



I-95 Corridor Coalition

Northeast Rail Operations Study, Phase II

Summary of Potential Rail Improvement Projects

Technical Memorandum #1



**I-95 CORRIDOR
COALITION**

August 2009

Northeast Rail Operations Study, Phase II

Summary of Potential Rail Improvement Projects

Technical Memorandum #1

Prepared for:

I-95 Corridor Coalition

Sponsored by:

I-95 Corridor Coalition

Prepared by:

Cambridge Systematics

August 2009

This report was produced by the I-95 Corridor Coalition. The I-95 Corridor Coalition is a partnership of state departments of transportation, regional and local transportation agencies, toll authorities, and related organizations, including law enforcement, port, transit and rail organizations, from Maine to Florida, with affiliate members in Canada. Additional information on the Coalition, including other project reports, can be found on the Coalition's web site at <http://www.i95coalition.org>.

Table of Contents

| | | |
|------------|---|------------|
| 1.0 | Objective..... | 1-1 |
| 2.0 | NEROps Background..... | 2-1 |
| 2.1 | NEROps Phase II Objective..... | 2-2 |
| 2.2 | Project Approach..... | 2-2 |
| 3.0 | Approach..... | 3-1 |
| 4.0 | Overview of Rail Network and Improvements..... | 4-1 |
| 4.1 | Rail Network Overview..... | 4-1 |
| 4.2 | Projects..... | 4-1 |
| 5.0 | Intercity Passenger Rail Network and Projects..... | 5-1 |
| 6.0 | Commuter Rail Systems and Projects..... | 6-1 |
| 7.0 | NS, CP, and Pan Am Network and Projects..... | 7-1 |
| 8.0 | CSX Network and Projects..... | 8-1 |
| | Appendix A. Table of Potential Projects Arranged by State..... | A-1 |

List of Tables

| | | |
|-----------|---|-----|
| Table 3.1 | DOT Meeting Dates..... | 3-1 |
| Table 5.1 | Potential Improvement Projects on Amtrak Corridors..... | 5-2 |
| Table 6.1 | Potential Improvement Projects on Commuter Rail Corridors | 6-2 |
| Table 7.1 | Potential Improvement Projects on NS Primary Corridors..... | 7-3 |
| Table 8.1 | Potential Improvement Projects on CSX Primary Corridors | 8-2 |
| Table A.1 | Potential Improvement Projects Organized by State | A-2 |

List of Figures

| | |
|--|-----|
| Figure 4.1 Potential Rail Improvement Projects in the Northeast Region | 4-3 |
| Figure 5.1 Amtrak Intercity Passenger Network in the Northeast Region..... | 5-2 |
| Figure 5.2 Potential Rail Improvements Along Existing and Future Intercity Passenger Rail Corridors | 5-5 |
| Figure 6.1 Commuter Rail Networks in the Northeast Region | 6-2 |
| Figure 6.2 Potential Rail Improvements Along Existing and Future Commuter Rail Corridors | 6-4 |
| Figure 7.1 NS, CP, PAS and PAR Primary Corridors | 7-2 |
| Figure 7.2 NS, CP, PAS and PAR Accessible Corridors | 7-2 |
| Figure 7.3 Potential Rail Improvements Along NS, CP, PAS, PAR Corridors..... | 7-4 |
| Figure 8.1 CSX Primary Corridors..... | 8-1 |
| Figure 8.2 CSX Accessible Corridors..... | 8-2 |
| Figure 8.3 Potential Rail Improvements Along CSX Corridors | 8-4 |

1.0 Objective

The purpose of this memorandum is to describe the freight and passenger rail network in the Northeast Region, and to identify potential improvement projects. For the purpose of this study, “Northeast Region” refers to the six New England States (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) and New York State. The potential improvement projects identified in this memorandum represent projects that are underway, programmed, planned, or are part of a collaborative long-term “vision,” and have been identified in planning documents and by DOT staff in each of the Northeast states and by CSX and Norfolk Southern railroads. These projects represent investments in the region’s rail infrastructure which will preserve or expand freight and passenger service and contribute to economic (re)development throughout the region.

- **Section 2.0** of this memorandum provides a brief summary of the genesis of the NEROps Phase II study.
- **Section 3.0** details the approach utilized to identify rail network features and potential improvement projects.
- **Section 4.0** highlights the rail network and potential improvements at a regional level.
- **Sections 5.0, 6.0, and 7.0** of the memorandum detail the potential improvements on each of the major regional rail networks, Amtrak, Norfolk Southern, and CSX, respectively.
- **Appendix A** of this document provides a full draft list of all of the potential improvement projects in the region, grouped by state.

2.0 NEROps Background

The Northeast Rail Operations Study (NEROps) grew out of a recommendation in the predecessor Mid-Atlantic Rail Operations Study (MAROps) that the I-95 Corridor Coalition and its partners investigate the regional rail transportation network in New York State, New England, and Atlantic Canada as a system and identify the major historical factors and emerging trends that are impacting the efficiency of the system today and will likely impact the ability of the region's freight and passenger railroads to meet expanded future needs that will be necessary to support the regional economy.

The NEROps Phase I report was intended as a tool to educate policymakers and the public about the Northeast rail system; identify issues, chokepoints, and constraints (physical, operational, and institutional) that hinder development of rail traffic; and provide a foundation and a process that would allow the Northeast states to begin identifying and prioritizing specific systemwide issues and chokepoints that cross jurisdictional, interest, and financial boundaries.

The Phase I report found that system capacity issues throughout the Northeast rail system result in decreased levels of service and reliability, delays at key yards and facilities that cascade throughout the rail network, and a diminished capability of passenger and freight trains to share infrastructure effectively. The age of the rail system in the Northeast region, coupled with the social, financial, and environmental constraints to making large-scale improvements, contributes to specific physical chokepoints such as clearance and weight restrictions. Outdated bridges, tunnels, and viaducts present a challenge to both railroads and their customers, as there is little redundancy within the NEROps system. Finally, a shortage of railcars in the Northeast has increased the cost of shipping goods by rail relative to competing modes.

The Phase I report also noted that the region lacks a mechanism for multi-jurisdictional rail planning and funding. The states and MPOs in the Northeast do not have tools such as cross-jurisdictional benefit-cost analysis models to justify substantial outlays of public funds for rail improvements. The states and the railroads were also grappling with the challenges of balancing freight and passenger rail efficiency with new security requirements.

Since the Phase I report was published:

- Several states including Maine, New Hampshire, New York, and Massachusetts have started or completed updates to their statewide rail plans;
- Private-sector rail operators have announced plans to increase service to the Northeast through a variety of partnerships and investment initiatives;

- The National Surface Transportation Policy and Revenue Study Commission, reflecting the direction of many state governments, has advocated closer coordination of transportation investments with economic development, energy, and climate change policies being developed at the regional and Federal levels;
- Congress has passed a new rail bill (HR2095/Division B), The Passenger Rail Investment and Improvement Act of 2008, which authorizes expansion of intercity passenger rail services; and
- Most recently, the deep recession of 2008 and 2009 has focused attention on the infrastructure and economic stimulus through the American Recovery and Reinvestment Act (ARRA) of 2009. This legislation provides several different avenues for funding improvements to transportation infrastructure, including both passenger and freight rail facilities.

The findings of the Phase I report and the need to recover and accelerate economic activity have led the I-95 Corridor Coalition and the NEROps states to advance this NEROps Phase II project.

2.1 NEROPS PHASE II OBJECTIVE

The objective of NEROps Phase II project is to identify strategic freight and passenger rail improvements that will support economic recovery and future economic development of the region. The intent is to provide short-term guidance to the states and the railroads that can be used in formulating a Federal infrastructure/economic stimulus program and longer-term guidance that can be used during discussions on re-authorization of the national surface transportation programs.

- Identify strategic freight and passenger rail improvements for the region that will support economic recovery and the future economic development of the region; and
- Provide short-term guidance to the states and the railroads that can be used in applying for Federal infrastructure/economic stimulus funding and longer-term guidance that can be used in the debate on authorization of the national surface transportation programs.

2.2 PROJECT APPROACH

The project will leverage the work being done by state departments of transportation, economic development agencies, and the railroads to:

- Examine state and regional economic development plans and visions for the NEROps region;
- Identify the region's major industries and the key growth industries;

- Identify the logistics (goods) needed by these industries;
- Identify passenger transportation needs resulting from demographic and economic trends in the region;
- Identify how freight and passenger rail can serve these logistics (goods) and transportation (passenger) needs;
- Identify strategic, corridor-level freight and passenger rail improvement projects to improve freight and passenger rail services;
- Estimate the benefits of a regional rail improvement program in terms of:
 - Economic impacts (e.g., jobs, revenue, GDP growth,...);
 - Environmental impacts (e.g., fuel saving, GHG reductions,...);
 - Social and community impacts (e.g., safety, security,...); and
 - Transportation impacts (e.g., relief of highway congestion, improved accessibility...).
- Build consensus on the recommended improvements; and
- Organize the recommendations for use by the NEROps states and the railroads.

3.0 Approach

For the purpose of identifying the state of the region's rail network and potential projects, a scan of recent planning documents produced by each of the Northeast region's states was performed. Recently completed state planning documents include:

- New York State Rail Plan, 2009;
- Vermont State Rail and Policy Plan, 2006;
- Rhode Island State Freight Planning Needs Assessment, 2006; and
- Vision for the New England High-Speed and Intercity Rail Network, July 2009.

