NEC Capital Investment Plan

Fiscal Years 2025-2029

October 2024

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Fiscal Years 2025-2029

A plan by the
Northeast Corridor Commission

In partnership with:

Massachusetts Department of Transportation (MassDOT)

Massachusetts Bay Transportation Authority (MBTA)

Rhode Island Department of Transportation (RIDOT)

Connecticut Department of Transportation (CTDOT)/CT*rail*

Metropolitan Transportation Authority (MTA)

MTA Metro-North Railroad (Metro-North)

MTA Long Island Rail Road (LIRR)

New Jersey Transit (NJ TRANSIT)

Southeastern Pennsylvania Transportation Authority (SEPTA)

Pennsylvania Department of Transportation (PennDOT)

Delaware Department of Transportation (DelDOT)

Maryland Department of Transportation (MDOT) Maryland Transit Administration (MTA) / Maryland Area Rail Commuter (MARC)

District Department of Transportation (DDOT)

Virginia Railway Express (VRE)

Amtrak

U.S. Department of Transportation (USDOT)


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Letter from the Co-Chairs

The Northeast Corridor Commission is pleased to submit our FY25-FY29 NEC Capital Investment Plan (CIP) and share how member agencies are seizing upon the tremendous funding opportunities provided by the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL). After over half a century of underinvestment and funding uncertainty, 25 critical NEC projects are now demonstrating meaningful progress in advancing planning, completing final design, and securing construction contracts thanks to over $16 billion in initial Federal State Partnership (FSP) grant awards. In addition, right-of-way owners are ramping up their basic infrastructure renewal programs to ensure safe and reliable operations and minimize service disruptions and delays that have become too frequent on some segments of the NEC.

We are only getting started in creating the world class railroad the American public deserves. Beyond the investments that are visible along the NEC—such as the construction of Portal North Bridge, which is now over 50% complete—NEC agencies have significantly grown their workforces, purchased new fleet and maintenance equipment, and invested in technology systems to meet this moment and prepare for the future. Notably, this progress has occurred amidst the fallout of a once-in-a-generation pandemic that disrupted supply chains, dramatically lowered ridership and revenue, and changed customers' travel patterns.

Given the economic reach and significance of the NEC, the entire nation is invested in the successful and efficient delivery of the investments underway today and sustaining the momentum initiated by BIL. Although the BIL funding is historic and substantial, it does not cover the funding needs of all NEC investments planned during the next 5 years and beyond. As the Commission's CONNECT NEC program illustrates, the NEC continues to have significant, long-term, unmet funding needs of approximately $100 billion. Getting the maximum value from the broad spectrum of investments NEC agencies have made thus far requires additional predicable, multi-year funding for the corridor beyond the current authorization period, which expires at the end of fiscal year 2026.

We look forward to continuing progress on existing projects, breaking ground on new projects, and showing our steadfast commitment to improving this important national asset together and being good stewards of federal, state, and local dollars invested in the NEC.

Amit Bose
Administrator, Federal Railroad Administration
Co-Chair, Northeast Corridor Commission

Kevin S. Corbett
President and CEO, NJ TRANSIT
Co-Chair, Northeast Corridor Commission

The Northeast Corridor consists of four right-of-way infrastructure owners (Amtrak, MBTA, CTDOT, and NY MTA Metro-North Railroad) and multiple station owners and service providers.

Introduction

The Northeast Corridor—both the NEC main line from Boston, MA to Washington, DC and connecting corridors to Harrisburg, PA; Spuyten Duyvil, NY; and Springfield, MA—hosts the passenger rail operations of eight commuter railroads, Amtrak's intercity services, and six freight railroad services. The NEC, long the nation's busiest passenger railroad, has been a cornerstone of the region's development since tracks began being laid in the 1830s, and continues to be a driver of its economic success. NEC ridership peaked in 2019 with 902,000 average weekday trips.

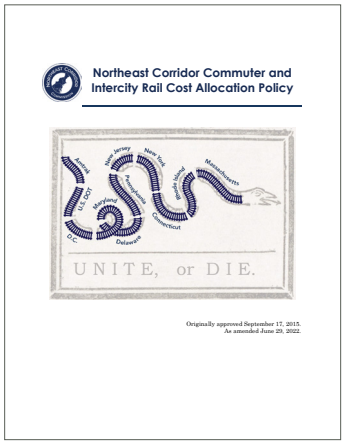
The 457-mile main line still includes many bridges and tunnels that date back to the period between the Civil War and the New Deal. The NEC's state-of-good-repair (SOGR) backlog must be addressed to ensure continued viability of essential intercity and commuter services and improve service reliability and promote the economic well-being of the Northeast region and the entire nation. Fortunately, the historic Infrastructure Investment and Jobs Act (IIJA) (also known as the Bipartisan Infrastructure Law (BIL)) includes tens of billions of dollars for rail and transit investments. These funds are supporting the replacement of numerous century-old bridges and tunnels and begin to address the corridor's overall state-of-good-repair backlog.

Background

The NEC Commission

The Northeast Corridor Commission was authorized by Congress in 2008 (49 U.S.C. § 24905) to develop coordinated strategies to improve the Northeast's core rail network in recognition of the inherent challenges of planning, financing, and implementing major infrastructure improvements that cross multiple jurisdictions. The expectation is that by coming together to take collective responsibility for the NEC, Commission member agencies will achieve a level of success that far exceeds the potential reach of any individual organization.

The Commission is comprised of one member from each of the NEC states (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, and Maryland) and the District of Columbia; four members from Amtrak; and five members from the U.S. Department of Transportation. The Commission also includes non-voting representatives from four freight railroads, states with connecting corridors, and several commuter operators in the region.



The Commission's NEC Cost Allocation Policy outlines a partnership built on three pillars: (1) operator cost sharing; (2) transparency, collaboration, and accountability; and (3) federal partnership. The transparency, collaboration, and accountability pillar includes NEC planning and reporting processes, including the 15-year CONNECT NEC Program and the five-year Capital Investment Plan (CIP). CONNECT NEC identifies long-term service objectives and associated capital investments, while the CIP serves as the implementation plan to advance CONNECT NEC in the near-term. Additionally, the CIP serves as the baseline for capital delivery reporting and the NEC Annual Report, which summarizes program delivery progress and train performance during the previous fiscal year. It is also a precursor to the Federal Railroad Administration's NEC Project Inventory, which serves as a pipeline for projects seeking Federal-State Partnership for Intercity Passenger Rail grants.

