

5.0 THE STATE'S RAIL SERVICE AND INVESTMENT PROGRAM

Vision

Minnesota GO, the first long-range transportation adopted for Minnesota in 2011, is the driver of the Statewide Multimodal Transportation Plan, the State Rail Plan, and other transportation planning efforts over the next 20 years. The Minnesota GO Vision serves as an overarching set of principles guiding the development of freight and passenger rail service, along with other modes of transportation, within the state.

The 2010 State Rail Plan promoted a vision for freight rail in Minnesota that called for the development of a balanced multimodal freight system which can respond to increased regional and international economic competition, constrained highway capacity, environmental challenges, a diverse customer base, and rising energy costs. The vision for passenger rail is that Minnesota should develop a robust intercity passenger rail system which results in improved travel options, costs and speeds for Minnesota and interstate travelers.

Since the 2010 Plan was adopted, changes in industry, public interest and funding opportunities resulted in a reconsideration of some of the specific actions that were adopted. Affecting both freight and passenger, these changes include:

- Increased emphasis on safety, caused by general traffic growth across the state's core network, and the rapid growth of crude oil shipment by rail.
- Continued development and refinement of Chicago – Twin Cities, Twin Cities – Rochester (Zip Rail) and Twin Cities – Duluth (NLX) corridors, and some shift in priorities among other corridors.
- The scarcity of federal funding for passenger and freight rail projects.

As a result, the need for some actions has accelerated, particularly those addressing the more rapid than expected growth in traffic along Minnesota's core network, while others will be drawn out over a longer period of time. To provide an indication of their relative timing, the proposed actions were divided into near term actions—those that can be accomplished by 2019—and long-term, those which can be accomplished over by 2035, a 20-year horizon.

4-YEAR ACTION PLAN

During the next 4 years, the following actions are necessary to implement the vision for rail.	
Freight	Passenger
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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

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

Freight	Passenger
<p>control and safety systems on Minnesota’s high-density main lines</p> <ul style="list-style-type: none"> Better integrate rail into the public planning process Build upon the existing Minnesota Rail Service Improvement Program (MRSI), including raising the maximum loan amount beyond the current \$200,000 ceiling Initiate advanced planning and construction of solutions to the state’s most critical network bottlenecks 	<p>between the Twin Cities and Duluth</p>

20-YEAR ACTION PLAN

During the next 20 years, the following actions are necessary to implement the vision for rail.

Freight	Passenger
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 will be required to fully determine into which phase projects are placed. Currently, public support appears to be greatest for service to Northfield, eventually continuing on 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, Wisconsin 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