Although relevant and recent planning documents were not available for all states in the region, some of the states are currently developing state rail or freight plans, or have other planning activities underway. The project team met with planning, freight and/or rail staff at each state DOT in the Northeast Region. The agenda of the meetings included a discussion of the existing rail network within each state, and discussion regarding the status of projects which are underway, programmed, or planned. The project team also asked DOT staffs to identify projects which would fit into a longer-term "vision." The dates on which the meetings were held are listed below:

Table 3.1 DOT Meeting Dates

| Date | Agency |
|----------------|----------------------------------|
| March 11, 2009 | New Hampshire DOT |
| March 12, 2009 | Massachusetts EOT |
| April 20, 2009 | Rhode Island DOT |
| April 29, 2009 | New York State DOT |
| May 8, 2009 | Connecticut DOT |
| May 14, 2009 | Vermont Agency of Transportation |
| June 10, 2009 | Maine DOT |

The projects identified by DOT staffs at these meetings were plotted on a map of the regional rail network and included as potential improvement projects. DOT officials and other stakeholders have made an initial review of these projects. A final set of regional rail improvement projects that contribute to a unified regional rail vision will be produced at the conclusion of this study. The remaining sections of this document outline the present regional rail network and identify the preliminary list of potential rail improvement projects. The next

steps of this study will examine the potential benefits these projects could bring to economic development initiatives throughout the region.

4.0 Overview of Rail Network and Improvements

4.1 RAIL NETWORK OVERVIEW

The Northeast regional rail network can be viewed as a set of primary Class I freight railroad corridors, supporting or secondary freight rail corridors, major intercity passenger corridors, and short-line freight and commuter/local passenger service corridors. Norfolk Southern Corporation and CSX Transportation are the two Class-I railroads with the greatest presence in the Northeast region. The two large Canadian railroads, Canadian National Railway (CN) and Canadian Pacific Railway (CP) also have significant presence both directly within the region, as well as providing important connections with the region's railroads.¹ Pam Am Railways is an important Class-II railroad which, through the Pan Am Southern agreement, has extended the NS reach into New England.

The passenger rail networks are represented by intercity services offered by Amtrak and commuter rail networks in some of the region's metropolitan areas. The Amtrak-owned Northeast Corridor is the most heavily-traveled intercity passenger rail line in the region. Amtrak's other services in the region operate primarily on track owned by freight railroads. Commuter railroads in the region include the Metropolitan Transportation Authority's Long Island and Metro-North railroads in the New York City metropolitan region, the Massachusetts Bay Transportation Authority Commuter Rail network in eastern Massachusetts, and Connecticut Commuter Rail's Shore Line East in southeastern Connecticut.

4.2 PROJECTS

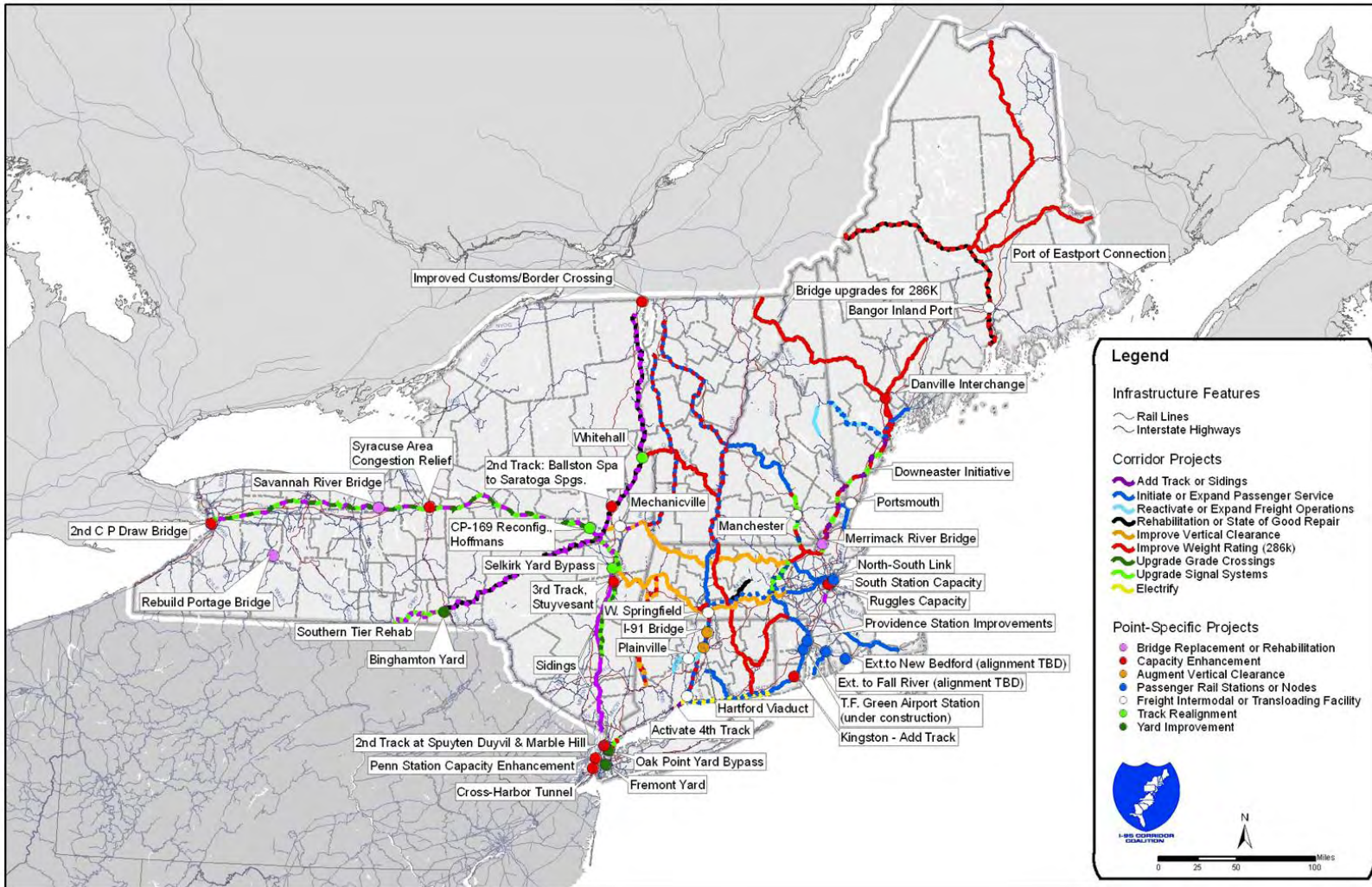
Figure 4.1 illustrates the distribution of projects underway, programmed, planned, or which are part of a long-term "vision." The projects are plotted at the corridor or corridor segment level in colors according to the objective of the project. For example, thick red lines represent projects to be completed with the objective of increasing the weight rating to 286,000 lbs. In some cases the specific track segments, bridges, and other features to be improved are known and

¹ Indeed, NS' access to New England is through a trackage rights agreement with the CP between Sunbury, Pennsylvania, and Saratoga Springs and Mechanicville, New York, as well as a connection with the Pan Am Southern, the recently formed NS/Pan Am Railways joint venture, at Mechanicville. NS' trackage rights operations over CP are displayed as being part of NS in the maps provided throughout this report.

documented. In others, the level of planning work completed is less advanced. In addition to corridors and corridor segments represented by lines, points represent point-specific projects such as yard improvements, replacement of a particular bridge, etc.

While Figure 4.1 represents the sum of all projects identified throughout the Northeast region, Sections 5, 6, 7 and 8 of this memorandum offer a look at the network and projects for the intercity passenger rail network, commuter rail network, the Norfolk Southern/Canadian Pacific/Pan Am networks, and CSX network, respectively. The appendix of this document includes a listing of all potential rail improvements, organized by state.

Figure 4.1 Potential Rail Improvement Projects in the Northeast Region



5.0 Intercity Passenger Rail Network and Projects

Most of the intercity passenger rail service in the Northeast Region is provided by Amtrak. Amtrak's most vital route is the Northeast Corridor between Washington, D.C. and Boston, Massachusetts. The Northeast Corridor is the highest-ridership service for Amtrak and is home to Amtrak's only existing high-speed rail service, Acela. The segment of the Northeast Corridor between New York City and Boston is included within the NEROps II study area. In addition to the Northeast Corridor services, Amtrak provides passenger service links between many cities within the Northeast region through the following services, mapped in Figure 5.1:

- **Northeast Corridor Spur** - Newport News, Virginia-Richmond-Washington to Springfield, Massachusetts diverting from the Northeast Corridor Line at New Haven, Connecticut;
- **Empire** - New York to Buffalo via Albany-Rensselaer;
- **Downeaster** - Boston to Portland, Maine;
- **Vermont** - New York to St. Albans, Vermont via New Haven;
- **Adirondack** - New York to Montreal;
- **Ethan Allen Express** - New York to Rutland, Vermont via Albany-Rensselaer and Saratoga Springs, New York;
- **Lake Shore Limited** - Chicago to Boston or New York via Buffalo and Albany-Rensselaer; and
- **Maple Leaf** - New York to Toronto via Buffalo or Chicago to Toronto via Buffalo.

Along these corridors there are many potential improvements which would benefit Amtrak passenger and freight operations. These projects are listed in Table 5.1.

In addition to existing Amtrak corridors, other freight or inactive corridors could be developed into intercity passenger rail corridors connecting cities throughout the region. The New England states have developed a high-speed rail plan for the region, including proposed improvements which would enhance existing or introduce new passenger rail services.