Figure 1. NEC Commission Plans and Reports

CONNECT PROGRAM

A 15-year plan with the long-term vision for a modern and resilient railroad with safe, reliable, and more frequent service; connections to new markets; and reduced travel times between communities.

Capital Investment Plan

A five-year plan that integrates NEC agencies' planned infrastructure investment detail. Year One of the CIP serves as an implementation plan and the baseline for infrastructure delivery reporting.

Annual Report

A report that documents the operational performance of NEC trains and the delivery of Year One of the CIP.

FY25-29 Capital Investment Plan

The FY25-29 CIP integrates the NEC infrastructure investments planned by each agency to develop a complete picture of corridor activities over the next five federal fiscal years. The core focus of the CIP is anticipated investments based on available funding. However, the CIP also identifies needed and desired capital investments that could occur with additional funding in years two through five and the additional funding required to fully implement this plan.

Capital Definitions

Investment type

The following investment types are aligned with the direction set by the FRA's Notice of Approach for its NEC Project Inventory (released June 2022). Investments may include improvement and capital renewal components regardless of investment type.

- Major Backlog: Projects necessary for achieving a state of good repair, but not undertaken on a routine basis.
- Capital Renewal: Routine repair and replacement of basic infrastructure.
- Improvement: Replacement of existing assets with markedly superior ones or introduction of new assets.
- Stations: Projects to repair, replace, modernize, or improve an existing station, occurring primarily within the boundaries of the station property, or projects to construct an expanded, new, or replacement station.
- Planning Studies: Projects that include only planning activities and have no associated construction in current form.

Investment Classification

- Programs: Investments that are typically cyclical in nature, may include both planned and reactive work, and sometimes cross multiple locations.
- Projects: Investments that typically focus on one location or asset with a discrete start and end date.

Status in Capital Investment Plan

- Active: Investments with preconstruction or construction activity in the first year of the plan. Active projects must have secured funding for at least the phase underway in the upcoming year. However, active projects may not yet be fully funded, and many require additional funding beyond FY25
- Future: Investments with project activity starting in years in two through five of the CIP are categorized as "future projects". These projects typically have received no funding, or have only received funding for work that has already been completed and now the project is on hold. These projects could advance in the next five years with additional funding

Historic funding leads to significant progress planned over the next five years

Thanks to historic funding provided to the NEC through BIL, agencies plan to make significant investments in NEC infrastructure during the upcoming fiscal year and over the next five years.

In FY25, NEC agencies plan to invest $6.4 billion to advance 90 programs and 253 projects, continuing the trend of increasing planned spend year-over-year since BIL.[1] 97 of those projects are scheduled to be in construction and 35 projects will be completed within FY25, including Next Generation Acela upgrades, Windsor Locks station in Connecticut, and Frazer Rail Shop and Yard in Pennsylvania. Of the $6.4 billion planned expenditure in FY25, project sponsors plan to spend approximately $2.6 billion on major backlog project activities across the NEC including construction on the Connecticut River Bridge Replacement and Frederick Douglass Tunnel projects.

1 Planned spend was $5.3 billion in FY24, $2.5 billion in FY23, and $3 billion in FY22.

Figure 2. Count of FY25 Projects by Lifecycle Stage at the End of FY25

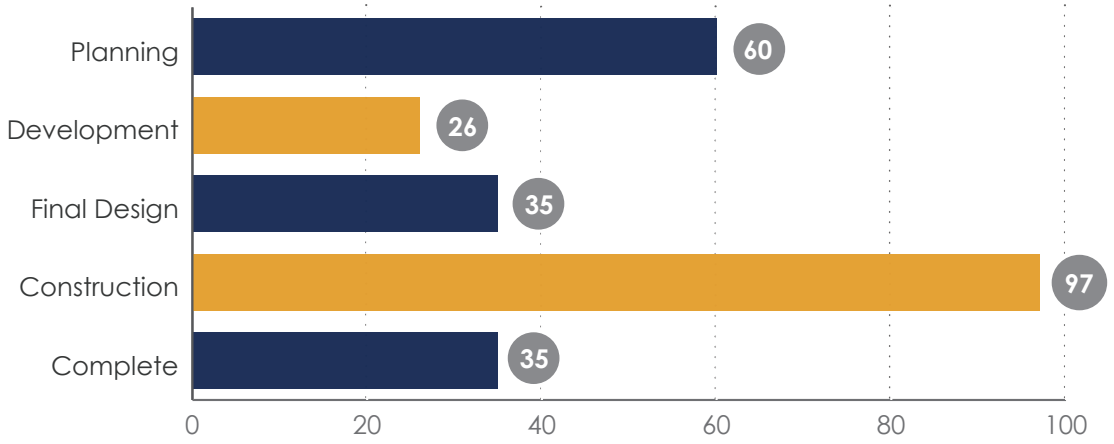
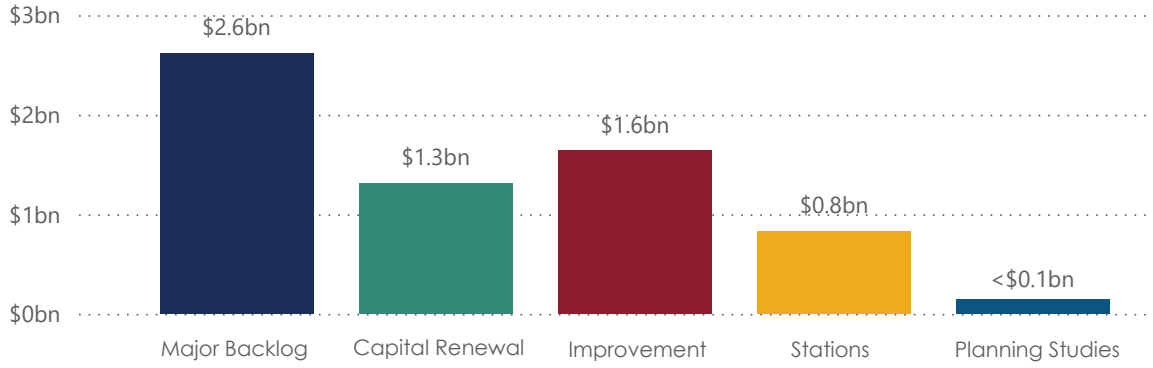
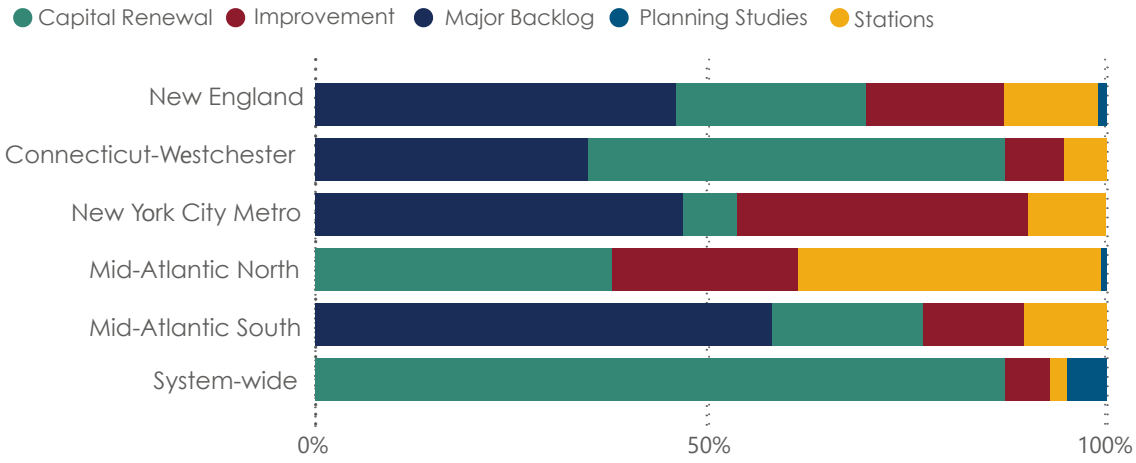