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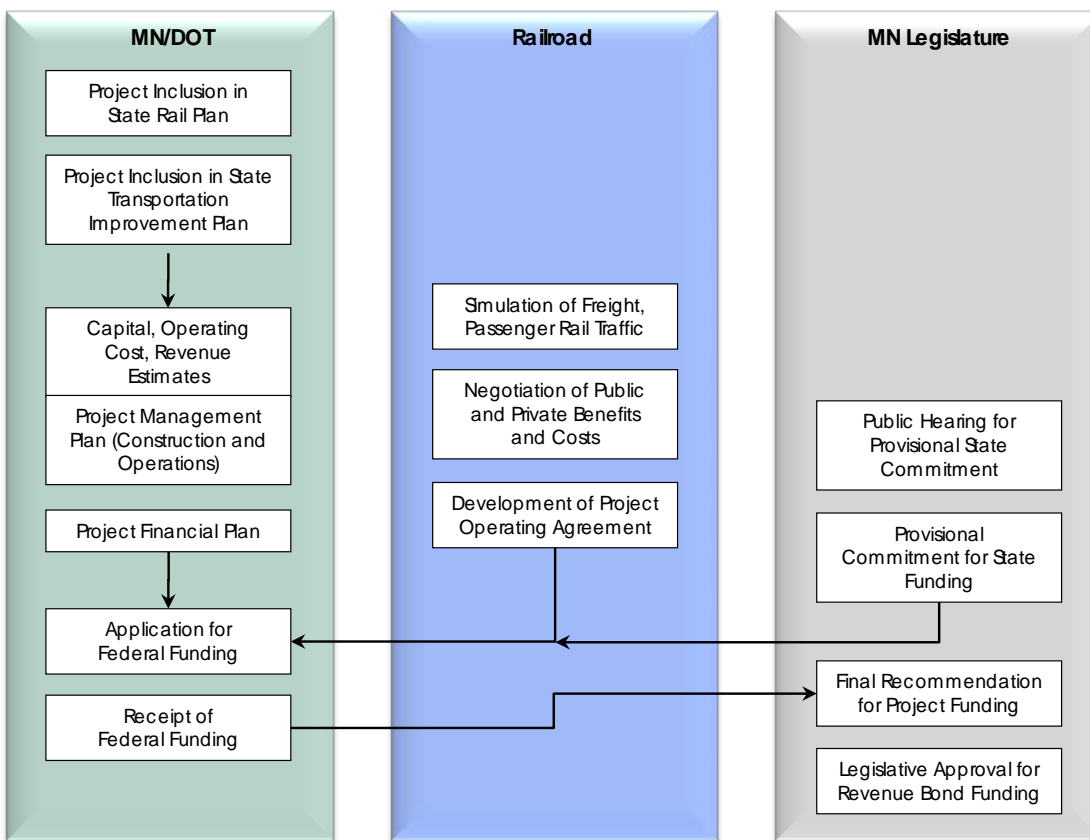
Freight	Passenger
<p>leverage the state's rail network for desirable economic development</p> <ul style="list-style-type: none">• Actively manage preserved rail corridors held in the State Rail Bank and evaluate for possible future transportation uses• Support the implementation of Positive Train Control (PTC) on short line corridors which handle certain categories of hazardous material⁶⁶	

⁶⁶ It is assumed that the Class I railroads will implement PTC at their own cost as federally mandated.

Program Coordination

A multistep process is recommended for making decisions on investing in passenger rail corridor projects, shown in Figure 5.1.

Figure 5.1: Passenger Rail Project Decision Process



Since the development of the 2010 State Rail Plan, and continuing with the 2015 Minnesota State Rail Plan, Minnesota has pursued a variety of strategies for moving individual projects forward. These strategies should continue. These steps are being led by the MnDOT Office of Freight and Commercial Vehicle Operations and Office of Passenger Rail:

- Include projects in the state’s long-range transportation plans. Once projects are included in the state plans, environmental analyses can begin that further refine the routes for passenger rail corridors. In particular, service-level environmental assessments and alternatives analyses should be prepared for all identified components of the passenger rail system.
- Pursue funding through the three-legged stool of federal grants, state and local appropriations and bonding authority, and private investment. The funding environment has changed substantially since the adoption of the 2010 State Rail Plan, with the availability of federal funding greatly diminished, requiring a more creative and multi-faceted strategy on the part of the state.

- Work with the freight railroads that own the track or rights of way to be used for the passenger rail projects. Reaching formal agreements with the freight railroads is necessary to move projects forward, and will force discussions to move beyond high-level conversations to detailed financial obligations.
- Continue 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.

Program Summary

The 2010 State Rail Plan identified a priority program that would achieve Minnesota’s vision for rail. Most of the elements of this program are retained or slightly modified in the 2015 Minnesota State Rail Plan as follows:

- Support short-term improvements and a second frequency on the existing Amtrak Empire Builder service
- Develop High Speed Rail passenger service to Chicago, Rochester and Duluth by upgrading/developing corridors to FRA Class VI conditions⁶⁷
- Enhance conventional passenger rail service to St. Cloud, Eau Claire, Mankato, Fargo and potentially other markets to be analyzed more fully in coming years. Upgrade corridors to Class IV (minimum), V or VI conditions as warranted (respectively 79, 90 or 110 mph)
- Support the implementation of PositiveTrain Control on short line locomotives that must operate over PTC-equipped lines and short line corridors which handle certain categories of hazardous material⁶⁸
- Upgrade grade crossing on all shared corridors
- Upgrade major junctions and bridges, particularly on short lines
- Upgrade all mainline track to minimum 286,000 pound capacity and 25 mph condition
- Upgrade all active warning devices and signs
- Support the development of additional intermodal facilities as market conditions warrant