Figure 5.1 Amtrak Intercity Passenger Network in the Northeast Region

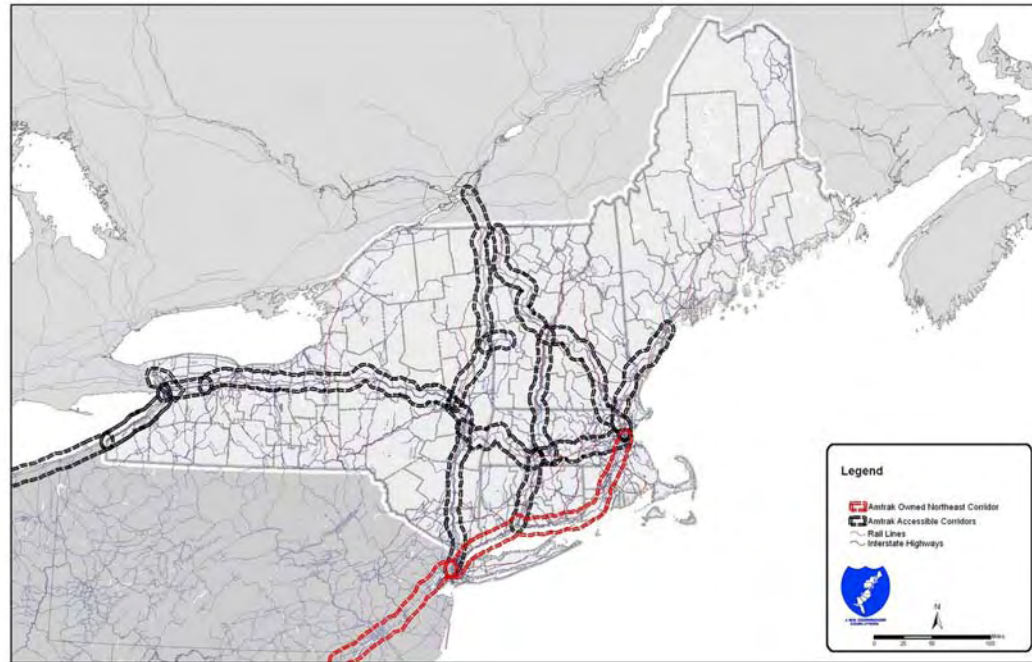


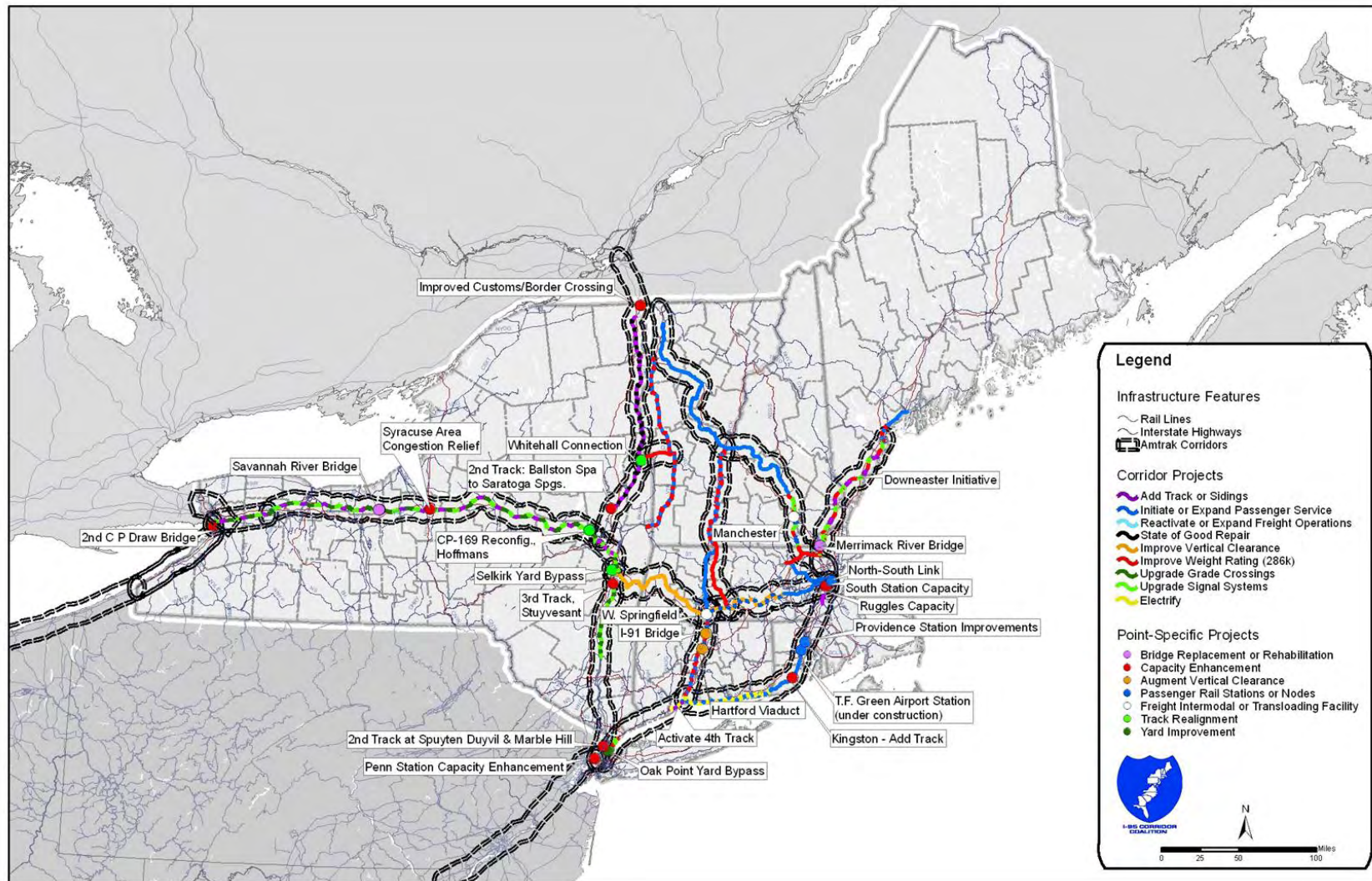
Table 5.1 Potential Improvement Projects on Amtrak Corridors

| Rail Line | Segment | Project Description |
|----------------|---------------------------|---|
| Amtrak | New Haven to MA Border | Part of Inland Route passenger service between Boston and New York & Commuter rail to Springfield, track and bridge upgrades to permit 286K |
| Amtrak | New Haven to Westerly, RI | Extend and enhance commuter rail operation |
| CTDOT | New Haven to Milford | Electrify 4 th track for passenger use |
| Amtrak | Windsor Locks | Eliminate vertical clearance constraint at I-91 bridge |
| Amtrak | Hartford | Eliminate vertical clearance constraint at viaduct |
| PAR | NH Border to Portland | Signal upgrades, add/extend sidings, track and bridge upgrades to permit 286K |
| PAR | Portland to Brunswick | Extend Amtrak Downeaster service to Brunswick |
| CSXT | Westboro to NY Border | Eliminate vertical constraints to establish full domestic double-stack clearance |
| PAR Conn River | Springfield to VT Border | Restore intercity passenger rail between Springfield and Vermont border (Knowledge Corridor project) |
| PAR Conn River | Springfield to CT Border | Track and bridge upgrades to permit 286K |
| NECR | Palmer (CSX) to VT Border | Track and bridge upgrades to permit 286K |

| Rail Line | Segment | Project Description |
|---------------|----------------------------------|---|
| PAR | Ayer to NH Border | Track and bridge upgrades to permit 286K |
| CSXT | Springfield to Boston | Improvements as part of Inland Route passenger service between Boston and New York |
| MBTA/ PAR | Haverhill | Rehabilitation of the Merrimack River Bridge |
| Amtrak/MBT A | Ruggles | Capacity improvements |
| Amtrak/MBT A | Readville to Canton Junction | Add third track |
| Amtrak/MBT A | Boston | South Station capacity expansion |
| Amtrak/MBT A | Boston | North-South Link |
| PAR Main Line | Within New Hampshire | Double track main line, upgrade signals, track and bridge upgrades to permit 286K |
| NECR | Within New Hampshire | Improvements to facilitate faster passenger and freight speeds |
| GRS | Manchester to Concord | Initiate passenger service and track and bridge upgrades to permit 286K |
| Amtrak | New York City | Penn Station track, turnout and signal upgrades, diagonal platform use |
| Amtrak | Bronx | Upgrade Pelham Bay Bridge to permit 286K |
| Amtrak | Bronx | Construct Hells Gate Bypass around Oak Point Yard |
| Amtrak | New Rochelle to Pelham | Upgrade 4 miles of track and under grade bridges to permit 286K |
| Amtrak | New York | Add 2 nd track at Marble Hill |
| Amtrak | Bronx | Add 2 nd track at Spuyten Duyvil |
| CPR | Rouses Point | Main line congestion relief due to U.S. Customs inspections at the border |
| CPR | Ballston Spa to Saratoga Springs | Add a second main line track on south approach to Saratoga Springs yard and passenger station |
| CPR | Schenectady to Rouses Point | Track rehabilitation to increase passenger and freight operating speeds |
| CPR | Mohawk to Mechanicville | Add sidings |
| CPR | Capital District | Restore Sand Bank Track & Wye, construct 2 bridges |
| CSX | Hoffmans | Track and signal upgrades, reconfiguration of CP-169 junction |
| CSX | Colonie | Construct 10,000 foot siding at a location between Albany and Schenectady |
| CSX | Syracuse | Upgrade 4 miles of track from 30 MPH to 50 MPH and eliminate 251 West operation |
| CSX | Syracuse | De Witt Yard improvements |
| CSX | Stuyvesant | Extend freight track to create effective 3 rd track |
| CSX | Selkirk Subdiv. | Build 5.4 mile bypass around Selkirk |
| CSX | Bronx | Construct runaround track along Bronx River/Oak Point Yard |

