FREIGHT RAIL ECONOMIC DEVELOPMENT

Minnesota Department of Transportation
Minnesota Department of Employment and Economic Development

MINNESOTA DEPARTMENT OF TRANSPORTATION

POSITIVELY Minnesota
Department of Employment and Economic Development

MINNESOTA REGIONAL RAILROADS ASSOCIATION

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Executive Summary

The Freight Rail Economic Development (FRED) Study was mandated by the 2012 Legislature and charges the Minnesota Department of Transportation (MnDOT) and the Minnesota Department of Employment and Economic Development (DEED) to cooperatively investigate ways to expand rail-related business growth in the state. The legislative report on the study's findings is due to committees by November 15, 2013. Following are some of the key findings and recommendations:

Findings

- Railroads are a preferred mode of transportation for large volume shippers of agriculture, industrial manufacturing, mining and consumer products and help achieve transportation efficiencies especially for bulk cargo.
- Freight rail is important to the economic competitiveness of Minnesota and plays a vital role in the logistics of key Minnesota industries. Class I railroads expect to spend $13 billion nationally in capital improvements to upgrade track and facilities in 2013-2014 (source: AAR.org). Helping short line railroads connect to this improved network will benefit Minnesota's economy and create jobs.
- The partnership between Class I and short line railroads is valuable and essential for the economic growth of Greater Minnesota. Short lines connect Minnesota shippers to a Class I rail network that has global trade connections. Agriculture, ethanol, mining, manufacturing, and food processing industries would improve their economic competitiveness if they could connect to a low-cost, efficient freight rail network. Enhancing Minnesota rail freight rail development programs will help short lines connect rural Minnesota with Class Is, so all shippers and economic clusters within Minnesota can benefit from Class I railroad investments.
- Freight rail infrastructure and rail service is growing in importance because of increased motor carrier regulations, increased fuel costs and a current and growing truck driver shortage. More than 27 motor carrier regulations are in the process of implementation, which continues to reduce the number of motor carriers. These trends have encouraged all industries to examine the possibility of freight rail and intermodal service in transportation planning.
- Intermodal freight transportation policy represents the next important area of progress for policymakers and industry professionals. Programs that help expand rail access will help reduce pavement damage, congestion, and highway costs and improve Minnesota's economic competitiveness. Freight transportation is a multimodal effort. Minnesota can leverage private sector investment by providing complimentary investment in highway access, brown field remediation, land use and zoning policies that recognize freight and in the development of intermodal connectors to improve transportation efficiency.
- Minnesota's rail network is regional and international in scope and essential to support exports. Two of the top three international trading partners with Minnesota include Canada and Mexico, our NAFTA neighbors, which are well connected to Minnesota by rail. Neighboring states compete for short line and Class I rail investments that benefit regional shippers. Freight rail development programs need to be flexible and eligibility for freight rail development funds should include economic development agencies (EDAs), regional development commissions (RDCs), ports and other

public planning agencies. Many short lines were spun off from Class I railroads without many real estate resources. Local EDAs, RDCs and port authorities are often involved in new business attraction activities and industrial park development. These agencies are well positioned to be leaders in planning for and developing rail connections to these new starts and redevelopment programs and should be eligible for rail planning and development programs.

- Public perception of freight rail's value generally lags behind its actual importance to the economy and communities that it serves. Outreach and public forums on freight rail development would help increase awareness.

Recommendations

The following list of recommendations will increase stakeholder interest, cooperation and investment to create ongoing private sector investment and collaboration.

- Collaboration and education. The majority of EDAs and RDCs around the state have little or no knowledge of rail transportation and the importance of access to this mode. The study has included these partners in outreach and includes a contacts list and geographical reference to match EDAs and local railroad representatives.
- Think big. Make no small plans; aim high in hope and work (Daniel Hudson Burnham). Rail access often involves large capital-intensive investments. Turnouts may run from $75-250K, and constructing new track is $1 million per mile. Programs such as MnDOT's Rail Service Improvement (MRSI) and DEED's business development efforts should recognize and be structured to facilitate significant infrastructure improvements if appropriate.
- Rail renaissance. Railroads have reversed decades of decline and are more competitive and productive due to deregulation. In Minnesota, four Class I railroads will invest nearly $200 million in capital improvements in 2013. Business and industry is increasing rail transportation spending. Minnesota should invest in projects that leverage and complement this private sector investment.
- MnDOT program enhancements. The MRSI program, a revolving loan program with a $200,000 project cap, can be restructured to allow larger projects and legislatively could be allowed to incentivize users with performance-based loan forgiveness or loan guarantees.
- DEED program enhancements. MNProspector, a statewide commercial property directory, can be reconfigured to show rail-related or accessible properties and interact with rail marketing efforts similar to its present interaction with commercial real estate developers.
- FRED integration with TED program. The interagency cooperation and economic development characteristics of the Transportation Economic Development (TED) program would be a natural and appropriate means of expanding rail-related economic development efforts. A true multi-modal approach to solicitations and projects would accomplish the FRED mandate, including the current local match requirement and an unrestricted (general appropriation or similar) source of state funding. Performance-based incentives for project follow-up or expansion could be a positive addition to the entire program.

- Establish a freight rail development forum. Similar to the Intercity Passenger Rail Transportation Forum, a semiannual forum should be held to recommend and coordinate projects. This forum should engage Class I railroads, short lines and rail shippers to share capital planning projects, freight transportation needs and development opportunities.
- Host annual executive planning meetings with Class Is and Transportation Commissioner. Minnesota is a desirable location for economic development and job creation based on site selection feedback. Minnesota transportation and economic development executives should engage each of the four Class I railroads separately in capital planning discussions and meetings to leverage multimodal transportation planning and investments. Short line meetings should also be considered.
- Public money invested in privately owned rail facilities has created public benefits for rail users and reduces transportation maintenance costs for public roadways in other states. Any public investment should be subject to a cost benefit calculation to document public benefits.

Purpose of Study and Background

The purpose of this effort is for MnDOT and DEED, with the support of the Minnesota Regional Rail Association, to cooperatively conduct a study to identify ways to increase rail-related business development within the state. Nine tasks were undertaken to examine action opportunities for rail growth. These tasks included:

1) Define rail-oriented business development.
2) Host a 10-state peer review to benchmark best practices in rail preservation and program development.
3) Map rail freight movements to and from Minnesota for key industries.
4) Evaluate current effectiveness.
5) Coordinate with Minnesota DEED.
6) Prepare a Rail Shipper Tool Kit.
7) Review legislative programs to aid in rail development.
8) Conduct outreach efforts.
9) Prepare a final report of findings and recommendations.

This study is required by Minnesota Laws 2012, Chapter 287, Article 3, Section 44 amended Minnesota Statutes 2010, Section 174.03. The law requires a full report to the Legislature on November 15, 2013.

Figure 1: U.S. Railroad Network

Source: 2007 Revenue Commission

The project goal was to *"Identify opportunities for shippers, railroads and economic development and transportation agencies to work together more effectively, in support of expanded local rail access, complementary business development, and improved rail and intermodal service options."*

One strategy to improve Minnesota's economic competitiveness is to pursue a balanced multimodal transportation system where rail can play a larger role in the future. According to the Council of Supply Chain Management Professionals, in 2011, U.S. businesses spent $1,282 billion on logistics, which is approximately 8.5 percent of our nation's Gross Domestic Product. Supply chains are becoming increasingly more multimodal. More than $629 billion (almost half) was spent on motor carrier transportation. Only $68 billion (approximately 11 percent of the total truck spend) was spent on railroad transportation. Rail capacity on many routes is available to expand freight movements.

The nation is facing transportation funding short falls for highway and bridge maintenance with no clear path forward to increase transportation revenues. Given this problem, the development of rail freight options will benefit states that proactively invest in alternative freight networks.

Railroads are a preferred mode of transportation for agriculture, industrial manufacturing, mining and consumer products and help achieve transportation efficiencies especially for bulk cargo. Railroads help industry reduce reliance on foreign fuels and provide safe transport for hazardous materials and other cargo. Railroads have been credited with reducing the depth of the economic recession because of transportation cost savings as a result of mode conversion. Domestic intermodal service actually grew during the economic downturn. When companies moved freight by rail instead of truck, cost savings

dropped to the bottom line and improved balance sheets for rail shippers. Rail transport represents a critical connection for Great Lakes shipping. Midwest Energy Resource Company has a rotary dumper that unloads one 135-car-unit rail train in roughly two hours to load onto vessels that sail from Minnesota ports. Railroads pull unit trains of ethanol tank cars from Minnesota's many ethanol plants. Railroads have a superior safety record for moving hazardous materials, chemicals and fertilizer. Figure 1 shows how Minnesota railroads connect to the North American rail network.

Minnesota has an extensive rail network, which is largely underutilized. In 2011, the State of Minnesota had more than 4,480 miles of private railroad track. Nearly 55 percent of this rail infrastructure is managed by short line railroads. This network is the eighth largest rail network in the United States. Unlike many states where rail serves only a portion of the state, every county in Minnesota, with the exception of four, has an operational railroad. Those four counties at one time had rail lines. Many of these rail right-of-ways have been preserved and may be available for redevelopment.

Minnesota competes with neighboring states for freight rail economic development opportunities. Many railroads in Minnesota have track and investments that connect to neighboring states. Railroads in Minnesota create economic benefits for the state by reducing highway maintenance and road repair. In 2011, it was estimated that Minnesota railroads moved an equivalent of 753,000 truckloads, which would have amounted to $33 million in pavement damage savings. Other states included in Figure 2 were invited to participate in the Peer Review Benchmark effort and are deemed leaders in rail preservation and development programs. Figure 2 also illustrates how Minnesota's rail network compares to neighboring states in tax, employment and pavement damage savings. While Minnesota has more route miles than Iowa, Iowa handles more railcars and achieved more pavement damage savings than Minnesota.

Figure 2: How Minnesota Stacks Up

State	Small Railroads Cl. 2&3	Total Miles Operated	Class 1	Small Railroad	Percent Small Railroad	Est. State Employment	State & Local Taxes	Carloads Handled	Truck Equivalents	Est. Pavement Damage Savings	Cars per mile	Jobs per car (000)	Tax/Mile
MN	**17**	**4480**	**2019**	**2,461**	**54.9**	**767**	**2,016,000**	**262,000**	**753,000**	**33,000,000**	**106**	**2.92748**	**$450.00**
PA	51	4942	2171	2,771	56.1	2,499	489,000	483,000	1,386,000	60,000,000	174	5.173913	$98.95
NC	20	3246	2336	910	28	197	316,000	99,000	283,000	12,000,000	109	1.989899	$97.35
FL	12	2908	1701	1,207	41.5	821	291,000	277,000	795,000	35,000,000	229	2.963899	$100.07
MI	21	3582	721	2,861	79.9	655	416,000	295,000	847,000	37,000,000	103	2.220339	$116.14
OH	33	5305	3248	2,057	38.8	885	14,000	337,000	967,000	42,000,000	164	2.626113	$2.64
WI	7	3503	864	2,639	75.3	252	871,000	70,000	202,000	9,000,000	27	3.6	$248.64
IA	13	3902	1982	1,920	49.2	768	8,032,000	354,000	1,017,000	44,000,000	184	2.169492	$2,058.43
OK	16	3275	2011	1,264	38.6	344	no report	211,000	607,000	26,000,000	167	1.630332	No Report
ND	7	3346	1716	1,630	48.7	280	1,531,000	143,000	411,000	18,000,000	88	1.958042	$457.56
KS	10	4890	2815	2,075	42.4	345	35,000	277,000	794,000	35,000,000	133	1.245487	$7.16
OR	15	2394	1102	1,292	54	259	28,000	48,000	137,000	6,000,000	37	5.395833	$11.70

Source: ASLRRA 2011 Factbook

For shippers who can move four truckload shipments at one time to one customer, rail carload transportation can be an option. For shippers without rail access, transload and intermodal service provides truck-like service at reduced transportation rates. Rail freight transportation cost savings depend upon a variety of factors, such as length of haul, freight handling, cargo value and inventory

carrying costs. It is estimated that rail savings, where conditions are optimal, can reduce shipping costs by 15 percent for intermodal shipments and more for carload shipments. Rail carload service is often a strategic transportation decision made for freight handling efficiency and for other transportation conveniences.

Railroads are one of the safest modes of transportation for chemicals and hazardous materials. The Association of American Railroads (AAR) reports that 99.9 percent of the nearly 1.7 million carloads of hazardous materials moved were handled safely and intact to their final destination.

In a time of limited public transportation funding, increasing highway congestion, ongoing environmental concerns and an increasing interest in rail served industrial sites, the promotion of freight rail growth has the potential to produce substantial benefits for Minnesota.

Freight Rail Economic Development

Local economic development (LED) offers local government, private and not-for-profit sectors, and local communities the opportunity to work together to improve the local economy. It focuses on enhancing competitiveness, increasing sustainable growth and ensuring that growth is inclusive. LED encompasses a range of disciplines including physical planning, economics and marketing. It also incorporates many local government and private sector functions including environmental planning, business, infrastructure and real estate development.

The practice of LED can be undertaken on different geographic scales. A local government may pursue LED strategies for the benefit of its jurisdiction as a whole or for individual communities or economic clusters within a local government's jurisdiction. LED strategies are generally undertaken to improve economic competitiveness for a region. Such developments are most successful if pursued in partnership with public and private sector interests. At the core, LED is about communities continually improving their investment climate and business environments to enhance regional competitiveness, retain jobs and improve wages. LED strategies can:

- Ensure the local investment climate is attractive for local businesses.
- Support small and medium-sized enterprises.
- Encourage the formation of new enterprises.
- Attract external investment (nationally and internationally).
- Invest in physical infrastructure.
- Invest in social infrastructure (educational and workforce development, institutional support systems and regulatory issues).
- Support growth of particular business clusters to create synergies and growth.
- Target particular parts of the city for redevelopment.
- Support minority and disadvantaged business groups.

From a state or regional perspective, the focus should be on net effects. Development policy must be careful not to encourage or result in shift of benefits within the region.

Public sector participation in economic development can take a variety of forms, including education and workforce development, pubic infrastructure investments, financing and tax incentives for private sector investment, marketing and technical assistance, and a regulatory climate that encourages business development. According to one source:

> "Economic development is a collaborative activity where both a private and a public sector entities work together for a common benefit. Jobs and income are created by the private sector, but government decisions on taxes, spending, investments, regulations, and incentives may affect the business investment and location decisions."[1]

In the early 1990s, urban planners, developers, and architects began developing the concept of smart growth. This movement supports urban growth that is sustainable, comprehensive and holistic and integrates preservation of existing communities and investment in physical resources, which results in family and business friendly communities. Smart growth is fundamentally about land use and transportation planning. The smart growth movement has further evolved and now recognizes both transit oriented development and cargo oriented development as urban planning principles.

Transit Oriented Development (TOD) refers to residential and commercial centers designed to maximize access by transit and non-motorized transportation. A typical TOD has a rail or bus station at its center, surrounded by relatively high-density development, with progressively lower-density spreading outwards one-quarter to one-half mile, which represent distances considered walkable for most pedestrians (Renne, 2009).

Cargo Oriented Development (COD) refers to industrial and logistics centers designed to maximize access to freight terminals and nodes. A typical COD has access to multiple modes of transportation, such as rail, truck, intermodal and often marine connections to ports or waterways. These logistics centers often include third-party logistics services, such as warehousing or mixing centers where value-added or kitting can reconfigure shipments customized for end users. A COD is about "place" and represents a "node" in the network where location synergies create value due to proximity.

In this study, we expand on the COD concept by adding the term Freight Rail Oriented Development (FROD) or, as it is referred to for this project, Freight Rail Economic Development (FRED). We define FRED as:

> "Freight rail oriented development promotes and supports economic growth that relies on freight rail transportation networks and facilities. FRED provides access to business clusters that create workforce opportunities and support environmental sustainability. FRED also supports the development of facilities and terminals to accommodate heavy, wide and tall shipments, which can move by rail (such as windmill blades). FRED lowers transportation costs, improves transportation productivity which results in improved local competitiveness and lower costs for consumers while reducing freight congestion and bottlenecks."

[1] Hubert H. Humphrey Institute of Public Affairs, *Emerging Principles in State and Local Economic Development: A Benchmarking Tool*, July 1995, p. 5.

FRED is about connecting users to a rail *network* that provides transportation shipping options. FRED complements the freight rail network by improving and enhancing network access and operational efficiency and maximizing network capacity.

FRED can be used by the state as an instrument to promote:

- Business attraction where low cost transportation access and land use regulations allow freight handling and development opportunities.
- Transportation efficiency and potential cost savings for the movement of freight into and out of the state via improved rail access.
- Infrastructure investments to accommodate heavy and high/wide transportation requirements.
- Increase freight density to support balanced freight movements thereby improving carrier operations (service) and equipment supply.
- A clustering strategy to promote the co-location of suppliers, manufactures, and distributors.
- The development of employment clusters of skilled workers with technological skills to support logistic jobs that support families.
- Access to the freight rail network which supports mode conversion and economic competitiveness.
- Environmentally sustainable transportation facilities that are sensitive and purposely built to reduce green house gases.
- Reduction of congestion and reduce heavy truck usage of rural, county and state highways.

Land use planning that recognizes freight can potentially yield regional benefits. Logistics clusters can result in job growth and tax dollars by providing access to transport networks, which supply raw materials and finished goods for the region. Figure 3 illustrates that Minnesota freight ton-miles are projected to grow by nearly 260 percent by 2040. Domestic truck ton-miles are projected to grow by 175 percent by 2040 unless investment on improved rail access can be established. Yet, as a nation, our expansion of our highway capacity has not kept pace with freight transportation demand. Freight rail oriented developments can help provide truck transportation alternatives if proper planning and coordination with supply chain partners can be achieved. Freight rail oriented developments help support a virtuous circle where inbound products can be procured with lower transportation costs, which results in more competitive local industries; more competitive local industries create more jobs and support economic expansion. Improved economic competitiveness within the region often results in lower costs for local consumers because increased freight density leads to lower transportation costs and the virtuous circle repeats itself.

Figure 3: Freight Growth

Minnesota Ton Miles by Mode unit of measure million ton-miles

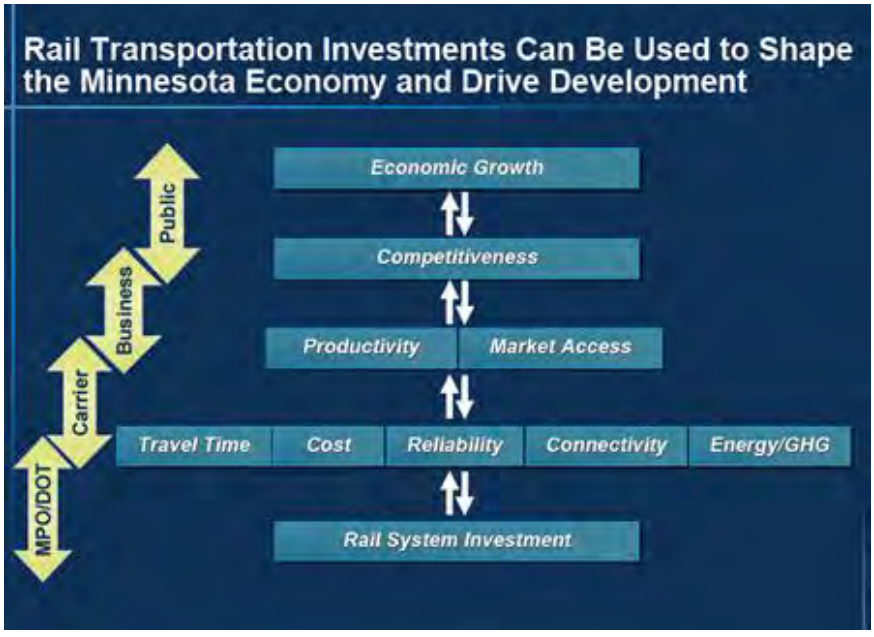
		Within		From		To		Total		Pct Change
Trade	**Mode**	**2011**	**2040**	**2011**	**2040**	**2011**	**2040**	**2011**	**2040**	
Domestic	*Truck*	*23,012*	*39,815*	*30,704*	*55,262*	*27,039*	*45,902*	*80,755*	*140,979*	*174.58%*
	Rail	2,274	2,913	45,378	70,427	29,857	49,228	77,509	122,568	158.13%
	Water	0	1	16,496	14,148	2,680	6,992	19,176	21,140	110.24%
	Air (include truck-air)			36	101	21	62	57	163	283.72%
	Multiple mo	972	815	29,256	32,058	6,270	14,508	36,498	47,381	129.82%
	Pipeline	441	370	15,809	14,062	12,540	11,467	28,790	25,900	89.96%
	Other and	252	444	533	776	350	759	1,135	1,979	174.39%
Total		26,952	44,358	138,212	186,834	78,757	128,918	243,921	360,110	147.63%
Imports	*Truck*	*40*	*88*	*276*	*662*	*4,925*	*14,085*	*5,241*	*14,835*	*283.06%*
	Rail	214	360	13,846	26,862	2,471	4,885	16,531	32,107	194.22%
	Air (include truck-air)			0	0	2	8	2	8	371.73%
	Multiple modes & mail			4	13	864	2,681	868	2,694	310.30%
	Pipeline	4,979	9,265			1,092	1,456	6,071	10,721	176.61%
	Other and	11	22	6	26	44	137	62	186	300.30%
Total		5,244	9,736	14,132	27,563	9,399	23,252	28,775	60,551	210.43%
Exports	*Truck*	*102*	*216*	*9,877*	*36,452*	*293*	*1,605*	*10,273*	*38,273*	*372.58%*
	Rail	78	198	10,362	14,401	5,287	16,293	15,727	30,892	196.43%
	Water	6	30	17,491	47,761			17,497	47,791	273.14%
	Air (include truck-air)			4	16	4	17	8	33	403.80%
	Multiple mo	10	26	5,917	11,342	120	85	6,047	11,453	189.40%
	Pipeline	3	12					3	12	404.61%
	Other and	111	471	295	689	14	43	420	1,204	286.67%
Total		**310**	**953**	**43,946**	**110,662**	**5,719**	**18,044**	**49,975**	**129,659**	**259.45%**

Source: FHWA Freight Analysis Framework

Source Freight Analysis Framework

The Minnesota State Rail Plan, completed in 2010, provided a diagram that illustrates the relationship between railroad investment and economic development. Figure 4 illustrates how rail investments can drive development.

Figure 4: Rail Investments Can Drive Development



The FRED study supports the vision statement in the 2010 Minnesota State Rail Plan: *"The vision for freight rail is that Minnesota should develop a balanced multimodal freight system which can respond to increased regional and international economic competition, constrained by highway capacity, environmental challenges, a diverse customer base and rising energy costs."* Actions identified in the 2010 plan have been expanded to include freight rail economic development concepts:

- Continue improvements in the condition and capacity of Minnesota's primary rail arterials and short lines to accommodate existing and future demand.
- Address critical network bottlenecks for railroads.
- Upgrade main line track for Class I, II and III railroads to 25 mph minimum speed as warranted.
- Improve the network of all Class I, II and III railroads to support the use of 286,000-pound track standards to improve rail productivity.
- Implement state-of-the-art traffic control and safety systems.
- Support expansion of intermodal and multimodal services and access options throughout the state.
- Maintain and ensure broad access to competitive freight rail services for shippers throughout the state.
- Better integrate freight rail into the public planning and economic development process.
- Build upon the existing Minnesota Rail Service Improvement Program (MRSI), including an increase in the maximum loan amount in excess of the current $200,000 ceiling.
- Expand the Rail/Highway Grade Crossing program.
- Actively manage preserved rail corridors and evaluate them for possible future transportation uses.
- Improve rail mapping of the state's track and facilities infrastructure.

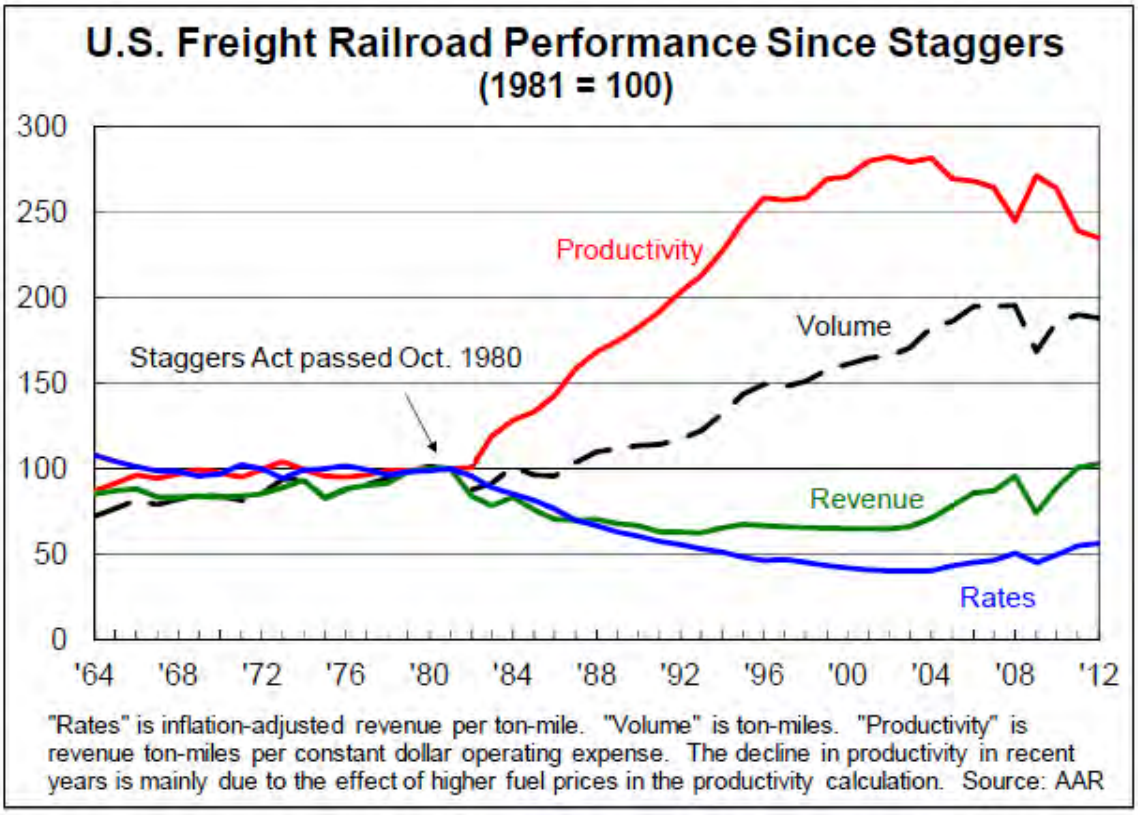
U.S. Freight Railroads Boost Our Economic Competitiveness

According to the Federal Railroad Administration, the "U.S. freight railroad system is the safest, most efficient and cost effective" in the world, based on data collected between 2006 through 2010 and measured by the World Bank. In 2013, U.S. railroads planned to spend an estimated $24.5 billion of private capital programs to improve access, upgrade equipment and maintain track and right of way. This will add new capacity to handle growing volumes of freight traffic, imports and exports, and will provide access to new markets. Unlike the U.S. Highway system, which is dependent upon tax revenues and user fees such as tolls to fund infrastructure investment and maintenance, the U.S. freight railroad system is privately owned for the most part.

U.S. freight railroads are energy efficient. A freight train can move one ton of freight an average of 484 miles on a single gallon of fuel; this is roughly four times as far as the same cargo could move by truck.

Figure 5 illustrates railroad productivity increases since the introduction of the Staggers Act in 1980 that deregulated much of the rail industry. Figure 5 also illustrates that rail rates have decreased over the same time period.

Figure 5: US Freight Rail-Productivity



Source: AAR.org

Freight Railroads Provide Public Benefits

According to the AAR, freight trains play a significant role in helping to reduce congestion. One intermodal train can move the equivalent of 280 trucks at one time or the equivalent of 1,100 passenger cars from a congested highway. Moving freight by rail can also result in environmental benefits. If just 10 percent of the long-distance freight moving by truck could move by rail, approximately one billion gallons of diesel fuel would be saved, resulting in 11 million tons of greenhouse gas emissions. To achieve the same amount of environmental benefits, more than 250 million trees would need to be planted.

Freight trains provide an alternative and often lower cost mode of transportation for many shippers. As funding for highway expansion and maintenance activities fall short, the opportunity to move heavier cargo by rail is an attractive option to help preserve our existing highway infrastructure. Freight moving by rail saved Minnesota more than $33 million in highway maintenance costs in 2011 according to the American Short Line and Regional Railroad Association fact book.

Railroads provide safe transportation alternatives especially for chemicals and hazardous materials. The railroad industry has a 99.9 percent safety rating as counted by the number of cars with an unexpected release.

Railroad carload service is a cost-effective transportation alternative for cargo, which fits certain logistical parameters. When cargo can move between shippers and receivers who have rail access and are located on the same rail network, when shipping volumes (orders per rail car) can approximate the same amount of volume as four truckloads, when product storage and handling capabilities are available to load and unload rail cars in a timely manner and when length of haul is sufficient for carload rail economics to be attractive, rail transportation can be a good transportation choice. In 2011, the AAR reported the average number of tons per rail car is 62.9 tons per car. The average length of haul for Class I railroads is 917 miles per car. This number does not include short lines or Canadian Class I railroads. Minimum carload length of haul can vary based on competitive factors, rail capacity, car utilization, concentrated demand and product characteristics. Some innovative short lines can economically move rail cargo less than 10 miles if economic and competitive conditions are right.

Railroad intermodal service provides the cost and environmental benefits for shippers and receivers who ship full truckloads of products but lack railcar sidings or physical rail access. There are more than 353 intermodal rail terminals in North America (source: Loadmatch.com October 2013) that provide access to the 140,000 mile North American rail network.

