

4.0 Ohio Freight Rail Traffic

4.1 Rail Traffic Commodity Profile

The state of Ohio plays an important role in freight rail transportation. In 2007, Ohio ranked ninth nationally in total originated rail tons and fourth nationally in total terminated rail tons. In 2007, a total of 311,226,977 tons and 6,698,844 units⁴ of freight were transported by railroads in Ohio. The largest component of the tonnage and carloads consisted of traffic that passed through Ohio between markets outside the state. By virtue of Ohio’s location in the North American rail network, much of this “overhead” traffic consisted of movements between eastern locations and markets in the Midwest as shown in **Exhibit 4-1**.

Exhibit 4-1: Ohio Rail Traffic Type – Estimated Volumes

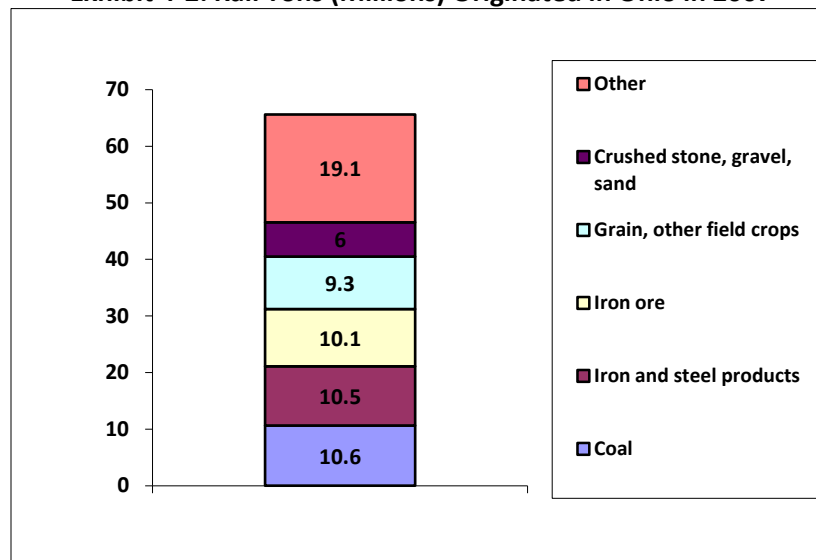
Traffic Type	Tons (millions)	Percent	Carloads	Percent
Interstate Inbound	40.1	12.9%	474,932	7.1%
Interstate Outbound	68.5	22.0%	667,079	10.0%
Intrastate	25.5	8.2%	698,573	10.4%
Overhead	177.1	56.9%	4,858,260	72.5%
Total	311.2	100.0%	6,698,844	100.0%

Note: Overhead traffic is estimated

Source: Association of American Railroads Website

As shown in **Exhibit 4-2**, coal and iron and steel products are the principal rail transported products originating in Ohio, terminating either in the state or in markets in other states. The Ohio railroads originate 10.6 million tons of coal and 10.5 million tons of iron and steel products, each representing approximately 16 percent of the state’s originated rail tonnage.

Exhibit 4-2: Rail Tons (Millions) Originated in Ohio in 2007



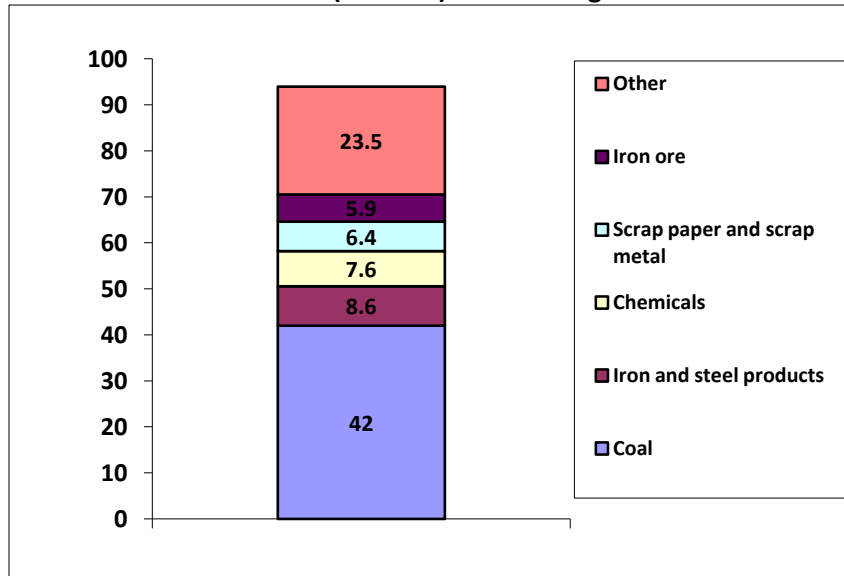
Source: Association of American Railroads

