CONNECT 2037

15-Year Service and Infrastructure Development Plan
and 5-year Capital Investment Plan
for the Northeast Corridor

CONNECT 2037

15-Year Service and Infrastructure Improvement Plan and 5-year Capital Investment Plan for the Northeast Corridor

A report 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 Regional Commuter (MARC)

District Department of Transportation (DDOT)

Virginia Railway Express (VRE)

Amtrak

U.S. Department of Transportation (USDOT)

November 2023

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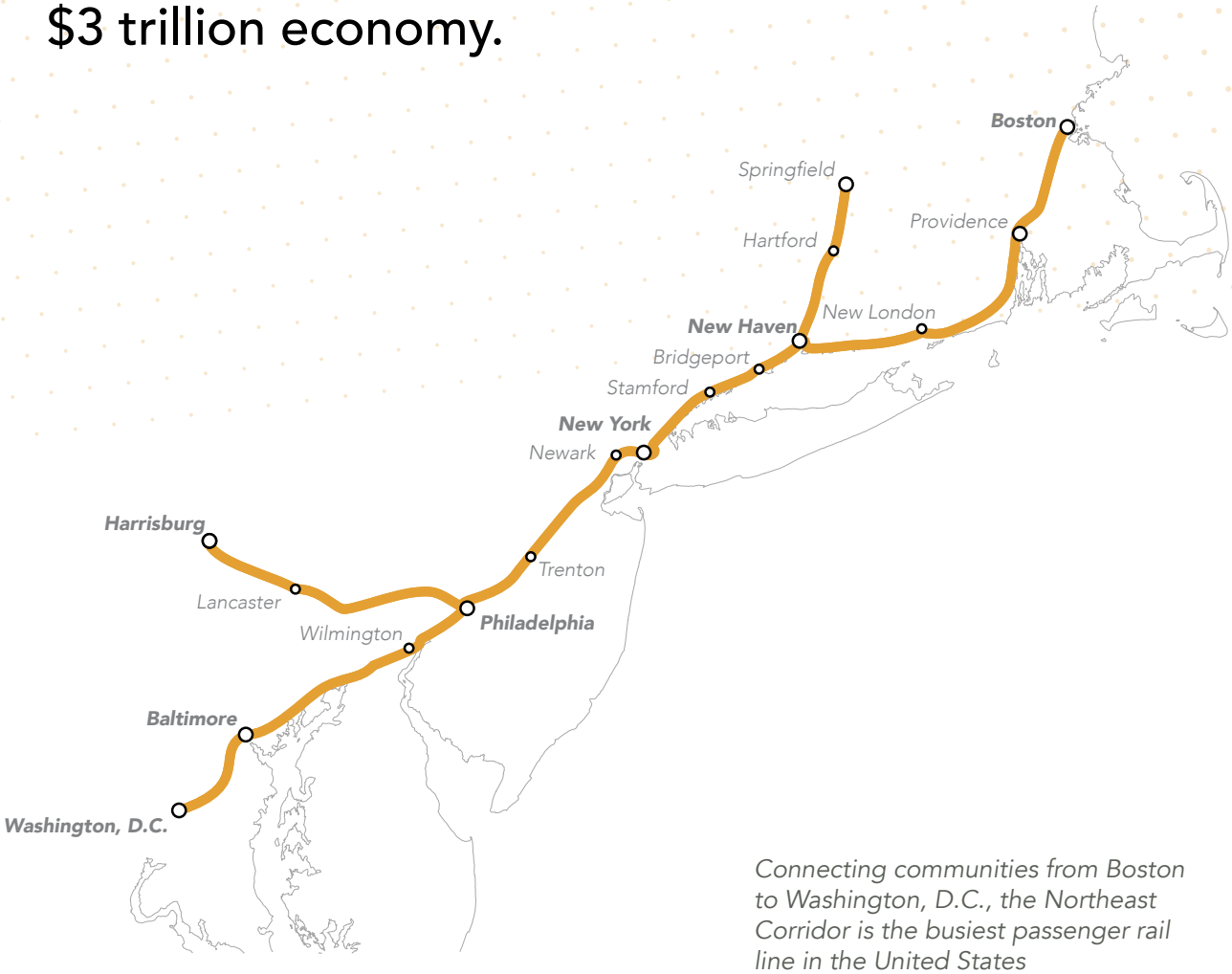
Amtrak train in Philadelphia, PA

CONNECT 2037

The Northeast Corridor (NEC) is the transportation backbone of the Northeast region, serving a population of over 50 million people and supporting a $3 trillion economy.



