EXECUTIVE SUMMARY

Overview of the Study

This document is the 2015 update to the Minnesota Comprehensive Statewide Freight and Passenger Rail Plan, first developed in 2010, referred to as the 2015 Minnesota State Rail Plan. Pursuant to Minn. Stat. Minnesota Session Law 2008, Section 174.03 subd. 1b, the purpose of the State Rail Plan is to guide the future of both freight and passenger (intercity) rail systems and rail services in the state. The development of the plan was jointly undertaken by the Minnesota Department of Transportation's Office of Freight and Commercial Vehicle Operations (OFCVO) and the Passenger Rail Office.

This executive summary provides an overview of the key components and recommendations of the 2015 Minnesota State Rail Plan, which follows the six-chapter structure required by the Federal Railroad Administration for state rail plans. The 2015 Minnesota State Rail Plan builds upon the technical analyses and findings of the 2010 State Rail Plan, incorporates information on changes between 2010 and 2015, and reflects the most current state of the system and stakeholder comments.

THE STATE'S ROLE IN RAIL TRANSPORTATION

The State of Minnesota has a significant role in interacting with the system of railroads that provide a necessary component in the state's transportation network. The Department of Transportation is the primary point of contact in coordinating public activities concerning rail transport. The Department was created 'In order to provide an integrated transportation system of aeronautics, highways, motor carriers, ports, public transit, railroads, and pipelines, and including facilities for walking and bicycling'. (Statute 174.01) Further, the goals of the Department include 'To provide multimodal and intermodal transportation facilities and services to increase access for all persons and businesses and to ensure economic well-being and quality of life without undue burden placed on any community;' (174.01, Subd. 2(2)), and 'To enhance economic development and provide for the economical, efficient, and safe movement of goods to and from markets by rail, highway, and waterway;' (174.01, Subd. 2(4)).

Unique among all the active modes of transportation, railroads involve private corporations operating for the most part on private infrastructure and regulated at the national level for the purpose of insuring unimpeded interstate commerce among the states, as reserved to the federal government in the Constitution. Despite the federal oversight, state and local governments are responsible for limited regulation as pertains to distinct local police powers, safety, and cooperative activities shared with federal agencies, including the State Partnership Program of the Federal Railroad Administration. The Commissioner of Transportation is specifically empowered to represent the state before the Surface Transportation Board involving issues of service, merger, construction,and abandonment. As changes in rail system safety and performance have manifested themselves in the last two years, documented in this Plan, MnDOT, the Governor, other state agencies, and numerous state and federal elected representatives have worked directly with and advocated for state industries and communities to ensure both public safety, and the continued delivery of effective transportation services by the railroads under their public responsibility as common carriers. This latter common carrier status of the railroads puts them on a par with public roads, waterways, and airports in providing the open and equitable transportation to all users that is an earmark of our economy and nation.

The public responsibility of the state toward its residents and businesses means that oversight and advocacy for responsive rail service, so important for access to national and international markets, is actively pursued. This function is necessarily being balanced with active provisions for community safety as well as support for local rail access, industrial development, travel options, and quality of life. Recent initiatives that ensure services for propane and agricultural rail shipments and expand preventative safety in crude-by-rail operations are just several examples of an active approach that can be beneficial to the state on an ongoing basis.

WHY FREIGHT RAIL?

Without rail, Minnesota businesses and consumers would not be able to access the products they need for everyday work and life. Located in the center of North America, Minnesota's freight rail system is critical in providing efficient connections to markets beyond state and country borders. Minnesota has a $289 billion economy, with 51 percent of businesses involved in producing, processing and handling commodities. These commodities—notably iron ore, farm products and food products—are moved by a multimodal freight network made up of highway, water, air and rail systems. In Minnesota, rail carries 25 percent of freight by weight. Freight on rail takes pressure off the state's constrained highway network and provides environmental benefits through fuel efficiency. Trains are four times more fuel efficient than trucks, and one ton of freight on rail can travel 473 miles on only one gallon of diesel fuel.

WHY PASSENGER RAIL?

Minnesota has a vision to develop a robust passenger rail system that results in improved travel options, costs and speeds for Minnesota and interstate travelers. Population and economic growth forecasts show a need for a statewide transportation network made up of multiple modes of travel. Expanding passenger rail options beyond the existing Amtrak Empire Builder service will offer Minnesotans a fuel-efficient, environmental and affordable travel option between Minnesota cities and to other states.

Context of the 2015 Rail Plan Update

Minnesota's 2013 population was approximately 5.4 million. Minnesota's population is projected to grow to 6 million by 2031 and 6.45 million by 2065, an annual growth rate of 0.5 percent.[1] Approximately 60 percent of Minnesota's population is centered in the Metro District in and around Minneapolis-St. Paul. Other highly populated areas are in St. Louis County (Duluth), Stearns County (St. Cloud), Olmsted County (Rochester) and along the corridors connecting these regions to the Twin Cities. Since the 1960s, population growth has shifted from the metropolitan core into the exurban regions of the Twin Cities. Although this trend has slowed in recent years, the collar counties are forecast to continue to see the highest rates of population growth between 2010 and 2040. Much of this projected growth will be within commuter rail or short intercity rail distance from the Twin Cities.

