



Chapter 3: System Inventory

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Chapter 3: System Inventory

Introduction

This chapter describes the rail industry in Wisconsin from a number of different perspectives. It begins with an overview illustrating how Wisconsin's rail system connects people and goods to the national rail network. It also details ownership, its implications for rail service in the state, and the operational strategies that railroads use to remain competitive. A profile of each railroad is also provided. A description of the rail infrastructure system in the context of rail capacity is explored. Finally, a discussion of at-risk lines for abandonment focuses on Wisconsin's rail service and rail corridor preservation efforts. Together, these perspectives provide relevant background information for the state's long-range planning.

Data in this chapter serves as a benchmark for future state rail plans in assessing capacity needs for shared freight and passenger rail demands and may be used to develop performance measures. The Wisconsin Department of Transportation (WisDOT) acknowledges the recent increase in the movement of frac sand and oil products by rail in Wisconsin and its impact on the rail network. WisDOT will continue to study the impacts of these commodity flows and address them in updates to the Plan.

Overview of Wisconsin's Network

Wisconsin's rail system consists of a network of mainlines, branches, industrial leads, spurs, rail yards and terminals. The rail network also includes out-of-service corridors that have been preserved for possible future transportation use¹.

As of January 2010:

- 59 out of 72 counties in the state are served by at least one of the state's 11 freight railroads
- Active rail mileage totals over 3,600 track miles
- Of the 3,600 miles, Amtrak operates over 236 miles to provide passenger rail service
- 7.3 miles are used for commuter rail provided by Metra between Kenosha and Chicago
- The public sector owns over 530 miles of track
- Intersecting the railroads are approximately 7,200 rail crossings with 4,800 located on public roads

Wisconsin's proximity to Chicago – one of the nation's most important interchange hubs handling one-third of the U.S. freight rail – underscores the importance of the state's rail system to the national system for both freight and passenger movement.

¹ The corridors are protected under rail banking agreements or they are currently being used as trails under the protections of the National Trails Act.

Map 3-1 shows the number of tons of freight flowing over the national rail system and illustrates that Wisconsin is north of a high density west to east freight rail corridor. Other corridors passing through

Map 3-1: Domestic Freight Rail Traffic - Year 2000



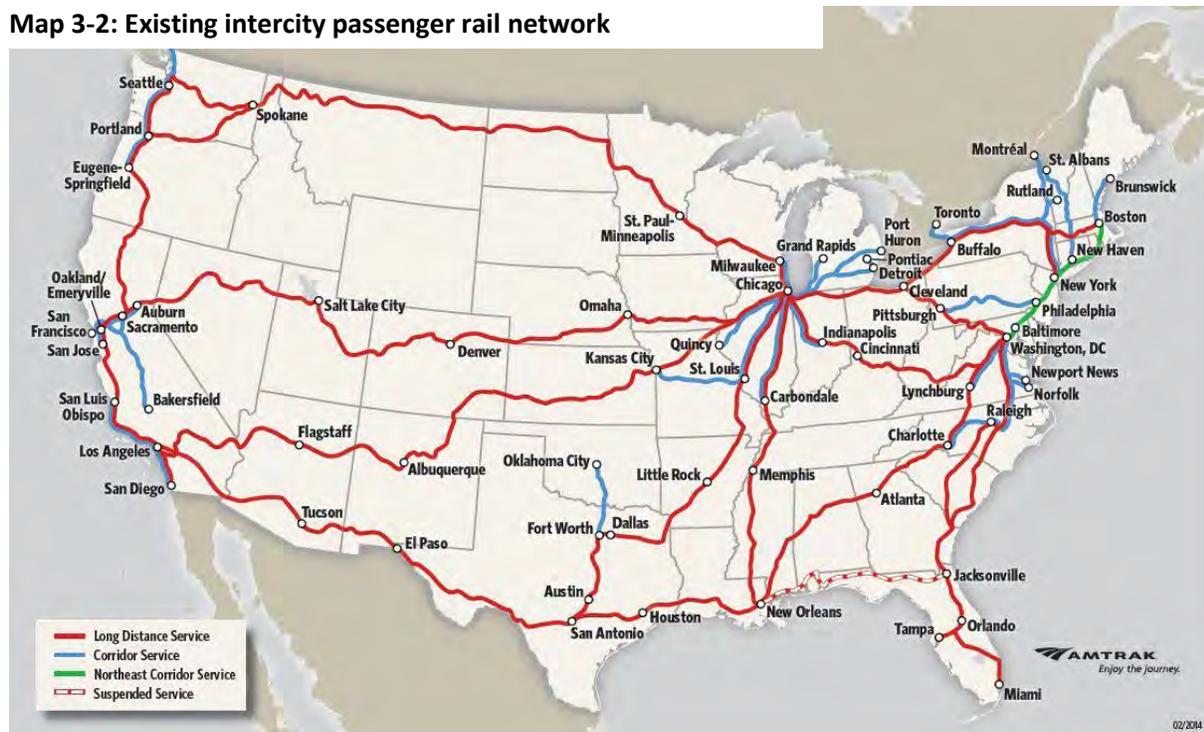
Source: Reebie Associates' TRANSEARCH and U.S. DOT Freight Analysis Framework Project

Wisconsin originate in Seattle, Washington and Vancouver and Prince Rupert, British Columbia. Many of Wisconsin's lines feed into these corridors.

In addition to the transport of freight, Wisconsin is part of the national passenger rail network. Map 3-2 shows the national intercity passenger system (Amtrak), major population centers or mega-regions, and where intercity passenger rail service currently exists. There are two passenger rail routes serving

the state: the *Hiawatha Service* between Chicago and Milwaukee, and the *Empire Builder* between Chicago and Seattle or Portland. These services and planning for future implementation of improved intercity passenger rail are discussed in Chapter 6: Intercity Passenger Rail.

Map 3-2: Existing intercity passenger rail network



Source: Amtrak

Wisconsin's rail network as part of national defense

The Strategic Rail Corridor Network (STRACNET) (Map 3-3) is an interconnected and continuous rail line network consisting of over 38,000 miles of track serving over 170 defense installations.

The Railroads for the National Defense Program, in conjunction with the Federal Railroad Administration, established this network to support defense deployment and peacetime needs. Rail transportation is extremely important to the Department of Defense since the majority of heavy and tracked vehicles would deploy by rail to seaports of embarkation. In Wisconsin, the STRACNET line is the same line that is used by Amtrak for passenger rail travel. See Chapter 9: Rail Safety and Security, for more information about STRACNET.

Map 3-3: STRACNET



Ownership

The institutional structure of the rail industry in North America is different from the other transportation modes. Highways, air, water, etc. have typically been the subject of public planning studies and policy development efforts and are generally publicly-owned and maintained and, therefore, accessible to any licensed operator. In contrast, rail carriers provide not only the service, but also maintain and control the tracks and other facilities required for service.

Understanding how the rail industry is structured, and the varying scale, ownership and operating arrangements present in Wisconsin are important factors for developing responsive strategies that will meet the goals set forth in the vision for rail. While the North American rail system is an integrated network, the individual carriers – which range from very small railroads operating in only in a small number of counties to the largest carriers that service much of the nation – have varying perspectives and needs.

Railroads are typically categorized by measures of size and geographic reach. This classification is important in that carrier size is an important determinant of the rail services that are available within a region, competitive posture, market access, physical condition and financial strength.

Classification

The Association of American Railroads (AAR) classifies U.S. freight railroads based on a combination of revenues and carrier characteristics. The Surface Transportation Board (STB) uses a classification scheme

that is purely revenue based.² Railroads serving Wisconsin are classified, using the AAR's definition, as follows:

Class I – Railroads must be U.S.-based and have operating revenue (for 2010) exceeding \$398.7 million. Currently there are seven Class I railroads in the U.S.³ Four have operations in Wisconsin:

- Burlington Northern Santa Fe (BNSF)
- Canadian National (CN) / Wisconsin Central, LTD.
- Canadian Pacific (CP) / Soo Line Railroad
- Union Pacific (UP)

Regional and short line railroads fall into the following three categories:

Regional – Are non-Class I line-haul railroads operating 350 miles or more with operating revenues of at least \$31.9 million but less than \$398.7 million. They generally operate in at least two states, and as many as four states. Wisconsin currently has two regional railroads, Wisconsin & Southern Railroad, and Dakota, Minnesota and Eastern Railroad.

Local – These railroads operate less than 350 miles and have revenues of less than \$31.9 million. The vast majority earn less than \$5 million per year. They generally perform point-to-point service over short distances. Most operate less than 75 miles in a single state. There are five railroads in Wisconsin that are considered local railroads:

- Escanaba & Lake Superior (ELS)
- Municipality of East Troy Railroad Company (METW)
- Progressive Rail, Inc. (PGR)
- Tomahawk Railway (TR)
- Wisconsin Great Northern (WGN)

Switching or Terminal – A railroad engaged primarily in switching and/or terminal services for other railroads (i.e., they are not typically involved in line-haul moves between two geographical locations). Switching and terminal railroads are often categorized with short line railroads due to their operational and revenue characteristics, except in cases where they are owned by one or more Class I carriers. The Rail + Transload, Inc. (located in Watertown) is considered a switching railroad.

² The STB classification for 2010: Class I - \$398.7 million or more, Class II - \$31.9 million to \$398.6 million, Class III – less than \$31.9 million. For 2009, the thresholds were \$378.8 million and \$30.3 million, respectively; for 2008, the thresholds were \$401.4 million and \$32.1 million, respectively.

³ Two Canadian railroads, CN and CP, have enough revenue that they would be U.S. Class I railroads if they were U.S. companies. Both companies also own railroads in the United States that, by themselves qualify as Class I railroads. Two Mexican railroads, Ferrocarril Mexicano and Kansas City Southern de Mexico, would also be Class I railroads if they were U.S. companies.

Other ownership arrangements

Small railroad ownership takes on different forms, of which many are represented by one or more Wisconsin railroads:

Industry – Usually operated for one industry, but can provide service to other unrelated firms. The most common owners are steel and forest products companies. Over the years, Wisconsin has had several industry-owned railroads, including Duluth, Missabe and Iron Range (DMIR), which was acquired by Canadian National in 2004 from an affiliate of U.S. Steel.

Holding Company – A railroad that is owned by a corporation holding several short lines. There are three holding companies operating in Wisconsin, including Watco, Genesee & Wyoming, and Progressive Rail. Watco owns and operates Wisconsin & Southern, as well as 29 other lines in North America. Genesee & Wyoming Inc. (GWI) owns and operates the Tomahawk Railway in Wisconsin, as well as 110 other lines on three continents. Progressive Rail operates Wisconsin Northern, one of its nine lines across five Midwestern states.

Independent – Railroads that are independently owned and operated (e.g., Wisconsin Great Northern and Escanaba & Lake Superior), with the underlying infrastructure either directly owned by the operator or by a third party, such as a Class I railroad or public agency.

Public – This category includes ownership by a state, county, city, municipality, or even the federal government (typically for military purposes). There are no publicly operated railroads in Wisconsin; however, several Wisconsin short line railroads have agreements to operate over trackage that is owned by a rail transit commission (see Table 3-2). Wisconsin & Southern and Wisconsin Great Northern Railroad are companies that operate over publicly-owned lines.

Figure 3-1: Wisconsin and Southern locomotives



Photo courtesy of WSOR

Table 3-1 lists each of Wisconsin's active freight railroads, their parent companies and miles operated. In the case where the railroad property is owned by a public entity, the owning agency and parent company of the operator are both indicated. Map 3-4 shows the Wisconsin rail system by operator.

Table 3-1: Mileage by classification

Railroad	SCAC ⁴	Parent company/ owning agency	Miles operated in Wisconsin ⁵	Percent of total miles
Class I Railroads				
Burlington Northern Santa Fe Railway Company	BNSF	Berkshire Hathaway	276	7.7%
Canadian Pacific ⁶	CP		310	8.6%
Union Pacific Railroad Company	UP		623	17.3%
Canadian National ⁷	CN		1,578	43.8%
Regional & Local Railroads (Class II & III)				
Dakota, Minnesota & Eastern ⁸	DME	Canadian Pacific	14	.4%
EsCANaba & Lake Superior Railroad Company	ELS		109	3%
Municipality of East Troy Wisconsin	METW		7	.2%
Progressive Rail, Inc. / Wisconsin Northern	PGR		61	1.7%
Tomahawk Railway Limited Partnership	TR	Genesee & Wyoming	4	.1%
Wisconsin & Southern Railroad Company	WSOR	State's RTCs & Watco	602	16.7%
Wisconsin Great Northern Railroad, Inc.	WGN		19	.5%
Switching and Terminal Railroads				
Rail + Transload, Inc.	RTI		0	-
Total Miles Operated			3,603	100%

⁴ Standard Carrier Alpha Code, an industry standard 2 to 4 letter designation.