Figure 3. FY25 Planned Expenditure by Investment Type



In the New York region alone, project sponsors plan to invest $3.1 billion across investment types to progress project activities such as construction on Portal north Bridge, Penn Station Access, Harold Interlocking, East River Tunnel Replacement, and Hudson Tunnel Project. Of the $1.3 billion in planned capital renewal spending, RoW owners plan to invest $800 million on capital renewal programs, including undercutting and concrete tie replacement in the Mid-Atlantic North and South regions and track renewal on the New Haven Line.

Figure 4. FY25 Planned Expenditure by Investment Type



Agencies plan to continue the historic investment beyond FY25 over the next five years to support the continuation or completion of pre-construction and construction milestones for active projects already underway. For example, planning, development, and design activities will advance for projects like BWI 4th Track Phase 1 in Maryland, Newark Penn Station Master Plan in New Jersey, and Warwick/T.F. Green Airport Station Expansion in Rhode Island.

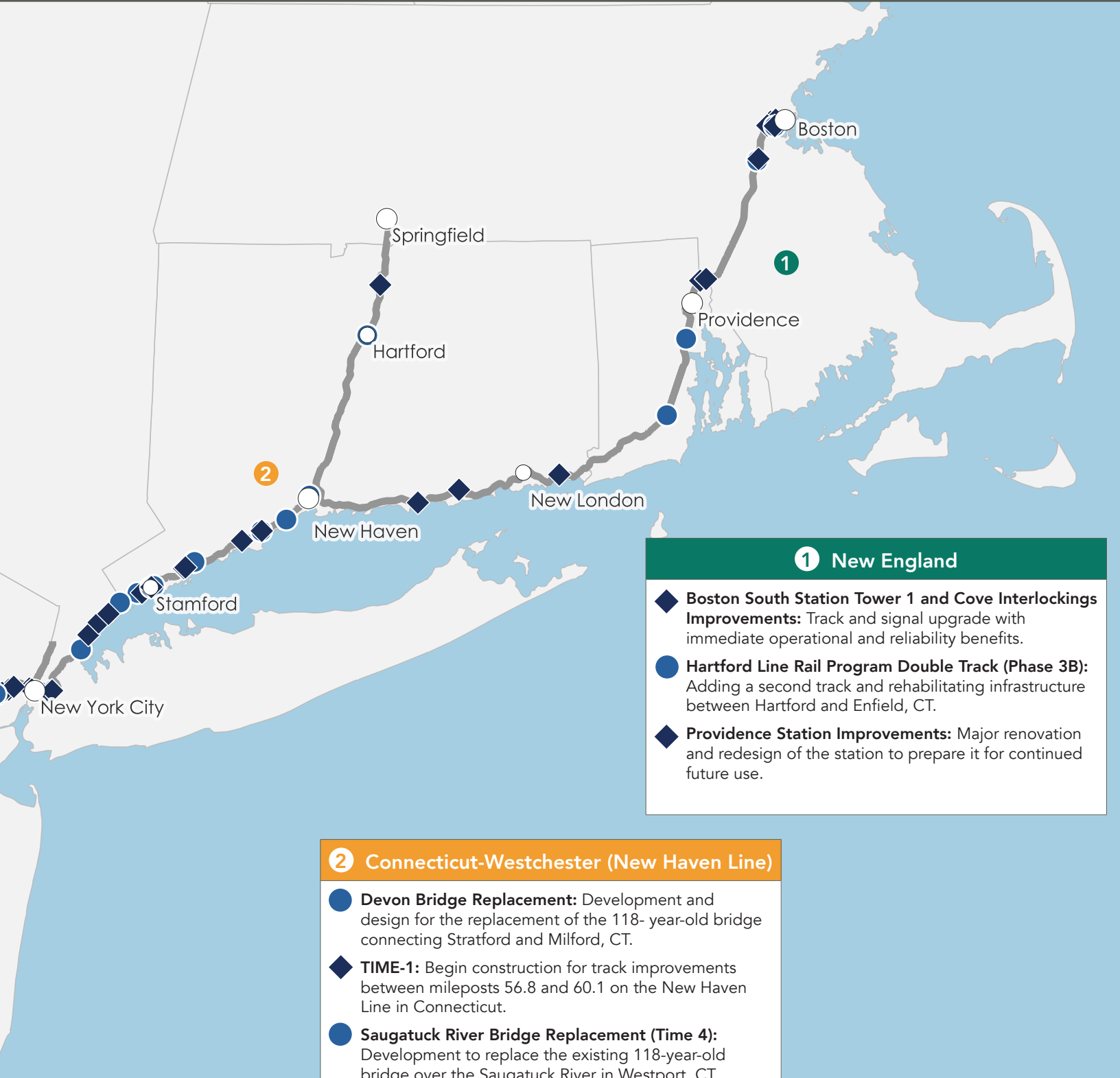
The funding made available through BIL has allowed project sponsors to move forward with large, essential projects, many of which will take many years to complete, including major backlog projects like Frederick Douglass Tunnel Program in Baltimore and Hudson Tunnel Project in New Jersey/New York. Two major backlog projects–East River Tunnel Rehabilitation and Portal North Bridge–and Penn Station Access, a major improvement project, are scheduled to be complete in the FY25-29 plan period.

