

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 Rail Plan promulgated 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 have 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 paucity 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 have been divided into near term actions, i.e. those that can be accomplished by 2019, and long-term, those which can be accomplished over by 2035, a 20 year horizon.

Over the 20-year outlook for this Plan, the actions necessary to implement the vision for freight are as follows:

- Improve the safety of the freight rail system in all aspects, and ensuring 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 critical network bottlenecks
- Upgrade main line track (all Class I-III railroads) to 25 mph minimum speed, as warranted

- Improve the network (all Class I-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

Over the next four years, through 2019, the necessary actions to implement this vision are more specific, and include the following:

- Develop and implement a comprehensive plan that addresses key safety vulnerabilities across Minnesota's rail network
- Continued development and investment in reducing rail/highway conflicts, including upgrading rail/highway grade crossings, grade separations, crossing closures, and quiet zones
- Complete initial deployment of state-of-the-art traffic control and safety systems on the State's high-density main lines
- 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
- Advance planning and construction of solutions to the state's most critical network bottlenecks

For passenger service, the 20 year priority action elements in support of the vision are as follows:

- Continue to participate in the Midwest Regional Rail Initiative (MWRRI) 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
- Connect all services eventually to both Target Field Station and St. Paul Union Depot
- Advance priority corridors incrementally depending on financing, ROW acquisition, and agreements with freight railroads

Through 2019, the near-term actions in support of the above are as follows:

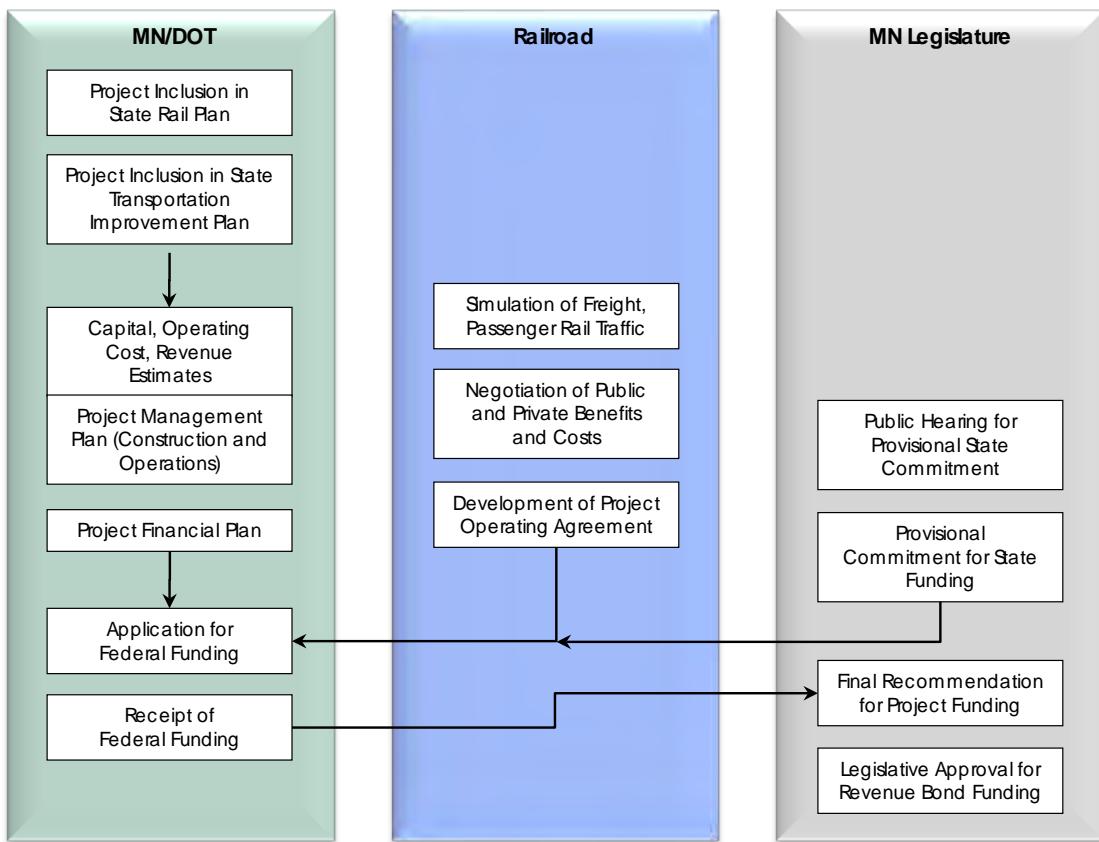
- Implement a second frequency along the Empire Builder route between Chicago and the Twin Cities

