



**Translating Freight Project  
Investment into Multi-State and  
National Benefits**  
**Case Studies of Four Successful Freight  
Partnership Models**

prepared for  
**The Eastern Transportation Coalition**

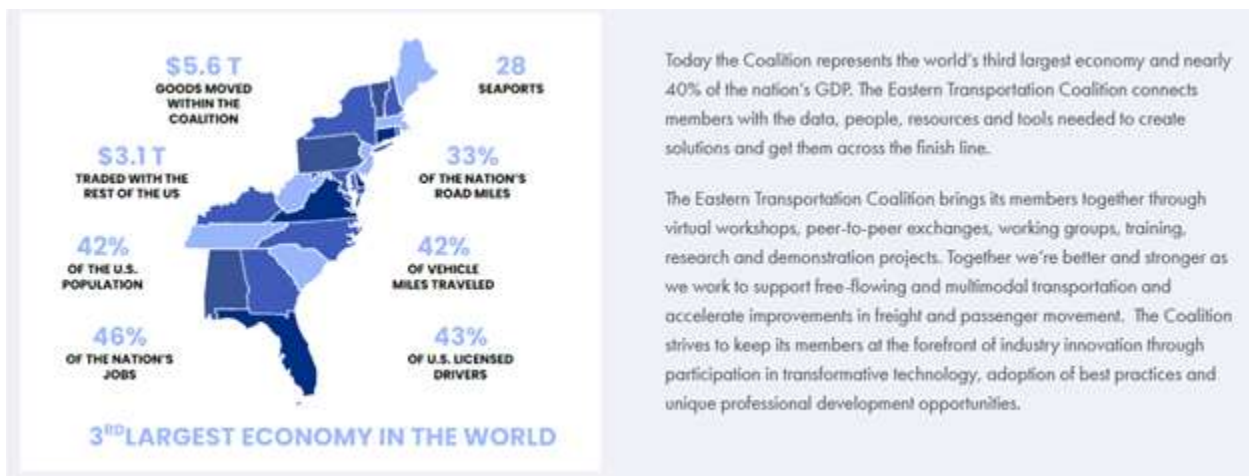


**WSP USA Inc. and Cambridge Systematics Inc.**  
**April 30, 2026**



## ABOUT THE EASTERN TRANSPORTATION COALITION

The Eastern Transportation Coalition (or “Coalition”) is a partnership of 20 states and the District of Columbia focused on connecting public agencies across modes of travel to increase safety and efficiency. Formerly the I-95 Corridor Coalition, the organization started as an informal group of transportation professionals working together to manage highway incidents that impacted travel across state lines. In the past 30+ years the Eastern Transportation Coalition has evolved from a small, highway-focused group to more than 200 public agencies working together to address the pressing challenges facing the eastern corridor with a focus on Transportation Systems Management & Operations, Freight, and Innovation.



Additional information is available at <https://tetcoalition.org>.



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## Executive Summary

Freight transportation has been described by the US Department of Transportation as the “economy in motion.” US industries depend on efficient, reliable transportation services and options, from which they create logistics and supply chain networks to receive critical input materials and ship products. US consumers depend on them to receive food, fuel, household goods, and other essential non-durable and durable goods. Government and public agencies – national, state, regional, and local —depend on them as a means of providing attractive, competitive locations for businesses to operate and residents to live.

As the nation seeks to support and enhance its industrial and manufacturing capabilities, ensuring excellence in freight transportation infrastructure is critical to the success of the overall mission. To support this process and illustrate pathways to future success, the Eastern Transportation Coalition (or “Coalition”) – supported by WSP USA Inc. and Cambridge Systematics Inc. – conducted a review of case studies where multi-state public and private sector partnerships delivered complex freight projects and programs with benefits to multiple states and the nation.

From analysis of the Mid-Atlantic Rail Operations Study (MAROps), the Northeast Rail Operations Study (NEROps), the Chicago Region Environmental and Transportation Efficiency Program (CREATE), and the Brent Spence Bridge Corridor Project, the most critical take-away is: **freight partnerships require sustained effort and commitment, but can deliver collective benefits to the nation beyond what any stakeholder or state could produce independently.**



## MAROPs Overview

Case Study illustrates major (> \$6.2 billion) long-term (> 20 years) program of coordinated and mutually supporting rail improvements involving five states, two Class I freight railroads, and passenger railroads.

- ◆ Key parties: the states of Delaware, Maryland, New Jersey, Pennsylvania, and Virginia; AMTRAK, CSX and Norfolk Southern, coordinated by the Coalition (then known as the I-95 Corridor Coalition)
- ◆ Benefits achieved: coordinated and mutually supporting program of projects to address and eliminate significant national rail network chokepoints --capacity constrained track, height/weight constrained bridges and tunnels, operating conflicts between railroads, rail grade crossings, and other constraints —resulting in improved safety and fluidity for freight rail traffic originating in, terminating in, or passing through the study region
- ◆ Critical success factors: strong and sustained leadership commitment by the Coalition and freight railroads, outstanding participation by state partners, and consultant support in developing consistent information to support the effort
- ◆ Status: many of the original MAROPs projects have been completed as planned or in a revised form; a few have not advanced due to changing needs or completion of other substitute projects; a few are still being completed
- ◆ Value as a model: MAROPs is an outstanding example of establishing and sustaining a partnership to deliver a broad range of projects – some very expensive – over a long period; it also illustrates some of the challenges with long-term partnerships, especially the tracking of project information and quantification of benefits in a consistent and systematic way



## **NEROps Overview**

Case Study illustrates multistate, public-private collaboration to identify key trends, inventory bottlenecks, and identify investments across seven New England states benefiting two Class I railroads, several shortlines, and intercity and commuter railroads.

- ◆ **Key parties:** the states of New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine; AMTRAK, MTA, MBTA, CSX, Norfolk Southern, Genesee and Wyoming, Pan Am Railways, and the Coalition.
- ◆ **Benefits achieved:** NEROps was developed as a tool to educate policymakers and the public about the role of rail in the Northeast region, the relationships of chokepoints, investment needs, and potential benefits that cross jurisdictional boundaries, and the need to prioritize rail investments for economic competitiveness. Many of the projects identified in NEROps were implemented with public agency support, in part, due to the multi-state vision.
- ◆ **Critical success factors:** Collaboration between the railroads, state partners, and TETC; Clear presentation of systemwide and corridor-level needs and projects.
- ◆ **Status:** Many of the projects have been implemented using funds from railroads, federal grant programs, state grants and funding sources, etc., including those described in the case study narrative. Some have not advanced due to changing needs or priorities.
- ◆ **Value as a model:** NEROps is an excellent example of demonstrating how freight performance and needs cross jurisdictional boundaries, and how investments in one jurisdiction can unlock benefits for a multi-state corridor and an entire region.



## **CREATE Overview**

Case Study illustrates a sustained, complex, multi-party program to deliver freight and passenger rail projects in the nation's most significantly bottlenecked region, with an outstanding degree of public communication and transparency about each project and the overall program.

- ◆ Key parties: City of Chicago, Cook County, State of Illinois; USDOT; Amtrak and METRA; and eight freight railroads
- ◆ Benefits achieved: Over the past 23 years, passenger train delays reduced by over 1.3 million passenger hours annually; 2,800 metric tons/year avoided emissions from idling vehicles; 18,500 truck trips per day avoided; 92,000 hours of truck delay and 230,000 hours of motorist and bus passenger delay avoided; \$31.5 billion in economic benefits and approximately 44,000 jobs created
- ◆ Critical success factors: Clearly defined organizational structure and mission; clear communication of the overall program and status of projects within the program; overarching public and private interest in addressing the underlying Chicago bottleneck in a systematic way
- ◆ Status: CREATE includes 70 projects, of which 35 are completed and 20 are in the engineering design, environmental review, or construction stages.
- ◆ Value as a model: CREATE offers a strong template for multi-state and multi-party project delivery. Its key lessons about how to establish leadership structure, operating agreements, project tracking mechanisms, and program delivery should, given appropriate effort and commitment, be repeatable in other geographies and contexts, and promise similarly successful outcomes.



## Brent Spence Bridge Corridor Overview

Case Study illustrates a process where two states formed a collaborative partnership to deliver a major improvement to a critical interstate highway bridge (I-71/I-75) connecting Cincinnati OH and Covington KY, and providing national network connectivity for commercial traffic originating, terminating, and passing through the region

- ◆ Key parties: OKI Regional Council of Governments as proponent and champion; Ohio DOT as designated lead agency; Kentucky Transportation Cabinet; the Federal Highway Administration; and the regional business community
- ◆ Benefits achieved: projected 9 to 12 million hours of vehicular delay (all types) avoided each year; projected 40 percent reduction in crash rates
- ◆ Critical success factors: long-term, sustained commitment by OKI and the business community to drive the project, establish community and legislative support, and provide clear public information on the project and its benefits; strong contributions by ODOT and KTC to advance implementation of the project; and receipt of federal funding through a combination of programs
- ◆ Status: as of autumn 2025, the project was under design, with groundbreaking expected in early 2026 and project completion in the early 2030s
- ◆ Value as a model: This is a repeatable model and a strong example of collaboration around a clearly defined roadway project of strong bi-state interest, with collaboration from two state DOTs and leadership from a regional bi-state MPO

In these Case Studies, freight programs created substantial benefits beyond the physical extents of any specific project, and success was grounded in the multi-state partnerships. **In the future, these successes can be replicated by applying key lessons learned and following best practice guidance.**



## Three Key Lessons Learned

### *Collaboration Works*

- ◆ Multi-state and public-private collaborations have successfully delivered complex projects and programs that no individual actor could have produced without its partners.
- ◆ These projects have generated substantial local, regional, state, multi-state, and national benefits – increasing freight network fluidity for rail and truck movement, providing new capacity and connectivity and resiliency, and reducing congestion, delays, crashes, passenger and community conflicts, and other negative impacts.
- ◆ The approach has multimodal applications for any project or program involving freight transportation across regulatory and financing jurisdictional boundaries.

### *Collaboration Takes Work*

- ◆ Achieving benefits from collaborative initiatives requires **up-front, substantial and sustained commitment** of public agencies and private partners, along with **committed champions** to establish, maintain, and coordinate relationships, schedules, data, resources, engagement, and communication. For example, funding to support examining freight project needs such as that in TETC's earmark was notably critical to support and sustain collaboration.
- ◆ The specific **champion(s) can be, but do not have to be, traditional project delivery organizations** – they can be private industry associations, multi-state/multi-region coalitions, or specially formed organizations.

### *Performance Should be Measured*

- ◆ Complex projects and programs involving multiple partners and/or multiple years require **careful tracking of project status and implementation**. More recent initiatives like CREATE have done an exceptional job of this, maintaining current information online and making it available to all. Older initiatives like MAROps did not have centralized systems to maintain and share information and as a result, when original participants transitioned roles and responsibilities to successors, knowledge of original projects suffered.
- ◆ **Benefits should be formally measured and tracked**, with performance measures established at the outset and maintained over the life cycle of project delivery, to clearly demonstrate the original and continuing value of the original collaborative process. Standards and formal Federal guidance for freight project benefit-cost evaluation have evolved substantially over the last two decades; while they were not available for older initiatives such as MAROps, they are now widely understood and utilized.



## Five Ideas for Best Practice Guidance

### *Federal Leadership*

- ◆ USDOT has required state freight plans to consider effects of and coordination with conditions and improvements in neighboring states but has offered little guidance on the best ways to achieve this. As a result, state freight plans vary widely in the nature and degree of compliance. **Revised and more specific guidance would help improve the quality of multi-state freight planning within the context of state freight plans.**
- ◆ **Federal support for multi-state project delivery initiatives and organizations** – through sustained program funding, discretionary grant eligibility, and/or other means – should be supported and actively promoted.
- ◆ Building on the success of USDOT’s Freight Fluidity initiative, **USDOT should take the next step and work closely with private freight carriers, infrastructure owners/operators, and beneficial cargo owners to identify multi-state bottlenecks** that could be addressed by multi-state solutions, benefiting the private sector and supporting the achievement of Federal transportation and economic goals.

### *Knowledge Sharing and Transfer*

- ◆ States can take a lead role in promoting awareness of multi-state project delivery. The Coalition recommends administration of a **national survey of states to identify, log, and track multi-state projects and programs**. This could be administered by any number of parties —USDOT, academic organizations, industry associations, state champions, or multi-state coalitions – but it is critical to establish, and maintain, a baseline understanding of where collaborations are occurring and the benefits they are achieving.
- ◆ **Best practice guidance for measuring performance and evaluating the success of multi-state project delivery initiatives** should be developed and shared – possibly in toolkit form —to help standardize the assessment of national benefits from multi-state projects and allow future benefits to be clearly understood and communicated.



# Introduction

## The Critical Importance of Multi-State Public/Private Partnerships

Freight transportation has been described by the US Department of Transportation as “economy in motion.” US industries depend on efficient, reliable transportation services and options, from which they create logistics and supply chain networks to receive critical input materials and ship products. US consumers depend on them to receive food, fuel, household goods, and other essential non-durable and durable goods. Government and public agencies—national, state, regional, and local—depend on them as a means of providing attractive, competitive locations for businesses to operate and residents to live.

As the nation seeks to support and enhance its industrial and manufacturing capabilities, ensuring excellence in freight transportation infrastructure is critical to the success of the overall mission. It does little good to invest in factories, technologies, equipment, and workers, if raw materials and finished goods cannot be transported to and from critical locations with the necessary levels of speed, reliability, and security, with acceptable effects on communities, and at an efficient price point.

From a transportation perspective, freight is different from passenger transportation. Apart from long-distance business or recreational travel, passenger transportation is largely focused within regions and states. Freight, on the other hand, depends heavily on multi-region, multi-state transportation networks, utilizing all transportation modes. Highways are typically publicly owned; major cargo and passenger airports are mostly publicly owned but there are some private facilities; container ports are mostly publicly owned but some are private and many bulk ports are private; rail terminals and track networks are mostly private; and warehouse/logistics facilities are generally private. Therefore, truly effective freight project delivery at scale requires multi-region, multi-state, and multi-modal investment, across public and private sector boundaries.

The creation of the US interstate highway system was one example of large-scale, multi-state thinking, but it remains an exception. Most freight projects have been or are being delivered locally, within regions or states, or by individual actors such as railroads or ports. However, over the past several decades, we have seen some models where larger-scale freight infrastructure development programs have been put in place and executed to deliver benefits in multiple states and across multiple modes through multi-agency and public/private collaboration.

## A Template for Success

Looking ahead to conditions of increasing need for freight investments and continuing resource constraints, it is more important than ever to (1) provide transportation decision-makers with clear explanations of the need for, and value of, freight project investments, and (2) demonstrate how freight investments at specified locations provide benefits over much larger multi-state supply chains and networks.



To accomplish this, the Eastern Transportation Coalition (the “Coalition”) – supported by WSP USA Inc. and Cambridge Systematics Inc. – conducted a review of case studies where multi-state partnerships identified a framework for successfully delivering complex projects and programs benefiting multiple states, the nation, and both the public and private sectors. Three of the Case Studies address freight and passenger rail improvements and involve multiple railroads; the fourth is an ongoing bi-state bridge project with substantial benefits to a nationally significant trucking corridor. The four Case Studies were:

- The Mid-Atlantic Rail Operations Study (MAROps)
- The Northeast Rail Operations (NEROps) Program
- The Chicago Region Environmental and Transportation Efficiency (CREATE) Program
- The Brent Spence Bridge Corridor Project

The Case Studies were developed with input and consultation from: the states of Virginia, Maryland, Delaware, Pennsylvania, and New Jersey; the Ohio-Kentucky-Indiana (OKI) Regional Council of Governments; and the Norfolk Southern Corporation. The study team is grateful for their time and contributions. Each Case Study addresses the program overview, history, governance and funding, project status, and lessons learned for freight transportation project delivery given today’s challenges and opportunities. This report closes with high-level findings and take-aways drawn from the Case Studies and interviews with study participants.



# Case Study #1: Mid-Atlantic Rail Operations Study (MAROPs)

## Overview

The Mid Atlantic Rail Operations Study (MAROPs) is a collaborative initiative originally launched by the I-95 Corridor Coalition (now the Eastern Transportation Coalition, or “Coalition”).

Commissioned in 2002, the original MAROPs study brought five states (Delaware, Maryland, New Jersey, Pennsylvania, and Virginia) and three railroads (Amtrak, CSX, and Norfolk Southern) together to assess the performance of the Mid-Atlantic passenger and freight rail network and make recommendations on processes and projects that would improve the efficiency and effectiveness of the corridor in serving regional and national economic interests.

TABLE 1. MAROPS OVERVIEW

MAROPs Overview
<p>Case Study illustrates major (&gt; \$6.2 billion) long-term (&gt; 20 years) program of coordinated and mutually supporting rail improvements involving five states, two Class I freight railroads, and passenger railroads.</p> <ul style="list-style-type: none"><li>◆ <b>Key parties:</b> the states of Delaware, Maryland, New Jersey, Pennsylvania, and Virginia; AMTRAK, CSX and Norfolk Southern, coordinated by the Coalition (then known as the I-95 Corridor Coalition)</li><li>◆ <b>Benefits achieved:</b> coordinated and mutually supporting program of projects to address and eliminate significant national rail network chokepoints --capacity constrained track, height/weight constrained bridges and tunnels, operating conflicts between railroads, rail grade crossings, and other constraints —resulting in improved safety and fluidity for freight rail traffic originating in, terminating in, or passing through the study region</li><li>◆ <b>Critical success factors:</b> strong and sustained leadership commitment by the Coalition and freight railroads, outstanding participation by state partners, and consultant support in developing consistent information to support the effort</li><li>◆ <b>Status:</b> many of the original MAROPs projects have been completed as planned or in a revised form; a few have not advanced due to changing needs or completion of other substitute projects; a few are still being completed</li><li>◆ <b>Value as a model:</b> MAROPs is an outstanding example of establishing and sustaining a partnership to deliver a broad range of projects – some very expensive – over a long period; it also illustrates some of the challenges with long-term partnerships, especially the tracking of project information and quantification of benefits in a consistent and systematic way</li></ul>



## History

MAROps projects were developed and documented in two phases, each with distinct but complementary purposes and objectives.

### ***2002 Phase I MAROps Study***

Leading up to 2002, each participating railroad was planning for large and complex initiatives involving multiple states:

- Crescent Corridor (NS)
- Heartland Corridor (NS)
- National Gateway (CSX)
- Northeast Corridor program (Amtrak)

The challenges facing each railroad and each state were:

- How to coordinate the improvements across different states and railroads, so that projects in one state or on one railroad did not face bottlenecks in other states or over other railroads that would limit or even negate the value of the projects;
- How to ensure that projects were complementary, adding capacity and value without being redundant, and transforming an aging, piecemeal set of assets into a modern, forward-looking, efficient and competitive network for moving people and goods while reducing pressure on congested highways; and
- How to fund the very large collective investment need, utilizing innovative public-private partnership structures and other available mechanisms.

At the same time, NS was advancing an innovative partnership with the State of Delaware for public-private financing of the Shellpot Bridge, which was beginning to illustrate the value of collaboration to deliver freight improvements.

Looking to realize the benefits suggested by the Shellpot Bridge experience – but at a far larger and nationally significant scale —under the umbrella of the Coalition, key representatives of each railroad and each state, assisted by a consultant team, participated in work sessions and meetings over many months to frame a program of freight and passenger rail improvements virtually unprecedented in scale since the building of the transcontinental railroad.

The original MAROps study recommended a 20-year, \$6.2 billion program of rail capacity and operational improvement projects over the five states and three rail systems. The Phase I study projected a public benefit of \$12.8 billion, with a benefit-cost ratio of 2.06, utilizing then-current BCA calculation approaches.

### ***2009 Phase II MAROps Study***

An expanded Phase II study completed in 2009 provided an update to the Phase I study. It identified 217 total projects, which encompassed 110 projects adding mainline capacity and 81 projects



providing double-stack clearance. Projects also included terminal capacity expansion, grade crossing enhancement and / or removal, bridge and tunnel rehabilitation, as well as communications and technology investments.

## **Funding and Governance**

MAROps was coordinated by the Coalition in collaboration with its state and railroad partners. Over the course of more than a year, each partner made consistent and substantial contributions to identify issues and opportunities, develop candidate projects, and create the messaging, in a manner supported by all stakeholders. The MAROps studies were funded through the Coalition's Work Program under their then federal funding earmark in the then transportation authorization bill. Each of the projects was funded by the state and railroad partners, in many cases with federal funding support.

For the partners engaged in the MAROps exercise, the recommended program and prescribed projects provided a long-term, “north star” vision of how the freight and passenger network could develop in the coming decades. While the creation of this vision involved extensive collaboration between the states and railroad partners, the execution of the vision followed a different pattern driven by regional cooperation, public funding availability, and project prioritization within the railroads’ internal capital planning.

CSX and NS, as private corporations accountable to their shareholders, develop their annual capital expenditure plans consistent with business objectives. Capital matches for projects with joint benefits with the public sector must compete in this process with other priorities across engineering, technology, mechanical, and other areas where capital investment is needed. Moreover, the public sector partners including the state DOTs and rail-related agencies are subject to their own laws, covenants, and procedures for making investments into rail infrastructure. Likewise, Amtrak, as the primary passenger rail partner, is subject to annual appropriations from Congress to determine project funding.

Many MAROps projects have been completed; some have been modified to meet changing business opportunities, technologies, operating plans, and/or funding availability; and others have been abandoned as no longer necessary. As a result, no single entity has been responsible for tracking the progress of specific MAROps projects. However, a good approximation of the progress can be discerned by tracking projects delivered by the individual partners across the specified MAROps corridor, focusing on primary success stories.

