



Chapter 5: Freight Rail

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Chapter 5: Freight Rail

Introduction

A growing economy in Wisconsin requires a strong multimodal transportation system that permits the safe and efficient movement of goods across the state. With over 3,600 miles of rail lines in Wisconsin, a strong freight rail system is a key factor in supporting and growing the state's economy.

This chapter provides a brief history of freight rail in Wisconsin, describes the state's freight rail network, and identifies a series of freight rail-related issues with corresponding plan recommendations.

For a detailed discussion of the state's rail network see Chapter 3: System Inventory.

From 2007 to 2030, overall freight rail tonnage shipped in Wisconsin is forecast to grow 16 percent. This includes a slight decrease in originating and terminating tonnage, a five percent increase in in-state tonnage, and a 37 percent increase in overhead tonnage.

Source: Global Insight TRANSEARCH

Wisconsin's Rail Freight Network

History of freight rail in Wisconsin

The United States has a vast network of railroad tracks that move large quantities of products over long distances. Since the 1830s, this system has evolved into one of the most efficient freight rail systems in the world. The first rail service in Wisconsin was introduced in 1851. From the 1860s until the late 1920s, private railroad companies built an extensive passenger and freight service network throughout Wisconsin and connected the state with the rest of the country. By the late 1920s, every county in the state had at least one depot. Wisconsin's railroad network peaked about 1920, with approximately 7,600 miles of rail corridors.

At one time, hundreds of railroad companies operated in the United States. Over time, this number declined due to railroad consolidations and bankruptcies. The emergence of a modern national highway system led to a steady decline in rail's share of freight movements and passenger traffic. This decline accelerated after World War II with the construction of the Interstate Highway System and lasted into the 1970s. In addition to the impacts of highway expansion, a heavy and inflexible system of industry regulations limited the freight railroads' ability to compete with a booming trucking industry.

The Staggers Rail Act of 1980 substantially reduced the economic regulation of the rail industry, allowing carriers to focus on their most profitable commodities and routes. But it also led to major service network cutbacks. Since the passage of the Staggers Rail Act, there has been a significant increase in freight rail productivity, resulting in lower shipping costs for rail users and increased use of the remaining rail network. However, this increase in rail freight has been primarily focused on a few key commodity markets and shipping lanes, such as coal from the Powder River Basin in Wyoming and long-

distance transportation of import/export containers. Hauling freight by truck over shorter distances (less than 1,000 miles) has continued to grow with few interruptions since the early 1900s.

The Staggers Rail Act also allowed for easier abandonment of rail lines and led to a number of changes among carriers as larger railroads “spun off” their unproductive lines to newly created short-line and regional railroads. By 1975, almost 1,300 miles of track in Wisconsin (22 percent of the state’s rail network) was threatened with abandonment. Most of this mileage consisted of Milwaukee Road and Chicago & North Western branch lines. Wisconsin ranked first in the nation in rail mileage proposed for abandonment and third in the nation in rail mileage at risk for abandonment.

The Wisconsin Department of Transportation’s response to changes in statewide freight rail service

In 1977, the Chicago, Milwaukee, St. Paul and Pacific Railroad—commonly known as the Milwaukee Road—filed for bankruptcy and announced it would abandon a large part of its system in Wisconsin. This raised concerns about the impacts to the state’s economy. The state chose to act. That same year the state legislature created the Rail Corridor Preservation Program, a state-funded assistance program. The program’s goal was to help communities and shippers preserve freight rail service through development of locally-based freight rail operators. The program:

- Allowed the Wisconsin Department of Transportation (WisDOT) to exercise its “first right of acquisition” for purchase of abandoned rail rights of way
- Allowed WisDOT to direct funds to local governments for rail infrastructure improvements and operating subsidies
- Provided the state the ability to preserve unused rail corridors for future use

By 1980, the Wisconsin Department of Transportation (WisDOT) had worked with local Rail Transit Commissions (RTCs) to purchase nearly 500 miles of track that were subsequently operated by newly created short-line carriers under contract to the RTCs. Those lines that were not purchased were abandoned, some of which were converted to trails. Purchasing abandoned rail lines posed a substantial financial challenge. Nearly all of the properties targeted for rescue had suffered a long period of deferred maintenance, requiring significant investment just to keep trains operating on the track. Funding for track renewal came from a combination of local, state and private sources, as well as the Federal Local Rail Service Assistance Program (renamed the Local Rail Freight Assistance Program in 1981).

Milwaukee Road

When the Milwaukee Road filed for bankruptcy in 1977, the railroad’s network:

- Constituted one-fourth of the total rail miles in Wisconsin and one-half of the rail mileage in southern Wisconsin
- Served Wisconsin’s eight largest cities and 16 of the 20 largest cities in the state
- Provided the only rail service to 184 Wisconsin communities

Rail Transit Commissions

Rail Transit Commissions (RTCs) were formed as a mechanism to purchase rail lines and manage rail service. They generally provide matching funds for the purchase and rehabilitation of rail corridors. They also contract with a private operator to provide the freight rail service. See Chapter 3: System Inventory, for more information on Wisconsin’s RTCs.

As noted previously, the passage of the Staggers Rail Act in 1980 reduced the regulatory burden on railroads and was expected to give railroads the flexibility to make operational and infrastructure changes that would improve their financial standing. By itself, this may have occurred. However, in 1980, Congress also passed the Motor Carrier Act of 1980, which reduced regulations on the trucking industry, making it easier for new trucking firms to enter the shipping market. Together, these two acts changed the face of the freight railroad industry. Major railroads were able to raise some shipping rates, while lowering others based on market demand. Railroads also began increasing their intermodal shipments, a trend that continues today. However, the acts also resulted in the railroads reducing or abandoning service on light-density lines, resulting in a wave of abandonments.

By the end of 1986, freight rail service had been discontinued on over 2,000 miles of rail line in Wisconsin. However, WisDOT and the RTCs were able to acquire over 200 additional miles of rail lines, bringing total public rail line acquisitions to over 817 miles at that time. Private freight rail operators provided service on about 568 of these miles under contract to the RTCs.

Once again, Wisconsin acted quickly. In 1992, the state's constitution was amended, allowing the use of state funding for rail improvements. This allowed WisDOT greater flexibility in setting project priorities. It also allowed the department to provide grants directly to freight rail carriers (although WisDOT typically continues to provide funding through the RTCs). As a result of this constitutional change, WisDOT replaced the original rail assistance program with the current Freight Rail Preservation Program (FRPP). This program provides grants for rail improvements and rail line acquisitions. WisDOT also created the Freight Railroad Infrastructure Improvement Program (FRIIP), a self-sustaining revolving loan program. See 10: Funding Wisconsin's Rail System Investments, for more information on both programs. Since 1977, the state, along with the rail transit commissions, have acquired approximately 824 miles of track. Currently, the state owns about 530 miles of track and provides funds to improve this system.

The Transportation Economic Assistance (TEA) Program and the Harbor Assistance Program (HAP) also can provide funding for rail-related improvements. See Chapter 10: Funding Wisconsin's Rail System Investments, for more information.

Wisconsin's current freight rail network

Wisconsin's freight rail network consists of about 3,600 miles of rail lines. This represents approximately two percent of the nation's rail network. The state's freight rail network is operated by:

- Four Class I railroads – Canadian National Railway, Canadian Pacific Railway, Union Pacific Railroad and Burlington Northern Santa Fe Railway

Freight rail classifications

Railroad classifications are defined on an annual basis by the Surface Transportation Board and are based on a railroad's annual operating revenue. As of 2010 the classifications were:

Class I railroads – Generate more than \$398.7 million in annual revenue.

Regional carriers (includes Class II and Class III railroads) – Generate between \$31.9 and \$398.7 million in annual revenue.

Short-line carriers – Generate less than \$31.9 million in annual revenue.

- Seven short-line and regional carriers (includes Class II and Class III railroads) – Wisconsin & Southern Railroad, Escanaba and Lake Superior Railroad, Tomahawk Railway, Progressive Rail, Municipality of East Troy Railroad, Dakota, Minnesota & Eastern, and Wisconsin Great Northern Railroad

For more information on these railroads, see Chapter 3: System Inventory.