Implementation of this program would result in the following achievements:

⁶⁷ The Federal Railroad Administration classifies track into a series of categories based on physical condition (i.e., tie and rail condition, surface, cross-level, etc.). For each category, which ranges from I to VIII, trains are permitted to travel up to a set speed, with the higher numbered categories allowing higher speeds. Permissible speeds generally differ for passenger and freight trains; thus, while freight trains can travel up to 40 mph on FRA Class III track, passenger trains can reach 60 mph. Typical short line track is maintained to FRA Class II (24 mph maximum for freight), and Class I (10 mph maximum). For more information, see 49 CFR 213.9 and 213.307.

⁶⁸ With PTC implementation well underway on the Class I railroads, this plan does not include the cost of deployment.

- A robust intercity passenger rail system that serves intercity travel between major population and activity centers within the state, and between Minnesota and other Midwest hubs
- All mainline track speeds would be at least 25 mph
- All rail lines would have 286,000 pound rail car capacity
- Significant increases in track to siding ratios;
- All active grade crossing devices would be upgraded or replaced
- All substandard capacities would be eliminated

This program does not address other improvements made independently by the Class I railroads that have a more robust investment program today than was envisioned in the 2010 State Rail Plan.

Prioritization of the passenger rail program will be formalized further in the coming years as additional analyses are completed. Prioritization will be based on a consistent methodology for benefit/cost analysis applied in completed or upcoming Environmental Impact Statements and detailed project planning studies. In the meantime, MnDOT is proceeding with project prioritization, both freight and passenger, being determined based on the following:

1. Advanced cost-benefit analysis on the proposed services
2. Mutual benefits to both freight and passenger through the safety, capacity, and operational improvements identified along the corridor
3. Public-private and public-public partnership opportunities related to project development funding and operations
4. Deliverability as a project reaches final federal approval stages.

Each project will be screened through the above criteria and prioritized. Phase 1 projects in the Plan will remain the focus of work. All projects will continue to advance incrementally with available funding necessary for the next phase of development. In the planning and project development phase. Several projects may be advanced simultaneously. In the latter stages of development (i.e., final design, construction, etc.) the availability of financial resources may limit project implementation to one project at a time.

The top priorities are the four projects that are already in advanced stages of planning and environmental review: A second daily Empire Builder train to Chicago reached project approval stage and is supported by a partnership with Wisconsin DOT. The three other projects involve the development of HSR between the Twin Cities and Chicago, Rochester and Duluth. Multiple public-private and private funding and development initiatives are emerging and being presented to MnDOT. The Rochester and Chicago corridors in particular are actively being advanced in planning and environmental analysis toward project qualification. Other passenger system elements identified in the 2015 Minnesota State Rail Plan are advancing including connections between Target Field Station and St. Paul Union Depot, and the NLX project.

All other projects 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 metrics. Enhanced service to Fargo is included in the

improvements to the Empire Builder. Other potential markets include Mankato, Willmar and Eau Claire, Wisc., the latter of which has strong public support but lacks political support in Wisconsin.

Project Costs

The capital cost of the fully implemented program would be approximately \$6.6 billion. 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 projects in the Advanced Planning stage. More detailed engineering cost estimates will be produced for these projects as studies are completed. On the whole, if built as a system rather than as a series of individual, unrelated projects, substantial synergies across projects can be achieved.

Cost estimates are based on high-level system wide unit costs. These estimates are based on the following assumptions:

- Infrastructure cost represents the needs for passenger service in 2040 above and beyond the total infrastructure needs identified for freight. For example, if the level of freight investment identified in [Chapter 4](#) also can accommodate four passenger trains per day, that scenario would produce no additional infrastructure cost for passenger rail. Track, signal systems and crossings are included in this cost.
- Capacity rights fees on freight railroads are assumed to be \$85,000/train/mile.⁶⁹
- Rolling stock is the cost to purchase trains to operate these services. In general, it is assumed that new rolling stock will be required for each new route. There may be opportunities for synergies among the several services; therefore, a 20 percent discount to the system wide cost of rolling stock was applied.
- The ridership forecasts developed for this study are the basis for revenue estimates, which were credited against the overall costs. Potential revenue for each of the services is based on the fares used to estimate ridership. The model includes fare estimates on a per mile basis. These were multiplied by ridership by segment to calculate revenue.
- A 10 percent engineering and 30 percent contingency cost was added to each project.