## **Program**

### ***MAROps Projects***

The original MAROps study recommended a 20-year, \$6.2 billion program encompassing 55 projects and programs. Figure 1 illustrates the Phase I program and indicates which projects were completed at the time the Phase II study was performed.

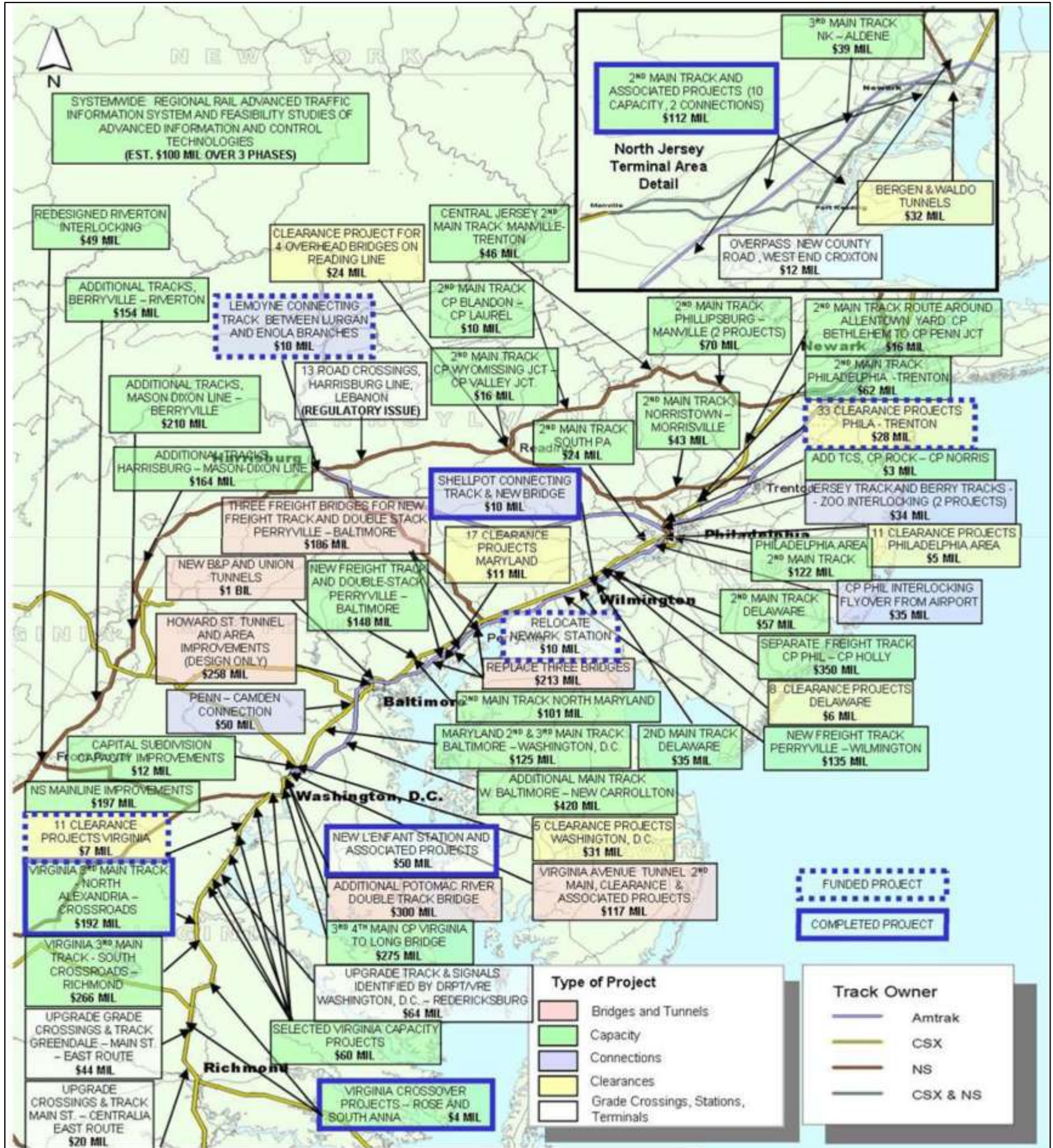


The MAROps route / corridor segments examined as part of the Phase II study are illustrated in Figure 2. The North Jersey Terminal segment included elements of the network where the two competing Class I freight carriers comingle on joint facilities and Conrail Shared Assets, a railroad owned jointly by CSX and Norfolk Southern for the express purpose of providing equal access to both carriers. Amtrak also intersects within the North Jersey Terminal area. The remaining MAROps route segments are owned respectively by NS, CSX, and Amtrak. The final Phase II MAROps improvements are depicted in Figure 3.

For ease of reference, following these figures, the improvements are discussed in terms of their primary geographic and railroad focus.



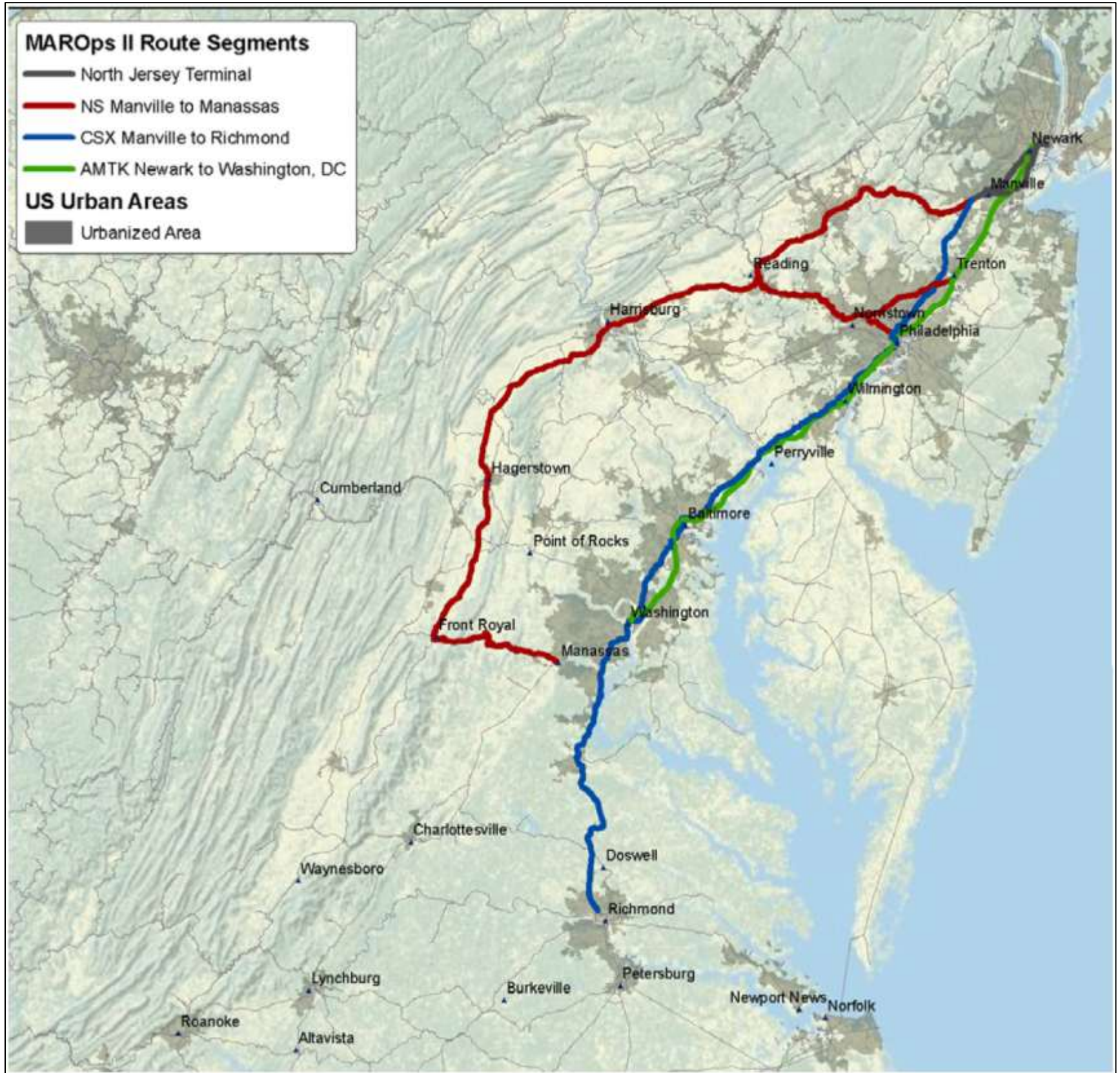
FIGURE 1. MAROPS PHASE I RECOMMENDED PROJECTS AND STATUS IN 2009



Source: MAROPS Phase II Study, 2009



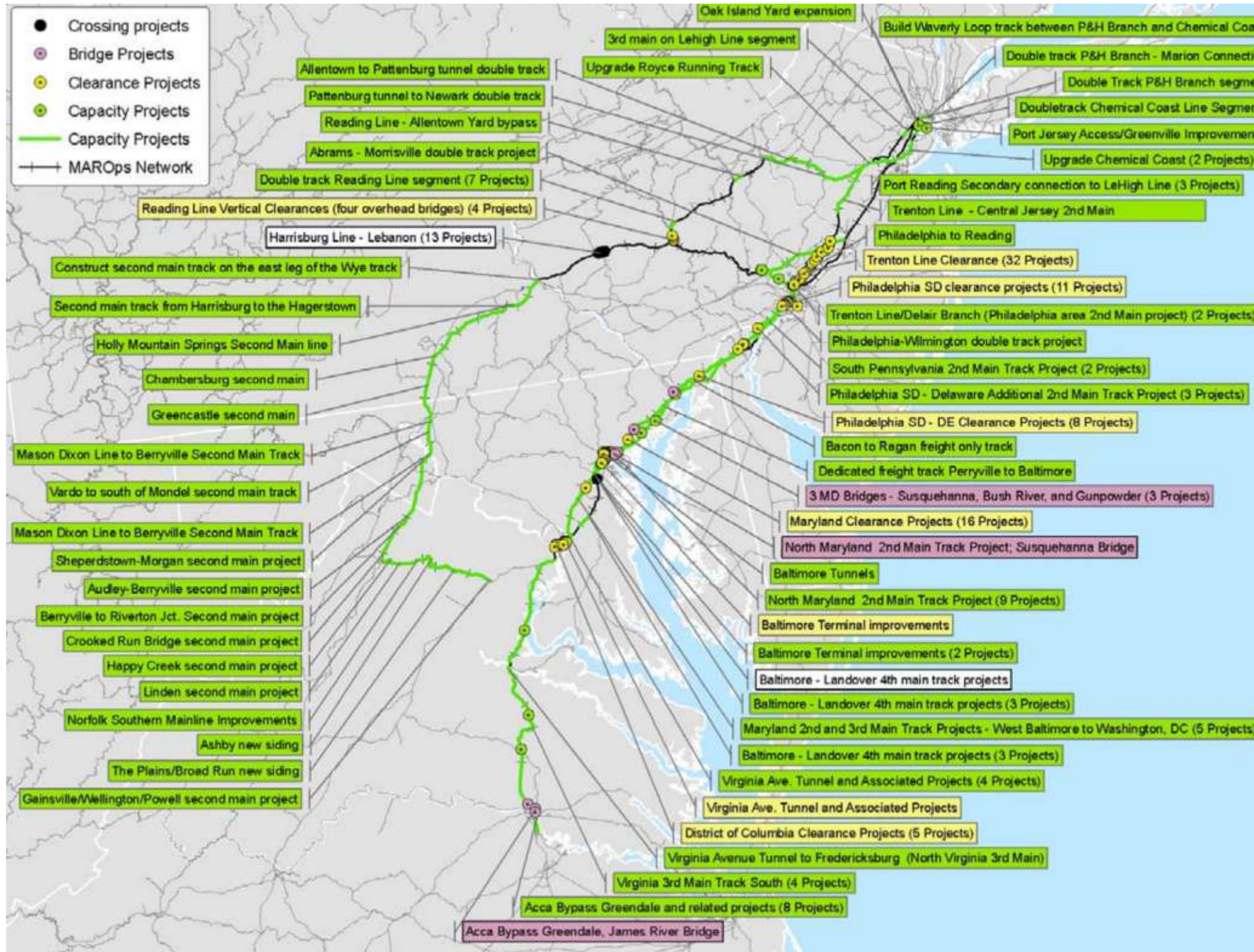
FIGURE 2. 2009 MAROPS PHASE II STUDY RAIL ROUTE SEGMENTS



Source: MAROps Phase II Study, 2009



FIGURE 3. 2009 MAROPS PHASE II STUDY RECOMMENDED PROJECTS



Source: MAROps Phase II Study, 2009



### **NORTH JERSEY TERMINAL**

New Jersey DOT (NJDOT) was among the five states that participated in the MAROps program, and MAROps provided the opportunity for collaboration and framing of public private partnerships.

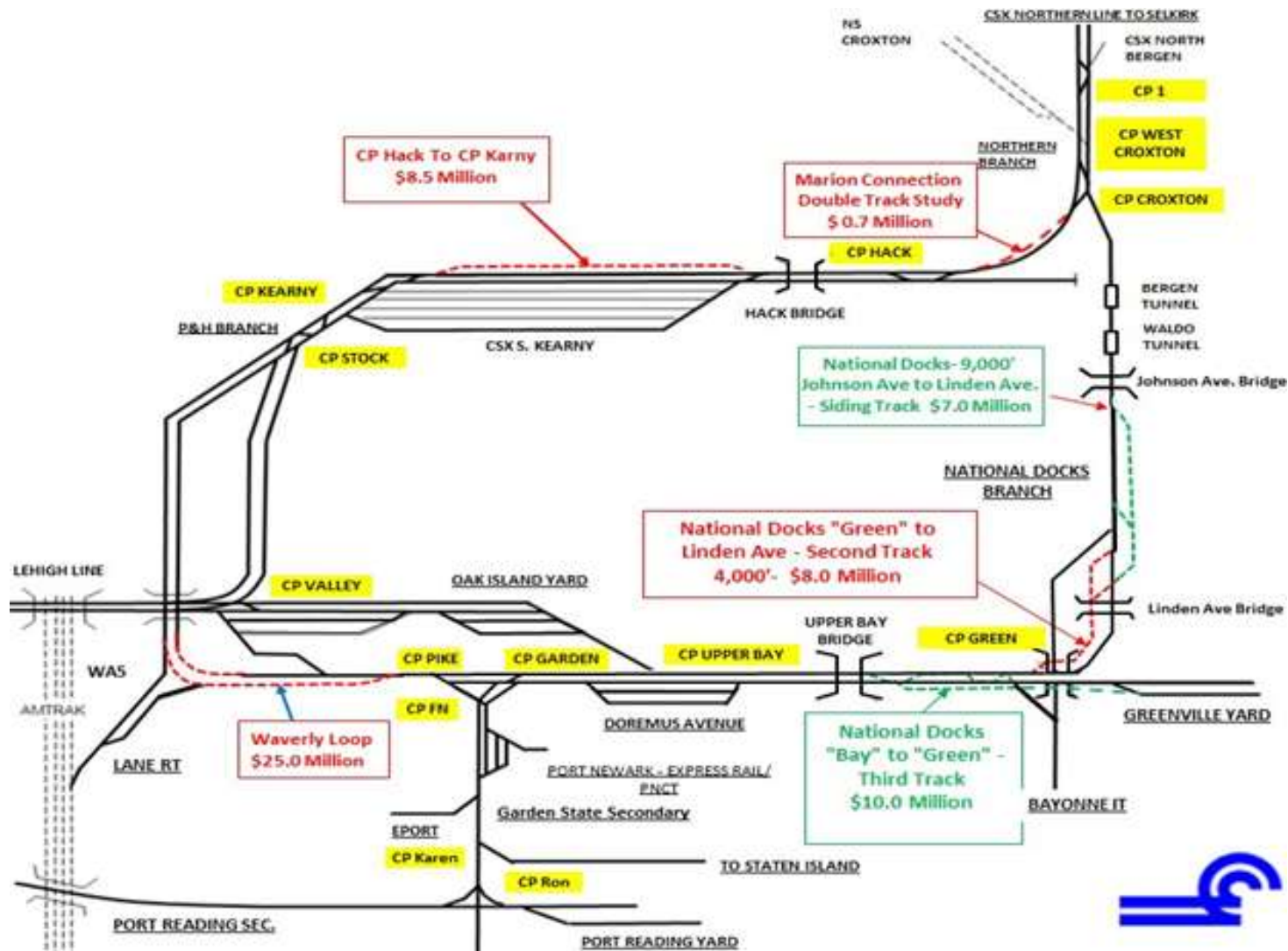
In approving the NS and CSX acquisition of Conrail, the STB granted a condition requested by NJDOT in conjunction with the Port Authority of New York & New Jersey (PANYNJ) requiring that NS, CSX, and Conrail participate in discussions regarding capacity and rail service for the Port and State. As a result, NS and the other two railroads undertook a series of meetings with the Port Authority and later produced the first Public Private Partnership (PPP) between public agencies and railroads. The PPP was guided by MAROPS findings that the State DOTs needed to shift their passive approach to freight rail to one that was pro-active, forward looking, and focused on the economic and environmental benefits of expanding rail freight transportation.

NS, together with CSX and Conrail, developed a comprehensive public private partnership initiative with PANYNJ and NJDOT to prioritize rail infrastructure improvements and identify projects that would improve rail operations in the Port District, better serve the New Jersey customers of NS and CSX, and developed a financing plan. The partnership advanced in four phases and completed projects in each phase are summarized below.

- For **Phase One** (between 2004 and 2007), the Port Authority and the three rail partners developed the New Jersey Rail Freight Program, with the goal of identifying and financing projects to enhance train velocity, switching performance, and network chokepoints. NJDOT identified projects addressing key chokepoints for the MAROPS program. As a result, New Jersey DOT and the PANYNJ contributed \$92 million toward a series of engineering projects to meld, connect lines, and increase capacity on portions of the Lehigh Line, Lehigh Connecting Track, the P&H Line, and the Chemical Coast. Projects included track rehabilitation as well as redesign, construction, and expansion of critical interlockings. The projects cleared the Bergen and Waldo Tunnels on the National Docks for double stack intermodal service from all Conrail main tracks and gateways. The investments on the Lehigh line, Lehigh Connecting Track, the P&H Branch, Northern Branch and Northern Running Track provide a freight rail through route traversing the NJSAA and meeting the needs of NS and Port customers for reliable, competitive transportation. This initiative focused on addressing the concerns of the PANYNJ that the North Jersey Shared Asset Area (NJSAA) rail infrastructure could be inadequate to handle the expected growth of rail traffic into and out of the port and other rail facilities in the NJSAA. Locations for many of these completed projects are illustrated on Figure 4.



FIGURE 4. NORTH JERSEY SHARED ASSETS AREA – COMPLETED PROJECTS



Source: Conrail Shared Assets, Courtesy of Norfolk Southern



- For the **Phase Two** Liberty Corridor (starting in 2009), the railroads and NJDOT agreed to projects funded under the federal Liberty Corridor program. NJDOT applied the 50% public share to improve vertical clearances on two tunnels on the Conrail route between the Port of New York and New Jersey and the CSX mainline serving the US rail network. A second major project involved reconfiguring the Port Reading Junction to provide double track train operations between CSX - West Trenton line and Norfolk Southern - Lehigh line. The National Docks Secondary's Bergen and Waldo Tunnels were cleared for 20-foot 9-inch vertical clearance to accommodate double-stack intermodal traffic. With the completion of these projects, shippers gained access to the Port district for double-stack intermodal traffic from all Conrail main tracks and gateways. In essence, the Liberty Corridor developed the equivalent of the Alameda Corridor (a dedicated freight rail corridor connecting the Ports of Los Angeles and Long Beach to major intermodal rail terminals and the national freight rail network) on the East Coast.
- **Phase Three**, Greenville Yard Development, was intended to establish a 3rd Express Rail facility. The railroads and Port Authority established a P3 to rehabilitate Greenville Yard at Bayonne. The PANYNJ and the railroads jointly developed and funded Port-related projects to develop and rehabilitate Greenville Yard.
- **Phase Four** focused on the South Jersey Shared Asset Area (SJSAA), which includes Philadelphia and connections with the NS. Public funds contributed \$71.1 million of the cost and Conrail contributed \$10.9 million. Projects included: replacing 60 approach spans on the Delair Bridge; vertical clearances for double stack on 7 bridges on the Port Richmond Line in Philadelphia; and grade crossing improvements, upgrade and track replacements on branch lines, and bridge replacements on secondary railroad lines.

Between 2000 to 2017, the public contributed \$177,506,115 to fund improvements in the State of New Jersey, with the railroad share of \$70,397,396 (NS and CSX each contributed 50% for the improvements or \$35,200 million each private match). More recently, NJDOT contributed approximately \$25 million (not included in above total) to help construct a replacement for the Point-No-Point bridge over the Passaic River.

There is the strong possibility that NS as an individual entity and NS with its rail partners will participate in future PPPs with NJDOT and/or the PANYNJ. The Port Authority is a substantial driver of economic development, and freight rail service and is expected to play a critical role in Port growth. In addition, New Jersey is exploring adding new or expanded New Jersey Transit (NJT) service on freight-owned lines. Likewise, NS and other freight railroads have expressed the need to upgrade NJT owned lines to handle 286K lbs. railcars.

#### **CSX FROM MANVILLE, NJ TO RICHMOND, VA**

CSX investments within **New Jersey** have been concentrated in the Conrail Shared Asset Area for both North Jersey and South Jersey (see discussion above).

