4– Chapter 4: Economic Context of Freight on Wisconsin's Transportation System

4.1 Introduction

Businesses throughout Wisconsin use the transportation system to obtain the inputs needed to produce their goods and get them to market. A safe and efficient transportation system supports the economy by providing access to inputs and markets at a low cost, potentially reducing the overall cost of doing business and increasing competitiveness. Predictable and reliable travel times are important for manufacturing and other industries using just-in-time delivery. A safe, integrated, and seamless network of roadways, airports, harbors, pipelines, and railroads link Wisconsin businesses and consumers to the global economy. Without investment in the transportation system, the link to the global economy could degrade, resulting in lost productivity and competitiveness.

Overview of Chapter 4

- Describes the critical link between Wisconsin's transportation system and the state's economy
- Explores how freight movement in Wisconsin creates jobs and supports economic development
- Reviews freight-dependent sectors in Wisconsin
- Identifies Wisconsin's relationship to the Midwest, connections to the global economy, and the required transportation assets needed to support regional and global trade

The connection between the transportation system and the economy makes transportation investment and policy choices not only about transportation, but also about facilitating economic development and growth.

In order to provide a transportation system that meets the needs of the state economy, an understanding of the current and future needs of the state's freight-dependent industries is critical. In addition, understanding the driving forces that could significantly affect those industries over the next 20 years allows decision makers to anticipate and invest in improvements that enable economic growth in Wisconsin. This chapter discusses the state's economy, composite industries and sectors.[1]

4.2 Wisconsin's Economy

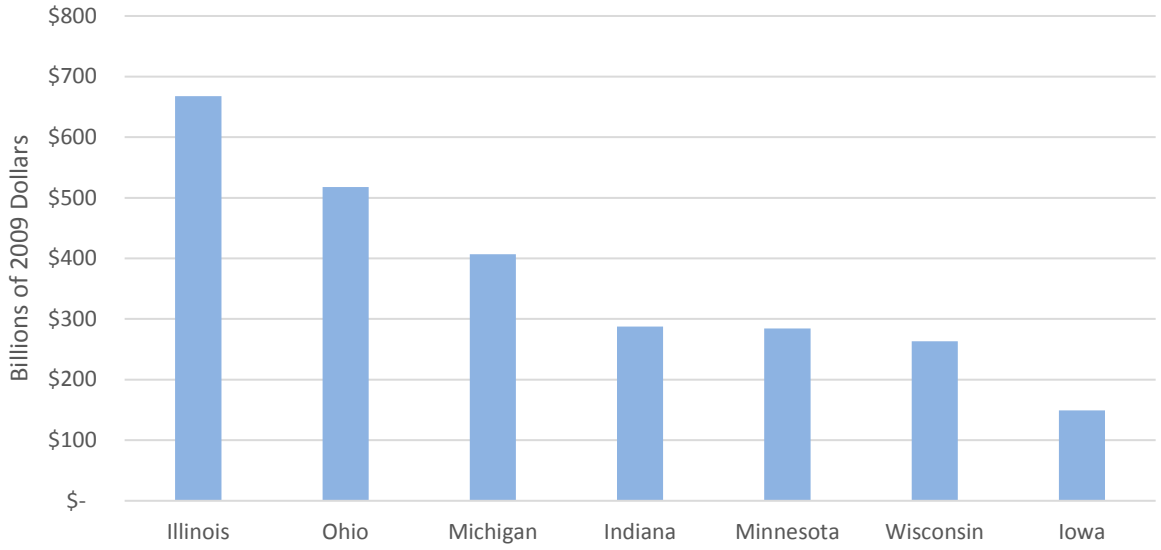
Gross Domestic Product

GDP is an economic statistic measuring the value of the goods and services produced by the state economy over a given time period. It is an indicator of the health of the state's economy.

According to the United States Bureau of Economic Analysis (BEA), Wisconsin's Gross Domestic Product (GDP) was $281.6 billion in 2013, ranking it 20th by state, at about 1.7 percent of the nation's total GDP.[2] Figure 4-1 displays the GDP of Midwestern states. Wisconsin has the second-smallest economy compared to other states in the region.

[1] Due to the limited availability and adequacy of freight and economic data, multiple sources and data from 2009 through 2013 was used to support the analysis provided within this chapter.
[2] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."

Figure 4-1: Comparison of Midwestern State Regional Real GDP, 2013

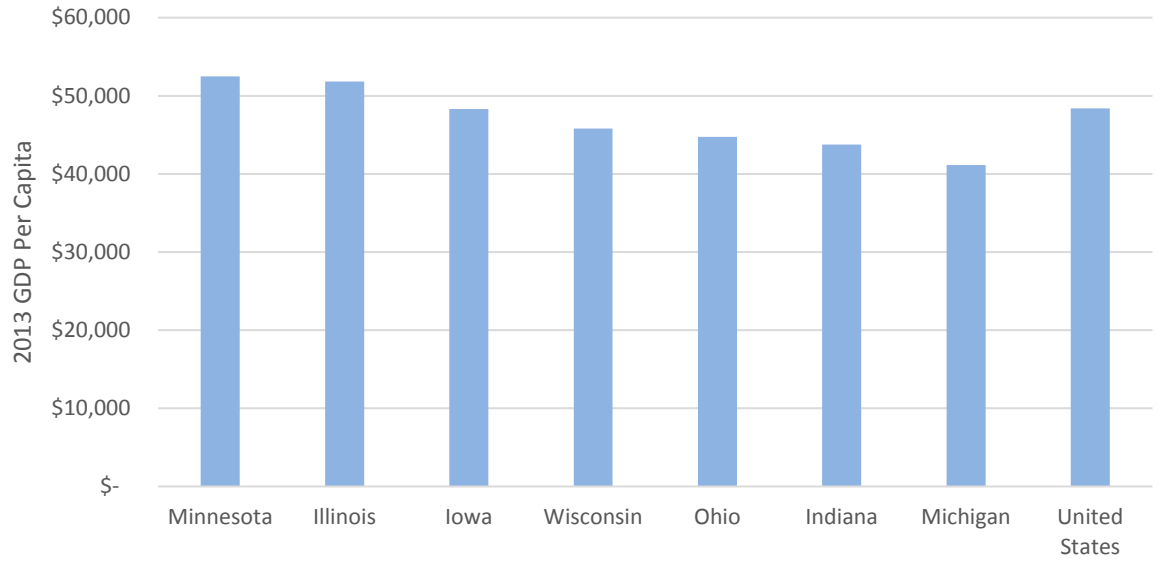


Billions of 2009 Dollars

Source: U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State"

Figure 4-2 displays the 2013 GDP per capita, which controls for differences in population between states. Wisconsin measures in the middle of the referenced regional states, with a per capita GDP of $45,811 in 2013.

Figure 4-2: Comparison of Midwestern Regional GDP per Capita, 2013



Billions of 2009 Dollars

Source: U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State"

Wisconsin's GDP Outlook

Wisconsin's GDP has rebounded from the 2008-2009 recession and is growing. By 2040, Wisconsin's GDP is forecast to grow to $448.8 billion,[3] at a compound annual rate of two percent, for an estimated 71 percent increase. As shown in Table 4-1, Wisconsin's forecast growth mirrors that of the United States over the same time period.

Table 4-1: Summary Real GDP for Wisconsin and the United States, 2013-2040

	2013	2040	2013-2040 Compound Annual Growth Rate
Wisconsin GDP	$263.3	$448.8	2.0%
United States GDP	$15,526.7	$26,853.4	2.0%

Billions of 2009 Real Dollars

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

4.3 Wisconsin's Freight-Dependent Economic Sectors

Wisconsin's diverse economy is supported by many prominent sectors, including agriculture, forestry, manufacturing, retail and wholesale trade, construction, mining, energy, and transportation services. Wisconsin's economic production and manufacturing base are geographically diverse, occupying both urban and rural areas. Wisconsin's diversity of industry and geography helps make the economy strong and resilient, but it also places high demands on the state's transportation infrastructure. To grow the economy, these sectors rely on a reliable, safe and efficient multimodal transportation system.

Industries Comprising Wisconsin's Freight-Dependent Sectors

While Wisconsin's economy is forecasted to grow, not all sectors are expected to have the same rate of growth. Additionally, the freight transportation needs of Wisconsin's sectors vary depending on the resources and the production processes used to create the final product, the location of the firm relative to suppliers, and the distance from production facilities to the end consumer of the products, among other factors. The plan defines the sectors of Wisconsin's economy that are freight-dependent (those that produce and sell goods). The remainder of this section is dedicated to identifying Wisconsin's freight-dependent industries and their associated transportation needs.

Sectors vs Industries

Sectors – A large segment of the economy comprised of many industries (e.g. agriculture and construction).

