improvement Program (AIP) provides grants to public agencies and, in some cases, to private owners and entities for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS). AIP eligible projects may indirectly benefit the movement of air freight and include those improvements related to enhancing airport safety, capacity, security, and environmental concerns. In general, project sponsors can use AIP funds on most airfield capital improvements or repairs and in some specific situations, for terminals, hangars, and non-aviation development. Any professional services that are necessary for eligible projects — such as planning, surveying, and design — are eligible. Aviation demand at the airport must justify the projects, which must also meet Federal environmental and procurement requirements.

The Grand Forks International Airport (GFK) receives federal Cargo Air Entitlement (CAE) funds through the Airport Improvement Program. CAE funds are available to GFK based on the volume of air cargo tonnage using the airport. No other airports in North Dakota are currently eligible to receive these funds.

### **HIGHWAYS**

Currently, there are no state grants or loan programs specifically available to pay for freight-related transportation infrastructure improvements to North Dakota's highway system. NDDOT does however use state and federal highway funding to construct highway projects that support the safe, secure and efficient movement of freight. These projects may provide for freight connectivity "last mile connections" between highways and other transportation modes.

## **RAILROADS**

### State Rail Freight-Related Grant & Loan Programs

The North Dakota Department of Transportation (NDDOT) administers a low-interest loan program that supports infrastructure improvements to the state's rail system: (1) Freight Rail Improvement Program (FRIP) and (2) Local Rail Freight Assistance (LRFA). Eligible applicants include: cities, counties, railroads, rail authorities, and other current or potential users of freight railroad service.

Funding for NDDOT's rail loan program is limited and funding is primarily intended to be used to upgrade and enhance rail infrastructure that improves rail service. Project proposals are categorized in descending order of priority as follows:

System Critical (railroads and rail authorities only eligible) – These are projects critical to a railroad's existence. These projects maintain or expand service, improve system connectivity, or enhance financial stability. These projects may include rail relay, major structure rehabilitation or construction, new rail connections, track realignment, etc.

Infrastructure Improvement (railroads, units of government, and rail authorities only eligible) – These projects may include structure repairs, tie and ballast replacement, switches, short segments of rail replacement, etc.

Economic Development (all applicants eligible) – These projects may include new sidings, siding extensions or upgrades, switches, loop and ladder tracks, access roads, active warning devices for new facility crossings, equipment – locomotives, maintenance of way equipment, roadway safety improvements adjacent to existing rail infrastructure, etc. These projects may improve safety and result in decreased trucking impacts on state and local roadway infrastructure.

For more information on NDDOT's rail loan programs go to:  
<https://www.dot.nd.gov/divisions/planning/railinfo.htm>

### Federal Rail Freight-Related Grant & Loan Programs

#### **Railroad Rehabilitation & Improvement Financing (RRIF)**

The RRIF program was established by the Transportation Equity Act for the 21st Century (TEA-21) and amended by the Safe Accountable, Flexible and Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU). Under this program the FRA Administrator is authorized to provide direct loans and loan guarantees up to \$35.0 billion to finance development of railroad infrastructure. Up to \$7.0 billion is reserved for projects benefiting freight railroads other than Class I carriers.

RRIF funding may be used to:

- Acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards, buildings and shops;
- Refinance outstanding debt incurred for the purposes listed above; and
- Develop or establish new intermodal or railroad facilities

Direct loans can fund up to 100% of a railroad project with repayment periods of up to 35 years and interest rates equal to the cost of borrowing to the government.

Eligible borrowers include railroads, state and local governments, government-sponsored authorities and corporations, joint ventures that include at least one railroad and limited option freight shippers who intend to construct a new rail connection.

## **PIPELINES**

The North Dakota Pipeline Authority was created by the Legislature in 2007. The legislation provided the Pipeline Authority with broad powers to participate in a pipeline facility through financing, planning, development, acquisition, leasing, rental, joint ownership, or other arrangements. To date, the Authority has not developed any grant or loan financing programs.

## **NON-MODE SPECIFIC STATE GRANTS & LOAN PROGRAMS AVAILABLE FOR FREIGHT-RELATED TRANSPORTATION INFRASTRUCTURE**

North Dakota Department of Commerce

The North Dakota Department of Commerce (NDDC) manages two programs that could possibly fund freight-related transportation system improvements. Neither of the two programs is specifically designed to promote freight-related transportation system improvements.

1. The North Dakota Development Fund (NDDF) provides “gap financing” through loans and equity investments not available from most conventional lenders and is available to any primary-sector business and the community. The NDDF also administers the Regional Rural Revolving Loan Fund, which provides funding for primary-sector projects located in a community of less than 8,000 in population or located more than five miles outside the city limits. The Development Fund is a secondary source of financing, subordinate to private sources. For more information, go to:  
<http://www.business.nd.gov/businessInformation/nd-development-fund/>
2. The Community Development Block Grant Program (CDBG) provides financial assistance to eligible units of local government in the form of grants and loans for public facilities, housing rehabilitation, and economic development projects. The primary beneficiaries of a project must be very low and low income individuals. An economic development freight-related transportation improvement may be eligible for CDBG funding if it created jobs for low income persons. NDDC’s Division of Community

Services contracts with the state's Regional Planning & Development Councils to distribute CDBG funds. To apply for CDBG funds applicants must contact the regional council in their area. For more information, go to:

<http://www.communityservices.nd.gov/community/block-grant/>

#### North Dakota Department of Trust Lands

The North Dakota Department of Trust Lands administers the Energy Infrastructure and Impact Grant Program. Although not specifically targeted to address freight-related transportation system improvements, counties and cities and other political subdivisions in oil and gas development impact areas may make applications to the Department for transportation projects that may benefit freight movements. For more information, go to:

<http://www.land.nd.gov/>

#### Other Grants and Loan Programs Available For Freight-Related Transportation Infrastructure

Many communities across North Dakota have created economic development funds. These funds usually receive revenue from a sales tax approved by the sponsoring unit of government and are used to help finance business developments. County, municipal, and township governments, regional airport authorities, and private air cargo companies may be eligible for some types of grants and loans from local economic development funds. Each local economic development fund has its own set of project eligibility requirements. For a directory of local economic development organizations see:

[http://www.gdi-solutions.com/directory/edo/north\\_dokota.htm](http://www.gdi-solutions.com/directory/edo/north_dokota.htm)

#### **Additional Comments**

Most aviation system improvement projects such as runway extensions or upgrades to navigational aids are not specific to the movement of air freight. However, regardless of the funding origin (local, state, or federal) or type of funding (dedicated, grant, or loan) these projects may also benefit the movement of air freight. It is important to note, air freight companies using the state's airports contribute revenues to local, state and federal aviation funding programs by paying landing fees, fuel taxes, aircraft registration and license fees, and other levies that support infrastructure at the state's commercial and general aviation airports.

## **NON-MODE SPECIFIC FEDERAL GRANTS & LOAN PROGRAMS AVAILABLE FOR FREIGHT-RELATED TRANSPORTATION INFRASTRUCTURE**

### Transportation Innovation & Finance (TIFIA)

This is a Department of Transportation program which makes three forms of credit assistance available – secured (direct) loans, loan guarantees and standby lines of credit- for surface transportation projects of national and regional significance. TIFIA credit assistance provides improved access to capital markets, flexible repayment terms, and potentially more favorable interest rates than can be found in private capital markets for similar instruments. TIFIA can help advance qualified, large-scale projects that otherwise might be delayed or deferred because of size, complexity, or uncertainty over the timing of revenues. Many surface transportation projects – highway, transit, railroad, intermodal freight, and port access – are credit eligible for assistance. Each dollar of federal funds can provide up to \$10 in TIFIA credit assistance – and leverage \$30 in transportation infrastructure investment. For more information on the TIFIA Loan Program go to: <http://www.fhwa.dot.gov/ipd/tifia>

**APPENDIX G**

**STATUTORY AUTHORITY AND CONSTITUTIONAL RESTRAINTS  
ON  
FREIGHT-RELATED INVESTMENTS**

## **STATE STATUTORY AUTHORITY FOR ACQUIRING, OPERATING AND REGULATING AIRPORTS**

The statutory authority for county, municipal, township governments and regional airport authorities to acquire, operate and regulate airports is provided for in the North Dakota Century Code (NDCC) - Title 2 Aeronautics, Title 11 Counties, Title 40 Municipal Government, and Title 58 Townships. Title 57 Taxation, allows county, municipal and township governments supporting airports or airport authorities to levy taxes.

### **North Dakota Century Code - Title 2 Aeronautics**

#### **2-02-01. Authority to acquire, operate and regulate airports**

The North Dakota Aeronautics Commission and all counties, cities, park districts, and townships of this state, separately or jointly, may acquire, establish, construct, expand, own, lease, control, equip, improve, maintain, operate, regulate, and police airports and landing fields for the use of aircraft either within or without the geographic limits of such political subdivisions, and may use for such purpose or purposes any available property owned or controlled by the state aeronautics commission or such political subdivisions. Any property acquired, owned, leased, controlled, or occupied for the purpose or purposes enumerated herein hereby is declared to be acquired, owned, leased, controlled, or occupied for a public purpose and as a matter of public need, and there is no liability on the part of the state aeronautics commission or any county, city, park district, or township in connection therewith, or in the operation thereof, except to its own employees.

#### **2-02-07. Authority to raise money by taxation and use airport income**

The local public authorities having power to appropriate moneys within the political subdivisions acquiring, establishing, developing, operating, maintaining, or controlling airports or landing fields under the provisions of this chapter may appropriate and cause to be raised by taxation or otherwise in such political subdivisions, moneys sufficient to carry out therein the provisions of this chapter, and also may use for such purpose or purposes moneys derived from said airports or landing fields.

#### **2-06-02. Creation of municipal airport authority - Dissolution**

1. Any municipality, by resolution of its governing body, may create a public body corporate and politic to be known as a municipal airport authority, which is authorized to exercise its functions upon the appointment and qualification of the first commissioners thereof; or the governing body by resolution may determine to exercise any or all powers granted to such authorities in this chapter until or unless such powers are or have been conferred upon a municipal or regional airport authority. Upon the adoption of a resolution creating a municipal airport authority, the governing body of the municipality, pursuant to the resolution, shall appoint five persons as commissioners of the authority. The commissioners who are first appointed are designated to serve for terms of one, two, three, four, and five years, respectively, but thereafter, each commissioner must be appointed for a term of five years, except that vacancies occurring otherwise than by expiration of term must be filled for the unexpired term by the governing body.

## 2-06-03. Creation of regional airport authority - Dissolution

1. Two or more municipalities, whether in this state or in an adjoining state, provided that at least one municipality is in North Dakota, by joint resolution, may create a public body, corporate and politic, to be known as a regional airport authority which is authorized to exercise its functions upon the issuance by the secretary of state of a certificate of incorporation. The governing bodies of the municipalities participating in the creation of a regional airport authority, pursuant to such joint resolution, shall appoint at least five persons as commissioners of the regional airport authority. The number to be appointed and their representation must be provided for in the joint resolution. The term of office of each regional airport authority commissioner must be in accordance with subsection 5. Each such regional airport authority, once created, shall organize, elect officers for terms of office to be fixed by agreement, and adopt and amend from time to time rules for its own procedure not inconsistent with section 2-06-06.

## North Dakota Aeronautics Commission (NDAC)

The North Dakota Aeronautics Commission (NDAC) is authorized to accept, receive, and receipt federal moneys, and other moneys, either public or private, for the acquisition, construction, enlargement, improvement, maintenance, equipment, or operation of airports and other navigational facilities under North Dakota Century Code (NDCC) 2-05-06.

The primary source of state funding for the State's aviation system is the State Aeronautics Commission Special Fund (SACSF). The main sources of revenue for the SACSF are state aviation fuel taxes and aircraft registration fees. SACSF funds must be used for airport construction or improvement projects, including airport administration and terminal buildings, hangars, landing strips for aircraft, and purchase of sites for airports or landing fields and easements and for maintenance and maintenance equipment, clearing of sites, marking, lighting, and engineering and navigational aids, all related to aeronautics in amounts as the NDAC may determine and upon projects as the commission may approve.

NDAC may act as an agent of all municipalities in accepting, receiving, receipting for, and disbursing federal monies, made available to finance, in whole or in part, the planning, acquisition, construction, improvement, maintenance or operation of municipal airports and other navigational facilities under NDCC 2-05-06. All federal moneys accepted under this section must be accepted and transferred or expended by the commission upon such terms and conditions as are prescribed by the United States. All moneys received by NDAC pursuant to this section must be deposited in the state treasury, and, unless otherwise prescribed by the authority from which such moneys were received, shall be kept in separate funds designated according to the purpose for which the moneys were made available, and held by the state for such purposes.

NDAC, as principal on behalf of the state, and for any municipality, may enter into any contracts, with the United States, with any municipality, or with any person, which may be required in connection with a grant or loan of federal moneys for municipal airport or air

navigation facility purposes, provided that no contract may be entered into on behalf of any municipality except pursuant to written request of such municipality. Federal monies received by the NDAC on behalf of municipalities can only be appropriated for the specific purpose for which the moneys were made available, and held by the state for such purposes.

**North Dakota Century Code - Title 11 Counties**

The statutory authority of a county to acquire, operate, and regulate airports is provided in Section 2-02-01 of the NDCC.

The statutory authority of a county to levy a tax to support an airport or airport authority is provided for in NDCC Section 57-15-06.7. The tax levy limitations specified in Section 57-15-06 do not apply to the following mill levies, which are expressed in mills per dollar of taxable valuation of property in the county:

1. Counties supporting airports or airport authorities may levy a tax not exceeding four mills in accordance with section 2-06-15.

In 2012, the following 23 counties levied taxes to support airports or airport authorities:

Adams	Dunn	Rolette
Barnes	Grand Forks	Sargent
Benson	LaMoure	Stark
Bottineau	McIntosh	Stutsman
Bowman	Mercer	Towner
Cavalier	Mountrail	Trail
Dickey	Pembina	Williams
Divide	Ramsey	

**North Dakota Century Code - Title 40 Municipal Government**

The statutory authority of a municipal government to acquire, operate, and regulate airports is provided in Section 2-02-01 of the NDCC and Section 40-05-01

Subsection 58. To acquire, establish, construct, expand, own, lease, control, equip, improve, maintain, operate, regulate, and police airports and landing fields within or without the geographic limits of the municipality as provided in Title 2.

The statutory authority of a municipal government to levy a tax to support an airport or airport authority is provided for in NDCC Section 57-15-10

Subsection 18. Taxes levied for airport purposes in accordance with section 57-15-36 may be levied in an amount not exceeding four mills.

In 2012, the following 75 municipalities levied taxes to support airports or airport authorities:

Arthur	Harvey	Oakes
Ashley	Hillsboro	Oxbow
Beulah	Hunter	Page
Bottineau	Jamestown	Park River
Bowbells	Kenmare	Parshall
Cando	Kindred	Pembina
Carrington	Kulm	Plaza
Casselton	LaMoure	Richardton
Cavalier	Lakota	Rolette
Columbus	Leeds	Rolla
Crosby	Lidgerwood	Rugby
Davenport	Linton	St Thomas
Devils Lake	Lisbon	Stanley
Dickinson	Maddock	Tioga
Edgeley	Mandan	Towner
Elgin	Mayville	Turtle Lake
Ellendale	McVile	Wahpeton
Enderlin	Milnor	Walhalla
Fargo	Minto	Washburn
Fessenden	Mohall	Watford City
Gackle	Mott	West Fargo
Garrison	Napoleon	West Hope
Glen Ullin	New Rockford	Williston
Grand Forks	New Town	Wimbledon
Gwinner	Northwood	Wishek

### **North Dakota Century Code - Title 58 Townships**

The statutory authority of a township to acquire, operate, and regulate airports is provided in Section 2-02-01 of the NDCC and Section 58-03-07

Subsection 19. To support an airport or to support or create an airport authority and to levy a tax for airport purposes within the limitations of section 57-15-37.1.

The statutory authority of a township to levy a tax to support an airport or airport authority is provided for in NDCC Section 57- 15-37.1. The electors of each township may vote at the annual meeting to levy a tax for the purpose of supporting an airport or an airport authority in an amount not exceeding the limitation in subsection 6 of section 57-15-20.2. The tax levy provided in this section does not apply to any city, park district, or other taxing district that already has an airport levy.

In 2012, a total of 31 townships in three counties levied taxes to support airports or airport authorities:

Cass County Townships

Addison	Durbin	Page
Amenia	Empire	Pleasant
Bell	Everest	Rich
Casselton	Gunkle	Rochester
Cornell	Harmony	Rush River
Davenport	Lake	Warren
Dows	Normanna	

Grand Forks County Townships

Avon	Lind	View
Gilby	Logan Center	Union
Grace	Loretta	Washington
	Northwood	

Trail County

Garfield

## **STATE STATUTORY AUTHORITY FOR HIGHWAYS, BRIDGES AND FERRIES**

### **North Dakota's Constitution, Article X, section 11 states:**

Revenue from gasoline and other motor fuel excise and license taxation, motor vehicle registration and license taxes, except revenue from aviation gasoline and unclaimed aviation motor fuel refunds and other aviation motor fuel excise and license taxation used by aircraft, after deduction of cost of administration and collection authorized by legislative appropriation only, and statutory refunds, shall be appropriated and used solely for construction, reconstruction, repair and maintenance of public highways, and the payment of obligations incurred in the construction, reconstruction, repair, and maintenance of public highways.

### **North Dakota Century Code - Title 24 Highways, Bridges and Ferries**

The statutory authority for an adequate and integrated system of roads and streets, essential to general welfare of the State of North Dakota is broadly defined in the North Dakota Century Code (NDCC) - Title 24 Highways, Bridges and Ferries.

#### **24-01-01. Declaration of legislative intent**

Adequate roads and streets provide for the free flow of traffic; result in low cost of motor vehicle operation; protect the health and safety of the citizens of the state; increase property value; and generally promote economic and social progress of the state. Therefore, the legislative assembly hereby determines and declares that an adequate and integrated system of roads and streets is essential to the general welfare of the State of North Dakota.

Section 24-01-01 of the NDCC designates the director of the department of transportation as the custodian of the state highway system. This section also recognizes the efficient management, operation, and control of county roads, city streets, and other public thoroughfares are likewise a matter of vital public interest and bestows upon the boards of county commissioners similar authority with respect to the county road system and to local officials with respect to the roads under their jurisdiction. Chapter 24-01 contains several references to roads which imply municipalities and townships have statutory authority for local roads, without specifically stating such authority.

#### **Section 24-05-02. Fund—How expended**

The county road fund created by section 24-05-01 may be expended only for road machinery and for grading, ditching, and surfacing, in proper form and condition for public travel, such highways or parts of highways, howsoever established, as constitute the principal thoroughfares of the county, communicating with shipping points and marketplaces resorted to by inhabitants of the county, for which the means otherwise provided, in the opinion of the board of county commissioners, are not sufficient.

Section 24-05-17 of the NDCC provides the statutory authority for counties to own and operate road systems.

24-05-17. Responsibility for county road system.

The boards of county commissioners in their respective counties have the sole authority and responsibility to acquire land for, construct, maintain, and operate the county road system as designated and selected by them.

Title 58 Townships. Section 58-03-07, Subsection 12 and 13 define the statutory authority of a township and of electors of a township in regard to local roads.

Subsection 12. To authorize the levy of township taxes for the repair and construction of roads and bridges and for other township charges and expenses within the limits prescribed in Title 57.

Subsection 13. To direct the expenditure of funds raised for the repair and construction of roads within the limits provided in title 24.

Title 40 Municipal Government, does not specifically reference a municipal government's statutory authority to own and operate a city street system. However, as mentioned previously, Section 24-01-01 implies municipalities' statutory authority for local roads, without specifically stating such authority.

## **STATE STATUTORY AUTHORITY FOR PIPELINES**

### **North Dakota Pipeline Authority**

The North Dakota Pipeline Authority was established by the Legislature in 2007. The Authority was created for the purpose of diversifying and expanding North Dakota's economy by facilitating development of pipeline facilities to support the production, transportation, and utilization of North Dakota energy-related commodities. Legislation provided the Authority broad powers to participate in a pipeline facility through financing, planning, development, acquisition, leasing, rental, joint ownership, or other arrangements. The North Dakota Industrial Commission is the managing entity for the North Dakota Pipeline Authority.