Minnesota's economy is diverse—"freight intensive" industries such as agriculture (led by corn-based products), mining (primarily taconite) and advanced manufacturing have long been a major driver of the state's growth and users of the freight transportation system, including freight rail. Many industries, including taconite and agricultural producers, rely on connections between rail and other modes to receive and ship a broad range of goods throughout North America and across the globe. Minnesota currently is developing a State Multimodal Freight Network. The MFN will include key multimodal hubs, including ports, rail yards and container facilities, and highway and rail infrastructure. The MFN will allow the state to better track freight activity, develop freight performance measures, and prioritize and incorporate projects into other planning and programming activities.

Recent industrial trends have changed the face of freight rail in the U.S. The broad adoption of advanced technologies including directional drilling and hydraulic fracturing (fracking) to extract oil and gas from shale oil formations in the Bakken Region of North Dakota, Montana, Saskatchewan, and Manitoba dramatically affects Minnesota's rail system. Unprecedented volumes of crude oil and liquefied natural gas are being shipped by rail, of it across Minnesota destined for refineries in the Midwest, and the East and Gulf Coasts. As of late 2014,

[1] Minnesota State Demographic Center Population Data, 2014.

approximately 50 oil trains per week transport Bakken crude oil across Minnesota. The drilling and fracking process also creates demand for substantial volumes of inbound material, including sand, which is mined in Southern Minnesota and Central Wisconsin

The increased crude traffic, in conjunction with a record grain harvest throughout the upper Midwest and a resurgence of coal use, drove up demand for rail service and led to significant railway congestion across the state's main rail corridors in 2013-2014, leading to fluctuations in rail service reliability over the past two years. Safety and security issues have also become of paramount concern, as a series of recent disasters involving unit trains of oil have occurred across North America. The Minnesota legislature responded to these trends by passing laws to increase the safety of rail movements in the state. In 2014, the legislature charged MnDOT to take action by conducting studies on highway grade crossing that have significant safety risks due to increased crude-by-rail activity, providing $2 million for improving rail grade crossings and hiring additional rail inspectors.

While trends leading to industrial growth and the need for freight rail investments are expected to continue, much of the future job growth in Minnesota will be focused on service, professional and management occupations, leading to continued growth in the demand for commuting and business travel. This trend supports the importance of connecting Minnesota—in particular the Twin Cities metropolitan economy—with Chicago and other regional business centers by a strong and robust transportation system that includes passenger rail service. It also suggests the potential to advance economic growth across the state by linking smaller communities with the Twin Cities by passenger rail.

The Vision for Minnesota's Multimodal Transportation System

In late 2011, MnDOT adopted the Minnesota GO Vision. The Vision aligns the transportation system with what Minnesotans expect for their quality of life, economy and natural environment. It provides the desired outcomes for the Statewide Multimodal Transportation Plan over the next 20 years, for MnDOT's complete Family of Plans and for all individual modes and key transportation partners. It includes a set of principles that are intended to guide future policy and investment decisions for all forms of transportation.

Minnesota's railroads form a critical part of the state's multimodal transportation system. For Minnesota, a strong rail system supports economic development, enhances environmental sustainability, helps to preserve the publicly-owned roadway infrastructure and increases the business marketability of the state. Future challenges for Minnesota will include increasing regional and international economic competition, constrained highway capacity, environmental protection and uncertain energy costs. The state is committed to developing a freight rail system that can support expanded traffic volumes and a changing customer base; and a passenger rail system to support the travel needs of citizens, businesses and visitors.

A successful, viable rail industry that meets the future needs of Minnesota's economy requires continued investment and improvement to its infrastructure. Made up of private firms, the freight railroad industry is unique in that it has largely borne the cost of maintaining its own infrastructure. This is expected to continue, but further improvements to the infrastructure will be necessary, not all of which may be fully self-funded. In recent experience, rail shippers and public entities have partnered in both mainline improvements and secondary lines and shipping facilities.

- Continue to make improvements to the condition and capacity of Minnesota's primary railroad assets
- Address critical rail network bottlenecks
- Upgrade main line track (all Class I to III railroads) to 25 mph minimum speed, as warranted
- Implement state-of-the-art traffic control and safety systems
- Improve the network (all Class I to III railroads) to support the use of 286,000 pound railcars throughout
- Expand intermodal service access options throughout the state
- Continue to develop programs promoting safety of freight rail and hazardous material transportation

PASSENGER RAIL GOALS

Minnesota should act in the following ways to meet the Minnesota GO Vision and develop a robust intrastate and interstate intercity passenger rail system that results in improved travel options, lower costs and higher speeds for Minnesotans and interstate travelers.

- Continue to participate in the Midwest Regional Rail Initiative and support the development of minimum 110 mph service for connections from the Twin Cities to Wisconsin and the Chicago Hub Network
- Develop an intrastate intercity passenger rail network connecting the Twin Cities with viable service to major outlying regional centers
- Develop all services with the ultimate goal to connect to both the Target Field Station and St. Paul Union Depot
- Advance corridors incrementally
- Prioritize project qualified corridors based on state of readiness
- Establish rail connections to intercity and commuter rail markets in Wisconsin and Minnesota, to the I-35 Corridor, the Red River Valley, the eastern plains and Canada, as demand warrants
- Promote energy-efficient technology and efficient transportation through expanded use of rail and intermodal shipping

PLANNING AND POLICY DEVELOPMENT GOALS

- Maintain and ensure broad access to competitive freight rail services for shippers throughout the state
- Better integrate rail into the public planning process
- Actively pursue public-private partnerships, partnerships with other agencies and private financing or operations in support of freight and passenger rail corridor development
- Build state assistance for freight rail projects upon the existing Minnesota Rail Service Improvement program
- Expand the Rail/Highway Grade Crossing program
- Actively manage and evaluate preserved rail corridors held in the State Rail Bank for possible future transportation uses

Minnesota's Existing and Future Rail System

The institutional structure of the rail industry in North America is different from the other transportation modes (highways, air, water, etc.). While the other modes are generally owned and maintained at public expense and accessible to any licensed operator, rail carriers not only provide the service, but also maintain and control the tracks and other facilities required to provide service. Physical conditions, service and institutional structure are closely related.