Connecting communities from Boston to Washington, D.C., the Northeast Corridor is the busiest passenger rail line in the United States

Introduction

We are about to commence the most ambitious period of reinvestment in the Northeast Corridor's history. Thanks to the work of Congress and the Biden Administration on the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL), the NEC has its first-ever source of dedicated, multi-year funding, providing the predictability needed to efficiently deliver a major capital program.

The Time is Now to Rebuild the NEC

After nearly a century of underinvestment, the NEC finally has a downpayment to address aging infrastructure, create much-needed capacity for additional service, and build a resilient railroad network for the future.

The Northeast Corridor Commission informed the Bipartisan Infrastructure Law (BIL) through the CONNECT NEC 2035 (C35) program in July 2021, a first-ever corridor-wide 15-year service development plan guided by the long-term vision set by the Federal Railroad Administration's 2017 NEC FUTURE Record of Decision. C35 defined a first phase of state-of-good-repair and improvement needs, and a feasible sequencing of infrastructure investment. C35 also proposed two key principles for a funding program to implement the plan: 1) Make funding predictable and 2) Fund the plan rather than individual projects.

Congress and the Biden Administration took these proposals to heart in structuring the BIL. The Federal-State Partnership for Intercity Rail program provided five years of advanced appropriations totaling $24 billion for the NEC, and it created the NEC Project Inventory, built on the CONNECT NEC planning process, to establish funding eligibility.

The NEC is Critically Important

The corridor serves as a vital link between people and their jobs, family, and friends, keeping riders off the roads, reducing greenhouse gas emissions, and connecting communities. Daily NEC riders contribute more than $50 billion annually to the national economy, and an unexpected loss of the NEC for one day alone could cost the nation nearly $100 million in transportation-related impacts and productivity losses.

At its peak just before the coronavirus pandemic, the NEC supported 930,000 trips on an average weekday, including 50,000 Amtrak trips and 880,000 commuter rail trips, with demand poised to grow from there. The NEC faced inadequate capacity to meet travel demand levels, with rail service running at maximum possible volume on aging infrastructure, including 15 major bridges and tunnels over 100 years old. Over the last several decades, NEC agencies made emergency investments while delaying critical state-of-good-repair work and capacity expansion efforts. More recently, NEC agencies have started to advance capital renewal and construction of projects like the Portal North and WALK bridge replacements. Meanwhile, the pandemic's impact on ridership and revenue further strained NEC agencies' financial ability to support service and fund infrastructure improvements. However, aided by operators who continue to increase service, ridership is returning to the NEC, reaching as high as 50,000 Amtrak trips and 585,000 commuter rail trips per day in spring 2023.

The CONNECT NEC Process

CONNECT NEC is an ongoing planning process and this update, CONNECT NEC 2037 (C37), builds on the work started in C35. C37 refines the planning process in light of newly available funding, lessons learned, and updated service objectives and project plans. C35 conceptually assessed what could be done in the next 15 years to achieve service and state-of-good-repair goals for the purpose of determining a funding need. C37 begins a transition to defining in much greater detail what will be done to achieve these goals, particularly for projects funded in the near-term. The C37 update to the CONNECT NEC planning process advances several key objectives:

- Incorporate project level planning advancements and newly available funding through initial Bipartisan Infrastructure Law grant awards;
- Develop and integrate more detailed information on workforce and other resource constraints;
- Where applicable, update service objectives to accommodate post-pandemic shifts in travel demand patterns; and
- Update funding need based on new project cost estimates and the above considerations.