Background - History and Heritage of Rail

U.S. railroads got their start in the early 1800s when miners, millers and others built railroads to move their products to market. The first known U.S. railroad moved granite blocks roughly 10 miles from a Massachusetts quarry to the town center. Railroads were considered a strategic resource in the Civil War. Wheat and other materials were shipped from Minnesota to battlegrounds in the south and east and kept the military fed and armed. After the Civil War ended, the nation was maturing, the east was undergoing an industrialization effort, but the west was still characterized as a vast open range, largely unpopulated. Gold was discovered in California in 1848, which spurred interest in western development. The government needed to devise a way to undertake rapid expansion to connect the growing nation. Railroads again proved to be a strategic resource in westward expansion.

Between 1880 and 1900, the U.S. railroad network more than doubled from roughly 100,000 to 200,000 miles. In the space of 20 years, enough railroad track was built to cross the U.S. 33 times from coast to coast. Never before had population and economic expansion increased at such a rapid pace. Two factors influenced the growth:

- The U.S. government had land to give away in exchange for westward expansion; land was provided to the railroads in the form of land grants to help provide building materials and land for frontier developments.
- The second factor addressed the need for a labor pool and market expansion. The Homestead Act, introduced in 1862, provided an incentive for immigration. Brave immigrants willing to

relocate were promised 160-acre sections of land for $10 if they could survive five years. Eleven million immigrants took trains to stake new homesteads claims. In 1880, 70 percent of Minnesota's population was composed of immigrants.

During this land rush, three railroad companies emerged in Minnesota:

- The Great Northern was led by James J. Hill who had a vision to connect the Midwest to Asia, thereby pioneering an alternative trade route to Far Eastern Markets. Hill did not take land grants for expansion, but understood that he would only make money if his settlements along the route were successful and shipped goods.
- The Northern Pacific was built by Jay Cook who viewed the railroad as a financial instrument. He took full advantage of the land grant incentives but chose to bypass the traditional banking system; instead he sold bonds to the public.
- The third group responsible for developing what would become the Canadian Pacific Soo Line was a coalition of agricultural interests who opposed railroad practices that controlled shipping rates and storage facility prices. This coalition had roots in the Granger movement and wanted to control their own shipping routes especially to wheat sources in the Dakotas and Canada.

These three rail development groups choose different business models to build railroads for expanded regional transportation. Their networks, now less recognizable due to mergers and acquisitions, created the rail footprint Minnesota uses today.

The construction of railroads in the Plains and Prairies differed from that in eastern North America because the rail network preceded the settlement of the land. These rail lines, rather than the communities they served, shaped the architecture, layout and placement of towns. In the U.S,, federal, state and local governments as well as individuals gave railroad companies gifts of land to build rail lines through the Great Plains. Railroads received an estimated 185 million acres of land from these sources. The largest contributor by far was the federal government; land grants were made directly to the railroad. Some state governments were also engaged in land grants to shape regional growth patterns. In Canada, railways received more than 38 million acres of land. Most of this acreage went to the Canadian Pacific Railway. This segment of history demonstrates that public incentives were often used to build railroad access.

The year 1865 marked the "golden age" of railroads— for nearly 50 years, no other mode challenged the railroads' inland access. The network grew from 35,000 to 254,000 miles by 1916. During World War I, the government took control of the railroads; by 1920, the railroads were returned to private ownership. By that time, trucks and automobiles became railroad competitors and took market share due to increased speeds and improved access.

Intermodalism emerged in 1936 when the Chicago Great Western Railroad moved several hundred truck trailers on flatcars. In 1956, Malcolm McLean, a trucking executive, converted a military tank ship into a marine container ship, revolutionizing port productivity. That same year Dwight D. Eisenhower undertook the world's largest public works program, a 41,000 mile high speed interstate highway

network, initially designed as a defense network for public safety. This network increased truck competition that further eroded rail market share.

Minnesota's Rail Network Today

Minnesota's rail network of 4,480 miles is larger than neighboring states and provides access to nearly every county in Minnesota. Minnesota has two intermodal terminals, one paper ramp and three equipment depots (loadmatch.com, October, 2013). In 2008, Minnesota reported 11,895 centerline miles of interstate, U.S. and Minnesota trunk highways, with an additional 14,391 centerline miles of county roads within the state. This network of rail and highway miles supports Minnesota's economy.

The 2013 MnDOT rail map shows the BNSF has 1,584 miles of track and is the largest rail carrier. CP with 1,222 miles is the second largest rail network in the state. Union Pacific operates 435 miles, and CN reports 425 track miles in the state.

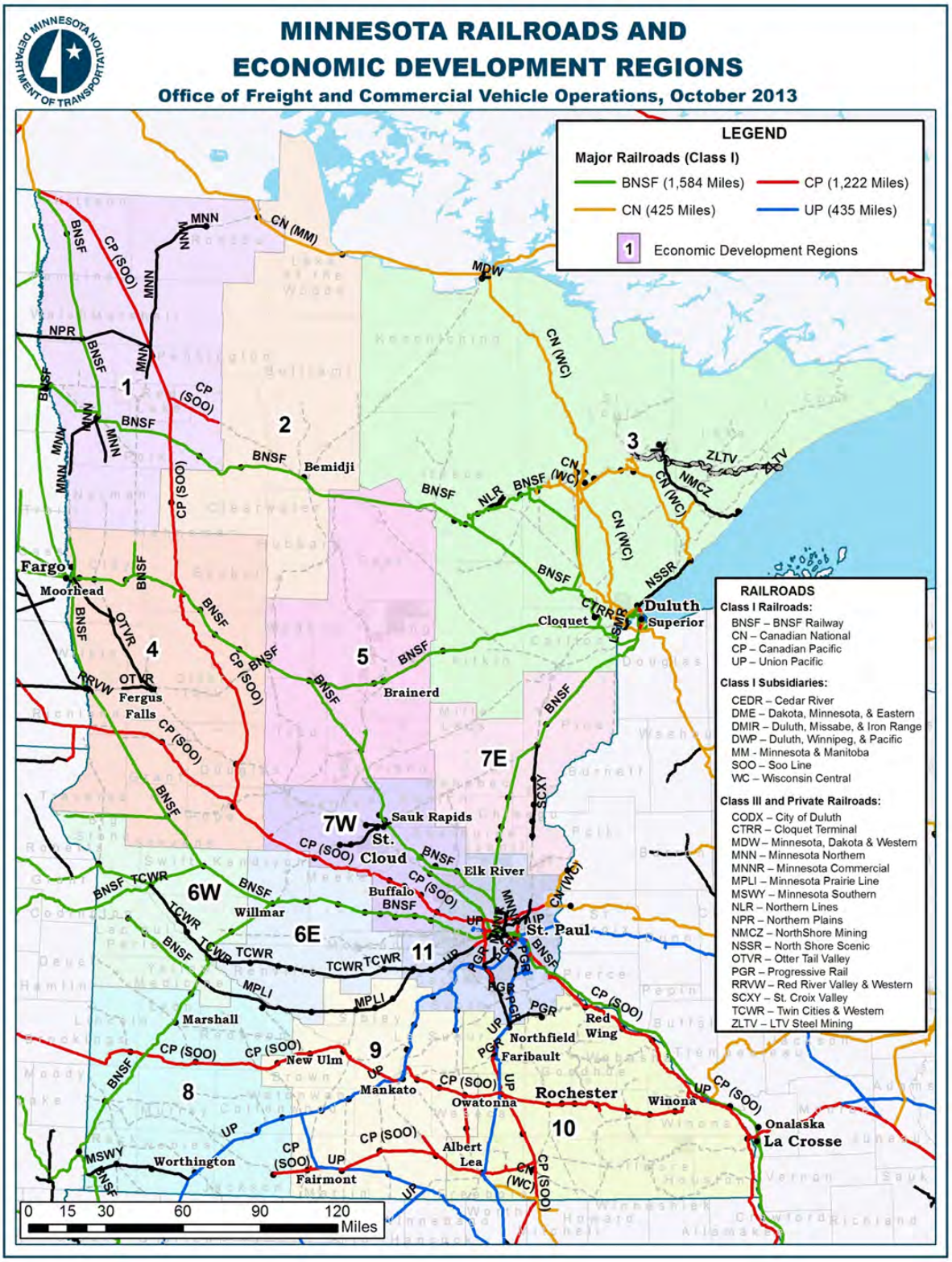
Short lines and others included among the remaining railroads were:

- Nine local railroads, with Minnesota Northern (243 miles) and Twin Cities & Western (218 miles) operating the most mileage
- Three switching and terminal railroads, with the Minnesota Commercial Railway (137 miles) operating the most mileage
- One regional railroad – Red River Valley & Western[2]

Figure 6 shows a map of current Minnesota freight railroads. Figure 7 depicts the evolution of these railroads, which reflects the mergers of Class I railroads and the spinoff of track to smaller railroads that largely occurred after passage of the Staggers Act.

[2] Association of American Railroads, *Freight Railroads in Minnesota*. According to the AAR, a **Class I** railroad is one with 2010 operating revenues of at least $398.7 million; a **Regional Railroad** is a non-Class I line-haul railroad that has annual revenues of at least $40 million or that operates at least 350 miles of road and has revenues of at least $20 million; a **Local Railroad** is neither a Class I nor a Regional Railroad and is engaged in primarily line-haul service; and a **Switching and Terminal Railroad** is a non-Class I railroad engaged primarily in switching and/or terminal services for other railroads.

Figure 6: Minnesota 2013 State Rail Network



Source: MnDOT

Figure 7: Minnesota Rail Network Inventory

Current Railroad	History	Miles Operated in State	Interchange Partners
Burlington Northern Santa Fe (BNSF)	Formed in 1995 with merger of Burlington Northern and Santa Fe; BN formed previously through merger of Burlington, Great Northern, Northern Pacific and Portland & Seattle.	1,584	CN, CP, NPR, OTVR, UP, TCWR, MSWY, SCXY, MNRR, NLR, PGR
Canadian Pacific (CP)	Purchased full control of Soo Line in 1990 (Soo Line purchased Milwaukee Road in 1986); assumed control of Dakota, Minnesota & Eastern in 2008.	1,222	BNSF, MNN, NPR, UP
Union Pacific (UP)	All of UP's trackage in Minnesota was part of the former Chicago and Northwestern, purchased by UP in 1995.	435	BNSF, CEDR, CP, DME, MNRR, MSWY, PGR
Canadian National (CN)	Became a public company in 1995; acquired Illinois Central in 1999; acquired Wisconsin Central in 2001; acquired Duluth, Missabe and Iron Range in 2004; CN subsidiary Duluth, Winnipeg & Pacific was integrated into US operations in 1990s.	425	BNSF, CP, MNN
Twin Cities & Western	Began in 1991 over track and trackage rights acquired from Soo Line (track was former Milwaukee Road)	146	BNSF, CP, SMRR, UP
Minnesota Northern	Formed in 1996 with purchase of track from BNSF.	120	BNSF, CN, CP
Minnesota Prairie Line	Began operations in 2002 over track previously abandoned by Chicago and Northwestern	94	BNSF
Progressive Rail	Began in 1996; contract rail carrier that operates line on behalf of CP and UP	80	CP, UP
Otter Tail Valley	Formed in 1986; purchased by RailAmerica in 1996; operates over former BNSF track (former Great Northern track)	71	BNSF
Northern Plains	Formed in 1997; operates on track leased from CP	63	CP
North Shore Mining	Built in 1954	50	CN
Minnesota Southern	Formed in 2001; track leased from a regional rail authority and formerly owned by Chicago and Northwestern	42	BNSF, UP
St. Croix Valley	Purchased from BNSF in 1997	36	BNSF
Minnesota Commercial Railway	Minnesota Commercial Railway	35	BNSF, CN, CP, UP, TCW
North Shore Scenic	Track owned by St. Louis County. Primarily a tourist railroad operating in summer and fall.	30	BNSF, CN
Northern Lines	Formed in 2004; operates on track leased from BNSF (former Great Northern track)	23	BNSF
Cedar River	Subsidiary of CN; former subsidiary of Illinois Central.	19	CN
Minnesota, Dakota & Western	Began in 1910 and was part of state's logging railroad network.	4	CN
Cloquet Terminal Railroad	Subsidiary of Sappi Fine Paper North America.	4	CP
Red River Valley & Western	Began in 1987 with track acquired from Burlington Northern	2	BNSF

Minnesota's economy is bolstered by agriculture, mining and the manufacturing of high value auto parts and instruments. Much of the Minnesota economy and workforce is dependent upon international trade service to maintain a high quality of life. Minnesota ranked fifth with a 2012 GDP growth rate of 3.5 percent, outpacing the national average of 2.5 percent. (Minnesota tied with California for fifth

fastest growth.) Minnesota's broad-based economic growth spanned several sectors, including manufacturing, construction, mining, wholesale trade, finance, real estate development and agriculture, according to Bureau of Economic Analysis data. The largest contributors to Minnesota's economic growth were durable goods manufacturing (0.66 percent growth rate), wholesale trade (0.4 percent growth rate) and retail trade (0.19 percent growth rate). Growth rates, which outpace the nation, require efficient multimodal transportation networks to connect to trade partners.

Figure 8 and Figure 9 show the value and weight of freight shipments within, into and out of Minnesota in 2011 by mode of transportation.[3] While truck is the predominant mode, rail primarily hauls heavier, lower-value commodities.

Figure 8: 2011 Value of Minnesota Shipments by Mode (Billions)

Mode	Intrastate	Inbound	Outbound	Total
Truck	$139.0	$93.7	$100.1	$332.7
Rail	$2.4	$10.1	$11.4	$23.9
Multiple Modes	$7.9	$30.5	$50.0	$88.4
Other	$12.1	$29.5	$17.3	$59.0
Total	$161.4	$163.8	$178.8	$504.0

Focusing on weight, Figure 9 shows that more than half of Minnesota rail shipments originate in the state for destinations outside of the state.

Figure 9: 2011 Weight of Minnesota Shipments by Mode

Mode	Intrastate	Inbound	Outbound	Total
Truck	245.5	61.9	61.5	368.8
Rail	16.7	38.7	60.7	116.1
Multiple Modes	6.3	9.2	35.0	50.5
Other	16.1	50.7	36.7	103.6
Total	284.6	160.5	193.9	639.0

In 2010, Minnesota ranked fourth in the U.S. – rail tons originated at 89.6 million; more than Iowa at 47 million tons, North Dakota at 35.6 million tons, South Dakota at 19 million tons and Wisconsin at 15 million tons. In the same year, Minnesota ranked sixth in the nation based on rail tons terminated in the state at 71.3 million tons. Wisconsin terminated 61.6 million tons, Iowa terminated 37.8 million tons and North Dakota terminated 14.4 million tons. Minnesota outpaces neighboring states, in part, because of Minnesota's port connections to the Great Lakes and the inland waterways.

[3] The shipment data come from the Freight Analysis Framework version 3, developed by the Oak Ridge National Laboratory Center for Transportation Analysis for the U.S. Federal Highway Administration (http://faf.ornl.gov/fafweb/Default.aspx). The shipments reported in the table include those that have a point of origin or point of destination (or both) in Minnesota.

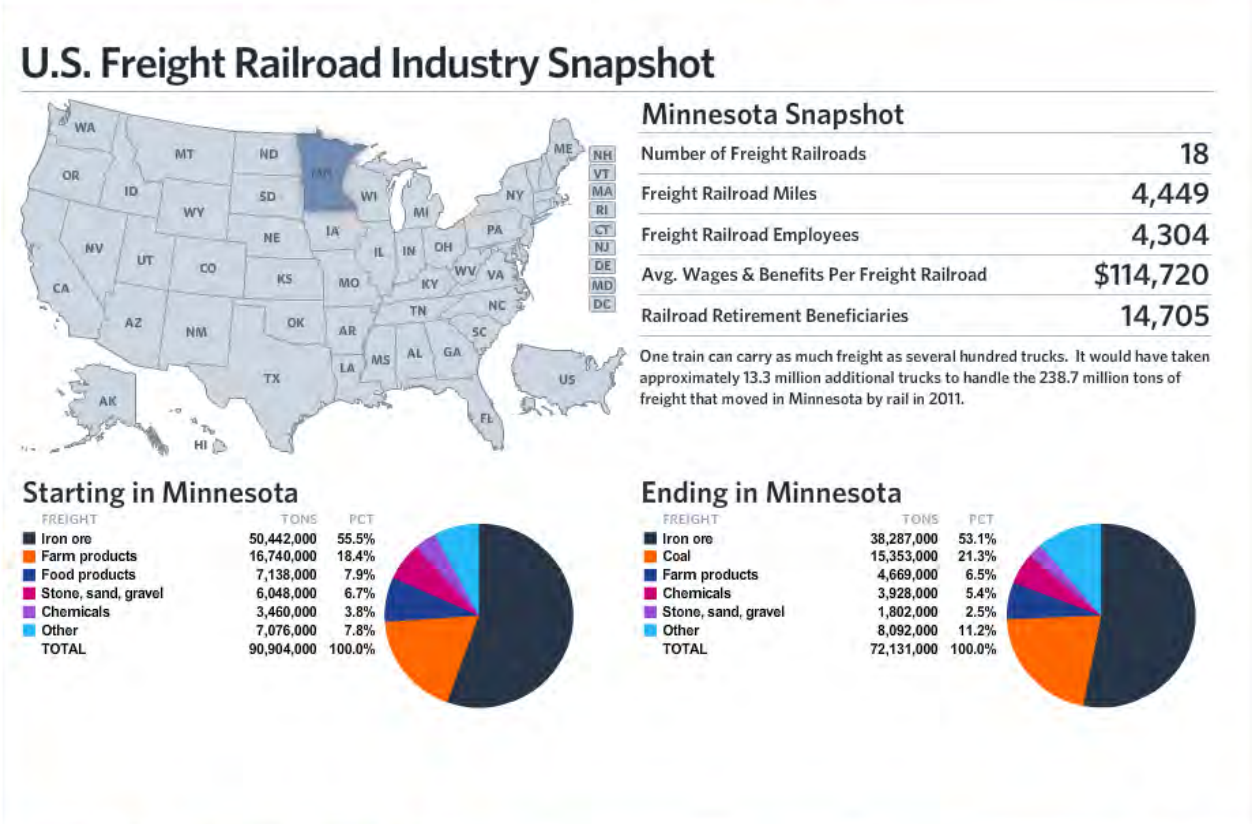
In 2010, MnDOT reported that cargo handled at Great Lakes ports amounted to 61 million tons and cargo handled at the river ports amounted to 11 million tons. Minnesota's ports are essential gateways for the movement of the top rail commodities in Minnesota. Iron ore, coal and grain among other important resources move to steel mills, manufacturers and construction firms along the Great Lakes. The rail marine link allows overweight and oversize cargoes to move to and from Minnesota. Wind generators, heavy lift cargos and project cargoes are moved with this multi-modal service. Products loaded at Minnesota ports are also exported to international markets. River ports also play a vital role in the movement of agriculture, fertilizer, aggregates and other bulk commodities.

Top commodities moved on Minnesota's rail network include iron ore, coal, food and farm products, sand, gravel, stone and chemicals (see Figure 10: Minnesota Freight Railroad Industry Snapshot). These heavy and dense products originate in rural areas and move to regional processing and manufacturing facilities or are exported. Many of these products move on county trunk highways to access rail shuttle facilities or other rail loading/unloading areas. Chemicals also move via Minnesota's rail network in large part due to the safety, economics and reliability of this mode of transportation for hazardous and dangerous goods.

These industries rely on rail transport to be market competitive. If railroads were not available to handle these products, it is unlikely that there would be enough truck capacity to move this cargo volume based on the rural nature of these producers. These products by and large move in bulk and have no backhaul or return move to balance drivers or transportation equipment.

The Oregon State Rail Plan identifies an average cost per ton mile by mode of transportation (see Figure 15). There is an estimated $.61 per ton mile difference between railroads and trucks. If extrapolated over an average railcar length of haul of 917 miles, this would amount to (917 miles x $.61 = $559) per shipment.

Figure 10: Minnesota Freight Railroad Industry Snapshot



Source: AAR.org

Railroad jobs in Minnesota on average pay $114,720 per employee in wages and benefits. Railroads are experiencing a renaissance and are hiring all types of workers. Based on 2010 employment and wage data available on the *Positively Minnesota* website, the average wage for natural resources and mining is $38,550; Minnesota construction wages in 2010 averaged $51,815, manufacturing workers in Minnesota earned $56,301 on average. Trade and transportation workers were paid an average of $40,173 per individual in 2010. Many of these jobs depend upon railroad service and connections. Benefit information was not available on the *Positively Minnesota* website for the job categories identified.

Railroads in Minnesota also purchase materials directly from suppliers in the state to run the railroad. Railroads also impact Minnesota indirectly through the transportation services they provide for rail shippers. The 2011 ASLRRA Fact Book reported that railroads paid $2,016,000 in state and local taxes and based on mode conversion estimates, saved more the state more than $33 million in pavement damage and maintenance savings. On average in Minnesota, every mile of track generates $450 in tax revenue (Figure 2).

In 2012, Union Pacific invested $5.4 million in rail infrastructure in Minnesota and purchased $103.8 million in local provisions. In 2013, BNSF announced that they would spend $95 million in facility improvements in Minnesota. CN reported that in 2012 they spent $50 million in Minnesota and CP railroad spent $46 million in 2012 on rail improvements in Minnesota. Although the investment years do not entirely match up, together, the Class I railroads are spending nearly $200 million per year on

infrastructure improvements in Minnesota. Based on projects and market growth, these numbers may vary year to year; however, this level of investment pressures short lines to keep up. Figures for all Minnesota short lines were not available, but three short line railroads responded to a maintenance-of-way survey conducted by Progressive Railroading Magazine, which reported 2013 spending programs. Progressive Rail Corporation reported an $8 million budget to upgrade a grain line from Northfield to Randolph, Minnesota. This project calls for 9.5 miles of jointed 115 lb. rail, a 7,300-foot-siding, 14,000 ties, 4,750 tons of ballast and the rehabilitation of two bridges. Minnesota Prairie Line will install two miles of continuous welded rail, 3,300 ties and 3,600 tons of ballast and will upgrade four bridges. Twin Cities Western Railroad will install 23,000 railroad ties and 14,625 tons of ballast and will deck one bridge.

Minnesota is less well connected to intermodal networks, with terminals in the Minneapolis St. Paul area. BNSF and CP intermodal rail networks provide six-day-a-week train service with limited area for terminal expansion. Union Pacific provides a roadrailer terminal for specialized niche service. CN provides a paper ramp (a collection facility and equipment depot, connected by a truck shuttle to a rail terminal in Chippewa Falls, Wisconsin) with limited activity. While these carriers provide access to many western markets and interchange with eastern rail carriers, there are many desirable point pairs with limited intermodal connections. Intermodal rail rates save transportation buyers 15 to 18 percent over truck services (Transcore, 2013).

Minnesota short lines have achieved recognition for their strategic investments and impact on economic development. Twin Cities Western recently surveyed their top 20 largest shippers that generated more than $4 billion on combined annual sales; these shippers moved 37 percent of their products via the TCW rail network. Over the past two decades, these shippers have invested more than $500 million in production and processing facilities along this rail line because of its strategic location.

Progressive Railroad Corporation recently was awarded the 2013 Wisconsin Economic Development Association Biennial Company award for developing transportation infrastructure improvements supporting new and existing industrial development initiatives. More than $5 million in private sector funds was secured to add two new passing tracks to a mainline segment near Chippewa Falls. This region has seen substantial growth in frac sand. By investing in rail infrastructure this product can now be moved safely by rail. This investment was cited as helping to reduce congestion and improve rail productivity. Short lines are often the incubators of new business opportunities such as this.

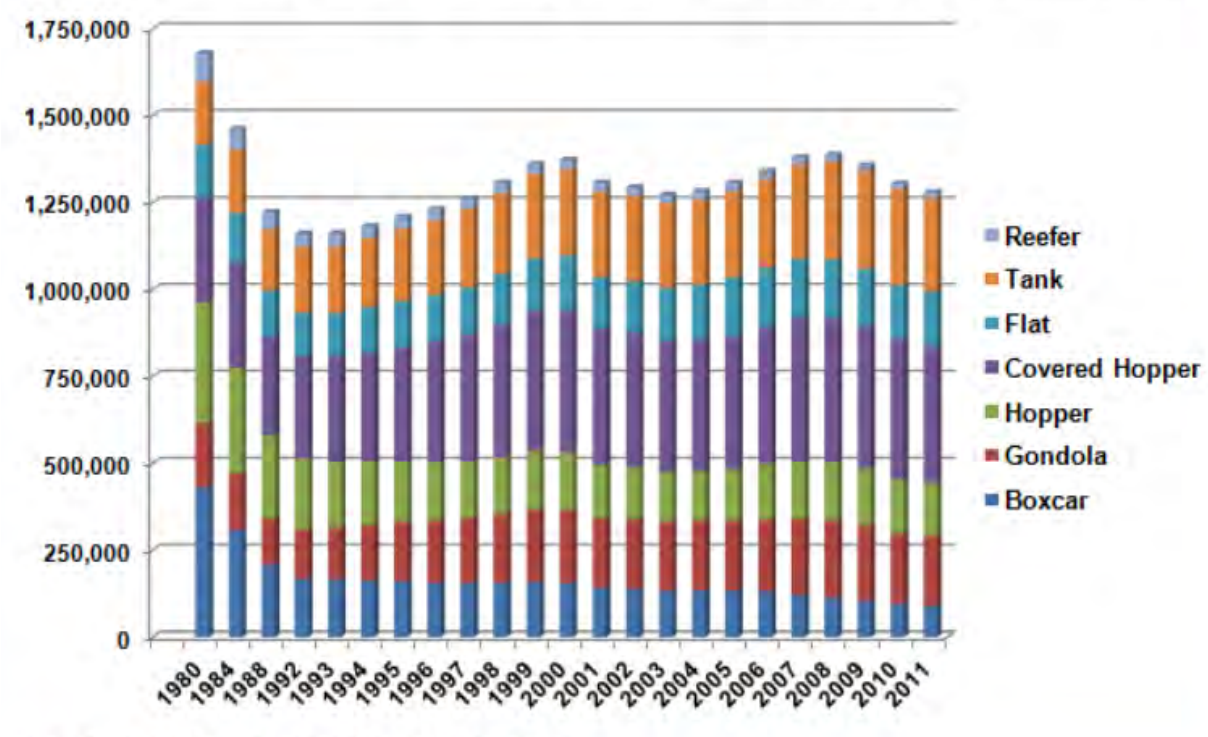
Rail Services and Shipper Types

Carload Service

Rail carload shipments are generally defined by the type of car used to transport a product. Figure 11 provides a historical snap shot of car type volumes shipped from 1980 until 2011. The refrigerated carload segment is among the smallest, which is primarily due to the need for rapid transportation. Many finish food products have a limited shelf life and transit time reduces the marketability of food products. Tank cars are often used for food grade syrups, chemicals and petroleum products. This

segment fluctuates based on U.S. manufacturing and now shale production. Flat cars handle lumber, logs and dimensional products such as pipe and machinery; this volume is impacted by the building and construction trade. Hopper cars handling bulk products such as coal, agriculture products, sand, aggregates, waste and scrap among other products. Finally, box cars handle finished goods, such as canned foods, paper, consumer products and other manufactured goods – this segment has lost share due to domestic containerization (intermodal) and the lack of reinvestment in an old fleet of equipment.

Figure 11: Rail Shipments by Car Type



Railcar service, from an operational perspective, involves a rail car to be placed or spotted at a customer facility for loading or unloading. Cars are positioned at a customer location typically by a local train that picks up and delivers individual carload shipments and then brings these cars back to a rail yard where cars are assembled into blocks (multiple cars) to be added to road trains, which connect rail yards. Carload service involves a number of labor and equipment intensive movements to get carload shipments from a customer into a train configuration. This process is then repeated at the delivery point, where trains are taken apart and individual cars are delivered to local customers.

Unit Train Service

Unit train service is highly efficient and brings a complete set of cars, usually hopper cars and tank cars to one location to be loaded or unloaded. Unit trains can be 100 or 120 cars in total depending upon commodity type. Some railroads use the term shuttle trains, which are typically 50 to 55 cars or blocks that are 15 to 50 cars and usually load agriculture products at grain elevators. Unit trains allow the railroad to realized economies of scale, by reducing switching costs and optimizing the use of locomotive

power. From a service perspective, these trains usually have no intermediate stops and two service locations: a pick-up point and a delivery point.

Transload Service

Transloading is an old concept that has grown and matured over time. Historically, railroads had team tracks where the public could bring products to a local facility where rail cars could be loaded. Some of these facilities had ramps to allow for roll on or roll off cargo. Other facilities had warehouses with doors that matched up with boxcar doors to facilitate loading.

Today, there are several types of transload operations. The first type is a variation on the historic model, where freight shippers without a rail siding can access the rail network through a public or privately operated facility, which specializes in loading rail cars. Some transload operators also perform customization such as cutting sheet metal to customer specific requirements for multiple customers in an end market. Some transload operators provide storage functions so that one carload shipment can be made and that product can be delivered to a receiver in smaller quantities over a short time period. Some transloaders simply cross dock product for those without rail access.

A second type of transloading operation is now popular in the intermodal industry. Inbound international containerized shipments are often transloaded near a deep water port. The contents of these containers can be mixed and matched and reloaded into domestic containers bound for inland distribution centers (usually a retail model). This allows importers to adjust product flows to match regional demand. This process typically happens within a supply chain managed by one owner. A variation on this theme is the transload of agriculture products into international containers for export. This process is growing in popularity for two reasons: interest on behalf of the international container owner for backhaul or balanced load-load shipments and the lack of storage facilities in overseas markets.

This agriculture transload operation is a very volatile market. Grain shipments can fluctuate between rail, barge and containerized transport modes based on pennies per pound.