Industries – Includes more specific groups of companies or businesses that comprise a sector.

Example – Manufacturing is a sector that is composed of industries such as high tech, food, chemical or metal.

As of 2012, the six freight-dependent sectors and their composite industries shown in Table 4-2 and Table 4-3 comprised almost 40 percent of Wisconsin's employment and 44 percent of the state's GDP. Wisconsin's service sectors or non-freight-dependent sectors, which include finance, government, education, healthcare, social assistance, and food service, comprise 60 percent of Wisconsin's employment and 56 percent of Wisconsin's GDP.

[3] Regional Economic Models, Inc., 2014

Table 4-2: Wisconsin's Freight-Dependent Sectors and Industries

Freight-Dependent Sector	Industries
Wholesale & Retail Trade	Durable goods: Electronics Non-durable goods: Apparel and grocery goods
Manufacturing	Durable goods: Fabricated metals, machinery, electrical and transportation equipment Non-durable goods: Products which are immediately used by a consumer or have an expected lifespan of three years or less
Agriculture & Forestry	Agriculture: Produce, vegetables, and milk Forestry: Wood and paper products
Construction	Buildings (commercial and residential), highways, streets, bridges, and trade contractors (e.g. electrical, plumbing, heating and cooling)
Transportation, Information, & Utilities/Energy	Transportation: Truck, rail, water, air and pipeline Information: Broadcasting, telecommunications and data processing Utilities/Energy: Coal, oil and gas
Mining	Clay, concrete, glass, stone, metallic ore, and non-metallic mineral mining

Source: IMPLAN 2012

Wisconsin's transportation system supports the movement of a wide variety of products and supplies produced and sold by each sector and industry depicted in Table 4-2. Transportation provides an efficient means of shipping raw materials to factories and job sites; transporting products to market; and transporting people to work, school, marketplaces, medical facilities or other destinations where they can participate in the economy.

The Multiplier Effect

The multiplier effect is a measure of the economic consequences of a change in one sector upon other sectors. It incorporates the direct effects of activities in one sector (such as construction jobs), plus those supported through purchases of goods and services (indirect jobs), plus the effects on the rest of the economy due to household spending (induced jobs).

The significance of goods-dependent or freight-dependent sectors within Wisconsin's economy is clear. Job gains or losses in these sectors impact the rest of the economy, multiplying their impact. Employment gained or lost in these industries, whether due to transportation infrastructure or other factors, results in additional economy-wide gains or losses. When new jobs are created, the employees who fill these jobs spend their wages on goods and services, supporting jobs in housing, retail, restaurants, and other industries. This has a cumulative effect on the state and ultimately impacts the state's GDP.

Table 4-3: Wisconsin's Sector Employment and GDP Comparison, 2012

Freight-Dependent Sector	Employment	% of Total WI Employment	GDP (current billion USD)	% of Total WI GDP
Manufacturing	467,121	13.4%	$68.2	23.9%
Wholesale & Retail Trade	496,403	14.3%	$31.4	11.0%
Transportation, Information & Utilities/Energy	145,903	4.2%	$12.3	4.3%
Construction	155,399	4.5%	$8.8	3.1%
Agriculture, Forestry, Fishing & Hunting	112,290	3.2%	$4.5	1.6%
Mining	6,030	0.2%	$0.7	0.3%
Total of Freight-Dependent Sectors	1,383,146	39.7%	$125.9	44.2%
All Sectors	**3,481,773**	**100.0%**	**$284.9**	**100.0%**

Source: IMPLAN, 2012

Manufacturing

As shown in Table 4-3, Wisconsin's manufacturing sector, with 467,121 jobs and $68.2 billion in GDP, accounted for 13 percent of the state's employment and almost 24 percent of its GDP in 2012. The sector is particularly important in terms of employment. Of the other Midwestern states, only Indiana has a higher concentration of manufacturing jobs. Nationally, just nine percent of all employment was in manufacturing.[4]

Table 4-4: Manufacturing Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Billions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
4.2%[5]	1.9%[6]	$33.9[7]	1.2%[8]	-0.9%[9]	-104,421[10]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

Manufacturing is divided into durable and non-durable categories. The manufacturers of durable goods (products that last more than three years) represent the largest group of industries in the manufacturing sector, accounting for almost 60 percent of the sector's overall GDP in 2012. Wisconsin's major durable manufacturing categories include fabricated metal products, machinery, motor vehicles and other transportation equipment, electrical equipment, and computer and electronic products. The manufacturing of non-durable goods (products which are immediately used by a consumer or have an expected lifespan of three years or less) accounted for more than 40 percent of manufacturing GDP in 2012. Key non-durable manufacturing categories in Wisconsin include food products, paper products, printing, plastics, rubber products, and chemical products.[11]

Manufacturing typically relies on all modes of transportation for both the receipt of raw materials for production and for the delivery of finished goods. The sector's warehousing and logistics functions rely primarily on the highway system to make "lean inventory" and just-in-time processes operate at optimum efficiency. Technological advances in manufacturing also contribute to efficiency, which enhances production and reduces costs.

Just-in-Time Delivery

Goods are produced based on consumer demand and delivered just-in-time for the next phase of production or consumption. Eliminating warehousing costs and reducing inventory costs have resulted in greater efficiency and productivity gains. As a result, trucks, railcars, and ship containers, as well as the state's transportation system, have become the new warehouses. Just-in-time shipping practices have created a greater reliance on a transportation system and requiring predictable travel times.

Due to enhanced production and automation processes, as well as investments in technology, manufacturing jobs are projected to decline by approximately 104,000 jobs between 2013 and 2040 (Table 4-4). Despite the loss of jobs in the manufacturing sector, the sector is projected to experience a nearly two percent GDP growth rate from 2013 to 2040, which translates into almost $34 billion added to the economy. The projected increase in production and decrease in

[4] Wisconsin Taxpayers Alliance and Local Government Institute, "Filling Potholes: A New Look at Funding Local Transportation in Wisconsin." (2014).
[5] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[6] Regional Economic Models, Inc., 2014.
[7] Ibid.
[8] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[9] Regional Economic Models, Inc., 2014.
[10] Ibid.
[11] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."

employment suggest companies will improve productivity through enhancements, allowing them to meet demand using existing workers, rather than by creating new jobs.[12]

Wholesale Trade and Retail

The wholesale trade sector is made up of businesses that purchase large quantities of goods which they resell to other businesses or directly to retailers. Wholesalers move products to and from distribution centers and are heavy users of transportation, particularly trucking. In 2012, wholesale trade accounted for six percent ($15.6 billion) of the state's GDP and three percent (125,837 jobs) of the total employment. The combined wholesale and retail trade sector supports 496,403 jobs in Wisconsin.

GDP growth within this sector will average nearly three percent from 2013 to 2040 in Wisconsin. This growth rate, however, is dependent upon the products and sectors of the economy with which individual wholesale trade firms are involved. For example, because of Wisconsin's aging population, growth is expected to be higher than average for wholesale trade firms that distribute pharmaceuticals and medical devices.[13] Despite the projected GDP growth, the wholesale sector is projected to lose approximately 3,000 jobs from 2013 to 2040 due to greater efficiencies and technological advances (Table 4-5).

Table 4-5: Wholesale Trade Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Billions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
1.9%[14]	2.7%[15]	$31.4[16]	0.7%[17]	-0.1%[18]	-2,809[19]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

Like wholesale trade, retail trade relies heavily on transportation (primarily trucking), as retail establishments complete the typical supply-chain cycle from manufacturer to distributor to retail establishment. Larger retailers often bypass the distributor (middleman) and purchase directly from the manufacturer. The retail trade sector represents a broad spectrum of the economy, from the small individual proprietor to department stores to mega warehouse-type stores. Catalog sales, mail order sales, and Internet transactions are also considered retail trade. In 2012 retail trade comprised about five percent ($15.8 billion) of the state's GDP and 10 percent (370,566 jobs) of the total employment in 2013.

Alternative retail outlets, such as electronic commerce companies that sell products exclusively over the Internet, will continue to take some business away from traditional retail stores. The rise of Internet sales will likely contribute to the loss of approximately 14,000 jobs in the retail trade sector (Table 4-6). However, this trend will be minimized as traditional retailers increase their presence on the Internet. Although retail Internet sales are expected to grow, sales at traditional retail stores are projected to continue to account for a major portion of total retail sales.

[12] U.S. Bureau of Labor Statistics, "Career Outlook."
[13] Ibid
[14] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[15] Regional Economic Models, Inc., 2014.
[16] Ibid.
[17] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[18] Regional Economic Models, Inc., 2014.
[19] Ibid.

