Helping Keep the State's Economy Afloat

Economic Impact of Wisconsin's Commercial Ports

PHOTO CREDIT: SAM LAPINSKI

Wisconsin's port facilities serve as hubs of diverse economic activity linking waterborne commercial vessels with an extensive network of highways, railroads and airports.

Wisconsin Department of Transportation
Bureau of Planning and Economic Development

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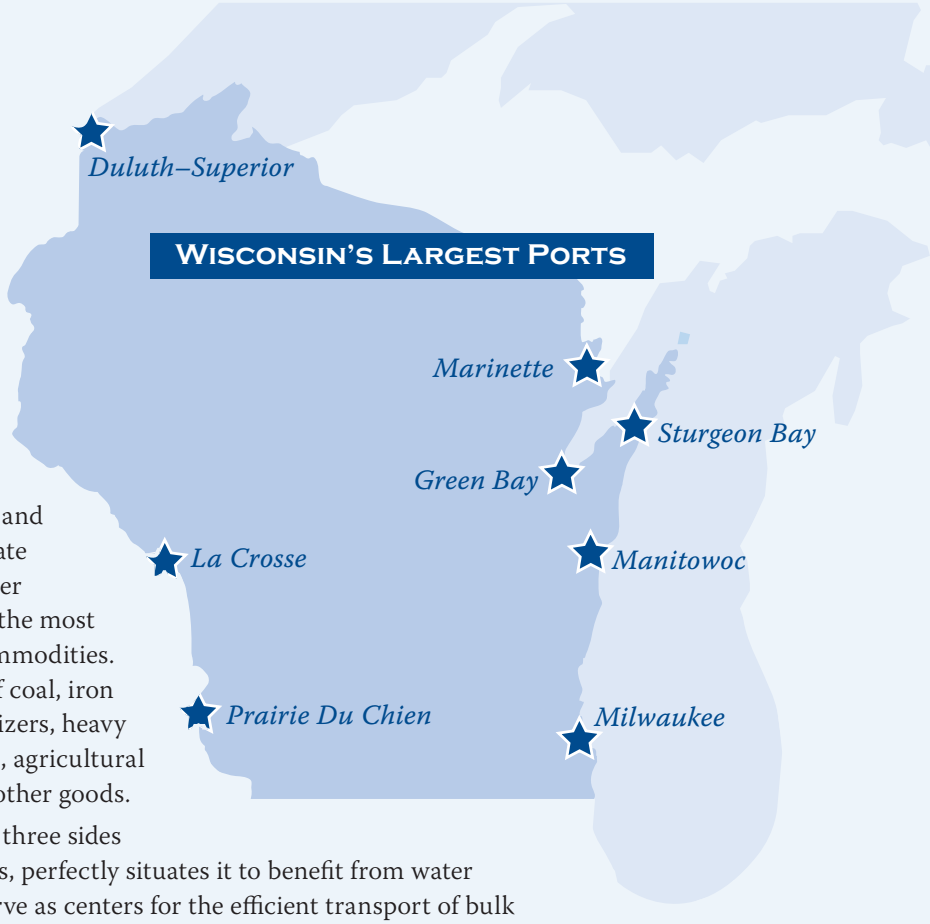
Each year, over 30 million tons of goods worth over $2.4 billion pass through Wisconsin's commercial ports, including essential products such as coal for power plants, iron ore for industry and salt for the safety of our roads.



Introduction

Moving goods by water in Wisconsin is a tradition that began in the late 1650s when the settlers arrived at Lake Superior's Chequamegon Bay. French explorers and fur traders quickly recognized the state waterways' vast potential. Today, water transportation continues to serve as the most efficient method for moving bulk commodities. It plays a vital role in the transport of coal, iron ore, broken stone, chemicals or fertilizers, heavy machinery, wind energy components, agricultural commodities, cement, road salt and other goods.