MINNESOTA'S FREIGHT RAILROAD INDUSTRY

America's railroad industry is commonly classified by size, with the seven largest carriers – BNSF,, Canadian National, Canadian Pacific, CSX, Kansas City Southern, Norfolk Southern, and Union Pacific - referred to as Class I railroads. Minnesota is served by four of these major carriers— BNSF, CN, CP, and UP. The state is also served by 18 smaller railroads. These include one Class II or regional railroad, the recently formed Rapid City Pierre and Eastern, and 14 small or Class III railroads.. Among the Class III railroads are three switching railroads and 11 small line-haul or "short line" carriers.

While the economic health of the large Class I railroads has improved in recent years, they still face intense capital needs. Of Minnesota's four Class I railroads, BNSF dominates many markets in the state including bulk freight, crude oil, agricultural products and intermodal traffic. UP primarily transports agricultural products, ethanol and coal. CN transports most of the taconite produced in Minnesota, along with a mix bulk and intermodal goods on its transcontinental through route. CP's primary commodities include grain, coal, crude oil and intermodal freight.

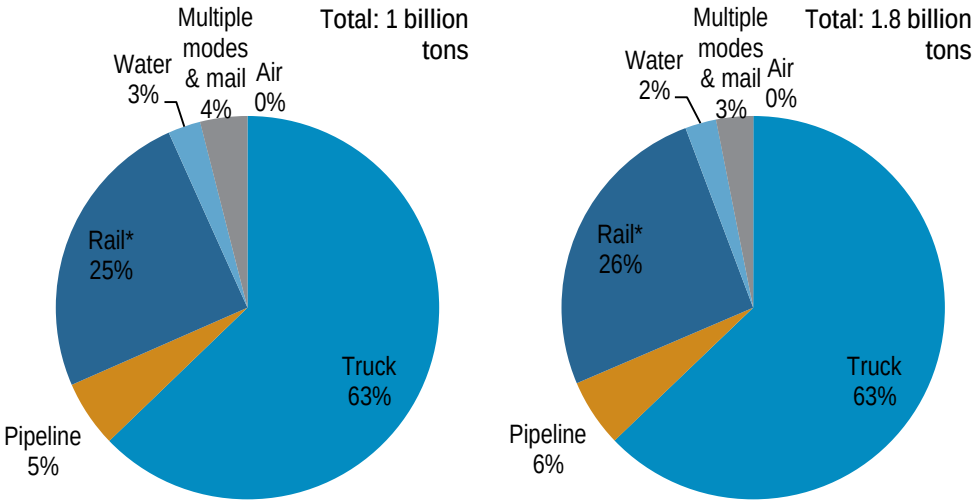
The short line industry consists of a mix of profitable and marginal companies. High-volume markets and lines have done relatively well and low-volume markets and lines have struggled. The national trend toward consolidation of short line ownership and some consolidation of low-density lines and collector/distributor functions has improved the business outlook for some short lines. This trend has emerged to a lesser degree in Minnesota, which can be attributed to the minimal presence of short line holding company ownership in the state. It is apparent that some short lines operating in Minnesota and elsewhere are not meeting critical volume thresholds, and services and investment in track and equipment are declining. Concurrently, short line railroads are facing pressure for investment to remain competitive with the Class I railroads as well as other modes of freight transportation.This includes being able to accommodate heavier weight railcars and providing competitive pricing and service offerings in conjunction with their Class I connections. At times, contractual arrangements and other institutional constraints curtail the ability of short lines to compete successfully.

Freight Demand

The future needs of Minnesota's rail system are driven by trends in freight demand in relation to Minnesota's economy and more broadly that of the United States and global economies. Consistent with federal and MnDOT planning horizons, existing and projected demand for the plan year 2040 was examined using the USDOT's FAF3.5 forecast. In all likelihood, actual freight volumes and the mix of traffic will not match projections, but certain fundamental trends such as population growth, income and economic activity are strong predictors of freight activity. Unanticipated changes in the economy, freight logistics, technology, public policy and other factors will influence the general demand for goods movement and that of the individual modes such as rail.

Minnesota's rail system has some of the highest volumes in the nation. In 2012, with 1 billion tons of freight using the state's transportation system, rail carried 253 million tons—25 percent of the total freight tonnage (Figure E.1). Trucks held the largest share at 63 percent of this tonnage, and the remaining 12 percent was moved by multiple modes, air, pipeline and water. By 2040, volumes are projected to total 1.8 billion tons, an increase of 44 percent. By value, $912 billion in freight moved over Minnesota's transportation system in 2012.That number is projected to grow to $2.3 trillion by 2040 (Figure E.2). Measured in units, in 2012 more than 3.9 million railcars moved on the state's rail system, a volume that is expected to increase by 108 percent and by 8 million railcars by 2040. Of the total rail volume, 93 percent of tonnage (234 million tons) is carried in railcars and 7 percent (19 million tons) in intermodal equipment (containers and trailers).