Select FY25-29 Fully Funded Projects

Project	Total Project Cost	Est. Construction End	
WALK Bridge Replacement will replace the existing Walk Bridge, a 127-year-old four-track, four-span, movable bridge over the Norwalk River in Norwalk, CT, with a new multispan bridge that will include 240-foot dual lift spans over the waterway and fixed east and west approach spans.	$1.4 billion	2030	
Penn Station Access will comprehensively rehabilitate 19 miles of the Hell Gate Line connecting New York Penn Station and New Rochelle, NY, facilitate an expansion to the New Rochelle Yard, and construct four new Metro-North stations in the Bronx.	$2.9 billion	2027	★
East River Tunnel Rehabilitation Project will fully rehabilitate tracks 1 and 2 of the 100-plus-year-old East River Tunnels in New York City, remediating damage incurred during Superstorm Sandy and returning tracks 1 and 2 to a state of good repair.	$1.6 billion	2027	★
Gateway: Hudson Tunnel Project will construct a new two-track rail tunnel beneath the Hudson River and rehabilitate and modernize the existing two-track North River Tunnel.	$16 billion	2038	
Gateway: Portal North Bridge will construct a new, two-track fixed structure railroad bridge and approaches across the Hackensack River to replace the the existing century-old Portal Bridge.	$2.2 billion	2027	★
Susquehanna River Bridge Replacement Program will result in two new fixed, two-track bridges over the Susquehanna River between Havre De Grace and Perryville, MD, replacing the current century-old, two-track structure that is beyond its useful life	$2.7 billion	2036	
Frederick Douglass Tunnel Program will construct the Baltimore and Potomac tunnel replacement including a new two-track tunnel for passenger rail use, three ventilation facilities, and an approach track. The project also reconstructs associated bridges in the project area and rebuilds the West Baltimore commuter station.	$6 billion	2035	

★ *Indicates projects are scheduled to be complete in the next five years.*

Figure 5. Active Projects by FY25 Planned Phase, with select project highlights



1 New England

- **Boston South Station Tower 1 and Cove Interlockings Improvements:** Track and signal upgrade with immediate operational and reliability benefits.
- **Hartford Line Rail Program Double Track (Phase 3B):** Adding a second track and rehabilitating infrastructure between Hartford and Enfield, CT.
- **Providence Station Improvements:** Major renovation and redesign of the station to prepare it for continued future use.

2 Connecticut-Westchester (New Haven Line)

- **Devon Bridge Replacement:** Development and design for the replacement of the 118- year-old bridge connecting Stratford and Milford, CT.
- **TIME-1:** Begin construction for track improvements between mileposts 56.8 and 60.1 on the New Haven Line in Connecticut.
- **Saugatuck River Bridge Replacement (Time 4):** Development to replace the existing 118-year-old bridge over the Saugatuck River in Westport, CT.

5 Mid-Atlantic South

- **Bush & Gunpowder:** Project development activities to replace the century-old, two-track Bush and Gunpowder River Bridges, each with a new four-track structure.
- **Mid-Atlantic South Signal System Upgrades to 562 Project:** Replace and upgrade existing signal system.
- **Bridge To Burgos Catenary Renewal:** Replace and install new catenary wire and reprofiling of existing catenary between Bridge and Burgos interlockings.

Project Phase at End of FY25

- Pre-Construction
- Construction

Spotlight: Northern New Jersey Service Disruptions

Throughout the summer of 2024, Amtrak and NJ TRANSIT customers experienced a significant spike in service disruptions between Trenton, New Jersey and New York Penn Station—the busiest stretch of the NEC. These service disruptions, resulted in major train delays, cancellations, and, in some cases, passengers stuck on trains without power. In the immediate aftermath of these incidents (and since), Amtrak and NJ TRANSIT committed to a joint effort that includes accelerated inspection, maintenance, and improvement activities as part of a holistic effort focused on both Amtrak infrastructure and NJ TRANSIT equipment.

The affected geography—inherited by Amtrak in 1976 after decades of deferred maintenance —is one of many areas on the NEC with a large number of assets that are not in a state of good repair (see "Addressing the NEC State-of-Good-Repair Backlog" starting on page 20). Of particular concern is the condition of the electric traction assets in northern New Jersey, many of which were placed in service in the 1930s. Specifically, only 7% of the 1,300+ catenary structures, 15% of 370 miles of catenary wire[1], and 1 of 13 substations (8%) in this geography are operating within their defined "useful life," or the period during which they are expected to operate without age-related failures.

Infrastructure-related service disruptions resulting from decades of underinvestment highlight the need for agencies to have dedicated, predictable funding for the NEC—as provided by the Bipartisan Infrastructure Law (BIL) for fiscal years 2022-2026. Thanks to federal funding, including from BIL, significant project work is already underway to improve and renew this territory, including several projects within the Gateway program. Portal North Bridge is currently 70% complete, and construction is expected to finish on time and within budget. Construction of the Hudson Tunnel Project began in November 2023. Dock Bridge will begin construction this year, and Sawtooth Bridges and Harrison 4th Track are both in design. Further south, between Newark and New Brunswick, catenary and signal upgrade projects are in early planning stages, while catenary upgrades between New Brunswick and Trenton are in construction. Combined, these projects will renew 93.7 track miles of catenary in this geography.