In **Delaware**, MAROps concepts for eight clearance projects and four double track projects were identified but have not advanced. However, other initiatives in Delaware have advanced involving



cooperation between state, federal, and railroad partners that are related to the MAROps vision for enhancing performance of the freight and passenger rail network on the east coast. These include:

- **Yard to Ragan 3<sup>rd</sup> Track:** Amtrak, the Delaware Department of Transportation, and Delaware Transit Corporation collaborated on a \$71.2 million project to install 1.5 miles of new electrified mainline between Ragan and Yard interlockings. The project also included a bridge replacement, which together will improve on time performance and reduce train delays.
- **Newark Regional Transportation Center:** Under construction since 2017, with a completion date still to be determined as of September 2025 according to DelDOT, the new transportation center includes passenger station amenities, high-level platforms, and infrastructure that will mitigate existing conflicts between passenger freight trains. High-level platforms enhance train performance by allowing passengers to board and alight more quickly and safely, while enabling train crews to open all doors simultaneously.
- Separately, WILMAPCO completed a study to quantify the benefits of added track capacity between Perryville and Wilmington, which is aligned with the MAROps project recommendation to add capacity dedicated to freight along the NEC.

The 16 clearance projects specified for **Maryland** ultimately expanded to 22 separate projects between Baltimore and Philadelphia that have been substantially completed. These include major projects to provide double-stack access to the Port of Baltimore (which is now operational and clear upstream and downstream connections for double-stacks, including the historic Howard Street and B&P Tunnel.

- For the Howard Street Tunnel (see [CSX Begins Reconstruction of Historic Howard Street Tunnel in Baltimore - CSX.com](#)), CSX notes:

“The historic Howard Street Tunnel in Baltimore, originally opened in the late 1800s, has officially closed for reconstruction as part of an initiative to modernize the nearly 8,700-foot-long tunnel and enable double-stack intermodal service along CSX’s I-95 Rail Corridor. On February 1, the project reached a significant milestone with the removal of rail spikes, marking the next phase of work on the Howard Street Tunnel Project. Scheduled for completion by the end of 2025, the initiative aims to increase vertical clearance in the 125-year-old tunnel and address 22 additional obstructions along the corridor between Baltimore and Philadelphia, improving connectivity to key Midwest markets ... The Howard Street Tunnel upgrades will enhance intermodal rail service on CSX’s I-95 corridor while better connecting the Seagirt Marine Terminal Intermodal Container Transfer Facility at the Port of Baltimore with interior distribution hubs... The tunnel reconstruction is part of a larger partnership involving CSX, the U.S. Department of Transportation, the state of Maryland, the Commonwealth of Pennsylvania, and other stakeholders. Once complete, it is expected to enhance operational efficiency, bolster the competitiveness of CSX-served markets, and deliver economic benefits to the region. With progress well underway and completion set for the second half of 2025, CSX is moving closer to achieving a modernized corridor that will drive growth for the company, its customers, and the surrounding community.”



- For the B&P Tunnel, the Federal Railroad Administration (see <https://railroads.dot.gov/rail-network-development/environment/environmental-reviews/baltimore-potomac-bp-tunnel-program>) notes:

“The B&P Tunnel is located beneath West Baltimore, primarily in the vicinity of the Bolton Hill, Madison Park, Reservoir Hill, Sandtown-Winchester, and Upton neighborhoods. Amtrak owns the existing 2-track railroad tunnel, which is currently used by Amtrak, Maryland Area Rail Commuter (MARC), and Norfolk Southern Railway (NS). The tunnel was built in 1873 and is one of the oldest structures on the Northeast Corridor (NEC). It is also a bottleneck for the operations of MARC and Amtrak passenger trains. The 1.4-mile tunnel, connecting Amtrak’s Penn Station to MARC’s West Baltimore station, is impacted by various age-related issues, including excessive water infiltration, a deteriorating structure, and a sinking floor. The tunnel does not include any modern fire and life safety systems that help keep passengers safe in the event of emergencies, and extensive maintenance is required. The B&P Tunnel Project, which is named the Frederick Douglass Tunnel Program in Amtrak’s portfolio, was awarded an FY22-23 Federal-State Partnership for Intercity Passenger Rail-Northeast Corridor grant up to \$4.7 billion for final design and construction ... FRA and Amtrak, the Project Sponsor and infrastructure owner, are advancing planning and design toward construction of the project.”

- Other freight projects proposed by MAROPs that have not been started but remain in the long-term rail plan for the state of Maryland include:
  - North Maryland 2nd Main Track Project (Susquehanna Bridge): This is a freight rail only bridge about one mile west of Amtrak’s Susquehanna Bridge.
  - North Maryland 2nd Main Track Project: 9 separate projects that would double track the CSX line between Baltimore and Philadelphia is not part of Amtrak’s NEC).
  - 2nd and 3rd main track projects on CSX between West Baltimore and Washington, DC

In **Virginia**, on the CSX line known as the former Richmond, Fredericksburg and Potomac (RF&P), three of the four projects specified in MAROPs have been completed or substantially completed.

- CSX opened the Virginia Avenue Tunnel to double stack operations in 2016.
- The 3rd main track south of Washington, DC on the RF&P was also completed, opening capacity for more frequent and reliable Virginia Railway Express (VRE) service.
- The Acca Yard Bypass at Greendale, with 8 interrelated projects, was completed with the assistance of federal funding; notably, this project enabled agreement with CSX to allow the 2nd and 3rd Amtrak frequencies to extend to Norfolk, VA.
- The major project not yet completed – but currently under construction -- is the Long Bridge. The project sponsor, the Virginia Passenger Rail Authority (see [Long Bridge Project – VPR](#)), notes:

“The Long Bridge is a CSXT owned two-track, century-old bridge that spans the Potomac River in Washington, DC. The Long Bridge Project will increase rail traffic capacity, creating a four-track corridor, and constructing approximately 1.8 miles of improvements



including seven rail bridges and pedestrian bridges over land and the Potomac River and related railroad infrastructure between Arlington, VA, and Washington, DC. The Long Bridge Project will construct a new, two-track railroad bridge next to the existing Long Bridge, creating a four-track corridor. A new bike-pedestrian bridge also will be constructed as part of the mitigation to National Park Service (NPS) parkland and will span the Potomac River and George Washington Memorial Parkway, connecting Long Bridge Park directly to East and West Potomac Parks. Freight and passenger rail operators within the project corridor include Amtrak, Virginia Railway Express (VRE) and CSXT. Annually, up to 2 million Amtrak passengers and 3 million VRE commuters traverse the current Long Bridge, which operates at 98% capacity during peak hours. The project's purpose is to create greater railroad capacity between Virginia and the District of Columbia while alleviating the rail congestion caused by the existing two-track Long Bridge.”

None of the double track and bypass projects specified for the CSX corridor in **Pennsylvania** as part of the original MAROps plan have not been completed, due to changing needs, volumes and service patterns, and other considerations.

#### **NS FROM MANVILLE, NJ TO MANASSAS, VA**

Improvements to the NS line in **New Jersey** as proposed in the Phase II MAROps study have not occurred. Neither the third main proposed on the Lehigh Line nor the Royce Running track have been constructed. Based on discussions with NS representatives, Norfolk Southern's efforts to improve freight access in New Jersey have largely been focused on the NJSAA discussed above.

Within **Pennsylvania**, most of the projects proposed in the Phase II MAROps study similarly have not been completed and not been advanced in any preliminary planning or partnership discussions. It is reasonable to assume that the requisite clearance projects were completed because Norfolk Southern can run double stack containers across this corridor between Pennsylvania and New Jersey. This includes traversing the Reading Line, for which MAROps specified four overhead bridge projects. Consultation with the Commonwealth of Pennsylvania revealed that the projects specified in MAROps were not part of previous or current state rail plans. With few exceptions, most of the projects proposed by MAROps in Pennsylvania were double tracking efforts adding multiple miles of 2nd mainline where operations have heretofore been run with single track and sidings. One exception noted by Norfolk Southern is the Reading Line Double Track project, which includes 7 segments, and is under study by the railroad.

Similarly, within **Maryland**, none of the second main line projects envisioned by MAROps have been completed. However, NS did finish smaller projects that take incremental steps toward these larger endeavors. For example, while the second main between Hagerstown, MD and Berryville, VA was not constructed, a 11,000-foot siding at Berryville was completed. In addition, Norfolk Southern adjusted yard operating rules through Hagerstown to allow through trains to proceed at faster speeds between the Hagerstown yard limits.

In partnership with the Class I Railroads, **Virginia** leveraged the commonwealth's Rail Enhancement Fund and the Department of Rail and Public Transportation's Six-Year Improvement Program, which is updated annually, to improve the freight and passenger rail network in Virginia.



While the original MAROps scope of effectively double tracking all the route miles on the NS Manville – Manassas corridor was not implemented, extensive investments in network capacity benefitting both freight and passenger services were completed. These include:

- Virginia Inland Port Double Track (5 miles): Located at Front Royal, Virginia, where NS Accesses the Virginia Inland Port container facility, this improvement provided passing capacity that reduces interference between movements staging for the VIP and trains moving through on the NS “H” line.
- Whitecut Siding: 17,000-foot passing track opened in 2008, approximately 46 miles from Manassas on the NS “B” line.
- Allison Siding: 11,000’ passing track opened in 2008, approximately 22 miles from Manassas on the NS “B” line.
- Gainesville Siding: 11,000’ passing track 7 miles from the junction between the NS “B” line and the former Southern Railway mainline at Manassas, VA. Opened for service in March 2010. Also benefits any potential VRE extension to Haymarket, VA.
- Riverton Junction Improvements: Enabled faster through speeds for trains operating at the junction between the NS “H” line and NS “B” line.
- Centralized Traffic Control (CTC) between Manassas – Riverton Junction: Enabled direct dispatching from remote offices using signals in lieu of mandatory directive (written train order) dispatching.
- Manassas – Riverton Junction Speed Increases: Saved an estimated 8.5 minutes eastbound and 10.8 minutes westbound for trains operating on the NS “B” line.

#### **OTHER AMTRAK PROJECTS**

On Amtrak’s NEC in **Maryland**, the dedicated freight tracks between Bacon, Ragan, Perryville, and Baltimore have not been completed and are not being shown in the latest state rail plans for Maryland. However, the three primary bridges located in Maryland on Amtrak’s NEC, specifically the Gunpow, Bush, and Susquehanna are all advancing projects toward construction.

Susquehanna Bridge is furthest along with 100% design completion, while Bush and Gunpow are at 30% design completion. For passenger operations, the Aberdeen and Martin stations are also advancing designs for high level platforms, which will improve access and reduce train stopping time. In addition, the Baltimore and Potomac Tunnels (Frederick Douglas Tunnel) project has advanced to groundbreaking with Amtrak’s award to Kiewit/J.F. Shea Joint Venture to build the brand new, state-of-the-art passenger rail tunnel that will serve electrified Amtrak and MARC commuter trains entering Baltimore Penn Station from the south. Passenger projects in MAROps that are in the State Rail Plan include:

- Baltimore Terminal Improvements
- Baltimore 4 main track projects: Would add 4th track to Amtrak NEC in West Baltimore. Currently under planning at BWI airport station.



### ***Non-MAROps Projects in the MAROps Geography***

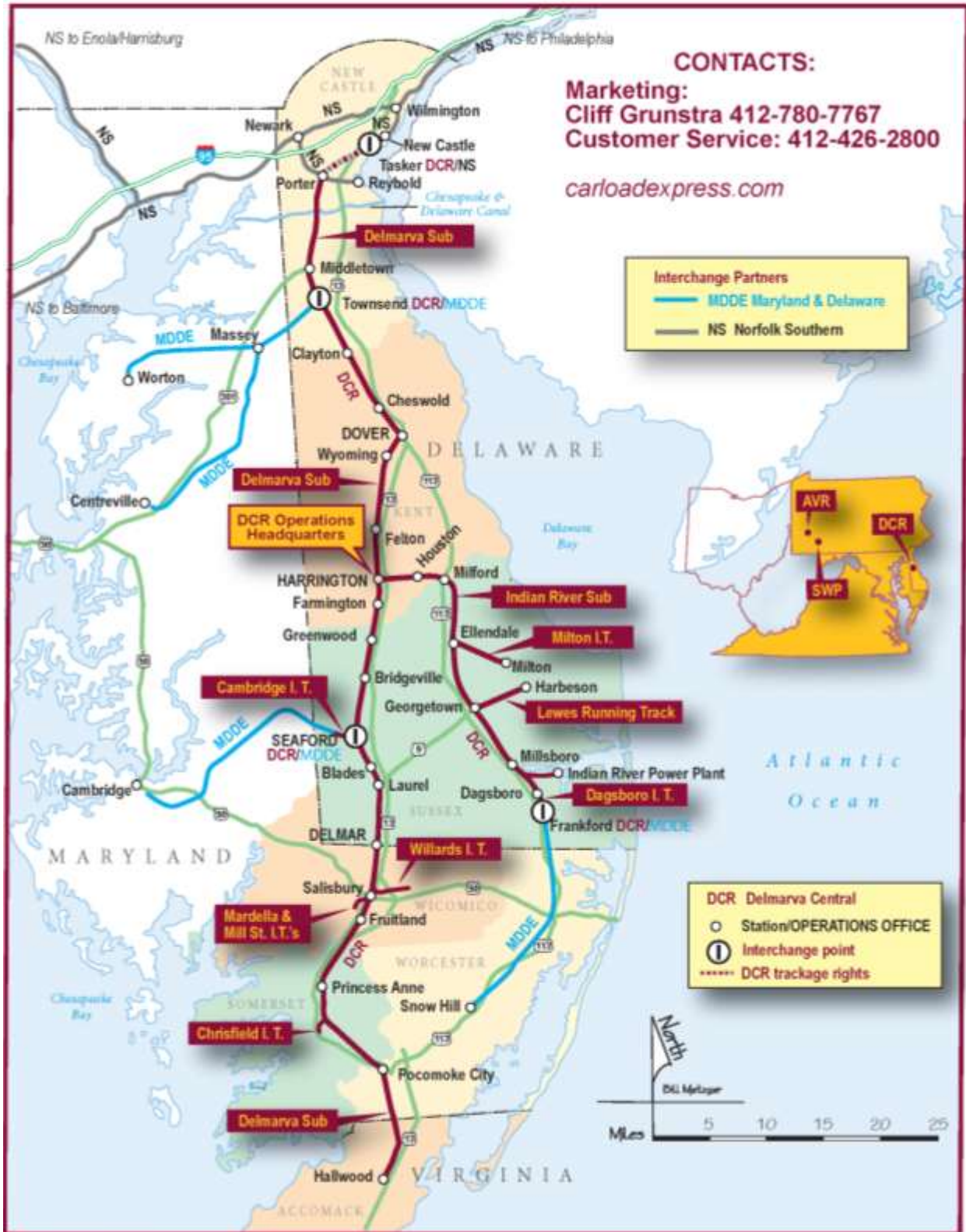
Along with implementation of the MAROps projects, the railroads and states in the MAROps region coordinated to deliver other projects. Some of these were initiatives to leverage the benefits of MAROps improvements over larger geographies; some were substitutions for MAROps projects; and some addressed new ground not covered in MAROps.

#### **DELMARVA PENINSULA**

Consolidation of railroad freight operations on the Delmarva peninsula began when Norfolk Southern leased lines to the Delmarva Central Railroad, a Class III railroad owned by holding company Carload Express. Carload Express subsequently assumed operations of the Bay Coast Railroad, which formerly ran carload ferry service across Chesapeake Bay. In addition, as of 2025, Carload Express has taken ownership of the Maryland & Delaware Railroad Company (MDDE), which also operates on the Delmarva peninsula. All Delmarva Carload Express freight operations are managed under the Delmarva Central Railroad, which interchanges with Norfolk Southern at Porter, DE. The DCR has subsequently been successful at obtaining federal grants to improve vertical lift bridges and over 100 miles of railroad in Delaware, projects that will improve access and service to freight rail customers. See Figure 5.



FIGURE 5. CARLOAD EXPRESS / DELMARVA CENTRAL RAILROAD NETWORK



Source: [www.carloadexpress.com](http://www.carloadexpress.com)



### **I-81 / CRESCENT CORRIDOR AND HEARTLAND CORRIDOR (NORFOLK SOUTHERN)**

In 2007, Norfolk Southern first announced the Crescent Corridor, a 13-state public private partnership freight rail initiative intermodal transportation across 2,500 miles paralleling I-81 and I-85. The project cost for investment by NS in the early 2010s was approximately \$2.5 billion. Not all the projects specified as part of Crescent Corridor were completed; however, the ones that were completed ultimately benefited the eastern rail network and aligned with the vision prescribed in MAROps. Projects completed as part of Crescent Corridor included:

- **Charlotte – Douglas International Airport Intermodal Terminal (North Carolina):** Situated between two runways, NS pays the airport authority \$1M in annual rent.
- **Greencastle Intermodal Terminal (Pennsylvania):** Strategically located within driving distance of the Industrial corridor on I-81 and within a half-day driving distance of the Northeast Corridor, Greencastle was completed in 2013.
- **Memphis Regional Intermodal Terminal (Tennessee):** Funded in part through a \$52.5 million TIGER grant, the Memphis Intermodal Terminal opened in 2012.
- **Birmingham Intermodal Terminal (Alabama):** Located on a 316-acre site in McCalla, Alabama, the \$97.5 million facility was also sponsored with federal public funds of \$52.5 million and opened 2012.
- **Elkton Siding (Virginia):** NS added a 10,000-foot siding on the H line south of Front Royal, allowing passing capacity for longer intermodal trains on the single track mainline between Harrisburg, PA and Roanoke, VA.

The Heartland Corridor was announced in 2007 as a public private partnership between Norfolk Southern Railway (NS), the Federal Highway Administration, and the states of Virginia, West Virginia, and Ohio. The objective of the partnership was to open a core route on the NS rail network between Norfolk, VA and Columbus, OH to double stack container operations. The effort required clearing 28 tunnels and 24 overhead obstacles at a cost of \$191 million, with the federal government contributing \$111 million. Other elements included the new Rickenbacker Intermodal terminal in Columbus, OH (\$70 million), and an additional extension to Cincinnati (\$6.1 million). The states of Virginia and Ohio contributed \$9 million and \$836,000 respectively, and the Ohio-Kentucky-Indiana Regional Council added an extra \$2.5 million. The combined effort totaled \$391 million, with Norfolk Southern covering the balance of the investment not sponsored by public partners. Heartland opened for the first intermodal double-stack trains in 2010, reduced mileage for intermodal trains on this segment by 250 miles and compressed the transit time from four to three days.

Relevant to both Crescent Corridor and Heartland Corridor, **the Randolph Street Interlocking** runs through downtown Roanoke, Virginia and serves as an integral junction on Norfolk Southern's rail network connecting multiple mainlines in one location. The investment made by Norfolk Southern in partnership with the commonwealth of Virginia re-engineered the track alignment so that trains could proceed through the junction at 30 mph instead of 15 mph. This greatly improved network fluidity and performance because trains could now clear the junction faster as well as transition between lines with less interference.



### **NATIONAL GATEWAY (CSX)**

Launched by CSX in 2008, the \$850 million National Gateway initiative aimed to improve the efficiency, reliability and competitive advantage of intermodal rail traffic by increasing the use of double-stack intermodal trains and linking mid-Atlantic ports with midwestern consumption markets. CSX's analysis states that every dollar of public money invested in National Gateway yields \$36 in public benefits, or the equivalent of \$10 billion over the first 30 years of operations. National Gateway, while broader in scope than MAROps, aligned with similar objectives and goals. In addition, National Gateway included some of the same projects such as the Virginia Avenue Tunnel, Howard Street Tunnel, and various capacity projects in Virginia on the same lines as the MAROps CSX corridor.

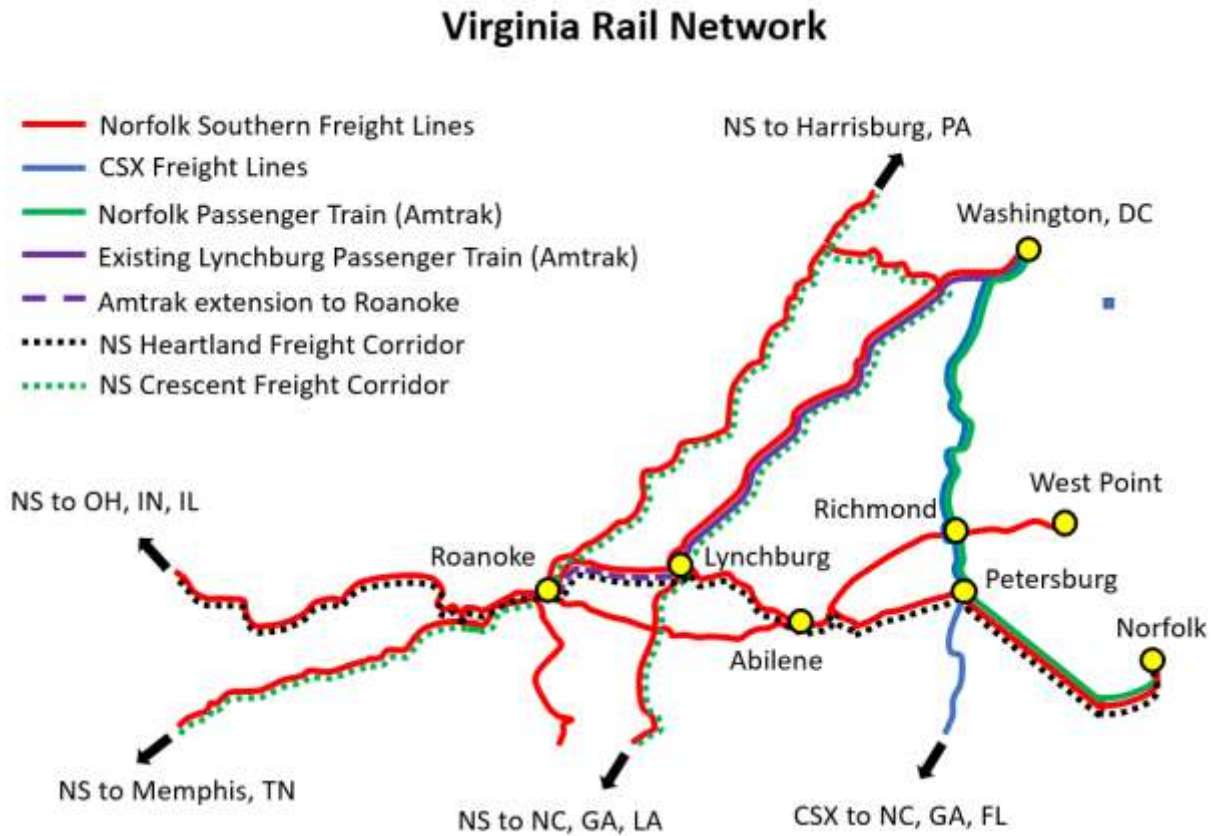
### **VIRGINIA PASSENGER RAIL EXPANSION PROJECTS**

The Commonwealth of Virginia's aggressive efforts to expand passenger rail have played a vital role in moving closer toward the objectives and goals contemplated in MAROps studies. Virginia's Department of Rail and Public Transportation (DRPT) directed, negotiated and launched multiple passenger train expansion projects across the commonwealth that not only enhanced passenger corridors, but also delivered deep benefits to the rail freight network and class I partners. In many cases, the projects proposed for the expansion of passenger trains were either direct derivatives with closely related elements envisioned in MAROps or significantly augmented the eastern corridor rail network as envisioned by MAROps. While delineating Virginia's full passenger rail program for the last twenty years is beyond the scope of this exercise, it is worthwhile to call out the Norfolk Passenger Train and Roanoke Passenger train as two examples that through trust, partnership, and collaboration among partners delivered results for public and private sector in a relatively short timeframe.