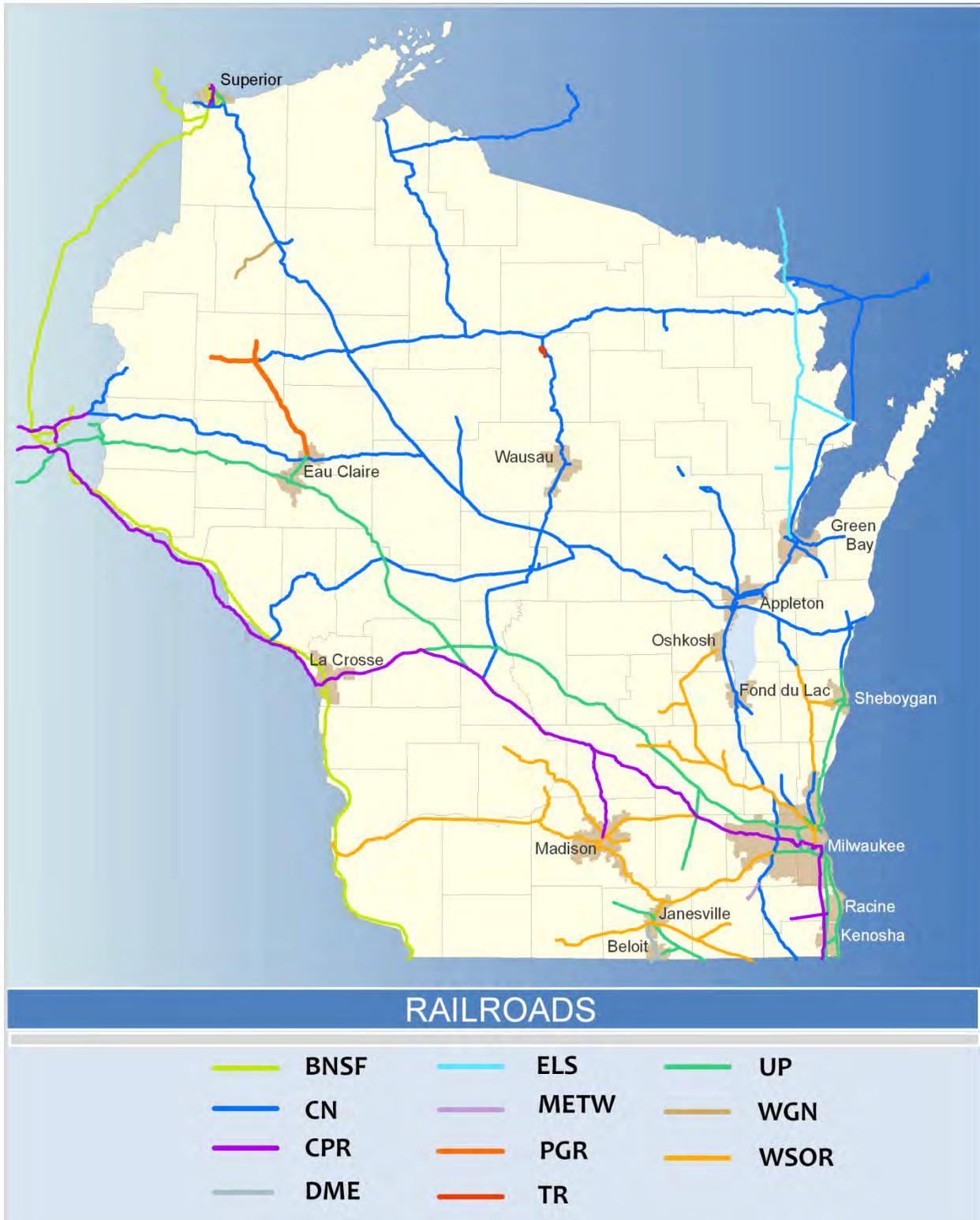
⁵ Mileage does not include trackage rights.

⁶ Soo Line Railroad Co. is the legal operating name for almost all CP assets in Wisconsin.

⁷ Grand Trunk Corporation, owner of the Wisconsin Central Ltd., the Sault Ste. Marie Bridge Company, and the Duluth, Missabe, and Iron Range, is the legal operating entity for CN in Wisconsin (and throughout the United States).

⁸ DM&E has since been formally absorbed into Soo Line.

Map 3-4: Railroads operating in Wisconsin – 2010



Source: Wisconsin Department of Transportation

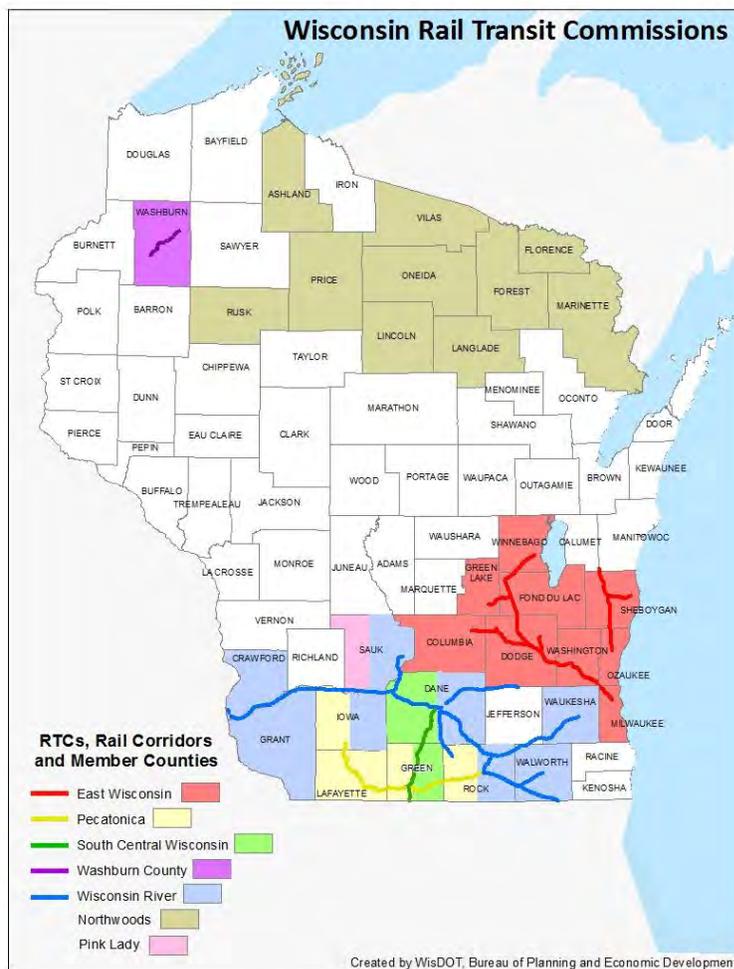
Rail Transit Commissions (RTCs)

Viable railroad lines are sometimes purchased to retain freight service for smaller communities. The State of Wisconsin has over 530 miles of publicly-owned rail lines that are jointly owned by the state and a combination of RTCs, Consortia, and/or Transit Authorities (collectively Rail Transit Commissions).

RTCs were created to help preserve rail service or the potential for rail service, and to influence policies on the future use of rail corridors if rail service is discontinued. The state's publicly-owned lines and the corresponding RTCs are depicted in Map 3-5 and Table 3-2.

Much of the responsibility for railroad operations and management is conferred on RTCs which, in turn, contract with private railroads for service. The contracts typically pass nearly

all the responsibility for the operation, maintenance and liability to the railroad. Most RTCs in Wisconsin are multi-county in nature. However, some are single-county, in partnership with the cities, villages, and/or towns within that county. RTCs are statutorily empowered to take any action that their member municipalities have assigned them in the establishing agreement. RTCs are staffed by their member municipalities and, in some cases, by regional planning commission staff. As can be seen from the brief descriptions in Table 3-2, their respective level of activity and scope of efforts vary. The commissions continue to be an important partner with WisDOT in preserving rail service. In this partnership arrangement, WisDOT provides resources, information, staff support, general oversight and funding. The commissions provide project



Map 3-5: Rail Transit Commissions

management, matching funds, and coordination with shippers, freight rail operators and local governments.

Table 3-2: Rail Transit Commissions			
Name	Created	Counties	Purpose
East Wisconsin Counties Rail Consortium	1980	Winnebago, Dodge, Green Lake, Washington, Fond du Lac, Columbia, Ozaukee, Sheboygan, Milwaukee	Manages 198 miles of track in the member counties. Contracts with WSOR for operations.
Forest County Transit Commission	1979 <i>Since dissolved</i>	Forest and Florence	Assisted in preservation of 37.8 miles of trackage between Wabeno and Tipler. Contracted with Nicolet, Badger and Northern Railroad for operations.
Geneva Lake Area Joint Transit Commission	Mid 1960s	Walworth	Created to promote commuter rail service between Lake Geneva and Chicago.
Northeast Wisconsin Rail Transit Commission	Late 1970s <i>Since dissolved</i>	Brown, Oconto, and Marinette	Assisted in preservation of 88 miles of trackage between Green Bay and the WI/MI State line. Contracted with Escanaba & Lake Superior Railroad for operations.
Pecatonica Rail Transit Commission	1978	Green, Iowa, Lafayette, Rock	Manages 34 miles of track operated by the WSOR between Monroe and Janesville, as well as a recreational trail.
Pink Lady Rail Transit Commission	1988	Sauk County, City of Baraboo, City of Reedsburg and Village of Prairie du Sac	Created to work with Union Pacific, communities, and shippers to maintain area rail service.
South Central Wisconsin Rail Transit Commission	1978	Dane, Green	Manages 59 miles of line that is currently a recreational trail.
Washburn County Rail Transit Commission	1998	Washburn	Manages 18 miles of line and currently has an operating agreement with the Wisconsin Great Northern Railroad.
Wisconsin River Rail Transit Commission	1980	Crawford, Dane, Grant, Iowa, Rock, Sauk, Walworth, Waukesha	Manages 278 miles of track. Contracts with WSOR to provide service over its network.
Northwoods Rail Transit Commission	2012	Ashland, Florence, Forest, Langlade, Lincoln, Marathon, Marinette, Oconto, Oneida, Price, Rusk, Vilas	Organized to negotiate on behalf of its counties and take actions designed to improve local rail service for the communities of northern Wisconsin and the Upper Peninsula of Michigan.

Characteristics of Railroads Operating in Wisconsin

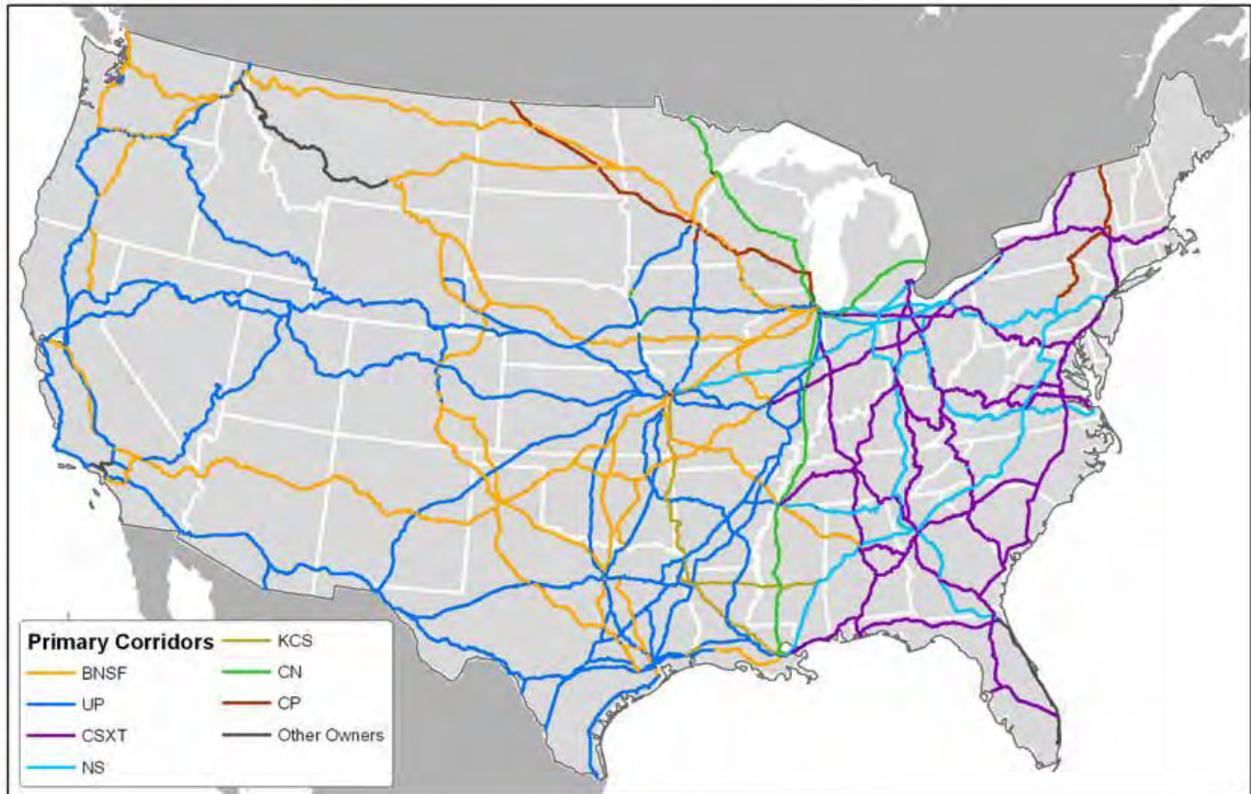
Meaningful public policy stems from an understanding of how railroads operate and use the rail infrastructure. This section covers the following topics:

- Railroad operational agreements
- Wisconsin railroad profiles
- Capacity of the rail system in Wisconsin
- Intermodal facilities

Railroad operational agreements

The railroad industry is highly concentrated in the hands of the Class I railroads but they are limited by their own networks. While Map 3-6 does not depict a comprehensive view of the North American rail system, and only illustrates the primary corridors of the Class I networks, it does show their geographic extent. For example, BNSF and UP's networks are in the western part of the country, while CN's network spans from north to south in the middle of the country. The eastern part of the country is served by Norfolk Southern and CSX.

Map 3-6: Class I U.S. Primary Rail Corridors



Source: Cambridge Systematics, Inc. prepared for the American Association of Railroads, 2007.

Railroads have developed several methods to extend their reach over each others' lines to satisfy shipper needs and achieve corporate efficiency goals.

Joint rate/route –Two railroads, by agreement, establish one rate from an origin on the first rail line to a destination on the second rail line. One of the partnered railroads sends one bill, the shipper returns one check, and the billing railroad pays the other its share of the revenue. Each railroad remains individually responsible for providing locomotives and crews over its lines and loss and damage to the freight while in its possession. Joint rate/route agreements are subject to STB regulation and are a matter of public record.

Union Station/Union Terminal

A union station or union terminal is the term used in North America for a train station where tracks and facilities are shared by two or more railway companies, allowing passengers or freight to connect conveniently between them.