Three of the Gateway projects—Dock Bridge, Sawtooth Bridges, and Hudson Tunnel—have received funding from the $24 billion IIJA Federal-State Partnership (FSP) NEC grant program. FRA's 2024 NEC Project Inventory lists the following projects that will upgrade catenary, signals, track, and other basic infrastructure in northern New Jersey, making them eligible for support through the FSP program:

- New York Metro Signal System Upgrades to 562 Program Phase 1: County to Elmora (signal system upgrades between New Brunswick and Elizabeth);
- County to Newark Catenary Upgrades (catenary upgrades from New Brunswick to Newark);
- The Sawtooth Bridges Replacement Project (final design and construction); and
- Kearny Sub 41 Relocation Project (design and construction).

[1] Reflects wiring renewal completed as part of NJ High-Speed Rail project between County and Clark

While funding from IIJA has been essential to advancing a number of long-delayed major backlog projects, continued guaranteed funding beyond FY26 is essential to advancing additional major backlog projects and to upgrade and repair the NEC's existing and aging basic infrastructure. Given the age and condition of basic infrastructure assets noted above, achieving a state of good repair for electric traction assets in New Jersey and elsewhere on the corridor will be a long-term effort. To aid in this effort, Amtrak continues to focus on improving its asset management practices so that the most critical and vulnerable assets receive investment first. While asset health was previously measured solely by age, Amtrak has been moving to condition-based scoring, which will significantly enhance its understanding of asset health. For example, Amtrak is using high-resolution photography of its catenary structures taken from a helicopter flying at low altitude to obtain a clearer, more accurate representation of the actual condition of these assets.

The deterioration of the NEC infrastructure over the last century has now reached a tipping point that requires a more urgent approach to infrastructure renewal than has been envisioned historically in NEC plans. Predictable long-term funding is essential to advance a sustained effort to rebuild and renew the aging infrastructure. Without dedicated predictable funding, NEC agencies are limited in their abilities to proactively engage in planning and design work, upgrade asset management systems, complete agreements, hire and train an appropriately sized and skilled workforce, and enter into large construction contracts. Investment at this scale will take time, but there is no alternative to reducing train delays and ensuring that Northeast Corridor passengers experience the reliable service that they deserve.

Sustained NEC funding is required for full and efficient plan implementation

BIL provided an installment of significant funding to renew and improve aging Northeast Corridor infrastructure. While BIL funds will go a long way in addressing the backlog of assets on the NEC, guaranteed funding beyond FY26 is necessary to advance all the investments in this plan and achieve the state-of-good-repair and service goals outlined in CONNECT NEC 2037. In addition, sustained, higher levels of annual appropriations to Amtrak's Northeast Corridor Account and the Federal-State Partnership for Intercity Passenger Rail grant program will be critical to the corridor's success.

Above: Sawtooth Bridges, originally built in 1907, are located in Kearney, New Jersey between Newark Penn Station and Secaucus Junction and include an approximately 1.9-mile-long stretch of right-of-way along Amtrak's Northeast Corridor (NEC).

NEC Funding Sources

From BIL Advance Appropriations and Annual Appropriations

Federal-State Partnership for Intercity Passenger Rail (FSP) Grant Program

The FRA FSP Program provides funding for capital projects that reduce the state-of-good-repair backlog, improve performance, or expand or establish new intercity passenger rail service. BIL directs the FRA to publish an NEC Project Inventory to create a predictable project pipeline of investments on the NEC. The FRA uses the data in the NEC Capital Investment Plan to inform the NEC Project Inventory.

Other Federal Discretionary Grants and Loans

NEC infrastructure investment is an eligible activity under a variety of federal competitive grant and loan programs to which agencies may apply for funding:

- FTA Sec. 5309 Capital Investment Grants
- FRA Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program
- USDOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program
- USDOT National Infrastructure Project Assistance (Mega)
- FRA Railroad Rehabilitation & Improvement Financing (RRIF) Program

Amtrak's NEC and National Network Accounts

As part of its annual legislative and grant request to Congress, Amtrak requests funding for the NEC and National Network accounts. Amounts for the NEC account are provided by Congress and invested in NEC infrastructure and other NEC needs like rolling stock, while a portion of funding for the National Network account are invested in the NEC's connecting corridors. Through BIL, Amtrak received $6 billion in supplemental funding to its NEC account and $16 billion in supplemental funding to its National Network accounts. Those Northeast Corridor BIL supplemental grants can be also used as local match to the FSP Program.

Federal Formula-Based Sources

FTA formula-based grant programs are allocated to geographic areas and, ultimately, transit agencies or providers. States and transit agencies can decide to spend some of their allocation on NEC projects or as a means of sourcing their Baseline Capital Charge (BCC) payments. In addition, states may flex some FHWA funds to transit and rail projects.

From Other Sources

Baseline Capital Charge (BCC)

Commitment by all passenger railroads operating on the NEC to contribute funding toward NEC capital renewal needs based on a consistent formula agreed to in the Cost Allocation Policy.

State, Commuter Agency, and Local Sources

Each NEC state and transit agency has its own revenue sources that fund transportation investments such as NEC projects, local matches for federal grants, or as a means of sourcing their BCC payments.

Amtrak's NEC Operating Surplus

When Amtrak's NEC services generate an operating surplus, Amtrak reinvests these funds back into corridor infrastructure and other NEC needs like rolling stock. This funding is in part supported by operating payments made by other operators through the Cost Allocation Policy.

Project sponsors currently have an estimated $45 billion of funding committed to progress 220 fully or partially funded projects with activity in the next five years. Current and future BCCs, along with other owner and operator capital funding, will cover $5 billion in programmatic capital renewal investment over the next five years.

Despite these historic funding levels, project sponsors need almost $29 billion in funding commitments to complete phases scheduled to begin in the next five years for investments that are already underway, such as the Bush and Gunpowder River bridge replacements in Maryland, catenary replacements in Pennsylvania and Delaware, and the TIME projects in Connecticut. Without additional funding, momentum on these important projects would be lost.