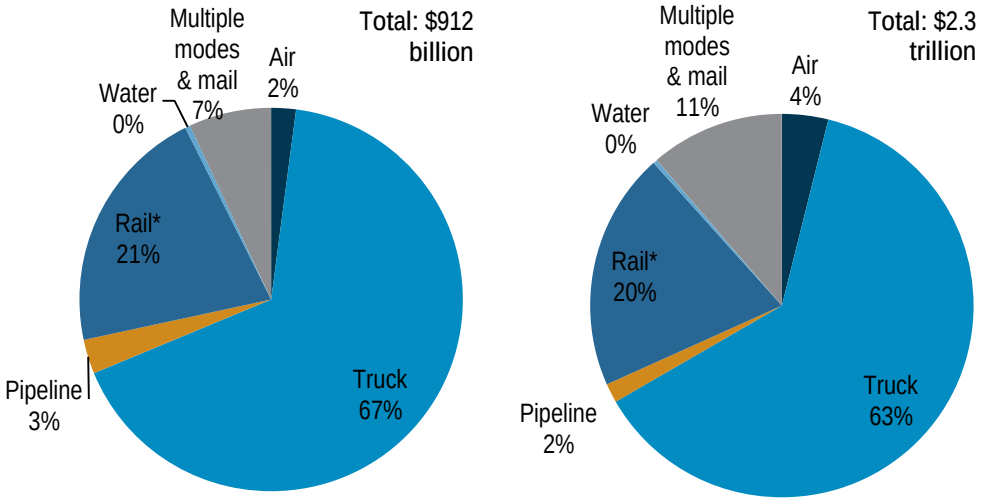
Figure E.1 Mode Share by Weight
2012 (left) and 2040 (right)



Source: FHWA FAF3 2015 Provisional estimates and 2040 Forecast, and through truck traffic estimated by routing these data; and, STB 2012 Confidential Carload Waybill Sample and FHWA FAF 3.5 forecast for 2040 processed by Cambridge Systematics.

Note: *Rail intermodal was excluded from Multiple Modes and Mail and included in Rail.

Figure E.2 Mode Share by Value
2012 (left) and 2040 (right)



Source: FHWA FAF3 2015 Provisional estimates and 2040 Forecast, and through truck traffic estimated by routing these data; and, STB 2012 Confidential Carload Waybill Sample and FHWA FAF 3.5 forecast for 2040 processed by Cambridge Systematics.

Note: *Rail intermodal was excluded from Multiple Modes and Mail and included in Rail.

The top commodities moved across the state are coal, farm products, chemicals and allied products, freight-all-kinds (i.e., miscellaneous mixed shipments moving in intermodal containers or trailers), hazardous materials (e.g., chemicals, petroleum and coal products, and crude petroleum, natural gas and gasoline), metallic ores and agricultural products The future is likely to see an increase in intermodal and petroleum shipments and a decline in coal due to the rise of new sources of electricity production and increasingly stringent environmental regulation of

coal burning power plants. Minnesota's top "trading partners" are Illinois, Wisconsin, Wyoming, Washington, Canada, Texas and North Dakota.

Issues Affecting Current and Future Freight System Performance

To meet current and future demand, improvements are needed in the freight rail network. Additional intermodal service is needed in terms of terminals and access to additional in-state and out-of-state markets. There are several major rail bottlenecks in the state. The Hoffman Junction east of the Union Depot in St. Paul is used by BNSF, CP, and UP, and carries 120 trains per day. Bottlenecks at the Minneapolis Junction and corridors to the north have caused delays to freight service as well as Northstar Commuter Rail and Amtrak's Empire Builder. The East Metro Rail Capacity Study, funded jointly by the three Class I railroads and Ramsey County Regional Railroad Authority, identified specific Hoffman Junction-area capacity improvements that are being systematically pursued. Other bottlenecks near La Crescent and Moorhead have worsened statewide system performance. Constructing additional double track, adding/increasing siding length, improving signal systems, and rehabilitating outdated structures will alleviate these problems as freight shipments and passenger rail demand grow. For short lines, the primary focus will continue to be on infrastructure that can efficiently accommodate the needs of existing and new shippers. This includes universally accommodating 286,000 pound railcars and achieving a state of good repair with track and bridges.

Several other issues emerged during the development of the 2015 Minnesota State Rail Plan that will influence the Minnesota freight rail networks and services. Many of these issues could require substantial investments in the rail system in coming years, including:.

- Infrastructure Constraints. Planned or needed improvements and conceptual cost estimates were identified for select lines, as well as more general conditions that impede system performance such as substandard track conditions and weight limits that impede efficient operations and ability to offer a competitive service. The substandard track and weight limits are primarily an issue with some of the state's short lines, while the formersystem improvements including bottlenecks and mainline capacity typically affects Minnesota's principal main lines. Several of the corridors went through advanced levels of engineering assessment and have more detailed cost estimates. While these projects are on the freight system today, many of these upgrades only become critical if passenger service is introduced on the line. These projects are described in detail in Chapter 4; a summary cost estimate is show in the Program Implementation and Funding section.

- Rail Facility and Line Relocation. Freight rail tracks and associated infrastructure represent significant capital investments at fixed locations. Under certain circumstances, however, the relocation of freight rail lines may be warranted to ease rail bottlenecks, reduce vehicle traffic delays at grade crossings, improve safety, and spur economic development opportunities. Substantial freight rail relocation or expansion projects, such as a rail bypass, a new line or yard or significant increases in train volumes, require the review and approval of the federal Surface Transportation Board (STB). Relocation projects underwent detailed study in Rochester and are under consideration in Shakopee and Hennepin County.