Trackage rights – Under this type of arrangement, the owning railroad retains all rights but allows another railroad to operate over certain sections of its track. Trackage rights can be "full service," where the tenant has the right to serve shippers on the owner's line, or "overhead" or "bridge" meaning that the tenant cannot carry freight to and from the owner's customers. Trackage rights can be temporary or long-term. Temporary rights agreements are typically made when a disaster affects one railroad while a parallel railroad line is fully operational. Long-term agreements can be made to allow competing railroads access to potentially profitable shippers or to act as a bridge route between otherwise disconnected sections of another railroad. Unlike joint route/rate, trackage rights agreements specify that the tenant railroad is solely responsible to the shipper for providing transportation service and for loss and damage to the freight.

Trackage rights agreements are subject to STB regulation and are a matter of public record. Labor provisions are attached to trackage rights agreements. If the employees on an owning railroad lose work or their jobs because a new tenant takes away traffic, they are entitled by federal law to up to six years pay.

Haulage rights – Under this type of arrangement, the railroad receiving haulage rights has control of marketing. It negotiates the rate or contract with the customer over the entire route. It also supplies the cars and is responsible for loss and damage. The railroad granting the haulage rights, meanwhile, retains direct control over operations. It provides the track, train crews, dispatching services, and sometimes the locomotives. In return, the host railroad gets a cents-per-unit payment for each car moved, but it is not privy to the haulage road's deals with the shippers.

Because haulage rights are outside of the STB's trackage rights jurisdiction, they are not a matter of public record and the owning railroad employees do not receive labor protection.

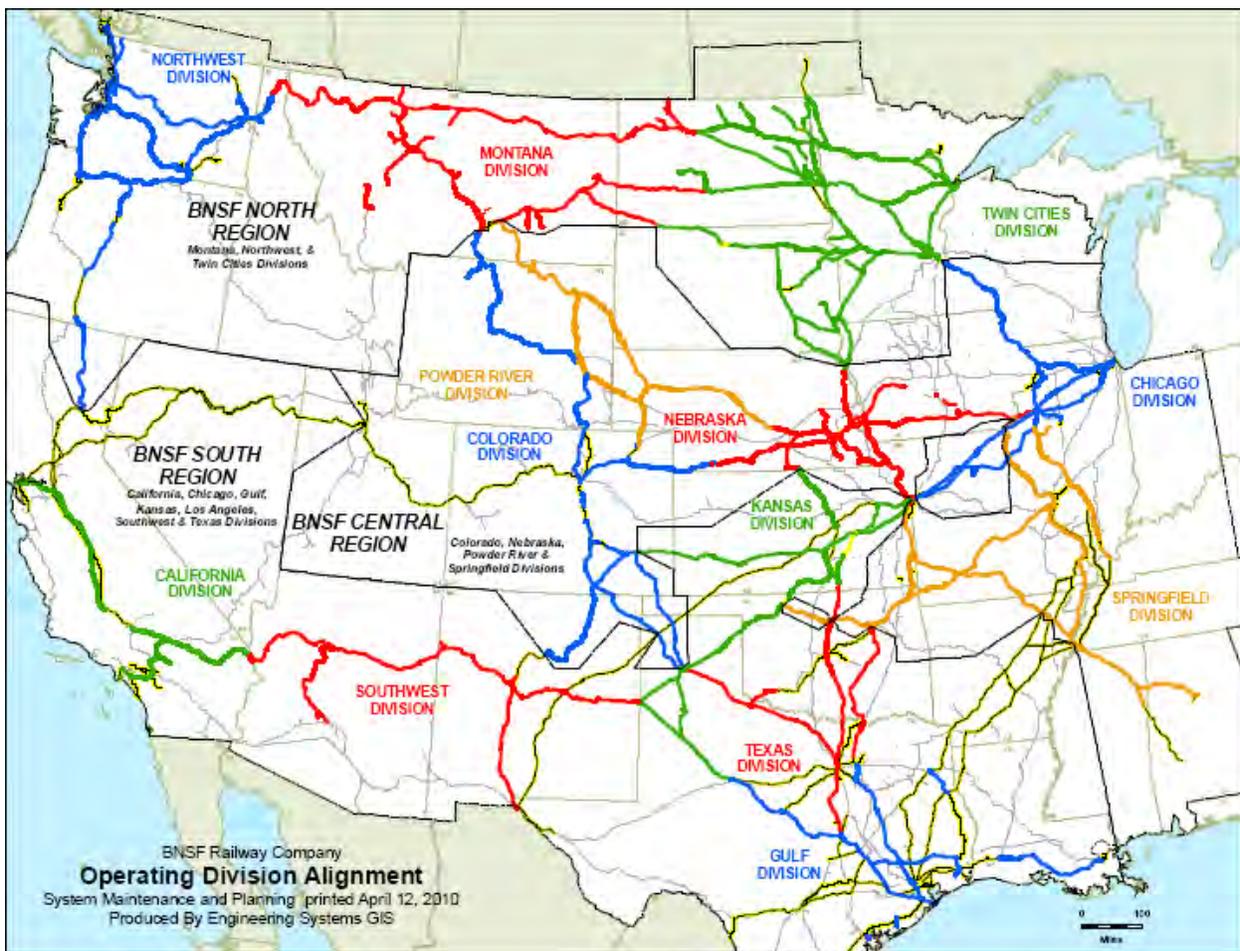
Wisconsin Railroad Profiles

This section profiles the 11 active freight railroads operating in Wisconsin. A table summarizes each railroad's operations in Wisconsin.⁹

Burlington Northern Santa Fe Railway

In September 1995, Burlington Northern Inc. and the Santa Fe Pacific Corporation merged to form one of the largest networks in North America. In February, 2010 the railroad became a wholly-owned subsidiary of Berkshire Hathaway, Inc.

Map 3-7: BNSF's System



Burlington Northern Santa Fe's (BNSF's) 32,000 route miles cover the western half of the U.S., serving all of the major markets in the region and connecting to eastern markets through all five primary gateways (Chicago, St. Louis, Kansas City, Memphis and New Orleans) and several other interchange locations, including a southeastern connection at Birmingham, Alabama. North American service is provided

⁹ Railroad timetables were used as the primary source for each railroad's operating profile.

through connections with Canadian and Mexican railroads. The network spans over 28 states and two Canadian provinces. In 2009, BNSF employed 38,000 people and served over 40 ports nationwide.

BNSF moves more intermodal traffic than any other rail system in the world. In 2008, more than 4.6 million intermodal shipments (truck trailers or containers) were transported on BNSF’s rail lines. According to BNSF, it is among the largest grain-hauling railroads in the United States, transporting more than one million carloads of agricultural commodities in 2008, nearly one-half of which were corn and wheat movements. Among the industrial products carried by BNSF’s carload services are lumber, newsprint, printing paper, paperboard, propane, lube oil, motor oil, asphalt, canned beverages, coiled sheet steel, recycled iron and steel, cement, asphalt, gypsum, crushed stone, limestone, iron ore, soda ash for glass, and kaolin clay for paper.

BNSF has had an aggressive campaign to close grade crossings across the country. In addition, the railroad has helped to develop new markets by creating “shuttle” trains in Texas, and an Ethanol Express service from the Midwest to California. In 2008, BNSF completed nearly 16 miles of a third main track through Cajon Pass in Southern California, increasing capacity of the transcontinental route between Chicago and Los Angeles from 100 to 150 trains per day. In April 2010, BNSF completed a \$200 million expansion and rebuilding of its Memphis Intermodal Facility which will increase its lift capacity to one million lifts by the time the facility is built out. BNSF’s average length of haul was reported to be 1,090 miles in 2008.

In 2009, the railroad had operating annual revenues of \$14 billion, a \$4 billion decrease from 2008. BNSF is headquartered in Fort Worth, Texas.

BNSF operates (Table 3-3) about 276 miles of track in Wisconsin which is mostly double-tracked. BNSF’s main Wisconsin line connects Chicago and the Twin Cities via the Mississippi River Valley from East Dubuque, Illinois, through Prescott (Pierce County). The mainline primarily carries overhead traffic through the state. Only a small percentage of BNSF traffic originates or terminates in Wisconsin. The predominant commodity terminating in Wisconsin is western coal at the Port of Superior. The railroad employs 673 people in Wisconsin with a payroll of \$42 million.

Table 3-3: BNSF operating profile in Wisconsin		
Mileage	Division	
276	Twin Cities	
Subdivisions	From	To
Allouez Branch	Saunders	Allouez
Aurora	Aurora, IL	North La Crosse
Hinckley	Boylston	MN State Line (Foxboro)
Lakes	Superior, WI	Cass Lake, MN
St. Croix	North La Crosse	MN State Line (Burns)
Major Yards		
Allouez, Superior, La Crosse		
Terminal Operations		
None in Wisconsin		
Trackage Rights		
Over CP, North La Crosse to Winona Over CN, Saunders to Ranier, MN		
Port Connections		
Superior/Duluth		

Canadian National

Canadian National (CN), headquartered in Montréal, Canada, operates the largest rail network in Canada. The railroad operates approximately 21,094 route miles in eight Canadian provinces and 16 American states (Table 3-4). CN serves the ports of Vancouver and Prince Rupert in British Columbia; Montréal; Halifax; New Orleans, Louisiana; and Mobile, Alabama; and the key metropolitan areas of Toronto, Buffalo, Chicago, Detroit, Duluth, Minnesota/Superior, Wisconsin, Green Bay, Minneapolis/St. Paul, Minnesota, St. Louis, Memphis, Tennessee, and Jackson, Mississippi, with connections to all points in North America.

Map 3-8: Canadian National System and Elgin, Joliet and Eastern Railway Co (EJE) Acquisition Inset



Source: 2009 Investor Fact Book

Table 3-4: CN operating profile in Wisconsin

Mileage	Division	
1,578	North	
Subdivisions	From	To
Ashland	Ashland	Ashland Jct.
Bradley	Ladysmith	Argonne Jct.
Chilton	Hilbert	Kiel
Dresser	MN St. Line (Osceola)	Dresser
Fox River	Green Bay	Neenah North
Manistique	MI State Line	Green Bay
Manitowoc	Neenah	Cleveland
Marinette	Green Bay	Marinette
Medford	Medford	Spencer
Minneapolis	MN St. Line (Withrow)	Owen
Neenah	Hoover	Fond du Lac
Pembine	Crandon	MI St. Line (Hermansville)
Plover	Stevens Point	Wisconsin Rapids
Saukville	Saukville	Mill
Shawano	Shawano	Shawano Jct.
Stinson	Stinson Yard	Ambridge
Superior	MN State Line	Hoover
Valley	New Lisbon	Bradley
Waukesha	Fond du Lac	North State Line
West Bend	Rusco	Milepost 99.5
White Pine	WI/MI State Line	Marengo Junction
Whitehall	Wisconsin Rapids	East Winona
Major Yards		
Fond du Lac		
Terminal Operations		
<i>Not available</i>		
Trackage Rights		
<i>Not available</i>		
Port Connections		
Green Bay , Superior		

Through a series of acquisitions that began in 1999 with the purchase of the Illinois Central, CN gained control of an extensive network in the central United States along the Mississippi River Valley from the Great Lakes to the Gulf of Mexico.

In 2001, CN acquired Wisconsin Central Transportation Corporation’s North American railroad subsidiaries based in Wisconsin: Wisconsin Central Ltd (WCL), Fox Valley & Western Ltd (FVW), Sault St. Marie Bridge Company (SSAM), as well as Wisconsin Chicago Link Ltd., and Algoma Central based in Michigan. WCL’s acquisition allowed CN to obtain its own through route to Chicago, thereby forming a transcontinental link from western Canada through the United States, as well as access to St. Paul from the east.

Other acquisitions have improved the efficiency of CN’s network in North America. The Duluth, Missabe & Iron Range (DMIR) was acquired in 2004 (12 rail miles in Wisconsin). This acquisition included access to the ports of Twin Harbors and Duluth/Superior, making CN the largest carrier of iron ore in North America. In 2008, CN acquired Elgin, Joliet and Eastern Railway Co. (EJE) after intense public debate. The line consists of a rail corridor through the Chicago suburbs that essentially bypasses Chicago’s congestion and allows trains to travel south without delays or interchanges in Chicago. Map 3-8 shows an inset of the former EJE lines.

Other system improvements include a \$100 million modernization of CN’s Memphis yard in 2009. This yard serves as the gateway to company’s operations in the Gulf Region.

In terms of commodities, no individual commodity group accounted for more than 18

percent of revenue. Nineteen percent of revenue came from the U.S., 28 percent from transborder traffic, 24 percent from Canadian domestic traffic, and 29 percent from overseas traffic. CN is the originating carrier for approximately 85 percent of traffic moving along its network, which allows it both to capitalize on service advantages and build on opportunities to efficiently use assets.

CN operates over 1,578 miles of track in Wisconsin as part of its North Division. The railroad has been involved with Wisconsin rail since 1995 when it entered into a long-term agreement with WCL, to provide haulage services for CN's carload and bulk commodity trains between Superior and Chicago. CN has one public intermodal facility at Chippewa Falls, and one private intermodal facility operated for Ashley Furniture in Arcadia, Wisconsin.

In 2009, the firm employed an average of 21,793 people, of which 6,696 are U.S. citizens, 440 located in Wisconsin. CN reported freight revenue of \$6.6 billion in 2009 down from \$7.6 billion in 2008.

Canadian Pacific Railway

Canadian Pacific Railway's (CP) network spans 14,000 miles in Canada and the United States from Vancouver to Montréal, and also serves major northern cities in the United States such as Minneapolis, Chicago and New York City. CP has port operations in Vancouver, Montréal, Philadelphia and New York. In 2009, 2.36 million carloads generated revenues of C\$4.3 billion, down from 2008's C\$4.9 billion. Over one-half of the CP's freight traffic is coal, grain and intermodal freight. It also ships automotive parts and automobiles, sulfur, fertilizers, other chemicals, forest products and other types of commodities.