Wisconsin's location, bordered on three sides by commercially navigable waterways, perfectly situates it to benefit from water transportation. Wisconsin's ports serve as centers for the efficient transport of bulk goods and for ship building, commercial fishing and ferrying services. Each year, Wisconsin ports handle over 30 million tons of cargo valued at over $2.4 billion.[1]

Wisconsin's commercial ports are major economic hubs, generating thousands of family-supporting jobs while playing an increasingly important role in the state's tourism industry and adding greatly to the state's quality of life. Through research, interviews and economic modeling, this study illustrates the economic importance of Wisconsin's port facilities to guide future port infrastructure improvements and help potential shippers understand the unique capabilities and advantages of water transportation.

Moving bulk commodities by water is efficient, environmentally friendly and safe. An inland barge can move a ton of freight approximately 616 miles on one gallon of fuel. Railroads move a ton of freight approximately 478 miles on one gallon of fuel and trucks approximately 150 miles on one gallon of fuel. An inland barge produces less than one tenth of the greenhouse gas (GHG) levels per million ton-miles than a truck (16.4 tons-GHG per 1 million ton-miles, as opposed to 171.82 tons-GHG per 1 million ton-miles). Inland barge transportation also has lower injury and fatality levels than rail and truck transport.[2]

Wisconsin's commercial ports are major economic hubs, generating thousands of family-supporting jobs while playing an increasingly important role in the state's tourism industry and adding greatly to the state's quality of life.

Total gross economic impact of commercial ports in Wisconsin (not including U.S. Coast Guard expenditures): 9,550 jobs, $1,625,085,310 in output and $461,987,535 in personal income from wages and salaries.

St. Lawrence Seaway and Upper Mississippi River Systems

Wisconsin is directly connected to two major waterway systems, the Upper Mississippi River System and the Great Lakes-St. Lawrence River System. The Great Lakes-St. Lawrence Seaway System extends 2,340 miles, from Duluth, Minnesota eastward to the Gulf of St. Lawrence on the Atlantic Ocean. It connects the five Great Lakes—Superior, Michigan, Huron, Erie and Ontario—serving eight states and two Canadian provinces and providing access to 15 major international ports. Since it opened to navigation in 1959, over 2.5 billion metric tons of cargo have passed through the St. Lawrence Seaway System.[3]

The Upper Mississippi River System is a 1,300-mile waterway linking five states to the Gulf Coast. It supports a wide variety of uses including commercial navigation, fishing, hunting and other recreational activities. From 2008 to 2011, an average of 61.3 million tons of cargo was shipped between Minneapolis and the mouth of the Missouri River. Food and farm products, petroleum products, and chemical products are the leading cargoes, with food and farm products accounting for approximately 40% of the total tonnage shipped through this vital water route.[4]

Economic Impact of Ports

As centers of economic activity, ports and harbors in Wisconsin include the operations of local and municipal government agencies, federal agencies such as the U.S. Coast Guard and U.S. Army Corps of Engineers, and private operators that contract with these agencies. Also economically significant are port terminal operators, stevedores, vessel suppliers, boat and ship builders and repair facilities, commercial and charter fishing operations, and other marine-related businesses. These are primary impact industries, providing transportation and port services. This analysis focuses on the direct, indirect, and induced economic effects of these industries and provides estimates in terms of employment, wages and salaries, and output (total economic activity, roughly similar to sales).[5]

Also economically significant are firms that are attracted to a region because of the presence of a port, but are not located at the port itself. These firms typically fall into two groups: exporters of commodities and importers of raw materials for assembly or distribution. There are also port-induced industries, which have expanded their markets by exporting through the port. For these industries, the port is a source of reduced transportation costs that can support industry expansion. Due to data availability constraints, this report does not include estimations of the economic significance of these industries.

The economic effects of port activities ripple outward through the state, providing both direct and indirect business, income, and jobs. Direct economic impact is the sum of the initial port-related spending by port authorities and their contractors, terminal operators, and other water transportation service providers. This analysis includes ship building and boat-building operations tied to ports, as well as the operations of the U.S. Coast Guard and the U.S. Army Corps of Engineers.

Indirect economic impact is the economic activity generated by suppliers to the port agencies and their contractors, and to all the other businesses included in the direct economic impact. It also includes the supply chain linked to these suppliers.