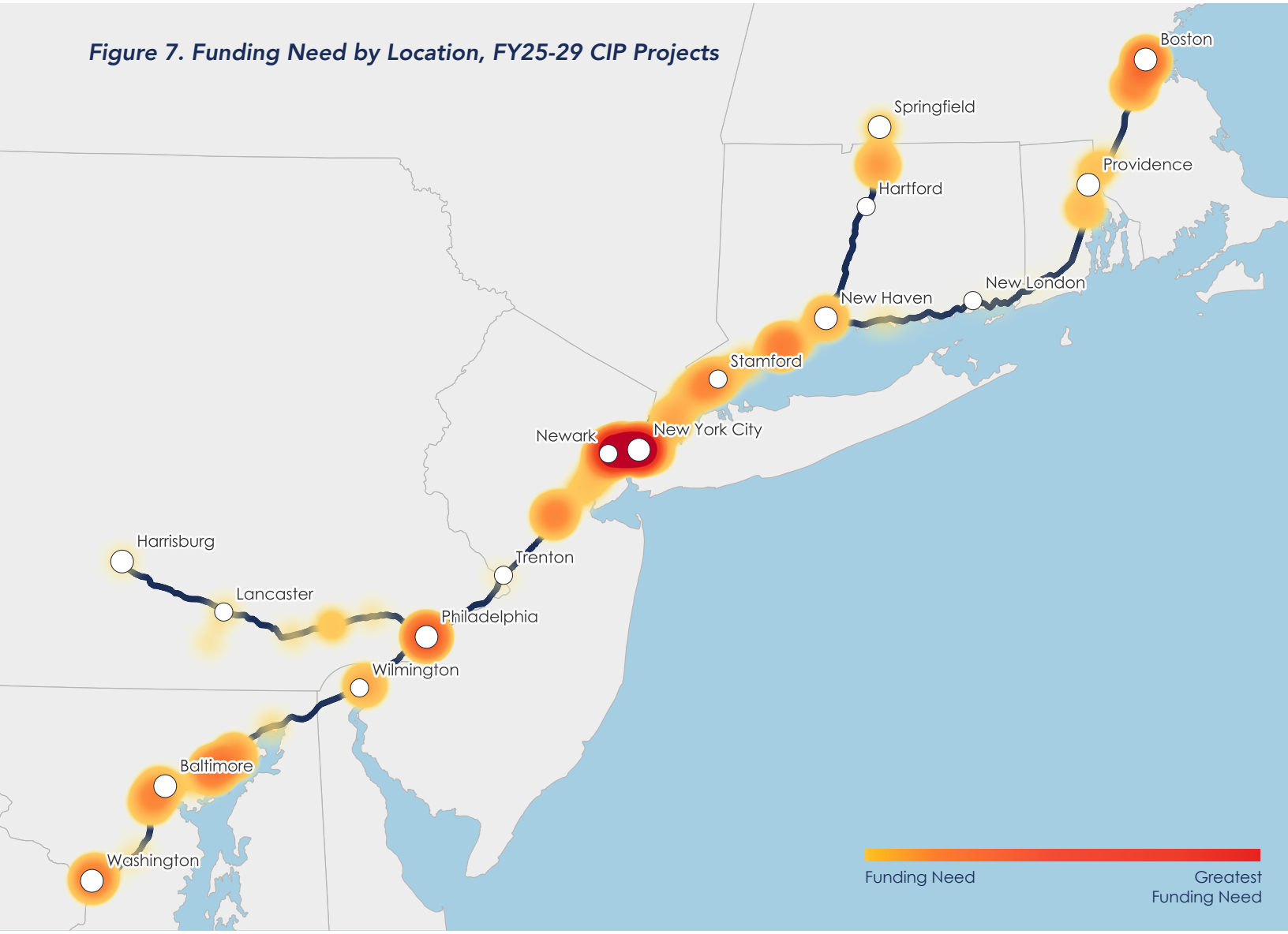
Additionally, nearly $4 billion is needed to initiate pre-construction for projects in the next five years that, as of today, have not yet started, including planning for projects such as the major overhaul and expansion of Boston South Station and Portal South Bridge.

Roughly half of the overall funding need is concentrated in the New York area and would cover such work as progressing elements of the Gateway Program, renewal and expansion of New York Penn Station, overhauling electric traction and signal systems in New Jersey, and construction phases of partially funded major backlog projects like Pelham Bay Bridge Replacement.

Figure 6. Top 10 Projects by Estimated FY25-29 Funding Need (Billions)

Rank	Project Name	State	Estimated FY25-29 Funding Need
1	New York Penn Station Reconstruction	NY	$7.0
2	Gateway: Sawtooth Bridges Replacement	NJ	$1.8
3	TIME-1	CT	$1.6
4	Mid-Atlantic OCS Replacement Program Phase 2: Brill to Landlith	DE	$1.6
5	Gateway: New York Penn Station Expansion	NY	$1.5
6	Mid-Atlantic OCS Replacement Program Phase 1: Zoo to Paoli	PA	$1.3
7	Midline Loop	NJ	$0.8
8	Philadelphia 30th Street District Plan	PA	$0.8
9	South-Side Maintenance and Layover Facility	MA	$0.7
10	Boston to Providence - Traction Power Upgrades	MA	$0.7

Figure 7. Funding Need by Location, FY25-29 CIP Projects



Some of this need will be addressed through the remaining $6 billion in FY24-26 advanced appropriations to the FSP program, along with potential future appropriations to Amtrak's NEC Account. However, project sponsors will need approximately $24 billion from a combination of federal, state, and local funding sources to continue the work outlined in this plan.

Figure 8. Estimated FY25-29 Funding Need (Billions)

Funding Need by Type[1]	**$32.4**
Major Backlog	$3.3
Stations	$13.6
Capital Renewal[2]	$8.5
Improvement[3]	$7.0
Additional Funding Available[4]	**$8.1**
Total Remaining FY25-29 Funding Need	**$24.3**

Table Notes:

[1] Funding need by type is based on analysis using costs and available funding sources submitted by project sponsors, and documented in the Project Information Appendix.