Map 3-9: Canadian Pacific System



Source: 2009 Investor Book

CP has had a lengthy presence in Wisconsin through its controlling ownership of the Soo Line Railroad, which served the upper Midwest. In 1985, Soo purchased the remaining assets of the Chicago,

Table 3-5: CP operating profile in Wisconsin		
Mileage	Division	
310	St Paul & Chicago Service Areas	
Subdivisions	From	To
C & M	Ill State Line (Wadsworth)	Milwaukee
Duluth-Superior Terminals	Superior	Superior
M & P	Portage	Madison
Tomah	Portage	MN Line
Watertown	Milwaukee	Portage
Major Yards		
Milwaukee, Portage, La Crosse, Superior		
Terminal/Intermodal/Transload Operations		
Intermodal facility-Milwaukee, Transload facilities –Milwaukee and La Crosse Passenger stations: La Crosse, Tomah, Wisconsin Dells, Portage, Columbus, Milwaukee, Milwaukee Airport, Sturtevant		
Trackage Rights		
Over CN, from New Lisbon to Weston Over WSOR, Watertown to Madison Over WSOR, Janesville to Madison Over BNSF, Superior to Foxboro and Superior to Duluth		
Port Connections		
Superior, Milwaukee		

Milwaukee, St. Paul and Pacific Railroad (Milwaukee Road), giving it a more direct through route between Chicago and the Twin Cities. Combined with Soo's existing lines west of the Twin Cities, a stronger link between Chicago, the upper Midwest and western Canada was established through gateways at Portal, North Dakota and Noyes, Minnesota. CP fully acquired the Soo in 1990 through a stock purchase. CP proceeded to shrink its U.S. network until 2007 when it initiated acquisition of Dakota Minnesota and Eastern (DME) and its affiliate Iowa, Chicago, and Eastern (ICE), which had been spun off by CP in 1997.

In Wisconsin, CP operates over 310 miles of track and leases five miles of track to Wisconsin & Southern Railroad (WSOR). CP's mainline connects Chicago, Milwaukee and the Twin Cities via La Crosse. It is a key link in CP's rail service from Vancouver, British Columbia, to Chicago. CP's mainline through Wisconsin serves as the route of Amtrak's *Empire Builder* service between Chicago and

the Twin Cities, as well as the route of Amtrak's *Hiawatha Service* between Milwaukee and Chicago. The railroad sold the Waterloo Spur, the line between Watertown and Madison to WSOR in 2003. The State of Wisconsin purchased the line from WSOR in 2009.

CP operates over five subdivisions in Wisconsin; its 2009 Wisconsin payroll was \$38 million for about 800 employees. As of May 2010, CP has 500 employees in Wisconsin.

Union Pacific Railroad Company

Union Pacific Railroad (UP), headquartered in Omaha, Nebraska is the largest railroad in North America. The railroad operated over 32,100 route miles in the western United States in 2009. The railroad serves 23 states, every major West Coast and Gulf Coast port, and the five largest gateways between the East and West at Chicago, St. Louis, Memphis, Kansas City and New Orleans. The railroad has one of the most diversified commodity mixes in the industry, including chemicals, coal, food and food products, forest products, grain and grain products, metals and minerals, automobiles and parts, and intermodal. UP is the nation's largest hauler of chemicals, much of which originate along the Gulf Coast near Houston, Texas. With access to the coal-rich Powder River Basin in Wyoming and coalfields in Illinois, Colorado, and Utah, the railroad moves more than 250 million tons of coal annually.

Map 3-10: Union Pacific System



UP began operating in Wisconsin when it acquired Chicago & North Western in 1995. The railroad owns approximately 753 miles of track in Wisconsin, of which it leases 130 miles to WSOR and Progressive Rail Inc., for a total of 623 operating miles of track. UP also operates roughly over an additional 300 miles through trackage rights. In Wisconsin, UP's line connects Chicago, Milwaukee, and the Twin Cities via Eau Claire. Another spoke reaches Evansville in southern Wisconsin.

Table 3-6: UP operating profile in Wisconsin		
Mileage	Divisions	
623	Chicago and Twin Cities	
Subdivisions	From	To
Adams	BJ South	Adams
Albert Lea (Duluth Superior Terminal)	Superior	South Itasca
Altoona	Altoona	MN State Line (Stillwater)
Chippewa Falls	Cameron	Yukon Jct.
Clyman	Clyman Junction	Fort Atkinson (EOT)
Harvard	Evansville	IL State Line (Harvard)
Kenosha	Saint Francis	IL State Line (Zion)
Milwaukee	FVW Connection	IL State Line (Gurnee)
Shoreline	BJ East	Edgewater Jct.
Winona	Wyeville	Winona
Wyeville	Adams	Altoona
Major Yards		
Milwaukee, Janesville		
Terminal Operations/Intermodal/Transload		
Intermodal: Milwaukee Transload: Glacier States, Kenosha, CSW Warehouse, Eau Claire		
Trackage Rights		
Over CN, Necedah to Superior		
Over CP, Tunnel City to Tower CK		
Port Connections		
Duluth, MN/Superior WI, Milwaukee, La Crosse		

Commuter rail service is provided by UP under contract to Metra in Southeast Wisconsin.¹⁰ UP employs 42,700 people of which 325 work in Wisconsin with an annual payroll of \$32.1 million.

UP's Global III intermodal facility, located in Rochelle, Illinois is an important interchange hub and loading/unloading terminal for intermodal shipments heading to and from Wisconsin. UP has four other intermodal facilities in the Chicago metropolitan area.

UP will be implementing Positive Train Control in 2013 for the Adams, Harvard and Kenosha Subdivisions, and in 2015 for Altoona, Wyeville and Milwaukee Subdivisions.

Union Pacific operates over 11 subdivisions in Wisconsin as shown in the operating profile, Table 3-6.

Dakota, Minnesota & Eastern Railroad

Although considered a regional railroad, Dakota, Minnesota & Eastern Railroad (DME) has been a subsidiary of Canadian Pacific Railway since October 30, 2008.¹¹

¹⁰ Metra is the commuter rail agency serving Cook, DuPage, Will, Lake, Kane and McHenry counties in the Chicago area. It is the sister agency to the Chicago Transit Authority, which provides mass transit rail (the L) and bus service to Chicago and some suburbs, and Pace, which provides bus service primarily in the suburbs.

¹¹ <http://www.stb.dot.gov/decisions/readingroom.nsf/WebDecisionID/39346?OpenDocument>

Map 3- 11: Dakota, Minnesota and Eastern Railroad System



DME, headquartered in Sioux Falls, South Dakota, began operations in 1986 from the remnants of a line slated for abandonment by Chicago & North Western Railroad. It has since become one of the largest regional (Class II) railroads in the United States, with over 2,500 miles of track. DME’s mainline extends from the Mississippi River at Winona, Minnesota, across southern Minnesota and central South Dakota to Rapid City. DME’s system map shows its rail lines in

blue and CP’s lines in red. DME serves 200 communities in Iowa, Illinois, Minnesota, Missouri, Minnesota, Nebraska, South Dakota and Wisconsin and employs 1,000 people.

DME manages over 7,000 rail cars and operates nearly 200 locomotives. The system transports over 300,000 carloads of freight yearly through the upper Midwest. The principal commodities include grain and grain products, coal, chemicals, bentonite and cement, steel products, scrap materials, biofuels and forest products. Much of the system’s traffic base is bulk commodity.



Map 3-12: DME in Rock County (red lines)

DME trackage in Wisconsin was previously part of the Soo Line Railroad. In 1997 the lines were sold to Iowa Minnesota Rail Link (IMRL) which operated them until 2002 when DME acquired the lines. For legal and regulatory historical reasons, IMRL was brought into DME as a separate entity—Iowa, Chicago & Eastern (ICE) Railroad—yet both DME and ICE were operated as a single system under common management by Cedar American Rail Holdings.

Today, DME operates over 14 miles in Rock County, between Beloit and Janesville. Major commodities include: marine engines, vegetable oil, plastics, petroleum products, canned goods, and lumber. DME has connections to UP and WSOR in Janesville.

Wisconsin & Southern Railroad Company

Wisconsin & Southern Railroad (WSOR), Wisconsin's second largest railroad, is the main operator of the state-owned lines in Wisconsin. This network includes many former Milwaukee Road tracks that were designated for abandonment in the late 1970s and early 1980s. These tracks are now owned and

Table 3-7: WSOR operating profile in Wisconsin		
Mileage	Divisions	
273	Northern, Southern	
Subdivisions	From	To
Cambria	Cambria	Horicon
Cottage Grove	Madison	Cottage Grove
Elkhorn	Bardwell	Elkhorn
Fox Lake	Janesville	IL State Line (Belden)
Madison	Madison	Janesville
Markesan	Markesan	Brandon
Milwaukee	Horicon	Grand Avenue
Monroe	Monroe	Janesville
Oshkosh	Oshkosh	Horicon
Plymouth	N. Milwaukee	Kiel
Prairie	Prairie du Chien	Madison
Reedsburg	Brooklyn	Reedsburg
Sauk	Badger Ordnance	Mazomanie
Watertown	Madison	Watertown
Waukesha	Waukesha	Madison
Major Yards		
Horicon, Janesville, Madison, Milwaukee		
Terminal/Intermodal Terminals/Transload		
Terminals: Horicon, Janesville, Madison, Milwaukee		
Transload: Horicon, Janesville, Madison, Milwaukee, Oshkosh, Plymouth, Ripon		
Trackage Rights		
Over BN, in Prairie du Chien		
Over CN, Slinger to Grand Avenue		
Over CP, Milwaukee to Chicago		
Over Metra, Fox Lake to Chicago		
Over UP, Kohler to Kohler Junction		
Port Connections		
Prairie du Chien		

managed cooperatively by the State of Wisconsin and 18 counties with which WSOR has a 50 year operating agreement.

WSOR's network (Map 3-13) spans over 21 counties and 530 miles in southern Wisconsin and northeast Illinois. The network is comprised of trackage owned by the railroad (20 miles), 92 miles leased from UP (1996), five miles from CP (1998), with the remainder state-owned.

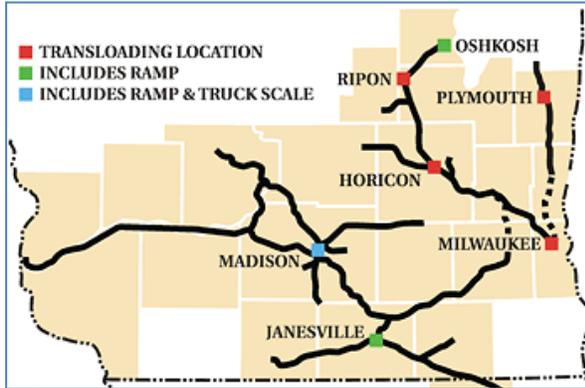
The Northern Division consists of five lines radiating from Horicon to Cambria, Markesan, Oshkosh, Mayville and Milwaukee (North Glendale Yard).

The Southern Division, which was formerly Wisconsin and Calumet Railroad (1992), consists of a line from Fox Lake, Illinois to Prairie du Chien, with branches terminating at Prairie du Sac, Elkhorn, Monroe, Waukesha and Watertown, and trackage rights to Chicago over

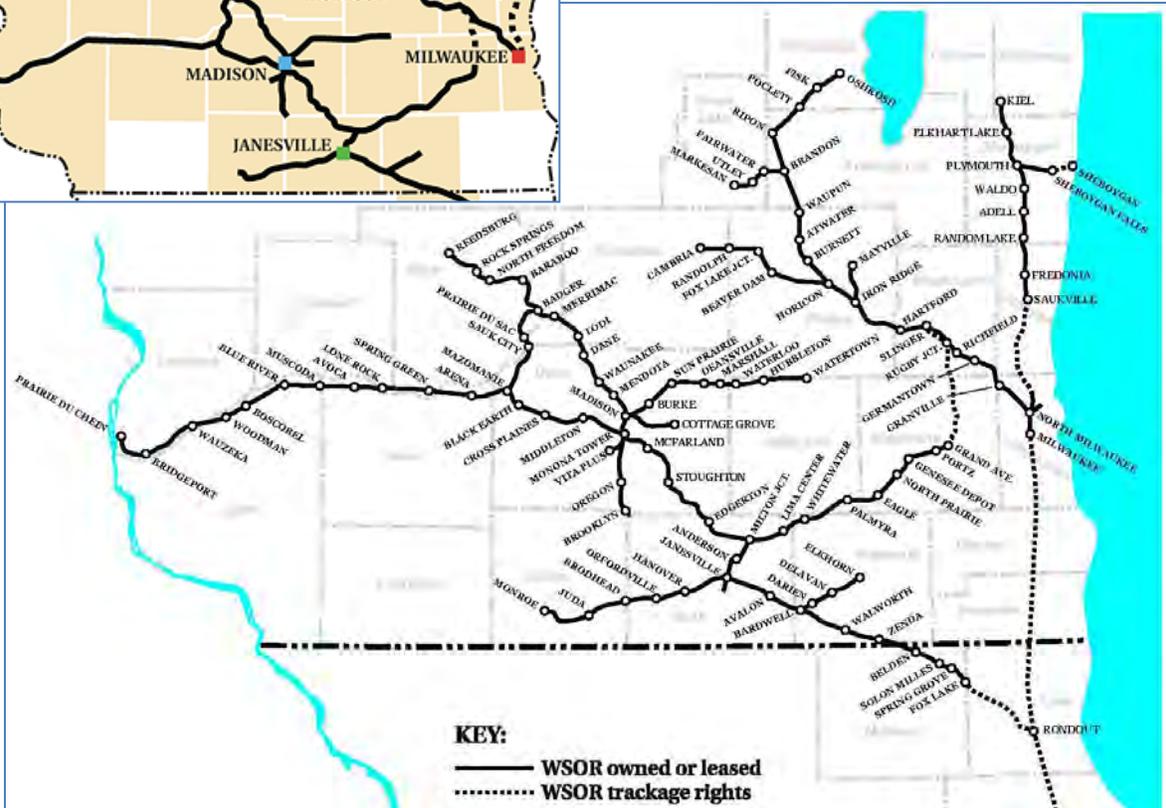
Metra. The leased lines from UP consist of Madison to Reedsburg, Madison to Cottage Grove and Madison to Central Soya. WSOR also holds trackage rights from UP between Kohler to Kohler Junction. WSOR has trackage rights on the CN to connect the northern and southern divisions between Waukesha and Slinger. It also has trackage rights on CP's line from Milwaukee to Chicago.

