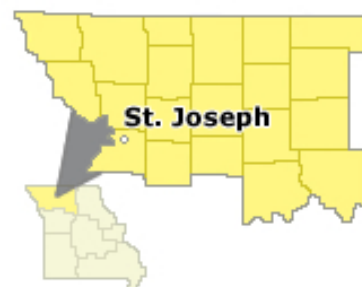


NORTHWEST DISTRICT PROFILE: Freight and the District's Economic Future



Global trade and new technologies continue to transform the economy, redefining the way businesses operate, challenging supply chains and transportation networks, and creating new customer opportunities for Missouri businesses in places where they were once inconceivable. Businesses and their employees are more dependent than ever on integrated, agile, and efficient transportation networks to sustain economic competitiveness and facilitate journeys to work and connections to markets.

To compete in this global marketplace, businesses must optimize every asset—workforce skills, competitively priced products, and reliable transportation systems—to ensure their customers receive quality goods and services when they expect them. As the importance of trade and the demands of customers continue to evolve, Missouri companies often find freight an increasingly important factor in sustaining and enhancing their competitive position in the marketplace. Freight supports the domestic and international trade of Missouri businesses, and supports State and local economic development and job growth.

Northwest Missouri Population Trends

Missouri's population is projected to grow, with the 2012 population of 6,021,988 increasing to 7,159,350 by 2040. The slight population growth experienced by the MoDOT Northwest Missouri District from 2000 to 2012 is expected to continue, with the 2012 population of 278,930 projected to grow to 286,150 by 2040.¹ Thirteen of the 20 counties within the District experienced a decline in population between 2000 and 2012, and between 2012 and 2040 nine counties are projected to see a decrease in population.

Andrew, Buchanan, Caldwell, Clinton, Daviess, Livingston, and Nodaway counties experienced growth in population from 2000 to 2012, but the population of these counties increased by only 8,322 during this period. Modest population growth often tempers the expansion of non-traded sector businesses that are generally driven by population growth, such as local professional services (legal, accounting, and medical), local retail trade, real estate and financial services, and food service and restaurants.

Freight is an increasingly important factor in sustaining and enhancing the economic competitiveness of businesses in Missouri and in the Northwest District.

Transportation Dependence: Missouri and the Northwest Missouri Economy

Freight transportation represents a key competitiveness factor for northwest Missouri businesses. Companies today compete on more than product quality and cost. The transportation networks serving their facilities must provide reliable connections to buyers and link to a multitude of markets to ensure timely deliveries of goods and services and provide access for employees and customers. Some business sectors use transportation facilities and services more extensively than others. An industry sector's dependence on transportation can be measured by examining the amount a business sector spends on transportation

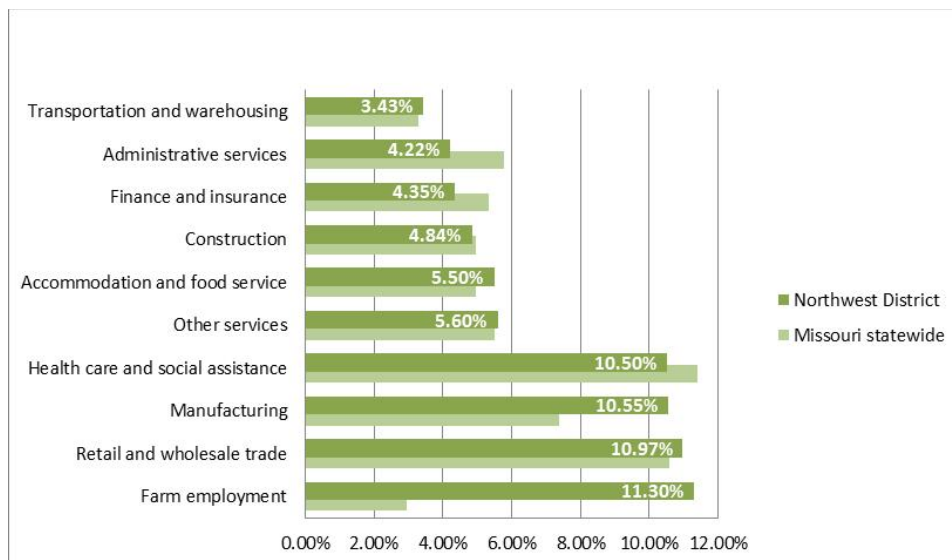
¹ US Census Intercensal Estimates, July 2000; US Census Annual Estimates; 2013 CEDDS by Woods and Poole Economics

Northwest District Profile

as a share of its total output.² Transportation satellite accounts provide national data regarding the amount spent on transportation per dollar of output for various sectors.

