



WEST VIRGINIA

STATE RAIL PLAN

Final Report

December 2013



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List of Acronyms and Abbreviations

Acronym/ Abbreviation	
AADT	Annual Average Daily Traffic
AAGR	Average Annual Growth Rate
AAR	Association of American Railroads
ABS	Automatic Block Signaling
ADA	Americans with Disabilities Act
Amtrak	National Railroad Passenger Corp.
AO	Appalachian and Ohio Railroad
ARRA	American Recovery and Reinvestment Act
B&O	Baltimore and Ohio Railroad
BB	Buckingham Branch Railroad
BEEM	Beech Mountain Railroad
BRIC	Brazil, Russia, India, and China
BSA	Boy Scouts of America
BTS	Bureau of Transportation Statistics
C&O	Chesapeake & Ohio Railroad
Caltrans	California Department of Transportation
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality
CPH	Collis P. Huntington Railroad Historical Society, Inc.
CR	Conrail
CREATE	Chicago Region Environmental and Transportation Efficiency Project
CSI	Customer Service Indicator
CSR	Cass Scenic Railroad
CSXT	CSX Transportation
CTC	Centralized Traffic Control
DGVR	Durbin & Greenbrier Valley Railroad
DOH	Department of Highways
EDA	Economic Development Administration
ELKR	Elk River Railroad
EPA	Environmental Protection Agency
EPTA – Pan Tran	Eastern Panhandle Transit Authority
FAF	Freight Analysis Framework
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration

FRT	Four Rivers Transportation, Inc.
FTE	Full-Time Employee
GAO	Government Accountability Office
GSP	Gross State Product
HSIP	Highway Safety Improvement Program
LKRR	Little Kanawha River Rail
LOS	Levels of Service
L RTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century Act
MARC	Maryland Area Regional Commuter
MATRIC	Mid-Atlantic Technology, Research and Innovation
MPH	Miles Per Hour
MPO	Metropolitan Planning Organization
MRAC	MARC Riders Advisory Council
N&W	Norfolk and Western
NHFC	National Highway Functional Classifications
NHS	National Highway System
NPS	National Park Service
NRT	New River Train
NS	Norfolk Southern Corporation
OESA	Original Equipment Suppliers Association
OTP	On-Time Performance
P&L	P&L Transportation, Inc.
PESR	Potomac Eagle Scenic Railroad
PMTM	Passenger Miles per Train -Mile
PRIIA	Passenger Rail Investment and Improvement Act
PTC	Positive Train Control
RJCV	R. J. Corman Railroad Company/West Virginia Line Inc.
RR	Railroad
RRIF	Rail Rehabilitation and Improvement Financing
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users
SBR	Summit Bechtel Reserve
SBVR	South Branch Valley Railroad
SRA	State Rail Authority
STB	Federal Surface Transportation Board
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
STRACNET	National Strategic Rail Corridor Network
TC	Traffic Control

TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery Discretionary Grants Program
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TOD	Transit-Oriented Development
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
VMT	Vehicle Miles of Travel
VRR	Vaughan Railroad Company
Watco	Watco Companies, LLC
WLE	Wheeling & Lake Erie Railway
WM	Western Maryland Railway
WNFR	Kanawha Rail Corporation
WVCR	West Virginia Central Railroad
WVDOT	West Virginia Department of Transportation
WW	Winchester and Western Railroad
WWW	Wood-Washington-Wirt

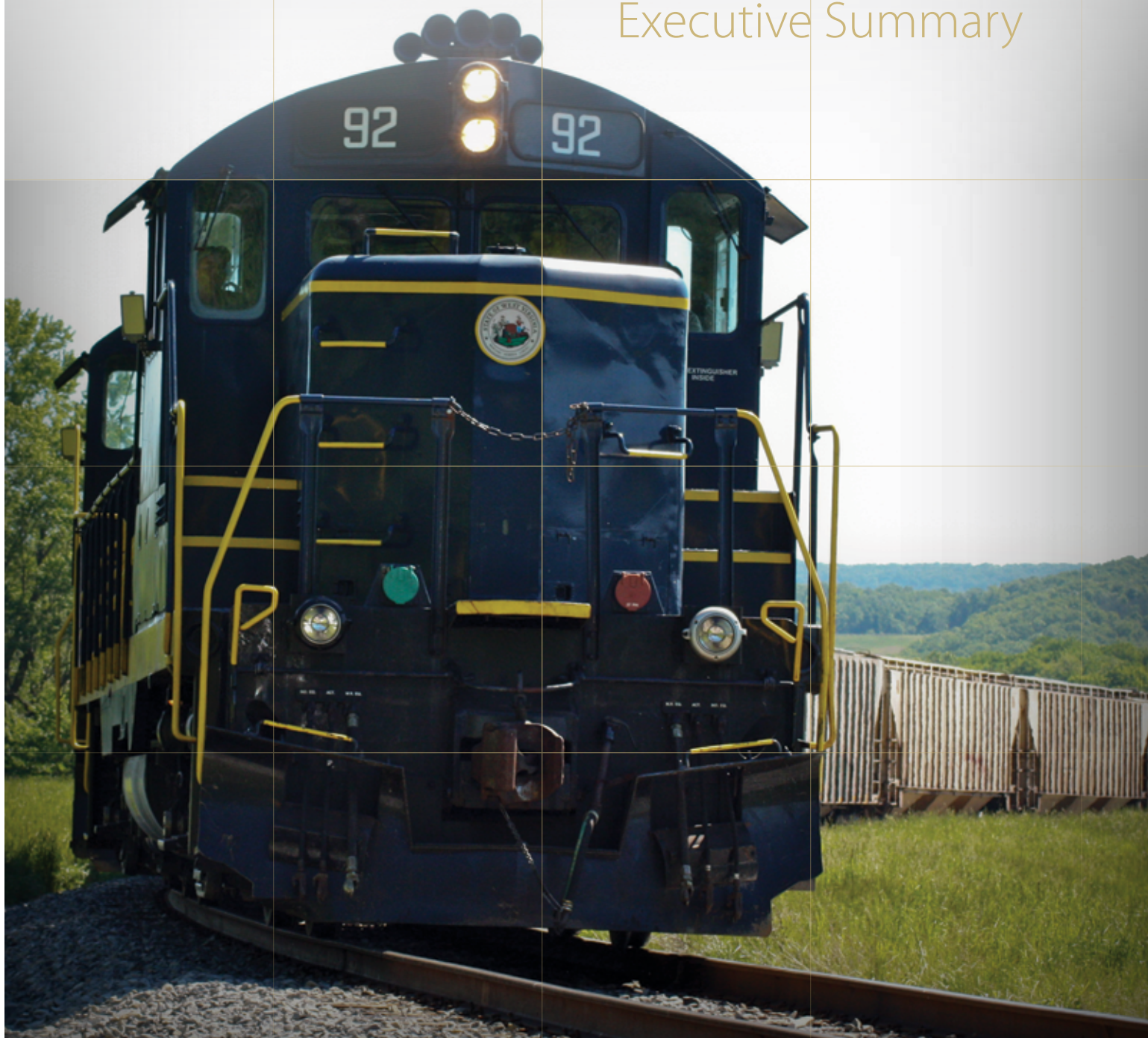
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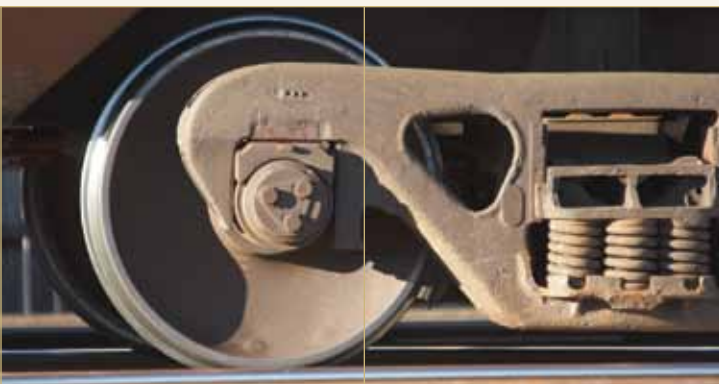


INTRODUCTION

The West Virginia Department of Transportation (WVDOT) has developed a State Rail Plan which is intended to serve as a framework for the state's rail freight and passenger transportation planning activities and project development plan over the next 20 years.

West Virginia's rail system plays an essential role in hauling coal and other natural resources to ports and industries throughout the Northeast and Midwest and is positioned to take advantage of improved rail intermodal corridors through the state and the expanded energy resources currently under development in the region. Although intercity and commuter rail passenger services are limited in the West Virginia, they provide essential transportation services to selected sectors of the state's citizenry.

This Plan describes the state's rail network, operations, and benefits; the State Rail Plan process; the state's rail vision, goals, and objectives; and proposed public short- and long-range capital improvements, studies, and recommended next steps to address the issues identified. The Plan was also developed with the intention of identifying the rail transportation-related economic development linkages and opportunities, as well as the physical and policy improvements necessary to enhance the effectiveness and efficiency of the state's rail system. Additionally, the Plan meets the requirements established by the federal Passenger Rail Investment and Improvement Act of 2008 to qualify for future federal funding for rail projects.





WEST VIRGINIA'S RAIL SYSTEM

Freight Rail System

The rail system in West Virginia is comprised of 2,297 route miles, which are owned by 13 freight railroads. All rail passenger services are operated over these freight railroad-owned rail lines.

The majority of rail mileage in the state is owned by the two large Class I railroads: CSX Transportation (CSXT) and Norfolk Southern (NS). These railroads own a total of 1,819 miles, or 79 percent of the total rail mileage in the state. The 11 regional or short line railroads operating in the state own the remaining route miles in West Virginia.

West Virginia's freight railroads carry more than 115 million tons of freight, or almost 1.1 million rail cars, of various commodities which originated or terminated within the state. Coal makes up almost 88 percent of these total rail carloads. Total rail freight tonnage in the state has fallen 28 percent since 2001; this decline is primarily due to reduced coal movements.

Through 2040, total rail freight flows in the state are forecast to continue to fall slightly, again primarily due to reduced domestic coal use. However, an increase in a number of rail-dependent commodities could reverse the declining trend in rail traffic and diversify the state's rail freight commodity base to maintain rail's competitive position in the marketplace and protect essential freight corridors. These commodities include intermodal traffic (container and trailer movements by rail), oil and gas production commodities to and from the Utica/Marcellus Shale region, export coal, and chemicals.

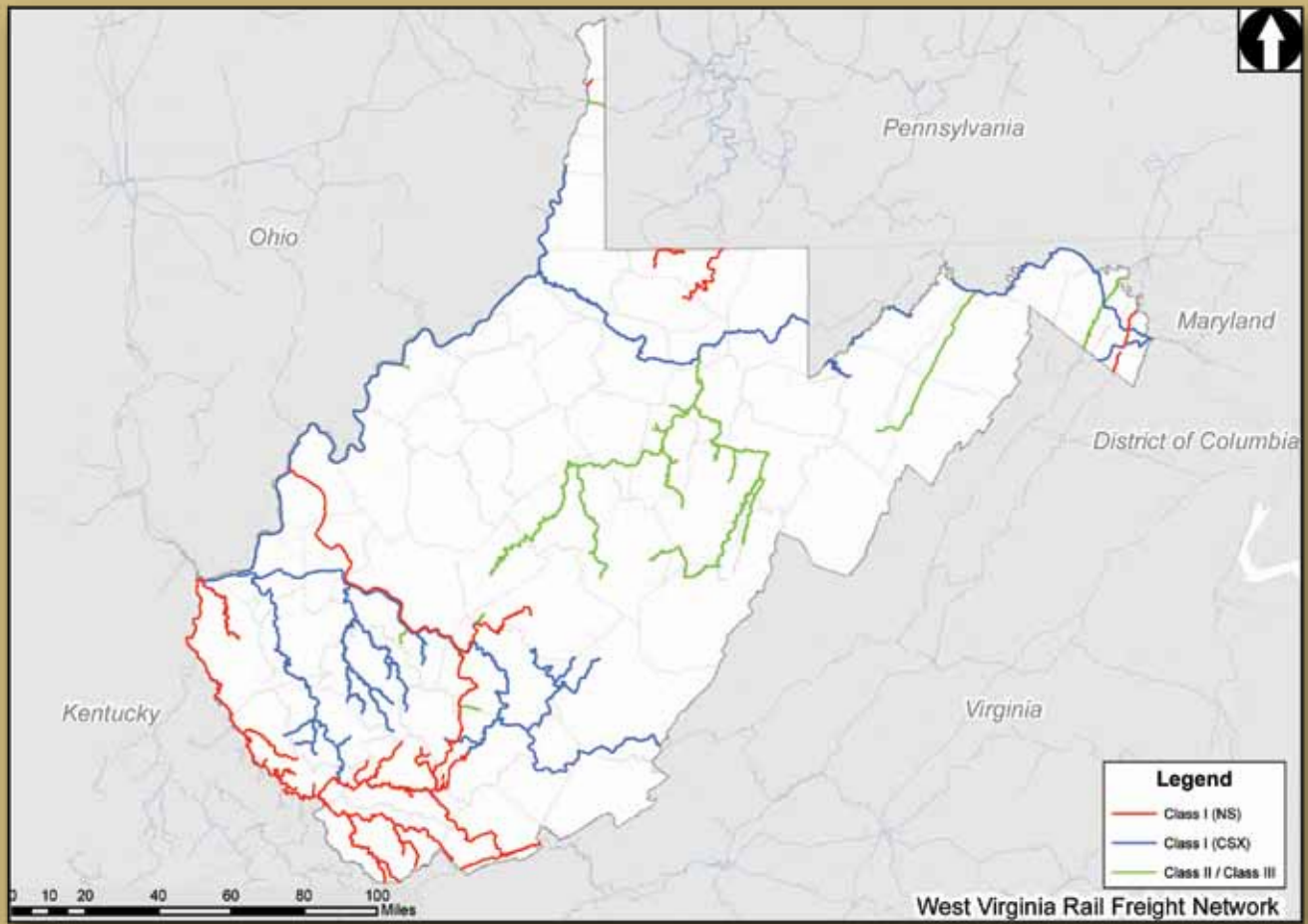
Railroad	Miles Owned in WV
CSX Corporation	1,060
Norfolk Southern Corporation	759
Wheeling & Lake Erie Railway	6
Appalachian & Ohio Railroad	158
Beech Mountain Railroad	8
Elk River Railroad	64
Kanawha Rail Corp.	6
Little Kanawha River Rail	3
RJ Corman Railroad Co./WV lines	16
South Branch Valley Railroad	52
Vaughan Railroad Co.	18
West Virginia Central Railroad	132
Winchester & Western Railroad	28
TOTAL RAIL LINES IN WV	2,310

Passenger Rail Service

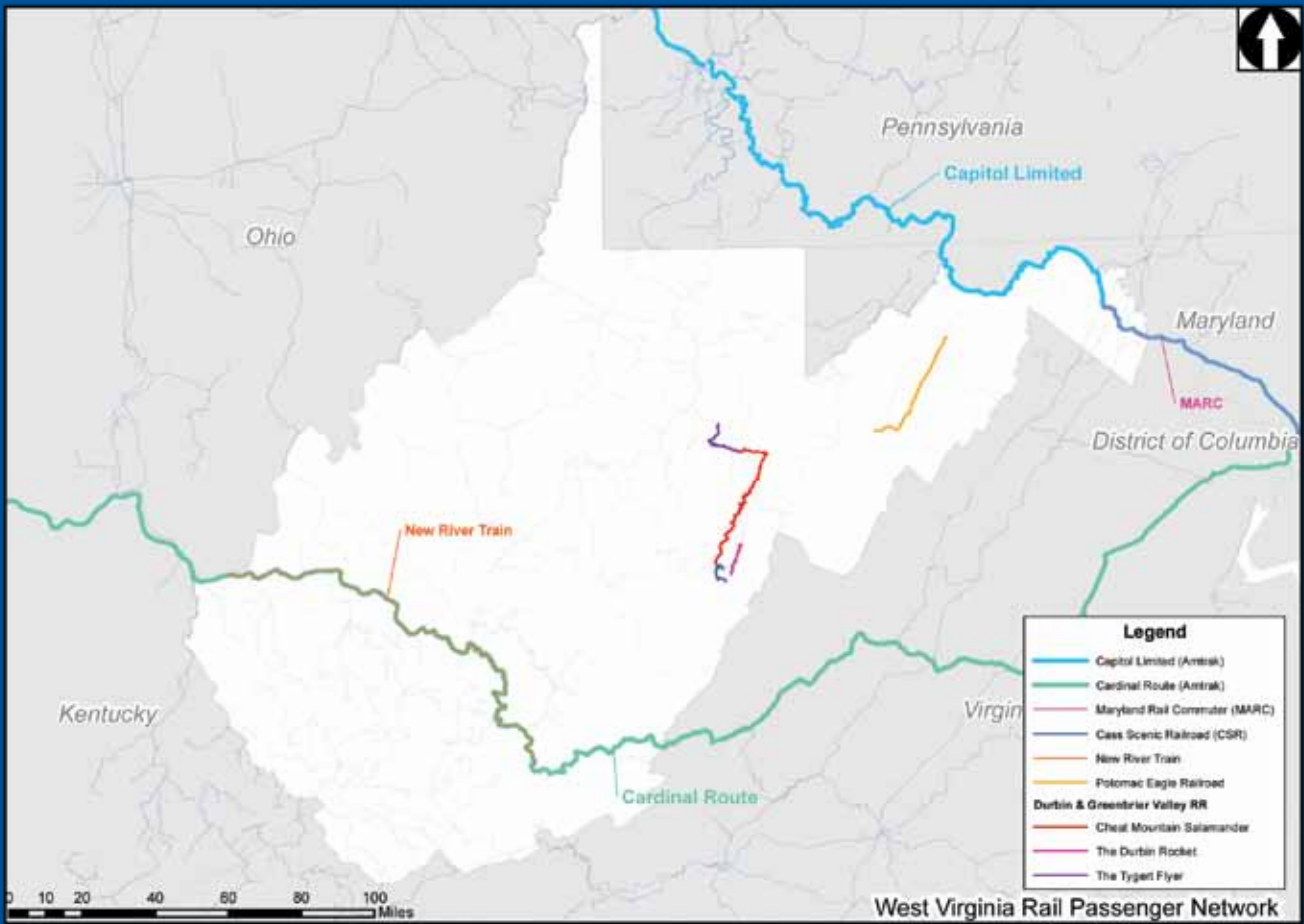
West Virginia's passenger rail network includes intercity passenger service provided by Amtrak, commuter rail service in the Eastern Panhandle provided by MARC, and a number of tourist passenger trains.

Amtrak operates two long distance intercity rail passenger routes through West Virginia, the *Capitol Limited* and *Cardinal*, which operate between Washington, DC and Chicago. The *Capitol Limited* provides one daily round trip, stopping at the Harper's Ferry and Martinsburg stations. The *Cardinal* operates three round trips per week, serving 10 station locations within West Virginia. A total of 55,000 passengers utilized these Amtrak services at West Virginia stations in 2012.

FREIGHT RAIL SYSTEM



PASSENGER RAIL SYSTEM





RAIL BENEFITS

Rail activity in West Virginia impacts an estimated 26,690 jobs across the state. In addition to the jobs directly related to the provision of freight and passenger rail services, a large majority of the jobs are related to rail users who move goods via the rail system. The total number of jobs which are directly or tangentially affected by rail represents 3 percent of total jobs in the state, while the \$1.7 billion earned by these employees represents 4.2 percent of total wage and salary income.

In addition to the direct employment benefits, the availability of rail transport provides cost and logistical advantages to West Virginia firms that enable the state to compete effectively in the global marketplace. The presence of rail freight is especially important in rural areas where mining, agriculture, and local industries rely on freight shipping.

Railroads are also up to four times more fuel efficient than trucks on the basis of ton-miles transported, and as greenhouse gas emissions are directly related to fuel consumption, every ton-mile of freight moved by rail instead of truck reduces greenhouse gases by up to 75 percent. The diversion of freight traffic to rail also increases the safety of the state's highway system.

Intercity passenger rail service connects major urban areas, which is important given the limited air service in the state. Commuter rail service provides an efficient and cost-effective means of accessing jobs in the Washington, DC area and reduces traffic congestion during peak hour travel times on major highways. Both intercity and commuter rail passenger stations also have the potential to increase economic development around the station areas. Tourist railroads play an important role in attracting vacation travelers to the state. These travelers generate income not only for the rail operations, but also for restaurants, hotels, and other visitor service establishments.





RAIL PLAN DEVELOPMENT PROCESS

This State Rail Plan was developed under the authority and guidance of the WVDOT and its State Rail Authority (SRA), which is responsible for rail planning in the state, as well as the ownership and operation of the state's two railroads. The SRA coordinated closely with other WVDOT divisions responsible for various rail-related functions – as well as the State Public Service Commission, the Public Port Authority, and the State Department of Commerce – in the development of the Plan.

A State Rail Plan Steering Committee was established to ensure that plan development was guided, reviewed, and supported by a wide range of state public agencies and representation from both public and private transportation and economic development entities in the state.

To provide a medium for public review of the Plan purpose and description, project deliverables, project schedules, meetings, and other information pertinent to the Plan, a project website was established. The draft State Rail Plan was posted to the website www.westvirginiarailplan.com for review and comment prior to finalization of the Plan.



All railroads operating in the state were contacted to solicit information as to their operations, project or other needs, and their opinion as to what the public sector could do to assist or improve the efficiency and expansion of rail in the state. Similar interviews were conducted for shippers located on both the Class I and short line railroad network within the state. In addition, an electronic survey was sent to all economic development agencies and Metropolitan Planning Organizations (MPOs) in the state to solicit their views as to rail infrastructure and operational needs and rail-related economic development opportunities within their jurisdiction.

Two series of eight public outreach meetings were held at different locations around the state to educate stakeholders and the general public regarding the Plan process, obtain input for developing a rail vision, provide a forum for discussion of specific rail issues in the state, and review and solicit comments on the draft State Rail Plan. More than 130 people attended these public meetings.

The draft Plan was also provided to the state rail planning contacts of neighboring departments of transportation to ensure coordination with neighboring states with respect to facilities, services, and future plans which cross state boundaries.





KEY RAIL ISSUES, CHALLENGES AND OPPORTUNITIES

Stakeholders and the general public expressed understanding and appreciation of the value and potential of the state's passenger and freight rail operations.

Rail Freight Issues

The key rail freight issues and recommendations expressed during the outreach included:

- The need to diversify the commodity base from its current dependence on coal movements to maintain rail's competitive position in the marketplace and protect essential freight corridors from potential downsizing (intermodal, oil and gas production, and export coal were seen as growth opportunities to counter the expected decrease in domestic coal movements);
- The importance of intermodal movements and facilities, and the need for additional inland ports and improved connections to Ohio River ports;
- The need for rail access and service to existing and prospective oil and gas drilling operations which can generate a significant amount of rail traffic;
- The need for public assistance to provide rail spurs that connect existing and prospective industries and for expanded storage capacity within industrial sites and on rail spurs and sidings; and
- The need for strategic mainline and yard capacity improvements to accommodate increased shale energy and export coal movements.

Rail Passenger Issues

The intercity and commuter rail passenger networks in the state were viewed as lacking the scale and levels of service necessary to serve as reliable transportation modes; however, improved rail passenger service could fill an important role in the state. Key issues and needs related to passenger services in the state included:

- The need to increase the frequency of *Cardinal* service from three trips weekly to daily for the purpose of improving the train's reliability, ridership, and revenue performance;
- The need for thruway bus connections to existing rail passenger routes to increase access to and ridership on these trains;
- The need for increased marketing and promotion of intercity passenger rail service to attract, accommodate, and connect tourists to the recreational and resort areas of the state as a means of improving both tourism and interest in passenger services;
- The need for increased rail commuter service frequencies and weekend service;
- The need for general station improvements, increased platform capacity, parking, and ADA compliance at most intercity and commuter passenger stations; and
- The need for continued expansion and increased marketing and promotion of the state's tourist railroad industry.



WEST VIRGINIA'S RAIL VISION

West Virginia's rail vision was proposed by the Plan Steering Committee using the common themes of the public outreach meetings and adopted by the WVDOT. The vision statement is as follows:

"A safe, efficient, modern passenger and freight railroad network that supports a thriving state economy by promoting an integrated intermodal transportation system"

Goals and objectives aligned with the rail vision were developed based on the rail-related benefits, issues, and obstacles that had been identified. These goals and objectives are as follows:

Rail Planning Goals and Objectives

Goal: Promote rail safety

- Objective – Analyze public grade crossings and support appropriate modifications where determined to be needed
- Objective – Promote safety at rail commuter stations

Goal: Preserve, protect, evaluate, and improve as needed West Virginia's rail infrastructure and service to ensure its continued competitive position and economic contribution to citizens and businesses

- Objective – Coordinate with surrounding states
- Objective – Identify financial opportunities for rail system support
- Objective – Identify and address infrastructure issues of short line railroad operators
- Objective – Continue support of a state discretionary rail assistance program for freight and passenger rail projects
- Objective – Coordinate with the USDOT national freight network as defined in MAP-21





WEST VIRGINIA'S RAIL VISION

Rail Freight Goals

Goal: Increase emphasis on intermodal and energy-related activities by expanding service in these areas

Goal: Balance the enhancement of West Virginia's rail network with community and environmental stewardship and economic competitiveness

Goal: Support movement of goods by rail

Passenger Rail Goals and Objectives

Goal: Preserve, protect, evaluate, and improve as needed intercity passenger rail service in the state

- Objective – Explore the feasibility for expansion of the *Cardinal* to daily service
- Objective – Analyze rail stations and station access needs
- Objective – Evaluate intermodal connections to existing intercity rail service
- Objective – Evaluate the need for additional intercity passenger service

Goal: Support rail-related tourism as part of an economic development program

- Objective – Work in concert with private industry and all levels of government to enhance economic opportunities

Goal: Preserve and support commuter rail service

- Objective – Analyze rail stations and station access needs
- Objective – Evaluate the need for additional commuter service
- Objective – Work with MARC to support West Virginia initiatives





PROPOSED INVESTMENT PROGRAMS AND FUTURE STUDIES

Based on identified needs and available funding sources, short- and long-range proposed rail investment programs were developed. The short-range projects are limited to those for which funding is available or expected to be available during the 4-year short range period. Long-range projects (5-20 years) were proposed during the outreach process or from other sources and will be further evaluated as to their feasibility, their merit on the basis of public benefits vs. costs, and available public funding.

Short – Range Investment Program

Freight Rail

- Upgrade bridges on state-owned SBVR and WVC railroads
- Upgrade locomotive fleet SBVR
- Upgrade 23 acres yard area on SBVR
- Expand maintenance shops on SBVR
- Upgrade 40+ at-grade rail crossings

Long – Range Investment Program

- Continue bridge upgrade program
- Continue locomotive upgrade program
- Upgrade WVC Dailey Branch
- Analyze CSXT Harper’s Ferry – Reedson reroute
- Analyze Upper Kanawha Valley trash rail transfer facility
- Analyze rehabilitation of Weirton Rail Yard

Short – Range Investment Program

Passenger Rail

Long – Range Investment Program

- Implement Harper’s Ferry ADA compliance improvements
- Implement Prince Station improvements
- Evaluate Highland Adventure of Mountain and Rail Loop and Hampshire Co. tourist train projects
- Evaluate *Cardinal* service expansion and station improvements
- Evaluate MARC service expansion and station improvements



PROPOSED INVESTMENT PROGRAMS AND FUTURE STUDIES

In addition to the long-range project evaluations noted above, which include feasibility, engineering, and cost-benefit analysis as required, additional areas of study were also proposed during the outreach process. These study areas include:

- Analysis of various feeder bus connections for *Capitol Limited*, *Cardinal*, and MARC passenger services;
- An evaluation of MARC service growth, potential expansion, and future needs;
- Feasibility studies of additional regional train services between Charleston-Huntington and Fairmont-Morgantown-Pittsburgh;
- Development of a Jefferson County Tourist Train Plan;
- A statewide study of intermodal needs and potential sites;
- A study of rail crossing safety in high hazard areas;
- A study of potential rail freight connections to Ohio River port areas; and
- Coordination of the State Rail Plan with development and implementation of the state's Freight System Plan.





STATE RAIL PLAN RECOMMENDATIONS AND NEXT STEPS

For the purposes of meeting West Virginia's rail vision, goals and objectives – and to address the identified rail issues and opportunities identified in preparation for future Rail Plan updates – the following actions are proposed:

- Continue and expand eligibility criteria of the Port Authority's Special Railroad and Intermodal Enhancement fund for the purpose of creating a dedicated, flexible State Rail Assistance Program; the State Rail and Port Authorities should coordinate to create a project eligibility, application, and evaluation process in preparation for administering available funding;
- Conduct a feasibility and engineering study of projects related to the improvement and expansion of Cardinal service, including the evaluation of related long-range investment projects;
- Conduct feasibility, engineering, and capital/operating cost studies of potential new regional rail passenger services including the Charleston-Huntington and Fairmont-Morgantown-Pittsburgh corridors;
- Conduct a comprehensive survey of MARC commuter rail service needs for West Virginians, as a preliminary component of feasibility, engineering, and capital/operating cost studies of proposed station, routing, and service expansion initiatives; and
- Conduct a study of prospective rail intermodal (container and bulk transfer facility) needs in the state and prospective intermodal sites.

Summary

West Virginia has undertaken a comprehensive study of its passenger and freight rail network and identified key issues and opportunities through a wide-ranging rail stakeholder and public outreach process. This State Rail Plan serves to document this information and set a direction for rail planning and project development into the future while meeting the federal requirements to qualify the state for any future federal rail funding.

The development of this State Rail Plan was made possible through a grant from the Federal Railroad Administration. WVDOT would also like to take this opportunity to thank all the individuals and parties who were involved in this effort and encourages continued public input into the West Virginia's rail planning efforts in the future.

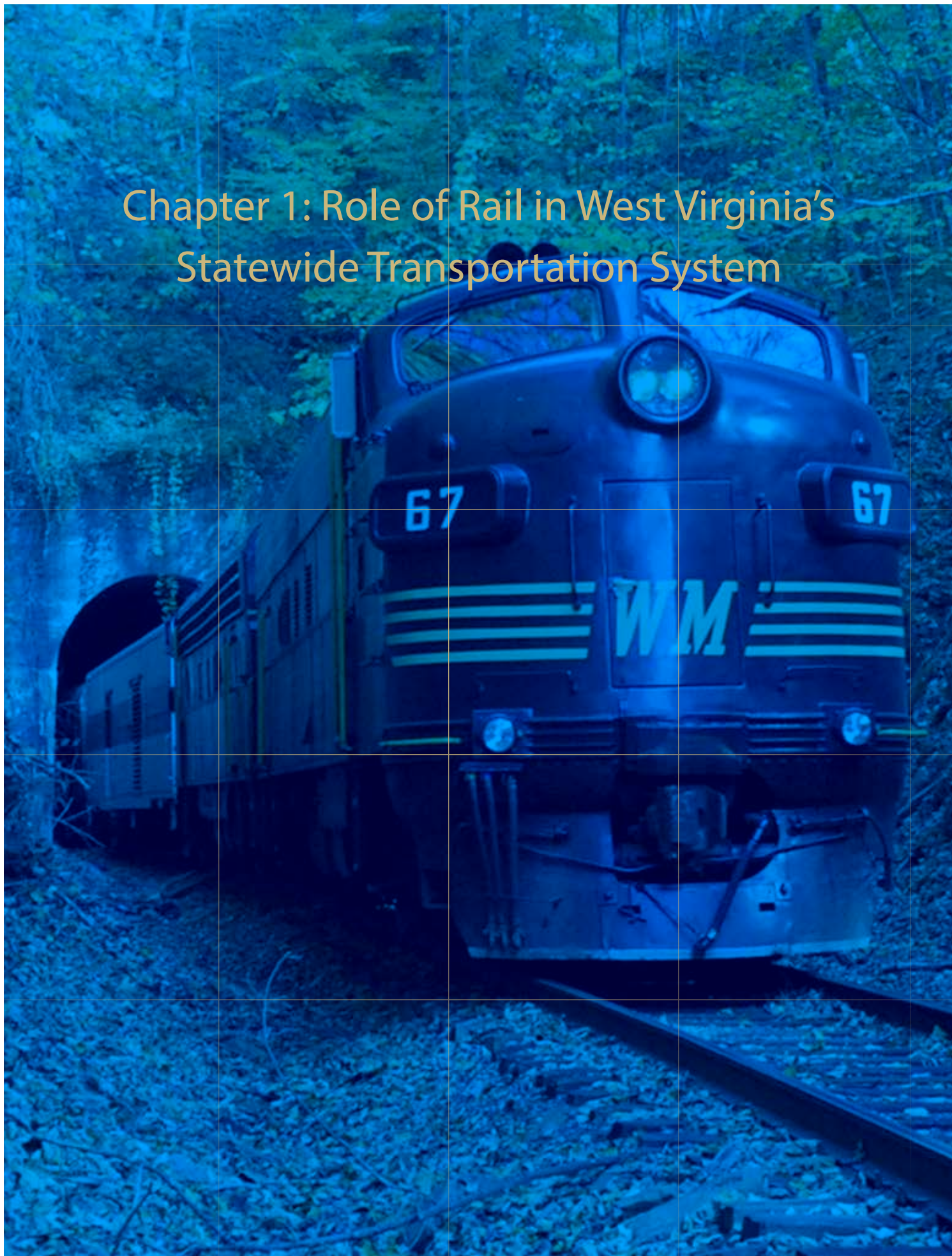


WEST VIRGINIA

STATE RAIL PLAN



Chapter 1: Role of Rail in West Virginia's Statewide Transportation System



1.0 Introduction

In 2008, the United States Congress passed the Passenger Rail Investment and Improvement Act with the expressed intent of improving passenger rail service in the United States. One of the features of the legislation is the requirement that any state seeking federal assistance for either passenger or freight improvements have an updated state rail plan. The legislation further stipulated the minimum content of the rail plans, which was codified in Public Law 110-432.

This document was developed by the West Virginia Department of Transportation (WVDOT) and the West Virginia State Rail Authority (SRA). It meets the requirements set forth in the legislation and public law, as well as “State Rail Plan Guidance” provided by the Federal Railroad Administration (FRA) in September 2013 and is intended to serve as West Virginia’s State Rail Plan. In addition to meeting federal requirements, this Plan is intended to formulate a state vision for rail in the future and strategies to achieve that vision. For this purpose, the Plan was developed with extensive public participation and involvement by the state’s railroads and rail users.

This chapter serves to illustrate the current and proposed future role of rail in West Virginia’s multimodal transportation system and describe how the state is organized to provide political, legal, and financial support to rail development.

1.1 West Virginia’s Multimodal Transportation System Goals

West Virginia’s multimodal Statewide Transportation Plan, published in June, 2010, described the state’s vision as it pertains to transportation to be “*A well-maintained and modern multimodal transportation system.*”

The specific goals related to this vision are to:

- Preserve past investments by maintaining the existing system;
- Support West Virginia’s economic development goals with multimodal access to markets in West Virginia, the United States, and overseas;
- Support the health and well-being of West Virginians, as well as the environment and overall quality of life, with a range of mobility options; and
- Promote efficient use of resources, especially in light of diminishing revenues.

The multimodal Statewide Transportation Plan recognized that a multimodal system provides a number of benefits to West Virginians including:

- Reduced shipper costs through less costly transportation alternatives;
- Economic development through companies taking advantage of transportation savings and bringing jobs to local economies; and
- Congestion reduction and fuel savings due to the ability of a multi-modal transportation system to reduce highway congestion.

This State Rail Plan will describe rail’s role in West Virginia’s multimodal system, its contributions toward the state’s transportation vision and goals, and the benefits the rail network provides.



1.2 Rail Transportation's Role within the West Virginia Transportation System

The introduction of rail service to West Virginia allowed access to the state's coal, timber, and other resources that were essentially inaccessible in the late 19th century. Rail lines through West Virginia provided a vital link between East Coast ports and the Midwest and led to the growth of natural resource industries while also providing the most dominant form of intercity passenger travel.

The Baltimore & Ohio Railroad (B&O), the first common carrier in the United States, played an important role in the creation of the state itself. The railroad was considered so important during the Civil War that its route affected the shape of the new state of West Virginia. Construction of the Chesapeake & Ohio Railroad (C&O) and Norfolk and Western (N&W) lines following the Civil War, together with the increased demand for coal with the industrialization of the U.S., led to an expanding rail system in the state, which lasted until after World War I.

The rail system's share of passenger and goods moved remained dominant through the 1940s and into the early 1950s. However, after World War II, the privately-owned and heavily regulated railroads found it increasingly difficult to compete with publicly funded highway and air transportation and a cycle of passenger train discontinuance and rail line abandonment led to a reduction in rail route miles in the state from approximately 4,000 miles in 1920 to 2,300 today.



Today, the rail system in West Virginia continues to play an essential role in hauling coal and other natural resources to ports and industries throughout the Northeast and Midwest and is positioned to take advantage of new and expanded energy resources currently being advanced in the country. The rehabilitation of key intermodal routes through West Virginia has not only strengthened the state's role in linking eastern ports to the Midwest but has also positioned it as a potential intermodal hub.

While rail passenger service in the state has been reduced to relatively low levels of service, the revitalization of intercity passenger rail service in the more heavily populated states that surround West Virginia provide the potential to extend service from West Virginia to these areas and provide the additional travel alternatives needed in a state heavily dependent on highway travel.

1.3 Institutional Structure of West Virginia's State Rail Program

Public sector rail activities in West Virginia entail the organizational aspects of rail planning as well as the planning and project programming processes, which are conducted by both state and local agencies. In addition to describing rail planning in West Virginia, this section will also address the systems that are in place to support decision making and project implementation.

Multimodal planning requires close coordination within a state department of transportation itself as well as with other federal and state agencies, local transportation agencies, railroads operating within the state, and the general public.

1.3.1 West Virginia Department of Transportation Rail Functions

WVDOT is responsible for coordinating the overall state transportation improvement strategy. Under this mandate it is primarily responsible for all rail planning and project development activities. The following are those state authorities or divisions under the jurisdiction of WVDOT that have rail-related responsibilities:

West Virginia State Rail Authority

The SRA, created originally as the West Virginia Railroad Maintenance Authority in 1975, was made a division of the new WVDOT in 1989. The SRA performs a number of functions including:

- Maintaining a comprehensive inventory of rail lines within the state;
- Monitoring proposed line abandonments and finding alternatives for shippers, including short line operations to preserve essential rail service or rail to truck transfer if feasible;
- Administering state responsibilities regarding federal grants to aid railroad transportation in West Virginia;
- Owning and operating the 52.4-mile South Branch Valley Railroad;
- Owning and overseeing operation of the 132.1-mile West Virginia Central Railroad;
- Assisting with the establishment of short line and tourist railroad operations and promoting increased rail tourism development;
- Participating in the MARC commuter service to Washington, DC by maintaining two train stations in the Eastern Panhandle and leasing a third for commuter use; and
- Rail-banking abandoned rail lines that may be used again if future conditions make it economically feasible and encouraging the interim use of these banked lines as trails for public recreation.



West Virginia Public Port Authority

The mission of the Public Port Authority is to develop the potential of intermodalism by combining highway, rail, and water transportation infrastructure to maximize overall economic advantages to business, industry, and the citizens of West Virginia. Specific responsibilities include:

- Assisting interested private or public parties in the development and operation of public port and intermodal facilities throughout West Virginia for economic and recreational enhancement; and
- Facilitating the development and empowerment of local port authority districts.

The Public Port Authority enters into agreements or contracts with the SRA for the preservation, operation, and use of rail lines. It also oversees the Special Railroad and Intermodal Enhancement Fund.

Highway Division, Railroads & Utilities Unit

The Railroads & Utilities Unit oversees the state's Grade Crossing Improvement Program and any other projects where coordination between railroads and the state's highway program is required.

1.3.2 Other State Agencies or Authorities with Rail-Related Responsibilities

Public Service Commission of West Virginia

The Public Service Commission's Transportation Enforcement Division includes the Railroad Safety Section, which is responsible for the administration and enforcement of federal and state regulations governing the transportation of persons and property by rail. These responsibilities are primarily the inspection of railroad track and equipment, operations, and the movement of hazardous materials.



In an effort to reduce the number of grade crossing accidents, the Railroad Safety Section has also assumed responsibility for the West Virginia Operation Lifesaver, Inc. program. The goal is to prevent injuries and fatalities at highway-rail grade crossings within West Virginia and to prevent injuries and fatalities to those who choose to trespass on railroad property.

West Virginia Department of Commerce

The Department of Commerce's mission is to improve the quality of life for all West Virginians by strengthening its communities and expanding the state's economy to create more and better jobs. In this regard, the Department of Commerce's Business and Industrial Development Division actively promotes the growth of the state's economy through business startups, retention and expansion of existing industry, and the attraction of new industry.

The Department of Commerce's financial assistance programs have been utilized to assist in the attraction of new industries on the state's rail lines through assistance in track rehabilitation and the construction of spur tracks to industries.

1.3.3 Local Organizations

Metropolitan Planning Organizations

Metropolitan Planning Organizations (MPOs) are federally mandated and funded transportation policy-making organizations comprised of local government and transportation officials. The formation of an MPO is required for any urbanized area with a population greater than 50,000.

MPOs are required to maintain and continually update a Long Range Transportation Plan (LRTP) as well as a Transportation Improvement Program (TIP), which is a multi-year program of transportation projects to be funded with federal and other transportation funding sources. As MPO planning activities have evolved to address the movement of freight as well as passengers, they have included also consideration of multimodal solutions, improved intermodal connections, and more specific rail and rail-related project solutions. MPOs must work cooperatively with area transportation stakeholders to understand and anticipate the area's travel needs and to develop these documents. Eight MPOs serve West Virginia:

- *Brooke-Hancock Jefferson Metropolitan Planning Commission:*
This MPO serves the Steubenville, Ohio/Weirton West Virginia area (Brooke and Hancock counties, West Virginia and Jefferson County, Ohio);
- *Bel-O-Mar Regional Council:*
This MPO serves Wheeling (Ohio and Marshall counties in West Virginia and Belmont County, Ohio);
- *Fayette-Raleigh Metropolitan Planning Organization:*
This newly formed MPO serves the entirety of Fayette and Raleigh counties; and
- *KYOVA Interstate Planning Commission:*
This MPO serves the Huntington, West Virginia/Ironton, Ohio area (Cabell and Wayne counties, West Virginia and Lawrence County, Ohio). KYOVA has been designated a Transportation Management Area (TMA) and is also responsible for planning in a portion of Putnam County, West Virginia;
- *Regional Intergovernmental Council:*
This MPO serves the Charleston Metropolitan Area (Kanawha and Putnam counties);
- *Wood-Washington-Wirt (WWW) Interstate Planning Commission:*
This MPO serves the Parkersburg, West Virginia/Marietta and Belpre, Ohio area (Wood County, West Virginia and Washington County, Ohio);
- *Morgantown/Monongalia County Transportation Planning Organization:*
This MPO serves the greater Morgantown area and Monongalia County; and
- *Hagerstown/Eastern Panhandle Metropolitan Planning Organization:*
This MPO serves the 3-county region of Berkeley and Jefferson counties in West Virginia and Washington County, Maryland.



Local Economic Development Agencies

The State of West Virginia has a number of local public and private economic development agencies that recruit industries and businesses on the basis of their location, available labor force, room for growth, and access to rail and other transportation assets.

The West Virginia Directory of Economic Development Organizations lists 48 entities around the state, including economic development agencies and authorities; chambers of commerce, alliances; development councils; corporations; and associations at the regional, county, or local level of government. Many of these agencies offer incentives such as tax exemptions and credits and other means of assistance to attract business interests.

Although these agencies do not generally work directly with freight railroad operators, they do have a vested interest in the level of rail services and rail assistance programs available to supplement their incentives.

1.3.4 West Virginia's Authority to Conduct Rail Planning and Investment

West Virginia has provided the SRA with wide-ranging legal authority to not only exercise those powers necessary for the state to qualify for rail service continuation subsidies pursuant to the provisions of the federal Regional Rail Reorganization of 1973 – the Railroad Revitalization and Regulatory Reform Act of 1976 – but also to establish, fund, construct, acquire, replace, operate, and maintain railroads and railroad projects.

Chapter 29, Article 18 of the West Virginia Code is cited as the “West Virginia State Rail Authority Act.” This Act grants the Authority the powers necessary to carry out and effectuate its corporate purpose, as well as serving as the State Rail Plan Approval Authority to provide final approval of the State Rail Plan by having the following authority and qualifications to:

1. Acquire rail properties both within and not within the jurisdiction of the federal Surface Transportation Board and within the purview of the federal Regional Rail Reorganization Act of 1973, any amendments to it, and any other relevant federal legislation;
2. Enter into agreements with owners of rail properties for the acquisition of rail properties or use, or both, of rail properties upon the terms, conditions, rates or rentals that can best effectuate the purposes of the article;
3. Acquire rail properties and other property of a railroad in concert with another state or states as is necessary to ensure continued rail service in the state;
4. Establish a state plan for rail transportation and local rail services;
5. Administer and coordinate the state plan;
6. Provide in the state plan for equitable distribution of federal rail service continuation subsidies among state, local, and regional transportation authorities;
7. Promote, supervise, and support safe, adequate, and efficient rail services;
8. Employ sufficiently trained and qualified personnel for these purposes;
9. Maintain adequate programs of investigation, research, promotion, and development in connection with such purposes and to provide for public participation therein;
10. Provide satisfactory assurances on behalf of the state that such fiscal control of accounting procedures will be adopted by the state necessary to assure proper disbursement of and accounting for federal funds paid to the state;
11. Comply with the regulations of the Secretary of Transportation and the U.S. Department of Transportation affecting federal rail assistance funds; and
12. Do all things otherwise necessary to maximize federal assistance to the state under Title IV of the federal Regional Rail Reorganization Act of 1973 and to qualify for rail service continuation subsidies pursuant to the federal Regional Rail Reorganization Act of 1973.



1.4 State Authority for Grant, Loan, and Other Rail Financing

West Virginia has utilized both federal and state transportation funding programs where rail infrastructure improvements were eligible and appropriate. State sponsored rail investment in West Virginia is provided through the WVDOT and its State Rail and Public Port Authorities.

The SRA is provided funding through the state budget process to operate and maintain railroads owned by the state. The SRA is also empowered to issue bonds to implement projects if the amount of bonding is capable of being serviced by revenues received by such projects. The SRA currently does not have a discretionary grant or loan program. However, the Authority has received state budget appropriations totaling approximately \$7.7 million over the past 5 years to implement improvements on the state-owned South Branch Valley and West Virginia Central Railroads as well as for improvements at the Duffields MARC station.

The Public Port Authority is empowered to enter into agreements with the SRA for the preservation, operation, and use of rail lines and to purchase railroad tracks being abandoned by any common carrier and to financially assist the SRA in making such purchases.

The Public Port Authority also oversees the Special Railroad and Intermodal Enhancement Fund. These funds are to be used only for the purpose of construction, reconstruction, maintenance, and repair of railways; the construction of railway-related structures; and payment of principal and interest on state bonds issued for railway purposes. This fund is currently being used for the development of the Heartland Intermodal Facility at Pritchard, West Virginia.

WVDOT provides required matching funds for federal financial assistance programs such as grade crossing improvement and separation projects.

The West Virginia Economic Development Authority also provides financial assistance for infrastructure improvements to support economic development projects. The Economic Development Authority provided a \$325,000 grant to the SRA to provide rail access to the Petersburg Industrial Park on the South Branch Valley Railroad in 2009.

1.5 A Summary of Freight and Passenger Rail Services in West Virginia

The rail system in West Virginia comprises 2,297 route miles which are owned by 13 freight railroads. Two of these railroads, CSX Transportation (CSXT) and Norfolk Southern Corp. (NS), are categorized as Class I or major railroads, and own a total 1,819¹ route miles, or 79 percent of the total rail mileage in the state. Regional or short line railroads own and operate the remaining route miles in the state. These freight railroads carried more than 115 million tons of freight or almost 1.1 million rail cars of various commodities that originated or terminated in West Virginia in 2010. Coal comprised almost 88 percent of the total carloads.

Two Amtrak long distance intercity rail passenger routes, as well as one MARC commuter route, operate within the state over rail lines owned by freight railroads. Amtrak's *Capitol Limited Service* and *Cardinal Service* operate between Washington, DC, and Chicago over different routes through West Virginia. MARC's Brunswick Line, which extends between Washington, DC, and Martinsburg, West Virginia, also operates over freight trackage in the Eastern Panhandle of the state.



¹ Based on CSXT and NS Surface Transportation Board- R1 Annual Reports as of December 31, 2012

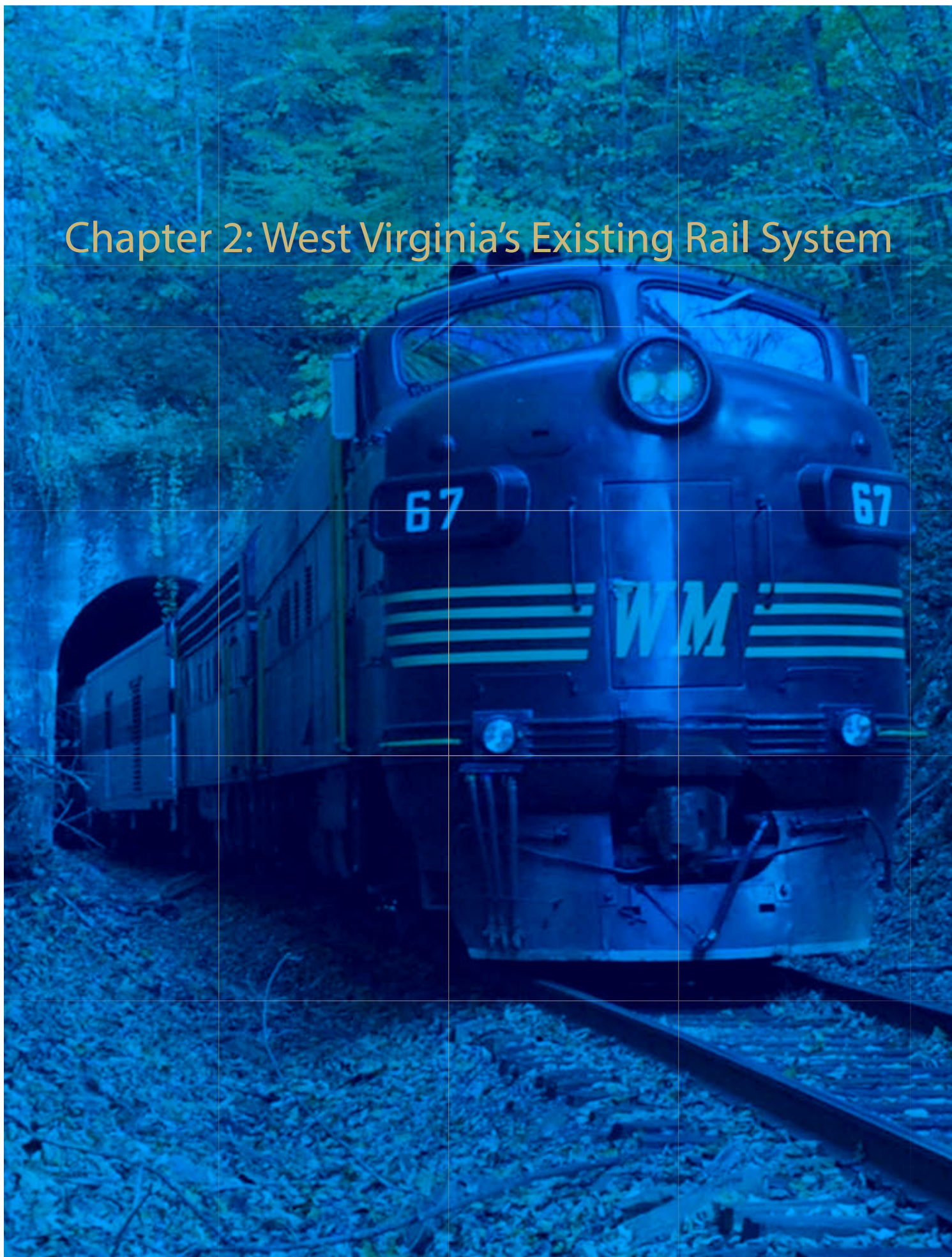


CHAPTER 1. ROLE OF RAIL IN WEST VIRGINIA'S STATEWIDE TRANSPORTATION SYSTEM

In addition to the state's freight, intercity passenger, and commuter rail operations, a number of tourist trains also operate over rail lines generally owned by freight railroads.