All costs shown in this report are in current real (uninflated) dollars as is typically done in long-range planning studies, so that the difficult-to-predict impacts of inflation are factored out.

⁶⁹ Based on the negotiated Northstar Rage

Passenger Element

PASSENGER SYSTEM PROJECTS EVALUATION

This section describes the potential system performance benefits of expanding passenger rail in Minnesota as discussed in the needs assessment.

Phase I – Advanced Planning Projects

Four projects are designated as being in Advanced Planning. Three are HSR 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 single daily train. Robust analyses are being performed of passenger ridership for these rail corridors under active development, and information will be included in the 2015 Minnesota State Rail Plan, as available.

Phase I Projects

Performance measures were used to evaluate each of the criteria areas described in [Table 5.1](#).

Table 5.1 Passenger Performance Measure Estimation

CATEGORY	MEASURE
System Performance	Ridership. Total ridership by corridor
	System efficiency. Passengers per train mile
Livability	System accessibility. Minnesota residents outside of the Twin City metro area with access to the rail system.
Environmental	Environmental impact. Qualitative assessment of the impact of new track or right of way on the environment.
Financial/Economic	Cost/Cost per Rider. Cost of implementing each scenario.
	Revenue/Farebox Recovery.

Ridership forecasts are summarized in [Chapter 3](#). Overall ridership was calculated assuming 300 service days per year. Livability was calculated as the total population living outside of the Twin Cities Metropolitan area that would have access to rail service in the future. County and metropolitan area population projections from the Minnesota State Demographic Center were used to evaluate this measure. Every county or metro area with a station was considered to have access to the rail system. Metropolitan estimates were used for stations in St. Cloud. County-level estimates were used for the remainder of the Phase I corridors. Finally, a qualitative assessment was made of environmental impacts. Corridors using new alignments have a high potential of impact. Passenger services (including all of the Phase I corridors) that would use shared track with freight railroads are expected to have a low potential for environmental impact.

Table 5.1: Phase I - Passenger Project Performance Measures – Benefits *in Millions*

CORRIDOR	SCENARIO EVALUATED	DAILY ROUND TRIPS	DISTANCE	RIDERSHIP	POPULATION WITH RAIL SERVICE OUTSIDE TWIN CITIES	ENVIRONMENTAL
Twin Cities – Albert Lea/Des Moines (I-35 Corridor)	Intercity Rail	4	113	136,475	104,877	Low
Twin Cities – Eau Claire, WI	Intercity Rail	4	87	268,812	-	Low
Twin Cities – Fargo/ Moorhead	Intercity Rail	2	242	37,032	67,079	Low
Twin Cities – Mankato	Intercity Rail	4	84	234,864	66,049	Low
Twin Cities – St. Cloud	Intercity Rail	8	67	1,107,005	267,420	Low

Table 5.2 shows these project metrics for the Phase I corridors. Major findings are as follows:

- The Twin Cities – St. Cloud corridor has the potential for the highest ridership, at more than one million annual riders, and provides access to the passenger rail system for more than 250,000 residents.
- Three routes have ridership better than one passenger per train mile—St. Cloud, Mankato and Eau Claire. St. Cloud has more than three riders per train mile, indicating a high likelihood of success for this line.
- As each of the Phase I alignments uses existing track, the environmental impacts are judged to be low.

Phase II Projects

Projects designated at Phase II are described in [Chapter 3](#), and have an implementation horizon of 20+ years. A robust evaluation of these projects has not been started.

PASSENGER SYSTEM COST EVALUATION

Phase I Projects

Cost, revenue and cost-effectiveness values were estimated for each Phase I corridor. Cost estimates are detailed in [Chapter 3](#). Because any passenger rail service operating on a freight route would need to be negotiated between the passenger rail provider and the freight railroad, it is difficult to establish a definitive cost.