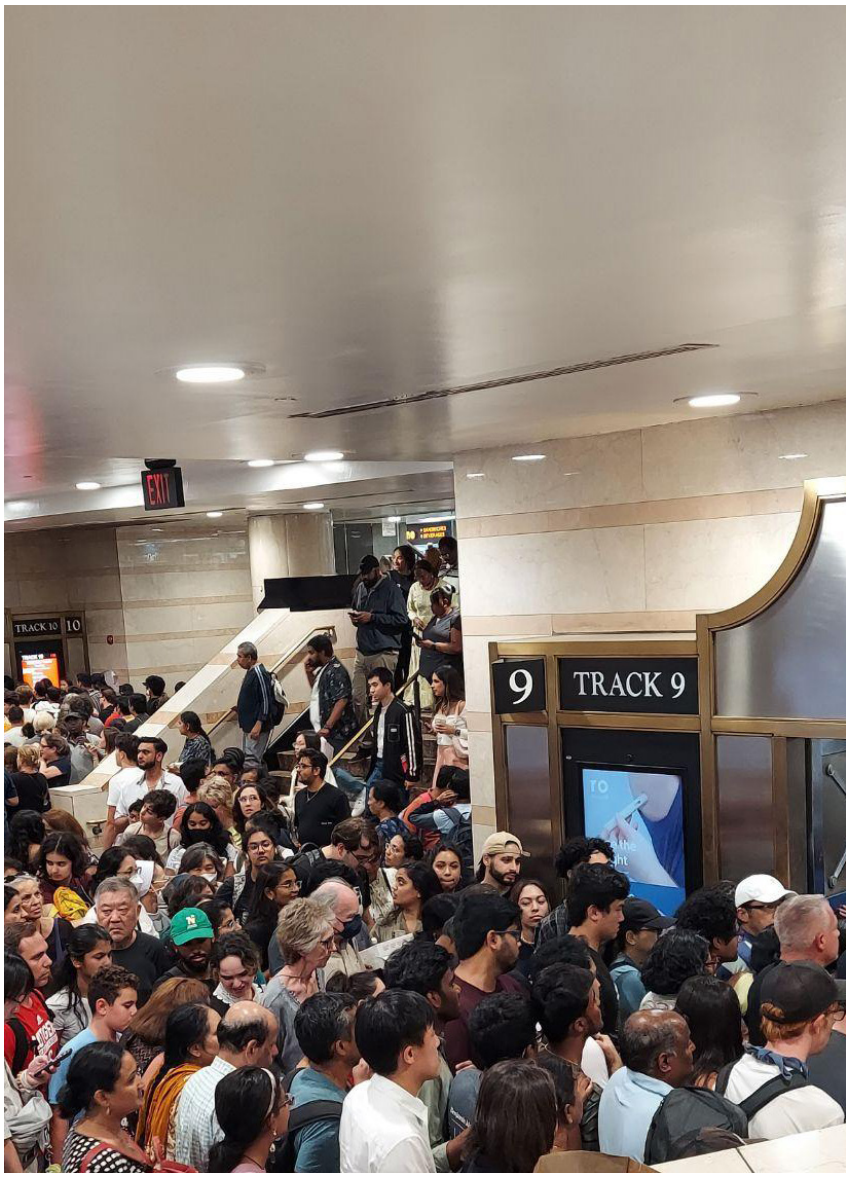
[2] Capital renewal funding need includes capital renewal projects and program needs less projected BCC levels, based on FY25 BCC obligations and inflated using NECC methodology.

[3] Planning studies are included in the Improvement totals.

[4] Additional funding available includes remaining advanced appropriations to the FSP-NEC program and assumed future Amtrak Annual Grant amounts, based on Amtrak's FY24 Grant and Legislative Request base needs capital request for the types of Annual Grant funded work in NECC capital plans and escalated using NECC methodology. Amtrak's BCC obligations to itself come from Annual Grant funding, but are incuded in the future BCCs assumptions driving the Capital Renewal funding need estimates for the purposes of this table.

Importantly, this additional funding would cover the cost of a project's entire unfunded project phase scheduled to begin in the next five years, even if the spending on that phase extends beyond the five-year period. Securing funding for entire phases, particularly for construction, allows sponsors to forecast and plan for resource requirements far in advance to move the project forward as quickly and efficiently as possible.

NEC Commission members continue to explore how to combine different sources of new and existing funding to maximize federal assistance. Agencies are committed to providing the local match through their own funding sources and working with federal partners to be good stewards of these new dollars to make the much-needed investments in the NEC.



Above: Crowded New York Penn Station

Addressing the NEC State-of-Good-Repair Backlog

The Northeast Corridor state-of-good-repair (SOGR) backlog is the population of assets on the NEC that are no longer in a condition to perform as designed, having reached the end of their useful life. Addressing and monitoring the SOGR backlog on the NEC has been a focus of the Commission since its creation as aging assets are prone to failure and often the cause of train delays and service disruptions on the NEC. Importantly, the SOGR backlog is a dynamic indicator of the NEC's "health" as each year some assets are aging beyond their useful life while others are being repaired or replaced through routine maintenance and capital investments.

Through the NEC Cost Allocation Policy, owners and operators have committed funding to cover nearly $1 billion annually in shared capital costs to maintain the railroad and prevent further asset degradation. More recently, BIL provided a significant installment of guaranteed and predictable funding to advance long-standing major backlog projects and critical capital renewal investments; however, significant work remains to plan, fund, and implement projects and programs to address the NEC's basic infrastructure backlog. Figure 10 summarizes the status of the basic infrastructure backlog based on data from RoW owners' asset management systems.

The Commission's CONNECT NEC plans use RoW owners' asset data to propose investments that make meaningful progress towards bringing all assets to a state of good repair while considering available track outages and workforce. While RoW owners have been working in recent years to enhance their asset management capabilities, including their asset condition data, improvements to these data and systems are ongoing and it remains challenging to identify how agencies' asset data are informing their capital plans. As a result, the CONNECT NEC analysis remains the best available source of the estimated cost to address the basic infrastructure backlog for all assets currently in or estimated to enter the backlog over the next fifteen years.

The following pages provide the Commission's assessment of cost and funding required to address the SOGR backlog and provide an update on the current status of efforts to eliminate the backlog. These tables will serve as the baseline for measuring progress in eliminating the backlog in the FY25 NEC Annual Report.

Major Backlog

Completing these large bridge and tunnel replacement or rehabilitation projects will eliminate a significant portion of the SOGR backlog for many generations. The cost of addressing major backlog asset SOGR is based on the total project costs for the associated replacement or rehabilitation projects and is currently estimated at $46.8 billion in year of expenditure dollars. The following table reflects major backlog costs and the amount of funding needed to advance each of these projects. The table also reflects the planned lifecycle stage for these projects at the end of FY25.