A planned 2025 update, C40, will continue to build upon these C37 advancements with a focus on resource and funding availability.

Funding CONNECT NEC

The Commission remains committed to a collaborative, shared planning process, that is more important now than ever with real funding at stake. Furthermore, the Commission has established an Implementation Coordination Program to bring to project delivery the same transparency, collaboration, and accountability the Commission brought to CONNECT NEC planning.

Despite these advancements, much more work remains. The Bipartisan Infrastructure Law's downpayment is significant, but it is not enough funding to realize the full potential of C37. Multi-year, predictable funding beyond FY26 is essential to address all the corridor's state-of-good repair and improvement needs, in addition to significant fleet and facility investments, typically sole-benefit projects. The Commission will continue to revisit CONNECT NEC in the coming years, and future iterations will apply even more scrutiny to changing travel demands, realistic resource constraints, delivery timelines, and funding availability.

Benefits of Delivering CONNECT NEC

If C37 is fully funded and implemented, Northeast Corridor passengers will enjoy new services, higher speeds, improved reliability, and more frequent service. C37 includes investment to significantly advance the NEC's state of good repair, remove capacity constraints, and build a modern and resilient rail network. With greater convenience, enhanced reliability, and a higher quality customer experience, the NEC can deliver mobility, economic, and environmental benefits to individuals, businesses, and communities throughout the region.

Bridgeport Station

Federal-State Partnership for Intercity Passenger Rail Awards

The Federal-State Partnership (FSP) for Intercity Passenger Rail grant program is providing historic investment in the Northeast Corridor (NEC), awarding over $16 billion to 25 projects that will reduce the state-of-good-repair backlog and improve service. Roughly $15 billion of this federal funding, along with local funding matches, will fully fund 10 key projects, enabling these projects to move forward and improve the quality of life for millions of travelers who rely on Amtrak and commuter rail services every day.

	Major Backlog Projects	FSP Federal Funding Award
3	Connecticut River Bridge Replacement Project (CT)	**$827,000,000**
5	DEVON Bridge Replacement (CT)*	**$246,000,000**
8	SAUGATUCK River Bridge Replacement (CT)	**$23,000,000**
9	WALK Bridge Replacement (CT)**	**$465,000,000**
12	Pelham Bay Bridge Replacement Project (NY)*	**$58,000,000**
13	East River Tunnel Rehabilitation Project (NY)	**$1,262,000,000**
14	Gateway: Hudson Tunnel Project (NY/NJ)**	**$3,800,000,000**
15	Gateway: Sawtooth Bridges Replacement (NJ)*	**$133,000,000**
16	Gateway: Highline Renewal and State of Good Repair: Dock Bridge (NJ)	**$300,000,000**
21	Susquehanna River Bridge Replacement Program (MD)	**$2,081,000,000**
22	Bush River Bridge Replacement Program (MD)*	**$19,000,000**
23	Gunpowder River Bridge Replacement Program (MD)*	**$30,000,000**
25	Frederick Douglass Tunnel Program (MD)	**$4,708,000,000**

	Capital Renewal, Stations, and Improvement Projects	FSP Federal Funding Award
2	Hartford Line Rail Program Double Track (Phase 3B) Project (CT)	**$105,000,000**
4	New Haven Line Network Infrastructure Upgrade (CT)	**$15,000,000**
6	DEVON Bridge Interim Repairs (CT)	**$119,000,000**
7	TIME-1 (CT)	**$72,000,000**
10	New Haven Line Power Improvement Program (CT/NY)	**$123,000,000**
11	Penn Station Access (NY)**	**$1,644,000,000**
17	Newark Penn Station: Master Plan and Reimagined Icon (NJ)	**$59,000,000**
18	Delco Lead (NJ)	**$181,000,000**
19	Cornwells Heights Station Improvements (PA)	**$31,000,000**
24	Baltimore Penn Station: Master Plan (MD)	**$108,000,000**
	Planning Studies	
1	New Haven - Providence Capacity Planning Study (RI/CT)	**$4,000,000**
20	Infrastructure Renewal and Speed Improvement Program (MD/DE/PA/NJ/NY)	**$22,000,000**