West Virginia's rail network, as well as its contributions and impacts on the state, will be described in greater detail in subsequent chapters of the Plan.

Chapter 2: West Virginia's Existing Rail System



2.0 Introduction

This chapter provides an overview of West Virginia's existing rail system, which was used as a baseline for planning and decision making during the Plan process. The chapter also describes the trends that will impact the need for rail in West Virginia and identifies the needs and opportunities for passenger and freight service in the state.

2.1 Description of West Virginia's Rail Network and Operators

West Virginia's system is comprised of two Class I railroads and 11 regional, short line, or terminal carriers. The rail system also includes intercity rail passenger services operated by the National Railroad Passenger Corp. (Amtrak), commuter rail service operated by the Maryland Area Regional Commuter (MARC), and four rail tourist railroads, which operate over lines owned by the freight railroads.

2.1.1 West Virginia's Freight Railroads

Freight railroads are generally defined and classified as follows:

- Class I railroads are defined by the Federal Surface Transportation Board (STB) as having more than \$379 million of annual carrier operating revenue. They primarily operate long-haul service over high-density intercity traffic lanes;
- Class II or Regional railroads operate over at least 350 miles of track and/or have revenue of between \$40 million and the Class I threshold;
- Class III or Short line railroads operate over less than 350 miles of track and have annual revenue of less than \$40 million per year; and
- Terminal, or switching railroads, provide pick-up and delivery service within a specified area.

The freight rail system in West Virginia is comprised of more than 2,300 route miles of track. Over 1,800 miles, or more than three-quarters of the state's rail system mileage, are owned by the Class I railroads. A summary of West Virginia freight railroads and mileages are shown in **Table 2-1** below.

Table 2-1: Freight Rail Owners and Operators in West Virginia

Railroad	Reporting Marks	West Virginia Route Miles			
		Operated	Owned	Trackage Rights	Leased
Class I Railroads:		2,117	1,819	262	16
CSX Corporation	CSX	1,311	1,060	215	16
Norfolk Southern Corporation	NS	806	759	47	0
Class II/Regional Railroads		6	6	0	0
Wheeling & Lake Erie Railway	WLE	6	6	0	0
Class III/Short Line Railroads:		393	485	0	0
Appalachian & Ohio Railroad	AO	158	158	0	0
Beech Mountain Railroad	BEEM	8	8	0	0
Elk River Railroad	ELKR/TERRI	31	64	0	0
Kanawha Rail Corporation	WNFR	6	6	0	0

Railroad	Reporting Marks	West Virginia Route Miles			
		Operated	Owned	Trackage Rights	Leased
Little Kanawha River Rail	LKRR	3	3	0	0
RJ Corman Railroad Company/WV Lines	RJCV	16	16	0	0
South Branch Valley Railroad	SBVR	52	52	0	0
Vaughan Railroad Company	VRR	0	18	0	0
West Virginia Central Railroad	WVCR	91	132	0	0
Winchester & Western Railroad	WW	28	28	0	0
TOTAL RAIL LINES IN WEST VIRGINIA		2,516	2,310	262	16

Note: CSXT and NS mileage from STB R-1 reports as of December 31, 2012

West Virginia's freight railroads are discussed briefly below by their respective classification. Detailed descriptions of each rail line are provided in *Appendix 1*.

2.1.1.1 Class I Freight Railroads

CSX Transportation

CSXT has an extensive rail network that covers 23 states east of the Mississippi River, shown in **Figure 2-1**. It serves nearly every major economic and population center east of the Mississippi River and provides connectivity to western U.S. markets at Chicago, St. Louis, Memphis, and New Orleans. CSXT serves all major Atlantic ports with major intermodal operations connecting the ports of New York and New Jersey, Philadelphia, Baltimore, and Norfolk with Midwest markets.

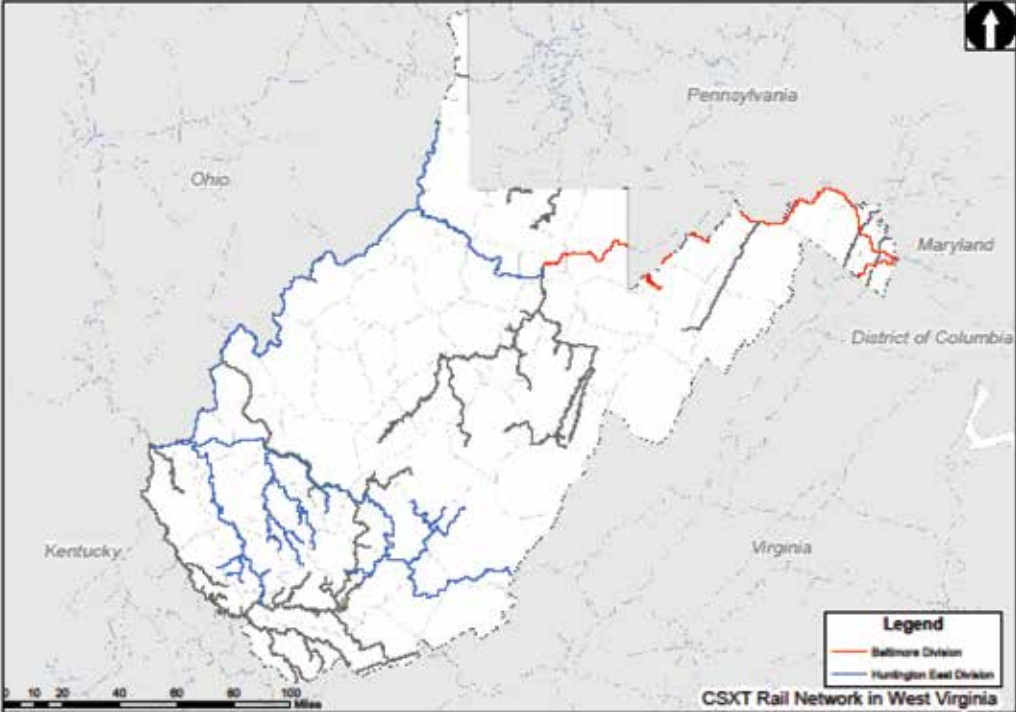
Figure 2-1: CSXT National Rail Network



Source: CSXT Website

Figure 2-2 is a map of CSXT's major rail lines in West Virginia.

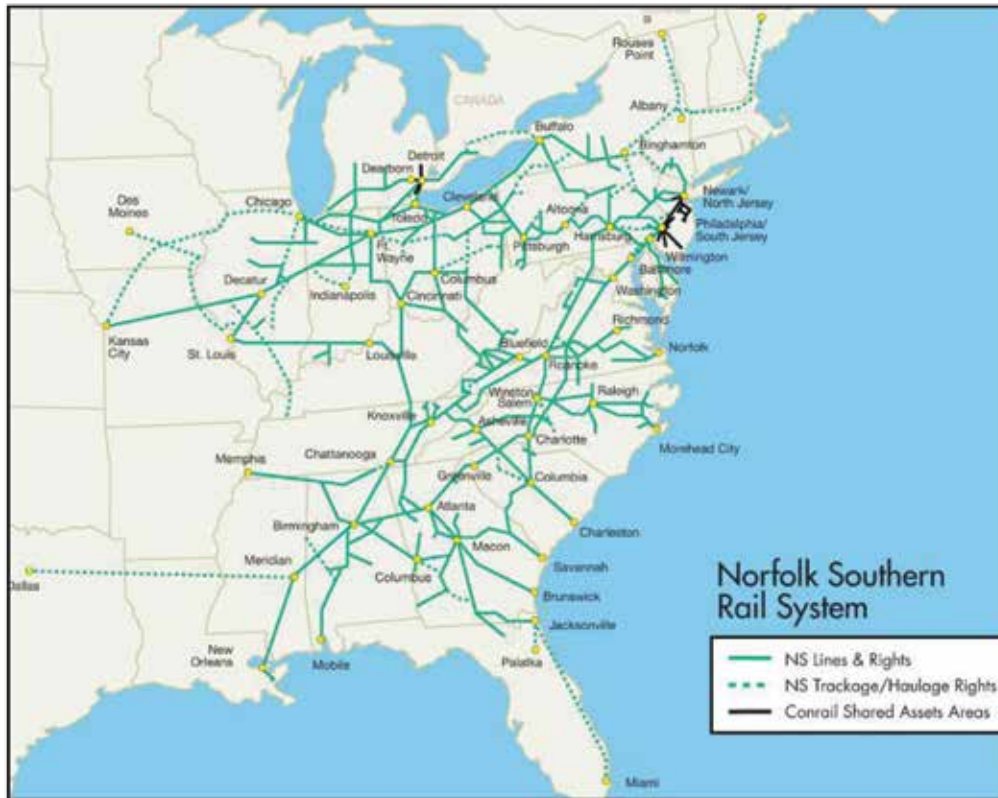
Figure 2-2: CSXT Network in West Virginia



Norfolk Southern

NS has significant operations east of the Mississippi River serving nearly all metropolitan areas (**Figure 2-3**). Its gateways to the west are Chicago, Kansas City, St. Louis, Memphis, New Orleans, and – through haulage rights – Dallas. NS focuses its international operations on the Port of Norfolk.

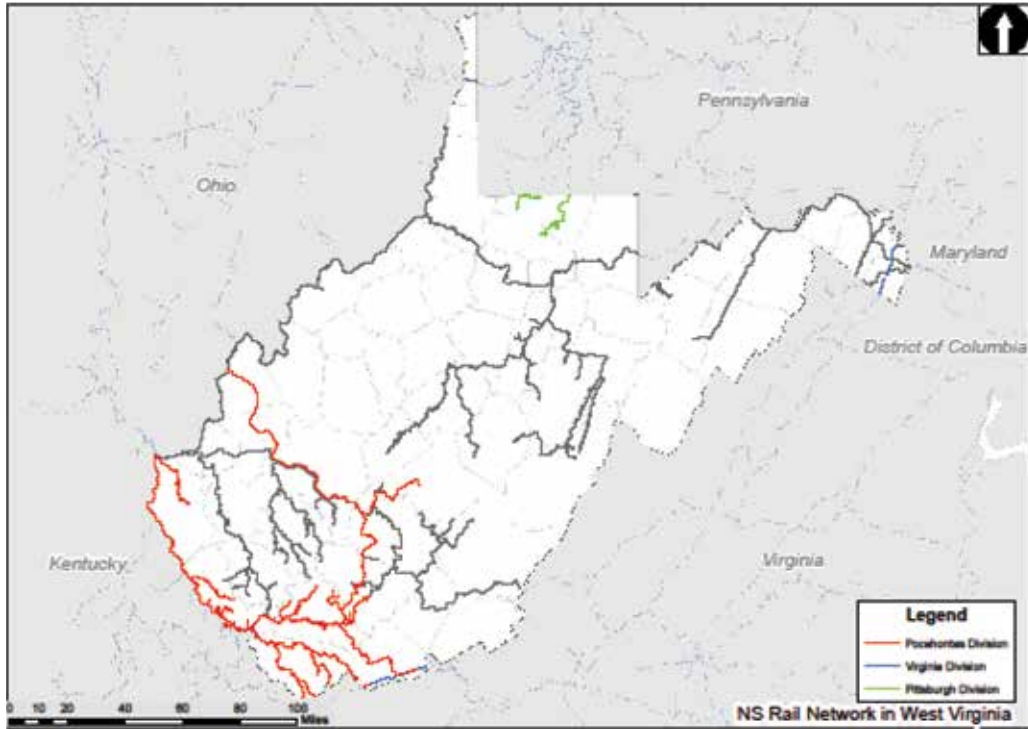
Figure 2-3: Norfolk Southern Network



Source: NS Website

Figure 2-4 is a map of major NS rail lines in West Virginia.

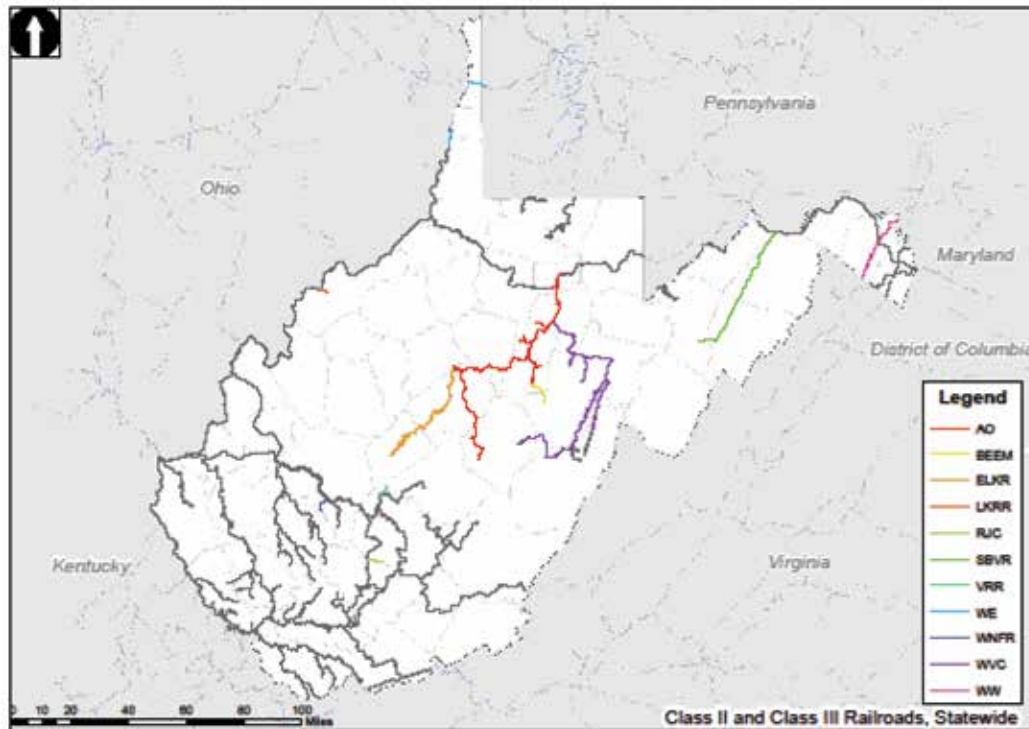
Figure 2-4: Norfolk Southern Network in West Virginia Map



2.1.1.2 Class II/III Railroads

West Virginia is served by one Class II railroad, the Wheeling & Lake Erie Railway, and 10 Class III railroads. These railroads are shown on **Figure 2-5** below. Individual railroad line descriptions are provided in *Appendix 1*.

Figure 2-5: Class II/III Railroads in West Virginia



2.1.1.3 West Virginia Passenger Railroads

Rail passenger services in West Virginia are generally classified as intercity rail passenger service, commuter rail service, and tourist train services. Each of these rail passenger service types are described below.

Amtrak Intercity Rail Services

West Virginia is served by two long-distance Amtrak trains linking Washington, DC and other East Coast cities with Chicago, the *Capitol Limited* and the *Cardinal*. There are currently no high-frequency corridor services provided in the state.

Capitol Limited

The *Capitol Limited* operates between Washington, DC and Chicago. The service consists of one daily round trip stopping at Harpers Ferry and Martinsburg, West Virginia. Key intermediate stops outside West Virginia include Rockville, Maryland; Cumberland, Maryland; Pittsburgh, Pennsylvania; Cleveland, Ohio; Toledo, Ohio; and South Bend, Indiana. Westbound trains leave Washington, DC at 4:05 PM and reach Chicago at 8:45 AM the next day. Eastbound trains leave Chicago at 6:10 PM and arrive in Washington, DC at 12:40 PM the next day. The *Capitol Limited's* scheduled departure and arrival times in Washington, DC supplement MARC rush-hour commuter service between Martinsburg, Harpers Ferry, and Washington, DC.

A map of the *Capitol Limited* route is provided in **Figure 2-6**. Through West Virginia, the *Capitol Limited* operates on track owned by CSXT.

Figure 2-6: Capitol Limited Route



Source: Amtrak

Cardinal

The *Cardinal* operates tri-weekly between New York City and Chicago, serving intermediate stations at Philadelphia; Baltimore; Washington, DC; Charlottesville, Virginia; White Sulphur Springs, West Virginia; Charleston, West Virginia; Huntington, West Virginia; Cincinnati, Ohio; and Indianapolis, Indiana. Westbound trains leave New York Sunday, Wednesday, and Friday at 6:45 AM and reach Chicago the next day at 10:05 AM. Eastbound trains leave Chicago Tuesday, Thursday, and Saturday at 5:45 PM, reaching New York the next day at 9:56 PM.

A map of the *Cardinal* route appears in **Figure 2-7**. Through West Virginia the *Cardinal* operates on track owned by CSXT.

Figure 2-7: Cardinal Route



Source: Amtrak

The *Cardinal* travels through Virginia horse country, the Shenandoah Valley, the Blue Ridge and Allegheny mountains, and the New River Gorge. It is a link from the Northeast and Midwest to many of West Virginia's recreational areas.

MARC Commuter Rail Service

MARC serves the Baltimore-Washington Metropolitan area. It is part of the Maryland Transit Administration, a modal agency of the Maryland Department of Transportation. One of its key routes, the Brunswick Line, serves West Virginia utilizing the CSXT's Metropolitan and Cumberland subdivisions. West Virginia stations served are Harpers Ferry, Duffields, and Martinsburg. A map of the MARC system is shown in **Figure 2-8**.

Figure 2-8: Maryland Area Regional Commuter System Map



MARC undertook service between Washington, DC and Martinsburg, West Virginia, in the late 1970s. West Virginia has responsibility for station maintenance and improvements at the West Virginia Stations.

The current schedule features three inbound frequencies to Washington, DC and three outbound frequencies from Washington, DC. The current schedule is shown in **Table 2-2**.

Table 2-2: Brunswick Line – Martinsburg Service (eff. 7/16/12)

AM	AM	AM		PM	PM	PM
7:09	7:35	8:31	Washington	4:25	5:40	6:20
6:50	7:13	8:09	Silver Spring	4:39	5:54	6:34
6:32	6:55	7:54	Rockville	4:53	6:09	6:51
5:40	6:05	7:05	Brunswick	5:45	6:58	7:42
5:25	5:50	6:41	Harpers Ferry	5:58	7:09	7:54
5:16	5:41	6:41	Duffields	6:11	7:20	8:05
5:00	5:25	6:25	Martinsburg	6:36	7:40	8:25

Transit buses from the Eastern Panhandle Transit Authority (EPTA-Pan Tran) serve the Martinsburg, Duffields, and Harpers Ferry stations. Pan Tran buses also provide connections with selected trains at the Brunswick MARC Station.

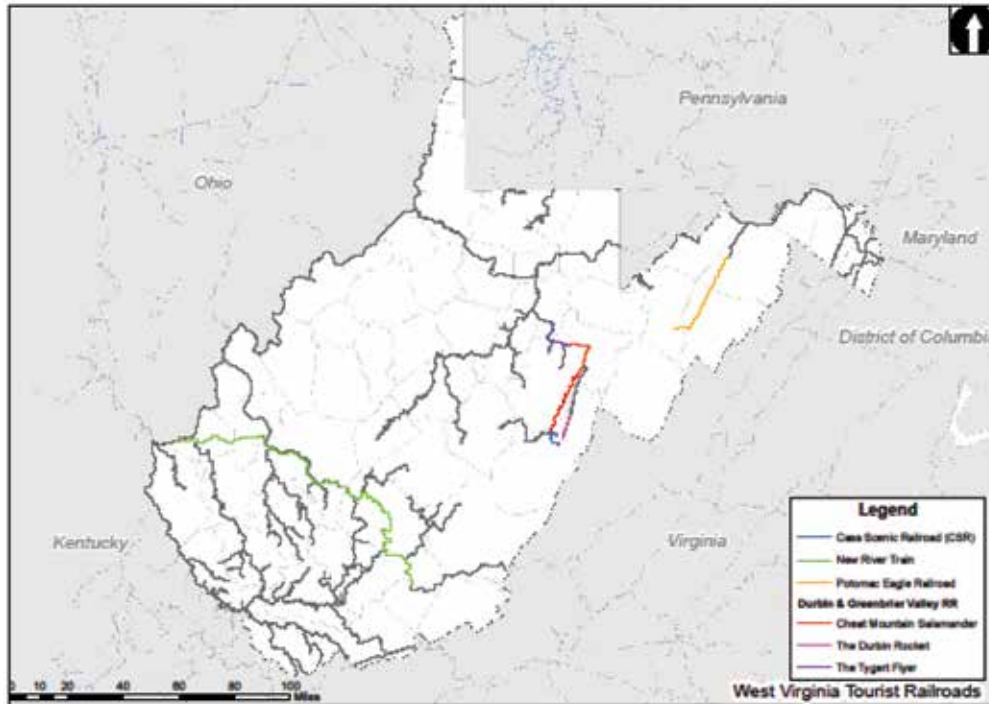
Tourist Rail Operations

West Virginia’s tourist train industry helps to chronicle West Virginia’s transition to the industrial age and attract vacation travelers to the state. These travelers, many of whom spend several nights in the state, generate income not only for the tourist railroads but also for restaurants, hotels, motels, and other visitor service establishments.

Tourist railroads generally consist of a short train ride through scenic countryside in passenger cars dating from the early 20th century to the streamlined era (1940s and 1950s). Trains can be steam or diesel powered with coaches, parlor cars, open-seating cars for sightseeing, and sometimes freight cars. Tourist railroads are either part of for-profit short line railroads or are operated as non-profit organizations for historical preservation purposes.

Figure 2-9 map shows the location of all tourist railroad locations in the state.

Figure 2-9: West Virginia Tourist Railroads



The following summaries provide an overview of the four tourist railroads which operate in West Virginia.

Cass Scenic Railroad

The Cass Scenic Railroad (CSR) is based in the restored lumber town of Cass, in Pocahontas County. CSR operates on the former West Virginia Pulp and Paper Company Railroad for 11 miles up Cheat Mountain to Bald Knob. The railroad uses the same steam locomotives that were used on the line for more than a half-century. The railroad is owned and operated by the State of West Virginia and is a West Virginia State Park. The railroad offers two steam train excursions from Memorial Day weekend until the last Sunday in October. These excursions include a 9-mile, 1.5-hour round trip to Whittaker Station where passengers can experience life in a recreated 1940s lumber camp, and a 22-mile, 4.5-hour round trip to Bald Knob.

New River Train Excursions

The New River Train (NRT) is operated by the Collis P. Huntington Railroad Historical Society, Inc. (CPH). This 300-mile round trip travels on the CSXT between Huntington, in Cabell County and Hinton, in Summers County. The NRT operates on the CSXT Kanawha Subdivision from Huntington to Montgomery and on the New River Subdivision from Montgomery to Hinton through the scenic New River Gorge.

The main focus of NRT operations are four fall foliage trips per year during the last two weekends in October. The NRT utilizes Amtrak locomotives and a mix of Amtrak Horizon/Amfleet and Amtrak approved private heritage coaches, lounges, parlor cars, diners, dome cars, and sleeper lounge cars. NRT operations are unique compared to

other tourist railroads in terms of the scale of its operations (25- to 30-car trains) over a high density freight main line at higher speeds.

CPH also periodically sponsors both day and overnight trips to the Greenbrier Resort in White Sulphur Springs, utilizing Amtrak's *Cardinal*, with participants riding in coach. In addition, 4-day trips to New York City and Washington, DC are also offered once a year utilizing Amtrak's *Cardinal*. Volunteers, or guides, aboard Amtrak's *Cardinal* describe scenic and historical sites along the train's route.

Durbin & Greenbrier Valley Railroad

The Durbin & Greenbrier Valley Railroad (DGVR) operates excursion trains on the West Virginia Central Railroad (WVCR). The DGVR is a short line freight railroad that also operates tourist trains. The DGVR has built a portfolio of four routes that travel through West Virginia's scenic and spectacular unspoiled mountain and canyon country. The scenic excursion trains operated by DGVR include:

- ***The Durbin Rocket*** operates between Durbin and Hevener Station over 5.5 miles of restored rail line. The train departs from the restored C&O depot in Durbin along the Greenbrier River through the Monongahela National Forest with a stop-over at Piney Island. The train operates June through October.
- ***The Cheat Mountain Salamander*** operates from Cheat Bridge to Big Cut, a distance of 17 miles. It also operates a 128-mile round trip excursion train departing from the historic depot in Elkins and traveling up Cheat Mountain to Spruce in Pocahontas County. Trains operate June through October.
- ***The New Tygart Flyer*** operates from the Elkins Depot on a 46-mile round trip south to Cheat Falls, on a former Western Maryland Railway line. Trains operate June through November.

In addition to the regular routes noted above, the DGVR operates three special operations. They are the ***Mountain Explorer*** dinner train; the ***Polar Express***, operated on weekends in November after the end of the regular season; and the ***Castaway Caboose***, which is a caboose outfitted as a camper that can be rented by visitors. The caboose is taken by the *Durbin Rocket* to a remote siding and set-out, where the visitors spend the night and are picked up the next day.

Potomac Eagle Scenic Railroad

The Potomac Eagle Scenic Railroad (PESR) operates passenger excursion trains on the South Branch Valley Railroad (SBVR). PESR operates passenger trains from Romney to Sycamore Bridge north of Moorefield, with occasional longer trips to Petersburg.

The *Potomac Eagle's* regular season begins in mid-May, and it operates every Saturday through September. Trains depart the Wappocomo Station (just over 1 mile from the Romney town center on Route 28) and complete a round trip in 3 hours. On selected Saturdays during the operating season PESR runs an all-day trip from Wappocomo to Petersburg and return. Fall foliage trains operate daily during the month of October, and twice daily on Saturdays and Sundays. Special longer trips are operated on Saturdays and Sundays in November to allow passengers additional time to view the fall colors. In addition to its regular schedule PESR operates several event trains for the Loy Foundation (featuring an on-train murder mystery), Hardy Heritage Days, Romney Railroad Days, and a Ridgedale Home Tour Special. Christmas train trips have been offered in past years.

2.1.1.4 Abandoned and Rail-Banked Lines

As noted earlier, West Virginia's rail system mileage has decreased from approximately 4,000 route miles in 1920 to about 2,300 today. Rail system mileage, however, has stabilized in both the U.S. and West Virginia over the past decade.

Rail freight service, including the lines over which rail service is operated, are under the jurisdiction of the STB. Rail owners and operators must apply to the STB for permission to discontinue or abandon freight service on a line.

The STB requires that a railroad must publish a notice to abandon an active line once a week for at least 3 consecutive weeks and provide notice at its stations and to its rail customers. For a line on which no service has been provided over the past 2 years and where no customers object, prior notice is not required and the carrier is exempt from many of the STB abandonment requirements. For each abandonment application, the STB establishes a docket number and collects information and testimony before deciding whether to allow abandonment or permit other actions as may be requested by interested parties. In addition to STB's authority to grant or deny abandonment of a rail line, it may also impose other conditions, such as granting "Interim Trail Use" or "Public Use" of the line.

The National Trails Act allows for reserving railroad right-of-way through the interim use of the railroad corridor as a trail. Interim trail use can be utilized when it is determined that the railroad right-of-way may be needed in the future for railroad use. Public agencies may also request that the rail corridor be made available for "public use" if it has determined that the right-of-way is suitable for highway or mass transit usage, conservation, energy production or transmission, or recreation. WVDOT, through the SRA, coordinates abandonment activities.

West Virginia Abandonment Applications

Over the past decade, only 85 miles of rail line have been proposed for abandonment in West Virginia. These line segments are shown in **Table 2-3** on next page in order of the STB's Service Date, or the date of publication of the latest decision on the case.

Table 2-3: West Virginia Rail Abandonments (2003-2013)

RR	COUNTY	DOCKET	STB SERVICE DATE	LENGTH (miles)	BEGIN	END (milepost)
NS	Mingo	AB-290-215X	02/27/2003	2.50	Williamston (FG 0.0)	Cinderella FG (2.5)
CSXT	Grant	AB-55-637X	06/09/2003	5.30	Sincol (BAH 63.7)	Henry (BAH 69.0)
NS	Mingo	AB-290-223X	09/26/2003	1.59	Licks Fork (TE 1.50)	Edna (TE 3.09)
CSXT	Logan	AB-55-671X	08/16/2006	1.40	Stirrat (CME 10.0)	Sarah Ann (CME 11.4)
CSXT	Raleigh	AB-55-661X	07/26/2007	15.12	Jarrods Valley Jct. (CLP 0.0)	Clear Creek (CLP 15.12)
CSXT	Greenbrier	AB-55-683X	08/01/2007	13.60	Rupert Jct. (CAH 20.8)	Clearco (CAH 20.8)
NS	McDowell	AB-290-272X	12/21/2007	2.50	Caretta (CB 0.0)	Caretta (CB 2.5)
CSXT	Logan	AB-55-607X	04/03/2008	10.02	Franco (CLU 6.3)	Saunders (CLU 16.32)
CSXT	Logan	AB-55-689X	10/10/2008	1.16	Don (CLV 2.0)	Don (CLV 3.16)
CSXT	Greenbrier & Fayette	AB-55-682X	12/12/2011	16.70	Rainelle (CAF 27)	Nallen (CAF 43.7)
CSXT	Preston	AB-55-625X	02/12/2013	14.30	Rowelsburg (BAJ 0.0)	Albright (BAJ 14.3)
TOTAL				84.99		

Rail-Banked Lines in West Virginia

The SRA has purchased 266 miles of abandoned or discontinued rail lines for the purpose of rail banking the line for possible future rail use. These rail corridors are generally used for recreational purposes. The rail-banked lines, current lessees, and trail operators are shown in **Table 2-4** on next page.

Table 2-4: State Rail Authority Rail-Banked Lines

Date	County	Location	Miles	Former RR	Lessee	Trail Name	Trail Operator
3/7/1994	Brooke	PA State Line - Colliers	4.57	CR	Weirton Board of Parks and Recreation	Panhandle Trail	Brooke County Parks and Recreation
3/1/1975	Greenbrier Pochontas	North Caldwell - Cass	77	CO	Department of Natural Resources	Greenbrier	WV Div. of Natural Resources
12/4/1984	Harrison	Haywood - Spelter	6.93	BO	Harrison County Parks and Recreation Commission	Spelter Line	Harrison County Parks and Recreation
8/29/1986	Harrison	Wilsonburg - Walker	8.82	BO	North Bend State Park	North Bend	WV Div. of Natural Resources
8/29/1986	Doddridge	Wilsonburg - Walker	20.79	BO	North Bend State Park	North Bend	WV Div. of Natural Resources
8/29/1986	Ritchie	Wilsonburg - Walker	26.15	BO	North Bend State Park	North Bend	WV Div. of Natural Resources
8/29/1986	Wood	Wilsonburg - Walker	4.81	BO	North Bend State Park	North Bend	WV Div. of Natural Resources
6/1/1989	Harrison	Gaston Junction - Willard	2.81	CSXT	Marion County Parks and Recreation	Marion County Trail	Marion County Parks and Recreation
6/1/1989	Marion	Gaston Junction - Willard	9.46	CSXT	Marion County Parks and Recreation	Marion County Trail	Marion County Parks and Recreation
4/12/1990	Nicholas	Allingdale - Richwood	14.53	CSXT	City of Richwood	Tri-Rivers Trail	City of Richwood
1/30/1990	Wood	Walker - Parkersburg	11.04	CSXT	North Bend State Park (DNR)	North Bend	WV Div. of Natural Resources
3/8/1991	Monongalia	Fairmont - Morgantown	16.31	CSXT	Mon River Trails Conservancy	Caperton Trail	Mon River Trails Conservancy
3/8/1991	Marion	Fairmont - Morgantown	4.86	CSXT	Mon River Trails Conservancy	Caperton Trail	Mon River Trails Conservancy
5/29/1992	Monongalia	Brownfield, PA - Morgantown	20.03	CSXT	Mon River Trails Conservancy	Caperton Trail	Mon River Trails Conservancy
5/29/1992	Preston	Brownfield, PA - Morgantown	9.04	CSXT	Mon River Trails Conservancy	Caperton Trail	Mon River Trails Conservancy
3/6/1997	Harrison	Clarksburg - McWhorter	14.11	CSXT	Harrison County Commission	Harrison County Trail	Harrison County Commission

2.1.2 Major Freight and Passenger Terminals

Rail terminals generally are locations where rail freight can be transferred or where rail passengers board or disembark from trains.

Rail freight terminals can include classification yards, intermodal facilities, and transload facilities. Rail classification yards are locations where freight cars are made into trains according to their destination. Freight intermodal terminals are facilities where large amounts of freight, generally containers or trailers, are transferred from one mode to another, such as between rail and either highway or water modes. Transload facilities are a form of intermodal transfer, which is generally reserved for local transfer of bulk commodities between rail and truck.

Rail passenger terminals, or passenger stations, are facilities where passengers wait for or leave trains. However, in addition to serving as gateways to trains for passengers, rail stations are also gateways for the cities served by these trains. Rail stations are a focus for activity and foster economic development, commercial endeavors, tourism, cultural activities, civic pride, and historic preservation in their cities. The amenities provided at passenger stations, such as parking, the ability to transfer to other transit modes, ticketing, etc. can vary significantly.

Descriptions of major freight and passenger terminals located in West Virginia are described by service providers below.

2.1.2.1 Rail Freight Terminals

CSXT Facilities

CSXT has six rail yards in West Virginia located in Charleston, Danville, Huntington, Grafton, Logan, and Parkersburg. In addition to its yard facilities, additional facilities to support CSXT operations in Huntington include its division headquarters, a freight car light repair shop, and a locomotive heavy haul repair shop.

TRANSFLO, a subsidiary of CSX Corporation, operates 57 active terminals nationally for the transfer of more than 500 bulk products between railcars, containers, and trucks. Via CSX TRANSFLO facilities CSXT serves multiple non-rail-served locations by transporting commodities by rail to the facility for transfer to truck for the final destination. The three TRANSFLO facilities located in West Virginia are shown in **Table 2-5** below.

Table 2-5: CSXT TRANSFLO Facilities in West Virginia

Location	Address	Car Spots
Clarksburg (Multi-Commodity Facility)	500 North Third Street Clarksburg, WV 26301	32
South Charleston (Multi-Commodity Facility)	1st Avenue and F Street South Charleston, WV 25303	24
Fairmont (Multi-Commodity Facility)	900 Washington Street Fairmont, WV 26554	42

CSXT also provides bulk transload service to Transload Solutions in Benwood, which has 200 rail car spots for the transfer of sand, chemicals, and asphalt.

NS Facilities

NS has rail classification and terminal yards in West Virginia located in Elmore, Auville, Kenova, Belle, Bluefield, and Williamson.

There are currently no major NS intermodal facilities in West Virginia. However, the West Virginia Public Port Authority is developing the Prichard Intermodal project. This project consists of the construction of a new intermodal facility in Prichard, on an approximately 100-acre site located adjacent to the NS rail line, giving shippers in the tri-state region of West Virginia, Kentucky, and Ohio multimodal access to highway and rail. The estimated project completion date is 2014. The project is intended to provide long-term economic benefits in conjunction with the completed NS Heartland Corridor Initiative.

NS also operates a Thoroughbred Bulk Transfer Terminal in Maidsville, which has 30 car spots for the transfer of chemicals, asphalt, food products, plastics, and petroleum products.

2.1.2.2 Rail Passenger Terminals

Amtrak Stations

There are 10 active Amtrak stations in West Virginia. Two are located in the Eastern Panhandle (Harpers Ferry and Martinsburg), and the remainder are located in the south central part of the state.

- The Harpers Ferry and Martinsburg stations, served by the *Capitol Limited*, see daily service. The tri-weekly *Cardinal* serves stations at White Sulphur Springs, Alderson, Hinton, Prince, Thurmond, Montgomery, Charleston, and Huntington. These stations are described in more detail below.
- The *Capitol Limited* stations, from east to west, are as follows:
 - The *Harpers Ferry Station* is part of the city's historic district. Built in 1894, it was transferred to the National Park Service (NPS) in 2001. The station platforms are owned by CSXT. The SRA leases and maintains these facilities and shelters. The NPS maintains the station building. Parking is available in an adjacent parking lot owned and maintained by the Park Service. The station is not staffed, and no tickets are sold at this location. The waiting room is opened by the Park Service during morning commute hours. One Pan Tran bus route serves the station. Renovation of the Harpers Ferry platforms and underpass head house shelters are currently underway. When completed, the platforms will be Americans with Disabilities Act (ADA) compliant and the shelters will match the historical style of the station.
 - The *Martinsburg Station* complex is owned by the City of Martinsburg. The platforms are owned by CSXT. The City of Martinsburg maintains the station, and caretakers open and close the station at train times. The former hotel, now renovated into offices, is an historic structure. The new historic style station annex was completed in 1997. The station has a Quik-Trak ticketing machine. The station is also the transit center and route hub for Pan Tran bus service. Parking is available in a city owned lot.
- The *Cardinal* stations, from east to west, are as follows:
 - The *White Sulphur Springs Station* is across the street from the Greenbrier Resort and is controlled by the resort. While unstaffed, a caretaker opens the station for departing and arriving passengers. The resort has converted the station into a Christmas store and gift shop. A new wheelchair lift, informational kiosk, and tactile platform edge are some of the improvements to be funded by the Mobility First program. The platform is owned by CSXT, and parking is available adjacent to the station.

- The *Alderson Station* is not staffed. The train will stop only if there is a passenger with a reservation to board or detrain at that station. The station platform is owned by CSXT, and parking is available adjacent to the station.
- The *Hinton Station*, part of Historic Downtown Hinton, is unstaffed. The station is opened and maintained by a caretaker. It is currently undergoing a series of repairs and renovation by the city of Hinton to bring the station into compliance with ADA requirements. All facilities are owned by CSXT, and parking is available adjacent to the station.
- The *Prince Station* is staffed by a ticket agent and offers checked baggage service. The station serves as a gateway to Beckley; the area's growing recreation market; and the Boy Scouts of America (BSA) Summit Bechtel Reserve (SBR) Jamboree and High Adventure Camp. The platform and station are owned by CSXT, and there is limited parking at the station.
- The *Thurmond Station* is within a national park, the New River Gorge National River. The Park Service owns the station and uses it as a visitor center during the summer months. The station is not staffed, and the train will stop only if there is a passenger with a reservation to board or detrain at that station. The platform is owned by CSXT, and parking is available adjacent to the station.
- The *Montgomery Station* is not staffed. The station has a platform shelter for waiting passengers. The local transit bus line hub is located adjacent to the station. The platform is owned by CSXT, and parking is available adjacent to the station.
- The *Charleston Station* is a Neo-Classical Beau-Arts style building extensively renovated in 1987. The station is staffed by a ticket agent, offers checked baggage service, and is fully wheelchair accessible. The station is scheduled to receive additional ADA compliant parking spaces, curb cuts, and tactile edging as part of Amtrak's Mobility First Initiative, which is designed to eliminate or reduce barriers to the disabled in accessing Amtrak trains. The platform is owned by CSXT. Some parking is available adjacent to the station. Three Kanawha Valley Regional Transportation Authority bus routes operate past the station.
- The *Huntington Station* was built in 1983. The station is staffed by a ticket agent, offers checked baggage service, and is fully wheelchair accessible. Huntington also serves as a base for train crews. The platform, station, and parking area are owned by CSXT. Short- and long-term parking is available adjacent to the station.

MARC Stations

The Eastern Panhandle of West Virginia is served by three MARC Commuter stations: Harpers Ferry, Duffields, and Martinsburg. The Harpers Ferry and Martinsburg stations are also served by Amtrak and are described above.

The *Duffields Station* was designed as a park-and-ride station. It has a large number of parking spaces (295) and easy highway access from WV 9. Facilities consist of platforms and a small shelter.

2.1.3 Objectives for Passenger Services in West Virginia

West Virginia's ability to provide specific levels of rail intercity and commuter passenger is limited by the fact that these services are provided by other owner and operating entities. Both Amtrak routes are long-distance services which remain under the control of Amtrak and serve multiple states. MARC service is provided by a Maryland transportation agency. Therefore, West Virginia's ability to control minimum levels of service (LOS) such as frequencies and scheduling – which directly impact capacity and ridership – is extremely limited.

Nevertheless, West Virginia has established a number of goals and objectives regarding rail passenger service in the state. The specific goals and objectives are discussed in *Chapter 5* of the Plan. In general, however, the state is

committed to preserve, protect, evaluate, and improve intercity and commuter passenger rail service and to support rail-related tourism.

These goals and objectives are addressed further during the Plan's rail analysis phase, and specific projects have been recommended to meet objectives in some cases.

2.1.4 Performance Evaluation of West Virginia Passenger Services

This section describes the ridership, operating, and financial characteristics of the intercity and commuter rail passenger operations within West Virginia. It should be noted that as none of the passenger services involves operations totally within the state, some of the operating and financial statistics are provided on a system basis and may not necessarily fully represent the characteristics within West Virginia.

2.1.4.1 Amtrak Performance

As noted earlier, Amtrak operates the *Capitol Limited* and *Cardinal* long-distance trains through the state. Performance characteristics for these trains are described below:

General Characteristics

In fiscal year 2012, the *Capitol Limited* carried 226,900 riders, a 0.1 percent increase over the previous year. At \$20.4 million, ticket revenue also showed growth increasing 0.8 percent compared to the previous year.

Riders traveling between the train's Chicago and Washington, DC end-points generate nearly 40 percent of the route's ridership and almost 60 percent of the revenue. This high percentage of end-point travel compared to other long-distance trains is a result of the substantial number of connecting passengers using the train. In Chicago, the *Capitol Limited* connects with all the western long-distance trains and the Chicago Hub Network, while in Washington, DC the train connects to trains destined to the Northeast Corridor, Florida, and the Carolinas. In Pittsburgh, the *Capitol Limited* connects to the *Pennsylvanian* serving Philadelphia and New York City. Riders traveling between Chicago and Pittsburgh (14 percent) and Pittsburgh and Washington, DC (7 percent) represent the next largest city pairs by ridership.

Based on the 2005 Amtrak Ridership Profile for the *Capitol Limited*, almost 90 percent of passengers characterize their trip purpose as leisure trips, described as trips for visiting family and friends and vacation/recreational trips. Trips to and from school, for personal business or medical appointments, and business trips account for the remainder of trip purposes. Almost one-third of riders chose the *Capitol Limited* because they did not want to fly or drive or because there was no alternative transportation available. More than 40 percent chose the train because of its comfort or to view the scenery.

In fiscal year 2012, the *Cardinal* carried 116,400 riders, a 4.9 percent increase over the previous year. At \$7.5 million, ticket revenue also showed strong growth increasing 6.2 percent compared to the previous year.

Unlike the *Capitol Limited*, few *Cardinal* passengers traveled between the end-point cities. The primary role of the *Cardinal* is connecting mid-route communities (many in West Virginia) to major cities and connecting hubs on the East Coast and Chicago. The most travelers (more than 60 percent) are making journeys between smaller intermediate stations and major cities. Because of these characteristics, riders on the *Capitol Limited* generate more ticket revenue per passenger (\$90) than do riders on the *Cardinal* (\$70). However, the *Cardinal* connects isolated communities where the train is often the only form of intercity public transportation available.

Based on the 2005 Amtrak Ridership Profile for the *Cardinal*, more than 90 percent of passengers characterize the purpose of the trip as leisure trips. Trips to and from school, trips for personal business or medical appointments,

and business trips account for the remainder of trips. About one-third of riders chose the *Cardinal* because they do not want to fly or drive, or because there was no alternative transportation available. More than 30 percent chose the train because of its comfort or to view the scenery.

Amtrak Ridership in West Virginia

Table 2-6 shows route ridership and ticket revenue for the *Capitol Limited* and the *Cardinal* over the past 5 years. While ridership and ticket revenue softened during the recent recession, the slowly recovering economy, improved service, and high gasoline prices have resulted in continuing strong growth in recent years.

Table 2-6: Ridership, Ticket Revenue, and Costs by Route

	<i>Capitol Limited</i>				<i>Cardinal</i>		
	Ridership	Ticket	Costs		Ridership	Ticket	Costs
		Rev (mil)				Rev (mil)	
FY2012	226,884	\$20.5	TBD		116,373	\$7.5	TBD
FY2011	226,597	\$20.3	TBD		110,923	\$7.1	TBD
FY2010	218,596	\$18.6	\$45.8		107,053	\$6.4	\$25.7
FY2009	215,371	\$17.6	\$40.3		108,614	\$6.4	\$22.0
FY2008	216,350	\$17.4	\$36.8		109,195	\$6.4	\$20.0

Source: Amtrak Train Earnings/Monthly Performance Report

Table 2-7 shows the number of boardings and alightings at each station in West Virginia for Fiscal Year 2010 through Fiscal Year 2012.

Table 2-7: Amtrak Riders in West Virginia FY 2010 Through 2012

Station	FY 2010	FY2011	% Chg.	FY2012	% Chg.
<i>Capitol Limited</i>					
Harpers Ferry	4,618	5,006	8.4%	5,483	9.5%
Martinsburg	6,986	7,734	10.7%	8,641	11.7%
Capitol Limited Total	11,604	12,740	9.8%	14,124	10.9%
<i>Cardinal</i>					
Alderson	705	659	-6.5%	603	-8.5%
Charleston	9,507	9,783	2.9%	9,799	0.2%
Harpers Ferry	4,618	5,006	8.4%	5,483	9.5%
Hinton	8,803	8,632	-1.9%	8,742	1.3%
Huntington	11,345	11,721	3.3%	11,743	0.2%
Martinsburg	6,986	7,734	10.7%	8,641	11.7%
Montgomery	936	473	-49.5%	580	22.6%
Prince	3,364	3,197	-5.0%	3,125	-2.3%

Station	FY 2010	FY2011	% Chg.	FY2012	% Chg.
Thurmond	230	254	10.4%	264	3.9%
White Sulphur Springs	4,654	6,056	30.1%	5,985	-1.2%
Cardinal Total	51,148	53,515	4.6	54,965	2.7%
Total West Virginia	62,752	66,255	5.6%	69,089	4.3%

Source: Amtrak State Fact Sheet

Route Metrics

The performance of Amtrak routes is measured by a series of key metrics as outlined by the Passenger Rail Investment and Improvement Act (PRIIA) of 2008. These metrics are financial, operational, and measures of customer satisfaction. Section 207 of PRIIA required and outlined a methodology for the development of standards for measuring the performance and service quality of Amtrak's routes. These standards are noted below:

Financial Performance

Amtrak's fiscal year begins on October 1. Amtrak reports route revenue on a monthly and year-to-date basis. Operating costs, however, are reported a year after they are incurred. Thus, October 2009 – September 2010 (FY10) revenue is compared with operating costs for October 2010 – September 2011 period (FY10 costs). These fiscal year data reveal that the *Capitol Limited's* revenue covered 44.1 percent of its operating costs. This ratio is commonly known as the fare box recovery ratio. The figure for the *Cardinal* was 27.2 percent. This result reflects the less competitive nature of tri-weekly service.

For the same FY10 time period, Amtrak's total long-distance services nationally generated a 44.8 percent fare box recovery.

Another key measure of financial performance is passenger miles per train-mile (PMTM). This measure reflects the overall productivity of the train. As outlined in FRA's Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations, for the 12 months ending March 2012, the *Cardinal* had a PMTM of 129 while the *Capitol Limited* had a PMTM of 199.

On-Time Performance

Amtrak defines on-time performance (OTP) as the total number of trains arriving on-time at a station divided by the total number of trains operated on that route. A train is considered on-time if it arrives at the final destination within an allowed number of minutes, or tolerance, of its scheduled arrival time. Trains are allowed a certain tolerance based on how far they travel. The service standard for OTP for the long-distance trains is 80 percent.

The overall OTP for all Amtrak routes in FY 2011 was 78 percent. In FY 2011 the *Capitol Limited* averaged 49 percent OTP, while the *Cardinal* averaged about 39 percent. These OTP percentages are very poor and also represent a double-digit decline compared to the previous year. A consistent and high OTP makes the rail service more attractive to riders, especially those traveling shorter distances.

Causes for Amtrak train delays can be attributed to a number of reasons. The types of delay measured include:

- Train interference delays are related to other train movements in the area. These can be freight trains as well as other Amtrak trains.

- Slow Orders are related to the railroad infrastructure and/or maintenance work being done on the tracks or signaling systems. This includes delays from reduced speeds to allow safe operation due to the track problems.
- Passenger Related Delays are related to the boarding of passengers (e.g., heavy holiday loads, disabled passengers, large groups, checked baggage, etc.) and passenger holds for connections.
- All Other Freight Railroad Delays are related to signal failures, debris, and routing delays (e.g., use of a siding rather than the main line).
- All Other Delays could include delays caused by the weather and non-railroad third-party factors such as a bridge opening for waterway traffic, police activity, grade crossing incidents, or loss of power due to a utility company failure.

Table 2-8 shows the causes of delay in percent of delay minutes for routes through West Virginia in June 2012 that negatively impact OTP.

Table 2-8: Causes of Delay to Amtrak Trains Serving West Virginia - June 2012

Causes of Delay	Route	
	<i>Capitol Limited</i>	<i>Cardinal</i>
Train Interference	29.5%	21.7%
Slow Orders	9.2%	17.9%
Passenger Related Delays	18.9%	26.3%
All Other Freight Railroad Operational Delays	29.6%	25.1%
All Other Delays	12.8%	9.0%

Source: Amtrak Monthly Performance Report for June 2012

Customer Service Indicator

Amtrak's Customer Service Indicator (CSI) Scores measure the satisfaction by passengers, on an 11-point scale, of a particular aspect of their trip. A CSI score of 80 means 80 percent of respondents rated the aspect of their trip in the top three of an 11-point scale. Service measures include:

- *Overall Service* is the measure for the respondents rating for their overall trip experience;
- *Amtrak Personnel* is the measure for the respondents rating Amtrak reservations personnel, station personnel, train crew, and on-board service crew;
- *Information Given* is the measure for the respondents rating all information they received pertaining to their trip;
- *On-Board Comfort* is the measure for the respondents rating seat or sleeping compartment comfort, air temperature, and ride quality;
- *On-Board Cleanliness* is the measure for the respondents rating the cleanliness of the train and on-board restrooms; and
- *On-Board Food Service* is the measure for the respondents rating the quality of the food and snacks purchased on-board the train.

Table 2-9 shows the CSI scores for the *Capitol Limited* and the *Cardinal* for the 12-month period ending in March 2012. CSI scores fell below the standard in some cases by a significant amount. These lower scores in the delivery of some services could be a result of poor OTP.

Table 2-9: CSI scores for the *Capitol Limited* and the *Cardinal*

Service	Standard	Route	
		<i>Capitol Limited</i>	<i>Cardinal</i>
Overall Service	82	79	74
Amtrak Personnel	80	82	77
Information Given	80	68	59
On-Board Comfort	80	76	73
On-Board Cleanliness	80	62	56
On Board Food Service	80	71	58

Red: CSI Scores below goals.

Source: FRA Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations

ADA Compliance

Amtrak's *A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990*, produced in 2009, notes that eight of West Virginia's in-service stations are required to be ADA-compliant. These are Charleston, Harpers Ferry, Hinton, Huntington, Martinsburg, Montgomery, Prince, and White Sulphur Springs. The other stations are flag stops, which are not required to be ADA-compliant.

The eight were assessed as to the levels of ADA compliance of their station structures, platforms, and pathways. The levels of compliance include:

- *Generally Compliant* for stations with scores above 80 percent compliance;
- *Partially Compliant* for stations scoring between 20 percent and 79 percent; and
- *Minimally Compliant* for stations scoring lower than 20 percent.

In 2009 four of West Virginia's stations – White Sulphur Springs, Prince, Montgomery, and Hinton were rated as *Minimally Compliant*. The remaining four – Charleston, Harpers Ferry, Huntington, and Martinsburg – were rated as *Partially Compliant*.

Amtrak and the freight railroads are currently working to develop strategies and plans to meet the FRA's new requirements requiring level boarding to accommodate passengers with disabilities. This is a very complex task integrating the needs of railroad clearance requirements, freight traffic, and the mix of different boarding levels by type of equipment (Superliner, single-level, and commuter) that often operate on the same line, while fulfilling the requirements and spirit of the ADA statute.