Table 4-6: Retail Trade Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Billions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
1.0%.[20]	2.2%.[21]	$11.69[22]	-0.3%[23]	-0.1%[24]	-14,022[25]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

Transportation and Warehousing[26]

The transportation and warehousing sector, comprised of air, water, rail, and truck transportation, is by its nature freight-dependent. In 2012, this sector accounted for over two percent ($6 billion) of GDP and three percent (113,734) of the state's employment. Truck transportation, with more than 55,000 jobs, or almost half of all transportation and warehousing employment, is critical to the agriculture, construction, trade, and manufacturing industries.

Table 4-7: Transportation and Warehousing Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Billions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
3.7%[27]	2.1%[28]	$5.55[29]	0.3%[30]	-0.03%[31]	-1,023[32]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

At almost two percent of total employment, trucking claimed a larger share of jobs in Wisconsin than nationally (one percent).[33] From 2013 to 2040, the transportation and warehouse sector is projected to lose approximately 1,000 jobs (Table 4-7). The decline in jobs can be attributed to the retirement and shortage of truck drivers (see Chapter 7, *Freight Transportation Trends, Issues, and Forecasts*). The shortage of truck drivers is a national issue and is not necessarily reflective of Wisconsin. Even with a potential decrease in the number of truck drivers, the transportation and warehousing sector will see economic growth. Growth is attributed to the demand for goods.

[20] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[21] Regional Economic Models, Inc., 2014.
[22] Ibid.
[23] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[24] Regional Economic Models, Inc., 2014.
[25] Ibid.
[26] IMPLAN data from 2012 combines information from the Transportation and Warehousing sector, Information sector, and Utilities and Energy sector. The Bureau of Economic Analysis and Regional Economic Models, Inc., from 2013, does not combine data from these sectors into one sector. Analysis in this section of the plan is provided separately on the Transportation and Warehousing sector and the Utilities and Energy sector. The Information sector, vital to Wisconsin's economy, is not a freight-dependent sector and is not included in the analysis of this plan. The information sector represents 21,169 jobs (0.7%) and $2 billion in GDP (0.8%) – IMPLAN, 2012.
[27] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[28] Regional Economic Models, Inc., 2014.
[29] Ibid.
[30] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[31] Regional Economic Models, Inc., 2014.
[32] Ibid.
[33] Wisconsin Taxpayers Alliance and Local Government Institute, "Filling Potholes: A New Look at Funding Local Transportation in Wisconsin." (2014).

GDP growth in the transportation and warehousing sector reflects the ups and downs experienced not only in Wisconsin, but also nationally. As the state and national economies grow and the production and sales of goods increase, demand for transportation services to move goods from producers to consumers also increases. During economic downturns, the truck transportation and warehousing sector often is one of the first to slow down as orders for goods and shipments decline.[34] The forecasted GDP growth from 2013 to 2040 is projected to be approximately two percent, which suggests that the transportation and warehousing sector will be in demand.

Utilities and Energy

The utilities and energy sector in Wisconsin is highly dependent on the transportation system, particularly on its waterways and railroads. In 2012, this sector's share of GDP was $4.3 billion (one percent of total GDP) and was the source for more than 11,000 jobs (less than one percent of total Wisconsin jobs). The utility and energy sector's statewide growth rates are provided in Table 4-8.

Table 4-8: Utilities and Energy Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Billions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
1.5%[35]	1.5%[36]	$2.61[37]	-1.2%[38]	-2.9%[39]	-5,989[40]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

Wisconsin's electricity needs are generally met through coal as an energy source. In 2016, coal supplied more than 50 percent of the state's net electricity generation.[41] The other major fuel sources of electricity in Wisconsin are natural gas, nuclear power, and hydropower, known as a renewable resource. In 2013, ten percent of retail sales of electricity in Wisconsin were from renewable resources.[42]

Although electric power and natural gas continue to be essential to everyday life, the increased size and efficiency of new power plants will lead to an overall decline in employment (a projected loss of 6,000 jobs between 2013 and 2040). Water, sewage, and other system segments of the industry, however, will continue to grow as the population of Wisconsin and the rest of the country increases and urban areas expand.[43]

Although the demand for electricity continues to increase over time, deregulation has led to greater cost-cutting measures that will allow power generation companies to be profitable in a competitive marketplace. As older, less-efficient plants are retired, they are being replaced with facilities that have higher capacities and require fewer workers.

[34] U.S. Bureau of Labor Statistics, "Career Outlook."
[35] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[36] Regional Economic Models, Inc., 2014.
[37] Ibid.
[38] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[39] Regional Economic Models, Inc., 2014.
[40] Ibid.
[41] U.S. Energy Information Administration, "Wisconsin State Energy Profile."
[42] Public Service Commission of Wisconsin, "2013 Renewable Portfolio Standard Summary Report."
[43] U.S. Bureau of Labor Statistics, "Career Outlook."

Construction

Construction is defined as those businesses engaged in building activities related to new construction, additions, alterations, and repairs. Historically, the construction industry has mirrored the economic cycles of the general economy. The sector is subdivided into three categories:[44]

- Construction of buildings (including residential)
- Heavy and civil engineering construction (including highways, streets, and bridges)
- Special trade contractors (including electrical, plumbing, heating, and air-conditioning)

In 2012, construction comprised 3.1 percent ($8.8 billion) of Wisconsin's GDP and accounted for 4.5 percent (155,399 jobs) of its overall employment (see Table 4-9).

Table 4-9: Construction Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Billions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
0.2%[45]	4.0%[46]	$16.82[47]	-1.0%[48]	2.3%[49]	136,882[50]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

The construction sector is projected to have the largest sector increase in employment in Wisconsin. While the construction sector is rebounding from the 2008-2009 recession, employment in this sector is not expected to reach pre-recession levels until 2024.[51] A net of approximately 137,000 jobs will be added in the construction sector from 2013 to 2040.

In terms of GDP, a growth rate of four percent is projected for the construction sector from 2013 to 2040. The growth will be driven largely by residential construction as it is expected to grow moderately over the decade to meet the needs of a growing population. Demand for housing by the oldest children of the baby boomers is expected to grow as they reach their peak house-buying years in the coming decade.[52] Demand by an expanding older population for senior housing and healthcare residences will also lead to growth in these areas. The renovation and expansion of older homes should prove relatively constant over the same period. Millennials (as a demographic cohort are people born between the early 1980s and mid-to-late 1990s) will influence the construction sector by their home buying patterns and preferences. In the near term, Millennials may delay home purchases due to financial and economic constraints, such as student loan debt.

Agriculture, Forestry, Fishing, and Hunting

As of 2012, the agriculture, forestry, fishing, and hunting sector represented $4.5 billion of Wisconsin's GDP (nearly two percent of the state) and 112,290 jobs (approximately three percent of the state). This sector has a strong economic impact on the Northern and Southwestern Regions of Wisconsin.

[44] U.S. Census Bureau, "Introduction to NAICS."
[45] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[46] Regional Economic Models, Inc., 2014.
[47] Ibid.
[48] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[49] Regional Economic Models, Inc., 2014.
[50] Ibid.
[51] U.S. Bureau of Labor Statistics, "Career Outlook."
[52] Construction Today, "In Demand." (December 21, 2016).

Table 4-10: Agriculture, Forestry, Fishing, and Hunting Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Billions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
5.9%[53]	1.1%[54]	$1.49[55]	0.2%[56]	-1.9%[57]	-43,921[58]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

Wisconsin's agriculture sector is directly linked to the state's food processing industry, which relies heavily on the transportation system. Wisconsin is "America's Dairyland," but more is produced and processed in our state than just milk and cheese. Wisconsin ranks first in the nation for snap beans for processing, cheese, cranberries, ginseng, mink pelts, dry whey for humans, milk goats, and corn for silage.[59]

Wisconsin is second in the nation for total production, acres harvested, and value of production of the major processing vegetables. Specifically, in 2015, Wisconsin grew 329,530 tons of snap beans, 97,730 tons of carrots for processing, 32,890 tons of cucumbers for pickles, and 81,120 tons of green peas. The state ranks third in the nation in potato production, harvesting potatoes on 62,500 acres in 2015.[60]

Wisconsin cranberry production for 2015 totaled 4.86 million barrels. Growers harvested 20,200 acres.[61] Wisconsin produces 57 percent of the nation's crop, making us the top cranberry-producing state in the country. The state also produces a large tart cherry crop, producing 9.3 million pounds in 2015. Wisconsin boasts many apple orchards, producing 51.5 million pounds of apples in 2015.[62]

Wisconsin is home to more than 9,000 dairy farms, more than any other state, and 1.28 million cows.[63] The dairy industry itself contributes $43.4 billion to Wisconsin's economy each year.[64] In terms of cheese, Wisconsin's nearly 1,200 licensed cheesemakers produce over 600 types, styles, and varieties of cheese – nearly double the number of any other state. Wisconsin cheese makers produce a quarter of the nation's cheese, more than 3 billion pounds.[65]