- **Norfolk Passenger Train.** Virginia's Department of Rail and Public Transportation (DRPT) ratified an agreement between Norfolk Southern and CSX in December of 2010 to ultimately extend three Amtrak frequencies from Richmond, VA to Norfolk, VA. Norfolk had not seen a passenger train in over 30 years, and the agreement called to expedite inauguration of the first frequency in two years by December 2012. The \$115 million invested into the rail network to get the first frequency running included a new connection track between CSX and Norfolk Southern, upgrading signals and speeds on 70 miles of NS mainline, rebuilding a state highway bridge, adding extended sidings in the NS Yard in Norfolk, new signaled siding at New Bohemia, train turning Wye in Norfolk, and for Amtrak a station and maintenance facility in Norfolk. These investments dramatically improved the line not only for passenger service, but also for intermodal, coal, and general merchandise trains serving major assets in Virginia including the Norfolk International Terminal and Lambert's Point Coal docks. These investments were also on the NS Heartland Corridor. Norfolk received its first inaugural passenger train on December 12, 2012, less than two years from the signing of the original agreement between DRPT and Norfolk Southern. See Figure 6.



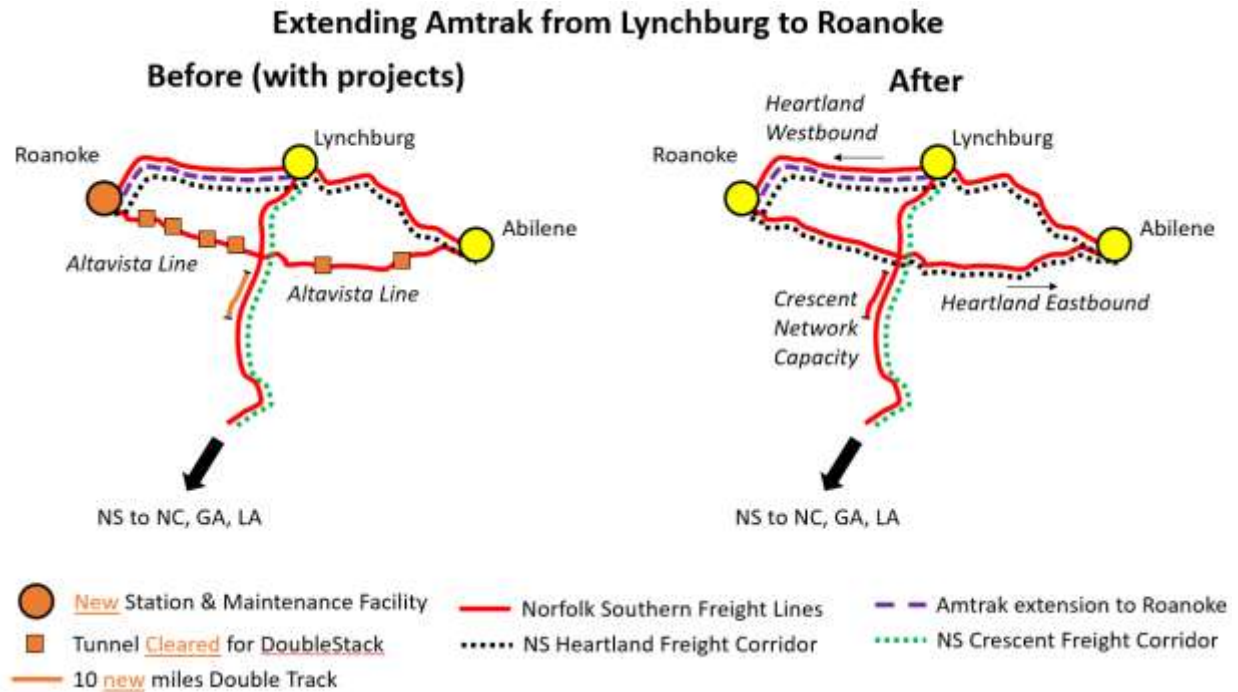
FIGURE 6. VIRGINIA FREIGHT AND PASSENGER NETWORK



- **Roanoke Passenger Train.** This project built on the earlier success of extending Amtrak from Richmond to Lynchburg, VA by further extending one daily round trip frequency further south to Roanoke, VA. The pattern of negotiation and trust established between DRPT and NS continued with a unique arrangement in which infrastructure built as part of the passenger train extension agreement was not located on the route the passenger train traversed but rather was made elsewhere on the NS network in Virginia. In consideration for NS allowing Amtrak to extend to Roanoke, VA, six tunnels were cleared on NS’s Altavista (former Virginian) line to allow for double-stack operation, allowing for the Heartland Corridor double-stack trains to exercise directional running, whereby double-stack trains headed eastbound would traverse the AltaVista Line and double-stack trains headed westbound with use the northern, former Norfolk and Western (N&W) line. Heretofore, all double-stack trains in both directions were required to operate on the single track (with sidings) N&W line, which impeded operations due to meets and passes between trains running in opposite directions. In addition, ten miles of double track were added to the NS Southern Main line, which is part of the Crescent Corridor. Passenger specific projects included a new station in Roanoke to the south of the Randolph Street Interlocking, as well as a new maintenance facility located under Highway 581. See Figure 7.



FIGURE 7. NS CORRIDOR BENEFITS FROM ROANOKE PASSENGER TRAIN



## Lessons Learned

Several lessons can be drawn from the MAROps experience.

- First, the core value of MAROps was, and remains, that the whole is greater than the sum of its parts. Like a pipeline carrying water, flows over the national freight rail network are constrained by their narrowest “pinch points.” Spending millions or billions to fix one pinch point, and leaving another just upstream unaddressed, does not benefit the system. The highest and greatest value of the collaborative approach was a shared understanding among all participants and investment partners that improvements made, bottlenecks addressed, and capacity added in one state would be matched with corresponding improvements in other states – ensuring that the intended value of each state and partner investment would be realized in practice.
- Second, the MAROps initiative was strongly supported by the Coalition, its railroad partners, and its state freight leaders. The initial effort in 2002 was completed then revisited in 2009 to reflect evolving needs and expanded investment priorities. Without leadership and commitment, the effort might have produced a long list of good ideas but no action; with leadership and commitment the product was translated into delivered projects.
- Third, different partners implemented projects in different ways. Some projects were completed independently by the railroads; some were partnerships between railroads and their host states and/or others; and many involved public financing. But because each party was working from a defined project set, the efforts remained coordinated.



- Fourth, the project set was dynamic rather than static. Not all the MAROPs projects were advanced as planned and some were not advanced at all; and some other projects that were not envisioned under MAROPs were implemented to achieve similar fluidity goals.
- Fifth, the primary deficiency of the MAROPs effort was the lack of tracking mechanisms. The work focused on identifying shared interest projects and securing buy-in from all partners. There was no effort to establish performance metrics and baseline transportation performance data, no point of contact to track the status of projects and/or changes in projects, and no way to measure the benefit-cost outcomes of specific projects. Having these systems in place at the outset would have made it much easier to tell the MAROPs story at the outset, during implementation, and now as it nears completion.
- Finally—and perhaps most importantly—MAROPs proved it is possible and beneficial to plan for freight rail improvements across large geographies, long timeframes, and different organizational responsibilities and interests, in a coordinated manner, given adequate support and committed champions and partners. From its inception in 2002, MAROPs offered a template for collaboration, which was subsequently followed and expanded in two other freight rail initiatives—the Northeast Rail Operations Study (NEROps) and the Chicago Region Environmental and Transportation Efficiency Program (CREATE)—which are discussed in the following sections of this report.



# Case Study #2: Northeast Rail Operations (NEROps) Program

## Background

The Northeast Rail Operations (NEROps) program was a two-phased study of the condition and needs of the rail transportation network in New York State and New England, completed between 2007-2009. The study identified priority corridors and projects that could help to make the region's rail network function as a more cohesive system.

TABLE 2. NEROPS OVERVIEW

NEROps Overview
<p>Case Study illustrates multistate, public-private collaboration to identify key trends, inventory bottlenecks, and identify investments across seven New England states benefiting two Class I railroads, several shortlines, and intercity and commuter railroads.</p> <ul style="list-style-type: none"><li>◆ <b>Key parties:</b> the states of New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine; AMTRAK, MTA, MBTA, CSX, Norfolk Southern, Genesee and Wyoming, Pan Am Railways, and the Coalition.</li><li>◆ <b>Benefits achieved:</b> NEROps was developed as a tool to educate policymakers and the public about the role of rail in the Northeast region, the relationships of chokepoints, investment needs, and potential benefits that cross jurisdictional boundaries, and the need to prioritize rail investments for economic competitiveness. Many of the projects identified in NEROps were implemented with public agency support, in part, due to the multi-state vision.</li><li>◆ <b>Critical success factors:</b> Collaboration between the railroads, state partners, and TETC; Clear presentation of systemwide and corridor-level needs and projects.</li><li>◆ <b>Status:</b> Many of the projects have been implemented using funds from railroads, federal grant programs, state grants and funding sources, etc., including those described in the case study narrative. Some have not advanced due to changing needs or priorities.</li><li>◆ <b>Value as a model:</b> NEROps is an excellent example of demonstrating how freight performance and needs cross jurisdictional boundaries, and how investments in one jurisdiction can unlock benefits for a multi-state corridor and an entire region.</li></ul>

## History

Phase 1 identified the major historical factors and emerging trends impacting the efficiency of the system at the time and that were expected to have lasting impact on the ability of the region's freight and passenger railroads to attract additional traffic. The accomplishments of Phase 1 included:



- Describing the various rail stakeholders in the region and how they interact at both the operational and policy levels.
- Describing the trends that have influenced how the rail system in the region has evolved and how it is operated and maintained.
- Identifying and describing physical, operational, and institutional issues, chokepoints, and constraints that, individually or collectively, impact the efficiency of the rail system in the region; and
- Providing recommendations to the Northeastern states and the Coalition for addressing freight and passenger rail issues, including developing actions to reduce or eliminate major issues, chokepoints, and constraints and describing how the Coalition could support these activities.

Phase 2 set out to identify potential projects, strategies, and initiatives that could allow the Northeastern states and the Coalition to address specific systemwide issues and chokepoints that cross jurisdictional, interest, and financial boundaries. Through interviews with the freight and passenger railroads and the Northeastern state DOTs, a comprehensive, unconstrained list of priorities and project needs were identified. The Phase 2 study consolidated and mapped the list and described at a corridor level the projects needed to optimize those corridors and thus, the entire region's network.

## **Governance and Funding**

NEROps was funded and led by the Coalition, which at the time was a partnership of state departments of transportation (DOT), regional and local transportation agencies, toll authorities, and related organizations (including law enforcement, transit, port, and rail organizations) in 16 states stretching from Maine to Florida, plus the District of Columbia, and with affiliate members in Canada. The NEROps studies were funded through the Coalition's Work Program, which in turn was funded through their transportation authorization earmark. Federal support made the Coalition's work in establishing and staffing the project, coordinating the participation of stakeholders, and managing consultant support possible.

Phase 1 engaged a steering committee consisting of several member agencies, which was chaired by a representative from New York State DOT. Phase 2 engaged each of the state DOTs individually to gather information about project priorities.

## **Program**

The NEROps Phase 1 study found that freight rail is a key component of the international supply and domestic distribution chains, providing access to international trade gateways and domestic trade corridors. The region has more intercity and commuter passenger rail service than most other parts of the country. However, it is not a single unified network.

NEROps described the region's network as a collection of sub-networks arranged according to ownership and operating rights agreements. Phase 2 therefore considered the performance and needs of the network in terms of how best to address problems and improve the operation of each

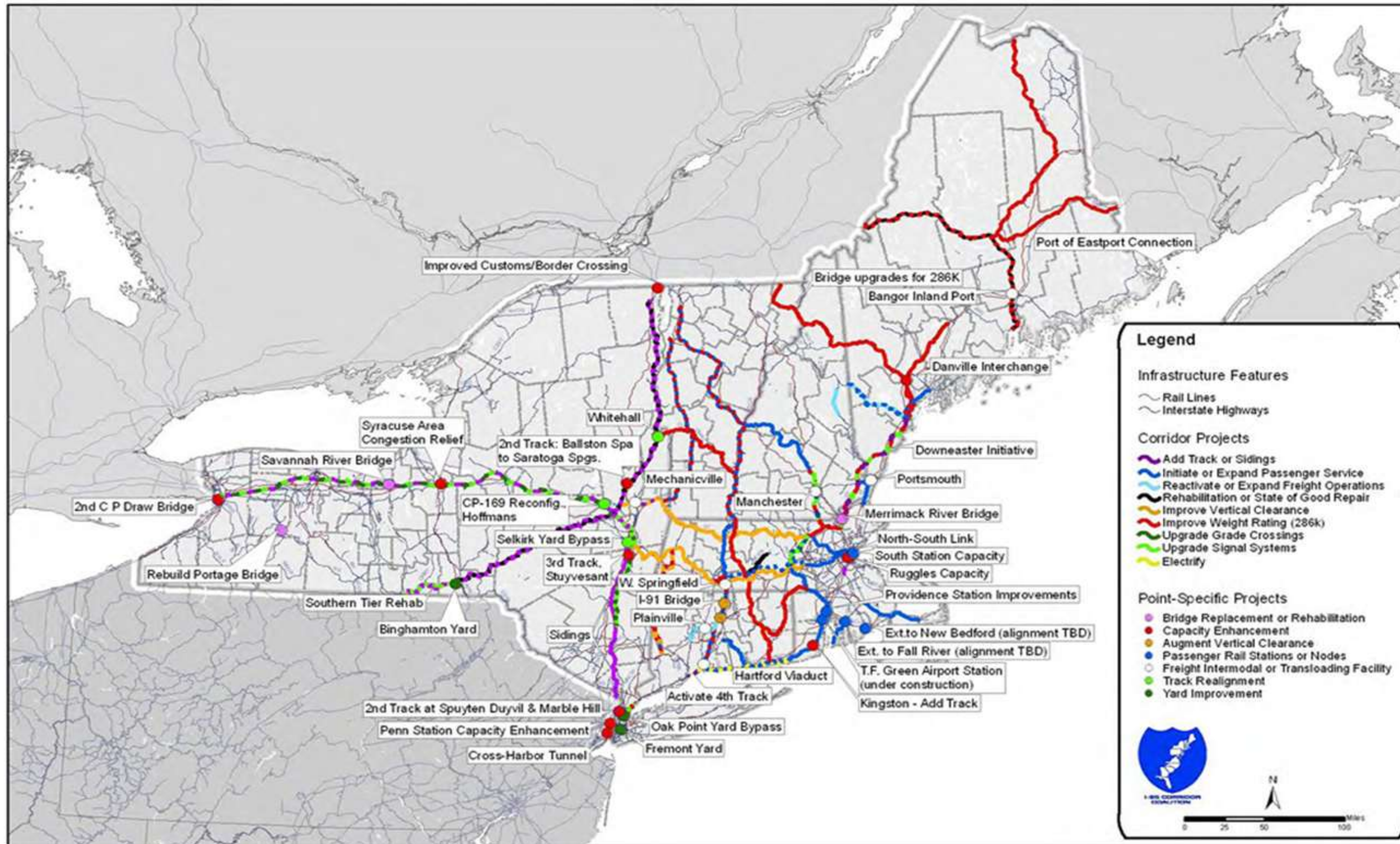


of the sub-network systems. Four such systems appear to exist in the Northeast—one that includes CSX’s Water Level Route and Worcester-Albany corridor as its core; one centered around Norfolk Southern and PanAm Southern’s Patriot Corridor and NS Upstate New York operations; Amtrak’s corridor objectives in New York and New England; and the commuter rail systems, especially expansions to MBTA’s network in New England, and various enhancements to Long Island Rail Road and Metro North in New York and Connecticut. A sub-network analysis resulted in a project list that included a combination of committed, planned, and envisioned improvements, and was not constrained by obligated or anticipated revenue streams.

Figure 8 shows the corridor projects and point-specific projects identified and mapped in Phase 2.



FIGURE 8. POTENTIAL IMPROVEMENTS IDENTIFIED IN NEROPS PHASE 2, 2009



Source: NEROPS Phase 2, 2009

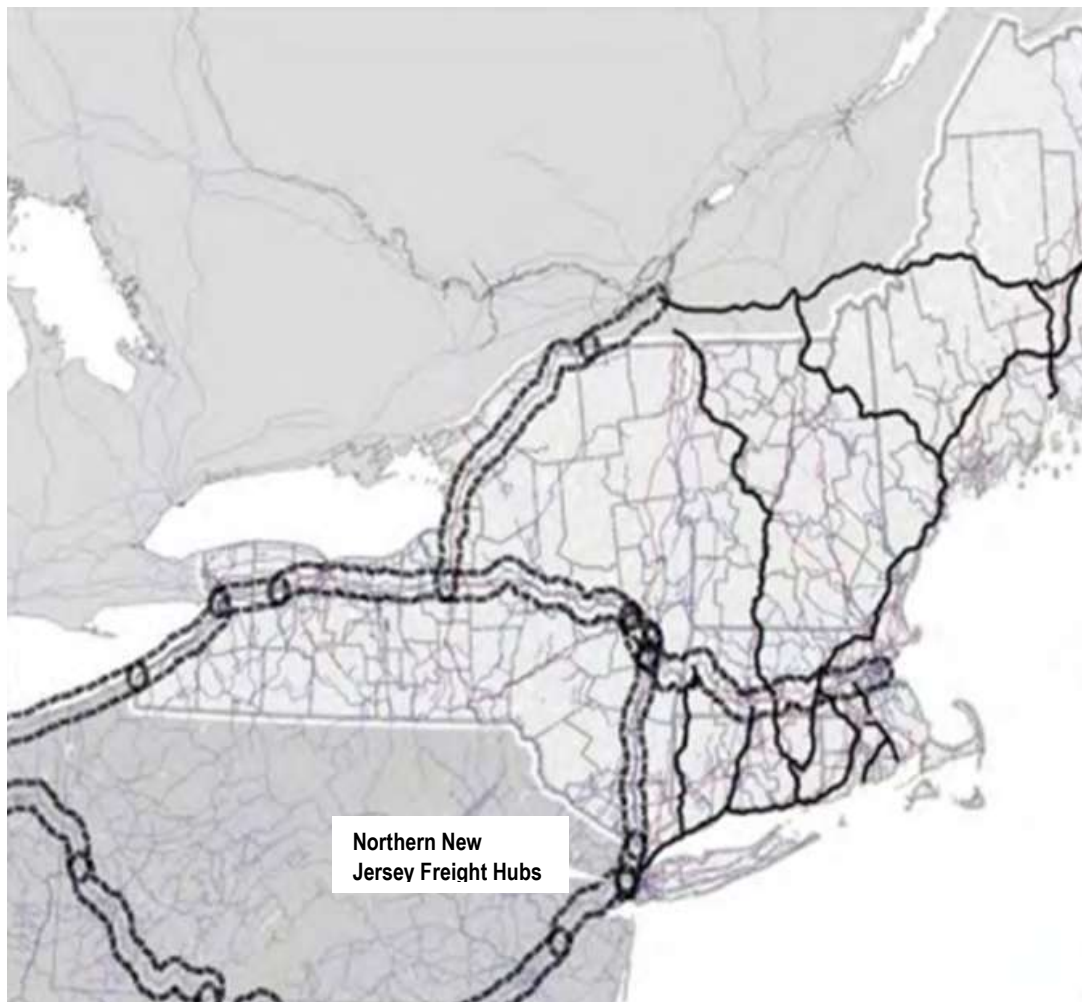


### CSX SYSTEM

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 9 shows the CSX network and CSX-accessible short line railroad lines. This is the portion of the Northeastern rail network owned, operated, or accessible via short line connection to CSX at the time of the NEROps Phase 2 study in 2009.