- Continue development of Tier 1 priority services through environmental and permitting process, e.g. Chicago-Twin Cities and Twin Cities - Rochester
- Tier II conceptual work
- Complete financing, ROW acquisition, operating agreements, and initiate construction of NLX

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 Rail Plan, and continuing with this Update, the State has pursued a variety of strategies for moving individual projects forward. These strategies should continue with this Plan Update. These steps are being led by the MnDOT Offices of Freight and Commercial Vehicle Operations, and 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 analysis 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 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 which would achieve the State's vision for rail described above. Most of the elements of this program are retained or slightly modified in this Plan Update as follows:

- Support short-term improvements and a second frequency on the existing Amtrak Empire Builder service;
- Develop High Speed Rail (HSR) passenger service to Chicago, Rochester and Duluth: Upgrade/develop corridors to FRA Class 6 conditions⁵²;
- 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 4 (minimum), 5, or 6 conditions as warranted (respectively 79, 90, or 110 mph);
- Support the implementation of Positive Train Control (PTC) on Short Line corridors which handle certain categories of hazardous material⁵³;

⁵²The 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.

- 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; and
- Support the development of additional intermodal facilities as market conditions warrant.

Implementation of this program would result in the following achievements:

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

This program does not address other improvements which will be made independently by the Class I railroads which have a more robust investment program today than was envisioned in the 2010 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 (b/c) applied in completed or upcoming Environmental Impact Statements and detailed project planning studies. In the meantime, MnDOT is proceeding with the following set of priorities:

- Project prioritization, both freight and passenger, will be 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, public/ public partnership opportunities related to project development funding and operations; and
 4. deliverability as a project reaches final federal approval stages.

⁵³ It is assumed that the Class I railroads will implement PTC at their own cost as federally mandated.

- 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 which are already in advanced stages of planning and environmental review: A second daily Empire Builder train to Chicago has 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 discussed with MnDOT. The Rochester and Chicago corridors in particular are being actively advanced in planning and environmental analysis toward project qualification; and other passenger system elements identified in the 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 twenty 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, 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 as described below. Enhanced service to Fargo is included in the improvements to the Empire Builder. Other potential markets include Mankato, Willmar, and Eau Claire, Wisconsin, the latter of which has strong public support but lacks political support in Wisconsin.

TEXT TO BE ADDED TO ADDRESS THE CHANGING LANDSCAPE OF PTC

Costs

The total capital cost of the fully implemented program over 20-years would be approximately \$X billion. This amount consists of \$X billion for freight-only improvements, and \$X billion for the priority passenger and shared freight improvements. 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. More detailed engineering costs developed for specific corridors may vary significantly from these estimates. 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 Section 4.0 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.

- The cost of operations and maintenance is assumed to be \$84.90/mile based on Amtrak's fully allocated overhead costs, excluding depreciation and interest.
- Capacity rights fees on freight railroads are assumed to be \$85,000/train/mile based on the actual negotiated Northstar rate.
- 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, especially if Phase II services are brought on-line. While these synergies cannot be determined at this time, 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. Except for high-speed route to Chicago, revenue was estimated for the entire corridor. For the Chicago route, the revenue was prorated to Minnesota based on the number of trip ends within the State. A minimum of 50 percent of the revenue was assumed to accrue against Minnesota's costs because all trip ends have an origin or destination in the Twin Cities. If the other trip end also was in Minnesota, 100 percent of the revenue is assumed to accrue against Minnesota's costs.
- A 30 percent contingency was added.

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. However, for the purposes of consistency with MnDOT's Statewide Plan, the total program costs inflated over the 20-year life of the program would be \$ X billion. This estimate is based on an annual inflation rate of four percent through 2020, three percent thereafter, and equal expenditures across the 20-year period. In reality, expenditures would probably start out low, peak in the middle years, and then decline in the out years.