To better understand the role freight and goods movement play in northwest Missouri and the contribution of multimodal transportation to the economic vitality of the region's key industry sectors, the project team evaluated the importance of these key industrial sectors based on the non-government employment concentrations in the region. Over 70 percent of the District's non-government employment is concentrated in 10 sectors: farm employment, retail and wholesale trade, manufacturing, health care and social services, other services, accommodation and food service, construction, finance and insurance, administrative services, and transportation and warehousing.³ Figure 1 shows the breakdown of these employment sectors for the Northeast District, by percentage, and for the State of Missouri.

Figure 1: Top Ten Non-Government Employment Sectors, Northwest District



As noted in Figure 1, the importance of transportation to these key industry sectors can be measured by the amount each sector spent on transportation as a share of its total output.

The project team evaluated several primary industry sectors and identified the corresponding industrial classification codes for each key sector in order to compare the applicable transportation costs per dollar of product output using the transportation satellite accounts research. Key business sectors for the Northwest District are shown in Table 1.

Table 1: North American Industrial Classifications for Key Industrial Sectors, Northwest District

Industrial Sectors	North American Industrial Classification Sector
Agriculture and Food Processing	Agriculture
Chemical Manufacturing	Manufacturing
Fabricated Metal Manufacturing	Manufacturing
Animal Production	Agriculture

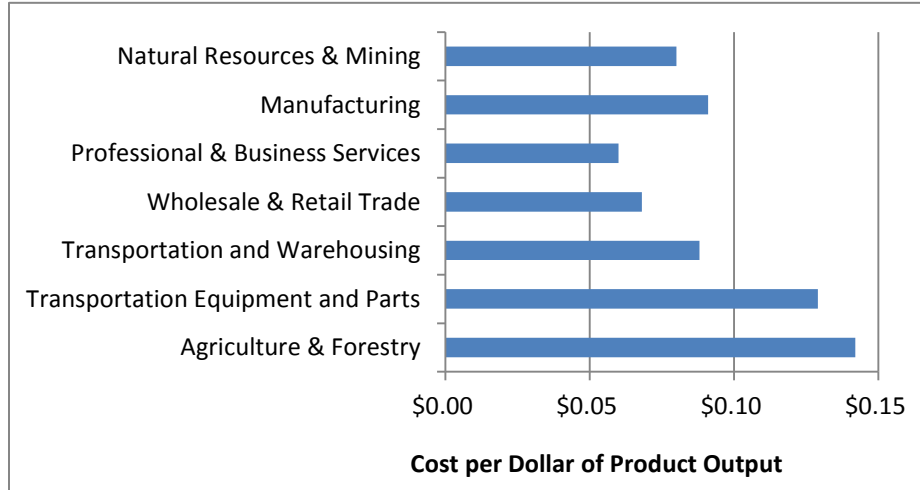
² "Transportation Satellite Accounts: A Look at Transportation's Role in the Economy," U.S. DOT Research and Innovative Technology Administration

³ Bureau of Labor Statistics, US Census 2012, County Business Patterns

Northwest District Profile

Figure 2 shows the transportation cost per dollar of product output for several important existing industry sectors in the Northwest District based on their NAICS code. Improvements in transportation costs and services would have a significant effect on the profitability of companies in these industries, as lower transportation costs and more reliable service help reduce the cost of materials, resulting in lower overall production costs. Reliable delivery of materials can enhance productivity, and reducing distribution costs to the consumer may also improve competitiveness.

Figure 2: Transportation Cost as a Share of Sector Output.



Source: Transportation Satellite Accounts database, Bureau of Transportation Statistics Research and Innovation Technology Administration

The Northwest District has been successful in retaining and attracting transportation-dependent businesses in several significant economic sectors as described in **Table 2**:

Table 2: Economic Sectors the Northwest District has retained and attracted transportation-dependent businesses

Agriculture and Food Processing	Chemical Manufacturing
Hillshire Brands	Albaugh, Inc.
LifeLine Foods	HPI Products, Inc.
AG Processing Inc.	Boehringer Ingelheim Vetmedica Inc.
Triumph Foods	
ConAgra	

Northwest District Profile

Economic Development Trends

The Northwest District accounts for 3.0 percent of State's population. About 47 percent of residents work in St. Joseph, the District's economic center, and another 8.0 percent are employed in Maryville, where Northwest Missouri State University is a major employer. Just under 6.0 percent commute to Kansas City.