**FIGURE 9. CSX PRIMARY NETWORK AND ACCESSIBLE SECONDARY CORRIDORS**

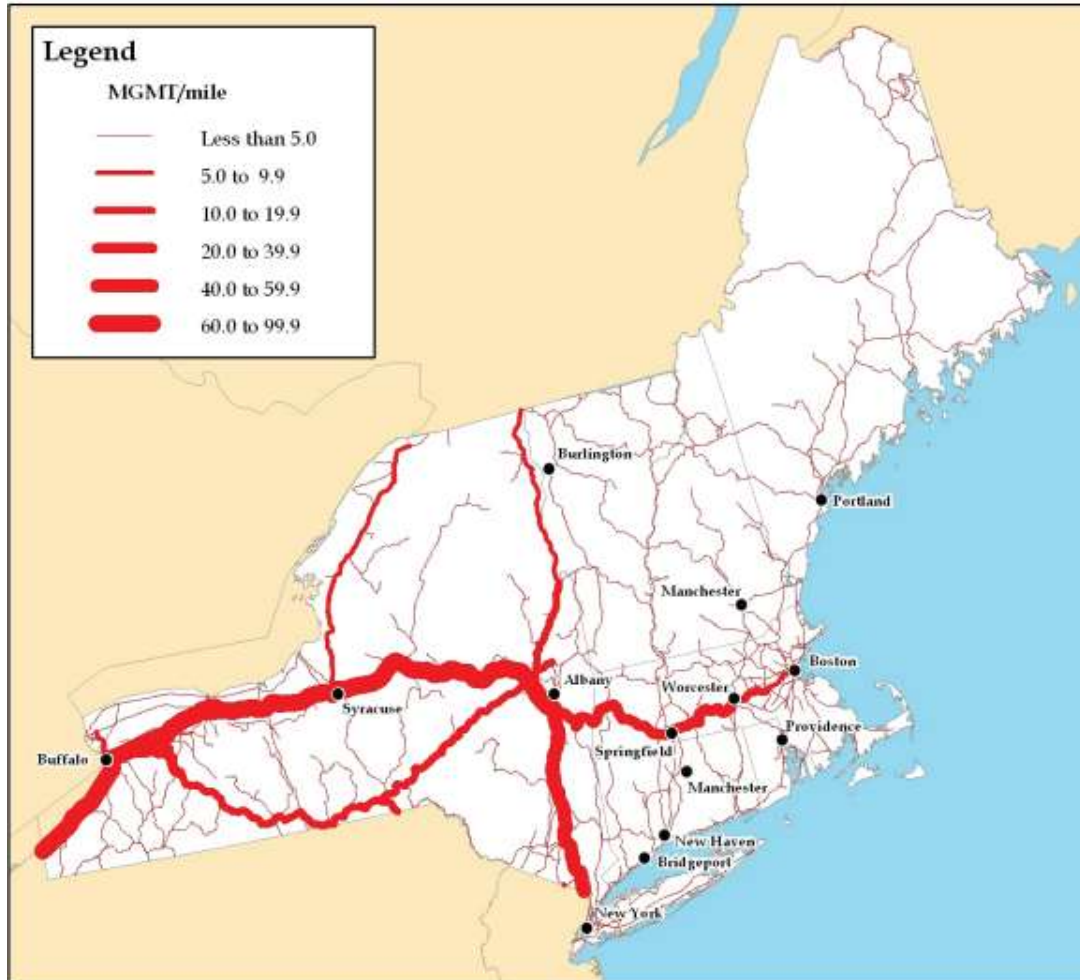


Source: NEROps Phase 2, 2009



As shown on Figure 10 from the Phase 1 study, the CSX network carried some of the greatest volumes of freight in the Northeast region.

**FIGURE 10. ANNUAL RAIL FREIGHT SHIPMENTS, NEROPS PHASE 1 (DATA YEAR UNSPECIFIED)**



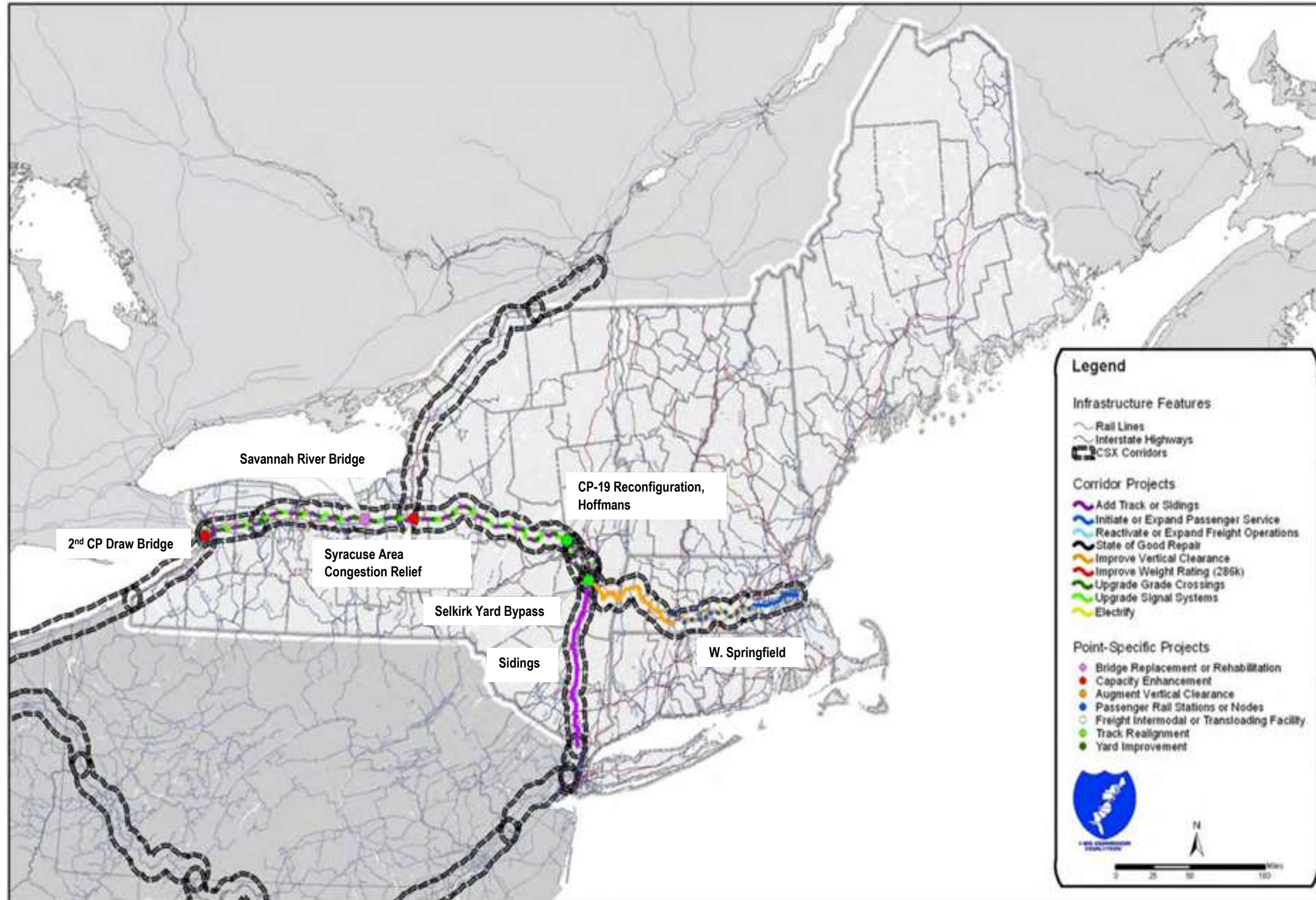
Source: NEROps Phase 1 Report, 2007

Figure 11 shows the projects identified in NEROps along the CSX primary corridors, aimed at improving the operations of the CSX portion of the network. Key objectives included:

- Establishing full double stack clearance in Massachusetts from the New York state line to Westborough on the outskirts of suburban Boston;
- Building second track and siding capacity along the River Subdivision between Selkirk and Northern New Jersey;
- Various yard, track, and bridge improvements or replacements to improve capacity and level of service; and
- Various enhancements to accommodate passenger needs on shared portions of the network, particularly in the Empire Corridor and Boston-Albany corridor.



FIGURE 11. NEROps PHASE 2 POTENTIAL IMPROVEMENTS ON CSX CORRIDORS



Source: NEROps Phase 2, 2009



NEROPS results for the CSX system included:

- **Establishing full double stack clearance in Massachusetts** from the New York state line to Westborough on the outskirts of suburban Boston. In January 2013, CSX opened New England’s first double-stack cleared route between the New York state line and Worcester. The project involved addressing 31 clearance constraints to achieve a corridor-long clearance of 21 feet. This project allows double-stack containers to move to Worcester without the need to fillet cars at Syracuse. The project was a partnership between CSX and Massachusetts, involving the state’s acquisition of CSX’s rail lines in the Boston area for the benefit of increased commuter rail service. In that agreement, the Commonwealth paid \$100 million to CSX in exchange for 45 miles of commuter lines.<sup>1</sup>
- **Building second track and siding capacity along the River Subdivision between Selkirk and Northern New Jersey.** Between 2013 and 2015, CSX invested \$26 million to add 18 miles of second track at key locations along the River Line between the Capital Region and northern New Jersey. Component projects included: 5 miles between Tomkins Cove and Haverstraw in Rockland County, connecting two existing sidings; 8 miles of second track added in and around Coxsackie; 5 more miles constructed near Catskill; and various yard, track, and bridge improvements or replacements to improve capacity and level of service.
- **Expanding the intermodal terminal in Worcester** from 23 acres to 51 acres and developing a new TransFlo terminal in Westborough and a switching yard in Framingham.
- **Various enhancements to accommodate passenger** needs on shared portions of the network, particularly in the Empire Corridor and Boston-Albany corridor.

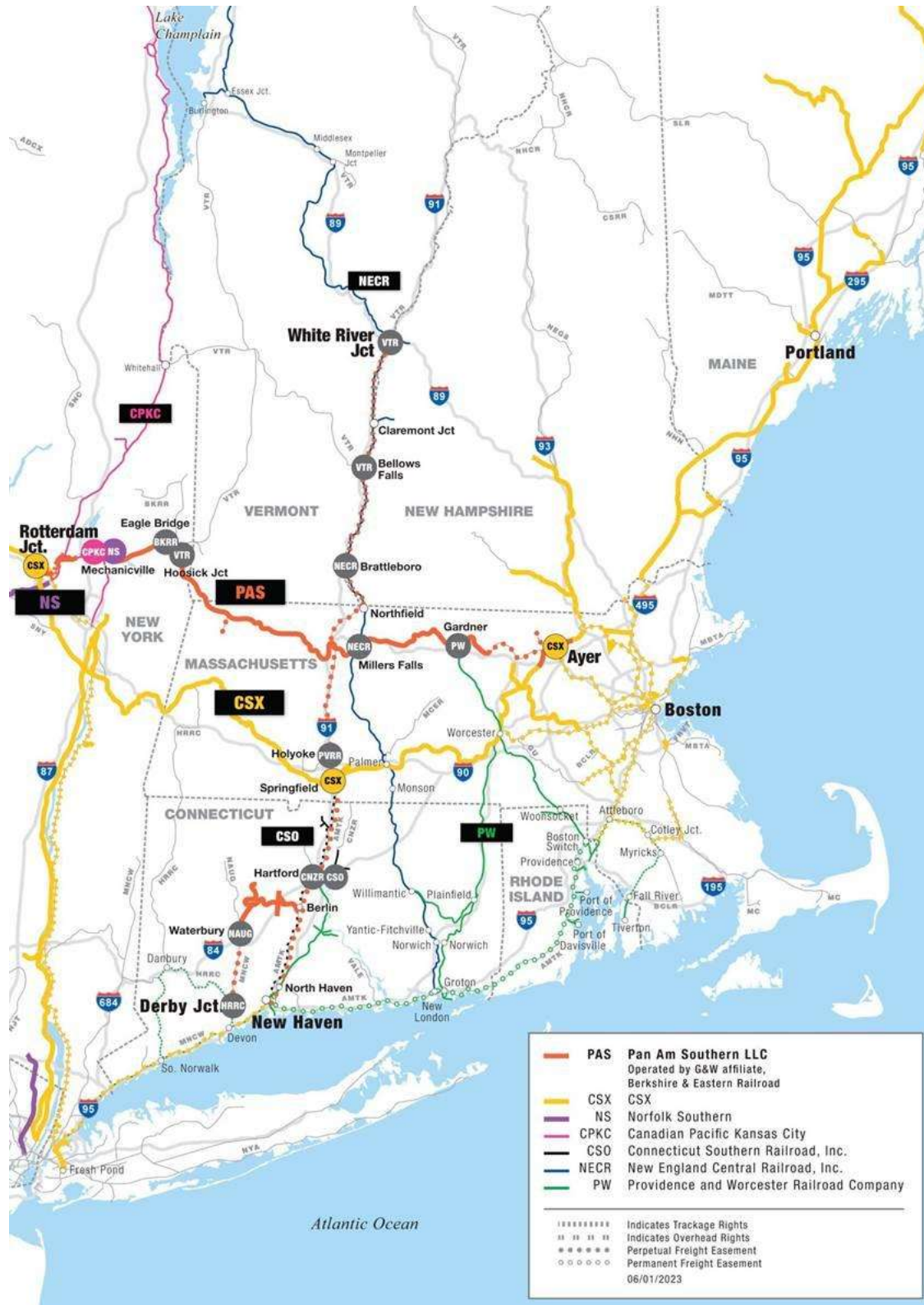
#### **CSX PAN AM ACQUISITION, 2022**

In 2022, CSX acquired Pan Am for \$600 million. CSX, now referring to the Pan Am system as the CSX New England Zone, pledged \$100 million in investments to upgrade the Pan Am and improve track speeds between Worcester and Mattawamkeag, Maine from 10 mph to 40 mph.

Maine DOT received a \$17.5 million CRISI grant in 2023 to help fund CSX’s improvements to 47 crossings, 25 mainline switch replacements, extend the signal system by 16 miles, and other improvements. In addition, Maine DOT received a \$55 million CRISI grant in 2024, in partnership with Eastern Maine Railway and One North, to replace track and signal equipment on 140 miles of track in northern and eastern Maine. These upgrades aim to strengthen ties to Class I networks, including with CSX at Mattawamkeag.<sup>2</sup>



FIGURE 12. KEY NEW ENGLAND LINES AFTER CSX'S ACQUISITION OF PAN AM



Source: Pan Am Southern website



### **NORFOLK SOUTHERN / PAN AM SOUTHERN / CANADIAN PACIFIC**

Norfolk Southern's primary gateway into the Northeast Region is via the Delaware and Hudson line. This line was, at the time of the NEROps study, owned by Canadian Pacific (CP), now Canadian Pacific Kansas City (CPKC). CP sold the line to NS in 2015. The line connects to NS's 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. From Binghamton, the D&H Line continues to the Capital District of New York. CPKC's Canadian Subdivision continues north toward Montreal, where it has connections to the Canadian National rail system. NS trackage rights along this line extend to Rouses Point, NY.

East of the Capital District, NS acquired trackage rights through an agreement with Pan Am Railways in 2009. Known as the Pan Am Southern Patriot Corridor between Mechanicville, New York and Ayer, Massachusetts, NS and Pan Am marketed quick, direct access into eastern Massachusetts. Beyond Ayer, NS has access along Pan Am Railways into southeastern Maine.

As noted in the CSX discussion above, CSX acquired Pan Am Railways in 2022. The STB approved Genesee and Wyoming as a neutral operator of the Pan Am Southern, and G&W's affiliate Berkshire and Eastern Railroad is operating that service. NS is in the process of securing a trackage rights agreement with CSX and Providence and Worcester to dispatch intermodal and auto carriers via those lines to Ayer, which was expected in September 2025. NS will benefit from faster transit times on the Worcester route compared to the Hoosac Tunnel route. This suggests that enhancements to the former Pan Am Southern route, including to the Hoosac Tunnel's vertical clearance, are unlikely to proceed anytime soon.<sup>3</sup> The route between Worcester and Ayer is not cleared for double-stack, so NS will have to continue operating single-stack intermodal service to Ayer until (and if) CSX addresses clearances.<sup>4</sup>

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 13 shows the NS/PAS/CP network and accessible short line railroad lines. This is the portion of the Northeastern rail network owned, operated, or accessible via short line connection to NS/PAS/CP at the time of the NEROps Phase 2 study in 2009.



FIGURE 13. NS/PAS/CP PRIMARY NETWORK AND ACCESSIBLE SECONDARY CORRIDORS

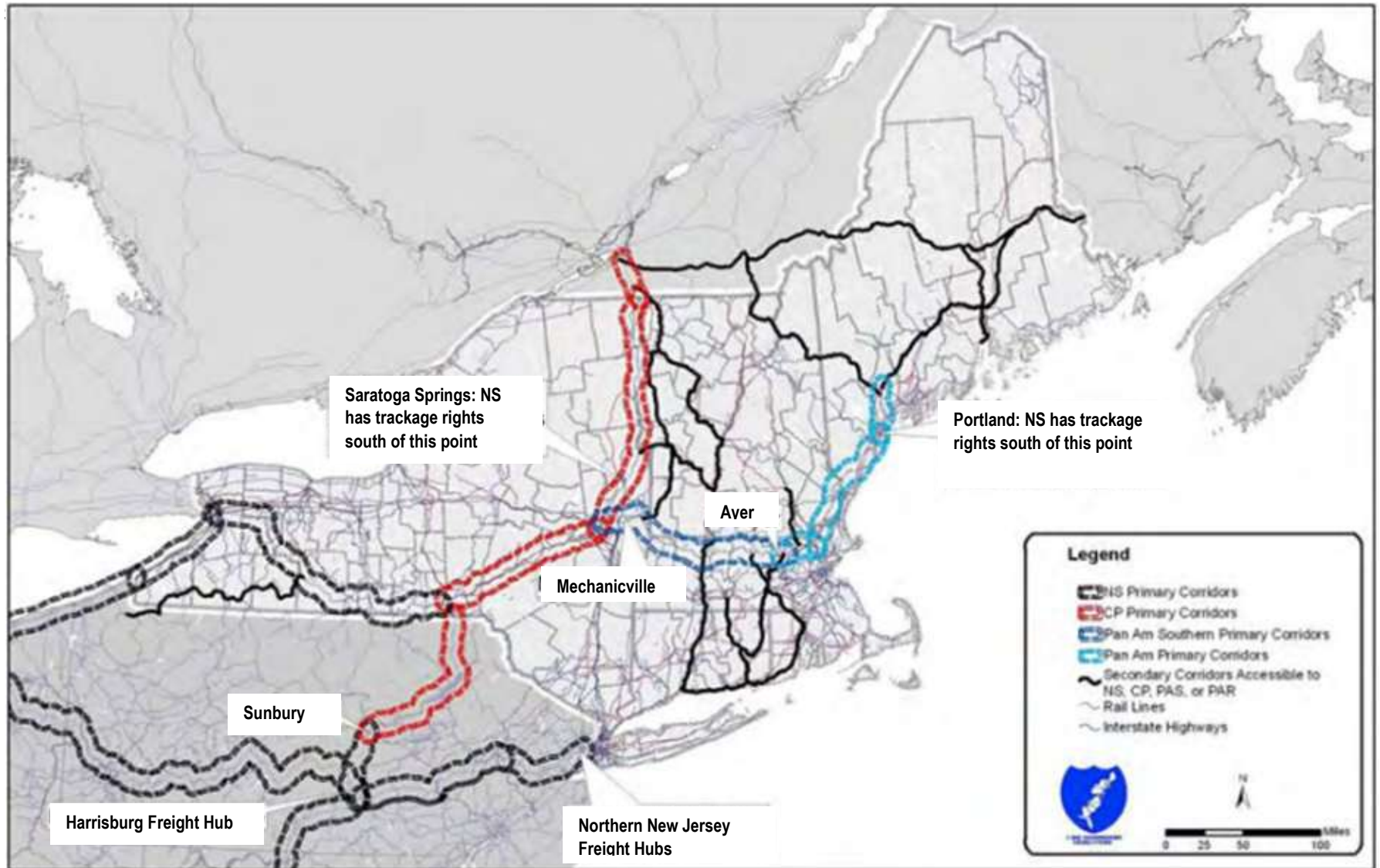
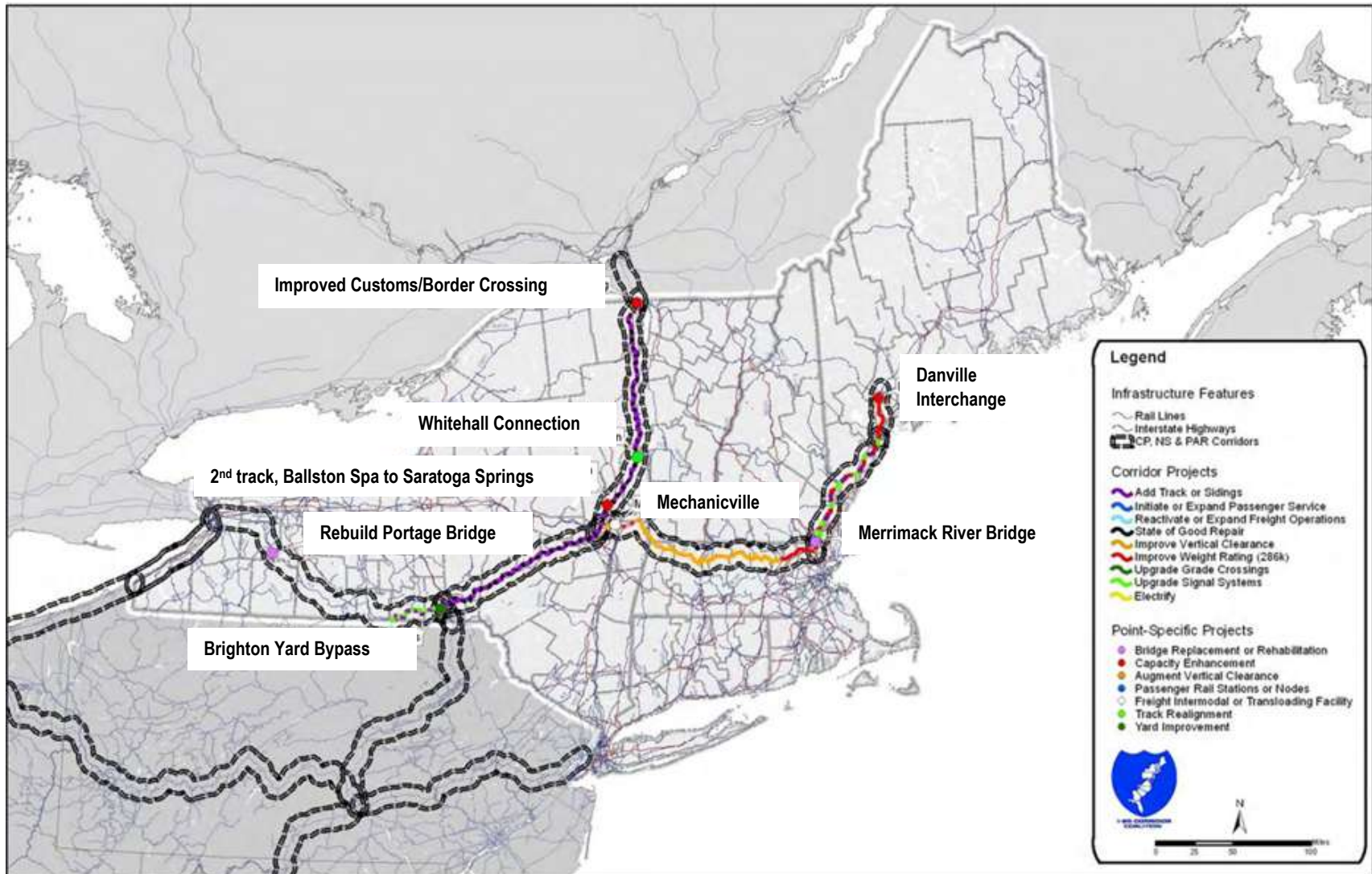