| Rail Line | Segment | Project Description |
|----------------|----------------------------------|---|
| CSX | Berkshire Subdiv. | Eliminate vertical constraints to establish full domestic double-stack clearance |
| CSX/ Amtrak | Schenectady to Buffalo | Install third main line track for 110 MPH passenger train track speed |
| CSX/ Amtrak | LAB to Hoffmans | Install second main line track for 110 MPH passenger train track speed |
| CSX/ Amtrak | Savannah | Replace Savannah River Bridge |
| CSX/ Amtrak | Hudson Subdiv. & Post Road Br. | Acquire ROW and infrastructure from CSX/Amtrak and complete initial SOGR |
| Amtrak | Providence to Wickford Jct. | Extend MBTA service |
| Amtrak | Wickford to CT Border | Extend commuter rail service from Wickford Junction to CT Border |
| Amtrak | T.F. Green Airport | New passenger rail station at T.F. Green Airport (under construction) |
| Amtrak | Providence | Providence Station capacity improvements |
| Amtrak | Kingston, RI | Add third track for Acela takeovers & future commuter rail station siding |
| VTR | Hoosick to Rutland | Track and bridge upgrades to permit 286K |
| VTR | Florence to Burlington | Track and bridge upgrades to permit 286K |
| VTR | Hoosick to Burlington | Initiate and extend passenger service |
| NECR | St. Albans to E. Northfield | Track and bridge upgrades |
| BMRR | E. Northfield to White River Jct | Track and bridge upgrades to permit 286K, initiate passenger service to Springfield |
| CLP | Whitehall to Rutland | Track and bridge upgrades to permit full 286K |

Figure 5.2 Potential Rail Improvements Along Existing and Future Intercity Passenger Rail Corridors



6.0 Commuter Rail Systems and Projects

Commuter railroads provide passenger rail services for relatively short, intra-regional trips. Commuter rail systems are typically laid out in a hub-and-spoke pattern, with rail lines fanning out into suburban communities from a hub in the urban core of a metropolitan region. In the Northeast Region there are four commuter rail networks—the Metropolitan Transportation Authority (MTA) Long Island Railroad (LIRR), the MTA Metro-North Railroad (MNR), the Massachusetts Bay Transportation Authority (MBTA) commuter rail network, and the Connecticut Commuter Rail Shore Line East. LIRR operates in the Long Island region of New York, with its primary terminal located at Penn Station in Manhattan. Metro-North operates in Downstate New York and Southeastern Connecticut, with Grand Central Terminal in Manhattan serving as its primary terminal. MBTA services terminate at South Station or North Station in Boston, with each station located on either side of Boston’s Financial District. Shore Line East in Southeastern Connecticut operates on one line between New London and New Haven.

Figure 6.1 shows the existing commuter rail networks in the Northeast region, while Figure 6.2 presents potential rail improvements on existing and future commuter rail lines throughout the region. Table 6.1 lists commuter rail projects and improvements.

Figure 6.1 Commuter Rail Networks in the Northeast Region

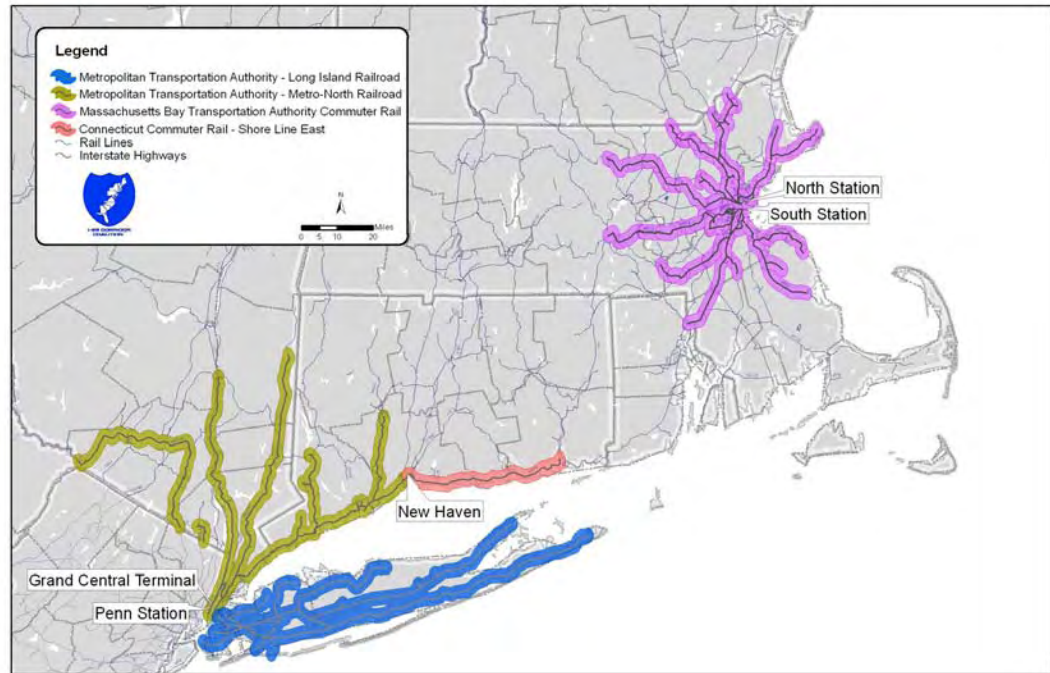
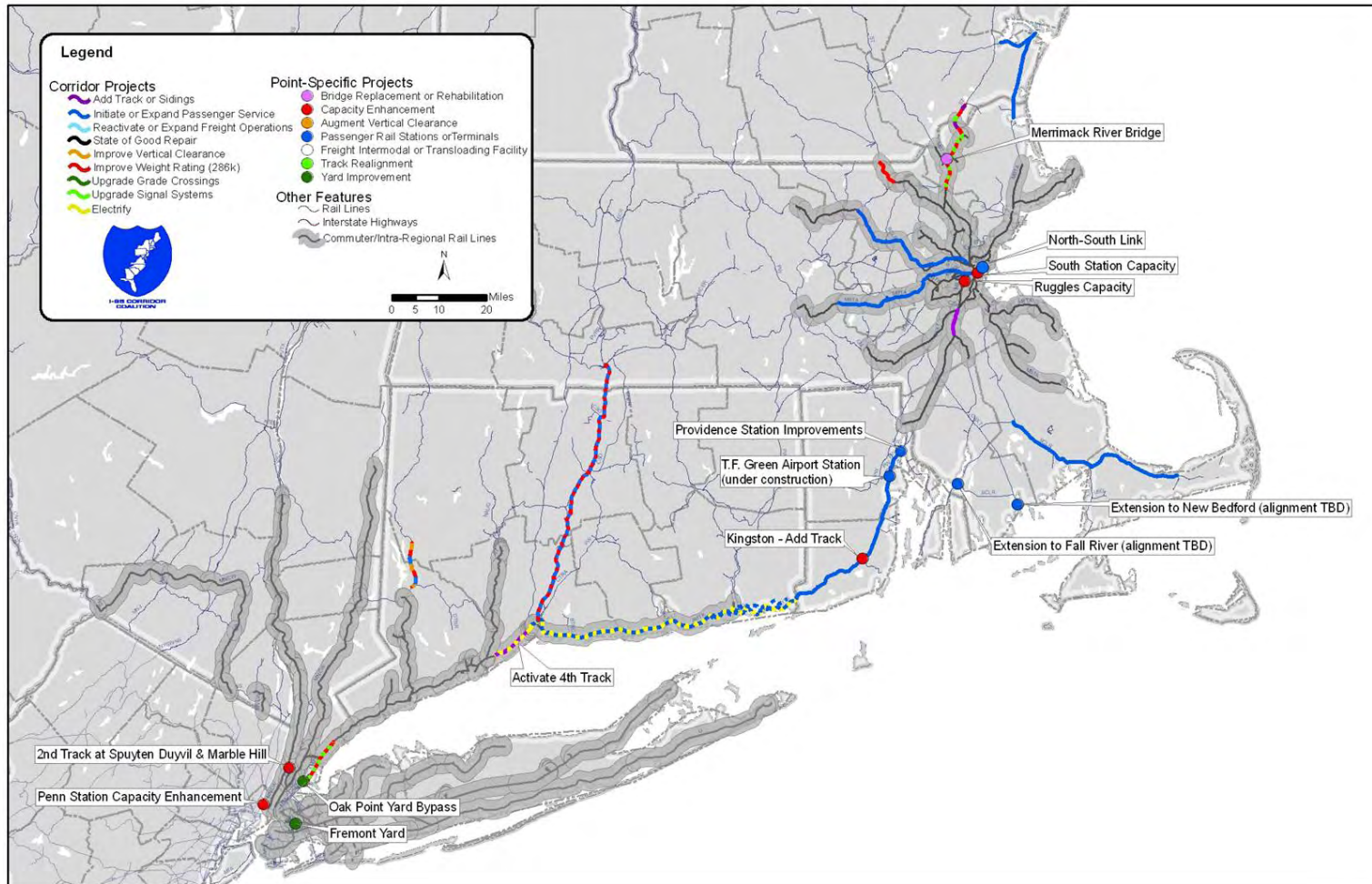