County, state, and national forests are extremely important to Wisconsin's forest products industry and economy. Each year, county forests generate anywhere from $25 to $30 million in timber revenues for counties and towns. Approximately 16,000 jobs and $4.6 billion in forest products production result from the timber harvested from county forests. Wisconsin's forests also provide recreational and tourism opportunities.[66]

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[53] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[54] Regional Economic Models, Inc., 2014.
[55] Ibid.
[56] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[57] Regional Economic Models, Inc., 2014.
[58] Ibid.
[59] Wisconsin Department of Agriculture, Trade and Consumer Protection, "Wisconsin Agricultural Statistics."
[60] Ibid.
[61] Ibid.
[62] Ibid.
[63] Ibid.
[64] The data from DATCP differ from the BEA data in several important respects, including using a more expansive definition of agriculture to include food processing, using sales rather than GDP data, and using an industry sales multiplier to account for impacts on other sectors in the economy. Thus the data from the two sources should not be directly compared.
[65] Wisconsin Department of Agriculture, Trade and Consumer Protection, "Wisconsin Agricultural Statistics."
[66] Wisconsin Department of Natural Resources, "County forests."

Markets for wood products, primarily destined for the construction sector in Wisconsin and the rest of the United States, are also projected to grow over the next several years as the construction sector grows.

The pulp and paper industry has and will continue to face rapid change as a result of new production capacities outside the United States and Canada, rapid rising consumption in Asia, declining use of paper, and growth in the use of recycled fiber in manufacturing. The net effect of these changes is to limit the nation's wood pulp production recovery from the recently low levels.[67]

As indicated in Table 4-10, the agriculture, forestry, fishing, and hunting sector will lose approximately 44,000 jobs between 2013 and 2040. Among other factors, technological enhancements in agriculture and forestry will contribute to the reduction in jobs. This sector is projected to experience just over one percent GDP growth from 2013 to 2040.

Mining

Wisconsin's mining sector, dominated by the production of nonmetallic minerals such as sand, gravel, stone, and lime, comprised the smallest sector of the state's economy in 2012 – less than one percent of both the total employment and GDP (6,030 jobs and $700 million, respectively).

Table 4-11: Mining Sector Economic Impact Analysis, 2013

WI GDP Compound Annual Growth Rate		GDP Forecast 2013-2040 ($ in Millions)	WI Employment Compound Annual Growth Rate		Job Outlook 2013-2040
2009-2013 Real GDP	2013-2040 Forecasted GDP		2009-2013 Employment	2013-2040 Forecasted Employment	
7.9%[68]	1.2%[69]	$374.4[70]	12.0%[71]	0.9%[72]	2,074[73]

Source: U.S. Bureau of Economic Analysis; Regional Economic Models, Inc.

The mining sector is closely linked to the construction sector and is dependent on road and highway construction. In 2013, Wisconsin was the nation's largest industrial sand and gravel producer.[74] The construction sector, as previously mentioned, is projected to see strong employment and GDP gains. As such, the mining sector is projected to experience an increase of just over 2,000 new jobs and $374.4 million in GDP growth (Table 4-11).

Despite growth through 2013, the mining sector will experience slower growth through 2040. From 2009 through 2013, Western Wisconsin experienced growth in the mining and processing of silica sand, a key ingredient used in hydraulic fracturing, or "fracking." Fracking is a process in which sand and fluids are injected into oil and natural gas wells, allowing pressurized oil and gas to reach the surface. Sand is transported primarily by rail from mines and processing plants to shale basins nationwide. Since 2013, mining of silica sand has decreased as the expansion of "fracking" has slowed.

[67] United Nations Economic Commission for Europe, "The North American Forest Sector Outlook Study." (2012)
[68] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[69] Regional Economic Models, Inc., 2014.
[70] Ibid.
[71] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[72] Regional Economic Models, Inc., 2014.
[73] Ibid.
[74] U.S. Geological Survey, "Sand and Gravel (Industrial)." (2015).

The growing United States and world economies will continue to demand larger quantities of the raw materials produced by mining, but the increased output will be able to be met by new technologies and extraction techniques that increase productivity but likely require fewer workers.[75]

Summary of the Freight-Dependent Sectors

During the 2009-2013 period, the freight-dependent sectors' employment grew at a compound annual rate of 0.4%, while the non-freight-dependent sectors' (such as finance, insurance, healthcare, and professional services) employment compound annual growth rate during the same period was 0.8% (Table 4-12). Over the 2013-2040 analysis period, the freight-dependent industry sectors' employment is forecast to decline by a compound annual rate of -0.09%. By contrast, the remaining non-freight-dependent sectors' employment is forecast to grow at a compound annual rate of 0.49%. Employment increases in non-freight-dependent sectors is largely due to the needs of the aging baby boomer population. Only the agriculture, forestry, fishing, and hunting, information and utilities/energy freight-dependent sectors are projected to decrease employment in Wisconsin by more than one percent from 2013 to 2040 (see Chapter 7, *Freight Transportation Trends, Issues, and Forecasts*). The construction and mining sectors are the only two freight-dependent sectors that will experience job gains from 2013-2040.

[75] U.S. Bureau of Labor Statistics, "Career Outlook."

Table 4-12: Comparison of GDP and Employment Between Freight-Dependent and Non-Freight-Dependent Sectors

Sector Description	WI GDP Compound Annual Growth Rate		WI Employment Compound Annual Growth Rate	
	2009-2013 Real GDP[76]	2013-2040 Forecasted GDP[77]	2009-2013 Employment[78]	2013-2040 Forecasted Employment[79]
Freight-Dependent (Good Dependent) Sectors				
Wholesale Trade	1.9%	2.7%	0.7%	-0.1%
Retail Trade	1.0%	2.2%	-0.3%	-0.1%
Manufacturing	4.2%	1.9%	1.2%	-0.9%
Agriculture, Forestry, Fishing & Hunting	5.9%	1.1%	0.2%	-1.9%
Construction	0.2%	4.0%	-1.0%	2.3%
Transportation and Warehousing	3.7%	2.1%	0.3%	-0.03%
Information	2.1%	2.7%	-0.1%	-1.0%
Utilities and Energy	1.5%	1.5%	-1.2%	-2.9%
Mining	7.9%	1.2%	12.0%	0.9%
Total – Freight-dependent Sectors	**NA***	**NA***	**0.4%**	**-0.09%**
Non-Freight-Dependent (Service) Sectors				
Finance, Insurance, Real Estate, Rental and Leasing	1.0%	1.7%	0.1%	0.2%
Government	-0.8%	0.5%	-0.3%	-0.2%
Educational Services, Healthcare and Social Assistance	0.9%	1.9%	1.1%	1.3%
Professional and Business Services	3.7%	2.3%	2.5%	1.0%
Arts, Entertainment, Recreation, Accommodation and Food Services	2.4%	1.3%	0.9%	0.2%
Other Services, Except Government	-1.0%	2.0%	0.5%	-0.1%
Total – Non-Freight-dependent Sectors	**NA***	**NA***	**0.8%**	**0.49%**

*2009-2013 and 2013-2040 real GSP compound annual growth rates are not readily computable because real dollar GDP estimates are not additive across industry sectors.

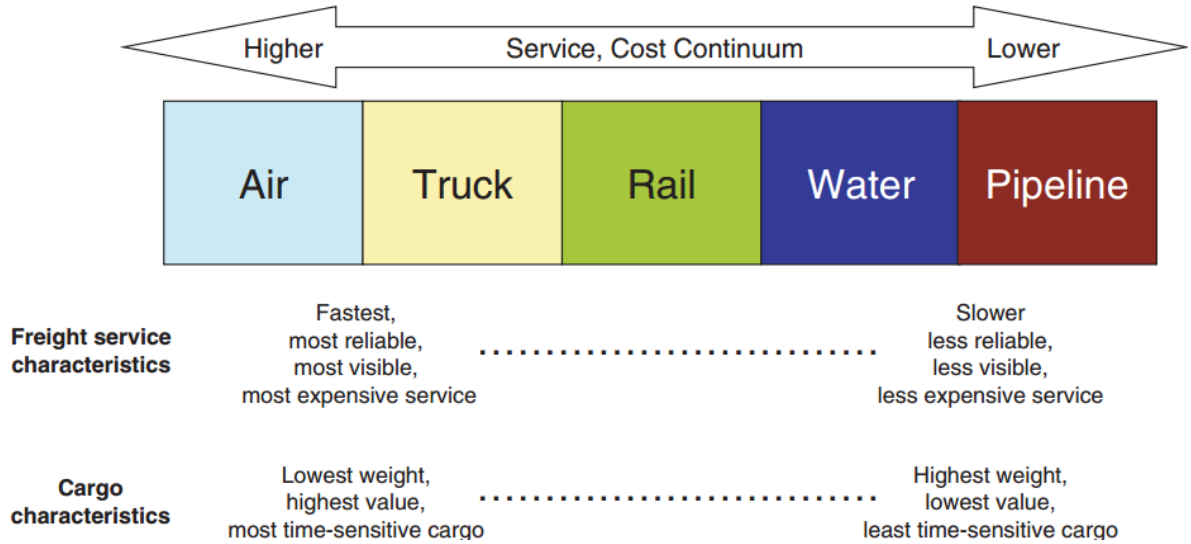
Source: 2009-2013: U.S. Bureau of Economic Analysis; 2013-2040: Regional Economic Models, Inc.