The North Dakota Public Service Commission is responsible for siting all intrastate transmission pipelines. Crude oil interstate pipeline systems are sited through the ND Public Service Commission, while interstate natural gas pipelines are sited through the Federal Energy Regulatory Commission (FERC). Intrastate pipelines that meet the North Dakota Public Service's definition of "gathering" are exempt from the Public Service Commission siting process.

The federal government establishes minimum pipeline safety standards under the U.S. Code of Federal Regulations (CFR), Title 49 "Transportation," Parts 190 - 199. The Office of Pipeline Safety, within the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA), has overall regulatory responsibility for hazardous liquid and gas pipelines under its jurisdiction in the United States.

The Office of Pipeline Safety (OPS) inspects and enforces pipeline safety regulations for interstate gas pipeline operators in North Dakota. The OPS also inspects and enforces the pipeline safety regulations for interstate and intrastate hazardous liquid pipeline operators in North Dakota.

Through certification by OPS, the state inspects and enforces the pipeline safety regulations for intrastate gas pipeline operators in North Dakota. This work is performed by the North Dakota Public Service Commission.

## **STATE STATUTORY AUTHORITY FOR PORT, COMMERCE & RAIL AUTHORITIES**

### **Port Authorities**

The statutory authority for creating a Port Authority is provided for in Chapter 11-36.

Section 11-36-02 defines the general powers of a port authority.

“A port authority may operate a port that includes all real and personal property, structures, machinery, equipment, and appurtenances or facilities that are part of the port or used or useful in connection with the port either as facilities for the convenience of handling equipment, passengers, and freight or as part of port or port facilities operation...”

Section 11-36-03 provides for the creation of a municipal port authority.

Any municipality located near the junction of two paved and divided multilane highways, where two competing railroad intermodal lines intersect, and where two class I railroads interchange freight cars, may create by resolution of its governing body a public body corporate and politic to be known as a municipal port authority, which is authorized to exercise its functions upon the appointment and qualification of the first commissioners of the authority. The governing body by resolution may determine to exercise any or all powers granted to the authorities in this chapter until the powers have been conferred upon a municipal or regional port authority. Upon the adoption of a resolution creating a municipal port authority, the governing body of the municipality shall appoint, pursuant to the resolution, five persons as commissioners of the port authority. The commissioners who are first appointed are designated to serve for terms of one, two, three, four, and five years, respectively, but thereafter, each commissioner must be appointed for a term of five years, except that vacancies occurring otherwise than by expiration of the term must be filled for the unexpired term by the governing body.

Section 11-36-04 provides for the creation of a regional port authority.

1. Two or more municipalities, one of which is in this state located near the junction of two paved and divided multilane highways, where two competing railroad intermodal lines intersect, and where two class I railroads interchange freight cars, may create by joint resolution a public body, corporate and politic, to be known as a regional port authority, which is authorized to exercise its functions upon the issuance by the secretary of state of a certificate of incorporation. The governing bodies of the municipalities participating in the creation of a regional port authority shall appoint, pursuant to the joint resolution, no fewer than five persons as commissioners of the regional port authority. The number to be appointed and representation must be provided for in the joint resolution. The term of office of each regional port authority commissioner must be in accordance with Subsection 5. Each regional port authority, once created, shall organize, elect officers for terms of office to be fixed by agreement, and adopt and amend rules for its own procedure not inconsistent with section 11-36-07.

The statutory authority to levy a tax by a port authority or municipality is provided for in Section 11-36-14.

The port authority may certify annually to the governing bodies the amount of tax to be levied by each municipality participating in the creation of the port authority, and the municipality shall levy the amount certified, pursuant to provisions of law authorizing political subdivisions of this state to levy taxes for port purposes. The levy made may not exceed the maximum levy permitted by the laws of this state for port purposes. The municipality shall collect the taxes certified by a port authority in the same manner as other taxes are levied and collected. The proceeds of such taxes must be deposited in a special account or accounts in which other revenues of the port authority are deposited and may be expended by the port authority as provided in this chapter. Before issuance of bonds under section 11-36-10, the port authority or the municipality by resolution may covenant and agree that the total amount of the taxes then authorized by law, or such portion of the taxes as may be specified by the resolution, will be certified, levied, and deposited annually until the bonds and interest are fully paid.

The statutory authority to levy a tax by a county for port purposes is provided for in Section 11-36-15.

In counties supporting ports or port authorities, a levy not exceeding the limitation in Subsection 37 of section 57-15-06.7 may be made but this levy may not apply to any municipality that has a port levy.

### **Commerce Authorities**

The statutory authority for creating a Commerce Authority is provided for in Chapter 11-37.

Section 11-37-02 defines the general powers of a commerce authority.

A commerce authority may be created to:

2. Endeavor to increase the volume of commerce within its jurisdiction and this state through planning, advertising, acquisition, development, construction, improvement, maintenance, operation, and regulation of transportation, storage, or other facilities that promote the safe, efficient, and economical handling of commerce;

(Effective after July 31, 2013) Creation of commerce authority. One or more political subdivisions may form a commerce authority as follows:

1. Any political subdivision may create, by resolution of its governing body, a public body corporate and politic to be known as a commerce authority that may exercise its functions upon the appointment and qualification of the first commissioners of the commerce authority. The governing body by resolution may determine to exercise any powers granted to a commerce authority until the powers have been conferred upon a commerce authority. Upon the adoption of a resolution creating a commerce authority, the governing body of the political subdivision shall appoint, pursuant to the resolution, no fewer than five individuals as commissioners of the commerce authority.

2. Two or more political subdivisions, whether in this state or in an adjoining state provided that at least one political subdivision is in this state, may create by execution of a joint agreement authorized by resolution of the governing body of each participating subdivision, a commerce authority that may exercise its functions upon the issuance by the secretary of state of a certificate of incorporation. The governing bodies of the participating political subdivisions shall appoint, pursuant to the joint agreement, no fewer than five persons as commissioners of the commerce authority.

The statutory authority to support a commerce authority with a tax levy is provided for in Section 11-37-13. Tax levy by political subdivision.

The commerce authority may certify annually to the governing bodies the amount of tax requested to be levied by each political subdivision participating in the commerce authority. The governing body of each political subdivision shall consider the levy request of the commerce authority and determine the amount to be levied. The levy may not exceed the maximum levy permitted for commerce authority purposes. Each political subdivision shall collect the taxes levied on behalf of a commerce authority in the same manner as other taxes are levied and collected. The proceeds of the taxes must be deposited in a special account or accounts in which other revenues of the commerce authority are deposited and may be expended by the commerce authority as provided in this chapter. Before issuance of bonds under section 11-37-09, the commerce authority by resolution may covenant and agree that the total amount of the taxes authorized by law, or the portion of the taxes specified by the resolution, will be certified and deposited annually until the bonds and interest are fully paid.

### **Regional Railroad Authorities**

The statutory authority for creating a Regional Railroad Authority is provided for in Chapter 49-17.2

Section 49-17.2-02 provides for the creation of a regional railroad authority.

Two or more political subdivisions may form a regional railroad authority by execution of an agreement authorized by resolution of the governing body of each subdivision and approved by a sixty percent majority of the electors of the subdivisions voting on the question of adoption of the resolution.

Section 49.17.2-14 defines the powers of political subdivisions in aid of a regional authority.

Any subdivision participating in an authority may:

5. Furnish, dedicate, close, pave, install, grade, regrade, plan, or replan, to the extent allowed by title 24, streets, roads, roadways, and walks from established streets or roads to such railroad facilities.
6. Aid and cooperate with the authority in the planning, undertaking, construction, or operation of railroad facilities.

Section 49.17.2-16 further defines the powers of a regional authority

A regional authority may plan, establish, acquire, develop, construct, purchase, enlarge, improve, maintain, equip, operate, regulate, and protect its railroads, and railroad facilities used or useful in the operation of a railroad. For these purposes an authority may acquire by purchase, gift, devise, lease, or condemnation any real or personal property or any interest therein.

The statutory authority to support a regional railroad authority with a tax levy is provided for in Section 49-17.2-21. Annual certification of tax levy for authority – Levy of tax - Collection

An authority may certify annually to the governing bodies the amount of tax to be levied by said governing bodies for railroad purposes. Each subdivision shall levy the amount certified, pursuant to provisions of law authorizing political subdivisions of this state to levy property taxes. The levy may not exceed the maximum levy permitted by section 57-15-28.1. Each subdivision shall collect the taxes certified by a railroad authority in the same manner as other taxes are levied and collected and shall pay the revenues to the railroad authority.

49-17.2-23. Maximum tax levy - County levy not applied in subdivision making levy.

In subdivisions which are parties to an agreement creating a regional railroad authority, a levy, not exceeding the limitation in section 57-15-28.1 may be made for such purposes. A county levy pursuant to section 49-17.2-21 shall not apply to any other subdivision within that county making a levy under section 49-17.2-21.

**APPENDIX H**

**NDDOT PARTICIPATION IN REGIONAL FREIGHT PLANNING ACTIVITY**

## **NDDOT PARTICIPATION IN REGIONAL FREIGHT PLANNING ACTIVITY**

Consistent with the goals, initiatives and strategies identified in North Dakota's Statewide Strategic Transportation Plan, *TransAction III*, NDDOT is actively participating in the following regional freight planning activities.

### Pembina/Emerson Land Port of Entry Cross-Border Planning

In 1998, the North Dakota Department of Transportation (NDDOT) secured a grant through the Federal Highway Administration's (FHWA) Coordinated Border Infrastructure Program to conduct a transportation planning study for the Pembina/Emerson and Portal/North Portal Land Ports of Entry (LPOE). The provincial transportation agencies of Manitoba and Saskatchewan joined NDDOT in this effort, participating both financially and technically. The planning/engineering firm, KPMG of Vancouver, BC was retained to conduct the study. A report containing recommendations for transportation infrastructure improvements to the ports was published in July 2001. The report also offered a recommended structure for the creation of a cross-border planning team consisting of state, provincial and federal transportation and border agencies at the Pembina/Emerson LPOE. Two months after the report was published, the terrorist attack of 9/11 occurred effectively postponing any action on the study's recommendations including the creation of a cross-border planning team.

In 2008, Manitoba Infrastructure and Transportation (MIT) contacted NDDOT to determine interest in re-starting efforts to develop a transportation plan for the Pembina/Emerson LPOE. The state and provincial transportation agencies mutually agreed upon the importance of such a study. MIT successfully secured a grant from Transport Canada (under the Gateways and Border Crossing Fund-GBCF) for the transportation planning study at the Pembina/Emerson LPOE. NDDOT committed to providing MIT with matching State Planning and Research funds and technical support for the study. Concurrently MIT and NDDOT held meetings to discuss the purpose and benefits of the proposed study with the various Canadian and US border agencies operating the LPOE. A study partnership team that included MIT, NDDOT, General Services Administration (GSA), Customs and Border Protection (CBP) and the Canada Border Services Agency (CBSA) was formed. In 2011, the firm of Gannett-Fleming was selected to conduct the Pembina/Emerson Port of Entry Transportation Study.

In September 2012, Phase 1 (conceptual planning) of the Pembina/Emerson Port of Entry Transportation Study was published. The Phase 1 report provided a comprehensive assessment of the Pembina-Emerson LPOE resulting in a long range concept plan that addressing traffic demand and operational requirements to the year 2035. The concept plan's purpose' was to facilitate coordinated border facility and transportation infrastructure improvements by various agencies within the context of bi-national, national, state, and provincial frameworks. The concept plan also provided guidance to local municipalities for land use decisions in the vicinity of the Pembina-Emerson POE.

Another outcome of the Pembina/Emerson Land Port of Entry Transportation Study has been the creation of an Inter-Agency Planning Committee. The committee's purpose is to provide a forum for on-going, cooperative planning of the border crossing and transportation agencies.

The Manitoba Infrastructure and Transportation and the North Dakota Department of Transportation began implementing improvements identified in the Pembina/Emerson Port of Entry Transportation Study in the fall of 2012 and throughout the summer of 2013. Also, in the summer of 2013, a meeting was held to discuss implementation of border wait-time technology at the Pembina/Emerson LPOE.

#### Portal/North Portal Land Port of Entry Cross-Border Planning

In 1998, the North Dakota Department of Transportation (NDDOT) secured a grant through the Coordinated Border Infrastructure Program to conduct transportation planning studies at the Portal/North Portal and Pembina/Emerson Land Ports of Entry (LPOE). The provincial transportation agencies of Saskatchewan and Manitoba joined NDDOT in this effort. The planning/engineering firm, KPMG based in Vancouver, BC was retained as the consultant to conduct the study. A report containing recommendations for transportation infrastructure improvements to the ports was published in July 2001. Two months after the report was published, the terrorist attack of 9/11 occurred; effectively postponing any action of the study's recommendations. The report did not include a recommendation for the creation of a cross-border planning team for the Portal/North Portal LPOE.

Cross-border freight planning efforts involving NDDOT and the Saskatchewan Ministry of Highways and Transportation and the border crossing agencies at the Portal/North Portal LPOE was re-initiated in the summer of 2013 when a meeting was held to discuss implementation of border wait-time technology at the port. The participants at this meeting agreed in principal to move forward with the creation of a cross-border planning team. The team's first meeting will be scheduled subsequent to Transport Canada's presentation of preliminary plans for reconfiguration of the North Portal LPOE.

#### North/West Passage Transportation Pooled Fund Study

The North/West Passage Transportation Pooled Fund (TPF) Study is a multi-state cooperative program for the coordination, development, and deployment of Intelligent Transportation Systems (ITS) projects along the I-90 & I-94 corridor. In 2001, the Minnesota Department of Transportation approved the development of a multi-state project to coordinate ITS deployment along Interstate 90 and Interstate 94 from Wisconsin to Washington State. In 2003, North Dakota, Minnesota, and Wisconsin contributed funding for Phase 1 of the pooled fund study. The Phase 1 work program initiated integration of reporting systems, the development of automated road condition reporting, a program website and other site specific actions. In 2005, representatives from Washington, Idaho, Wyoming, Montana, North Dakota, South Dakota, Minnesota, and Wisconsin met to discuss the development of a North/West Passage transportation coalition.

Subsequent to Phase 1, the pool fund study has progressed through seven subsequent phases. Some of the topics studied in these seven phases include the development of an Integrated ITS Corridor Plan, consistent major event descriptions, regional permitting, travel information dissemination to commercial vehicle operators, truck parking availability and parking projects, and concepts for rural Transportation Management Systems(TMS)/Traffic Operations Center (TOC) operations.

The Federal Highway Administration serves as a monitoring body, providing strategic and technical input. The Steering Committee, consisting of members from the eight states meets monthly, or as necessary, to provide overall program direction.

### Great Northern Corridor Study

The Montana Department of Transportation received a Multi-State Corridor Operations and Management (MCOM) grant to study the Great Northern Corridor which is an east-west oriented transportation corridor spanning eight states from Illinois to Washington and Oregon. An initial study meeting of the participating states was held in May 2013.

The Great Northern Corridor Study is a pool fund study that is partially funded through the Federal Highway Administration's Multi-state Corridor Operations and consists primarily of east-west oriented transportation infrastructure tying together the northern tier of the western United States. This interconnected transportation system serves 27 million Americans in eight states. The primary focus of this corridor is the rail network from the Great Lakes to the Pacific and infrastructure such as highways, ports, and terminals. This infrastructure is aging and capacity demand is increasing.

A *Request for Proposal* was developed and the consultant firm of Olsson & Associates was selected in early December 2013 to conduct Phase 1 of the study. The project steering committee met with the consultant firm for a pre-study conference in January 2014.

### WASHTO MAP-21 Freight Discussion Group

The WASHTO MAP-21 Freight Discussion Group consists of Western Association of Highway and Transportation Official freight planning staff and was created in January of 2013. The group has multiple purposes including holding regular conference calls on emerging freight issues; sharing information on freight corridor planning, performance measures and improvement strategies; successful best practices, common truck performance analysis including information on truck bottlenecks; and other cross jurisdictional freight issues.

### FHWA's Trans Border Working Group<sup>26</sup>

"In October 2000, Transport Canada and the U.S. Department of Transportation concluded a [Memorandum of Cooperation](#) that highlighted the importance of coordinating closely on transportation initiatives along the Canada-U.S. border. The Memorandum cited the need for "increasing the degree and speed of communication" between both departments, and stressed the importance of "meeting more regularly to conduct information exchanges and discuss issues of mutual concern."

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<sup>26</sup> Almost the entire section on FHWA's Trans Border Working Group is a quote from the group's website, [http://www.thetbwg.org/about\\_e.htm](http://www.thetbwg.org/about_e.htm)

Out of this spirit, the Canada-U.S. Transportation Border Working Group (TBWG) was formed during January 2001. Its core membership includes federal, state and provincial departments of transportation from both sides of the border, U.S. Customs and Border Protection, and the Canada Border Services Agency. As well, Foreign Affairs Canada and the U.S. Department of State participate, as do other partners, such as regional planning organizations. Canadian provinces and U.S. northern Border States are partners in this forum, and attend meetings at their discretion. Transport Canada and the U.S. Federal Highway Administration co-chair the TBWG.” **North Dakota has been an active member of TBWG since its inception in 2000.**

“The Mission of the Transportation Border Working Group (TBWG) is to facilitate the safe, secure, efficient, and environmentally responsible movement of people and goods across the Canada-U.S. border. The TBWG brings together multiple transportation and border agencies, and other organizations, to coordinate transportation planning, policy implementation, and the deployment of technology to enhance border infrastructure and operations. As such, this forum fosters on-going communication, information sharing, and the exchange of best practices to improve the transportation and the safety and security systems that connect our two countries.”

The TBWG meets in a plenary session twice annually, and Canada and the U.S. alternate as hosts. The first plenary meeting was held in Windsor, Ontario in January 2002. In addition to biannual sessions, subcommittees of the TBWG meet regularly throughout the year to pursue issues and products that are of a broad interest to partners. For example, subcommittees presently are working to promote a Border Information Flow Architecture to enhance border technology interoperability, and maintain a Border Infrastructure Compendium that compiles descriptive information and infrastructure needs for all the Canada-U.S. land border ports of entry. Other key priorities for the TBWG, which are identified in our Action Plan, include data collection and analysis, border technology programs, and communications and information exchange.

Since Minister David Collenette and Secretary Rodney Slater signed the Memorandum of Cooperation in 2000, the TBWG has grown into a network of nearly 200 policy advisors, transportation planners, and other professionals across more than 20 states and provinces, a dozen federal agencies, and several planning organizations. As such, the TBWG has gelled into a productive mechanism through which Canadian and American partners pursue initiatives along the border that add value to the largest bi-lateral trading relationship in the entire world.”

### North Dakota Freight Plan

Early on, the North Dakota Department of Transportation recognized the importance of reaching out to our neighboring states and Canadian provinces during the development of our state’s freight plan. Letters from NDDOT’s director were sent to each surrounding jurisdiction explaining the purpose, scope and use of North Dakota’s Freight Plan. The surrounding states and provinces were involved in our three freight surveys identifying freight issues and trends, system needs, and bottlenecks. Each of the surrounding states and provinces were encouraged to identify interstate freight gateways and corridors, and provide us with comments on our draft freight plan. NDDOT is committed to working cooperatively with its surrounding states and provinces to improve the region’s freight transportation system.

**APPENDIX I**

**A SUMMARY OF METROPOLITAN PLANNING ORGANIZATION  
FREIGHT PLANNING IN NORTH DAKOTA**

## A Summary of Metropolitan Freight Planning in North Dakota

North Dakota currently has three Metropolitan Planning Organizations: Fargo-Moorhead Council of Governments (FMCOG), Grand Forks-East Grand Forks MPO (GF-EGF MPO), and the Bismarck-Mandan MPO (BisMan MPO).<sup>27</sup> Annually, the state's MPOs develop a Transportation Improvement Program (TIP) which may include freight-related infrastructure projects. Each MPO submits its TIP to NDDOT which incorporates the three MPO TIPs into the Statewide Transportation Improvement Program (STIP).

Section 1201 Subsection 134 of MAP-21 states,

“It is the national interest to encourage and promote the safe and efficient management, operation and development of a surface transportation system that will serve the mobility needs of people and **freight** and foster economic growth and development within and between states and urbanized areas...”