Traffic includes food products, grain, fertilizer, limestone, lumber, steel, plastic, aggregates, salt, pulp board, paper and chemicals.

WSOR is headquartered in Milwaukee, where all dispatching duties are carried out. Branch offices are located in Madison, Janesville and Horicon. Locomotive maintenance is centered in Janesville; WSOR's Horicon paint shops often do contract work on both rolling stock and locomotives.



Map 3-13: WSOR System and transloading locations



WSOR has connections to the western Class I railroads: BNSF, CN, CP and UP. It also has access to harbor facilities on the Mississippi River at Prairie du Chien and maintains several transloading sites within its system.

WSOR's operating revenue exceeded \$35 million in 2009. As of January 1, 2010, it had 182 full-time employees. In January 2012 WSOR was sold to Watco, a Kansas-based rail-holding company.

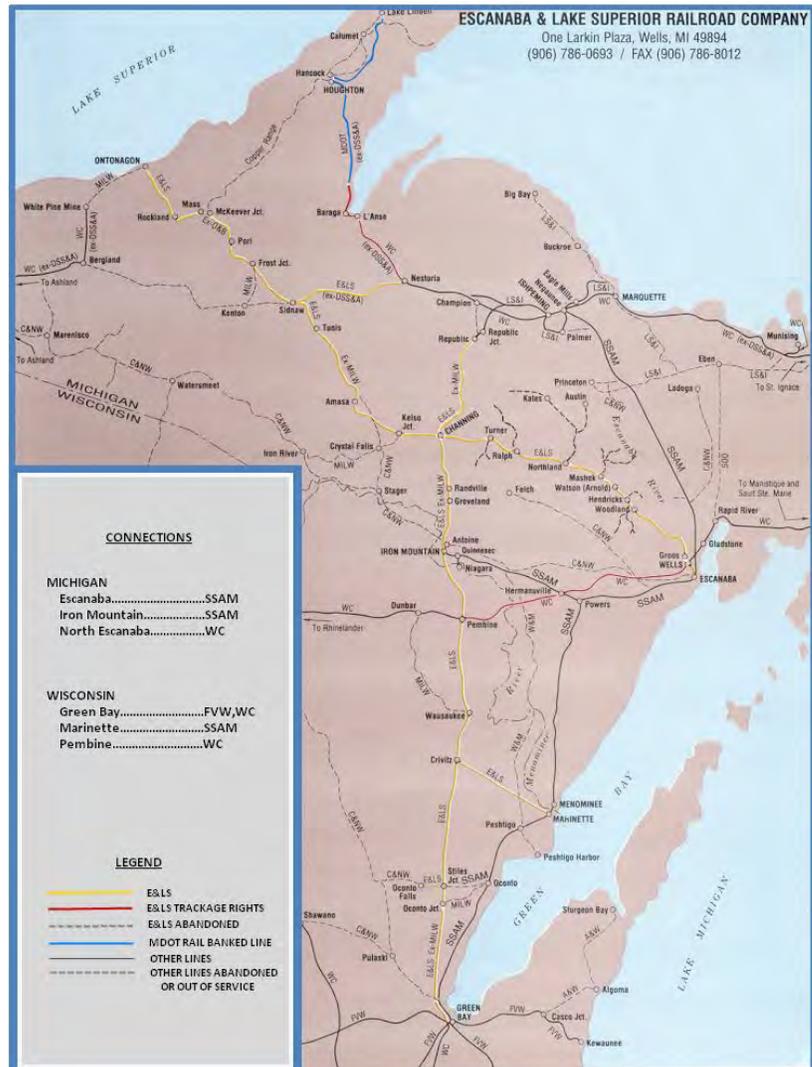
Escanaba & Lake Superior Railroad Company

Escanaba & Lake Superior Railroad (ELS) is a Class III short line carrier (STB classification) based in Wells, Michigan. ELS has been in operation since 1978 when it took over 65 miles of ex-Milwaukee Road trackage. Since then the railroad has grown to a 235-mile system with a diversified traffic base that includes wood pulp, pulpwood logs, oriented strand board, lumber, wood bark, canned goods, steel, scrap metal, aggregate, chemicals, and agricultural products (corn, grains, feed, and fertilizers).

Map 3-14: Escanaba & Lake Superior System (2007)

ELS's system (Table 3-8) is comprised of two primary lines and two branch lines:

- The first stretches north-south and connects Green Bay, with Republic, Michigan and Lake Superior & Ishpeming Railroad
- The other line connects Escanaba with Baraga via Channing, Sidnaw and Nestoria
- Key Wisconsin branches are the six mile Stiles Junction to Oconto Falls line and the 21 mile Crivitz, to Marinette/Menominee, Michigan line.



The railroad has connections with CN in Green Bay. ELS provides a minimum of five days per week service over the mainline from Channing to Green Bay and

customizes service to meet shipper requirements in Oconto Falls and Marinette/Menominee. In Michigan, ELS's petitioned abandonment of the line from Sidnaw to Ontonagon has not been finalized due to negotiations with other interested parties.

The ELS has trackage rights over CN from North Escanaba, Michigan to Pembine, Wisconsin connecting with it in four locations: Green Bay, Pembine, Escanaba, and Iron Mountain, Michigan.

Starting in 1982, Wisconsin has provided ELS financial assistance in the form of loans or grants for its system in Wisconsin. This assistance has been used for acquisition and rehabilitation of track. The Northeast Wisconsin Rail Transit Commission served as the intermediary until it was dissolved.

Table 3-8: ELS operating profile in Wisconsin

Mileage	Division	
109	None	
Subdivisions	From	To
Channing to Crivitz	Channing, MI	Crivitz
Crivitz- Green Bay	Crivitz	Green Bay
Crivitz- Menominee/Marinette	Crivitz	Menominee
Stiles Jct. –Oconto Falls	Stiles Jct.	Oconto Falls
Major Yards		
Crivitz (Menominee, MI)		
Intermodal Ramp		
Howard		
Trackage Rights		
Over CN, North Escanaba to Pembine, WI		
Port Connections		
None in Wisconsin, Connection to Port of Menominee, MI		

Municipality of East Troy Railroad

East Troy Electric Railroad is a standard gauge, common carrier railroad, operating over seven miles of track in Walworth and Waukesha Counties. The line runs from East Troy to Mukwonago, where it connects to CN. Farm products, lumber and tubing are the commodities shipped. Currently, the railroad’s largest shipper, Burlington Co-op, unloads its farm products on a spur at the south end of Young Street in the East Troy Industrial Park. Trent Tube, manufacturers of specialty stainless-steel tubing, also ships via its spur off Young Street.

The Municipality of East Troy Wisconsin, its former owner, was built in 1906-07 by the Milwaukee Electric Railway and Light Company, as part of its 200-mile system of

streetcar and interurban service. East Troy was the terminus of one line that ran from Milwaukee. This segment survived the abandonment of the rest of the East Troy line due to a need for freight service to sustain the industries located in the area.

The line was transferred from the Milwaukee Electric Railway and Light Company to the village of East Troy in 1939. The village operated the railroad with its own employees for freight purposes. A deal was formed between the village and Wisconsin Electric Railway Historical Society, and it began operations on Memorial Day 1972. They operated the East Troy Trolley Museum through 1984 on a line leased from the village.

In 1985, an agreement was struck with the village for freight and the entire operation was taken over by Wisconsin Trolley Museum Inc., under the name of the East Troy Electric Railroad.

The not-for-profit Friends of East Troy Railroad Museum, Inc. was first formed in 1975 to assist the development of the museum. As the 1990s began, its mission was redefined with a much wider scope. It was decided to bring the entire railroad – the vehicles, artifacts and operations into the organization.

This goal was achieved in stages, first with the purchase of the railroad property itself in January 1995. Then it bought all of the privately-held rolling stock and parts on the line, which was executed in parcels and completed in September 2000. The operating corporation was brought under Friends of East Troy Railroad Museum in December 2000. East Troy Electric Railroad is operated entirely by a volunteer workforce.

Progressive Rail, Inc.

Wisconsin Northern Railroad (WNR) is an operating division of Progressive Rail Incorporated (PGR), headquartered in Lakeville, Minnesota. PGR has a total of nine separate rail operations: five in Minnesota; and one each in Wisconsin, Iowa, Illinois, and Missouri.



Map 3-15: Progressive Rail Inc., in Wisconsin

WNR began operations on November 29, 2004, leasing its trackage from UP and Wisconsin Central Ltd. (WC). UP trackage extends north from Norma, Wisconsin, a junction with the UP in northern Chippewa Falls, to Cameron. It was completed by Chippewa Falls and Northern Railway, a predecessor of the Chicago and North Western Transportation Company, in 1883.

In 2009, the railroad handled over 1600 carloads of rail freight, generating almost 35,000 car miles or 3.28 million ton miles of work. Major commodities handled include: plastic resins, scrap materials, logs, fertilizer, chemicals, steel, feed grade grains, aggregate, and tallow. Annual revenues were \$1.05 million.

WNR has five employees locally in train operations and track maintenance. Administrative functions are handled by system staff at PGR’s Lakeville, Minnesota headquarters.

Wisconsin Great Northern Railroad, Inc.

The Wisconsin Great Northern Railroad (WGN) is a historic excursion and dinner train operating on 19 miles of former Chicago & North Western track between the northern Wisconsin municipality of Spooner and town of Springbrook, with connections to CN’s track at Stanberry Junction. The excursion train operates under a permit issued by the WisDOT’s Railroads and Harbors Section. WGN is certified for freight service, but there is no scheduled freight service at this time.

Map 3-16: Tomahawk Railway network



Tomahawk Railway

Tomahawk Railway (TR), owned by Genesee & Wyoming Railroad, operates over four miles of track in Lincoln County, Wisconsin. TR has two locomotives and 17 employees. Primary products shipped are coal and waste paper into the Packaging Corporation of America's containerboard mill. Finished products are switched onto the long-distance freight lines via CN. The railroad operates 365 days per year.

Rail + Transload, Inc.

Rail + Transload, Inc., is owned by Mark K. Smith and operates approximately 1,100 feet (0.208 miles) of railroad and track that extends from a point of connection with CP's Waterloo Spur to a terminus approximately 200 feet northeast of Specialty Ingredients, LLC (SIL) at Watertown.

Capacity of the Rail System in Wisconsin

Since the passage of the Staggers Act in 1980, when hundreds of miles of track were abandoned, physical capacity (as measured by miles of rail) has steadily decreased to today's streamlined transnational system. Growth in intermodal traffic and coal has necessitated railroads to double and triple track in heavy use corridors. Any disruption to the U.S. rail system, such as unanticipated or even anticipated increased levels of demand – fall grain shipments, weather, infrastructure failure or operational issues – impacts the entire system causing delays throughout. The level of sensitivity and how resilient the system is depends on the capacity and redundancy of the network.

Additional capacity gives railroads the ability to run more freight through a terminal or line. Some examples of capacity improvements include:

- Adding more tracks (sidings, double tracking)
- Processing more trains on a given track (signaling improvements, speed increases, electronic braking)
- Expanding the capacity of a track (longer sidings)
- Increasing the capacity of each car (higher clearance, heavier-axle loads)

Operating improvements are important to getting the best possible utilization from the available line capacity. However, even with such improvements, there is often a need for additional mainline capacity, in the form of running tracks and/or passing sidings.

Wisconsin Rail Plan 2030 does not include an in-depth capacity study, partly because no known capacity issues were identified by the railroads during development of the plan. This section, however, discusses the elements of capacity and provides benchmark data for investment decisions and future rail plans. A comprehensive picture of capacity and productivity would require the following data:

- Infrastructure (track, signals, structures, yards and grade crossings)

- Motive power (locomotives)
- Rolling stock (cars)
- Operating strategies
- Crews

Although these are discussed as individual topics, they are interrelated. The focus of this section will be on infrastructure and will serve as an inventory of the rail infrastructure in Wisconsin.

Infrastructure: double track, signals, weight limits

Wisconsin's rail network consists of 3,600 miles of rail lines. Four hundred miles of that trackage is double tracked, with BNSF leading the way with most of its system double tracked. CP has over 100 miles double tracked; CN and UP also have some small segments double tracked.

Track signalization (Map 3-17) provides an idea of a railroad's capacity over a given route. While many branch lines do not require signals because they do not have a high volume of traffic, most Class I railroads use some form of automatic block signaling (ABS) to ensure that the track is safely clear of other trains and to improve capacity.

ABS works by breaking up a rail line into a number of blocks. Only one train is allowed to be in a block at any time and the system of signals lets the locomotive engineer know whether it is okay to proceed or not. The rails carry an electronic current that responds to whether a train is on the track and relays this information to a signal next to the track and in the cab. Block lengths are determined by planned train length and stopping distance. Stopping distances vary by terrain and train weight. Since trains have been getting longer and heavier, longer blocks are necessary. Having greater block lengths reduces the capacity of the track.

Another type of block signaling system is track warrant control (TWC). The conductor communicates with a dispatcher via a radio for verbal approval to enter a track segment or block. TWC can be used as a stand-alone dispatching and safety system in unsignaled territories, or can be supplemented with ABS to increase flexibility and traffic capacity.

The Automatic Train Stop (ATS) system has been used for passenger trains since the 1950s. ATS can be found over a short segment in Wisconsin. Chicago & North Western (now UP) installed ATS on its commuter routes out of Chicago. ATS is considered an intermittent system that triggers an alerter in the cab of the locomotive that the engineer must respond to within a set period of time before the brakes are automatically applied. The system has no ability to enforce speeds or signal indications.

Map 3-17: Signaling systems in Wisconsin 2010



Source: Railroad timetables

Centralized traffic-control (CTC) systems use a dispatcher located in a consolidated control center. Single-track with CTC is considered to have about 70 percent of the traffic-handling capability of automatic block signaling double track. Pulling up some of the second track, but leaving long “passing track” sections connected with high-speed turnouts reduces track investment, maintenance and taxes while improving the flexibility of handling traffic that must move at much different speeds in the same direction.