2.1.4.2 MARC Performance

Performance measures for MARC Brunswick Line service are described below:

Ridership

Ridership information for MARC's Brunswick Line and for stations in West Virginia is shown in **Tables 2-10** and **2-11**. **Table 2-10** shows total annual route ridership for the Brunswick Line between Washington, DC; Brunswick; Martinsburg; and Frederick. Overall ridership has shown relatively steady growth in recent years.

Table 2-10: Brunswick Line Ridership (State Fiscal Year – July-June)

Year	Riders	% Chg
FY 05	1,670,200	
FY06	1,718,000	2.9%
FY07	1,767,500	2.9%
FY08	1,794,700	1.5%
FY09	1,842,300	2.7%
FY10	1,846,000	0.2%
FY11	1,838,500	-0.4%
FY12	1,910,900	3.9%

Source: MARC

Table 2-11 shows the average daily ridership at each of West Virginia's stations based on a 12-month rolling average. The date ranges shown provide key information about the impact of a fare surcharge implemented in January 2009 indicating that price sensitive riders chose other commuting alternatives.

Table 2-11: West Virginia Ridership (12-Month Rolling Average Daily Ridership*)

Station	2/08-1/09	2/09-1/10		2/10-1/11		2/11-1/12	
Martinsburg	223	190	-14.8%	194	2.1%	208	7.2%
Duffields	184	157	-14.7%	152	-3.2%	164	7.9%
Harpers Ferry	140	125	-10.7%	98	-21.6%	117	19.4%
Total	547	472	-13.7%	444	-5.9%	489	10.1%

*Time periods chosen to show ridership before and after fare surcharge effective January 2009.

Source: MARC

On-Time Performance and Delays

MARC has an OTP goal of 95 percent. This is its core service standard. **Table 2-12** shows the average OTP on the Brunswick Line for the past 3 years. As can be seen, OTP on the Brunswick Line through June 2011 falls significantly short of the goal. **Table 2-13** shows the causes of delays by type between January 2003 and July 2010.

Table 2-12: Brunswick Line On-Time Performance (State Fiscal Year - July-June)

Year	OTP	% Chg
FY10	88.4%	
FY11	83.1%	-6.0%
FY12	87.0%	4.7%

Source Table 5: MTA Website, MTA Meeting Summary, July 22, 2011 (FY10-11), MTA FY12

Table 2-13: Brunswick Line Causes of Delay (January 2003-July 2010)

Cause of Delay	Percentage
Train Interference	37%
Tracks	16%
Weather	14%
Signals	14%
Mechanical	7%
Accident	3%
Other Causes	9%

Source Table 6: MARC Ridership and Delays Analysis, September 2010

As the line uses one of CSXT's major freight corridors with increasing freight traffic, freight train interference is a major cause of delays.

Trespasser incidents are also a major cause of the delays. Almost 90 percent of MARC's trespasser incidents occur on the Brunswick Line.

Two operational issues may factor into the line's delays. The first is weather related delays. Heat-orders and flash flood warnings are the biggest causes of weather related delays. Both result in speed restrictions lasting several hours. Heat-related speed restrictions are imposed as a safety measure due to the risk of welded rail kinks during extremely hot weather. CSXT imposes a 59 miles per hour (mph) speed limit when the temperature is expected to rise above 85 degrees. This can delay trains and cause congestion.

An additional issue is the boarding and detraining at Brunswick Line's low-level platforms. At Brunswick Line stations, passengers must climb steep car steps to board or detrain. At high volume stops non-level boarding takes a great deal of time and leads to delayed trains.

ADA Compliance

All of West Virginia's MARC stations need investment to bring the stations into compliance with Americans with Disabilities Act. Details regarding the Martinsburg and Harpers Ferry stations are outlined in the Amtrak Performance Section above. It has been proposed that the Duffields Station be replaced by a full service, fully accessible station at Ranson, West Virginia.

2.1.5 Public Financing for Rail Projects in West Virginia

West Virginia has utilized both federal and state transportation funding programs where rail infrastructure improvements were eligible and appropriate. The following is a short summary of state and federal rail funding resources utilized in the recent past.

2.1.5.1 State Sponsored Rail Funding

State sponsored rail investment in West Virginia is provided through WVDOT and its State Rail and Port Authorities.

The SRA is provided funding through the state budget process to operate and maintain railroads owned by the state. The SRA is also empowered to issue bonds to implement projects if the amount of bonding is capable of being serviced by revenues received by such projects. The SRA currently does not have access to a discretionary grant or loan program that could be utilized to address safety-related or strategic rail investments in the state. However, the SRA has received state budget appropriations totaling approximately \$7.7 million over the past 5 years to implement improvements on the state-owned SBVR and WVCR, as well as for improvements at the Duffields MARC station.

The Public Port Authority is empowered to enter into agreements with the SRA for the preservation, operation, and use of rail lines and to purchase railroad tracks being abandoned by any common carrier and to financially assist the SRA in making such purchases.

The Public Port Authority also oversees the Special Railroad and Intermodal Enhancement Fund. These funds are to be used only for the purpose of construction, reconstruction, maintenance, and repair of railways; the construction of railway-related structures; and payment of principal and interest on state bonds issued for railway purposes. This fund is currently being used for the development of the Heartland Intermodal Facility at Prichard.

WVDOT provides required matching funds for federal financial assistance programs such as grade crossing improvement and separation projects.

The West Virginia Economic Development Authority also provides financial assistance for infrastructure improvements to support economic development projects. The Economic Development Authority provided a \$325,000 grant to the SRA to provide rail access to the Petersburg Industrial Park on the SBVR in 2009.

2.1.5.2 Federal Rail-Related Programs and Funding

In 2008, PRIIA and related appropriation bills provided funds directly to states for intercity rail passenger investments. In early 2009, the American Recovery and Reinvestment Act (ARRA) also provided flexible transportation funding to states for rail capital projects as well as funding for passenger rail development.

The following describes these programs and federal budget appropriations specifically available for rail assistance as well as programs that may be eligible for selected rail-related applications.

PRIIA Rail Capital Assistance Programs

This legislation authorized more than \$13 billion between 2009 and 2013 for Amtrak and promoted the development of new and improved intercity rail passenger services. The act also established an intercity passenger rail capital grant program for states. States were required to identify passenger rail corridor improvement projects in their state rail plans.

PRIIA established three new competitive grant programs for funding passenger rail improvements. Each of the three programs provided 80 percent federal funding with a required 20 percent non-federal match.

Intercity Passenger Rail Service Corridor Capital Assistance Program

This program was intended to create the framework for a new intercity passenger rail service corridor capital assistance program. The program authorized USDOT to use appropriated funds to provide grants to assist in financing the costs of facilities, infrastructure, and equipment necessary to provide or improve intercity passenger rail transportation. States or groups of states, interstate compacts, and public intercity passenger rail agencies established by states are eligible for these grants.

High-Speed Rail Corridor Development Program

PRIIA also authorized \$1.5 billion annually to establish and implement a high-speed rail corridor development program. Funding is restricted to projects intended to develop the 11 federally-designated high-speed corridors for intercity passenger rail services (not including the Northeast Corridor) that may reasonably be expected to reach speeds of at least 110 mph.

Congestion Grant Program

This PRIIA program authorized \$325 million annually for grants to states, or to Amtrak in cooperation with states, for financing the capital costs of facilities, infrastructure, and equipment for high-priority rail corridor projects necessary to reduce congestion or facilitate intercity passenger rail ridership growth.

U.S. Department of Transportation Budget Appropriations

Federal funding authorized under PRIIA or other authorization programs must be appropriated in annual budget or other legislative bills.

USDOT's last budget appropriation for the high-speed rail state grant program was for Federal Fiscal Year (FFY) 2010 (October 1, 2009 through September 30, 2010) and provided \$2.5 billion of funds authorized under PRIIA. Funds were provided to states, on a competitive basis, up to 50 percent of the capital cost of improving intercity rail passenger service.

Previous USDOT appropriation acts also provided funding that could be utilized for intercity rail passenger improvements under similar terms. The FFY 2008 USDOT Appropriations Act provided \$30 million to states. The FFY 2009 USDOT Appropriations Act provided \$90 million to states. Up to 10 percent of the funding available under these appropriations was available for rail corridor planning grants. West Virginia received a FFY 2009 grant of \$1.0 million to determine the feasibility of high speed rail service in the state and to develop the State Rail Plan.

No appropriations for high speed rail grants were included in the FFY 2011, 2012, or 2013 budgets. No rail passenger capital improvement projects within West Virginia under the PRIIA programs described above have received federal grants under past USDOT budget appropriations.

American Recovery and Reinvestment Act

As a result of the economic recession of 2008, the federal government approved the ARRA (Public Law 111-5) in February 2009 to stimulate the economy partly through the funding of infrastructure projects that could be initiated in the short-term. Programs that could be utilized for rail-related projects under ARRA are described below.

Flexible Highway Program

This program provided states a total of \$27.5 billion of flexible highway funding for surface transportation improvements including rail improvements. Eligibility criteria included projects being "shovel ready" for early implementation.

Intercity Passenger Rail/High Speed Rail Program

This program provided \$8 billion of High-Speed Intercity Passenger Rail funding to “jump start” intercity passenger rail improvements authorized under PRIIA. The federal share of costs was 100 percent, and proposed projects were not required to be included in the State Rail Plan.

Transportation Investment Generating Economic Recovery Discretionary Grants Program (TIGER)

The TIGER grant program allowed local and state governments to apply for \$1.5 billion of discretionary funding. Grants were eligible for capital investment in rail, highway, bridge, public transportation, and port projects and awarded by USDOT on a competitive basis. USDOT has held five rounds of TIGER applications since 2010. The 2013 TIGER grant program was funded through the Full-Year Continuing Appropriations Act of 2013.

A total of four West Virginia rail-related projects have received TIGER grants as follows:

- A \$98 million TIGER I grant was awarded to the states of Ohio, Pennsylvania, West Virginia, and Maryland in 2009 for a package of rail infrastructure and intermodal terminal projects that will enhance transportation service options along three major freight rail corridors owned and operated by CSX (National Gateway Corridor) through the Midwest and along the Atlantic Coast;
- A \$17.5 million TIGER I grant was sponsored and awarded to Kentucky in 2009 to improve the infrastructure on five lines of the R.J. Corman Group's short line railroads operating in Kentucky, Tennessee, and West Virginia;
- A \$5 million TIGER III grant was sponsored and granted to the city of Ranson, for a package of street and transit improvements; a new Charles Town Commuter Center is expected to boost ridership on both MARC and Amtrak services; and
- A \$12 million TIGER III grant was awarded to the West Virginia Public Port Authority in 2011 to help fund construction of the intermodal terminal along the NS Heartland Corridor near Prichard.

Federal Surface Transportation Rail-Related Programs

Federal transportation funding to states is periodically authorized through STB acts. Transportation funding is provided to states through apportionment by formula or discretionary funding for various programs.

The Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users, commonly referred to as SAFETEA-LU, was passed in 2005 and served as the transportation authorization bill for the nation's Surface Transportation Program (STP) until July 2012.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was passed into law in July 2012 and authorizes funding from July through September 2012 and for FFY 2013 and 2014 (October 1, 2012 through September 30, 2014). This act consolidated a number of the formerly separate highway-related programs included in SAFETEA-LU. It also establishes a National Freight Policy and requires the identification of a National Freight Network. Both SAFETEA-LU and MAP-21, however, had similar programs relative to rail-related funding.

The following is a brief description of rail-eligible programs available through these STB acts and West Virginia's participation where applicable.

Highway Safety Improvement Program

This program, the HSIP, is a core federal-aid funding program with the goal of achieving a significant reduction in traffic fatalities and serious injuries on all public roads. Funding from this program is set aside for West Virginia's Highway-Railway Safety Program with the purpose of reducing the number of fatalities and serious injuries at public highway-railway crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. The federal funding share for this program is 90 percent. West Virginia receives approximately \$3 million annually through this program.

Rail Line Relocation and Improvement Capital Grant Program

This program provides financial assistance for local rail line and improvement projects. Any construction project that improves the route or structure of a rail line and 1) involves a lateral or vertical relocation of any portion of the rail line, or 2) is carried out for the purpose of mitigating the adverse effects of rail traffic on safety, motor vehicle traffic flow, community quality of life, or economic development, is eligible. The federal share for these funds is 90 percent, not to exceed \$20 million. No additional funding authorizations for this program were included in MAP-21, and FRA is not currently accepting new applications. West Virginia has not received grants under this program.

Rail Rehabilitation and Improvement Financing (RRIF)

This program provides loans and credit assistance to both public and private sponsors of rail and intermodal projects. Eligible projects include acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities. Direct loans can fund up to 100 percent of a capital project with repayment terms of up to 25 years and interest rates equal to the cost of borrowing to the government. A total of \$35 billion was authorized under SAFETEA-LU for this program, of which \$7 billion was directed to short line and regional railroads. No additional authorizations were included in MAP-21, however.

Eligible borrowers include railroads, state and local governments, government sponsored authorities, corporations, and joint ventures that include at least one railroad. West Virginia railroads and other public agencies are eligible to apply for loans under this program.

Federal Surface Transportation Programs with Selected Rail Applications

In addition to the above programs, a number of additional programs, although primarily intended for highway use, are eligible for rail projects at the discretion of states and with the approval of the administering federal agency. These programs include:

National Highway System Program

This program can be utilized to improve designated highway intermodal connectors between the National Highway System (NHS) and intermodal facilities, such as truck-rail transfer facilities. The federal share of NHS funding is 80 percent.

Congestion Mitigation and Air Quality Improvement Program

This program funds transportation projects and programs that improve air quality by reducing transportation-related emissions in non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter. Examples of Congestion Mitigation and Air Quality (CMAQ)-funded rail projects include the construction of intermodal facilities, rail track rehabilitation, diesel engine retrofits and idle-reduction projects in rail yards, and new rail sidings.

CMAQ funds are disbursed to and within a state based on levels of pollution within an area, with the state or the region utilizing the funds to implement projects that reduce congestion or improve air quality. Projects must be included in MPO transportation plans and TIPs or the current state transportation improvement program (STIP) in areas without an MPO. The federal matching share for these funds is 80 percent.

Surface Transportation Program

The STP is a general grant program available for improvements on any Federal-Aid highway, bridge, or transit capital project. Eligible rail improvements include lengthening or increasing vertical clearance of bridges, crossing eliminations, and improving intermodal connectors. Project funding decisions are made by WVDOT with approval from the Federal Highway Administration (FHWA). The federal share for these funds is 80 percent.

Projects of National and Regional Significance

This program can fund highway, bridge, transit, and freight rail projects. Funding (\$500 million) was authorized for only 2013, subject to the annual appropriations process. No funding was authorized for 2014. This program is focused on funding very large projects, such as multi-state corridor projects, which would likely not be undertaken with individual state formula funds.

Transportation Infrastructure Finance and Innovation Act (TIFIA)

This program provides credit assistance to large-scale projects (more than \$50 million, or one-third of a state's annual federal-aid funds) of regional or national significance that might otherwise be delayed or not constructed because of risk, complexity, or cost. A wide variety of intermodal and rail infrastructure projects are eligible and can include equipment, facilities, track, bridges, yards, buildings, and shops. Eligible recipients for TIFIA funds include state and local governments, transit agencies, railroad companies, special authorities or districts, and private entities. The interest rate for TIFIA loans is the U.S. Treasury rate, and the debt must be repaid within 35 years.

Transportation Alternatives Program

This program, which replaced the SAFETEA-LU Transportation Enhancement Program, offers funding opportunities to expand transportation choices and enhance the transportation experience through twelve eligible activities related to surface transportation. Rail related eligible activities include the rehabilitation of historic transportation buildings or facilities, the preservation of abandoned rail corridors, and the establishment of transportation museums. The federal share of project costs is 80 percent.

Other Federal Programs Available for Rail-Related Funding

In addition to transportation programs available under the Transportation Authorization bill, other programs are administered by federal agencies for which rail-related capital projects are eligible. These programs include:

U.S. Department of Commerce Economic Development Administration

The U.S. Department of Commerce provides Economic Development Administration (EDA) grants for projects in economically distressed industrial sites that promote job creation or retention. Eligible projects must be located within EDA-designated redevelopment areas or economic development centers. Eligible rail projects include railroad spurs and sidings. EDA also provides disaster recovery grants. Grant assistance is available for up to 50 percent of the project, although EDA could provide up to 80 percent for projects in severely depressed areas.

U.S. Department of Agriculture Programs

The U.S. Department of Agriculture (USDA) Community Facility Program and Rural Development Program provide grant or loan funding mechanisms to fund construction, enlargement, extension, or improvement of community facilities providing essential services in rural areas and towns. Grant assistance is available for up to 75 percent of the project cost. Eligible rail-related community facilities include transportation infrastructure for industrial parks and municipal docks.

Environmental Protection Agency

The Environmental Protection Agency (EPA) provides funding for environmental remediation at brownfields and other industrial sites where contaminants or other pollutants may be present. EPA funds were received for the Elkins rail yard redevelopment project.

Railroad Track Maintenance Credit Program

This program was authorized within the Internal Revenue Code in 2005 to provide tax credits to qualified entities for an amount equal to 50 percent of qualified railroad maintenance expenditures on railroad tracks owned or leased by Class II or Class III railroads. The maximum credit amount allowed is \$3,500 per mile of track. It is currently scheduled to expire at the end of 2013. A number of short line railroads operating in West Virginia have taken advantage of this program.

2.1.6 Rail Safety and Security in West Virginia

Rail safety has been and continues to be a priority for railroads and state departments of transportation. Rail safety has an impact not only on the general public but also on the efficiency of railroad operations. Although major railroads have long had their own police or security forces, the concern over potential terrorism to disrupt transportation in general or to harm large numbers of citizens has brought an increased focus to the security of the rail network and rail operations.

2.1.6.1 Rail Safety Programs in West Virginia

Rail safety requirements are provided through a combination of federal and state laws. Most safety-related rules and regulations fall under the jurisdiction of the FRA, as outlined in the Rail Safety Act of 1970 and other legislation, such as the most recent Rail Safety Improvement Act of 2008. FRA's rail safety regulations can generally be found in Title 49 Code of Federal Regulations Parts 200-299.

West Virginia's Public Service Commission has one of the largest state rail inspection programs in the U.S. Its rail safety inspection program, established in 1975, is comprised of 10 FRA certified inspectors for all FRA inspection disciplines. West Virginia has two track inspectors, three motive power and equipment inspectors, two operating practices inspectors, two signal and train control inspectors, and one hazardous material inspector. These inspectors coordinate their inspections with five FRA inspectors which cover West Virginia and portions of Virginia and Ohio.

In addition to inspections, inspectors also respond to complaints and conduct rail accident investigations. West Virginia signal and train control inspectors also conduct final inspections for grade crossing improvement projects and administer West Virginia's Operation Lifesaver program.

West Virginia's highway-rail grade crossing improvement program is administered by the Department of Transportation's Railroad and Utilities unit which is located in the Department's Engineering Division. This unit programs all grade crossing improvement projects and coordinates with the railroads on any other issue where both rail and state highway infrastructure are involved.

2.1.6.2 West Virginia Rail Accident Statistics

This section addresses rail safety in West Virginia over the past decade. It reviews the rail accident and incident trends and provides details as to the type of rail accidents, those affected, and causes.

Table 2-14 shows statistics for the total number of rail accidents and incidents in West Virginia over the past decade. These totals include Train Accidents, Highway/Rail Incidents, and Other Accidents/Incidents. Each accident/incident type is defined and discussed below:

Table 2-14: Total Rail Accidents and Incidents in West Virginia (2003-2012)

Total Rail Accidents/ Incidents	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Events	136	130	145	116	115	98	122	106	118	106
Deaths	10	9	6	9	7	6	9	5	9	7
Injuries	95	75	71	60	62	66	89	60	69	70

Source: FRA Office of Safety Analysis

The trend in total rail accidents and incidents in the state has generally been downward over the past decade. The first half of the decade saw an average of 128 incidents, eight fatalities, and 73 injuries, while the most recent 5-year period saw averages of 110 total incidents, seven fatalities, and 71 injuries.

Rail accidents and incidents occurring over the 10-year period were distributed among a number of railroads operating within the state, with almost 95 percent occurring on Class I railroads.

Note that total rail accidents and incidents include statistics at both public and private highway/rail crossings. Crossing incident statistics provided below will address only incidents at public crossings, and therefore total incidents, fatalities, and injuries for the individual charts below will not correspond to the totals above.

Train Accidents in West Virginia

Train accidents include train derailments, collisions, and other events involving on-track rail equipment that result in fatalities, injuries, or monetary damage above a threshold set by FRA.

Train accident statistics in the state over the past decade are provided in **Table 2-15**.

Table 2-15: Total Train Accidents in West Virginia (2003-2012)

Train Accidents	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Accidents	18	27	42	30	24	24	17	30	29	13
Deaths	0	0	0	0	0	0	0	0	0	0
Injuries	2	0	3	1	0	0	3	3	0	0

Source: FRA Office of Safety Analysis

Other Rail Accidents/Incidents

Other rail accidents or incidents include events other than train accidents or crossing incidents that caused a death or injury to any person. As noted earlier, most fatalities in this category are to rail trespassers. Other events which generally lead to injuries in this category include such activities as getting on or off equipment, doing maintenance work, throwing switches, setting handbrakes, falling, etc. Rail passenger-related casualties can include getting on or off standing trains or platforms. Statistics for this category of rail incidents are shown in **Table 2-16** below.

Table 2-16: Other Rail Incidents (2003-2012)

Other Accidents/ Incidents	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Incidents	79	72	68	54	65	58	82	53	65	67
Deaths	7	6	5	5	7	4	6	2	6	7
Injuries	72	67	64	50	58	57	78	52	59	61

Source: FRA Office of Safety Analysis

In general, rail-related fatalities in the state, excluding highway/rail incidents, result primarily from trespassers on railroad property who are struck by trains or other equipment. Trespass-related fatalities accounted for 61 of the total 64 fatalities over the decade. Persons injured as a result of rail accidents or incidents are primarily railroad employees, contractors, or volunteers performing rail-related activities on railroad property.

2.1.6.3 Highway-Rail At-Grade Crossing Safety in West Virginia

A total of 3,390 at-grade rail crossings exist in West Virginia. Of these, 1,422 at-grade crossings are public crossings, with the remainder considered private crossings. Public at-grade crossings have various levels of grade crossing warning devices. **Table 2-17** shows the type of warning equipment and the number of crossings equipped with each. The warning devices are shown in a decreasing order of warning effectiveness.

Table 2-17: Types of Warning Devices at West Virginia Public At-Grade Crossings

	Gates	Flashing Lights	Bells	Special Warning	Stop Signs	Cross Bucks	None
No. of Crossings	231	455	8	9	38	599	82

Source: FRA Office of Safety Analysis

These figures show that 49 percent of at-grade crossings in the state have what are considered active warning devices such as gates, flashing lights, bells, or special warning arrangements (e.g. flagmen), while 51 percent have passive or no warning systems.

At-Grade Public Crossing Incidents in West Virginia

Table 2-18 shows the number of highway-rail grade crossing incidents, fatalities, and injuries which have occurred at public grade crossings over the past decade. As grade crossing incidents may include property damage, only events and multiple casualties may occur during one incident; therefore, the number of incidents may not correlate with the number of fatalities and injuries.

Table 2-18: Public Highway-Rail Crossing Incidents in West Virginia (2003-2012)

Highway-Rail Incidents	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Incidents	30	19	24	18	13	9	15	15	17	19
Deaths	3	3	1	4	0	2	3	3	3	0
Injuries	21	8	4	9	4	9	8	5	10	9

Source: FRA Office of Safety Analysis

These figures show a decreasing number of average total incidents and injuries comparing the initial and latter 5-year segments, while the average number of fatalities is similar for both periods.

Further investigation showed that almost 80 percent of highway/rail incidents at public crossings in the state over the past decade occurred at crossings with active warning devices. Although it could be argued that these crossings are likely more heavily used, it can equally be argued that driver error or disregard for active warning devices at crossings is a major contributor to incidents and casualties at crossing locations.

2.1.6.4 Hazardous Materials

Hazardous material regulations apply to all interstate, intrastate, and foreign carriers by rail, air, motor vehicle, and vessel. The West Virginia Public Service Commission enforces the hazardous materials regulations in West Virginia, in cooperation with the FRA.

Hazardous Materials Safety Programs are generally composed of four main components:

- Inspection of railroad and shipping facilities to ensure compliance with Part 49 Code of Federal Regulations (CFR); USDOT received the authority to regulate the transportation of hazardous materials through the Hazardous Materials Transportation Act of 1975;
- The provision of technical assistance, education, and outreach activities to shippers/consignees, rail carriers, emergency responders, and the general public;
- The inspection and transport of nuclear materials; and
- Inspection of employee training records, security procedures, and quality assurance programs to ensure safety standards are met.

Rail Incidents Involving Hazardous Materials in West Virginia

Table 2-19 below shows the history of incidents involving rail cars carrying hazardous material in West Virginia over the past decade.

Table 2-19: Rail Incidents Involving Hazardous Materials in West Virginia (2003-2012)

Rail Hazmat Incidents	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cars Carrying Hazmat	13	57	16	12	76	1	2	102	7	30
Hazmat Cars Damaged or Derailed	0	5	2	3	24	1	0	4	1	13
Cars Releasing Hazmat	0	0	0	0	0	0	0	0	0	1

Source: FRA Office of Safety Analysis

Only one accident resulting in the release of hazardous materials was reported in the past decade. This occurred on September 25, 2012 in Proctor when a CSXT train was derailed on the Ohio River Subdivision due to a broken rail resulting in 13 hazmat cars being derailed and one car releasing sodium hydroxide solid. No fatalities or injuries resulted from the accident.

2.1.6.5 Railroad Bridge Safety

FRA has jurisdiction over rail bridge safety in the U.S. Railroads have been required to inspect and keep records of rail bridge inspections since the 1980s. FRA has updated and amended its bridge safety standards and bridge management programs periodically, the latest update being in July, 2010. As part of the State Rail Plan process, it was confirmed that all freight railroads operating in West Virginia were in compliance with FRA bridge safety standards.

2.1.6.6 Positive Train Control

Positive train control (PTC) refers to technologies designed to automatically stop or slow a train before certain accidents occur. PTC is designed to prevent collisions between trains and derailments caused by excessive speed, trains operating beyond their limits of authority, incursions by trains on tracks under repair, and trains moving over switches left in the wrong position. PTC systems are designed to determine the location and speed of trains, warn train operators of potential problems, and take action if operators do not respond to a warning.

The Rail Safety Improvement Act of 2008 required railroads to place PTC systems in service by December 31, 2015 under the following circumstances:

- Rail lines over which regularly-scheduled commuter or intercity passenger trains operate; and
- On all Class I railroad main lines with over 5 million gross ton-miles per mile annually over which any amount of toxic/poison-by-inhalation hazardous materials is handled.

The mandate for PTC excludes all Class II and III railroads regardless of tonnage or number of toxic/poison cars handled if no passenger trains travel over the lines. Under these conditions, all rail operators over the Amtrak *Cardinal* and *Capitol Limited* corridors would need to be equipped with PTC for operation over the lines.

2.1.6.7 Rail Security

The focus of rail security has changed significantly over the past decade. In response to potential terrorist threats to the transportation system, new federal and state agencies have been established to oversee and provide assistance to ensure the security of transportation modes. The following addresses specific rail security issues and West Virginia's involvement in rail security procedures.

Federal and State Roles in Rail Security

The primary agencies responsible for security related to transportation modes in West Virginia are the U.S. Department of Homeland Security and the West Virginia Division of Homeland Security and Emergency Management. These agencies, coordinating with federal and state transportation agencies, have addressed transportation security largely through identifying critical infrastructure assets, developing protection strategies for these assets, and developing emergency management plans.

The U.S. Department of Homeland Security addresses rail system security through the following means:

- Training and deploying manpower and assets for high risk areas;
- Developing and testing new security technologies;
- Performing security assessments of systems across the country; and
- Providing funding to state and local partners.

The Association of American Railroads (AAR), working with the U.S. Department of Homeland Security and other federal agencies, has organized the Rail Security Task Force. This task force developed a comprehensive risk analysis and security plan for the rail system that includes:

- A database of critical railroad assets;
- Assessments of railroad vulnerabilities;
- Analysis of the terrorism threat; and
- Calculation of risks and identification of countermeasures.

The railroad sector maintains communications with the U.S. Department of Defense, the U.S. Department of Homeland Security, the USDOT, the Federal Bureau of Investigation, and state and local law enforcement agencies on all aspects of rail security.

The West Virginia Division of Homeland Security and Emergency Management manages disaster preparedness, mitigation, and response and recovery efforts throughout the state by coordinating with all responsible government agencies, including WVDOT.

2.1.7 Rail Transportation Impacts in West Virginia

Freight and passenger rail not only play an important role in the provision of transportation choices but also have a large impact on the competitive position of West Virginia businesses and the quality of life of the state's citizens. This section describes and attempts to quantify these impacts in terms of their benefits or challenges to the West Virginia's economy, environment, energy consumption, land use, and communities.

2.1.7.1 Economic Impacts

Transportation-related economic benefits are measured in terms of four economic metrics:

- Jobs/Employment – measured in terms of full-time equivalent job years;
- Income – the wage/salary earnings paid to the associated jobs;
- Value-added – the net additional economic activity or Gross State Product (GSP) which includes employee and proprietor income, other income types, taxes, etc. required in the production of final goods and services; and
- Output – the total sales value associated with all levels of economic activity.

Rail-related economic benefits can be further categorized into transport-service activities, which are associated with the provision of rail operations, and trade-user benefits, which are the economic impacts associated with shippers/receivers using the rail network for the movement of goods. These activities consist of three types of economic impact:

- Direct benefits – the impact from the provision of freight rail transport as well as from the firms/industries that use rail to ship and receive goods;
- Indirect benefits – the impacts associated with the suppliers that provide intermediate goods and services to the directly impacted industries; and
- Induced benefits – the impacts associated with the re-spending of earned income from both the direct and indirect industries in the state.

Freight rail activity in West Virginia impacts an estimated 26,690 *total* jobs across the state. A vast majority of these *total* employment impacts arise from rail users who move goods via the rail system, with the balance attributable to rail transport services. In terms of jobs, *trade-user* related employment impacts a total of 20,100 jobs (75 percent of *total* jobs), versus 6,580 (25 percent) for rail transport-service related jobs. These summary rail-service and rail-user impacts include the *direct* impact of goods and services provided, the *indirect* impact associated with suppliers, and the *induced* impacts associated with income re-spending.

The following details the composition of the employment impact estimates, as well as the other impact *measures* (e.g., output, value-added, and income). The total impacts are summarized for both rail *activities* by impact *measure* and *type*.

The *direct* impact of West Virginia rail operations totals 2,590 jobs. The *indirect* and *induced* (i.e., the multiplier) effect associated with rail operations yield an additional 3,990 jobs (2,140 and 1,850, respectively) throughout the state. Combined, an estimated 6,580 people owe their jobs, directly or tangentially, to the physical movement of freight by rail. The *direct* output impacts related to rail services total \$1.0 billion, of which \$232 million is paid in income to the 2,590 people *directly* employed in the rail industry, as shown in **Table 2-20**. These impacts typically occur at rail yards, with the vast majority of direct jobs resulting from freight service.

Table 2-20: Rail Transport-Service Impacts

Impact Type	Output ¹	Value Added ^{1,2}	Labor Income ¹	Employment ³
Direct	\$1,008	\$394	\$232	2,590
Indirect	\$289	\$141	\$99	2,140
Induced	\$200	\$118	\$64	1,850
Total	\$1,497	\$653	\$395	6,580

Source: CDM Smith

¹ Million of 2011 dollars

² Comparable with GSP

³ In FTE job-years

The *indirect* output impacts associated with the supply of products and services to rail transport providers total \$289 million, of which \$99 million is paid in income to 2,140 *indirect jobs*. The re-spending of *direct* income (\$232 million) and *indirect* income (\$99 million) generates an additional \$200 million in *induced* output impacts, of which \$64 million is paid to an additional 1,850 jobs. The 6,580 jobs related directly or tangentially (indirect and induced) tied to the provision of rail transport in West Virginia result in total earnings of \$395 million. Total output related to rail transport services totals almost \$1.5 billion.

In addition to the rail-operation (transport-service) impacts detailed above, many consignees and shippers in the state heavily rely on the rail service to receive and/or ship freight. In doing so, they generate significant impacts as well. While these firms/industries are not entirely dependent on the rail mode for shipping freight, the use of other modes would likely entail higher transport costs (due to longer transport distances, price, logistics, etc.) and could increase overall demand (and resulting handling costs) for all users of other modes (both the diverted rail users as well as current users). The long-term result would be a migration of industry away from West Virginia to other locations with relatively better rail accessibility and better modal options/mix.

The *direct* output of trade-related rail users in West Virginia totals \$3.4 billion, of which \$840 million is paid in the form of income to 9,120 *direct jobs*. Indirect impacts associated with suppliers account for another \$1.0 billion in annual output, of which \$268 million is paid in income to 4,850 jobs. The re-spending of direct and indirect income (\$1.1 billion) generates additional *induced* impacts of \$0.7 billion in output, of which \$210 million is paid in income to 6,130 jobs.

As shown in **Table 2-21**, a *total* of 20,100 jobs in West Virginia can be traced back to the firms that ship and/or receive freight via rail in West Virginia. Of these *total jobs*, the vast majority (92 percent, 18,560 jobs) are attributable to freight originating in West Virginia (including intrastate movements) and 8 percent (1,540 jobs) are attributable to inbound freight terminating in West Virginia.

Table 2-21: Rail Trade-User Impacts

Measure and Type	Outbound/ Intrastate	Inbound	Trade-User Total
Output¹			
Direct	\$3,128	\$273	\$3,401
Indirect	\$922	\$82	\$1,004
Induced	\$622	\$41	\$663
Total	\$4,672	\$396	\$5,068
Value Added^{1,2}			
Direct	\$1,662	\$94	\$1,756
Indirect	\$428	\$34	\$462
Induced	\$368	\$24	\$392
Total	\$2,458	\$154	\$2,612
Labor Income¹			
Direct	\$790	\$50	\$840
Indirect	\$248	\$20	\$268
Induced	\$197	\$13	\$210
Total	\$1,236	\$83	\$1,319
Employment³			
Direct	8,358	762	9,120
Indirect	4,454	396	4,850
Induced	5,750	380	6,130
Total	18,561	1,539	20,100

Source: CDM Smith

¹ Millions of 2011 dollars

² Comparable with GSP

³ In FTE job-years

The 26,690 total jobs directly or tangentially affected by rail represent 3.0 percent of the 900,600 jobs statewide (in 2011), while the \$1.7 billion earned by these employees represents 4.2 percent of West Virginia's total wage and salary income (\$41.3 billion in 2011). The combined value-added impact, \$3.3 billion, associated with the rail operations and rail users represents 4.9 percent of GSP (\$66.4 billion in 2011).

Additionally, since the globalization of trade and manufacturing increasingly requires dependable and efficient access to transport facilities, rail transport provides cost and/or logistical advantages to West Virginia firms that enable the state to compete efficiently in the global market place.

2.1.7.2 Environmental Impacts

Rail transportation impacts the environment both positively and negatively. Diesel locomotives have impacts on air and noise quality and derailments can result in spillage of environmentally damaging products. These impacts, however, should be considered in terms of the rate by which remediation measures are leading to the reduction of impacts.

The AAR, based on an independent study for the FRA, states that on average railroads are four times more fuel efficient than trucks on a ton-miles transported basis. As greenhouse gas emissions are directly related to fuel consumption, every ton-mile of freight moved by rail instead of truck reduces greenhouse gas emissions by 75 percent.

Through the use of greener and cleaner technologies and more efficient operating practices, freight railroads have consumed 3.7 billion fewer gallons of fuel and emitted 41 million fewer tons of carbon dioxide than they would have if their fuel efficiency had remained constant since 1980.

EPA standards for newly manufactured and remanufactured railroad locomotives and locomotive engines, which include idle reduction requirements and adopt provisions to encourage a new generation of clean switcher locomotives, are designed to significantly reduce emissions from all types of line haul, switcher, and passenger rail diesel locomotives.

2.1.7.3 Energy Impacts

In 2011, U.S. freight railroads moved a ton of freight an average of 469 miles per gallon of fuel, up from 235 miles in 1980. This is an average improvement of about 1.8 percent per year. This rate of improvement compares favorably to improvement in fuel efficiency for trucking, which in an analysis conducted for FRA, averaged between 0.76 percent and 1.0 percent. The rail modes fuel efficiency superiority over other surface transportation modes is primarily based on the fact that it can move long and heavy loads over steel rails which result in much lower friction, and the resulting loss of energy, than trucks' rubber tires on pavement. Also contributing to their efficiency is that trains normally run at steady-state speeds, with limited inefficiency due to acceleration, and low driven wheel traction loading. These efficiency factors are especially pertinent to West Virginia with its heavy coal movements.

Passenger rail is also more energy efficient than other modes of travel. Estimates by the U.S. Department of Energy show an energy consumption of 2,435 Btu per passenger-mile for intercity passenger rail and 2,812 Btu per passenger-mile for commuter rail compared to 2,901 Btu per passenger-mile for air travel and 3,528 Btu per passenger-mile for automobile travel.

2.1.7.4 Land Use Impacts

Transportation and land use are indisputably linked. Land use patterns can support or encourage the use of one type of mode while transportation systems can support and encourage the development of a certain type of land use. Enhancements to the rail network will drive land use decisions that support the availability of this mode and encourage appropriate development around station locations.

A major issue is the compatibility of different land uses. Land use issues associated with freight rail often concern the compatibility of freight activities with surrounding land uses. The proximity of residential or commercial land uses to rail facilities presents environmental concerns, such as noise and vibration, especially near residential areas. As rail lines and facilities are generally located around industrial areas, zoning regulations could arise as an issue. The coordination of both land use planning and transportation planning is necessary to providing an efficient and effective coordinated system. Residents living in the proximity of rail lines or rail yard may be exposed to noise and

air concerns. Also, high volume rail operations in urban areas can create congestion and safety concerns at grade crossings, separate neighborhoods, and use property for rail operations that could be utilized for more valuable development purposes. Land use impacts, however, must be balanced with the rail industry's ability to meet increasing freight and passenger demand, and the related benefits associated with the economy, the environment, and energy.

2.1.7.5 Safety Impacts

The rail mode is also one of the safest transportation modes. Based on statistics published by the FRA and FHWA, rail operations nationally have lower accident rates and safety costs compared to truck operations for moving the same amount of goods. Accident costs per ton-mile of freight carried shows rail having a \$0.007 advantage (\$0.004 vs. \$0.011), almost three times that of truck accident costs. Rail passenger travel is also safer with the fatality rate for automobile of 0.55 deaths per 100 million passenger miles compared to 0.13 for passenger rail in 2011, according to the National Safety Council.

Comparisons of fatalities and injuries to ton-miles indicate an even greater external cost savings benefit associated with rail and water transport versus that of truck. Average data between 2003 and 2007 suggest the average fatalities of rail transport per billion ton-mile of freight transport (0.39) to be 15 percent that of truck transport (2.54), as shown in **Table 2-22**. Even more dramatic, the 3.32 injuries per billion ton-miles of freight train transport are only 6 percent that of truck (56.05).

Table 2-22: Accidents per Billion Ton-Miles, by Mode

	Trucks	Trains	Waterborne
Fatalities	5,069	683	7
Injuries	111,800	5,747	26
Ton-Miles (Billion)	1,997	1,739	587
Fatalities per Ton-Miles (Billion)	2.54	0.39	0.01
Injuries per Ton-Miles (Billion)	56.05	3.32	0.05

Source: Surface Freight Transportation; A Comparison of the Costs of Road, Rail, and Waterways Freight Shipments That Are Not Passed on to Consumers; GAO, January 2011; <http://www.gao.gov/new.items/d11134.pdf> Note, figures represent averages between 2003-2007

2.1.7.6 Community Impacts

Local community livability can be thought of as a combination of various attributes which define how attractive a given place is to live. Attributes associated with livability can include clean air and water, safe streets, affordable housing, quality schools, open space, uncongested roads, low taxes, etc. The transportation system's ability to efficiently and safely move people and goods also plays a role in how people view and rate livability and sustainability in an area.

Although, as noted previously, rail is associated with air and noise issues that may affect a community, it does offer potential benefits to communities and potential remedies to some of these issues. Rail passenger routes, and most specifically the areas in proximity to rail passenger stations, provide major opportunities for focused growth, especially in urban areas. Station areas can function as local connection points for other feeder modes and create transportation hubs for the community. Such station development areas can lead to reductions in fuel use, air pollution, and greenhouse gas emissions. Urban sprawl may also be reduced by these areas satisfying housing and

business needs in a more efficient manner. Improved rail passenger service can be a catalyst for the revitalization of older neighborhoods improving the housing stock and attracting new retail and service providers.

Freight rail also plays a prominent role in the livability and sustainability of a community. The ability to efficiently transport goods and provide access to economic centers is critical to the overall success of a region's economy. Time and cost lost due to congestion and other forms of transportation inefficiency has significant impacts on profitability and the ability to attract new business to a region.

The presence of rail freight is especially important in rural areas where mining, agriculture, and local industries rely on freight shipping. The preservation and/or revitalization of rail lines can lower shipping costs, provide pricing power for local industries, secure redundancy in the transportation network, and shield local industries from predicted increases in the cost of fossil fuels.

Railroads, together with federal and state government agencies, are also working to remediate those areas where negative impacts can occur in a community due to rail operations. As noted earlier, new generation locomotives, commonly referred to as "gensets," can be operated only when needed thus avoiding the long-standing practice of letting locomotives run continually. This reduces both noise and air quality impacts in areas surrounding rail yards. FRA has also approved the creation of quiet zones, where with significant upgrades to ungated crossings (e.g., 4-quadrant gates, approach medians, crossing closures, etc.) locomotives need not blow their horns when approaching the zone.

2.2 Demographic and Transportation Trends in West Virginia

This section describes the trends that will impact the need for rail in West Virginia. Trends which impact both passenger and freight rail include demographic and economic growth factors, transportation, and the future outlook by industrial sector. These factors all contribute to the projected demand and growth for both passenger and freight, although many of these factors are difficult to incorporate into demand forecasting. The following discussion provides a historic base for rail service in West Virginia and identifies areas of West Virginia's future economy that will be transportation dependent.

Globalization and new technologies have transformed economies around the world, redefining the way businesses operate, challenging supply chains and transportation networks, and creating new customer opportunities in places that were previously inconceivable. To compete in this global marketplace, businesses must optimize every asset: workforce skills, competitively priced products, and reliable highway and freight rail transportation networks to ensure their customers receive quality goods and services when they expect them. As the needs of businesses continue to evolve and the importance of trade expands nationally and internationally, West Virginia companies are more dependent than ever on integrated, agile, and efficient multimodal transportation networks to sustain and enhance their competitive position in the marketplace.

2.2.1 West Virginia Demographic and Economic Growth

In 2012 the population of West Virginia was 1,855,413, which ranked it 37th among U.S. states. The state's population increased only 0.1 percent over the past 2 years compared with a 1.7 percent population growth rate for the U.S. as a whole.² However, since 2000 the state's population has grown by 2.47 percent. It is projected that the state's population will increase to 2,017,790 by 2040.³

² American Community Survey, U.S. Census, 2013

³ Woods & Poole Economics Inc. 2013

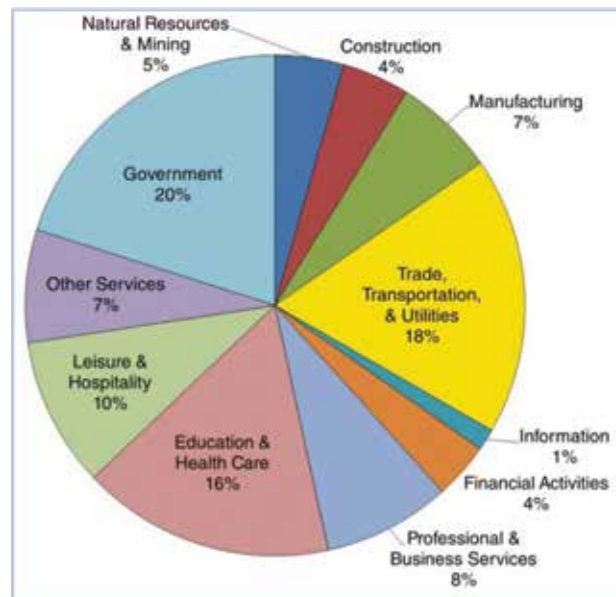
The median age in the state has continued to increase over the past 30 years rising from 29.85 years of age in 1970 to 41.35 years of age in 2010. Nearly 83 percent of the population over the age of 25 graduated from high school, with 17.6 percent receiving a bachelor's degree or higher compared with 28.2 percent nationally.

In 2010 the state's total employment was 907,300. Total employment is projected to increase to 1,237,630 by 2040. In the last 8 years, West Virginia has successfully attracted more than \$20 billion in new business investment including such companies as Amazon, Alcon Research, Armstrong World Industries, Coldwater Creek, Lockheed Martin, Macy's, and Pratt & Whitney. The growth in private sector jobs has helped the state to maintain a higher rate of employment within the state during the economic recession. In 2011 the unemployment rate was 7.3 percent, which was below the national average.

West Virginia's per capita personal income in 2011 was \$33,513, which ranks 48th among U.S. states. Per capita personal income has increased approximately 47 percent from \$22,862 in 2001, which exceeded the overall growth rate of the U. S. during that period. Real personal income (adjusted for inflation) in the state is forecast to continue growing at an average annual rate of 2.2 percent through 2017. In 2011, the median household income in the state was \$38,587, the lowest among U.S. states.

Employment in West Virginia by sector is shown in **Figure 2-10**.

Figure 2-10: West Virginia Employment by Sector (2011)



In 2011, West Virginia's GSP was \$66.8 billion, which has grown by 1.2 percent annually since 2006. The largest contributing industry to GSP growth was the mining industry, which includes coal mining and natural gas extraction. The largest industrial sectors, as measured by percentage of total GSP are Mining; Information, Finance and Real Estate; and Government. West Virginia's real GSP is expected to grow by an average of 2.2 percent annually through 2017, which is slightly below the projected annual growth rate 2.7 percent for the national gross domestic product. The natural resources and mining sector is forecast to fall an average of 1.4 percent annually over this period.

2.2.1.1 West Virginia's Industry Outlook by Sector

West Virginia's economy depends on the timely and cost-effective transport of raw materials, finished goods, and process operations and markets within the state to access domestic and international markets around the world. It is important to understand the relationship between West Virginia's economy, the businesses and industries that drive that economy, and the multimodal transportation networks needed to support the state's economic competitiveness. Different business sectors have varying dependence on freight transportation. Some sectors such as business services or biometrics do not rely heavily on freight and goods movement. However other sectors, such as energy and chemicals, are very dependent on freight transportation.

The state has identified 10 major industrial sectors that are the primary focus of the state's economic development efforts: advanced energy, aerospace, automotive, biometrics, biotech, business services, chemicals and polymers, specialty metals, tourism development, and wood products. In addition to these targeted industries, manufacturing and exports are important to the state's economic future as well. West Virginia provides unique assets and attributes that are attractive advantages to these industry sectors.

To better understand the role that freight rail plays in the West Virginia economy, it is important to understand these targeted industry sectors, current trends that are affecting them, and the importance of transportation – and more specifically the importance of freight rail – to these sectors. The analysis below describes these targeted economic drivers and trends affecting their future. Relating these existing and emerging businesses to the transportation dependence of their associated business sectors underscores the critical relationship between West Virginia's economy and freight rail transportation.

Advanced Energy

West Virginia is a leader in energy markets in the U.S. Historically the state has been one of the largest producers of coal in the country. In 2009 the coal mining industry in the state produced \$8.8 billion in industry output.⁴ The Marcellus and Utica Shale Formations may contain more than 50 trillion cubic feet of recoverable natural gas. The passage of the Marcellus Gas Manufacturing and Development Act by the state legislature could attract a number of oil producers and related industries to the state and help to promote the expansion of this sector.

The growth in employment, population, and development in West Virginia will be driven primarily by the new technologies allowing for oil extraction from shale deposits, the presence of petrochemical expertise within the state, and the proximity of these reserves to East Coast markets. At other shale formation sites, businesses have found it more cost effective to move the oil and gas production from the fields to markets by rail car rather than by pipeline. Recent data indicates that for every new drill operation, 30 to 50 rail car loads of materials and equipment are required.

Aerospace

Based upon several studies conducted by industry analysts, the annual increase in demand for large commercial airplanes internationally over the next 20 years will exceed 34,000 planes with an estimated value in excess of \$4.5 trillion.⁵ The growth in the aerospace industry will be driven by development and production of next-generation aircraft, better fuel efficiency, and overall global economic improvements. This indicates strong potential for increased orders and production of commercial airplanes globally particularly as companies focus on "next generation" engine technology to improve fuel efficiency and new aircraft to improve the customer flying experience. Increases in

⁴ "Energy Blueprint", West Virginia Division of Energy, 2009

⁵ "Global Market Forecast 2011 – 2030", Airbus Business Case; "Current Market Outlook 2011- 2030"; Boeing Commercial; "2012 Global Aerospace and Defense Industry Outlook", Deloitte White Paper, February 2012

aviation production should translate to additional business and new high-wage jobs for the aerospace and aviation companies currently located in West Virginia.

A number of major aerospace and aviation companies are located in West Virginia including Bombardier Aerospace (West Virginia Air Center), Goodrich Corporation, Lockheed Martin Aeronautics, Pratt & Whitney Engine Services, Alliant Techsystems, and FMW Composite Systems. These companies design and manufacture propeller systems, air handlers and frequency converters, composite aircraft structures, and provide maintenance and repair services for a range of aircraft in West Virginia. Aviation and aerospace is one of the fastest growing economic sectors in West Virginia contributing to new high wage jobs. The products shipped by these companies are often heavy, oversized loads requiring special handling, and security during transport.

Automotive

From 2007 to 2011, U.S. automotive manufacturers produced an average of 8.1 million vehicles annually. In addition to the manufacturer of vehicles, there are numerous parts manufacturers, research and development centers, and professional services supporting the automotive industry employing well over 4 million people in the U.S. There is strong confidence in the economic recovery of this industry sector, both from domestic consumption and exports. The growing demand for high-tech equipment continues to drive growth in production even in the face of the current unemployment rate. Original equipment manufacturers are also optimistic in the future demand which drives suppliers. Emerging economic represent new market opportunities and Latin America with lower debt levels and increasing personal incomes will provide additional market growth over the next 20 years.

In addition to the manufacturers of vehicles, numerous parts manufacturers, research and development centers, and professional services support the automotive industry, employing well over 4 million people in the U.S. The sales of new automobiles increased significantly in 2012, growing nearly 14 percent to a post-recession high of 14.5 million in production. Replacement of aging cars, more fuel efficient vehicles, and improvements in consumer confidence have sparked forecasts for automotive sales to reach 15 million vehicles in 2013. The anticipation of increased sales is leading to record automotive production in the U.S. According to the Original Equipment Suppliers Association's (OESA) "Automotive Supplier Barometer Summary" for May 2013, suppliers are optimistic for total 2013 production in North America particularly given recent auto forecaster presentations. Production and sales volumes continue at strong levels and orders continue to strengthen for increased global auto revenues for 2013.⁶ Increased automotive production in North America will help to foster continued investment and job growth in the West Virginia automotive industry sector.

Automotive manufacturing is a significant growth sector in West Virginia. Companies including Toyota Motor Manufacturing, NGK Spark Plugs, Allevar Sogefi, Nippon Thermostat, Sanko Electronics, General Motors, and Hino Motors Ltd. have located facilities in the state drawn by lower electrical costs, the transportation network, and skilled workers. The ability to purchase key components such as steel and other raw materials from within the state or from adjacent states and the concentration of consumers in the eastern U.S. have helped the automotive sector to grow in the state. The state's automotive supplier network is within a 500-mile drive of many of the nation's major automotive manufacturers, including GM, Ford, and Chrysler in Michigan; Honda and Navistar in Ohio; Nissan and Volkswagen in Tennessee; and Daimler and BMW in the Carolinas.