The section further states,

“The metropolitan planning process for a metropolitan area under this section shall provide for consideration of projects and strategies that will increase the accessibility and mobility of people and **freight**.”

### Bismarck-Mandan MPO Freight Planning

The Bismarck-Mandan MPO has conducted a Freight Program Assessment. The assessment asked questions covering eight subject areas to help the MPO determine its knowledge of, and ability to conduct freight planning. The eight assessment subject areas included: Institutional Organization, Public/Private Sector Relationships, Planning & Programming, Funding, Freight Operations, Multi-Jurisdictional Coordination, NHS Intermodal Connectors, and Land Use.

Building on the findings of the Freight Program Assessment, the MPO expanded its Long Range Transportation Plan (LRTP) to include a section on Freight Planning. Considering the state's strategic transportation plan, *TransAction III*, the MPO developed a freight vision and set of goals for the Bismarck/Mandan area. Recognizing the importance of freight as a factor of the costs to delivery raw materials and finished products, the MPO has worked toward to understand the nature and complexity of freight movements; detect freight system deficiencies, determine the origins and destinations of freight, and to identify freight generators and routes.

The BisMan MPO has addressed freight from a variety of aspects, ranging from goals and objectives to identification of project specific improvements or deficiencies.

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<sup>27</sup> The Fargo-Moorhead Council of Governments and the Grand Forks-East Grand Forks MPO straddle the North Dakota-Minnesota border. By agreement with the Minnesota Department of Transportation, NDDOT has the lead responsibility for cooperatively working with these MPOs to develop their Long Range Transportation Plans.

The Long-Range Transportation Plan (LRTP) is the guiding transportation document for the Bismarck-Mandan MPO area and considers all relevant modes of travel, including the movement of freight. The 2010-2035 LRTP identified 8 goals to address transportation issues within the region. Freight specific goals developed in the LRTP include the following:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- Increase the accessibility and mobility of people and for freight
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

Additionally, the LRTP identified freight movement needs including: the identification of freight routes; the identification of freight transportation related deficiencies; and an assessment of land use conflicts with associated truck routes.

Freight concerns are commonly considered in all Bismarck-Mandan MPO subarea and corridor studies. Studies which had a significant freight consideration included: the 71<sup>st</sup> Avenue-Centennial Road Corridor Study; the Northern Bridge Corridor Study; and the Bismarck-Mandan Regional North/South Beltway Corridor Study.

Annually, the Bismarck-Mandan MPO develops a “Monitoring Report” to track recent trends in population, housing, employment, and transportation. Freight specific elements are tracked within this document. The Monitoring Report has identified the locations of industries with a propensity for freight movement, as well as, identified significant freight corridors (by percentage average annual daily truck traffic) and examined recent trends regarding changes of growth or decline in truck movements, within the Bismarck-Mandan MPO area.

The Bismarck-Mandan MPO is currently working with local member jurisdictions and emergency managers to identify hazardous material routes within the region. It is anticipated that recommendations for hazardous material routes will be developed in the near future.

## Fargo-Moorhead Council of Governments Freight Planning

Freight issues and concerns have been addressed in policies and plans prepared by the Fargo-Moorhead Metropolitan Council of Governments (Metro COG). In these instances, freight has been included as part of the Long-Range Transportation Plan (LRTP). This has included input collected from roundtable discussions and focus groups with regional business and industry leaders and other freight stakeholders. However, until recently, Metro COG has not worked on any comprehensive plan dedicated solely to freight activities in the Fargo-Moorhead Metropolitan area.

Metro COG is currently developing a Regional Freight Profile. This is the first time that Metro COG has worked on a stand-alone freight document. The purpose of this document is to analyze the different freight components present in the Fargo-Moorhead

area and to identify freight generators and other important freight programmatic elements.

One of the features of the Regional Freight Profile is a detailed analysis of the different freight generators in the Fargo-Moorhead area. A freight generator is defined as a specific building or defined area that produces freight-related traffic. Based on best practice, freight generators in the Fargo-Moorhead area were separated into three tiers:

- Tier 1 – Goods Movement Dependent Groups
- Tier 2 – Goods Movement User Groups
- Tier 3 – Incidental Goods Movement Groups

Tier 1 groups are businesses and industries that have goods movement as a central focus of their activity. Tier 2 groups are businesses and industries that depend on regular goods movement, though it is of lesser importance to business operations and secondary to other business purposes. Tier 3 groups use goods movement services incidentally and do not ship or receive goods in significant volume. Tiers were determined by business and industry codes in the 2010 NAICS data for the Fargo-Moorhead area. Only those businesses and industries with 10 or more employees were included in the freight generator analysis.

The Regional Freight Profile also will analyze the different modal choices for freight transportation including truck, rail and air. The truck freight profile gives percentages and values of inbound, outbound and through-freight carried by trucks in both North Dakota and Minnesota. The rail freight profile gives an overview of impacts rail movements have on the Fargo-Moorhead area. It identifies the different freight carried by rail as well as the number of trains per line in the Fargo-Moorhead area. The rail freight profile also looks at activities at Dilworth Intermodal Facility and the 12th Avenue Rail Yard in Fargo. The air freight profile looks freight totals and the value of goods handled by Hector International Airport in Fargo.

The Regional Freight Profile is tentatively schedule for review by Metro COG's TTC and Policy Board in March 2014. With the approval of the Regional Freight Profile and the development of NDDOT's state freight plan, Metro COG anticipates moving forward in creating its own regional freight plan. This regional freight plan would incorporate planning elements from both the regional freight profile and state freight plans from both NDDOT and MnDOT. The regional freight plan would include a freight policy directive that would tie in strategic regional freight goals with state and national goals and produce a series of objectives for realizing those goals.

#### Grand Forks-East Grand Forks MPO (GF-EGF MPO) Freight Planning

Freight and commodities are moved internationally and regionally thru the GF-EGF MPO area via highway, rail, pipeline, and air. The focus of this analysis was to identify those modes that most affect the metro area's streets and highway system. The MPO staff evaluated truck and rail freight movements, connectivity, safety needs and issues

and opportunities. The findings from this analysis identified strategies and improvement projects, which were then considered in the MPO's "Range of Alternatives" process. Additionally, the freight information will be shared with each State DOT's freight planning process as required by MAP-21. In the meantime, the GF-EGF MPO recognized the goals that have been established under the National Freight Policy:

- Improving the contribution of the freight transportation system to economic efficiency, productivity, and competitiveness.
- Reducing congestion on the freight transportation system.
- Improving the safety, security, and resilience of the freight transportation system.
- Improving the state of good repair of the freight transportation system.
- Using advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system.
- Reducing adverse environmental and community impacts of the freight transportation system.

The GF-EGF MPO embraced these goals as part of its Long Range Plan's development and will continue to collaborate and coordinate with the freight community during the Street and Highway Plan's implementation program. The GF-EGF MPO will also work with local, state and national agencies to ensure future state freight plans are integrated accordingly into the GF-EGF MPO area's planning process.

Over the years, the GF-EGF MPO, as part of its planning process, has established partnerships with the freight community to address needs and issues. Coordinating and collaborating with the freight community has resulted in a number of freight-related transportation improvement projects being identified and implemented.

As part of the Long-Range Plan update, the freight community participated in a series of interviews and focus group meetings. From these discussions, specific metro freight issues, opportunities and needs were compiled. The list of issues provided guidance in developing solutions and prioritizing future transportation improvements. The identified freight needs have been added to those identified in the last Long-Range Plan and by the 2009 Metro Freight Study.

**APPENDIX J**  
**STAKEHOLDER AND PUBLIC INVOLVEMENT**  
**FREIGHT PLAN SURVEYS & RESPONSES**

## **NDDOT Stakeholder and Public Involvement - Freight Plan Surveys**

An important element of NDDOT's planning effort is stakeholder and public involvement. In May 2013, an initial freight plan meeting was held to inform key stakeholders NDDOT was launching the development of a state freight plan. The meeting attendees were asked questions that were used to develop a three-part freight survey.

Following the initial stakeholder meeting, NDDOT developed a mailing list of more than 350 businesses, individuals, associations, and governmental entities to receive the survey. The first survey solicited stakeholder opinions on significant trends and issues affecting the future of freight movements. The second survey was designed to identify the needs of North Dakota's freight system. The third survey's questions asked to identify freight bottlenecks, freight generators with transportation problems, and conditions that cause freight delays.

A combination of electronic and regular mail was used to conduct the survey. In each subsequent survey the number of survey respondents using mail dropped, while the percentage of people responding electronically increased.

In addition to being included as stakeholders responding to the three-part survey mentioned above, the states and provinces surrounding North Dakota were asked to complete a fourth survey regarding cross jurisdictional issues affecting freight movements including bottlenecks, gateways and corridors, and future freight system infrastructure needs. This survey was conducted electronically. All of North Dakota's neighboring states (Minnesota, South Dakota, and Montana) and Canadian provinces (Manitoba and Saskatchewan) responded.

NDDOT's stakeholders and the public were afforded the opportunity to comment on the draft freight plan prior to it being adopted for implementation. Outreach was also conducted to ensure minority populations, people with limited English proficiency and physical disabilities were aware of NDDOT's freight planning effort and had the opportunity to ask questions and offer comments.

On the following pages are copies of the tabulated survey results.

## North Dakota Freight Survey No. 1

A total of 143 people, businesses and organizations responded to NDDOT's first freight survey which solicited input on significant trends and issues affecting future freight movements. People responding to the survey were asked if they Agreed, Disagreed, or had No Opinion to ten identified freight trends. People responding to the survey also could identify additional significant trends and issues that were not listed.

In tabulating the survey responses, two columns are shown. The first column factors in people who commented indicating "No Opinion." The responses agreeing with the stated trend in this column range from a high of 87.4% agreeing, to a low of 58.7% agreeing. Further analysis of people commenting having, "no opinion," found these were usually people whose primary freight mode was different than the mode referred to in the trend.

The second column does not factor in people who indicated, "No Opinion." The two different ways of computing respondents' responses produce nearly the same rank order of trends. However, when those responding, "No Opinion," are not factored in, the percentage of people agreeing with all of the trends jumps significantly. The responses agreeing with the stated trend in this column range from a high of 96.7% agreeing, to a low of 77.0% agreeing.

**Trend 1      North Dakota's oil and natural gas production is expected to double by 2017, and to continue to rise for the next 10 to 15 years. Additional freight system capacity (both rail and pipeline) will be necessary to meet this challenge**

77.6% - Agree

4.9% - Disagree

17.5% - No Opinion

94.4% - Agree

5.6% - Disagree

**Comments:** It is important to consider the implications of all types of movements, not just crude oil, refined oil products, natural gas and processed gas products, as we prioritize improvements to the freight system. Movements of these commodities impact the state's entire freight system, not just western North Dakota. The movement of oil and natural gas products by rail has resulted in congestion and is negatively impacting the movement of manufactured goods and agricultural commodities. Since oil is traded on a worldwide basis, international factors such as the performance of China and India's economies and foreign oil imports have the potential to significantly influence the demand for North Dakota's oil.

Oil and natural gas development in the state is also significantly impacting the movement of air freight. Air freight at Williston, Dickinson, Minot and Bismarck has increased. At Williston, FedEx installed a nine gate sorting portable facility to handle demand. Aircraft flights are adjusted to match the demand on a daily basis from regional freight hubs in Grand Forks and Sioux Falls. Minot needs additional aircraft parking spaces for air cargo aircraft. The Dickinson airport has added additional hangar space for aircraft due to inclement weather. Bismarck has established an aircraft access point for vans to intercept and transport the freight from planes.

**Trend 2**      **While the volume of ND crude oil moved by rail may increase; downward pressure on world crude oil prices coupled with increased pipeline capacity will lower rail’s share of total movements**

67.8% - Agree	83.6% - Agree
13.3% - Disagree	16.4% - Disagree
18.9% - No Opinion	

**Comments:** Some people wondered why this question is important. They felt the railroads and oil companies will determine which mode will be used to export the state’s oil. Other people who responded understood the possible impact of moving oil by rail versus pipelines on the overall capacity of the freight system. They commented that increasing oil movements by rail is negatively impacting the movement of agricultural commodities and resulting in automobile/rail conflict in the state’s urban areas. Some people commented saying moving oil by pipeline is more efficient; others were concerned about moving oil safely by either pipeline or rail. Some individuals commented this trend may be slow in coming. Finally, some people commented saying both pipelines and rail freight will be needed to move all of the oil North Dakota produces in the future.

**Trend 3**      **North Dakota is experiencing unprecedented population growth resulting in increased volumes of inbound consumer-related freight; most of this freight will be transported by trucks**

85.3% - Agree	96.1% - Agree
3.5% - Disagree	3.9% - Disagree
11.2% - No Opinion	

**Comments:** Trucks move 70% of all consumer-related freight. In the future, most of the state’s consumer goods will come in by truck even if North Dakota has a freight rail port (intermodal containers). By national standards, North Dakota’s population growth is small and consumer goods will likely come via truck from large distribution centers.

**Trend 4**      **North Dakota’s increasing agricultural production will result in higher volumes of freight; in-bound seed, fertilizer, machinery, fuel, etc. and outbound bulk commodities, processed agricultural products, etc.**

68.5% - Agree	91.6% - Agree
6.3% - Disagree	8.4% - Disagree
25.2% - No Opinion	

**Comments:** Annually, North Dakota’s agricultural production fluctuates, but over the long haul agricultural production has continued to rise. Increased productivity, shifts to higher output crops such as corn, genetic improvements, changes to national farm programs (e.g. Conservation Reserve Program) will add to the state’s agricultural production. Corresponding increases of farm machinery, fertilizer, seed and fuel will likely follow although some of these items may see

increased production within the state. The continued increase in specialty crops will create more truck and rail freight volume.

**Trend 5**      **While the number of licensed grain elevators may decline, total elevator storage and throughput capacity will increase**

87.4% - Agree	94.7% - Agree
4.9% - Disagree	5.3% - Disagree
7.7% - No Opinion	

**Comments:** The trends over the past 20 years tend to bear this out. As the number of grain elevators declines, more storage and throughput capacity will be needed. More grain shuttle facilities will be built and rationalization and modernization of the grain elevator industry will likely continue.

**Trend 6**      **Spin-off industries producing equipment, supplies, and technology supporting the state's growing agricultural, manufacturing and energy sectors will create new freight movements and significantly increase the volume of freight**

82.5% - Agree	96.7% - Agree
2.8% - Disagree	3.3% - Disagree
14.7% - No Opinion	

**Comments:** Some people were skeptical and weren't sure this was happening while many people stated they think this trend is already happening. Those who saw this already taking place tended to see this trend creating opportunities for new businesses, creating a demand for containerized cargo, a distribution center, and expanded truck freight services.

**Trend 7**      **Worldwide demand for high value-added food products will continue to grow. Reaching consumers will require North Dakota's freight system to be globally integrated, service and rate competitive, and technologically advanced**

72.0% - Agree	93.6% - Agree
4.9% - Disagree	6.4% - Disagree
23.1% - No Opinion	

**Comments:** The people who agreed with this trend commented the state's freight system needs to have this happen sooner, than later. They commented these system characteristics would help the state deal with economic downturns and be a wise investment.

**Trend 8**      **Worldwide, many industries participate in an economy that is reliant on time-definite transactions, production flexibility and speed; air freight will play an ever increasing role meeting these demands**

63.6% - Agree	88.3% - Agree
8.4% - Disagree	11.7% - Disagree
28.0% - No Opinion	

**Comments:** Some of the people commenting on this trend didn't believe the products North Dakota produces (agricultural and energy) are well-suited for air freight. Other people who commented saw air freight becoming increasingly more important as the state's economy continues to evolve. All of the people who commented understood air freight's unique role in moving higher-value, time sensitive freight; some commented about studies that show increased demand for air freight services.

**Trend 9**      **North Dakota's agricultural producers and manufacturers, reacting to their customer's demands, will require containerized rail service that is accessible and affordable**

58.7% - Agree	77.8% - Agree
16.8% - Disagree	22.2% - Disagree
24.5% - No Opinion	

**Comments:** A large number of people commented on this trend indicating they had no opinion, while a few thought the state's agricultural production will continue to rely on bulk movements. The people responding by agreeing with the trend did so enthusiastically saying things like, "completely agree," "most definitely," and "I couldn't agree more." One person commented rail container service will be needed as consumer demand for Identity Preserved products grows.

**Trend 10**      **Differences in truck size and weight regulations between North Dakota and neighboring states and provinces hamper the region's economic competitiveness. Industries dependent on trucking would benefit significantly from harmonization of regulations**

77.6% - Agree	91.0% - Agree
7.7% - Disagree	9.0% - Disagree
14.7% - No Opinion	

**Comments:** Most of the people commenting on this trend agreed that harmonization of truck size and weight regulations would be good for North Dakota's producers, provided harmonization did not result in lower weight limits or additional red-tape. Many people commented they shipped products to surrounding states and provinces; increased harmonization of truck regulations would help shippers be more competitive and increase compliance.

## **Additional Stakeholder Identified Freight-Related Trends and Issues:**

### Non-mode specific

- Continued expansion of North Dakota's economy is greatly dependent on finding people to fill the state's labor shortage.
- Continued growth of biofuels will require additional movement of hazmat materials via highways and rail as well as other co-products such as Dried Distillers Grains (DDGs). These movements will increase the need for regulatory oversight.
- DDGs will/are becoming an internationally traded commodity. Capacity to move large volumes of DDGs to overseas markets will be required. This may be via intermodal containers or large bulk rail movements.
- The grain elevator business is changing quickly and will continue to evolve.
- Local governments in North Dakota's oil production area need more money to deal with the ever increasing demand on roads and bridges, and other transportation infrastructure such as rail separations and crossing upgrades.
- Companies build facilities without discussing their transportation needs with the Department of Transportation or local governmental units. This often results in facilities being located on highways that do not provide the transportation service required by the business. In turn, this then results in companies requesting expensive infrastructure upgrades.
- Public concern is growing in regard to truck, rail, and pipeline safety and movement of hazardous materials. The movement of hazmat material by rail and pipeline can reduce the volume moved via trucks.
- Preventing acts of terrorism to the freight system (all modes).
- Implementation of spring load restrictions.
- Non-truck friendly (narrow, poor turning radii, etc.) roadways – (agricultural, energy development equipment continues to get bigger and heavier.
- The disparity of legal truck size and weight limits between states/provinces inhibits the free flow of freight.
- The uncertainty of public funding sufficient to maintain and improve the freight transportation system (all modes).
- Transportation projects that improve the movement of freight are competing for funding with projects designed to move people.
- The "lack" of a sustainable, long-term, "freight vision."

### Highways

- Highways all across North Dakota are experiencing increased truck traffic carrying freight to and from the state's oil and gas producing region.
- Agricultural production continues to grow due to increased crop yields and intensified agricultural practices and a reduction in Conservation Reserve Program (CRP) acreage coupled with farmland being converted to crops that produce more weight per acre (e.g. wheat acreage converted to growing corn). Overall, the amount of agricultural land removed from production and converted to oil well sites will be more than offset by the amount of land converted from CRP acreage to farmland.

- Facilities in eastern North Dakota are serving as Just-In-Time (JIT) storage/transfer facilities for agricultural processors in Minnesota. ND's higher truck load limits (105.5K) encourage the development and location of large storage agricultural facilities, positioning production for final delivery to processing plants in Minnesota which has lower truck load limits (80K). Facilities generating JIT freight movements concentrate heavy truck vehicle movements on specific routes which accelerates highway deterioration.
- North Dakota's highway system attracts through state movements of freight due to lower oversize/overweight permits fees than surrounding states and provinces. Some trans-Canada freight movements use North Dakota's highway system due to lower US fuel costs, shorter travel distances to destinations south of the Great Lakes, and access to the US Interstate highway system.
- More in-state processing of agricultural commodities is resulting in additional truck traffic (bulk commodity movements by rail is shifting to trucks).
- There is continued pressure from captive rail shippers to increase truck size and weights limits. Increases in truck size and weight are generally opposed by rail and waterway interests.
- The distance trucks hauling water for fracking has decreased as more sources of water have been developed.
- The number of rail/highway/pipeline transload facilities has been increasing; however, the number of sites suitable for additional transload facilities is rapidly decreasing.
- Gravel sources suitable for road surfacing and construction are rapidly being depleted.
- The development of multiple oil well pads has reduced the number of trucks necessary to drill a well; however the sheer volume of wells being drilled has increased overall truck traffic.
- Counties, townships and cities in the state's oil producing region do not have enough money to maintain their roads.
- Some counties in the state's oil producing region are shifting traffic on to the State Highway System by posting lower load limits.
- Equipment used in the energy and agricultural sectors of the state's economy will continue to get heavier and larger.
- Effective truck size and weight enforcement will be necessary to protect the highway transportation infrastructure and to ensure a level playing field amongst producers.
- Truck traffic will continue to increase significantly as the state's energy, agricultural and manufacturing industries continue to grow.
- Industries with significant logistical demands will continue to primarily locate on Interstate and four-lane highways, and railroad mainlines.
- As truck traffic volumes continue to grow the capacity of main arterials will require infrastructure upgrades – truck bypasses, center and shoulder turning lanes, load carrying capacity, grade separations, and management strategies e.g. access management.
- As truck freight shipments increase there is a strong perception the state's highways are not as safe as they used to be.
- Truck traffic along North Dakota's major highways will require corridor planning and intermodal coordination and cooperation.