Positive train control (PTC) uses global positioning systems (GPS) along with continuous data communications to directly control speed and distance from other trains, which further improves capacity and fuel efficiency. PTC systems are not currently used in Wisconsin but routes that carry

passenger trains are now mandated to install this type of signaling system. Railroads are currently putting implementation plans together.

The corridors that use CTC can handle the most traffic. However a combination of signaling system and double trackage can equate to the capacity of CTC. Capacity can be inferred by applying the signaling system to the number of tracks in a given corridor. For example, BNSF primarily runs unit trains of coal on its double tracked system. According to Table 3-9¹², BNSF would have capacity constraints if it came close to running 80 trains per day.

Examining maximum allowable car weights is another way of looking at Wisconsin’s rail network capacity, not only in terms of what commodities can be carried, but also the ability of shortlines to service local freight that needs a connection to the long-haul (Class I) market.

Map 3-18 shows the maximum allowable weights in Wisconsin which range from 263,000 to 286,000 pounds. The BNSF line in Minnesota can handle 315,000 pound cars. In Wisconsin, the rail industry will likely maintain the 286,000 pound standard for the near term, considering the cost of going to the 315,000 pound standard.

Table 3-9: Average Capacity of Typical Rail-Freight Corridors (Trains per Day)

Number of Tracks	Type of Control	Trains per Day	
		Practical Maximum If Multiple Train Types Use Corridor*	Practical Maximum If Single Train Type Uses Corridor**
1	N/S or TWC	16	20
1	ABS	18	25
2	N/S or TWC	28	35
1	CTC or TCS	30	48
2	ABS	53	80
2	CTC or TCS	75	100
3	CTC or TCS	133	163
4	CTC or TCS	173	230
5	CTC or TCS	248	340
6	CTC or TCS	360	415

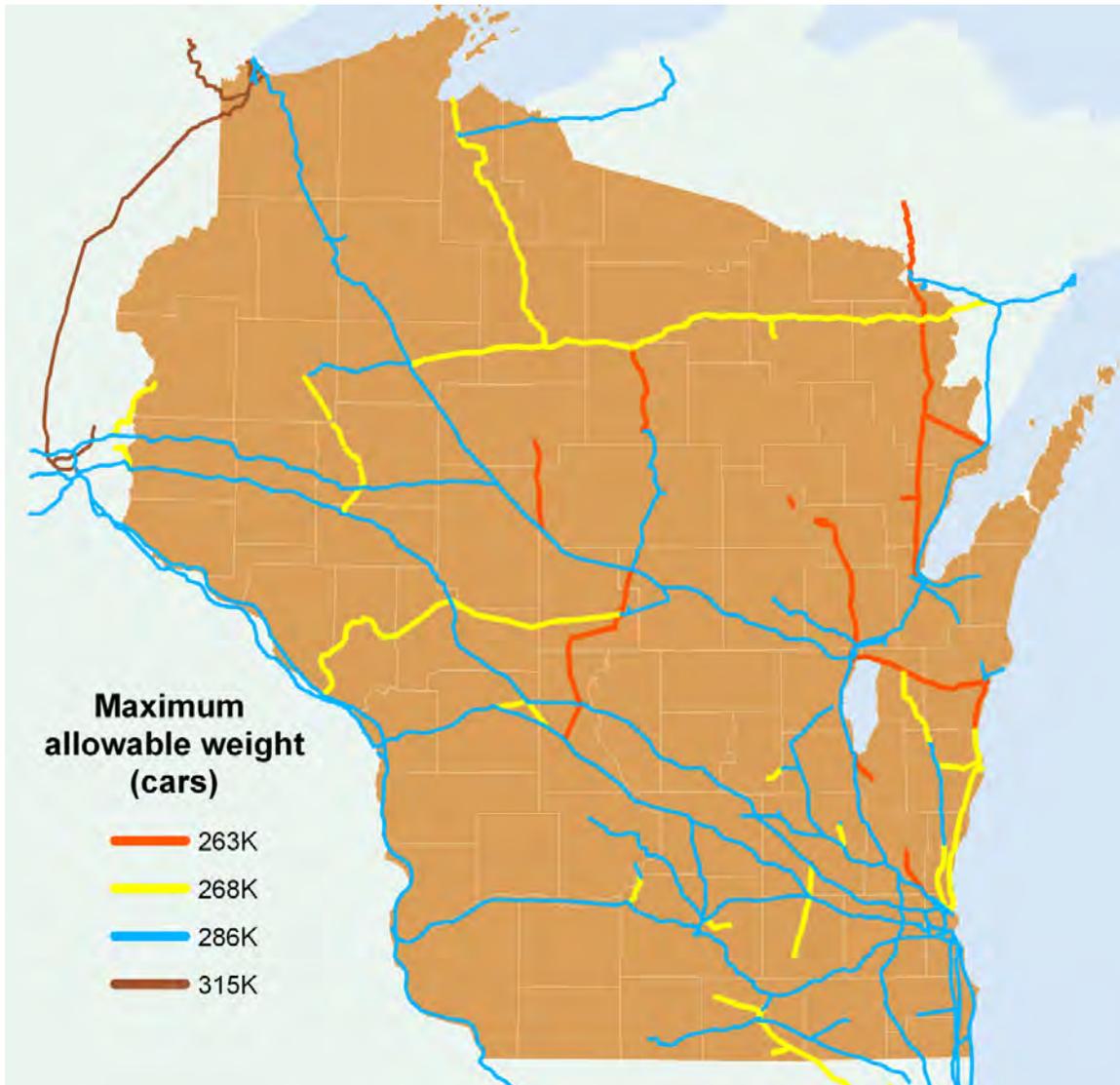
Key: N/S-TWC – No Signal/Track Warrant Control.
 ABS – Automatic Block Signaling.
 CTC-TCS – Centralized Traffic Control/Traffic Control System.

Notes: * For example, merchandise, intermodal, and passenger trains.
 ** For example, all intermodal trains.

The table presents average capacities for typical rail freight corridors. The actual capacities of the corridors were estimated using railroad-specific capacity tables. At the request of the railroads, these detailed capacity tables were not included in this report to protect confidential railroad business information.

¹² Class I railroad data aggregated by Cambridge Systematics, Inc. in the American Association of Railroads’ report: National Rail Freight Infrastructure Capacity and Investment Study, 2007.

Map 3-18: Maximum allowable weights in Wisconsin-2010



Sources: Railroad web sites; railroad timetables

Rail terminals or yards

Terminals and yards serve many functions for the railroads. They originate and terminate traffic by building outbound trains and breaking down inbound trains. They are used to classify inbound cars for assignment to outbound trains for through traffic. Yards can offer refueling, crew change, storage and maintenance functions. Given this key role in the rail network, a substantial amount of rail capacity is impacted by the size and efficiency of the terminals and yards. The capacity of a yard is often quoted as so many cars or trailers handled at a yard per day.

Major yards in Wisconsin are located in Milwaukee, Stevens Point, La Crosse, Janesville, Fond du Lac (Shops Yard), Superior and Portage. Smaller yards are located throughout the state (Map 3-19). There is no information at this time on the capacity of each yard.

Map 3-19: Major and minor yards in Wisconsin – 2009



Source: Railroad track charts, NTAD 2009

Grade crossings

Grade crossings are both a safety issue and a capacity issue. From a capacity standpoint, lower speeds (although not always) through grade crossings contribute to train delays, especially near terminals. Switching activities as part of terminal operations sometimes result in backing trains across grade crossings, and even stopping trains on grade crossings. The number of grade crossings in a given corridor may pose problems if freight rail trains increase in

The prevention of train-vehicle, vehicle-train and train-pedestrian crashes is a priority. The key strategies are: signage and control of intersections, education of pedestrians and vehicle operators, and elimination of grade crossings with higher-volume highways.

frequency or in length; or if higher speed passenger trains are operating on the lines. Currently, there are no state or federal limits on the length of trains or requirements to notify agencies about unusually long train configurations. More information on the grade crossings is covered in Chapter 9: Rail Safety and Security.

Bridges and tunnels

Many rail bridges in Wisconsin are original and date back to the late 1800s and early 1900s. They were built of varying materials including timber, concrete and stone. Like other information regarding railroads, condition data on bridges is proprietary.¹³

Bridges and tunnels can be capacity issues if they cannot support heavier cars or provide enough clearance to accommodate doublestack movements. On the state-owned rail system operated by WSOR, there are 139 timber bridges, 106 steel structures, 18 concrete bridges, seven stone bridges and seven highway bridges for a total of 277 bridges. Findings from a recent study concluded that the steel structures could sustain 286,000 pound car traffic. Timber bridges however, if exposed to 286,000 pound traffic, would have at most a life of five years.¹⁴

WSOR also operates over trackage leased from the Class I railroads, which includes an additional 87 bridges of which the majority are steel structures.

Wisconsin currently has no capacity issues with regard to tunnels or bridges. If, however, UP would run intermodal doublestack through Wisconsin there are a number of bridges on the Milwaukee and Adams subdivisions that would need modifications to support doublestack traffic. Map 3-20 shows the preponderance of structures over water as well as the locations of WSOR system bridges.

¹³ The federal role in overseeing the safety of railroad bridges and tunnels is limited because FRA has determined that most railroads are sufficiently ensuring safe conditions. FRA issues bridge management guidelines, makes structural observations and may take enforcement actions to address structural problems.

¹⁴ Impact of Railcar Weight Change on Bridges of the State of Wisconsin-Owned Railroad System, August 2006.

Map 3-20: WSOR bridges and rail Infrastructure over water



Source: WSOR; WisDOT GIS processing hydrology and rail, 2010

Class of track and maintenance

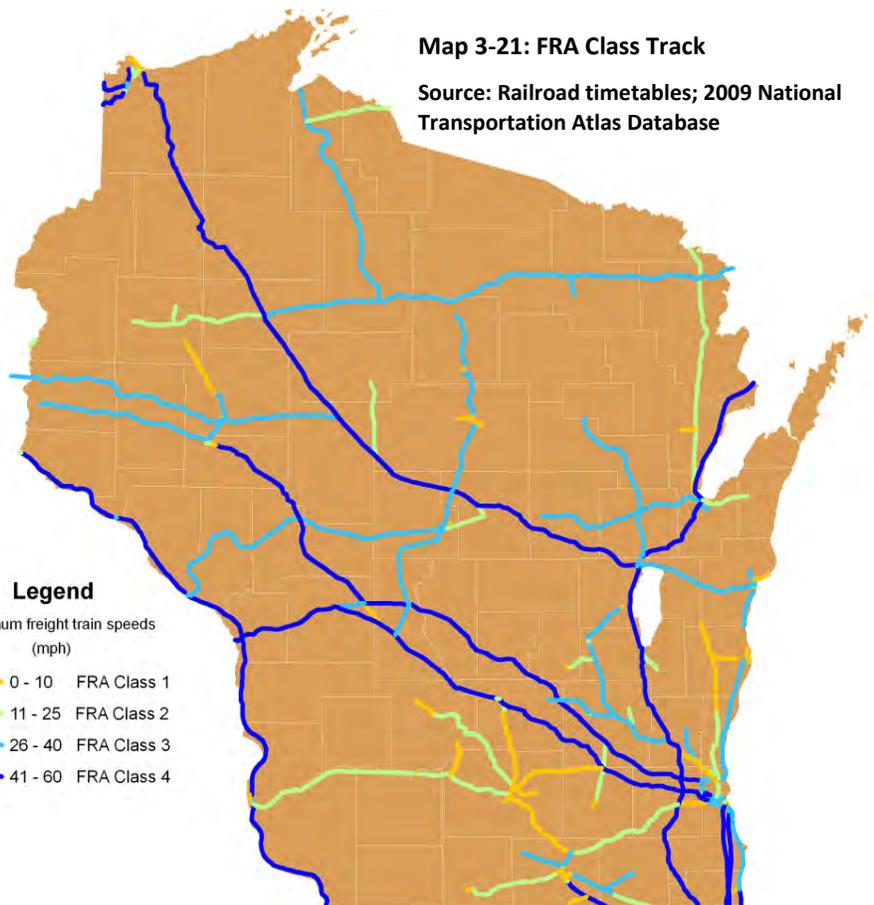
The Federal Railroad Administration (FRA) track class offers clues on the condition of track and capacity. Each class has limits on the maximum speed that trains can run, although trains may operate at lower speeds. Railroads usually upgrade the weight of the rail and ties and ballast on a corridor basis. Speeds are frequently reduced in urban areas, yards, over hilly terrain or where track curves exist. For planning purposes, FRA class track helps to quickly visualize the condition of corridors that may be considered for future passenger/freight movements. To run passenger rail service, a rail line must be classified as a FRA Class 5 track. Map 3-21 shows the segments and their corresponding track class.¹⁵

Likewise this map helps understand the differences in service and maintenance among Class I and regional railroads. As evidenced in Map 3-18, almost all railroads can run 286,000 pound cars; the difference is in how fast the trains can run. Map 3-21 shows that the rail structure has been built to handle the heavier cars on corridors where trains can run at speeds of 60 miles per hour.

This inventory does not include information on maintenance activities which entails tie and ballast replacement. Maintenance needs to be scheduled around train movements otherwise capacity can be impacted. However, finding time to do maintenance in heavy-use corridors is also a problem.

Locomotives run more efficiently and are less likely to malfunction on well-maintained rail

Track class	Freight trains	Passenger trains
Excepted track	10	N/A
Class 1	10	15
Class 2	25	30
Class 3	40	60
Class 4	60	80
Class 5	80	90
All trains		
Class 6	110	
Class 7	125	
Class 8	160	
Class 9	200	



Map 3-21: FRA Class Track

Source: Railroad timetables; 2009 National Transportation Atlas Database

¹⁵ Data shows maximum train speed per subdivision.

infrastructure. Tracks that are poorly maintained increase the risk of derailment even though trains are travelling at slower speeds. The process used to upgrade ties is mechanized while ballast replenishment may require more time.