The state ranked fifth in terminated rail tonnage with coal iron ore, grain, and crushed stone, gravel, and sand among the leading commodities. Coal (42 million tons), however, is the dominant product moving by rail and

⁴ Includes intermodal units

terminating in the state as shown in **Exhibit 4-3**. In addition to in-state consumption, coal not only terminates at Ohio’s power plants and industrial sites, but is also transferred to vessels through Ohio’s port network.

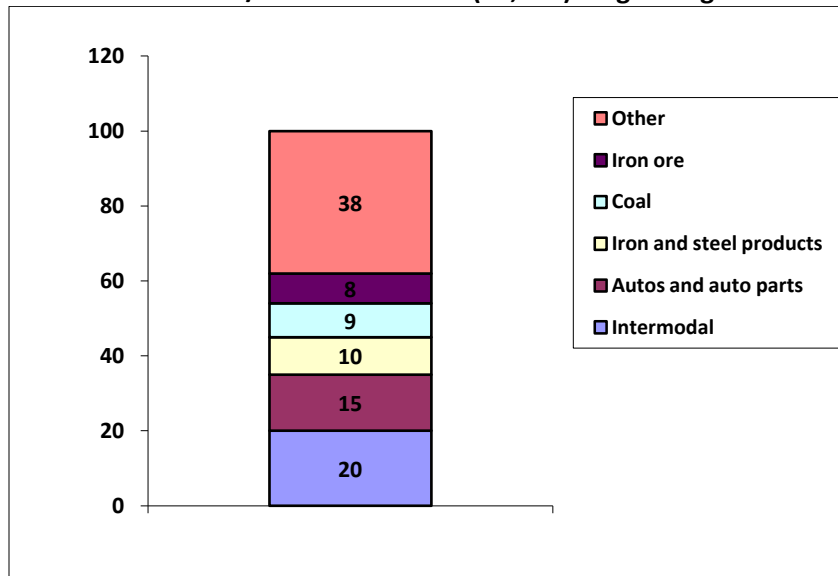
Exhibit 4-3: Rail Tons (Millions) Terminating in Ohio in 2007



Source: Source: Association of American Railroads

In terms of freight car or intermodal units, Ohio originates more units of intermodal traffic than any other commodity. The second most important commodity is autos and auto parts.

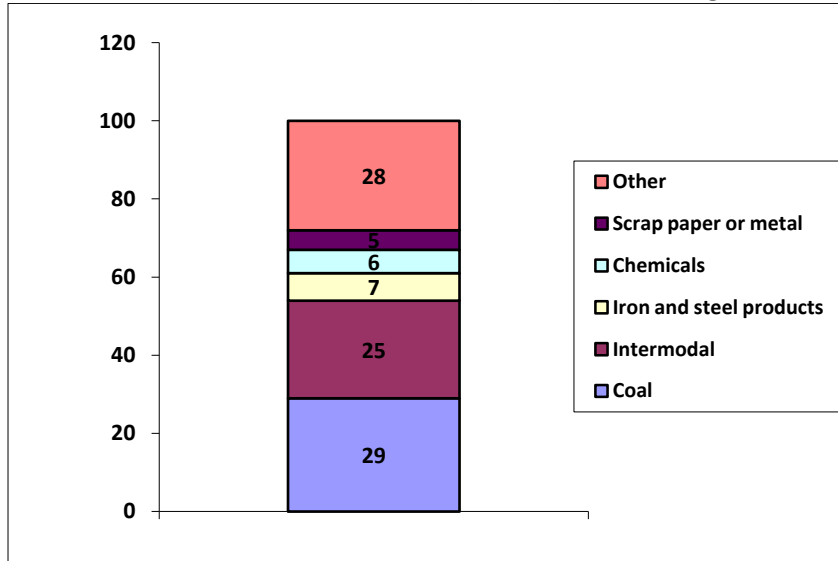
Exhibit 4-4 Rail Carloads/Intermodal Units (10,000) Originating in Ohio in 2007