- Statewide, future levels of truck traffic will be significantly influenced by the volume of freight associated with developing the state's energy resources (oil, natural gas, wind and coal) and increases in agricultural production.
- Development of more natural gas processing plants will result in more transportation of refined products. Natural gas processing plants located away from railroad lines will result in higher truck volumes.

#### Rail

- Containerized exports of soybeans, peas and lentils to Asia have been growing; additional growth is highly dependent on the proximity to, and the availability of, empty containers, and rates.
- Rail service is increasingly becoming more congested. Some people believe the Class I railroads are prioritizing oil shipments over the movement of agricultural products and Amtrak service.
- Continued abandonment of railroad branch lines will result in additional localized truck traffic.
- The increased volume of oil being shipped by rail is rapidly consuming the rail system's capacity and will require large capital investments in right-of-way, track, locomotives and maintenance.

#### Air Freight

- Air freight is typically used to transport goods that have a high value to weight ratio, and those that are perishable or extremely time sensitive.
- Commercial air carriers are using larger aircraft to service airports in western North Dakota. These aircraft are capable of carrying more next-day and second-day air freight.
- There is an upswing in the amount of air freight (energy industry equipment parts) to western North Dakota to service the oil and gas industry.
- Air freight will continue to grow serving the industries associated with the production of oil and gas, agricultural crop production, manufacturing, and product and customer service.
- As more businesses locate in western North Dakota in-bound and out-bound air freight will be more balanced – currently in-bound freight is significantly higher.

#### Pipelines

- Many people see the development of more gathering pipelines as a logical, safe and efficient method for moving oil from a well-site to a transload facility or pipeline transfer point.
- More oil will move via pipelines as additional capacity is developed. As the state's oil production increases (10 to 15 years) the volume of oil moving via railroads will also grow.

## North Dakota Freight Survey No. 2

A total of 98 people, businesses and organizations responded to NDDOT's second freight survey which solicited input to identify the needs of the state's freight transportation system. People responding to the survey were asked if they Agreed, Disagreed, or had No Opinion to ten freight system needs. People responding to the survey also could identify additional significant freight system needs that were not listed.

In tabulating the survey responses, two columns are shown. The first column factors in people who commented indicating "No Opinion." The responses agreeing with the stated trend in this column range from a high of 94.9% agreeing, to a low of 61.2% agreeing. Further analysis of people commenting having, "no opinion," found these were usually people whose primary freight mode was different than the mode referred to in the trend statement.

The second column does not factor in people who indicated, "No Opinion." The two different ways of computing respondents' responses produce nearly the same rank order of trends. However, when those responding, "No Opinion," are not considered, the percentage of people agreeing with all of the trends jumps significantly. The responses agreeing with the stated trend in this column range from a high of 97.9% agreeing, to a low of 73.2% agreeing.

### **Need 1      Access to competitively-priced intermodal container rail service**

64.3% - Agree	91.3% - Agree
6.1% - Disagree	8.7% - Disagree
29.6% - No Opinion	

**Comments:** A large percentage of people commenting on this freight system need indicated, "No Opinion." Further analysis of the people expressing, "No Opinion," indicated they were shippers who would not normally use intermodal rail service. When the people expressing, "No Opinion" were not considered, the percentage of people agreeing with the need jumped significantly. Most of the comments agreeing with this need referenced Identity Preserved grains, specialty crops, and value-added agriculture.

### **Need 2      Additional interstate pipeline capacity to export North Dakota crude oil**

85.7% - Agree	95.5% - Agree
4.1% - Disagree	4.5% - Disagree
10.2% - No Opinion	

**Comments:** Many of the people who agreed with this freight system need acknowledged there currently is not enough pipeline capacity and railroads are needed to ship North Dakota crude to locations that cannot be accessed by rail. People also commented that more pipeline capacity would ease rail congestion and make more capacity

available to ship agricultural commodities. Still other people responded by citing pipelines as being safer and more efficient.

**Need 3      Expansion of the crude oil and natural gas pipeline gathering system**

84.6 % - Agree	96.5% - Agree
3.3% - Disagree	3.5% - Disagree
12.1% - No Opinion	

**Comments:** We did not receive many additional comments regarding this system. The few comments we did receive voiced support for more gathering pipelines as a means to reduce truck traffic on the roadways.

**Need 4      First/Last mile connections linking freight generators to the state’s principal freight system**

63.3% - Agree	94.0% - Agree
4.1% - Disagree	6.0% - Disagree
32.6% - No Opinion	

**Comments:** A few people commented indicating they didn’t understand what First and Last Mile Connections are. The people who did comment indicated development should be located along US and state highways or major local roads since there are not enough resources to improve all of the roads. Some people also commented that roads should be built using a 30-year design and considering life-cycle costs for all building options.

**Need 5      Targeted highway improvements to eliminate impediments (load restrictions, overhead structures, etc.) to the movement of freight**

94.9% - Agree	97.9% - Agree
2.0% - Disagree	2.1% - Disagree
3.1% - No Opinion	

**Comments:** Many of the comments indicated state highways have not kept pace with the demands of the freight system; roads need to be built to carry heavier loads and have wider lanes and shoulders. One person commented North Dakota should request to be a pilot state for using Longer Combination Vehicles – two 53 foot trailers as a way to reduce truck congestion and emissions while improving carrier efficiencies.

**Need 6 Additional mainline railroad capacity and additional railroad safety enhancements at crossings**

79.6% - Agree	94.0% - Agree
5.5% - Disagree	6.0% - Disagree
14.9% - No Opinion	

**Comments:** When only the people who agreed or disagreed were considered, a percentage of the responders agreed with the need for more rail capacity. This support for additional mainline rail capacity appears to be strong across of North Dakota’s main economic freight-dependent rail sectors. While most of the comments acknowledge the railroads have the primary responsibility for adding capacity, some comments expressed some degree of support for public/private partnerships, especially for improvements like grade separations, quiet zones and rail crossing safety improvements.

**Need 7 Upgrading some Short Line railroad branch lines to carry 286,000 lb. rail cars**

61.2% - Agree	89.6% - Agree
7.1% - Disagree	10.4% - Disagree
31.7% - No Opinion	

**Comments:** There appears to be some support for upgrading some shortline railroad branch lines as a way to reduce the volume of truck traffic on primarily local roads.

**Need 8 An access management program for the State Highway System**

70.0% - Agree	88.7% - Agree
8.2% - Disagree	11.3% - Disagree
21.8% - No Opinion	

**Comments:** The only comments received indicated the responders didn’t understand what this would entail.

**Need 9 A statewide, coordinated system (state & local roads), for permitting and routing of oversize/overweight vehicles, similar to the existing permitting for state routes**

61.2% - Agree	73.2% - Agree
22.1% - Disagree	26.8% - Disagree
16.4% - No Opinion	

**Comments:** There was a wide variety of comments on this system need. Most people who responded indicated a coordinated permitting system would be very helpful, while some people expressed frustration with state’s permitting system. People in

western North Dakota were generally less supportive of a statewide coordinated system permitting citing the oil and gas producing counties have a system that is working well. People in the remainder of the state expressed more support for coordinated permitting system. Still other people commented the state has too many roads and administering a statewide permitting system would be a nightmare.

**Need 10 Improved harmonization of truck size and weight regulations with neighboring states and provinces**

71.4% - Agree

7.1% - Disagree

21.5% - No Opinion

90.1% - Agree

9.9% - Disagree

**Comments:** Most of the comments agreed with efforts to improve harmonization of truck size and weight regulations with neighboring states and provinces, provided harmonization did not end in more restrictions on North Dakota shippers. Comments also indicated that cross border freight movement is becoming more important and many businesses regularly experience difficulties moving freight across state borders.

**Additional Stakeholder Identified Freight System Needs:**

Highways

- Increasing the load capacity of highways serving freight generators that are the origin/destination of heavy vehicle movements.
- Additional capacity (more lanes) and improvements (adding turning lanes, wider lanes to accommodate trucks, etc.) accessing major freight generators will be necessary.
- Improving corridors to be truck-friendly (reducing weight/load/width/height restrictions, turning radii, access management, grade separations, etc.).
- Increasing the load capacity and width of lower volume secondary roads – eliminating spring load restrictions.
- Effective truck size and weight enforcement to protect the highway system and encourage compliance.
- The development of truck bypasses around urban areas.
- Improving freight movement connections between the highway and rail networks – development of last/first mile connectors.
- Increased coordination with surrounding states and provinces - planning and building projects to improve freight flows.
- Developing of more weigh-in-motion sites to detect overloaded trucks and protect the highway system while still allowing the movement of legal loads.
- Increased cooperation between the public and private sectors to locate freight generators on infrastructure that meets their transportation needs.

## Rail

- The Class I railroad mainlines are becoming more congested. To alleviate this situation will require more double tracking, adding sidings, and improvements to rail classification and interchange yards.
- A continuing shift in agricultural production from traditional crops to new crops (wheat to corn or peas) will create a demand for more rail cars or for container rail service

## Air Freight

- Some smaller airports will need to have their runways lengthened to handle jet air freight (Gwinner, Killdeer, etc.).
- Air freight services (UPS and Fed Ex) will need to expand their facilities to service the level of air freight being handled.

## **What truck volume do you believe constitutes a major freight generator?**

Survey responses to this question varied widely. The daily truck volumes cited below represent the best average estimate of the mid-range responses.

Year round – 50 trucks per day

Seasonal – 75 trucks per day - Seasonal being a period of at least three months in duration

The daily volume of trucks is one manner of measuring freight movements. However, the concentration of truck movements within a short period of time (100 trucks movements in a day versus 100 truck movements within 8 hours) should also be considered when defining a major freight generator. For example, a shuttle grain elevator may generate 50 to 100 trucks over several days while a water depot in oil country make generate as many trucks or more within a few hours.

### North Dakota Freight Survey No. 3

Are you aware of any conditions that create a freight bottleneck on North Dakota's transportation system? Please identify the condition. (To clarify your concern, you may provide an example location where the condition exists; include the highway number (e.g. ND 1) and the approximate distance from a mile marker, town, cross road, railroad track, or other notable landmark) How does the bottleneck impact the flow of freight? For example, the bottleneck may delay freight movements, result in a detour, or create a safety concern.

Responses:

- The overall volume of freight traffic (agricultural, oil/energy, manufacturing, and consumer products) statewide is greater than the railroads can service resulting in train delays and shipments missing delivery schedules. This situation is exacerbated by factors such as a shortage of train crews, insufficient rail infrastructure (double track, sidings, etc.), seasonal repositioning of locomotives and grain cars, and freight rates, etc.
- Higher volumes of rail traffic coupled with longer trains are causing highway/rail conflicts (e.g. more frequent and longer vehicle delays, crosstown access for emergency vehicles, etc.) at many mainline rail crossings (e.g. 42nd St & Demers in Grand Forks).
- Spring load restrictions reduce the effective capacity of truck (e.g. ND 49 south of I-94) and rail transportation.
- The higher volume and percentage of truck traffic statewide, but in particularly the oil producing area, is slowing traffic flows and creating roadway safety issues.
- The movement of oversized oil field equipment is impeded on highways (e.g. US 85) with structures that may meet design standards but have restricted clearance (Long X Bridge), and other limitations results in lengthy detours and increased operating costs.
- The lack of pipeline capacity has resulted in more oil moving by rail which has resulted in rail congestion and other issues (e.g. crossing safety upgrades and quiet zones).
- In high water years, such as 2011, there are numerous segments of state and local roads (e.g. I-29 north of Fargo) underwater resulting in longer trips, delays, additional transportation costs and infrastructure damage. Some highway segments also experience frequent closures due to heavy snows. High water and snow also affect some rail segments (e.g. Devils Lake to Churchs Ferry).
- Class I Railroad pricing and service preference for unit train shipments is resulting in poorer service to branchline agricultural shippers, which in turn is resulting in more long distance truck traffic. Grain shipments from branchline elevators are being delayed resulting in missing shipping connections at Pacific Northwest seaports.
- Oil freight movements on some branchlines (Mandan to Zap) are impacting the movement of coal (Antelope Valley Station to Leland Olds Station) and agricultural commodities.
- Shuttle grain facilities, fertilizer plants, and other freight generators are being built on roads with a spring load restriction which inhibits freight movements and creates a demand for roadway upgrades.
- Rail derailments, pipeline leaks, and highway incidents impede freight movements. These situations often result in lengthy delays, rerouting traffic and require emergency responses.

- Two-lane highway sections on major freight corridors (e.g. US 52 between Minot and Jamestown) lengthen transit time and increase operating costs.
- The intermodal facility (Port of North Dakota) in Minot is not functional.
- I-94 Interchanges 159 and 161 inhibit truck flows due to their configurations and operational issues.
- Truck freight movements are impeded when cities with major freight corridors lack truck reliever routes. Highways and roads through many cities in the oil producing counties of North Dakota were not designed and built for the increased truck volumes associated with the current oil boom (e.g. Dakota West Parkway in Williston and ND 22 in Dickinson).
- The lack of cross border planning and coordination (design, construction and operation) at Land Ports of Entry (e.g. Pembina/Emerson and Portal/North Portal) impedes the movement of freight.
- Several rail crossings were identified as freight bottlenecks due to a variety of conditions. (The referenced crossings have been referred to NDDOT's Planning and Asset Management for review)
- The location of major freight generators in urban areas (e.g. the Magellan Tank Farm in West Fargo) creates unique truck traffic challenges.
- Major traffic generators that lack acceleration and turning lanes impede traffic flows and create safety risks.
- Rural state highway intersections with significant truck volumes (e.g. US 85 and ND 200) result in slower traffic flows and impede the movement of freight and increase the risk of crashes.
- Overloaded trucks are causing accelerated pavement damage ultimately resulting in reduced freight capacity.
- Major truck freight corridors lack truck-friendly features such as turning and acceleration lanes, chain-up areas, truck parking rest stops, etc.
- There shortages of some types of truck freight services (flatbed, LTL, tanker, etc.) particularly in the oil production area. In some cases, the availability of service is affected by the lack of outbound backhauls.
- Some major freight generators (Dore rail transload facility) lack adequate (particularly load limits) "last and first mile" roadway (state and local roads) connections which makes freight transfers between modes difficult.

**Are you aware of any other issues that cause freight traffic to be delayed, backed up, or otherwise impacted (please indicate the type of impact)?**

Responses:

Yes, the road system was not designed for heavy oilfield traffic. Roads are missing traffic controls, lights, and signs. Road markings are non-existent. Roads do not have turning down lanes.

The Grand Forks Airport (GFK) needs additional capacity at its cargo sort facility. The airport has recently spent over \$830K to expand the sort facility, however much of that is being used for storage. We need a storage facility to allow them to better utilize the sort

facility. We also need to accommodate UPS in the vicinity of FedEx since they work together. This could be accomplished by building an apron and building near FedEx on the south end of the airport. GFK is the Air Cargo hub for the State. We also convert Air Cargo to trucks. Much of the oil patch cargo moves through GFK.

The Federal Motor Carrier Safety Administration imposed increased Hours of Service regulations effective July 1, 2014. The regulations were imposed without being based on science. The effect of these regulations is a reduction in national truck capacity of 2-4%.

Freight delays due to construction.

Severe weather may close highways, airports, and some rail shipments. Weather-related freight delays (snow storms, spring and flash flooding, high winds, etc.)

Traffic on US 52 between Portal and Jamestown has grown – the mix of agricultural sector traffic with the cross-border and inter-state commercial sector traffic is creating safety issues.

There are too many trucks in the city of Williston.

**APPENDIX K**

**FREIGHT TREND SURVEY RESPONSES  
SURROUNDING STATES AND PROVINCES**

## Freight Trend Survey Responses from Surrounding States and Provinces

North Dakota's economy and transportation system are inextricably intertwined with those of its surrounding states and provinces. Of all 50 states, Minnesota is North Dakota's leading trading partner. Of the remaining 49 states and 10 Canadian provinces, Manitoba is North Dakota's second leading trading partner. Many North and South Dakota companies have a long history of doing business together while the number of companies in Montana and Saskatchewan doing business with companies in our state is rapidly growing due to our state's oil boom.

As part of NDDOT's program to reach out to our stakeholders, a questionnaire was sent to surrounding states and provinces. The questionnaire included questions to identify emerging cross border freight system trends, issues, and needs; infrastructure and operational bottlenecks, freight gateways and corridors, border zone rural freight generators, and freight performance measures.

The survey questions and responses follow:

1. What are the most important current or emerging trends affecting cross-border freight movements between your state/province and North Dakota?

All of the states and provinces responding to the questionnaire identified they are experiencing increased truck and rail volumes associated with freight movements into and out of North Dakota's oil and natural gas producing counties. In the case of Minnesota this is being manifested as increased freight traffic (fracking sand and crude oil) on the state's rail mainlines. The remaining states and provinces are seeing increased truck traffic hauling energy-related equipment, pipe and crude oil. Energy-related freight movements (rail, truck and pipeline) through the region to and from Canada's energy production areas in Alberta and Saskatchewan are rising. Energy-related rail movements have also increased to the West, East and Gulf coast regions of the U.S. Non-energy related rail freight movements in the region are also increasing and segments of the rail system are frequently experiencing congestion. Increased rail freight movements have occasionally caused Amtrak to temporarily suspend service. North/South truck freight movements on Interstate 29 (farm machinery and agricultural products) and US 85 (pipe, equipment and other energy-related freight) are continuing to rise. Increased agricultural production due to farmers shifting to higher yielding crops (e.g. wheat to corn) and the conversion of Conservation Reserve Program acres to active farmland is resulting in more truck and rail freight movements. Growth of identity-preserved and organic crops along with the Mon-Dak Region's emergence as a premier producer of peas and lentils is also driving the demand for access to rail containers. The abolition of the Canadian Wheat Board and lifting of restrictions on grain exports coupled with Canadian farmers growing more corn and soybeans is increasing the south-bound movement of Canadian agricultural commodities to grain elevators in North Dakota.

2. What are the most important current issues affecting cross-border freight movements between your state/province and North Dakota?

Differences between allowable truck size and weight configurations and a lack of harmony in permitting and documenting oversize and overweight movements was the most commonly mentioned issue affecting cross-border freight movements. Montana also mentioned issues related to motor fuel sale taxes and dyed diesel enforcement.

The second most mentioned were issues at North Dakota's Land Ports of Entry (LPOE) with Canada, the issues identified include: implementation of provisions found in the Beyond the Border Agreement, the multiplicity of trusted trader programs (C-TPAT, FAST, PIP, NEXUS, CSA, etc.), LPOE inspection procedures and inadequate staffing were cited, and LPOE capacity and coordinated improvements including flood protection at Pembina/Emerson. Finally, the lack of rail capacity coupled with the need to improve at-grade crossings, and provide adequate highway access to transload facilities was frequently mentioned.

3. What are the most important current and near term needs of the freight system in regard to cross border freight movement between your state/province and North Dakota?