Figure 9. Major Backlog Cost, Funding Need, & Planned Lifecycle Stage (Billions)

Major Backlog Projects		Total Project Cost	Total Funding Need	Planned Lifecycle Stage end of FY25
CT	Connecticut River Bridge Replacement Project	$1.5	$0.2	Construction
	DEVON Bridge Replacement	$3.1	$2.8	Development
	SAUGATUCK River Bridge Replacement (TIME-4)	$1.1	$1.1	Planning
	WALK Bridge Replacement	$1.4	$0	Construction
	COS COB Bridge Replacement (TIME-8)	$3.4	$3.4	Planning
NY	Pelham Bay Bridge Replacement Project	$0.7	$0.6	Development
	East River Tunnel Rehabilitation Project	$1.6	$0	Construction
NJ	Gateway: Hudson Tunnel Project	$16.0	$0	Construction
	Gateway: Highline Renewal and State of Good Repair	$0.3	$0.3	Not Started
	Gateway: Portal North Bridge	$2.2	$0	Construction
	Gateway: Sawtooth Bridges Replacement Project	$2.1	$1.8	Construction
	Gateway: Dock Bridge Rehabilitation Project	$0.4	$0	Construction
MD	Susquehanna River Bridge Replacement Program	$2.7	$0	Final Design
	Bush River Bridge Replacement Program	$1.9	$1.9	Development
	Gunpowder River Bridge Replacement Program	$2.4	$2.4	Development
	Frederick Douglass Tunnel Program	$6.0	$0	Construction

Note: Cost, funding, and schedule information as provided by project sponsor. Costs are escalated to Year-of-Expenditure, accounting for inflation, unless otherwise escalated by project sponsor. Planned lifecycle stage reflects the most advanced stage if a project is in multiple stages at the end of FY25. Details on each project can be found in the Project Information Appendix. Green highlight indicates fully funded, yellow highlight indicates partially funded, red highlight indicates no funding.

Basic Infrastructure SOGR

Despite funding made available through BIL, a significant, unaddressed backlog of basic infrastructure assets, such as rails, ties, ballast, communication systems, electric traction power systems, undergrade bridges and other similar items, remains.

CONNECT NEC 2037 (C37) efforts forecasted capital needs for basic infrastructure SOGR using RoW owner asset data and unit cost assumptions, accounting for both assets already in the backlog and assets that will enter the backlog in the next 15 years. The analysis factored in asset age and condition (where available) and limited spending based on reasonable expectations of track outage and workforce availability for capital renewal investment. **Importantly, the actual investment needed to address the current backlog is significantly higher than the spending estimated in C37.**

This constrained spending estimated in C37, updated for this plan to account for inflation, reflects that owners could spend approximately $12 billion on capital renewal projects and $58 billion on capital renewal programs to begin to address the basic infrastructure backlog in the next fifteen years with available resources. Figure 10 below shows the forecasted 15-year programmatic capital renewal spending by discipline.

Beyond FY39, C37 analysis estimates that owners need to invest approximately $3 billion in programmatic capital renewal each year for an additional 15 years to fully address the current backlog, on top of basic maintenance required to address assets that fall out of a SOGR after FY39. While future BCCs will be available to fund some of this work, that funding will need to be supplemented with other sources to fully address the current backlog.

Figure 10. Estimated Programmatic Capital Renewal Spend, FY25-39 (Billions, YoE)

Programmatic Capital Renewal by Discipline	FY25-39 Spend
Track	$10.8
Structures	$22.2
ET	$10.9
C&S	$13.8

Note: Based on C37 analysis results, inflated to base year 2024 dollars and then to Year-of-Expenditure dollars for the FY25-29 CIP. Force account protection and supervision costs are divided proportionally between the disciplines. This analysis will be updated using refreshed asset data for next iteration of CONNECT NEC, therefore is subject to change.

Progress in eliminating basic infrastructure backlog

To meet statutory requirements to report on progress in eliminating the SOGR backlog, the Commission has been working with RoW owners to determine an initial baseline percentage of existing assets in a SOGR for select asset types, with the purpose of tracking percentage of assets addressed each year in the NEC Annual Report. Figure 11 includes the latest asset data from RoW owners, reflecting the current count of existing assets, for asset types where that data is available. In this table, Amtrak's percent of assets in a SOGR is based on useful life for all assets except for catenary structures, which is based on condition. Amtrak is moving away from age as a proxy for asset condition. Future iterations of this table will include more condition-based SOGR assessments. MNR percent of assets in a SOGR is determined by condition data when available, otherwise useful life is used to calculate the percentage. As of this plan, percent in SOGR estimates are not comparable across iterations due to methodology updates.

Figure 11. Status of NEC programmatic backlog to date

Asset Type	Unit	Asset Count	Percent in SOGR
Amtrak (Amtrak and Massachusetts)			
Catenary Structures (Replacement)	each	18,545	67%
Catenary Wire (Replacement)	miles of catenary	1,412	12%
Central Instrument House (Replacement)	each	2,241	70%
Concrete Ties (Replacement)	each	3,346,230	Not available
Culvert (Replacement)	each	737	Not available
Rail (Replacement)	track miles	1,617	72%
Signals (Replacement)	each (INT)	1,816	91%
Signals (Replacement)	each (ABS)	768	90%
Substations (Replacement)	each	85	32%
Switch Machine (Replacement)	each	2,240	74%
Turnouts (Replacement)	each	1,692	70%
Undergrade Bridges (Replacement)	linear feet (bridge)	110,635	98%
Wood Ties (Replacement)	each	1,506,669	Not available
Metro-North (New York and Connecticut unless noted otherwise)			
Culverts (Replacement, NY only)	each	5	40%
Rail (Replacement)	rail miles	442	43%
Turnouts (Replacement)	each	15	60%
Undergrade Bridges (Replacement, NY only)	each	29	90%

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Page vi: Crews inspecting catenary at Trenton Station, New Jersey, courtesy of Amtrak, 2024. Photo available at https://media.amtrak.com/2024/07/fra-and-fta-july-2024-site-visit-with-amtrak-and-nj-transit-in-morrisville-pa-and-trenton/

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Page 13: Acela at Metropark. Courtesy of the Northeast Corridor Commission, 2024.

Page 14: Sawtooth Bridges in Kearney, New Jersey. Courtesy of Amtrak, 2020.

Page 19: Overcrowding at New York Penn Station, 2024. Courtesy of Eliza Bertrand.

Back cover: Work crews move west along the Harrisburg Track Renewal Project, Middletown, PA, courtesy of Amtrak, 2024. Photo available at https://media.amtrak.com/2024/05/amtrak-executive-laura-mason-tours-harrisburg-track-renewal-project/

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