Commodities moved

Wisconsin's railroads move 33 percent of Wisconsin's total freight by weight, about 180 million tons annually. Rail freight movement in Wisconsin is characterized as the amount of freight that:

- Originates or terminates within the state (with corresponding destinations or origins outside of the state) (terminating)
- Moves entirely within the state (intrastate)
- Passes through from an out-of-state origin to an out-of-state destination (overhead)

In 2007, rail movements (by weight) statewide were 46 percent overhead, 42 percent terminating, 10 percent originating and two percent intrastate.

Commodities are generally defined as those items shipped by weight, volume or value. Table 5-1 summarizes the top commodity by each of these characteristics. For more information, see Chapter 4: Economic Development. WisDOT acknowledges the increase in movement of frac sand and oil products by rail in Wisconsin since 2007. WisDOT will continue to study the impacts of these commodity flows and address them in updates to the Plan

Table 5-1: Top commodities shipped by rail in Wisconsin in 2007 (in-bound, out-bound, intrastate and overhead traffic)

Characteristic	Top commodities	Key facts
Weight	Coal	<ul style="list-style-type: none"> • Approximately 45 million tons per year • Almost 25 percent of all Wisconsin freight rail tonnage • Roughly 55 percent all rail tonnage destined for Wisconsin • Over 90 percent of coal deliveries terminating in Wisconsin are used to produce electricity
	Metallic ores	<ul style="list-style-type: none"> • Approximately 19 million tons per year • About 11 percent of all Wisconsin freight rail tonnage • Roughly 15 percent of all rail tonnage destined for Wisconsin • Primarily iron ore from Minnesota
	Farm products	<ul style="list-style-type: none"> • About 19 million tons per year • Approximately 10 percent of all Wisconsin freight rail tonnage • The commodity most commonly carried by intrastate freight rail service
Volume (Number of Rail Units)	Freight of all kinds	<ul style="list-style-type: none"> • Results from the large number of containers from Asia passing through the state going to Chicago or west to the Pacific Northwest • About 826,000 rail units per year • Approximately 26 percent of all Wisconsin rail units
	Coal	<ul style="list-style-type: none"> • About 12 percent of all Wisconsin rail units
	Empty containers	<ul style="list-style-type: none"> • Typically Asia-bound empty containers headed from Chicago to the ports in the Pacific Northwest • Approximately seven percent of all Wisconsin rail units
Value	Freight of all kinds	<ul style="list-style-type: none"> • Approximately \$52 billion in shipments per year • About 29 percent of all Wisconsin freight rail shipments by value • Results from the large number of containers passing through the state going to Chicago or west to the Pacific Northwest
	Transportation equipment	<ul style="list-style-type: none"> • About \$41 billion in shipments per year • Approximately 23 percent of all Wisconsin freight rail shipments by value
	Chemicals or allied products	<ul style="list-style-type: none"> • About \$23 billion in shipments per year • Approximately 13 percent of all Wisconsin freight rail shipments by value

Source: Global Insight TRANSEARCH

2030 freight shipments forecast

Both rail and trucking freight shipments in Wisconsin are expected to grow through the year 2030. As can be seen in Tables 5-2 through 5-4:

- The weight of freight rail commodities traveling in Wisconsin is expected to grow by over 16 percent by 2030. This includes a:
 - 4 percent decrease in tons leaving Wisconsin
 - 4 percent decrease in tons entering Wisconsin
 - 5 percent increase in tons traveling entirely within Wisconsin (intrastate shipments)
 - 37 percent increase in tons traveling through Wisconsin (overhead shipments)

- The value of freight rail traveling in Wisconsin is expected to grow by 18 percent by 2030. This includes a:
 - 38 percent decrease in value of rail shipments leaving Wisconsin
 - 12 percent increase in value of rail shipments entering Wisconsin
 - 2 percent increase in the value of rail shipments traveling entirely within Wisconsin (intrastate shipments)
 - 24 percent increase in the value of rail shipments traveling through Wisconsin (overhead shipments)

- While freight rail tons originating in Wisconsin are forecast to decline by a small amount by 2030, the value of those shipments is forecast to decline by a larger amount. This may reflect fewer of Wisconsin's manufactured, higher-value goods traveling out of state by rail. By contrast, the forecasts show that Wisconsin may import a greater percentage of higher-value goods traveling by rail to Wisconsin.

- The percentage growth in freight tonnage carried by rail in Wisconsin is expected to outpace the percentage growth of freight tonnage carried by trucks. However, the percentage growth in total freight value carried by trucks is expected to outpace the percentage growth in total freight value carried by rail.

These forecasts were prepared prior to the recent rapid growth in the outbound movement of non-metallic minerals; more specifically, frac sand. These forecasts were also prepared prior to the announced closings, or conversions, of several coal-fired power plants. Future forecasts are likely to change.

Table 5-2: Wisconsin freight shipments by weight, 2007 and 2030 (thousands of tons)

	Leaving WI			Entering WI			Within State			Overhead			All		
	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change
Rail	15,234	14,580	-4.3%	75,415	72,635	-3.7%	3,771	3,971	5.3%	86,067	118,073	37.2%	180,487	209,934	16.3%
Truck	92,467	99,387	7.5%	52,990	67,702	27.8%	118,392	112,779	-4.7%	76,462	106,568	39.4%	340,350	386,519	13.6%
Water	21,365	NA	NA	8,106	NA	NA	425	NA	NA	0	NA	NA	29,896	NA	NA
Air	199	NA	NA	76	NA	NA	<1	NA	NA	0	NA	NA	275	NA	NA
Unknown	54	NA	NA	621	NA	NA	0	NA	NA	0	NA	NA	675	NA	NA
Total	129,319	NA	NA	137,208	NA	NA	122,519	NA	NA	161,799	NA	NA	5550,845	NA	NA

Source: Global Insight TRANSEARCH

Table 5-3: Wisconsin freight shipments by value, 2007 and 2030 (thousands of \$)

	Leaving WI			Entering WI			Within State			Overhead			All		
	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change
Rail	\$12,751	\$7,867	-38.3%	\$20,843	\$23,356	12.1%	\$1,867	\$1,905	2.0%	\$146,887	\$180,531	22.9%	\$182,348	\$214,262	17.5%
Truck	\$226,014	\$263,031	16.4%	\$248,884	\$380,169	52.7%	\$184,272	\$229,436	24.5%	\$329,504	\$513,445	55.8%	\$988,726	\$1,386,298	40.2%
Water	\$6,939	NA	NA	\$1,113	NA	NA	\$387	NA	NA	\$0	NA	NA	\$8,439	NA	NA
Air	\$763	NA	NA	\$1,218	NA	NA	\$2	NA	NA	\$0	NA	NA	\$1,983	NA	NA
Unknown	\$6	NA	NA	\$187	NA	NA	\$0	NA	NA	\$0	NA	NA	\$193	NA	NA
Total	\$246,473	NA	NA	\$272,245	NA	NA	\$186,497	NA	NA	\$475,900	NA	NA	\$1,181,689	NA	NA

Source: Global Insight TRANSEARCH

Table 5-4: Wisconsin freight rail shipments by weight, units and value, 2007 and 2030