- Intermodal Services. The Twin Cities are the only location where rail intermodal (the haulage of containers and trailers) service is available in Minnesota, and Chicago and the Pacific Northwest/Western Canada are the only directly served markets. Although efforts to provide service in other parts of the state have not been successful, stakeholder conversations revealed a strong desire for intermodal service in Duluth and the western and southern parts of the state, as well as additional terminal capacity and services in the Twin Cities. Intermodal service is density driven, and given that a broadly used competitive service must typically operate on a daily basis, the volume requirements are substantial. Particular interest has developed around the need for service

from this market to the Pacific Northwest gateways. For a terminal served by a Class I railroad, the minimum volume threshold is around 50,000 units, while for a short line it may be less.

- Positive Train Control. The purpose of PTC is to prevent most train-to-train collisions, overspeed derailments and casualties or injuries to roadway workers. The technology combines precise locating of all trains and other track vehicles; lineside infrastructure such as switches, crossings and junctions; automated cataloging of speed restrictions and traffic conditions; and real-time wireless communications with locomotives and other operating equipment The U.S. Rail Safety Improvement Act of 2008 mandated the widespread installation of PTC systems by December 2015 on most lines handling passenger trains or hazardous materials,a network totaling 80,000 miles.[2] The Class I railroads are implementing PTC largely at their own expense, and installation is well underway in Minnesota and elsewhere. However, PTC poses costly challenges to some short lines that are handling hazardous materials, or more commonly must operate over PTC-equipped Class I main lines. The $100,000 plus cost of retrofitting older locomotives that are typical of short line fleets is beyond the financial ability of many carriers.

- Hazardous Material Transport. For many years, the railroad and chemical industries and USDOT were actively engaged in improving the safe transport of hazardous materials by rail. Substantial progress was made in the design of and materials used in tank cars, reporting, custody, education, communications and safe handling. The FRA and the Pipeline and Hazardous Materials Safety Administration are currently updating safety regulations related to transporting flammable liquids by rail. Specifically, these regulations relate to DOT 111 tank cars and their operations. Recommendations currently under review include enhanced tank head and shell puncture resistance systems and enhanced top fittings protection. Minnesota is actively pursuing preventative and emergency response measures to improve the safety of crude oil and hazardous materials shipments, especially track and hazmat inspection and grade crossing improvements.

PASSENGER RAIL

Minnesota has one active intercity passenger rail service, Amtrak's Empire Builder. The Empire Builder operates one train per day between Chicago and Seattle/Portland. Stops in Minnesota include Winona, Red Wing, St. Paul, St. Cloud, Staples, Detroit Lakes and Fargo/Moorhead. In recent years, the Empire Builder had the highest ridership of any single train on the Amtrak system; in FY 2014, it slipped to second place due to increased delays caused by congestion along its route. In the Twin Cities metro area, there are two major rail stations: Target Field Station in Minneapolis and the Union Depot in St. Paul. Target Field Station is currently the terminal for the Northstar Commuter Rail, while the Union Depot is a station for the Empire Builder.

Passenger Demand

As a part of the 2010 Statewide Freight and Passenger Rail Plan, a needs analysis was conducted for all potential passenger rail corridors in Minnesota. A process was developed so that a clear understanding of needs on the rail system for passenger operations—today and in the future (2040)—could be derived. Key to this process was the understanding of the cumulative effect projects have on each other and how critical the underlying freight infrastructure is to the eventual development of a robust passenger rail network in the state. In the 2015 Minnesota

[2] Federal Railroad Administration, www.fra.dot.gov.

State Rail Plan, which builds upon the needs analysis conducted in 2010, rail corridors were divided into three categories: Phase I Projects in Advanced Planning, Phase I and Phase II. Having had substantive planning work, four projects were designated as being in Advanced Planning. Three are High Speed Rail services (at least 110 mph), and consist of Twin Cities to Milwaukee as part of an overall Chicago hub regional service, Duluth (Northern Lights Express or NLX) and Rochester (Zip Rail). The fourth advanced planning effort entails a second Empire Builder between the Twin Cities and Chicago that would complement the existing daily train. Robust analyses are being performed on passenger ridership for these rail corridors under active development. Passenger demand estimates from these corridors will be included in updates to this document as they become available.