Transload Development

Three models exist of transload development exist:

1. Class I Preferred Network
    - These sites have been identified by a Class I railroad who typically owns the property and hires an operator to manage the customer shipments to and from the rail site. These facilities help the railroads expand their customer reach by serving customers who are near rail but have no rail access. These facilities also help railroads keep specific types of railcars within the same rail network, allowing for better equipment utilization of a captive rail asset.
2. Operator Development
    - Some transloads have been developed by entrepreneurs who specialize in a product or a product customization service. These operators often have several facilities on various rail networks and often act as a customer service liaison for the railroad.

3. Economic Development

- Some transloads have been undertaken by port authorities and economic development agencies. In Ohio, a port authority undertook a brownfield redevelopment opportunity at a local industrial site that had rail service but was no longer in use. The total cost of the development was $253,000.00. The Ohio Rail Development Commission provided $103,000; an initial end user of the transload provided a prepayment for future rail service of $100,000; the Lancaster Port Authority provided $50,000. For the 1.5 acre site, the city and port authority came to agreement on a land lease where the city receives 50 percent of net profit. The initial user was motivated by rail savings and service close to their operation. The port authority is marketing this service to other potential users. To create a loading area, about 80 percent of the railroad ties needed replacement as well as switch work, new ballast, new bolts in rail and some new bars were needed to update the rail infrastructure. Cleanup of the industrial site was also completed to improve the neighborhood and reduce vagrancy.

Intermodal Service

Intermodal service is a railroad product where customers bring trailers or containers to a terminal. This equipment is loaded on dedicated trains, which have a specific service schedule, with train cut-offs and arrival schedules between designated point pairs. Train schedules are typically built around truck transit times and attempt to match truck service times plus one day. Intermodal service is wholesaled by the railroads to intermodal marketing and trucking companies, who arrange for local pick-up and deliveries.

Rail Shipper Profile

Rail shippers can be divided into three groups.

A) Carload Shippers:

- Carload shippers are moving products that weight more than a truckload volume (which is typically 48,000 pounds) or dimensional products that exceed truck size limits. Carload service requires a rail siding to load and unload railcars. Car load rail service is variable and depends on how frequently the rail facility is switched and train service.

B) Intermodal Shippers:

- Intermodal shippers may access railroad networks using a domestic trailer or container or an international container. These shipments typically move more than 700 miles in scheduled rail service that is typically one to two days slower than a domestic truck shipment. International containers may use the North American rail network, which connects international vessels to railroads on or near coastal ports. Railroads move the containers to inland ports or terminals and trucks bring containers the last mile connecting importers and exporters to world markets. Shipments in intermodal equipment must conform to U.S. truck size and weight rules unless overweight permits can be obtained. The U.S. interstate standards require all shipments to conform to an 80,000 gross vehicle weight unless the load is considered non-divisible and is eligible for oversize and overweight permitting. The U.S. has among the lightest maximum weight allowed on highway networks.

- International weight standards are often heavier. Railroads wholesale intermodal service to intermodal marketing companies, trucking companies and ocean carriers who retail these shipments to their customers. Domestic intermodal service strives to be only one day longer than truckload service in most markets. International intermodal service schedules are driven by vessel arrival and cut-off times.

C) Transload Shippers

- The term transload most literally means the transfer of cargo from one mode to the other, where one mode is a railroad. For international containerized shipments, an entire industry has been built around the transfer of cargo from international containers (typically 20 foot and 40 foot lengths) to domestic containers that are typically 53 feet long. This allows buyers of international goods to mix inventories from import containers and assemble domestic container shipments to regional distribution centers nationwide. This process allows ocean carriers to keep their containers close to the ports for return movement and allows shippers to adjust inventory replenishment volumes when shipments arrive in the U.S. and when product is typically a week away from final destination. Demand forecasts are always more accurate the closer they are to consumption. Railroads and equipment owners also benefit because there are typically fewer empty miles when domestic equipment is used.
- Another form of transloading is when international containers arrive inland and agricultural products are loaded in empty containers for export destinations. Historically, the import container volume was greater than the domestic container volume but, for a variety of reasons, ocean carriers prefer to keep international containers closer to the deep water ports to improve asset utilization and empty repositioning costs.
- The third form of transloading, which has been around for nearly as long at the railroads, is when trucks connect shippers without rail access to public loading facilities where railcars can be loaded. What was at one time an old staple practice has become a new strategy for supply chain managers to reduce costs.

Minnesota's Potential to Improve Rail Economic Business Environment

Minnesota's is poised to improve rail economic business development for five primary reasons:

- Minnesota's economy is diverse and moves large volumes of dense commodities long distances that are attractive cargos for railroad carriers. Some of the rail products that are suited to rail transportation include aggregates, chemicals for manufacturing, agriculture related products such as fertilizer, grain, beans and Distillers Dried Grains, logs, mining products and retail products. Minnesota is also a preferred distribution center for the Upper Great Plains and has connections to Class I railroads that serve every Pacific Ocean port from British Columbia to the Mexican Port of Lázaro Cárdenas. The Port of Duluth Superior is the top tonnage port on the Great Lakes, which is also well connected to four Class 1 networks. River ports in Minnesota are also connected to rail that improves freight transportation economics for Minnesota shippers.

Minnesota's GDP in 2012 was one of the top five fastest growing in the U.S., and growing economies need transportation services.

- Minnesota has rail service connecting all but four counties to the North American railroad network. This level of access is unprecedented. Few states enjoy such a broad network of rail service. Helping local producers and manufacturers understand how to leverage freight rail service is the next stepping stone to improving the rail business environment.
- Minnesota is well connected to international rail networks, which support global trade, with two Canadian railroads and rail access to Mexico directly via the BNSF or Union Pacific Railroad and interchange access to the Kansas City Southern. Railroads have a more efficient border crossing process and are able to clear customs en route. Full trains cross the borders with fewer delays than individual trucks moving to and from Mexico and Canada. Mexico's energy and auto production is growing rapidly as a result of near shoring logistics trends, and Canada is Minnesota's largest trading partner.
- Railroad competition helps improve service and pricing for users. Promoting rail access and competition helps maintain a competitive commercial environment for shippers.
- Active and healthy short line railroad organizations can help new users, communities and service providers grow railroad opportunities by discussing options and rail solutions for complex freight movements.

Minnesota Rail Investments

The Class I railroads are making record investments in Minnesota to improve market access to important producers, receivers and ports. Minnesota can leverage these investments by collaborating with railroads in the preplanning process. Minnesota can benefit by coordinating additional customer access points and multimodal synergies by reviewing adjacent bridge structures, overpasses, grade crossings and other public structures in the targeted development zone. Between 2012 and 2013, Minnesota's freight rail network will receive an infusion of more than $204 million from private sector rail companies and a Transportation Investment Generating Economic Recovery (TIGER) grant.

Source	**Investment Level**
UP	$5 million in 2012 (UP website)
BNSF	$95 million in 2013 (Progressive Rail magazine article)
CP	$46 million in 2012 (Herb Jones CP)
CN	$50 million in 2012 (Patrick Waldron CN)
Duluth Port Authority TIGER V Grant	$10 million 2013

While this infusion is welcome, it also raises the bar for connecting short line railroad to keep up in order to create operational efficiencies.

Rail investments also benefit rural highway networks. Minnesota's rail accesses many rural communities where mining, logging and agriculture efforts are undertaken, often distant from major interstate highways. Trucks, especially heavy haul equipment, can reduce pavement life and create increase

maintenance expenses for DOTs. In 2008, the Kansas DOT analyzed wheat movements in a rural section of the state and determined the road damage resulting from abandonment of the short line railroads in the study area could be divided into two parts: (1) costs associated with truck transportation of wheat from farms to county elevators and (2) costs of truck transportation of wheat from county elevators to shuttle train stations and terminal elevators. The study found that the short line railroad system in the study area saved $57.8 million annually in road damage costs. Shipper's total delivered costs were also somewhat lower; however, those cost savings were not calculated.

Railroads Help Connect Minnesota to Export Networks

In President Obama's January 2010 State of the Union Address, he announced a National Export Initiative to increase exports. A goal was set to double exports by the end of 2014. In 2012, U.S. exports set a record reaching $2.2 trillion and outpaced the growth of imports. Ninety-five percent of the world's consumers live outside the U.S. according to the Nation Export Initiative fact sheet at www.commerce.gov. In 2012, the Brookings Institution completed a Minneapolis-St. Paul Export Plan – A Metro Export Initiative. The First Core Strategy identified the need to connect companies to global opportunities.

Figure 12 lists Minnesota's export trade partners. More than 36 percent of Minnesota's exports went to our NAFTA partners in Canada and Mexico. Rail provides one of the most productive and efficient means of transport for freight crossing our borders with Canada and Mexico. Shipments can be pre-cleared to avoid border delays. Large volumes of products move seamlessly to our international customers. The railroad's reliability and reputation with border crossing authorities help minimize delays for inspection or other customs documentation screening. North American boarders are among the most active in the world reflecting the fact that NAFTA partners build things together.

Figure 12: 2012 Minnesota Export Trade

ITA International Trade Administration
U.S. DEPARTMENT OF COMMERCE

Minnesota Export Trade 2012 Trade ($) with Global Partners

Rank	Partner	2010	2011	2012	% 2012 Total
Total	**World**	**18,903,679,573**	**20,692,431,051**	**20,826,764,033**	**100.00%**
1	*Canada*	*5,430,939,825*	*6,241,259,823*	*6,287,067,340*	*30.19%*
2	China	1,571,464,972	1,930,011,566	2,028,272,197	9.74%
3	*Mexico*	*977,586,864*	*1,215,645,519*	*1,296,005,216*	*6.22%*
4	Japan	1,132,813,871	1,310,170,487	1,179,891,956	5.67%
5	Germany	781,868,298	734,291,036	727,809,519	3.49%
6	South Korea	628,436,115	702,105,123	707,443,443	3.40%
7	Belgium	591,111,295	622,796,865	640,881,740	3.08%
8	United Kingdom	588,345,809	556,809,717	511,436,095	2.46%
9	Philippines	462,223,908	523,500,736	496,399,105	2.38%
10	Taiwan	472,629,046	488,726,956	489,499,584	2.35%

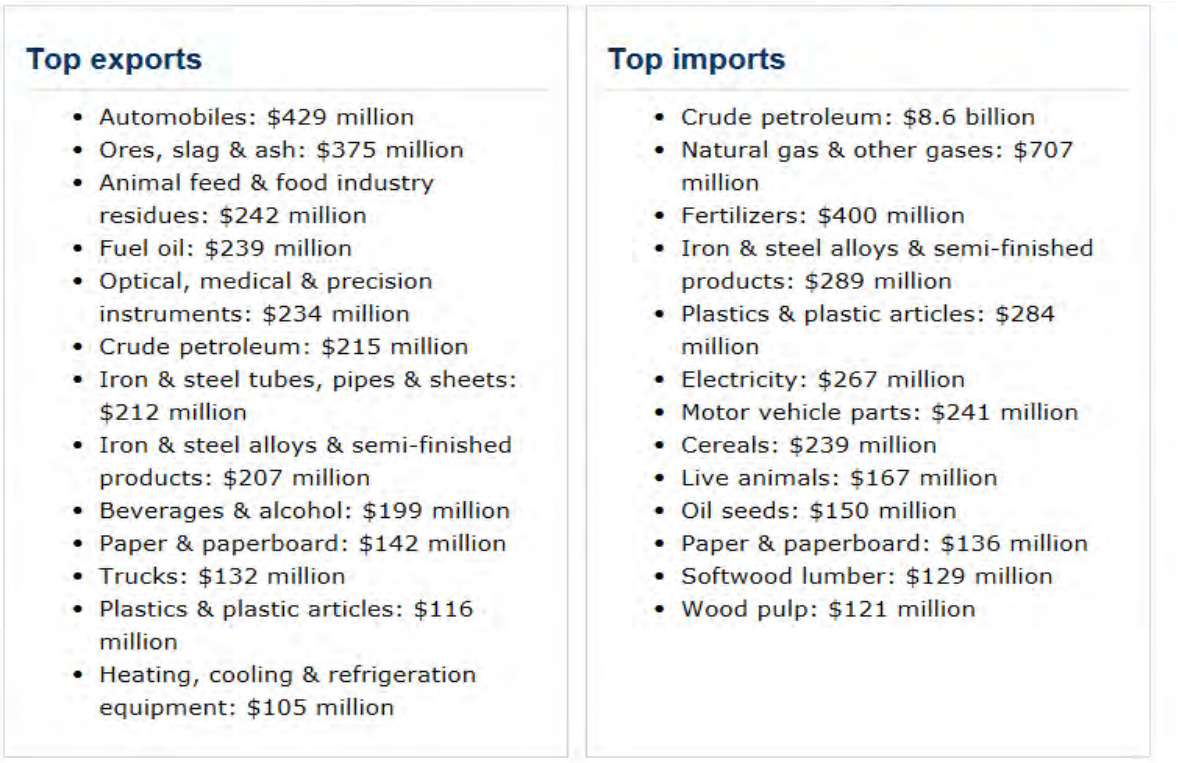
Source: U.S. Department of Commerce

Minnesota containerized exports access BNSF or CP intermodal terminals in the Twin Cities; these carriers connect Minnesota shippers to West Coast ports with access to the majority of the world's container cargo ships. CN has an intermodal terminal in Chippewa Falls, Wisconsin, and a paper ramp in Minneapolis that provide access to their rail network, which then has access to Atlantic, Pacific and Gulf ports. Bulk commodities moving via the Panama Canal can access the inland waterway network via Minnesota's river ports, which connect to ocean vessels that call Gulf Coast transfer terminals. The Port of Duluth Superior is a gateway for many bulk domestic and international cargo vessels that travel the Great Lakes St. Lawrence Seaway. International cargo connects Minnesota to European and Middle Eastern customers. Lakers, which call the Port of Duluth Superior home, can load up to 10,000 tons per hour. This volume of tonnage is best delivered by rail to efficiently load vessels and reduce costly vessel dwell time at the ports. No transportation system in the world is more efficient than the rail-marine connection. This transportation synergy is the primary reason that the Port of Duluth-Superior ranks number one as the largest tonnage port on the Great Lakes.

Canada Is Our Largest Trading Partner

In 2012, 161,500 Minnesota jobs depended upon trade with Canada and 18,800 Minnesotans were employed by Canadian-owned business. Minnesota sells more goods to Canada than any other country in the world. Goods traded between (imports and exports) Canada and Minnesota amounted to $19.3 billion in 2012. Figure 13 highlights top exports and imports between Canada and the U.S. Many of these products can and do move by rail in carload and intermodal service.

Figure 13: Top Canadian Exports and Imports

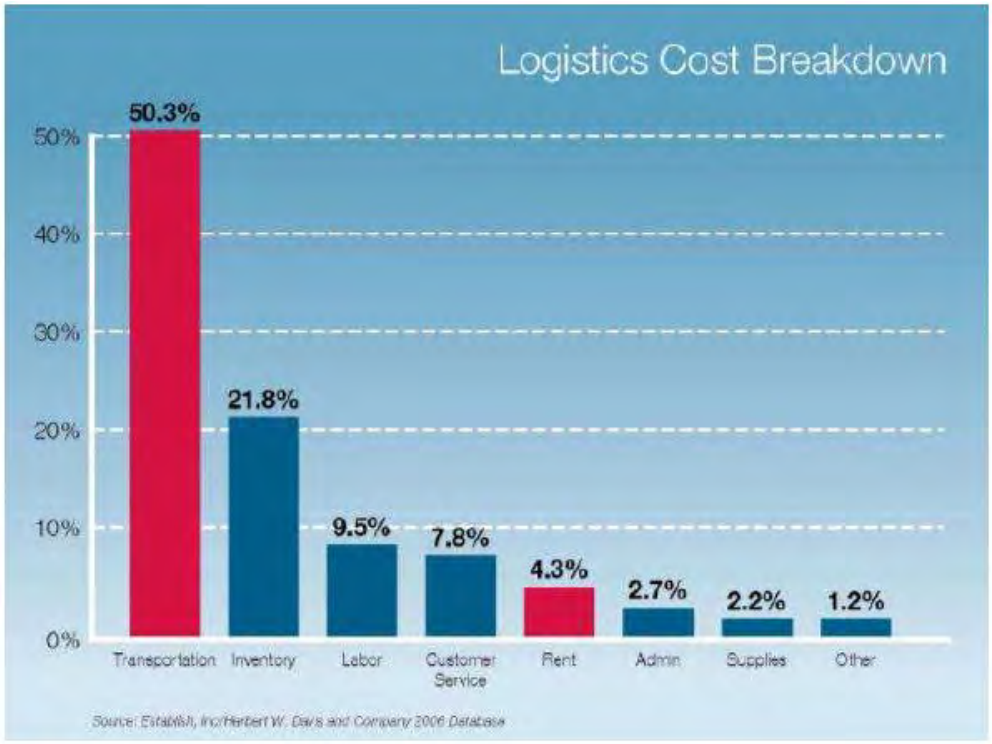


Source: Canadian Government Statistics 2012

Minnesota's Outlook for Freight Rail Economic Development Opportunities

Minnesota's highly productive and educated workforce and quality of life attributes are driving site location searches and commercial interest. Supply chain managers calculate total delivered cost by adding transportation costs, inventory, labor, customer service, rent (warehouse costing), administration and supplies and other costs to determine the total cost of logistics. Figure 14 illustrates the logistics costs associated with moving goods between suppliers, distributers and buyers. More than 50 percent of logistics costs are associated with transportation. The two primary drivers of transportation cost are labor and fuel. Railroads, where feasible, are more than four times more fuel efficient than trucks. Supply chains that can utilize rail carload or intermodal service can provide economic benefits for those companies who locate on or nearby rail routes.

Figure 14: Logistics Cost Breakdown



Source: Herbert W. Davis 2006 Database

How does the cost of transportation impact the total cost of logistics? The Herbert W. Davis firm provides benchmarking services to the logistics industry and measures the components of supply chain costs. Transportation costs represent slightly more than half (50.3 percent) of the total cost of logistics. If supply chain managers choose to change the mode of delivery (for example, switch from truck to rail), inventory cost may go up but not as much as the transportation cost saved by the mode switch.
The Council of Supply Chain Management Professionals measures the State of Logistics each year and compares the cost of logistics for each node in the supply chain. In 2012, U.S. business logistics costs topped $1.33 trillion dollars representing a $4.3 billion increase (3.4 percent) growth over the previous year. Total business logistic costs as a percent of gross domestic product remained stable at 8.5 percent, which means that the cost of logistics is growing at the same rate at the national economy. From a logistics manager's perspective, this means that any revenue growth on average is going to pay for increased logistics costs. To increase annual revenues, logistics managers are looking for ways to reduce transportation costs. Therefore, rail options and mode conversion discussions have led to a renewed interest in rail transportation. Mode conversion from truck to intermodal and, in other cases, from truck to rail has laid the framework for a rail renaissance. Site selectors mention that international shippers and countries like China, who is investing in U.S. resource companies, place rail service as a top priority.

The state of Oregon estimated the public and private costs of one ton of freight one mile by both truck and rail. Figure 15 illustrates that there is nearly a five percent cost saving by using rail versus truck as mode of transport.

Figure 15: Summary of Transportation Costs

Table 1: Summary of costs for truck-rail competitive freight shipments (cents per ton-mile)

Mode	Private Cost	Public Cost	External Cost	Total non-private costs	%
Truck	7.69	0.25	0.86	1.11	14.4%
Rail	2.68	0.00	0.25	0.25	9.3%

Source: Oregon State Rail Plan

Minnesota faces fierce competition for new manufacturing sites and facility expansion. In a recent research survey conducted by Site Selection Magazine, Minnesota ranks second behind Kansas in the West North Central State category for expansion 2012. Of the 107 sites identified, 28 were new manufacturing sites, 22 were considered expansions and 57 were considered other, which includes distribution centers, mixed use facilities and office space. Kansas is a leader in freight rail economic development. Members of their State DOT Rail Division participate in site selection visits and economic development meetings.

In modern day manufacturing, access to rail carload and intermodal networks is an important selection attribute (See Figure 19). Minnesota's highways, access to a well-educated labor pool and natural resources all set Minnesota apart from competitors. Minnesota's rail access and proximity to rail improves Minnesota's economic development opportunities. Strong freight rail improvement and development programs could further enhance Minnesota's attraction for industrial enterprises.

Minnesota's rail development and preservation programs compete with neighboring states in the region. In railroad benchmarking surveys, neighboring states were praised for more generous programs. Iowa makes rail planning grants available and other grants of up to $6,000 per job created for rail projects. Wisconsin offers $5,000 for every job created and has two rail development programs. South Dakota has two economic development programs that make rail development and expansion attractive. Kansas economic development programs can include up to $35,000 for each new job created. When transportation and economic development programs are coordinated, significant employment gains can be made.

A matrix of state rail programs for neighboring states and peer review programs is presented in the Appendix. Figure 16 shows regional rankings prepared by Site Selection Magazine. These regional rankings take into account taxes, labor, and many other attributes beyond transportation connectivity. In 2012 Kansas outpaced Minnesota in this ranked profile for manufacturing development.

Figure 16: Regional Rankings of New Facilities and Expansion

REGION, RANK & STATE		TOTALS 2012	TOTALS 3 Year Total 2010-12	MANUFACTURING (New) 2012	MANUFACTURING (New) 3 Year Total 2010-12	MANUFACTURING (Expansion) 2012	MANUFACTURING (Expansion) 3 Year Total 2010-12	OTHER FACILITIES* 2012	OTHER FACILITIES* 3 Year Total 2010-12
Northeast									
	1 Pennsylvania	430	1,220	139	403	97	289	194	528
	2 New York	119	455	26	93	48	151	45	211
	3 Massachusetts	68	117	7	15	31	37	30	65
	4 New Jersey	63	162	13	48	6	14	44	100
	5 Connecticut	25	52	8	14	2	8	15	30
	6 Rhode Island	10	22	0	3	5	12	5	7
	7 Maine	9	19	4	6	2	2	3	11
	8 Vermont	8	23	2	8	6	11	0	4
	9 New Hampshire	3	16	2	7	0	6	1	3
	Region Totals	**735**	**2,086**	**201**	**597**	**197**	**530**	**337**	**959**
East North Central									
	1 Ohio	491	1365	59	204	208	570	224	591
	2 Michigan	337	835	90	150	160	254	87	231
	3 Illinois	322	743	51	107	66	192	205	444
	4 Indiana	168	508	41	123	79	229	48	156
	5 Wisconsin	43	145	9	30	20	78	14	37
	Region Totals	**1,361**	**3,396**	**250**	**614**	**533**	**1,323**	**578**	**1,459**
West North Central									
	1 Kansas	122	274	17	43	32	80	73	151
	2 Minnesota	107	238	28	55	22	67	57	116
	3 Iowa	74	196	7	21	38	66	29	109
	4 Nebraska	73	174	32	80	4	27	37	67
	5 Missouri	68	268	13	62	24	99	31	107
	6 North Dakota	15	38	10	14	5	15	0	9
	7 South Dakota	6	24	2	5	4	15	0	4
	Region Totals	**465**	**1,212**	**109**	**280**	**129**	**369**	**227**	**563**
South Atlantic									
	1 Georgia	296	781	70	199	103	260	123	322
	2 North Carolina	280	816	71	195	98	306	111	315
	3 Virginia	199	662	23	68	70	211	106	383
	4 South Carolina	106	397	30	131	47	164	29	102
	5 Florida	97	334	24	116	14	53	59	165
	6 West Virginia	42	106	6	18	23	54	13	34
	7 Maryland	40	160	6	22	10	29	24	109
	8 Delaware	10	28	1	6	4	7	5	15
	9 District of Columbia	7	13	0	0	0	0	7	13
	Region Totals	**1,077**	**3,297**	**231**	**755**	**369**	**1,084**	**477**	**1,458**
South Central									
	1 Texas	761	1,649	161	339	164	355	436	955
	2 Tennessee	231	554	23	78	140	295	68	181
	3 Kentucky	196	559	20	72	108	318	68	169
	4 Louisiana	139	667	42	145	59	334	38	188
	5 Alabama	97	315	27	75	44	165	26	75
	6 Oklahoma	62	211	10	33	42	94	30	84
	T7 Arkansas	14	87	3	17	6	57	5	13
	T7 Mississippi	14	83	6	26	5	34	3	23
	Region Totals	**1,534**	**4,125**	**292**	**785**	**568**	**1,652**	**674**	**1,688**
Mountain									
	1 Arizona	90	192	32	74	15	22	43	96
	2 Utah	71	135	4	22	15	30	52	83
	3 Colorado	27	74	7	16	1	11	19	47
	4 New Mexico	23	33	5	10	1	1	17	22
	5 Idaho	16	46	8	16	7	17	1	13
	6 Montana	8	15	3	3	1	6	4	6
	7 Nevada	4	45	2	12	0	6	2	27
	8 Wyoming	3	21	1	10	1	3	1	8
	Region Totals	**242**	**561**	**62**	**163**	**41**	**96**	**139**	**302**
Pacific									
	1 California	112	362	22	110	4	20	86	232
	2 Washington	30	74	8	25	4	13	18	36
	3 Oregon	18	51	5	20	3	9	10	22
	4 Alaska	4	7	3	4	0	1	1	2
	5 Hawaii	2	9	2	6	0	0	0	3
	Region Totals	**166**	**503**	**40**	**165**	**11**	**43**	**115**	**295**
	GRAND TOTALS	**5,580**	**15,180**	**1,185**	**3,359**	**1,848**	**5,097**	**2,547**	**6,724**

* **Other Facilities** include offices, headquarters, distribution centers, research and development facilities and mixed-use facilities.

Source: Conway Data Inc.'s New Plant Database. Researched by Karen Middlemach and Mike O'Connor

Source: Site Selection Magazine

Transportation is essential to our economic competitiveness. Rail offers unmatched surface transportation productivity for shippers who can release large volumes of freight to their customers who have rail access to either a carload or intermodal network.

The main issues Minnesota faces in freight rail economic development include:

- Willing Class I Railroads – Railroads operate large multi-state freight networks. Train service must be designed to optimize freight shipments moving within the current system. While freight railroads are making record investments, competition for internal capital is fierce. Freight rail development must pass internal operating criteria to answer questions such as "Is there sufficient capacity on this line to justify a new train start?" or "Can the current schedule accommodate additional switching activities to support additional customers on this line?" Transportation questions might include "How will these additional rail car set offs or pickups impact my crew time?" Marketing assessments might evaluate the profitability of one market and local competition versus other revenue opportunities in other portions of the network. Equipment availability and service requirements are also considered for commodities where the railroad provides rail car equipment.
- Contractual issues, such as open access and paper barriers, can be considerations for short line railroad development. Some rail-served properties are open to reciprocal switching by multiple carriers; other sites are restricted to a single railroad. Many site development considerations begin with the identification of which railroad is the service provider and what rail connections are possible with this short line. While most Class I railroads have mainline track support car load weights of 286,000 lb. and up to 315,000 lb. tracks, some short lines operate rail lines with limited weights and limited track speeds of less than 25 miles per hour. Class I railroads expect short lines to meet minimum competitive cost and service standards in order to participate in interchange business.
- Equipment can be a consideration for rail users. The rail community operates a fleet of carrier-owned and leased railcars. Some shippers own or lease railcars for their own use and other equipment is owned by TTX, a railroad cooperative that manages and repairs a fleet of rolling stock. Some states have invested in rail cars to help shippers, especially during peak season, gain access to rail equipment. However, Minnesota statutes preclude Minnesota from rail car ownership. Some shipper cooperatives in the past have invested in rail cars for member/users.
- Competitive rail preservation and economic development programs in neighboring states can lure regional business on short lines, which serve multiple states. Short lines surveyed during this project identified programs in neighboring states as a threat to Minnesota's economic development success.