Project Funding Status

- # Funded through Construction
- (#) Funded through Planning, Project Development, and/or Design

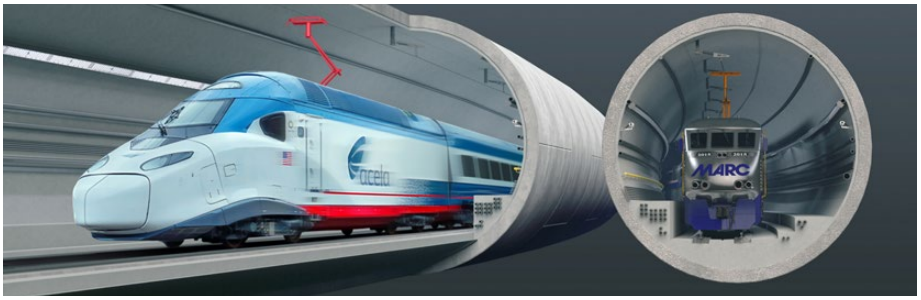
**FRA also issued a Letter of Intent (LOI) with the FY22/23 FSP award indicating its intention to fund the project for future lifecycle stages. LOI funding is not included in the above table.*

***Assumes full funding for construction will be identified. See Project Information Appendix for funding plan details as of November 2023.*

9 WALK Bridge Replacement

11 Penn Station Access

21 Susquehanna River Bridge Replacement Program



25 Frederick Douglass Tunnel Program

Images are project renderings

Northeast Corridor Regions

CONNECT NEC planning is organized into five regions to allow for improved coordination between Northeast Corridor operators and Right-of-Way owners: New England, Connecticut-Westchester, New York City Metro, Mid-Atlantic North, and Mid-Atlantic South.

Dividing the NEC into regions helps to clarify service objectives for each operator and develop a project delivery analysis that is tied to each region's transportation, economic, and environmental initiatives and goals.

Right-of-Way Owners and Operators by Region

New England

Operators: Amtrak, Massachusetts Bay Transportation Authority (MBTA), CT*rail*

Owners: Amtrak, MBTA

Connecticut-Westchester

Operators: Amtrak, CT*rail*, Metro-North Railroad (Metro-North)

Owners: CTDOT, Metro-North

New York City Metro

Operators: Amtrak, Long Island Rail Road (LIRR), NJ TRANSIT

Owner: Amtrak

Mid-Atlantic North

Operators: Amtrak, Southeastern Pennsylvania Transportation Authority (SEPTA), NJ TRANSIT

Owner: Amtrak

Mid-Atlantic South

Operators: Amtrak, MARC, Virginia Railway Express (VRE)

Owner: Amtrak

Corridor-wide Benefits

If C37 is fully funded and implemented, travelers on the Northeast Corridor will enjoy new trains, new and improved stations, as well as more reliable, faster, and more frequent intercity and commuter rail services.

Communities along the Northeast Corridor will benefit from more reliable, high-quality, mobility options, new connections for underserved areas, and additional one-seat rides and express services, which will increase accessibility, improve environmental quality, and provide new economic opportunities.

Benefits of C37

Mobility and Access

+ More frequent Amtrak service on modern trainsets
+ Expanded commuter rail services

Connections to Opportunities

+ Expanded access to downtowns, housing, and opportunities
+ High-quality job and career opportunities

Environmental Quality

+ Reduced greenhouse gas emissions by moving more people by train
+ A resilient rail network for a changing climate

Mobility and Access

More frequent Amtrak service on modern trainsets

Amtrak riders will enjoy 50% more trains between Boston and New York with today's 20 daily round trips increasing to 30 within 15 years. Riders will be able to access an Acela train every hour and a Regional train every 30 minutes between New England and New York.