Induced economic impact is the activity generated within the state when employees of ports and port-related businesses (and government entities such as the U.S. Coast Guard and the U.S. Army Corps of Engineers) spend their wages on food, clothing, shelter, etc. All this spending is income for the recipient businesses, and is, in turn, re-spent in the economy, creating a spinoff effect as successive waves of spending occur.

Each of these types of impact adds jobs, income and output to the economy. The total gross economic impact is the sum of the direct, indirect and induced impacts on employment, income and output. In 2008, businesses at Wisconsin's commercial ports supported 9,550 jobs, and generated over $1.6 billion in economic output and nearly $462 million in personal income from wages and salaries. These totals do not include U.S. Coast Guard expenditures due to their ship building, repair and maintenance expenditures that are already included in the analysis. The following is a detailed breakdown of these impacts, by major business type:

Private businesses

Freight and passenger transportation, marine services and the handling of marine cargo at the ports.

2008 ECONOMIC IMPACT	JOBS	OUTPUT	PERSONAL INCOME
Direct	1,124	$301,723,740	$70,077,550
Indirect and induced	1,615	$199,377,220	$69,513,610
Total	2,739	$501,100,960	$139,591,160

Commercial fishing

A specialized subsector of private, port-related businesses important to many Wisconsin communities.

2008 ECONOMIC IMPACT	JOBS	OUTPUT	PERSONAL INCOME
Direct	730	$21,707,290	$2,355,440
Indirect and induced	90	$10,208,070	$3,746,590
Total	820	$31,915,360	$6,102,030

Ship and Boat Building

Ship and boat building is an important manufacturing industry in Wisconsin, including businesses that repair and refurbish boats and ships. Analysis excludes Wisconsin firms engaged in canoe and other non-port oriented activities.

2008 ECONOMIC IMPACT	JOBS	OUTPUT	PERSONAL INCOME
Direct	2,230	$603,539,520	$160,568,420
Indirect and induced	3,600	$466,192,400	$147,595,900
Total	5,830	$1,069,731,920	$308,164,320

Ports Administration

The management and administration of ports also generates economic activity. These estimates include the activities of the U.S. Army Corps of Engineers at the ports.

2008 ECONOMIC IMPACT	JOBS	OUTPUT	PERSONAL INCOME
Direct	80	$12,305,560	$4,752,380
Indirect and induced	81	$10,031,510	$3,377,645
Total	161	$22,337,070	$8,130,025

U. S. Coast Guard

The U.S. Coast Guard employs both civilian and military personnel, and contracts with both public and private contractors and providers in Wisconsin. Some of this business includes the ship builders and ship repair and maintenance providers described above. There is no method to separate those U.S. Coast Guard expenditures from its other expenditures; therefore, these estimates include some of the impacts listed in the Ship and Boat Building category.

2008 ECONOMIC IMPACT	JOBS	OUTPUT	PERSONAL INCOME
Total	830	$71,841,560	$39,570,130

The following are profiles of Wisconsin's largest commercial ports. Not included in these profiles are several smaller ports with smaller or no commercial maritime activity.[6]

PHOTO CREDIT: PORT OF MILWAUKEE

Port of Milwaukee

MILWAUKEE

The Port of Milwaukee offers an operational flexibility unique to the western Great Lakes utilizing the St. Lawrence Seaway and inland waterway system. Terminals designed for the efficient handling of steel products, containers, general cargo, roll-on/roll-off vehicles, dry and liquid bulk, and heavy machinery, plus intermodal connections to all Midwest cities, make the Port of Milwaukee a key economic link for routing all types of cargo, by ship or barge. The port's facilities are becoming increasingly important in transporting wind energy equipment.

Primary port contact

Paul Vornholt
Interim Port Director
2323 S. Lincoln Memorial Drive
Milwaukee, WI 53207
Phone: (414) 286-3511
Fax: (414) 286-8506
Email: paul.vornholt@milwaukee.gov
Web site: www.milwaukee.gov/port

Primary road and rail access

Roads: The Interstate Highway System (I-94/I-794) leads directly into the Port of Milwaukee, assuring delay-free pickup and delivery. Highway deliveries to cities within a 350-mile radius (Chicago, Minneapolis/St. Paul, Peoria, Des Moines, Moline, Indianapolis) are accomplished in a few hours.