Source: Source: Association of American Railroads, Global Insight

Shown in **Exhibit 4-5**, coal and intermodal lead the units terminated in the state. Collectively, they account for 54 percent of the terminating rail units. Iron and steel products, chemicals, scrap paper, or metal contribute significantly to the rail traffic volume terminated in Ohio.

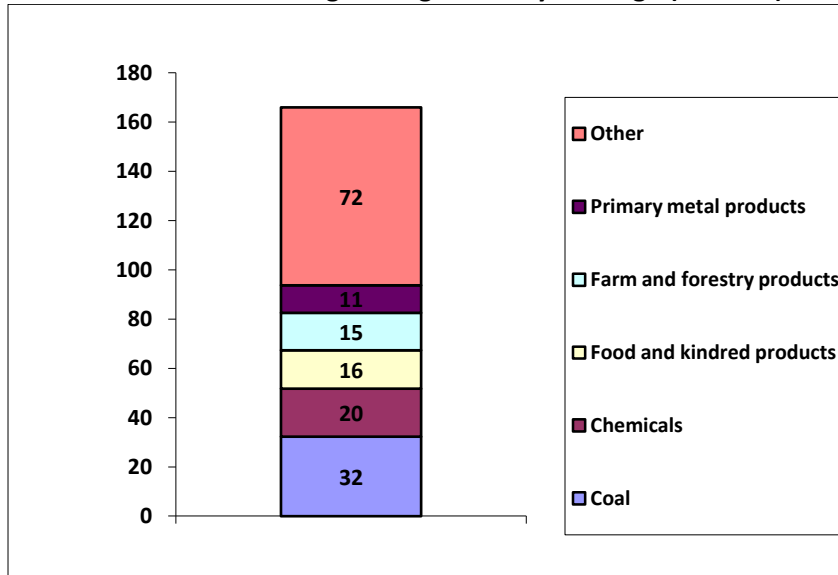
Exhibit 4-5 Rail Carloads/Intermodal Units (10,000) Terminating in Ohio in 2007



Source: Source: Association of American Railroads

An ODOT study of overhead rail traffic conducted using the 2004 U.S. Surface Transportation Board Waybill Sample offers insight to the rail traffic bridging the state. Coal is the largest commodity group that crosses Ohio. It is likely that this primarily represents Appalachian coal shipments destined to markets to the north and west. Chemicals shipments comprise the second highest tonnage commodity group passing through Ohio in 2004.

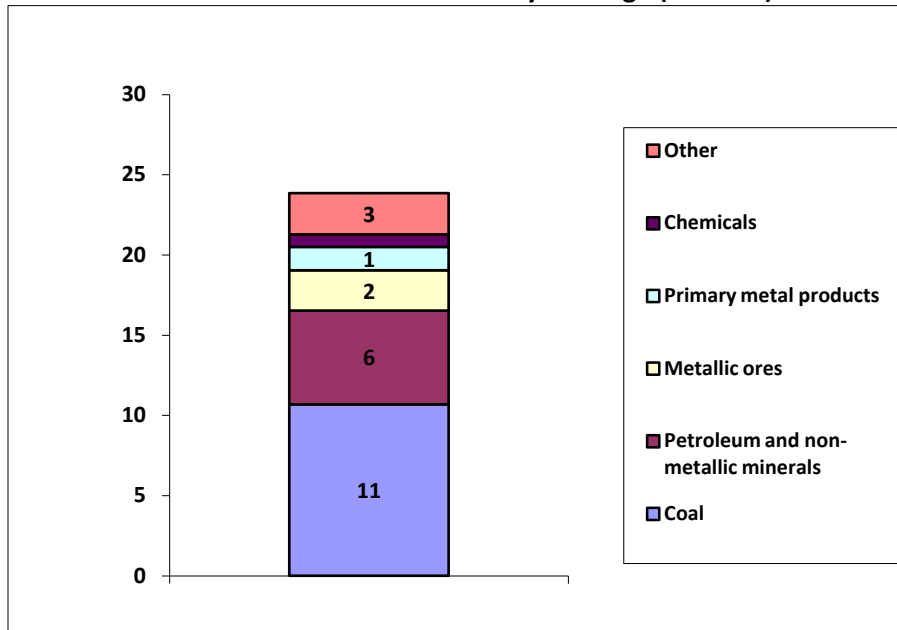
Exhibit 4-6 Rail Traffic Passing Through Ohio by Tonnage (Millions) in 2004