FIGURE 14. NEROPS PHASE 2 POTENTIAL IMPROVEMENTS ON NS/PAS/CP CORRIDORS



Source: NEROps Phase 2, 2009



NEROPS results for the NS/PAS/CP system included:

- **Establishing full domestic double stack clearance between the NS intermodal terminal in Mechanicville and Ayer, Massachusetts.** NEROps was completed as planning and development of NS's intermodal and automotive terminal in Mechanicville were underway. The intermodal terminal opened in 2012, and the auto terminal opened in 2014. As noted above, the Hoosac Tunnel is the primary clearance constraint on the Pan Am Southern line between New York State and Ayer. With the Pan Am's acquisition by CSX, and NS's intention to use the CSX route via Worcester to access Ayer, it is possible double stack clearance on the Pan Am Southern route may not be necessary for the foreseeable future. There are, however, some clearance constraints between Worcester and Ayer that CSX would have to address in order to establish a double-stack clear route to Ayer.<sup>5</sup>
- **Adding second mainline track and sidings along portions of the CP route between the Canadian border and Binghamton, New York.** Since NS acquired the 282-mile-long D&H Line from CP in 2015 for \$214.5 million, investments have been made to achieve and maintain a state of good repair and address safety needs. NS installed new wood ties and resurfaced nearly 100 miles of track in the first year of ownership of the line. Currently, additional main line and siding track are not considered necessary priorities.
- **Addressing capacity constraints and replacing the Letchworth Gorge bridge on the Southern Tier Line.** Key to upgrading the Southern Tier Line to 286,000-pound capacity was the replacement of the Portageville Bridge. Built in 1875 by the Erie Railroad, the 819-foot-long, 234-foot-high iron bridge, consisting of 13 open spans, crossed the Genesee River at Letchworth Gorge, known as the "Grand Canyon of the East." The NEROps study identified Portageville Bridge as the primary obstacle to achieving 286k capacity on the Southern Tier Line (capacity was 273k), and the 10-mph speed limit on the single-track bridge created a bottleneck. Norfolk Southern sought assistance from state and federal sources, including several grant applications. The \$72 million project was ultimately funded using \$2.5 million from New York State DOT's PFRAP program, \$10 million in Federal CMAQ funds, and the remaining \$59.5 million from Norfolk Southern. The new Genesee Arch Bridge was completed in December 2017.<sup>6</sup> This was the first new arch bridge built for a railroad since the 1940s. The steel structure carries a single track that provides 286k capacity and allows operating speeds of 30 mph, improving the efficiency of the line in terms of railcar loading and transit speed.<sup>7</sup>
- **Addressing weight limitations on the PAR network** between Ayer and Danville, Maine. Through the Maine DOT CRISI grants and CSX-funded improvements described in the CSX section above, weight limitations and track speeds are being addressed on the PAR network north of Ayer.



FIGURE 15. NS LOCOMOTIVES IN MECHANICVILLE INTERMODAL TERMINAL



Source: Cambridge Systematics

A 2023 bridge survey conducted by the City of Binghamton found several bridges along Norfolk Southern's Southern Tier Line and the New York Susquehanna and Western were in poor or severe condition. Since then, NS has rehabilitated or replaced four bridges in the city, the last being completed in September 2025. NYS&W repaired or replaced three bridges.<sup>8</sup> These projects addressed safety and state of good repair needs on the corridor.

NS received \$5 million from New York State's PFRAP grant program in 2022 to make improvements to and reactivate the 15-mile Voorheesville Line.<sup>9</sup> The project includes full replacement of jointed rail with continuously-welded rail, turnout replacement, rebuilding of the roadbed and track section, an alignment shift in order to ease a curve, tie replacements, and other improvements to support 25 mph operation. In addition, the village of Voorheesville and Albany County are in the process of securing \$340,000 to install four-quadrant gate system that would allow for a quiet zone to be established in the village. Use of the Voorheesville Line will allow NS to connect from the D&H Line to CSX's Worcester Line.<sup>10</sup>

## Lessons Learned

Key take-aways from the NEROps experience include:

- The NEROps program effectively coordinated the delivery of improvements in and/or benefiting seven northeastern states, providing double-stack clearance, intermodal terminal capacity, track capacity, bridge replacement, weight constraint elimination, and passenger service enhancements.
- Coordination was particularly important in this case due to the historically fragmented nature of the Northeastern US rail system and its ongoing transformation through acquisitions and



improvements. Collaboration among partners ensured the alignment of different projects and avoided redundant or non-productive project concepts. The Coalition played a critical role in establishing, managing, and driving the process to a successful outcome.

- The vision developed during the NEROps process was one rooted in each of the major freight and passenger railroads achieving their respective goals to retain and expand service in the region. These service expansions would advance public sector goals as well, including truck-to-rail and automobile-to-rail trip diversions and associated transportation system, economic, environmental, and community impact benefits.
- In the years since 2009, the railroads made steps toward implementing their respective strategies. Of course, some of the conditions and institutional relationships shifted in that time, and as a result, some projects identified in NEROps were deemphasized, and some projects that were not envisioned in NEROps were identified and implemented. This is like the MAROps experience. NS and CSX have made significant investments and commitments to improve their ability to use the Worcester line to access their respective Massachusetts terminals and other portions of the New England network. These investments will provide an improved route, reduced travel times, and more efficient operations for CSX, NS, and the shortlines that connect to these railroads in New England.
- Implementing these improvements has required significant investments on the part of the railroads, but they have also leveraged assistance from public agencies, including use of Federal grant programs such as CRISI, state grant programs such as New York State's PFRAP, and asset transfers such as those made between CSX and the Commonwealth of Massachusetts. Federal and state program funding has required clear demonstration of benefits and understanding how a single project fits within a larger program can help funding applicants make their best case for public investment.
- Like MAROps, an after-the-fact accounting of project outcomes is challenging because no performance measures or formal project tracking and reporting systems were put in place. Different stakeholders have implemented projects, individually or together, at various times. There have been efforts to estimate before and after effects of projects in cases where that information is a condition of grant funding, but this information is not publicly available, and there is no formal program-level evaluation. This makes it more difficult to argue the specific benefit of NEROps, but also points to an opportunity to improve the process for multi-party collaborative programs through careful and transparent record-keeping, like the CREATE project discussed in the next section.

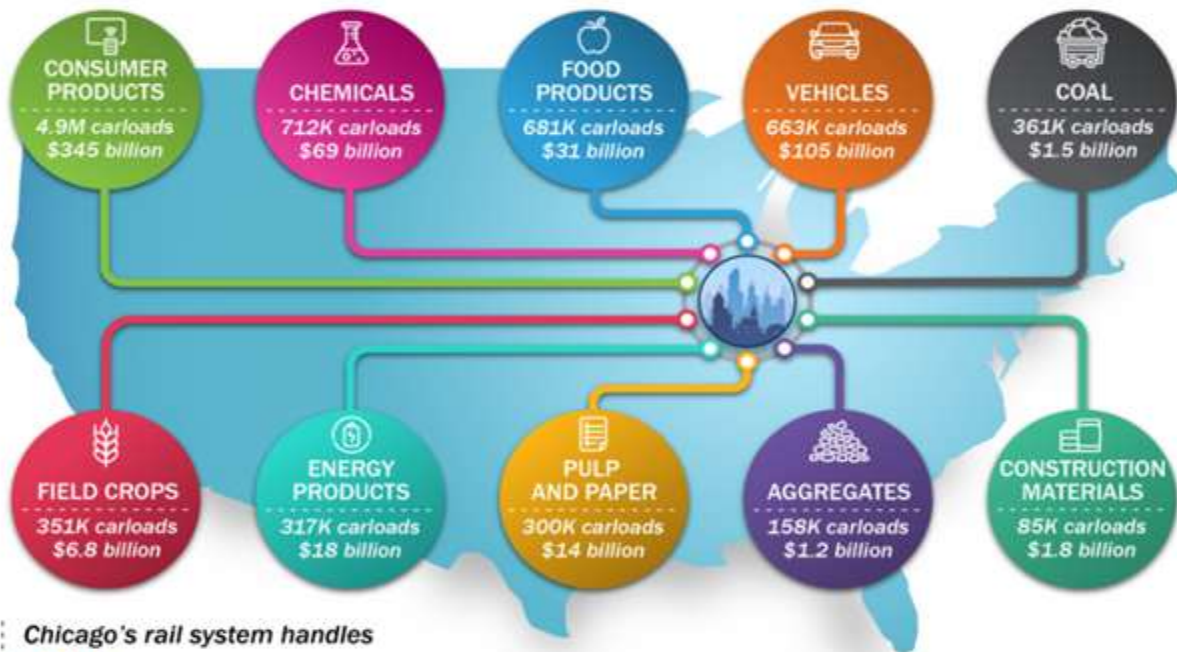


# Case Study #3: Chicago Region Environmental and Transportation Efficiency Program (CREATE)

## Overview

Since the introduction of railroads as transportation mode, Chicago has been the largest Midwest interchange between eastern and western carriers. Even as Class I Railroads consolidated from over 100 in the first half of the 20th century to only seven by the beginning of the 21st century, Chicago remained as the central interchange and continues to function as the nation's rail hub. One in every four U.S. freight trains, or approximately 500 freight trains pass through Chicago every day. At the same time, the freight services comingle and intersect with 800 passenger trains operated by Amtrak and Metra (Figure 16).

FIGURE 16. CHICAGO REGION RAIL FREIGHT



Chicago's rail system handles  
**47% OF INTERMODAL RAIL CONTAINERS**  
& **29% OF RAIL CARS IN THE U.S.**  
**\$652 BILLION** WORTH OF GOODS EACH YEAR

Source: Annual Carloads and Value, 2019 STB Confidential Waybill Sample.

Source: <https://www.createprogram.org/>



The Chicago Region Environmental and Transportation Efficiency Program (CREATE), is a public private partnership focused on improving the way passengers and freight move through the region of Chicago, where all Class I freight railroads converge to interchange traffic amidst Amtrak and Metra Commuter passenger operations.

TABLE 3. CREATE OVERVIEW

CREATE Overview
<p>Case Study illustrates a sustained, complex, multi-party program to deliver freight and passenger rail projects in the nation’s most significantly bottlenecked region, with an outstanding degree of public communication and transparency about each project and the overall program.</p> <ul style="list-style-type: none"><li>◆ <b>Key parties:</b> City of Chicago, Cook County, State of Illinois; USDOT; Amtrak and METRA; and eight freight railroads</li><li>◆ <b>Benefits achieved:</b> Over the past 23 years, passenger train delays reduced by over 1.3 million passenger hours annually; 2,800 metric tons/year avoided emissions from idling vehicles; 18,500 truck trips per day avoided; 92,000 hours of truck delay and 230,000 hours of motorist and bus passenger delay avoided; \$31.5 billion in economic benefits and approximately 44,000 jobs created</li><li>◆ <b>Critical success factors:</b> Clearly defined organizational structure and mission; clear communication of the overall program and status of projects within the program; overarching public and private interest in addressing the underlying Chicago bottleneck in a systematic way</li><li>◆ <b>Status:</b> CREATE includes 70 projects, of which 35 are completed and 20 are in the engineering design, environmental review, or construction stages.</li><li>◆ <b>Value as a model:</b> CREATE offers a strong template for multi-state and multi-party project delivery. Its key lessons about how to establish leadership structure, operating agreements, project tracking mechanisms, and program delivery should, given appropriate effort and commitment, be repeatable in other geographies and contexts, and promise similarly successful outcomes.</li></ul>

## History

In early 1999, a major blizzard in Chicago caused severe rail service disruptions, exposing critical inefficiencies in the nation’s busiest rail hub and resulting in significant delays and economic losses. In response, the Association of American Railroads (AAR) formed the Chicago Planning Group (CPG) to identify operational challenges and improve coordination through the Chicago Transportation Coordination Office. Recognizing the urgency, the federal Surface Transportation Board (STB) convened a task force in the early 2000s, including private railroads, the State of Illinois, and the City of Chicago, to collaboratively develop solutions for the region’s rail capacity constraints. This effort led to the creation of the CREATE Program.

The concept of CREATE was spearheaded by leaders from the remaining consolidated Class I railroads, with decades of operations experience, coming together to discuss bottlenecks and how each railroad has interdependencies with the others converging in Chicago. In short, if one



railroad's operations were suffering, it was not uncommon for all the railroads to experience an impact. These discussions evolved into a portfolio of infrastructure projects designed to relieve key operational pain points and help expedite the entire flow of freight and passenger rail traffic through Chicago across all carriers.

The parties entered a Joint Statement of Understanding (JSOU) in 2003 to restructure, modernize and expand the freight and passenger rail facilities and highway grade separations in the Chicago metropolitan area while reducing the environmental and social impacts of rail operations on the public. The JSOU served as the initial framework agreement among stakeholders, outlining shared objectives for securing project funding and guide collaboration. While it reflected the parties' mutual intent, it was not legally binding. The stakeholders agreed that JSOU's provisions would only become enforceable through mutually acceptable definitive agreements—formal, detailed contracts specifying commitments, timelines, and governance arrangements.

An amendment was signed in 2004, one year after the original agreement, to:

- Introduce binding commitments related to securing additional funding beyond the railroads' own financial contributions.
- Make execution of definitive agreements contingent upon securing this funding under terms acceptable to the participating railroads.
- Extend the timeframe for funding negotiations and maintain the JSOU in effect through a new deadline to allow continued pursuit of funds.

Over the following 14 years, three additional amendments were signed to:

- Clarify governance arrangements, operational responsibilities, and project scopes based on evolving stakeholder needs and progress.
- Incorporate adjustments to financial commitments and timelines as project phases advanced.
- Strengthen mechanisms for dispute resolution and performance tracking.

Collectively, these amendments transformed the JSOU from a preliminary cooperation framework into a formalized agreement with enforceable financial and operational commitments, ensuring the CREATE Program's sustained progress and stakeholder accountability. The current participation of CREATE is displayed in Figure 17.

Although it is not a formal partner, the Association of American Railroads plays an important part in this process, helping facilitate and coordinate the activities and inputs of its member railroads, and by supporting industry advocacy and funding initiatives.



FIGURE 17. CREATE SIGNATORY PARTNERS



Chicago Department of Transportation



Cook County Department of Transportation and Highways



Illinois Department of Transportation



U.S. Department of Transportation

(Federal Highway Administration and Federal Railroad Administration)

The Association of American Railroads represents:



Amtrak (National Railroad Passenger Corporation)



The Belt Railway Company of Chicago



BNSF Railway Company



CN



CPKC



CSX Transportation, Inc.



Indiana Harbor Belt Railroad Company



Metra (Northeast Illinois Regional Commuter Railroad Corporation)



Norfolk Southern Railway Company



Union Pacific Railroad Company

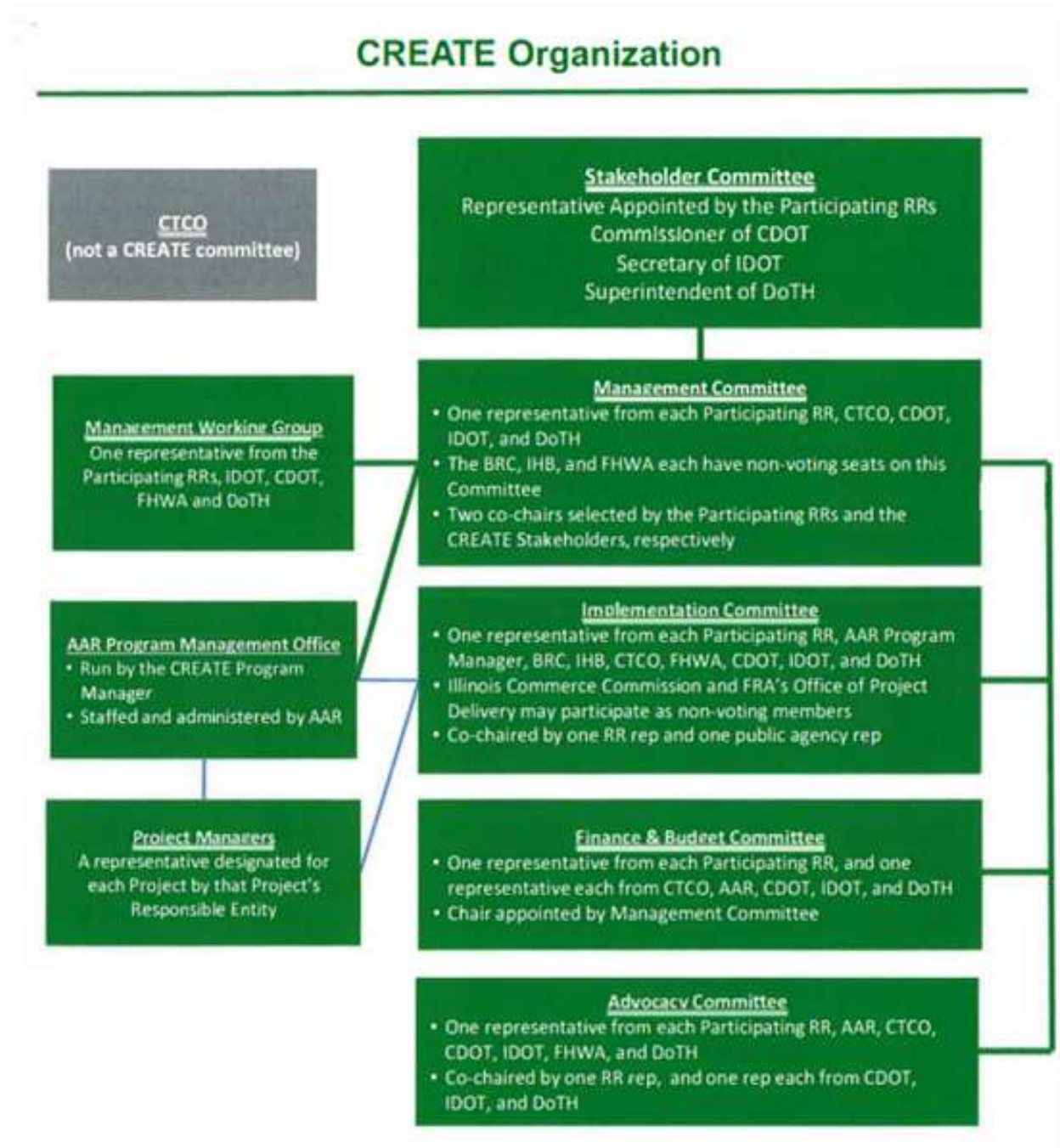
Source: <https://www.createprogram.org/>

## Governance and Funding

Governance of the CREATE Program is shared among its founding partners, with coordination led by a steering committee composed of representatives from each stakeholder group. This committee oversees project prioritization, funding allocation, and implementation strategy. The governance model and organization, shown in Figure 18, emphasizes collaboration between public agencies and private railroads to ensure alignment on infrastructure goals and community impact.



FIGURE 18. CREATE ORGANIZATION AND GOVERNANCE STRUCTURE



Source: <https://www.createprogram.org/>

The CREATE Program Final Feasibility Plan and Final Preliminary Screening documents were developed in 2005 to establish overall “Program Level Goals and Strategies” and to define the objective of each component project within the Program. It contains a list of projects that includes the scope (objective/intent, work description and preliminary purpose and need) of each project,



the goals and objectives of the CREATE Program and the resultant net benefits realized through the implementation of the entire CREATE Program.

The final CREATE Feasibility Plan was released by the CREATE partners in August 2005 and subsequently endorsed by the Chicago Metropolitan Agency for Planning (CMAP). The first amendment to the CREATE Program Feasibility Plan was completed in 2009. A modification to the amended Feasibility Plan was completed in January 2011. A clarification, specific to the WA7 project, was published in July 2012. There are currently 70 individual projects included in the CREATE Program, all designed to improve the safe and efficient movement of passengers and freight on the railway system, reduce delays and enhance safety for travelers on the roadway system, and provide air quality benefits for the Chicago region.