	Leaving WI			Entering WI			Within State			Overhead			All		
	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change	2007	2030	% Change
Carload Tons (000s)	14,794	14,458	-2.3%	75,176	72,448	-3.6%	3,771	3,971	5.3%	68,057	96,291	41.5%	162,452	187,837	15.6%
Intermodal Tons (000s)	439	122	-72.2%	238	187	-21.4%	0	0	0%	17,349	21,782	25.6%	18,035	22,097	22.5%
Total Rail Tons (000s)	15,234	14,580	-4.3%	75,415	72,635	-3.7%	3,771	3,971	5.3%	85,406	118,073	39.0%	180,487	209,934	16.3%
Carload Units	184,398	163,892	-11.1%	714,681	697,110	-2.5%	43,596	43,728	0.3%	821,639	1,121,498	36.5%	1,771,254	2,026,228	14.4%
Intermodal Units	22,800	6,631	-70.9%	21,280	19,140	-10.1%	0	0	0%	1,319,800	1,740,325	31.9%	1,364,640	1,766,096	29.4%
Total Rail Units	207,198	170,523	-17.7%	735,961	716,249	-2.7%	43,596	43,728	0.3%	2,141,449	2,861,823	33.6%	3,135,894	3,792,324	20.9%
Carload Value (millions \$)	\$10,860	\$7,362	-32.2%	\$19,850	\$22,614	13.9%	\$1,837	\$1,905	2.0%	\$77,422	\$94,040	21.5%	\$110,416	\$125,921	14.0%
Intermodal Value (millions \$)	\$1,891	\$505	-73.3%	\$993	\$741	-25.4%	\$0	\$0	0%	\$69,036	\$87,095	26.2%	\$71,931	\$88,341	22.8%
Total Rail Value (millions \$)	\$12,751	\$7,867	-38.3%	\$20,843	\$23,356	12.1%	\$1,837	\$1,905	2.0%	\$146,458	\$181,135	23.7%	\$182,348	\$214,262	17.5%

Source: Global Insight TRANSEARCH

Wisconsin's intermodal facilities

The efficiency of freight movement is enhanced by the presence of intermodal facilities. Intermodal facilities are locations where freight containers, trailers or bulk commodities are transferred between truck, rail, water and air modes. Each transportation mode plays a distinctive role in the efficient movement of goods from one location to another. Shippers typically use a combination of modes to maximize speed and service and to minimize cost.

In the past, railways served all sectors of the economy, moving food, industrial goods and passengers to and from communities large and small. Today, freight railways are more specialized and lack direct physical access to many of their targeted clients. Intermodal facilities help address that lack of direct physical access, enabling truck-served industries to gain the economies of scale and long-haul efficiencies of the rail mode through consolidation of shipments and access to rail cars at designated intermodal points.

Wisconsin's primary rail intermodal focus is on the transfer of bulk commodities between rail and truck or rail and water modes. Due to the special purpose of these facilities, most are privately-owned and dedicated to the use of a specific client or industrial group. Canadian National (CN) has one public intermodal facility at Chippewa Falls, and one private intermodal facility operated for Ashley Furniture in Arcadia, Wisconsin.

The U.S. Bureau of Transportation Statistics lists 119 freight intermodal facilities in Wisconsin, of which 95 include the freight rail mode. Wisconsin classifies these facilities as transload, because they do not typically handle containerized freight. See Chapter 3: System Inventory, for more information about Wisconsin's intermodal facilities.

Network service and capacity issues

Constraints on railroad capacity take many forms. Capacity constraints may include:

- **Line capacity:** A rail route has a finite capacity in terms of the number of trains it can handle in a set period, such as a day. Factors affecting capacity include the track configuration, such as single- or double-track and signalization. For example, double track can handle more trains than single-track with passing sidings. Also, a single-track line controlled by a dispatcher in a remote location using wayside signals can handle more trains per day than one with no such system.
- **Yards:** Rail yards include general carload classification yards, intermodal yards handling trailers and containers on flatcars or double-stack cars, and small switching yards. Upper limits of capacity are often quoted as the number of cars, trailers or containers handled at a yard per day.
- **Fleets:** Rail fleets consist of cars and locomotives. If a railroad does not have enough cars and locomotives to haul its traffic, it can lease them from other railroads. Railroads monitor their car and locomotive fleets to assure a sufficient supply where and when they are needed. However, there are times when demand outstretches supply, and railroads and shippers must search for available equipment.

- **Tunnels and bridges:** Tunnels have vertical clearances that can restrict some types of traffic, such as double-stack cars and automobile tri-levels. Certain structures, such as bridges, might also have vertical clearance restrictions, as well as weight restrictions. Swing bridges over navigable waterways must remain open when not handling trains and may cause capacity constraints.
- **Track:** Heavier carloads require more robust track structures. Many railroads recently have been increasing maximum carloads to 286,000 pounds, and some larger railroads are increasing maximum carloads to 315,000 pounds. The increasing carload weights have caused many freight railroads to upgrade their track structures. Typically, upgrading track requires replacing the track. This is expensive and can present financial obstacles for short-line or small railroads with limited cash flow. While track does not necessarily need to be upgraded to handle heavier cars, it will eventually result in higher maintenance costs.
- **Work force:** A train cannot move without a train crew. Two-person crews are typical for freight trains and consist of a locomotive engineer and a conductor. Crews are highly trained in train operations and regulations. They are limited in the hours they can work. Hours of service rules prevent a crew member from working more than 12 hours per day. If a train crew reaches its 12 hour limit, the train must stop and wait for a new crew. While this rule addresses an important safety concern, it can negatively impact the efficiency of train shipments.
- **Shared use:** Passenger rail services that operate on freight rail lines, including both intercity passenger and commuter rail service, can diminish capacity for freight trains. Freight railroads regularly insist on capacity enhancements before allowing new passenger trains access to freight lines.
- **Interchanges:** Interchanges occur when one railroad delivers rail cars or even whole trains to another carrier. This happens every day in Chicago. When rail cars are interchanged, crews and locomotives must change as well. Depending on the type of traffic involved, several hours or even days may be required to complete the interchange. This can negatively impact the efficiency of freight rail.
- **Train-related crashes/incidents:** Vehicles and pedestrians are sometimes struck by trains when crossing railroad tracks. These crashes may occur for a variety of reasons, including motor vehicles getting stuck on the track, motorists disregarding warning devices, or pedestrians trespassing on railroad right-of-way. Whatever the cause, any train-related crash will require a train to stop.
- **Severe weather conditions:** Flooding can make tracks impassable, and high winds have been known to push trains off track. Severe winter storms can also slow train movements. These conditions exist in the Upper Midwest and can profoundly impact train movements and railroad operations.
- **Other constraints:** container shortages, shortage of regional intermodal terminals with double stack capability, and lack of clearances for double stack on some corridors.

In Wisconsin, no known capacity issues were identified by the railroads during development of the plan. However, Chicago continues to be a major regional rail bottleneck due to its status as the principal gateway for transcontinental traffic. In Chicago, rail cars are interchanged among different rail carriers. Additionally, some intermodal trailers and containers are trucked across the city from terminals served by western carriers to those operated by the eastern railways. As noted above, these transactions may take hours or even days to complete.

The Chicago Region Environmental and Transportation Efficiency Program (CREATE) is an attempt to solve the Chicago bottleneck. The program involves a partnership between the U.S. Department of Transportation, the State of Illinois, the city of Chicago, Metra (Chicago's commuter rail operator), Amtrak and the nation's freight railroads. The goal of the program is to improve freight rail movements in the Chicago region, reduce motorist congestion at grade crossings, improve passenger rail service, enhance public safety and promote economic development.

While no significant capacity issues were identified by the railroads during plan development, planned additions to intercity passenger rail service, as well as continued growth in freight rail service, may result in capacity concerns in the future. WisDOT's policy is to work with freight railroads to address these concerns as new intercity passenger rail service is implemented. This may require WisDOT and the freight railroads to cooperatively identify additional infrastructure needed to keep new intercity passenger rail service from negatively impacting freight rail service.

Issues Related to Wisconsin's Freight Rail Network and Plan Recommendations

Managing passenger rail improvements on Wisconsin's rail network

Growing interest in intercity passenger rail service and commuter rail service highlights the need for coordination with Wisconsin's freight rail service providers.

As discussed in Chapter 6: Intercity Passenger Rail, WisDOT recommends implementing the Wisconsin component of the Midwest Regional Rail System (MWRRS). This would result in expanded intercity passenger rail service in Wisconsin, including more frequent service between Chicago, Milwaukee and Minneapolis/St. Paul, and new service between Chicago, Milwaukee and Green Bay. The majority of the track on which the state's proposed intercity passenger rail routes will operate is owned or operated by freight railroads. The new intercity passenger services will use some capacity on these freight rail lines. The planned service improvements in the near-term include:

- Additional *Hiawatha Service* train frequencies between Chicago and Milwaukee
- A second daily round-trip train frequency between Chicago, Milwaukee, and Minneapolis/St. Paul, stopping at existing stations along the corridor, on the existing Amtrak *Empire Builder* route

As discussed in Chapter 7: Commuter Rail, locally proposed commuter rail systems in southeast Wisconsin and in Dane County would also use freight rail lines and would consume track capacity.