Chemicals and Polymers

Chemicals are one of the largest manufacturing industries in the U.S., accounting for 15 percent of the world's total chemical production. The chemical and polymer sectors invest heavily in research and development to create new and safer products that are used in a broad range of other industries including health care, agriculture, consumer

⁶ OESA "Automotive Supplier Barometer Summary", May 2013

goods, automotive manufacturing, water treatment, and biotechnology. Chemical and polymer manufacturing is projected to continue to grow in the future at a rate of 3.5 percent annually.

West Virginia is home to four of the largest chemical firms in the world. A number of other chemical manufacturing companies have located in the Chemical Alliance Zone, an economic development organization that actively promotes the chemical industry in West Virginia. The state also supports chemical research and innovation through the Mid-Atlantic Technology, Research and Innovation (MATRIC) Center, a Center of Excellence working in chemistry, chemical products, biotechnology, and integrated software. Companies including DuPont, Bayer, PPG, Dow, and Emerald Biofuels have located facilities in West Virginia to take advantage of the state's proximity to raw materials, skilled workforce, lower utility costs, and shared infrastructure allowing companies to keep their operating costs as low as possible.

Specialty Metals

Metals are critical inputs in many durable goods manufacturing and construction, and they account for nearly 25 percent of the nation's gross domestic product. Slower global economic growth has affected the export of U.S. metals as well as domestic demand. Long term, analysts anticipate demand and pricing to move upward particularly as the BRIC nations (Brazil, Russia, India, and China) begin a 20- to 30-year growth cycle.⁷ There is growing concern about alloys and metals not mined within the U.S. Research and development of new fiber reinforced materials and other composites will play an important role in the creation of lighter stronger metals in the future.

Metals have played an important role in the West Virginia economy for many years. Companies including Constellium Rolled Products, Severstal Wheeling, ArcelorMittal USA, and Swanson Plating Company operate metals facilities in the state. More than 1,300 metalworking and machinery manufacturing companies are located in the state.

Wood Products

Production of lumber, plywood, veneers, wood containers, wood flooring wood trusses, and manufactured homes should increase as a result of the improvements in the housing construction industry.

In West Virginia, 343 wood products industries employ nearly 16,000 people. National companies including Weyerhaeuser, Armstrong Hardwood Flooring, Appalachian Log Structure, and Allegheny Wood Products have facilities in the state. West Virginia has developed a Wood Technology Center in Elkins to provide workforce training in computerized equipment and advanced wood manufacturing technologies. The state has 12 million acres of forestland, and, according to forestry management professionals, more than 75 billion board feet of timber inventory is in the state. West Virginia ranks third in the nation in term of the total percentage of forested lands within the state.

Manufacturing and Exports

Nearly 9 percent of the workforce in West Virginia is employed in manufacturing. The 2013 Global Manufacturing Competitiveness Index recently released by Deloitte and the Council on Competitiveness identified ten key drivers of global competitiveness. Six of those drivers relate directly to West Virginia's targeted industries and freight rail services:

- Cost and availability of labor and materials;
- Supplier networks;

⁷ "Long-term Metals Forecast", Defense Contract Management Agency, U.S.DOD 2013

- Talent-driven innovation;
- Physical infrastructure;
- Economic, trade, financial, and tax systems; and
- Government investments in manufacturing and innovation.

International executives who participated in this study in 2013 ranked supplier networks as the fourth most important driver of manufacturing competitiveness; in 2010, supplier networks only ranked eighth. The increase in international business operations, expanding exports, and efforts to locate new production near emerging consumer markets play a crucial role in increased manufacturing production.

West Virginia's economy is intrinsically linked to its ability to move people, materials, components, and finished goods within the state and to national and international destinations. Manufactured goods account for 56 percent of West Virginia's exports and support more than 24,000 trade-related jobs in the state.⁸ Businesses in West Virginia exported \$3.6 billion of manufactured goods, and the total value of state exports exceeded \$8 billion in 2010 in goods and services.⁹ The state's largest export markets include Canada, Japan, China, Belgium, and Netherlands. Primary exports include chemical manufacturing, primary metals, fabricated metal products, transportation equipment, plastic and rubber products, automotive, petroleum and coal, nonmetallic mineral products, and food and beverage and tobacco products. Small businesses make up 75 percent of West Virginia exporters.

Tourism Development

More than \$4.27 billion in tourism spending was generated in West Virginia according to the state's 2010 economic impact study for travel.¹⁰ Tourism spending has increased by 5.6 percent per year since 2000, and visitors who overnight in the state generated about one-third of all travel spending. Tourism spending supports more than 44,000 jobs in the state and \$988 million in annual wages. West Virginia's tourist railroads play an important role in the state's plan for tourism in the future. These trains offer a unique visitor experience both in terms of the rail travel and the destinations they access. The growing interest in adventure, historic, and eco-tourism provides new opportunities to expand the role of these railroads in the state's tourism destinations.

2.2.2 Rail Freight Demand and Growth

Total West Virginia rail freight tonnage fell 28 percent from 160.2 to 115.1 million tons between 2001 and 2010. The 18.2 million ton decline in inbound rail freight reflects a 55 percent decrease over the 10 years, while the 27.0 million ton decline in outbound freight reflects a 21 percent decrease. Historical tonnage data is shown in **Table 2-23** and charted in **Figure 2-11**.

⁸ Data from Bureau of Economic Analysis, Bureau of Labor Statistics, and USITC

⁹ U.S. Department of Commerce, International Trade Administration, Office of Trade and Industry Information, February 2013 Report, and West Virginia Department of Commerce

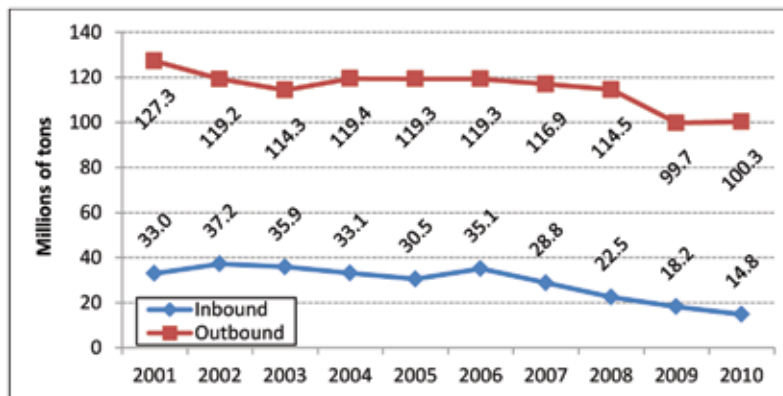
¹⁰ "Economic Impact of Travel on West Virginia: 2000-2010 Detailed State and County Estimates", West Virginia Division of Tourism

Table 2-23: Historical Rail Tonnage in West Virginia (2001-2010)

Tons	Inbound		Outbound		Total	
	Tons	Annual Change	Tons	Annual Change	Tons	Annual Change
2001	32,953,476	--	127,283,023	--	160,236,499	--
2002	37,221,424	13.0%	119,227,237	-6.3%	156,448,661	-2.4%
2003	35,906,786	-3.5%	114,274,486	-4.2%	150,181,272	-4.0%
2004	33,114,874	-7.8%	119,378,612	4.5%	152,493,486	1.5%
2005	30,527,120	-7.8%	119,317,981	-0.1%	149,845,101	-1.7%
2006	35,148,295	15.1%	119,317,981	0.0%	154,466,276	3.1%
2007	28,810,000	-18.0%	116,930,000	-2.0%	145,740,000	-5.6%
2008	22,474,865	-22.0%	114,536,370	-2.0%	137,011,235	-6.0%
2009	18,224,000	-18.9%	99,736,000	-12.9%	117,960,000	-13.9%
2010	14,798,000	-18.8%	100,262,000	0.5%	115,060,000	-2.5%
2001-2010Δ						
Tons	-18,155,476		-27,021,023		45,176,499	
Percent	-55%		-21%		-28%	

Source: BTS from AAR. Year 2007 data is not provided, number shown represents midpoint between years 2006 and 2008

Figure 2-11: Historical Rail Tonnage in West Virginia (2001-2010)



Source: BTS data compiled by the AAR; http://www.bts.gov/publications/state_transportation_statistics/
Note that intrastate movements are included in both Inbound and Outbound movements

The decline in West Virginia rail freight tonnage primarily reflects the changing market of Appalachian coal reserves relative to other U.S. regions.

Total rail freight flows are forecast to fall slightly (2.7 percent) from 117.2 million tons in 2010 to 114.0 million tons by 2040.¹¹ Notable inbound freight movement growth outpaces stagnant outbound growth and declining intrastate growth. Specifically:

¹¹ Note that the 2010 FAF tonnage volumes shown represent an interpolated estimate between the year 2007 Survey and the year 2011 FAF estimate.

- Inbound flows are forecast to grow 18.0 percent from 8.3 million tons in 2010 to 9.8 million tons in 2040, an average annual growth rate (AAGR) of 0.57 percent;
- Outbound freight movements are forecast to fall slightly (-1.5 percent total, 0.05 percent AAGR) from 96.6 million tons in 2010 to 95.1 million tons in 2040; and
- Intrastate movements are forecast to decline notably (-26.0 percent, -1.03 percent AAGR) over the next 30 years.

These inbound, outbound, and intrastate movements are summarized for years 2010 and 2040 below:

Table 2-24: Forecast Rail Freight Tonnage by Direction

Direction	2010		2040		% Change	
	Tons (mil)	Share	Tons (mil)	Share	Total	AAPG
Inbound	8,308,604	7%	9,800,321	9%	18.0%	0.57%
Outbound	96,593,337	85%	95,107,411	83%	-1.5%	-0.05%
Intrastate	12,306,922	11%	9,110,236	8%	-26.0%	-1.03%
Through	na	na	na	na	na	na
Total	117,208,862	103%	114,017,968	100%	-2.7%	-0.10%

Source: Prepared by CDM Smith based on FHWA's 2010 Freight Analysis Framework version 3 (FAF3)

These directional rail tonnage forecasts are expressed in terms of specific commodities in **Table 2-25** below.

Table 2-25: Forecast Rail Freight Tonnage by Commodity (2010-2040)

STCG	Description	Tonnage					Growth (2010-40)
		2010	2020	2030	2040	Total	AAPG
15	Coal	106,853,992	102,526,358	100,020,718	101,053,851	-5%	-0.2%
19	Coal-N.E.C.	3,182,568	3,964,581	3,541,036	3,263,565	3%	0.1%
20	Basic Chemicals	2,678,774	3,036,541	3,383,070	3,657,591	37%	1.0%
22	Fertilizers	1,265,943	1,023,105	868,054	671,769	-47%	-2.1%
24	Plastics/Rubber	1,170,960	1,200,471	1,393,745	1,643,612	40%	1.1%
32	Base Metals	512,072	647,151	673,885	610,275	19%	0.6%
11	Natural Sands	278,944	359,145	416,569	503,273	80%	2.0%
41	Waste/Scrap	256,654	314,725	466,689	615,950	140%	3.0%
27	Newsprint/Paper	219,866	245,132	291,484	352,967	61%	1.6%
13	Nonmetallic Min.	129,311	193,838	263,525	320,934	148%	3.1%
23	Chemical Prods.	126,362	168,925	252,127	377,097	198%	3.7%
	Other	533,416	681,341	810,294	947,085	78%	1.9%
Total		117,208,862	114,361,312	112,381,197	114,017,968	-3%	-0.1%

Source: FAF3 Includes Inbound, Outbound, and Intrastate. Excludes through tonnage.

These estimates suggest little change in Coal and Petroleum/Coal movements. Despite falling overall West Virginia coal production (as well as in greater Appalachia), coal railed to other domestic and especially international markets may well hold relatively constant through the year 2040. Conversely, many other product tonnage movements will increase substantially.

2.2.3 Passenger Travel Demand and Growth

As earlier noted, West Virginia travelers are heavily dependent on highway travel, due to its limited rail and air passenger services. Private vehicle travel on West Virginia's highways increased by 23 percent from 1990 to 2011, while the state's population grew by only 3 percent during the same period. The projections provided below underscore the need for significant service expansion to intercity and commuter rail services to increase rail's share of passenger travel.

The forecasts of existing Amtrak and MARC services, and potential new services, are based on available public data and conservative analysis methodologies to arrive at the future ridership estimates.

2.2.3.1 Amtrak Ridership Forecast

There are 10 intercity stations in West Virginia. The *Cardinal* stops at eight of them, as shown in **Table 2-26**. The *Capitol Limited* stops at the remaining two stations. The table shows 2012 boardings and alightings at the stations, as well as a forecast of same in 20 years. Also appearing below is a forecast assuming a change in *Cardinal* from a tri-weekly train to a daily train.

The basis for the forecasts of existing Amtrak services was twofold: (1) the 2010 population within 10- and 30-mile radii of existing stations, and (2) population growth rates predicted by the West Virginia University for each of the 10 station areas. Specifically 2010 U.S. Census block data for the areas within 10- and 30-mile radii of the stations were summed and then grown per the predicted growth rates. Small differences in the growth rates between radii for individual stations were smoothed by averaging them. The resulting blended growth rates over the 20-year period (2010 to 2030) were then applied to the 2012 ridership to produce the 2032 forecast.

With only three exceptions, populations around West Virginia rail stations are predicted to decrease over the next 20 years. Accordingly, ridership at stations, assuming no changes in the existing services, will decrease at these stations. The exceptions are Martinsburg and Harpers Ferry – which are in the vicinity of the growing Washington, DC metroplex – and White Sulphur Springs, the location of The Greenbrier resort.

The 2032 intercity ridership estimates based on the analytical approach are provided in **Table 2-26**:

Table 2-26: Intercity Ridership forecast for West Virginia

Station	Service	2012	2032	2032 with Daily Cardinal
Alderson	<i>Cardinal</i>	603	593	1,157
Charleston	<i>Cardinal</i>	9,799	9,489	18,503
Harpers Ferry	<i>Capitol Limited</i>	5,483	6,790	6,790
Hinton	<i>Cardinal</i>	8,742	8,500	16,575
Huntington	<i>Cardinal</i>	11,743	11,504	22,433
Martinsburg	<i>Capitol Limited</i>	8,641	11,811	11,811
Montgomery	<i>Cardinal</i>	580	551	1,075
Prince	<i>Cardinal</i>	3,125	3,044	5,936
Thurmond	<i>Cardinal</i>	264	252	491
White Sulphur Springs	<i>Cardinal</i>	5,985	6,102	11,899
Total Intercity Ridership		54,965	58,637	96,671

Note: 2012 ridership reported by Amtrak.

Overall, intercity rail ridership in West Virginia is forecasted to increase slightly over the 20-year period, rising 7 percent from about 55,000 per year in 2012 to about 59,000 per year in 2032.

A much greater change is forecast assuming implementation of a daily *Cardinal* train (one round trip per day). In its 2010 PRIIA Section 210 Report, *Cardinal Performance Improvement Plan*, Amtrak predicted a 95 percent increase of ridership with the implementation of daily *Cardinal* service. Accordingly, ridership at stations served by the *Cardinal* is estimated to nearly double to reflect this service improvement. Overall, West Virginia intercity ridership would swell over the 20-year period, rising 75 percent from about 55,000 per year in 2012 to about 97,000 per year 2032.

2.2.3.2 MARC Ridership Forecast

The current three MARC round trips generate 489 boardings and alightings daily at the Martinsburg, Duffields, and Harpers Ferry Stations, as shown in **Table 2-27**. Thus, each MARC train averages approximately 80 West Virginia-based riders daily.

For the purpose of forecast expanded service, one later morning eastbound trip and one early afternoon westbound trip between Washington, DC and Martinsburg were assumed (i.e., a fourth round trip) on commute weekdays. Ridership generated by the additional round trip at the three stations would be less than the average for the three existing round trips as the trains would be arriving and departing Washington, DC outside of the traditional commute period. Accordingly, each train is assumed here to generate an additional 60 riders (75 percent of the commute period average).

Table 2-27 presents the year 2032 forecasts for weekday MARC train ridership for the three West Virginia stations assuming three round trips and four round trips. The 2012 figures were assumed to grow at just under 2 percent per year, a figure representing the average annual growth of Brunswick Line ridership between 2005 and 2012.

Table 2-27: MARC Commuter Rail Ridership Forecast for West Virginia

Station	2012		2032	
	3 Round Trips	4 Round Trips	3 Round Trips	4 Round Trips
Martinsburg	208	262	305	383
Duffields	164	201	240	294
Harpers Ferry	117	146	171	214
Total	489	609	716	891

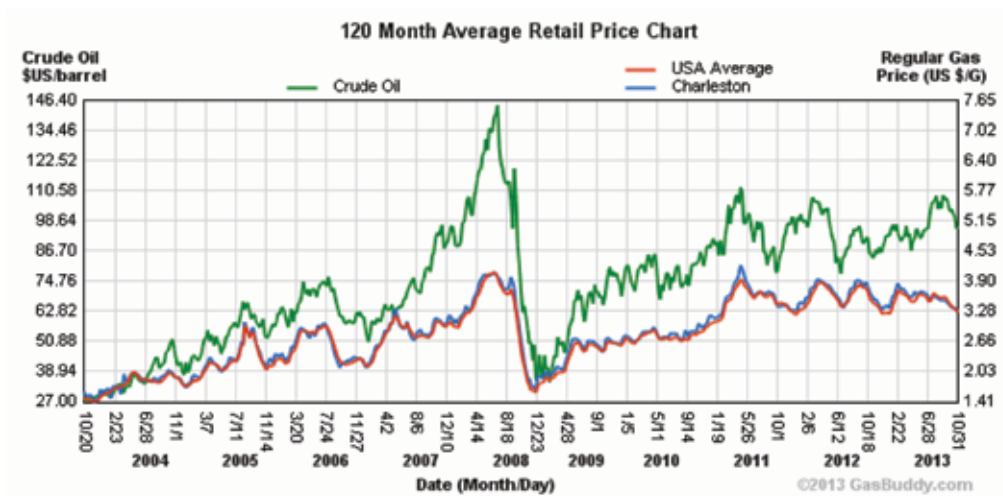
Note: Figures for 2012 were a 12-month rolling average for period ending in January 2012; rolling average was reported by MARC.

To estimate future ridership on weekend service, two round trips on Saturdays, Sundays, and holidays were assumed. Each such train in West Virginia predictably would generate fewer riders than the commute-period trains (80), and probably less than the fourth round trip trains operating outside of commuter hours (60). Accordingly, 50 riders were assumed for each Saturday, Sunday, and holiday train at West Virginia stations, for a total of about 200 riders for the two round trips. Assuming the same growth rate incorporated in **Table 2-27**, 2032 ridership at West Virginia MARC stations would total about 282 for the two round trips.

2.2.4 Fuel Cost Trends

Trends in fuel costs (crude oil and regular gasoline) over the last 10 years are shown in **Figure 2-12**. Costs for fuel rose steadily until the 2008 recession and have recovered somewhat although they have not attained their pre-recessionary highs. Average retail gas price trends, which are shown for both Charleston and the U.S., track each other closely over the period.

Figure 2-12: 10-Year Fuel Price Trends



2.2.5 Rail Congestion Trends

West Virginia's rail network was built to accommodate frequent and heavy movements of coal. Therefore, its mainline network was constructed with an above average amount of double track infrastructure and heavy weight rail. Recent improvements to a number of main lines through the state to accommodate intermodal movements have also contributed to the quality of the main line network. The recent decline in coal traffic has freed up a substantial amount of capacity to the point where concerns are more directed to having an excess of infrastructure. A more detailed discussion of the state's rail freight capacity is provided in Chapter 4.

The *2007 National Rail Freight Infrastructure Capacity and Investment Study*, sponsored by the AAR, found no primary freight corridors within West Virginia which would likely operate at or above capacity by 2035.

2.2.6 Highway and Airport Trends

In addition to the demographic and economic forecasts and their relationship on future rail freight and passenger levels, other transportation-related trends may have an impact on future reliance for any transportation mode. Factors such as high fuel prices or increased vehicle miles of travel (VMT) and congestion negatively impact highway travel and make the rail mode more attractive. The following is a general discussion of these transportation modes.

2.2.6.1 Highways

West Virginia has 55 counties and is home to approximately 3,100 cities, towns, villages, and small communities. To link them (and to provide an important part of the transport of the state's abundant natural resources) to major population and manufacturing centers within the U.S., there are more than 36,000 miles of various types of highways in the state. Approximately 89 percent of the total miles are owned by the WVDOT Division of Highways (DOH), 9 percent are owned by various municipalities, and the remaining 2 percent are owned by various federal agencies and other entities.

Every highway in the state is classified as one of the following National Highway Functional Classifications (NHFC):

- Urban/Rural Local Road
- Rural Minor Collector
- Rural Major Collector/Urban Collector
- Minor Arterial
- Principal Arterial
- Freeway/Interstate

Local roads provide access to individual pieces of property. Arterial roads are intended to satisfy the need for mobility by providing high speed roadways over longer distances. The Freeway/Interstate class of roads, which provides the highest level of service, is actually a sub-class of Arterial roadways. Bridging the gap between Local roads and Arterials are the Collector Roads, which possess elements of both.

Most traffic counts are reported in terms of annual average daily traffic (AADT) and represent an estimate of the number of vehicles traveling along a given point on a highway on an average day in the year. VMT estimates, while based on AADT estimates, include the distance traveled element and thus provide a measure of highway vehicle

travel usage over a geographic area, such as a county, state, or highway system. VMT is routinely used to calculate important statistics including traffic fatalities, fuel efficiency, and air quality.

Table 2-28 provides a breakdown of the mileage and traffic carrying characteristics of each highway functional class in West Virginia. The data indicate that the highway network in West Virginia currently handles 19.7 billion VMT each year. VMT has increased steadily in West Virginia from 2.5 billion in 1940 to 19.0 billion in 2000, an average increase of roughly 3.5 percent per year. VMT is projected to continue increasing in the future but at a slower rate (roughly 1.5 percent per year), which corresponds to the average yearly growth in VMT that has occurred from 1990 to 2007. Even at the lower rate of growth, annual VMT in the state would reach 23.9 billion by 2020.

Table 2-28: Highway Mileage by Functional Classification in West Virginia

Functional Classification	Miles	% of Total Miles	Annual VMT (millions)	% of Total VMT
Urban/Rural Local Road	23,700	65.3	1,192	6.0
Rural Minor Collector	2,244	6.2	370	1.9
Rural Major Collector/Urban Collector	6,537	18	3,556	18.0
Minor Arterial	1,894	5.2	3,850	19.5
Principal Arterial	1,373	3.8	4,667	23.6
Freeway/Interstate	564	1.6	6,106	30.9
Total	36,312	100	19,741	100

Source: West Virginia Statewide Transportation Improvement Program fiscal years 2009-2014

While Freeway/Interstate roads make up only 1.6 percent of the state's highway mileage, they carry more than 30 percent of all highway traffic. Conversely, Local roads account for more than 65 percent of the state's total highway mileage, but carry only slightly more than 6 percent of the highway traffic.

The rail system's interaction and coordination with the highway mode has been limited due to the fact that most freight-related coordination between the modes involves intermodal container or trailer transfers, where rail carriers generally carry out the long-haul portion of the trip with trucks responsible for the movements between the origin/destination and the truck/rail transfer facilities. To-date no truck/rail intermodal facilities have been operating within the state; therefore, the two modes have in some cases competed for traffic which can be accommodated by either mode. The establishment of the new Prichard intermodal facility will be an important test case to determine the potential for additional rail/highway intermodal arrangements in the future.

2.2.6.2 Primary Airports

As shown in **Table 2-29**, West Virginia is currently served by five primary airports, which are publicly owned airports that receive scheduled passenger service and have more than 10,000 passenger boardings (*enplanements*) each year.

Table 2-29: Primary West Virginia Airports

Airport	Enplanements (2010)
Charleston Yeager Airport	264,818
Clarksburg North Central West Virginia Airport	10,694
Huntington Tri-State Airport	115,263
Lewisburg Greenbrier Valley Airport	12,293
Morgantown Municipal Airport	11,249
Total	414,317

The state's limited air transportation network, with just over 400,000 enplanements at its primary airports, and no interconnections between existing rail and services, contributes only limited intercity travel opportunity and competition to the state's other passenger modes.

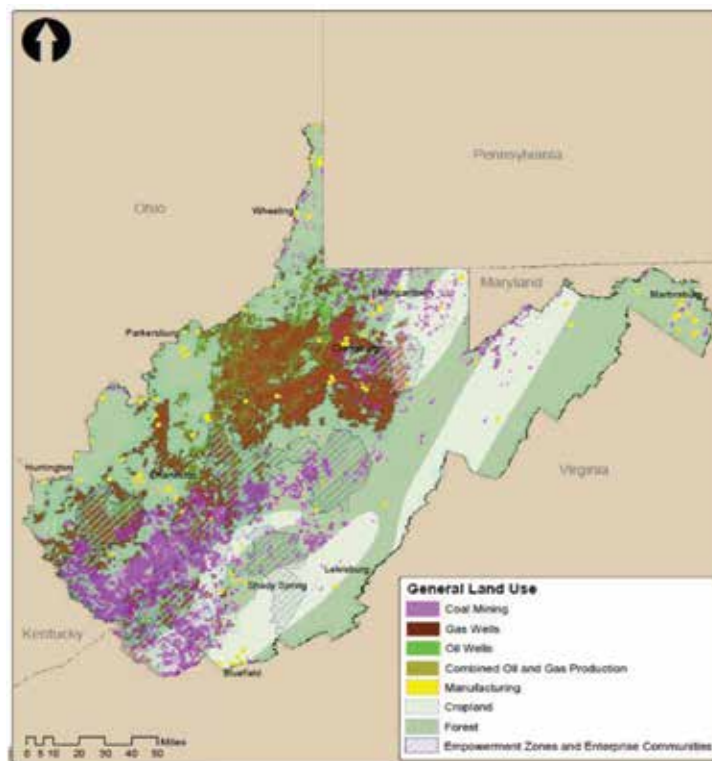
In contrast to the highway and air modes, however, the interaction between rail and port facilities in West Virginia has been long established and successful. All river port districts (Jackson County, Buffalo-Putnam, Kanawha Valley, Cabell/Wayne, and Weirton), as well as the inland port district in the Eastern Panhandle, are served by at least one Class I railroad. The combination of rail and the intercoastal and intracoastal waterways provide a cost-effective, intermodal means of moving the bulk commodities which comprise a major portion of the state's economy.

With little population or economic growth forecast for the state, it is important that the state protect its existing transportation network and be prepared to accommodate any potential economic development opportunities which arise in the future. Improvements to both the rail freight and passenger networks, and to intermodal connections and coordination, is a key emphasis area for rail planning and development in the future.

2.2.7 Land Use Trends

Land uses in West Virginia have been relatively stable over time. Statewide land uses are represented in **Figure 2-13**.

Figure 2-13: West Virginia Land Uses



CDM
Smith

West Virginia Generalized Land Use

Much of the state is rural and mountainous with development limited to river valleys and along its national roadway system. The state's physical and topographical constraints affect growth as slopes more than 20 percent are extremely difficult to build on.

Local planning agencies have recognized these constraints and the importance of transportation accessibility to land development. Strategies developed to address existing land use constraints and to maximize existing development infrastructure center on the following:

- Redevelopment at a higher level at existing development sites as opposed to growth at undeveloped areas;
- Growth in undeveloped areas near existing development which are already served by existing infrastructure and allow urban areas to expand in a contiguous pattern; and
- Limited greenfield development to minimize sprawl and preserve open space.

2.3 Key Rail Service Needs and Opportunities

The purpose of this section is to identify the needs and opportunities for freight and passenger rail service in West Virginia. This will include identification of service gaps, improvement needs, and the potential financial needs and deficits associated with these issues. The discussion will include the railroad industry's planned improvements to address identified issues, as well as those actions which could be undertaken by the public sector to assist in these efforts and to increase potential public benefits through rail-related economic development improvements.

2.3.1 Rail Freight Services

West Virginia railroads' reliance on domestic coal demand has raised concerns in the recent past as production has decreased, due to the low price of natural gas and the resulting shift by utilities from coal to natural gas due to both the lower cost and federal initiatives. This has led railroads in the region to seek new industries to serve and commodities to move, and the railroads, especially CSXT and NS, have implemented plans to that end.

CSXT and NS have emphasized three areas of potential growth in West Virginia and the region. These are international container (intermodal) movements, export coal, and oil and gas production services. The success in serving these and other growth markets is reliant on the carriers having adequate capacity over West Virginia's rail lines where needed. The following provides a brief review of the state's rail mainline capacity.

2.3.1.1 West Virginia Mainline Capacity Analysis

Available mainline capacity in the state was reviewed from the perspectives of both publicly available data and independent analysis.

The rail industry has worked together to identify rail lines and line segments, which they estimate will see the greatest increase in volume and where existing and projected capacity constraints will affect the fluidity and reliability required for the rail network to remain competitive. To determine rail mainline system capacity needs for the country, the "National Rail Freight Infrastructure Capacity and Investment Study," published by the AAR in September 2007, was developed.

Class I railroads were evaluated on the basis of both current rail volumes compared to current capacity and future (2035) volumes compared to current capacity. From this, current and future LOS from Level A to Level F, similar to that used for the highway system, were assigned to each of the corridors. The results of this analysis showed that all designated rail freight corridors in West Virginia were rated with LOS Grades A, B, or C, signifying that future (2035) rail volumes are generally forecast to be below current capacity, with train flows ranging from low to moderate levels and with capacity to accommodate maintenance and recover from accidents.

As an independent analysis, both the estimated line capacity and the estimated number of daily trains were developed from tonnage data. Tonnage figures by line segment were divided by the calculated average tonnage per train to develop an estimate of average daily trains by line segment. These estimated trains per day were compared to the estimated line capacity in terms of trains per day.

This independent analysis showed that only traffic on CSXT's Bridgeport/Mountain and Metropolitan/Cumberland subdivision were approaching estimated line capacity levels.

These mainline capacity constraint findings are consistent with CSX plans for capital improvements in West Virginia. Among CSXT's planned mainline investments are:

- Cumberland Subdivision (Weverton, Maryland to Cumberland, Maryland) – The addition of tracks at Martinsburg, along the north leg of the Winchester & Western Railroad interchange, to accommodate business growth and increase network efficiency;
- Bridgeport Subdivision (Grafton to Clarksburg) – Rehabilitation of Tracks 1 and 2 to accommodate new business and to increase network efficiency;
- Coal River (St. Albans to Sharples) and Logan subdivisions (Barboursville to Gilbert) – Installation of radio controlled switches to increase train movement efficiency;
- Ohio River Subdivision (Wheeling to Guyandotte) – Improved siding capacity (to 130 cars) near Point Pleasant and installation of new signals; and
- Mountain Subdivision (Cumberland, Maryland to Grafton) – Create a yard bypass at Cumberland Yard.

These, and additional capital investment plans by both CSXT and NS, are directly related to the potential rail growth areas noted above and described in more detail below.

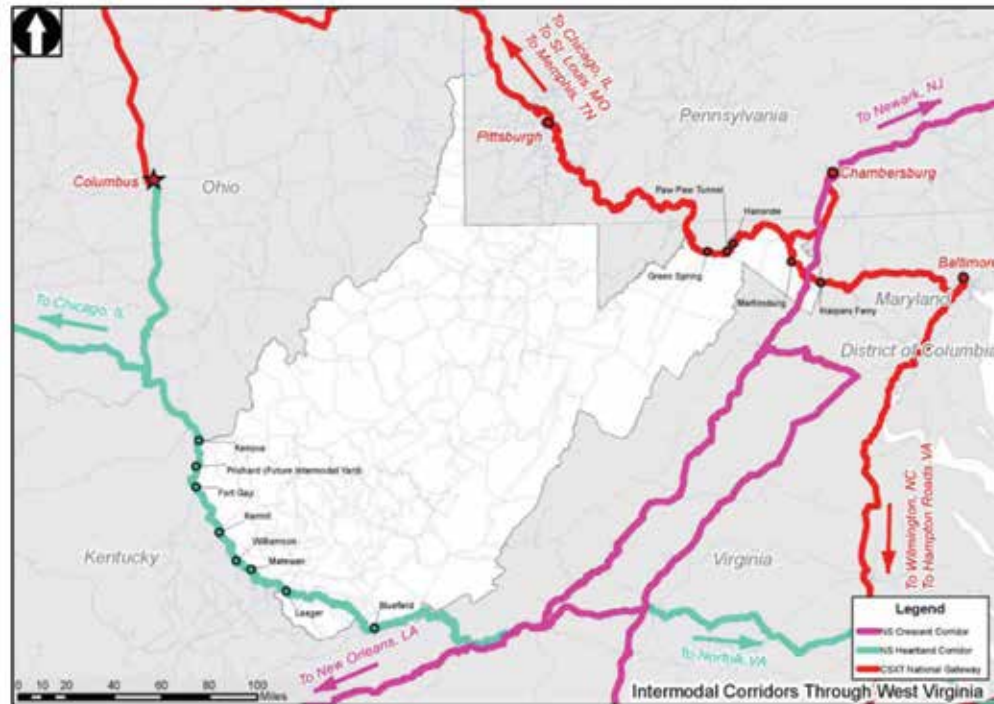
2.3.1.2. Potential Rail Freight Growth Areas

International Intermodal Traffic

The on-going Panama Canal expansion project is expected to result in new shipping patterns and new opportunities for a number of East Coast and Gulf Coast ports, as well as the railroads connecting to them.

With the anticipation of increased international intermodal traffic due to the expansion of the Panama Canal, which will be completed in 2015, East Coast ports have been deepening harbors and constructing or expanding on-dock rail facilities to accommodate the larger intermodal ships and to unload and transport the international containers from the ports to inland intermodal facilities for local distribution. Relevant to West Virginia, the ports of Baltimore and Norfolk are addressing the expected increased traffic in containers, many of which would be moved westward over CSXT and NS rail lines through West Virginia. Having foreseen this increase in intermodal traffic between the East Coast ports and Midwest destinations, CSXT and NS have sought major efficiency and productivity improvements to ensure that their primary intermodal routes can accommodate double-stack container trains. Several of the major rail intermodal corridors pass through West Virginia, and the improvements completed and planned are described in **Figure 2-14**.

Figure 2-14: Intermodal Corridors through West Virginia



CSXT National Gateway – This infrastructure project, scheduled for completion in 2015, will improve the flow of rail freight between the Mid-Atlantic (including the ports of Wilmington, North Carolina; Hampton Roads, Virginia; and Baltimore, Maryland) and the Midwest (including Chicago, St. Louis, and Memphis) by increasing vertical clearances at 61 locations to provide clearance for double-stack intermodal movements.

This major corridor passes through West Virginia's Eastern Panhandle (Cumberland/Mountain Subdivisions) through Harpers Ferry, Martinsburg, and Green Spring. Tunnel clearance projects in West Virginia will be completed at Hansrote and Paw Paw.

The estimated cost of this project, which has received considerable state and federal funding, is \$842 million.

NS Heartland Corridor – NS opened its Heartland Corridor in 2010, allowing double-stack trains to move between Norfolk and Chicago. The core of the new railroad corridor is the NS Pocahontas Division, an east-west rail corridor, which passes through Bluefield, Laeger, Matewan, Williamson, Kermit, Fort Gay, Prichard, and Kenova. The project was a public-private partnership of NS, the federal government, the Commonwealth of Virginia, and the states of West Virginia and Ohio; it involved improving the vertical clearance of 28 tunnels and eliminating 24 other obstructions, such as bridges.

The Prichard intermodal yard, currently under construction, will be an important beneficiary of the NS Heartland Corridor and will be an important asset to movement of goods in the West Virginia. The Prichard project is intended to provide a long-term and stable economic stimulus through the construction and operation of an intermodal facility in conjunction with the Heartland Corridor. The objective of the project is to stimulate and support economic

development within the region and provide and maintain connections to key regional and national transportation corridors.

NS Crescent Corridor – This corridor, a \$25 billion, 9-state, 2,500-mile network designed principally for intermodal traffic between New Orleans, Louisiana and Newark, New Jersey, is now operational. The Crescent Corridor passes through the Eastern Panhandle of West Virginia at Martinsburg.

Upon completion, these three major corridors will have expanded freight movement capacity, as well as intermodal double-stack capability, to better link major markets and important shipping origins and destinations. Their importance to West Virginia relates to the growth of rail movement of goods in containers. West Virginia will host portions of all three major rail corridor improvements, and this augurs well for West Virginia economic development. Construction of the NS Prichard Terminal in Wayne County will directly benefit West Virginia through improved transportation options for shippers in the region and from the economic development potential which can be realized in the proximity of major transportation distribution facilities.

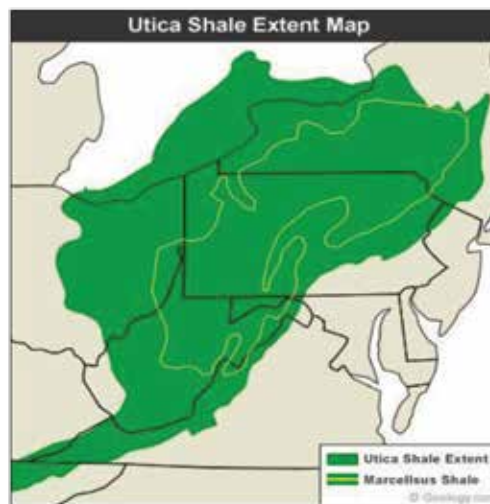
Oil and Gas Production

Recent growth of the process called hydraulic fracturing (fracking) to recover natural gas and crude oil from shale reservoirs represents a potential opportunity for West Virginia railroads. The Marcellus Shale is comprised of a shale rock formation which is being developed into one of the world's largest natural gas fields. This shale is located below the earth's surface and when fractured, can produce a large amount of natural gas.

Recent attention has also been focused on the Utica Shale which is a rock formation located a few thousand feet below the Marcellus shale. It also has the potential to become an enormous natural gas resource which extends over an even greater area than the Marcellus shale.

These deposits of shale oil and gas extend over much of Appalachia, including West Virginia (see **Figure 2-15**).

Figure 2-15: Marcellus and Utica Shale Regions



West Virginia is the only net exporter of natural gas east of the Mississippi River. The West Virginia Geological and Economic Survey has identified about 7,500 wells producing 1.9 billion barrels of oil and about 40,500 wells producing 191.6 billion cubic feet of natural gas. Natural gas is produced in 49 of West Virginia's 55 counties.

New wells drilled for oil or natural gas can represent a significant amount of rail traffic. Each new wellpad can require more than 50 carloads of drill-related equipment including sand, pipe, barites (barium sulfate), and miscellaneous chemicals. In some locations, up to 300 railcar equivalents of water is also required. Well outputs can also require 25 carloads of drill cuttings and 40 carloads of brine water. In many locations with limited access to pipelines, oil or gas may also be transported by rail.

The rail benefits associated with oil and gas drilling and production apply to Class I and short line railroads. Rail access to drill sites can be in the form of direct rail access or through the establishment of transload facilities.

Rail carriers in West Virginia are in the process of developing projects specifically to address these needs. CSXT plans to rehabilitate two tracks at Clarksburg (Bridgeport Subdivision) and to expand the Brooklyn Junction Yard in New Martinsville for new business associated with hydraulic fracturing in West Virginia.

Export Coal

The Class I railroads in West Virginia are developing projects to add capacity for the expected increase in export coal. Most of these projects currently entail the reconfiguration and expansion of rail yards to accommodate unit trains destined to port coal export facilities.

CSXT currently has plans to expand yards at Grafton, Keyser, and Benwood for these purposes. A yard bypass at Cumberland to increase the efficiency of export coal movements is also planned.

2.3.1.3 Rail Freight Service Needs

The limited rail capacity needs and planned improvements by CSXT and NS to accommodate growing market demands will likely address the major rail freight infrastructure and service needs on Class I rail lines for the state in the near term. However, if these new market demands extend to the short line railroads operating in the state, they may require financial assistance to address the associated infrastructure needs. The short line railroads and local economic development agencies have identified the need for public financial assistance to build or extend rail spurs to development areas. Increased rail traffic originating from oil and gas production or expanded production of export coal on or in the proximity of short line railroads may require additional rail spurs or transload facilities to meet the new demand. In addition, increased rail car storage capacity and more efficient interchange operations with Class I railroads may also be required to accommodate significantly higher traffic levels.

2.3.2 Intercity Passenger Rail Service

Issues and system needs with regard to intercity passenger rail service within West Virginia are discussed next.

2.3.2.1 Intercity Passenger Network Gaps

Despite the highway improvements undertaken in the last six decades, such as the Interstate Highway System, the West Virginia Turnpike, and the Appalachian Development Highway System, many West Virginians remain isolated. West Virginians who are transit-dependents, the elderly, youth, the disabled, those with limited means, or families with only one auto, are isolated by a lack of available intercity public transportation.

Market forces and the rise of discount airlines have combined to reduce the once extensive, multi-frequency network of rail passenger and intercity bus routes. This combined rail and bus network once linked the Northeast with the

Midwest and the Midwest with the Southeast. Passing through West Virginia, these routes linked West Virginia cities to the rest of the nation while providing local service between West Virginia cities several times daily.

What remains are: two Amtrak routes, the *Capitol Limited* and *Cardinal*; two Greyhound Lines routes, a Megabus route serving Morgantown, a Mountain Line route from Clarksburg to Pittsburgh; MARC commuter service (Monday-Friday) between Martinsburg and Washington, DC; and parent club sponsored charters from West Virginia University to cities in the Northeast. While these surface transportation services link some West Virginia cities to adjacent states, they offer limited frequencies and do not constitute a network.

Similarly, airline routes that were linear with several stops in West Virginia allowing intrastate travel (i.e., Charleston to Pittsburgh with stops in Elkins, Morgantown, and Wheeling) have shifted to non-stop routes serving airline hubs. The airline network is now designed for the long-distance traveler. While the airline network provides the state with excellent service to distant cities in the U.S. and around the world, flying between cities in West Virginia or cities in adjacent states can be expensive, circuitous, and time consuming and involve a connection. A recent USDOT study projected higher fares and reduced frequencies for small communities and in short-distance markets.

Efforts of West Virginia's Division of Public Transit utilizing funding through the Federal Transit Administration's Section 5307 funding for transit in urban areas – Section 5310 funding for specialized transit for elderly and disabled, and Section 5311 funding for transit in rural areas (areas with population less than 50,000) – have offset some of the decline at the county and regional level. However, for intrastate intercity travel and travel between West Virginia cities and cities in adjacent states, West Virginians are almost totally auto-dependent.

The changes in the past several decades in the rail passenger, regularly scheduled motor coach and the airline industries have dramatically reshaped the intercity passenger network. The *West Virginia Multimodal Statewide Transportation Plan* found that existing transit programs meet about 27 percent of estimated demand. Much of the service funded and demand met is for local regional trips. Intrastate intercity travel within West Virginia, as well as to nearby cities in adjacent states, is now almost totally reliant on the personal automobile.

2.3.2.2 Intercity Passenger Rail Opportunities and Challenges

West Virginia's existing rail routes and passenger rail improvements being made in neighboring states offer both opportunities and challenges. Current service can provide a focal point for incremental improvements in service and coverage and an opportunity for the state to begin rebuilding its intercity transportation network. While West Virginia's population density is lower than neighboring states, the state lies within easy reach of several major urban areas. Foremost among these is the Washington, DC/Baltimore area and the northeast corridor. Pittsburgh, Cincinnati, Richmond, and the Virginia Tidewater area are also potential intercity rail markets. The large economic activity in these neighboring areas gives West Virginia leverage to develop enhanced passenger rail service and also use connecting thruway bus service to connect to routes outside of the state.

Another opportunity is using passenger rail service as a development tool to promote economic growth with tourism and transit-oriented development (TOD), which is development of residential and commercial areas, centered around transit stations and designed to maximize walkability and the use of public transit. Finally, West Virginia's long-term intercity rail passenger opportunity could be the continuation of its historical role in providing a potential high-speed rail system connection between existing East Coast and the Midwest high speed rail networks.

Foremost among the challenges is the preservation of existing service. Preservation and improvement of existing services will require a viable funding strategy and strong partnerships with surrounding states.

Rail passenger routes with the most potential are routes with strong bi-state or multi-state partnerships. Capital investments required to improve service, from West Virginia's perspective, may be necessary in another state. An additional challenge is West Virginia's low-population density and rugged mountain terrain which present revenue risks and construction cost issues. Finally, with two of the three West Virginia freight main lines improved (the NS Heartland Corridor between Norfolk, Virginia and Columbus, Ohio and the CSXT National Gateway between Baltimore, Maryland and New Baltimore, Ohio) to handle growing intermodal freight traffic, new or expanded passenger rail service may require substantial capital investment to ensure the safety of increased shared freight and passenger services as well as protect the rail owners from potential liability. Capital investments could entail additional sidings, curve realignments, and improved signal systems.

With Amtrak focused on capital improvements to make its stations accessible, especially pathways and platforms, it is important that West Virginia focus on the station structures to facilitate state of good repair, improvements, and adaptive use. In addition to funding capital improvements, the state can also aid cities and private owners in preparing grant requests, engineering and design, and best practices.

Improved Cost Recovery

An important near-term action is the improvement in the cost recovery ratio (revenues divided by operating costs) of existing rail passenger routes. As part of that effort and as required by the PRIIA, Amtrak undertook an analysis of the *Cardinal* (New York – Chicago via Charleston), and *Capitol Limited* (Washington, DC - Chicago via Martinsburg) routes. The improvements outlined in these reports can increase these routes' cost recovery ratio. While both trains are Amtrak long-distance basic system trains (trains with route lengths longer than 750 miles that were part of Amtrak's original network and are defined by the 2008 PRIIA Act as still being the financial responsibility of Amtrak), West Virginia will need to take the lead to ensure the success of these routes, especially the *Cardinal*.

State Partnerships

An important step in preserving and improving existing passenger rail service is West Virginia's leadership in demonstrating that it is a partner with adjacent states by supporting their efforts to expand service.

Thruway bus service connections to the *Pennsylvanian* at Pittsburgh and to Lynchburg or Roanoke, Virginia would assist those states' proposed service additions and provide additional intercity passenger mobility to West Virginians. Partnership with Virginia in facilitating daily operation of the *Cardinal* would also be beneficial to both states. Not only would West Virginia's transportation network be enhanced, but transportation options for the rural Virginia communities of Staunton and Clifton Forge would be improved. At Charlottesville and Northern Virginia stations, a daily *Cardinal* would also expand schedule options on Virginia's growing route through Charlottesville.

Rail Freight Capacity

Changes in the patterns of rail freight traffic could negatively impact the financial performance of existing intercity passenger services. The energy market is currently undergoing substantial change. Rail lines built to haul coal are seeing 12 percent to 15 percent declines in coal traffic. Two rail corridors through West Virginia, CSXT's line through Martinsburg (*Capitol Corridor route*) and NS's line through Williamson, have been rebuilt to serve the double-stack intermodal market. These corridor improvements allow fast-growing intermodal traffic to replace declining coal traffic. The rail industry will look to industrial traffic to offset the decline in coal traffic. Alternatively, if freight traffic continues to decline, the railroads could downsize the fixed plant or reduce maintenance to match traffic on corridors with passenger service, such as the *Cardinal* route. For instance, the *Cardinal* uses the Buckingham Branch Railroad (BB), located in Virginia, which is a short line railroad that the CSXT uses as an alternate route for empty coal trains due to capacity constraints on its James River Line. A reduction in coal traffic

could reduce revenue needed to maintain the rail line. Coordination between West Virginia, Virginia, and CSXT will be necessary to maintain the BB in a state of good repair.

2.3.2.3 Potential *Cardinal* Initiatives

Daily service on the *Cardinal* route is the action that would yield the greatest near-term benefit for West Virginia's intercity transportation network. This was a key recommendation in the PRIIA mandated *FY10 Performance Improvement Plan for the Cardinal*. The report found that daily service would substantially improve the train's utility and marketability, greatly enhancing the train's role in linking rural communities with major Eastern and Midwest cities. In addition, the train would be more attractive for short-distance local trips.

Based on its financial performance (a cost recovery ratio of 27 percent) the *Cardinal* is at risk of discontinuance unless improvements are made. As no other state has as much to lose from the discontinuance of the *Cardinal*, West Virginia likely must lead the effort to preserve and enhance this service.

Promotion

Promotion of existing rail service is the first step in building awareness and usage of the rail mode. Discussions were held with both the West Virginia Division of Tourism and the BSA with regard to initiatives which could contribute to improved intercity passenger rail services.

The West Virginia Tourism Website has a comprehensive listing for Amtrak's *Cardinal* and *Capitol Limited* with a link to Amtrak's website. The Greenbrier Resort is a featured Amtrak Vacation destination, and there is an advertisement for the resort in Amtrak's national timetable. A recent U.S. Census Bureau analysis found double-digit population growth in the downtown areas of many cities. Four of the fastest growing downtown population cities are on the route of the *Cardinal* – Chicago; Washington, DC; Philadelphia; and New York. The West Virginia tourism industry could explore developing a strategy to cater to these potential leisure travelers who are not as auto-focused as current tourists. Other states have had success with this market by developing a "Car Free" travel program. With the "Car Free" program, tourism partners work together to provide detailed information on how to visit and enjoy cities and attractions without an automobile.

Summit Bechtel Reserve

A major new destination attraction and source of ridership, the SBR, is coming to the route of the *Cardinal* in 2014. The BSA is establishing its fourth high adventure camp adjacent to the New River Gorge National River Area and Glen Jean, West Virginia near Beckley. The site is also the permanent home of the National Scout Jamboree.

Up to this point the BSA focus has been on the National Jamboree. With the Jamboree's completion efforts are underway to begin the next phase of SBR (i.e., its permanent role as a High Adventure Base). In future years, two other major activities are planned for the site: the National Scout Summer Camp and the Center for Leadership and Excellence, a training facility and program for adult scout leaders. This new major activity center on the *Cardinal's* route is of long-term importance to the train, where the ridership levels could be similar to those on the *Southwest Chief*. At Raton, NM, summer treks, spring and fall leadership conferences, and staff ridership from Philmont Scout Ranch generate significant ridership 6 months of the year for the train. In similar fashion the diverse activities at SBR should have the potential to generate a steady flow of traffic, spring through fall, on a daily *Cardinal*. In its permanent role, SBR is expected to attract about the same level of activity as Philmont Scout Ranch, about 20,000 to 25,000 participants yearly, in addition to the National Scout Jamboree which is held every 4 years.

The *Cardinal's* route and schedule position the rail service to conveniently serve SBR participants and staff. SBR is located at about mid-point on the *Cardinal's* route, offering a morning arrival from Chicago and mid-day departure

from SBR to Chicago and cities in the Midwest. The current schedule also offers daylight service to/from cities in the Northeast Corridor. Participants from Northeast Corridor cities will have to arrive the day before day one of their treks, but this is similar to the situation at Philmont for West Coast participants and is accommodated by Philmont. SBR's current information for the 2014 roll-out of the High Adventure Base mentions Amtrak service to Prince as an option and notes that scout crews will need to arrange their own transportation, as is the case with the Philmont Scout Ranch.

However, the current tri-weekly service will at best serve 40 percent of the potential market. In addition, the days of train operation may not correspond to trek beginning or end dates. With tri-weekly service, scout crews, especially from Northeast Corridor cities, will be forced to add an extra 2 or 3 days to their trip, further reducing potential ridership. Thus, daily service on the *Cardinal* is the key to tapping this potential market. In addition, WVDOT's DOH plans to replace the highway bridge over the New River accessing the Prince Amtrak station. These plans need to move forward to enable shuttle vehicles to SBR to safely travel to the station.

Special Trains

West Virginia's scenic beauty and recreational opportunities have always drawn additional rail service. This enhanced rail service can take the form of separate trains, premium service on the *Cardinal*, or the movement of luxury chartered private rail cars on the *Cardinal*.

The separate trains can be oriented toward scenery (outlined in more detail in the Tourist Train section of this report) or can be complete luxury trains usually with a stopover at The Greenbrier Resort. The American Orient Express was such an operation which traveled through West Virginia on some of its itineraries. Currently efforts are underway to develop a regularly scheduled luxury rail service between Washington, DC and White Sulphur Springs starting as special cars coupled to the *Cardinal* and eventually growing to a separate train. Premium service, using private rail cars, is offered seasonally from West Virginia to Northeast cities.

Support in the marketing of these trains by the SRA and West Virginia Division of Tourism would facilitate these efforts.