Minnesota Examples of Preserving and Growing Community Viability and Market Access to the Rail Freight Network

Minnesota Prairie Line (MPLI)

The Minnesota Prairie Line (MPLI) is a subdivision of the Twin Cities Western Railroad. The Twin Cities Western Railroad is classified as a Class III railroad with operating revenues below $21 million. In 2002, Heartland Corn Products located in on the rail line to take advantage of one of the best agriculture regions for corn production in the nation. The greatest demand for ethanol in the U.S. is within the coastal regions with large populations. As these markets flex and prices modulate, rail access to east or west coast population centers is critical for an ethanol producer. As Class I railroad business models

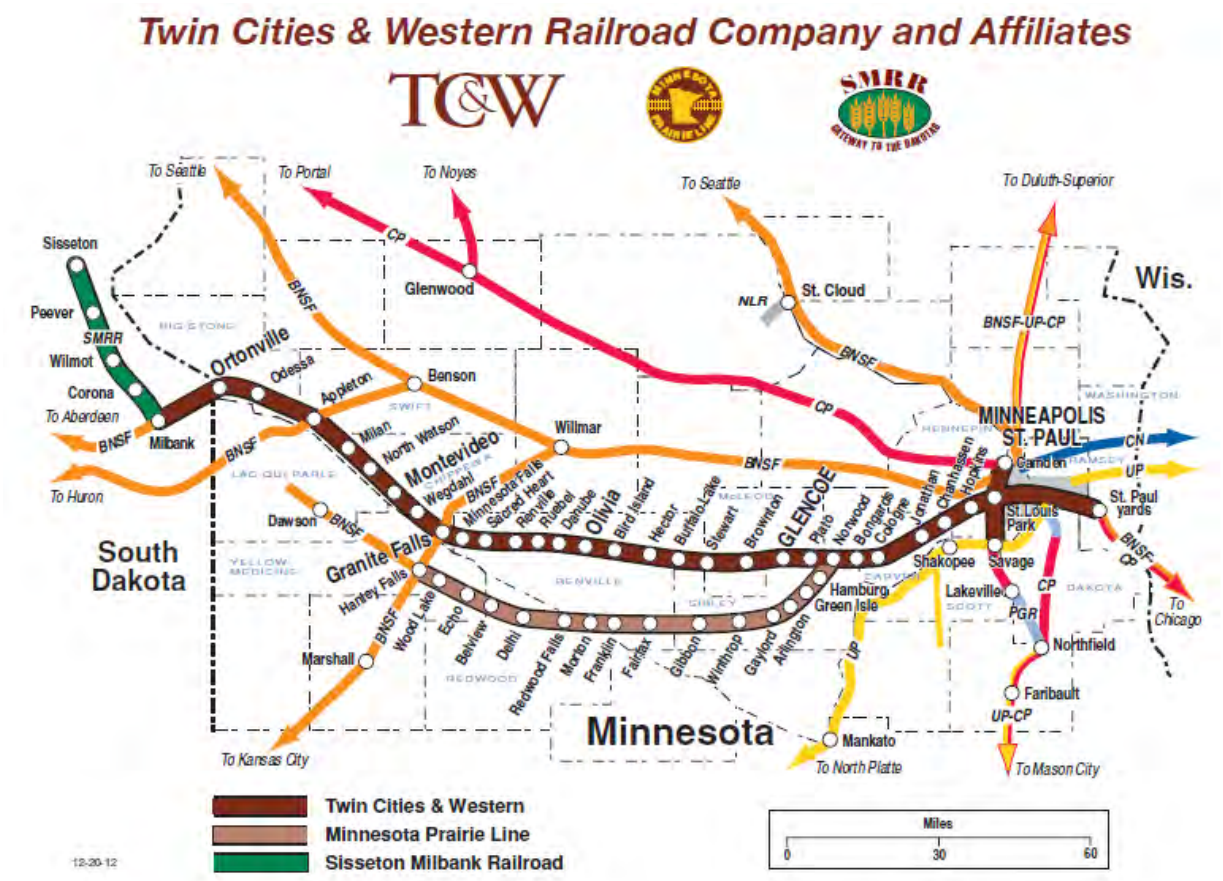
change, to mitigate risk and maximize market responsiveness, ethanol producers who locate on a short line with access to all rail carriers is an important strategy.

In Winthrop, Minnesota, rail had been in place for the past 100 years. In 1995, Heartland Corn Products located in Winthrop and began developing a 10-million-gallon ethanol facility. The plant was expanded to 35 million gallons, a second facility was built in 2002 to produce an additional 65 to 70 million gallons of ethanol and related products. The combined production of the two plants now uses 80-car-unit trains to move product to eastern markets every eight to nine days. This is an approximate equivalent of 25,000 trucks for each trainload. A MRSI grant of $200,000 was applied for to provide a spur track connection to the MPLI railroad. While the paperwork was substantial, the loan was received. Nearly 50 people are employed at this facility. The private investor built a multimillion ethanol facility to take advantage of production benefits and global transportation access to support their business plan. Ten years after this development, the business owner was contacted. After benefiting from the program, the investor recommended that the loan amount should be increased to $500,000 to keep pace with current costs and to match the effort required to apply for the grant. Assistance in the application might also be helpful given the time requirements, unless application process could be simplified. As a result of increased density on this line, service has improved and new facilities have been built.

In 2007, a study of traffic moving between Hamburg and Hanley Falls, Minnesota, was completed (Figure 17). At that time, there were 19 shippers identified on this line, mostly engaged in agricultural activities. Elevators in Winthrop and Arlington load 25-car shuttle trains three times per week and receive inbound fertilizer for regional use. Some shippers on the short line railroad had more than one facility. One manufacturer reported they received inbound product from overseas in intermodal containers. These containers arrive in Minneapolis-St. Paul and are trucked to Gaylord, Minnesota.

As a result of the rail improvements and the new volume moving from the ethanol plant, service levels on the short line improved. When service levels, improved more shippers located on the line began using rail. This virtuous cycle of rail investment led to increased rail usage, which generated more rail volume from neighboring businesses. This type of freight rail development is an activity Minnesota needs to incentivize. If this rail line had not been upgraded, traffic would have been diverted to the highway and more than 5,100 trucks would be added to the local roadways, which would require pavement maintenance and upgrades to 10 to 14 sections of highways in the region that were structurally inadequate. The Minnesota Valley Regional Rail Authority reported in 2008 that grants to upgrade the line to 25 miles per hour and handle larger rail cars helped shippers in five surrounding counties save more than $3.5 million in freight transportation savings in 2008. The Minnesota Regional Rail Authority calculated that between 2002 and 2008 that Minnesota saved a total of $15.4 million in road maintenance and freight rates to benefit the regional economy.

Figure 17: Twin Cities Western Railroad Map



Source: TCW website

Recent investments show that short lines invest were business growth can be demonstrated. Progressive Railroad Corporation will spend $8 million in 2013 to upgrade a grain line from Northfield to Randolph, Minnesota. This work will also include rail bridge rehabilitation efforts and turnouts to handle increased traffic volume. The Progressive Railroad Corporation was recently awarded a Wisconsin Economic Development award for a $5 million dollar investment in the Chippewa Falls area for connecting their short line network to an emerging industrial park. In addition, Twin Cities Western will invest in 23,000 ties, 14,625 tons of ballast and will deck one rail bridge in 2013 but did not disclose their annual maintenance of way budget. However, short lines by and large have little retained earnings to invest in speculative development.

Public Role in Rail Transportation

The U.S. Department of Transportation (USDOT) is committed to building a multimodal transportation system that moves people and goods efficiently, creates jobs and economic opportunities in the U.S., enhances energy independence and fosters livable communities. There has been a dramatic shift in federal transportation policy towards investing in passenger rail and working with states to build an intercity rail network across existing freight rail networks. The vision is a comprehensive national rail

plan that addresses regional needs and interactions with freight railroads. USDOT is engaging states for input on the national rail plan as well as requesting input on governance models for multistate corridors, building capacity, expertise, sustainable funding sources and planning and evaluation tools. USDOT will soon put together its principles for surface transportation authorization, including how to structure passenger and freight programs and how to fund them.

Collaboration and Issues Working with Private Railroads and Commercial Shippers

Class I railroads face competition from trucks, especially if the freight movement has a short haul of less than 500 miles. Trucks often take what freight railroads could haul when rail access is not available or if highway routes provide a more direct connection between buyers and sellers. Railroads also compete with barges, especially with bulk products such as grain, coal, aggregates and fertilizer. A rule of thumb is that barge catchment areas reach up to 60 miles from any loading point along the inland waterways. Railroads also compete at marine gateways for international traffic. Many ocean carriers have contracts with specific rail carriers. For example, if a manufacturer selects Maersk, often the inland rail transportation portion of the freight movement is selected by Maersk.

Railroads also compete with other railroads of all classes. Some short line railroads can interchange with multiple Class I carriers. In this instance, some Class I carriers feel they complete with short lines due to short line's multiple connections. Some Class I carriers require that short lines must meet specific service and operating parameters or the Class I carrier prefers to have regional shippers bring freight directly to their terminals. Shuttle train operations are often viewed by Class Is as business they are uniquely suited to handle, due to the volume and equipment considerations. On the other hand, many Class Is are satisfied with short lines aggregating multiple customer shipments into one handoff between the carriers.

Because railroads compete with so many modes with unique circumstances, most are not comfortable sharing strategic plans and programs with public agencies where meeting notes and documents could be made public. Because of this unique interface, railroads as well as many private sector shippers are reluctant to share detailed planning and investment information with public sector agencies, such as MnDOT or DEED.

Short line railroads are also particularly sensitive with information sharing because many short line holding companies are looking for new rail properties to acquire and expand. Short lines are also subject to being bought back by the railroads, which spun them off originally, especially if economic conditions for short line users have improved, carload volumes have increased and needed maintenance and upgrades have been completed.

For all these competitive reasons, collaborating with rail carriers can be difficult for a public agency. One-to-one relationships between rail users and rail carriers is often a much easier task because these discussions are private contract matters that cannot be disclosed. The best advice for working with a rail carrier is to understand the users in the state and the key economic drivers that impact their shipping patterns.

Use of Agency Resources and Investments

State Department of Transportation resources are constrained given the fact that gas tax rates at the federal level have not changed since 1992. Over the past 20 years, fuel use and transportation patterns have changed as the nation has become more urbanized. Since 2007, motor vehicle fuel efficiency has also improved. Gas tax shortfalls hamper Minnesota's ability to fund transportation improvements. Added to this short fall, many state transportation programs are siloed, which means they have specific funding eligibility rules and limitations.

When it comes to multimodal funding, agencies often have to cobble programs together to address rail or multimodal needs. As a general rule of thumb, projects requiring multiple funding sources require creative managers. Finding the first dollar is the hardest task as everyone wants their contributions to be the last ones in to realize a project. A business case for investment must be made if private sector funds will be used.

One important consideration is that railroad investments, like highway investments, are long-lived assets. A rail car has a life expectancy of 50 years. A segment of railroad, dependent upon freight density and drainage considerations, can last for 50 years if properly maintained. An example of this is the fact we have many short lines today with rail track weights of 116 pounds[4] that were laid in the 1940s.

Community Development

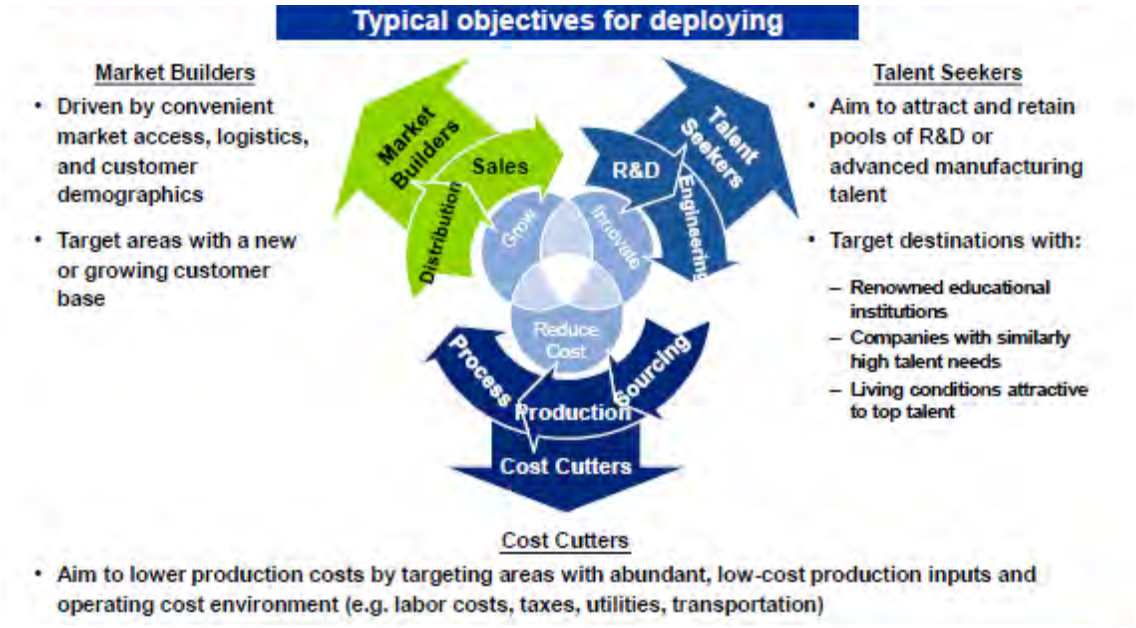
Rail development comes in a variety of forms. Shipper-led developments happen when rail users see a need to expanding shipping mode choices. These developments can be spurred by cost reduction or risk mitigation strategies. Carrier-developed facilities are often developed as a result of market demand or improved asset utilization strategies. Some carriers want to keep their specialized assets within their control to assure they have enough rolling stock to meet customer needs, instead of letting shipments be interchanged to another carrier where the return of that asset may not happen in a timely manner.

Industrial Site Selection Criteria Score Cards

States are engaged in economic development and customer attraction activities. Figure 18 illustrates the motives private sector companies have for undertaking a site selection search. There are three primary motivations: market access or expansion, talent and educational resources and cost cutting factors. Transportation typically amounts to more than 50 percent of total logistics costs. By providing economic development professionals with information and access to tools to help identify rail access, it is possible to improve Minnesota's success in competitive site selection searches.

[4] Railroad track is classified by weight in pounds per linear yard.

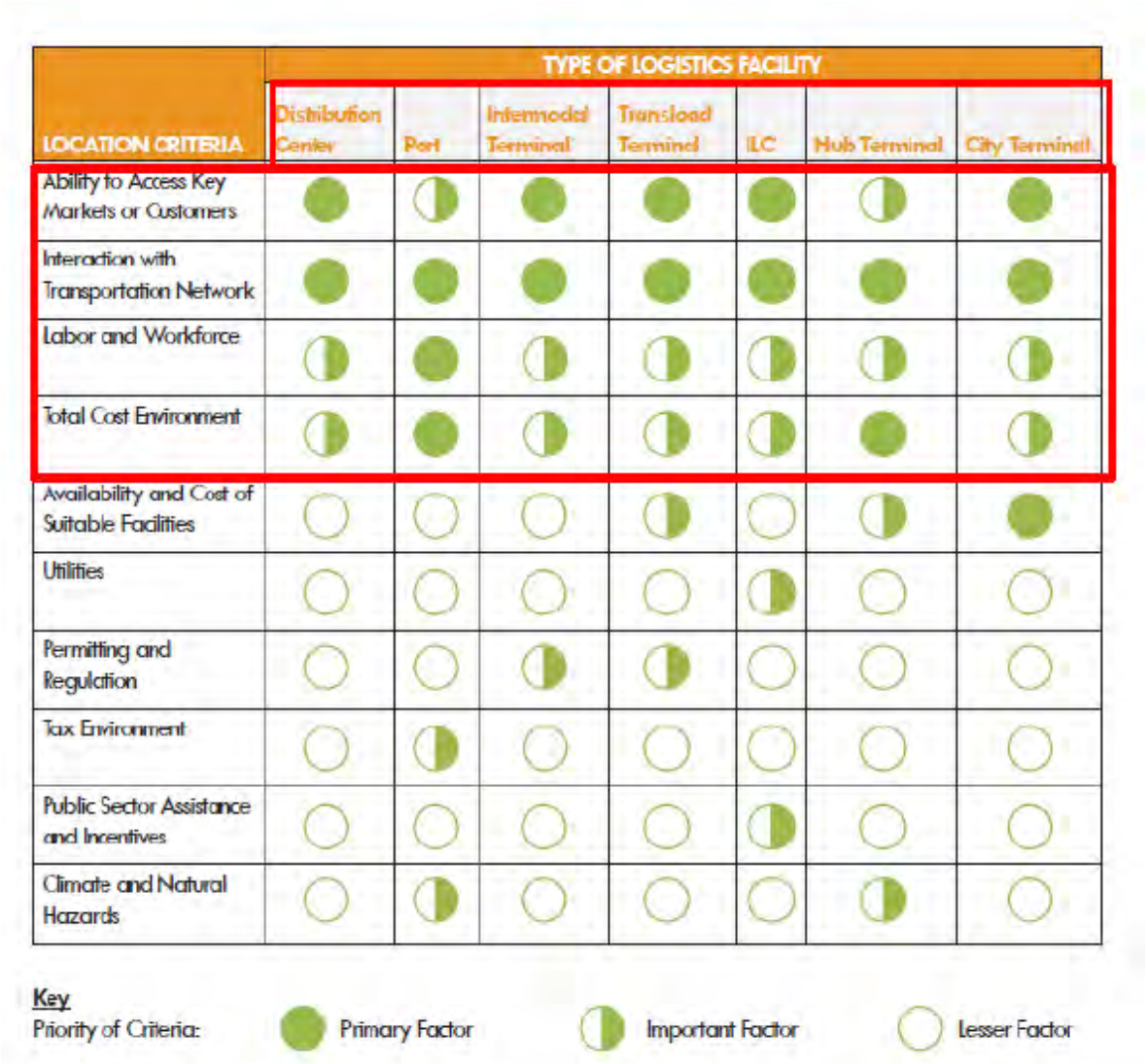
Figure 18: Site Selection Criteria



Source: Deloitte

Companies wishing to relocate or to expand often use a scorecard criteria, as shown in Figure 19, to identify logistics assets in the prospective area along with other resources, such as utilities, labor and workforce, and other economic criteria, such as taxes and regulation. The most desired attributes are represented by shaded circles. Public agencies that focus on highlighting their transportation assets and access to them are most successful.

Figure 19: Site Selection Factors by Facility Type



LOCATION CRITERIA	TYPE OF LOGISTICS FACILITY						
	Distribution Center	Port	Intermodal Terminal	Transload Terminal	ILC	Hub Terminal	City Terminal
Ability to Access Key Markets or Customers	●	◑	●	●	●	◑	●
Interaction with Transportation Network	●	●	●	●	●	●	●
Labor and Workforce	◑	●	◑	◑	◑	◑	◑
Total Cost Environment	◑	●	◑	◑	◑	●	◑
Availability and Cost of Suitable Facilities	○	○	○	◑	○	◑	●
Utilities	○	○	○	○	◑	○	○
Permitting and Regulation	○	○	◑	◑	○	○	○
Tax Environment	○	◑	○	○	○	○	○
Public Sector Assistance and Incentives	○	○	○	○	◑	○	○
Climate and Natural Hazards	○	◑	○	○	○	◑	○

Key
Priority of Criteria: ● Primary Factor ◑ Important Factor ○ Lesser Factor

Source: NCFRP

Examples of Public Private/Private Partnerships and Potential for Future Cooperation

Public-private partnerships are not new. The most publicized partnerships have typically been large in scale and economic scope. The TIGER program is also often considered a public-private partnership program where a local match is required to qualify for a federal award. The TIGER program has awarded nearly 30 percent of their funding to rail-related projects since the inception of the program in 2009.

The Alameda Corridor example illustrates **"Think Big."** The Ports of Long Beach and Los Angeles purchased Southern Pacific Railroad's Alameda Corridor line for $235 million in 1994. A trench was constructed, which was 33 feet deep, 50 feet wide and spanned 10 miles connecting the ports to inland rail terminals. The line was opened for train operation in 2002 and, at the peak, demand handles more than 60 trains per day, dramatically reducing grade crossing delay and congestion on I-710. This partnership included ports, federal funding and two Class I railroads.

Chicago CREATE is another example of **"Think Big"** and substantial complexity. Like Alameda, this project is projected to provide substantial public benefits; nearly half of the original budget of $1.5 billion was aimed at reducing grade crossing delays and providing improvements for the METRA commuter system. Yet the number of projects and the elongated time frame has nearly doubled the budget and half of the original projects remain after nearly 10 years of effort. This partnership includes six Class I railroads, Metra and Amtrak.

Port of Northern Montana – An example of "**Collaboration"** between Amtrak, BNSF and the local community to support energy development and bi-national trade. This project received just under $10 million in TIGER grants. It untangled a freight rail and Amtrak operation in Shelby, Montana, and helped create logistics jobs and access for dimensional shipments supporting wind and shale energy development. This partnership includes freight and passenger rail cooperation and support from the private sector.

The Shellpot Railroad Swing Bridge – an example of a "**Railroad Renaissance."** The 115-year-old bridge was owned by Conrail and did not support the railroad business strategy. After the Conrail split, NS Railroad acquired the network. With the Delaware DOT, NS rebuilt the bridge with the express interest of separating freight from passenger rail networks. This $13 million project was funded with a $9 million loan, a $5 million grant and a tariff fee of $35 per rail car.

Public-private partnership opportunities for Minnesota should be considered as an option for rail freight economic development investment. Figure 20 shows how specific project elements might be approached. These partnerships will vary based on the types of relationships. Quantifying the public benefit is often the first stepping stone in building financial partnerships. For the private sector to invest, private sector productivity and network benefits must be identified. Most private sector companies prefer that the public sector partners help with permit and regulatory coordination as well as community involvement and outreach.

Figure 20: Public-Private Partnership Matrix of Opportunities

Public Private Partnership Matrix of Freight Rail Development Opportunities		
Element	**Leadership**	**Support**
Rail Capacity Limits	Railroads	Port Authorities and Public Agencies
Rail Capacity Investments	Railroads	Public Agencies
Freight Market Enhancements	Public Agencies and Stakeholders	Railroads
Multi-Modal Effects of Investment	Public Agencies	Railroads
New Market Assessments	Public Agencies	Railroads and stakeholders
Public Education	Public Agencies	Stakeholders
Environment	Public Agencies	Railroads
Multi-Jurisdicional Coordination	Railroads	Public Agencies
Public Outreach	Public Agencies	Railroads and stakeholders

Minnesota Stakeholder Feedback

A major effort of the FRED study was to obtain feedback and insights on the role of rail in economic development from stakeholder groups in Minnesota, including shippers, railroads and state and local agencies.

Expressed Need for Improved Rail Access

In July and August of 2013, Minnesota EDAs, Metropolitan Planning Organizations (MPOs) and RDCs were asked to provide information on rail improvements identified within their region. This included freight rail and safety projects, which are shown in Figure 21. These projects amounted to $43.4 million. Not all projects have been funded. This list of projects is separate from the Class I railroad investment list and represents about 25 percent of the total Class I investment amount within the state.

Figure 21: Inventory of Minnesota Regional Rail Projects

Inventory of MN Rail Improvements August 2013		
Rail Project Description	**Rail Project Location**	**Estimated Cost**
Short Discription	**Location**	**If Known?**
Bridge Replacement	St, James,, MN	$2,000,000
Rail siding, 350' track	BNSF Granite Falls	$176,000
Track replacement in rail yard	Montevideo	$250,000
Industrial Access	City of Arlington	$800,000
Mars Pet Food facility rail access	City of Le Sueur	$500,000
UP second track Mankato to Le Sueur	Le Sueur County	$250,000
2 110 car unit train tracks 9,000 ' each	Southwest RDC	$6,500,000
Rail Spur for Wadena	Wadena, MN	$2,200,000
2 rail spurs - under NDA can not discuss	St Paul, MN	$500,000
Subtotal Freight Rail Improvements		***$13,176,000***
Installation of lights and gates at the crossing of CSAH 5 in Springfield		$275,000
Safety crossing enhancements	Morrison Co, Cass Lake, Various	$1,858,333
Grade Sep	City of Moorhead	$22,000,000
Signalization improvements	City of Moorhead	$6,100,000
Subtotal safety improvements		***$30,233,333***
Grand total Freight and Safety Improvement		**$43,409,333**

Class I Rail Needs

The Minnesota State Rail Plan produced in 2009 identified freight rail improvements shown in Figure 22. Needs were categorized by infrastructure type, and estimated costs. Positive train control upgrades are a looming unfunded mandate. While Congress has provided an extension for compliance, these projects are expensive and essential for rail system growth. BNSF's Aaron Hegeman noted that each CTC siding that complies with positive train control requirements will cost an estimated $1.5 million.

Figure 22: Class I Rail Network Improvements

Subdivision	2009	Cost to Upgrade (Millions of Dollars)
Track, Signal, Bridge		
	BNSF	$68.00
	CN	$68.00
	CP	$331.80
	UP	$35.40
Other Major Class I Improvements		
	Bottlenecks *(incl. in passenger line costs)*	–
	Bridges *(incl. in passenger line costs, except for Roberts Street Bridge)*	$51.00
	Intermodal Facilities	$150.00
Weight, Speed and Track Restrictions°		
	286k lb Upgrades	$548.00
	Bridge and speed restrictions	$13.00
	FRA Class 1 to 2 Upgrades (less 286k overlap)	$244.00
Positive Train Control		
	Class I Mainlines Base/Best Cases	$1,640.00/$335.00
Grade Crossings		
	Active Warning Devices (1,400)	$280.00
	Cost of Upgrades – Base/Best Cases	$3,173/$1,867
	10% Engineering/10-30% Contingency – Base/Best Cases	$1,269/$373
	Total Cost – Base Case/Best Case	**$4,442/$2,241°**

° Does not include unknown costs.

Source: MN State Rail Plan

Survey of Minnesota Railroads

A survey and assessment of railroad effectiveness was also conducted. Minnesota Class I and short line railroads were contacted to participate in a survey where they rated their effectiveness in the areas of marketing, technology and communication and operational performance. These surveys were completed between May and July 2013.

Short Line Surveys

Eleven organizations representing the 13 Class III railroads in Minnesota were contacted to participate in the rail effectiveness survey. Two Class III railroads were unavailable. Questions about market effectiveness, customer communication, economic development and public funding programs were posed. Surveys were sent out, follow-up phone calls were made, carriers were invited to complete the survey at the Minnesota Regional Rail Association meeting and one more follow-up attempt was made in August. Five short lines completed the survey effort. Others who opted out of the survey cited commercial concerns in a competitive industry. The following is a summary of the replies for the five organizations that responded to the survey. The railroads that responded include both smaller and larger short line railroads.

Short line railroads are one of the primary areas in which the state can make rail investments and know that Minnesota dollars are having the greatest impact on Minnesota rail shippers. Many short lines have new leaders and are active and visible in the communities they serve. The Marketing Efforts section of the survey was designed to identify opportunities to promote and increase rail usage.

Short Line Marketing Efforts Findings

- Three of the five short line organizations make direct sales calls to customers, and all of the railroads said that they coordinate their marketing efforts with the Class I railroads.
- One short line indicated that they did a significant amount of market research; three indicated they did not engage in any market research.
- Two short lines reported that they had three individuals engaged in marketing, two had one person engaged in marketing, and one reported that it did not have anyone engaged in marketing. For some short lines that only interchange with one Class I carrier, a marketing effort is primarily undertaken by the Class I partner. For short lines with multiple Class I connections, marketing efforts are often expanded to increase user interest.
- Three of the organizations indicated that they work with real estate representatives and they work with regional economic development agencies to increase rail traffic. One railroad that said that they did not work with the local regional economic development agency said that they did not think the agency was effective.
- Three of the five organizations said that they had land adjacent to their rail line that could be used for economic development.

There was a range of responses to the question regarding whether it was useful to work with trade associations. Three of the organizations did not indicate whether they worked with trade associations. One of the organizations said that it was somewhat useful, while one indicated that it was quite useful.

The organizations' responses to questions about the usefulness of working with the universities and public agencies were more tepid. Two of the organizations said that working with universities was somewhat useful.

Two also said that is was somewhat useful to work with public agencies, but one organization said that it was not useful. One organization noted that there is sometimes a lack of coordination between the localities and the DEED. It indicated that DEED's objective of encouraging high value manufacturing does not always match local market conditions.

Three of the organizations thought that they were highly effective in communicating with their customers, while the other two said that they were somewhat effective but there was room for improvement. Two of the organizations said that their marketing efforts were highly effective, two said that their efforts were somewhat effective but could be improved, and one said their marketing effort was not effective (that organization also said that they did not have anyone involved in marketing).

In summary, most short line railroads are busy small businesses trying to flex to meet changing marketing conditions that impact their customers, such as crop yield variances. Some have actively

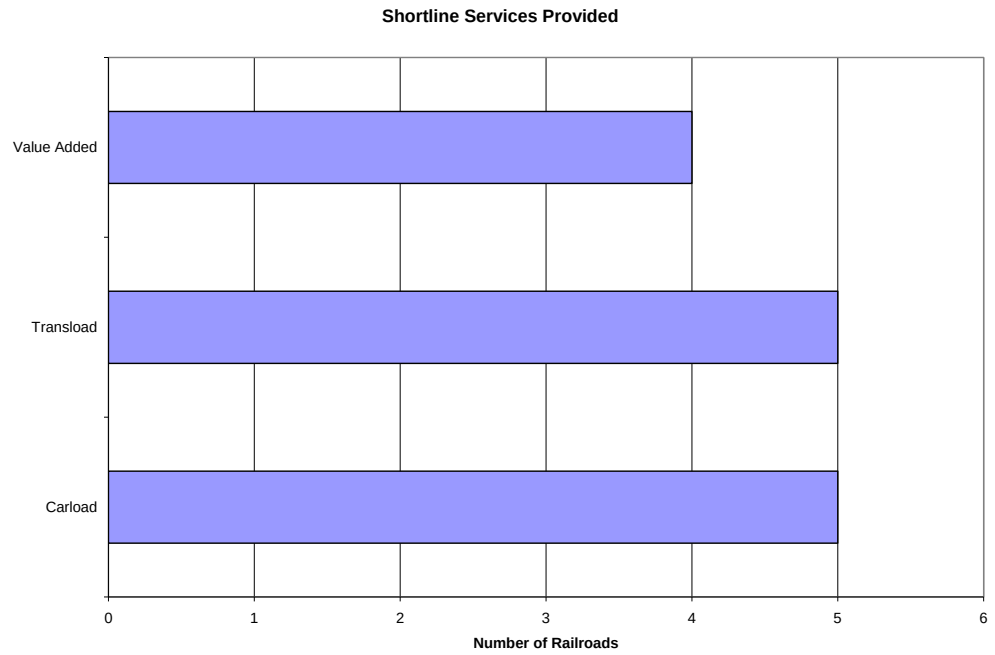
engaged their customers in customer satisfaction surveys; others work hard to meet customer expectations. A third category of short lines have limited control of their commercial affairs because of their relationship with Class I carriers who have high performance and service expectations.

Services Offered, Integration of Technology and Resource Optimization

The second portion of the survey was intended to identify areas for service enhancement, the need for new or updated technology to better communicate with shippers and interchange rail carriers and finally the need for additional resources.

In terms of the services offered by the short line railroads, ***all*** responding organizations said they offered carload and transload service (see Figure 23). Only one of the organizations said that they do not provide value added services such as storage, sorting, blocking and bracing, weighing and others. The fact that four of the five short lines identified value added services were being performed is a testament to the entrepreneurial nature of short line railroad operators. Every respondent indicated they have active transloading centers, which is another positive feature, meaning these small railroads are extending their market reach to shippers who are not rail served. These services help promote mode conversion and are valuable front line efforts that aid new rail users in the identification of transportation options, which can help their customers, reduce overall costs and increase market reach.