[76] U.S. Bureau of Economic Analysis, "Annual Gross Domestic Product (GDP) By State."
[77] Regional Economic Models, Inc., 2014.
[78] U.S. Bureau of Economic Analysis, "Annual State Personal Income and Employment."
[79] Regional Economic Models, Inc., 2014.

4.4 Wisconsin's Regional Economies and Freight Movement

Decisions regarding the movement of freight products are predisposed to use a particular mode above others, based on commodity type, value, weight or size, origin and destination location, and urgency. Figure 4-3 displays the service and cost tradeoffs between different modes of transportation relative to freight transport. Carriers provide several "tiers" of service tied to price, speed and service guarantees.

Figure 4-3: Service Cost Continuum by Mode



Source: NCFRP REPORT 6: Impacts of Public Policy on the Freight Transportation System

As mentioned, economic activity is geographically dispersed between urban and rural areas in Wisconsin. Within urban and metropolitan areas in Wisconsin, population density is one of the primary drivers of freight demand. Urban areas are characterized by high densities of residents and employment centers for service industries, warehouses, distribution centers, retail establishments, hospitals, and institutions. Goods intended for personal consumption account for a large number of urban freight movements. The shipment or movement of goods between warehouses, distribution centers, retail stores and, ultimately, to residents who consume the goods contributes heavily to area traffic.

Urban and Rural Classification[80]

The Census Bureau identifies two types of urban areas:

- Urbanized Areas (UAs) of 50,000 or more people
- Urban Clusters (UCs) of at least 2,500 and less than 50,000 people

"Rural" encompasses all population, housing, and territory not included within an urban area.

Global market competitiveness increases the pressure on manufacturers and producers located within urban and metropolitan areas to reduce the costs of transporting inbound raw materials and outbound finished products. As a result, many businesses and industries are concentrated in Wisconsin's metropolitan areas. This is not because they rely solely on truck, rail, air, and water transportation to receive raw materials and ship finished products around the world, but because these are the locations where multiple modes of transportation come together and connect Wisconsin to other Midwestern states and countries.

At some point, the movement of materials and goods must traverse the "first or last mile," which often includes local roads. The first or last mile describes the movement of materials and goods from the point of production or

[80] U.S. Census Bureau, "Urban and Rural."

"first mile," typically accessed by a local road, to a transportation hub, such as a highway, railroad, or port, and then to the "last mile" or final destination, also accessed by a local road, where the materials and goods are consumed. These "first and last mile" connections are located in both urban and metropolitan areas, as well as rural areas.

An efficient transportation system provides critical social and economic connections in rural areas. Commodities including timber, fuel, and agricultural products must be moved from rural areas where they are produced to urban areas where they are consumed, processed or sent out of the state or country. Ultimately, transportation is a rural community's essential connection to the nation and the world.

Economic activity in rural areas includes the full range of economic sectors spread throughout Wisconsin. Forestry dominates the landscape in the northern part of the state, while agriculture (field and row crops) and dairy farming are found predominantly in the south. Both forestry and agriculture require a wide range of transportation services. Raw forest products and lower value and bulk agricultural products, such as grain and fertilizer, require low-cost transportation options, such as rail. Perishable and high-value items such as fruits, vegetables, cheese, and meats require specialized handling and equipment, and rely on a dependable local roadway and highway system.

For the purposes of this discussion, the following analysis of Wisconsin's regional economies is based on WisDOT's defined five regions: Southeast, Southwest, Northwest, North Central, and Northeast (Figure 4-4). As of 2010, Wisconsin's total population was 5.7 million people. Table 4-13 provides a summary of the state's population by region.

Figure 4-4: WisDOT Regions

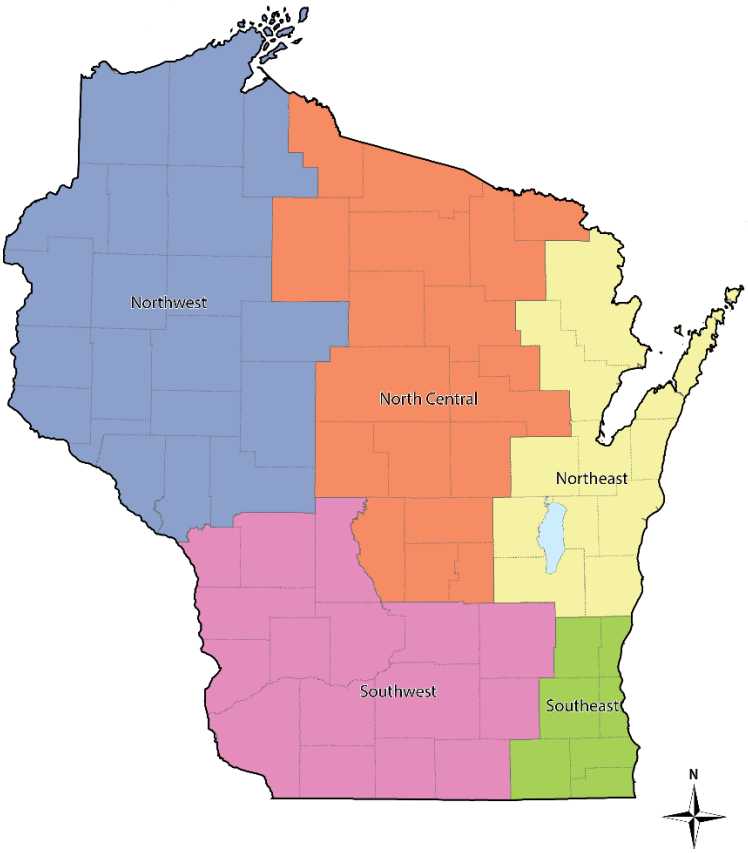


Table 4-13: Wisconsin Population by Region

Wisconsin Region	Population (2010 US Census)
North Central	598,601
Northeast	1,068,417
Northwest	685,557
Southeast	2,021,375
Southwest	1,313,036
Total – Wisconsin Population	**5,686,986**

Regional Domestic Product (RDP)

Regional domestic product (RDP) is the monetary value of all of the finished goods and services produced within a region of a state in a given specific time period.

For the state, value-added is referred to as GDP, which is the monetary value of all the finished goods and services produced within a state's borders in a specific time period.

For the purposes of this plan, RDP is discussed in the context of WisDOT's five regions of Wisconsin: Southeast, Southwest, Northwest, North Central, and Northeast (see Figure 4-4).

Each region contributes to Wisconsin's overall economy through RDP, which is the monetary value of all of the finished goods and services produced within a region of a state in a given specific time period. Similar to GDP, manufacturing is the largest contributor to RDP, followed by wholesale and retail trade. In general, manufacturing has a larger output-to-employment ratio (a measurement of the proportion of the state's working-age population that is employed) than other sectors due to the large-scale mechanical nature of industrial businesses.

Southeast Region

The largest economic/demographic region in Wisconsin is the Southeast (SE) region, which contains seven counties, including the state's largest city, Milwaukee. Of the freight-dependent sectors, SE Wisconsin's largest sector in terms of employment is wholesale and retail trade, followed closely by manufacturing. Together, these two sectors make up nearly 77 percent of the SE region's employment and 84 percent of its RDP (see Table 4-14). The smallest sector in the SE region is mining, which employs less than one percent of the region's employees and comprises less than one percent of the region's GDP.

Table 4-14: Southeast Region's Freight-Dependent Sector Employment and RDP, 2012

Freight-Dependent Sectors	Employment	RDP (current billion USD)
Wholesale & Retail Trade	169,211	$11.8
Manufacturing	157,263	$26.6
Agriculture, Forestry, Fishing & Hunting	6,358	$0.3
Construction	39,318	$2.7
Transportation, Information & Utilities/Energy	52,702	$3.9
Mining	1,560	$0.3
Total	**426,412**	**$45.7**

Source: IMPLAN, 2012

Northeast Region

The Northeast (NE) region is comprised of eleven counties and is the second-largest economic region in Wisconsin in terms of RDP. Its largest employment and RDP sector is manufacturing, which comprises 41 percent of the jobs in the freight-dependent sectors in the region (Table 4-15). The manufacturing RDP is nearly 61 percent of all freight-dependent sectors. The smallest sector in the NE region is mining, which employs less than one percent of the region's employees and less than one percent of the region's GDP.