Potential revenue for each of the services is based on the fares used to estimate ridership. The model includes fare estimates on a per mile basis, multiplied by ridership by segment to calculate revenue. In addition, cost-effectiveness was evaluated using several metrics, including:

- **Capital Cost per Mile of Service.** This is the total capital cost divided by the corridor length. This shows the average cost of implementation of each new route and allows a normalized comparison of routes.
- **Farebox Recovery Ratio.** The farebox recovery ratio is the total ticket revenue divided by operations and maintenance costs. It captures the extent to which a new service, once implemented, can pay for itself. According to Fiscal Year 2014 Amtrak data, farebox recovery ratios for single or bistate corridors range from 14 percent for the Hoosier State service to 156 percent for Washington–Lynchburg service, with an average of 58 percent. Long-distance, multistate Amtrak routes average about 48 percent. Only the Northeast Corridor (Boston-NYC-DC) Acela has consistently covered its operating costs through revenues.
- **Operating Subsidy per Rider.** In addition to the farebox recovery ratio, an average operating subsidy per rider is estimated. In combination with the capital cost, this captures the magnitude of public expenditures required to support each service.

[Table 5.3](#) shows these metrics of cost-effective performance by passenger line.

Table 5.3 Phase I Passenger Project Performance Measures – Costs and Cost-Effectiveness

CORRIDOR	SCENARIO EVALUATED	DAILY ROUND TRIPS	CAPITAL COST (MILLIONS ONE-TIME)	MAINTENANCE COST (MILLIONS ANNUALLY)	REVENUE (MILLIONS)	FAREBOX RECOVERY (PERCENT)	CAPITAL COST PER MILE (MILLIONS)	CAPITAL COST PER RIDER	OPERATING SUBSIDY PER RIDER
Twin Cities – Albert Lea/Des Moines (I-35 Corridor)	Intercity Rail	4	\$119	\$19.0	\$1.0	5%	\$1.0	\$868.29	\$131.82
Twin Cities – Eau Claire, WI	Intercity Rail	4	\$156	\$14.6	\$5.1	35%	\$1.8	\$580.33	\$35.26
Twin Cities – Fargo/Moorhead	Intercity Rail	2	\$120	\$10.2	\$2.0	20%	\$0.5	\$3,229.64	\$220.26
Twin Cities – Mankato	Intercity Rail	4	\$223	\$14.1	\$4.1	29%	\$2.7	\$949.48	\$42.80
Twin Cities – St. Cloud	Intercity Rail	8	\$ 218	\$ 22.5	\$15.7	70%	\$3.3	\$196.93	\$6.19

Major findings include:

- Service to St. Cloud, Mankato and Eau Claire have higher capital and operating costs, yet the higher levels of ridership allow costs per rider on these lines to be significantly lower than those for Albert Lea/Des Moines or Fargo/Moorhead. Annual operating subsidies are highest for Fargo (more than \$200 per rider), and Albert Lea (more than \$130 per rider). All other routes have subsidies less than \$100 per rider, with St. Cloud’s operating subsidy per rider less than than \$10 annually.

Phase II Projects

Projects designated at Phase II are described in [Chapter 3](#), and have an implementation horizon of 20+ years. A robust evaluation of these projects has not yet been started.

Freight Element

Being privately owned, the sources of funds to operate, maintain and improve a freight railroad are largely drawn from private capital. Freight railroads provide significant public benefit, however, and are often shared corridors with passenger service. There are exceptions and cases where public financing of freight railroad projects are undertaken. This is particularly the case with short lines, where some degree of public funding is common. [Table 5.4](#) lists the typical sources of funding for operations and maintenance, and the primary categories of capital investment by carrier type.