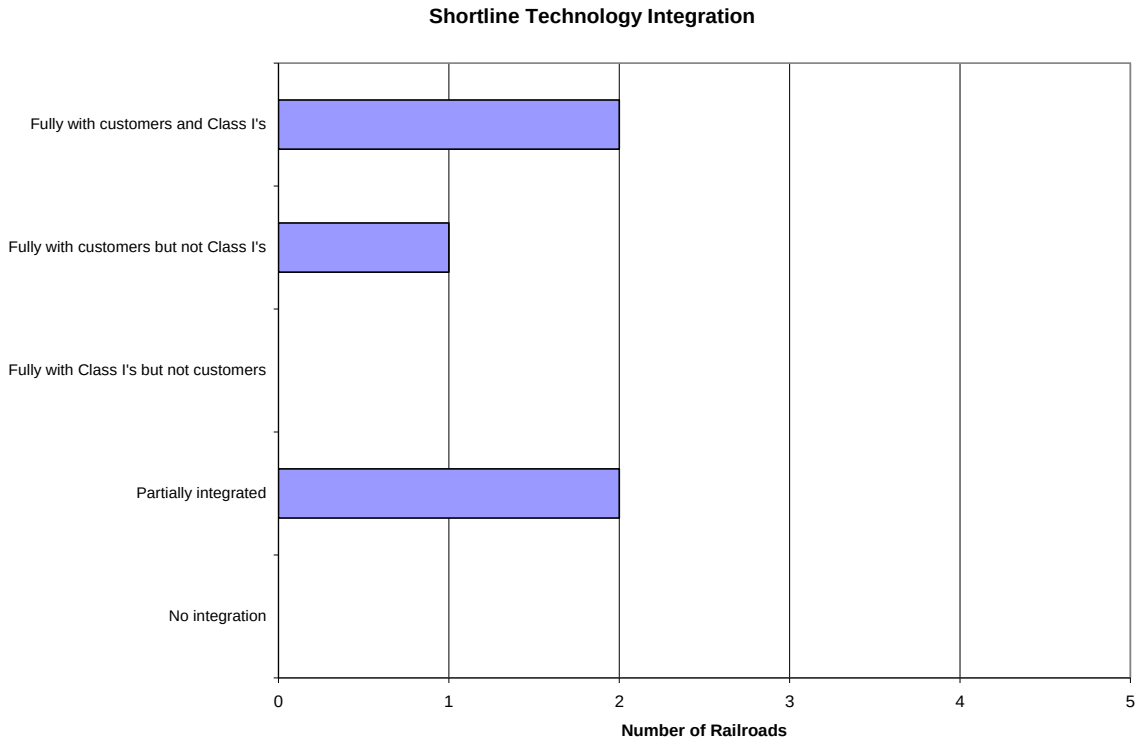
Figure 23: Short Line Services Provided



There were varying responses to the question of whether the technologies of the railroads (for billing and tracking shipments) were fully integrated with those of shippers and the Class I railroads with which they interconnected (see Figure 24). Two of the organizations said that their technologies were fully integrated with both the shippers and Class I railroads. One organization said that its technology was fully integrated with Class I railroads but partially integrated with shippers. Two indicated that

technology was partially integrated with shippers and Class I railroads (one of these noted that most communication was done by fax and phone). Technology interfaces are essential for shipment visibility on behalf of every partner in the supply chain. It is understandable that some small volume users might default to phone and fax, yet computer interfaces help reduce clerical errors and improve work flows and improve supply chain visibility for car ordering, asset utilization and load planning. Technology grants and training could benefit every rail user's experience.

Figure 24: Short Line Technology and Communication



Most of the railroads thought that, through cooperation with Class I railroads and shippers, resources were highly optimized.

Recommendations and Comments about Government Actions that Could Improve Short Line Marketing Efforts

One of the purposes of this study was to identify state programs that could impact freight rail economic development. This section of the survey attempted to quantify what short lines feel would have the greatest impact on rail development in Minnesota.

Short Line Findings

- One organization cited Minnesota tax and regulatory policy as a major barrier to expanding its market. Railroads located near the Iowa and South Dakota borders are losing business to those states.

- One organization said that current law limits government funding for rail freight, which limits what the state can do. Changing the law would improve the situation considerably.
- One organization indicated that the MRSI cap should be increased $500,000 to accomplish more given the cost of rail and construction. The amount of time spent on the documentation for a $200,000 loan is onerous. Capital improvement projects, such as building a switch, will often be significantly more than the $200,000 amount. It also said that the infrastructure loan program should be converted to a grant program in order for it to be attractive to short line railroads.
- One organization suggested that an effort be undertaken to determine what the best forum is for communications between the railroads, MnDOT, and DEED.
- One organization noted that some industrial parks have been sited near rail lines but spurs were not put in place at the time the industrial park was planned. Who pays for the spur now? Railroads will want to be sure that there will be sufficient volume to cover the cost of the spur if they have to pay for it. Economic developers felt that if the spur is not in place it is hard to advertise rail access.

Survey of Class I Railroads

We interviewed three of the Class I railroads that do business in the State of Minnesota. One Class I chose not to participate in the survey but did make a presentation at the Peer Review meeting.

Current Marketing Efforts

Class I railroads are billion dollar transportation organizations with centralized marketing organizations that support field offices. One railroad noted that they have both regional account managers that focus on the local markets and national account managers that work with the larger customers in the Minnesota area. Marketing divisions tend to be organized around the commodities shipped: agriculture, industrial products, petroleum and chemicals and intermodal.

Services Offered, Integration of Technology, and Resource Optimization

Because the three railroads have different presences in Minnesota and different business models, they have significant differences in how they relate to the short line railroads and the types of special services they provide to customers. A Class I railroad mentioned that short lines must perform to specific operational and economic standards or there was no value in interchanging with them. They also noted that they believed that short lines are not suited to develop unit train business. This carrier had a highly defined role that they felt short lines must adhere to. Based on the growth in some regional rail markets, Class Is are now buying back or reabsorbing short lines they spun off years ago. Class I railroads approach transloading operations in various ways. One of the railroads said that it relies on its short line partners to handle transloading operations. Another said that transload operations were a significant component of their Minnesota operations, with a number of transload facilities in the state. One railroad said that they primarily interchanged traffic with other railroads and, therefore, did not provide special services to customers. Another carrier has segmented transloads into premier operations and transload operations.

The railroads also differ significantly in the amount of land they have adjacent to their trackage that can be used for economic development in Minnesota. Some Class Is are interested in expanding services in Minnesota yet are limited based on historic trackage and haulage rights.[5]

The Class I railroads generally felt that they were effective in their marketing efforts with shippers. One railroad noted that its business had grown in Minnesota over the past few years, and they are successful in finding new shippers and receivers in the area as well as growing their existing market base. Another noted that they work closely with their short line partners to market to their customers. When that railroad is either looking for a shipper or receiver for a particular commodity, they work with the short lines to try to find such customers.

The railroads also felt that their technologies were successfully integrated with those of the short line railroads and shippers. Resources are being optimized through cooperation. One railroad noted that they had undertaken an effort to move cars offline in order to make their network run more smoothly. That railroad indicated that this move might create short-run costs to the shippers if they needed to install more trackage to handle their empty cars, but that ultimately they would be rewarded with better service.

General Comments about Government Actions that Could Improve Marketing Efforts

One of the railroads noted that Wisconsin will pay up to $5,000 per job for rail projects and they had recently received $13 million from Iowa for a rail project. That railroad also said that Iowa was more pro-business than Minnesota. This same carrier noted that rail projects in Minnesota require coordination with the Department of Natural Resources (DNR) and that they would like help from MnDOT or DEED in working with the DNR on rail expansion especially at the beginning of the process when development projects are being planned. Another railroad noted that frac sand was a major opportunity in the state right now, but that there was significant opposition to such projects at the local level. This carrier would like DEED and MnDOT to help resolve neighborhood and stakeholder issues early in the process.

Finally, one railroad noted that a significant barrier to expanding facilities is the issue of at-grade crossings. For example, grain elevators may want to expand their size to reach a more optimal level, but the grade crossings may limit the degree to which these facilities can expand. Randolph, Shakopee and Valley Park Yard were mentioned as areas where transload development might be attractive in the future.

Rail freight economic development has three touch points within the Class I railroad organization. Any industrial development project must be vetted by an industrial development specialist. Most railroads have individuals responsible for four to six states within a region. These specialists know the rail network, available capacity, crew situation and real estate resources within a region. A public affairs representative is also part of the railroad organization and their role to coordinate with public or state agencies on all matters that impact the railroad, such as new development, grade crossings, safety and

[5] Trackage is the contractual right of a railroad to operate its locomotives and or rail cars on another railroads track right of way. The owner of the right of way will control train movements. Haulage is the contractual right of a railroad to have its cars and cargo therein to be moved on another railroad's right of way. The railroad with the right of way provides locomotive power and controls train movements.

public interaction. A third organization within the railroad is responsible for marketing and pricing. These representatives are the commercial arm of the railroad and are responsible for customer rates and service. All three of these railroad departments play a role in freight rail economic development.

Communities and EDAs

Peer review participants and short line representatives suggested that the role of freight rail economic development is often shared between economic development agencies and railroad companies. Short lines noted that they know their customers and facilities that have access to their railroads. They identified that it was difficult to identify freight rail opportunities for shippers that did not have rail access to their line. economic development agencies, ports, and other public organizations often have access to a broader network of shippers and programs. Peer states identified that several freight rail development programs have expanded eligibility to allow non-railroad entities to be eligible for rail development loans and grants. These projects are often transload operations or rail spur projects, which provide access to new industrial parks.

Two economic development organizations held annual meetings during the time of the study. Participants were asked about rail development and development processes. Their primary interests are summarized below:

- **How do you get the railroad to stop?** Economic development agencies and MPOs are interested in rail development but do not know who to contact at the railroad or where to begin discussions. To resolve this challenge, a Rail Shipper Toolkit was developed that describes the process of railroad business opportunity engagement and includes a matrix of rail contacts.
- **What is a rail asset? Is all rail an asset?** To some economic developers, rail, which looks old or underutilized, might be considered a liability or something to be mitigated. For others, identification of rail ownership can be difficult, especially if the line is a low density line or only lightly used. There are several resources to identify rail ownership that include MnDOT state rail maps, railroad websites and a service Freight Rail 411 sponsored by Railinc, a subsidiary of AAR (www.railinc.com/rportal/freight-rail-411).
- **How do I educate local shippers about rail service, access and programs?** The first step is to understand the rail service in your community. Which railroad(s) serve your region? Where do they go? What does their network look like? What type of line are you on? Rail service on branch lines can be less frequent than accessing main line corridors. Understanding the economics of rail shipment is an important first step. One rail car can move the equivalent of four trucks. Does your shipper move that much product to one customer at one time? Are you within 200 miles of an intermodal rail terminal? Invite railroads or third party logistics providers to come talk to your chamber of commerce, local traffic clubs, county economic development groups or associations, Kiwanis and Rotary clubs, city planning meetings or other public forums to describe the benefits of rail. Railroads often provide programs for schools and public agencies to talk about grade crossing safety. Use these meetings to discuss rail commerce in your region.

- **What comes first: rail or new business attraction?** In the dynamic world of site selection, more than 85 percent of sites are screened via the internet before economic development agencies schedule final site visits. To compete in this environment having community assets defined and documented is essential. Rail spurs are expensive and speculative development takes time to realize economic benefits. Actively promoting existing rail access in site selection magazines and economic development trade publications can be a first step. Minnesota's freight rail development programs can be seen as an asset in the site selection process.

Many of the EDAM and MAPCED representatives noted that industrial parks are being designed and developed yet most have no rail access planned yet rail infrastructure is nearby. From a planning perspective, preserving rail access and providing freight friendly zoning is a first step for land use planning to provide for rail access in the future.

Business Community Visits

Three business communities were visited to explore their rail development efforts. These three cities were Albert Lea, Big Lake and Duluth.

Albert Lea Case Study

Albert Lea has a long-standing legacy in the food manufacturing sector with the Hormel meat processing plant and many resources that support food processing. Albert Lea is located at the cross roads of I-90 and I-35. Companies such as Hormel, Cargill, Schwans and others have facilities in the area. Albert Lea is served by two Class I railroads: the Canadian Pacific and Union Pacific. A refrigerated trucking company is located nearby with more than 200 tractors and refrigerated trailers. The 2010 census estimates the population of Albert Lea to be approximately 18,000.

Albert Lea was recently short listed in two site selection searches for a retail food distribution facility. Walmart considered the site but went to Mankato where a large population of university students was available for part-time employment. Target considered Albert Lea but selected a site in Iowa where they had an existing workforce available near another Target facility. These short list opportunities demonstrate Albert Lea is an attractive location yet the right fit has not yet been found. Albert Lea should continue to pursue food grade distribution facilities for other grocery networks, such as Super Valu, Schwans and others. Contacting business leaders and transportation departments within the distribution sector might provide insights on rail service needs and other factors to improve Albert Lea's competitive position.

Albert Lea recently constructed a highway overpass over a Union Pacific rail switching facility. This was done to preserve the railroad position in the town and to reduce at grade crossing conflicts with the switching yard. Unfortunately, shortly after the overpass was completed the business climate changed and now Union Pacific has removed track from this facility.

Albert Lea now controls a site that is served by both the Union Pacific and Canadian Pacific and would like to develop this and other sites near a new ethanol facility – an intermodal facility is proposed on the several hundred acres of flat land with county road access to the interstate network.

The Canadian Pacific site in Albert Lea is located on a branch line that connects Jackson, Minnesota to Austin, Minnesota. At the time of the study, this was a low density line and was for sale.

Figure 25: CP Rail Map at Albert Lea Site

Source: CP website

The Union Pacific also serves Albert Lea on a carload line, which has some clearance restrictions. This line connects Minneapolis to Kansas City, yet due to rock outcrops and track condition, track speed is reduced. While this is an ideal corridor for Minnesota commercial interests, the condition of this track and the current rail service is one factor that led Union Pacific to close their switching yard in Albert Lea.

A short line holding company was interested in the Albert Lea location, but a business plan for potential rail users needs to be developed. The prospective short line operator needed to understand potential business volumes, suppliers and their locations and customers and their requirements. The interested party used Google Earth to make a quick assessment of track location and current facilities, yet property ownership and commercial activities were not known.

There are three important messages from this case study:

1) Understand the customer base, freight flows and demand drivers. Any business interested in investing in rail development will need to develop a business plan with freight forecasts.
2) Collaborate with site selection firms and proactively market location assets for new development. Making the short list for two national site searches indicates that many essential location requirements have been met. Continue to Think Big and work to improve identified weaknesses and purse other retailers in similar economic sectors.
3) Preserve rail access and gain a better understanding of the local rail network. Rail networks change; be ready to take advantage of network upgrades and improvement or a rail renaissance if new investors bring investments to the community. Meet with rail economic development coordinators for each railroad on an annual basis to stay abreast of their commercial interests.

Big Lake Case Study

Big Lake is located on the BNSF and, at one time, had a double track infrastructure. The second track was removed to match past traffic volumes. Based on shipments to and from North Dakota and developing shale market, BNSF has interest in double tracking this segment. Big Lake has an industrial park adjacent to the mainline and would like to invest in rail access. The industrial park would like to enhance its attractiveness to potential users but does not currently have a user who has specified their development requirements. Big Lake has been working with the BNSF and submitted an unsuccessful TIGER V grant.

Important messages from this case study include:

1) Investing in complimentary rail development at a time when the Class I railroad is making improvements is a good opportunity to lay the appropriate framework for future service.
2) TIGER grants are extremely competitive and completing the required benefit cost analysis will help the local development community understand the potential benefits and returns for freight rail development. This effort demonstrates Think Big when it comes to rail development.
3) Collaborating with BNSF economic development representatives and continuing to market potential rail access through commercial marketing firms is a good strategy to promote site visibility. This rail market is experiencing a Rail Renaissance.

Duluth Case Study

The Duluth Superior Arrowhead Regional Development Commission has done an outstanding job in maximizing their historical rail connections and rail visibility. Organizationally, they have brought users, public agencies (such as the DNR, DOT, EDCs, DEED, MnDOT) and universities to quarterly planning meetings. Duluth, like several other port cities in Minnesota, has developed expertise in brownfield remediation and redevelopment grant application preparation. Attendance at these meetings often exceeds 30 individuals. Topical presentations and learning sessions are provided to keep members updated and engaged. Class I rail representatives have been appointed to a working group and provide local insights on service and capacity. Recognizing that multimodal transportation is essential to the region, a regional rail map was developed to provide detailed site and connection information. In this region, many rail maps were outdated and national mapping firms did not have accurate information on existing facilities. This organized effort resulted in greater railroad awareness and understanding of what railroad developments need in order to be attractive to service providers and users. This collaboration resulted in a successful TIGER V grant award of $10 million for multimodal rail and port development.

Three lessons learned from this case study include:

1) Collaboration is essential to revitalize multimodal networks as demonstrated by the TIGER grant award that will help pave the route to a local rail renaissance.
2) Actively engaging the railroad and providing up-to-date rail mapping allows carriers and users a one-stop shop for location information.
3) Duluth Superior leaders Think Big and partnered to prepare a $10 million project.

Statewide Economic Development Associations

Several outreach sessions were completed with EDAs during the course of the study.

Economic Development Association of Minnesota (EDAM)

At the Economic Development Association of Minnesota Conference on June 26-28 in Duluth, four table top sessions were hosted and displays of project work products were available. Table top sessions consisted of a brief project overview and an open discussion of the types of rail projects each individual was trying to accomplish.

Minnesota Regional Railroad Association(MRRA)

The study team hosted a program at the Minnesota Regional Railroad Association Meeting, and attendees were invited to discuss rail rehabilitation programs and investments that carriers preferred.

Minnesota Association of County Professional Economic Developers (MAPCED)

An outreach session was conducted with the Minnesota Association of County Professional Economic Developers in Little Falls, Minnesota. This included a 30-minute presentation and a roundtable discussion of rail projects that were planned or underway. The study team was invited to make a presentation about the Freight Rail Economic Development Study, which was in the final stages. Association members were asked about rail development potential. The following list summarizes opportunities and developments and includes high-level comments:

- Carver County has two industrial parks next to rail. Rail is not currently active in this industrial park.
- The City of Norwood is looking at a TIF district with low interest financing. No rail was mentioned.
- Willmar has a University of Minnesota pipeline technology demonstration project underway and a new industrial park area waiting for land to be made available. No rail access at this time. A TIGER Grant was submitted where the Class I would participate if the grant is successful. If the grant is not awarded, the private sector rail company will not be interested in undertaking the development.
- Windom's Highway 71 industrial park is receiving $2.4 million in funding from TED, EDA and Enterprise funds. There is no rail at this time. Twelve lots are designed within the industrial development park. Fiber optic companies and a Fast Sprayer company with a 72,000-square-foot warehouse is in development. A new headquarters for Big Game Tree Stands is being developed. An O'Reilly's Auto Parts store is moving to town.
- Aiken County is working on a new ATV track and a Certified Wood Products company development. A $2.5 billion, 500-mile pipeline to carry Bakken crude from northwest North Dakota to Superior, WI is under development by the Enbridge Pipeline company. The proposed Sandpiper pipeline will expand pipeline capacity to 425,000 barrels per day. While the exact route is not confirmed, upon approval the new pipeline could go into service in 2015-2016. The Sandpiper operation is expanding near Staples, Minnesota, with no rail service at this time; a rail spur could be possible in the future.

- Carlson is working on a housing project.
- Redwood Falls has a 48,000-square-foot distribution center going in for Grow Company Supply near Ft. Dodge. A Sprayes and Farm Equipment facility opportunity is being explored. This city is home to the Minnesota Regional Rail Authority.
- Lac Qui Parle EDA is investigating a three-year fiber premium project.
- Morrison County is exploring a fiber optic project, and a local ethanol plant is being sold but will still have corn and DDG shipments. The new facility will make the next generation of ethanol (enbuthanol) at the 22-million-gallon facility that is too small to compete with regional ethanol plants that are 100 million gallons or more. A pilot plant for this new ethanol-like technology is being built in Emmitsville, Iowa and Morrison County facility will use the same processing methods A bike trail is being extended that will connect the Soo Line Trail with the Paul Bunyan trail. The railroad serves Camp Ripley and the track supports an ethanol plant near the camp. A center for aeronautics training is being set up in Little Falls. A million dollar education curriculum is being designed.
- Lincoln County is working on a solar manufacturing plant and a solar garden at Hendricks Hospital. An Otter Tail Power scenic area is being developed as well as a 30-million-gallon biodiesel plant.
- Cass County has a Reed's distribution center going up at an estimated at $2.5 million dollars. A superfund site is being redeveloped. A new Family Dollar retail store is opening.
- Hennepin County noted that the Fort Snelling Upper Post project is being developed with the DNR. The plan is to redevelop the area for an Upper Mississippi Academy. An industrial park area is also being considered.
- Pope County is working on a grade separation.
- Pine County is working through a land dispute where a land owner was trying to donate land for an industrial park but had to pay back taxes on the property in Wyoming. In Rush City, there is a 70-acre industrial park under consideration but there is no rail spur. Another 200-acre site is being considered.

Of the 14 reported business activities, only two did not include large projects where access to rail for ethanol, biodiesel, manufacturing or large warehouses were reported. Superfund sites have been used in the past for rail transload developments and, depending on rail access and local freight patterns, could be repurposed for rail access. While many of the industrial parks mentioned did not have rail, the opportunity to add spurs at a later time could be considered depending on proximity to active rail lines.

The group leader of MAPCED thanked the team for presenting and mentioned that they seldom have transportation programs like this presented. Due to time constraints, the presentation and comments were limited to 30 minutes. Potentially, a workshop at a future meeting could share a case study on rail economic development success stories. MAPCED will provide links to all project materials. The group was most interested in the commodity maps showing rail market share of basic commodities by county.

Figure 26 lists the entire membership of MAPCED with contact information and a short comment about rail.

Figure 26: MAPCED Membership and Projects

MAPCED
Minnesota Association of Professional County Economic Developers

Minnesota Association of Professional County Economic Developers

Organization	Contact	Phone	Rail Activity Update
Aitkin County	Ross Wagner	218-927-7305	no rail potential spurs
Alexandria Area Econ. Dev. Commission	Jason M. Murray	320-763-4545	
Anoka County	Karen Skepper	763-323-5709	
Brainerd Lakes Area Dev. Corp.	Sheila Haverkamp	218-828-0096	
Carlton County Econ. Dev.	Connie Christianson	218-384-9597	housing relocations
Carver County CDA	John Sullivan	952-448-7715	Ind. Park next to rail
Cass County Econ. Dev. Corp	Gail Leverson	218-947-7522	Superfund Redevelopment Site
Chisago County HRA-EDA	Nancy Hoffman	651-674-5664	
Community Dev. Of Morrison County	Carol Anderson	320-632-5466	Ethanol Plant Camp Ripley
Dodge County Econ. Dev. Agency	Andrew Barbes	507-319-5985	
Goodhue County	Scott Anderson	651-385-3001	
Hennepin County	Patrick Connoy	612-348-2215	Industrial Park Development
Hubbard County REDC	David Collins	218-732-2256	
Kandivohi County and City of Willmar EDC	Steve Renquist	320-235-7370	New Ind. Park, no rail
Lac Qui Parle County EDA	Pamela Lehmann	320-598-7976	3 year fiber optic project
Lake County	Laurel Buchanan	218-834-8320	
Lincoln County Enterpise Dev. Corp	Vince Robinson	507-694-1306	30 million gallon Biodiesel
Martin County EDA	Scott Higgins	507-238-3126	
Meeker County	Suzanne Hedtke	320-693-4620	
Mille Lacs County	Richard Baker	320-983-8409	
Murry County Economic Development	Amy Rucker	507-863-6023	
Pine County Economic Development	David Minke	320-591-1621	70 acre Ind. Park no spur
Pope County	Richard Dreher	320-334-3042	Grade seperation
Redwood Area Development Corporation	Julie Raith	507-637-4004	48,000 Sq Ft bldg, Rail Authority
Renville County HRA/EDA	Chris Hettig	320-562-3656	
Rice County Economic Development	Deanna Kuennen	507-332-6126	
Roseau County	Glenda Phillipe	218-463-4248	
Scott County CDA - First Stop Shop	Stacy Crakes	952-496-8613	
Stearns County HRA	Bob Swanberg	320-685-7771	
Stevens County Econ. Improvement CMTE.	Michael Haynes	320-585-2609	
Swift County	Jen Frost	320-842-4769	
Todd County Development Corp.	Rich Utech	320-732-2128	
Worthington Regional EDC	Abraham Algadi	507-372-5515	
Wright County Econ Dev. Partnership	Ted LaFrance	763-477-3054	
Cottonwood County/Windom	Aaron Backmead		no rail 12 lots in Ind. Pk.

Minnesota Department of Employment and Economic Development (DEED)

The study team also talked to DEED representatives individually and also at the EDAM meeting. DEED has 13 regions within the State of Minnesota to support and promote economic development activities.

DEED regions are shown in Figure 29. Some regions have been subdivided into eastern and western portions. Many DEED offices were present at the meeting for the Economic Development Association of Minnesota (EDAM). The summer meeting offered table top workshops where the Minnesota Freight Rail Economic Development project made a presentation and opportunities for individual conversations about freight rail economic development. There were over 200 attendees at the EDAM meeting. There are 510 individual EDAM members who are interested in the economic development of Minnesota.

The following comments and areas of interest were captured at the EDAM meeting:

- Seven Rivers needs to eliminate borders between Wisconsin and Minnesota. There is interest in developing a cold chain food business and a college program at University of Wisconsin-La Crosse, which focuses on composites. Growth and interests in composites could benefit from rail access bringing tank and hopper cars of inbound raw materials to the area. The cold chain opportunities need to find a source of refrigerated rail cars.
- Mankato's primary industrial manufacturer is Johnson Outdoors (A Fortune 500 company) It was reported that Johnson Outdoors sources 50% of their inbound materials from vendors within a one hour travel distance from their plant.
- Upper Minnesota felt they had legislative enablers to help them take advantage of rail but was still working on specific matching opportunities. This is not an intermodal opportunity because the perception is the Class I railroads in the region do not want to stop their trains for inbound or outbound freight.
- St. Cloud identified a rail opportunity associated with Verso Paper Mill in Savage, which recently had a fire and explosion. Representatives were interested in redeveloping the rail assets of the plant.
- Albert Lea would like to redevelop rail-served cross dock facilities and a Union Pacific switching terminal, which recently removed tracks. Albert Lea has a railroad authority but did not have promotional materials that focused on rail access. An effort to put together potential inbound and outbound tonnage was attempted but difficult to produce. This information was requested by a short line railroad development and holding company. While the company was able to review the potential rail served sites in Albert Lea with Google Map applications, without shipper contacts and projected volumes, a business plan could not be put together. A regional trucking company with over 200 refrigerated trailers was interested in participating in the development if customers could be identified.
- Magnitation is a new business development in Grand Rapids, with the potential of moving unit trains to Mexico. The facility is still in the development phases.
- SR Steel in Kewatten is an example of a site served by the Itasca County Railroad. An 11-mile segment of track was constructed to provide the steel mill with rail access, which would support and estimated 700 jobs. The plant is anticipated to be opened by mid-2014.
- Sartel has a 65-acre site with an existing rail spur; they would like to explore a rail transload at that facility.

- Chisago has a food producer and silica sand and would like to develop rail access for these customers.
- Luverne has a manufacturer that would like to explore a public or private transload operation for the community. They have their own switch engine and track.
- Cokato has a two-mile expansion project and is interested in rail.
- Sauk Rapids feels their facility is underutilized and would like to have joint powers to market their facilities.
- One attendee asked "How do you determine if rail is an asset?" Others agreed that many of the local neighbors see rail as a grade crossing delay or a loud whistle. This individual also wanted to know how to market the rail they had and mentioned that many times rail is a "chicken and egg" dilemma. A site attraction specialist wants to see rail in the ground. They have a rail spur but the rail spur does not connect to businesses within the industrial park. What sources of funds can be used for making these connections if the business is not already there?
- Bueller has a 70-acre park and wants to extend rail siding. They submitted a TED application but were denied. They want to avoid letting the park getting land locked without rail access.
- A Hennepin County representative wanted to know who is responsible for residual environmental cleanup if a rail line is abandoned.
- A community in Southwestern Minnesota has a rail station where they provided a local railroad museum a short-term lease. A transload railroad operator approached the city to see if they could lease the depot area. The rental lease could not be terminated within a timeframe that was viable for the transloader and the opportunity was lost.

Twenty-five individuals attended the table top workshop on freight rail access. Sixteen (64 percent) were actively engaged in rail projects or concepts and were interested in further information. No two were similar. Those who attended and signed the registration sheet were interested in copies of the rail market share commodity maps, a shipper tool kit and other rail development resources (see Figure 27).