Revisions to the CREATE Program are governed by United States Department of Transportation (USDOT) procedures. During implementation of the CREATE Program, the Federal Highway Administration (FHWA) recognized that some revisions were small, and the overall impact was minor and easily discerned. Consequently, more than one process for documenting these revisions was established. A major revision would be considered an amendment while a minor one would be considered a modification. A third process is also available to accommodate emergency revisions where time is critical, and the revisions may occur due to unforeseeable events.

Railroad government relations teams and other advocacy organizations helped educate lawmakers, public officials, and their staff about the need for the public and private sector to work together to not only benefit commerce but also deliver public improvements that would otherwise be unachievable. Congressman Bill Lipinski, who represented a district in Chicago from 1983 to 2005, played a pivotal role in early development and funding for CREATE. The \$100 million earmark he secured became the first round of federal support for the project, and his role as a senior member on the House Transportation and Infrastructure Committee helped foster a group of CREATE caretakers that has subsequently delivered nearly \$700 million in funding for CREATE.

Funding is provided through a combination of public and private sources currently estimated to cost \$4.6 billion to fully implement. Funding commitments come from the Program's partners and include a mix of public and private funds. By 2021, the Program had received \$1.6 billion from a variety of public and private commitments and an estimated \$3 billion was needed to complete the full program of projects (CREATE, 2021). By 2021 funding commitments included \$647 million from federal agencies, \$461 million from IDOT, \$150 million from local governments and \$375 million from private railroads.

## **Program**

The CREATE Program will enhance the quality of life of Chicago-area residents by bringing critically needed rail improvements to communities throughout the region. The 70 projects include:

- 25 new roadway overpasses or underpasses at locations where traffic (auto, pedestrian, bicycle, bus) currently crosses railroad tracks at grade level
- 6 new rail overpasses or underpasses to separate passenger and freight train tracks



- 36 freight rail projects including extensive upgrades of tracks, switches and signal systems
- Viaduct improvement projects – improvements to existing viaducts in Chicago
- Grade crossing safety enhancements – improvements to existing railroad grade crossings throughout the region
- Common Operational Picture (COP) – integration of information from dispatch systems of all major railroads in the region into a single display

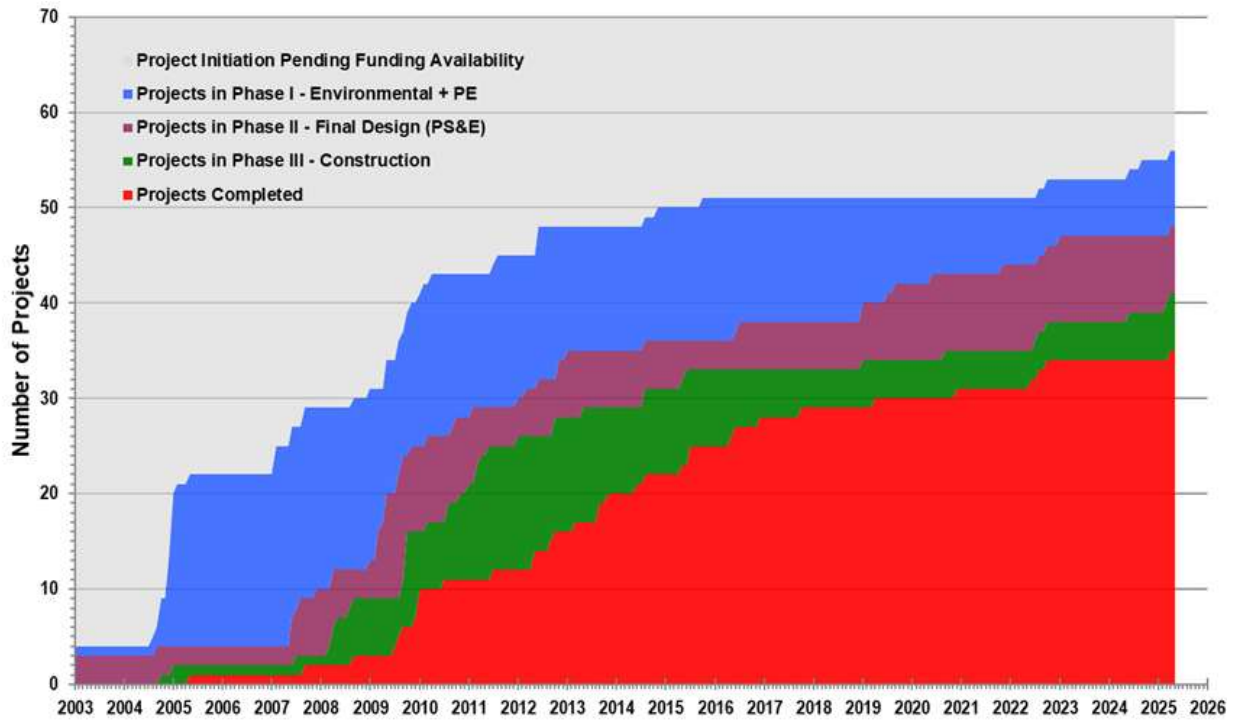
Most of the CREATE improvements are grouped along or near four rail corridors running through the Chicago region. Each project is named according to the corridor it lies along or its project category (grade separations and towers).

- Western Avenue Corridor – WA projects
- Beltway Corridor – B projects
- East West Corridor – EW projects
- Passenger Corridor – P projects
- Grade Separations – GS projects
- Towers – T projects

The program addresses capacity, safety, and efficiency challenges to accommodate projected growth in freight and passenger demand. Through targeted infrastructure upgrades, grade separations, and operational improvements, CREATE seeks to reduce congestion, enhance safety, and minimize community impacts and is recognized as a program of both regional and national significance. As shown in Figure 19 and Figure 20, approximately half of the original CREATE projects have been completed as of 2025. Figure 21 maps the location of projects along with the four corridors.



FIGURE 19. CREATE PROGRAM, COMPLETION PROGRESS, 2003-2025



Source: <https://www.createprogram.org/>



FIGURE 20. CREATE PROGRAM PROGRESS SUMMARY

Proj. No.	Project Name	Municipality	Railroads Affected	Lead Entity	Current Project Status - 14-Apr-2025					Project Completion Date	
					Initiation Pending Funding Availability	IDOT Phase I - Environmental + PE	IDOT Phase II - Final Design (P&E)	IDOT Phase III - Construction	Project Completed		
<b>BELT CORRIDOR</b>	B1	CP double & IHB connection	Franklin Park	Metra/CP/IHB/CN	Metra	-	-	-	-	X	Dec 2020
	B2	Proviso 3rd Main	Bellwood / Berkeley / Elmhurst / Melrose Park	IHB/UP/Metra	UP	-	-	-	-	X	Sep 2013
	B3	Melrose connection	Bellwood	IHB/UP	UP	-	-	-	-	X	Sep 2009
	B4*	TCS LaGrange to CP Hill	LaGrange / LaGrange Park / McCook	IHB	IHB (CSX)	-	-	-	-	X	May 2012
	B5*	TCS LaGrange to CP Hill	Bellwood / Broadview / Melrose Park	IHB/CN	IHB (CSX)	-	-	-	-	X	May 2012
	B6	McCook	McCook	CSX/BNSF/Amtrak/Metra	CSX	-	-	-	-	X	Dec 2009
	B8	TCS Argo to Canal	Bedford Park / Bridgeview / Summit	CSX/Amtrak/Metra	CSX	-	-	-	-	X	Mar 2009
	B9**	Argo Connections	Chicago / Bedford Park / Bridgeview / Summit	BRC/CSX/Amtrak/Metra	CSX	-	-	-	-	X	Jun 2022
	B12	CP Francisco	Alsip / Blue Island	CSX	CSX	-	-	-	-	X	Jul 2011
	B15	TCS Blue Island	Blue Island / Dolton / Riverdale	IHB	IHB (CSX)	-	-	-	-	X	Sep 2012
B16	Thornton Jct	South Holland	UP/CN	UP	-	-	-	-	X	Jun 2014	
<b>E-W CORRIDOR</b>	EW1**	Argo Jct	Chicago / Bedford Park / Bridgeview / Summit	BRC/Amtrak/Metra	BRC (CSX)	-	-	X	-	-	-
	EW2***	80th Street Jct & Belt Jct	Chicago	BRC/Metra/UP/NS	BRC (NS)	-	-	X	-	-	-
	EW3	Pullman Jct	Chicago	BRC/NS	NS	-	-	-	X	-	-
	EW4	CP 509	Chicago	BRC/NS/Amtrak	NS	-	-	-	-	X	Jul 2008
<b>WESTERN AVE CORRIDOR</b>	WA1	Ogden Jct	Chicago	CSX/NS/UP/Metra	UP	-	-	X	\$	-	-
	WA2	TCS Blue Island Sub	Chicago	CSX/Amtrak/Metra	CSX	-	-	-	X	-	-
	WA3	Ashland Ave & CJ Mains	Chicago	NS	NS	-	-	-	-	X	Jun 2016
	WA4	BNSF Horseshoe	Chicago	BNSF/CN/NS/CSX	BNSF	-	-	-	-	X	Apr 2019
	WA5	Corwith Tower	Chicago	BNSF/CN/Amtrak/Metra	BNSF	-	-	-	-	X	Jun 2009
	WA7	Brighton Park	Chicago	NS/CSX/CN/Amtrak/Metra	NS	-	X	-	-	-	-
	WA10	Blue Island Jct	Blue Island	CN/CSX	CSX	-	-	-	-	X	Sep 2013
	WA11	Dolton Interlocking	Chicago / Dolton / Riverdale	IHB/CSX/UP/Amtrak	CSX	-	-	X	\$	-	-
<b>PASSENGER CORRIDORS</b>	P1	63rd & State	Chicago	Metra/NS	Metra	-	-	-	-	X	May 2016
	P2***	Rock Island Connector	Chicago	BRC/Metra/NS	Metra	-	-	X	-	-	-
	P3***	Forest Hill Flyover	Chicago	BRC/CSX/NS/Metra	Metra	-	-	-	X	-	-
	P4	Grand Crossing	Chicago	NS/Amtrak	NS	-	X	-	-	-	-
	P5	Brighton Park	Chicago	CN/Amtrak/Metra	Metra	X	-	-	-	-	-
	P6	Canal	Summit	CN/Amtrak/Metra	Metra	-	X	-	-	-	-
	P7	Chicago Ridge	Chicago Ridge	Metra/IHB	Metra	X	-	-	-	-	-
<b>TOWER PROJECTS</b>	T1	21st Street	Chicago	Amtrak/Metra	Amtrak	-	-	-	-	X	Feb 2005
	T2	Blue Island Jct.	Blue Island	CN	CN	-	-	-	-	X	Aug 2014
	T3	Roundout	Lake Forest	CP/Metra/Amtrak	CP/Metra	X	-	-	-	-	-
	T4	A-5	Chicago	CP/Metra/Amtrak	CP/Metra	-	-	-	-	X	Aug 2022
	T5	B-17	Bensenville	CP/Metra	CP/Metra	X	-	-	-	-	-
	T6	Calumet Tower (IN)	Indiana / Chicago	IHB	IHB	-	-	-	-	X	Mar 2013
	T7	16th Street	Chicago	Metra/CN	Metra	-	-	-	-	X	Apr 2025
	T8	Gresham	Chicago	Metra	Metra	-	-	-	-	X	Jan 2010
	T9	Blue Island	Blue Island	Metra	Metra	-	-	-	-	X	Oct 2022
	T10	Kensington	Chicago	Metra/NICTD/Amtrak	Metra	-	-	-	-	X	Jan 2010
	T11	Hick (IN)	Indiana / Chicago	NS/Amtrak	NS	-	-	-	-	X	Jul 2010
	T12	Deval	Des Plaines	UP/Metra	UP	-	-	-	-	X	May 2005
<b>GRADE SEPARATION PROJECTS</b>	GS1	65th St / Harlem Ave	Chicago / Summit / Bedford Park	BRC	IDOT	-	-	X	-	-	-
	GS2	Central Ave / Archer Ave-55th St	Chicago	BRC	IDOT	-	X	-	-	-	-
	GS3a	Morgan St / Pershing Road	Chicago	NS	CDOT	-	X	-	-	-	-
	GS4	Central Ave	Chicago Ridge / Oak Lawn	IHB	IDOT	X	-	-	-	-	-
	GS5a	Grand Ave	Franklin Park	IHB/CN/Metra	IDOT	-	-	-	-	X	Sep 2007
	GS6	25th Ave	Melrose Park / Bellwood	UP/Metra	IDOT/local	-	-	-	-	X	Dec 2016
	GS7	Belmont Rd	Downers Grove	BNSF/Metra/Amtrak	Metra	-	-	-	-	X	Oct 2012
	GS8a	5th Ave	Maywood	UP/Metra	IDOT	X	-	-	-	-	-
	GS9	Archer Ave / Kenton Ave	Chicago	BRC	CDOT	-	-	X	\$	-	-
	GS10	47th St / East Ave	LaGrange / McCook	IHB	IDOT	X	-	-	-	-	-
	GS11	Columbus Ave / Maplewood Ave	Chicago	BRC	CDOT	-	-	-	X	-	-
	GS12	1st Ave	Maywood	UP/Metra	CCDOTH	-	X	-	-	-	-
	GS13	31st St	LaGrange Park	IHB	IDOT	X	-	-	-	-	-
	GS14	71st St	Bridgeview	CSX	IDOT/local	-	-	-	-	X	Nov 2013
	GS15a	130th St / Torrence Ave	Chicago	NS/NICTD	CDOT	-	-	-	-	X	Jul 2015
	GS16	Irving Park Rd	Bensenville / Chicago	CP	IDOT	-	-	-	-	X	Oct 2017
	GS17	Western Ave	Blue Island	CSX	IDOT	X	-	-	-	-	-
	GS18	Harlem Ave	Berwyn / Riverside	BNSF/Metra/Amtrak	CCDOTH	X	-	-	-	-	-
	GS19***	71st St / Bell Ave	Chicago	CSX	IDOT	-	-	-	X	-	-
	GS20	87th St / Rockwell St	Chicago / Evergreen Park	CSX	CDOT	X	-	-	-	-	-
	GS21a	95th St / Eggleston Ave	Chicago	UP/Amtrak	CDOT	-	X	-	-	-	-
	GS22	115th St	Alsip	CSX	IDOT	X	-	-	-	-	-
	GS23a	Cottage Grove	Dolton	IHB/CSX	CCDOTH	-	X	-	-	-	-
	GS24	Maple Ave	Brookfield	BNSF/Metra	IDOT	X	-	-	-	-	-
	GS25	Roosevelt Road	West Chicago	UP/Metra	IDOT	-	-	-	-	X	Jul 2015
Other	Common Operational Picture	Chicago and suburbs (Chicago Terminal District)	All Railroads		-	-	-	-	X	May 2015	
Other	Viaduct Improvement Program	Chicago (various locations)	various	CDOT	-	-	-	X	X	varies	
Other	Grade Crossing Safety Program	Suburbs (various locations)	various	IDOT/CDOT	X	-	-	-	-	-	
<b>Total Projects</b>						<b>14</b>	<b>8</b>	<b>7</b>	<b>6</b>	<b>35</b>	

\* Projects B4 and B5 were linked for the purposes of environmental review and design/construction.

\*\* Projects B9 and EW1 were linked for the purposes of environmental review, but are advancing separately through final design and construction.

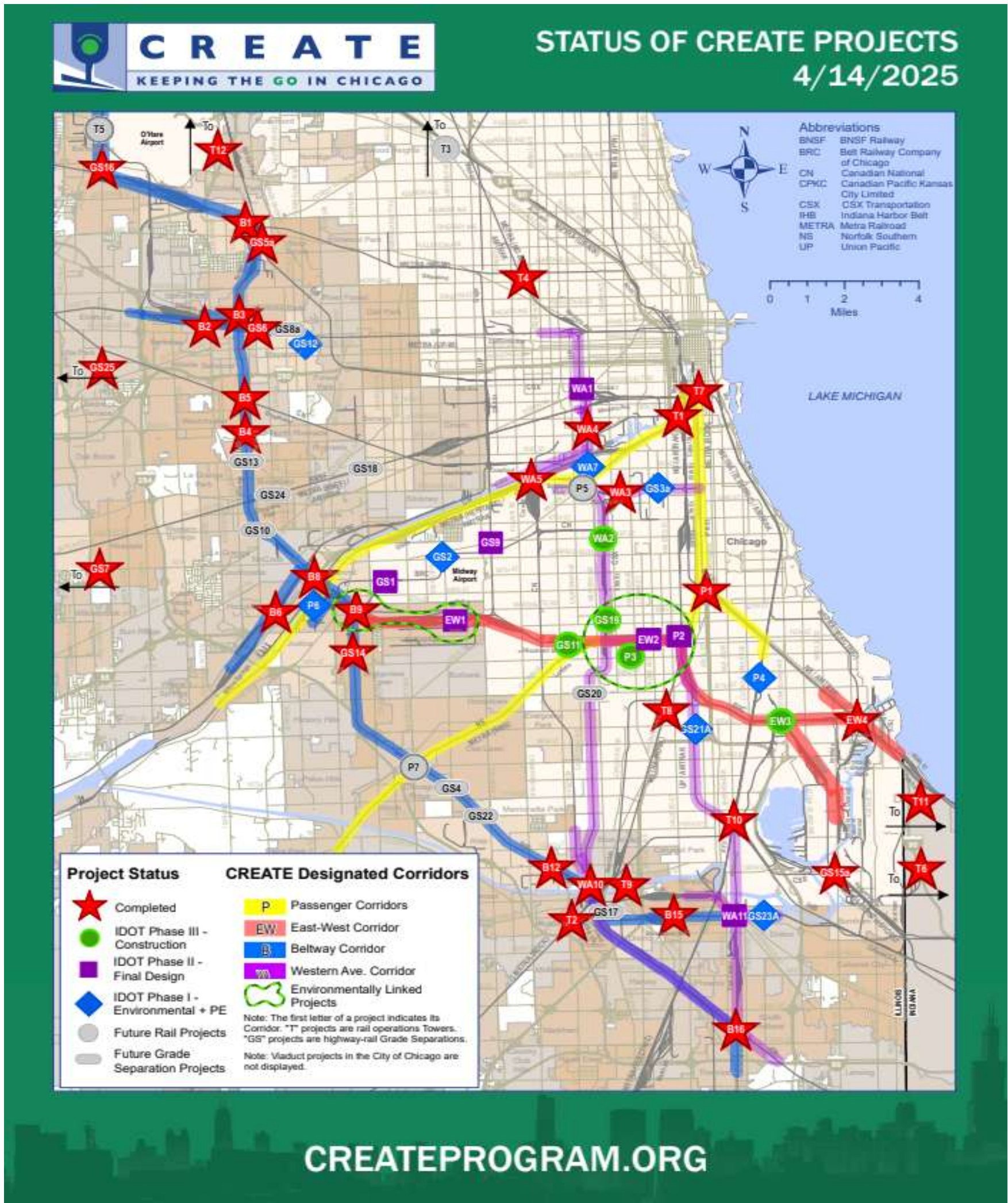
\*\*\* Projects P2, P3, EW2, and GS19 are linked for the purposes of environmental review and collectively known as the "75th Street Corridor Improvement Project".

\$ These projects have not yet reached this status but have secured a full funding commitment (from a combination of federal, state, local, and/or railroad sources) to advance through the indicated stage.

Source: <https://www.createprogram.org/>



FIGURE 21. CREATE PROJECTS AND STATUS



Source: <https://www.createprogram.org/>



A sample of benefits generated by CREATE over the past 23 years include:

- Passenger train delays reduced by over 1.3 million passenger hours annually
- 2,800 metric tons/year avoided emissions from idling vehicles
- 122 million tons of freight per year would travel by rail, avoiding 18,500 truck trips per day on highways
- 92,000 hours of truck delay and 230,000 hours of motorist and bus passenger delay will be saved
- \$31.5 billion in economic benefits
- Approximately 44,000 jobs created

**FIGURE 22. ENGLEWOOD FLYOVER**



Source: <https://www.createprogram.org/>

## Lessons Learned

Key lessons from the CREATE experience include the following.

- **Scale effects.** Although the public partners in CREATE include USDOT, the state of Illinois, Cook County Illinois, and the City of Chicago – and no other states – the private freight and passenger railroads partnering in CREATE each operate in multiple states and bring awareness



of opportunities and constraints in the networks of adjoining states. CREATE is designed to “uncork” a set of bottlenecks in a very confined geography, so it can be undertaken as a single-state effort, but the value of addressing these bottlenecks is felt by every state that routes rail traffic through Chicago.

- **Necessity of collaboration.** Freight operations in a system with multiple owners and jurisdictions cannot be made fluid and efficient without collaboration between parties because of network interdependence in a system that has been developing, evolving, and transforming since 1848.
- **Communications and transparency:** Early on, CREATE built a strong coalition of public officials, businesses, and communities, passenger users, and other constituencies that had facilitated widespread understanding of the benefits to the program. CREATE is transparent in its agreements, which are posted on the CREATE website and document how the original vision and partners evolved as the program moved forward from initial conception to planning to implementation. The CREATE website (<https://www.createprogram.org/>) serves as a comprehensive source for information about the program to multiple audiences.
- **Project status and benefit monitoring.** CREATE posts and maintains detailed information on the overall program, project status within the program, and benefits achieved from program investments. Fact sheets on every project with diagrams, pictures, illustrations and descriptions are on the CREATE website and regularly updated as the program progresses. This facilitates accountabilities for all partners across the program by publicly showing the status of every project in the program and allows progress to be tracked over time. This addresses the single largest challenge with both MAROps and NEROps – the lack of formal tracking mechanisms for project delivery and performance.
- **Results.** This coordinated public-private program, with active management across multiple parties and jurisdictions and over many years, has delivered and continues to deliver material benefits to the partners, the region and the national system, despite its location in one of the most challenging and complex urban operating environments in the country.
- **Repeatability.** CREATE offers a strong template for multi-state and multi-party project delivery. Its key lessons about how to establish leadership structure, operating agreements, project tracking mechanisms, and program delivery should, given appropriate effort and commitment, be repeatable in other geographies and contexts, and promise similarly successful outcomes.