Table 6.1 Potential Improvement Projects on Commuter Rail Corridors

| Rail Line | Segment | Project Description |
|----------------|------------------------------|---|
| Amtrak | New Haven to MA Border | Part of Inland Route passenger service between Boston and New York & commuter rail to Springfield, track and bridge upgrades to permit 286K |
| Amtrak | New Haven to Westerly, RI | Extend and enhance commuter rail operation |
| CTDOT | New Haven to Milford | Electrify 4 th track for passenger use |
| Amtrak | Windsor Locks | Eliminate vertical clearance constraint at I-91 bridge |
| Amtrak | Hartford | Eliminate vertical clearance constraint at viaduct |
| PAR Conn River | Springfield to CT Border | Track and bridge upgrades to permit 286K |
| MBTA/ PAR | Haverhill | Rehabilitation of the Merrimack River Bridge |
| Amtrak/ MBTA | Ruggles | Capacity improvements |
| Amtrak/ MBTA | Readville to Canton Junction | Add third track |
| Amtrak/ MBTA | Boston | South Station capacity expansion |
| Amtrak/ MBTA | Boston | North-South Link |
| | MA Border to Plastow | Extend MBTA service to Plastow, NH |

| Rail Line | Segment | Project Description |
|-----------|-------------------------------------|---|
| PAR | Portsmouth Branch or Hampton Branch | Extend MBTA service to Portsmouth via Portsmouth Branch or via PAR Main Line and Hampton Branch |
| Amtrak | New York | Penn Station track, turnout and signal upgrades, diagonal platform use |
| Amtrak | Bronx | Upgrade Pelham Bay Bridge to permit 286K |
| Amtrak | Bronx | Construct Hells Gate Bypass around Oak Point Yard |
| Amtrak | New Rochelle to Pelham | Upgrade 4 miles of track and under grade bridges to permit 286K |
| Amtrak | New York | Add 2 nd track at Marble Hill |
| Amtrak | Bronx | Add 2 nd track at Spuyten Duyvil |
| Amtrak | Bronx | Construct runaround track along Bronx River/Oak Point Yard |
| NYAR | Fremont Yard | Yard improvements at Fremont Yard |
| Amtrak | Providence to Wickford Jct | Extend MBTA service from Providence to Wickford Junction |
| Amtrak | Wickford Jct to CT Border | Extend commuter rail service from Wickford Junction to CT border |
| OCFR | MA Border to Newport | Extend commuter rail service from Fall River to Newport |
| P&W | Providence to Worcester | Extend commuter rail service from Providence to Worcester |
| Amtrak | T.F. Green Airport | New passenger rail station at T.F. Green Airport (under construction) |
| Amtrak | Providence | Providence Station capacity improvements |
| Amtrak | Kingston | Add third track for Acela takeovers and future commuter rail station siding |

Figure 6.2 Potential Rail Improvements Along Existing and Future Commuter Rail Corridors



7.0 NS, CP, and Pan Am Network and Projects

Norfolk Southern's primary gateway into the Northeast Region is by trackage rights over the Canadian Pacific Freight Main Line. The line connects to NS at Sunbury, PA, a short distance from the major rail and truck hub at Harrisburg. Harrisburg is an important crossroads for NS, whose Main Line between the Northern New Jersey freight hubs and Chicago passes through the area. Entering the Northeast Region near Binghamton, the CP Freight Main continues to the Capital District of New York. CP's Canadian Main Line continues north toward Montreal, where connections to the Canadian National rail system. NS trackage rights terminate along this line at Saratoga Springs.

East from the Capital District, NS has acquired trackage rights through an agreement with Pan Am Railways. Known as the Pan Am Southern Patriot Corridor between Mechanicville, New York and Ayer, Massachusetts, NS and Pan Am are marketing quick, direct access into eastern Massachusetts. Beyond Ayer, NS has access along Pan Am Railways into southeastern Maine. Additional NS corridors of importance include the Southern Tier Line between Binghamton and Buffalo, and the Buffalo Subdivision along Lake Erie and continuing service west to Chicago.

While not perfectly seamless throughout, these railroads, combined, provide a network of major rail corridors connecting freight activity centers in the Northeast Region with activity centers in Pennsylvania, Chicago, Montreal, and beyond.

Figure 7.1 illustrates the primary northeastern freight corridors of NS, CP, and Pan Am, including the Pan Am Southern Patriot Corridor. Figure 7.2 illustrates the primary corridors and accessible secondary corridors, mostly owned by railroads other than those mentioned previously in this section. Stakeholders have identified a number of potential rail improvements along NS, CP and Pan Am primary corridors, which are listed in Table 7.1 and illustrated on a map in Figure 7.3.

Figure 7.1 NS, CP, PAS and PAR Primary Corridors

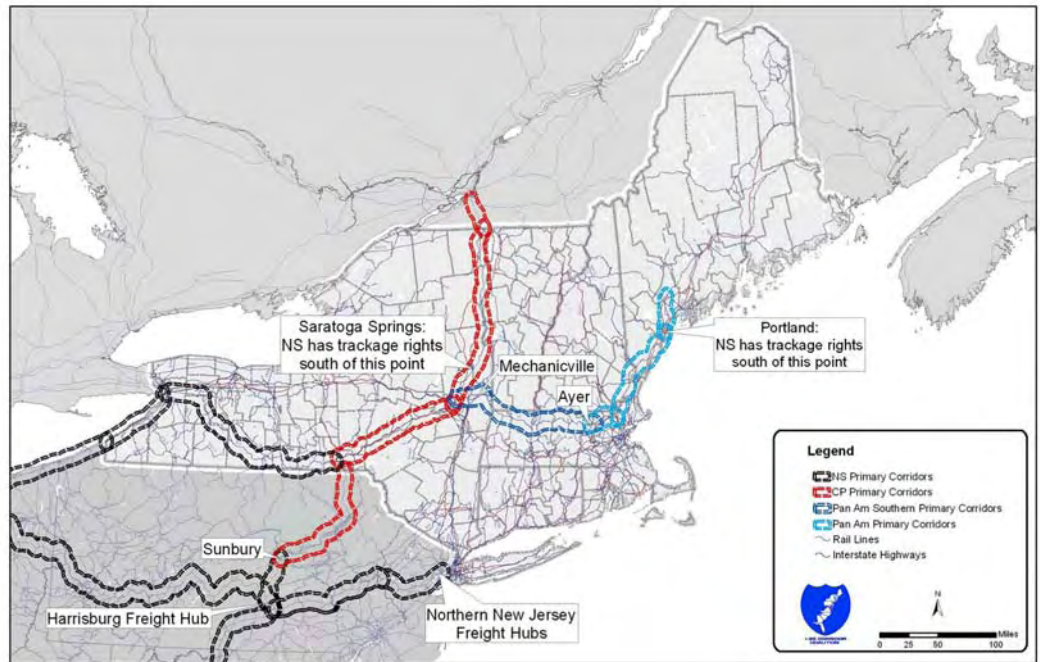


Figure 7.2 NS, CP, PAS and PAR Accessible Corridors

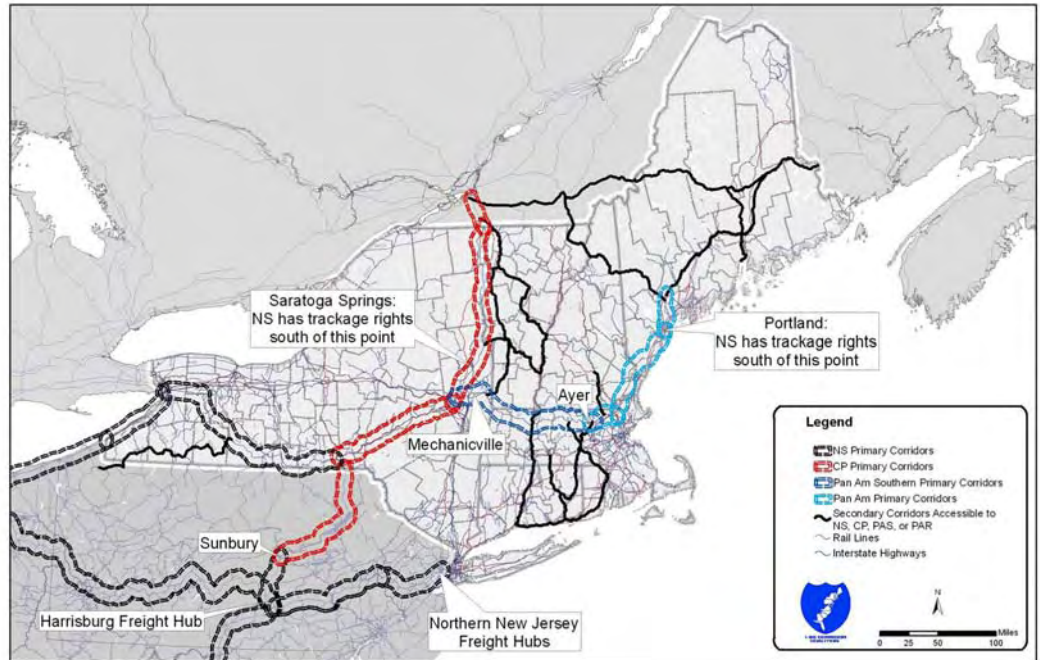
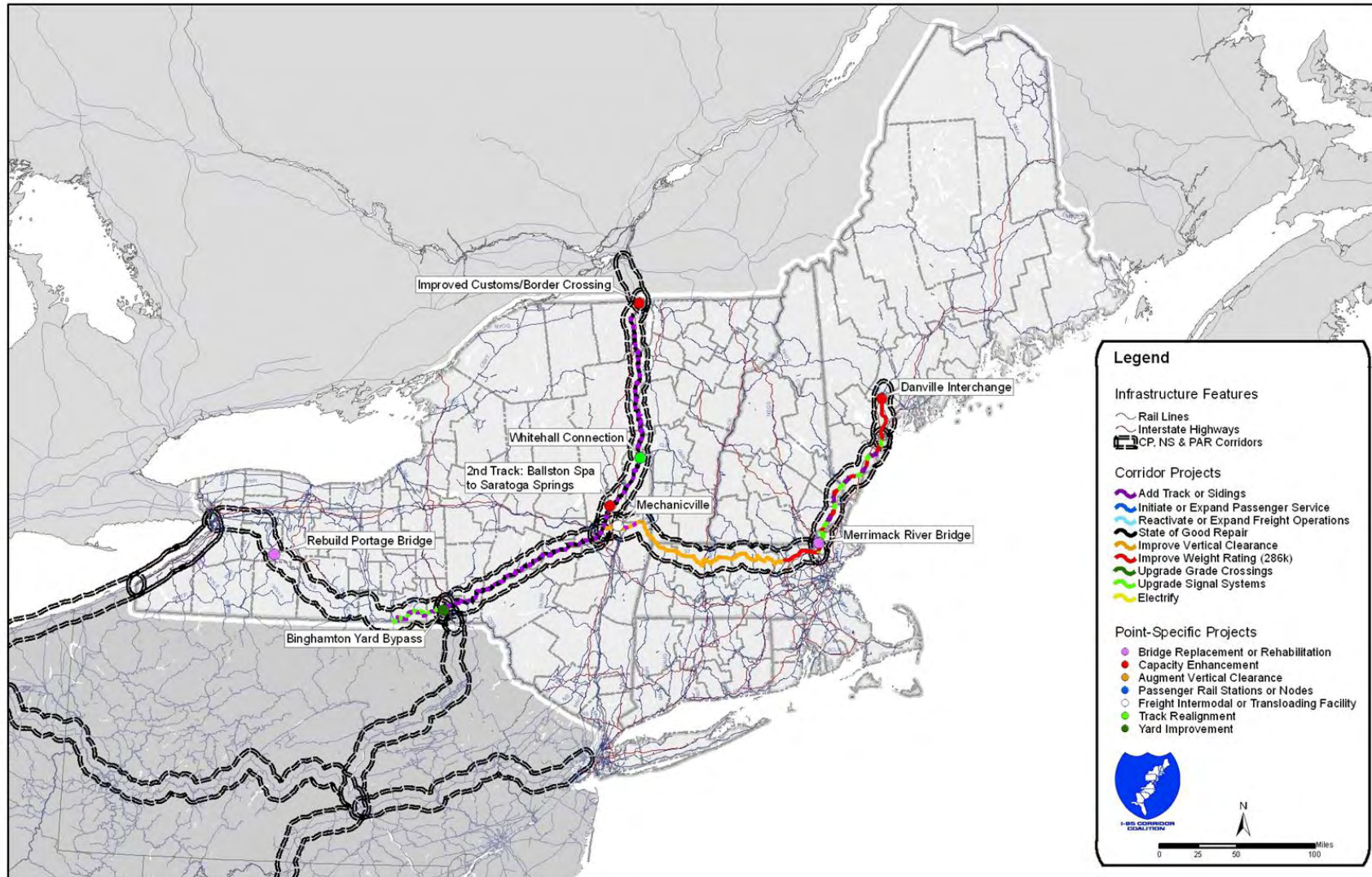