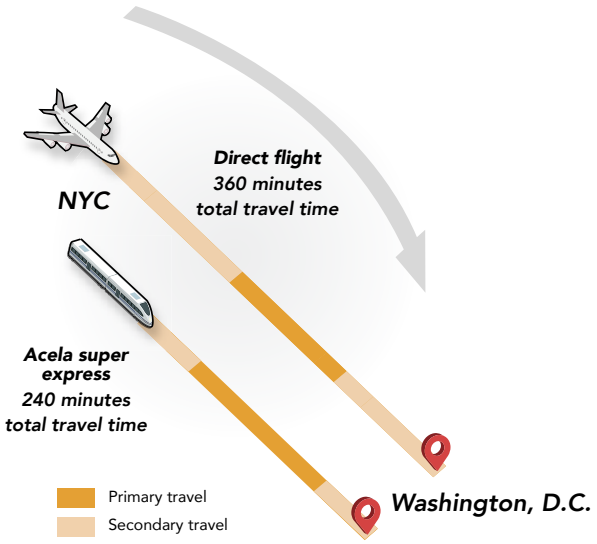
Between New York and Washington, D.C., Amtrak riders will enjoy nearly 100% more service with 60 daily round trips, up from 35 daily round trips today. Acela trains will depart every 30 minutes in peak periods, and hourly at other times. Amtrak will also reintroduce direct New York-Philadelphia-Washington, D.C. super-express Acela service, allowing riders to travel between New York and Washington, D.C. in only 2 hours and 30 minutes.

New trains will offer riders modern comfort and amenities on Acela service starting in 2024 and on Regional service starting in 2026. Riders will enjoy ample leg room, convenient food service, reserved seating, and improved views through larger windows. New Acela trains will offer nearly 25% more seats than before, providing more capacity for passengers seeking express services at speeds up to 160 mph.

Expanded commuter rail services

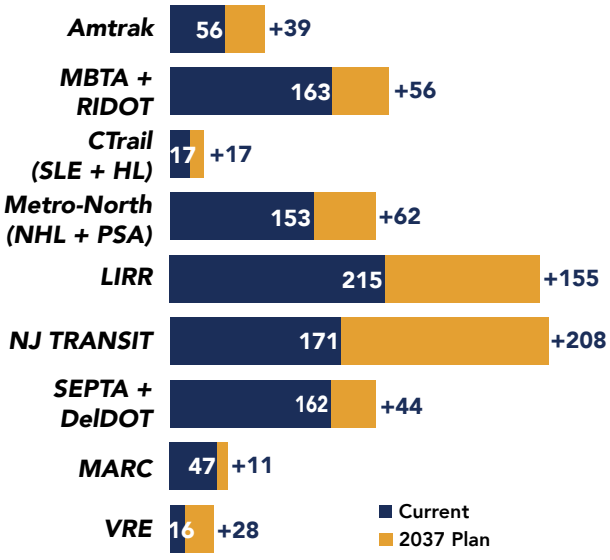
Overall, communities will have 60% more commuter trains to choose from, making rail an attractive choice for all kinds of travel. From Boston to Washington, D.C., riders will enjoy commuter rail services that are more frequent, reliable, and faster with new express services, one-seat rides, extended operating hours, and new stations closer to home. A more reliable NEC means passengers can expect on-time trains and avoid time added to their journeys to account for anticipated delays. Commuter rail operators in the NEC's major metropolitan areas are continuing to evaluate how they can best provide service to appeal both to customers returning to traditional weekday center city commutes, and to historically underserved work and non-work travelers.

Door-to-Door Travel Time Comparison
Acela super-express versus direct flight



Factoring in travel times, time for ticketing, bag check, and security, the door-to-door experience of taking Acela can save passengers time compared to flying.

Increase in Daily Round Trips on Corridor
by operator



INSIGHT

How Do We Make Trains Faster?

Comprehensive Updates Lead to Faster Journey Times

Faster travel times and more reliable service result from implementing a comprehensive suite of difficult and interrelated improvements to the corridor, which is currently hindered by outdated infrastructure.