Table 5.4 Typical Sources of Funding for Freight Railroads

COST CATEGORY	CLASS I CARRIERS	CLASS II AND III CARRIERS
Operations and Maintenance	Private capital – Cash flow	Private capital – Cash flow, loans, etc.
Capital Maintenance and Expansion	Private capital – Cash flow, loans, stock, etc. Tax credits and public grants	Private capital – Cash flow, loans, stock, etc. Tax credits, public loans and grants
Cars and Locomotives	Private capital – Direct ownership, third-party lease	Private capital – Direct ownership, third-party lease
Grade Crossings	Private capital – Cash flow	Private capital – Cash flow
Customer Facilities	Private capital – Customer cash flow, loans, etc. Freight rail and economic development assistance programs	Private capital – Customer cash flow, loans, etc.

[Table 5.5](#) shows a strategy for distributing the costs of the \$4.3 billion in freight-only improvements. As shown, 72 percent of these costs are assigned to be covered by the private railroads, with public contributions primarily in the areas of 286,000 pound compliance and grade crossings. Existing investment trends indicate that Class I railroads may be able to cover a higher share than previously thought; however, the railroads at best may be able to make investments which can accommodate existing traffic, but not future growth.

Table 5.5: Freight System Costs, Public and Private Shares
Including Contingencies (\$millions)

NEED	TOTAL COST	PUBLIC SHARE	PRIVATE COST
Class I upgrades	\$2,875.2	\$718.8	\$2,156.4
Other Class I improvements	\$201.0	-	\$201.0
PTC (Short Line Locomotive Retrofits)	\$3.0 ⁷⁰	\$0.75	\$2.3
286K restrictions*	\$548.0	\$54.8	\$493.2
Non Class I bridge and speed restrictions*	\$13.0	-	\$13.0
Class II track upgrades*	\$244.0	-	\$244.0
Grade Crossings	\$441.3	\$441.3	-
Total	\$4,325.5	\$1,215.7	\$3,109.8
Percent of Total		%28	%72

Note: Contingencies include 30 percent contingency and 10 percent engineering costs in base case; 10 percent contingency and 10 percent engineering cost in best case. * indicates values carried forward from 2010 State Rail Plan.

SHARED FREIGHT/PASSENGER IMPROVEMENTS

The financing plan for the shared passenger and freight improvements (including the stand-alone HSR passenger lines) assumes three levels of federal funding support (0, 30 and 50 percent). The 80 percent federal share shown in the 2010 State Rail Plan was eliminated as unrealistic. The distribution of costs is shown in Table 5.6. Total non-federal public sector capital costs range from \$2.09 billion (50 percent federal share) to \$4.18 billion (0 percent federal share)

Table 5.6: Total Possible Improvement Costs, State Rail Plan

NEED	NO FEDERAL FUNDS (MILLIONS)	30% FEDERAL MATCHING FUNDS (MILLIONS)	50% FEDERAL MATCHING FUNDS (MILLIONS)
Freight Infrastructure Costs	\$3,010.7	\$903.2	\$1,505.4
Passenger Improvement Costs	\$977.6	\$310.0	\$517.0
Crossing Safety Improvement Costs	\$441.3	\$132.4	\$220.7
Total Improvement Costs	\$4,429.6	\$1,328.9	\$2,214.8

⁷⁰ ASLRRRA Estimates that retrofits can cost between \$70,000 to \$150,000 per locomotive, based on age and model. Assumption: 20 locomotives will be retrofitted.

Financing

The approach to financing the 2015 Minnesota State Rail Plan presumes the need for multiple actors, methodologies and years. This is a 25-year program and 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 will be needed among the public sector stakeholders—federal, state, regional/local—and the private sector, including railroads and investor/developers. Unlike the interstate highway program to which this national rail initiative is often compared, there is no single dedicated source of funding.

State and local funding commitment to planning, capital investment and operations has already been demonstrated in Minnesota. State general fund and bond proceeds were dedicated to the existing freight and safety programs (including the Minnesota Rail Service Improvement Program), the Passenger Rail Office in MnDOT, Zip Rail, NLX, MWRRI, and station facilities at Target Field Station and St. Paul Union Depot. Minnesota counties and Regional Railroad Authorities also committed local matches from general funds and special purpose tax levies toward these and other projects.