In order to provide capacity for new passenger services on these freight lines, track upgrades, such as passing sidings and sections of double-track, may be required. Typically, the analysis of required capacity improvements is done through an operations simulation, where impacts of potential new capacity and additional train services can be considered together as a means of defining required infrastructure investments.

All passenger rail development plans in the near-term involve sharing track and facilities with freight rail. This brings new challenges distinct from those associated with new demands for freight services:

- Passenger trains must operate according to schedule to a higher degree than freight trains. This implies a need for greater “buffer” capacity along a passenger rail route, even given a modest increase in the number of trains.
- New passenger trains operating at higher speeds relative to freight operations can require more track infrastructure (such as passing sidings, additional mainline tracks, etc.) than what an equivalent increase in slower speed freight trains would require. Some large freight railroads maintain that a rail corridor segment with a single Amtrak train moving along it would support three freight trains traveling along the same segment.
- Track engineering specifications for passenger operations often are tighter than those needed by the host freight railroad, both to support safe passenger operations at higher speeds and to provide a high standard of comfort for on-board passengers.
- Track maintenance must be shifted to avoid passenger service hours. Ideally, maintenance cycles should also be shortened to avoid the typical freight railway practice of major, highly-disruptive rebuilding programs every several years.

WisDOT completed a detailed operations simulation of the Chicago-Milwaukee-Madison corridor. The simulation showed that with the right infrastructure improvements, new passenger rail service can be implemented without harming current and future freight rail operations. Additional operations simulations will need to be conducted for planned future service to both Minneapolis/St. Paul and Green Bay.

If states select Amtrak to operate the new intercity passenger service, they will be able to rely on Amtrak’s statutory rights of access to freight corridors under terms that do not “unduly burden” the ability of the host freight carriers to serve their clients. The Federal Railroad Administration is preparing guidance that will likely require formal analytical assessments of infrastructure and operations scenarios to be expected over the long term (i.e., 20 years), as opposed to simply defining needs for an initial tier of passenger operations. WisDOT’s goal is to ensure that freight railroad service is not negatively impacted by the expansion of passenger rail service. In fact, WisDOT expects that the necessary improvements to accommodate passenger rail may enhance freight service.

WisDOT recognizes the important contributions freight rail carriers make to Wisconsin's economy and the need to avoid compromising their ability to serve freight clients. Under *Wisconsin Rail Plan 2030*, WisDOT will:

- Continue to work collaboratively with the appropriate stakeholders, including freight railroads, Amtrak and the Federal Railroad Administration, to define the appropriate upgrades to rail infrastructure in support of upgraded and expanded intercity passenger rail service
- Continue to build upon and expand WisDOT's technical expertise in the areas of railway engineering and operations to facilitate dialogue with host freight carriers and to better safeguard the growing public sector investment in rail corridors
- Lead efforts to develop cooperative agreements with stakeholders regarding upgraded and expanded intercity passenger rail service as required by the Federal Railroad Administration

Infrastructure needs for publicly-owned rail lines

Just over 530 miles of active rail lines in Wisconsin are publicly-owned. Several rail line segments in the state are under public control but operated by other parties. The vast majority of these lines are operated by Wisconsin & Southern Railroad Company (WSOR). Wisconsin Great Northern operates on the remainder of the publicly-owned lines.

Wisconsin's short-line system must be able to accommodate heavier car loadings that are prevalent for Class I railroads. In particular, tracks and bridges need to be upgraded. To articulate needs on the publicly-owned system, WSOR prepared a 10 year capital plan. The plan estimated annual costs of tie and rail replacement at \$16.3 million. Using a cost per mile basis and applying it to all of the public line segments would equate to capital costs of \$19.7 million per year.

In 2006, WisDOT also analyzed 30 bridges used by WSOR to determine whether the bridges are capable of handling 286,000 pound carloads and what the resulting service life of those bridges would be. WisDOT took the estimated costs and extrapolated them to the rest of the publicly-owned system to determine potential costs for all publicly-owned bridges. These estimates suggested a total cost of \$29.5 million, or an annual cost of \$5.9 million over five years.

This analysis, along with the growing role for the state of Wisconsin in the continued support and enhancement of the state's rail network, resulted in a program increase in the 2009-2011 biennial budget process.

Recognizing the value of the state-owned railroad lines and their role in the state's transportation network, it is in the state's interest to ensure that the system is capable of providing the intended service. In order to accomplish the desired level of oversight, Wisconsin, in cooperation with its partners, should formalize its ability to assess the value of the assets by working to implement an asset management system for the state-owned rail lines. This system would be able to identify areas of the system that are in need of additional support and help ensure that the system performs to its desired level. In addition to addressing track and bridge upgrade needs, the state also is tasked with preserving, if appropriate, rail corridors proposed for abandonment for future use. If a corridor is being abandoned

and WisDOT and local governments are not able to preserve its current rail use, the department shifts to a rail corridor preservation approach. This ensures that rights of way are preserved for future transportation purposes. Rail banking or land banking offers one option for rail corridor preservation. Rail banking is an option when local partners have plans to restore the rail service in the near future. The preserved corridors can also be converted to recreational corridors known as rails-to-trails, which offer benefits to the surrounding communities and users.

Rail service in communities may be restored during the life of this plan. Restoration of rail service along these corridors may be based on economic feasibility, creating system redundancy or other factors. Given the nature of the preserved corridors as recreational trails with a very different use, restoration can be a contentious issue for users and the communities.

As part of *Wisconsin Rail Plan 2030*, WisDOT will:

- Continue to preserve, as appropriate, rail corridors for future use
- Work with railroads to ensure that appropriate rail service will be provided to all shippers statewide
- Acquire rail lines into public ownership, when appropriate, to preserve essential railroad service
- Conduct more detailed studies of publicly-owned rail line infrastructure needs
- Fund track upgrades for publicly-owned rail lines to meet changing industry standards
- Investigate potential for moving to an asset management method of proactively maintaining and improving publicly-owned rail lines

Shipper access to the rail service network

Adequate connections to the regional and national transportation system continue to be an overarching need of Wisconsin communities and shippers who rely on local freight rail service. Class I railroad efforts to improve efficiency have resulted in the railroads promoting unit trains that move large volumes of product from a single origin to a single destination, while reducing service to smaller shippers with individual carload shipments. By taking this approach, larger railroads have been able to offer pricing incentives to larger shippers with facilities capable of loading or unloading large product volumes in a short period of time.

Pursuing increased unit train business has proven to be a good business decision for the larger railroads. However, some smaller shippers have commodities and/or shipping points that are unsuited to unit train movement. A large carrier's decision on whether to service these shippers becomes a function of the relative profitability of a given mixed freight traffic flow versus the

Unit Trains vs. Mixed Freight Trains

A **unit train** transports one type of commodity from a single origin to a single destination. The train does not stop to drop off or pick up cargo along the way. For example, trains delivering coal to Wisconsin power plants typically are unit trains.

A **mixed freight train** makes multiple stops during its trip to pick up and drop off different types of cargo at various businesses. For example, Wisconsin & Southern Railroad (WSOR) typically serves multiple businesses in southern Wisconsin with mixed freight trains. Some of WSOR's mixed freight trains interchange with Class I railroads in Chicago.

“opportunity cost” of deploying crews and locomotives to handle the offered business. Some smaller shippers located on congested, long-haul main line corridors may watch in frustration as a carrier cuts back service to their facilities even as the volume of trains passing their front doors continues to grow. New potential clients may be required to fund, in addition to a switch and spur into their facility, industrial “frontage track” and high speed turnouts that mitigate the impact of local switching activity on main line capacity.

Complicating matters is Wisconsin’s proximity to the Chicago gateway. Rail freight traffic originating in Wisconsin and moving to the eastern U.S. will most likely need to be turned over to a different railroad operator in Chicago after a relatively short haul to one of the Chicago connectors.