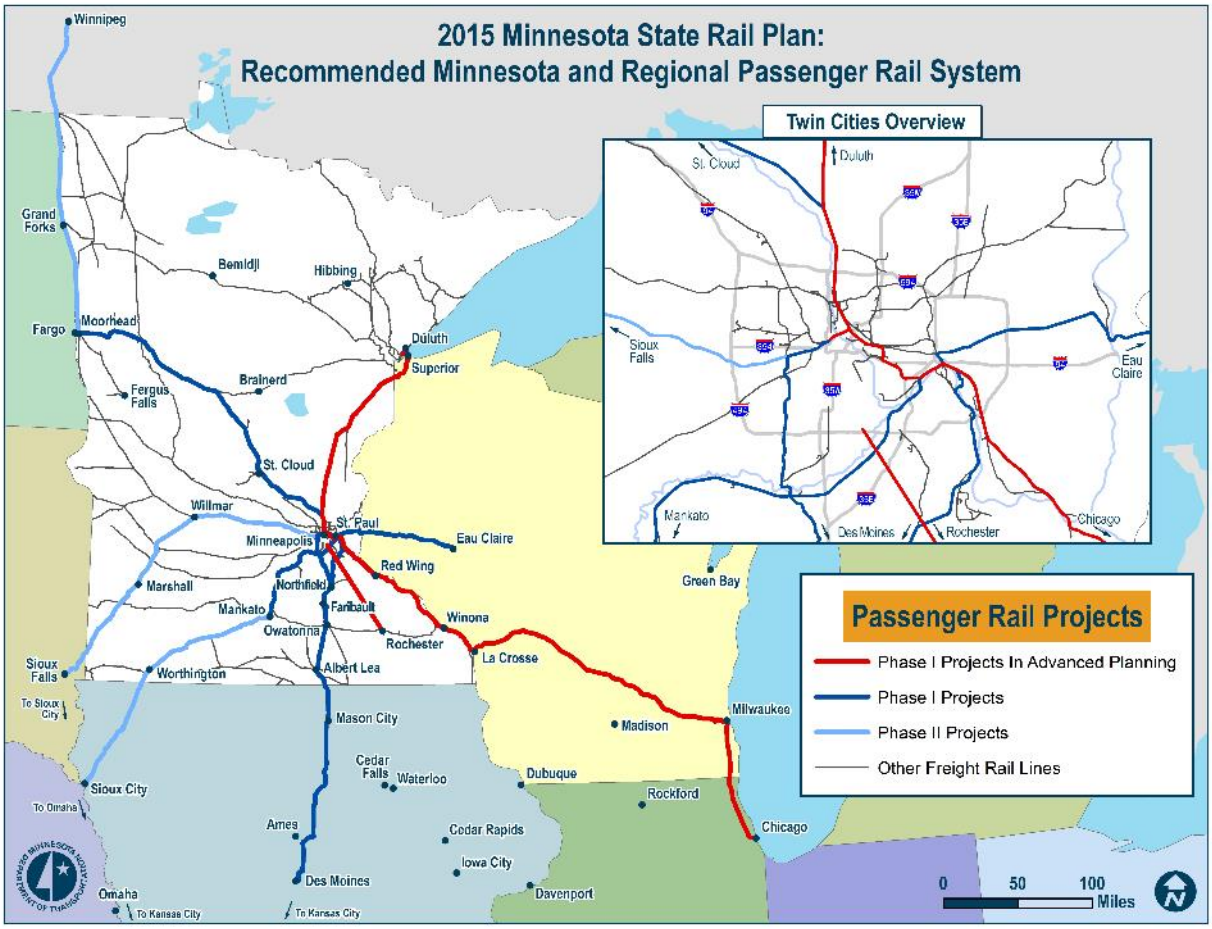
The next two levels apply to projects that have not yet entered advanced corridor-level planning. These corridors are assigned a Phase I or Phase II priority as follows:

- Phase I: Projects that are within a 0- to 20-year implementation horizon and would connect the Twin Cities with the following cities—St. Cloud and on to Fargo, Northfield and on to Albert Lea and Des Moines, Mankato and Eau Claire.
- Phase II: Projects that have a 20+ year implementation horizon, such as extensions of the Mankato service to Sioux City, Iowa; the Fargo service to Winnipeg and service from the Twin Cities to Willmar and on to Sioux Falls, South Dakota.

For these Phase I and II corridors, the rail passenger travel demand was re-estimated using the methodology developed in the 2010 State Rail Plan, but updated to reflect more recent demographic data. The highest total travel demand to/from the Twin Cities along these corridors is with St. Cloud, with more than 1 million forecast rail trips annually and a rail market share of about 8 percent. This city pair is followed by a second cluster of city pairs with more than 100,000 annual trips or between 4 and 5.5 percent of the total travel market, including Eau Claire, Mankato and Northfield.

All of the corridors are shown in Figure E.3.

Figure E.3: Passenger Rail Corridors



Issues Affecting Current and Future Passenger Rail

Issues affecting current and future passenger rail include:

- Safety. There is a continuing need for improved safety at highway-rail grade crossing concern due to a history of collisions with crossing vehicles, bicyclists and pedestrians. While significant improvements were made in recent years, many of the currently installed warning devices will need replacement by 2030 due to age and functional obsolescence. Improvements beyond active warning devices also will be necessary in some locations. The recent rapid increase in the transport of shale oil and other hazardous materials across Minnesota poses new challenges to ensuring safety.
- Prioritization and Coordination of Passenger Rail Projects. Advancing passenger rail projects is complex and competition for funding is intense. Great attention is necessary for selecting the best projects,such as having detailed supporting analyses including rigorous cost benefit analysis, and focusing on moving projects through the planning process. Passenger rail systems sharing infrastructure with Minnesota's freight network will require coordination between operations. Passenger terminal design and capacity must continue to be developed to allow for advanced multimodal connections and support, including the destinations of St. Paul and Minneapolis.

- Need for Increased Passenger Service Reliability. Amtrak's Empire Builder currently provides the only passenger rail service in Minnesota. An increase in the number of delays primarily due to increased freight rail volume resulted in a drop in on-time performance, from 78 percent in 2010 to 27 percent in 2014. There is a strong near-term interest in increasing the frequency and reducing service delays on the Empire Builder. In the short-term, double tracking segments along the route, proactive scheduling and continued investments from the host railroads are expected to alleviate Amtrak delays.