Source: Association of American Railroads

Coal, petroleum products, and non-metallic minerals collectively represent about 80 percent of the intrastate traffic in Ohio.

Exhibit 4-7 Ohio Intrastate Rail Traffic by Tonnage (Millions) in 2004

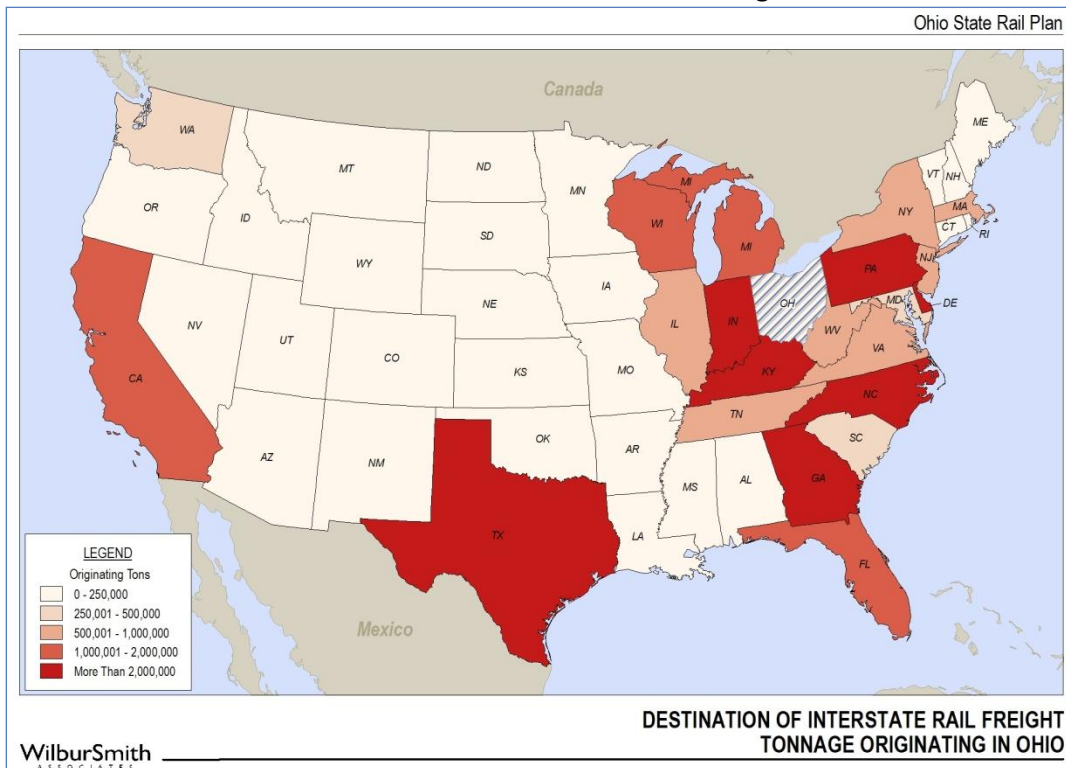


Source: Association of American Railroads

4.2 Rail Traffic Geography Profile

Exhibit 4-8 displays the destination states of rail freight that originates from Ohio. The source of the data is the U.S. Federal Highway Administration’s Freight Analysis Framework - 2 and represents preliminary estimates for 2008. As can be seen, the largest destinations for rail freight originating in Ohio are several of Ohio’s neighboring states, including Pennsylvania, Kentucky, Indiana, and Michigan. Several southeastern states, such as North Carolina, Georgia, and Florida are also important trading partners with Ohio. Other important destinations include Texas, California, Wisconsin. As a sample of some of the larger commodity flows originating in Ohio, shippers within the state send cereal grains, waste/scrap, petroleum products, non-metallic minerals, and base metals to Pennsylvania. Ohio sends chemicals to Kentucky, and agricultural products to Georgia and North Carolina. Ohio sends base metal products, petroleum products to Texas, and base metals, waste/scrap to Indiana.