Table 4-15: Northeast Region's Freight-Dependent Sector Employment and RDP

Freight-Dependent Sectors	Employment	RDP (current billion USD)
Wholesale & Retail Trade	99,385	$5.9
Manufacturing	126,946	$17.8
Agriculture, Forestry, Fishing & Hunting	19,003	$0.9
Construction	33,794	$2.0
Transportation, Information & Utilities/Energy	27,556	$2.6
Mining	1,151	$0.1
Total	**307,835**	**$29.3**

Source: IMPLAN, 2012

Southwest Region

The Southwest (SW) region is comprised of sixteen counties, and includes the state capital, Madison. As the third-largest economic region in Wisconsin in terms of RDP, the SW region's wholesale & retail trade sector is the largest employer at nearly 40 percent of the freight-dependent sectors, with manufacturing as its heaviest producer, contributing 45 percent of its freight-dependent sectors' RDP (Table 4-16). The smallest sector in the SW region is mining, which employs less than one percent of the region's employees and less than one percent of the region's GDP.

Table 4-16: Southwest Region's Freight-Dependent Sector Employment and RDP

Freight-Dependent Sectors	Employment	RDP (current billion USD)
Wholesale & Retail Trade	123,296	$8.0
Manufacturing	88,722	$12.2
Agriculture, Forestry, Fishing & Hunting	39,244	$1.5
Construction	41,774	$2.4
Transportation, Information & Utilities/Energy	27,634	$2.9
Mining	1,564	$0.2
Total	**322,233**	**$27.1**

Source: IMPLAN, 2012

Northwest Region

The Northwest (NW) region is comprised of 20 counties and is the largest geographic region in the state. The NW region includes St. Croix County, which is the fastest growing county in the state. The NW region also includes several other large urban areas including the cities of Eau Claire, Chippewa Falls, and Superior. Within the freight-dependent sectors, the wholesale and retail trade sector is the largest employer (53,973 jobs) and the manufacturing sector has the largest RDP ($5.5 billion) (Table 4-17). The smallest sector in the region is mining, which employs less than one percent of the region's employees and less than one percent of the region's GDP.

Table 4-17: Northwest Region's Freight-Dependent Sector Employment and RDP

Freight-Dependent Sectors (FIS)	Employment	RDP (current billion USD)
Wholesale & Retail Trade	53,973	$2.9
Manufacturing	47,267	$5.5
Agriculture, Forestry, Fishing & Hunting	28,836	$1.0
Construction	23,526	$1.0
Transportation, Information & Utilities/Energy	22,526	$1.5
Mining	1,293	$0.1
Total	**177,422**	**$12.0**

Source: IMPLAN, 2012

North Central Region

The North Central (NC) region, comprised of eighteen counties, is the smallest economic region in Wisconsin. The wholesale and retail trade sector is the largest employer in the region, followed closely by manufacturing, together which comprise 65 percent of all freight-dependent employment for the region (Table 4-18). The smallest sector in the region is mining, which employs less than one percent of the region's employees and less than one percent of the region's GDP.

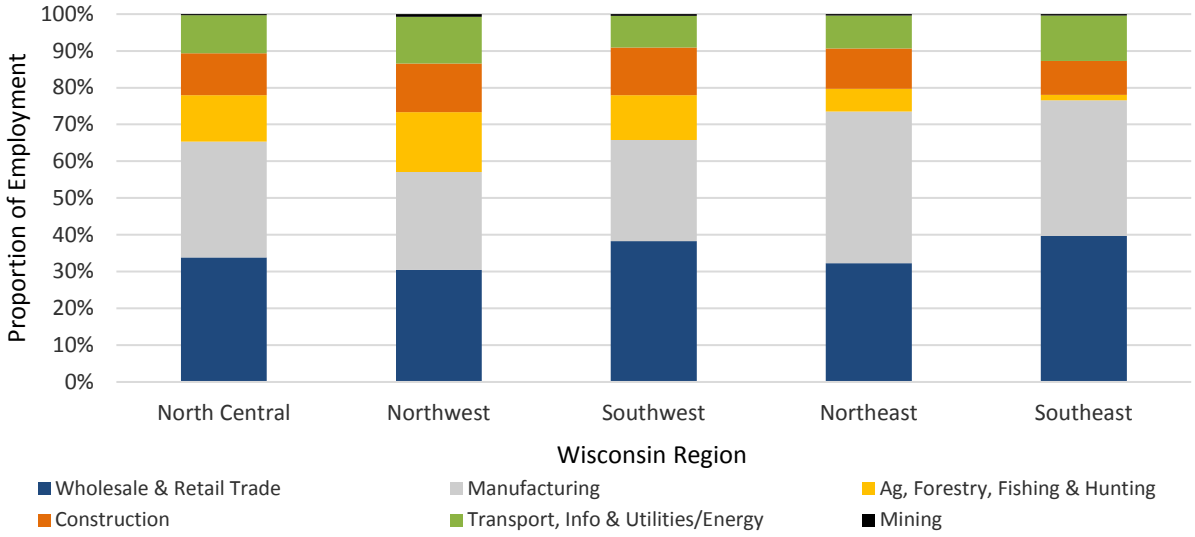
Table 4-18: North Central Region's Freight-Dependent Sector Employment and RDP

Freight-Dependent Sectors	Employment	RDP (current billion USD)
Wholesale & Retail Trade	50,538	$2.8
Manufacturing	46,924	$6.2
Agriculture, Forestry, Fishing & Hunting	18,848	$0.8
Construction	16,987	$0.7
Transportation, Information & Utilities/Energy	15,484	$1.3
Mining	462	$0.0
Total	**149,243**	**$11.8**

Source: IMPLAN, 2012

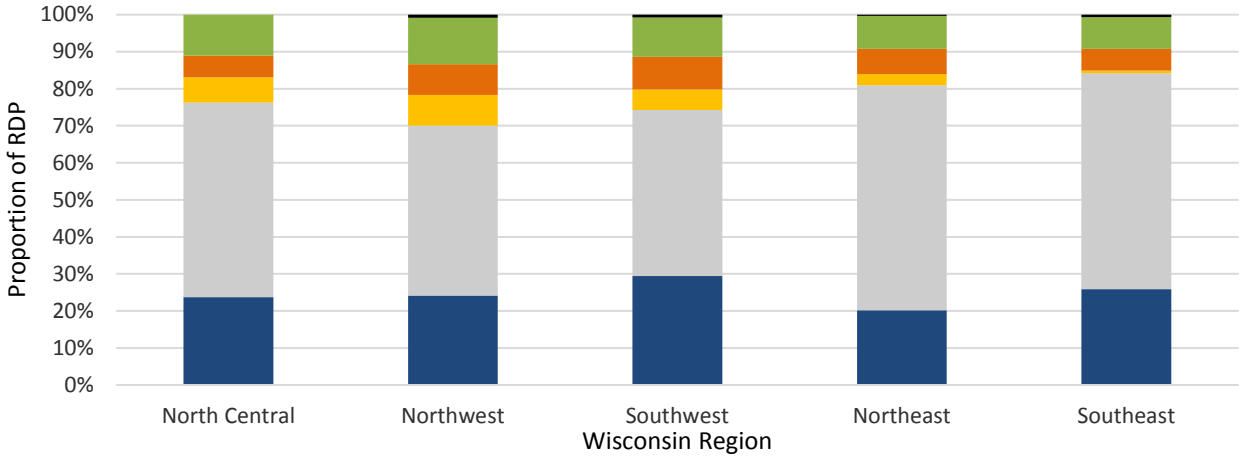
Each of Wisconsin's five regions are important to the overall economic health of the state. Figure 4-5 compares the proportion of freight-dependent sector employment for each region in the state. Figure 4-6 shows the comparison of regional RDP for each region in Wisconsin.