The frac sand mining expansion has resulted in rapid growth of freight movements from western Wisconsin. This expansion has led to the development of new transload facilities and the reactivation of out-of-service rail lines.

Short-line rail carriers, unlike the Class I railroads, focus on short haul and carload traffic. These short-line carriers can fill the service gap created by the Class I railroads. Strategies to preserve such freight for the rail mode often hinge on creating and expanding short-line operations. In some circumstances, the large carriers will even encourage prospective new rail clients to locate on a short-line carrier where the client is more likely to benefit from intense local service and the more flexible operations model of the smaller carrier. In Wisconsin, the value of short-line operations is clearly demonstrated by the success of WSOR even as mixed freight traffic from Wisconsin shippers served by the larger carriers continues to decline.

While short-line carriers may be able to accommodate smaller shipments, the carriers may face challenges interchanging with other railroads and reaching distant destinations.

Under *Wisconsin Rail Plan 2030*, WisDOT will:

- Continue to support freight rail shippers and short-line carriers in preserving service to light-density rail lines
- Support freight shipper investments that permit new or continued local service in high-traffic areas; in some cases relocation support for a rail shipper to move to a branch line or short-line served point may prove to be a more cost-effective option for continued rail service
- Continue to provide planning support, as requested, to metropolitan planning organizations and regional planning commissions throughout the state in considering transportation needs that support developing rail-friendly industrial development sites
- Support efforts to improve connections between Wisconsin’s short-line railroads and other carriers

Future of Wisconsin’s branch line network

As discussed in Chapter 3: System Inventory, nearly a quarter of Wisconsin’s active rail system (about 858 miles according to the FRA) consists of low density rail lines. These are rail lines that carry less than

five million gross tons of freight shipments per year. An additional 237 miles of rail line are currently out-of-service (the track is in place, but no trains are operating on it). Map 5-1 highlights these low density and out-of-service rail corridors. Canadian National (CN), Canadian Pacific Railway (CP), Union Pacific Railroad (UP), and Wisconsin & Southern Railroad (WSOR) currently operate the majority of the state's light density lines.

Wisconsin's rail system has lost a considerable portion of its rail mileage to abandonment over the past several decades. Current public ownership of rail lines, concentrated in southern Wisconsin, consists primarily of lines abandoned by the Milwaukee Road and Chicago & North Western in the 1980s. There is some concern that compared to higher volume mainlines, the economic viability of the state's current light density rail lines is more susceptible to changing market conditions (e.g. losing a customer's business or increasing rail maintenance costs). As a result, some of Wisconsin's light density lines could be at risk for abandonment in the future.

Northern Wisconsin is one region where the state's branch line network has undergone considerable changes over the past 25 years. The Soo Line Railroad, long the dominant player in rail transportation for Wisconsin's forest products industry, marked a major change in direction with its purchase of assets from the bankrupt Milwaukee Road in 1985 and the subsequent spin-off, in 1987, of nearly 2,000 miles of Wisconsin and northern Michigan track to a new carrier, Wisconsin Central Ltd. (WCL). According to comments received from shippers, WCL brought a local marketing and service focus to northern Wisconsin's short-line network, recapturing volumes long lost to motor carriers. Operations and customer service were centralized in Stevens Point. In 1992, WCL investors purchased the former Green Bay and Western and Fox River Valley lines, blanketing the remaining geography of northern and east central Wisconsin. Carload volumes and intermodal traffic volumes continued to grow over WCL's lines into the 1990s.

In 2001, CN purchased WCL. CN had relied on portions of WCL's network for access to Chicago from western Canada since the early days of the railroad. By purchasing WCL, CN now enjoyed full and direct control of its operations to and from the Chicago gateway for all of its North American service.

CN continues to operate most of the branch line network purchased from WCL, but car loadings on the branch line network continue to decline. Under CN, the Wisconsin rail branch line traffic represents a relatively minor part of the railroad's overall service franchise. Approximately 75 percent of CN's track in Wisconsin consists of branch lines. The other 25 percent makes up the Superior-Stevens Point-Fond du Lac-Chicago mainline that carries the bulk of CN's traffic in Wisconsin. However, CN has stated that it is committed to serving its customers along its northern Wisconsin branch lines.

Map 5-1: Low density and out-of-service rail lines in Wisconsin



As described earlier in the chapter, public sector involvement in Wisconsin's rail freight industry has long been fueled by the abandonment of rail lines and potential loss of service to communities and industries. In order to promote Wisconsin businesses' continued access to freight rail on the state's light density rail lines, WisDOT will:

- Continue efforts to preserve rail freight service when the service is judged to be essential, cost-effective and financially viable, based on transportation efficiency cost-benefit analysis
- Develop outreach to, and foster relationships with, all Wisconsin railroad operators to keep abreast of market demands and railroad interests
- Facilitate relationships to reduce the number of abandonments and strengthen the market for rail
- Monitor railroad activity and create partnerships among businesses and railroads to increase the use of rail
- Work with the Department of Commerce to explore possible state policies to encourage business development within a supporting transportation policy framework

Chicago's effect on Wisconsin's freight service

Chicago is the nation's busiest and most complex rail transportation hub. Over 1,200 trains per day travel to, from and through the Chicago region, including commuter trains, intercity Amtrak trains and freight trains. None of the major U.S.-based rail systems serves both the Pacific and Atlantic coasts. As a result, all east-west traffic must interchange at one of the rail "gateways" such as Chicago, St. Louis, Memphis and New Orleans. Chicago is the largest such interchange point, and the need for traffic to change hands only adds complexity to the movement of over 35,000 freight rail shipments per day.

Fractured ownership of rail facilities and lack of coordination among the carriers led to some catastrophic service breakdowns in the 1980s and 1990s. Freight cars would frequently take longer to cross the Chicago terminal area than they had spent on the entire journey to Chicago from Seattle or Los Angeles. In 1999, the industry agreed to create the Chicago Transportation Coordination Office, a centralized location where dispatchers and planners for each of the rail organizations could jointly plan train movements, establish protocols and map out detailed contingency plans to cope with weather emergencies or other unplanned events. While this office improved Chicago operations, it became clear that something more dramatic and costly would be needed to permanently address the perennial service disruptions in the terminals.

In 2003, the major freight carriers, Metra, the city of Chicago and the Illinois Department of Transportation put together a \$1.5 billion capital improvement plan to eliminate bottlenecks and improve train velocity through the city. This new plan, called the Chicago Region Environmental and Transportation Efficiency Program (CREATE), includes:

- Upgrades to five rail corridors and creation of passenger-dominant routes to speed movement of Amtrak trains into the Union Depot from the east and south
- 25 new rail-highway grade separations to mitigate motor vehicle delays

- Six rail-rail grade separations to dramatically reduce conflicts between passenger and freight operations while simplifying freight rail activity

Most of the program's funding will come from state and federal sources, with rail carriers contributing 10 percent to 15 percent of the total cost. As of March 2010, 10 of 71 major projects had been completed, with another 30 in various phases of planning and design. In February 2010, the program received a \$100 million U.S. Department of Transportation TIGER (Transportation Investment Generating Economic Recovery) stimulus grant.

Wisconsin's proximity to the Chicago rail gateway gives the state a major stake in the program's success. Traffic moving east from Wisconsin does not have the option to move via "alternative gateways" such as St. Louis or Memphis when connecting to the eastern roads. Congestion in the Chicago terminal area can "back up" rail operations and negatively impact rail service in southeastern Wisconsin. Finally, Wisconsin's role in the Midwest Regional Rail Initiative can only reach full potential with the assurance of reliable, speedy intercity passenger rail service into the heart of Chicago.