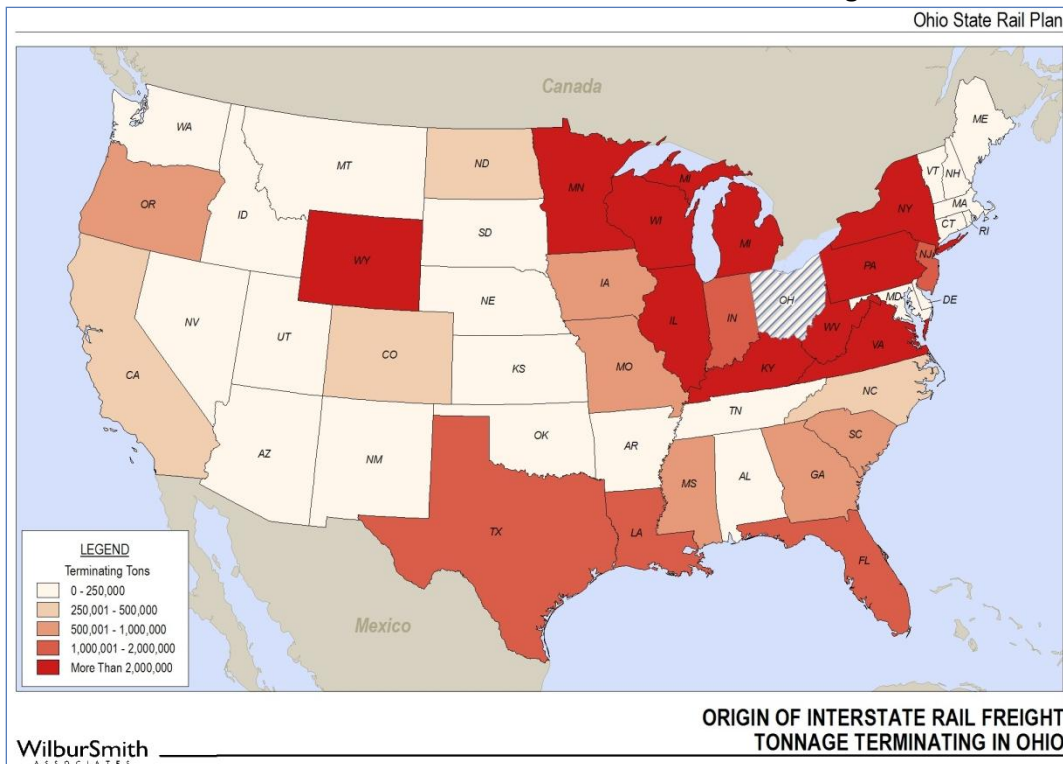
Exhibit 4-8 Distribution of Interstate Rail Traffic Originated in Ohio



Source: FHWA Freight Analysis Framework -2

Exhibit 4-9 shows the originating states that ship rail freight into Ohio. Among the states originating the highest volumes of tons are several large coal-producing states, such as Wyoming, West Virginia, and Kentucky, which account for the sizeable percentage of total terminating tonnage that coal represents in Ohio. The largest rail supplying states tend to be those in the closest proximity to Ohio, including New York, Pennsylvania, Virginia, Ohio, Kentucky, Illinois, Michigan, Wisconsin, and Minnesota. As a sample of commodity flows with trading states, Ohio receives coal from Kentucky, West Virginia, Virginia, Pennsylvania, and Wyoming. Ohio receives metallic ores from Minnesota and gravel from Wisconsin. Ohio receives motor vehicles from Michigan, and base metals from Pennsylvania. Ohio receives fertilizer and food products from Illinois and waste/scrap from New York.