2.3.2.4 Potential Capitol Limited Initiatives

The key recommendations in the *FY10 Performance Improvement Plan for the Capitol Limited* (serving Martinsburg and Harpers Ferry) were estimated to result in a 9 percent increase in revenue and a 4-point improvement in the cost recovery ratio. The major recommendation is the establishment of through service between Chicago/Toledo/Cleveland and Philadelphia/New York. Through coaches and sleeping cars from the *Pennsylvanian* would be added to the *Capitol Limited* in Pittsburgh. This improvement would eliminate the need to change trains at Pittsburgh at late night or early morning hours and significantly increase ridership, revenue, and customer satisfaction. Market research has found that changing trains, especially at unattractive hours, is a detriment to ridership (by about 40 percent). The improvement plan also recommended food service changes (a more appropriate menu and full dining and lounge cars), station improvements (cleanliness, security, signage and disabled access), and the installation of bicycle racks in coach/baggage cars. It is estimated that these proposed changes would result in an additional 20,400 riders per year. Due to equipment issues these improvements are not being implemented at this time.

Feeder Bus Service

A potential area for West Virginia to pursue is thruway (feeder) bus service to enhance passenger rail ridership and revenues while also addressing the mobility shortfall for many West Virginians. Thruway service offers one-stop transportation shopping, coordinated schedules and fares, and guaranteed connections at Amtrak stations. Feeder bus networks provide four main functions:

- Increasing ridership on the trains by adding a significant number of additional cities to the rail system;
- Increasing the number of frequencies on corridor routes by adding parallel schedules during off-peak times of the day;
- Providing vital service to transit dependent residents in rural areas; and
- Enhancing the value of the rail program to taxpayers by serving many more state residents.

Potential types of thruway bus services include:

- Dedicated charter motor coaches operated exclusively for rail passengers;
- Motor coaches operating regular intercity schedules which carry both rail passengers and bus passengers; the schedules and operations of these routes are coordinated with the train schedules; and
- Interline services where schedules may or may not be coordinated with the rail service; this service is most successful when the connecting bus route has a high number of daily frequencies, minimizing the negative impact of any missed connection.

These services would require SRA and Division of Public Transit support and assistance to coordinate between local transit agencies, West Virginia motor coach operators, and Greyhound Lines on a strategy to increase mobility for West Virginians and provide expanded connecting service to airports, rail passenger service, and intercity motor coach service.

2.3.3 Commuter Rail Service

Issues with regard to commuter rail service within West Virginia are discussed below.

2.3.3.1 Opportunities and Challenges

As West Virginia develops and upgrades its intercity passenger and freight rail network, there may be markets where commuter rail service can be initiated. There are both opportunities and challenges in this regard. The key opportunity is that while West Virginia's population density is lower than most regions served by commuter rail, it lies on the outer edge of major urban areas. Foremost among these is the Washington, DC /Baltimore area. A second area is the Pittsburgh metropolitan region. Its proximity to these major markets allows West Virginia to leverage the large economic activity in these neighboring areas into a viable commuter rail service by extending the larger region's commuter network. Also, West Virginia has always benefited from being the connecting bridge between the East Coast and the Midwest. Any level of rail passenger upgrade between the East Coast to Cincinnati or from Pittsburgh to Columbus could also accommodate commuter rail service. Using commuter rail service as a development tool to promote economic growth with residential-commercial mixed use TOD and tourism presents another opportunity.

Foremost among the challenges is funding. Unless West Virginia can develop a viable funding strategy, not only is it unlikely that any new commuter rail service can be built, but it puts the current service at risk. Other challenges are that the routes with the most potential are interstate routes where a strong bi-state partnership is required and that the most important capital investments to improve service from West Virginia's perspective may be in another state. Even if the funding issue can be overcome, West Virginia's low-population density and rugged mountain terrain present revenue risks and construction cost issues. Finally, as with intercity passenger service, the freight railroads may be reluctant to support new or expanded commuter rail service without substantial capital investment.

2.3.3.2 Maintaining and Expanding Existing MARC Rail Service

Maryland's goals related to the MARC Brunswick Line include increased peak service, increased off-peak service, late evening service, weekend service, and improved reliability. These goals are driven by the fact that the MARC network has reached its practical capacity and must be expanded to handle baseline growth resulting from highway congestion, gasoline price increases, and regional growth. Also, most of the moderate-cost capacity improvements have already been made. MARC's Growth and Investment Plan, published in 2007, stepped beyond the minimum and outlined the investments needed to go beyond baseline growth. The plan is multifaceted because all segments of the network – track, parking, stations, number of seats, and train storage and maintenance facilities – are at capacity. Investment is also planned to make the network more reliable to increase the OTP from the mid-1980s to 9 percent. The document emphasizes that the programmed investments are designed to handle present growth (5 percent to 6 percent yearly) and to position commuter rail to offer a quality product that would divert automobile drivers to rail service.

2.3.3.3 MARC Riders Advisory Council Recommendations

West Virginia MARC Riders Advisory Council members recommend expanding service to four round-trip frequencies a day. MARC members from both West Virginia and Maryland have also recommended that MARC consider weekend service. This would allow West Virginians to travel to Northeast corridor cities by train for weekend trips. More importantly, it would aid the West Virginia tourism industry by allowing travelers from Northeast cities to make weekend trips to Harpers Ferry and Martinsburg.

Members have also suggested extending MARC service approximately 2 to 2.5 miles west of Martinsburg and establishing a new combined layover and station facility that could easily be expanded to support long Penn Line trains and/or additional frequencies. The location identified is at the junction of WV 9 and I-81. Property is available for a layover facility and a large parking lot for passenger autos. This location also has additional property available for a system-wide maintenance base.

Since this project would bring jobs and spending to West Virginia, it could be viewed as an industrial development opportunity. It is also an opportunity for West Virginia to contribute capital to the MARC system while improving service for West Virginians. Transferring the layover facility west of Martinsburg was initially suggested in the *2010 West Virginia Multimodal Statewide Transportation Plan*. The convenient access to I-81 would also expand the service area for MARC service.

Riders have also suggested a replacement for the Duffields station, an isolated station east of Martinsburg. The City of Ranson, working with the developers of "Northport" (a mixed use community), has annexed property up to WV 9 and has requested a new stop. This proposed stop would also serve Charles Town.

2.3.3.4 Impact of New Commuter Rail Service on West Virginia's Rail Network

The expansion of MARC service would be on the Baltimore to northwest Ohio segment of CSXT's National Gateway corridor through West Virginia. The National Gateway is designed to create a highly efficient freight transportation link between the Mid-Atlantic ports and the Midwest, improving the flow of goods between the eastern and western rail networks. An anticipated change in freight flow patterns, in part because of the expansion of the Panama Canal and the potential of all-water container traffic between Asia and Mid-Atlantic ports, as well as the growth of domestic intermodal traffic, are the key drivers in this project. Vertical clearances and terminals are being improved to facilitate double-stack container shipments on the routes.

Adding new commuter rail services could tax the capacity of the route. Capacity improvements, such as new or expanded passing sidings and/or longer double track sections, to accommodate new commuter train volumes, would be needed. It will be necessary for such capacity enhancements for commuter rail to be borne by the agencies seeking increased access to the line.

Considering existing and new proposals, existing studies and reports, potential future commuter rail corridors and funding, it is recommended that the most feasible and most viable proposals regarding commuter rail service relate to improvements on the existing MARC Brunswick Line rather than the pursuit of new routes at this time.

The feasibility of and priority attached to further improvements would be greatly enhanced by West Virginia funding support of operations as well as capital.

Recent legislation gives the SRA the authority to negotiate with MARC for the continued operation of the commuter rail operations between Maryland; the Washington, DC metropolitan area; and West Virginia. The legislation also creates a West Virginia Commuter Rail Access Fund that shall be administered by the director of the SRA. The negotiated agreement may provide for the payment of track access fees attributed to commuter rail operation within West Virginia. Any payment of track access fees pursuant to the agreement shall be paid from the special fund created when appropriations are provided to this fund by the Legislature.

2.3.4 Tourist Railroad Service

West Virginia's tourist train industry helps to chronicle the state's transition to the industrial age, an age when railroad technology enabled the development of the state's vast coal, timber, and oil resources. West Virginia's four tourist train operations also serve to preserve artifacts; skills; the experience of living in industrial America; and the craftsmen, industrialists, and workers that built them. These railroads also demonstrate the hard work that was needed to build today's West Virginia.

In addition to their role in preservation and education, West Virginia's tourist railroads also attract vacation travelers to the state. These travelers, many of whom spend several nights in the state, create a multiplier effect not only generating income for the tourist railroads but income for restaurants, hotels, motels, and other visitor service establishments. It is estimated that visitors to West Virginia's tourist railroads generate \$6 to \$7 million in direct non-rail spending (lodging, meals, gasoline, shopping, etc.) each year.

In today's competitive travel marketplace, tourist railroads must be creative to survive and prosper. Some properties are oriented toward scenery, others toward historic preservation while some vary the theme by train departure. Value added services (theme trains, dinner trains, entertainment, etc.) are not only important as revenue generators but they are important in maintaining a repeat customer base.

2.3.4.1 Current Tourist Railroad Issues

West Virginia's tourist railroads are trying to rise to the challenges that exist in today's economic environment.

NRT's goals are to continue its current operations, fall foliage trains, and yearly trips using its private cars to Washington, DC and New York City and perhaps to Midwest cities. Of concern to the NRT is CSXT maintaining its current policy to allow it to continue to operate over the route under Amtrak's insurance umbrella, without which the railroad would require \$500 million of liability insurance. Also of concern is the continuation of the *Cardinal*, the ability to lease Amtrak cars and locomotives, and Amtrak maintaining the crew base at Huntington – all of which facilitate NRT operations. The final concern is the older age of the railroad's membership and volunteers and the related ability to maintain car maintenance and rebuilding skills.

While DGVR's target demographic – rail enthusiasts and those who had worked or ridden trains in their youth – had served it well in the 2008-2012 growth period, DGVR has realized the need to expand its demographic base to continue to maintain and grow its traffic in the future. In 2011 DGVR introduced the Polar Express™ event to its calendar to attract young families with children to the franchise. This new market has the potential for repeat business on heritage and scenic routes. The Polar Express™ and other event trains also lengthen the season, improving the railroad's income and keep professional employees working longer, thus maintaining a trained, reliable workforce.

The PESR's major concerns near term are high gasoline prices and the negative impact that may have on consumer discretionary spending and the frequency of auto vacation trips needed to attract increased ridership and revenue to its tourist train operation.

CSR's mission remains to be a historical park recreating, as authentically as possible, the life and technology as it existed in an early 20th century logging and steam railroad town.

While CSR has added some special and event trains, the goal is that these remain “in context” and not stray from their presentation of life in another time. It will not try to attract visitors by adding more contemporary entertainment or amusements. Near-term challenges impacting the CSR include the stagnant economy and high gasoline prices which could reduce visitations and maintaining critical state funding for state-of-good-repair projects. Perhaps more critical is attracting visitors to a genuine living historic site in an environment where consumers have so many travel alternatives.

While these railroads have been able to sustain their operations, maintaining that momentum into the future could be challenging. The demographics of America are changing, costs are increasing, and the equipment continues to age. Unlike a typical business, a heritage railroad by its nature is unlikely to see major productivity improvements, and competition from other recreational activities may also erode the tourist train market.

There are favorable trends, including rising population and income, the universal appeal of trains, increased partnerships with other attractions and theme departures, and more fuel-efficient automobiles to offset rising gasoline costs. Also, the heritage rail community is becoming more professional, experimenting with new ideas and sharing these ideas to make the visitor's experience more personally meaningful.

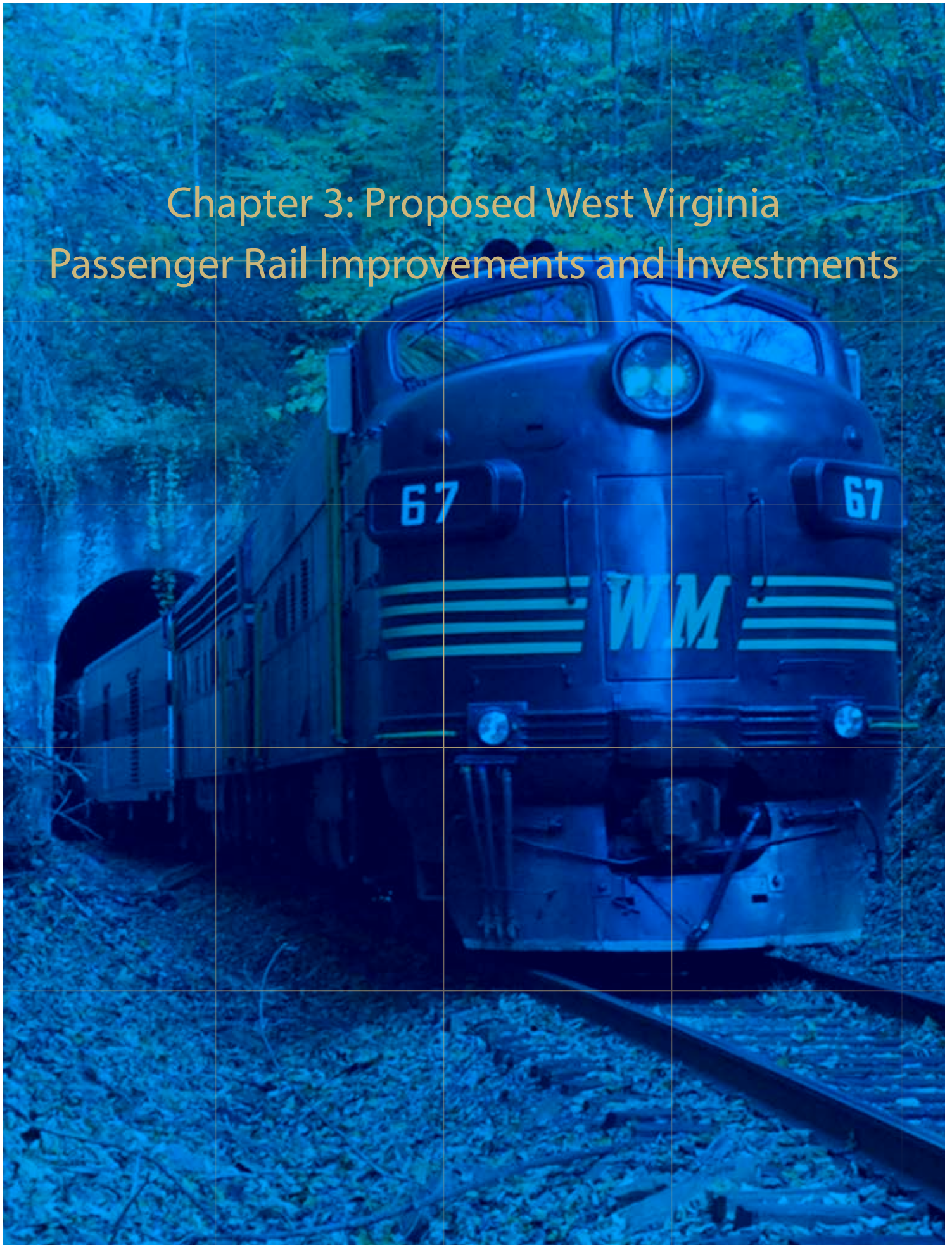
To position themselves for the future, West Virginia's tourist railroads must increase interpersonal connections with their visitors and seek strategies to attract a more diverse visitor base. The railroads must continue to seek opportunities for partnerships and off-season theme trains to build revenues and retain and replace critical skill sets necessary to run the railroads. More efficient marketing is also needed, including the use of travel trade shows and presentations to group motor coach operators. Finally, the international market has great potential if it can be reached in a cost-effective manner.

2.3.5 Rail Financial Needs

The development by West Virginia of a funding strategy to support rail transportation – whether commuter rail, intercity rail, or freight rail – is the lynchpin for maintaining and expanding existing service and initiating new service. This funding strategy can take many forms as demonstrated by the experience in other states. The most consistent is a flow of funds for both operating and capital support from a guaranteed source (sales tax on fuel or a general sales tax for example). West Virginia currently depends on annual general fund appropriations to finance rail improvements and these investments have been limited to state-owned freight railroads and commuter station improvements. In general, West Virginia's rail infrastructure shows no major deficiencies. This allows any dedicated sources of public investment in rail to be directed toward rail-related economic development opportunities (such

as access to new customers or markets) and to improving the level of service, and – as opportunities arise – the expansion and reach of its rail passenger network. A dedicated fund, with the flexibility to direct grants or loans to strategic rail projects on a statewide basis, would provide the state the means and opportunity to address many of the issues noted above over a reasonable period of time.

Chapter 3: Proposed West Virginia Passenger Rail Improvements and Investments



3.0 Introduction

The purpose of this chapter is to describe the improvements and investments that could address the passenger rail needs of West Virginia.

Leadership and funding are critical issues for West Virginia to maintain and expand its passenger rail service. The expansion to daily service for the Amtrak *Cardinal* intercity passenger service and additional financial investment (capital or operating) in MARC commuter rail service are the critical near-term issues.

Proposed improvements to all aspects of West Virginia's rail passenger network are discussed in detail below.

3.1 Implementation of Daily *Cardinal* Service

The concept of daily *Cardinal* intercity passenger service was explored by Amtrak in 2010. Section 210 of the PRIIA required Amtrak to undertake a comprehensive program to improve its long-distance service. Amtrak chose to begin with planning improvements of its five worst performing routes, which included the *Cardinal*. PRIIA Section 210 Report, *Cardinal* Performance Improvement Plan, produced by Amtrak in September 2010, identified the improvements required to improve the ridership and financial viability of the route.

The Amtrak study found that the current tri-weekly service is a major driver of inefficiency in the current *Cardinal* service. The inefficiencies include equipment and/or crews having a 1- to 2-day turnaround delay, during which employees receive held-away pay and equipment sits idle without generating any ticket revenue. Amtrak proposes to deal with these issues including converting the *Cardinal* to a daily service running on the same schedule as today, enhancing food service, and offering checked baggage service.

With daily *Cardinal* Service, Amtrak anticipated the following improvements:

- A forecasted doubling of annual ridership, from 140,200 in FY 2010 to 275,100;
- An 8-point improvement in its cost recovery, or fare box ratio, from 27 percent to 35 percent;
- A 31 percent improvement in loss per passenger mile, from \$0.42 in the study year to \$0.29; and
- A 15 percent improvement in the *Cardinal's* passenger load factor, measured by an increase in PMTM from 109.1 in FY 2010 to 125.5.

The study, however, did point out that the federal operating subsidy required would increase by \$2.1 million per year with daily service.

Equipment needs would be met by various means. *The Hoosier State*, which was implemented to run on the same route and schedule between Chicago and Indianapolis the remaining 4 days a week, would be replaced by daily *Cardinal* service and its rolling stock could be assigned to the *Cardinal*. Remaining equipment needs would include a baggage car, a sleeping car, a diner/lounge car, and a coach car. This equipment could be provided either through the equipment acquisitions, delivery of which is expected in 2013, a temporary reassignment of existing equipment, and/or assignment of refurbished cars funded by the ARRA of 2009.

The plan also noted that Amtrak would explore a temporary reroute of the *Cardinal* into and out of Chicago as a measure to improve OTP. Improvements related to the Chicago Region Environmental and Transportation Efficiency Project (CREATE) for rail infrastructure in Chicago are expected to improve the *Cardinal's* schedule adherence in the future.

In summary, the *Cardinal* improvement plan included the following highlights:

- Daily service between New York and Chicago;
- Continued service via Charlottesville, Charleston, Cincinnati, and Indianapolis;
- Checked baggage service;
- Initiatives to improve station signage and cleanliness;
- Improvements to equipment maintenance practices;
- Improved equipment utilization by eliminating long layovers;
- Continued daylight operation through the most scenic areas;
- Daily connections to all transcontinental trains;
- Regional menu selections; and
- A dome lounge car during appropriate seasons.

To-date, only selected aspects of Amtrak's plan for the *Cardinal* have been implemented. Checked baggage service at staffed stations began in the spring of 2010, and the station initiatives and menu changes began to be phased in the spring of 2010. In the fall of 2013 a dome lounge car is scheduled to operate on selected trips. Amtrak and CSXT (the chief host railroad) have also focused on OTP improvement. These improvements are expected to deliver bottom line operating cost savings for Amtrak.

Aside from the improvements noted above, however, Amtrak has not taken steps toward making the *Cardinal* a daily train. This situation poses significant risks to West Virginia and other states' passengers who are reliant on the *Cardinal*.

Given the *Cardinal's* poor operating and financial performance, and its poor customer satisfaction rating, the route's continued viability must be questioned. Amtrak currently ranks the *Cardinal* in the bottom third of its long distance trains based on these performance measures.

As the *Cardinal* is a long distance route which travels through a number of states, other states and Amtrak routes are also affected by changes to the *Cardinal*. Due to provisions in PRIIA that require states to subsidize operating losses on regional corridor routes, as of October 2013, the *Hoosier State* may cease operation on the western portion of the route if the State of Indiana does not subsidize that service. In addition to benefiting West Virginia, the daily operation of the *Cardinal* would be beneficial to Virginia through enhanced transportation options for the rural Virginia communities of Staunton and Clifton Forge. At Charlottesville and Northern Virginia stations, a daily *Cardinal* would also expand schedule options on Virginia's growing route through Charlottesville.

3.1.1 Proposed *Cardinal* Action Plan

Amtrak believes that service, revenue, and ridership gains would justify daily *Cardinal* service, tapping the latent demand for enhanced mobility between central Virginia communities and the Northeast Corridor, between Cincinnati and Chicago, and most importantly for West Virginians. For this reason, the states along the *Cardinal* route have an interest in exploring *Cardinal* improvement options.

Raising the priority of daily *Cardinal* service in Amtrak's near-term implementation plans will likely depend on focused multi-state action to promote daily *Cardinal* service. Conceptually, West Virginia could join with Virginia, Ohio, and Indiana to aggressively support the service improvement, as riders in these states would be the biggest

beneficiaries. In addition to reaching consensus on the goal of a daily *Cardinal*, the states could explore actions to improve the train's reliability, running time, service quality, and capacity. A model for multi-state action is the consortium of southern states, which has been advocating for passenger train improvements, including restoration of the *Sunset Limited* east of New Orleans.

West Virginia, with its limited intercity passenger rail and scheduled motor coach service options, has the most to lose from the continuation of existing poor service and a potential loss of service. Given the pattern of the train's ridership (little through traffic with most ridership to/from intermediate stations), West Virginia has much to gain from the doubling of ridership, ability to use the train for trips every day of the week, and improvement of the train's finances. Because of this, the state has the incentive to champion a coordinated, multi-state effort to implement daily service and related amenities even though, as a long-distance train, Amtrak is 100 percent responsible for its operation and funding.

3.2 Other Intercity Passenger Service Improvements

The following are additional initiatives which should be considered to improve the level of intercity rail service.

3.2.1 Promotion of Rail Passenger Service

Currently, the CPH, located in Huntington, provides narration on historical and geographic highlights on-board the *Cardinal* between Charleston and Clifton Forge. An expanded role for this volunteer program on trains and at stations – providing personalized service and information – would enhance the improvement in Amtrak passenger service that would result from daily service on the *Cardinal*. Insurance for the volunteers is covered by Amtrak. CPH organizes and manages the volunteer effort.

Both the North Carolina Department of Transportation's Rail Division and California Department of Transportation's (Caltrans) Division of Rail have developed a corps of interested volunteers to provide this enhancement to their services. North Carolina has more than 100 volunteers in its Train and Station Host Association. Riding the *Piedmont* and the *Carolinian*, these train hosts serve as North Carolina goodwill ambassadors and add a welcoming dimension to the service. On board the train and in stations, the hosts assist passengers and provide information about passenger services, the train route, ground transportation, and area attractions. In California, on the *Capitol Corridor* and *San Joaquin* routes, volunteer station hosts assist passengers in locating the correct train or connecting motor coach, local transportation, and information.

Promotion of rail service is an ongoing investment in the continuing effort to build awareness and usage of the rail mode. Amtrak, its travel partners, and the State of West Virginia must seek every opportunity to develop low-cost promotions. The link to Amtrak's website from the West Virginia Tourism Website needs to be maintained. Efforts should also be undertaken to promote Amtrak rail service on other West Virginia travel websites, such as the *Visit Southern West Virginia website/publication* and *The Greenbrier* website.

3.2.2 Ridership and Revenue Opportunities

A new destination attraction and source of ridership now located on the route of the *Cardinal* is the SBR. The BSA has established a major outdoor adventure center with four major activities: the National Jamboree (every 3 years), a High Adventure Base (beginning in 2014), and in the future, the National Scout Summer Camp and the Center for Leadership and Excellence (adult leader training). Overall SBR's High Adventure Base activity is expected to draw the largest number of yearly visitors to West Virginia (more than 20,000 each year). The *Cardinal's* route and schedule position it to conveniently serve SBR participants and staff. SBR is located about mid-point on the *Cardinal's* route.

An entrance to SBR is located about 7 miles from an Amtrak station. With its mid-route location and convenient schedule from the Northeast and Midwest, SBR traffic will likely be very productive from the load factor/yield perspective. Even though the High Adventure Base program will operate Sunday through Saturday, Saturday arrivals from the NEC and Sunday departures westbound – combined with other crews making pre-and post-trek touring – would allow detraining scouts to be replaced immediately by boarding scouts. The camping director at the Philmont, New Mexico Scout Ranch estimates that about 20 to 25 percent of participants and staff travel to and from the scout ranch by train. Based on this guidance and assuming daily service on the *Cardinal* and a similar mode share to the *Southwest Chief* at Raton, it is estimated that SBR could generate an additional 8,000 to 9,000 riders and \$550,000 to \$600,000 in yearly revenues for the *Cardinal*.

SBR's current information for the 2014 roll-out of the High Adventure Base mentions Amtrak service to Prince as an option and notes the scout crews will need to arrange their own transportation, similar to the arrangement at the Philmont Scout Ranch.

However, whether it is the National High Adventure Base, the National Jamboree, the future adult training, or National Summer Camp, the current tri-weekly service serves at best 40 percent of this market. Thus daily service is the key to tapping all of this potential market. Finally, local stakeholders report that the highway bridge over the New River accessing the Prince Amtrak station is life expired, has a broken structural member, and is weight-restricted by the DOH. The DOH has active plans to replace the bridge. Replacement would enable shuttle vehicles to SBR to safely travel to the station.

3.2.3 Thruway Connecting Bus Service

Thruway bus services involve the creation of a network of bus routes to connect rail passenger service to off-line cities. Thruway bus service enhances passenger rail ridership and revenues while also creating new intercity transportation alternatives for West Virginians. Thruway bus service does not necessarily require full-size motor coaches. For example, there are Thruway services that use 14-passenger vans, taxis, etc. Other connections are provided by public transit agencies.

The Intelligent Transit route between Huntington and Charleston is an example of an initiative service that improves intercity mobility. Two early initiatives are recommended: the extension of the existing PanTran connecting buses to Hedgesville (and eventually Berkeley Springs) – connecting to additional MARC frequencies – and initiating a Thruway ticketing agreement between Amtrak and Mountain Line, of which Route 29 connects with Amtrak's *Capitol Limited* to/from the west in Pittsburgh. West Virginia should also encourage Virginia to institute Thruway bus service between Clifton Forge and Roanoke. While the route is in Virginia, any effort to boost *Cardinal* revenues is critical for Virginia and West Virginia.

The SRA should support and assist efforts of the Division of Public Transit to coordinate, develop strategies, and conduct route analysis with the goal to increase intercity mobility for West Virginians. New and expanded routes could provide connecting service to airports such as Charleston, Huntington, Morgantown, Clarksburg, Pittsburgh, or Washington-Dulles; to major passenger rail stations; and to intercity motor coach service. Connecting bus routes would reduce the isolation of transit dependent intercity travelers and improve the revenues of intercity passenger carriers.

3.2.4 Station Improvements

Passenger stations are the gateways to intercity and commuter rail services. Stations that are safe and in a state of good repair not only make rail passenger service more attractive and efficient, they are also required to meet standards making them accessible to everyone.

Amtrak's *A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990*, produced in 2009, notes that eight of West Virginia's in-service stations which are not flag stops are required to be ADA-compliant. The same report cited preliminary cost estimates for improvements ensuring ADA compliance and a state of good repair for station structures, platforms, and pathways. The total of these estimated costs was about \$9.6 million. The individual projects are included in the state's rail program of projects. When completed, they will improve access for the elderly, the disabled, and those with luggage.

With Amtrak focused on capital improvements to make its stations accessible, especially pathways and platforms, the focus for West Virginia should be on the station structures facilitating state of good repair, improvements, and adaptive use. The state can work with cities and private owners in preparing grant requests, engineering and design, and best practices.

3.2.5 Special Trains

West Virginia's scenic beauty results in interest and operations by special train operators. The SRA should continue to work with the freight railroads and private train operators to ensure that sufficient rail capacity is retained and that existing facilities required by these operations are kept in a state of good repair. In addition, the state can work with stakeholders to identify required capital investments to expand these operations and to identify potential public and private funding sources.

3.3 Summary of Proposed Intercity Rail Passenger Improvements

The following matrix in **Table 3-1** outlines the issues involved with the improvements needed for current services. These improvements are taken from existing studies and reports or are examples of service initiatives undertaken in other states. The three actions listed in **Table 3-1** represent near-term initiatives that require prioritization, a champion, critical partnerships, and an incremental funding plan. The factors in the left hand column of the matrix represent issues that relate to the feasibility of intercity rail service.

Table 3-1: Improvements to Existing Services

Service Feasibility Criteria	Daily Service, <i>Cardinal</i> , NYC to Chicago via Charleston, West Virginia	Recommended PRIIA Service Improvements, promotion, and state partnerships - <i>Cardinal</i>	Thruway Connecting Motor Coach Service
Existence and characteristics of a rail corridor between terminals	CSXT main line, Centralized Traffic Control (CTC) for single track with segments of double track.	CSXT main line, CTC single track with segments of double track.	Leverages investment in Interstate and Appalachian Development Highways.
Current traffic levels on existing rail corridor	A heavily-trafficked main line hosting between 18 and 30 trains per day.	A heavily-trafficked main line hosting between 18 and 30 trains per day.	Some traffic congestion that could impact schedules.
Amtrak route	Yes.	Yes.	No.
Improvement metrics	Ridership and revenue increases. Improves route rev/cost ratio.	Improved service resulting in improved ridership, revenue and Customer Satisfaction.	Ridership, bus route revenue generated, subsidy required and number of routes.
Colleges, universities, and other significant passenger generators on route	Improved connectivity with other rail routes. Marshall University, U. of Charleston, WV Institute of Technology, U. of Charleston, WV Institute of Technology, Mtn. State U., SBR, and several resort hotels and ski resorts.	Marshall University, U. of Charleston, WV Institute of Technology, Mtn. State U., SBR, and several resort hotels and ski resorts.	Depends on route.
Prior analysis	Amtrak PRIIA Section 210 Report, Sept. 2010.	Amtrak PRIIA Section 210 Report, Sept. 2010.	Operations in other states can provide an example.
Target market and initiative goals	Frequency and destination of time sensitive riders. Improves the overall functionality of service.	Service sensitive riders, increase repeat ridership, and improving Customer Satisfaction scores.	Amtrak connecting riders and transit-dependent local riders. Increases West Virginia intercity public transportation network.
Impact on West Virginia's intercity public transportation network	Major, significant increase in service on a major intercity corridor and increases in passenger capacity. Service becomes more competitive with auto travel and for short-distance local travel in West Virginia.	Minor, except for station access improvements and increase in repeat ridership.	Potential to substantially improve West Virginia's limited intercity passenger transportation network.
Next steps	West Virginia should take the initiative and marshal stakeholders to develop a strategy to achieve daily service on the <i>Cardinal</i> .	West Virginia should support efforts to improve service, taking the lead on stations, station access issues, and state partnerships.	Coordinate with West Virginia Div. of Public Transit and public transit stakeholders and operators on funding and route development.

3.4 Commuter Rail Service Improvements

West Virginia should view MARC's Brunswick line as a critical West Virginia transportation resource – its link to the Northeast Corridor. Given West Virginia's population density and funding issues, the most feasible and most viable proposals regarding commuter rail service relate to improvements on the existing MARC Brunswick Line rather than the pursuit of new routes at this time.

3.4.1 Ridership and Financial Accounting Improvements

Working with MARC to improve ridership and ticket revenue data analysis to clearly define the contribution of West Virginia riders are critical priorities. Once incremental revenues and incremental costs for the West Virginia service are determined, reaching a long-term financial arrangement would be facilitated.

3.4.2 Service Related Capital Improvements

Maryland's Transportation Infrastructure Investment Act of 2013 increased gasoline taxes, and some of the moneys raised will fund commuter rail capital projects. In the near term, accelerated MARC planning and project development can be anticipated as a result of this funding.

The *MARC Growth and Investment Plan* released in 2007 represents an aggressive strategy, driven by the fact that the MARC network has reached its practical capacity. The plan not only handles present growth (5-6 percent per year), but seeks to position commuter rail with service quality, speed, and capacity to divert riders from the automobile and act as a catalyst for higher density growth around MARC stations (TOD). The number of daily seats would triple, while reliability would reach 95 percent, and the Brunswick Line would offer 20-minute peak-hour headways with express and limited service. The plan also foresees mid-day, late evening, and weekend service. A regional transportation service would be created that would increase commuter rail's mode share of travel.

Many of the improvements are proposed to be in core investments: rolling stock, support facilities, stations, and track. Since West Virginia residents commuting to Washington, DC utilize these core investments when they ride MARC trains, they will benefit from these improvements (even though they will be in Maryland). An example of potential service expansion on the Brunswick Line has been proposed by West Virginia members of the MARC Riders Advisory Council (MRAC). They have suggested one additional round trip between Martinsburg and Washington, DC on weekdays. This additional frequency would round-out the current schedule with a later morning departure, while re-instating the 7:25 PM departure from Washington, DC (recently replaced with a late afternoon departure). This later departure (morning and evening) would broaden the market appeal of the service. While the later morning departure would allow West Virginians some time for early morning errands, the evening 7:30 PM departure from Washington, DC is vital for those with late meetings or those who needed extra time at their office.

MARC members from both West Virginia and Maryland have also suggested that MARC consider weekend service. This would allow West Virginians to travel to Northeast Corridor cities by train for weekend trips. More importantly it would aid the West Virginia tourism industry by allowing travelers from Northeast cities to make weekend trips to Harpers Ferry and Martinsburg.

To support this service expansion and improve reliability and more importantly to maintain the present service, investment in the core system is required. Core system requirements are rolling stock, stations, and train storage and maintenance facilities. Capital funding to provide modern shop facilities owned by MARC would help reduce maintenance costs. Capital funding to reduce running times would also reduce operating costs while increasing ticket revenue.

On the Brunswick Line, the number of peak-period trains would be increased offering 20-minute headways. Reverse peak service would also be offered. Selected Brunswick Line trains would be extended to Northern Virginia. The number of midday frequencies would increase, and there would be late evening and weekend service. To support this increase in frequency, while also improving reliability, the plan proposes a third mainline in stages between Silver Spring and Point of Rocks starting with a segment in Rockville. The plan also increases parking and makes station improvements in Montgomery County.

Given West Virginia's challenge in developing dedicated annual operating subsidy funding, MARC's long-range plan provides an opportunity for West Virginia. With the need for substantial capital funds to undertake the core system improvements, West Virginia can take the initiative to raise a portion of capital funds needed. *The MARC Growth and Investment Plan* is long-range (30 years) giving West Virginia the opportunity to develop a long-term capital funding strategy to support the plan. The MARC vision also provides an opportunity for West Virginia to improve its public transportation link to the Washington, DC /Baltimore metro area and other northeast cities.

Significant station parking and train storage is planned at Brunswick, Maryland on the basis that Brunswick is the endpoint of the route for most Brunswick Line trains. The high LOS ending at Brunswick draws a significant number of West Virginia residents. West Virginia-supported capital investments could be directed to building additional track capacity, stations, train storage, and servicing facilities in the state, possibly allowing service to expand to Hancock, West Virginia. This would reduce the investment needed at Brunswick and could entail a commuter train overhaul and maintenance base at an I-81 location.

Longer term, the addition of a fourth frequency, weekend service, and an extension of service could be pursued upon agreement by appropriate West Virginia and Maryland officials.

3.5 Tourist Railroad Improvements

Generating new and repeat ridership and maintaining momentum into the future both near-term and long-term could be challenging for West Virginia's tourist railroads.

The economy always presents a challenge, and the demographics of America are changing. Costs – especially fuel costs – are increasing, and the equipment utilized for these railroads continues to age. Maintenance and overhaul expenses will remain a significant expense. Efforts to improve “back office” and maintenance productivity, areas that are not visible to visitors, are critical. Retaining and replacing the critical skill sets related to maintenance and operation are also of vital importance.

3.5.1 Highland Adventure of Mountain and Rail Loop

In February 2012, plans for a 90-mile excursion train loop were unveiled during a meeting of the West Virginia Tourism Commission in Charleston. The proposed Highland Adventure of Mountain and Rail Loop would make use of the existing state-owned WVCR right-of-way, a portion of which the DGVR utilizes. Utilizing track materials from out-of-service trackage between Spruce in Pocahontas County and Bergoo in Webster County, a new rail line would be constructed connecting Durbin in Pocahontas County to Elkins in Randolph County to the north and to Cass in Pocahontas County to the south. The restored rail line would follow an existing WVCR rail right-of-way which follows the West Fork of the Greenbrier River. The existing West Fork Trail would be relocated, sharing the right-of-way with the new rail line. The abandoned rail line between Spruce and Bergoo would be converted to a 30-mile trail to the headwaters of the Elk River.

The additional rail infrastructure would make it possible to travel by excursion train through the Monongahela Forest southeast from Elkins via Durbin to Cass, then west to Spruce on the Cass Scenic Railroad, then north via

High Falls back to Elkins. The Mountain and Rail Loop would offer multiple recreation options. The new service would, in many ways, be similar to the local railways of Switzerland or Canada's wilderness railways, combining recreation and transportation where travelers, hikers, cyclists, and walkers use the train to reach the gateways to recreation. Rail cars would be equipped to carry kayaks, mountain bikes, and backpacking and fishing gear, making it possible for backcountry recreation seekers to be dropped off and picked up at various locations along the loop. For hikers, cyclists, kayakers, and backpackers the service facilitates "open-jaw" treks. Open-jaw trips are triangle trips where one mode is used between points A and B and between C and A with a different mode or method used to travel between B and C. Facilitating open-jaw trips would eliminate the need for a time-consuming vehicle shuttle and eliminate the risk of leaving one's vehicle at an isolated trailhead. Eight main stations would be served with a total of eight trains per day.

Sightseers on the loop would avoid the scenery "replays" of out-and-back excursions. Multiple day-trips would be possible with overnight stopovers at campsites, historic cabooses, Cass company houses, or resort hotels. For hikers, cyclists, and backpackers, the rail loop would intersect with the Greenbrier River Trail, Allegheny Highlands Trail, West Fork Trail, and the new trail to Bergoo. Rail enthusiasts would also have the option of riding a working freight train on portions of the route.

The plan is estimated to cost \$35 million to build and would take 2 years to complete. The new route, linking six counties, is estimated to draw 150,000 tourists and inject \$50 million per year into the local economy the first year it opens.

The plan consists of three phases. Phase I would upgrade the existing rail line from Durbin to MP 90.5 and repair and upgrade the line from MP 90.5 to Cass. Phase II would relocate the West Fork Trail and construct 26 miles of rail line from MP 48.5 to Durbin. Phase III would involve the initiation of operations with DGVR operating two legs of the loop from Elkins connecting to the Cass Scenic Railroad segment at Spruce and Cass.

CSR is also involved in the proposed new rail service. The CSR line between Cass and Spruce is a key link in the loop. This expansion of rail service would allow a partnership between DGVR and CSR, creating marketing synergy, a new product, and a new market. For both tourist railroads, this new market would target those traveling for outdoor recreation and utilizing the loop as a link in their travels. Cass Scenic Railroad could serve this market without changing its core mission, with its rental cottages, restaurant, and grocery serving as a stopover point for travelers. The new rail line may require additional CSR track and facilities, such as new station tracks, additional layover tracks, and train servicing facilities.

3.5.2 Promotion

Increasing the number of off-season "theme" operations to increase revenue is an important area to further explore. The list of themes is substantial, from rail enthusiast-oriented, to nature lovers, to music concerts, to photographer specials, to snow trains. Partnering with local communities to host events is an activity that many tourist railroads find productive. Many of these events are not rail-oriented; the tourist railroad is just a key partner. Theme trains help encourage and expand the market.

Some tourist railroads host "Rail Camps" during summer months. High school and middle school students studying or interested in U.S. history are a prime market. Outreach to youth helps build repeat visitation and knowledgeable potential volunteers and employees.

Partnerships and shared learning with other tourist railroads and railroad museums on presentation and interpretation is a critical endeavor. Partnership with CSXT and NS should also be explored, with events built around the

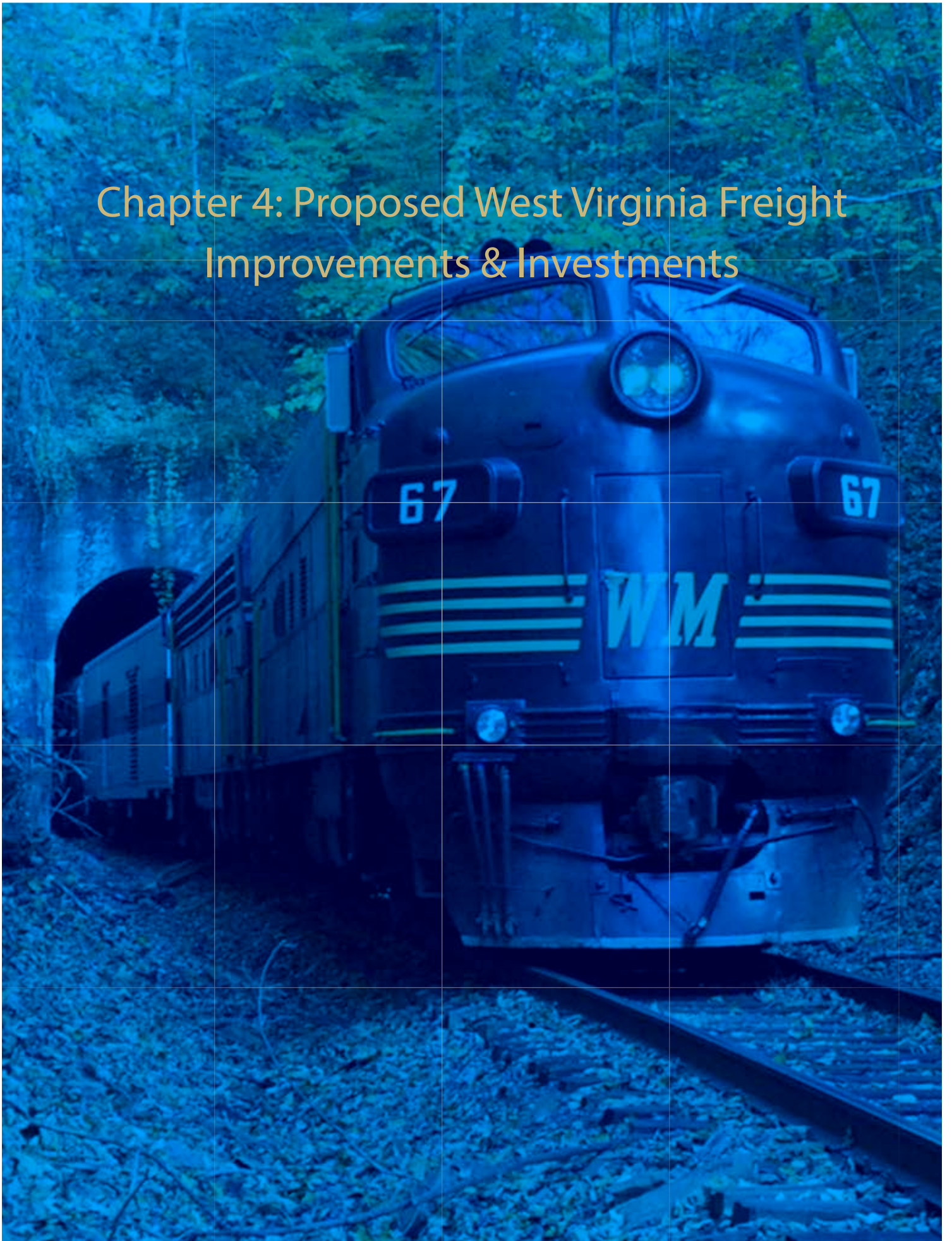
display of modern railroad equipment. It also provides an opportunity to outline the importance of the rail industry to the U.S. and West Virginia's economy.

A key potential partner may be Davis & Elkins College in Elkins. The college has just opened its Center for Railway Tourism. The center is part of the Recreation Management and Tourism major in the Business & Entrepreneurship Department. The program is designed to educate future tourist railroad managers, as well as provide a focal point for information and learning about railroad tourism operations and market expansion.

International marketing also will be critical in the next several decades. While interest from the train-loving British and outdoor-loving Germans will remain important, the tourist railroads should also look at Latin America and Asia. Economies in these areas are expanding, and they have young growing populations. One way to facilitate the international effort would be by partnering with the West Virginia Division of Tourism and West Virginia State Parks in an international marketing effort.

As part of any planning effort to fill the gaps in transit motor coach service and improve feeder service to intercity carriers, links to West Virginia's tourist railroads should also be considered. Connecting tourist railroads to intercity carriers would help broaden their market and allow tourist railroads to compete for urban dwellers that have forsaken auto travel. Also, including stops at key trailheads would enhance and expand the Highland Adventure of Mountain and Rail Loop transportation network.

Chapter 4: Proposed West Virginia Freight Improvements & Investments



4.0 Introduction

The purpose of this chapter is to describe the improvements and investments that could address the freight rail needs of West Virginia.

The determination of future freight needs, of course, must be based on the effectiveness and efficiency of existing rail freight operations in the state, as well as an understanding of future rail freight traffic levels and their impact on the existing rail network capacity and operational characteristics.

The determination of rail freight needs in West Virginia is based on the cumulative analysis of a number of rail freight measures and the results of the stakeholder outreach mechanisms. These include:

- Existing and projected rail freight traffic movement and commodity analysis;
- Existing rail freight capacity analysis;
- Class I, II, and III railroad analyses; and
- Rail operational and project needs identified during public outreach sessions, railroad interview, shipper interviews, and transportation and economic development agency interviews.

4.1 Rail Capacity

The results of the rail freight forecasts provided in *Chapter 2* suggest that total future rail freight tonnage in West Virginia will likely be comparable to today's levels through 2040. However, the composition and directional movements will change as domestic coal shipments decline and other commodity movements expand. Directional changes will likely result from the decline of existing coal seams, greater emphasis on export and metallurgical coal, the projected increase in selected commodities such as waste/scrap, nonmetallic minerals, chemical products, the overall energy production changes such as increased natural gas (from shale), and additional intermodal rail movements resulting from the Class I railroads' intermodal corridor clearance and capacity projects.

Independent analysis of existing mainline capacity found that only one Class I rail line – the CSXT Mountain Subdivision (Huntington-Cumberland, Maryland) – approached or slightly exceeded the lower bound of available capacity on the basis of current trains per day. Two additional lines – CSXT's Metropolitan/Cumberland Subdivisions between Brunswick, Maryland and Cumberland, Maryland and NS' Hagerstown District (Hagerstown, Maryland to Front Royal, Virginia) – fell within 85 percent of the lower bound of available capacity.

No short line railroads expressed the need for additional line capacity during the railroad interview process.

4.2 Class I Railroad Analysis

Interviews held with the Class I railroads and shippers served directly by these railroads raised no significant infrastructure or operational needs.

CSXT's near-term projects in West Virginia are aimed at completion of its National Gateway intermodal corridor through the Eastern Panhandle and strategic mainline and yard capacity projects to accommodate future export coal movements to expanding East Coast export facilities. CSXT also plans to increase capacity and install new signal technology on its Huntington Division to accommodate future growth to support merchandise and auto traffic growth, increase mine capacity, and improve train operations.

CSXT's capacity-related projects involve increasing siding capacity and signals on the Ohio River Subdivision. The railroad also intends to install radio control switches on the Coal River and Logan Subdivisions and add additional

yard tracks at the Benwood, Grafton, and Keyser yards, all to add capacity for export coal. Additional CSXT projects include track rehabilitation at its Clarksburg TRANSFLO facility to accommodate new sand shipments associated with hydraulic fracturing operations in the region and construction of additional interchange tracks to address increased business growth at Martinsburg.

CSXT's efforts to address increased business needs are consistent with the CSXT-related infrastructure needs expressed by its shippers and economic development agencies with jurisdictions within its service area. These entities also expressed the need for additional spur tracks or spur extensions into existing or potential development areas within Monongalia, Tyler, and Jackson counties, as well as within the general Charleston area.

Norfolk Southern has recently completed its Heartland and Crescent intermodal corridor clearance programs.

The Heartland Corridor, which passes through southern West Virginia, is currently carrying double-stack intermodal trains. NS is currently progressing work in its Prichard intermodal facility in Wayne County, which will allow for local collection and distribution of containers, as well as the development of related economic growth associated with distribution and other value-added activities. The Crescent Corridor is expected to divert a significant amount of truck traffic moving over I-81 to rail.

NS currently has no major capacity projects planned for West Virginia in the near term.

4.3 Class II/III Railroad Analysis

West Virginia's Class II and Class III railroad network, with the exception of the Elk River Railroad (ELKR) industrial track, is capable of handling 286,000-pound gross weight railcars. Although this carload bearing capacity is currently the industry standard for Class I railroads, nonconformance to this standard is recognized nationally as the predominant problem facing short line railroads. The inability to accommodate these higher weight carloadings leaves shippers of heavier, bulk commodities at the disadvantage of having to utilize older equipment designed to carry the former 263,000-pound gross weight standard or to under-load existing equipment. Both of these situations leave shippers at an economic disadvantage to competitors on lines which can accommodate the heavier loads.

Accommodating 286,000-pound loadings on short line railroads usually involves high capital expenditures for bridge replacement or rehabilitation as well as track upgrades. In most states, addressing this issue has strained the financial ability of both the short line railroads themselves and available state rail funding assistance programs. Many states project that this issue can only be addressed over the long-term (20-plus years) given existing fiscal conditions.

The fact that 286,000-pound loading capability is not a critical issue in West Virginia is important in that it allows the railroads, as well as any potential public investments, to be applied to other, generally lower-cost needs which can improve both the efficiency of rail operations and the attractiveness of rail use to existing and potential rail customers. Improvements of this nature include increased speeds through track upgrades, increased line and rail car storage capacity, new or improved spur connections to industries and businesses, and transload facilities to serve shippers not directly connected to a rail line.

West Virginia, which owns a large portion of the state's short line network through its control of the SBVR and WVCR, has focused its investments in improving the quality of service and expanding the traffic base through rail-related economic development projects.