Stakeholder and Public Involvement

Throughout the 2015 Minnesota State Rail Plan development process, various strategies were used to engage the public, stakeholders and other agencies. These strategies were outlined at the beginning of the project in a Public Involvement Plan. The goals and objectives of the engagement process were to create opportunities for involvement, provide opportunities for education and information about the state's rail system, use the input to identify opportunities to guide MnDOT's vision for rail, and integrate and coordinate stakeholder and public involvement with technical tasks.

Comments were solicited through two rounds of public open house meetings across the state, passenger Rail Forum meetings, the Minnesota Statewide Freight Summit, individual stakeholder meetings, a MetroQuest online survey, website and online engagement, and letters and resolutions.

Program Summary and Action Plan

To achieve the vision laid out by Minnesota GO and the goals outlined in this document, a set of short- and long-term actions were developed and are summarized below.

4-YEAR ACTION PLAN

During the next 4 years, the following actions are necessary to implement the vision for rail.

Freight	Passenger
• Develop and implement a comprehensive plan that addresses key safety vulnerabilities across Minnesota's rail network • Continue development and investment in reducing rail/highway conflicts, including upgrading rail/highway grade crossings, grade separations, and crossing closures • Complete initial deployment of state-of-the-art traffic control and safety systems on Minnesota's high-density main lines • Better integrate rail into the public planning process • Build upon the existing Minnesota Rail Service Improvement Program, including raising the maximum	• Implement a second frequency along the Empire Builder route between Chicago and the Twin Cities and reduce service delays • Continue development of the High Speed Rail services listed as Phase I in Advanced Planning through environmental and permitting processes including the Twin Cities to Milwaukee segment of Chicago HSR; Zip Rail between the Twin Cities and Rochester; and NLX between the Twin Cities and Dululth

During the next 4 years, the following actions are necessary to implement the vision for rail.	
Freight	Passenger
loan amount beyond the current $200,000 ceiling • Initiate advanced planning and construction of solutions to the state's most critical network bottlenecks	

20-YEAR ACTION PLAN

During the next 20 years, the following actions are necessary to implement the vision for rail.	
Freight	Passenger
• Improve the safety of the freight rail system in all aspects, and ensure the ability of the rail infrastructure to safely support growing traffic volumes • Make improvements to the condition and capacity of Minnesota's primary railroad arterials to accommodate existing and future demand • Address all critical network bottlenecks • Upgrade main line track (all Class I to III railroads) to 25 mph minimum speed, as warranted. • Improve the network (all Class I to III railroads) to support the use of 286,000 pound railcars throughout • Implement state-of-the-art traffic control and safety systems • Expand intermodal service access options throughout the state • Maintain and ensure broad access to competitive freight rail services for shippers throughout the state, and leverage the state's rail network for desirable economic development • Actively manage preserved rail corridors held in the State Rail Bank and evaluate for possible future transportation uses • Support the implementation of Positive Train Control on	• All projects currently not in Advanced Planning will fall into Phase I (implementation within 20 years), or Phase II (implementation beyond 20 years). Further study is required to fully determine into which phase projects are placed. Currently, public support appears to be greatest for service to Northfield, continuing on eventually to Des Moines and Kansas City. Also, service to St. Cloud reflects a combination of intercity service and an extension of the existing Northstar Commuter Rail service, and as such has strong performance. Enhanced service to Fargo is included in the improvements to the Empire Builder. Other potential Phase I markets include Mankato, Willmar and Eau Claire, Wisc. • Advance corridors incrementally depending on analysis results, financing, right of way acquisition, and agreements with freight railroads • Connect all services (including the Advanced Planning projects) to both Target Field Station and St. Paul Union Depot

During the next 20 years, the following actions are necessary to implement the vision for rail.	
Freight	Passenger
short line corridors where conditions warrant, such as the handling of certain categories of hazardous materials[3]	

COSTS

The capital cost of the fully implemented program would be approximately $6.6 billion and includes both private and public investment. This amount consists of $3.5 billion for freight-only improvements and $3.1 billion for passenger improvements for Phase I projects, but does not include costs for the Phase I projects in Advanced Planning. More detailed engineering cost estimates will be produced for these projects as studies are completed. Consideration should be given to building these projects as a system rather than a series of individual, unrelated projects.

Program Implementation and Funding

FUNDING AND INVESTMENT OPPORTUNITIES

The approach to financing the 2015 Minnesota State Rail Plan presumes the need for multiple actors, methodologies and years. This is a 20-year program—the full program costs should be viewed as a long-term goal which can be achieved incrementally over the life of the program. A range of financing tools is needed among the public sector stakeholders—federal, state and regional/local—and the private sector including railroads and investor/developers

State and local funding commitment to planning, capital investment, and operations has already been demonstrated in Minnesota. State general fund and bond proceeds are dedicated to the existing freight and safety programs (including MRSI), MnDOT's Passenger Rail Office, Zip Rail, NLX, service to Milwaukee/Chicago, and station facilities at Target Field Station and St. Paul Union Depot. Minnesota counties and their Regional Railroad Authorities committed significant local funding from both general funds and special purpose tax levies to advance these projects and support ongoing rail operations.

On the federal side, the funding picture has changed considerably since 2010. The Moving Ahead for Progress in the 21st Century (MAP-21) authorization was enacted in 2012. While it did not include any substantive changes to potential funding sources for intercity passenger rail service, appropriation levels dropped substantially. MAP-21 was extended through May 2015 under a continuing resolution.