Truck scales are located at the port. High-wide truck access to dock areas is available via East Bay Street by appointment.

Rail: The Port of Milwaukee is served by two Class 1 railroads—the Canadian Pacific Railway Ltd. and the Union Pacific Railroad. Both provide pier delivery and switching services to all port terminals. Fifteen miles of port-owned and maintained track connect each terminal to the main line railroads. The classification yard provides track for unit train assembly. Terminal lead tracks have 120-pound rail.

Types of cargo handled

The Port of Milwaukee handles asphalt, cement, coal, fertilizer, general cargo, grain, out-of-gauge machinery, limestone, passenger and commercial vehicles, salt, sand and steel.

Average 2007–2011 annual tonnage handled

3.20 million short tons[7]

Warehouse space

Covered: 311,000 square feet

Temperature controlled: 30,000 square feet

Liquid: 357,619 barrels

Storage: The port maintains 15 acres of paved, lighted and fenced areas for the storage and marshalling of project, steel and dry bulk cargoes. An additional 10 acres of adjacent unpaved land is also available. These sites are in close proximity to the roll-on/roll-off berths and outer harbor docks.

Cargo handling equipment

The port owns and operates a variety of heavy lift cranes with lifting capacities up to 200 metric tons. These cranes are rented on an hourly basis to port terminal operators for handling both dry bulk and general cargos.

PHOTO CREDIT: DAVE HEILI

Port of Manitowoc

MANITOWOC

The Port of Manitowoc handles bulk commodities, newly constructed yachts, and passengers on the Lake Michigan car ferry. The port is also home to a marine contracting firm that serves Lake Michigan ports in Wisconsin and Michigan.

Primary port contact

Paul Braun, Harbormaster
City of Manitowoc – Planning Department
900 Quay Street
Manitowoc, WI 54220
Phone: (920) 686-6930
Email: pbraun@manitowoc.org

Additional contacts

McMullen & Pitz
17 Maritime Drive
P.O. Box 8
Manitowoc, WI 54221-008
Phone: (920) 682-0131
Fax: (920) 682-1099

Primary road and rail access

Roads: US 151, US 10 and WIS 42 lead to local access points to all of the private docks.

Rail: Canadian National Railway Company's access point is at the 16th Street Peninsula.

Types of cargo handled

Cement, coal, flexible pipe for oil and gas mining, newly constructed yachts, passenger and commercial vehicles, rock, stone, wind turbine towers and parts and wood

Average 2007–2011 annual tonnage handled

301,060 short tons[8]

Warehouse space

Uncovered: 100,000 square feet

Covered heated: 100,000 square feet

Cargo handling equipment

Front-end loaders and marine contracting equipment (spud barges, cranes, etc.)

PHOTO CREDIT: SCOTT BEST

Port of Marinette

MARINETTE

The Port of Marinette serves industries with facilities on the harbor. These include Marinette Fuel and Dock and Marinette Marine Corporation, a Fincantieri Company.

Primary port contact

David Campbell
Marinette Fuel and Dock Company
808 Ogden Street
Marinette, WI 54143
Phone: (715) 735-6694
Fax: (715) 735-9654
E-mail: mardock@centurytel.net

Additional contact

Marinette Marine Corporation
1600 Ely Street
Marinette, WI 54143–2434
Phone: (715) 735-9341
Web site: www.fincantierimarinegroup.com

Primary road and rail access

Roads: US 41 and Ogden Street serve Marinette Fuel and Dock Company.

US 41 and Ely Street serve Marinette Marine Corporation.

Types of cargo handled

Marinette Fuel and Dock Company handles limestone, pig iron and road salt.

Marinette Marine Corporation is an established ship builder that has designed and built high-tech vessels for the U.S. Navy, U.S. Coast Guard and other government and commercial clients.

Average 2007–2011 annual tonnage handled

307,764 short tons[9]
Includes Menominee, Michigan tonnage.