Figure 3-2: WSOR Tie Replacement
Photo courtesy of WSOR

Motive power

Knowing the number and type of locomotives helps to measure the amount of freight that can be moved. Shortages of either rail cars or locomotives reduce the capacity of the rail system. An excess of cars and locomotives is also costly because they tie up capital that could be directed elsewhere. However, technological advances have yet to be made to the coupling device that joins locomotives and cars putting motive power at a limit for the heaviest trains. For example, coal trains are now being operated with

distributed power where a number of locomotives are placed throughout the train to provide better traction. They are controlled by the train's engineer.

Operating strategies

Changes in operating strategies can improve productivity and capacity. One strategy known as “scheduled service” is helping railroads better align themselves with customers who need reliable service. In the past, with heavy labor costs and no additional revenue from an improved service business model, railroads minimized costs by waiting for a train to be at its full capacity before sending it out. However, this led to uncertainty in delivery times, which translated into unpredictable working hours, unknown system conditions during travel periods, and uncertain delivery windows for the customer.

Technological advances in communications as well as containerized shipping have helped the rail industry to be competitive in the marketplace for goods other than bulk goods. For higher-value intermodal traffic, which places a premium on reliable service, scheduled service and a high on-time percentage are absolute requirements to attract and keep business.

The Class I railroads now schedule intermodal service arrivals and departures fairly closely and are aggressive in trying to meet these schedules. Many of the railroads also schedule the departure times of bulk and carload traffic, but the arrival times for these types of services continue to present a scheduling challenge. Railroads will also limit the top speed of trains in order to make the average speed more uniform. This can have a positive impact on fuel consumption as well as on system capacity.

Crew size

Crew size decisions came about as a result of collective bargaining. Wisconsin mandated a two person crew in the state, but was superseded by federal regulation which allows for one person crews. Federal law regulates the hours of service for railroad crews to 12 hour shifts. Railroads invest six months in

training new crew members and have had shortages of employees. There are a number of locations where, especially in yards, train operations are controlled remotely by a crew member on the ground rather than in the locomotive.

Intermodal Activity: Truck and Barge

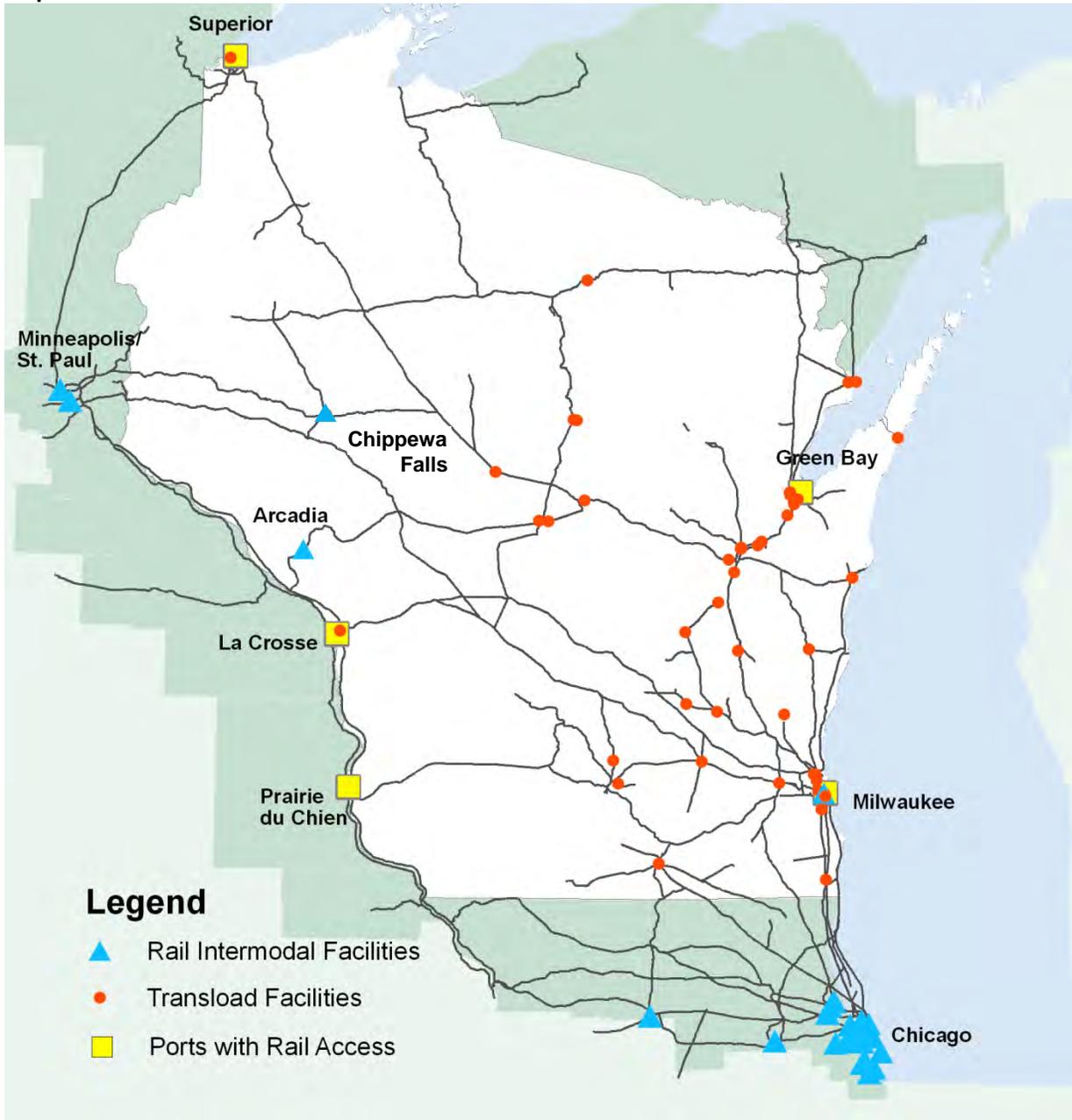
Moving goods over two or more modes is called intermodalism. Intermodal moves can be classified as direct or intermediate. A direct intermodal move can involve truck trailers or containers: respectively termed, trailer on flatcar (TOFC) or container on flatcar (COFC).¹⁶ Typically, the trailer or international container remains closed or sealed. An intermediate transfer, also known as transloading, occurs when goods may be stored or handled before exchange to a different mode.

This section highlights where intermodal activity occurs and its implication on capacity statewide. The exchange between modes depends on many factors including the type of commodity, a commodity's final destination and the length of haul. Carriers usually have a minimum length of haul (700 miles) in order to make a move financially feasible. Given Wisconsin's proximity to Chicago and the Twin Cities, and the number of large intermodal facilities located in those cities, intermodal facilities in the state are not generally an efficient option for Class I railroads.

Map 3-22 shows the location of Wisconsin's intermodal facilities in relation to the major rail intermodal facilities in Illinois and Minnesota. Two rail intermodal facilities exist in Wisconsin: Chippewa Falls and Arcadia. CN operates both the Chippewa Falls facility and the facility in Arcadia at the Ashley Furniture plant. CN moves freight domestically and internationally, almost exclusively with COFC loading.

¹⁶ Trailer on flatcar (TOFC) – a standard truck trailer on a chassis loaded onto a flat rail car and hauled to a facility, where it is unloaded from the rail flat car and hauled by truck to its final destination. Container on flatcar (COFC) – a standardized container loaded onto a flat car or stack car, where it is moved by rail to an intermodal facility and unloaded from the rail car, placed on a rubber-tired highway chassis, and hauled by truck to its final destination.

Map 3-22: Intermodal facilities and transload locations



Sources: 2009 National Transportation Atlas Database; Railroads

Transload facilities

Transloading is another method of intermodal shipping that provides flexibility for those shippers that do not have rail access. Transload facilities may have a ramp, truck scale or equipment to move the contents from a truck to a rail car or from a barge to rail car or truck. Transload locations may also have warehouse space.



Figure 3-3: Example of transloading
Photo courtesy of WSOR

According to railroad web sites, there are more than 50 locations in Wisconsin where commodities can be transloaded. Not all transload facilities will load onto a railroad in Wisconsin. This is the case in the Fox Valley where goods are transloaded to a truck for rail access in Chicago. The preponderance of transload facilities implies that demand for rail service is not being met in the Fox Valley. Transloading activity occurs at the Port of Superior where iron ore arrives by barge, then stored for future move by rail.

Ports with rail access

This section provides an inventory of the five ports in Wisconsin that have rail access and lists the *intermodal connectors*, those “orphan roads” that connect a port with a state highway on the National Highway System (NHS).¹⁷ The condition of intermodal connectors are an issue of discussion in regard to intermodal connectivity as they sometimes deteriorate before improvements can be scheduled.

The Federal Highway Administration has a threshold for classifying roads that lead to a port area.¹⁸

Each port is mapped to show the location of road and rail. A table summarizes rail operators, lists the roads classified as NHS intermodal connectors as well as known alleviation

In 2010, the U.S. Maritime Administration (MARAD) formally designated 18 corridors along the West, East and Gulf Coasts, the Great Lakes and many of America’s inland waterways. These corridors are routes where water transportation presents an opportunity to offer relief to landside corridors that suffer from traffic congestion, excessive air emissions or other environmental concerns and other challenges. The Great Lakes Corridor is slated to relieve I-90. Competitive funding has also been appropriated.

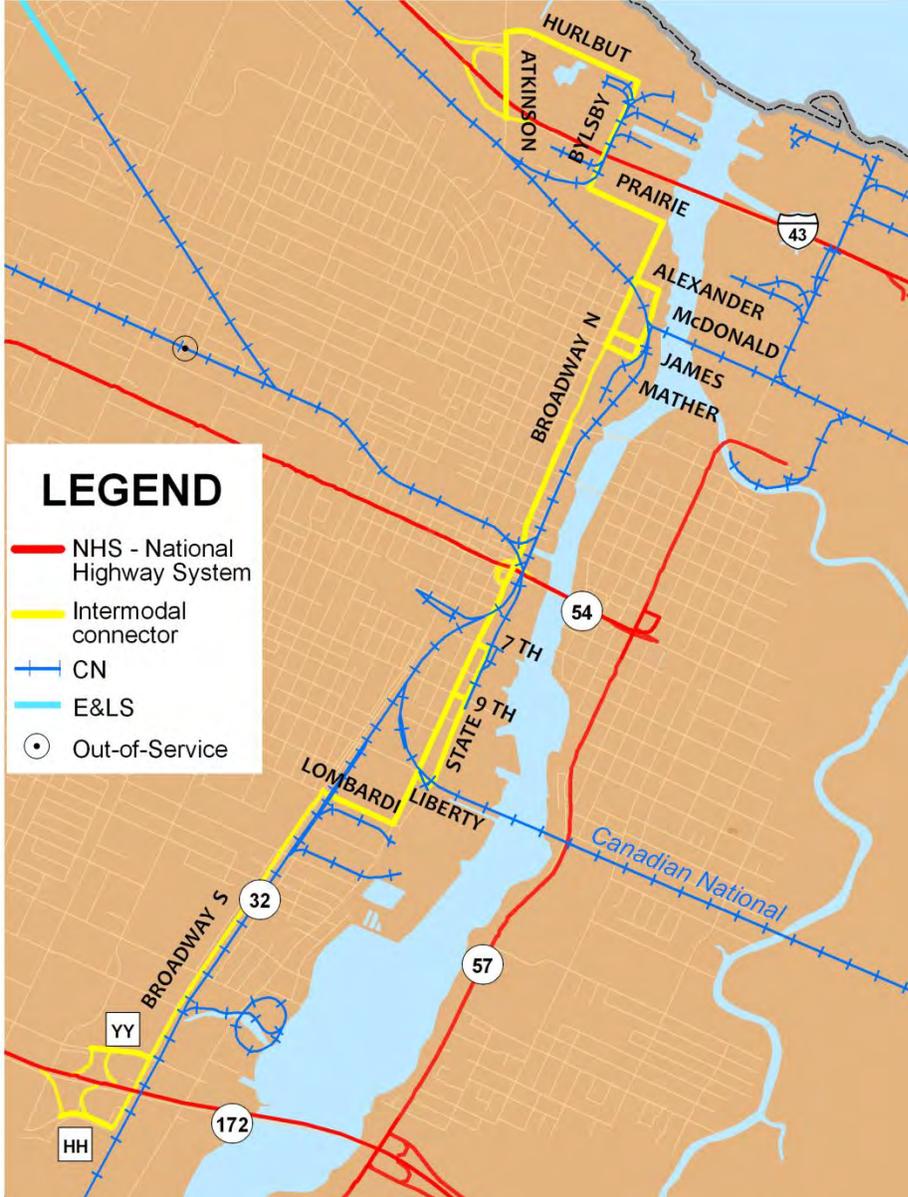
¹⁷ The National Highway System includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The NHS was developed by the U.S. Department of Transportation in cooperation with the states, local officials, and metropolitan planning organizations. Roads under the NHS designation can be improved with federal-aid funds. NHS includes only four percent of the nation’s roads, but carries more than 40 percent of all highway traffic, 75 percent of heavy truck traffic, and 90 percent of tourist traffic.

¹⁸ Criteria include: 1) Terminals that handle more than 50,000 TEUs (a volumetric measure of containerized cargo which stands for twenty-foot equivalent units) per year, or other units measured that would convert to more than 100 trucks per day in each direction. 2) Bulk commodity terminals that handle more than 500,000 tons per year by highway or 100 trucks per day in each direction on the principal connecting route. (If no individual terminal handles this amount of freight, but a cluster of terminals in close proximity to each other does, then the cluster of terminals could be considered in meeting the criteria. In such cases, the connecting route might terminate at a point where the traffic to several terminals begins to separate.)

strategies. Any constraints are discussed.

