

# FREIGHT

## Freight Transportation Profile—North Dakota Freight Analysis Framework

Understanding future freight activity is important for matching infrastructure supply to demand and for assessing potential investment and operational strategies. To help decisionmakers identify areas in need of capacity improvements, the U.S. Department of Transportation developed the Freight Analysis Framework (FAF), a comprehensive national data and analysis tool, including county-to-county freight flows for the truck, rail, water, and air modes. FAF also forecasts freight activity in 2010 and 2020 for each of these modes. Information about the methodology used in developing FAF is available on the Office of Freight Management and Operations' website [www.ops.fhwa.dot.gov/freight](http://www.ops.fhwa.dot.gov/freight).

The U.S. freight transportation network moves a staggering volume of goods each year. Over 15 billion tons of goods, worth over \$9 trillion, were moved in 1998. The movement of bulk goods, such as grains, coal, and ores, still comprises a large share of the tonnage moved on the U.S. freight network. However, lighter and more valuable goods, such as computers and office equipment, now make up an increasing proportion of what is moved. FAF estimates that trucks carried about 71 percent of the total tonnage and 80 percent of the total value of U.S. shipments in 1998. By 2020, the U.S. transportation system is expected to handle about 23 billion tons of cargo valued at nearly \$30 trillion.

### North Dakota

Table 1 presents information on freight shipments that have either an origin or a destination in North Dakota. As shown in the table, trucks moved a large percentage of the tonnage and value of shipments, followed by rail tonnage and air value. Figures 1 and 2 show freight flows on the highway and rail modes.

Truck traffic is expected to grow throughout the state over the next 20 years. Much of the growth will occur in urban areas and on the Interstate highway system (Figures 3 and 4). Truck traffic moving to and from North Dakota accounted for 12 percent of the average annual daily truck traffic (AADTT) on the FAF road network. Approximately 49 percent of truck traffic involved in-state shipments, and 29 percent involved trucks traveling across the state to other markets. About 10 percent of the AADTT were not identified with a route-specific origin or destination.

Table 2 shows the top five commodity groups shipped to, from, and within North Dakota by all modes. As expected, the top commodities by weight and value are farm products and food or kindred products.

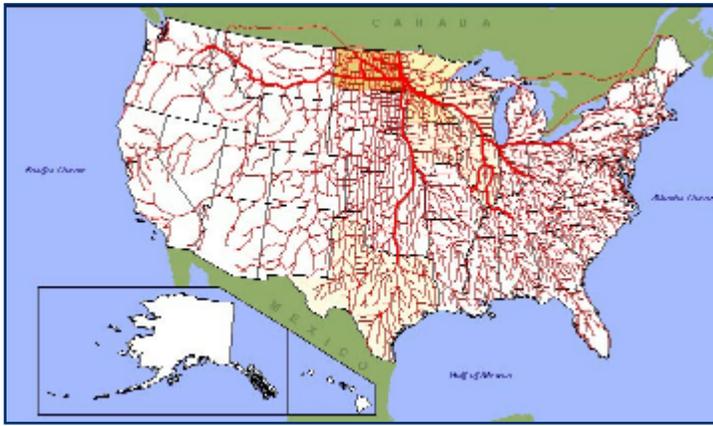
Table 1. Freight Shipments To, From, and Within North Dakota: 1998, 2010, and 2020

NORTH DAKOTA	Tons (millions)			Value (billions \$)		
	1998	2010	2020	1998	2010	2020
<b>State Total</b>	117	159	196	85	166	278
<b>By Mode</b>						
Air	<1	<1	<1	14	34	64
Highway	74	99	120	61	113	182
Other <sup>a</sup>	<1	<1	<1	<1	<1	<1
Rail	40	56	71	10	19	31
Water	2	2	3	<1	<1	<1
<b>By Destination/Market</b>						
Domestic	88	114	135	43	73	113
International	29	44	61	41	93	166

Note: Modal numbers may not add to totals due to rounding.

<sup>a</sup> The "Other" category includes international shipments that moved via pipeline or by an unspecified mode.