Warehouse space

Uncovered: 14.5 acres

Marinette Marine Corporation's shipyard has a number of buildings used for warehousing, fabrication, construction and painting for ship building purposes.

Cargo handling equipment

Marinette Marine Corporation has two 100-ton cranes.

Marinette Marine Corporation's shipyard has a variety of forklift trucks, module moving equipment and cranes located throughout the yard. Maximum lifting and moving equipment capability is 1,600 tons. The port has a ship lift that can accommodate up to 200 tons and 1,800 feet of dockwall with water depths of over 20 feet for mooring.

LA CROSSE

The Port of La Crosse handles over one-half million tons of commodities annually including liquids, cement, grain and general bulk products. Strategically located near major roads and rail yards, the port offers connections to the Upper Midwest and the world—importing and exporting products from China, Russia, Spain, South America, Mexico and other countries. The port serves as home for two seasonal excursion tour boats. Skipperliner Industries builds excursion boats that are used in places from Disneyland in Florida to the canals in upstate New York.

Primary port contact

Larry Kirch
La Crosse Joint Board of Harbor Commissioners
La Crosse City Hall
400 La Crosse Street North
La Crosse, WI 54601
Phone: (608) 789-7512
Fax: (608) 789-7318
Email: kirchl@cityoflacrosse.org

Additional contacts

Karl Green
UW-Extension
La Crosse Co. Administrative Center
400 4th Street North
Room 3140
La Crosse, WI 54601
Phone: (608) 785-9593
FAX: (608) 789-4808
Email: karl.green@ces.uwex.edu

An inland barge produces less than one tenth of the greenhouse gas (GHG) levels per million ton-miles than a truck (16.4 tons-GHG per million ton-miles, as opposed to 171.82 tons-GHG per million ton-miles).

PHOTO CREDIT: DOUG CONNELL

Port of La Crosse

Primary road and rail access

Roads: I-90, US 14/61, WIS 53 and WIS 35

Rail: Canadian Pacific Railway Ltd. and Burlington Northern-Santa Fe Railway

Types of cargo handled

Asphalt, aggregate, caustic soda, cement, coal, coal slag, coke, cottonseed, fertilizer, grain, oils, oversized/overweight equipment, pig iron, pipe, salt and other bulk products

Average 2007–2011 annual tonnage handled

662,100 tons[10]

Warehouse space

Covered: 100,000 square feet

Uncovered: 60 acres

Temperature controlled: arranged

Liquid (gallons): 20 million gallons

General/bulk cargo, etc.: 60 acres

Cargo handling equipment

Cranes with up to 150 tons of lift capacity, pneumatic unloaders, conveyor loading equipment, and other miscellaneous barge, rail, and truck loading and unloading equipment

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Blatnik Bridge, Port of Superior

DULUTH-SUPERIOR

The Port of Duluth-Superior, located at the western most tip of Lake Superior, is the Great Lakes' largest harbor. Each year, Duluth-Superior hosts about 1,100 lake carriers and oceangoing ships, loading or delivering about 40 million tons of bulk cargo. The port accommodates a wide range of economic activities ranging from western grain fields, the Iron Range, the Montana-Wyoming coal mines, and northern forests.

Primary port contact

Jason Serck, AICP
Planning & Port Director
City of Superior
1316 North 14th Street
Superior, WI 54880
Phone: (715) 395-7335
Fax: (715) 395-7292
E-mail: serckj@ci.superior.wi.us
Web site: www.duluthport.com

Primary road and rail access

Roads: I-35 and I-535, WIS 35, USH 2 and USH 53 and Minnesota State Highway 61

Rail: Burlington Northern-Santa Fe Railway, Canadian Pacific Railway Ltd., Canadian National Railway Company and Union Pacific Railroad.