At the time of the development of the 2010 State Rail Plan, the federal government had authorized substantial funding for the Passenger Rail Investment and Improvement Act. Since 2010, Congress has not appropriated any further funding under the PRIIA programs, and PRIIA's authorization expired at the end of FY 2013. Current draft

[3] It is assumed that the Class I railroads will implement PTC at their own cost as federally mandated.

legislation does not include substantive direct funding for passenger rail program development outside of the Northeast Corridor.

Since 2010, the MnDOT OFCVO and Office of Passenger Rail have pursued a variety of strategies for moving individual projects forward, such as:

- Including projects in the state's long-range transportation plans, after which environmental analyses can begin. Service-level environmental assessments and alternatives analyses should be prepared for all identified components of the passenger rail system.
- Pursuing funding through combinations of federal grants, state and local appropriations and bonding authority, and private investment.
- Reaching formal agreements with the freight railroads to move projects forward.
- Continuing to authorize and empower corridor-level special purpose authorities or joint powers authorities, much like the Northstar Commuter Rail system was originally planned by MnDOT, delivered by the Northstar Commuter Rail Development Authority and operated by Metro Transit.
- Prioritizing projects, both freight and passenger, based on:
    - Cost-benefit analyses
    - Mutual benefits to freight and passenger services;
    - The potential for funding partnerships among multiple public and private entities
    - Deliverability as a project reaches final federal approval stages.

Exploration of new funding opportunities are necessary to move rail development forward. In addition to strategies mentioned above, some options for MnDOT to pursue in the future include:

- Pursuing funding through federal grant programs. The USDOT's TIGER discretionary grant program has provided funding for freight and passenger rail projects; however, the program is highly competitive for a relatively small pot of money. The 2014 program received 1,400 applications totaling $57 billion in project costs—for only $1.5 billion in available grants.
- Rail eligible corridor investments. Some states have identified major intercity corridors that enable economic activity, and are focusing their infrastructure investments in these corridors. These programs facilitate capacity expansion and congestion relief in road and rail facilities. In 2000, MnDOT designated a primary set of highways for moving goods and people between regional trade centers in Minnesota called the Interregional Corridor System. These corridors could serve as a primary focus for investment in rail projects as well as highway, and are consistent with many of the major freight rail, and potential passenger rail corridors.
- Freight rail improvements. Many states have programs that offer financial assistance to freight railroad operations. Some of these programs are focused on short line or regional railroads and can involve public ownership of rail lines with private operators. Other programs offer tax incentives for expansion of facilities, spurs or lines for new or expanded business development. Some states offer assistance through revolving loan

programs, while others make direct grants. Examples include programs in Wisconsin, Pennsylvania, Florida, Ohio and Nebraska.

- Passenger rail investments. Most investments in passenger rail capacity by states involve expanding the facilities of freight railroads over which the passenger services will operate. These passenger rail investment programs provide operating benefits for the freight railroads and can be characterized as investments in shared corridors. Examples include programs in North Carolina and Virginia.
- Rail safety programs. Thirty states cooperate in enforcing federal rail safety regulations and in supporting federally certified rail safety inspectors. These programs, funded solely with state resources, leverage the efforts of the FRA, and are coordinated through the FRA's eight regional safety offices. The Federal Surface Transportation Program dedicates $220 million to funding improvements in highway-rail grade crossing protection. Several states augment this federal funding with state resources, aimed at allocating resources on a safety risk-based process.
- Public Private Partnerships. MnDOT has limited legal authority to implement some forms of PPPs, but the state of the practice has changed significantly since MnDOT's PPP authorization legislation was enacted.[4] MnDOT's programs could be greatly expanded to support the development of passenger rail projects. Tools for leveraging private sector investment include:
  - Expanding the Minnesota Rail Service Improvement Program (MRSI) from a revolving loan program to a combination of loan and grant programs as done in some other states such as Iowa, Wisconsin and Virginia, and increasing the loan ceiling from the current $200,000
  - Offering financial assistance for Railroad Rehabilitation and Improvement Financing applicants. Oregon has such a program
  - Providing state maintenance and investment tax credits for rail improvements;
  - Broadening access to the Minnesota Revolving Loan Fund for projects beyond grade crossing improvements;
  - Amending the constitutional limit of $200 million in debt to support rail projects
  - Creating a dedicated funding source for multimodal investments not subject to annual appropriations

Conclusions

WE HEARD FROM OUR STAKEHOLDERS

A robust rail network is vital to Minnesota's economy, environment and quality of life. We heard this unifying statement from diverse stakeholders over and over when writing this plan. Stakeholderssaid it in different ways.

[4] http://www.fhwa.dot.gov/ipd/p3/state_legislation/state_legislation_key_elements.aspx

Minnesota needs a rail system that is safe, one that works well and carries both people and freight. It is important to our economy, our environment and our quality of life.

WHAT'S NEXT?

The need for a robust rail network is great, and the success of Minnesota's rail system depends on the coordinated efforts of many public and private stakeholders. Although passenger and freight interests are sometimes seen as at odds with one another, this plan sets forth unifying strategies for meeting the needs of both. Rail improvements to safety, capacity and system efficiency benefit both freight and passenger rail systems. MnDOT will fulfill a dual role of developing new economically-beneficial rail systems in the state and promoting and enforcing transportation safety and commodity delivery equity within the state. With public and private interests working together, our state's freight and passenger rail system will grow investments in Minnesota's economy, help the environment and improve overall quality of life.