Exhibit 4-9 Distribution of Interstate Rail Traffic Terminating in Ohio



Source: FHWA Freight Analysis Framework -2

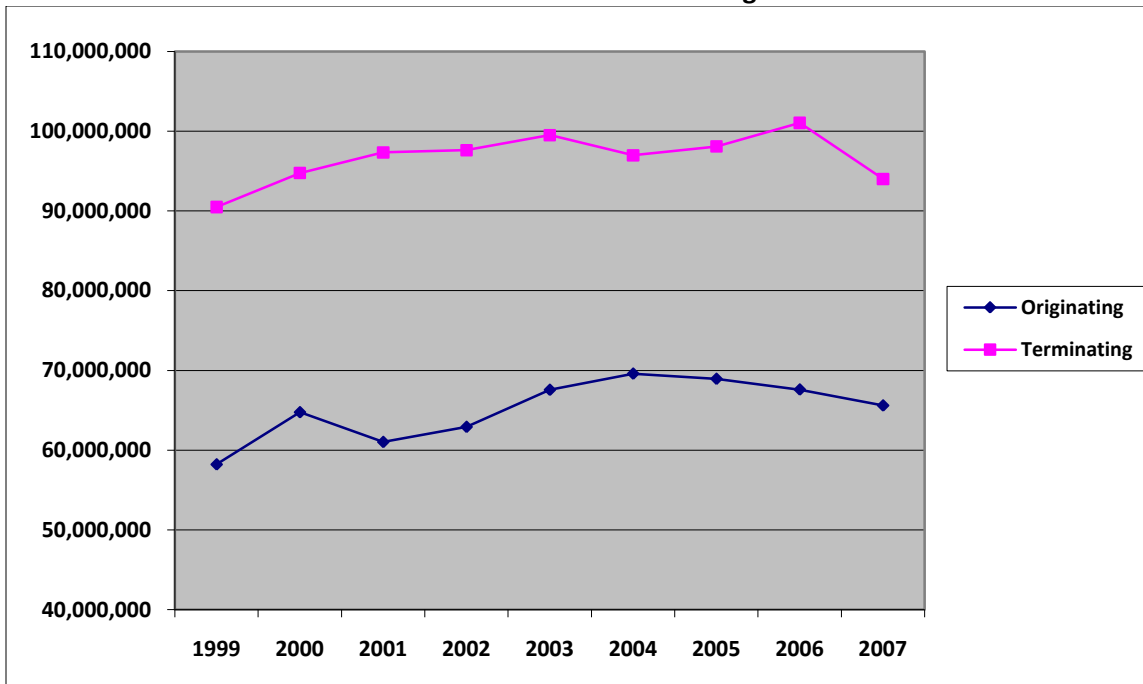
4.3 Rail Traffic Trends

According to the U.S. Bureau of Transportation Statistics from the Association of American Railroads, growth in rail tonnage terminating in Ohio was moderate, increasing at the annualized rate of 0.5 percent between 1999 and 2007. Until 2006, terminating rail traffic grew at a rate of 1.6 percent per year; however, it suffered a sharp decline in 2007 from the prior year.

On the other hand, rail traffic originating in Ohio has been steadily declining since 2004, although it showed an annual rate of increase between 1999 and 2007 of approximately 1.5 percent per year due to increases from 1999 to 2004, the highest year for originating rail traffic.

In every year coal was the commodity with the highest terminating tonnage. In every year except 2003 and 2007 iron and steel products had the highest originating tonnage. In 2003 and 2007, coal had the highest originating tonnage.

Exhibit 4-10 Historic Ohio Rail Tonnage Trends



Source: Association of American Railroads

ODOT’s analysis of the 2004 Waybill Sample also includes a forecast of traffic in the year 2030. While current economic conditions have changed significantly since the study was completed, its results can be used to describe expected traffic distributions as well as expected annual growth when the economy returns to more normal conditions.