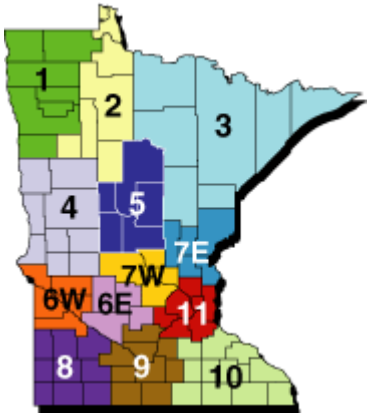
Figure 27: Economic Development Association of Minnesota Roundtable Participants

Summer Program Duluth 2013

Name	*Agency*	*Phone*
Angie Steinbach	City of Montevideo	320-269-6975
Ron White	Hennepin County	952-881-6577
Aaron Backman	City of Windom	507-832-8661
Dean Uselman	City of Wadena	
Brad Vrzexunsju	DEED	218-310-7757
Justin Pearson	BNSF Railroad	701-566-1116
Brian Hanson	Apex	218-740-3667
Chris Robinson	BLAEDC	218-828-0096
Heather Rand	DEED	218-349-7076
Bryan Murdock	Baywest	651-248-4291
Clay Wilfahrt	Elk River	
Judy Bodway	City of Winona	507-457-8234
Kersten Elverum	Hopkins	
Steve Peterson	Iron Range Resources B(	218-735-3002
Nancy Hoffman	Chiscago County EDA	651-674-5664
Patti Gartland	GSDC	320-252-5228
Mark Osendolf	Xcel Energy	320-255-8610
Chuck Deye	Bay West	651-592-0167
Ted LaFrance	WCEDP	651-592-0167
Betsy Johnson	APEX	
Amanda Fredler	City Of Becker	
Ros Olson	Sauk Rapids	320-258-5302
Dave Minke	Pine County	320-372-0655
Patrick Connely	Hennepin County	
Janna King	EDSI	612-925-2013
Michaela Orr	BioBusiness Alliance	952-746-3832

Figure 28 lists the economic development regions in Minnesota and related counties.

Figure 28: Minnesota Economic Development Regions



POSITIVELY Minnesota
Department of Employment and Economic Development

Economic Development Regions

	County	
	Kittson County	Marshall County
Northwest	Norman County	Pennington County
	Polk County	Red Lake County
	Roseau County	
EDR 02	Beltrami County	
Headwaters	Clearwater County	Hubbard County
	Lake of the Woods County	Mahnomen County
EDR 03	Aitkin County	Carlton County
Arrowhead	Cook County	Itasca County
	Koochiching County	Lake County
	St. Louis County	
EDR 04	Becker County	Clay County
West Central	Douglas County	Grant County
	Otter Tail County	Pope County
	Stevens County	Traverse County
	Wilkin County	
EDR 05	Cass County	Crow Wing County
North Central	Morrison County	Todd County
	Wadena County	
EDR 06E	Kandiyohi County	McLeod County
Southwest Central	Meeker County	Renville County
EDR 06W	Big Stone County	Chippewa County
Upper Minnesota Valley	Lac qui Parle County	Swift County
	Yellow Medicine County	
EDR 07E	Chisago County	Isanti County
East Central	Kanabec County	Mille Lacs County
	Pine County	
EDR 07W	Benton County	Sherburne County
Central	Stearns County	Wright County
EDR 08	Cottonwood County	Jackson County
Southwest	Lincoln County	Lyon County
	Murray County	Nobles County
	Pipestone County	Redwood County
	Rock County	
EDR 09	Blue Earth County	Brown County
South Central	Faribault County	Le Sueur County
	Martin County	Nicollet County
	Sibley County	Waseca County
	Watonwan County	
EDR10	Dodge County	Fillmore County
Southeast	Freeborn County	Goodhue County
	Houston County	Mower County
	Olmsted County	Rice County
	Steele County	Wabasha County
	Winona County	
EDR 11	Anoka County	Carver County
7 County Twin Cities	Dakota County	Hennepin County
	Ramsey County	Scott County
	Washington County	

Peer State Programs for Rail and Economic Development

A 10-state peer review was convened on April 15 and 16, 2013. Neighboring states as well as states with recognized freight rail economic development programs were invited to attend. Florida, North Carolina, Pennsylvania, Ohio, Michigan, Wisconsin, North Dakota, Iowa, Kansas and Oklahoma attended. The event began with a tour of a railroad transload operation. The tour provided a firsthand opportunity to identify how third-party service companies can bring rail freight into a climate controlled building and merge, assemble and distribute goods to customers within a 60-mile radius that do not have an active rail siding. Design standards, such as dock height and safe rail car access, were demonstrated. LEED certified equipment was discussed in terms of costs and also cost-effective implementation. Facility landscaping was of great interest and demonstrated how freight can fit into local neighborhoods in an attractive and environmentally friendly way. Of greater importance were the business principles discussed, which allowed for overhead garage door manufacturing companies to perform light customization in the same facility where competing paper companies with common customers share supply chain facilities. The transloaders described the importance of separating food grade products to meet food safety specifications. This tour demonstrated the strategic importance of rail service and the role transloading operations can perform in support of supply chain operations.

The story of economic development entrepreneurs working with railroads and logistics companies to enhance regional competitiveness was continued in an evening meeting. A short line owner described the short line business model and identified that short lines today manage irreplaceable assets such as bridges and track infrastructure (for example, a bridge crossing the Ohio River connecting Louisville, Kentucky with markets in Ohio). Land use, zoning and rail preservation principles were discussed with specific examples where lack of oversight can result in development of strategic rail served properties in less than optimal ways.

Railroad Program Themes

The Peer Review meeting included a full agenda aimed at promoting dialogue about freight rail economic development program administration issues, funding features, challenges and success stories. Norfolk Southern, a leader in short line cooperation and growth shared insights about their annual short line meeting and growth strategies. BNSF shared insights on rail planning and program efforts across their network. Participants were asked to identify themes that could help Minnesota enhance their freight rail economic development efforts. Two Youtube videos were filmed at this event and are available on the Minnesota Department of Transportation website. One video captures why freight rail economic development is important, the second video captures recommendations to enhance Minnesota's freight rail economic development efforts.

Twelve freight rail program planning factors were identified:

1. **Freight rail economic development projects require patience.** It was noted that, not only do freight rail development projects take time to plan and coordinate, they also take time to construct and demonstrate success. Sometimes it can take up to three years for new facilities to produce expected results.

2. **Freight is regional in nature – coordinate with neighboring states.** It is essential to connect regional trading partners to realize economic synergies. State boundaries can make project coordination difficult. A regional approach can help target industries connect to suppliers and customers in neighboring states. Kansas/Oklahoma/Texas participate in regional rail meetings and analyze freight flows. This is particularly important given the pace of energy industry developments.

3. **Loan programs are less desirable than grants,** particularly when the prime interest rate is already low. Interest rates for state rail loan programs range from zero percent to two thirds the prime rate, with repayment periods of up to 10 years. Loan amounts vary by states. Wisconsin offers up to $3 million per year. Rail ownership of track, right of way and rolling stock varies by states. Iowa requires a wage quality standard for projects funded by state loans. Some states offer loan forgiveness if volume forecasts are met. Other states focus on private sector financial participation, including minimum service requirements and feel that the private sector must have a stake in the process to ensure a positive outcome. Documentation of rail assistance programs is important with clearly established rules, deadlines and milestone reporting criteria. Ohio requires a benefit cost assessment for all projects considered. Iowa identified the importance of funding planning grants to assure that all parties are engaged in the process. North Dakota provides tax credits since many short lines are small businesses or limited liability companies.

4. **Think Big – higher maximum loan amounts can achieve more.** Minnesota's maximum loan amount for rail service improvement projects is $200,000, while other states offer $1 to $3 million loans. Site selectors who help new business starts and corporate expansion efforts are aware of incentive programs and how different states compare. Smaller economic development projects may be more likely to be funded through other means. The BNSF Director of Public Private Partnerships stated that CTC rail sidings cost $8 million to construct.

5. **Program definitions and performance standards help realize successful development.** Restrictions can help ensure funds are used as intended, but create barriers if companies feel they are too burdensome. Bond funds often carry restrictions for the useful life of the investment. The Federal Railroad Administration (FRA) wants to see a 20-year useful life for projects. Wage quality requirements can help ensure the type of job growth states want. Many states use claw backs if funds are not invested as promised or if projects do not meet performance standards. Some states require performance measures and service thresholds. Multimodal funds are more desirable than mode specific funds. When benefit cost measures are introduced, finding accurate and reliable data sources is essential, especially when companies must quantity economic, job creation, environmental and performance benefits.

6. **State oversight and program rules can ensure investments will achieve results.** Formalized agreements with railroads should be used to ensure new facilities will be used. Shippers need to make sure new facility connections are coordinated with short lines and Class I railroads. Iowa has an assistance program to help economic developers understand basic requirements.

7. **Education and training is needed for non-rail industry partners.** These may include state DOTs and economic development agencies. Railroads do not typically share any type of facility, especially if

one company already has access. Many states note that an inventory of rail-served sites is an important step in providing business attraction targets with site visibility.

8. **Planning grants can be a strategic tool to ensure the success of rail investments.** Funding to support design, outreach, public involvement and environmental review of projects is an opportunity to be proactive in meeting rail challenges. Railroads must be involved in this process for the effort to be worthwhile.

9. **Predictable funding sources help freight stakeholders plan better projects.** State rail program funds are often unpredictable. Economic opportunities developed by the private sector are generally developed around a business need, not because a funding program exists. When funding programs are unpredictable, participation is often lower because of the variability in the structure.

10. **Short lines have unique challenges.** Many short lines lack long-term vision since they are preoccupied with their daily work of running a railroad. Due to the economic climate, they tend to be less focused on long-term capital investments. Most short lines focus on the near term of the next one to three years. Loose car railroading is a lost art form, reminded one short line operator. Short line operators are essentially educators and entrepreneurs when it comes to loading freight on railroads. They have unique expertise in understanding the economics and the financial motivate to get traffic moving. Today's Class I railroads are volume oriented and highly sensitive to network production. Short lines and other states note that expanding eligibility for rail preservation and improvement funds can lead to positive benefits. Economic Development Agencies, Port Authorities, Chambers of Commerce and other regional transportation coalitions can help facilitate freight rail development.

11. **Communication is the key to success, Class I railroads' guardedness creates challenges for industry and agency partners;.** Private sector railroads have a strong profit motivation and are less interested in marginally profitable new business. Due to competitive and strategic reasons, Class I railroads often object to sharing information. Railroads have capital programs, which can be leveraged for better overall system improvement if public agencies would get involved. Examples of public-private partnerships associated with Tower 55 in Texas and Mississippi River bridge crossings were highlighted. Railroads and DOTs would benefit from joint infrastructure planning efforts. Kansas invites the DOT to participate in Department of Commerce site selection projects. BNSF also noted that they have high standards for short lines to meet and some short lines service is below their expectations for interchange opportunities.

12. **Trucks often compliment freight rail developments and provide the first and last mile of trips.** Therefore, rail investments also need to be coordinated with highway projects. For example, trucks bring crops to elevators for rail shuttle train loading, and provide local distribution services for rail served terminals and production facilities.

Rail Program Challenges

The Peer group also identified several freight rail economic development challenges:

- The value engineering environment in Minnesota favors smaller projects, while larger projects could have more impact. Freight rail economic development projects require certain economies of scale in order to be successful.
- Transportation and economic development agencies have highway funding available, which helps them leverage additional funds and respond to immediate needs. Rail funding, is much more limited, this hinders the ability to leverage additional funds for rail projects.
- Planning pays off. Poor project planning can lead to project delays or failure. Many rail programs do not have funding to support planning efforts.
- Many State Dot's lack rail staff to promote, support and encourage freight rail economic development. Lack of agency staff can be a limiting factor in a freight rail program.
- Education of the supply chain partners in rail development is essential. The lack of understanding of railroad and shipper needs is also an issue. In order for rail programs to be create value each stakeholder must understand the economic requirements and benefits for successful outcomes.
- A secured, dedicated revenue stream for rail investment is important. Revolving loan fund balances can get re-appropriated for other needs. A stable program requires a sustainable funding source for users to incorporate in long range planning activities.

Peer Review Recommendations for Minnesota

- Legislative champions are needed to increase funding. Freight Rail Economic Development is a complicated concept. Champions help simplify and inform elected officials.
- Planning is critical to freight rail economic development success. Statutory requirements ensure studies and funding occur.
- Funding for project development is needed to ensure freight rail economic development success
- Developing a freight rail project inventory is beneficial when Federal funding opportunities arise such as TIGER Grants and other rapid turnaround programs are announced
- Build in long-term capacity so railroads have room to grow. Many highway projects have long life spans, planning for future rail growth, particularly around highway bridges can benefit long range planning.
- Periodic coordination meetings or conferences should be held between MnDOT and economic development, tourism, agriculture and other business supporting agencies to discuss freight rail economic development needs, opportunities and interests.
- Documented processes and guidelines for funding are needed to make State expectations clear to railroad loan/grant recipients. It was recommended that Minnesota ask for feedback on communications about existing programs and provide technical assistance and training with the funding process.
- Promote funding opportunities via professional development and trade organizations.
- Matching funds from the railroads or other private stakeholders ensures that the private sector has a steak in the success of the freight rail development project.
- Coordinate with industry clusters to identify specialized needs and future opportunities. Railroad service benefits stakeholders who provide large volumes of freight. When industry clusters identify opportunities for inbound, outbound and aggregated freight volumes, freight railroads become an important resource.
- Freight rail training and education needs were identified as an essential key to future success. Training programs for DOT staff could be enhanced by workshops lead by railroads and rail industry experts.
- In recent years the industry has demonstrated a preference for forgivable loans. Several peer states recommend this tool as an option to encourage participation while managing risk.
- Educate the public on the benefits of privately owned rail transport and rail system structure and the synergies between road and rail networks.
- Establish a freight action team and an ombudsman to facilitate project coordination.
- Encourage DOT leadership to participate in Class I strategic planning efforts to ensure long range transportation network investments are coordinated. Opportunities for rail and highway network developments should be coordinated to planned jointly.

Peer Review Program Comparison Sheet

A comparison spreadsheet was developed to provide an at-a-glance comparison of rail development and preservation programs. Key attributes and highlights are described in tabular fashion on the following pages. Figure 30 shows a comparison of rail development and preservation programs. Figure 29 presents a comparison of rail-related programs for Minnesota and other key states.

Figure 29: Rail Related Programs for Minnesota and Neighboring States

	Minnesota	Indiana	Iowa	Kansas	North Dakota	Wisconsin
Program	1. Rail Line Rehabilitation 2. Capital Improvements Loan Programs	**Industrial Rail Service Fund (IRSF)**	Railroad Revolving Loan & Grant Program. Project types: a. Job creation b. Rail network improvement **c. Rail Port Planning and Development.**	1. State Rail Service Improvement Fund 2. Economic Development **3.Intermodal Transportation** 4. Community Block Grant	1. LRFA 2. TRIP Project Types (prioritized) a. System Critical b. Infrastructure Improvement c. Economic Development	1. Freight Railroad Preservation Program; **2. Freight Railroad Infrastructure Improvement Program**
HIGHLIGHTS		**Funding Flexibility (Applicants, source)** **Outreach (planning)**	**Targeted job creation;** **Funds for planning;** **Funding Flexibility (shared financial risk)**	**Intermodal Legislation and regulations;** **Community Block Grant $ for Rail**	**Funding Flexibility** **prioritized projects** **deferred repayment**	**Funding Flexibility** **Applicants; interest; repayment**
PROGRAM FUNDING						
Program Annual Funding	1.$4M est. funding 2012-2015 for 1 (2012) project (MN 2011 State Transportation Improvement Plan) 2. $3M per STIP	$1.5-1.7M	~$2-$3M. b. Program set aside: Min $200K up to 10%	1. $5M 2. $10M	Varied; Avg $2M from 2008-2010	1. up to $30M 2. ~$5 - $8M new projects annually
Source	MRSI Program has received General Fund appropriations and Bond appropriations over the life of the program. The 2003 & 2004 Legislature rescinded $6.4M in General Fund appropriations. Revolving loan fund.	0.029% of State Sales Tax and loan repayment (deposited quarterly)	Appropriations (Rebuild Iowa's Infrastructure Fund or General Fund) and loan repayment; Special appropriation in 2011.	1. & 2. 28% by sales tax (.4¢) 25% motor fuels tax 22% federal funds 12% registration fees 9% bond proceeds 2% local funds 2% other 3. Appropriations; sale of bonds (if any); repayments; interest on fund; transfers from state highway fund 4. HUD (federal block grant)	Loan repayment and interest (revolving loan fund)	1. bonding authority 2. currently by revolving loan funds
Other	By statute, program administration can't be funded from MRSI account		Access Rail (Iowa DOT initiative to gain additional funding)			

	Minnesota	Indiana	Iowa	Kansas	North Dakota	Wisconsin
Program	1. Rail Line Rehabilitation 2. Capital Improvements Loan Programs	**Industrial Rail Service Fund (IRSF)**	Railroad Revolving Loan & Grant Program. Project types: a. Job creation b. Rail network improvement **c. Rail Port Planning and Development.**	1. State Rail Service Improvement Fund 2. Economic Development **3.Intermodal Transportation** 4. Community Block Grant	1. LRFA 2. FRIP Project Types (prioritized) a. System Critical b. Infrastructure Improvement c. Economic Development	1. Freight Railroad Preservation Program; **2. Freight Railroad Infrastructure Improvement Program**
PROJECT FUNDING						
Type	1. Loan 2. Loan	Loans; Grants (Max to Port Authority is 20% program funding). *Mostly given as grants*	a. Loans; Grants (limited to 50% of total funds available); b. Loans c. Grants	1. Loans/Grants 2. Grants 3. loans; guarantees; bonds refunding/ acquisition 4. Loan	Loans (no grants since 1996)	1. Grant 2. Loans
Max Project $	2. $200K	Grant: $300K.	a. Grants: 6K/job; Loans: $12K/job c. **$100K max**	4. $35,000 per job created; $750K total (min $100K)	**1. $5M** 2. $1M	**2. $3M ($1.5 limit for non-rail purposes such as loading equipment, grain bins, warehousing)**
Max % of Project	1. 70% (80% if owned by a regional rail authority)	Grant: (Recipient Railroad) 75%			a. 80% b. 80% c. 50%	1. 80% (100% of real estate acquisition costs) 2. up to 100%
Term	1. Max. 15 year 2. 10 years	Set by DOT	a. 10 years b. 10 years	1. 10 years 4. 10 years	a. 15 Years b. 15 Years c. 10 Years 2. **Defer repayment for up to two years allowed**	2. 10 years
Interest Rate	1. Low or no interest 2. 10% loan fee (0% for applicants investing $10K+ toward rehabilitation)	Set by DOT	a. 0% b. 0%	1. low interest (rate determined by secretary) 4. 0%	a. 0% b. 1/2 Prime (cap 4.5%) c. 1/2 Prime (cap 4.5%) 2. 1/2 Prime (not less than 3%)	**2. Formulaic interest rate calculated to allow (but cap) return on the railroad's investment in the project equal to double its cost of capital. 2% min.**
Match	1. Rail users 10% to the rail carrier, Rail carrier 20 %	Grant: Recipient Railroad Max 25%	a. Grants: 50%; Loans: 20% b. 20% **c. 20%**	1. Local 30% 2. Local 25% 4. 50%		
Secured	2. Yes		a. track and materials used	1. Promissory Note & Lien		
Repayment	1. In addition to loan, Rail carrier must reimburse users for funds loaned. 2. Quarterly			1. Monthly 4. 1/4 to 1/2 of funding is repaid (conditional)	Annual	Repayment may be based on: a per car formula with min payment per fixed period and maximum end of-term balloon payment of no more than 50% of loan; fixed amount per fixed period; an amortized repayment schedule based on the interest rate, length of repayment period and principle amount.
Requirement	1. Shipper's survey, cost/benefit analysis, and rehabilitation needs assessment 2. Provide letter of support from railroad serving facility	Project outline includes 286,000 pound capacity of project rail segment and total number of Indiana jobs the project will generate	a. Funding is contingent on job creation, retention and wage commitments by the applicant.	1. Benefit/Cost>1 2. Benefit/Cost>1 4. At least 51% of jobs must meet HUD's low-and-moderate income test for the county	**Benefit/Cost >1**	Benefit/Cost analysis (but not threshold)

	Minnesota	Indiana	Iowa	Kansas	North Dakota	Wisconsin
Program	1. Rail Line Rehabilitation 2. Capital Improvements Loan Programs	**Industrial Rail Service Fund (IRSF)**	Railroad Revolving Loan & Grant Program. Project types: a. Job creation b. Rail network improvement **c. Rail Port Planning and Development.**	1. State Rail Service Improvement Fund 2. Economic Development **3.Intermodal Transportation** 4. Community Block Grant	1. LRFA 2. FRIP Project Types (prioritized) a. System Critical b. Infrastructure Improvement c. Economic Development	1. Freight Railroad Preservation Program; **2. Freight Railroad Infrastructure Improvement Program**
Eligibility/ Applicants Applicants	1. Must include the Mn/DOT, rail users, and the railroad. Eligible rail line if a) Not FRA Class II Track Safety Standards compliant or it does not have the required structural capacity to support rail cars of 263,000 pounds; 2) Is within physical boundaries of or predominantly serves rail users in Minnesota. 2. Rail users and railroads	Class II or III railroads (Loans/Grants); **Port Authorities (Grants)**	Industries, railroads, local governments or economic development agencies	1. Local Governments, railroads, port authorities, and shippers (local government, shipper or port authority must have MOU with the serving railroad) 2. Local Governments 3. Any governmental unit or private enterprise 4. Small city and county governments on behalf of a participating private for-profit company	a. Railroads b. railroads, units of government, and rail authorities c. Cities, counties, railroads, or other current or potential users of freight railroad service	1. local units of government, industries, railroads 2. railroads, rail service customers and units of government
Project Type	1. Provides loans to rehabilitate and preserve rail lines that are financially viable and have the potential to increase rail use. 2. Provides loans for projects that improve rail service and/or strengthen the financial condition of the associated line.	Upgrade Class II and III freight railroad physical plant and assist in railroad track improvements related to new business development.	a. rail spur construction serving **specific** industrial development projects b. Projects support the sustainability of the existing rail system; c. Rail port planning / development studies that collect info and create databases that enable a community, county or region to make fact-based decisions concerning the location, design or funding requirements for a rail port facility.	1. 2 types: major railroad rehabilitation and railroad capacity improvement projects 2. Any transportation mode 3. Relating to an intermodal facility having cost in excess of $150,000,000 4.Infrastructure Projects: Funding for water, sewer, rail spur, roadway and other infrastructure improvements designed to assist companies in creating jobs.	a. Projects critical to the short line's existence b. Structural repairs, tie and ballast replacement, switches, short segments of rail replacement, etc. c. Upgrading and installation of existing or new rail infrastructure. 2. FRIP generally eligible only when the rail line has carried less than 5M gross ton miles of freight/mile in the year previous.	1. Preserving essential rail lines and rehabilitation following purchase 2. Improvements to rail system and other rail-related projects such as loading and transloading facilities

	Minnesota	Indiana	Iowa	Kansas	North Dakota	Wisconsin
Program	1. Rail Line Rehabilitation 2. Capital Improvements Loan Programs	**Industrial Rail Service Fund (IRSF)**	Railroad Revolving Loan & Grant Program. Project types: a. Job creation b. Rail network improvement **c. Rail Port Planning and Development.**	1. State Rail Service Improvement Fund 2. Economic Development **3.Intermodal Transportation** 4. Community Block Grant	1. LRI-A 2. FRIP Project Types (prioritized) a. System Critical b. Infrastructure Improvement c. Economic Development	1. Freight Railroad Preservation Program; **2. Freight Railroad Infrastructure Improvement Program**
Program Administration						
Administration	MN DOT	Indiana DOT State Auditor services approved loans	IA DOT	1. KDOT 2. KDOT 3. KDOT and KS development Finance Authority 4. KS Department of Commerce		2. WI DOT Railroads and Harbors Section
Special Review			Transportation Commission (with DOT input)			2. Application conference (w/i 45 days of submission)
Timing		**Indiana's Short-Range (1-5 Year) Projects. Additional projects (from stakeholder outreach) are on Long-Range (6-20 Year) Projects [Large scale dependant on federal funding].**	Applications accepted anytime; reviewed periodically when funds available (typically once a year)	1. & 2. Annual **Mechanism for 45 day expedited review to recruit new business**		
Statutory Authority	Minnesota Statutes Sections 222.46 to 222.54 cited as the Minnesota Rail Service Improvement Act.	IC 8-3-1.7 Chapter 1.7, Industrial Rail Service Fund	Iowa Code section 327H.20A	1.K.S.A. 75-5040 et. seq. 3. K.S.A. 75-5081 through 75-5087; Kansas Register, Art. 42, 36-42-1 et seq.	ND Chapter 49-17.1	Wis Stats 85.08 and 85.09

Current Minnesota Programs and Recommendations

This section describes the two primary programs in Minnesota that could be used for freight rail economic development and a summary of recommendations to improve these programs. In addition, a discussion of other options for promoting and funding freight rail economic development is presented. Additional detail is found in Section 3 of the Appendix.

Minnesota Rail Service Improvement (MRSI)

Background

The Minnesota Rail Service Improvement (MRSI) Program was created in 1976 with funding authorized in 1978. The purpose of this program is to help rail users improve their efficiency of the rail system. Funds are available for capital improvement projects that increase rail usage. Examples include adding industrial spurs, installing rail switches or loading and transfer improvements. Figure 31 provides program expenditures over the past five year period from 2007-2012. Shading indicates the source of the funding i.e. bonds, general or federal funds.

The maximum loan amount for the MRSI Program is $200,000 with a 10-year repayment schedule for qualified applicants. The key benefit to this program is that the loan is interest free, making it more affordable for the rail user. **The downside of this program is that the $200,000 maximum loan amount is often not enough to fund even the smallest types of improvements.** Many rail projects are significantly in excess of $200,000 and, as a result, the utility of this program is limited.

A number of other states have loan program limits that are in the millions of dollars; however, according to Minnesota State Statutes 116L.66, “businesses or private enterprises that receive grants or loans from the state in amounts over $200,000 a year shall as part of the grant or loan agree to list any vacant or new positions with the state workforce centers.” Based on input from MnDOT, DEED and others involved, the job posting requirement is a limiting factor to increase the loan amount. A legislative exemption or compliance with the job posting requirement would be required if the funding level increases above $200,000.

Figure 30: MRSI Example Expenditures

MINNESOTA RAIL SERVICE IMPROVEMENT PROGRAM
EXPENDITURES

Contract Date	Project	Agreement Number	Project Type	State (MRSI)	Federal (Section 803 & FRA)	Private Railroad	Private Shippers	Total	Funding Source
19-Apr-07	Midwest Regional Rail Initiative-State of Wisconsin		Consul. Agmt	$10,416.67	$0.00	$0.00	$0.00	$10,416.67	
13-Jun-07	MN Valley Alfalfa Producers-Priam	91184	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	
30-Aug-07	Agassiz Valley Grain-Barnesville	91527	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	200 T79 0000 018
30-Aug-07	Hi-Yield Products-Alden	91592	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	
27-Aug-07	MVRRA DTFR53-07-G-00013	92242	Rehab-Bond	$1,000,000.00	$0.00	$0.00	$0.00	$1,495,000.00	500 T79 0000 817
			Fed. Grant Rehab		$495,000.00	$0.00	$0.00		300 T79 0000 883
10-Sep-07	Elbow Lake Coop Grain-Elbow Lake	91526	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	
5-Feb-08	Heartland Corn Products-Winthrop	92418	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	
19-Mar-08	United Farmers Coop-Winthrop	92273	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	
27-May-08	Rothsay Farmers Coop-Rothsay	92819	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	
10-Sep-08	Midwest Interstate Passenger Rail		Consul. Agmt	$15,000.00	$0.00	$0.00	$0.00	$15,000.00	200 T79 0000 018
10-Sep-08	Midwest Reg Rail Initiative-State of Wisconsin		Consult. Agtm	$10,416.66	$0.00	$0.00	$0.00	$10,416.66	200 T79 0000 018
10-Sep-08	States for Passenger Rail Colition		Consult. Agmt	$4,000.00	$0.00	$0.00	$0.00	$4,000.00	200 T79 0000 018
15-Oct-08	Red River Valley & Western	93441	RR Cap Improv	$479,469.71	$0.00	$76.00	$0.00	$479,469.71	500 T79 0000 748 A92 5i
25-Nov-08	MPL-Hamburg Crossings	93626		$1,815.00	$0.00	$0.00	$0.00	$1,815.00	200 T79 0000 018
26-Jan-09	Minnesota Commercial	93440	RR Cap Improv	$308,000.00	$0.00	$122.76	$0.00	$308,000.00	500 T79 0000 748 A92 5i
	MN Valley Reg. Rail Authority		Fed. Grant Rehab		$950,000.00				300 T79 0000 883
5-Jun-09	Northern Plains Railroad	94027	RR Cap Improv	$490,000.00	$0.00	$0.00	$0.00	$490,000.00	200 T79 0000 018
5-Jun-09	Northern Plains Railroad	94040	RR Cap Improv	$650,000.00	$0.00	$0.00	$0.00	$650,000.00	200 T79 0000 018
16-Jul-09	RK Midwest Enterprises, LLP	95071	RR Cap Improv	$166,900.00	$0.00	$0.00	$0.00	$166,900.00	200 T79 0000 14S A92 5i
	MN Valley Reg. Rail Authority		Fed. Grant Rehab		$1,000,000.00				300 T79 0000 21U
26-Aug-10	Coop Country-Renville (Danube)	97529	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$200,000.00	200 T79 0000 14S A92 5i
17-Sep-10	Wenner Gas Company, Inc.	97580	Cap. Imp.	$200,000.00	$0.00	$0.00	$0.00	$0.00	200 T79 0000 018
	Buffalo Ridge Reg Rail Authority	97827	Ln to Grant Conv	$0.00	$0.00	$0.00	$0.00	$0.00	
1-Nov-10	MN Valley Reg. Rail Authority	97782	Bond Approp	$4,000,000.00	$0.00	$0.00	$0.00	$4,000,000.00	500 T79 0000 815 A92 5a
1-Nov-10	MN Valley Reg. Rail Authority	97783	Bond Approp	$5,000,000.00	$0.00	$0.00	$0.00	$5,000,000.00	500 T79 0000 B11 A92 5a
8-Dec-10	Step Saver	98042	Cap. Imp.	$74,726.00	$0.00			$74,726.00	200 T79 0000 018
12-Jan-11	Minnesota Commercial	97823	RR Cap Improv	$420,720.00	$0.00	$0.00	$0.00	$420,720.00	200 T79 0000 018
12-Jan-11	Minnesota Commercial	98098	RR Cap Improv	$547,380.00	$0.00			$547,380.00	200 T79 0000 018
12-Jan-11	Minnesota Commercial	98099	RR Cap Improv	$146,960.00	$0.00			$146,960.00	200 T79 0000 018
25-Jan-12	Minnesota Commercial	521	RR Cap Improv	$570,504.00	$0.00			$570,507.00	2000 T7910000 T790018
	FRED Study		Consult. Agmt						
				$15,696,308.04	$2,445,000.00	$198.76	$0.00	$15,991,311.04	

Bonds
General Fund
Federal Funds

Prepared by Office of Freight & Commercial Vehicle Operations

Transportation Economic Development Infrastructure Program

Background

The Transportation Economic Development (TED) Infrastructure Program was created to close financing gaps and accelerate transportation projects to promote job creation/retention and improve the state's economic competitiveness. It was established in 2010 and is a collaborative effort between MnDOT and DEED. As such, program funding sources in the first three TED solicitations have come from MnDOT Trunk Highway fund resources (bonds and cash) and DEED general obligation bonds. While these funds have allowed the program to fund projects on both the state and local systems, statutory and constitutional limitations associated with the Trunk Highway funds have reduced the flexibility in selecting projects that are off the trunk highway system. Ultimately, a more flexible revenue source would allow a much broader array of economic development projects to qualify for the program, including critical projects on local road systems, transit, freight, rail and port improvements.