As part of *Wisconsin Rail Plan 2030*, WisDOT will:

- Monitor the CREATE Program's progress and partner with Illinois in supporting new federal funding to move the improvements forward
- Explore opportunities to increase freight rail penetration of Chicago-directed traffic flows through intermodal offerings and expanded direct carload service to Chicago interchanges by Wisconsin's short-line partners

Rail/highway intermodal facilities and the public sector's role

A growing emphasis on greenhouse gas emissions, energy efficiency and sustainable transport has led many states to explore possible strategies to shift highway truck traffic to the rail mode. In response, the nation's large railways have expanded their offerings for movement of domestic intermodal freight, including large, multi-lane service contracts with some of the nation's largest trucking firms. For example, Wisconsin-based Schneider National is one of the country's largest users of rail intermodal services.

The railways' engagement with domestic intermodal traffic is heavily targeted to corridors that exceed 1,000 miles, with traffic moving in containers rather than standard over-the-road trailers. Containers may be double-stacked, maximizing payload per train. Operation of the cranes and other elements of the rail/highway interface at the intermodal ramps are very expensive. As a result, the long-haul cost-efficiencies of rail movement must be substantial to produce an economically feasible service package to the targeted clients.

This domestic intermodal business model has two important implications for Wisconsin and other states:

- Shorter-haul highway traffic (less than 1,000 miles) is "off the radar" for those promoting rail intermodal handling

- Minimum volume scales are high for establishing service at a new point – most rail carriers insist on a minimum of 100,000 “lifts” per year as a condition of adding a new service point

In addition to these two obstacles, Wisconsin also suffers major impacts from freight shippers moving goods over its highway system to access large railroad intermodal facilities in Chicago. West bound intermodal freight traffic from Minnesota and the Dakotas often travels east by truck on I-94 and I-90 through Wisconsin before it is transferred in Chicago to west-bound trains. Truck volume on these interstate routes is high – around 10,000 vehicles per day – and is expected to grow faster than passenger vehicle traffic over the next 20 years.

Initiatives to provide rail intermodal alternatives for some of this traffic may require development of a new business model and/or engagement by short-line carriers with a more natural focus on shorter-haul opportunities. Given the multi-state nature of the traffic and associated highway impacts, a collaborative approach with adjoining states would likely be needed. New models of capital sharing, rail rolling stock and service design may be required to be effective in this market. A key objective would be to provide better access to the rail mode for Wisconsin shippers and receivers as a byproduct of the overhead traffic diversion to rail.

As part of the *Wisconsin Rail Plan 2030*, WisDOT will:

- Investigate new policies and new financing strategies for projects that improve freight service
- Seek innovative ways to maintain an all-mode freight network to improve efficiencies among the modes and facilitate movement of goods

Import/export containers and Wisconsin rail service

Wisconsin’s location just north of the nation’s largest freight hub in Chicago means that the state sees a large volume of rail-hauled containerized import/export freight moving through the state. However, container volume handled at Wisconsin facilities is quite modest. A specialized and privately-operated intermodal facility near Arcadia in west central Wisconsin handles inbound and outbound product for locally-based Ashley Furniture. The facility is served by Canadian National and is a rare example of a modest-volume rail facility receiving regular service for double-stack container movement. Ashley Distribution operates a fleet of trucks to provide transport for those wishing to make use of backhaul container availability within a 150-mile radius of the Arcadia site.

Large railways strongly favor dedicated trainload movement of container traffic and seldom promote locations that are not capable of loading an entire train for movement to a single port. Several facilities of this scale are located in the Chicago region, and two are located in the Twin Cities (operated by Burlington Northern Santa Fe and CP). This means that Wisconsin shippers seeking access to long-haul intermodal service for import/export containers generally must move their commodities by truck across state lines to deliver boxes for delivery by freight rail to major U.S. port facilities.

The Arcadia and Milwaukee terminals do offer limited alternatives to this scenario, provided steamship line boxes are available and are scheduled to move to Asian or European markets. Access to

import/export backhaul capacity is a challenge for small volume or irregular export stakeholders due to the cost of repositioning the boxes and the need to coordinate movement with export clients, railways and steamship lines alike.

Two important structural changes in the flow of export goods may impact Wisconsin rail traffic: the expansion of the Panama Canal and growing volumes of import traffic handled by Canadian National via the Port of Prince Rupert. Before 2006, the majority of Asian traffic entering North American markets was imported through the West Coast ports and then moved inland via double-stack intermodal trains to the Midwest and Eastern U.S. markets. The San Pedro Bay ports of Los Angeles and Long Beach dominated this trade, in part because of a large local consuming market that complemented volumes targeted at inland markets.

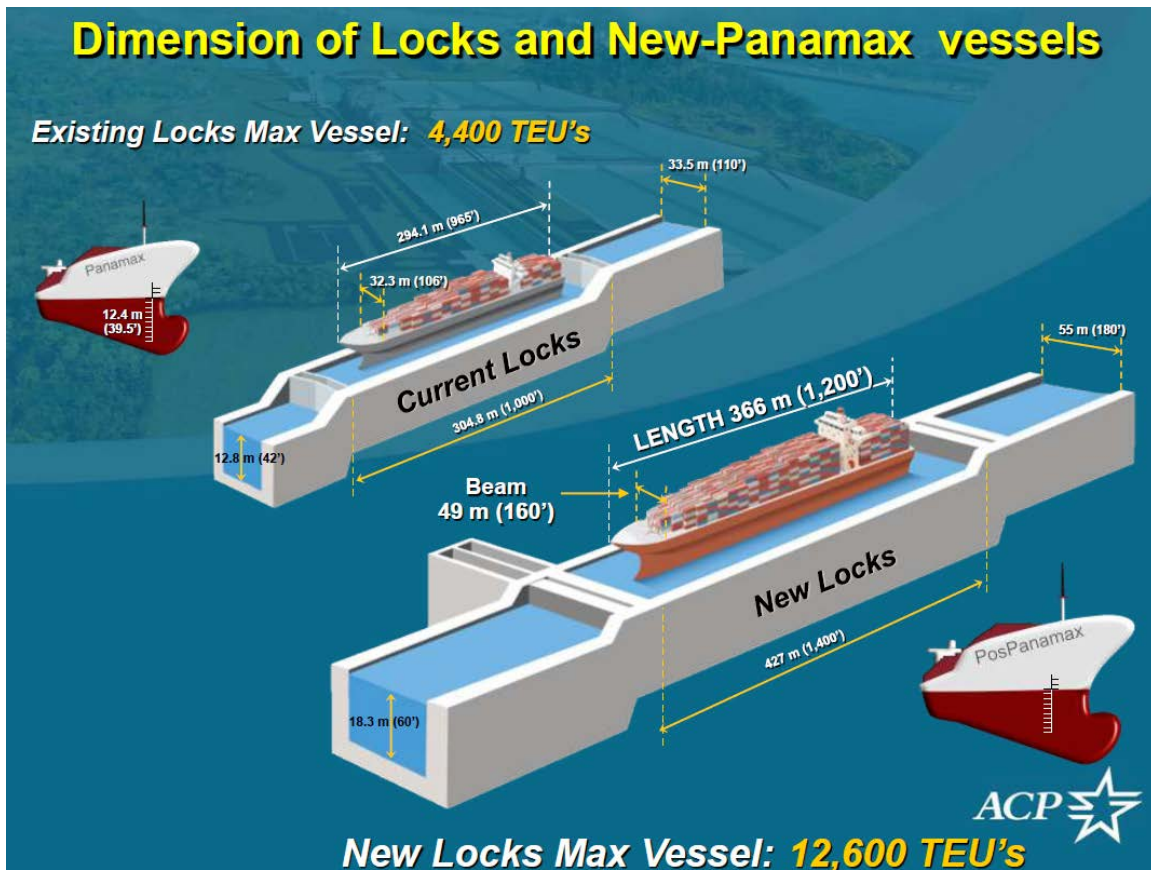
However, labor disruptions in 2004-2005 and ongoing congestion at the ports of Los Angeles and Long Beach prompted shippers and consignees to search for alternatives for their international trade flows. Shippers adopted strategies to diversify the risk of importing the majority of freight through the San Pedro Bay Ports. One effect of this strategy is a greatly increased demand for use of the Panama Canal for Asian imports.

Panama Canal expansion

In October 2006, the citizens of Panama overwhelmingly approved a seven year, \$5.2 billion plan to expand the Panama Canal. The historic canal had not kept pace with continuing increases in the size of marine vessels. Each day, 40 vessels can move in each direction through the canal and locks (14,000 vessels per year).