In the future, Ohio’s rail tonnage is expected to increase by a compound annual growth rate (CAGR) of 1.6 percent. The greatest increases are expected in through rail traffic, while intrastate traffic is expected to grow the least. This shift away from intrastate toward overhead traffic likely reflects an overall trend within railroad transportation toward longer distance unitized train service away from shorter-haul individual carload service. Both originating (outbound interstate plus intrastate) and terminating traffic (inbound interstate plus intrastate) traffic are expected to grow at a rate of roughly 1.2 percent CAGR.

Exhibit 4-11 Forecasted Ohio Rail Traffic by Type

Traffic Type	2004 Tonnage (Millions)	2004 Distribution	2030 Tonnage (Millions)	2030 Distribution	2004-2030 CAGR ⁵
Interstate Inbound	76.8	25.0%	108.4	23.5%	1.3%
Interstate Outbound	40.8	13.3%	58.5	12.7%	1.4%
Intrastate	23.9	7.8%	30.2	6.6%	0.9%
Overhead	165.9	54.0%	264.5	57.3%	1.8%
Total	307.3	100.0%	461.6	100.0%	1.6%

Source: Global Insight

⁵CARG is the interest rate at which a given present value would "grow" to a given future value in a given amount of time.

It is expected that in the future the commodity referred to as miscellaneous shipments will show the most tonnage moving by rail in the state of Ohio, surpassing coal. This commodity is principally transported in containers or trailers. This reflects the increasing attractiveness of intermodal rail service as an alternative to truck. The last decade saw significant growth in ocean carrier container traffic moving to inland markets by rail. Domestic intermodal transportation is expected to experience a similar surge in the next decade.

International trade trends and its impact on intermodal development in Ohio will be discussed in more detail in **Chapter 5**.

Exhibit 4-12 Forecasted Ohio Rail Traffic by Commodity

Commodity	2004 % Traffic by Commodity	2030 % Traffic by Commodity	2004-2030 CAGR
Miscellaneous	14.5%	25.8%	3.9%
Coal	24.4%	22.1%	1.2%
Chemicals	10.2%	7.8%	0.5%
Food Products	7.1%	7.3%	1.7%
Transportation Equipment	6.1%	6.1%	1.6%
Primary Metal Products	9.4%	5.9%	-0.3%
Farm and Forestry Products	7.7%	5.6%	0.3%
Petroleum Products	4.0%	3.9%	1.5%
Crude Petroleum and Non-Metallic Minerals	3.9%	3.6%	1.3%
Clay, Concrete, Glass & Stone Products	2.6%	3.2%	2.3%
Pulp, Paper	2.8%	2.7%	1.5%
Lumber or Wood Products	2.5%	2.5%	1.5%
Metallic Ores	3.8%	2.4%	-0.2%
Other	0.9%	1.0%	2.4%
Total	100.0%	100.0%	1.6%

Source: Global Insight

Despite slow growth, coal and chemicals will remain as important commodities transported by rail. Metal products and metallic ore tonnages are anticipated to decline in the future.