Table 7.1 Potential Improvement Projects on NS Primary Corridors

| Rail Line | Segment | Project Description |
|-----------|----------------------------------|--|
| CPR | Rouses Point | Main line congestion relief at Rouses Point due to U.S. Customs border inspections |
| CPR | Ballston Spa to Saratoga Springs | Add second main line track on south approach to Saratoga Springs yard and passenger station |
| CPR | Schenectady to Rouses Point | Track rehabilitation to increase passenger and freight operating speeds |
| CPR | Binghamton to Mohawk | Add sidings |
| CPR | Mohawk to Mechanicville | Add sidings |
| CPR | Binghamton | Construct runaround track to bypass Binghamton Yard |
| CPR | Capital District | Restore Sand Bank Track and Wye track as controlled points, construct 2 overhead bridges (bypasses Mechanicville, Kenwood & Selkirk yards) |
| NS | Binghamton to Waverly | Single-track current double-track segment, add traffic control and passing sidings at Johnson City and Owego, increase speed rating |
| NS | Letchworth Gorge | Rebuild Portage Bridge |
| PAS | Mechanicville | Develop intermodal terminal and automotive unloading facility at Mechanicville |
| PAS | Mechanicville to Hoosick Jct. | Develop passing sidings between Mechanicville and Hoosick Junction |
| PAS | Mechanicville to MA Border | Eliminate vertical constraints to establish full domestic double-stack clearance |
| PAS | NY Border to Ayer | Eliminate vertical constraints to establish full domestic double-stack clearance |
| PAR | Ayer to NH Border | Track and bridge upgrades to permit 286K |
| MBTA/ PAR | Haverhill | Rehabilitation of the Merrimack River Bridge |
| PAR | Main Line in New Hampshire | Double track Main Line, upgrade signals, track and bridge upgrades to permit 286K |
| PAR | NH Border to Portland | Track and bridge upgrades to permit 286K, signal upgrades, add/extend sidings |
| PAR | Portland to Danville | Track and bridge upgrades to permit 286K |
| PAR/SLR | Danville | Improve interchange between PAR & SL&A at Danville |

Figure 7.3 Potential Rail Improvements Along NS, CP, PAS, PAR Corridors



8.0 CSX Network and Projects

The CSX primary network includes the “Water Level Route” between the New York City metropolitan area and Buffalo via the West Shore Line along the Hudson River to Albany and the Empire Corridor between Albany and Buffalo. From Buffalo, CSX maintains a busy service along Lake Erie and west toward Chicago. The West Shore Line terminates in Northern New Jersey. Continuing service operates through Northern New Jersey onto the West Trenton Line into the Philadelphia region and points south. CSX also owns a corridor extending east from the Albany area across the Hudson River at Selkirk, into Massachusetts, through Springfield and Worcester, and into the Boston metropolitan region. Additionally, the CSX St. Lawrence Subdivision between Syracuse and Montreal provides a service which competes with the CP Canadian Main Line service.

Figure 8.1 illustrates the CSX primary freight corridors in the region. Figure 8.2 illustrates the primary corridors and accessible secondary corridors, mostly owned by railroads other than CSX. Potential rail improvements along CSX primary corridors are listed in Table 8.1 and illustrated on a map in Figure 8.3.