Container ships that can move through the Panama Canal are classified as “Panamax” vessels. Their size limitations are 965 feet in length, 106 feet in width, and a draft limitation of 40 feet. As shown in Map 5-2, Panamax container ships carry approximately 4,500 to 5,000 twenty-foot-equivalent units, while “Post Panamax” ships can move up to 12,600 twenty-foot-equivalent units.

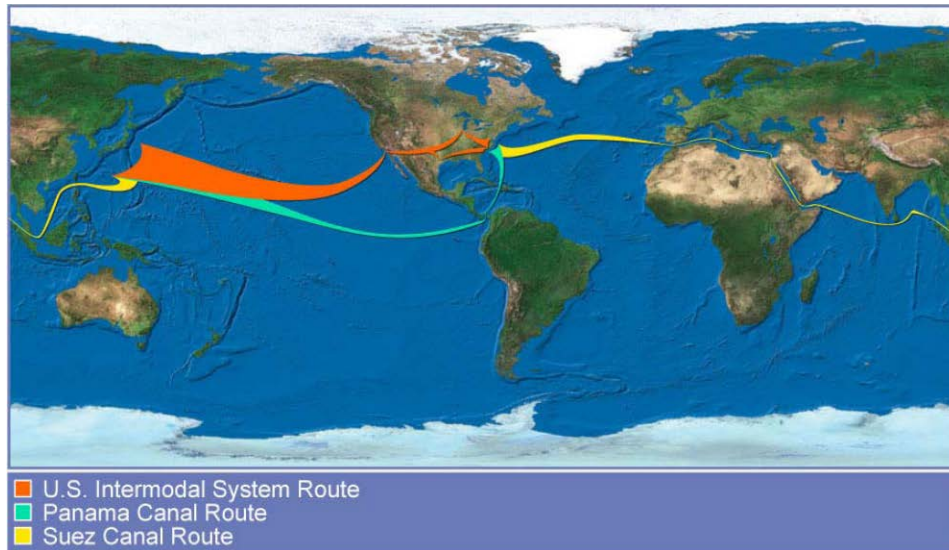
Map 5-2: A Post-Panamax Vessel Compared to a Panamax Vessel



Source: Panama Canal Authority

The increase in the length, width and depth of the locks will enable today's largest container ships to use the canal, more than doubling throughput capacity. While the number of transits will not increase, the doubling of permitted vessel size will further improve the competitive position of U.S. Gulf and East Coast ports in handling Asian trade (see Map 5-3). An expanded Panama Canal, therefore, might result in slower growth or a decrease in intermodal rail traffic through Wisconsin. The expansion project should be completed by late 2014 or 2015.

Map 5-3: Competitive shipping routes between Asia and the U.S. East Coast markets



Source: Panama Canal Authority

Port of Prince Rupert

In 2007, Canadian National Railway (CN) introduced a new and somewhat unique intermodal service via the Port of Prince Rupert on the coast of British Columbia. As shown in Map 5-4, the port's location allows cargo ships from northern Asian locations to unload two days earlier than the next closest location on the Pacific Coast, speeding vessel cycle times and productivity. Containers are then moved via expedited double-stack trains over the railway's network to Harvey, Illinois (just south of Chicago) and Memphis, Tennessee. The inbound service was designed with an emphasis on speed to expedite consumer freight from China to Prince Rupert in 11 days on COSCO and Hanjin container ships. Boxes are moved from Prince Rupert to Chicago in just four days, for a total of 15 days transit from China to the heart of America's consuming market. Like the expanded Panama Canal, the new CN intermodal service via Prince Rupert provides shippers with another means of transporting goods between Asia and the U.S. Unlike the potential impact of the expanded Panama Canal, CN's new intermodal route via Prince Rupert could result in an increase in rail traffic through Wisconsin. Wisconsin shippers may be able to take advantage of the new, faster CN service by trucking goods to and from the CN intermodal facility in Chicago.

The service continues to grow and appears to have a competitive advantage in the Pacific trade lane. Volumes increased from 180,000 twenty-foot-equivalent units in 2008 to 260,000 twenty-foot-equivalent units in 2009, despite the recession. The port's start-up phase was designed to handle 500,000 twenty-foot-equivalent units annually, with a Phase II expansion capacity of 2,000,000 twenty-foot-equivalent units per year. At the 2,000,000 twenty-foot-equivalent units level, as many as 20 container trains a day could be traversing CN's main route across Wisconsin. This would represent an approximate doubling of traffic.

Map 5-4: Comparison of shipping routes between Shanghai and North American ports



Source: Canadian National

Whereas all inbound international containers are loaded with freight, only about 30 percent of the containers returning to Prince Rupert have returning loads. CN has aggressively sought backhaul traffic for this lane, including paper, forest products, dry grains, chemicals, processed food and aluminum. This unused westbound capacity could provide a source of competitive advantage for Wisconsin's export shippers, provided a suitable facility and service model is developed with CN and the involved steamship lines.

The proximity of large intermodal terminals in Chicago and the Twin Cities, however, means that the majority of Wisconsin's import/export rail intermodal traffic will continue to move over the state's highway system before transferring to the rail mode in adjoining states.

The recent economic recession resulted in decreased freight rail volumes. As the country's economy begins to grow again, it is reasonable to assume that freight volumes will also recover. However, railroads and shippers debate the extent of the recovery. Some argue that the impact of the Panama Canal (discussed in this chapter), the effect of the reevaluation of Chinese currency (making Chinese goods more expensive), and even a shift in manufacturing to South Asia from China (and thus a routing to the U.S. via the Suez Canal and East Coast ports), may result in freight rail volumes not returning to their pre-recession highs. Even with an improved Panama Canal, Wisconsin may see continued growth in transcontinental traffic to and from West Coast ports, simply because this will be the preferred routing

for higher value traffic demanding faster transit times. Most of this traffic will go to and from Chicago, which has the potential to remain a bottleneck because of its role in U.S. rail transportation.

As noted in *Connections 2030*, WisDOT will collect and analyze data and work to understand the freight markets in Wisconsin, and freight's regional, national and international role in the global economy. In addition, WisDOT will:

- Continue to monitor changes in international trade flows and work with communities that are impacted by dramatic changes in train frequencies
- Encourage dialogue with major rail carriers and Wisconsin business interests to leverage container backhaul capacity for improved Wisconsin export access to foreign markets

Powder River Basin coal traffic

The United States, along with the rest of the developed world, is just beginning to grapple with the changes in energy use and production that will support a reduction in greenhouse gas emissions. There has been continual growth in traffic from the Powder River Basin coal fields in Wyoming and Montana (see Map 5-5) over the past 30 years. The basin now supplies around 40 percent of the nation's one billion tons-per-year of total coal use. It is responsible for the electricity that lights one-fifth of the nation's homes and businesses.

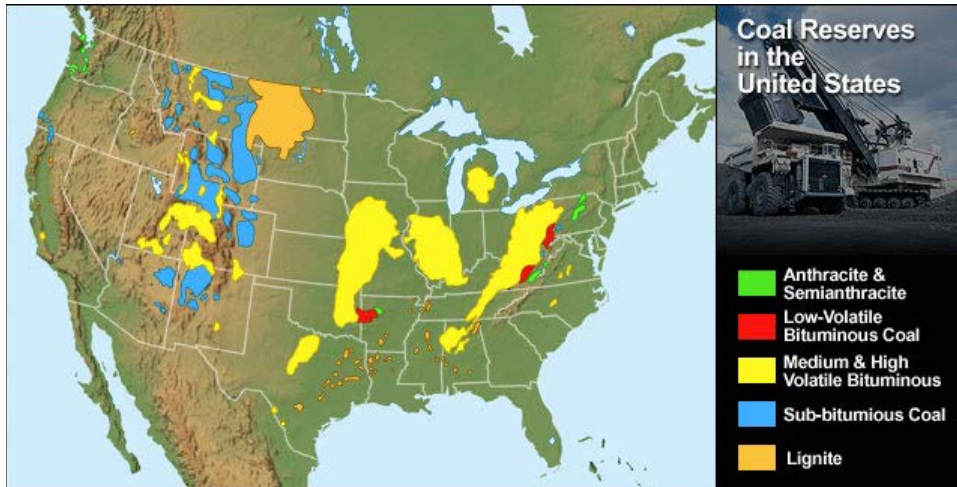
Powder River Basin

Wyoming's Powder River Basin is the nation's largest source of coal for electric power generation. It provides the coal that is used to produce electricity for one of every five homes and businesses in the U.S. In 2009, the basin produced approximately 420 million tons of coal.