# Case Study #4: Brent Spence Bridge Corridor Project

## Overview

The Brent Spence Bridge was built in 1963 to carry Interstate 71/75 over the Ohio River, connecting Cincinnati, Ohio with communities on the Kentucky side of the river. The two-deck bridge was designed to carry 80,000 to 100,000 vehicles per day. Due to rapid growth in the greater Cincinnati region, today the bridge now carries twice that number, and more capacity is needed. In 2025, downtown Cincinnati's I-71/I-75 intersection, north of the Brent Spence Bridge was ranked 8th most congested area in the nation for truck traffic, and the bridge was ranked the 14th worst bottleneck in the nation in a 2024 report.<sup>11</sup> According to the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), due to increased traffic flow, motorists are three to five times more likely to be in a crash on the Brent Spence Corridor than any other part of the interstate systems in Ohio or Kentucky.<sup>12</sup> The solution that has been developed is the Brent Spence Bridge Corridor Project (Figure 23).

TABLE 4. BRENT SPENCE BRIDGE CORRIDOR OVERVIEW

<b>Brent Spence Bridge Corridor Overview</b>
<p>Case Study illustrates a process where two states formed a collaborative partnership to deliver a major improvement to a critical interstate highway bridge (I-71/I-75) connecting Cincinnati OH and Covington KY, and providing national network connectivity for commercial traffic originating, terminating, and passing through the region</p>
<ul style="list-style-type: none"><li>◆ <b>Key parties:</b> OKI Regional Council of Governments as proponent and champion; Ohio DOT as designated lead agency; Kentucky Transportation Cabinet; the Federal Highway Administration; and the regional business community</li><li>◆ <b>Benefits achieved:</b> projected 9 to 12 million hours of vehicular delay (all types) avoided each year; projected 40 percent reduction in crash rates</li><li>◆ <b>Critical success factors:</b> long-term, sustained commitment by OKI and the business community to drive the project, establish community and legislative support, and provide clear public information on the project and its benefits; strong contributions by ODOT and KTC to advance implementation of the project; and receipt of federal funding through a combination of programs</li><li>◆ <b>Status:</b> as of autumn 2025, the project was under design, with groundbreaking expected in early 2026 and project completion in the early 2030s</li><li>◆ <b>Value as a model:</b> This is a repeatable model and a strong example of collaboration around a clearly defined roadway project of strong bi-state interest, with collaboration from two state DOTs and leadership from a regional bi-state MPO</li></ul>



**FIGURE 23. RENDERING OF THE BRENT SPENCE COMPANION BRIDGE**



Source: Brent Spence Bridge Corridor Project

The Corridor Project includes:

- Improvements to the Brent Spence Bridge, which will continue to carry local traffic between downtown Cincinnati and Covington
- Construction of a two-deck companion bridge west of the Brent Spence bridge to carry non-local traffic passing through the area
- Improvements to the adjoining eight-mile stretch of roadway, such as ramp and interchange improvements
- Active transportation improvements and aesthetic improvements

## History

In the late 1990's attention began to be directed to the Brent Spence Bridge. An analysis by OKI in 1997 found that the bridge's capacity was insufficient for traffic levels and would need rehabilitation or replacement within the next two decades. The OKI long-range plan prepared in 2001 recommended a project to replace the bridge.

A Feasibility and Constructability Study of the Replacement/Rehabilitation of the Brent Spence Bridge was contracted in 2003 by the Kentucky Transportation Cabinet (KYTC) and overseen by a Bi-State Management Team that included KYTC, the Ohio Department of Transportation (ODOT) and the Federal Highway Administration.

According to a representative from OKI, the local business community consistently supported the project. For example, the Northern Kentucky Chamber of Commerce has been a strong supporter of the project and has actively helped to lobby for the project in Washington, DC. Advocates of the



project sought to gain support, not only within Kentucky and Ohio, but also regionally, since a bottleneck in the Cincinnati metropolitan area can impact a wide range of states in the region. The bridge is part of a larger trade corridor that reaches from the Canadian border to the southern U.S. and provides critical connections between suppliers and producers in the automotive industry. The OKI Regional Council of Governments was active in promoting the project with a representative stating that he participated in over 200 interviews and media events over the years.

Planning continued for the project, and an environmental assessment was completed in 2012. However, momentum for the project stalled. According to an OKI representative, the intention to collect tolls on the bridge reduced support for the project. When project sponsors explained the impacts of the project compared to the level of tolling, they could convince stakeholders and members of the public of the project's merits. But without this level of explanation, the mention of tolls frequently prompted negative reactions, and it was difficult to control the narrative.

State legislatures were reluctant to allocate federal formula funds or state funds to cover most of the project's \$3.6 billion cost. It was assumed that the project would be delivered under a design-build-finance-operate-maintain structure. Ninety-four percent of the project cost would be borrowed, and this would be repaid through revenues from tolling.

**FIGURE 24. POTENTIAL TOLL FACILITY LOCATIONS**



Source: Brent Spence Bridge Corridor Project Preliminary Tolling Concept of Operations



## Governance and Funding

In 2022, Ohio and Kentucky signed a Memorandum of Understanding to pursue \$2 billion in federal funding to advance the Brent Spence Bridge project. Tolling became unnecessary when the states secured full federal funding. This funding included \$1.385 billion from the Bridge Investment Program in 2022, plus \$250 million from the National Infrastructure Project Assistance (Mega) Program and \$367 million from federal formula funds. A six-week shutdown of the bridge in 2020 due to a crash and fire helped dramatize the importance of the facility.

Ohio and Kentucky signed a subsequent Memorandum of Understanding in 2023 where they agreed to share the costs of the Companion Bridge and the rehabilitation of the existing bridge equally, while each state would pay all costs of the approaches to the existing and new bridges within their states.<sup>13</sup>

ODOT was designated as the lead agency, responsible for managing the project. According to an OKI representative, this was considered appropriate because ODOT is larger and has more resources available to manage the project relative to KYTC. ODOT thus can more easily take care of contracting, monitoring, and other activities needed to manage the project. KYTC is responsible for maintaining the existing bridge and the new companion bridge after the construction is completed.

## Program

As of autumn 2025, the project was under design. Groundbreaking is expected in early 2026, and the project should be completed in the early 2030s. Given the project is not yet operational it is not possible to report on its actual benefits, but its expected transportation benefits are listed below.

“Local traffic will be routed to the existing Brent Spence Bridge, while the new companion bridge will carry interstate traffic. This will reduce congestion-related accidents while improving travel times. The addition of the companion bridge will allow the Brent Spence Bridge to return to carrying three lanes of traffic per deck with emergency shoulders. This will reduce the impact of accidents on through traffic. The addition of a collector-distributor and the reconfiguration of entrance and exit ramps will create safer conditions for local traffic.” The project interchange modification study projects total travel time savings (all users) of 9 to 12 million vehicle hours of delay per year with a crash rate reduction of 40 percent (see <https://brentspencebridgecorridor.com/community-benefits/>).

## Lessons Learned

- The OKI Regional Council of Governments played an important role in facilitating the planning process as an MPO that spanned state borders. Their role was similar to the Coalition’s role in MAROps and NEROps and the AAR’s role in CREATE and illustrates the value that multi-state MPOs can bring to collaborative project delivery.
- Gaining public support for the project was key to the project success. Support from the business community was important, but support from the local community was vital. The



project faced some of its greatest challenges convincing state legislators to provide support. OKI maintains and reports clear information on the project and its benefits.

- Support from the federal government ultimately allowed the project to advance with project sponsors arguing effectively that the benefits of the project were not limited to the immediate, bi-state area. Full federal funding obviated the need for tolling, which was a prominent source of community opposition.
- This is a repeatable model and a strong example of collaboration around a clearly defined roadway project of strong bi-state interest, with collaboration from two state DOTs and coordination from a regional bi-state MPO.



## Findings and Recommendations

Each of the Case Study examinations offered different features and attributes. One attribute they shared is they created substantial benefits beyond the physical extents of any specific project, and success was grounded in the multi-state partnerships.

**TABLE 5. SUMMARY OF CASE STUDY FEATURES**

MAROps	NEROps	CREATE	Brent Spence Bridge Corr.
Case Study illustrates major (> \$6.2 billion) long-term (> 20 years) program of coordinated and mutually supporting rail improvements involving five states, two Class I freight railroads, and passenger railroads	Case Study illustrates multistate, public-private collaboration to identify key trends, inventory bottlenecks, and identify investments across seven New England states benefiting two Class I railroads, several shortlines, and intercity and commuter railroads.	Case Study illustrates a sustained, complex, multi-party program to deliver freight and passenger rail projects in the nation’s most significantly bottlenecked region, with an outstanding degree of public communication and transparency about each project and the overall program	Case Study illustrates a process where two states formed a collaborative partnership to deliver a major improvement to a critical interstate highway bridge (I-71/I-75) connecting Cincinnati OH and Covington KY, and providing national network connectivity for commercial traffic originating, terminating, and passing through the region
<b>Key parties:</b> the states of Delaware, Maryland, New Jersey, Pennsylvania, and Virginia; AMTRAK, CSX and Norfolk Southern, coordinated by the Coalition (then known as the I-95 Corridor Coalition)	<b>Key parties:</b> the states of New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine; AMTRAK, MTA, MBTA, CSX, Norfolk Southern, Genesee and Wyoming, Pan Am Railways, and the Coalition.	<b>Key parties:</b> City of Chicago, Cook County, State of Illinois; USDOT; Amtrak and METRA; and eight freight railroads	<b>Key parties:</b> OKI Regional Council of Governments as proponent and champion; Ohio DOT as designated lead agency; Kentucky Transportation Cabinet; FHWA; and the regional business community
<b>Benefits achieved:</b> coordinated and mutually supporting program of projects to address and eliminate significant national rail network chokepoints --capacity constrained track, height/weight constrained bridges and tunnels, operating conflicts between railroads, rail grade crossings, and other constraints —resulting in improved safety and fluidity for freight rail traffic originating in, terminating in, or passing through the study region	<b>Benefits achieved:</b> NEROps was developed as a tool to educate policymakers and the public about the role of rail in the Northeast region, the relationships of chokepoints, investment needs, and potential benefits that cross jurisdictional boundaries, and the need to prioritize rail investments for economic competitiveness. Many of the projects identified in NEROps were implemented with public agency support, in part, due to the multi-state vision.	<b>Benefits achieved:</b> Over the past 23 years, passenger train delays reduced by over 1.3 million passenger hours annually; 2,800 metric tons/year avoided emissions from idling vehicles; 18,500 truck trips per day avoided; 92,000 hours of truck delay and 230,000 hours of motorist and bus passenger delay avoided; \$31.5 billion in economic benefits and approximately 44,000 jobs created	<b>Benefits achieved:</b> projected 9 to 12 million hours of vehicular delay (all types) avoided each year; projected 40 percent reduction in crash rates
<b>Critical success factors:</b> strong and sustained leadership commitment by the Coalition and freight railroads, outstanding participation by state partners, and consultant support in developing consistent information to support the effort	<b>Critical success factors:</b> Collaboration between the railroads, state partners, and TETC; Clear presentation of systemwide and corridor-level needs and projects.	<b>Critical success factors:</b> Clearly defined organizational structure and mission; clear communication of the overall program and status of projects within the program; overarching public and private interest in addressing the underlying Chicago bottleneck in a systematic way	<b>Critical success factors:</b> long-term, sustained commitment by OKI and the business community to drive the project, establish community and legislative support, and provide clear public information on the project and its benefits; strong contributions by ODOT and KTC to advance implementation of the project; and receipt of federal funding through a combination of programs
<b>Status:</b> many of the original MAROps projects have been completed as planned or in a revised form; a few have not advanced due to changing needs or completion of other substitute projects; a few are still being completed	<b>Status:</b> Many of the projects have been implemented using funds from railroads, federal grant programs, state grants and funding sources, etc., including those described in the case study narrative. Some have not advanced due to changing needs or priorities.	<b>Status:</b> CREATE includes 70 projects, of which 35 are completed and 20 are in the engineering design, environmental review, or construction stages	<b>Status:</b> as of autumn 2025, the project was under design, with groundbreaking expected in early 2026 and project completion in the early 2030’s
<b>Value as a model:</b> MAROps is an outstanding example of establishing and sustaining a partnership to deliver a broad range of projects – some very expensive – over a long period; it also illustrates challenges with long-term partnerships, especially the tracking of project information and quantification of benefits in a consistent and systematic way	<b>Value as a model:</b> NEROps is an excellent example of demonstrating how freight performance and needs cross jurisdictional boundaries, and how investments in one jurisdiction can unlock benefits for a multi-state corridor and an entire region.	<b>Value as a model:</b> CREATE offers a strong template for multi-state and multi-party project delivery. Its key lessons about how to establish leadership structure, operating agreements, project tracking mechanisms, and program delivery should be repeatable in other geographies and contexts, and promise similarly successful outcomes	<b>Value as a model:</b> this is a repeatable model and a strong example of collaboration around a clearly defined roadway project of strong bi-state interest, with collaboration from two state DOTs and leadership from a regional bi-state MPO



The most important lessons learned from this analysis are summarized below.

TABLE 6. LESSONS LEARNED

<b>Three Key Lessons Learned</b>	
<b><i>Collaboration Works</i></b>	
◆	Multi-state and public-private collaborations have successfully delivered complex projects and programs that no individual actor could have produced without its partners
◆	These projects have generated substantial local, regional, state, multi-state, and national benefits – increasing freight network fluidity for rail and truck movement, providing new capacity and connectivity and resiliency, and reducing congestion, delays, crashes, passenger and community conflicts, and other negative impacts.
◆	The approach has multimodal applications for any project or program involving freight transportation across regulatory and financing jurisdictional boundaries
<b><i>Collaboration Takes Work</i></b>	
◆	Achieving benefits from collaborative initiatives requires <b>up-front, substantial and sustained commitment</b> of public agencies and private partners, along with <b>committed champions</b> to establish, maintain, and coordinate relationships, schedules, data, resources, engagement, and communication. For example, funding to support examining freight project needs such as that in TETC's earmark was notably critical to support and sustain collaboration.
◆	The specific <b>champion(s) can be, but do not have to be, traditional project delivery organizations</b> – they can be private industry associations, multi-state/multi-region coalitions, or specially formed organizations.
<b><i>Performance Should be Measured</i></b>	
◆	Complex projects and programs involving multiple partners and/or multiple years require <b>careful tracking of project status and implementation</b> . More recent initiatives like CREATE have done an exceptional job of this, maintaining current information online and making it available to all. Older initiatives like MAROps did not have centralized systems to maintain and share information and as a result, when original participants transitioned roles and responsibilities to successors, knowledge of original projects suffered.
◆	<b>Benefits should be formally measured and tracked</b> , with performance measures established at the outset and maintained over the life cycle of project delivery, to clearly demonstrate the original and continuing value of the original collaborative process. Standards and formal Federal guidance for freight project benefit-cost evaluation have evolved substantially over the last two decades; while they were not available for older initiatives such as MAROps, they are now widely understood

Three of the four case study programs in this report were advanced and financed on a project-by-project basis over extended periods of time. The fourth was a single, multijurisdictional project that also took years to materialize. None of the programs had a dedicated or sustained funding source,



yet all advanced based on their ability to demonstrate local, regional and national benefits to both the public and private sectors.

The system-level outcomes were substantial. Most of the case study programs began with a regional scope and an overarching vision to unite the elements. Project-by-project building blocks were turned into larger program frameworks. Policy frameworks were established through the efforts of the Coalition, which sponsored and directed studies that established regional, multistate and multiparty network needs; the parties involved in CREATE and the Brent Spence Bridge came together around common interests.

Throughout the life cycle of each effort, it has been the shared interests of public and private partners in transportation safety, fluidity, and efficient goods movement that have sustained MAROps, NEROps, CREATE, and the Brent Spence Bridge Corridor project. Most programs were implemented over many years, causing some initial elements to be dropped or modified, and others to be added. The availability of funds lengthened the timelines, yet implementation was persistent. Persistence was due to several factors: the potency of the vision and adherence to it, the sustained commitment of the partners, the economic returns on investment, and the recognition of network interdependence, which meant that individual projects and partners needed other projects and partners to reach their full potential.

Federal funding has been central to these efforts. A federal earmark was the foundation for the Coalition to convene studies for MAROPs and NEROPS that brought the states and railroads together to conduct work to identify projects, a federal earmark was the catalyst for CREATE, a variety of federal grants and funding programs supported the others as they did too with CREATE, and federal funds for the Brent Spence Bridge overcame local opposition to a nationally important investment by covering 100 percent of the cost. Moreover, federal programs recognize and value multistate outcomes, and can distinguish public and private benefits in a way that encourages private investment.

Combined freight and passenger benefits were also significant in these case study programs. Freight transportation inherently favors multistate travel more than passenger transportation, especially across the stages in supply chains. The economic gains were tangible to the freight infrastructure operators and kept them motivated. Passenger travel on shared infrastructure – including local travel – nonetheless gains from much freight-forward investment.

The effect of all this is that multijurisdictional investment programs in the national interest can be implemented, but as a nation they tend to be undertaken opportunistically rather than consistently. This report has spelled out a variety of lessons for the formation and management of collaborative arrangements. The core message is **that collaboration would better proceed in a policy and financial framework that continuously supports these efforts with resources and technical assistance, helping generate multistate and national benefits that advance Federal economic and transportation policy goals, particularly support for domestic freight producers and consumers who depend on the fluidity and performance of our transportation system.**

With these considerations in mind, the Coalition offers five ideas for Best Practice Guidance to support and sustain multi-state and multi-party partnerships to achieve national benefits.



TABLE 7. BEST PRACTICE GUIDANCE

### Five Ideas for Best Practice Guidance

#### *Federal Leadership*

- ◆ USDOT has required state freight plans to consider effects of and coordination with conditions and improvements in neighboring states but has offered little guidance on the best ways to achieve this. As a result, state freight plans vary widely in the nature and degree of compliance. **Revised and more specific guidance would help improve the quality of multi-state freight planning within the context of state freight plans.**
- ◆ **Federal support for multi-state project delivery initiatives and organizations** – through sustained program funding, discretionary grant eligibility, and/or other means – should be supported and actively promoted.
- ◆ Building on the success of USDOT’s Freight Fluidity initiative, **USDOT should take the next step and work closely with private freight carriers, infrastructure owners/operators, and beneficial cargo owners to identify multi-state bottlenecks** that could be addressed by multi-state solutions, benefiting the private sector and supporting the achievement of Federal transportation and economic goals.

#### *Knowledge Sharing and Transfer*

- ◆ States can take a lead role in promoting awareness of multi-state project delivery. The Coalition recommends administration of a **national survey of states to identify, log, and track multi-state projects and programs**. This could be administered by any number of parties —USDOT, academic organizations, industry associations, state champions, or multi-state coalitions – but it is critical to establish, and maintain, a baseline understanding of where collaborations are occurring and the benefits they are achieving.
- ◆ **Best practice guidance for measuring performance and evaluating the success of multi-state project delivery initiatives** should be developed and shared – possibly in toolkit form —to help standardize the assessment of national benefits from multi-state projects and allow future benefits to be clearly understood and communicated.



## Endnotes

- <sup>1</sup> <https://www.wbjournal.com/article/csx-launches-nes-first-double-stack-route>
- <sup>2</sup> <https://govmarketnews.com/maine-gets-192-million-from-infrastructure-bill-for-road-and-rail-improvements/>
- <sup>3</sup> Interview with Charles Hunter, May 9, 2025.
- <sup>4</sup> <https://www.trains.com/pro/freight/short-lines-regionals/its-official-berkshire-eastern-to-take-over-pan-am-southern-operations-on-sept-1/>
- <sup>5</sup> <https://www.trains.com/pro/maintenance-of-way/traffic-growth-will-flow-from-pan-am-track-and-service-improvements-csx-says/>; and interview with Charles Hunter, May 9, 2025.
- <sup>6</sup> [https://www.dot.ny.gov/divisions/engineering/structures/repository/events-news/2018\\_LBC\\_session\\_3-3.pdf](https://www.dot.ny.gov/divisions/engineering/structures/repository/events-news/2018_LBC_session_3-3.pdf)
- <sup>7</sup> <https://www.americanbridge.net/featured-projects/portageville-bridge-replacement/>.
- <sup>8</sup> <https://www.binghamton-ny.gov/Home/Components/News/News/532/15>.
- <sup>9</sup> Rail News - New York awards \$76 million in freight-rail infrastructure grants. For Railroad Career Professionals
- <sup>10</sup> Voorheesville track work to start | The Altamont Enterprise
- <sup>11</sup> American Transportation Research Institute, *Top 100 Truck Bottlenecks – 2025*, [Top 100 Truck Bottlenecks – 2025](#).
- <sup>12</sup> [Brent Spence Bridge - OKI Regional Council of Governments](#)
- <sup>13</sup> Interstate Cooperative Agreement Regarding the Brent Spence Bridge Corridor Project by and between the State of Ohio and the Commonwealth of Kentucky, 1/18/2023, [2023.2.17-OH-KY-Interstate-Cooperate-Agreement Fully-Executed.pdf](#).