4.4 Rail Traffic Densities

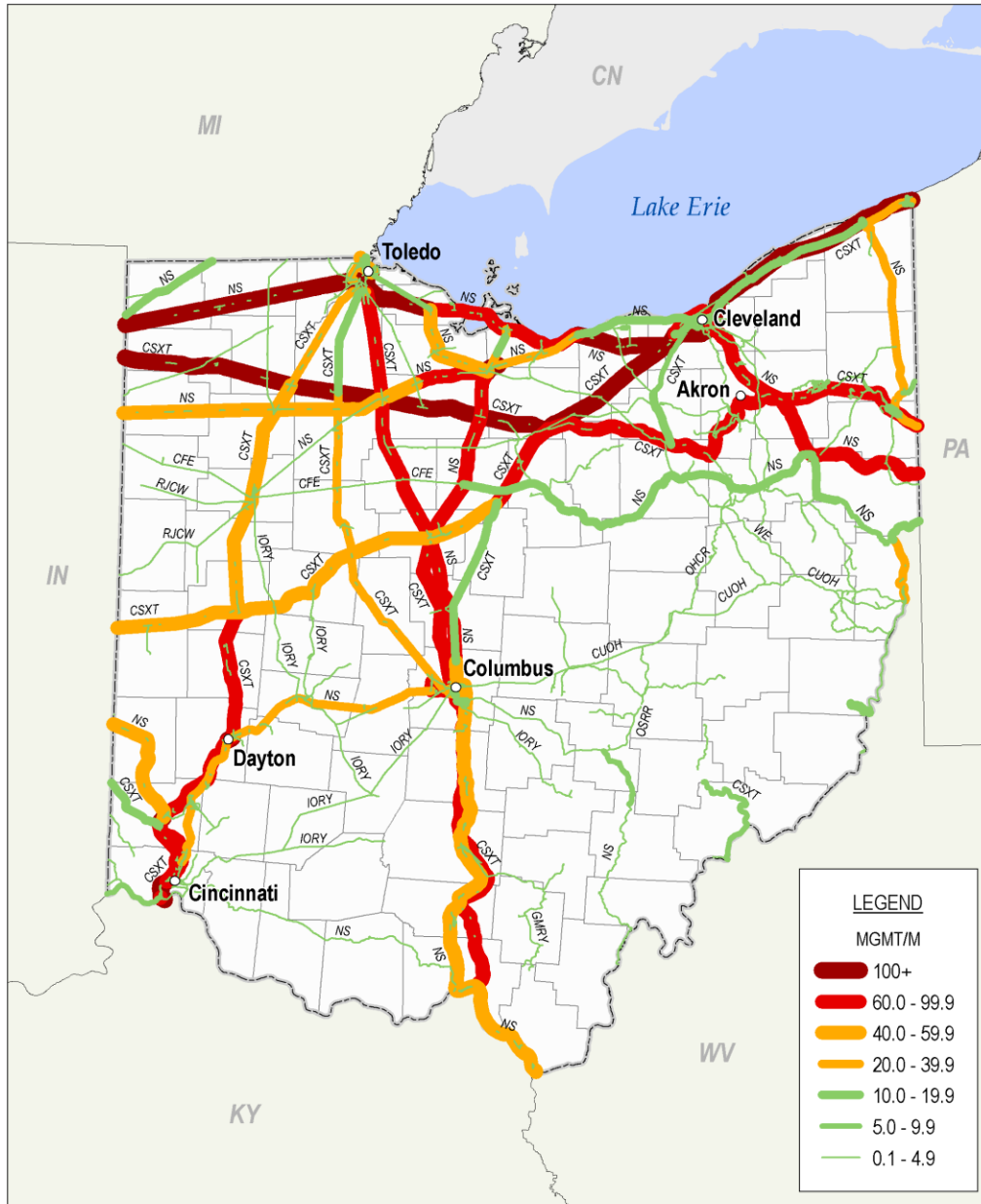
Exhibit 4-13 displays freight density of Ohio rail lines for 2007 measured in million gross ton-miles per mile on each rail line. This is an indication of both the volume of rail traffic over the line, as well as weight of the commodities carried.

Rail lines with the highest densities in Ohio are the CSX and NS east-west lines that cross the northern part of the state. Some segments, such as the NS Chicago Line and Erie West subdivisions between the Pennsylvania border and Vermillion, OH or the CSX Greenwich subdivision between Cleveland and Greenwich, OH carried over 100 million gross ton-miles per mile in 2007. These are among the highest density rail lines in the nation.

The CSX line that runs north-south between Portsmouth and Toledo via Columbus also experiences very heavy traffic volumes.

Exhibit 4-13 Ohio Rail Freight Density 2007

Ohio State Rail Plan



WilburSmith
ASSOCIATES

DENSITY OF OHIO RAIL LINES

Source: U.S. Federal Railroad Administration

The high densities over these corridors can be attributed to the large volumes of bulk material, such as coal, grain, and metal ores, as well as manufactured goods such as autos and steel. However, the growing volumes of intermodal traffic, although lighter than bulk goods, are also contributing to increases in density on a number of rail lines in the state. As container traffic shifts to the northeast ports, New York and Norfolk, traffic density will increase further.