Source: U.S. Department of the Interior

Wisconsin's experience with Powder River Basin coal mirrors that of much of the country. Western coal now is the largest inbound rail commodity for the state, encompassing both trans-loaded volumes moved over the Port of Superior to power plants bordering the Great Lakes and tonnage delivered to Wisconsin's power utilities (see Figure 5.1). The impact from future steps to further limit greenhouse gas emissions is unclear. It will depend heavily on the potential for new coal power plant technologies such as carbon dioxide sequestration and coal gasification and on the development of new energy sources such as solar, wind and geothermal.

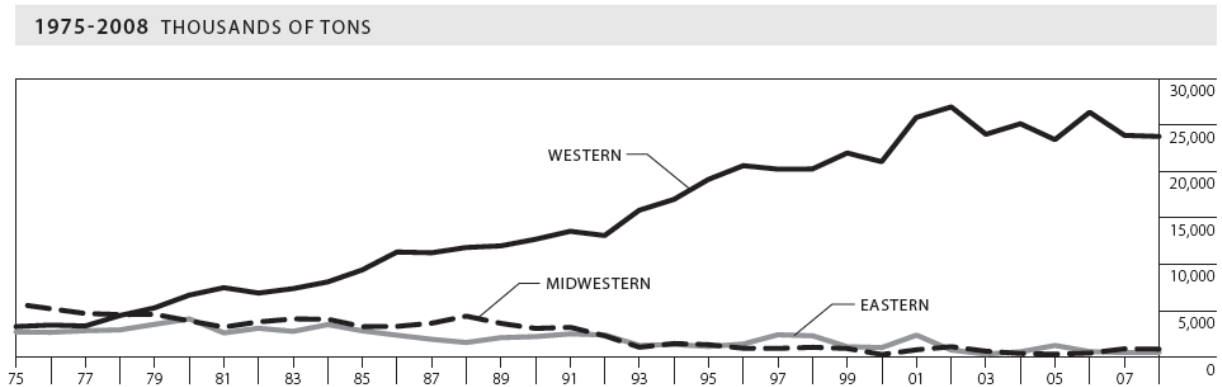
Map 5-5: United States Coal Reserves



Source: American Coal Foundation

Loss of coal traffic is seen as having a dramatic financial impact on the large western railroads, particularly Union Pacific Railroad and Burlington Northern Santa Fe Railway. Conversely, the main line capacity freed up by such a change would position these railroads to more aggressively pursue domestic intermodal markets that are seen today as too short haul or marginal in profitability. Railways' relative fuel efficiency is seen as a powerful tool in capturing truck volumes as energy prices continue to rise for the long term.

Figure 5-1: Coal deliveries to Wisconsin power plants, by region of origin



Source: Wisconsin Energy Statistics 2009

As part of *Wisconsin Rail Plan 2030*, WisDOT will continue to monitor coal consumption trends and any potential changes to coal consumption forecasts than may result from environmental legislation.

Changes in railroad regulation

U.S. railroads operate in a legal and regulatory environment that is quite distinct from that for most other business enterprises. As the first “modern” geographically far-flung industrial enterprises in the late 1800s, railroads have long been the target of public scrutiny. Labor relations in the railroad industry

are governed under the Railway Labor Act, which triggers federal review and possible public intervention whenever major labor disputes threaten disruptions to either freight or passenger service.

Railways enjoy powers of eminent domain to acquire rights of way and extend their operations, an exceptional grant of power to privately-held organizations. Facilities needed by the carriers to support their operations are similarly held by the courts to be largely exempt from local zoning and regulatory controls.

As discussed below, two federal agencies share responsibilities for federal oversight of the nation's rail system: the Federal Railroad Administration (FRA) and the Surface Transportation Board (STB).

Federal government and Wisconsin rail

The FRA is the principal agency in the U.S. Department of Transportation that is concerned with railroads. Until recently, it received modest funding for its activities. The FRA includes three principal offices:

- Office of Policy and Communications: Performs in-house analyses and research concerning the railroad industry as requested by the FRA administrator and other FRA and U.S. DOT officials. It does not make grants and only occasionally awards contracts to analyze issues of interest.
- Office of Railroad Development: Its responsibilities include:
 - Act as the conduit for Amtrak's annual appropriations and overseeing Amtrak's activities as directed by Congress and applicable legislation
 - Manage grant and loan programs, such as the Railroad Rehabilitation and Investment Financing and the Rail Line Relocation grant programs (aimed at removing busy rail lines from city centers)
 - Manage responsibilities relating to National Environmental Policy Act compliance in railroad construction projects
 - Manage research and development programs, the bulk of which are concerned with safety research to support Office of Railroad Safety activities
 - Administer funds and grant programs established by the Passenger Rail Investment and Improvement Act (PRIIA)
- Office of Railroad Safety: Responsible for developing and enforcing railroad safety statutes, regulations and standards; maintaining comprehensive railroad accident reporting systems and databases; and conducting safety-related analyses and investigations. Also responsible for Congressionally-mandated upgrades in railroad safety systems, including Positive Train Control.

Surface Transportation Board

Economic and structural oversight of the railroad industry is carried out through the Surface Transportation Board (STB), an Executive Branch agency that was created in the Interstate Commerce Commission Termination Act of 1995. The STB took over the vestigial railroad oversight functions that were not abolished with the disbanding of the Interstate Commerce Commission. As discussed earlier in

this chapter, the Staggers Rail Act of 1980 relieved freight carriers from most, though not all, federal regulation of rail rates and services and simplified the regulatory process associated with railroad mergers, line sales and abandonments. Pricing and service decisions of the carriers had been heavily regulated until this time; remaining economic regulation of the carriers was vested in the STB. Until recently, freight rate appeals to the STB were costly, frustrating and seldom settled in favor of shipper applicants.

A shift in philosophy through composition of the board hints at a more sympathetic forum for aggrieved rail customers in the months and years to come. Filing fees have been reduced and processes to handle smaller claims have been expedited, making the board's review and oversight functions accessible to more of the freight shipping community. To ensure that the state responds to national policy and is well positioned to leverage future funding decisions, WisDOT will:

- Review federal funding guidelines for rail improvements to leverage potential funding opportunities for Wisconsin's freight handling and intercity passenger rail systems
- Ensure that PRIIA specified qualification standards are maintained for funding of rail projects and programs; these include FRA approved and updated statewide plans, WisDOT rail organization and environmental review of specific project applications
- Monitor changes in economic regulation of the rail industry and work with the state's short-line rail partners, as appropriate, to broaden shipper access to freight rail services in the state

WisDOT's future role in freight rail

As shown throughout this chapter, the needs of Wisconsin's freight rail users and the impact of freight rail on Wisconsin's communities will continue to evolve in the years ahead. *Connections 2030* identified several policies and actions to help shape WisDOT's future role, including to:

- Establish a freight focus in WisDOT to better understand freight needs across the state and to integrate freight transportation policies into department planning and investment decision-making processes
- Assume the role of facilitator and advocate for freight between public and private interests
- Collect and analyze data to support freight planning
- Conduct an all-mode freight study
- Work with railroads to ensure that appropriate rail service is provided to all shippers statewide
- Preserve corridors for future rail use
- Acquire lines into public ownership to preserve essential railroad service
- Fund track and bridge upgrades for publicly-owned rail corridors
- Continue to preserve corridors for future transportation use
- Provide loan assistance to Wisconsin businesses and communities

These policies and actions are reaffirmed in *Wisconsin Rail Plan 2030*.