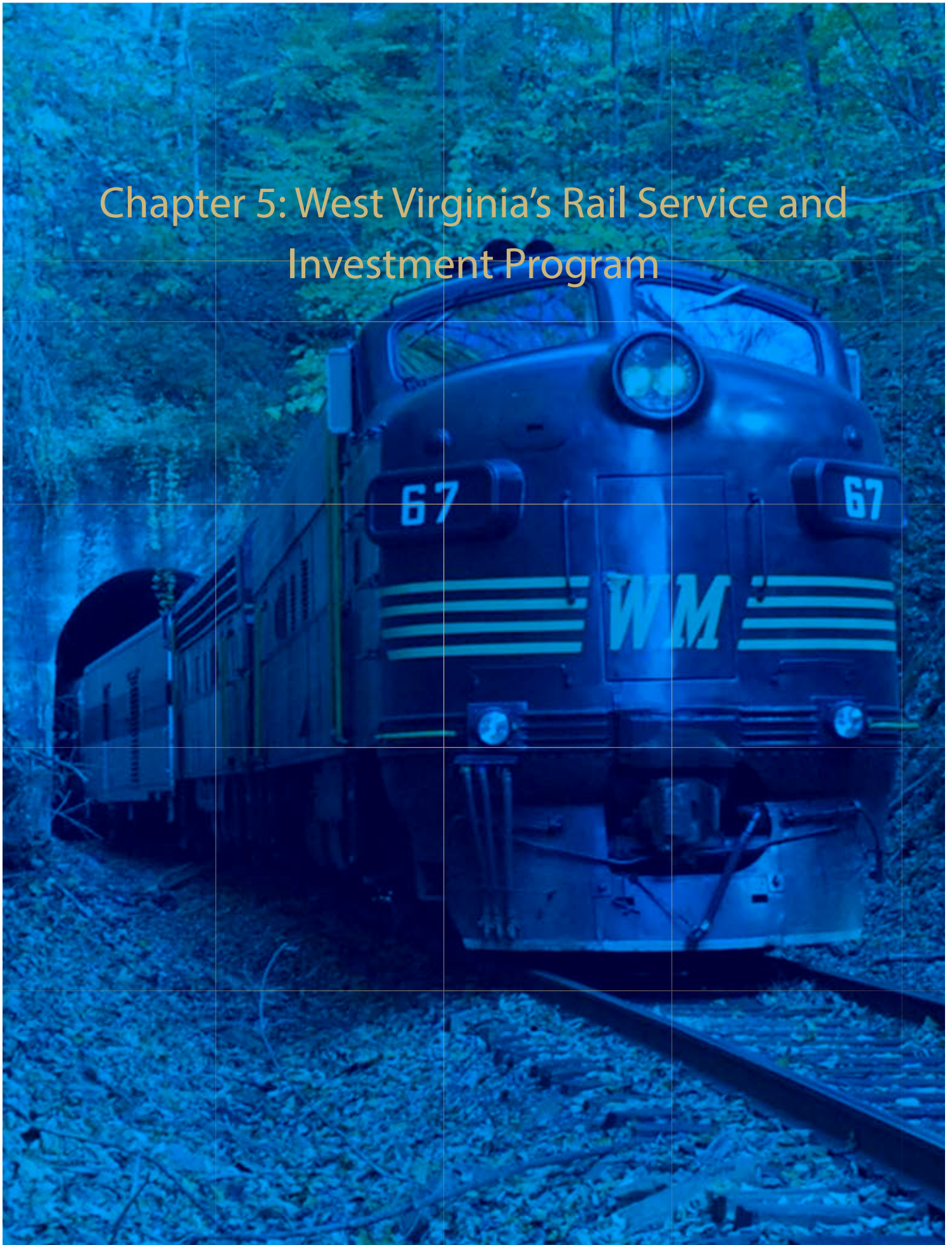
On the SBVR, proposed short-term improvement projects including upgrading and expanding SBVR's shops, adding a sand tower, and upgrading property adjacent to the line to accommodate existing customer needs and allow for future rail-served development. SBVR will also continue on-going programs to upgrade locomotive power and to re-deck all rail bridges on the line.

The WVCR also plans to continue its program to re-deck all rail bridges as well as to upgrade the Dailey Branch over the longer term. Long term project plans also include implementation of the railroad's complementary Highland Adventure of Mountain & Rail tourist train expansion project.

Public investment for rail project proposals identified on privately owned West Virginia short line railroads, such as the rehabilitation of the Elk River Railroad and the removal of existing clearance restrictions on the Appalachian & Ohio Railroad (AO), will require expanded authority and funding as well as the implementation of a project evaluation methodology.

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Chapter 5: West Virginia's Rail Service and Investment Program



5.0 Introduction

This chapter describes the state's long-term vision for rail service and its role in the statewide multimodal transportation system. It addresses the specific projects, programs, policies, laws, and funding necessary to achieve the West Virginia's rail vision and describes the related financial and physical impacts of these proposed actions.

5.1 West Virginia's Rail Vision

West Virginia's rail vision was developed through reviewing the common themes from the first round of public outreach meetings, presenting a draft rail vision statement for discussion by the Plan Steering Committee, and having the resulting final draft statement approved by WVDOT.

The rail vision statement adopted by West Virginia is provided below.

West Virginia Rail Vision Statement

"A safe, efficient, modern passenger and freight railroad network that supports a thriving state economy by promoting an integrated intermodal transportation system"

5.1.1 Related Rail Goals and Objectives

To develop draft goals and objectives related to its broad vision, the Plan Steering Committee again turned to the comments from the public outreach sessions to identify specific rail issues for consideration. These issues included beneficial aspects of the physical rail system and services, as well as negative issues such as the lack of service, poor service quality, deficient infrastructure, regulatory or institutional obstacles, or disruption to communities.

The resulting goals and objectives are aligned with the vision, consistent with comments received from public outreach activities and based on consensus of the Plan Steering Committee members. The following are West Virginia rail goals and objectives as proposed by the Plan Steering Committee and approved by WVDOT.

West Virginia Rail Planning Goals and Objectives:

13. Goal: Promote rail safety
 - Objective – Promote rail safety education programs
 - Objective – Analyze public grade crossings and support appropriate modifications where determined to be needed
 - Objective – Promote safety at rail commuter stations
2. Goal: Preserve, protect, evaluate, and improve as needed West Virginia rail infrastructure and service to ensure its continued competitive position and economic contribution to West Virginia citizens and businesses
 - Objective – Analyze mainline capacity needs
 - Objective – Preserve rail rights-of-way
 - Objective – Support the development of rail spurs to serve industrial development
 - Objective – Support development of inland ports for enhancing rail connectivity
3. Goal: Take a leadership role in rail planning and development
 - Objective – Coordinate with surrounding states

- Objective – Identify financial opportunities for rail system support
- Objective – Identify and address infrastructure issues of short line railroad operators
- Objective – Continue support of a state discretionary rail assistance program for freight and passenger rail projects
- Objective – Coordinate with the USDOT national freight network as defined in MAP-21

West Virginia Freight Rail Goals:

4. Goal: Increase emphasis on intermodal and energy-related activities by expanding service in these areas
5. Goal: Balance the enhancement of West Virginia's rail network with community and environmental stewardship and economic competitiveness
6. Goal: Support movement of goods by rail

West Virginia Passenger Rail Goals and Objectives:

7. Goal: Preserve, protect, evaluate, and improve as needed intercity passenger rail service in the state
 - Objective – Explore the feasibility for expansion of the *Cardinal* train to daily service
 - Objective – Analyze rail stations and station access needs
 - Objective – Evaluate intermodal connections to existing intercity rail service
 - Objective – Evaluate the need for additional intercity passenger service
8. Goal: Support rail-related tourism as part of an economic development program
 - Objective – Work in concert with private industry and all levels of government to enhance economic opportunities
9. Goal: Preserve and support commuter rail service
 - Objective – Analyze rail stations and station access needs
 - Objective – Evaluate the need for additional commuter service
 - Objective – Work with MARC to support its West Virginia initiatives

5.2 Integration of the Rail Vision with Other Transportation Efforts

This State Rail Plan is intended to integrate with and expand upon the *West Virginia Multimodal Statewide Transportation Plan*, which was published in June 2010.

The vision of the STP is “A well-maintained and modern multimodal transportation system,” including specific goals to:

- Preserve past investments by maintaining the existing system;
- Support West Virginia's economic development goals with multimodal access to markets in West Virginia, the U.S., and overseas;

- Support the health and well-being of West Virginians, as well as the environment and overall quality of life, with a range of mobility options; and
- Promote efficient use of resources, especially in light of diminishing revenues.

The State Rail Plan addresses each of these STP goals with respect to how they are affected by the rail mode within West Virginia.

As West Virginia also shares rail corridors and services with other states, it is also essential to coordinate with other states through both direct interaction and through comprehensive review and analysis of state rail plans prepared by other states in the region. West Virginia has submitted the draft Plan to surrounding states for their review and comment. As the regions' states have developed and completed their plans over the course of the past 5 years, it is likely that this coordination of Plan content will increase as states begin to update their plans. These updates are required every 5 years per PRIIA.

FRA was directed by PRIIA legislation to develop a Preliminary National Rail Plan to address the rail needs of the U.S. The Preliminary National Rail Plan, published in October 2009, provided objectives for rail as a means of improving the performance of the National Transportation System, which include:

- Increased passenger and freight rail performance;
- Integration of all transportation modes to form a more complementary transportation system;
- Identification of projects of national significance; and
- Providing for increased public awareness.

A final National Rail Plan will account for state rail planning practices and reflect the issues and priorities addressed in various state rail plans. The National Rail Plan is intended to be developed through the integration of individual state rail plans. WVDOT will work with FRA and other states in the region to ensure that the region's rail perspectives and issues are adequately addressed within the final National Rail Plan when it is published.

In addition to the need to coordinate the State Rail Plan with the National Rail Plan and Freight Network, West Virginia will also coordinate as necessary with the U.S. Military Surface Deployment and Distribution Command's Transportation Engineering Agency, which oversees the federal National Strategic Rail Corridor Network (STRACNET). The STRACNET is comprised of a 32,000-mile interconnected network of rail corridors and associated connector lines most important to national defense. West Virginia's STRACNET system is shown on **Figure 5-1**. In addition to providing main line corridor throughput capability, these lines provide access to major defense contractors, logistics sites, and military facilities critical to national defense.

Figure 5-1: West Virginia Strategic Rail Corridor Network



5.3 Proposed Organizational or Policy Changes

At all stakeholder outreach venues, participants were questioned as to the potential need for organizational or policy changes. Aside from the expressed need for a dedicated public rail financial assistance program, no significant changes to WVDOT's rail planning, program development, regulatory, or other rail-related activities were recommended.

5.4 Potential Effects of Rail Program Implementation

In the absence of a dedicated rail improvement program and given West Virginia's near-term funding challenges, the level of possible rail investments, and their related benefits are speculative at this time. Therefore, the projects and other proposals outlined below are based on those activities that best protect the past investments and the future viability of state-owned rail lines, those rail passenger improvements that are based on preservation and improvement of service, and the safety of passengers. Despite the limited scope of proposed improvements, however, these projects offer substantial potential benefits.

Since Amtrak surveys indicate that the majority of its riders are diverted from the automobile, rail passenger improvements will result in a more extensive and diverse intercity transportation network, less traffic congestion, walkable development patterns, increased tourism and access to job opportunities, and increased energy efficiency. For rail freight improvements, the benefits involve increased transportation competition resulting in lower cost to shippers, less highway congestion and damage, and reduced environmental and energy impacts. By their nature grade crossing improvement projects, as well as other rail-related improvements, also increase transportation safety.

The following is a summary of the potential benefits associated with West Virginia's specific rail projects and proposals:

5.4.1 Proposed Short-Range Passenger Rail Projects

At this time, there are no proposed passenger rail projects proposed for implementation during the 1- to 4-year short-range program period. This is primarily due to the lack of sufficient dedicated funding during the short-term needed to initiate projects and the need to further study the feasibility of various passenger projects which have been proposed.

5.4.2 Proposed Long-Range Passenger Rail Projects

The following are proposed long-range (5-20 years) projects for which planning and coordination activities have already been conducted and which will likely be implemented upon funding availability.

Prince Railroad Station (Fayette County)

The Prince Railroad Station Authority was created by the West Virginia Legislature in 2012 to acquire and maintain the Prince Station. A proposed, long-range estimated \$1.0 million project (no funding source identified) would address platform, ramp and stair, parking, lighting and signage, station interior improvements, and ticketing and communication functions.

This station is located in the proximity of the SBR, a major new destination and potential source of significant ridership to the *Cardinal* route. CDM Smith estimates that SBR could generate an additional 8,000 to 9,000 riders a daily *Cardinal*, or about 60 to 70 riders per train. Long-term, there is some potential that several Boy Scout councils could charter the Northeast Corridor charter train set (10 to 12 cars), which would require that the train-length platform at Prince be maintained for operational efficiency and the safety of passengers. Station improvements and amenities are also important to coordinate the travel and transfer process, including bus transfer between the station and SBR.

This project could increase the viability and help preserve *Cardinal* service and increase rail passenger access, passenger safety, and economic activity in the region. The project would have little or no impact on system capacity and congestion.

Harpers Ferry Station (Jefferson County)

This proposed \$2.3 million project entails the preparation of engineering design and construction of upgrades required for the station to meet all ADA compliance standards. The SRA is responsible for 86 percent of the total costs and Amtrak is responsible for the remaining portion.

This project will increase accessibility and safety for passengers utilizing both Amtrak and MARC service. The project upgrades may also have a positive impact on system capacity and congestion due to more efficient passenger movements to and from trains due to platform improvements.

The SRA's share for engineering design was made available from its General Fund budget. No funding has been secured for the construction phase to date.

Potential Projects Related to Improved Cardinal Service

The upgrading of *Cardinal* service and its stations and the successful implementation of daily service would allow for growing patronage and improving the *Cardinal's* core service attributes of OTP and travel time, and its cost recovery ratio, thus better ensuring continued operation of this route.

Although no specific project or investment is planned at this point in time, a number of project proposals were provided during the stakeholder outreach process. These projects are described below and will be included in the

long-range program of projects. These projects will be evaluated in the future and if chosen for implementation and funding will be described in more detail as the short- and long-range programs are updated.

Projects developed as a result of coordination efforts, which could be located within the state or outside of the state as a result of a coordinated investment program with other states, would be added to the program of projects in the future. Coordination with other *Cardinal* states to plan projects or other operational improvements may also be included in the future.

The proposed projects referenced above are as follows:

Huntington Station/South Yard Passenger Siding

This proposed project involves the construction of a connection at the Huntington passenger station from the mainline to a new siding at the existing CSXT South Yard. A new passenger and baggage loading platform would also be constructed adjacent to the siding. The preliminary estimated cost is \$2.5 million. This project increases both passenger and freight safety by allowing Amtrak to move passenger boarding off the mainline and also allows for a longer platform to make boarding more efficient and timely. Moving passenger trains off the mainline would also increase the efficiency of freight operations and reduce traffic congestion. The project could also be an initial phase of additional operational improvements at the location, such as the transfer of refueling operations which would provide additional *Cardinal* schedule improvements. No funding source is currently available for this project.

Charleston Multimodal Passenger Terminal Relocation

This proposed project entails conducting engineering studies and the potential construction of a new state-of-the-art passenger intermodal facility in Charleston. This proposed project is intended to address the current station's perceived problems, which include its isolated location, problems entering and leaving the station along a controlled access highway, the lack of a station spur which requires passenger trains to stop on the mail line, limited parking, and the lack of intermodal connections.

Construction of a New Hurricane Passenger Station

This proposed project entails studying the feasibility of constructing an additional staffed Amtrak station at Hurricane.

Hawk's Nest Bridge Replacement and Realignment

This proposed project consists of the construction of a new bridge and major re-alignment of the CSXT tracks over the New River at Hawk's Nest. Portions of the existing bridge are more than 100 years old and the curves associated with the crossing severely limit the speed of all trains. This project would benefit freight service as well as passenger service along the corridor.

Potential Projects Related to Improved MARC Service

In addition to the implementation of ADA improvements at the Harper's Ferry Station discussed above, a number of project proposals related to improving MARC's Brunswick service within West Virginia were provided during the stakeholder outreach process. These projects are described below and will be included in the long-range program of projects. These projects will be evaluated in the future and if chosen for implementation and funding will be described in more detail as the short- and long-range programs are updated.

Construct New or Improve Existing MARC Stations or Facilities

Project proposals provided at stakeholder outreach meetings held within West Virginia's commuter territory were largely focused on the need for replacement or rehabilitation of existing commuter stations. The project proposals are based on the perceived need to address defects related the stations' infrastructure and concerns over passenger safety.

New facilities were recommended at West Martinsburg and Ranson. The West Martinsburg facility would involve a larger and more efficient train storage/service facility for 5- to 6-train sets. The proposed new intermodal facility at Ranson has been proposed by a private developer to be part of a transit-oriented new community. This facility would likely replace the existing Duffields station. Additional potential new station locations have been proposed at North Port and McKees Crossing.

Purchase Commuter Train Sets

The state's purchase of commuter train sets was proposed to enable express service from West Virginia to Washington, DC for the purpose of reducing trip time and promoting West Virginia ridership.

Potential Projects Related to Tourist Rail Service

The tourist rail projects described below have been proposed prior to or during the stakeholder outreach process. These projects will be further evaluated and if chosen for implementation and funding will be described in more detail as the short- and long-range programs are updated.

Hampshire County Rail Spur and Station Project

This proposed \$22 million project entails the construction of a rail spur and station to expand tourism opportunities on the PESR's excursion service over the SBVR. It is anticipated that additional businesses would locate within the proposed station complex, further benefitting the local economy and employment in Hampshire County.

The Hampshire County Development Office will coordinate with the SRA to identify available state and/or federal funding opportunities.

Highland Adventure of Mountain & Rail (Randolph and Pocahontas Counties)

This proposed \$44 million project involves the creation of a new excursion route that would significantly expand the range of existing DGVR and CSR tourist train operations. The expanded excursion route is expected to attract additional ridership as well as provide access to the area's wide range of recreational activities. Indirect benefits will include new and expanded economic benefits for lodging, food, and recreational facilities in the region.

Funding for this project has not been identified at this time. Additional study is required to determine whether the project will generate an adequate stream of revenue to support potential bonding of the project.

Tourist Train Signing Program

Proponents of the state's tourist rail systems recommended that additional signs directing drivers to the location of tourist trains be provided, especially on secondary roads.

5.4.3 Proposed Short-Range Freight Rail Projects

As noted earlier, West Virginia's unique role in both owning and operating railroads requires WVDOT to protect the state's past investment in these rail properties by utilizing available rail-eligible funding to maintain and upgrade their infrastructure and operations. Many of these past and proposed projects also contribute to the state's and

region's economy by assisting existing rail users to expand operations and provide incentives for additional rail users to locate on the lines.

During the 4-year short-range program period, all proposed freight rail projects are expected to be located on state-owned rail lines as follows.

South Branch Valley Railroad Capacity Project

This \$3.0 million project will upgrade 23 acres of property on the SBVR to allow the use of 90-car unit trains to serve the railroad's largest customer. This project will also benefit other shippers on the line through increased efficiency and more competitive rates. It will also provide additional capacity and the ability to market the railroad to new businesses, which would provide additional employment and business activity within the region.

Funding is expected to be provided from the State General Fund and the SRA's Special Revenue Fund for use on the SBVR.

South Branch Valley Railroad Locomotive Upgrade Program

This project involves the short-term, \$1.0 million phase of the on-going \$3.0 million project to upgrade the railroad's locomotive fleet over a 10-year period. These upgrades will ensure reliable and more efficient service to the railroad's existing customers, as well as significantly reduce locomotive fuel usage and emissions.

Funding is expected to be provided from the State General Fund and the SRA's Special Revenue Fund for use on the SBVR.

South Branch Valley Railroad Bridge Improvement Program

This project is comprised of the short-term, \$0.75 million component of the ongoing \$2.5 million project to re-deck all rail bridges on the railroad over a 10-year period. This project will ensure that the railroad will be able to accommodate heavier carload weights and to ensure continued service to existing customers on the railroad.

Funding is expected to be provided from the State General Fund and the SRA's Special Revenue Fund for use on the SBVR.

South Branch Valley Railroad Shops Expansion and Sand Tower

This project will involve the upgrade and expansion of the SBVR maintenance shops and the construction of a sand tower to provide sand for locomotive traction on steep grades. These projects will provide improved working conditions and efficiency on the railroad.

The \$0.75 million estimated project cost is expected to be provided from the State General Fund and the SRA's Special Revenue Fund for use on the SBVR.

West Virginia Central Railroad Bridge Improvement Program

This project consists of the short-term, \$0.75 million component of the ongoing \$2.5 million project to re-deck all rail bridges on the railroad over a 10-year period. This project will ensure that the railroad will be able to accommodate heavier carload weights and to ensure continued service to existing customers on the railroad.

Funding is expected to be provided from the State General Fund and the SRA's Special Revenue Fund for use on the WVCR.

Freight Rail Safety Projects

In addition to the short-range projects described above, WVDOT will also undertake a number of rail safety-related initiatives over the next 4 years.

WVDOT has currently programmed a total of 40 at-grade improvement projects on CSXT; AO; R. J. Corman Railroad Company/West Virginia Line Inc. (RJCW), Winchester & Western Railroad (WW); and WVCR railroad systems. The estimated total cost of these projects is \$4.5 million, primarily from the federal HSIP. Additional projects will be added to the program as they are selected.

WVDOT will also expend an estimated \$1.0 million over the 4-year period to conduct annual rail bridge inspections on the SBVR and WVCR.

5.4.4 Proposed Long-Range Freight Rail Projects

The following projects have been proposed for funding beyond the 4-year short-range program period.

South Branch Valley Railroad Locomotive and Bridge Upgrade Programs

These projects consist of the completion of the SBVR locomotive upgrade program (\$1.5 million) and the bridge upgrade program (\$1.5 million) described in the short-range program above.

West Virginia Central Railroad Bridge Improvement Program

This project consists of the completion of the WVCR bridge improvement program (\$1.5 million) described in the short-range program above.

West Virginia Central Dailey Branch Upgrade

This \$3.1 million project would upgrade operations over the line to provide access to potential new businesses. The project would also open a new rail tourism venue on the rail line. The project will result in increased employment and stimulate the local economy.

Funding for this project is currently unavailable. The SRA will evaluate the potential use of General Funds, the SRA's Special Fund for use on the WVCR, and the prospective use of the Public Port Authority's Special Railroad and Intermodal Enhancement fund based on the level of existing and/or prospective shipper commitment.

Additional Rail Freight Project Proposals

The following projects were proposed during the stakeholder outreach process. These projects will be evaluated in the future and if chosen for implementation and funding will be described in more detail as the short- and long-range programs are updated.

Reroute CSXT Line Between Harper's Ferry and Reedson

This project proposal entails re-routing CSXT trains between Potomac Street in Harper's Ferry and Reedson. This re-routing would eliminate several crossings and correct the width and height restrictions at the Bakerton Underpass.

Revitalize the Weirton Rail Yard

This project proposes to upgrade the Mittal Weirton Yard for the purpose of attracting additional rail-served development in the area.

Construct a Rail Waste Transfer Facility in the Kanawha Valley

This project proposal is based on the premise that landfill capacity in the Kanawha Valley, and possibly other areas of the state, will soon be exhausted, requiring the construction of transfer stations and the hauling of waste to more distance disposal sites. It is proposed that a rail-served transfer facility would be the cost-effective mode for this activity.

5.5 Rail Project Impact and Financing Analysis

State rail plan guidelines require states to describe how capital projects were analyzed, specifically with regard to their impacts on passenger rail ridership, potential diversion from highway and air to rail, passenger rail revenues and costs, freight rail project benefits, etc. States are also required to describe their 4- and 20-year financing plans for passenger rail capital and operating costs. Discussion of these analytical areas for both passenger and freight rail projects are described below.

5.5.1 Passenger Rail Project Impact Analysis

Most significant rail intercity or commuter rail projects will have some level of impact, usually positive, on overall rail passenger ridership, rail passenger miles travelled, modal diversion from highway and air, and increased rail passenger revenues and/or reduced costs.

As noted previously, West Virginia has a limited amount of control over the rail passenger operations within the state. Amtrak and MARC operate the respective intercity rail passenger and commuter rail operations, and those operations within West Virginia represent only a portion of the total service area of the operations. These limitations also reduce the state's ability to significantly affect positive impacts on other modes or influence major modal diversion.

WVDOT, as part of the State Rail Plan process, has developed project evaluation tools for both potential new intercity and commuter passenger rail services which will allow it to conduct preliminary analyses of the estimated ridership, passenger-miles, revenues, and costs for new services or service extensions. This will provide the benchmark information necessary to determine whether further analysis and potential investment in the proposed services are merited.

5.5.2 Passenger Rail Project Financing Plan

West Virginia is limited in the means available to increase the frequency and LOS of the *Cardinal*, and any capital investments related to the overall corridor must be made at the regional level with concurrence by Amtrak, other states served by the route, and the line owner, CSXT.

West Virginia, however, does plan to contribute to the preservation, and possibly the eventual expansion, of *Cardinal* service by taking advantage of and leveraging all available opportunities to increase ridership.

West Virginia also plans to contribute to both Amtrak's *Capitol Limited* service and MARC's Brunswick commuter line through investment in the Harpers Ferry Station. The proposed improvements, which will result in compliance with ADA standards, will provide increased access to the rail services provided at the station. A number of additional projects have been proposed during the Plan process that could benefit both intercity and commuter rail service on this corridor.

West Virginia's lack of direct control over these rail passenger corridors' physical and operational characteristics, as well as the current limited funding available for rail projects, require that public investments be limited to specific, strategic projects that help secure or improve service, increase ridership and provide commensurate public benefits.

The state will also work to expand rail passenger service's reach through low cost transit connections and coordinate with other states toward larger, regional solutions.

One area of rail passenger service for which the state does have a large measure of control is the state's tourist train operations, as many of them operate over state-owned rail lines. This situation often provides opportunities to leverage investments in these railroads' infrastructure to the benefit of both freight and tourist train operations. Given this situation, the state is considering future investment in the expansion of its tourist network through the Highland Adventure of Mountain & Rail, WVCR Dailey Branch upgrade, and Hampshire County Rail Spur and Station projects. These projects are expected to provide significant benefits to the local economies and to provide the railroads with increased operational efficiencies and revenue opportunities. The proposed financing of these initiatives will largely be reliant on the future availability of funding and determination of whether the level of resulting public benefits justifies the significant level of investment involved.

5.5.3 Passenger Rail Operations Financing Plan

Amtrak has total fiscal responsibility for its long-distance routes, which include the state's *Cardinal* and *Capitol Limited* services. This differs from state-supported intercity passenger corridors where states have the financial responsibility for operating losses but also a voice in the expected performance and operation of the service. At this time, WVDOT foresees no new intercity passenger rail corridor operations being established that would require the state to contribute a subsidy for operating losses.

With regard to commuter rail service, it was previously noted that recent legislation gives the SRA the authority to negotiate with MARC for the continued operation of the commuter rail operations between Maryland, the Washington, DC metropolitan area, and West Virginia. The legislation also creates a West Virginia Commuter Rail Access Fund that shall be administered by the SRA. The negotiated agreement may provide for the payment of track access fees attributed to commuter rail operation within West Virginia.

5.5.4 Public and Private Economic Benefits

West Virginia's proposed short- and long-range rail investment plans are intended to have a high correlation between the public funding provided and their intended benefits.

Because its proposed short-range program is primarily directed at the short line railroads owned by the state, the public benefits include not only the transportation-related economic and socio-environmental benefits involved in providing competitive rail service itself, but also the preservation and protection of state-owned assets. These rail lines have also steadily produced increased traffic levels, which have resulted in former and new shippers receiving cost efficient service.

Through this Plan process, WVDOT has also developed a better understanding of the rail industry's plans for growth within the state and the projects deemed necessary to facilitate this growth. These private sector rail projects, if deemed to provide sufficient public benefits in the future, may receive public financial assistance in the future should funding become available.

As most proposed long-range projects have yet to be analyzed with regard to their economic feasibility, it is premature to identify any correlation between the level of public investment and benefits.

5.6 Rail Project Impacts and Financing

This section, combined with *Appendix 2*, describes the 4- and 20-year capital financing plans for public investments and the estimated benefits associated with these proposed investments.

West Virginia has a larger measure of control over freight rail service as a result of its ownership and operation of rail lines in the state. The state's purchase and operating control over the SBVR and WVCR provides incentive to not only preserve rail service on these lines, but to improve both the LOS to induce economic benefits to the local communities as well as the financial viability of the railroads. West Virginia has largely accomplished this by focusing its investments on improving overall service efficiency and meeting the needs of specific shippers, expanding access and service capability to attract new business, and leveraging the capacity of both railroads by supporting tourist train operations which provides an additional revenue source with limited incremental costs.

Through this Plan process, WVDOT has also developed a better understanding of the rail industry's plans for growth within the state and the projects deemed necessary to facilitate this growth.

5.6.1 Rail Freight Financing Plan

With the security of having rail ownership and control of operations, West Virginia has provided the financial resources necessary to largely meet the infrastructure needs of its two railroads, with the SRA receiving state budget appropriations over the past 15 years and through funds available from railroad revenue. The level of revenue generated by the railroads has precluded the need for appropriations to be used for operating deficits.

The lack of a discretionary rail assistance program, however, precludes the SRA's ability to address privately owned railroad needs.

The Public Port Authority's Special Railroad and Intermodal Enhancement Fund would provide an additional program source to address strategic rail needs statewide if funding was continued and any restrictions to use removed.

5.6.2 Rail Program Economic Effects

The state's proposed short- and long-range freight projects are based on preserving and increasing the efficiency of rail operations on its publicly owned rail lines. Operating efficiency will continue to benefit from the investments in bridge rehabilitation on both railroads as well as the locomotive upgrade program and shop expansion on the SBVR. Additionally, the proposed SBVR project to provide the ability for its largest customer to utilize 90-car unit trains will not only benefit existing customers but also provide the ability to attract new business to the line. Finally, the larger-scale, long-range tourist train expansion projects would all be on or connected to the state's two railroads, which will provide expanded revenue opportunities and possibly provide additional access to new freight-related initiatives.

As noted previously, most proposed long-range projects have yet to be analyzed with regard to their economic feasibility, and it is premature to identify any specific economic benefits.

5.7 Recommended Planning Studies

Analysis of West Virginia's rail network and comments and recommendations provided at the Plan's outreach meetings resulted in a number of recommendations for studies to determine the feasibility of future projects or state-sponsored services to improve rail operations in the West Virginia.

Potential rail studies which will be considered in the future, pending the available staff and/or financial assets required, center on the following areas:

- Intercity and commuter passenger rail service connections;
- Regional commuter-type service studies; and
- Other rail freight service, safety, and tourist rail studies.

These are discussed in more detail below.

5.7.1 Proposed Rail Passenger Connection Studies or Pilot Initiatives

A number of proposed thruway bus service feeder connection initiatives were recommended for further study during the stakeholder outreach process. The feasibility of these initiatives could be determined by undertaking an analysis and prioritizing the feeder connections on the basis of route population or work trips between service endpoints, and then undertaking a short pilot operation to determine the economic feasibility of the service. The proposed feeder connections are identified below by the existing intercity or commuter rail service.

Cardinal Service Feeder Connections

- Parkersburg-Ravenswood-Ripley-Prince
- Summersville-Fayetteville-Prince
- Bluefield-Princeton-Hinton
- Point Pleasant-Huntington
- Beckley-Oak Hill-Montgomery-Prince

Capitol Limited Feeder Connections

- Morgantown-Connellsville, Pennsylvania
- Romney-Keyser-Cumberland, Maryland
- Wheeling-Weirton-Pittsburgh, Pennsylvania

MARC Feeder Connections and Needs Analysis

- Berkley Springs-Martinsburg
- MARC growth projections/future needs study

5.7.2 Regional Rail Passenger Service Studies

Regional rail passenger service studies entail the analysis of establishing new rail passenger corridors or providing additional service over existing corridors. Studies would involve the determination of estimated ridership, service economics, and major capital investment needs. The proposed types of service and locations are:

- Establishment of a rail commuter or rail shuttle service between Charleston and Huntington; and
- Establishment of a new commuter or rail shuttle service between Fairmont-Morgantown-Pittsburgh, Pennsylvania.

5.7.3 Other Rail-Related Studies

A number of additional study recommendations were put forth from the Plan's public outreach and Steering Committee. These study recommendations are:

- A feasibility study of providing rail freight access to the Ohio River port at Beech Bottom;
- A statewide study of freight intermodal facility needs and prospective locations;

- Development of a state freight plan that meets the requirements of the National Freight System legislation outlined in MAP-21;
- A study of long-range, statewide highway-rail crossing safety; and
- A study of the feasibility of establishing a tourist train in Jefferson County as part of a comprehensive county tourism plan.

5.8 West Virginia's Short- and Long-Range Rail Program of Capital Projects

PRIIA requires state rail plans to include a Rail Investment Program, which includes a short-range list of rail capital project to be considered for the next 4 years and a long-range list of rail capital projects for years 5 through 20 that are reasonably expected to be undertaken or supported for consideration by the state.

West Virginia has chosen to limit short-term projects to those projects for which funding have been identified. Long-range projects include projects for which funding has been identified but are planned to be implemented as part of a multi-year program that exceed the 4-year short-range period, as well as projects that are under study or consideration but for which funding has not been identified.

5.8.1 Short-Range Rail Investment Program

Proposed short-range projects have been evaluated largely on the basis of their respective sources of funding eligibility and evaluation of benefits to be realized from the completion of the projects.

Projects prioritized for potential funding are selected on the basis of estimated benefits expected for the project in terms of job creation, job retention, shipper transportation savings, energy and environmental benefits, and other program-specific benefits. As existing state funding is limited to specific legislative appropriations and special revenue funds for state-owned railroads, short-range capital projects are currently restricted to those railroads.

Grade crossing improvement projects are programmed to address specific corridors, and within those corridors the projects are based upon several criteria, including the relative safety of the existing crossing and the volume and types of existing train and highway traffic.

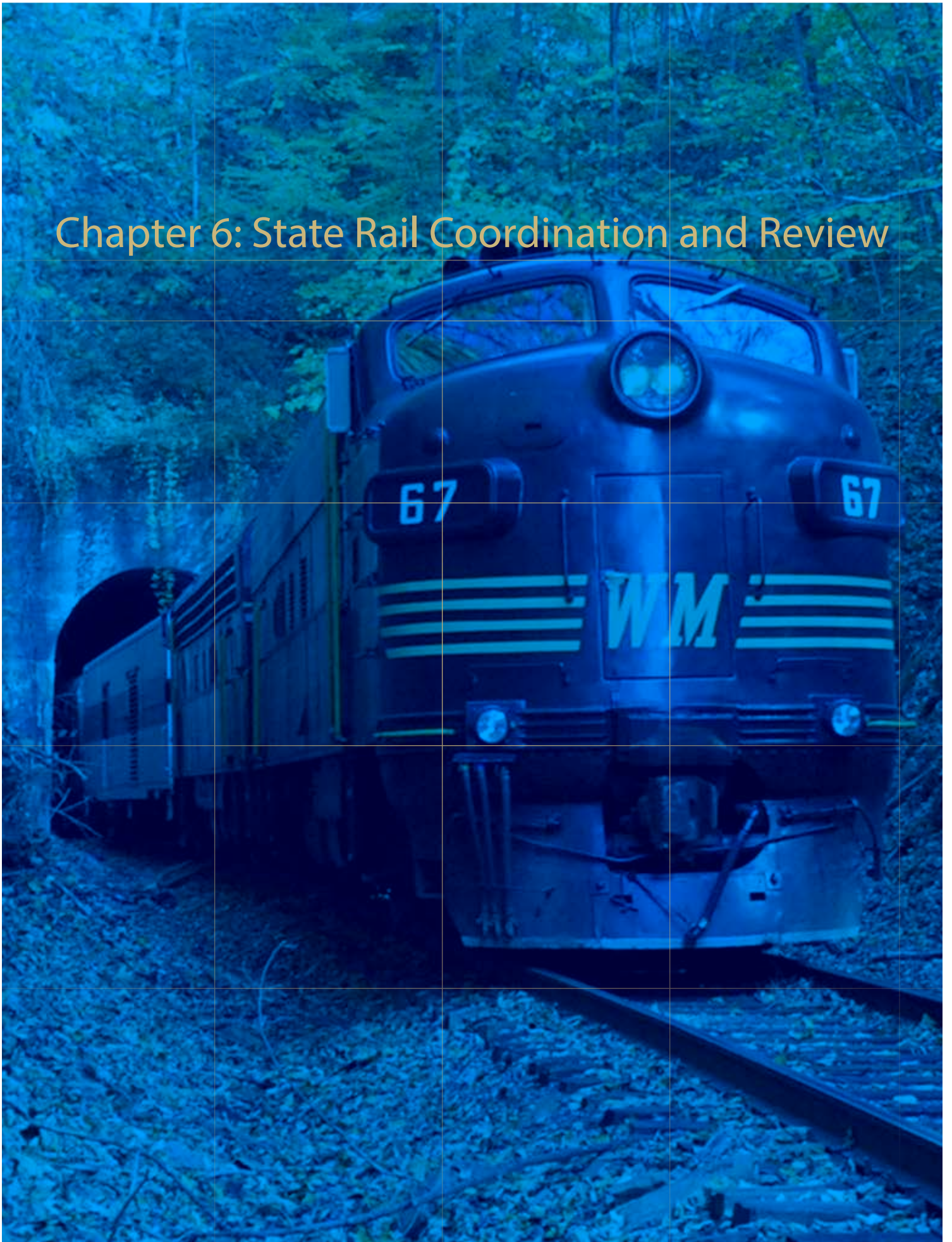
5.8.2 Long-Range Rail Investment Program

West Virginia's Long-Range Rail Investment Program is comprised of projects which have been identified by the SRA and other rail stakeholders to address rail passenger and freight needs. These projects, however, are either not expected to be implemented within the next 4 years or, in most cases, neither the justification for funding nor the funding itself have been identified as yet.

WVDOT has elected to include any prospective rail projects which received support as a result of the public outreach process, regardless of funding availability at this time. These projects are subject to additional feasibility analysis and evaluation of potential public and private benefits. Upon completion of these analyses, the Long-Range Investment Program will be modified to include projects deemed to be a high priority for the designated long-range period. Upon the availability of state or federal funding resources, projects selected for implementation could be moved to the Short-Range Rail Investment Program.

A compilation of short- and long-range projects are available in *Appendix 2*.

Chapter 6: State Rail Coordination and Review



6.0 Introduction

This chapter describes how rail stakeholders were involved in the development and coordination of the various components of the West Virginia State Rail Plan.

WVDOT and the SRA made an early commitment to provide an ongoing stakeholder and public involvement process for all aspects of its State Rail Plan.

Stakeholders are individuals and groups who are affected by or have an interest in a particular project or action. It was determined that a wide variety of stakeholders would be interested in the State Rail Plan, including the state's railroads; shippers; rail passenger users; the mining and manufacturing sectors; state, regional, county, and city government agencies; elected and appointed public officials; economic development and business interests; advocacy groups; and the general public. Stakeholder involvement extended to participating in rail planning activities, developing the rail vision and goals for West Virginia, identifying rail needs and potential rail investments, and helping to define rail policies and performance metrics.

6.1 Public Participation Approach

The development of a Public Participation Plan was one of the first components of the project planning task for the State Rail Plan. To ensure that Plan development was guided, reviewed, and supported by a wide range of state public agencies and representation from both public and private transportation and economic development entities in the state, a State Rail Plan Steering Committee was developed to provide general direction and input into the Plan process.

The Public Participation Plan called for the development of public outreach tools and a comprehensive public outreach effort that included public meetings and interviews of various stakeholders involved in or affected by the state's rail system. Each of these public participation elements are described below.

6.1.1 West Virginia State Rail Plan Steering Committee

West Virginia's State Rail Plan Steering Committee was formed through the invitation and acceptance of state legislative representatives, state transportation and economic development officials, private railroad operators, metropolitan transportation organizations, and business associations to provide guidance to the Plan process. Plan Steering Committee representatives are shown in *Appendix 3*.

Plan Steering Committee meetings were scheduled on a quarterly basis. These meetings included project status reports from the consultant team, presentation of summary findings for discussion, a special workshop to develop a draft rail vision and goals, discussion of proposed work and deliverables, and development of policies regarding proposed studies and projects to be included in the Plan.

In addition to these meetings, WVDOT submitted all Plan deliverables to Plan Steering Committee members for their review and comment.

6.1.2 State Rail Plan Website

To provide a medium for public review of project findings, scheduled meetings, and other information pertinent to the Plan, a project website was established. This website located at www.westvirginiarailplan.com, includes the project description, project deliverables produced, schedules, upcoming meetings, steering committee membership, and the ability to submit comments regarding any of the above.

The draft State Rail Plan was posted to the website during September and October, 2013 and WVDOT publicized its availability for public review and comment prior to finalization of the Plan.

6.1.3 Stakeholder Interviews and Surveys

The most direct method of determining the status/condition of the rail network in West Virginia and soliciting the infrastructure, operational, policy, or other needs of these stakeholders with regard to rail operations is through interviews or surveys. During the analysis period for the Plan, all railroads operating in the state were contacted to solicit information as to their operations, project, or other needs and their opinion as to what the public sector could do to assist or improve the efficiency and expansion of rail in West Virginia. Similar surveys were conducted for shippers located on both the Class I and short line railroad network.

In addition to the interviews and surveys conducted with railroads and shippers, an electronic survey was submitted to all economic development agencies and MPOs in the state to solicit their views as to rail infrastructure and operational needs and rail-related opportunities that could improve economic development within their areas of jurisdiction.

6.1.4 Public Outreach Meetings

WVDOT arranged two series of public outreach meetings around the state to educate stakeholders and the general public regarding the Plan process, to obtain input for development of the state's rail vision, to provide a forum for discussion of specific rail issues regarding West Virginia's rail network, and to provide a forum to review and solicit comments on the draft State Rail Plan.

The first round of meetings was held at the following locations:

- Lewisburg – December 10, 2012
- Huntington – December 11, 2012
- Williamson – January 8, 2013
- Ripley – January 9, 2013
- Elkins – January 15, 2013
- Fairmont – January 16, 2013
- Wheeling – January 22, 2013
- Martinsburg – January 29, 2013

For this first round of meetings, two sessions were held at each location. The first sessions were held in late afternoon and directed toward invited rail stakeholders such as rail carriers, rail users or shippers, state and local officials, transportation planning agencies such as MPOs, economic development agencies, and representatives of rail passenger advocacy groups.

The second sessions at each location were evening meetings open to the general public. WVDOT invited the general public to these meetings using its standard public notification procedures such as press releases, etc.

Poster boards which displayed the State Rail Plan process as well as maps of the West Virginia rail system were provided for public view prior and during each session. Following introductions, the consultant team provided a presentation outlining the requirements and purpose of rail plans and moderated discussion for the purpose of developing a rail vision for the state and identifying rail-related issues.

A total of 82 people attended the first round of outreach sessions. Participants included attendance or representation from: U.S. Congressional staff; West Virginia Senators and House Delegates; county and local government officials; MPO staff; local economic development organizations; short line, tourist, Amtrak, and MARC railroad

organizations; rail contractors; rail labor; rail passenger advocacy organizations; rail-served industries; homeowner organizations; local media; and private citizens.

The second series of public outreach meetings were held at the following locations:

- Charleston- July 16, 2013
- Parkersburg – July 17, 2013
- Flatwoods – July 18, 2013
- Beckley – July 23, 2013
- Weirton – July 24, 2013
- Morgantown – July 25, 2013
- Moorefield – July 26, 2013
- Charles Town – July 27, 2013

Sessions were held in the early evening, except for the meeting in Charles Town which was held on a Saturday afternoon to accommodate commuter rail passengers. The meetings were advertised in local newspapers and through press releases to the print, radio, and television media.

Poster boards displaying the Plan process; the proposed state rail vision, goals, and objectives; and maps of the West Virginia rail system were provided for public view prior to and during each session. A presentation was provided outlining key aspects of the purpose and process involved in state rail plans; the process utilized to develop the state's proposed rail vision, goals, and objectives; current and projected rail freight; intercity passenger and commuter rail ridership trends; rail-related economic impacts; rail infrastructure needs and recommendations; and short-and long-term projects proposed to date.

Attendees were encouraged to provide additional rail issues, policies, and projects for consideration by the Plan Steering Committee and were also encouraged to review and comment on the draft final State Rail Plan to be made available on the Plan's website.

A total of 50 people attended the outreach sessions. The meetings also resulted in a number of newspaper and television interviews and coverage of the State Rail Plan.

6.2 Coordination with Neighboring States

WVDOT routinely interacts with neighboring states through involvement in national and regional transportation organizations and to address specific transportation issues, as necessary. Rail coordinators in all neighboring states were contacted to inform them as to the availability of the draft State Rail Plan and to solicit their comments.

6.3 Stakeholder Involvement in the Development of the State Rail Plan

Both public and private sector stakeholders played a major role in providing input into the Plan. Actions that were taken to involve stakeholders are described below.

6.3.1 Rail Shipper Outreach

Private sector freight rail shippers served by both Class I and short line railroads were contacted regarding the Plan and given the opportunity to comment. Rail shippers are defined as a business or company that uses rail for shipping or receiving all or part of their products materials used to manufacture or produce their products.

Shippers were asked to comment as to problems or issues with rail service, potential infrastructure, or operational improvements that could increase their rail use, as well as regulatory restrictions that impact rail service. Shippers were also asked their opinion as to the value of public rail retention and infrastructure programs, any other means

by which the public sector could assist or enhance rail service to local industries, and their general views as to the future of local rail freight service.

6.3.2 Railroad Interviews

All railroads operating within West Virginia were contacted to solicit input into the Plan. In addition to describing their rail infrastructure and operations within the state, the railroads were also asked to identify past investments and potential capital projects which would increase operational efficiency, capacity, and provide an improved LOS to its shippers or passengers. The railroads were asked their opinion as to the need and value of a public rail assistance program. All rail freight, intercity passenger, and commuter passenger railroads are also represented on the Plan Steering Committee, which provided them with the opportunity to review and provide input to all deliverables produced during the Plan process.

6.3.3 Economic Development Agency Surveys

To determine the level of involvement by local economic development agencies with the railroad industry in the state and to identify potential rail-related economic development opportunities, surveys were sent electronically to all economic development agencies and metropolitan transportation planning organizations in the state. These agencies were asked to identify potential rail projects that would enhance economic development in their region, the potential for future development in their region, and the value of a public rail assistance program that could be utilized to enhance rail access to industry.

6.4 Issues Identified During the Rail Plan Process

Rail-related issues expressed during stakeholder interviews, surveys, or outreach sessions were utilized to complete a number of the State Rail Plan components.

During the outreach meetings, time was set aside to solicit views as to the state's vision for rail transportation, as well as to identify general and specific rail issues. This information was documented and presented to the Plan Steering Committee as part of a vision workshop where the information was used to develop a draft rail vision, as well as rail-related goals and objectives that were submitted to WVDOT for review and approval.

Information obtained as a result of stakeholder interviews and surveys was utilized to develop and modify profile information as necessary, to identify infrastructure, operational, and regulatory issues and to ascertain stakeholders' views on the effectiveness of West Virginia's current involvement in rail planning and oversight as well as strategic roles the state could play in the future to address existing needs.

During the outreach process, stakeholders and outreach meeting participants were requested to provide specific issues regarding rail operations within the state. These issues could entail beneficial aspects of the physical rail system and services or negative issues, such as lack of or poor service quality, deficient infrastructure, regulatory or institutional obstacles, or disruption to communities.

The following are a summary of the themes raised during the outreach process in response to existing rail issues at the local, regional, or state levels. The themes described include:

- General Rail Benefits, Opportunities, and Threats
- Rail Freight Issues
- Rail Passenger Issues
- Rail-Related Tourism

- Rail Safety
- The Role of the Public Sector Regarding Rail

6.4.1 General Rail Benefits, Opportunities, and Threats

The importance of rail transportation in West Virginia is well understood based on comments received during the outreach process. The general public understands and appreciates freight railroads' operating and cost efficiencies, environmental and energy-related benefits, and especially its importance to West Virginia's economy. The public also understood the diverse roles of Class I and short line carriers, with short line carriers focused on providing direct access to industry and Class I railroads providing primarily long-haul service.

The value and potential of intercity, commuter, and tourist rail passenger services was also understood. Although intercity and commuter rail passenger services in the state are limited, they are recognized as providing essential services given the limited air and intercity bus services available to travelers. Tourist rail operations were seen as key economic contributors which also provide access to other recreational and tourist activities.

The need to diversify the rail freight commodity base to maintain rail's competitive position in the marketplace and protect essential freight corridors was identified as a major issue. In this regard, major freight rail-related opportunities were seen in the expected increase in intermodal rail movements through the state and the expected new oil and gas production from the Marcellus and Utica Shale regions. These were seen as important new rail commodities to offset the expected decrease of coal production in the state, which could result in a downgrade of rail infrastructure and service if traffic volumes cannot be maintained. The value and potential of the state's short line railroad network was also recognized as providing essential rail access to numerous communities not served by the large railroads and as marketing tools to attract new industries or to facilitate industry expansion in the state.

The intercity and commuter rail passenger networks in the state were viewed as lacking the scale and LOS necessary to serve as reliable transportation modes. The need for expansion of current services and the possible development of new passenger corridors and connections were viewed as opportunities that warranted further review. The potential related to expanded rail-related tourism was deemed as important to continue tourism's contribution to the state economy.

6.4.2 Rail Freight Issues

In response to the need to diversify the state's rail freight commodities and to protect against a decrease in rail coal movements, the outreach process produced recommendations that the state and railroads emphasize the following areas:

- Intermodal (international and domestic container) movements and facilities, such as inland ports, which can lead to growth in distribution, assembly, and value-added activities and related jobs;
- Increased rail access and service related to prospective new oil and gas drilling operations. Rail could provide both the commodities required for drilling (sand, pipe, etc.), as well as outgoing energy products; and
- Improved rail connections to Ohio River ports to leverage the combined low transportation costs of both water and rail transportation.

A number of specific rail freight needs, concerns, and opportunities were also raised, including:

- The need for additional rail spurs that connect to existing industries and provide rail access to prospective new industries (It was noted that industrial spurs off major rail mainlines are often very expensive for smaller

companies, and for most short line railroads, the cost of new spurs to attract new businesses is also seen as a financial burden due to the limited amount of capital available to these operations);

- The need for expanded storage capacity within industrial sites or on rail spurs and sidings;
- The potential for increased rail-related industrial development in the chemical valley corridor along Route 2; and
- Selected operational improvements such as increased car supply, rail car condition, interchange frequency, and transit times.

6.4.3 Rail Intercity Passenger Issues

Stakeholder outreach found a significant level of agreement that rail passenger service could fill an important role in the state. There was also agreement that existing service was unreliable and not of sufficient quantity to fulfill that role. Additional frequencies, improved stations with intermodal passenger connections, and increased service reliability were cited as essential needs to making rail passenger service more competitive with other modes.

Intercity rail passenger service was cited as providing the only intercity mode of transportation in areas of the state. As existing Amtrak services (the *Capitol Limited* and *Cardinal* services) are oriented in an east-west direction at the northern and southern parts of the state, the need for a north-south intercity passenger service which could link to the existing routes was expressed. Due to the lack of active rail infrastructure that could accommodate rail passenger service, it was also recognized that establishment of such a service would be difficult.

It was recommended that marketing of intercity passenger services in the state be emphasized to increase ridership. The advertisement of rail passenger service as part of vacation packages was suggested as a means of improving both tourism and interest in passenger services.

Specific needs, concerns, and opportunities were expressed for the existing Amtrak routes.

Concern over Amtrak's *Cardinal* passenger service focused on the current service frequency of only three round trips per week. This is seen as the primary reason for its low ridership and related poor fare box recovery ratio. Fear was expressed that continued poor performance statistics could lead to the discontinuance of service. It was expressed that a schedule expansion to daily service and improved amenities at stations and onboard trains are necessary to attract students and other travelers.

It was also noted that the *Cardinal* route is a popular attraction for tourist excursion trains and private rail car owners. The proximity of the Greenbrier resort and BSA facilities were cited as major attractions that could greatly increase ridership if adequate access and storage facilities, as well as a reliable schedule, were provided.

Additional issues related to the *Cardinal* service included:

- General station improvements, increased platform capacity, and ADA compliance at passenger stations; and
- Improved schedule reliability through the improvement of various chokepoints both within and outside of West Virginia.

Issues regarding the *Capitol Limited* service were limited to station needs. These included the need for additional parking, additional platform capacity and ADA compliance, and the need for additional safety for pedestrians and automobiles at crossings in the proximity of the stations.

6.4.4 Commuter Rail Passenger Issues

Issues regarding MARC service centered on the sufficiency of existing service levels and specific issues and concerns with regard to stations and safety.

There was general sentiment that MARC and CSXT provide a good service for the infrastructure and financial limitations of the rail line and facilities. The issue of whether ridership will grow in the region resulted in mixed views. MARC has noted lower ridership over the past year and its analysis of the types of tickets sold appear to show that advances in telecommunication and technology had and could continue to diminish commuter rail needs. Others have pointed to the expected job growth in the Washington, DC area over the next 30 years which would result in housing growth in the Panhandle region.

Specific issues regarding MARC commuter service included:

- The need for increased parking at all current commuter rail stations; and
- Pedestrian and driver safety concerns around commuter stations.