In addition to overall cost, 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 reflects 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 revenue divided by operations and maintenance costs. It captures the extent to which a new service, once implemented, can pay for itself. According to July, 2009 Amtrak data, farebox recovery ratios for single or bistrate corridors range from 18 percent for the Hoosier State service to 96 percent for Washington-Newport News service, with an average of 69 percent. Long distance, multistate Amtrak routes average about 44 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 5.1 shows these metrics of cost-effective performance by passenger line. Overall performance of each line is described in more detail below. Major findings include the following:

- High-speed routes are the most costly to implement.
- High-speed service to Chicago does not require an operating subsidy and may contribute an operating surplus to other services, though it is difficult to assess without considering the service over its entire length.
- Service to several destinations requires significant capital investment for each annual rider generated.
- Annual operating subsidies are highest for Sioux Falls (over \$450 per rider/day), Fargo (over \$200 per rider), and Albert Lea (over \$150 per rider). All other routes have subsidies under \$100 per rider.

Table 5.1 Passenger Project Performance Measures – Costs and Cost-Effectiveness *in Millions*

CORRIDOR	SCENARIO EVALUATED	PHASE	CAPITAL COST (MILLIONS OF DOLLARS ONE-TIME)	MAINTENANCE COST (MILLIONS OF DOLLARS ANNUAL)	REVENUE (MILLIONS OF DOLLARS)	FAREBOX RECOVERY (PERCENT)	CAPITAL COST PER MILE (MILLIONS OF DOLLARS)	CAPITAL COST PER RIDER (DOLLARS)	OPERATING SUBSIDY PER RIDER (DOLLARS)
Phase I – Advanced Planning									
Twin Cities - Chicago	Amtrak Empire Builder (2 nd frequency)	Adv. Planning							
Twin Cities – Chicago	HSR	Adv. Planning							
Twin Cities – Rochester (Zip Rail)	HSR	Adv. Planning							
Twin Cities – Duluth (NLX)	HSR	Adv. Planning							
Phase I – Other Projects									
Twin Cities – Albert Lea / Des Moines (I-35 Corridor)	Intercity	Phase I							
Twin Cities – Eau Claire Intercity Phase I Twin	Intercity	Phase I							

Cities – Fargo / Moorhead									
Twin Cities - Mankato	Intercity	Phase I							
Twin Cities – St. Cloud	Intercity	Phase I							
Phase II									
Twin Cities – Sioux Falls, SD via Willmar	Intercity	Phase II							
Fargo - Winnipeg	Intercity	Phase II							
Mankato – Sioux City	Intercity	Phase II							
Twin Cities – Chicago Amtrak Empire Builder (2 nd frequency)Adv. Planning Twin Cities – Chicago HSR Adv. Planning Twin Cities – Rochester (Zip Rail)	HSR	Adv. Planning							
Twin Cities – Duluth (NLX)	HSR	Adv. Planning							
Phase I – Other Projects									

a Includes passenger-specific costs, including capacity rights, but not rolling stock which is expensed as an operating cost in Chapter 7. Does not include freight-related costs.

System Performance

The performance of the various passenger projects based on forecast ridership, capital cost, and farebox recovery ratio is shown in [Figure 5.2](#). The ideal location of a project would be the lower right-hand corner where a project would have low cost and high ridership. The size of the circle reflects the percentage of farebox recovery. All capital costs (passenger-only and shared freight) are included in the vertical axis.

[Figure 5.2: Summary of Individual Passenger Route Performance](#)

Figure TBD

[Table 5.2](#) shows several additional project metrics. Major findings are as follows:

- Four routes have potential for over 400,000 riders per year – St. Cloud, Chicago, Rochester and Duluth.
- Four routes have ridership better than one passenger per train mile – St. Cloud, Mankato, Eau Claire, and Rochester. St. Cloud has over three riders per train mile, indicating a high likelihood of success for this line.
- Three routes provide access to the passenger rail system for over 200,000 residents – St. Cloud, Duluth, and Rochester.
- High-speed routes have potential environmental issues that will need to be addressed through detailed studies.