The three most important freight system issues identified were:

- a) Improving cross border communication – comments cited the need to improve communication between federal, state and provincial agencies at Land Ports of Entry regarding infrastructure upgrades, freight flow security and enforcement, and dealing with the multitude of trusted trader programs
  - b) Trucking issues – problems caused by differences in allowable size and weight, permitting, regulatory harmonization, standardized equipment, the lack of a regional strategy for truck freight movements; and the unintended adverse impacts of FMCSA regulations and enforcement
  - c) Rail Capacity – the rapid increase in rail traffic is resulting in a lack of capacity and congestion. Agricultural shippers in particular cite the railroads preference for shipping bulk oil as the cause for delays to their shipments. Increased freight traffic through communities on rail mainlines is also generating questions regarding the safety of trains carrying crude oil and the need for grade separations and upgrades to safety devices. Quiet Zones are seen as a means to reduce the sound levels associated with train horns.
4. What are the three most significant highway or rail infrastructure (load restricted highways, congested rail lines, deficient bridge structures, etc.) bottlenecks to freight system movements between your state/province and North Dakota?

Listed in no particular order:

- Congested rail movements through Fargo-Moorhead
- Replacing the Northern Plains Railroad bridge over the Red River between Ardoch, ND and Oslo, MN
- The general lack of pipeline capacity to move North Dakota crude oil

- Inadequate highway structures crossing the Red River between North Dakota and Minnesota
- Differences in connecting highway weight limitations
- Implementation of the Pembina/Emerson Port of Entry Transportation Study
- The associated negative impacts (reduced efficiency and capacity) on freight movements due to a lack of adequate truck friendly rest areas
- Implementation of the Beyond the Border Agreement at Land Ports of Entry
- Northeastern Montana is experiencing issues related to the preservation of both state and local roads that link to North Dakota's cross border oil producing region

5. What are the three most significant bottlenecks to freight system movements between your state/province and North Dakota?

#### Minnesota

- Oversize/overweight permit coordination
- 511 Commercial driver information
- Rest area maintenance and space notification

#### Manitoba

- Operational bottlenecks at the Pembina/Emerson Port of Entry (processing times/staffing levels)
- Lack of veterinarian inspectors at ports of entry

#### Saskatchewan

- Mostly border crossing criteria and efficiencies (i.e. dealt with through the Canada/US Beyond the Border Agreement implementation)

#### South Dakota (none cited)

#### Montana

- Communication, cooperation and coordination during weather-related events, emergency response, and disaster relief (e.g. 2011 flooding)
- Truck operations caused by differences in State DOT design standards and highway condition
- The main street intersection in Fairview straddles the ND/MT border and is failing due to the large number of truck turning movements.

6. What are the key freight gateways (highway or rail) between your state/province and North Dakota?

#### Minnesota

- Fargo, ND-Moorhead, MN (highway & rail)
- Grand Forks, ND-East Grand Forks, MN (highway & rail)
- Ardoch, ND - Olso, MN (rail)

#### Manitoba

- Interstate 29 (Grand Forks, Fargo, Kansas City, Minneapolis) – Provincial Highway 75 (Winnipeg)<sup>28</sup>
- US 281 (Dunseith) – Provincial Highway 10 (Boissevain)
- ND 32 (Walhalla) – Provincial Highway 32 (Winkler)
- ND 18 (Neché) – Provincial Highway 30 (Gretna)
- US 83 (Westhope) – Provincial Highway 83 (Coulter)<sup>29</sup>

#### Saskatchewan

- US 52 (Portal) – Provincial Highway 39 (North Portal) and the CP Railway
- MT 16 (Raymond, MT) – Provincial Highway 6 (Minton)<sup>30</sup>

#### South Dakota

- Interstate 29
- US 83 (south of Linton, ND to Pierre, SD)
- US 281 (south of Ellendale, ND to Aberdeen, SD)
- US 85 (south of Bowman, ND to Rapid City, SD)
- BNSF Railway (Terry, MT to Appleton, WI)

#### Montana

- I-94
- US 2 (west of Williston, ND)
- MT 200 (south of Sidney, MT west of ND 68)
- MT 5 (west of Fortuna, ND)
- MT 16 and MT 23 Sidney to Culbertson, MT (west of ND 68)
- Hwy 201 (west of Fairview, ND)
- State Secondary 258 (west of Grenora, ND)
- State Secondary 202 (west of ND 16)

7. Does your state/province recognize any significant (50 trucks or more per day either year-round or seasonally) rural/non-urban freight generators near your border with North Dakota?

#### Minnesota<sup>31</sup>

- Grain shuttle facilities at the following locations: Argyle, Alvarado, Crookston, Hallock, Tenney, Ulen, Barnesville, Rothsay, Fergus Falls (2), Breckenridge (2)
- Beltrami (grain shuttle facility and pipeline terminal)
- East Dilworth (rail transload)

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<sup>28</sup> I-29 from Kansas City to the US/Canadian border is Congressional High Priority Corridor 23

<sup>29</sup> US 83 from the ND/SD border to the US/Canadian border is Congressional High Priority Corridor 59

<sup>30</sup> US 85 from the ND/SD border to US 2 and then west to MT 16 and north to the US/Canadian is Congressional High Priority Corridor 58

<sup>31</sup> There are three sugar beet processing plants and several sugar beet transfer sites located on the Minnesota side of the Red River. These sites were not listed since the North Dakota and Minnesota departments of transportation know the location of the beet transfer sites through a long cooperative working relationship with the sugar beet industry.

#### Manitoba

- No single location identified, however, oil development in southwest Manitoba may be the source of significant future cross border freight movements.
- Additionally, the elimination of the Canadian Wheat Board is resulting in Canadian farmers selling agricultural commodities directly to grain elevators located in North Dakota. The magnitude of freight traffic related to these sales is currently not known.

#### Saskatchewan

- The Ceres Corporation is building a large, two-loop track rail transload facility (oil and grain) on the Canadian side of the North Dakota/Saskatchewan border near the town of Northgate, ND.
- Similar to the comment received from Manitoba, no single location identified, however, oil and potash development in southeast Saskatchewan may be the source of significant future cross border freight movements.
- Additionally, the elimination of the Canadian Wheat Board is resulting in Canadian farmers selling agricultural commodities directly to grain elevators located in North Dakota. The magnitude of freight traffic related to these sales is currently not known.

South Dakota – No significant freight generators near the North Dakota border were identified by the South Dakota Department of Transportation

#### Montana

- Gavillon Grain, 54 car grain facility, Fairview, MT
- Bainville, MT – multiple shippers
- United Grain, 110 shuttle grain facility, Culbertson, MT
- Nortana Grain Co, 54 car grain facility, Sidney, MT
- Farmers Elevator, 110 shuttle grain facility, Glendive, MT
- Farmers Elevator, 110 shuttle grain facility, Wolf Point, MT
- Gavillon, Farmers Elevator, Columbia Grain, 54 car grain facility, Wolf Point, MT
- New Century Ag, 54 car grain facility, Westby, MT
- Columbia Grain, 54 and 52 grain facilities, Plentywood, MT
- Multiple freshwater sources in Sheridan, Roosevelt, Richland, Dawson and Wibaux Counties
- Multiple saltwater disposal sites in Sheridan, Roosevelt and Richland Counties
- Procore, oil industry products, Bainville, MT
- Pioneer oil transload, ceramic proppants, Culbertson, MT
- BNSF transload facility (proposed), Poplar, MT
- Multiple pipe, proppant, etc, transload facilities in Sidney, Glendive MT
- Multiple pipeline transload facilities

8. Please list any freight-related performance measures your agency has adopted or may be considering.

#### Minnesota

- Rail tonnage from, to, and through Minnesota
- Truck tonnage from, to, and through Minnesota
- Truck delays due to congestion
- Container lifts
- Miles of rail lines rated at less than 286K lbs. or FRA Class 2
- Deficient Road and Rail Structures

#### Manitoba

- Ride condition of the surfaced highway network – measured using the International Roughness Index in terms of kilometers and % in Good & Poor Condition
- Improved strategic focus of infrastructure funding on the Manitoba’s highway network – measured by % of capital funding spent on core trade routes
- Performance of key strategic assets such as Emerson Border Crossing, Port of Churchill, and Centre Port. Trade values at Emerson POE measured by 2012 Research and Innovative Technology Administration Bureau of Transportation Statistics (RITA BTS) annual trade stats - \$18B

#### Saskatchewan

- Currently focused on weather delays and coordinating with operational efforts with North Dakota

#### South Dakota (none cited)

#### Montana

- Montana has not adopted a freight-related performance measure and will likely comment via FR (Federal Record) for any proposed measure.

**APPENDIX L**  
**AN OVERVIEW OF NORTH DAKOTA FREIGHT SUPPLY CHAINS**

# NORTH DAKOTA FREIGHT SUPPLY CHAIN

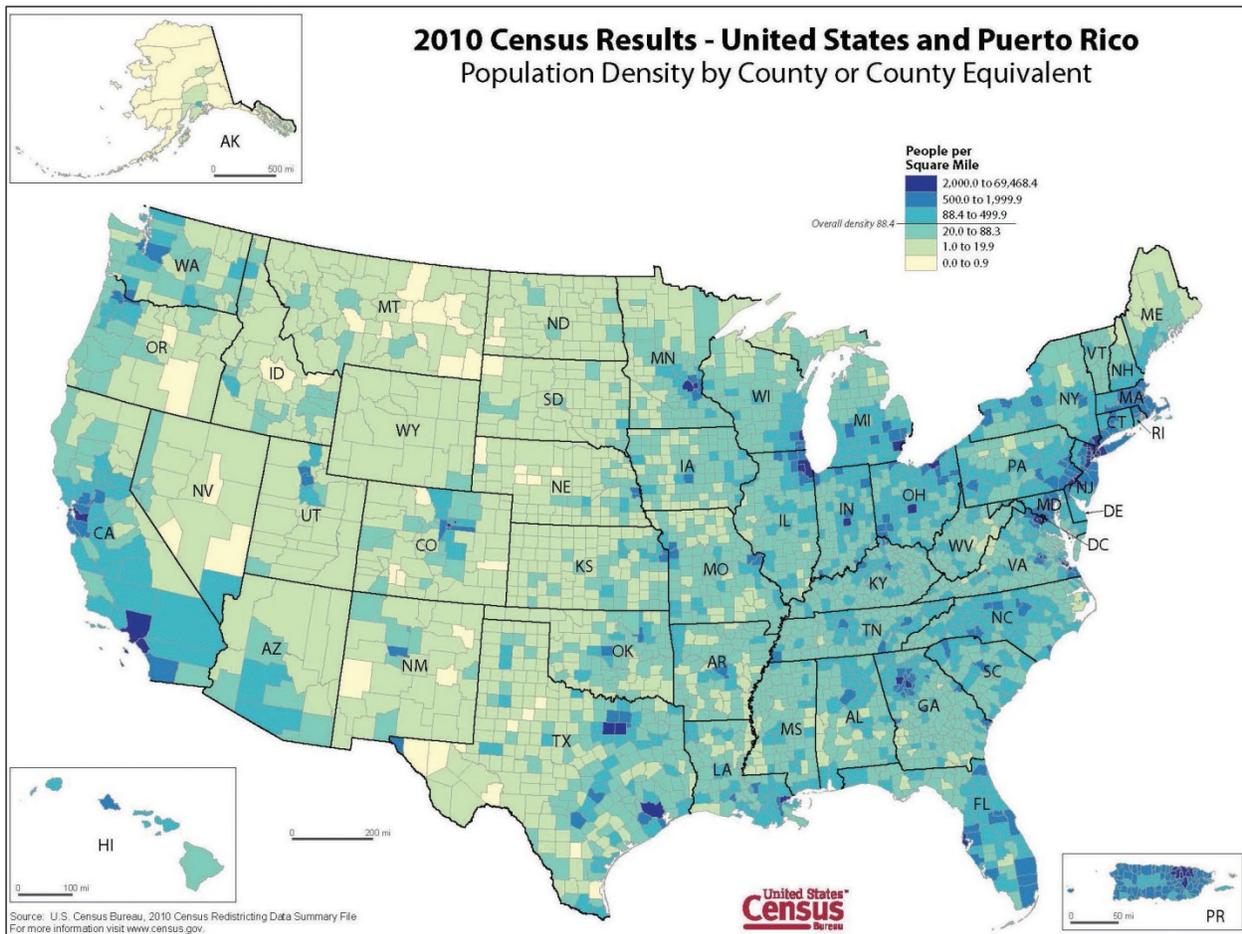


prepared by

**NDSU** UPPER GREAT PLAINS  
TRANSPORTATION INSTITUTE

# NORTH DAKOTA FREIGHT SUPPLY CHAIN

North Dakota's economy is based largely on its ability to competitively market goods and services to U.S. population centers and foreign markets. While North Dakota's population has increased recently, it remains a rural state. U.S. Census figures for 2012 show that North Dakota is 47<sup>th</sup> in a ranking of states by population density with about 10 residents per square mile. In comparison, New Jersey, 1<sup>st</sup> in this ranking, has about 1,200 residents per square mile. U.S. population centers and export ports are located primarily along the coasts and major interior transportation hubs such as Chicago, Kansas City, and Minneapolis where natural advantages existed along navigable waterways.

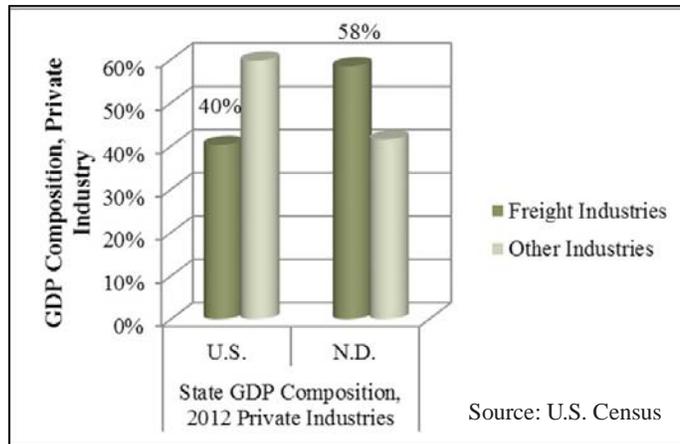


North Dakota's economy is heavily based on freight-dependent industries compared to the nation overall (Source: U.S. Census, Regional Economic Accounts). Figures for 2012 private industries incomes show that freight-based industries, such as agriculture and mining, comprised 58% of North Dakota's economy compared to 40% for the United States overall. In the United States as a whole, a larger share of economic activity is attributed to industries such as financial and business services that are less dependent on freight. Compared to 2002, freight industries have become relatively more important to the state in

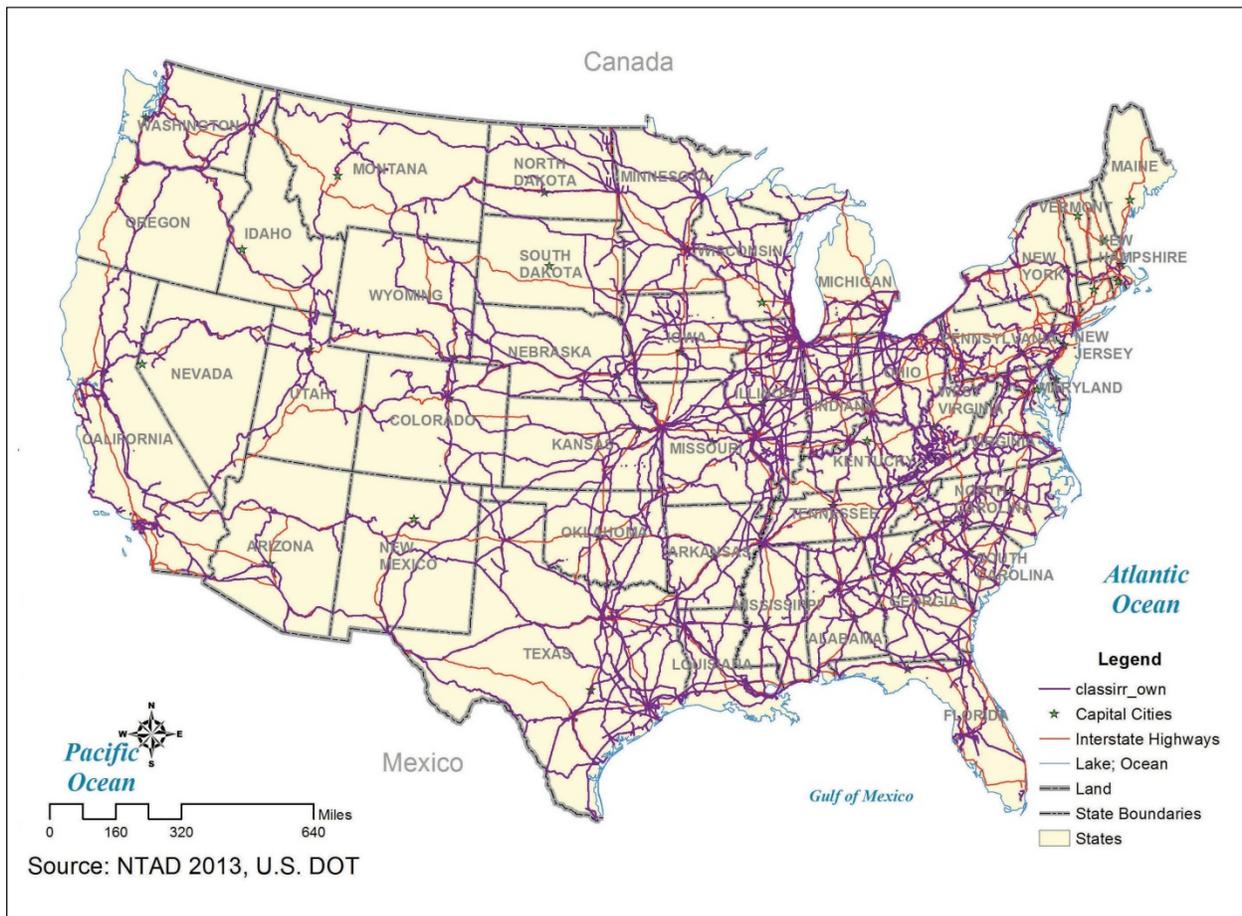
terms of their share of the economy, rising from 54%. Based on freight data from 2007 and 2010 Census numbers (the most recent data available), North Dakota originated 142 tons of freight per capita, establishing it within the 25% of states in freight originated per capita. The median among all states is 38 tons per capita.

U.S. Department of Transportation information on highway and rail networks were used to illustrate the major interstate freight transportation corridors based on designations as Interstate Highway road type and Class I

Rail Carrier track ownership category. These corridors are likely to remain similar over time based on the long-lived nature of transportation assets and their relation to these major transportation hubs associated with major population and export locations. The ability of North Dakota to competitively access markets through this transportation network is critical in to its export-based freight economy.