Agriculture and Food Processing

Agriculture and food processing is a key economic sector for the Northwest District. In the first quarter of 2014 the District had 38 food manufacturing firms employing 5,861 workers, a slight increase (1.7 percent) over the previous year. More than 10,000 area residents were either farm owners or farm workers in 2007, though many held down other jobs in addition to farming. Firms in the District include LifeLine Foods, based in St. Joseph, which manufactures ethanol-based food ingredients and food packaging, along with ConAgra, Danisco, AG Processing, and Ventura Foods.

The State is third in the production of beef cattle, seventh in turkeys, eighth for hogs and pigs, and seventh for milk cows, and Missouri ranks sixth in the U.S. in pork exports and tenth for beef exports. Animal production is a key sector in the Northwest District, thanks in large part to its location in the center of four states that produce animal feedstocks: Missouri, Kansas, Nebraska, and Iowa. The District is also part of the animal health corridor that runs from Columbia, Missouri to Manhattan, Kansas and includes leading universities and private companies involved in animal nutrition and health science and research. Area firms in this sector include Triumph Foods, with headquarters in St. Joseph, one of the top pork processors in the U.S. and a leading exporter of pork products; and Hillshire Brands, also based in St. Joseph, which includes Ball Park Franks, Jimmy Dean sausage products, Sara Lee bakery goods, and Hillshire Farms meats. Hillshire Brands merged with Tyson Foods in August 2014. The combined company will have over \$40 billion in annual sales. Demand for U.S. agricultural and food products is expected to remain strong as global populations increase and consumers in other countries seek the quality products made here.

Chemical Manufacturing

Chemical manufacturing is another strong sector in the Northwest District, and chemical industry workers command among the highest wages in the area, averaging more than \$58,000 in 2008. Furthermore, chemical manufacturing has direct and indirect impacts in the economy. For every 100 new workers hired, an additional 429 related jobs are created. The value-added benefit per worker in chemical manufacturing and its supporting industries is \$130,738.⁴ In 2008 the Northwest region had more than 1,300 chemical manufacturing employees. Albaugh, Inc. in St. Joseph produces herbicides, fungicides, insecticides, and plant growth regulators, and HPI Products, also in St. Joseph, manufactures lawn and garden supplies, herbicides, pesticides, and other agrochemical products. Also in St. Joseph, Boehringer Ingelheim Vetmedica Inc., which recently invested \$160 million in its facility, develops vaccines and pest control products for cattle, swine, and horses as well as the pet industry. Nestle Purina Petcare has two facilities in St. Joseph that together employ 250 workers. Its product technology center is the global research and development headquarters for Friskies pet food, and a pilot production plant shares the site. Biozyme Inc. is an innovator in animal nutrition and microbiology, producing vitamin, mineral, and protein supplements.

Chemicals are the state's second largest export to other countries, and exports to other states are also significant. Top export partners for Missouri agricultural chemicals in 2009 were Belgium, Brazil, the U.K., China, India, Canada, Mexico, Colombia, Korea, and Australia. As with food products, global demand for agricultural chemicals is forecast to strengthen in coming years and producers in the Northwest District will benefit from this growth.

Fabricated Metal Manufacturing

Though employment in fabricated metal manufacturing declined somewhat during the recent recession, it remains a significant industry in Missouri, representing the State's third largest manufacturing employment sector. The industry is important for the Northwest District as well. Most of the area's metal manufacturing firms are mid-sized and produce customized metal products. WireCo WorldGroup in St. Joseph manufactures and distributes wire, wire rope, and electromechanical cable. Perka Building Frames makes steel building structures and trusses for agricultural, industrial, commercial, and residential use, and Varco Pruden Buildings designs and manufactures pre-engineered steel nonresidential buildings. Silgan Containers is the largest provider of metal food packaging in the U.S., and Snorkel is a leading global manufacturer of aerial lifts and work platforms. Fabricated metal products were the State's sixth largest manufacturing export in 2012 and both domestic and international sales should remain strong. The fabrication industry is part of the machine manufacturing sector, which is projected to see overall growth of 6.3 percent in 2014—more than double the 2.9 percent increase of 2013—and between 5.0 and 6.0 percent growth is expected between 2014 and 2018.⁵