Table 5.2 Passenger Project Performance Measures – Benefits
In Millions

CORRIDOR	SCENARIO EVALUATED	PHASE	DISTANCE	RIDERSHIP	PASSENGERS PER TRAIN MILE	POPULATION WITH RAIL SERVICE OUTSIDE TWIN CITIES	POTENTIAL ENVIRONMENTAL IMPACT
Phase I – Advanced Planning							
Twin Cities - Chicago	Amtrak Empire Builder (2 nd frequency)	Adv. Planning					
Twin Cities – Chicago	HSR	Adv. Planning					
Twin Cities – Rochester (Zip Rail)	HSR	Adv. Planning					
Twin Cities – Duluth (NLX)	HSR	Adv. Planning					
Phase I – Other Projects							
Twin Cities – Albert Lea / Des Moines (I-35 Corridor)	Intercity	Phase I					
Twin Cities – Eau Claire	Intercity	Phase I					
Twin Cities – Fargo / Moorhead	Intercity	Phase I					
Twin Cities - Mankato	Intercity	Phase I					

Twin Cities – St. Cloud Intercity Phase I Phase II							
Twin Cities – Sioux Falls, SD via Willmar	Intercity	Phase II					
Fargo - Winnipeg	Intercity	Phase II					
Mankato – Sioux City	Intercity	Phase II					

Financing

The approach to financing the State Rail Plan presumes the need for multiple actors, methodologies, and years. This is a 25-year program and the full program costs should not be viewed as daunting but rather 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, and will continue. State general fund and bond proceeds have been dedicated to the existing freight and safety programs (including MRSI), the Passenger Rail Office in MnDOT, Zip Rail, NLX, MWRR and station facilities at Target Field Station and St. Paul Union Depot. Minnesota counties and regional railroad authorities have also committed local matches from both general funds and special purpose tax levies toward these and other projects.

On the federal side, the funding picture has 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 have dropped substantially. With an initial duration of only 2 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 the following:

- Surface Transportation Program;
- Congestion Mitigation and Air Quality (CMAQ) Improvement Program;
- Rail Line Relocation Grant Program;
- Transportation Infrastructure Finance and Innovation Act (TIFIA);
- Transportation Investment Generating Economic Recovery (TIGER) discretionary grants;
- Private Activity Bonds (PABs); and
- Rail Rehabilitation and Improvement Financing (RRIF) Financing Program.

Since 2010 Congress has not appropriated any further funding under the PRIIA programs, and indeed 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 U.S. DOT's Transportation Investment Generating Economic Recovery (TIGER) discretionary grants. This program is, however, 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 the following:

- Expanding the Minnesota Rail Service Improvement Program (MSRI) from a revolving loan program to a combination of loan and grant programs as done in some other states like Iowa, Wisconsin, and Virginia, and to increase the loan ceiling from the current \$200,000;
- Offering financial assistance for Railroad Rehabilitation and Improvement Financing (RRIF) applicants (Oregon has such a program);
- Providing state maintenance and investment tax credits for rail improvements; and
- 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 Plan. In order to achieve full state participation, the constitutional limit of \$200 million in debt to support rail projects needs to be amended.

Freight Element

Being privately owned, the sources of funds to operate, maintain, and improve a freight railroad are largely drawn from private capital. However, freight railroads can provide significant public benefit, and are often shared corridors with passenger service; hence 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 has been 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](#) and [Figure 5.3](#) show a strategy for distributing the costs of the \$X billion in freight-only improvements. As shown, 74 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)**

	TOTAL COST	PUBLIC SHARE	PRIVATE COST
Class I upgrades			
Other Class I improvements			
PTC (Short Line Locomotive Retrofits)			
286K restrictions*			
Non Class I speed restrictions*			
Grade Crossings			
Class 2 track upgrades*			
Total			
Percent of Total			

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 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 Plan has been eliminated as unrealistic. The distribution of costs is shown in [Figure 5.4](#). Total annual non-Federal public sector costs, including capital and operating, range from \$X billion (50% federal share) to \$X billion (0% federal share)

Figure 5.4: Phase I Shared Passenger/Freight Rail Infrastructure Cost (\$billions)

Annual operating and capital costs for the entire State Rail Plan are shown in [Table 5.6](#).

**Table 5.6 Total Possible Annual Costs, State Rail Plan
(\$millions)**

	NO FEDERAL FUNDS	30% FEDERAL MATCHING FUNDS	50% FEDERAL MATCHING FUNDS
Phase I Infrastructure Costs			
Freight Only Improvements, Public Share			

Phase I Operating Costs			
Subtotal Annual Cash Costs			
Total Annual Costs, Capital and Cash Costs			

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 those that 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.

Beyond the direct financial impacts are indirect benefits and costs. These entail 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

DESCRIPTION OF EXISTING AND NEEDED PLANNING STUDIES TO BE ADDED

Passenger and Freight Rail Capital Program

LIST OF ALL SELECTED PROJECTS ORGANIZED BY RAIL CORRIDOR TO BE ADDED