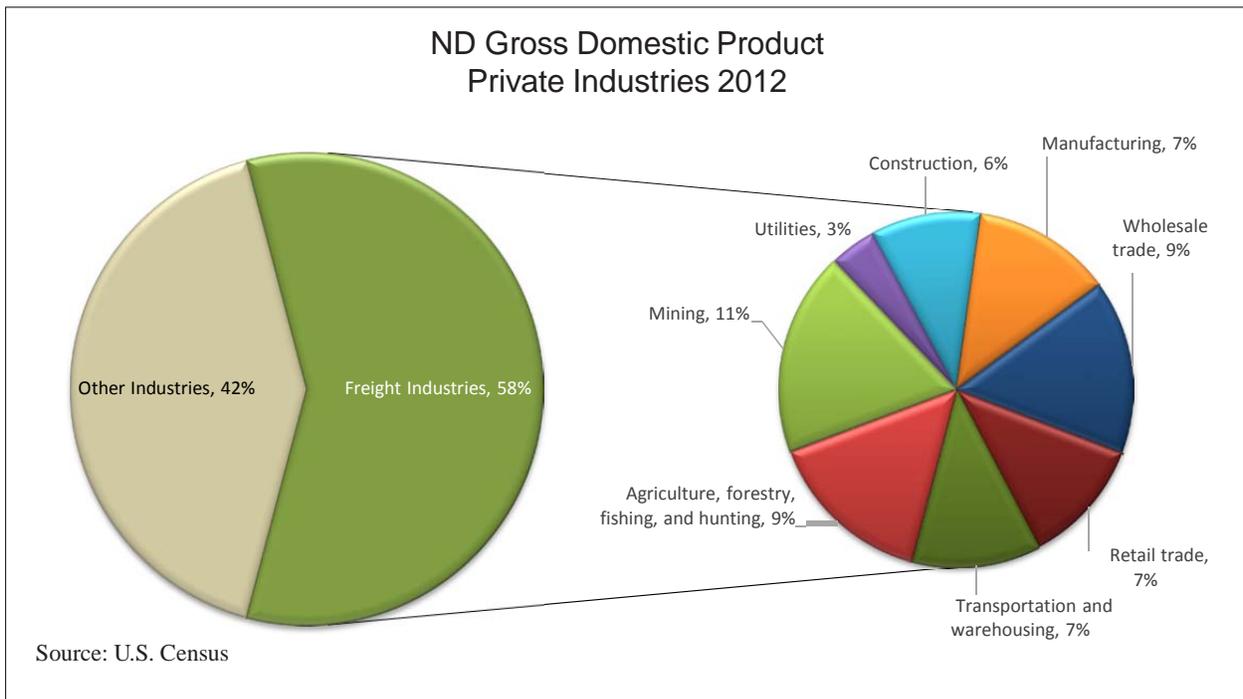
### U.S. Interstate Highways and Class I Rail



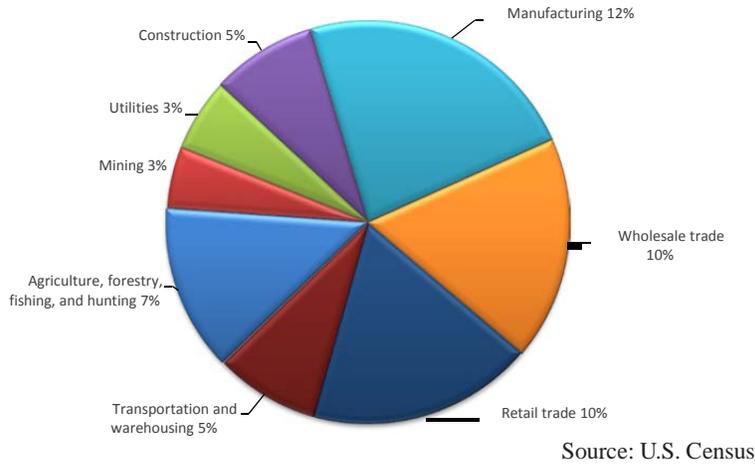
## Freight Industries



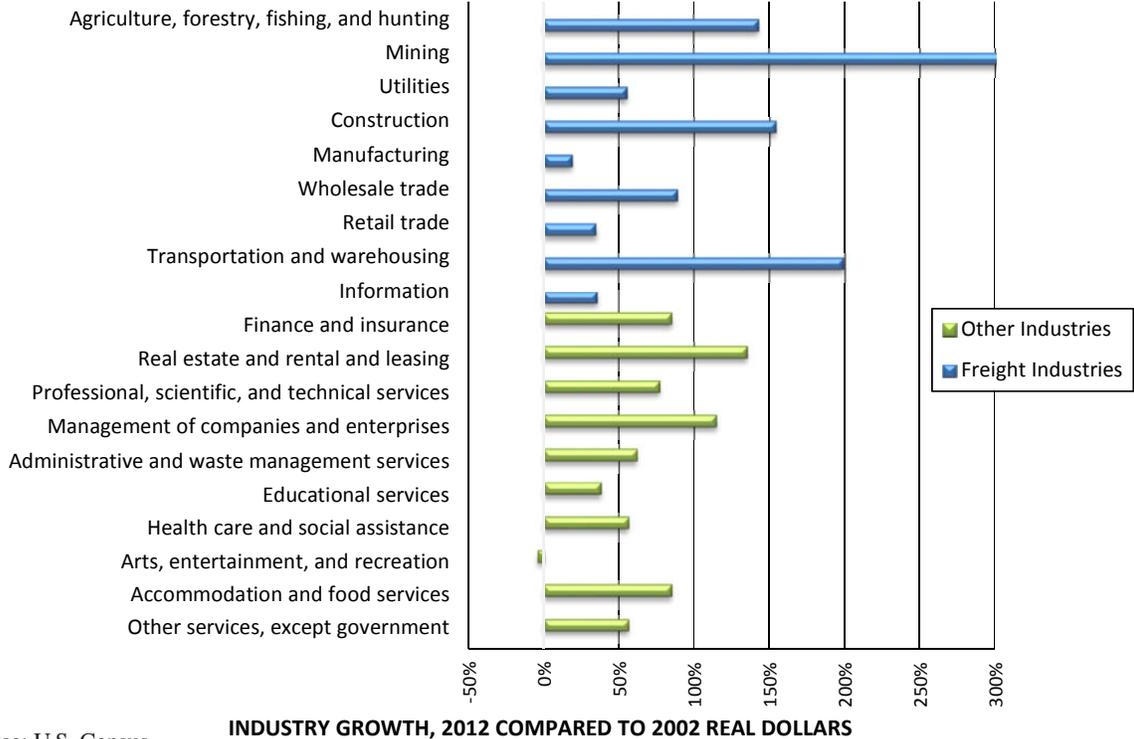
Mining, agriculture and wholesale trade are the leading contributors to freight in terms of annual earnings. In relative terms, manufacturing and retail industries played a smaller role in the state economy in 2012 than in 2002. Wholesale trade share has also declined slightly while the shares of all other sectors grew.



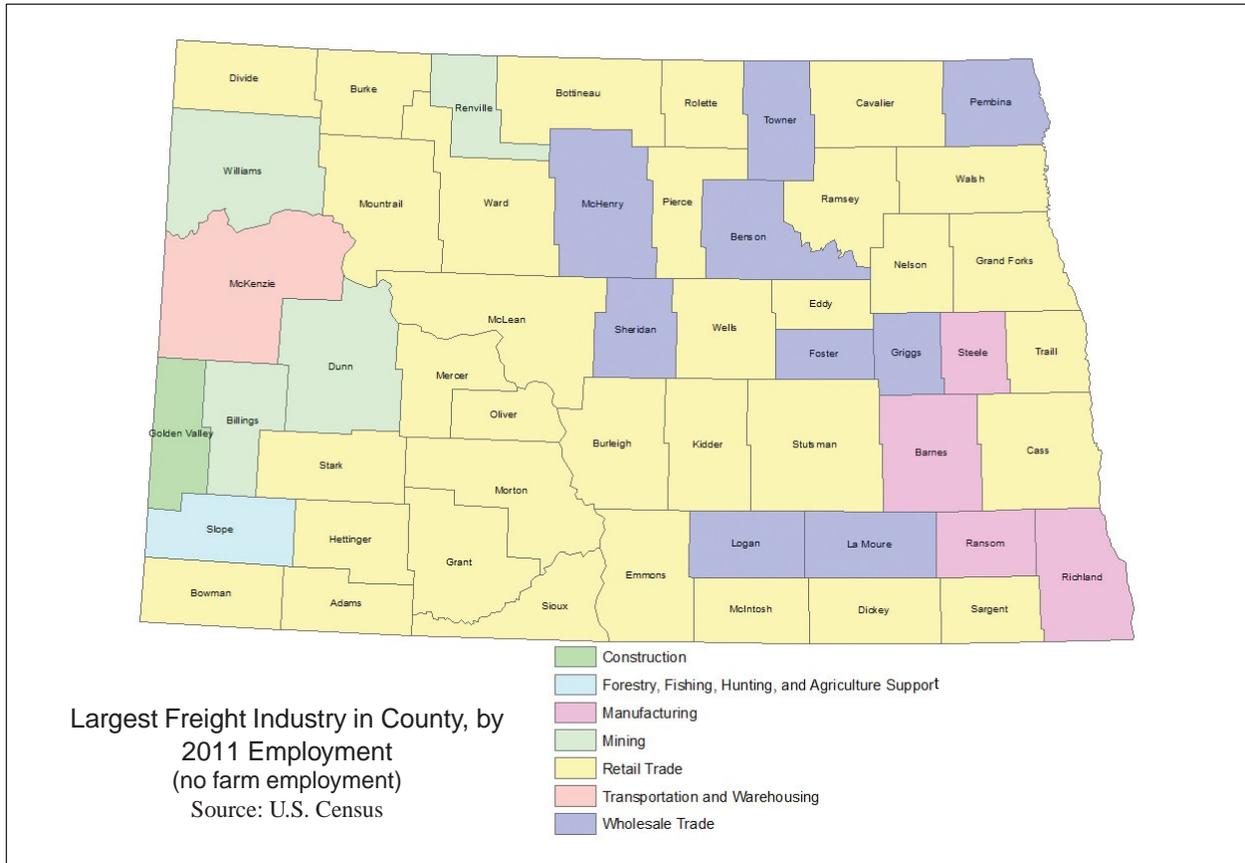
### ND Gross State Product, 2002 Private Freight Industries



Most N.D. industries grew between 2002 and 2012. The state's private sector gross domestic product (GDP) expanded 98% in real dollars. Freight industries played a large part in this growth with the largest increases generated by mining and agriculture. With development of the Bakken oil formation, mining experienced 700% growth in 2012 earnings compared to 2002. Transportation/warehousing and construction expanded more rapidly than the traditional economic leaders, agriculture and wholesale trade, but remain slightly smaller in terms of their overall contribution to the economy.



U.S. Census County Business Pattern figures offer some insight with regard to the distribution of industrial activities within the state. The leading freight industry for each county, in terms of employees, is illustrated below. Retail is the leading freight industry employer in a majority of North Dakota counties. Oil activity is evident in the west region while a manufacturing corridor is evident in east. Wholesale trade is a leading employment industry in nine counties across central and eastern areas.



North Dakota businesses rely on trucks, railroads, and pipelines to move its freight. With the exception of the oil and gas industries, surface freight modes are used by virtually all industries in procuring inputs and distributing outputs. National freight statistics show rail provided the largest share of freight movement, as measured in ton-miles.

Total Modal Activity for the United States			
Mode of Transportation <sup>1</sup>	Ton-miles (Million) <sup>2</sup>		
	2002	2007	2012*
Total	3,137,902	3,344,663	3,319,666
Truck	1,261,813	1,351,531	1,270,507
Rail	1,360,760	1,549,557	1,696,694
Shallow draft	258,386	208,611	163,972
Great Lakes	49,330	30,835	28,478
Deep draft	75,544	92,060	81,693
Air	5,659	4,425	5,597
Parcel, U.S.P.S. or courier	19,004	27,852	20,438
Pipeline <sup>3</sup>	S	S	S
Other & unknown modes	44,253	33,510	279

\*Preliminary; S - Estimate does not meet publication standards because of high sampling variability or poor response quality.

<sup>1</sup>Estimates represent activity for a given mode across single and multiple mode shipments. <sup>2</sup>Ton-miles estimates are based on estimated distances traveled along a modeled transportation network. <sup>3</sup>Estimates exclude shipments of crude petroleum.

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics and U.S. Department of Commerce, U.S. Census Bureau, Economic Census: Transportation Commodity Flow Survey.

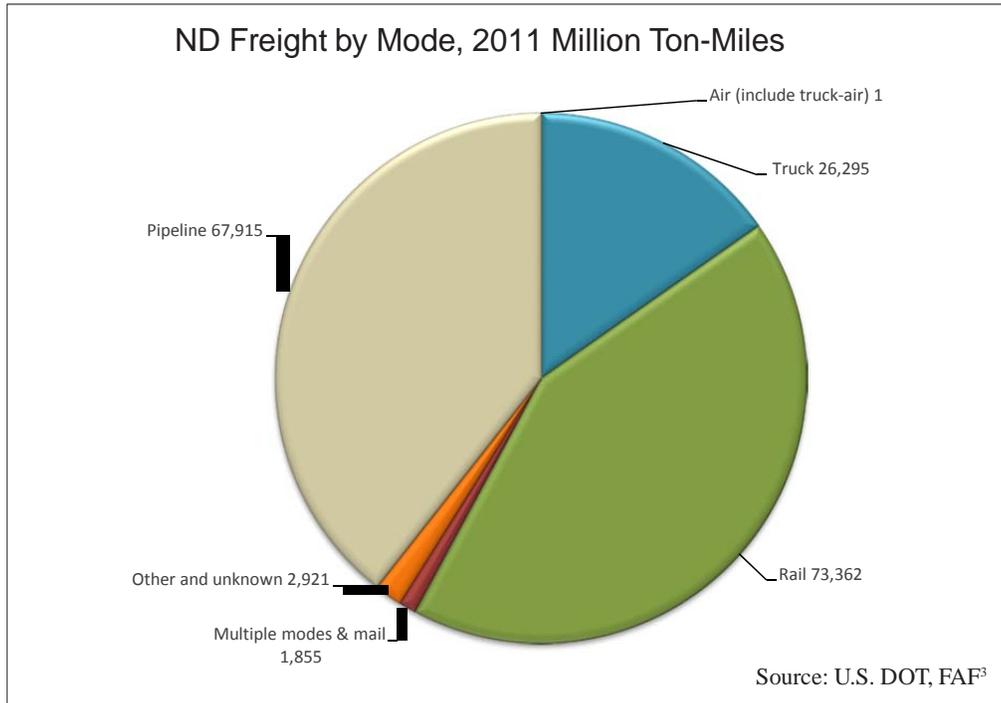
U.S. freight shipments, measured in ton miles, increased about 6% from 2002 to 2012. Preliminary results from the U.S. Census 2012 Commodity Flow Survey show freight increasingly moved via rail. Rail's modal share increased 8 percentage points from 2012 to 2002, accounting for 51% of ton-miles. Modal volumes declined substantially for shallow draft waterways and the Great Lakes.

In North Data in 2007, approximately 44% and 23% of freight originated via truck and rail, respectively. The 2012 modal origination information are scheduled to be available at the state level in late 2014.

Modes of Transportation for Shipments Originating in North Dakota, 2007		
	Value (\$Million)	Mode (1,000 Tons)
Truck	1,863,987	4,161,689
Rail	481,374	2,229,134
Multiple modes	221,967	133,939
Parcel, U.S.P.S. or courier	141,738	9,567
Other & unknown modes	50,812	2,956,234
Pipeline & Air (inc. truck & air)	S	S
Total	2,674,300	9,567,100

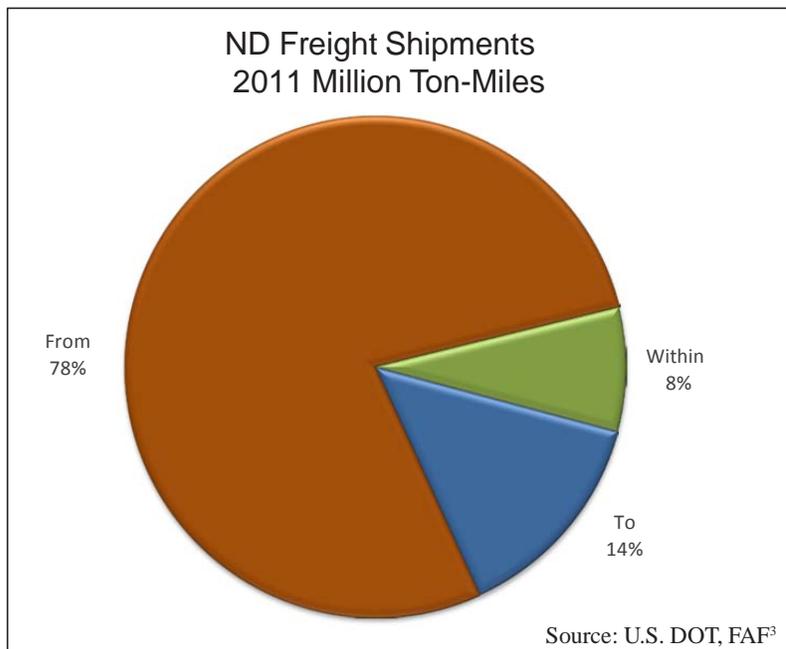
(See footnotes in previous table)

The latest figures from the U.S. Department of Transportation show rail to be the dominant surface mode for North Dakota freight as it accounts for 43% of total ton miles and 70% of the surface freight.



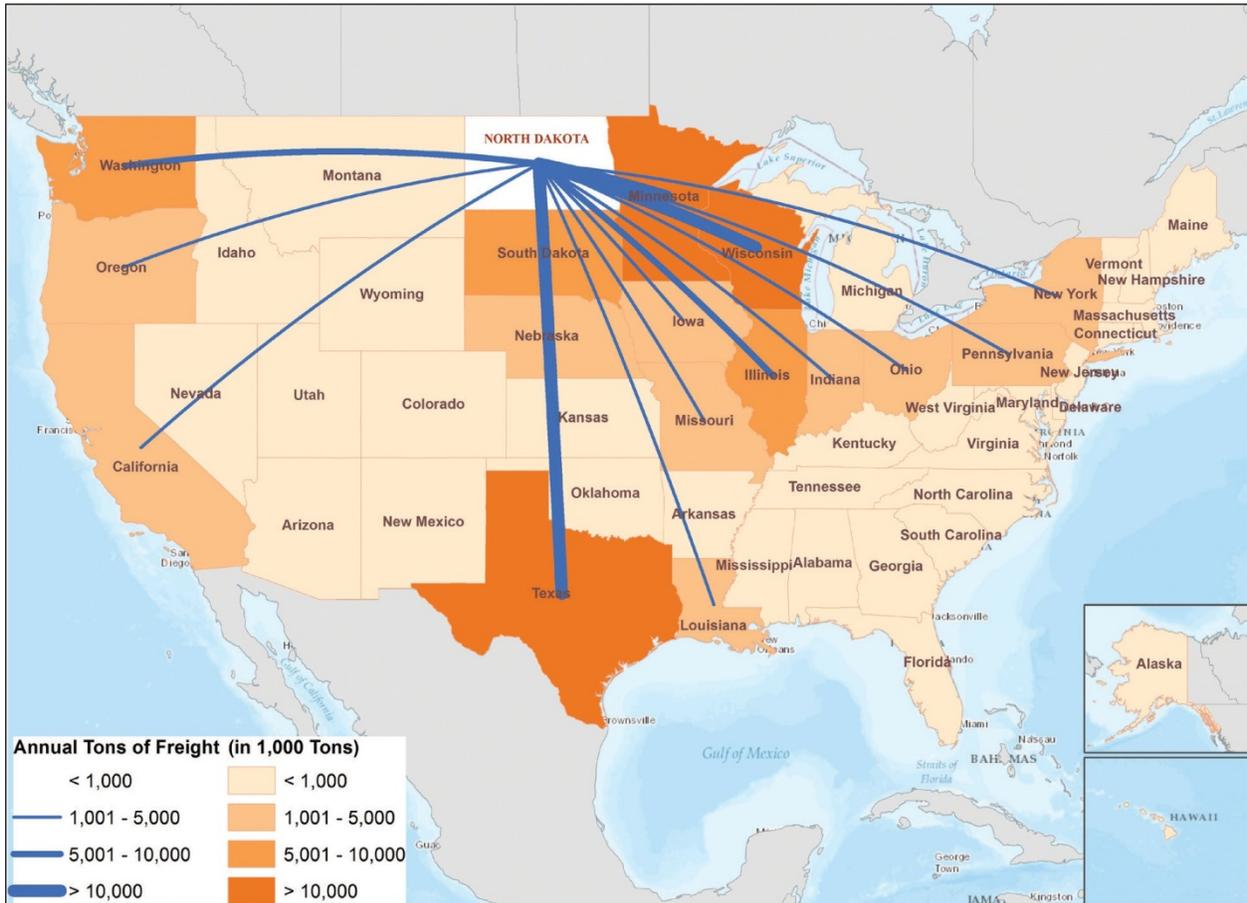
As noted previously, North Dakota has an export-based economy because of its natural resource assets and low population density. This balance is evident in the goods movements as reported within, to and from the state as indicated in U.S. DOT freight flows. About 78% of North Dakota freight flows are outbound, compared to about 30% for other Western states such as California and Washington that have large population centers. As illustrated, 3 of every 4 ton miles of freight travel for North Dakota products are outbound movements.

The importance of North Dakota's freight network connectivity and competitiveness in relation to national and international freight networks is evident in these figures. More knowledge regarding these relations may be gained by considering market relationships and industry supply chains.