Figure 8.1 CSX Primary Corridors

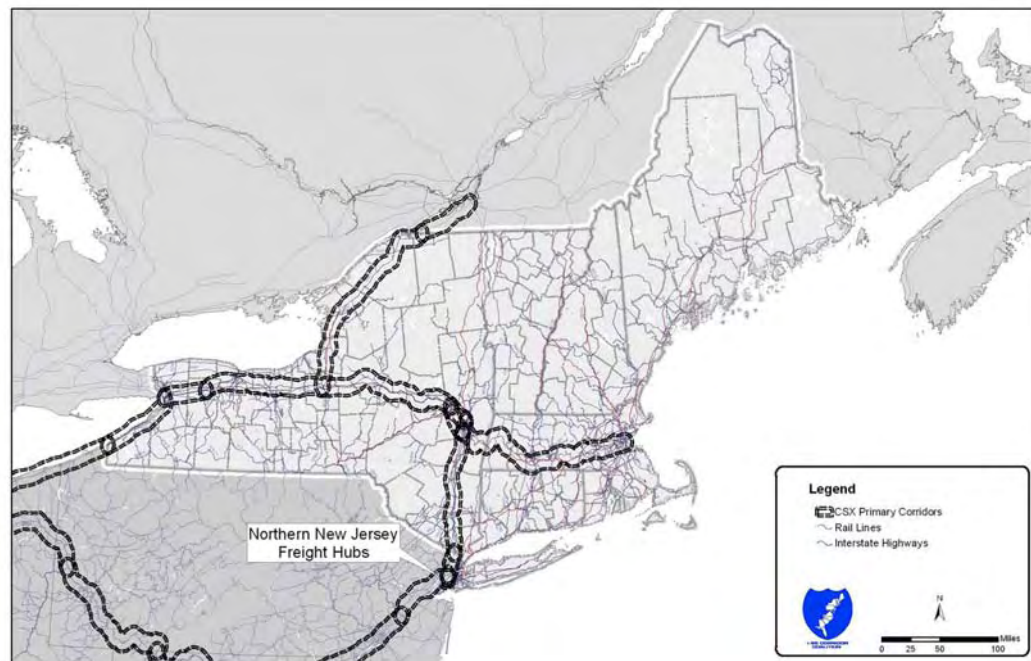


Figure 8.2 CSX Accessible Corridors

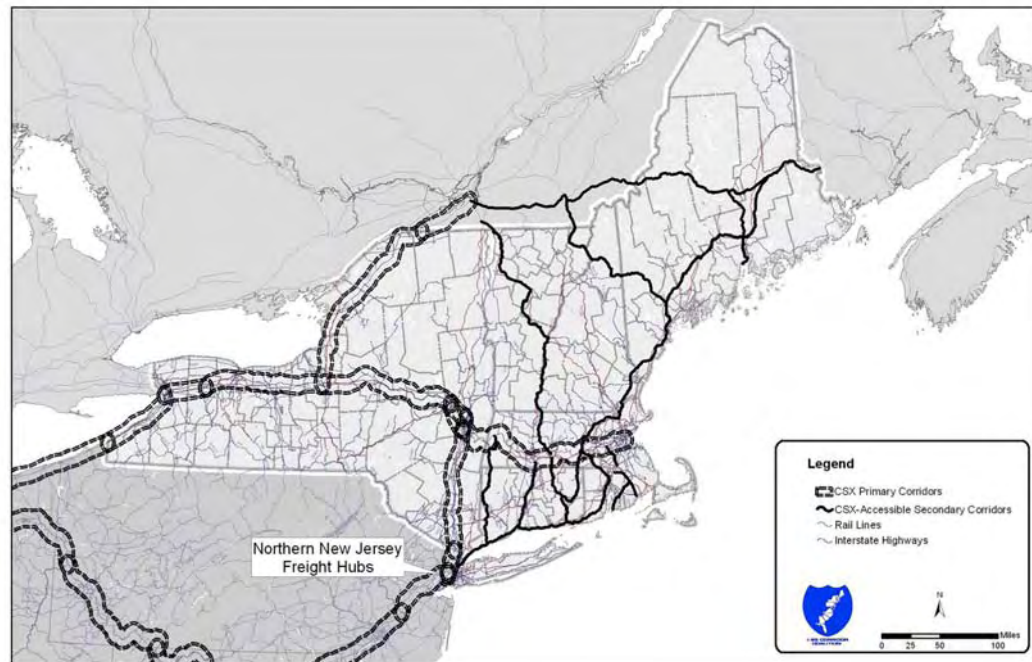
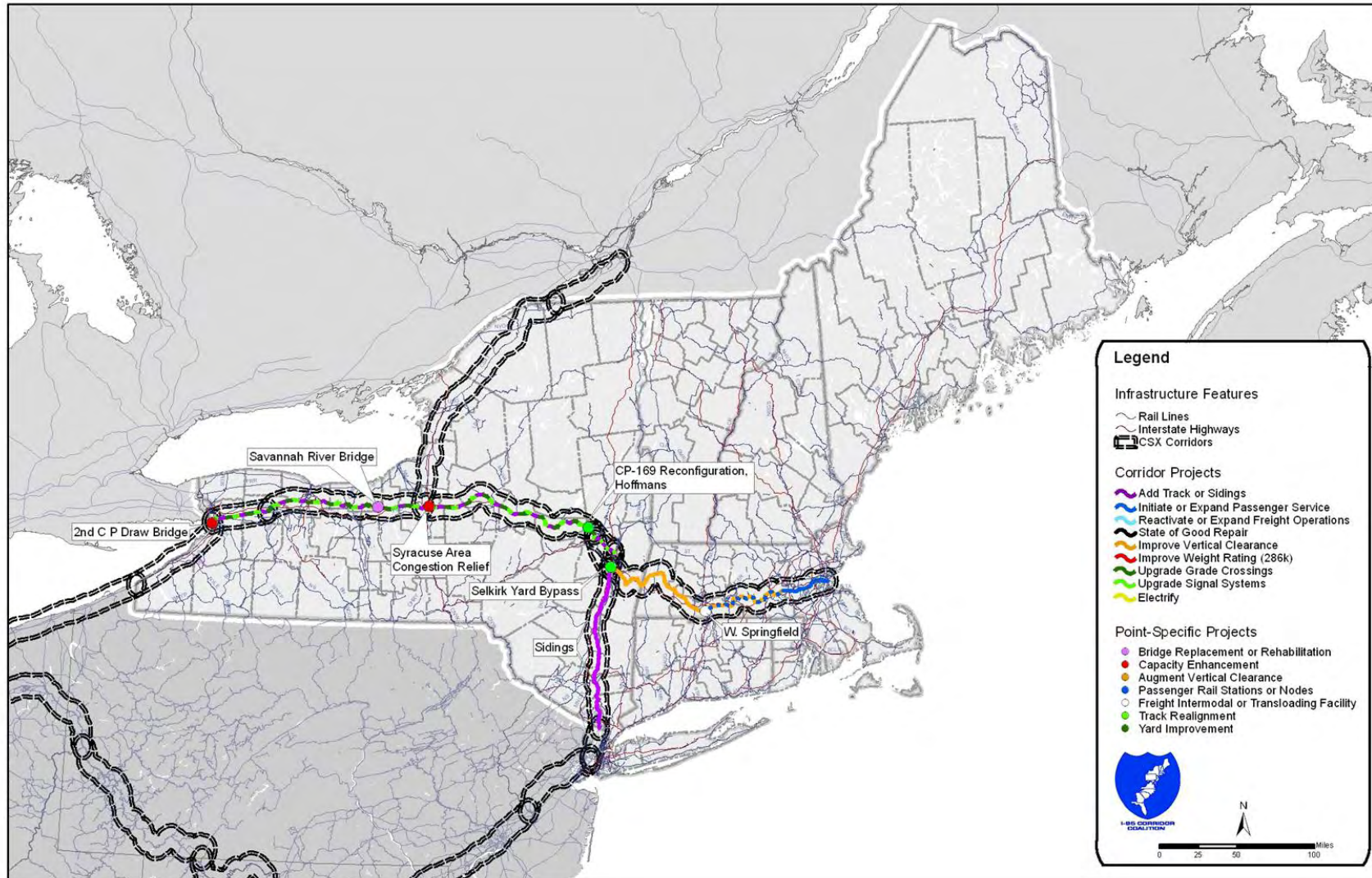


Table 8.1 Potential Improvement Projects on CSX Primary Corridors

| Rail Line | Segment | Project Description |
|------------|------------------------|--|
| CSXT | Hoffmans | Track and signal improvements, and reconfiguration of CP-169 junction |
| CSXT | Colonie | Construct a 10,000 foot siding at a location between Albany and Schenectady |
| CSXT | Syracuse | Upgrade 4 miles of track from 30 MPH to 50 MPH and eliminate 251 West operation |
| CSXT | Syracuse | Upgrade crossover and restore fully controlled main line track #4 on the east approach to De Witt Yard |
| CSXT | Stuyvesant | Extend existing freight track to create an effective third track |
| CSXT | River Subdivision | Add or upgrade passing sidings at Athens, Catskill, Haverstraw, Kingston, and Mt. Marion |
| CSXT | Selkirk Subdivision | Build 5.4 mile main track bypass at Selkirk |
| CSXT | Oak Point, Bronx | Construct runaround track along Bronx River/Oak Point Yard |
| CSXT | Berkshire Subdivision | Eliminate vertical constraints to establish full domestic double-stack clearance |
| Rail Line | Segment | Project Description |
| CSXT | River Subdivision | Add track to fill in "gaps" such that the entire subdivision has two main tracks |
| CSXT | Buffalo | Construct 2 nd C P Draw Bridge |
| CSX-Amtrak | Schenectady to Buffalo | Install third main line track for 110 MPH passenger train track speed |

| | | |
|------------|--|--|
| CSX-Amtrak | LAB to Hoffmans | Install second main line track for 110 MPH passenger train track speed |
| CSX-Amtrak | Savannah | Replace Savannah River Bridge |
| CSX-Amtrak | Hudson Subdiv. (Poughkeepsie to Hoffmans) & Amtrak Post Road Branch | Acquire ROW and infrastructure from CSX and Amtrak and complete initial state of good repair |
| CSXT | NY Border to Westboro | Eliminate vertical constraints to establish full domestic double-stack clearance |
| CSXT | West Springfield | Roadway access improvements to intermodal terminal at West Springfield & industrial park |
| CSXT | Boston to Springfield | Inland Route passenger service |