Figure 4-5: Proportion of Employment Based On Sectors Statewide



Source: IMPLAN, 2012

Figure 4-6: Wisconsin Regional Proportion of RDP Based on Sectors



Source: IMPLAN, 2012

4.5 Wisconsin's Connections to the Global Economy

Wisconsin businesses conduct international trade with companies around the world, both importing and exporting goods. The scale and scope of globalization has created an environment where the transportation sector must adapt. This is particularly the case for North America because of the scale and scope of production, distribution and consumption taking place, and the large distances involved. Global trade routes for several major industries flow through Wisconsin on roadways, railways, and waterways. For example, wholesale goods and raw materials flow from Asia to the Port of Prince Rupert in western Canada, then on railroads, often through Wisconsin, to major United States markets in Chicago and the Northeast. Agricultural products travel down the Mississippi River, and goods bound for Europe travel from Wisconsin's Great Lakes ports to the Atlantic Ocean via the St. Lawrence Seaway. Wisconsin's highways connect the state to major truck, air, and rail transportation hubs in Chicago and Minneapolis-St. Paul.

Exports

A total of 8,737 companies exported from Wisconsin locations in 2013. Of those, 7,592 (87 percent) were small and medium-sized firms with fewer than 500 employees. Small and medium-sized firms generated over one-quarter (27 percent) of Wisconsin's total exports of merchandise in 2013.[81] In 2014, goods exports from the state supported nearly 125,000 jobs.[82]

Net Positive Exports
Positive net exports contribute to economic growth. More exports mean more output from factories and industrial facilities, as well as a greater number of people employed in these factories. Foreign consumption of Wisconsin export also represents an inflow of funds to the state, which stimulates consumer spending and contributes to economic growth.

In 2013, Wisconsin exported freight valued at more than $23 billion. Table 4-19 displays the main destinations and the percentage of total Wisconsin exports in 2013 as measured by value. Wisconsin's top export trading partners are Canada, Mexico, and China. 44 percent of Wisconsin's total exports are exported to Canada (33 percent) and Mexico (11 percent).

Table 4-19: Wisconsin's Top Export Destinations Ranked by Value, 2013[83]

Country	Export Value (millions)	% of Total WI Exports
Canada	$7,527	32.6%
Mexico	$2,517	10.9%
China	$1,659	7.2%
Japan	$934	4.0%
Germany	$701	3.0%
United Kingdom	$679	2.9%
Australia	$676	2.9%
Brazil	$477	2.1%
Chile	$474	2.0%
France	$460	2.0%
All Other Countries	**$7,006**	**30.3%**
Total All Countries	**$23,110**	**100.0%**

Source: U.S. Census Bureau, "USA Trade Online"

[81] U.S. Department of Commerce, International Trade Administration, "Wisconsin Exports, Jobs, and Foreign Investment."
[82] Ibid.
[83] U.S. Census Bureau, "Exports: Origin of Movement - Based on Origin State."

The state's top commodities exported in 2013 (Table 4-20) were industrial machinery ($6.8 billion), agricultural products including food products ($2.6 billion), medical equipment ($2.3 billion), electrical machinery ($2.2 billion), vehicles ($1.9 billion), and plastics ($953 million).

As the state's top export commodity in 2013, industrial machinery accounted for nearly 30 percent of the state's total exports that year. As with other top commodities, the state's top agricultural export markets include Canada, Mexico, and China. Dairy products were Wisconsin's most valuable agricultural export category in 2013, at $397 million.

Table 4-20: Wisconsin's Top Export Commodities, 2013[84]

Product	Export Value (millions)	% of Total WI Exports
Industrial Machinery	$6,837	29.6%
Agricultural Products	$2,606	11.2%
Medical & Scientific Instruments	$2,263	9.8%
Electrical Machinery & Devices	$2,220	9.6%
Vehicles / Not Railway	$1,937	8.4%
Plastics	$953	4.1%
Paper, Paperboard	$928	4.0%
Iron / Steel Products	$440	1.9%
Printed Materials	$396	1.7%
Furniture and Furnishings	$348	1.7%
All Other Products	**$4,182**	**18.1%**
Total All Products	**$23,110**	**100.0%**

Source: U.S. Census Bureau, "USA Trade Online"

Imports

Imports represent an inflow of goods from places external to the state, and an outflow of funds from the state since they are payments made by local companies (importers) to overseas entities (exporters). Imports are a vital component of the economy, allowing state economies to specialize in the production of goods, rather than producing all consumed goods within the state.

Over the last decade, trade with Asian and South American countries have impacted the Wisconsin transportation system by increasing traffic to the state. Specifically, many of the imports from China are transported to the air cargo hubs in either Chicago or Minneapolis-Saint Paul and to major seaports located along the western United States and Canada. Once in the United States or Canada, imports from China are usually transferred to rail or truck and then transported to Wisconsin.

In 2013, Wisconsin imported freight valued at approximately $22 billion. Table 4-21 displays the main origins of Wisconsin imports in 2013. China, Canada, and Mexico were the top origins of Wisconsin's imports, followed by Germany and Vietnam.

[84] U.S. Census Bureau, "Exports: Origin of Movement - Based on Origin State."

Table 4-21: Top Origins of Wisconsin Imports, 2013[85]

Country	Import Value (millions)	% of Total WI Imports
China	$5,854	26.3%
Canada	$4,213	19.0%
Mexico	$2,452	11.0%
Germany	$1,212	5.5%
Vietnam	$736	3.3%
Japan	$733	3.3%
Italy	$697	3.1%
India	$639	2.9%
Taiwan	$487	2.2%
France	$451	2.0%
All Other Countries	**$4,749**	**21.3%**
Total – All Countries	**$22,223**	**100.0%**

Source: U.S. Census Bureau, "USA Trade Online"

Table 4-22 shows the major commodities being imported into Wisconsin in 2013, ranked by value. The state's top commodities imported in 2013 were industrial machinery ($3.9 billion), electrical machinery and devices ($2.6 billion), knit apparel ($1.7 billion), medical and scientific instruments ($1.5 billion), vehicles ($1.2 billion), and agricultural products including food products ($1.1 billion).

Table 4-22: Wisconsin's Top Import Commodities by Value, 2013[86]

Product	Import Value (millions)	% of Total WI Imports
Industrial Machinery	$3,919	17.6%
Electrical Machinery & Devices	$2,617	7.7%
Apparel / Knit	$1,715	6.9%
Medical & Scientific Instruments	$1,530	5.2%
Vehicles / Not Railway	$1,159	4.5%
Agricultural Products	$1,089	4.9%
Apparel / Woven	$996	4.3%
Plastics	$958	3.9%
Furniture, Furnishings	$874	2.6%
Footwear	$584	2.2%
All Other Products	**$6,782**	**30.5%**
Total All Products	**$22,223**	**100.0%**

Source: U.S. Census Bureau, "USA Trade Online"

4.6 State and Province Trading Partners

While Wisconsin's international trading partners were identified in the previous section, this section identifies Wisconsin's United States-based and Canadian Province trading partners. Table 4-23 and Table 4-24 detail Wisconsin's projected top six trading partners in 2040 for freight originating in and destined for Wisconsin. Wisconsin's immediate neighbors and other states in the upper Midwest, generally receive the largest share of freight from Wisconsin. The states from which Wisconsin receives its largest share of freight are more disperse.

[85] U.S. Census Bureau, "Imports: State of Destination (SD) Series."
[86] Ibid.