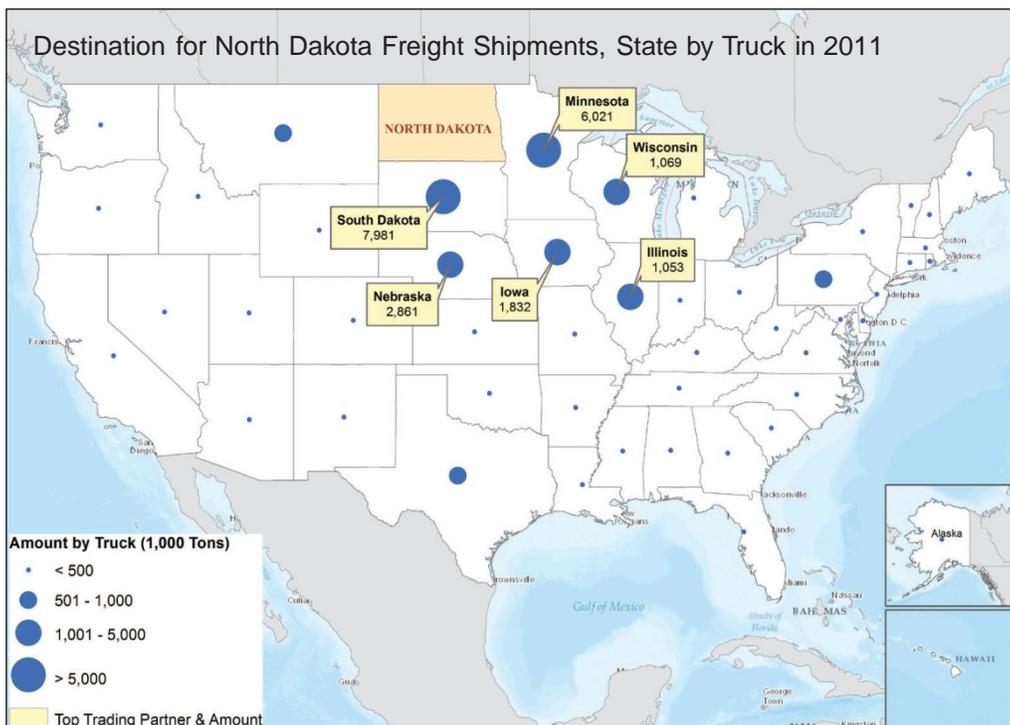
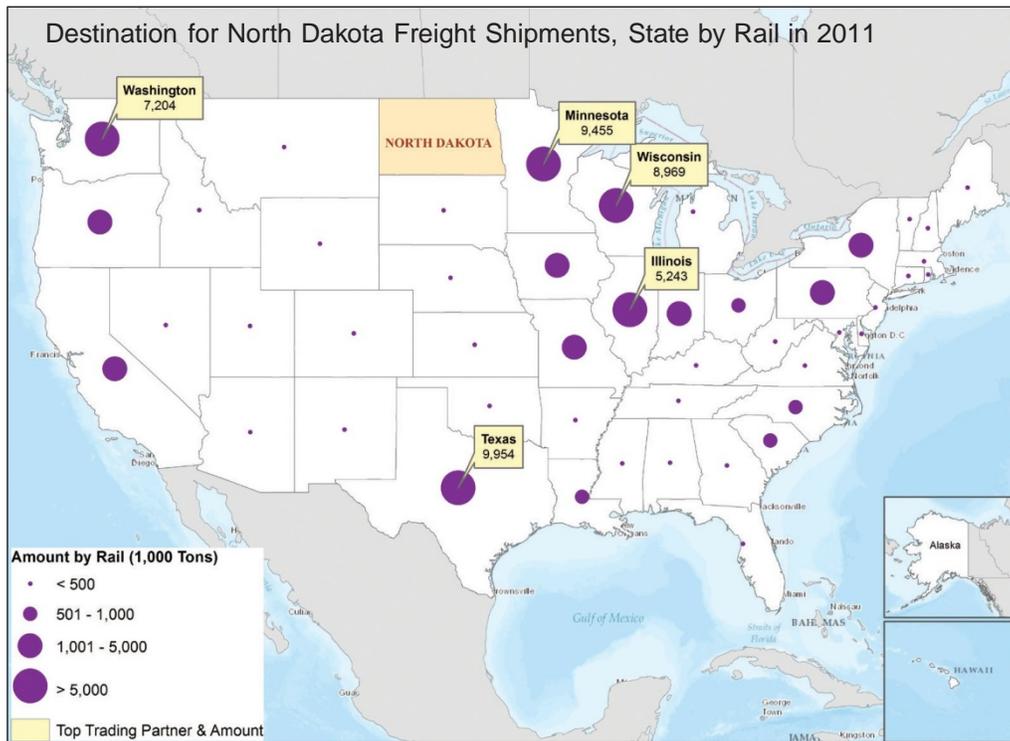


An analysis of the U.S. Department of Transportation data identified destinations for the state's freight shipments, in total and by mode as illustrated the map below. About 59% of the state's freight is destined for markets within the state borders or for International export points, such as border crossings, within the state. Within the United States, Minnesota Wisconsin and other states in close proximity are large destinations. States associated with export market flows such as Texas, Illinois, and Washington are also identified as important destinations.

Destination for North Dakota Freight Shipments in 2011 (in 1,000 Tons)



A modal separation of flows from North Dakota to destination states was also developed.



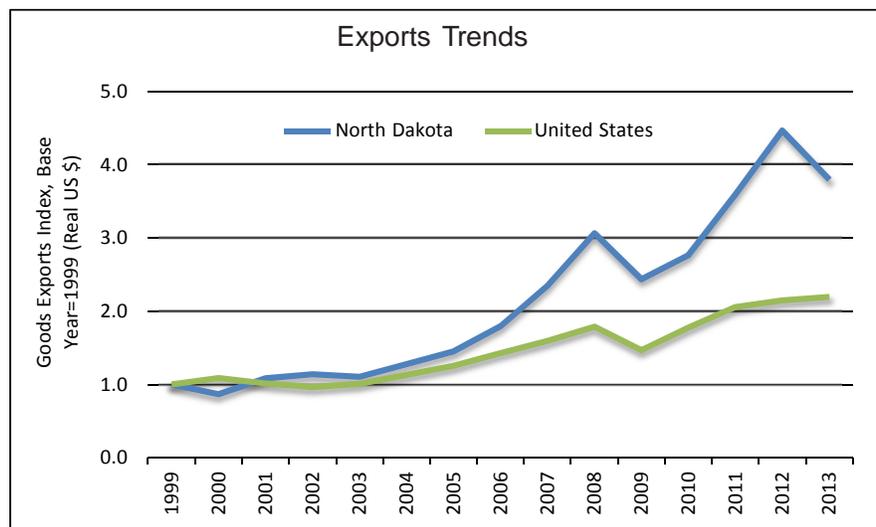
Analysis shows 78% of the freight delivered to North Dakota originated within the state or at an international import point, such as border crossings, within the state. Beyond North Dakota's borders, the five largest freight supplier states accounted for 53% of the in-bound freight flows. Leading states include Minnesota, Montana, South Dakota, Oregon, and Illinois.

## Freight Composition

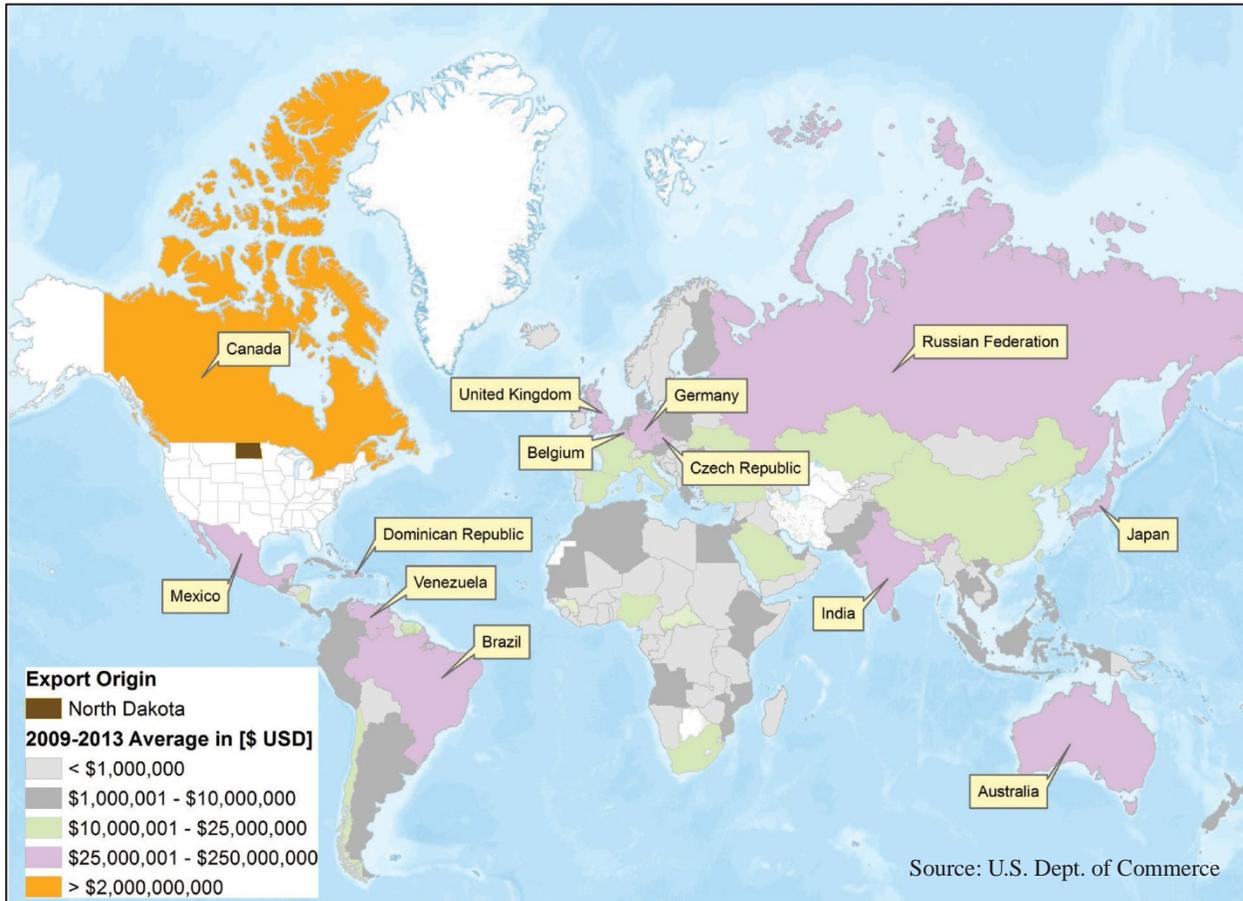


U.S. Dept. of Commerce figures show that North Dakota exports grew faster than the nation's exports overall. In 2013 exports totaled \$3.7 billion. While N.D. exports were down from 2012, the figure represents growth of 280% in real dollars compared to 1999. By comparison, total U.S. exports grew about 120% during the same time.

The ability of N.D. businesses to competitively access world markets is critical to its economy. A map of North Dakota export destinations for goods exports shows the wide distribution of its products. The leading destination, in terms of export value, is Canada which accounted for 70 cents of each dollar North Dakota exported between 2011 and 2013 – up from 52 cents of each dollar between 2001 and 2003. Mexico and Australia are 2<sup>nd</sup> and 3<sup>rd</sup> among export destinations in the most recent three years.

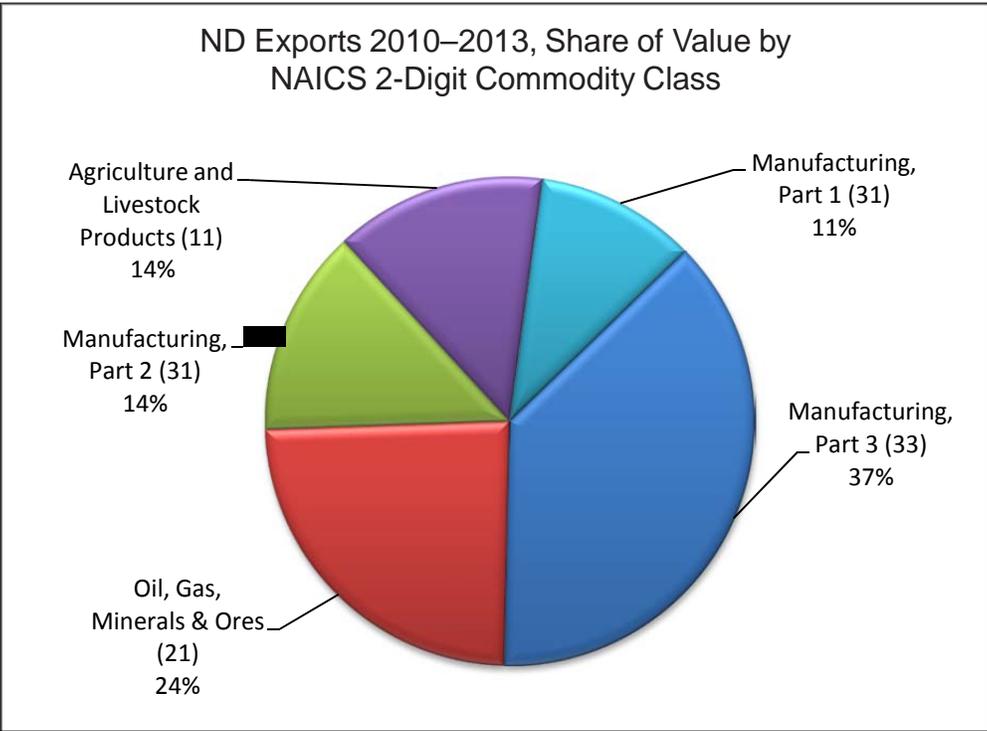


2009–2013 NAICS Total All Merchandise Exports from North Dakota

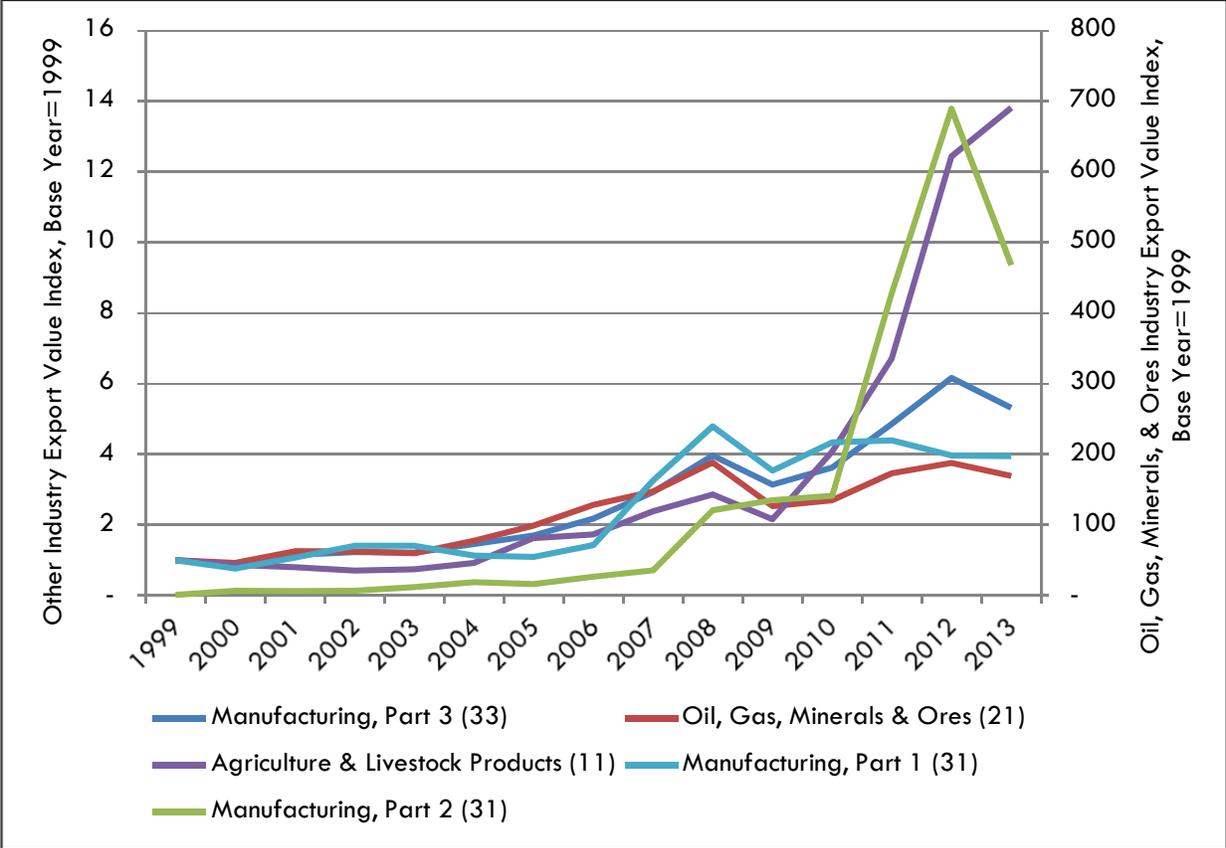


Broadly defined industry export activity is available at the 2-digit North American Industry Classification System (NAICS)<sup>1</sup> commodity classes. Three manufacturing classes, along with the oil & gas class and agricultural class, accounted for 89% of the value of the state’s export goods between 2010 and 2013. These general categories offer a way to track general industry activity in the state (lower graph) but additional detail is needed to better understand the commodity class composition and its transportation demands.

<sup>1</sup>U.S. Census, North American Industry Classification System, accessible online at <https://www.census.gov/eos/www/naics/>.



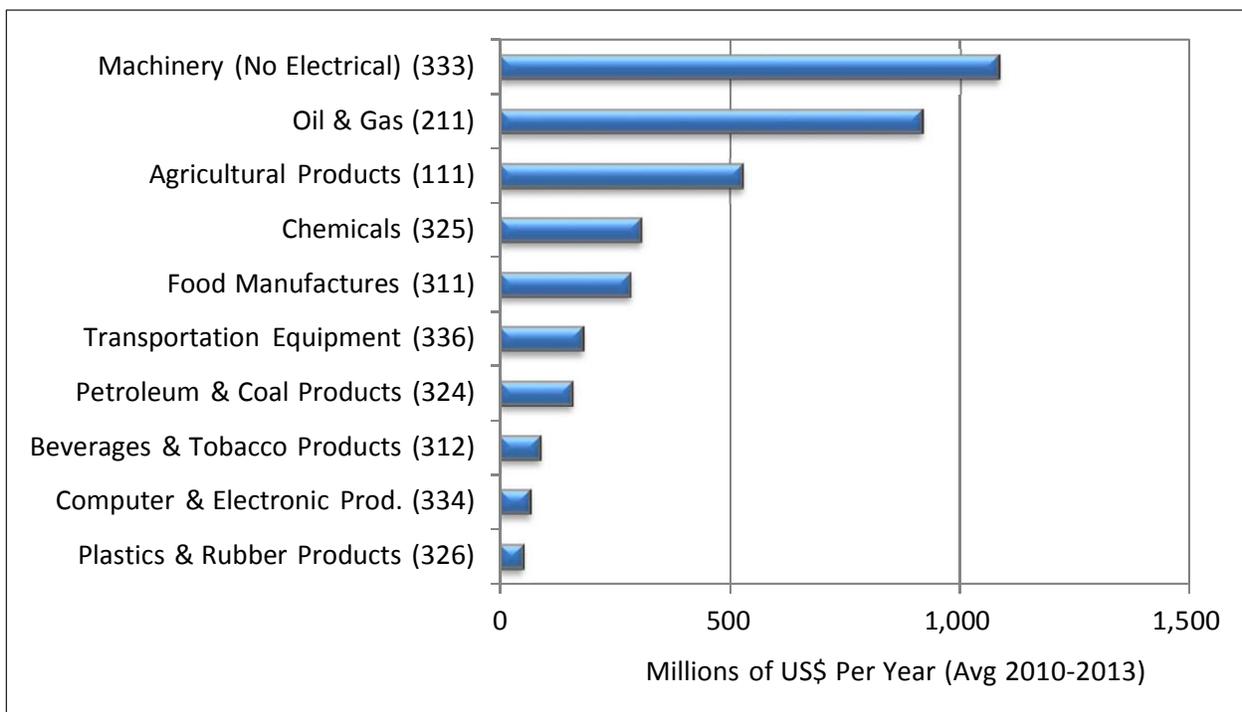
Commodity Export Trends, Value by NAICS 2-Digit Commodity Class



The top 10 N.D. NAICS commodity classes were identified by export values. They accounted for 95% of the products exported from the state between 2010 and 2013. These figures were based on average annual export dollars at the 3-digit commodity class level – the most detail available through the U.S. Census International Trade Data.