On the federal side, the funding picture changed considerably since 2010. SAFETEA-LU was supplanted by MAP-21 in 2012, and while it did not include any substantive changes to potential funding sources for intercity passenger rail service, actual appropriation levels dropped substantially. With an initial duration of only two years, MAP-21 was set to expire in 2014, but was extended through May 2015 under a continuing Congressional resolution. Existing rail-eligible program elements include:

- Surface Transportation Program
- Congestion Mitigation and Air Quality Improvement Program
- Rail Line Relocation Grant Program
- Transportation Infrastructure Finance and Innovation Act
- Transportation Investment Generating Economic Recovery discretionary grants
- Private Activity Bonds
- Rail Rehabilitation and Improvement Financing Program

Since 2010, Congress has not appropriated any further funding under the PRIIA programs; PRIIA's authorization expired at the conclusion of FY 2013. Current draft legislation does not include any substantive direct funding for passenger rail program development outside of the Northeast Corridor.

The one federal program that has continued to be a consistent source of funding for freight and passenger rail projects is the USDOT's Transportation Investment Generating Economic Recovery, discretionary grants. This program is highly competitive for a relatively small pot of money. The 2014 program received 1,400 applications for \$57 billion in project costs for only \$1.5 billion in available grants.

Tools for leveraging private sector investment include:

- Expanding the Minnesota Rail Service Improvement Program 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 to increase 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 rail projects beyond grade crossing improvements

In addition to these programs designed to leverage private investment, a dedicated stream of state and or local/regional revenue is needed to support bonding for capital investment and annual operating subsidies. Otherwise, this program will always be in annual competition with a broad array of state priorities and it will be difficult to achieve the unified system envisioned in the 2015 Minnesota State Rail Plan. To achieve full state participation, the constitutional limit of \$200 million in debt to support rail projects needs to be amended.

Public and Private Economic Benefits

Potential rail investments will generate a range of economic impacts in the areas served by the improvements. Though not quantified in this study, this section provides a discussion of the range of impacts that these investments may bring about.

Economic benefits are usually categorized into direct and indirect categories. Direct benefits are directly associated with the investment during planning and construction, and subsequent implementation. During construction, typical benefits include construction jobs and direct supplier purchases. Once operational, the range of benefits expand beyond direct system employment and vendor sales to include out-of-pocket cost reductions by system users, time savings, reduced maintenance costs on parallel highways, and gains in safety from a reduction in accidents. Examples include personal time savings for all riders on any train faster than competing auto or air travel, and lowered costs on rail per passenger mile versus automobile use.

Indirect benefits and costs refer to the broader economic effects that an investment will have on a region's economy. For example, new passenger rail service may expand tourism opportunities and, with it, increase the amount of investment and jobs in that business sector. For freight, changes in a region's economy will occur because of changes in the cost of doing business associated with the cost of freight transportation. Business costs affect productivity and profitability, and ultimately also the competitiveness of a region's businesses. The value of this cost differs by industry, depending on the extent to which each industry relies on rail freight, trucking or "on-the-clock" employee travel.

Rail Studies and Reports

A description of completed planning studies related to freight and passenger rail is included in [Chapter 1](#) and [Appendix A](#). The need for additional studies of freight and passenger rail are discussed, as applicable, in [Chapter 3](#) and [Chapter 4](#).

Passenger and Freight Rail Capital Program

A complete list of projects identified in the 2010 State Rail Plan and current efforts is included in [Appendix C](#). Freight, passenger and crossing safety projects are organized by corridor. Phase I and II corridors include Twin Cities to Albert Lea/Des Moines (I-35 Corridor), Twin Cities to Eau Claire, Twin Cities to Fargo/Moorhead, Twin Cities to Mankato, Twin Cities to Saint Cloud and Twin Cities to Sioux Falls, South Dakota. Advanced planning projects for the Twin Cities to Duluth (NLX) Corridor, and Twin Cities to Rochester (Zip Rail) Corridor also are included using 2010 estimates. In addition, a number of projects are included that are not part of specific corridors, but are important to freight and passenger mobility and public safety. In total, there are 62 freight projects, 57 passenger projects and 45 crossing safety projects.