According to the 2012 Minnesota Statute 116J.436, in order for a project to be eligible, funds must be used for "predesign, design, acquisition of land, construction, reconstruction and infrastructure improvements that will promote economic development, increase employment, and improve transportation systems to accommodate private investment and job creation."

TED program funds cannot be used by MnDOT for Trunk Highway improvement projects (projects being developed by MnDOT), but can be used to fund locally initiated improvements to the Trunk Highway and non-Trunk Highway system in coordination with Trunk Highway improvement projects being done by MnDOT.

TED Examples

In the TED program's first three solicitations, a total of 89 projects requested funding and 29 were selected. Total funding available for distribution was $74 million, compared to a total of approximately $275 million in requests. As the program has matured, more prospective local government applicants have been coming forward with project ideas that meet the two fundamental goals of the TED program: create and retain jobs and "grow the revenue pie" by leveraging private and other public resources.

A success story of the 2011 TED program was the Mille Lacs County Road 132 and Hawkins Sawmill Road project. This project included the reconstruction of two miles of County Road 132 that was a five-ton gravel road and replaced it with a nine-ton bituminous surface that can carry larger lumber trucks coming in and out of the sawmill. This project was included in the TED program; however, the funding came from the Greater Minnesota Business Development Public Infrastructure (BDPI) program. DEED has the ability to use BDPI program bonding dollars to fund potential TED projects.

The 2013 TED solicitation process recently included two rail-related projects. One was a regional rail park located in Big Lake and the other was an industrial rail park in Becker. The Big Lake Regional Rail Park project proposed rail infrastructure improvements including a 10,400 foot siding spur parallel to the BNSF mainline with two switches as well as modifying the TH 10 bridge over the existing BNSF line to allow the spur to pass under TH 10 next to the mainline track. The Becker Industrial Rail Park project was seeking to connect the existing city-owned spur track to a 70-acre site by extending the spur track approximately 2,500 feet – the city had completed other transportation infrastructure projects in 2011 in preparation of this project. Both of these projects would have created a significant number of new jobs in the area, roughly 56 new jobs in Becker and 1,100 in Big Lake upon full build out. That being said, both of these projects were not awarded TED funding because of the current limitations associated with using Trunk Highway funds. Rail projects are possible under the BDPI program mentioned above; however, it is a very complex process because it is difficult to use bonding money for privately owned infrastructure such as railroads.

TED and MRSI Program Recommendations

There are several recommendations that could enhance and to promote additional rail economic development opportunities, particularly as they relate to the TED and MRSI programs.

Expanded Flexible Funding for TED

Currently, a significant portion of TED comes from the Trunk Highway Fund. These funds are required to be spent on the Trunk Highway system. Finding a long-term dedicated source of funds outside of the Trunk Highway Fund would provide more flexibility for the use of the funds. Potential additional funding sources could include the use of General Obligation funds or even potentially the General Fund as Governor Dayton has previously endorsed the use of the General Fund for the TED program in the FY14 biennial budget ($20 million for 2014 and $20 million for 2015 for a total of $40 million). Another source

of funding that may be available would be to dedicate the sales tax generator on locomotive diesel fuel to be used for the TED program. Other states have used this dedicated tax for rail-related improvements and increased rail efficiencies. While MnDOT can use the Trunk Highway Fund as a funding source for the TED program, DEED has no dedicated funding to routinely contribute to this program.

In addition to expanding the funding sources, greater flexibility in the TED program would provide additional opportunities for a variety of transportation infrastructure projects to be funded. Only using the Trunk Highway fund ensures that projects benefit the state's highway system that generally carries the most amount of traffic. However, in an effort to increase multi-modalism and transload facilities, a more flexible funding process is encouraged.

In addition, a more flexible funding process associated with the TED program would allow for opportunities for the TED and MRSI programs to work together to enhance the state's rail transportation system. For example, the MRSI program could be used for specific rail infrastructure improvements such as switches, track repair, or other transfer improvements. The TED program could then be used for larger projects that involve rail, such as spur track extensions and other larger, more expensive improvement projects.

A similar type of a joint funding program is already in use by MnDOT and DEED with the Greater Minnesota Business Development Public Infrastructure Program (BDPI). This program has also used General Obligation bonds to fund some of the TED program projects. In addition to the BDPI program, there is also the Innovative Funding program that is also a joint MnDOT/DEED funding program. Unfortunately, the BDPI program is not very conducive to rail projects; while it is possible, it is more complex for rail use since bond funds typically are not used for private infrastructure (i.e., privately owned railroads).

MRSI Funding Increase

In addition to increased funding flexibility, an increase in the MRSI program funding is needed to assist railroads and other rail users with needed improvements. As previously mentioned, the $200,000 maximum loan amount often not enough to fund significant rail improvement projects. Increasing this to $1,000,000 would make the program more comparable to what other states are doing and provide a large enough funding source to fund larger rail improvement projects. In the case study of the ethanol facility on the Minnesota Prairie Line, the delay in the MRSI loan nearly compromised the entire multi-million funding packaged required to construct the facility. The owner felt that the amount of time and the uncertainty of the funding horizon, created a risk and a required level of effort that was not commensurate with the level of funding. Other eligible rail recipients voiced similar concerns.

TED Program Permanent Funding

A permanent, steady funding source is also needed for the TED program. While the TED program is funded by the Trunk Highway Fund, the dollars are not guaranteed for the future use of this program. Many potential applicants have stated that they oftentimes have a potential project, but it is not "shovel-ready" and so they are not able to submit a TED application for potential funding. Having a sustainable funding source year-after-year would enable these potential projects to develop and submit

an application when the project is further along in the development process and increase the probability that it would be funded.

Other Infrastructure Investment Programs/Tax Incentives

Expanded Tax Increment Financing[6]

A number of the examined states authorized rail projects under TIF Programs. In Minnesota, per Minn. Stat. 469.176, Subd. 4, the use of tax increment revenues is limited to paying the principal and interest on bonds used to finance a project and for the purposes specified under the various authorities. There are two authorities where railroad projects are specifically authorized by statute. Per Minn. Stat. 469.055, Sub1, one enumerated general duty of a Port Authority is to provide or promote adequate docks, railroad, and terminal facilities open to all on reasonable and equal terms for the handling, storage, care, and shipment of freight and passengers to, from, and through the port. Per Minn. Stat. 469.142(8), one enumerated purpose of a Rural Development Finance Authority is to provide financial or other assistance to rail users (shippers) for the purpose of making capital investment loans for rail line rehabilitation. Rail facilities and infrastructure investment are not explicitly covered under the purposes/powers of any other authority. Making rail facilities and infrastructure explicitly eligible for TIF under other authorities provides clarity and expands the opportunity for rail investment.

Highlighting/Expanding DEED Programs for Freight Rail

Minnesota may want to consider highlighting the existing economic development program administered by DEED that are available for railroad infrastructure projects and consider whether there are other opportunities to expand existing or future DEED programs to include rail infrastructure projects.[7] There are a number of examples of states that highlight the fact that rail infrastructure is an eligible use of economic development program funds. For example, Kansas, like Minnesota, has a Small Cities Community Development Block Grant to create or retain jobs in non-metropolitan areas.[8] Kansas highlights that its program is available for infrastructure construction projects including, among other things, rail spurs that are directly linked to job creation. Pennsylvania has a developer loan program called "Business in Our Sites" to provide assistance to finance the construction of an inventory of development ready sites.[9] The Pennsylvania program guidelines indicate that permissible rail construction expenditures include the construction or rehabilitation of spurs, signals, crossings, and

[6] "Tax increment financing (TIF) uses the increased property taxes that a new real estate development generates to finance costs of the development. In Minnesota, TIF is used for two basic purposes: To induce a development or redevelopment that otherwise would not occur; and to finance public infrastructure (streets, sewer, water, or parking facilities) that are related to the development. Minnesota authorizes development authorities to use TIF. Minnesota allows several different types of TIF districts. The legal restrictions (e.g. the sites that qualify, and the purposes for which increments may be used) vary with the type of district." Joel Michael, *Tax Increment Financing*, House Research Short Subjects, p. 1 (October 2010) http://www.house.leg.state.mn.us/hrd/pubs/ss/sstif.pdf (accessed September 11, 2013).

[7] Currently, certain rail infrastructure projects would be eligible under the Minnesota Investment Fund.

[8] Kansas Department of Commerce, *2012 Economic Development Program Community Development Block Grant Program*, p. 2 (2012) http://ks-kdoc.civicplus.com/DocumentCenter/Home/View/137 (accessed September 12, 2013).

[9] Pennsylvania Department of Community and Economic Development, *Business in Our Sites Program Guidelines*, (December 20, 2012) http://www.newpa.com/sites/default/files/uploads/Business%20In%20Our%20Sites%20Guidelines%202012.pdf (accessed September 12, 2013).

intermodal facilities.[10] Pennsylvania appears to do a good job of communicating rail funding opportunities across state agencies. For example, in what appears to be a slide presentation for a freight rail summit meeting, the presenter provided state funding opportunities through the state's Department of Transportation as well as the Department of Community and Economic Development, including program contact information.[11]

Tax Credits for Infrastructure Investment

Another way to incentivize private investment to meet freight rail economic development goals would be to offer tax relief for rail infrastructure investment. One option would be to adopt the Federal 45G Short Line Railroad Infrastructure Tax Credit at the state level.[12] The Federal 45G tax credit is calculated as 50 percent of "qualified railroad tax maintenance expenditures" incurred by an "eligible taxpayer" during the taxable year.[13] An "eligible taxpayer" is defined as a Class II or Class III railroad, a shipper using Class II or Class III rail facilities, or person furnishing railroad related property or services to a Class II or Class III railroad.[14] "Qualified railroad tax maintenance expenditures" is defined as the gross expenditures for maintaining railroad track (including roadbed, bridges, and related track structures) owned or leased by the Class II or Class III railroad.[15] The credit is capped at $3,500 per track mile.[16] In a 2010 white paper, the Railroad Shipper Advisory Council indicated that:

> "[b]ecause each dollar in credit is generated by two dollars in private investment, short line railroads have rapidly increased and accelerated track rehabilitation. This ripple effect of increased infrastructure investment spending has been noted by the railroad construction contractors that perform much of the labor, the domestic supply industry that provides the material and heavy equipment, and most importantly by the more than 12,000 short line customers—the small companies that rely on this crucial services. The short line railroad rehabilitation tax credit has been a remarkably successful government policy. It has helped small businesses thrive and encourage local entrepreneurs to continue aggressively investing in the nation's rail infrastructure.[17]"

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[10] Pennsylvania Department of Community and Economic Development, *Business in Our Sites Program Guidelines*, p. 2 (December 20, 2012) http://www.newpa.com/sites/default/files/uploads/Business%20In%20Our%20Sites%20Guidelines%202012.pdf (accessed September 12, 2013).

[11] See Eric G. Madden, *Central PA Rail Freight Summit*, http://www.sedacograil.org/Documents/Eric_Madden_-_Financial_Assistance_Available_for_Rail_Facilities.pdf (accessed September 12, 2013).

[12] 26 U.S.C. §45G.

[13] 26 U.S.C. §45G(a).

[14] 26 U.S.C. §45G(c).

[15] 26 U.S.C. §45G(d).

[16] 26 U.S.C. §45G(b).

[17] Railroad-Shipper Transportation Advisory Council, *Position Paper on Section 45G Railroad Track Maintenance Credit and the Short Line Investment Tax Credit Extension*, p. 2 (October 5, 2010) http://www.stb.dot.gov/stb/docs/RSTAC/RSTAC%20White%20Paper%20-%20Tax%20Credit%2010-10.pdf (accessed September 12, 2013).

Several states have adopted similar incentives.[18] For example, Oklahoma Statutes 68-2357.103 and 68-2357.104 provide for a tax credit for Class II and Class III railroads of 50 percent of qualified railroad reconstruction or replacement expenditures, with a per-track-mile cap ranging from $500 to $2,000 (depending on the year).[19] Kentucky provides a tax credit for Class II and III railroads and shippers equal to 50 percent of expenditures (capped at $3,500 per track mile) incurred to maintain or improve Kentucky railroads, including roadbeds, bridges, and other related structures.[20]

In 2013, Minnesota amended its statutes to "recognize" the federal tax credit for purposes of reducing the taxable income of Minnesota short line railroads that take advantage of the federal credit.[21] Minnesota might consider expanding upon this change to also allow for a state tax credit for short line railroads that would offset some of the remaining cost of infrastructure improvements. Legislation providing a full state match to the federal tax credit was introduced in 2009 but was not adopted. Some less costly proposal may be more acceptable.

New Jersey is an example of a state using tax credits to geographically target rail economic investment. The New Jersey program provides a tax credit for capital investment within a certain radius of a defined "transportation hub"—New Jersey's Urban Transit Tax Hub Credit.[22] Tax credits are applied for under the program and the program itself is capped at $1.75 billion. Private developers, owners or tenants who make "a qualified capital investment" in business facilities within a designated geographic "Urban Transit Hub" can apply for the credit.[23] The definition of "transportation hub" has been expanded to include "property adjacent to, or connected by rail spur to, a freight rail line if the business utilizes that freight line at any rail spur located adjacent to or within a one-mile radius surrounding the entrance to the property for loading and unloading freight cars on trains" within the designated urban municipalities.[24] The amount of the credit depends on the level of job creation/retention and can equal up to 100 percent of the qualified capital investments. This model is designed to improve investment in targeted urban geographic areas, but is a potential model for struggling rural areas and intermodal or transload facility construction.

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[18] George C. Betke Jr., *Guest Comment: Section 45G tax credit is a prescription worth refilling*, (June 2010) http://www.progressiverailroading.com/short_lines_regionals/article/Guest-Comment-Section-45G-tax-credit-is-a-prescription-worth-refilling-mdash-by-George-C-Betke-Jr--23539 (accessed September 12, 2013).

[19] Okla. Stat. tit. 68, §2357.104 (2013) http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=443911 (accessed September 12, 2013).

[20] See http://transportation.ky.gov/railroads/pages/shortline-railroad-assistance.aspx (accessed September 12, 2013). See also, Ky. Stat. 141.385 http://www.lrc.ky.gov/Statutes/statute.aspx?id=29125 (accessed September 12, 2013).

[21] Recently, Minnesota tax code was changed to conform to the federal track maintenance tax credit. Previously, Minnesota had been treating the federal tax credit as ordinary income. *Minnesota Comprehensive Statewide Freight and Passenger Rail Plan*, p. 6-6 http://www.dot.state.mn.us/planning/railplan/finalreport/6%20Institutional%20Relationships.pdf (accessed September 12, 2013). Minn. Stat. 290.01, Subd. 19d "provides a subtraction for railroad maintenance expenses that are disallowed when the taxpayer claims a federal credit under IRC section 45G." See http://www.revenue.state.mn.us/Documents/Law_Changes/2013_Corp_Overview.pdf (accessed September 12, 2013).

[22] N.J.S.A 34:1B-207 et. seq. New Jersey Economic Development Authority, *Incentive Programs—Urban Transit Hub Tax Credit Program*, http://www.njeda.com/web/Aspx_pg/Templates/Npic_Text.aspx?Doc_Id=888&menuid=1295&topid=718&levelid=6&midid=1175 (accessed September 12, 2013). See also, State of New Jersey Department of the Treasury, *Corporation Business Tax Credits and Incentives*, http://www.state.nj.us/treasury/taxation/cbt-creditlist.shtml#TransitHub (accessed September 12, 2013).

[23] N.J.S.A. 34:1B-207 et. seq.

[24] N.J.S.A. 34:1B-208.

Demand Side Tax Incentives

An additional means to spur freight rail economic development would be to provide incentives to increase demand for freight rail service. This could be accomplished through a shipper tax credit—an income tax credit for shippers who can demonstrate that their rail shipments are taking trucks off the road. A shipper tax credit provides shippers an incentive to demand rail transportation. Virginia offers a program under the Virginia Barge and Rail Tax Credit.[25] The credit is:

> "Available for 'international trade facilities' that transport containers by barge or rail, rather than by using trucks or other motor vehicles on Virginia's highways. For purposes of this credit, an 'international trade facility' is defined as a company that: is doing business in Virginia; is engaged in port-related activities; has the sole discretion and authority to choose the method used to move cargo in containers originating or terminating in Virginia; uses maritime port facilities located in Virginia; and uses barges and rail systems to move cargo containers through port facilities in Virginia rather than trucks or other motor vehicles on Virginia's highways.26"

A shipper tax credit program could be promoted and marketed by railroads and agencies at a low cost. The credit could be structured to meet a variety of goals. To capitalize on the environmentally friendly benefits of rail transportation, the amount of the credit could be targeted to an estimate of environmental benefits or an estimate of the highway repair cost savings. To potentially limit the lost tax revenues, the tax credit could be made incremental over some baseline level of rail traffic or it could be tiered with a higher credit available to the heaviest rail users. In addition, to limit forgone tax revenues, a cap on the total credit allowable could be implemented.

Funding Approaches

In many states across the nation, transportation budgets have been constrained by recent economic conditions. Some states have attributed additional limitations to stagnant or declining revenues from one traditional source of such funding—state gasoline tax (as a larger number of more fuel efficient or flexible fuel vehicles are substituted for less efficient vehicles, fuel expenditures, and thus the associated taxes, fail to keep pace with use).[27]

Railroads provide substantial economic, energy, and environmental public benefits. However, unlike highways, railroad infrastructure is primarily privately owned and its maintenance is primarily privately

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[25] Va. Code §58.1-439.12:09(A) http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+58.1-439.12C09 (accessed September 12, 2013). See *also Barge and Rail Usage Tax Credit Guidelines*, (April 17, 2012) http://www.tax.virginia.gov/Documents/Barge%20%20Rail%20Guidelines.pdf (accessed September 12, 2013).

[26] *Barge and Rail Usage Tax Credit Guidelines*, p. 2 (April 17, 2012) *citing* Va. Code §58.1-439.12:09(A) http://www.tax.virginia.gov/Documents/Barge%20%20Rail%20Guidelines.pdf (accessed September 12, 2013).

[27] For example, in early 2013, Virginia's Governor proposed "replacing the state's outdated gas tax revenue model with a 0.8 percent increase in the state's sales tax dedicated to transportation... Declining funds for infrastructure maintenance, stagnant motor fuels tax revenues, increased demand for transit and passenger rail, and the growing cost of major infrastructure projects necessitates enhancing and restructuring the Commonwealth's transportation program and the way it is funded." http://www.virginiadot.org/newsroom/statewide/2013/gov._mcdonnell_proposes_major62621.asp (accessed September 12, 2013). For an additional discussion of issues regarding state funding of transportation infrastructure through the gas tax, see Jaime Rall, *Pain at the Pump*, State Legislatures, pp. 26-29 (June 2013) http://www.ncsl.org/Portals/1/Documents/magazine/articles/2013/SL_0613-Transportation.pdf (accessed September 10, 2013).

funded. Even with substantial private investment, overall investment in freight railroad infrastructure is falling short of need to maintain and improve the rail system given current projections of future use.

Minnesota's financial needs to maintain and improve its rail system are substantial. A 2012 analysis of transportation funding needs analysis in Minnesota estimated that there is a $300 million funding gap over the next 20 years to maintain the existing service levels and conditions of freight rail and ports.[28] Under an alternative transportation scenario, enhancements are made to the current service levels and conditions, the 20-year funding gap increases to $600 million.[29] One of the conclusions reached by the Minnesota Transportation Finance Advisory Committee was that:

> "[t]he transportation funding gap predicted during the next 20 years must be addressed with a comprehensive funding and investment framework that is sustainable and equitable. Minnesota needs a formula that blends a return on investment approach with a fair, predictable, and sustainable method for supporting a variety of transportation options throughout the state.[30]"

Sustainable, predictable programs allow business to plan accordingly and help to make the program more effective and efficient. The lack of a long-term, sustainable source of rail funding has been identified as an impediment to rail economic development. For example, Oregon identified its lack of dedicated funding as:

> "The number one challenge facing a viable rail system for both passenger and freight in Oregon. Without such funding, Oregon does not have revenue available for the required match for federal funds to improve passenger rail service, nor the substantial revenue to maintain or operate the infrastructure once built. Additionally, funds are needed to maintain and improve the freight rail systems that are vital to Oregon businesses and the economy, and to reduce congestion, greenhouse gas emissions and highway maintenance costs.[31]"

[28] Transportation Finance Advisory Committee, *Minnesota Moving Ahead: Transportation Funding and Financing for the Next 20 Years*, Table 8, p. 51 (December 2012) http://www.dot.state.mn.us/tfac/docs/final-report.pdf (accessed September 10, 2013).
[29] Transportation Finance Advisory Committee, *Minnesota Moving Ahead: Transportation Funding and Financing for the Next 20 Years*, p. 51 (December 2012) http://www.dot.state.mn.us/tfac/docs/final-report.pdf (accessed September 10, 2013).
[30] Transportation Finance Advisory Committee, "Minnesota Moving Ahead: Transportation Funding and Financing for the Next 20 Years, 5 (December 2012). http://www.dot.state.mn.us/tfac/docs/final-report.pdf (accessed September 10, 2013).
[31] Cover letter to Pat Egan, Chair, Oregon Transportation Commission, accompanying the Oregon Rail Funding Task Force Final Recommendation (December 21, 2011). http://www.oregon.gov/ODOT/RAIL/docs/rail_funding_tf/final_recommendation.pdf (accessed September 12, 2013) It is noteworthy that the Task Force was not formed until 2011 despite the fact that the Oregon Legislature had authorized the issuance of $100 million in lottery-backed revenue bonds to fund a Multimodal Transportation program (for non-highway transportation projects) in each of the 2005-2007, 2007-2009, and 2009-2011 biennia and an additional $40 million for 2011-2013. Cumulatively, Oregon invested $340 million in non-highway, multimodal transportation projects in the first four rounds of funding—44 percent of that was targeted at primarily rail projects. Oregon Department of Transportation Freight Planning Unit, *ConnectOregon Report*, Note to Appendix 1, Table 3 http://www.oregon.gov/ODOT/TD/TP/CO/ConnectOregonReport.pdf (accessed September 11, 2013).

The 2010 Oregon State Rail Plan examined 17 potential sources for funding its rail program—twelve of which have been employed in other states. A reproduction of the Potential Sources of Revenue table from the Oregon Rail Plan is included in the Appendix. It describes each program, the source of the funding, the estimated revenue, who assesses and collects the revenue, whether it is a freight or passenger program, where the program has been used, and issues about using similar financing in the context of that state. The programs are varied (including freight car fees, railroad diesel fuel taxes, rental car taxes, and lottery funds) and produce very different annual sums (from hundreds of thousands to a hundred million dollars), with most generating $1 to $5 million annually.

In 2011, the Oregon Task Force convened to make a funding recommendation and provided a proposal consisting of five components:

> "The creation of a special [tax] district, allocation of lottery proceeds to rail, reallocation of railroad property taxes to rail, a telephone access fee and a rail investment tax credit. These sources are estimated to generate $75 -$80 million annually for rail specifically and are intended to encourage further private investment by the freight railroads. [32]"

After almost a year-long study, the Minnesota Transportation Finance Advisory Committee made a number of transportation funding and financing recommendations to Governor Dayton for consideration in his 2014-2015 biennial budget.[33] The recommendations were organized into four categories:

- System-wide revenue options for roads (via an increase in motor vehicle registration fees and per-gallon excise tax on motor-fuels).
- Transit-dedicated sales tax options (adding a half a cent to the existing sales tax for transit in metro area, capture remaining leased vehicle sales tax from state general fund and increase the allocation to Greater Minnesota Transit).
- Local government revenue options (expand option of wheelage tax for 80 counties in greater Minnesota, enable local option for formation of Transportation Improvement Districts, enable local sales tax option for transportation in 80 counties without need for referendum, and expand regional transit capital levy in entire Twin Cities metropolitan area).
- Project-level revenue options (expand MnPASS System [dynamic pricing], employ Value Capture concepts around transportation improvements, explore tolling options, public private partnership opportunities, monetizing assets to generate revenues, and continue the state role in General Obligation Bonding).[34]

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[32] Cover letter to Pat Egan, Chair, Oregon Transportation Commission, accompanying *Oregon Rail Funding Task Force Final Recommendation* (December 21, 2011) http://www.oregon.gov/ODOT/RAIL/docs/rail_funding_tf/final_recommendation.pdf (accessed September 12, 2013). Oregon estimated its annual rail needs to be in the range of $57 - $182 million. See pp. 4-5.
[33] Transportation Finance Advisory Committee, *Minnesota Moving Ahead: Transportation Funding and Financing for the Next 20 Years*, (December 2012) http://www.dot.state.mn.us/tfac/docs/final-report.pdf (accessed September 10, 2013).

[34] Transportation Finance Advisory Committee, *Minnesota Moving Ahead: Transportation Funding and Financing for the Next 20 Years*, pp. 10-12, (December 2012) http://www.dot.state.mn.us/tfac/docs/final-report.pdf (accessed September 10, 2013).

With regard to the recommendations to enhance existing TED and MRSI programs as discussed above, most would require some type of increased funding. A freight rail champion armed with the tools that demonstrate the public benefits of rail to Minnesota (e.g., good jobs, environmentally friendly, highway repair cost savings, shipper cost savings, fuel savings, reduction in trucks on the road, congestion/accident reduction, and quality of life factors) would be helpful to secure consistent and sustained freight rail project funding.

Likely sources for freight rail program funding are General Appropriations or General Obligation Bonds (although, as discussed above, not Trunk Highway bonding). There are two articles in the Minnesota State Constitution that limit the potential application of bond funding of railroad infrastructure. Minnesota Constitution Art. XI: Sec.5(i) provides that limited public debt may be incurred:

> "to improve and rehabilitate railroad rights-of-way and other rail facilities whether public or private, provided that bonds issued and unpaid shall not at any time exceed $200,000,000 par value.[35]"

In addition, Sec. 12. limits the level of county, township, or municipal debt to aid railroads:

> "The legislature shall not authorize any county, township or municipal corporation to become indebted to aid in the construction or equipment of railroads to any amount that exceeds 5 percent of the value of the taxable property within that county, township or municipal corporation.[36]"

With regard to the tax credit programs discussed above, securing a state funding source would not be necessary although the structure of the tax credit may be such that it would result in a reduction of state tax revenues. As discussed above, there are options to potentially cap the loss in tax revenues from the credit.

Site Selection Tools

For Minnesota to increase freight rail economic development a visible easy to access inventory of available rail sites is an important first step. Access to available rail served facilities is described in this section. This section evaluates MNProspector and several other site selection inventory tools which have been developed in other states.

Minnesota DEED Site Section Tool: MNProspector

MNProspector is a state-of-the-art online mapping tool to help businesses identify available development sites and buildings in Minnesota. It also comes with a full range of workforce and economic data that is useful for site selection. Users can search for sites for lease or rent, input a range of square footage and filter for property type (office, industrial, retail, and specialized such as airports or transit station areas). The site also has search functions for existing businesses and community demographic data. GISPLAN (software company based in California) developed this software for Economic Development Agencies (EDAs), and it has been adopted by 39 states. Local EDA's must upload

[35] Minn. Const. Art. XI: Sec.5(i).
[36] Minn. Const. Art. XI: Sec.12.

their site data to the GISPLAN site; GISPLAN then provides other economic and demographic data to support the areas listed. This software was designed with the economic development professional in mind, rail site identification was not the primary consideration when this program was designed. Minnesota is in the process of rebidding this mapping service, and the potential exists for a change in service provider within the next year. The existing tool was analyzed and a short list of benefits and limitations was identified. Benefits of using MNProspector for rail economic development include:

- Users can filter listed properties with rail access.
- Some listings identify which railroad serves the facility and provide additional site specification details such as number of dock doors per building.
- Users can search by facility type, lot size, or other building attributes.. This function could be useful to shippers looking for expansion opportunities. This site can be useful for railroads if there are new customer inquiries or local businesses who might have interest in attracting suppliers or customers with close proximity.
- Listings can be downloaded in multiple formats.
- Data such as labor force, consumer spending, wages, and existing businesses in the surrounding area are included for each listing.
- Including rail service as a site selection attribute is a nice feature to include in a site selection screening tool.