⁴ MERIC Pattern Analysis: Northwest Region, December 2010

⁵ Cassell, Jonathan. IHS Technology. "Rise of the Machines: Industrial Machinery Market to Double in 2014." April 16, 2014

Northwest District Profile

Importance of Freight to the Economic Development Future of the Northwest District

Manufacturing and Exports

Manufacturing continues to be a vital part of Missouri's economy and exports of Missouri manufactured goods continue to increase. Missouri businesses exported over \$3 billion in goods by the close of the first quarter of 2014, and nearly \$13 billion in 2013.^{6,7} Four primary industries in the manufacturing sector accounted for over 62 percent of Missouri exports: transportation equipment, chemicals, food and kindred products, and machinery related businesses. These industries exported over \$8 billion in products in 2013.⁸ Agricultural products, fabricated metal products, electrical equipment, minerals and ores, primary metal manufacturing, and computer and electronic products round out the top 10 exports from the state in 2013. Over 6,100 businesses in Missouri exported products and services in 2012, and 89.5 percent of Missouri's exports are manufactured goods produced in communities around the State. Manufacturing exports support nearly 107,000 jobs in the State, and 85 percent of the companies engaged in exporting goods and services are small businesses.⁹

Manufacturing matters in Missouri because:

- Employees in manufacturing firms earn an average of \$77,060 annually in pay and benefits, while average workers in all industries earn \$60,168. This means manufacturing jobs pay, on average, 19.9 percent more than non-manufacturing jobs.¹⁰
- Manufacturing firms account for nearly two-thirds of all research and development in the U.S. and are a leading user of new technologies and processes.¹¹
- Manufacturing has the highest multiplier effect of any economic sector; for every dollar spent in manufacturing another \$1.48 is added to the economy, helping to stimulate economic growth.
- Missouri's economy is intrinsically linked to its ability to move people, materials, components, and finished goods within the state and to national and international destinations.
- Missouri's principal trading partners are Canada, Mexico, China, Japan, and Korea.¹² The five industries with the most significant job dependence on exports include grain farming, oilseed farming, wholesale trade, and aircraft manufacturing.
- Export products are intrinsically dependent on multimodal freight transportation.

Conclusion

The Northwest District, particularly St. Joseph, its economic and commercial center, is home to a number of international firms as well as innovative startups. St. Joseph was named one of the Best Cities for Job Growth by New Geography. It was also listed in Area Development magazine's 100 Leading Locations: Desirable Places for Doing Business in the spring of 2011. The economy of the Northwest District is heavily dependent on the manufacturing sector, with strong clusters in agriculture and food processing, animal production and animal care and nutrition, chemical manufacturing, and fabricated metal manufacturing. These industries are all among Missouri's top manufacturing exports, and are expected to see growth in the next decade.

But the success of the District's manufacturing sector, and thus its economic vitality, depends on a reliable and efficient freight network. Manufacturers depend on the freight system to deliver raw material and components and carry finished products to assembly plants, distributors, and end users. Farms rely on state highways and secondary roads to transport their output to markets and consumers, and businesses rely on these routes for time-sensitive deliveries. Research shows that investment in physical infrastructure reduces costs and improves efficiencies in conducting business, boosts job creation, and fosters growth cycles within countries.¹³ Based on the research, maintaining the District's existing freight infrastructure and expanding both its

⁶ WISER Export Trade data, 2014

⁷ U.S. Census Freight Trade State Exports, Missouri

⁸ MERIC, Missouri Department of Economic Development, March 2013

⁹ U.S. Department of Commerce, International Trade Administration, National Association of Manufacturing, 2013

¹⁰ Bureau of Economic Analysis, Industry Economic Accounts, 2011

¹¹ Brookings Institute, Metropolitan Policy Program, "Why Does Manufacturing Matter?" February 2012

¹² US Census, State Exports, Foreign Trade, 2013

¹³ Deloitte LLP and the Council on Competitiveness, "2013 Global Manufacturing Competitiveness Index"

Northwest District Profile

capacity and connectivity in ways that increase reliability and reduce transportation costs are critical to the economic prosperity of the businesses and residents of the Northwest District.