**Figure 1. Freight Flows To, From, and Within North Dakota by Truck: 1998 (tons)**



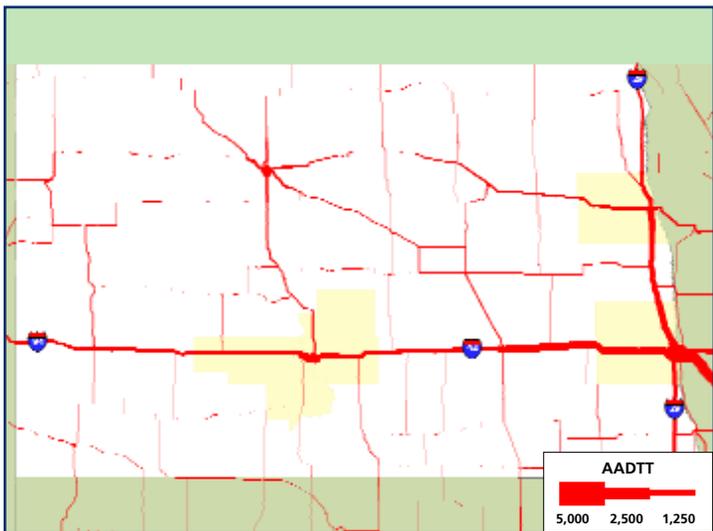
Federal Highway Administration

**Figure 2. Freight Flows To, From, and Within North Dakota by Rail: 1998 (tons)**



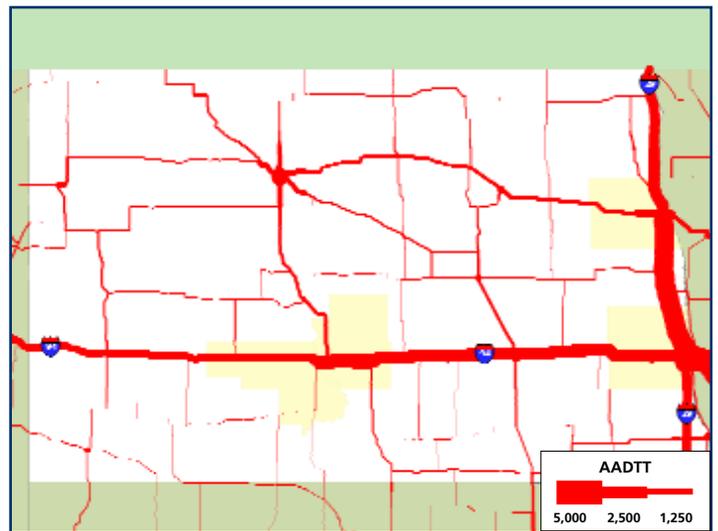
Federal Railroad Administration

**Figure 3. Estimated Average Annual Daily Truck Traffic: 1998**



Federal Highway Administration

**Figure 4. Estimated Average Annual Daily Truck Traffic: 2020**



Federal Highway Administration

**Table 2. Top Five Commodities Shipped To, From, and Within North Dakota by All Modes: 1998 and 2020**

Commodity	Tons (millions)		Commodity	Value (billions \$)	
	1998	2020		1998	2020
Farm Products	48	64	Farm Products	16	27
Food/Kindred Products	18	36	Food/Kindred Products	15	49
Coal	11	16	Machinery	13	48
Chemicals/Allied Products	8	15	Transportation Equipment	10	31
Lumber/Wood Products	6	15	Instr/Photo Equip/Optical Equip	7	46

**For More Information, Please Contact**

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November 2002  
FHWA-OP-03-050  
EDL 13738

A series of FAF products are available on the website noted below. FAF outputs include freight flow maps for states, modes, and gateways; detailed databases on traffic flows and commodity movements; information on the methodologies used to develop FAF; and forecast assumptions.

The U.S. Department of Transportation, Bureau of Transportation Statistics (BTS) is also developing a series of state transportation profiles. For more information and to obtain a copy of the BTS reports, please call 202-366-DATA.



U.S. Department of Transportation

**Federal Highway Administration**