MNProspector software limitations for freight rail economic development include:

- Listed properties with rail access indicated, may actually have varying levels of rail access. Some sites were adjacent to railroad tracks yet had no spur, other sites had a rail spur connecting the site to the railroad carrier.
- New rail customers will need to conduct further research and coordinate with railroads to ensure they will serve the site.
- Properties listed have varying levels of detail provided. Data provided for each site lacks consistency.
- Users can not search by specific rail carrier (i.e., you cannot search for a site on the Canadian Pacific in Southeast Minnesota).
- Track geometry and active service levels are not reported. New locomotives need expanded turning radius and specific geometrics.
- Encourage local EDAs to provide a full profile for all rail sites uploaded to MNProspector. At this time, only 39 rail-served sites were listed for sale or lease in Minnesota.
- Railroads are not posting available sites on this public inventory.

MN Prospector User Evaluations:

Rail carriers often post available sites for industrial development. Selected rail websites were reviewed to identify what level of information was available for prospective rail development.

- Three short lines have industrial development website tabs and direct you to contact a railroad person. When the carrier was called, they said many of the properties are not for sale but were available for development. Many carriers were also concerned about keeping land prices affordable and to keep prices low, many sites and transactions are private.
- One carrier had 11 sites on the website. Many have not been updated since 2005. One was updated in 2013. One of the 11 is listed on MNProspector.
- Industrial real estate brokers (such as CBRE, Grubb and Ellis) were contacted regarding MNProspector; most did not use this tool. These agents use MNCAR (MN Commercial Association of Realtors) as their source for commercial site availability. This inventory seemed to be more current and was actively updated. Only one of the Minnesota Short Lines properties was found in this database There was no tab or filter criteria for rail.

Potential Enhancements

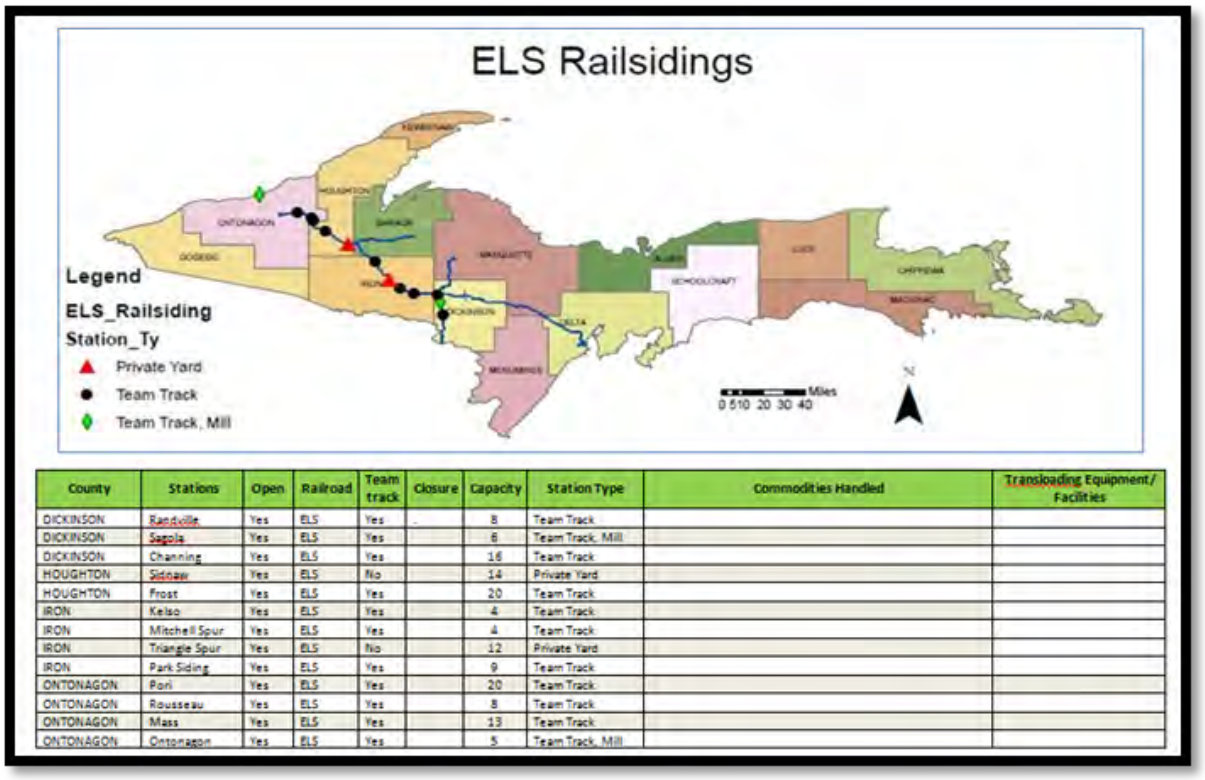
- MNProspector is easy to access yet, in some cases, the information content and contacts could be updated more frequently with all data fields completed.
- Photos of rail-served properties should be detailed enough to allow viewer to see if a switch to the main line railroad is included.
- For rail-served sites, mention the rail carrier and if the site is open to reciprocal switching. If so, switching fees would be a useful addition.
- Allow site selectors to sort sites by rail carrier access. For example, if a site selector is looking for a specific railroad, allow a sort by carrier name.
- Broaden regional search parameters for rail-served sites. There are no rail-served filters for regional searches.
- Benchmark other rail site selection tools. Michigan is in the process of mapping their rail served sites. This is a work in progress, which is currently being undertaken by Michigan Tech. They have undertaken an approach to map each rail line and show sites along existing rail corridors. This is a helpful perspective for users looking for a specific carrier and networks. Information about switching, car capacity and station type is included in

- Figure 31.
- Encourage MNCAR, EDAM, MAPCED, DEED, Class 1 and Short line railroads to provide site availability to all site selection inventories.

Michigan Tech Railroad Inventory Project

Michigan Tech University undertook a rail-mapping project for Michigan Department of Transportation. The approach begins from a rail network user perspective and maps sites available based on carrier network. Figure 32 provides a snapshot of site location and capacity attributes.

Figure 31: Michigan Tech Rail Inventory Project

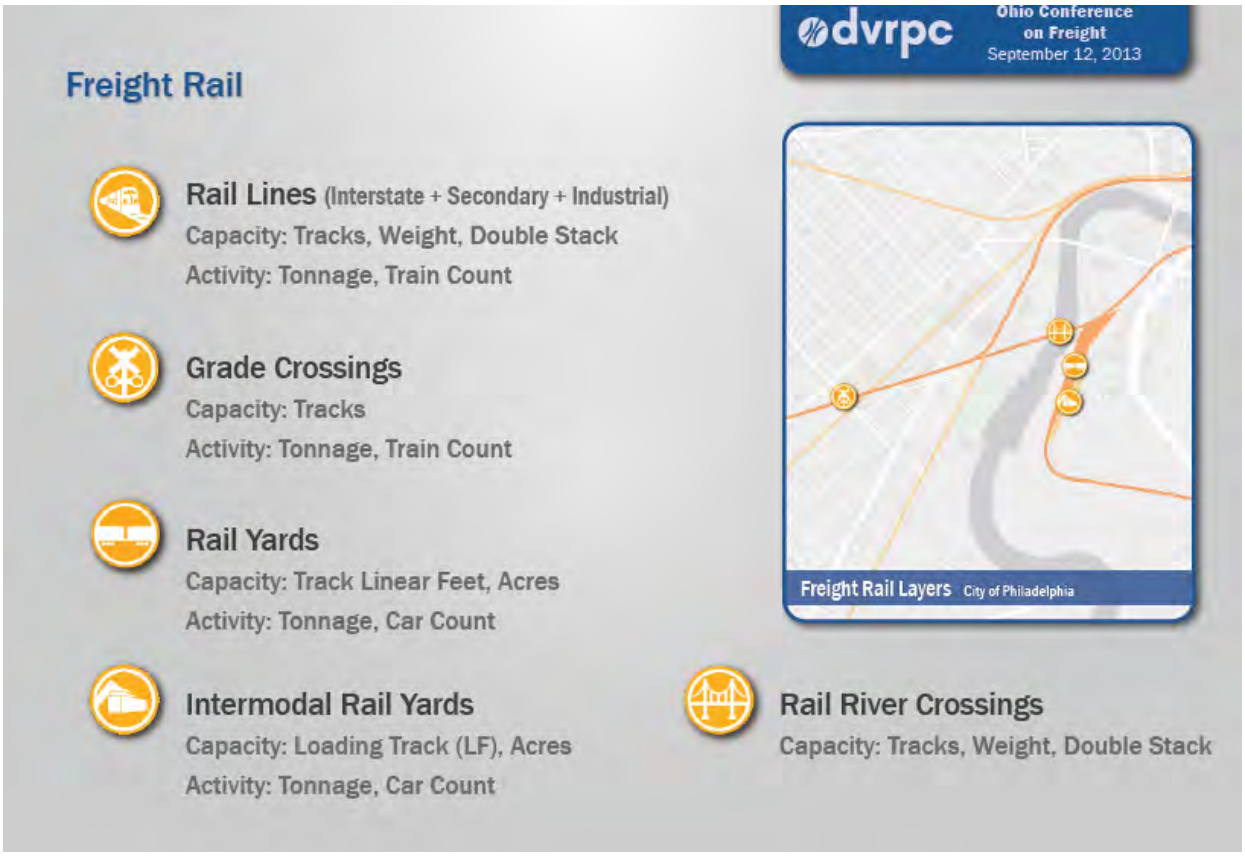


County	Stations	Open	Railroad	Team track	Closure	Capacity	Station Type	Commodities Handled	Transloading Equipment/ Facilities
DICKINSON	Randville	Yes	ELS	Yes		8	Team Track		
DICKINSON	Sagola	Yes	ELS	Yes		6	Team Track, Mill		
DICKINSON	Channing	Yes	ELS	Yes		16	Team Track		
HOUGHTON	Sidnaw	Yes	ELS	No		14	Private Yard		
HOUGHTON	Frost	Yes	ELS	Yes		20	Team Track		
IRON	Kelso	Yes	ELS	Yes		4	Team Track		
IRON	Mitchell Spur	Yes	ELS	Yes		4	Team Track		
IRON	Triangle Spur	Yes	ELS	No		12	Private Yard		
IRON	Park Siding	Yes	ELS	Yes		9	Team Track		
ONTONAGON	Pori	Yes	ELS	Yes		20	Team Track		
ONTONAGON	Rousseau	Yes	ELS	Yes		8	Team Track		
ONTONAGON	Mass	Yes	ELS	Yes		13	Team Track		
ONTONAGON	Ontonagon	Yes	ELS	Yes		5	Team Track, Mill		

Philly Freight Finder

Delaware Valley Regional Plan Commission, the MPO for the Greater Philadelphia, PA and Camden, NJ area, recently launched a product called the PhillyFreightFinder (http://www.dvrpc.org/webmaps/phillyfreightfinder/). This web-based tool was built on a GIS platform and contains 20 individual layers and over 350 features of infrastructure and facilities that are organized in seven categories, which recognize the multimodal nature of freight. PhillyFreightFinder is a customizable tool that illustrates local, regional and global connections. The tool gives visibility to attributes within the following seven freight networks: freight rail, truck and highway networks, port and waterway connections, airports, pipelines, freight centers and communities. Freight rail attributes include capacity and activities for rail lines, grade crossings, yards, terminals and river crossings. This tool was developed with a public-private partnership lead by a subcommittee of the Delaware Valley Goods Movement Task Force.

Figure 32: PhillyFreightFinder Rail Site Location Tool



Source: DVRPC

Expanded Distribution and Use of a Minnesota Rail Inventory

For MNProspector or the next generation of Minnesota mapping software for rail served sites to the "go to" source for rail served, available commercial sites, all potential users and information providers should be engaged in the population of site information and the development and distribution of a Minnesota rail site inventory.

Potential Users of MNProspector

The following agencies and organizations may benefit from a MNProspector inventory:

- Economic Development Agencies, (EDAs)
- Industrial Parks
- Port Authorities
- Industrial real estate brokers
- Site selection consultants
- Railroads
- Transload operators
- Railroad authorities

Promotion of MNProspector

MNProspector is available for all users. The following list of primary users should include:

- EDAM
- MAPCED
- Real Estate Developers/MNCAR.org/Loopnet
- Railroads

Recommendations:

- Prepare a flyer to promote the inventory tool and sent to each railroad to increase site visibility for freight rail economic development and use of MNProspector.
- Suggest that a demo of MNProspector be provided at next DEED, EDAM and MAPCED meetings.
- Send flyer to real estate and site selection firms in Minnesota, Wisconsin, North Dakota, Iowa, South Dakota, and Illinois to increase visibility of rail served sites in the region. Some rail users in other states maybe looking for sites for vendor or distributors
- Information on rail loans and grants could be posted on the MNProspector site.
- Have a DEED booth featuring the MNProspector tool at MNCAR Commercial Real Estate Expo, October 24, 2013 at the Depot Minneapolis and at future meetings.

Study Recommendations

Agency/State Policy Enhancements

A number of recommendations have been identified as part of this study, including:

1. **Project Evaluation –** There are a number of methods and techniques that MnDOT could use to evaluate projects with state funding. For example, MnDOT could require a benefit-cost analysis be completed to evaluate rail investment projects. This analysis would help determine whether or not public funding should be used for rail projects. The Ohio Rail Transportation Commission has a tool used to evaluate each rail project. (See the Appendix) This tool evaluates expected rail carload volume, existing carload activity, employment data, infrastructure data, project location impacts, shipper cost, highway maintenance and fuel savings along with environmental impacts. Other states that require benefit-cost analysis for rail projects include Pennsylvania, Virginia and Washington. TIGER Grant programs also require a benefit-cost assessment.

2. **Railroad Coordination –** Various outreach and coordination efforts should be explored with railroad representatives. This includes establishing a relationship with Class I railroad representatives at the executive level. Railroads have a complicated and centralized organizational structure. Field employees coordinate regional outreach efforts; however, strategic decisions are made at headquarters. A strategic investment meeting with each Class I railroad and MnDOT administrators and Freight Office staff should be coordinated on an annual basis to discuss long-range capital plans. Indiana, Oregon, South Carolina and Texas have similar programs that bring public and private sector leaders together.

   In addition to meeting with railroad executives, MnDOT should look to create public-private partnerships with Class I railroads. South Carolina, Illinois, California and other states that have won TIGER grants are examples of such partnerships.

   Finally, in addition to increased coordination with the railroads, MnDOT should develop a Rail Freight Forum that could regularly meet and advise on freight rail decisions. This forum could be used to identify upcoming issues, review potential policy changes and other related items.

3. **Rail and Intermodal Investments –** Based on the findings of this report, MnDOT is encouraged to continue to make investments in rail infrastructure and other intermodal facilities. The preservation of rail infrastructure will provide greater economic advantages and competitiveness compared to other states and regions. Minnesota is precluded from owning railroads, yet can support regional rail authorities by monitoring rail corridors ripe for preservation. Finally, in addition to state investments, MnDOT, DEED and other state agencies should explore opportunities for key businesses in Minnesota to participate in partnerships for rail economic development.

4. **Actively Promote Rail Transportation –** Minnesota has a tremendous asset with its extensive rail system. State agencies (MnDOT, DEED, etc.) should extensively promote Minnesota's rail efficiencies and access to site selectors. The state should capitalize on available sites and access improvements to accommodate new businesses and explore partnering opportunities with DEED, local EDAs and other regional agencies to help promote rail economic development. In addition to

promoting rail at the state level, efforts to coordinate and integrate rail marketing and recruitment efforts with local officials should be increased. The local level of government is often where railroads and other economic development opportunities will focus after a site is selected. MnDOT and DEED should actively work with local agencies to promote the benefits of rail economic development at the local level. A thorough inventory of rail, port, and other multi-modal assets is encouraged so state officials can easily understand the resources and value of these facilities. In addition, MnDOT should consider funding programs that support consolidating or developing storage and loading facilities to improve accessibility to rail service. Opportunities for Minnesota to provide a more coordinated intermodal system to move goods would increase the competitiveness of rail transportation throughout the state. Indiana and Oregon have similar programs that have proven to be successful.

MnDOT and DEED should look to promote rail economic development to a variety of stakeholders and potential project partners for future investments as an opportunity to attract businesses to Minnesota and increase the number of high-paying jobs that railroads can provide. Roll-out programs should be targeted to site selectors, businesses, other U.S. regions and even other nations (i.e., Canada).

Finally, MnDOT should conduct public information campaigns to promote freight rail transportation as a safe, cost-effective and efficient means of transportation. The media often portrays freight rail transportation as a dirty, unsafe mode of transportation. In reality, freight rail is one of the most energy efficient modes of transportation with a superior safety record. Opportunities to promote a positive image of rail should be encouraged. Indiana currently supports information campaigns to expand the public's perception of trains beyond grade crossing delays and annoying whistles.

5. **Performance Measures –** MnDOT has a long history of using performance measures to track progress and asset performance over a period of time. As such, MnDOT should develop performance measures for rail funding to continuously monitor and track results related to railroad investments. Kansas currently has rail-related performance measures in use and successfully used them for rail projects and investments.

6. **MNProspector Enhancements –** DEED and MnDOT should work together to enhance MNProspector as a way to help promote railroads, intermodal facilities and economic development in general. The commercial real estate directory of MNProspector should be expanded to allow railroad input of rail-owned or accessible property and provide rail-accessibility searches. The same information should be coordinated with the Minnesota Commercial Association of Realtors (MNCAR) directory. Further, MNProspector should be promoted as an economic development site that local EDAs and other can use to attract rail economic development in their communities.

   As MNProspector is updated, new rail location software designed by Michigan Tech University and DVRPC's PhillyFreightFinder should be benchmarked. The public-private partnership model developed by the DVRPC Goods Movement Action Taskforce should also be investigated.

7. **Shipper Coordination –** MnDOT and DEED should collaborate with shippers to help increase rail transportation programs and awareness. This could be done by establishing a rail shipper forum

similar to the passenger transportation forum. This rail shipper forum along with trade associations could support matchback programs and public parking lots for intermodal freight to help link inbound and outbound shippers in an effort to improve economic competitiveness and efficiency to improve Minnesota's economic competitiveness.

8. **Agency Coordination –** In addition to coordinating with the railroads, MnDOT, DEED and other state agencies should collaborate more to increase Minnesota's economic competiveness. Opportunities for state agencies to work together exist as many of the freight rail economic development projects entail various agencies and levels of government to be successful. Improved collaboration and coordination between MnDOT's Office of Freight and Commercial Vehicle Operations and Minnesota Business First Stop, an interagency team for business prospecting that involves key staff from MnDOT, Agriculture, Commerce, DNR, and PCA, will help to further promote economic development within Minnesota. Furthermore, DEED and MnDOT should continue to work together and coordinate on various programs to promote economic development and transportation projects. Expanding and enhancing the TED program to include rail and other multi-modal projects would provide greater opportunities for Minnesota's transportation network.

   Further coordination activities would include enhancing education and identifying a liaison with local EDAs for freight rail issues and opportunities, including coordination of contacts with railroads and MnDOT. DEED has recently designated one business development representative to take the lead on all business projects with a major logistics component.

   One element to increase the successfulness of this effort is to establish a freight rail champion within each agency (e.g., DEED) to participate in site attraction visits and on state recruiting trade missions.

Funding Resources for Activities and Incentives

A number of recommendations could be made in regards to potential funding sources, existing initiatives, and interagency cooperation, including:

- **TED Program Enhancements –** Continue making enhancements to the TED program to broaden this funding source to rail and other multi-modal projects. Expanding the TED program could help create better projects that are multi-modal in nature and increase Minnesota's competitiveness among other states and regions. In 2013, the TED program expanded competitive solicitations to multi-modal proposals. Through expanded criteria and guidance, promote public-private freight and rail collaborations with the applying public jurisdictions. MnDOT and DEED should continue to maintain other core TED requirements, such as local match and job creation measures and targets. Additional criteria/performance metrics should be explored to ensure that the project is meeting the anticipated job growth and other economic benefits that are predicted/expected as stated in the TED application.
- **Infrastructure Funding –** Promote the consideration of freight rail related projects for infrastructure funding programs and business development funding programs. Infrastructure

programs tend to be grant programs, while business development programs tend to be loans, forgivable loans, or tax credits.

- **Diversified Funding –**MnDOT and other state agencies should look to diversify the funding sources available for rail and other intermodal projects. For example, the TED program should expand its funding sources to include the Trunk Highway Fund, General Obligation Bonds and General Fund appropriations. This mix of funding allows for the greatest diversity of projects to be funded and allows the program to respond flexibly to opportunities for transportation infrastructure to impact economic development, regardless of modality. Establishing a competitive application process with a variety of funding sources could also allow for larger funding projects and potential greater economic benefit.
- **Alternative Funding –** There are a number of alternative funding sources and other programs that could be incorporated to promote freight rail economic development. One option would be to provide rail-related funding as an incentive to businesses to locate or expand in the state. North Carolina and Virginia have such incentive plans to foster rail development. This type of funding could be in the form of either a tax break, grant or forgivable loan if certain criteria are met.

  Another potential alternative funding source that could be explored is dedicating the locomotive diesel fuel tax that is paid by the railroads for rail enhancement projects, rail economic development or other rail-related projects. North Dakota recently dedicated this funding source for quiet zone improvements. In addition to dedicating the diesel fuel tax, a dedicated fund could be established for property tax dollars paid for by railroads. While a significant portion of this goes to the local municipality, some of the property tax dollars go to the state and this portion could be dedicated for rail-related purposes. The use of dedicated rail property tax dollars is consistent with the Itasca Group and other industry recommendations. Between this portion of the property tax dollars and the diesel fuel tax, millions of dollars per year could be available.

  Allowing tax credits for railroad rehabilitation and maintenance for preservation purposes, mirroring federal tax credits should also be explored as an opportunity to foster freight rail economic development. In addition to rail rehabilitation projects, shippers could also receive tax credits for meeting environmental, energy and other policy-related improvements. Most railroad officials expressed a strong desire for tax credits as a mechanism to fund rail projects. This would essentially be a similar method of providing them funding.

FRED Study Products

Three study products have been developed for on-going use by Minnesota rail shippers, operators, public agencies and economic development professionals.

Data

The Freight Rail Economic Development Study required the purchase of data and development of commodity flow maps illustrating the Minnesota tonnage that is most attractive for short line rail movement. This data was mapped to illustrate tonnage volume differences between county areas. Of most importance is the mode share information by county. Other features on the maps include rail lines, highways and transload facilities.

Twelve data maps were prepared to be used by economic developers and short lines to identify where tonnage volumes of a specific commodity might be high, yet rail share of transportation is low. The data can be manipulated to show many freight data movements. MnDOT will hold the data and make it available upon request. Peter Dahlberg with Minnesota DOT will be the point person for this data.

The maps were developed to illustrate the following freight patterns:

1. Freight volumes by origin or destination
2. Rail percentage share of origin volumes and destination volumes
3. Basic freight flows filtered by length of haul

Many freight movement questions can be queried based on the data sets, and local knowledge and freight oriented development questions can refine the freight story that these maps portray.

About the Data

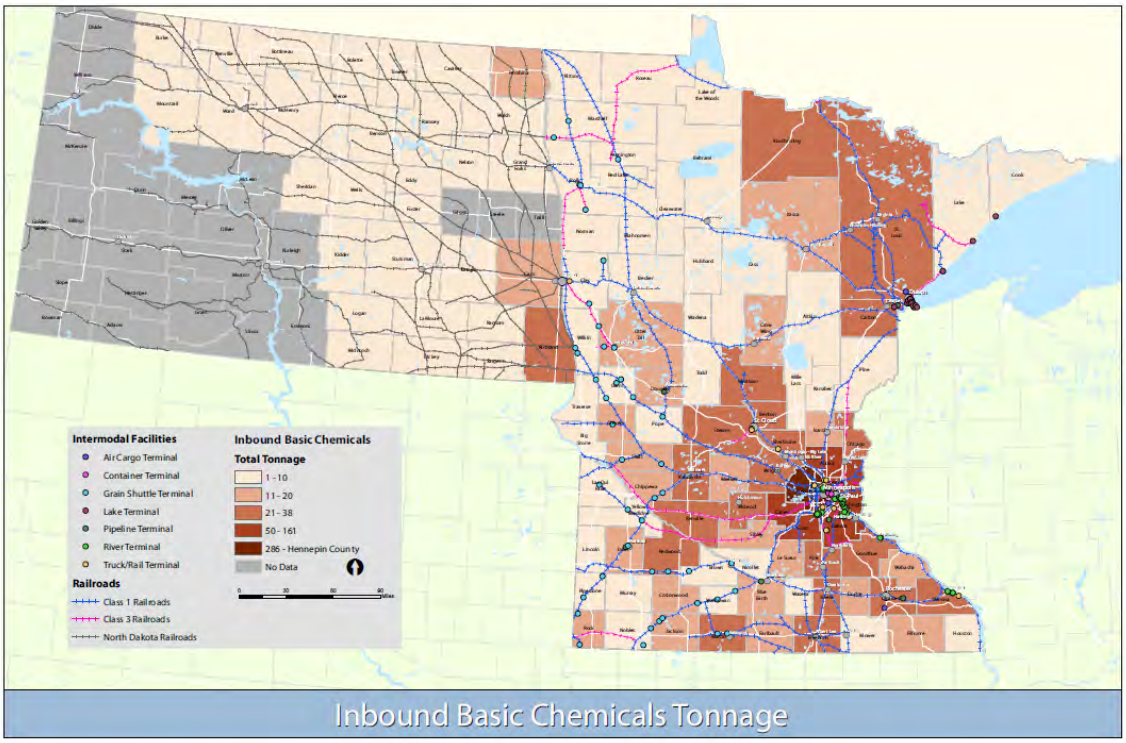
The county-to-county commodity flow database combines four data sources in a gravity model framework. The four datasets are:

1. Freight Analysis Framework (FAF) data providing commodity flows by mode among US metropolitan areas
2. County-level economic activity, as estimated by Bureau of Economic Analysis (BEA), County Business Patterns (a US Census database) and Bureau of Labor Statistics (BLS)
3. WISER Trade data showing commodity throughput at US ports
4. Oak Ridge Intercounty Impedances – highway, rail, and marine travel impedances among all US County pairs

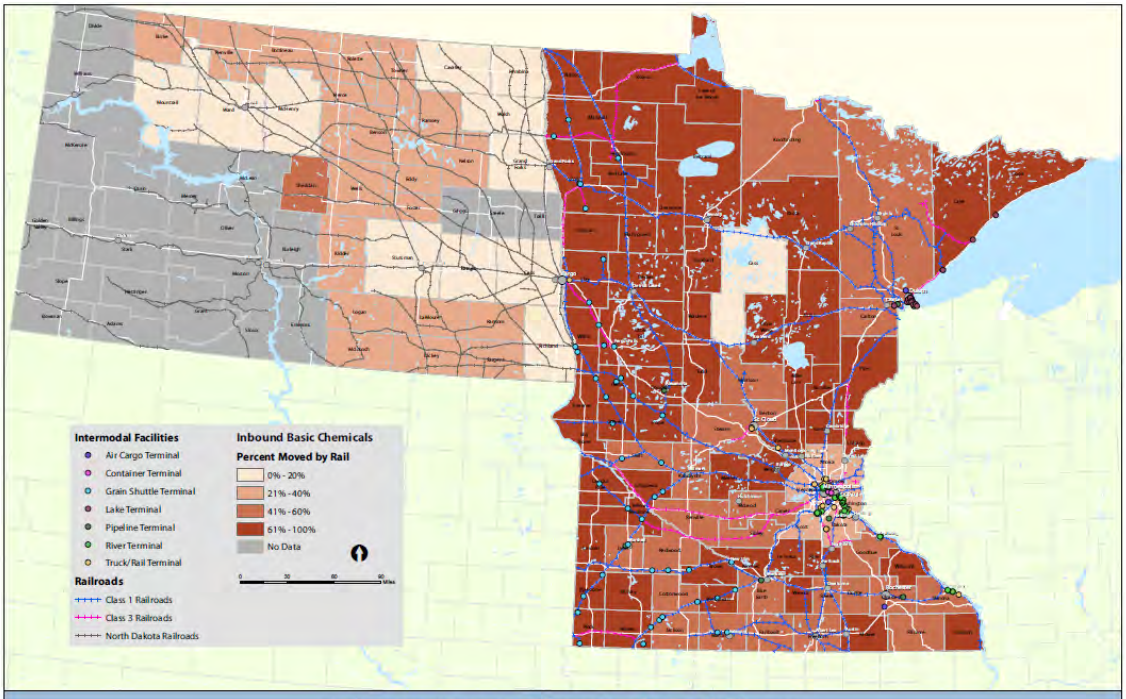
The data is generated by down-allocating origins and destinations separately. County origins are down-allocated from FAF zone origins based on the county location of economic activity producing each of the 42 SCTG commodities. Destinations are down-allocated based on the county location of economic activity consuming each of the 42 SCTG commodities. Origin-destination pairs are matched based on a calibrated gravity model for each mode. For international flows, FAF flows are down-allocated to

country trading partners based on WISER flows (by mode and port of entry/exit). Inbound and outbound tonnage maps are presented in the Appendix.

Figure 33: Example of Tonnage Maps



Inbound Basic Chemicals Tonnage



Inbound Basic Chemicals Rail Share

Videos

Two videos were produced that feature short line railroads, State DOTs and invited guests who attended the peer review event on April 15, 2013. The first video discusses railroads and the benefits they can bring to economic development projects. The second video was prepared with specific messages about freight rail economic development and recommendations for Minnesota. These videos were developed for the most basic audience and intended to raise the awareness of freight rail economic development. The videos will be posted on the MnDOT, MRRA and DEED websites.

Rail Shippers Tool Kit

A Rail Shippers Tool Kit was assembled to be a primer for basic railroad questions for new shippers or economic development professionals interested in rail projects. This stand-alone document covers railroad basics such as why, where, when and how to use rail service. This document will be posted on the MnDOT, MRRA and DEED websites.