Figure 8.3 Potential Rail Improvements Along CSX Corridors



Appendix A. Table of Potential Projects Arranged by State

Table A.1 Potential Improvement Projects Organized by State

| State | Railroad | Segment | Project Description |
|---------------|----------------|------------------------------|--|
| Connecticut | Amtrak | New Haven to MA Border | Track and bridge upgrades to permit 286K, "Inland route" passenger service between Boston and New York & commuter rail to Springfield |
| Connecticut | | Waterbury to Hartford | Upgrades to expand freight operations |
| Connecticut | VALE | Saybrook to Middletown | Rehabilitate and initiate a tourism-based passenger service |
| Connecticut | Amtrak | New Haven to Westerly, RI | Extend and enhance commuter rail operation in eastern CT to Westerly, RI |
| Connecticut | CTDOT NHL | New Haven to Milford | Electrify 4th track for passenger use |
| Connecticut | P&W | Entire Length | Track and bridge upgrades to permit 286K |
| Connecticut | NECR | New London to Norwich | Track and bridge upgrades to permit 286K |
| Connecticut | HRRC | MA Border to Danbury | Tie and rail replacement, track and bridge upgrades to permit 286K, eliminate vertical constraints |
| Connecticut | | Plainville | Establish intermodal terminal at Plainville |
| Connecticut | | New Haven area | Establish intermodal terminal in New Haven vicinity |
| Connecticut | Amtrak | Windsor Locks | Remove clearance constraint at I-91 bridge in Windsor Locks |
| Connecticut | Amtrak | Hartford | Remove clearance constraint at Hartford viaduct |
| Maine | SLR | NH border to Portland | 286K |
| Maine | Mtn Div | Portland to Fryeburg | Restore freight and excursion passenger |
| Maine | MMA | Searsport to Quebec | Maintain and Upgrade |
| Maine | EMRY | Vanceboro to Brownville Jct | Track and bridge upgrades to permit 286K |
| Maine | MMA | Brownville Jct to Fort Kent | Track and bridge upgrades to permit 286K |
| Maine | PAR | NH border to Portland | track and signal upgrades, add/extend sidings, upgrade to 286K |
| Maine | PAR | Portland to Brunswick | Extend Amtrak Downeaster service to Brunswick |
| Maine | PAR/SL&A | Danville | Improve interchange between PAR and SL&A at Danville |
| Maine | MMA | Bangor | Enhance the emerging inland port at Bangor, serving Searsport |
| Maine | PAR | Portland to Danville | Track and bridge upgrades to permit 286K |
| Massachusetts | CSXT | Westboro to NY Border | Eliminate vertical constraints to establish full domestic double-stack clearance |
| Massachusetts | PAS | Ayer to NY Border | Track and bridge upgrades to permit 286K, eliminate vertical constraints to establish full domestic double-stack clearance (project continues into NY) |
| Massachusetts | PAR Conn River | Springfield to VT Border | Restore intercity passenger rail between Springfield and the Vermont border (the Knowledge Corridor Project) |
| Massachusetts | PAR Conn River | Springfield to CT Border | Track and bridge upgrades to permit 286K |
| Massachusetts | Mass Central | South East Mass Lines (EOT) | Heavy repair program/state of good repair (SOGR) |
| Massachusetts | Mass Central | Palmer to Barre (EOT) | Maintain State of Good Repair |
| Massachusetts | Fitchburg Line | Fitchburg to Somerville area | Track and signal upgrades to improve commuter service (project underway) |
| Massachusetts | NECR | Palmer (CSX) to VT Border | Track and bridge upgrades to permit 286K |
| Massachusetts | PAR | Ayer to NH Border | Track and bridge upgrades to permit 286K |
| Massachusetts | PAR | Lowell to NH Border | Track and bridge upgrades to permit 286K |
| Massachusetts | PV | Westfield to Holyoke | Track and bridge upgrades to maintain 286K |
| Massachusetts | MBTA/PAR | Haverhill Line | Double track and other improvements for passenger service |
| Massachusetts | CSXT | Springfield to Boston | Inland Route passenger service |
| Massachusetts | P&W | Worcester to Gardner | Track and bridge upgrades to permit 286K |
| Massachusetts | EOT | Middleborough to Hyannis | Track upgrades to permit restoration of intercity service to Cape Cod |
| Massachusetts | HRRC | CT Border to Pittsfield | Tie and rail replacement, track and bridge upgrades to permit 286K, eliminate vertical constraints |
| Massachusetts | EOT | | Extend passenger service to Fall River and New Bedford (alignment TBD) |
| Massachusetts | MBTA/PAR | Haverhill | Rehabilitation of the Merrimack River Bridge |
| Massachusetts | Amtrak/MBTA | Ruggles | Capacity improvements |
| Massachusetts | Amtrak/MBTA | Readville to Canton Junction | Add third track |
| Massachusetts | Amtrak/MBTA | Boston | South Station capacity expansion |
| Massachusetts | Amtrak/MBTA | Boston | North-South Link |

| State | Railroad | Segment | Project Description |
|---------------|-------------------|------------------------------------|---|
| Massachusetts | CSXT | West Springfield | Roadway access improvements to the CSX Intermodal Terminal and Industrial Park |
| New Hampshire | BMRR | | Track and bridge upgrades to permit 286K and signal improvements to initiate passenger service |
| New Hampshire | SL&A | | Track and bridge upgrades to permit 286K |
| New Hampshire | Conway Branch | Conway to Ossipee | Restore freight service on Conway Branch |
| New Hampshire | | MA Border to Plastow | Extend MBTA service to Plastow |
| New Hampshire | PAR Main Line | MA Border to ME Border | Double track Main Line, upgrade signals, track and bridge upgrades to permit 286K |
| New Hampshire | Portsmouth Branch | PAR to Portsmouth | Extend MBTA service to Portsmouth via Main Line & Portsmouth Branch |
| New Hampshire | Hampton Branch | MA Border to Portsmouth | Extend MBTA service to Portsmouth via Hampton Branch |
| New Hampshire | NECR | MA Border to VT Border | Improvements to facilitate faster passenger and freight speeds |
| New Hampshire | GRS | Manchester to Concord | Track and bridge upgrades to permit 286K and initiate passenger service |
| New Hampshire | | Portsmouth | Establish intermodal terminal at Portsmouth |
| New Hampshire | GRS | Manchester | Establish intermodal terminal at Manchester |
| New York | Amtrak | New York City | Penn Station: track, turnout and signal upgrades, diagonal platform use |
| New York | Amtrak | Bronx | Upgrade Amtrak Pelham Bay Bridge to permit 286K |
| New York | Amtrak | Bronx | Construct Hell Gate Line bypass around Oak Point Yard |
| New York | Amtrak | New Rochelle to Pelham | Upgrade 4 miles of track and under grade bridges to permit 286K |
| New York | Amtrak | New York | Add 2 nd track at Marble Hill |
| New York | Amtrak | Bronx | Add 2 nd track at Spuyten Duyvil |
| New York | CPR | Rouses Point | Main line congestion relief at Rouses Point due to U.S. Customs border inspections |
| New York | CPR | Ballston Spa to Saratoga Springs | Add a second main line track on south approach to Saratoga Springs yard and passenger station |
| New York | CPR | Schenectady to Rouses Point | Track rehabilitation to increase passenger and freight operating speeds between Schenectady and Rouses Point |
| New York | CPR | Binghamton to Mohawk | Add sidings |
| New York | CPR | Mohawk to Mechanicville | Add sidings |
| New York | CPR | Binghamton | Construct runaround track to bypass Binghamton Yard |
| New York | CPR | Capital District | Restore Sand Bank Track (8,000 feet) and Wye track as controlled points, construct 2 overhead bridges (bypasses Mechanicville, Kenwood and Selkirk yards). |
| New York | CSX | Hoffmans | Track and signal improvements, and reconfiguration of CP-169 junction |
| New York | CSX | Colonie | Construct a 10,000 foot siding at a location between Albany and Schenectady |
| New York | CSX | Syracuse | Upgrade 4 miles of track from 30 MPH to 50 MPH and eliminate 251 West operation |
| New York | CSX | Syracuse | Upgrade crossover and restore fully controlled main line track #4 on the east approach at De Witt Yard |
| New York | CSX | Stuyvesant | Extend existing freight track to create an effective third track |
| New York | CSX | River Subdivision | Add or upgrade passing sidings at Athens, Catskill, Haverstraw, Kingston, Mt. Marion |
| New York | CSX | Selkirk Subdivision | Build 5.4 mile main track bypass at Selkirk |
| New York | CSX | Oak Point, Bronx | Construct runaround track along Bronx River/Oak Point Yard |
| New York | CSX | Berkshire Subdivision | Eliminate vertical constraints to establish full domestic double-stack clearance |
| New York | CSX | River Subdivision | Add track to fill in "gaps" such that the entire subdivision has two main tracks. |
| New York | CSX | Buffalo | Construct 2 nd C P Draw Bridge |
| New York | CSX-Amtrak | Schenectady to Buffalo | Install third main line track for 110 MPH passenger train track speed |
| New York | CSX-Amtrak | LAB to Hoffmans | Install second main line track for 110 MPH passenger train track speed |
| New York | CSX-Amtrak | Savannah | Replace Savannah River Bridge |
| New York | CSX-Amtrak | Hudson and Amtrak Post Road Branch | Acquire ROW and infrastructure from CSX and Amtrak and complete initial state of good repair |
| New York | NS | Binghamton to Waverly | Single-track current double-track segment between Binghamton and Waverly, add traffic control and passing sidings at Johnson City and Owego, tie and surface the segment to increase speed rating |
| New York | NS | Letchworth Gorge | Rebuild Portage Bridge |
| New York | NYAR | Fremont Yard | Yard improvements at Fremont Yard |
| New York | NYCH | New York Harbor | Construct Tunnel to improve/expand cross-harbor rail freight movement |
| New York | PAR | | Add or extend passing sidings at Glennville, Halfmoon, Johnsonville, Mechanicville and Schaghticoke |
| New York | PAS | Mechanicville | Develop intermodal terminal and automotive unloading facility at Mechanicville |

| State | Railroad | Segment | Project Description |
|--------------|----------|---------------------------------|---|
| New York | PAS | Mechanicville to MA Border | Eliminate vertical constraints to establish full domestic double-stack clearance |
| New York | PAS | Mechanicville to Hoosick Jct. | Develop passing sidings between Mechanicville and Hoosick Junction |
| New York | VTR | VT Border to Hoosick Jct. | Track rehabilitation between VT/NY border and connection with PAS/PAR at Hoosick Junction |
| Rhode Island | Amtrak | Providence to Wickford Junction | Extend MBTA service from Providence to Wickford Junction |
| Rhode Island | Amtrak | Wickford to CT Border | Extend commuter rail service from Wickford Junction to CT Border |
| Rhode Island | OCFR | MA Border to Newport | Extend commuter rail service from Fall River, MA to Newport |
| Rhode Island | P&W | Providence to MA Border | Extend commuter rail service from Providence to Worcester, MA |
| Rhode Island | Amtrak | T.F. Green Airport | New passenger rail station at T.F. Green Airport (under construction) |
| Rhode Island | Amtrak | Providence | Providence Station capacity improvements |
| Rhode Island | Amtrak | Kingston | Add third track for Acela takeovers and future commuter rail station siding |
| Vermont | SLR | NH Border to Canadian Border | Bridge upgrades to permit 286K |
| Vermont | VTR | Hoosick, NY to Rutland | Track and bridge upgrades to permit 286K |
| Vermont | VTR | Florence to Burlington | Track and bridge upgrades to permit 286K |
| Vermont | NECR | St Albans to E. Northfield, MA | Track and bridge upgrades |
| Vermont | BMRR | MA border to White River Jct. | Track and bridge upgrades to permit 286K, initiate passenger service to Springfield |
| Vermont | GMRC | Bells Falls to Rutland | Track and bridge upgrades to permit 286K |
| Vermont | CLP | Whitehall, NY to Rutland | Track and bridge upgrades to permit full 286K |
| Vermont | VTR | Hoosick, NY to Burlington | Initiate and extend passenger service |