Types of cargo handled

Cement, coal, dry bulk, general cargo/break bulk, iron ore, fertilizer, grain, limestone, liquid bulk, salt, scrap iron and metals, steel coil, stone and aggregate, wind turbine components, wood products and other heavy equipment for energy-related projects

Average 2007–2011 annual tonnage handled

38,749,099 short tons[9]
Includes Duluth, Minnesota tonnage

Warehouse space

Covered: 256,000 square feet

Uncovered: 500,000 square feet

Temperature controlled:
256,000 square feet

General/bulk cargo:
11.2 million tons capacity

Total grain elevator capacity:
52 million bushels

Cargo handling equipment

Seven berths (6,600 linear feet of dock space) at full Seaway depth

Two 82-metric ton (180,000 pounds) rail-mounted gantry cranes lifting 125 metric tons in tandem (greater capability cranes available on demand)

A fleet of forklift trucks with capacities of up to 55,000 pounds

Roll on/roll off ramp with immediate access to Interstate highway and designated heavy-lift route

STURGEON BAY

The Port of Sturgeon Bay provides support services to commercial navigation and is the location of major ship building and ship repair facilities on Lake Michigan. Bay Shipbuilding Company is the Great Lakes' leading builder of self-unloading bulk carriers and barges. The company also manufactures and repairs large and small vessels for military and commercial use. Palmer Johnson, Inc. manufactures world-class luxury yachts.

Primary port contact

Todd Thayse, Bay Shipbuilding Company
605 North Third Avenue, P.O. Box 830
Sturgeon Bay, WI 54235
Phone: (920) 743-5524
Fax: (920) 743–2371
Web sites:
www.fincantierimarinegroup.com
http://bayshipbuildingcompany.com

Additional contact

Bob Bordeau, Harbor Master
835 North 14th Avenue
Sturgeon Bay, WI 54235
Phone: (920) 746-2912
Fax: (920) 746-2906
Web site: www.sturgeonbaywi.org

Primary road and rail access

Roads: WIS 42 and WIS 57

Types of cargo handled

Vessels under construction or repair

Average 2007–2011 annual tonnage handled

3,812 tons[12]

PHOTO CREDIT: TONY HODGES

Michigan Street Bridge, Port of Sturgeon Bay

PRAIRIE DU CHIEN

PHOTO CREDIT: JOHN A. WEEKS III

Port of Prairie du Chien

The Port of Prairie du Chien is located on the Mississippi River in the southwest corner of the state. The city owns docks that accommodate large paddle wheel cruise boats and small excursion boats. Privately owned docks and storage facilities handle bulk cargo.

Primary port contact

Blair Dillman
Prairie Sand and Gravel, Inc.
P.O. Box 210
Prairie Du Chien, WI 53821
Phone: (608) 326-6471
Fax: (608) 326-8955
Email: prairiesand@centurytel.net

Primary road and rail access

Roads: US 18 and WIS 35

Rail: Burlington Northern-Santa Fe Railway and Wisconsin & Southern Railroad

Types of cargo handled

Cement, coal, fertilizer, grain, salt, sand, scrap metal and silicon carbide

Average 2007–2011 annual tonnage handled

505,221 tons[13]

Warehouse space

Covered: 20,000 square feet

Uncovered: 25 acres

Fleet capacity: 30 barges on site

Cargo handling equipment

10-ton lift equipment

GREEN BAY

The Port of Green Bay is strategically located on the western most point of Lake Michigan and offers a direct route for shipments linking Midwest and international markets. The port is served by a major railroad, and several nationally known truck lines provide overnight delivery within a 400-mile radius.

Terminals located on the adjacent Fox River include 14 capable of handling dry bulk commodities. Five firms handle bulk liquids and two docks handle general cargo.

Primary road and rail access

Roads: I-43, US 41-141, and WIS 29, WIS 32 and WIS 57

Rail: Canadian National Railway Company

Types of cargo handled

Ash, cement, coal, gypsum, limestone, liquid asphalt, liquid bulk, miscellaneous bulk, petroleum products, salt and pig iron

Average 2007–2011 annual tonnage handled

2,255,616 short tons[14]

Warehouse space

Covered: 135,000 square feet

Uncovered: 150,000 square feet

Liquid: 34,000,000 gallons

General/bulk cargo: 100 acres

30,000 tons silo storage

Cargo handling equipment

Three 8-cubic yard payloaders and one 100-ton crane

Two 10-inch lines for pumping cement off ship or barge

PHOTO CREDIT: JEFF DUMEZ

Port of Green Bay

Primary port contact

Mr. Dean R. Haen
Director, Brown County Port & Resource Recovery Department
2561 S. Broadway Street
Green Bay, WI 54304
Phone: (920) 492-4953
Fax: (920) 492-4957
E-mail: haen_dr@co.brown.wi.us
Web sites:
www.portofgreenbay.com
www.browncountyrecycling.org