6.4.5 Rail Tourism Issues

The results of stakeholder outreach found a deep pride in the state's railroad heritage as represented by the significant number of tourist railroad operations around the state. These railroads were cited as an essential component of the state's tourism economy. The general consensus was also that rail-related tourism be expanded in the state through both individual line expansions and the connection of services. It was also expressed that increased marketing and infrastructure improvements be implemented to attract, accommodate, and connect tourists to the recreational and resort areas of the state, such as water and ski recreational areas, the Greenbrier Resort, etc.

6.4.6 Rail Safety

Rail safety was not raised as a significant problem in West Virginia. Those safety concerns raised were primarily in two areas: the need for increased rail-highway crossing investment and the need for the state to address any safety needs identified on short line railroads.

Grade crossing concerns centered on the need for additional grade separations in the state with crossings in the St. Albans area being specifically mentioned. Additional emphasis on the need for additional at-grade crossing improvements, especially near commuter rail stations, crossing maintenance, the Operation Lifesaver program, and increased driver education with regard to grade crossing safety was encouraged. The need to address rail trespassers was also mentioned.

No specific rail operational safety concerns were raised.

6.4.7 The Role of Public Agencies Regarding Rail

Meeting attendees and survey respondents were asked to discuss any actions that the public sector could take to improve rail service and operations. These actions could include public financial investment, the source of investment funding, legal or regulatory reform, and agency coordination.

Responses largely centered on the need for discretionary rail assistance programs at the state level for both rail infrastructure improvements and to continue the preservation of rail lines. The discussion of public financial involvement is discussed separately for freight and passenger services.

Freight-related rail financial assistance was discussed primarily in terms of a discretionary program available to the SRA to address safety concerns, state of good repair, operating efficiency, and economic development opportunities on the state's short line railroad network. Specific uses included the financing of rail spurs or car storage facilities to attract new or expanding industries or other rail users. Class I railroad connections would also be eligible under such a program. An additional area of freight investment noted was for additional intermodal or transload facilities.

The availability of state-administered rail programs in surrounding states was noted at a number of meetings and the state was encouraged to examine these programs and their funding sources. The existing Special Rail and Intermodal Fund, which has been extended by the legislature, was the leading candidate as a source for a public rail assistance program.

Passenger-related rail financial assistance was discussed in terms of intercity passenger, rail commuter, and rail tourism operations. Intercity passenger financial investment was largely discussed in terms of station improvements. Public opinion as to the need for West Virginia to subsidize any new intercity passenger corridor services, as required by the PRIIA, was also solicited.

The general consensus on state subsidized passenger service was that it would be acceptable if the future service was relatively self-sustaining and provided legitimate public benefits.

Commuter rail proponents expressed the opinion that the state was not equipped financially to address commuter service. Legislation (Commuter Rail Access Act) which has passed and signed into law, authorizes the SRA to negotiate an agreement with MARC to compensate for operating fees paid to CSXT which should reduce MARC operating costs and free up funds for improved service. As noted previously, the need for station and station access improvements were also discussed.

No specific programs or sources were discussed with regard to state assistance to expand rail tourist operations.

In addition to specific rail funding needs, participants also discussed the means by which state and local government should address rail-related needs. Recommendations included:

- Implementation of the best transportation investments regardless of transportation mode;
- Increased coordination with surrounding and other states to increase the capacity and efficiency of rail corridor services; and
- Establishment of a state short line railroad association to better identify and communicate needs.

6.5 Recommended Actions to Address Rail Issues

The comments and recommendations received through all aspects of the public outreach process were presented to WVDOT and the Plan Steering Committee. These comments and recommendations were utilized in the development of the goals and objectives outlined in *Chapter 5*. Based on these actions, WVDOT and the SRA will work toward the following initiatives:

- Continue efforts to preserve strategic rail rights of way and support the development of rail spur, rail storage capacity, intermodal facilities, and other infrastructure projects required to maintain a state of good repair through support for the establishment of a dedicated, discretionary public rail assistance program for freight and passenger projects;
- Continue to promote and enhance rail safety through continued safety education programs and enhancements to the public grade crossing improvement program;

- Expand rail planning and development activities, including increased coordination with other state agencies on rail issues, as well as with surrounding states on regional issues;
- Increase the movement of goods by rail and emphasize rail-related intermodal and energy-related activities to ensure a diverse and robust rail network, while maintaining community and environmental stewardship and economic competitiveness;
- Preserve, protect, improve, and expand (as necessary), intercity rail passenger service through station facility and access improvements, and continue to study of additional intercity passenger services where transportation and other public benefits merit;
- Preserve and support existing commuter rail service and evaluate additional service as transportation and other public benefits merit; and
- Support existing and expanded rail-related tourism where economic opportunities merit.

6.6 State Rail Planning Coordination

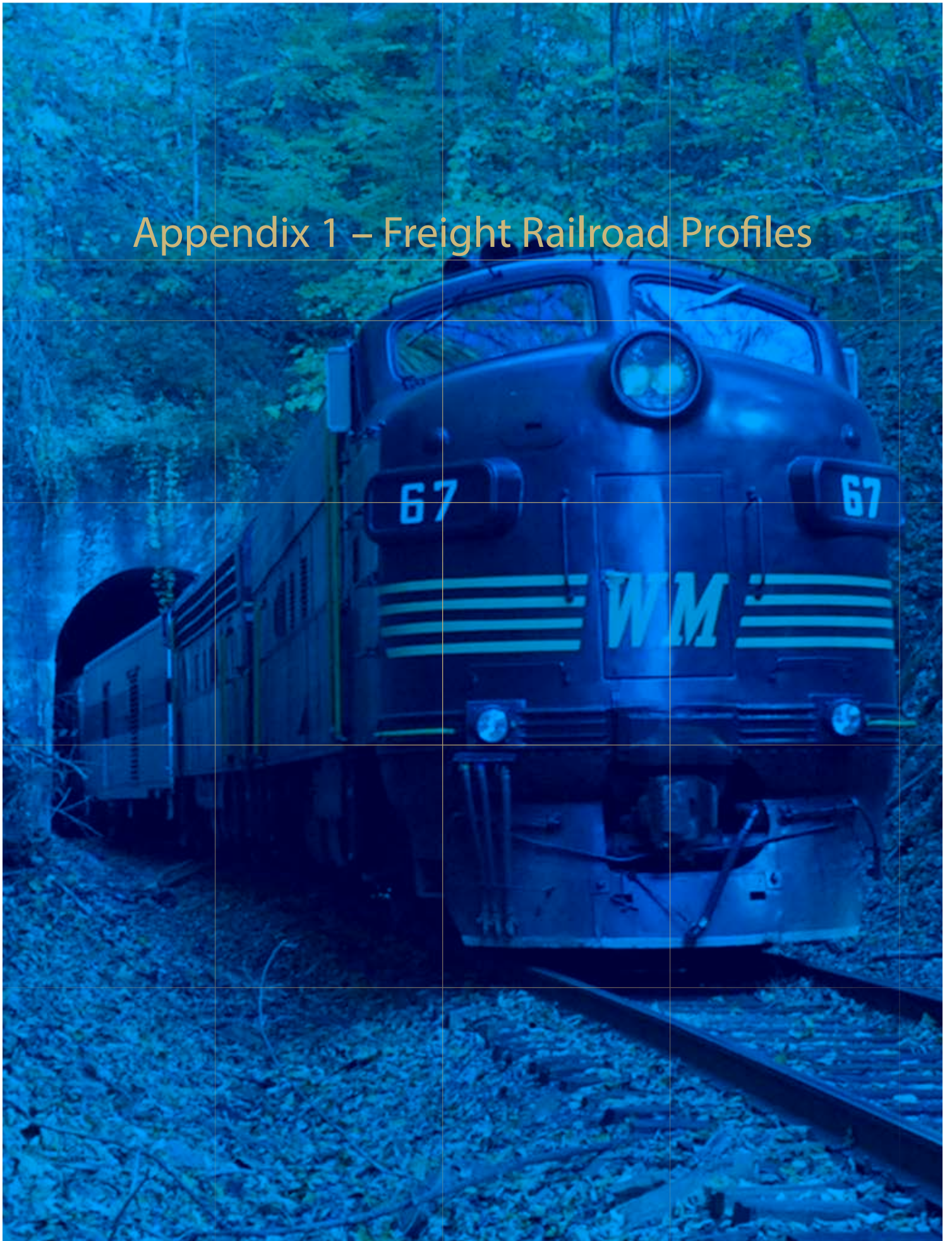
As described in *Chapter 1*, some aspect of rail planning is undertaken within a number of authorities or offices within WVDOT.

The SRA is primarily responsible for the operation and oversight of the state's owned and leased rail lines and coordination of intercity, commuter, and tourist railroad operations within the state. The SRA, however, works directly with the Public Port Authority with respect to the operation and funding of rail operations within the Public Port Authority's jurisdiction; with the Rail Highway Safety program with regard to grade crossing safety and projects; with the Office of Engineering with respect to rail project implementation; and with the Office of Planning and Administration with regard to rail data collection and related planning activities.

These agencies all served on the State Rail Plan's Technical and Steering Committees, providing guidance, review, and comment on all aspects of the Plan's development.

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Appendix 1 – Freight Railroad Profiles



Freight railroads operating in West Virginia are described below. These descriptions provide the rail lines' names and endpoints as designated by the railroad, its total length and the number of miles within West Virginia, trackage rights granted to other railroads, connections with other carriers, operating speeds, signal systems, and any other information pertinent to the rail line.

Most Class I railroad operations are controlled by automatic signal systems. The two most common systems are Centralized Traffic Control (designated as "CTC" for CSXT and "TC" for NS) and Automatic Block Signaling (ABS).

CTC is commonly found on high- or medium-density lines; it is a series of electronic switches, or interlockings, that are designed so that conflicting train movements cannot be authorized. A train dispatcher remotely controls signals and powered switches, generally over a long section of railroad. Train operators observe the controlled signals to authorize train movements.

ABS consists of a series of signals that govern blocks of track between signals. Under ABS, signals are automatically activated by the condition of the block beyond the signal, providing restrictive signal aspects to move between blocks so that safe braking distances are ensured if two trains attempt to enter the same block.

Rail lines without automatic signal systems are operated by DTC Track Warrants for CSXT or Track Authorities for NS. Track Warrants or Track Authorities are used primarily on medium- and low-density lines. They provide for a train dispatcher to verbally instruct the train to proceed, usually via radio. The dispatcher designates the stations or mileposts between which the train may move.

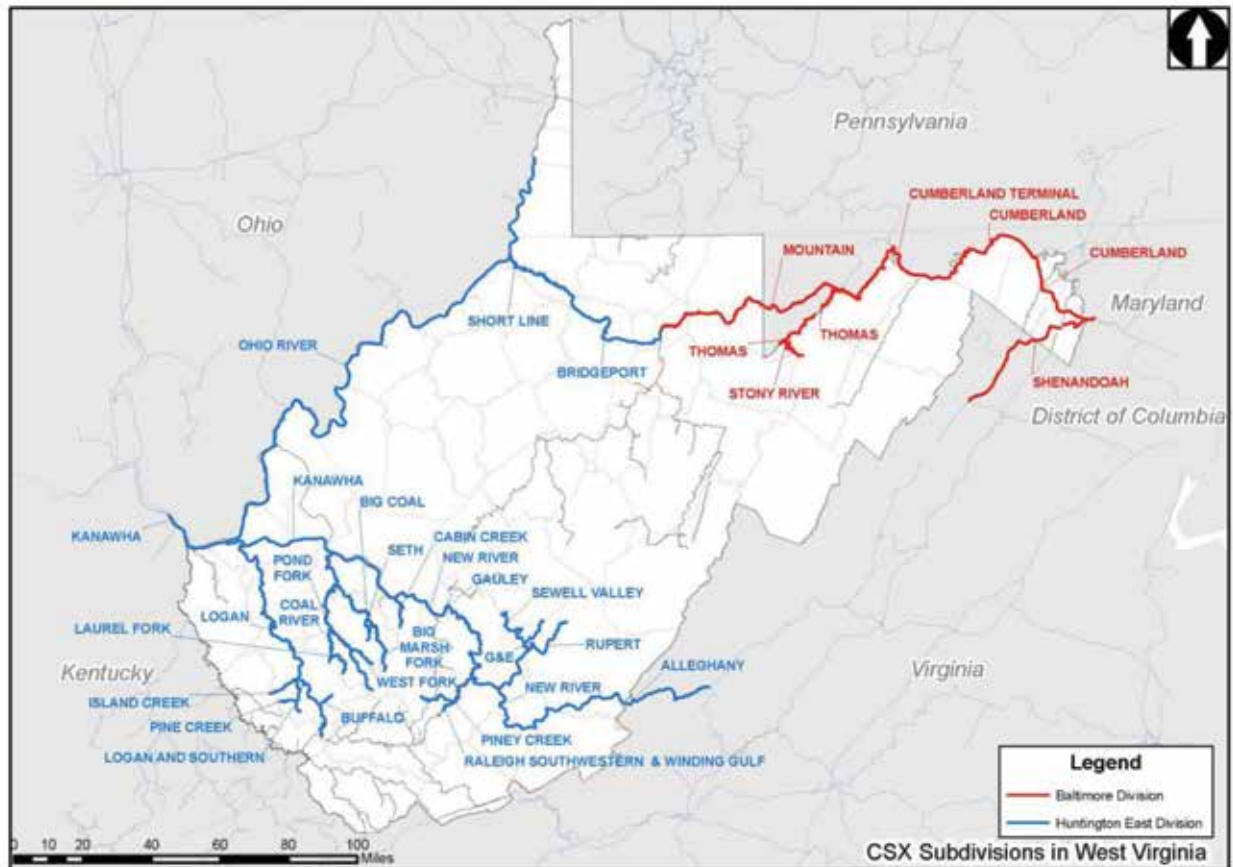
CLASS I RAILROADS

CSX Transportation

CSXT divides its rail network into Divisions and Subdivisions. CSXT's **Baltimore Division** extends from Maryland and Virginia's I-95 Corridor west through West Virginia's Eastern Panhandle to western Pennsylvania. CSXT's **Huntington Division** extends from Newport News, Virginia west to Cincinnati, Ohio and along the western portion of West Virginia.

A map and description of CSXT subdivisions within West Virginia are described on the next page.

CSXT Rail Network in West Virginia

**Baltimore Division**

Cumberland Subdivision: This former B&O line extends a total of 95 miles from a junction with the CSXT Metropolitan Subdivision at Weverton, Maryland to Cumberland, Maryland. Trackage in West Virginia extends a total of 91 miles between Harpers Ferry and the Potomac River bridge crossing south of Cumberland. This line connects with NS at Shenandoah Junction, with the Winchester and Western Railroad at Martinsburg, and with the SBVR at Green Spring. Amtrak and MARC provide passenger service over the eastern portion of this line to Martinsburg, with Amtrak continuing to Cumberland and points west. The line is double track with maximum authorized speeds of 65 mph for passenger trains and 50 mph for freight trains. Train operations are controlled by CTC.

Shenandoah Subdivision: This former B&O line extends a total of 50 miles from a junction with the CSXT Cumberland Subdivision at Harpers Ferry, West Virginia to Strasburg Junction, Virginia. Trackage in West Virginia extends a total of 20 miles between Harpers Ferry and Summit Point. The line is single track with maximum authorized speeds of 25 mph, and train operations are controlled by DTC Track Warrants.

Mountain Subdivision: This former B&O line extends a total of 102 miles from Cumberland, Maryland to Berkeley Run Junction just west of Grafton, West Virginia. Trackage in West Virginia extends a total of 9 miles between

Keyser and WVCR Junction and 44 miles between Rinard and Grafton. This line connects with AO at Berkeley Run Junction. The line is both double and single track with maximum authorized speed of 45 mph, and train operations are controlled by CTC.

Thomas Subdivision: This former Western Maryland Railway (WM) line extends a total of 50 miles from a junction with the CSXT Mountain Subdivision in Mineral County, West Virginia just west of Piedmont to Henry. The line crosses the Maryland/West Virginia border a number of times from the junction at MP 28 to just west of Bayard, West Virginia at MP 63.7. The line is single track with maximum authorized speed of 25 mph, and train operations are controlled by DTC Track Warrants.

Stony River Subdivision: This former WM line extends a total of 17 miles from a junction with the CSXT Thomas Subdivision at Bayard to Stony River. The line is single track with maximum authorized speed of 25 mph, and train operations are controlled by DTC Track Warrants.

Huntington Division

Bridgeport Subdivision: This former B&O line extends a total of 22 miles from Berkeley Run Junction just west of Grafton to J Tower west of Clarksburg. A TRANSFLO bulk transfer terminal is located in Clarksburg. The line is single and double track with maximum authorized speed of 35 mph, and train operations are controlled by CTC.

Short Line Subdivision: This former B&O line extends a total of 58 miles from J Tower west of Clarksburg to Brooklyn Junction where it connects with the Ohio River Subdivision. The line is single track with maximum authorized speed of 25 mph, and train operations are controlled by DTC Track Warrants.

Ohio River Subdivision: This former B&O line extends a total of 210 miles from Wheeling to Guyandotte where it connects with the Kanawha Subdivision. The Ohio River Subdivision connects with the Wheeling & Lake Erie Railway Company (WE) at Benwood, the Little Kanawha River Railroad (LKRR) at Parkersburg, and NS at Point Pleasant. A major rail yard is located at Parkersburg. The line is single track with maximum authorized speed of 30 mph, and train operations are controlled by DTC Track Warrants.

Allegheny Subdivision: This former C&O line extends a total of 79 miles from JD Cabin near Clifton Forge, Virginia to MX Cabin near Hinton, West Virginia. Trackage in West Virginia extends a total of 47 miles between Tuckahoe and Hinton. Amtrak also operates over this line. The line is both single and double track with maximum authorized speed of 60 mph for passenger trains and 55 mph for freight trains. Train operations are controlled by CTC.

New River Subdivision: This former C&O line extends a total of 79 miles from MX Cabin near Hinton to Montgomery. This line connects with RJCV at Thurmond. The line is both single and double track with maximum authorized speed of 65 mph for passenger trains and 50 mph for freight trains. Train operations are controlled by CTC.

Sewell Valley Subdivision: This former C&O line extends a total of 44 miles from a junction with the CSXT New River Subdivision at Meadow Creek to Russ Junction. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Rupert Subdivision: This former C&O line extends a total of 21 miles from a junction with the CSXT Sewell Valley Subdivision at Rainelle Junction to Clearco. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

G&E Subdivision: This former C&O line extends a total of 14 miles from a junction with the CSXT Sewell Valley Subdivision at G&E Junction to Peaser Junction. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Piney Creek Subdivision: This former C&O line extends a total of 27 miles from a junction with the CSXT New River Subdivision at Prince to Glen Daniels Junction. The line connects with NS at Eccles Junction. The line is single track with maximum authorized speed of 14 mph, and train operations are controlled by DTC Track Warrants.

Raleigh Southwestern and Winding Gulf Subdivision: This former C&O line extends a total of 6 miles from a junction with the CSXT Piney Creek Subdivision at Raleigh to a junction with NS at Pemberton. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Gauley Subdivision: This former C&O line extends a total of 7 miles from a junction with the CSXT New River Subdivision at Gauley to Rich Creek Junction. The line connects with NS at K&M Junction and with Vaughn Railroad at Rich Creek Junction. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Kanawha Subdivision: This former C&O line extends a total of 96 miles from Montgomery to Russell, Kentucky. Trackage in West Virginia extends a total of 85 miles between Montgomery and Kenova. Major rail yards are located at Charleston and Huntington. A TRANSFLO bulk transfer terminal is located in South Charleston. The line connects with the Kanawha Rail Corporation/Winifrede Railroad (WNFR) at Winifrede Junction and with NS at Kenova. Amtrak also operates over this route. The line is double track with maximum authorized speed of 79 mph for passenger trains and 50 mph for freight trains. Train operations are controlled by CTC.

Cabin Creek Subdivision: This former C&O line extends a total of 12 miles from a junction with the CSXT Kanawha Subdivision at Cabin Creek Junction to Red Warrior. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by CTC.

Coal River Subdivision: This former C&O line extends a total of 51 miles from a junction with the CSXT Kanawha Subdivision at St. Albans to Sharples. A major rail yard is located at Danville. The line is single track with maximum authorized speed of 25 mph, and train operations are controlled by DTC Track Warrants.

Big Coal Subdivision: This former C&O line extends a total of 36 miles from a junction with the CSXT Coal River Subdivision at Sproul Junction to Jarrolds Valley Junction. The line is single track with maximum authorized speed of 25 mph, and train operations are controlled by DTC Track Warrants.

Seth Subdivision: This former C&O line extends a total of 10 miles from a junction with the CSXT Big Coal Subdivision at Seth to Prenter. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Big Marsh Fork Subdivision: This former C&O line extends a total of 9 miles from a junction with the CSXT Big Coal Subdivision at Jarrolds Valley Junction to Sundial. The line is single track with maximum authorized speed of 20 mph, and train operations are controlled by DTC Track Warrants.

Pond Fork Subdivision: This former C&O line extends a total of 29 miles from a junction with the CSXT Coal River Subdivision at Pond Junction to Harris. The line is single track with maximum authorized speed of 20 mph, and train operations are controlled by DTC Track Warrants.

West Fork Subdivision: This former C&O line extends a total of 7 miles from a junction with the CSXT Pond Fork Subdivision at West Junction to Robinhood. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Laurel Fork Subdivision: This former C&O line extends a total of 7 miles from a junction with the CSXT Coal River Subdivision at Clothier to Hampton No. 3. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Logan Subdivision: This former C&O line extends a total of 87 miles from a junction with the CSXT Kanawha Subdivision at Barboursville to a connection with NS at Gilbert. A major rail yard is located in Logan. The line is single track with maximum authorized speed of 35 mph, and train operations are controlled by CTC between Barboursville and West Hamlin and DTC Track Warrants between West Hamlin and Gilbert.

Island Creek Subdivision: This former C&O line extends a total of 11 miles from a junction with the CSXT Logan Subdivision at FD Cabin near Logan to Scarlet. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

Logan and Southern Subdivision: This former C&O line extends a total of 12 miles from a junction with the CSXT Island Creek Subdivision at Monitor to Sarah Ann. The line is single track with maximum authorized speed of 25 mph, and train operations are controlled by DTC Track Warrants.

Pine Creek Subdivision: This former C&O line extends a total of 6 miles from a junction with the CSXT Logan and Southern Subdivision at Omar to Hobet No. 7. The line is single track with maximum authorized speed of 10 mph, and train operations are controlled by DTC Track Warrants.

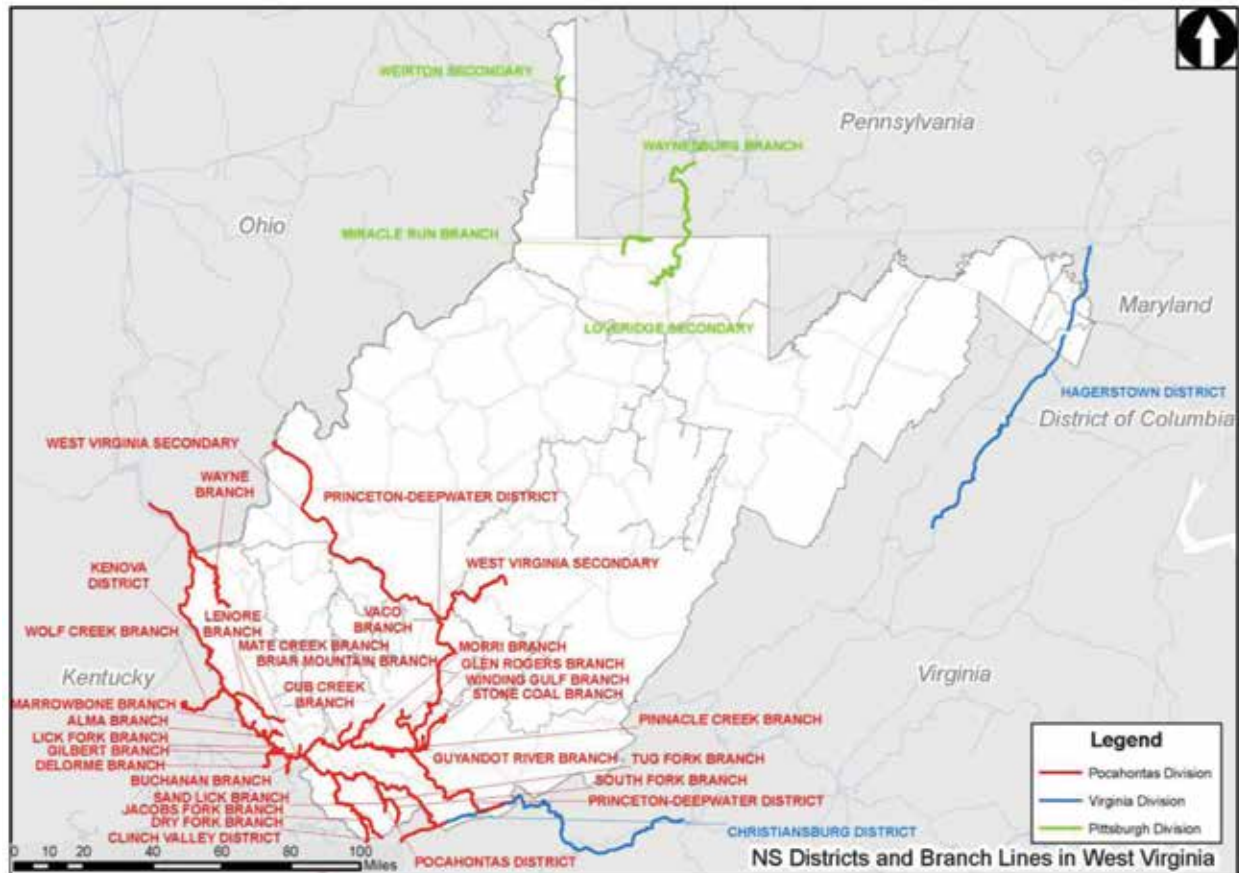
Buffalo Subdivision: This former C&O line extends a total of 17 miles from a junction with the CSXT Logan Subdivision at Man to Sand. The line is single track with maximum authorized speed of 25 mph, and train operations are controlled by DTC Track Warrants.

Norfolk Southern

NS divides its rail network into divisions, districts, and branch lines. NS's **Pocahontas Division** is comprised largely of NS lines in the southern portion of West Virginia. The **Virginia Division** extends from the southeastern edge of West Virginia and through the eastern panhandle to points in Virginia and Maryland. The **Pittsburgh Division** includes lines in and near West Virginia's northern panhandle and in southwest Pennsylvania.

A map and description of NS rail lines within West Virginia are described on the next page.

Norfolk Southern Rail Network in West Virginia



Pocahontas Division

Pocahontas/Williamson Districts: This former N&W line extends 105.4 miles from Bluefield to Williamson. The line connects to the NS Kenova District in Williamson. The line is double track with maximum operating speed for all trains is 40 mph, and train operations are controlled by TC.

Tug Fork Branch: This line connects to the Pocahontas District near Hemphill. This single line branch is 16 miles long and extends from Hemphill to Pageton. Only the first 12.3 miles are operated. The maximum operating speed is 15 mph, and train operations are controlled by Track Authority.

Sand Lick Branch: This branch line connects to the Tug Fork Branch at Gary. The Sand Lick Branch is 4 miles in length and extends from Gary to Filbert. It services coal mines U.S. #6, U.S. #8, and U.S. #9. The single track line has a maximum operating speed of 10 mph, and train operations are controlled by Track Authority.

South Fork Branch: This branch lines connects to the Tug Fork Branch at South Fork near Skygusty. The single line branch extends 5.6 miles. Maximum operating speed is 10 mph and train operations are controlled by Track Authority from South Fork for 3 miles and by restricted speed for the remainder of the line.

Gilbert Branch: This branch line connects to the Guyandot River Branch near Neds. The line is 12.9 miles in length and extends from Neds to Jerry. Gilbert Yard is just west of Neds. There is a wye at Jerry where the branch meets the

NS Pocahontas mainline with the west leg leading to Wharncliffe and the east leg leading to Mingo. The maximum operating speed is 25 mph, and train operations are controlled by TC.

Ben Creek Spur: This spur track connects to the Gilbert Branch at Ben Creek. The line is 2.8 miles long and extends from Ben Creek to Timbar. Train operations are controlled by Track Authority for 0.7 miles and by restricted speed the remainder of the line.

Briar Mountain Branch: This branch line connects to the Pocahontas main line at Glen Alum. The line is 3.9 miles long. Maximum operating speed is 15 mph. Train operations are controlled by Track Authority from Glen Alum for 1.3 miles and by restricted speed to the end of the line.

Delorme Branch: This branch line connects to the Pocahontas main line 17 miles east of Williamson at Arrow. The line is 0.1 mile long in West Virginia before extending 9.4 miles into Kentucky. Maximum operating speed is 20 mph and train operations are controlled by Track Authority.

Lick Fork Branch: This branch line connects to the Pocahontas main line 15 miles east of Williamson at Lick Fork Junction. The line is 2.6 miles in length and extends between Lick Fork Junction and Old Ben. Only 1.5 miles is operated. Train operations are at restricted speed or a maximum of 10 mph. Train operations are controlled by Track Authority.

Mate Creek Branch: This branch line connects to the Pocahontas main line 10 miles east of Williamson at Matewan/Mate Creek Junction. The line is 6.3 miles in length and extends from Mate Creek Junction to Mabley. Maximum operating speed is 15 mph. Train operations are controlled by Track Authority.

Alma Branch: This branch line connects to the Pocahontas main line at Alma Junction in Alma. The line is 3.6 miles long. Maximum operating speed is 15 mph. Train operations are controlled by Track Authority for 1.6 miles and by restricted speed for the remainder of the line.

Kenova District: This former N&W main line track extends 73.13 miles from Williamson to Kenova where the track continues over the Ohio River into South Point, Ohio. The line is primarily double track but there are numerous tunnels on this route where track becomes a single main line. The maximum operating speed for all trains is 50 mph. Train operations are controlled by TC.

Nolan Spur: This spur track connects to the Pocahontas line at Nolan near Lenore. The line is 0.2 miles long in West Virginia and extends from Nolan to the Kentucky border where the tracks branch to the many coal mines. The maximum operating speed is 15 mph, and train operations are controlled by TC.

Lenore Branch: This branch line connects to the Pocahontas line at Naugatuck, 14 miles northwest of Williamson. The line is 21.9 miles long. Maximum operating speed is 15 mph. Train operations are controlled by CTC from Naugatuck to Marrowbone Junction, by Track Authority from Marrowbone Junction for 18.9 miles, and by restricted speed the remainder of the line.

Marrowbone Branch: This branch line connects to the part of Pocahontas line that leads to the Lenore Branch at Marrowbone Junction. This Junction is about 16 miles northwest of Williamson. The single track line is 2.4 miles long. Maximum operating speed is 15 mph, and train operations are controlled by restricted speed.

Wolf Creek Branch: This branch line connects to the Pocahontas line at Wolf Creek. The line is 0.1 miles long in West Virginia before it continues into Kentucky for 23 miles. Maximum operating speed is 25 mph, and train operations are controlled by TC.

Wayne Branch: This branch line connects to the Pocahontas line at Kenova Yard. The line is 32 miles in length and runs between Kenova and East Lynn where it meets the Colmont Spur. The maximum operating speed is 25 mph, and train operations are controlled by Track Authority.

Colmont Spur: This spur track connects to the Wayne Branch at East Lynn. The line is 3.6 miles long. Maximum operating speed is 15 mph, and train operations are controlled by Track Authority.

Dry Fork Branch: This branch line connects to the Pocahontas line at Iaeger, which is near Auville Yard. This single track line extends 32.7 miles within West Virginia before passing into Amonate, Virginia. Maximum operating speed is 30 mph, and train operations are controlled by TC.

Jacobs Fork Branch: This branch line connects to the Dry Fork Branch at Omega, 2 miles south of Newhall. The track is 10.4 miles in length extending from Omega to Bishop. Maximum operating speed is 10 mph. Train operations are controlled by Track Authority for 6.8 miles and by restricted speed for the remainder of the line.

Buchanan Branch: This branch connects to the Pocahontas line at Devon, which is 1 mile north of Woodman, Kentucky. The line extends 0.1 mile within West Virginia and 50.7 miles in Kentucky and Virginia. The maximum operating speed is 25 mph, and train operations are controlled by TC.

Princeton-Deepwater District: This former Virginian Railway line extends 108 miles from the Virginia Division at PD Junction near Kellysville to WV Secondary at Alloy. This single track line has a maximum operating speed of 35 mph, and train operations are controlled by TC.

Winding Gulf Branch: This branch line connects to the Pocahontas line at Gulf Junction near Amigo. The line is 29.3 miles long extending from Gulf Junction to Bowyer. There is shared trackage with CSXT on a portion of the line. The maximum operating speed is 20 mph. Train operation is controlled by TC from Gulf Junction to Helen for 12.1 miles and Track Authority for the remainder of the line.

Stone Coal Branch: This branch line connects to the Winding Gulf Branch at Amigo. The Stone Coal Branch is 4.5 miles long. Maximum operating speed is 15 mph. Train operations are controlled by Track Authority from Amigo for 2.9 miles and by restricted speed the remainder of the line.

Glen Rogers Branch: This branch line connects to the Pocahontas line near McGraws. The line is 12.5 miles long extending from Virwest to Bolt. The maximum operating speed is 10 mph, and train operations are controlled by Track Authority.

Vaco Branch: This branch line connects to the Princeton-Deepwater line 3 miles west of Robson. The Vaco Branch is 0.8 miles long and connects with CSXT at Deepwater. The maximum operating speed is 10 mph, and train operation is controlled by Track Authority.

Guyandot River Branch: This branch line connects to the Princeton-Deepwater line at Elmore, which is 4 miles east of Itmann and connects to the Gilbert Branch at Neds. The line is a 42.5 mile long single track with a maximum operating speed is 30 mph. Train operation is governed by TC.

Pinnacle Creek Branch: This branch line connects to the Guyandot River Branch at Pinnacle Creek Junction near Pineville. The line is 5.2 miles long with a maximum operating speed of 15 mph. Train operation is governed by Track Authority from Pinnacle Creek Junction for 2.4 miles and by restricted speed the remainder of the line.

Morri Branch: This branch line connects to the Guyandot River Branch 20 miles west of Pineville. The single track line extends for 19.3 miles with a maximum operating speed of 20 mph. Train operations are controlled by TC for 11.9 miles, by Track Authority for 5.6 miles and by restricted speed for the remainder of the line.

Cub Creek Branch: This branch line connects to the Guyandot River branch 24 miles west of Pineville. The single track line is 9.43 miles long with a maximum operating speed of 10 mph. Train operations are controlled by Track Authority for the first 7.5 miles and by restricted speed for the remainder of the line.

West Virginia Secondary: This former New York Central main line is 125 miles long extending from Point Pleasant to Enon, which is 10 rail miles south of Lockwood. The maximum operating speed is 40 mph and train operations are controlled by Track Authority.

Virginia Division

Christiansburg District: This former N&W line extends from Glen Lyn, Virginia to RD near Ada, West Virginia. The Pocahontas line branches off at PD Junction. The line is double track with a maximum operating speed in West Virginia of 30 mph. Train operations are controlled by Track Authority.

Hagerstown District: This former N&W line originates in Hagerstown, Maryland, crosses over the Potomac River into Shepherdstown, West Virginia, and exits West Virginia near Ripen, West Virginia. A total of 19.2 miles lie within West Virginia. The maximum operating speed is 60 mph, and train operations are controlled by Track Authority.

Pittsburgh Division

Miracle Run Branch: This branch line connects to the Waynesburg Branch near Brave, Pennsylvania. The track runs to Federal Mine #2 near Miracle Run, West Virginia. The track extends for 5.9 miles in West Virginia with a maximum operating speed of 25 mph. Train operation is controlled by Track Authority from the state border for 3.1 miles and by restricted speed for the remainder of the line.

Waynesburg Branch: This branch line enters West Virginia near Brave, Pennsylvania extending back and forth between Pennsylvania and West Virginia for 7 miles. Three miles of the line lie within West Virginia. The maximum operating speed is 25 mph. Train operation is controlled by Track Authority and by restricted speed for the last 1.5 miles of the line.

Loveridge Secondary: This former B&O line enters West Virginia from Pennsylvania near Maidsville. The single track line extends a total of 33.4 route miles within West Virginia terminating at the Loveridge Mine. The maximum operating speed is 25 mph. Train operations are controlled by Track Authority for 31.3 miles and by restricted speed for the remainder of the line.

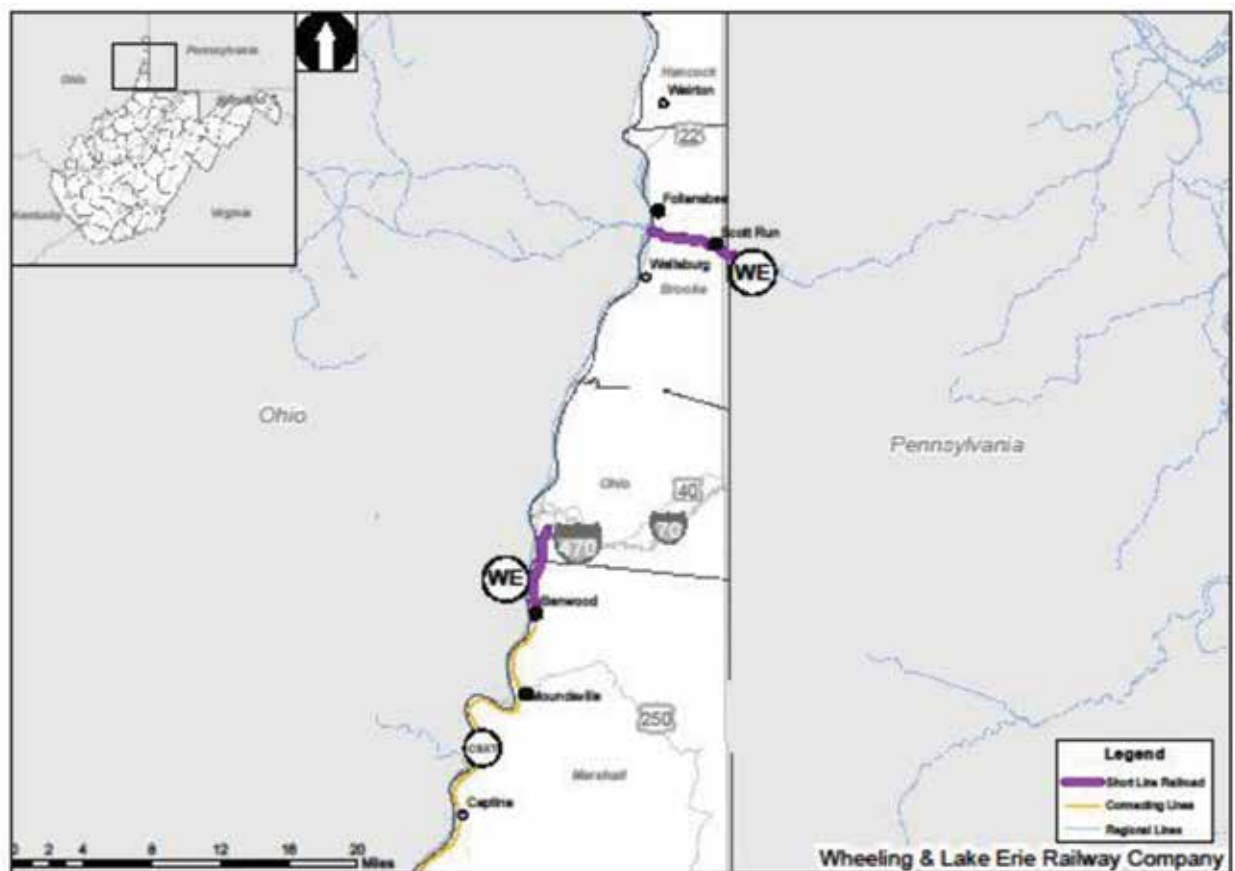
Weirton Secondary: This single track line and yard is located in Weirton near the Ohio River. The maximum operating speed is 25 mph. Train operations are controlled by Track Authority from the Ohio state line for 0.5 miles with the rest of the line controlled by restricted speed.

Newell Industrial Track: Newell Industrial Track extends 12.7 miles from Weirton to Newell. The maximum speed is 15 mph, and train operation is controlled by Track Authority and restricted speed.

Wells I.T.: This industrial track extends from Weirton Junction for 7.2 miles along the Ohio River where it terminates in Wellsburg. The maximum operating speed is 10 mph, and trains are controlled by restricted speed.

CLASS II/REGIONAL RAILROADS***Wheeling & Lake Erie Railway Company***

WE was built in 1871 to move West Virginia coal to Pittsburgh and Lake Erie port cities. The railroad is owned by the Wheeling Corporation and operates in Ohio, Pennsylvania, Maryland, and West Virginia. Including trackage rights, the railroad extends between Hagerstown, Maryland and Toledo, Ohio. The railroad is one of the largest regional railroads in the country. The total mileage operated by the WE in the State of West Virginia is only 5.5 miles.

Wheeling & Lake Erie Railway Company (WE)

The railroad operates more than 4.5 miles of rail line in Northern West Virginia, near Follansbee, on its Rook Subdivision. The Rook Subdivision is an important segment that connects the WE system in Ohio with its lines in Pennsylvania and Maryland, including a major interchange point in Pittsburgh. Within West Virginia, there are no WE interchanges or other rail facilities along this subdivision. Across the Ohio River at Mingo Junction, Ohio, it operates the River Subdivision south to Bellaire, Ohio. At Bellaire, the railroad crosses the Ohio River on the CSXT Bellaire-Benwood Bridge to reach Benwood, West Virginia. At Benwood, WE owns a 1-mile loop track with a connection to the CSXT Benwood Yard. All facilities in Benwood, with the exception of the loop track, are owned by CSXT. The railroad has operating rights in the CSXT Benwood Yard to interchange traffic.

Within West Virginia, the Rook Subdivision is a single track railroad with no sidings and no signal system. This rail line can accommodate 286,000-pound rail cars, and there are no clearance restrictions in West Virginia. Maximum operating speeds on the West Virginia portion of this line are 30 mph. Along this segment, the railroad operates 20 trains per week. There are no freight customers in West Virginia on this line. WE trains carry a mix of commodities including coal, steel, sand, aggregates, limestone, cement, lumber, crude oil, liquefied petroleum gas, paper, plastic pellets, chemicals, grain, feed, and food products.

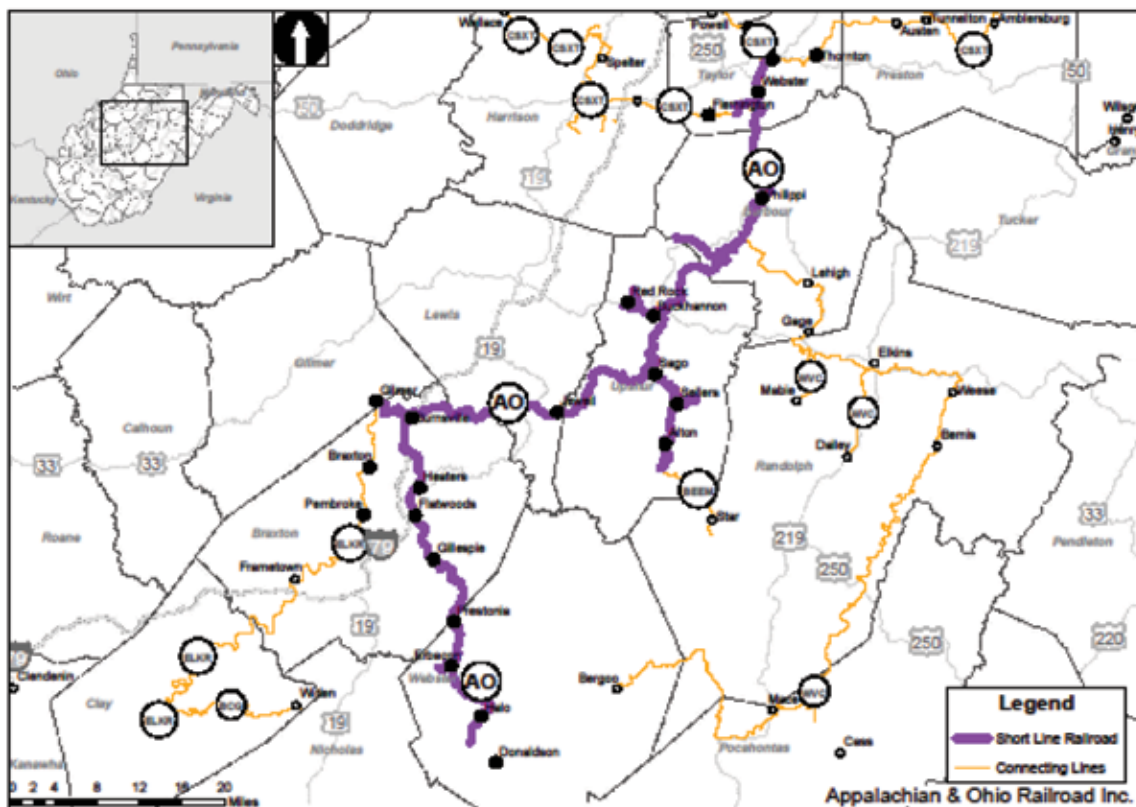
The approximately 1-mile segment of the WE River Subdivision in Benwood, West Virginia is a single track railroad with no sidings and no signal system. This rail segment can accommodate 286,000-pound rail cars and has no clearance restrictions. Maximum operating speed on the West Virginia segment of this line is 10 mph. WE operates local trains between Mingo Junction and the CSXT Benwood Yard several times per week.

CLASS III/SHORT LINE RAILROADS

Appalachian & Ohio Railroad Inc.

AO was originally part of the B&O Cowen and Pickens Subdivisions, which were later operated by CSXT until they were leased to Watco Companies, LLC (Watco), which began operations on March 25, 2005. Watco operated the line for approximately 1 year before the lease was transferred to Four Rivers Transportation, Inc. (FRT) on May 15, 2006. FRT is a jointly-owned railroad management company made up of the P&L Transportation, Inc. (P&L) of Paducah, Kentucky and CSXT. AO is a subsidiary of P&L.

Appalachian & Ohio Railroad Inc. (AO)



AO operates a total of 158 miles of railroad in West Virginia over three subdivisions. The AO main line extends 119 miles between Berkeley Run Junction, near Grafton in Taylor County, and Cowen, in Webster County. AO has trackage rights between Berkeley Run Junction and the CSXT Grafton Yard, where the railroad interchanges with CSXT. AO also interchanges with three short line railroads: the WVCR at Tygart Junction in Barbour County; the Beech Mountain Railroad (BEEM) at Alexander on the Pickens Subdivision in Upshur County; and The ELKR at Burnsville Junction in Gilmer County.

The Cowen Subdivision is a single track railroad with multiple sidings. Maximum operating speed is 25 mph. At Berryburg Junction, the 2-mile-long Berryburg (Compass) Branch extends from the main line to serve the Sentinel Mine Loadout. A short industrial spur is also located at Phillipi. At Tygart Junction, the line connects to the West Virginia Central Railroad toward Elkins. At Century Junction, the 3-mile-long Century Branch leads to the Century 102 Mine. At Teter, the Rawhide Mine Industrial Track serves the Rawhide Coal Mine. At the town of Buckhannon, there is a wye connecting to the 2-mile-long Christopher Branch. The Brooks Run industrial track provides access to the Brooks Run Mine. The Buckhannon Yard, north of Hampton Jct., and Cowen Yard, located at the end of the line serve operations over the AO.

Clearance restrictions on the mainline exist at the following tunnels: Knight (MP 5.7), Lane (MP 8.5), Hampton (MP 41.9), Abbott (MP 48.3), Jones (MP 51.1), Frenchton (MP 53.8), Jacksonville (MP 62.5), Morrison (MP 87.8), and Elk (MP 92.3). Equipment exceeding Plate C (15 feet 6 inches in height and 10 feet 8 inches in width) is prohibited south of Hampton Junction (MP 41.9).

The Pickens Subdivision extends from the Cowen Subdivision at Hampton Junction. The Pickens Subdivision is a 15.8-mile single track railroad with no sidings. The Island Creek Industrial Track provides access to the Sawmill Run Mine. At Alexander, AO interchanges coal trains with the BEEM.

The Elk Subdivision extends from the Cowen Subdivision at Burnsville Junction. AO operates between Burnsville Junction, on the Elk Subdivision, and Gilmer. AO interchanges with the ELKR at the Gilmer Wye.

All lines are capable of handling 286,000-pound rail cars. The Cowen Subdivision operates under a CTC signal system, controlled by the CSXT dispatcher in Jacksonville, Florida. CTC is in effect between Berkeley Run Junction and Hampton Junction. All other areas are governed by radio-dispatched track warrants.

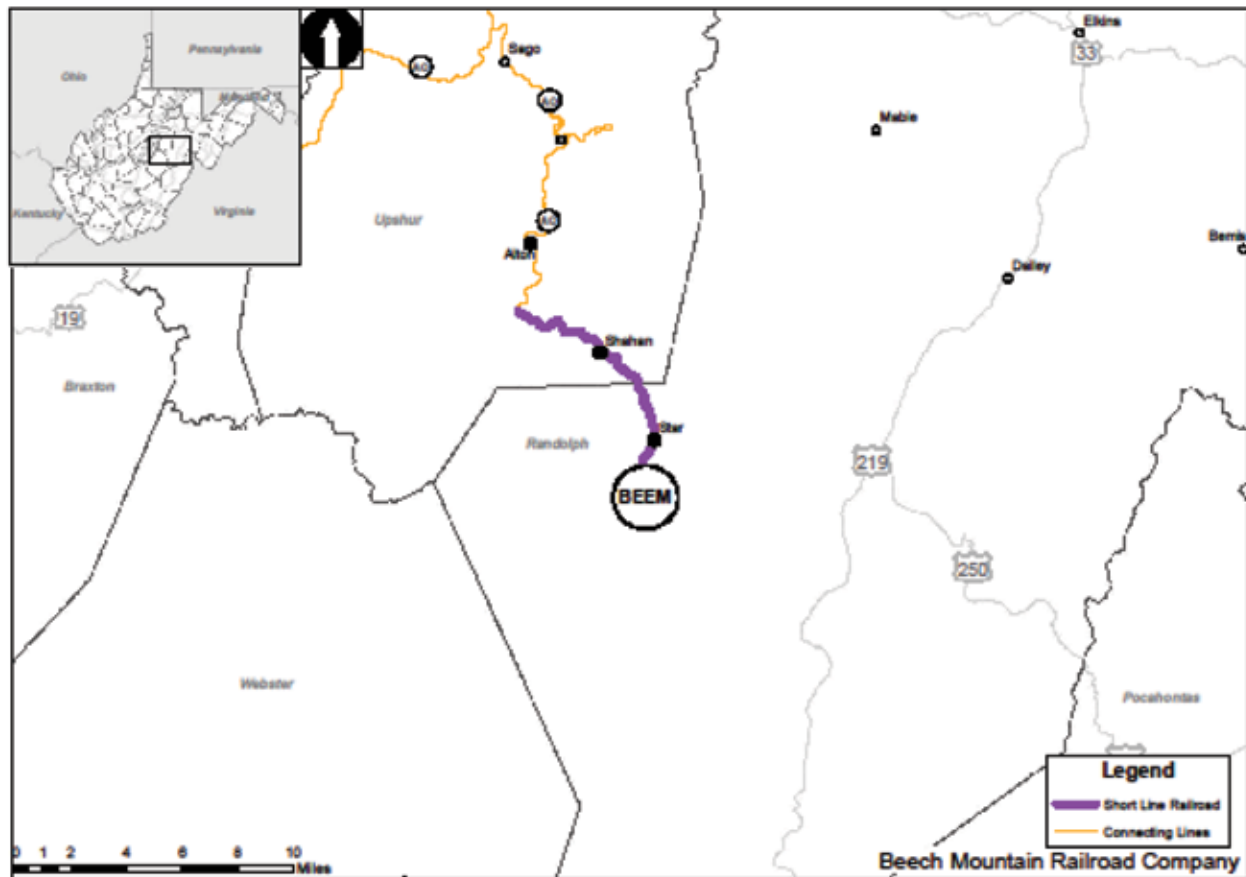
The railroad's main business is serving the six coal mines in the area. AO operates 10 loaded coal trains and five mixed freight locals per week. The railroad reaches two active coal mines directly, Rawhide at Teter and Evergreen, near Cowen. Additional coal mines are served via loadouts at Sentinel on the Berryburg (Compass) Branch, Sawmill Run on the Pickens Sub, and the Brooks Run on the Brooks Run Industrial Track at Erbacon. AO's traffic is largely coal destined to power plants in the Northeast and Mid-Atlantic region.