Port of Green Bay

Map 3-23: Intermodal connectors at the Port of Green Bay



**Table 3-11:
Port of Green Bay**

Railroad operator	Water system
CN	Lake Michigan
Comments/constraints	
Roads are in fair condition with Atkinson interchange and Lombardi Ave. the best.	
Intermodal connector roads	
7 th St.	
9 th St.	
Alexander St.	
Atkinson Dr.	
Bylsby Ave.	
Broadway N	
Broadway S	
HH (segment)	
Hurlbut St.	
Jane St.	
Liberty	
Lombardi	
Mather St.	
McDonald	
Prairie Ave.	
State St.	
YY	
Improvement plans	
None known at this time.	

Port of La Crosse

Although BNSF is in its proximity, the railroad does not service the Port of La Crosse.

Figure 3-4: The Mississippi River Movable Bridge Span



Photo courtesy of John A. Weeks III.

The Mississippi River movable bridge span connects La Crosse and La Crescent, Minnesota. In 1998 the U.S. Coast Guard determined the bridge constituted an unreasonable obstruction to navigation within the meaning of the Truman Hobbs Act. The proposed bridge alterations will facilitate commercial and recreational navigation on that section of the Mississippi River. The design of the proposed vertical lift span bridge has been completed and the current estimated cost is \$70 million. Congress has

appropriated \$12.5 million toward the project. The bridge is the highest priority bridge on the Coast Guard's Truman-Hobbs projects list.

Table 3-12: Port of La Crosse	
Railroad operators	Water system
CP	Mississippi River
Comments/constraints	
Niedbalski Bridge to Isle de Plume on Hood St. needs replacing.	
The city of La Crosse will be updating its 1999 port plan.	
Intermodal connector roads	
2 nd St. Bainbridge S B/Clinton Cass St. Cross St. Front St.	
Improvement plans	
None known at this time.	

Other comments regarding the NHS routes (in red) include U.S. 14 north and southbound through downtown are in poor shape and should be repaired in the next three to five years. Highway 53 North and South and Clinton Street should have expansion joints repaired.

CP's tracks lead to the F.J. Robbers Terminal and another set to Hydrite Chemical. The tracks are in good condition.

Map 3-24: Intermodal connectors at the Port of La Crosse



Port of Milwaukee

One of the major issues for all ports is the transportation of oversize and overweight commodities e.g., wind turbine components and transformers. While the issue is not whether a port can handle the commodity, the freight mobility issue is whether the commodity can be moved through the city. This is the case for Milwaukee. The constraint locations are listed in Table 3-13.

Trackage in the Port of Milwaukee is publicly-owned and there are 27 railroad crossings on Jones Island. The Port of Milwaukee has direct access to the Interstate system via 5th Street. The intermodal connectors associated with the port offers access to Interstate 43 as well.

Map 3-25: Intermodal connectors at the Port of Milwaukee



Figure 3-5: Aerial of the Port of Milwaukee and moving a transformer



(Photos courtesy of the Port of Milwaukee).

Table 3-13: Port of Milwaukee

Railroad operators	Water system	Constraints/ comments	Intermodal connector roads	Improvement plans
CP, UP	Lake Michigan	<p>Rail Bridges- low clearance</p> <p>Two highway bridges cannot accommodate oversize/overweight traffic due to insufficient clearance.</p> <ul style="list-style-type: none"> On I-794E Under Street: N. 2nd Ave Clearance: 15.72' Cardinal direction north On: I-794E/I-43S Under Street: W. St. Paul Ave./Tory Hill Clearance: 15.06' Cardinal direction E 	<p>Bay St. E Bay St. S Becher St. Carferry Dr. S Harbor Dr. S Lincoln Ave. E Lincoln Memorial Dr. S Scott St. S</p>	<p>Harbor Drive, 2011</p> <p>Carferry, 2012</p> <p>Lincoln Memorial, 2013</p>

Port of Prairie du Chien

Map 3-26: Intermodal connectors at the Port of Prairie du Chien



Table 3-14: Port of Prairie du Chien

Railroad operator	Water system	Constraints/ comments	Intermodal connector roads	Improvement plans
WSOR	Mississippi River	Villa Louis Road is in poor condition.	W. Blackhawk Ave S. Main St. Villa Louis Rd.	S. Main St. was part of the reconstruction process for the highway 18 bypass project completed in 2011. The city has applied for funding to resurface Villa Louis Road.

Port of Duluth-Superior

An issue for shipping in Lake Superior is the modernization of the Soo Locks system located in Sault Ste. Marie, MI connecting Lake Superior to Lake Huron. The project is on hold pending funding (\$490M cost).

For purposes of this inventory, only facilities in Superior are listed. The intermodal connector routes are primarily used by grain trucks going to the grain elevators in the Port of Superior. CN also has access to the Port but not within the extent of the map shown.

Map 3-27: Intermodal connectors in the Port of Superior



Table 3-15: Port of Superior				
Railroad operators	Water system	Constraints/Comments	Intermodal connector roads	Improvement plans
BNSF, CP, CN, UP	Lake Superior	Traffic flow could be improved if ramp is built to bypass Belknap and connect to Susquehanna. This has been studied but the costs exceeded the benefits. Roads are in good condition.	N 1 st St. 3 rd St. N 5 th St. N Belknap St. Dock St. Main St. Susquehanna Ave. Tower Ave. Winter St.	None known at this time.

At Risk Rail lines: Abandonments, Out-of-Service, and Low Density Lines

Rail line abandonments and efforts to preserve rail right-of-way often go hand-in-hand in Wisconsin. WisDOT’s policy is to preserve freight rail service where feasible. If preservation is not feasible, the department’s policy is to work with the Wisconsin Department of Natural Resources (DNR) to preserve the rail corridor for future rail transportation use by using the 1983 National Trails System Act (NTSA). The NTSA gives interested parties the opportunity to negotiate voluntary agreements with railroads to use railroad corridors for trails in the interim.

Rail abandonments 1987-2010

While abandonments still do occur, they have differed from earlier abandonments of the late 1970s and early 1980s (Chapter 5: Freight Rail) where entire corridors were eliminated. Over the last 23 years, 13 abandonment applications have been approved by the Surface Transportation Board (STB) in Wisconsin. Six of those lines were short stub-ended spurs of only a few miles in length; others occurred on Native American tribal lands. Table 3-16 summarizes abandonment activity since 1987.¹⁹

Since 1987, railroads in the state have submitted over 40 applications to the Surface Transportation Board to abandon more than 400 miles of rail lines. Over 70 percent of the miles have been preserved or are in negotiations to be preserved for future transportation use. Many of the lines are used as trails in the interim. Lines preserved under the NTSA are not abandoned. These lines retain their character as rail corridors and hence may be reactivated at any time in the future.

As of January 2010, there were 11.93 miles of rail that are still in negotiation for sale to the state to be preserved as a rails-to-trails segment. Negotiation efforts can sometimes take years. These lines are depicted in Map 3-28.

RR	Segment	Mileage	Result	Year	Status
WC	<i>Mellen-Bessemer</i>	32.38	<i>Abandonment</i>	1987	<i>Final</i>
WC	<i>Abbotsford – Athens</i>	0.64	<i>Abandonment</i>	1997	<i>Final</i>
FVW	<i>Rockwood-Denmark</i>	14.00	<i>Abandonment</i>	1997	<i>Final</i>
WC	<i>Wisconsin Rapids</i>	0.75	<i>Abandonment</i>	1998	<i>Final</i>
FVW	<i>Brown County</i>	0.16	<i>Abandonment</i>	2000	<i>Final</i>
FRW	<i>Luxemburg to Kewaunee</i>	0.12	<i>Abandonment</i>	2000	<i>Final</i>
UP	<i>Eau Claire</i>	1.65	<i>Abandonment</i>	2004	<i>Final</i>
CN(WC)	<i>Green Bay west toward Oneida</i>	10.12	<i>Abandonment</i>	2004	<i>Final</i>
CN(WC)	<i>Manawa to Scandinavia</i>	10.70	<i>Abandonment</i>	2004	<i>Final</i>
CN(WC)	<i>Shawano</i>	12.50	<i>Abandonment</i>	2004	<i>Final</i>
CN(WC)	<i>Ashland Ore dock</i>	0.98	<i>Abandonment</i>	2006	<i>Final</i>

¹⁹ Abandonment allows railroads to cease to operate service over a line. Once abandoned Wisconsin state law gives WisDOT the first right to acquire for present or future transportation any property used in operating a railroad. WisDOT can exercise its right of first acquisition, or, assign this right to any other state agency, any county or city, or any transit commission for acquisition for future transportation or recreational purpose. However, most filings in Wisconsin are actually “exemptions to the abandonment process” which requires that a railroad not have carried traffic over the said line segment for two years.

WC	Shawano and White Lake	11.40	Abandonment	2008	Final
CN (WC)	Manitowoc County	1.16	Abandonment	2010	Final
UP	Saukville-Kiel	37.00	Purchased by State	2005	Now Active
CN (WC)	Evansville to Madison	15.00	Rail Bank	1998	Final
UP	Hayward Industrial Lead	11.88	Rail Bank	1998	Final
State	Laona to Laona Jct.	7.05	Rail Bank	2001	Final
UP	Oconto Falls Industrial Lead	8.30	Rails-to-Trails	1997	Final
UP	Waukesha Industrial Lead	1.40	Rails-to-Trails	1997	Final
WC	Greenleaf-Green Bay	13.90	Rails-to-Trails	1998	Final
NBN	Wabeno to Laona	38.50	Rails-to-Trails	1998	Final
State	Burlington to Elkhorn	12.30	Rails-to-Trails	2000	Final
WSOR	Madison to Freeport	44.70	Rails-to-Trails	2000	Final
State	Laona Jct. to Tipler (State Line)	27.00	Rails-to-Trails	2001	Final
WC	White Lake to Menominee Line	7.00	Rails-to-Trails	2002	Final
UP	Clyman Branch	2.00	Rails-to-Trails	2003	Final
CN (WC)	Dresser to Amery	15.25	Rails-to-Trails	2003	Final
CN (WC)	Hilbert – Greenleaf	12.60	Rails-to-Trails	2003	Final
SOO	Kansasville- Burlington	7.50	Rails-to-Trails	2003	Final
CN (WC)	Luxemburg to Kewaunee	16.58	Rails-to-Trails	2003	Final
CN (WC)	Near Crandon - White Lake	26.00	Rails-to-Trails	2003	Final
CN (WC)	New London-Seymour	24.08	Rails-to-Trails	2003	Final
CN (WC)	West Bend – Eden	24.64	Rails-to-Trails	2003	Final
UP	Menomonie Industrial Lead	2.00	Rails-to-Trails	2006	Final
CP	West Allis Line	5.00	Rails-to-Trails	2006	Final
UP	Central Soya Line	4.40	Rails-to-Trails	2008	Final
CN (WC)	Ashland	0.48	Rails-to-Trails	2009	Final
WC	Crandon-end of Line	4.62	Rails-to-Trails	2009	Final
CN (WC)	Brown County	1.63	Rails-to-Trails		Pending
UP	Capitol Drive Industrial Lead	3.08	Rails-to-Trails		Pending
CN (WC)	Denmark, Brown County	0.25	Rails-to-Trails		Pending
CN (WC)	Portion of Dresser -Amery	1.77	Rails-to-Trails		Pending
CN (WC)	Shawano- Stockbridge-Munsee	3.40	Rails-to-Trails		Pending
CN (WC)	Tail end of Hayward Spur	1.80	Rails-to-Trails		Pending

Total	477.67		
Miles Abandoned Lines	96.56	% Miles abandoned	20
Miles Preserved (rail bank & rails-to-trails)	329.11	% Miles preserved	69
Service Preserved	37	% Service preserved	8
Current miles pending negotiation	11.93	% Miles pending	2.5

Out-of-service

In addition to previously abandoned and pending rails-to-trails negotiations, rail lines that are taken out-of-service are of concern to the State. These line segments represent economic development assets

whose potential is unfulfilled. The following table summarizes the rail lines out-of-service. Some of these lines have been out-of-service for many years. In Wisconsin there has not been a strong correlation between lines that are out-of-service and abandonment filings. Often rail lines are taken out-of-service after a natural disaster impacts the rail. The out-of-service lines are also shown in Map 3-28.

Table 3-17: Out-of-service lines		
Railroad Operator	Segment	Mileage
CN	Ladysmith to Prentice	40.6
CN	Rhineland to Goodman	60
CN	Two Rivers to Manitowoc	2.7
CN	Marengo Junction to Michigan State Line	31.2
WSOR	Capitol Drive Industrial Lead, Milwaukee	3
CN	Almena to Poskin	4.5
UP	Sheboygan to Cleveland	11.1
WSOR	Kohler to Plymouth	9.2
Total Miles		162.3

Low density lines

Another indication of lines that may be at risk for abandonment is to look at Class I rail lines that carry less than five million gross tons of freight. Map 3-28 shows all lines in Wisconsin with less than five million gross tons (in 2007) and contrasts this to lines out-of-service in 2010. Some of the low density lines identified in 2007 are now out-of-service. According to the FRA, there are 858 miles of low density lines in the state.

Possible Future Corridors: Rails-to-Trails

Wisconsin has a strong commitment to creating a network of trails from former rail corridors. As mentioned in the previous section, lines preserved under the National Trails System Act are not abandoned. These lines retain their character as rail corridors with titles and easements and hence may be reactivated at any time in the future.

This is important from a number of perspectives:

- Rail capacity – if Wisconsin would need to improve rail capacity
- Safety – can create redundancy in the freight system
- Possibilities for passenger rail implementation

One corridor, Monroe to Mineral Point, has been recently studied for reactivation. The findings showed there is potential for sufficient traffic on portions of the line. Further study is needed. One of the possibilities is to reactivate the corridor as a rails-with-trails corridor. There are currently about 300 miles of rails with trails corridors in Wisconsin.

Map 3-28 also shows where current rails-to-trails lines are located. As of January 2010, Wisconsin has 312 miles of lines in rails-to-trails. The termini for the rails-to-trails corridors are summarized in Table 3-16.

Map 3-28: Abandonments, out-of-service, rails-to-trails, low density lines



Source: FRA 2007, WisDOT