Additional contact

Ace Marine LLC
201 South Pearl Street
Green Bay, WI 54301
Phone: (715) 735-4101

Ferries operating in Wisconsin

Water transportation in Wisconsin includes six ferries who play an important role in their communities' economies and the state's tourism industry. This includes linking island communities with jobs, schools, hospitals and other services. Please contact WisDOT's Bureau of Planning & Economic Development for more information about the economic impact of ferries.[15]

Cassville Ferry

Web site: www.cassville.org/ferry.html

Located in southwest Wisconsin on the Mississippi River, the Cassville Ferry operates between WIS 133/81 and US 52 near Millville, Iowa.

Lake Express Car Ferry

Web site: www.lake-express.com

Located on leased Port of Milwaukee property, the Lake Express auto/passenger ferry offers service between Milwaukee, Wisconsin and Muskegon, Michigan, crossing Lake Michigan in just two and one-half hours.

Lake Michigan Carferry

Web site: www.ssbadger.com

Located in eastern Wisconsin along Lake Michigan, the Lake Michigan Carferry connects Manitowoc, Wisconsin, with Ludington, Michigan. Crossing time is approximately four hours.

Madeline Island Ferry Line

Web site: www.madferry.com

Located on Wisconsin's northern tip along Lake Superior, the Madeline Island Ferry connects Bayfield, Wisconsin, with LaPointe Harbor on Madeline Island.

Merrimac Ferry

Web site: www.dot.wisconsin.gov/travel/water/merrimac.htm

Located in south-central Wisconsin, the Merrimac Ferry is the state's only free ferry shuttling WIS 113 traffic between Okee and Merrimac, across the Wisconsin River.

Washington Island Ferry

Web site: www.wisferry.com

Located in Door County, Wisconsin on Lake Michigan, the Washington Island Ferry connects WIS 42 from Northport, Wisconsin, to Detroit Harbor on Washington Island—a distance of 4.5 miles.

Harbor Assistance Program

To assist harbor communities along the Great Lakes and Mississippi River maintain and improve waterborne commerce, WisDOT created the Harbor Assistance Program (HAP) in 1979. HAP projects typically include dock reconstruction, mooring structure replacement, dredging and the construction of facilities to hold dredged material. Grant applications are accepted twice per year—August 1 and February 1.

Since 1980, WisDOT has contributed over $110 million in matching funds for some 86 preservation and improvement projects.[16]

To be eligible for funding, the port facility must be publicly-owned; the project must benefit facilities that are used for cargo transfer, ship building, commercial fishing or regular ferry service; the applicant must be a local unit of government; the project must pass a rigorous benefit-cost analysis; and the project must have been identified in a current Three-Year Harbor Development Plan. Project selection criteria are outlined in administrative rule TRANS 28 and consider a project's urgency and economic impact.

Conclusion

Wisconsin's port facilities serve as multimodal distribution centers linking waterborne vessels with an extensive network of highways, railroads, and airports. While Wisconsin's waterways and harbors are deeply rooted in the state's history, they continue to play an important role in the state's economic future.

Endnotes

1 Wisconsin freight shipment value 2011 TRANSEARCH data provided by Global Insight. 2011 freight tonnage provided by *U.S. Army Corps of Engineers Institute for Water Resources, Navigation Data Center, Waterborne Commerce Statistics Center.*

2 C. James Kruse, Annie Protopapas, and Leslie E. Olson, Texas Transportation Institute, "A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2001–2009", February 2012, National Waterways Foundation, accessed November 14, 2013, http://nationalwaterwaysfoundation.org/study/FinalReportTTI.pdf
Fuel efficiency is given in short tons. Greenhouse gas levels are given in metric tons.