In addition to coal trains, AO operates three local train operations to handle various commodity shippers. Commodities handled include chemicals, lumber, non-metallic minerals, plastics, and scrap metal.

AO's Buckhannon Yard and locomotive shop is located on the Cowen Subdivision. Cowen Yard is split into two sections. East Cowen Yard provides eight loading and storage tracks supporting the Evergreen Coal Mine. West Cowen Yard has three yard tracks, plus a main track and two additional tracks that provide access to the east end of the wye. All locomotive servicing and car repair is performed at the CSXT Grafton Yard.

Beech Mountain Railroad

The BEEM began hauling coal in 1953, when tracks were re-laid on the former Alexander & Eastern Railway right-of-way to serve several coal mines. The original line was constructed in 1892 to haul logs. BEEM hauled coal from a number of mines until mine closures in 1975 forced abandonment of all but 8 miles of the railroad between the Carter Roag Mine at Star Bridge in Randolph County, as well as the interchange with the AO at Alexander in Upshur County. The railroad ceased operation in March, 1998, but in the summer of 2004, Carter Roag Coal Company rebuilt the line with heavier rail. On February 14, 2005, BEEM resumed operations when United Coal's Carter Roag Mine resumed operations. The railroad is owned by Metinvest Group and United Coal.

Beech Mountain Railroad (BEEM)

This single track railroad extends 8 miles along the Left Fork of the Buckhannon River between the mine at Star Bridge and the AO interchange at Alexander, and it has a coal load out at Star Bridge. The railroad is single track with no sidings. There is a 3-track interchange yard and a small single stall engine house and shop at Alexander. The maximum authorized speed is 10 mph. There is no signal system and only one train operates at a time. The line is capable of handling 286,000-pound railcars, and there are no clearance restrictions.

The railroad operates six to eight times a month interchanging coal cars with AO which deliver the loads to CSXT at Grafton, West Virginia. From there, CSXT moves the coal to Curtis Bay, in Baltimore, for loading on ships for export.

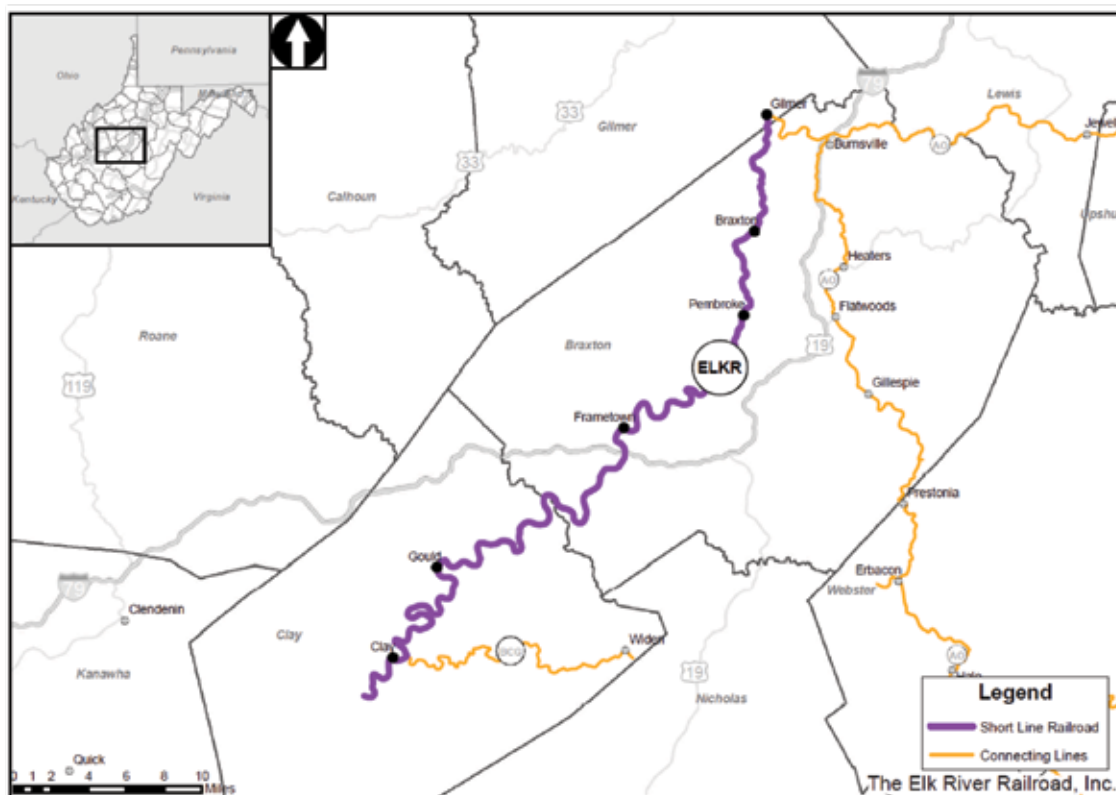
The Elk River Railroad, Inc.

ELKR, or TERRI, is located in Braxton and Clay counties between Gilmer (Gilmer County) and Hartland (Clay County).

In July 1989, Bright Enterprises obtained a lease from CSXT to operate 61 miles of the former B&O line that connected Gilmer and Hartland. Built in the late 1900s, this line was once part of the old Coal and Coke Railroad that once linked Charleston and Grafton. After leasing the former CSXT track between Gilmer and Hartland, Bright Enterprises purchased the right-of-way between Dundon (near Clay) and Widen (Clay County) and renamed it the Buffalo Creek Railroad. Over the next 4 years, Bright refurbished the CSXT trackage and the short portion of the Buffalo Creek Railroad between Dundon and Avoca in Clay County. The railroad operated one coal train per week between Avoca and the CSXT interchange at Gilmer from 1996 to 1999, but it ceased operation when American Electric Power Company did not renew its coal contract with Pittston Coal.

In November, 2001, Bright enterprises signed a contract to store excess rail cars at its yard in Gassaway, Braxton County. On June 1, 2009, The ELKR became an industrial track. The railroad is currently operating as an industrial railroad under the reporting marks TERRI. The industrial railroad generates revenue by moving rail cars between Gilmer and Gassaway, as well as through storage and switching rail cars for the contract repair facility at Gassaway.

The Elk River Railroad, Inc. (ELKR, TERRI)



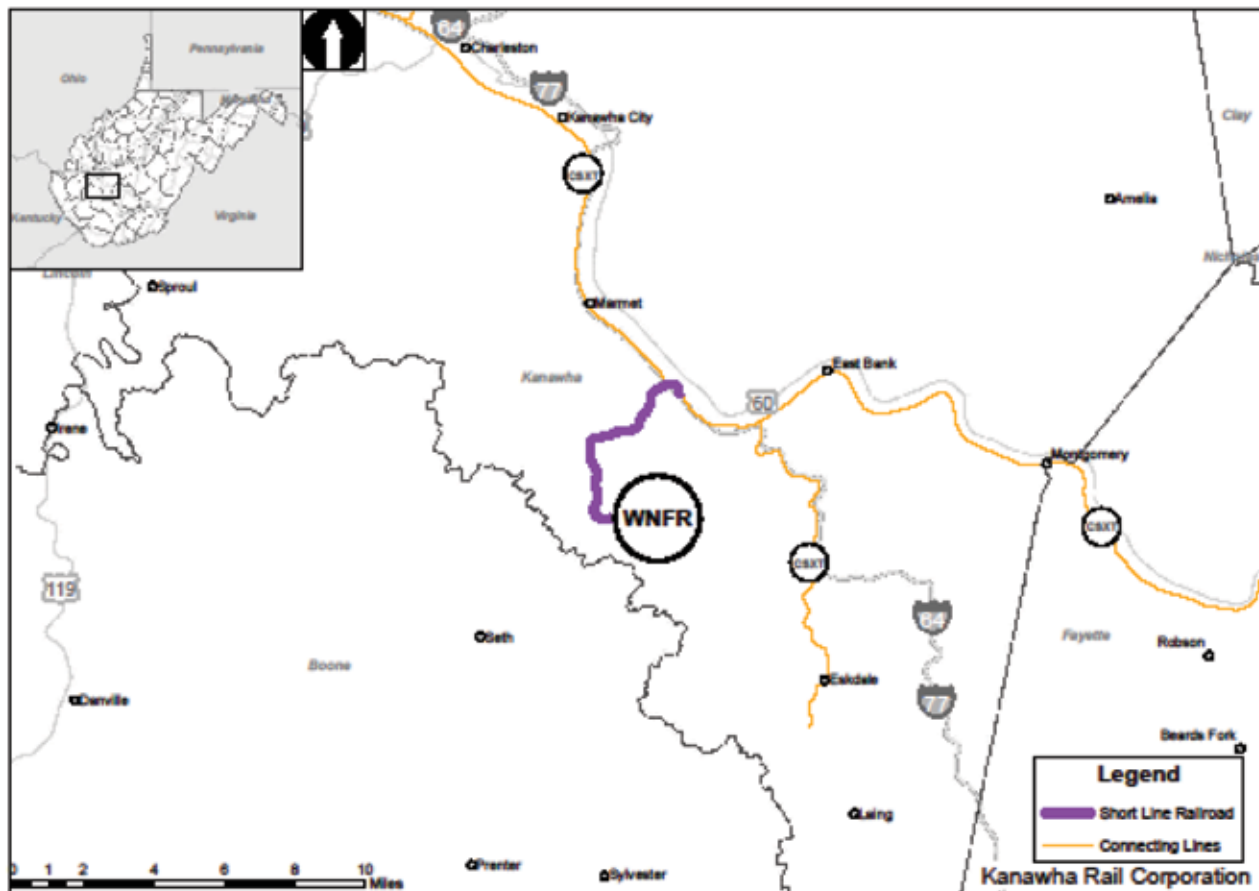
The ELKR main line extends between Burnsville Junction, near Gilmer, and Dundon. However, only 31 miles between Burnsville Junction and Frametown are in service and utilized as an industrial track. The maximum gross weight of rail cars on this railroad is 260,000 pounds with a maximum speed of 10 mph. There are no signals on the railroad. At Gassaway, a 3-track yard with storage capacity for 70 cars on each track exists. Track one is used as a car repair facility. An office building and a small rail car repair office in the yard are also located at Gassaway, as well as storage of motive power. Between Frametown and Dundon, 36.3 miles of track are out of service.

Kanawha Rail Corporation

WNFR (formerly the Winifrede Railroad Company and later Big Eagle Rail) began operations in 1850 to transport coal from a mine in Winifrede to a transloading facility on the Kanawha River in Kanawha County. A declining coal market in the late 1980s forced the WNFR to cease operations. On July 23, 1999, WNFR filed a notice of exemption with the STB for the acquisition of the Winifrede Railroad. This railroad is controlled by the Kanawha Eagle Coal Company.

On September 7, 2000, the STB approved a request by WNFR to lease the operation of its rail line to Big Eagle Rail, LLC. Appalachian Railcar Services, Inc. began operations on this rail line under contract with Big Eagle Rail, LLC, on August 20, 2000.

Kanawha Rail Corporation (WNFR)



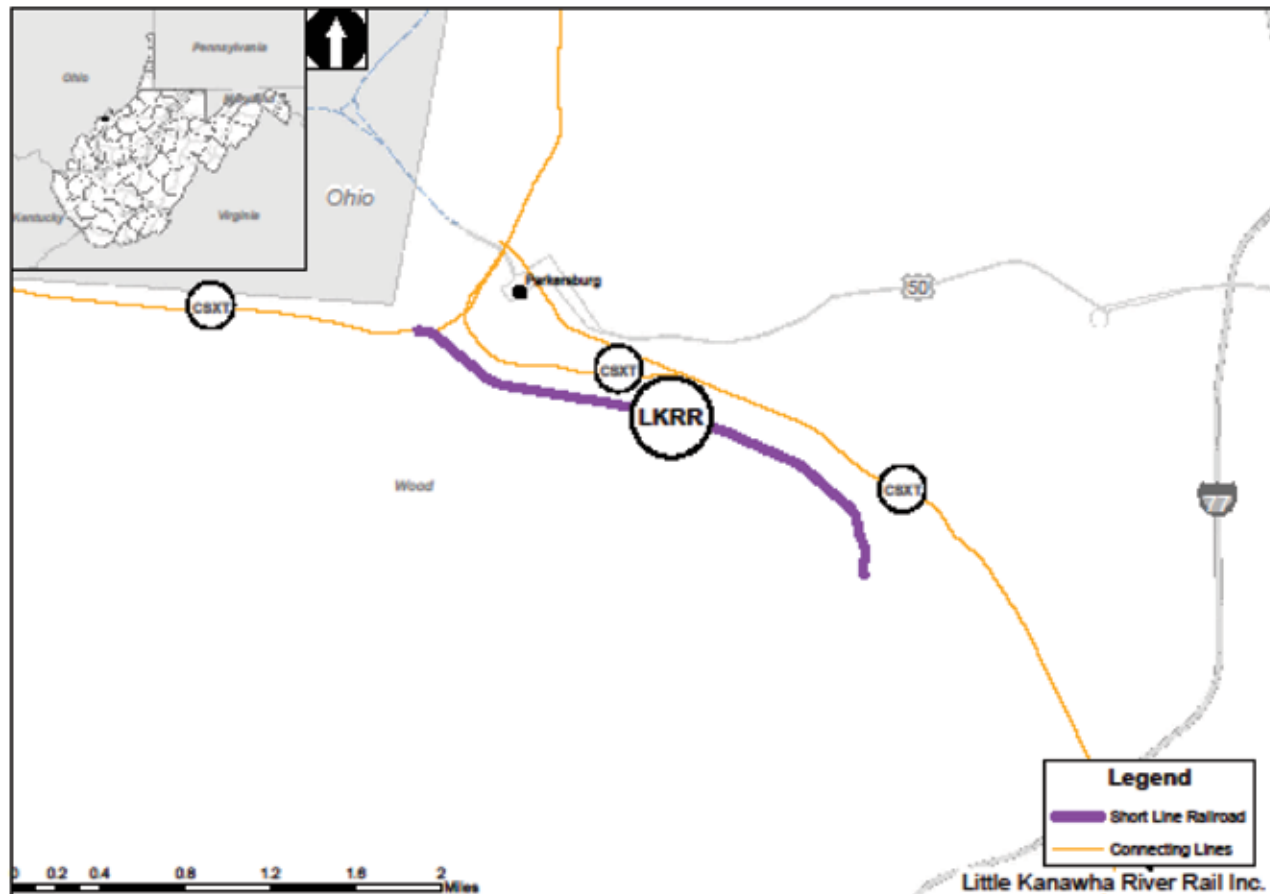
This railroad extends 6.47 miles between its interchange with CSXT at the town of Chesapeake to its southern terminus at the Kanawha Eagle Coal Company load out.

WNFR operates a rail-barge loading facility in the town of Chesapeake on the Kanawha River. To support this coal transload facility, the railroad has a 5-track yard to store loaded rail cars to the west of the coal loader and a 5-car yard to store empty cars to the east of the coal loader. The Chesapeake Yard also has a 2-track interchange facility with CSXT. WNFR also has a yard office and a locomotive servicing track. One mile north of the Kanawha Eagle Coal loader is a 4-track staging yard. A 4-track yard is also at the loading facility.

Little Kanawha River Rail, Inc.

LKRR began in 1896 as a short section of railroad in South Parkersburg. The railroad was purchased by the B&O in 1920. The Elliot Family purchased the rail line from CSXT in September, 1989. LKRR is currently owned and operated by the Elliot Family under a parent company, Marietta Industrial Enterprises, Inc.

Little Kanawha River Rail (LKRR)



LKRR is an industrial switching railroad that operates 3 miles of track in South Parkersburg. The railroad interchanges with CSXT at Ohio River Junction near the Juliana Street Bridge.

The railroad serves four customers and a river-rail transload facility that is affiliated with its owner, Marietta Industrial Enterprises, Inc. Commodities handled are aggregates, brick and cement, forest products (paper, lumber,

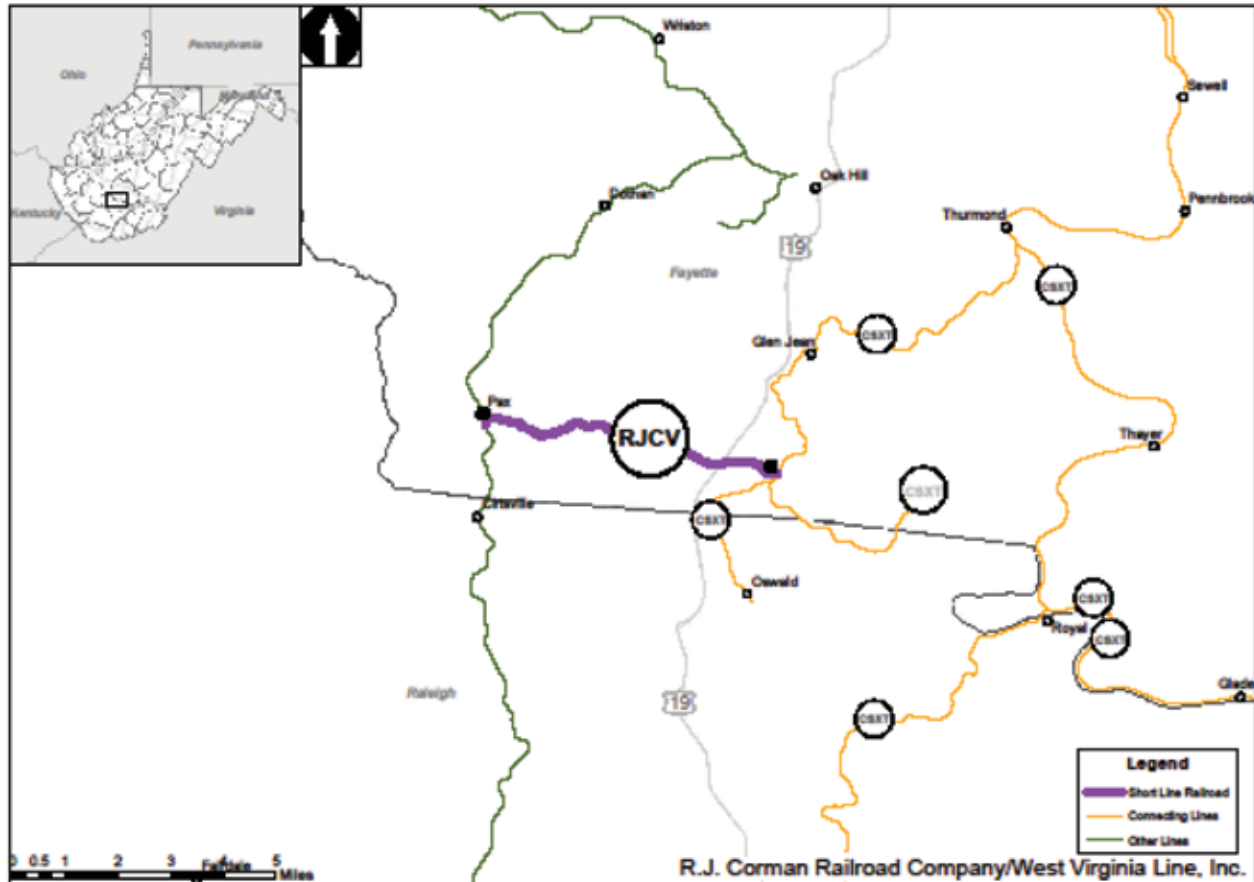
and pulp), chemicals, coal, metallic ores and minerals, construction and demolition debris, municipal solid waste, food and feed products, and steel and scrap.

The railroad has a 3-track rail yard located between the E Street Bridge and Buckeye Street.

R. J. Corman Railroad Company/West Virginia Line Inc.

RJCV consists of 16 miles of the former Chesapeake & Ohio Loup Creek Subdivision in Fayette County between Pax and the CSXT interchange at Thurmond. In 2005, RJCV purchased 12 miles of the line between Thurmond and Mount Hope. In 2006, the line was extended an additional 4 miles to Pax to serve a coal loader operated by Pioneer Fuel Company. RJCV is owned by the R. J. Corman Railroad Group, a railroad holding company based in Nicholasville, Kentucky.

R. J. Corman Railroad Company/West Virginia Line Inc. (RJCV)



RJCV operates an average of five trains a week. Commodities handled include coal, anhydrous ammonia, and ammonium nitrate.

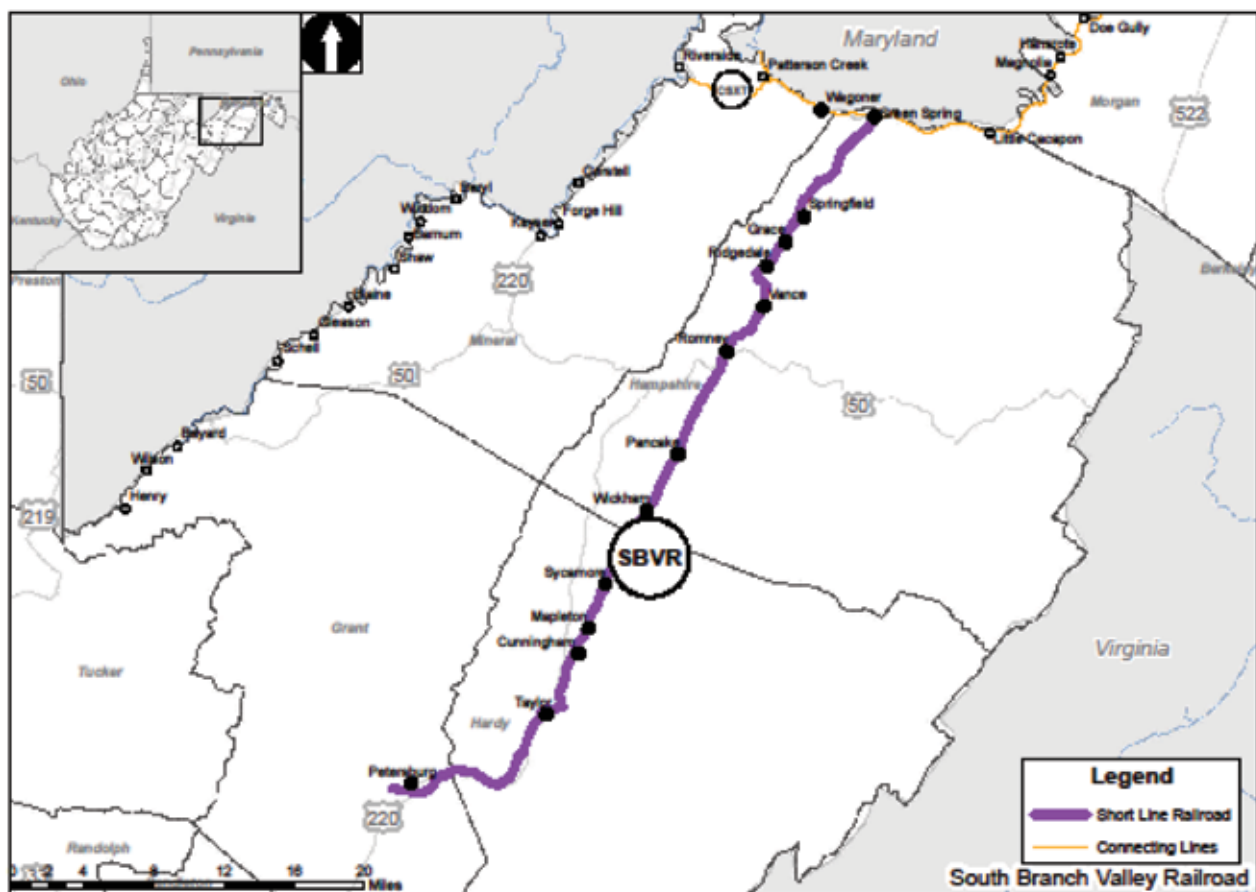
There are no signals on this line, except at the CSXT interchange in Thurmond. Maximum authorized speed on the entire line is 10 mph. High cube box cars and oversize loads are restricted on the line. The railroad uses a CSXT

interchange track at Thurmond to interchange rail cars. The railroad does not have a maintenance facility on this line.

South Branch Valley Railroad

B&O purchased this rail line from the Moorefield & Virginia Railway Company in 1913 and operated it as the South Branch line until the mid-1970s when B&O filed to abandon the rail line due to low traffic volumes. When the State of West Virginia purchased the B&O rail line on October 11, 1978, it became the first state in the nation to own and operate a commercial freight railroad.

South Branch Valley Railroad (SBVR)



SBVR is comprised of 52.4 miles from the interchange with CSXT at Green Spring, in Hampshire County, south to the end of track at Petersburg, in Grant County. The railroad follows the South Branch of the Potomac River through Hampshire, Hardy, and Grant counties serving the towns of Romney, Moorefield, and Petersburg.

CSXT owns and operates the 0.6-mile portion between the CSXT mainline and SBVR's MP 0.0, where SBVR ownership begins. A siding is located between MP 0.5 and MP 1.6 to facilitate interchange traffic with the CSXT. There is also a short spur track off the siding to store SBVR locomotives. Maximum authorized speed is 25 mph, and

no signal system exists on the line. Movements outside of yard limits are by track warrant control. SBVR can accommodate cars up to a maximum gross weight of 286,000 pounds. There are no clearance restrictions.

SBVR provides service to the Grant County Industrial Park in Petersburg, the Moorefield Industrial Park, and the Hampshire County Industrial Park at Romney. A private passenger rail operator runs the Potomac Eagle excursion train under contract with the SRA.

No major rail yards are located on the SBVR. Small switching facilities are found on various side tracks and are designated by yard limits. A shop facility is located off the main line in Moorefield. The main building and wash bay are used to maintain SBVR's fleet of nine locomotives. A wye track is located near the shop.

Vaughan Railroad Company

Vaughan Railroad Company (VRR) was purchased by Consol Energy, Inc. on June 16, 2007. The railroad owns this 18-mile railroad between Vaughan, in Nicholas County, and the CSXT/NS interchange at Rich Creek Junction. Although VRR is a Class III common carrier, the company has no operating employees, and rail operations over its existing 18-mile line are handled by NS and CSXT via trackage rights.

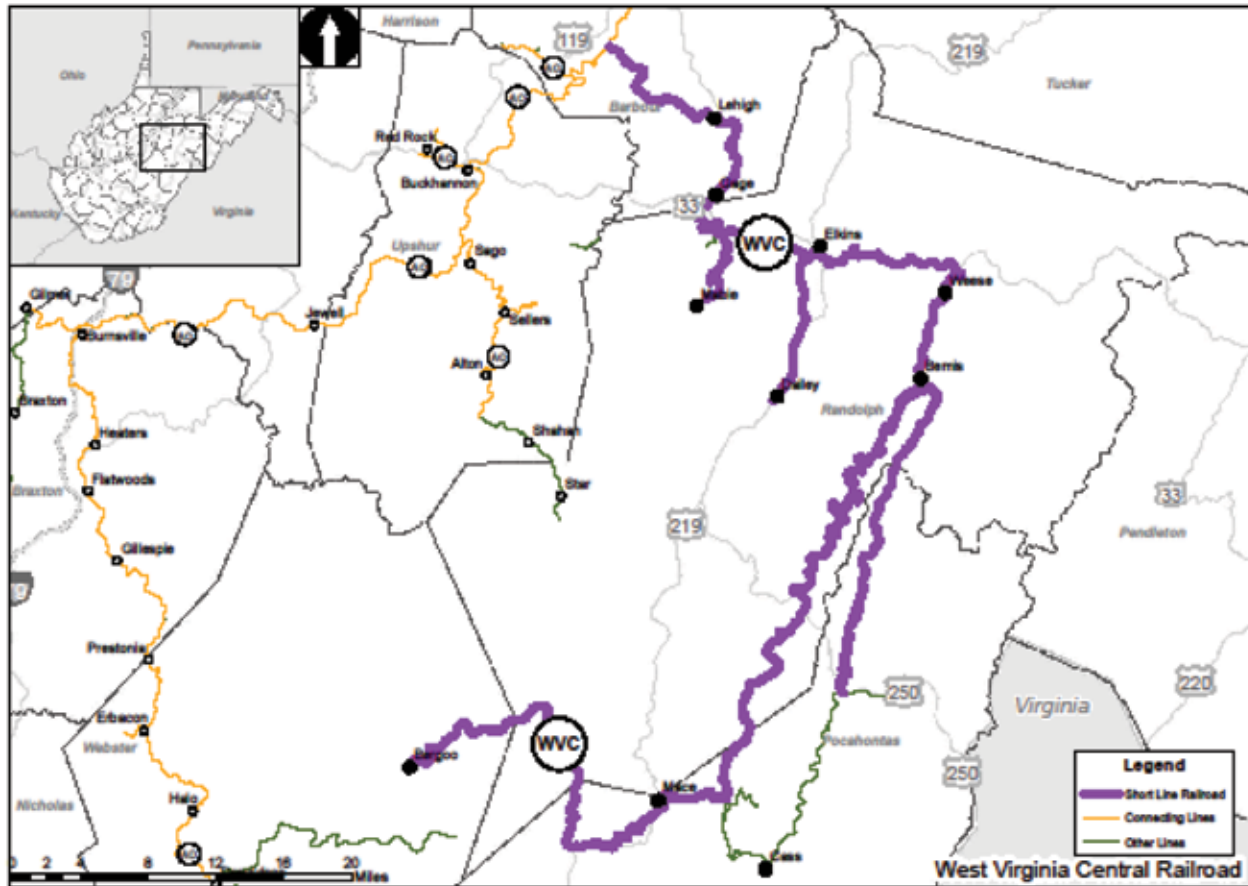
Both CSXT and NS connect with VRR at Belva. Trains of both railroads operate from Belva to a Consol Energy coal loader at Vaughan. The 2-track coal loading facility at Vaughn is capable of loading up to 130 rail cars. The line is capable of handling 286,000 pound rail cars.

The VRR is single track and has no signaling system, so only one train can operate on the line at a time.

West Virginia Central Railroad

WVCR is comprised of the former B&O Belington Branch and the former Western Maryland Tygart, Laurel and Dailey Branches. The railroad was purchased from CSXT in September, 1997, and began operation in May, 1998. WVCR interchanges with the AO at Tygart Junction. The railroad is owned by the State of West Virginia and is operated by the DGVR. DGVR operates both freight trains and passenger excursion trains on the line. WVCR operates more than 98 miles of railroad with 46 additional miles out of service.

West Virginia Central Railroad (WVCR)



The 11.6-mile Tygart Subdivision is in Barbour County and extends from Tygart Junction to Belington. There is a 13-car interchange track on WVCR at Tygart Junction.

The 17.4-mile Belington Subdivision extends from Belington to Huttonville Jct. At Norton there is a 15-car siding used for train meets. The Coalton Industrial Track also diverges from the Belington Subdivision at Norton.

From Huttonsville Junction, the Dailey Subdivision diverges southward, and the Cheat Subdivision continues eastward before turning southward along the Shavers Fork River.

The 9.6-mile Dailey Sub connects Elkins and Dailey, both in Randolph County.

The Cheat Subdivision extends from Elkins to High Falls within Randolph County. At Huttonsville Junction near Elkins, the Cheat Subdivision extends from Huttonville Junction, at Elkins Yard, to High Falls. A 580-foot siding is located at Point Siding and is used by the locomotives of an excursion train, the New Tygart Flyer, to run around the excursion train before or after reaching High Falls Station.

The GC&E Subdivision extends from High Falls in Randolph County to Laurel Bank in Pocahontas County. The rail line is currently out of service beyond MP 90.

The Laurel Subdivision extends from Laurel Bank in Pocahontas County) to the end of the line near Bergoo in Webster County. The entire Laurel Subdivision is out of service.

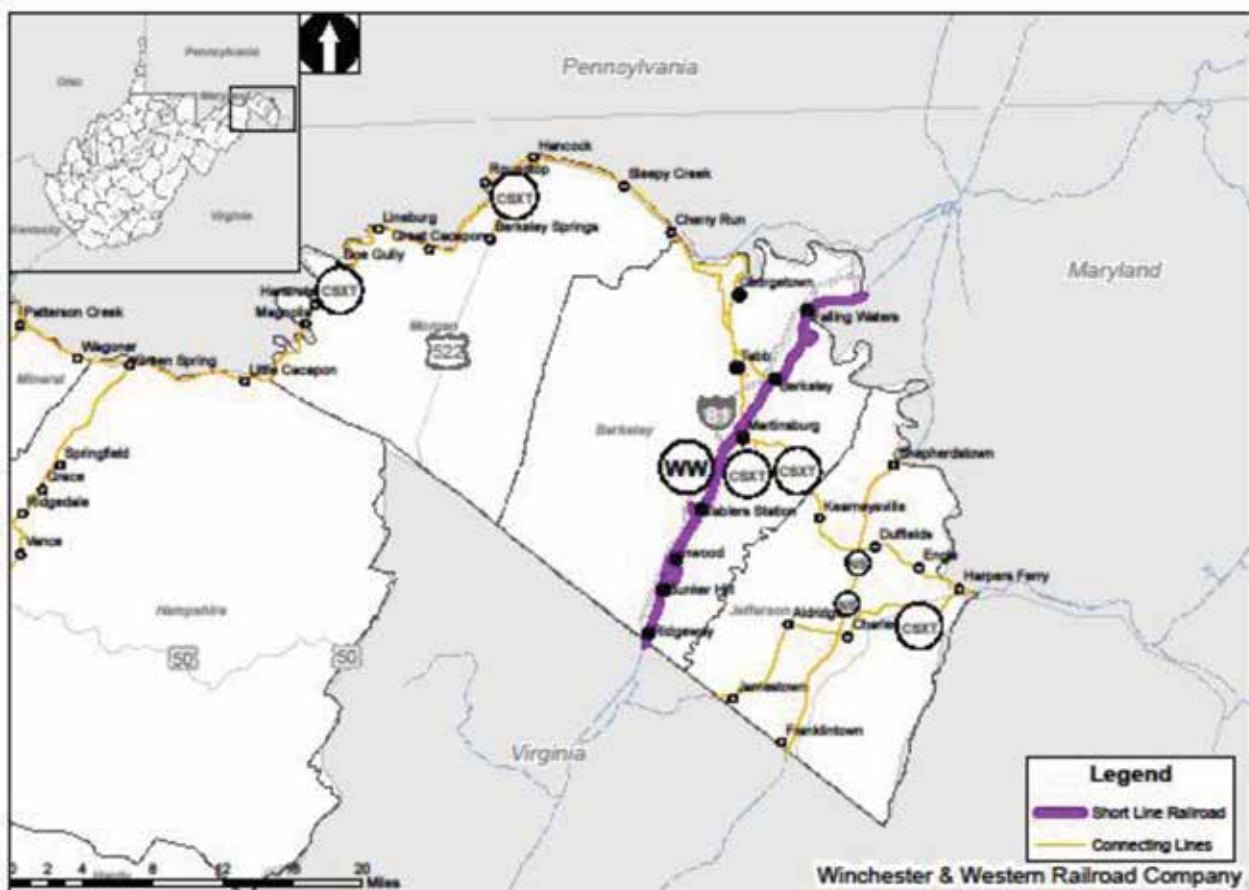
Maximum authorized speed is 25 mph on main tracks and 5 mph on all other tracks. On average, 10 trains are operated per week. Commodities handled include highway salt, finished lumber, scrap metals, and limestone. WVCR is capable of handling up to 315,000 pound rail cars.

The Belington Yard is located 17 miles west of Elkins. In Belington, WVCR built a 40-foot by 110-foot single stall engine facility on the site of the old B&O yard. The Belington Yard serves as the railroad's locomotive and passenger car maintenance facility.

Winchester & Western Railroad

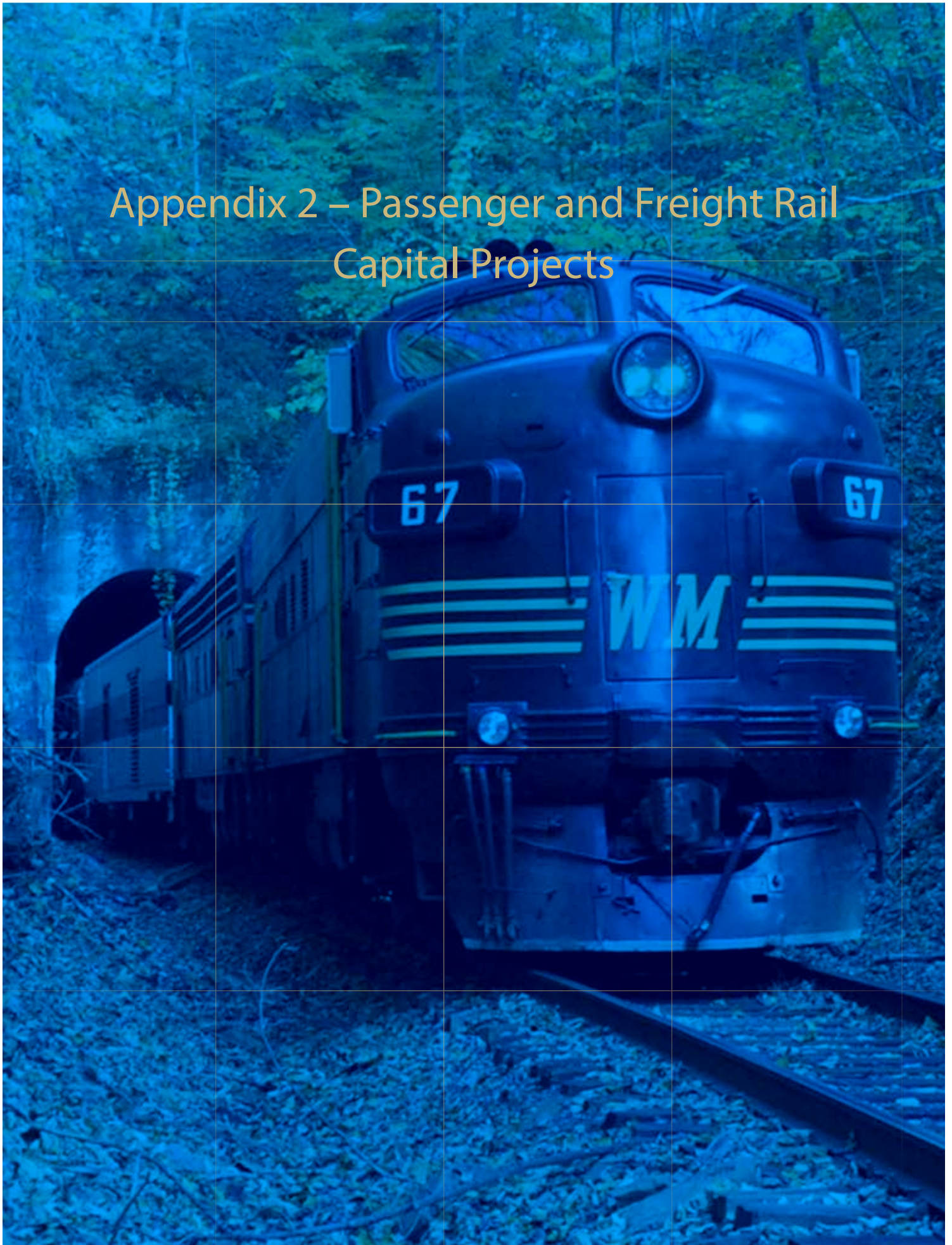
WW was originally built in 1916 to haul timber. In 1986, WW purchased the former Pennsylvania Railroad Winchester Secondary line, between Winchester, Virginia and Hagerstown, Maryland, from the Consolidated Rail Corporation (Conrail). WW interchanges with CSXT at Winchester, Virginia and Martinsburg, West Virginia. The railroad also interchanges with NS in Hagerstown, Maryland. The railroad operates 28 miles in the State of West Virginia with the majority of its freight supplied by the quarry of its parent company, the Unimin Corporation, located in Gore, Virginia.

Winchester & Western Railroad (WW)



WW's interchange at Martinsburg consists of a wye and a spur track that can hold up to 36 rail cars. The railroad operates at a maximum authorized speed of 10 mph. There is no signal system on the railroad. WW can handle 286,000-pound railcars. Commodities handled include sand, cement, lime, asphalt, paper, auto parts, and coal.

Appendix 2 – Passenger and Freight Rail Capital Projects



West Virginia Short-Range (1-4 Years) Rail Investment Program

Project Name	Project Description	Project Benefits	Estimated Cost (\$millions)	Proposed Funding Source
Rail Freight Projects				
SBVR – Upgrade property to accommodate unit trains	Upgrade 23 acres of property to accommodate 90-car unit trains for use by the railroad’s largest customer	Lower long-haul rates and enhanced marketing capability	\$3.0 million	State General Fund; SBVR Special Revenue Fund
SBVR- Upgrade shops and construct sand tower	Upgrade and expand the existing SBVR shops including a new sand tower to supply sand for locomotives	Increased efficiency and safety for employees; increased locomotive efficiency	\$0.75 million	State General Fund; SBVR Special Revenue Fund
SBVR – Locomotive Upgrades	Upgrade existing locomotive fleet – initial 4 years of a 10-year program	Extend the life of the locomotive fleet; increase productivity; reduce emissions	\$1.0 million	State General Fund; SBVR Special Revenue Fund
SBVR- Rehabilitate rail bridge decks	Rehabilitate all bridge decks on the line – initial 4 years of a 10-year program	Extend the life of existing bridges and the ability to accommodate heavy loads	\$ 0.75 million	State General Fund; SBVR Special Revenue Fund
WVCR – Rehabilitate rail bridge decks	Rehabilitate all bridge decks on the line – initial 4 years of a 10-year program	Extend the life of existing bridges and the ability to accommodate heavy loads	\$0.75 million	State General Fund; WVCR Special Revenue Fund

Grade Crossing Projects				
AO Grade Crossing Rehabilitations - Braxton County	Upgrade three AO crossings in Braxton Co. at: Co Rt. 1 Oil Creek Rd.; Co. Rt. 1/3 Happy Hollow Rd.; and Co. Rt. 5/10 at Burnsville with LED flashers and bell	Upgrade the level of crossing signals from passive to active systems at three locations	\$0.606 million	Federal Highway Safety Improvement Program (HSIP)
AO Grade Crossing Rehabilitation - Braxton County	Upgrade AO WV Rt. 5, Burnsville crossing with cantilevers and gate mechanisms	Upgrade the level of the crossing's active warning system	\$0.237 million	HSIP
AO Grade Crossing Rehabilitation - Lewis County	Upgrade AO US Rt. 19, Crawford crossing with LED flashers and bell	Upgrade the level of the crossing warning signal from a passive to active system	\$0.201 million	HSIP
AO Grade Crossing Rehabilitations - Upshur County	Upgrade two AO crossings in Upshur Co. at Co. Rt. 11/2, Centerville Rd. and Co. Rt. 11 Frenchton Rd. with LED flashers and bell	Upgrade the level of crossing warning signals from passive to active systems at two locations	\$0.404 million	HSIP
AO Grade Crossing Rehabilitation - Upshur County	Upgrade AO WV Rt. 20, Locust St., Buckhannon crossing with cantilevers and gate mechanisms	Upgrade the level of the crossing's active warning system	\$0.237 million	HSIP
CSXT Grade Crossing Surface Rehabilitation - Cabell County	Upgrade the CSXT US 60 E., Adams Ave. crossing with a concrete surface	Upgrade the crossing surface to increase highway safety	\$0.096 million	HSIP
CSXT Grade Crossing Surface Rehabilitations - Putnam County	Upgrade the CSXT Co. Rt. 44, Scary Creek Rd. and Co. Rt. 33/3, Hedrick Rd. crossings with concrete surfaces and improved approaches	Upgrade the crossing surfaces and approaches to increase highway safety at two locations	\$0.168 million	HSIP
CSXT Grade Crossing Surface Rehabilitations - Raleigh County	Upgrade five CSXT crossings at: Co. Rt. 16/9, City Ave., Mabscott; Co. Rt. 3/21, Mabscott; two Co. Rt. 18/1; and Co. Rt. 18 crossings with concrete surfaces	Upgrade crossing surfaces to increase safety at five locations	\$0.088 million	HSIP
RJCV Grade Crossing Signal System Installation	Install a new crossing signal system at RJCV Stadium Dr., Mt. Hope	Establish a new active crossing warning system	\$0.126 million	HSIP
RJCV Grade Crossing Signal System Installations in Fayette County	Install new crossing signal systems at RJCV crossings at Co. Rt. 19/3 Collins Hill Rd. and Co. Rt. 25/5 Red Star Rd.	Establish new active crossing warning systems at two locations	\$0.25 million	HSIP

Grade Crossing Projects				
RJCV Grade Crossings Rehabilitations - Fayette County	Upgrade five RJCV crossings at: Co. Rt. 25 (2); Co. Rt. 25, Red Star; Alt. WV 61, Virginia St.; and WV 211, Main St. with constant warning time equipment upgrades	Upgrade the level of active crossing warning system at five locations	\$0.125 million	HSIP
WW Grade Crossing Rehabilitations - Berkeley County	Upgrade six WW crossings at: Co. Rt. 51/5, Henshaw Rd.; Co. Rt. 26, Runnymede Rd.; Co. Rt. 28, Speck's Run Rd.; WV Rt. 45, Apple Harvest Dr.; WV Rt. 51, Grove Ave.; and Co. Rt. 11/22, True Apple Way Rd. with improved lights and PMD train detection systems	Upgrade the level of active crossing warning systems at six locations	\$0.667 million	HSIP

West Virginia Long-Range (5-20 Years) Rail Investment Program

Project Name	Project Description	Project Benefits	Estimated Cost (\$millions)	Proposed Funding Source
Rail Passenger Projects				
Prince Railroad Station Rehabilitation	Rehabilitate the station interior and station access, as required, to serve Amtrak <i>Cardinal</i> service and provide access to the Summit Bechtel Reserve	Improve station amenities and access to increase rail passenger ridership and access to SBR	TBD	TBD
Harpers Ferry Station ADA Compliance Improvements	Rehabilitate the station interior, platforms, and station access to fully comply with ADA station standards	Ensure ADA compliance and improve station access and amenities	\$2.3 million	WV 86% share TBD; Amtrak/MARC
Huntington Station/South Yard Siding	Construct a passenger train siding at CSXT's South Yard adjacent to the Huntington Station	Increases rail safety by removing trains from the mainline during boarding; increases the speed and efficiency of boarding	TBD	TBD
Charleston Multimodal Passenger Terminal	Conduct feasibility and engineering studies, as necessary, related to construction of a new multimodal terminal at a more accessible location within the Charleston area	Increase rail passenger ridership and intermodal accessibility to users	TBD	TBD
Hurricane Passenger Station	Conduct feasibility or engineering studies, as necessary, related to establishing a new rail passenger station at Hurricane on Amtrak's <i>Cardinal</i> route	Increase rail passenger accessibility and ridership on the <i>Cardinal</i> service	TBD	TBD
Replace Hawk's Nest Bridge	Conduct engineering and operational analyses, as necessary, to determine the benefits of replacing and realigning the CSXT Hawk's Nest Bridge	Eliminates slow orders for both passenger and freight rail movements; improves rail passenger travel times and reliability	TBD	TBD
Establish new rail passenger stations or support facilities at West Martinsburg, North Port, Harpers Ferry, and McKees Crossing	Conduct feasibility and engineering studies, as necessary, to establish new or improved stations or support facilities to MARC/Amtrak stations in the Eastern Panhandle	Provide increased access and ridership to MARC commuter service and Amtrak <i>Capitol Limited</i> service; improve transit oriented development and passenger safety and convenience	TBD	TBD

Project Name	Project Description	Project Benefits	Estimated Cost (\$millions)	Proposed Funding Source
Rail Passenger Projects				
Purchase New Commuter Rail Trainsets	Conduct feasibility and marketing studies related to the purchase of new trainsets for the purpose of establishing express service between WV stations and Washington, DC	Provide additional commuter rail frequencies and shorter travel times; increase ridership at WV stations	TBD	TBD
WVCR Highland Adventure of Mountain& Rail Project	Create a new excursion rail route connecting existing WVCR and Cass excursion operations	Significantly increase rail-related tourism and related economic expansion	\$44.0 million	TBD
Hampshire County Rail Spur and Station Project	Construct a new spur and station complex to expand existing Potomac Eagle Scenic RR operation	Expand tourism opportunities and related business expansion	\$22.0 million	TBD
Provide Tourist Train Signage	Install additional tourist train directional signage on the WV highway system as necessary	Expand tourism opportunities and related business expansion	TBD	TBD

Rail Freight Projects				
SBVR Locomotive Fleet Upgrades	Upgrade existing locomotive fleet; final 6 years of a 10-year program	Extend the life of the locomotive fleet; increase productivity; reduce emissions	\$1.5 million	State General Fund; SBVR Special Revenue Fund
SBVR Bridge Improvements	Rehabilitate all bridge decks on the line; final 6 years of a 10-year program	Extend the life of existing bridges and the ability to accommodate heavy loads	\$1.5 million	State General Fund; SBVR Special Revenue Fund
WVCR Dailey Branch Upgrade	Rehabilitate line to expand and improve freight service to existing and potential businesses and add to the existing tourist train network	Increase access and level of service to existing and potential freight and passenger customers	\$3.1 million	TBD
WVCR Bridge Improvements	Rehabilitate all bridge decks on the line; final 6 years of a 10-year program	Extend the life of existing bridges and the ability to accommodate heavy loads	\$1.5 million	State General Fund; WVCR Special Revenue Fund
Reroute CSXT freight line between Harper's Ferry and Reedson	Conduct engineering studies as necessary to determine the feasibility and benefits of relocating rail freight service between the two locations	Improves safety by removing freight operations from a section of heavy passenger traffic and at local grade crossings	TBD	TBD
Construct a rail trash transfer facility in Upper Kanawha Valley	Conduct feasibility and engineering analyses as necessary to determine the benefits of constructing a rail trash transfer facility in the region	Reduce heavy highway traffic and related negative environmental and energy impacts	TBD	TBD
Upgrade Mittal Weirton Yard	Conduct engineering and marketing analyses as necessary to determine the benefits of upgrading the Weirton Yard as a prospective intermodal hub or to serve additional local businesses	Provide local transportation and economic benefits to the region	TBD	TBD

Appendix 3 – WVDOT State Rail Plan Steering Committee Members



WVDOT State Rail Plan Steering Committee Members		
Ira Baldwin	Manager, Railroad Safety Section	Public Service Commission of West Virginia
Senator Robert Beach	Chairman, Transportation Committee	WV State Senate
Scott Blatt	Manager	Kanawha River Terminal
Jason Bostic	Vice President	WV Coal Association
Cindy Butler	Executive Director	WV State Rail Authority
Randy Cheetham	Regional Vice President State Government Affairs	CSX Transportation
Susan V. Chernenko	Director	WV Aeronautics Commission
David Cramer	Commissioner's Office of Economic Development	WV Department of Transportation
Sarah Daniel	Inter-Agency Unit, Staff Engineer	WVDOT Division of Highways
John Friedman	Vice President, Strategic Planning	Norfolk Southern
Phil Hancock	Specialist, Government Affairs	Amtrak
John Hovatter	Director, MARC Train & Commuter Bus	Maryland Transit Administration
Mark Julian	Director, Business & Industrial Development	WV Department of Commerce
Matt Mullenax	Acting Director	Hagerstown/Eastern Panhandle MPO
Susan O'Connell	Director	WV Division of Public Transit
Elwood Penn	Program Planning and Administration Division	WV Department of Highways Program Planning and Administration Division
John J. Philbrick	Superintendent	WV State Rail Authority
Karen Price	President	WV Manufacturers Association
Gary Scott	Railroad & Utilities Coordinator	WVDOT Division of Highways
Delegate Margaret Staggers	Chair, Roads & Transportation Committee	WV House of Delegates
Todd Stennis	WV Representative	Amtrak
Jason Wazelle	Manager, Government Relations	Norfolk Southern
Jimmy Wriston	Engineering Advisor	WV Department of Transportation
James (Doug) York	Director	WV Public Port Authority

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WEST VIRGINIA
STATE RAIL PLAN