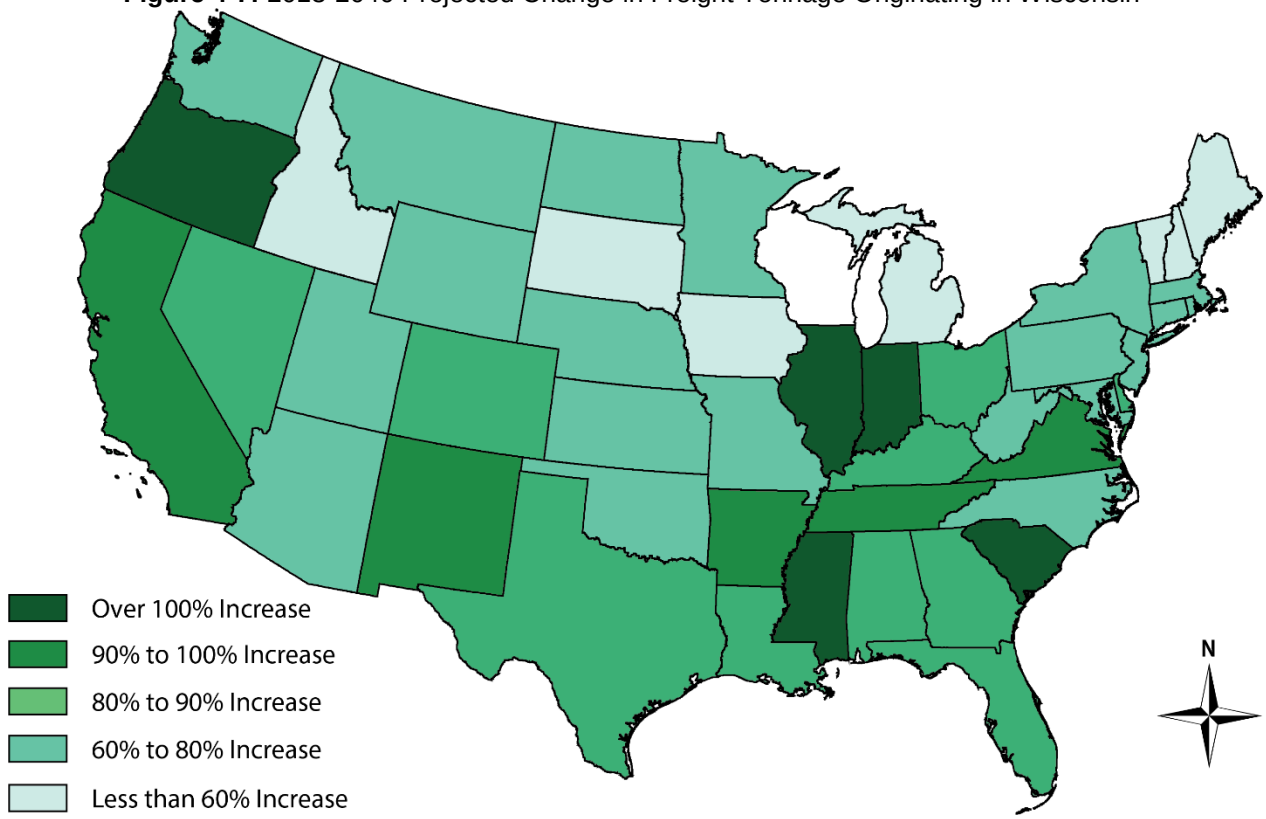
Table 4-23: 2013-2040 Top Six Destinations of Freight Originating in Wisconsin by Tonnage

Destination	2013 Tons	2013 % of Total	2021 Tons	2021 % of Total	2040 Tons	2040 % of Total	% Change, 2013-2021	% Change, 2021-2040	% Change, 2013-2040
Illinois	77,725,756	13.6%	103,751,590	14.9%	165,562,946	16.6%	33.5%	59.6%	113.0%
Minnesota	34,904,263	6.1%	41,866,992	6.0%	58,403,473	5.8%	19.9%	39.5%	67.3%
Michigan	27,489,879	4.8%	30,187,068	4.3%	36,592,893	3.7%	9.8%	21.2%	33.1%
Indiana	15,602,921	2.7%	20,522,087	2.9%	32,205,107	3.2%	31.5%	56.9%	106.4%
Ontario	10,630,847	1.9%	16,864,467	2.4%	31,669,314	3.2%	58.6%	87.8%	197.9%
Texas	14,089,253	2.5%	17,664,158	2.5%	26,154,557	2.6%	25.4%	48.1%	85.6%

Source: 2013 IHS Transearch Database

Given Illinois's neighboring proximity to Wisconsin and Chicago's status as a continental transshipment center, it is not surprising that Illinois is expected to see a 113 percent increase in freight tonnage originating in Wisconsin. Texas will likely receive a larger freight share mostly because it is forecasted that there will be a 75 percent increase in the amount of sand and/or gravel shipped there by rail. Figure 4-7 shows the anticipated change in shipping patterns by tonnage between Wisconsin and its trading partners between 2013 and 2040.

Figure 4-7: 2013-2040 Projected Change in Freight Tonnage Originating in Wisconsin



As shown in Figure 4-8, Wisconsin is expected to see a decrease in freight traffic originating in Wyoming and Montana by 2040. Wyoming and Montana supply Wisconsin with coal, which is expected to decrease in volume because of fewer coal-burning facilities. All other states are forecasted to see an increase in the amount of freight they ship to Wisconsin.

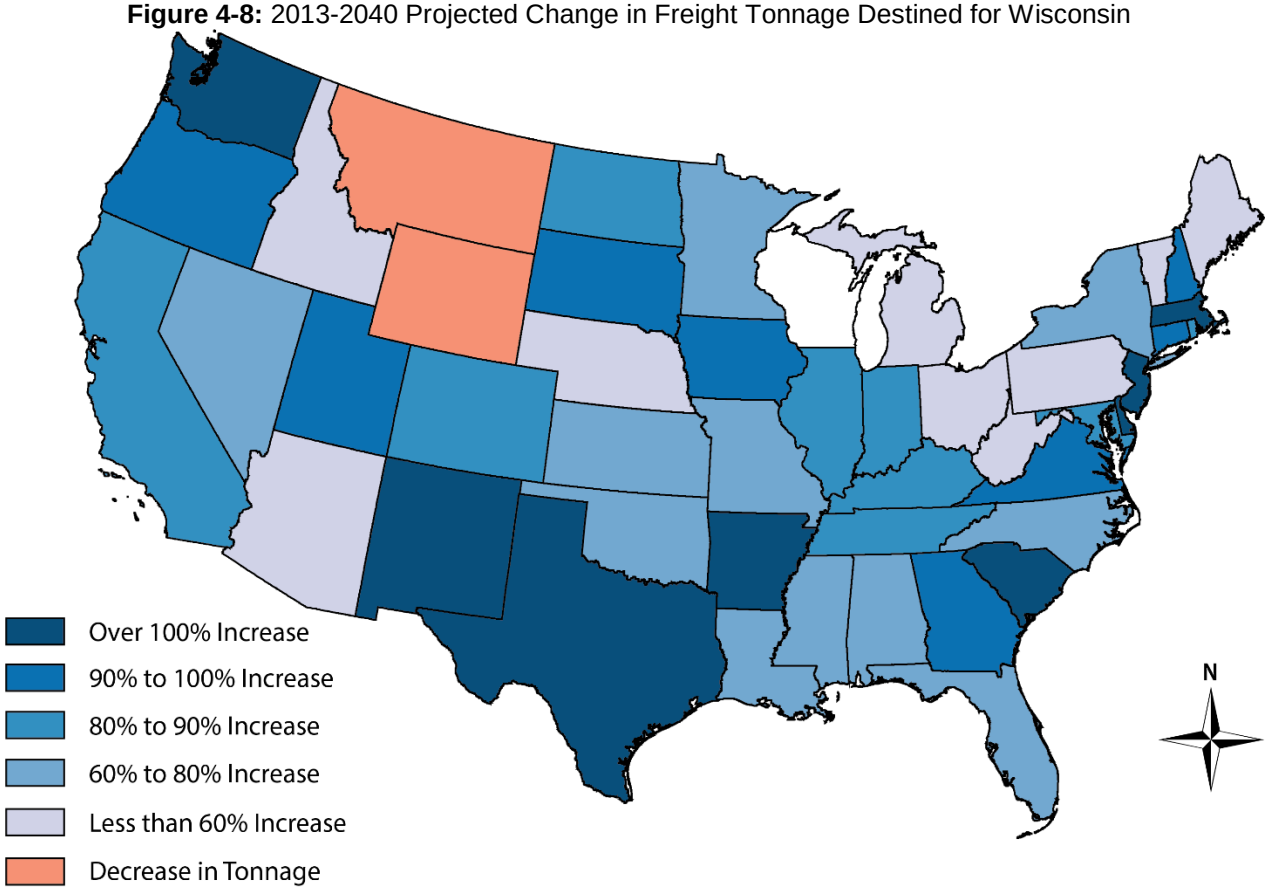
Table 4-24: Top Six Origins of Freight Destined for Wisconsin by Tonnage

Origin	2013 Tons	2013 % of Total	2021 Tons	2021 % of Total	2040 Tons	2040 % of Total	% Change, 2013-2021	% Change, 2021-2040	% Change, 2013-2040
Minnesota	58,344,705	10.2%	71,744,772	10.3%	103,569,930	10.4%	23.0%	44.4%	77.5%
North Dakota	36,516,978	6.4%	45,190,037	6.5%	65,788,555	6.6%	23.8%	45.6%	80.2%
Illinois	28,966,060	5.1%	35,983,932	5.2%	52,651,377	5.3%	24.2%	46.3%	81.8%
Wyoming	31,710,032	5.6%	31,451,118	4.5%	30,836,197	3.1%	-0.8%	-2.0%	-2.8%
Iowa	13,978,522	2.4%	17,705,775	2.5%	26,557,999	2.7%	26.7%	50.0%	90.0%
Washington	12,002,232	2.1%	15,926,915	2.3%	25,248,038	2.5%	32.7%	58.5%	110.4%

Source: 2013 IHS Transearch Database

Figure 4-8 shows the anticipated changes in shipping patterns by tonnage between Wisconsin and its trading partners from 2013 to 2040.

Figure 4-8: 2013-2040 Projected Change in Freight Tonnage Destined for Wisconsin



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