3 "The Seaway: A Vital Waterway," *Great Lakes St. Lawrence Seaway System,* accessed September 27, 2013, http://www.greatlakes-seaway.com/en/seaway/vital/index.html

4 Data courtesy of U.S. Geological Survey, Upper Midwest Environmental Sciences Center, "2011 Waterborne Commerce of the United States Waterways and Harbors on the Great Lakes," *U.S. Army Corps of Engineers, Navigation Data Center, Waterborne Commerce Statistics Center,* accessed October 28, 2013, http://www.navigationdatacenter.us/wcsc/pdf/wcusmvgc11.pdf

5 IMPLAN 2008, version 3

6 Ports excluded from this report are located in Ashland, Bayfield, Madeline Island (La Pointe Harbor), Port Washington, Sheboygan, Washburn and Washington Island (Detroit Harbor).

7 "2011 Waterborne Commerce of the United States Waterways and Harbors on the Great Lakes," *U.S. Army Corps of Engineers, Navigation Data Center, Waterborne Commerce Statistics Center,* accessed October 14, 2013, http://www.navigationdatacenter.us/wcsc/webpub11/Part3_Ports_tonsbyTT_Dr_Yr_commCY2011-2007.HTM

Tonnage is given in short tons. A short ton is equal to 2,000 pounds (907.18474 kilograms) and is often called "ton", without distinguishing it from the metric ton (1,000 kilograms).

8 Ibid.

9 Ibid.

10 Brennan Marine, Inc.

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11 "2011 Waterborne Commerce of the United States Waterways and Harbors on the Great Lakes," *U.S. Army Corps of Engineers, Navigation Data Center, Waterborne Commerce Statistics Center,* accessed October 14, 2013, http://www.navigationdatacenter.us/wcsc/webpub11/Part3_Ports_tonsbyTT_Dr_Yr_commCY2011-2007.HTM

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12 Ibid.

13 Prairie Sand and Gravel, Inc.

Tonnage is given in short tons. A short ton is equal to 2,000 pounds (907.18474 kilograms) and is often called "ton", without distinguishing it from the metric ton (1,000 kilograms).

14 "2011 Waterborne Commerce of the United States Waterways and Harbors on the Great Lakes," *U.S. Army Corps of Engineers, Navigation Data Center, Waterborne Commerce Statistics Center,* accessed October 14, 2013, http://www.navigationdatacenter.us/wcsc/webpub11/Part3_Ports_tonsbyTT_Dr_Yr_commCY2011-2007.HTM

Tonnage is given in short tons. A short ton is equal to 2,000 pounds (907.18474 kilograms) and is often called "ton", without distinguishing it from the metric ton (1,000 kilograms).

15 For extensive information about the economic impact of ferries, please contact Professor Teresa M. Adams, PhD, University of Wisconsin, Department of Civil and Environmental Engineering. Email: adams@engr.wisc.edu

16 For more information about the Harbor Assistance Program, contact Sheri Walz, WisDOT's Railroads and Harbors Section, (608) 267-9319, Email: sheria.walz@dot.wi.gov

ACKNOWLEDGEMENTS

Authors

Liat Lichtman-Bonneville
(608)267-3614
liat.bonneville@dot.wi.gov

Dennis Leong

Robert Russell

Organizations

Wisconsin Department of Transportation,
Railroads and Harbors Section

Wisconsin Commercial Ports Association

Port of Duluth-Superior

Port of Green Bay

Port of La Crosse

Port of Manitowoc

Port of Marinette

Port of Milwaukee

Port of Prairie du Chien

Port of Sturgeon Bay

U.S. Army Corps of Engineers, Institute of Water Resources,
Waterborne Commerce Statistics Center

U.S. Geological Survey,
Upper Midwest Environmental Sciences Center

Wisconsin's ports serve as centers of ship building, commercial fishing, ferrying services and of course, the efficient transport of bulk goods.

While Wisconsin's waterways and harbors are deeply rooted in our state's history, they continue to play an important role in the state's economic future.

Wisconsin Department of Transportation
Bureau of Planning and Economic Development

wisconsindot.gov/Documents/travel/water/ports-report.pdf