Machinery is the largest among these industries with about \$1.1 billion in exports annually. The machinery industry, as indicated by NAICS, includes agricultural, industrial, and commercial subsectors. The oil & gas extraction industry, which accounted for about 11% of export dollars in 2009, contributed 24% of the average annual exports between 2010 and 2013. This share was based on an average of more than \$900 million in export sales per year. Agricultural products, which include livestock and field crops, attributed \$500 million in export sales per year during the same period. The agricultural industry exports increased 15% when comparing 2009 values to the average between 2010 and 2013. Export income in a related N.D. industry, food manufacturing, declined by 13% in the same time. After the oil and gas industry and machinery industry, the largest export increase was in petroleum and coal products – showing an increase of \$144 million, from just \$6 million in 2009 to an average \$150 million annually from 2010 to 2013.

N.D. Goods Exports  
Top NAICS Commodity Class by Value



## Transportation Demand



Exports and domestic sales create demand for transportation services. Insight into transportation for the state are available in the modal demand estimates, value of goods exported, and volume of goods transported. Figures for SCTG<sup>2</sup> commodity classes in U.S. DOT analysis provide insight regarding transportation demand. Cereal grains form the largest component in North Dakota's freight composite – these figures do not consider farm-based haulage. Although less than expected in today's market, the crude petroleum and coal industry group, which includes petroleum products and natural gas, suggest that the Bakken traffic is reflected in the 2011 traffic mix. These three commodity classes accounted for two in every three ton-miles of freight originated from the state in 2011.

North Dakota Freight Origination Traffic by SCTG Commodity Class, 2011

Commodity Class	Within	To	From	Total	Share
	million ton miles				
Cereal grains	5,165	601	51,937	57,703	29%
Other Coal/Petroleum Prod.	3,243	2,495	41,982	47,720	24%
Crude Petroleum	465	642	25,176	26,282	13%
Live Animals/Fish	67	402	5,767	6,236	3%
Fertilizers	168	1,487	5,084	6,739	3%
Other Foodstuffs	64	838	5,081	5,983	3%
Animal Feed	37	1,146	4,110	5,293	3%
Basic Chemicals	74	488	2,986	3,548	2%
Other Ag Products	366	953	2,863	4,183	2%
Nonmetallic Minerals	35	1,507	2,331	3,873	2%
Plastics/Rubber	11	1,144	1,651	2,806	1%
Milled Grain Prods.	65	174	1,506	1,745	1%
Wood Prods.	20	688	1,184	1,892	1%
Machinery	38	1,036	687	1,762	1%
Base Metals	30	1,850	651	2,531	1%

Source: FHWA, U.S. DOT

<sup>2</sup> 2007 Commodity Flow Survey, Standard Classification of Transported Goods (SCTG), U.S. Census, CFS-1200, October 2006, accessible online at <https://www.census.gov/svsd/www/cfsdat/cfs071200.pdf>.

**North Dakota Freight by SCTG Commodity Class,  
Tons Originated and Share Shipped Beyond the State in 2011**

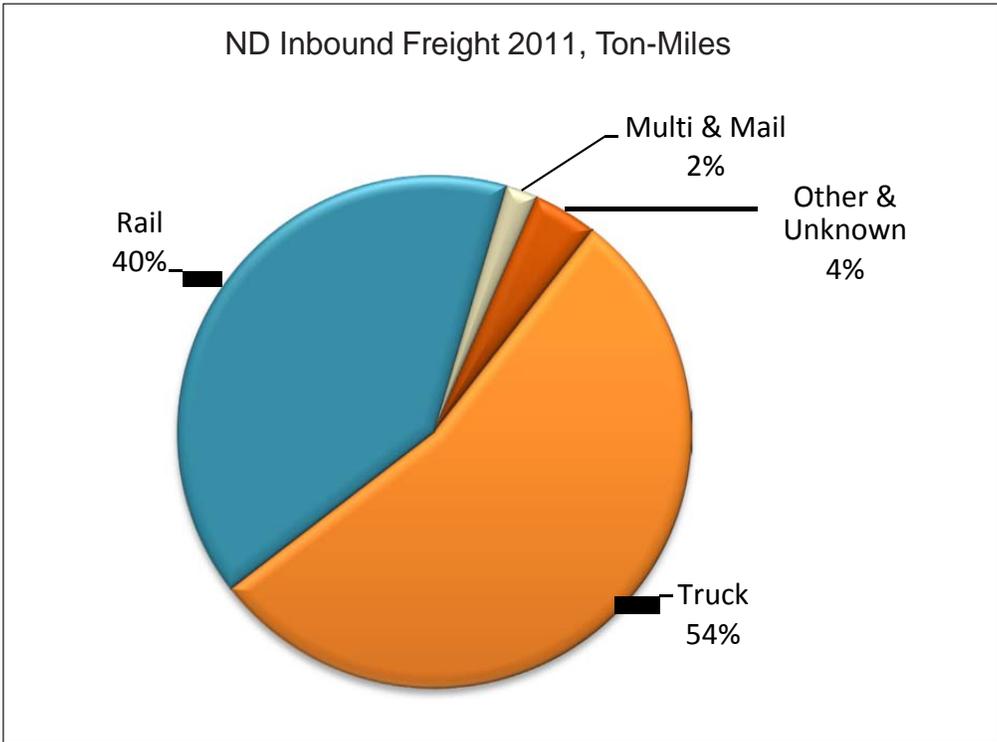
Commodity Class	Tons in 1,000s	Shipped Beyond ND
Cereal Grains	105,733	48%
Coal	45,783	0%
Gravel And Crushed Stone	12,520	0%
Live Animals And Live Fish	10,071	93%
Fertilizers	8,661	80%
Other Ag Products	6,906	44%
Other Prepared Foodstuffs And Fats And Oils	4,886	86%
Other Coal/Petroleum Prod.	4,462	51%
Animal Feed	3,437	88%
Basic Chemicals	3,352	78%
Milled Grain Prods.	2,207	69%
Fuel Oils	2,186	9%
Waste and Scrap	2,124	13%
Nonmetallic Minerals	2,113	83%
Nonmetallic Mineral Products	1,818	17%
Gasoline And Aviation Turbine Fuel	1,684	11%
Plastics and Rubber	1,501	92%
Wood Products	1,307	84%
Machinery	1,123	63%
Base Metals	1,082	70%

Source: FHWA, U.S. DOT

Ten states accounted for three in every four tons of freight shipped to North Dakota in 2011. The largest originator was Minnesota with 20% of the volume. Montana was also a large shipper into North Dakota, attributing 15% of the tons in 2011. The remaining states were similar in the freight volume shipped to North Dakota, accounting for 6% to 7% of the total shipments bound for North Dakota in 2011.

Freight Destined for North Dakota, by Origination State	
State	Tons in 1,000s
Minnesota	6,343
Montana	4,563
South Dakota	2,052
Oregon	1,922
Illinois	1,810
Wyoming	1,748
Wisconsin	1,739
Iowa	1,567
Texas	1,290
Indiana	982

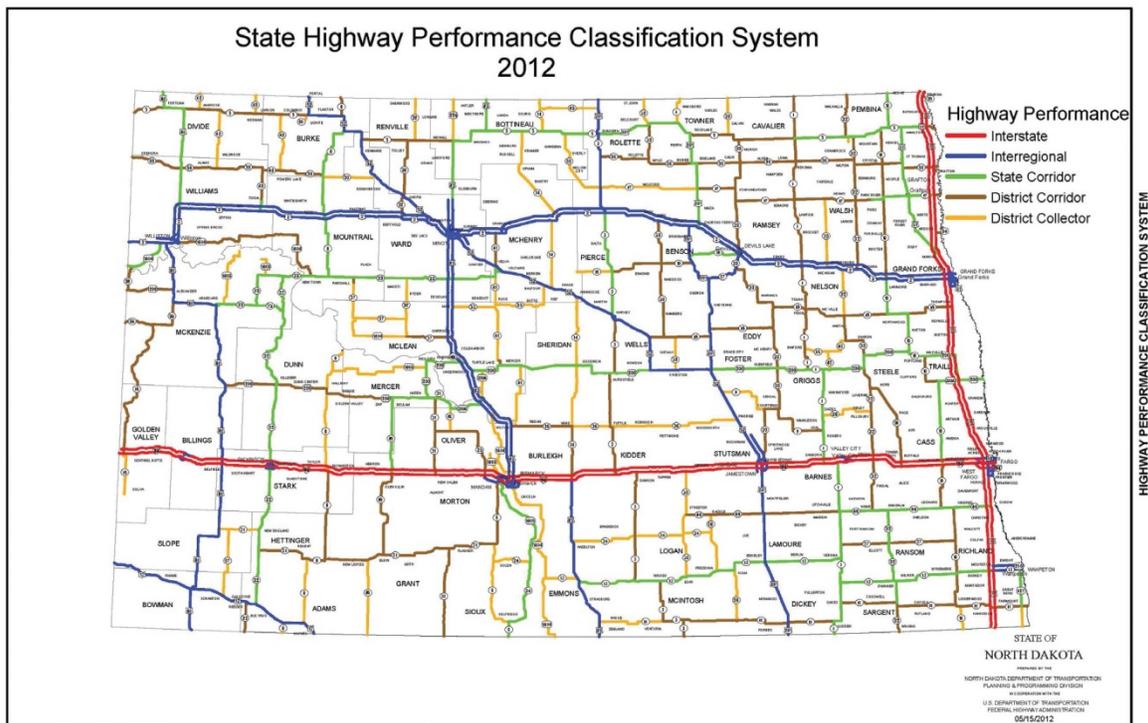
The largest share of the freight demand, measured in ton-miles, was in truck transportation at 54%. Rail was also a significant mode in the mix attributing 40% of the ton-miles for the North Dakota bound freight. Air accounted for less than 1% of the ton-miles associated with shipments into the state.



## Transportation Infrastructure



A few facts about North Dakota transportation infrastructure provides context for the larger discussion of flows into national freight supply chains. North Dakota's has 86,851 miles of roads, including 571 miles of interstate. In the state 76% of the roads classified as rural, the highest in the nation. The FHWA reports 12% roads are under local authority which is double the national average and in the highest quartile among states in a distribution of local road share in the state system.<sup>3</sup> Interstates play a key role in moving traffic through the state as well as in providing local businesses with access to national and international markets. The local roads are important as a reliable gathering network for agricultural products, and more recently, oil. The ND Department of Transportation uses a classification system for its highways that elevates highway investment priorities based on traffic volumes, trade patterns, and public input as illustrated in the following map.<sup>4</sup>

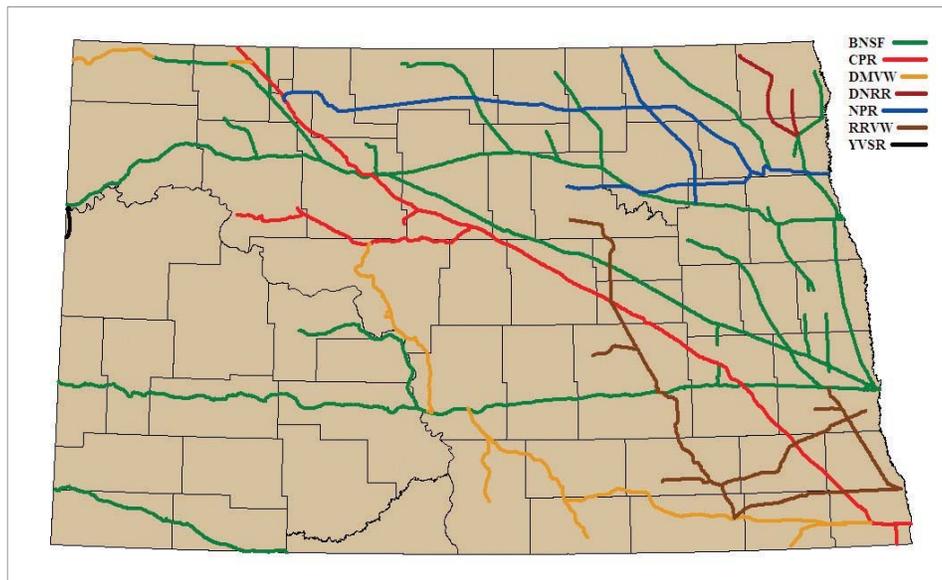
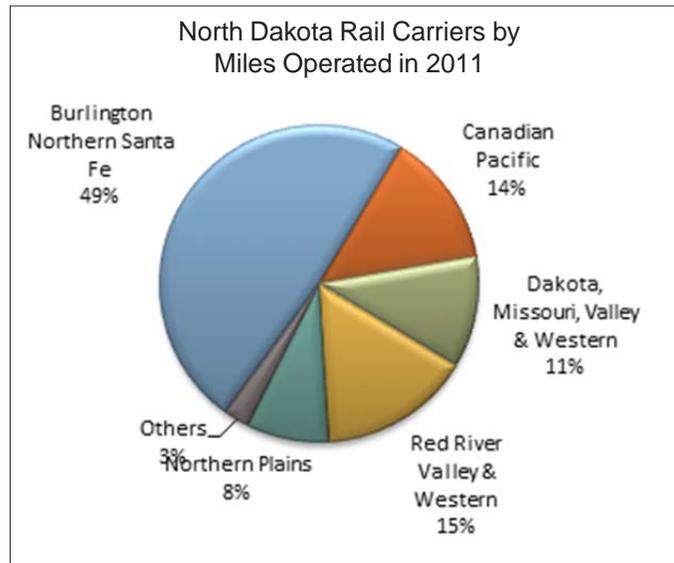


<sup>3</sup> U.S. Department of Transportation, Federal Highway Administration, Office of High Policy Information, Highway Statistics Series, accessed online at <http://www.fhwa.dot.gov/policyinformation/statistics.cfm>.

<sup>4</sup> ND Department of Transportation, Highway Performance Classification System, accessed online at <https://www.dot.nd.gov/divisions/planning/hwclassification.htm>.

Local roads are often the “first-mile” in a transportation system that allows the industry to gather a relatively homogeneous, low-value product from ubiquitous field production sites for delivery to local collection and processing points. A recent survey of elevators in the upper Midwest identified local road investments as a top transportation concern in several states (Vachal 2012).<sup>5</sup>

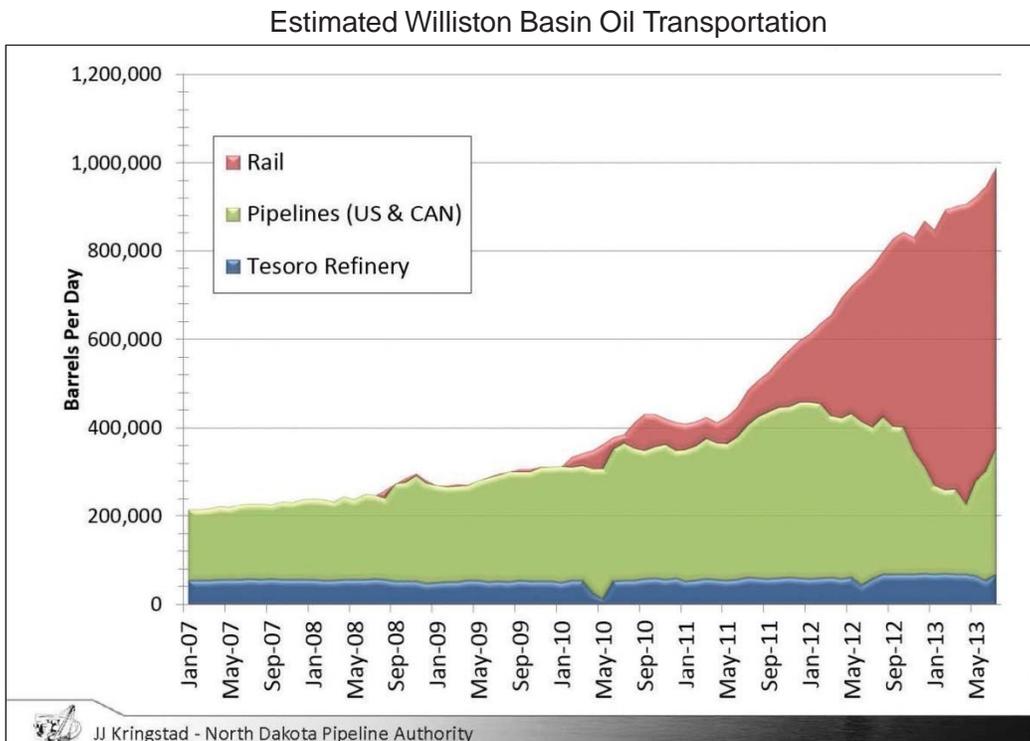
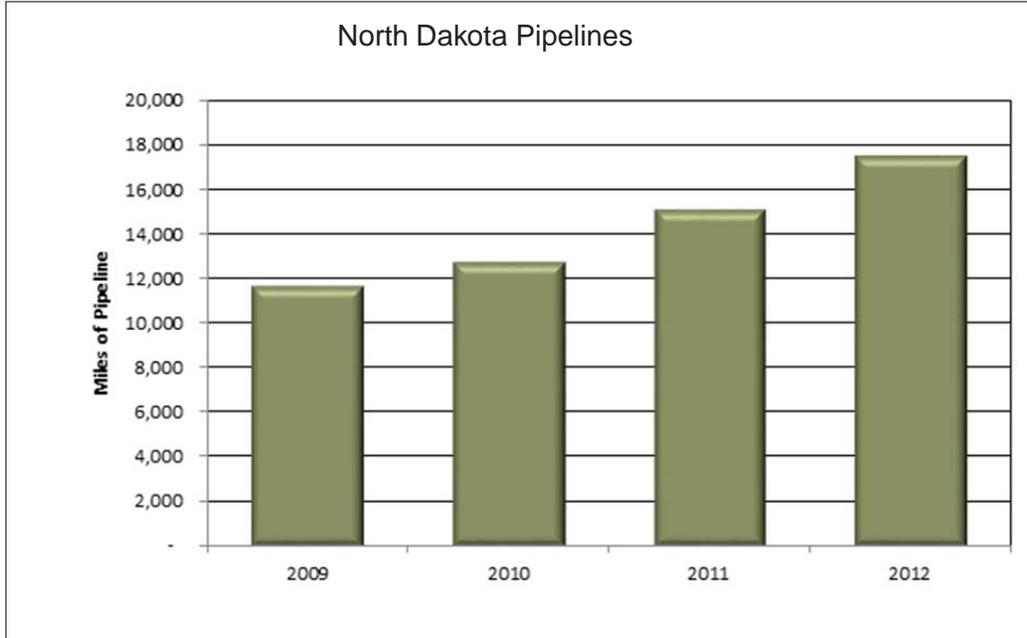
North Dakota’s rail system includes two Class I railroads, three short line carriers, and three other local operations with small track miles. The Burlington Northern Santa Fe (BNSF) and Canadian Pacific Railway (CP) operate 49.0% and 14.0% of the 3,528 track miles in the state.<sup>6</sup> Three short line carriers, affiliated with these Class I railroads, operate 35.0% of the rail miles. The remaining 3.0% of the track is owned by other operations with little role in the state’s freight system.



<sup>5</sup> Vachal, Kimberly. *Regional Elevator Transportation: Market Decisions and Rail Service*, DP-259. North Dakota State University, Fargo: Upper Great Plains Transportation Institute, 2012.

<sup>6</sup> American Association of Railways, *Freight Railroads in North Dakota*, June 2013.

Approximately 17,540 miles of gathering and transmission pipeline are currently located in North Dakota. Investments in recent years have nearly doubled the pipeline miles in the state according to information provided by the N.D. Pipeline Authority.<sup>7</sup> Insight into the role of rail and pipelines in this market was also provided by the N.D. Pipeline Authority in its estimates for oil traffic in recent years.



<sup>7</sup> Kringstad, Justin, 2013, N.D. Pipeline Authority, October 13, 2013 presentation to the N.D. Energy Development and Transmission Committee, Bismarck, ND.