- **Signals** – Existing signal systems limit capacity and speeds on the NEC. Upgrading to a modernized signal system allows train operators to safely operate at higher speeds.
- **Catenary** – The catenary system of the NEC is dated and restricts the top speed of trains. Upgrading the NEC's catenary system to an independently registered, fixed termination system allows trains to operate at higher speeds by providing a more stable and reliable power for trains.
- **Tracks** – The curvature of the current NEC track significantly restricts how fast trains can travel along the corridor because trains must begin reducing their speed well in advance before they encounter a tight curve. By straightening key curves along the corridor with sufficient existing right of way, trains will be able to operate at a higher consistent speed.
- **New Alignments** – Incorporating new sections of longer and straighter alignments outside the existing right of way can provide trains a faster route but must be balanced against community impacts.
- **Fleet –** New intercity and commuter fleet has the potential to operate at higher top speeds and to accelerate faster.

C37 investment in these improvements will contribute to service that is not only faster, but more frequent and reliable.

Creating a Faster and More Reliable System Requires a Comprehensive Suite of Integrated Corridor Improvements

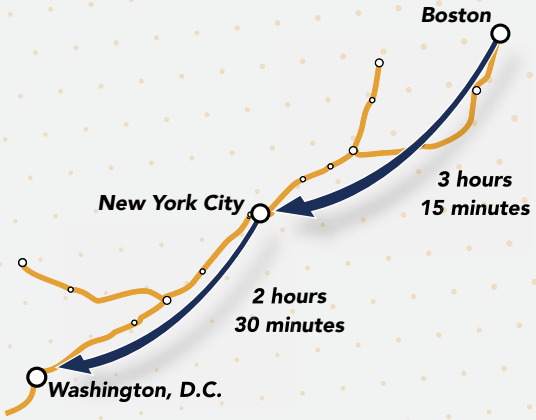
Different sections of NEC require a varied suite of interrelated corridor improvements to fully realize faster more reliable service. For example, the benefits of installing new track may be significantly limited without a modernized signal system.

New Amtrak Acela trainset

Acela 2040 Trip Time Goals

Trip time savings for Acela will be realized from a combination of interrelated investments, including on-right-of-way infrastructure upgrades such as catenary systems replacements, modernized signal systems, and straightened track geometry. In addition, possible new alignments outside of the existing right-of-way have the potential to significantly reduce trip times in the long-term.

Acela Trip Time Goals for 2040



The C35 analysis explored ambitious but achievable trip time savings for Acela based on an investment plan that was unconstrained by available funding and workforce. The C37 analysis incorporates more specific investments that will result in trip time savings, such as the Portal North Bridge project, catenary system replacements in New Jersey, and signal system upgrades in Maryland, all of which have secured funding and are underway. However, overall projected C37 trip time savings falls short of projected C35 savings due to the application of more realistic workforce constraints, new project information, and increased scrutiny on other assumptions made in C35.

Commission members are focused on advancing additional investments that will result in greater trip time savings for all operators, and plan to include these in the next iteration of CONNECT NEC. Amtrak has committed to a 2040 goal of two hours and 30 minutes average Acela trip time from New York City to Washington, D.C., and three hours and 15 minutes for trips from Boston to New York City using the existing Northeast Corridor route. Beyond these goals, shorter average Acela trip times are being explored in the New Haven-Providence Capacity Planning Study included in this plan.

These goals for Acela service in 2040 are only achievable with a sustained funding commitment to improve infrastructure and service. Additionally, due to the many interrelated investments required to achieve travel time savings, analysis needs to be completed to define realistic scopes, schedules, and budgets for the programs of projects. This analysis is underway, and the C40 update to CONNECT NEC will report how Amtrak plans to reach Acela 2040 trip time goals.

Connections to Opportunities

Expanded access to downtowns, housing, and opportunities

New stations will introduce rail service to underserved communities along the Northeast Corridor. C37 investment includes four new Metro-North stations in the Bronx, NY; new CT*rail* stations on the Hartford Line in Connecticut; a new NJ TRANSIT station in North Brunswick, NJ; and new MARC stations in Elkton and southeast Baltimore, MD. More than 260,000 households within 15 minutes of these new stations will be better connected to the corridor than they are today, in addition to new households that will benefit from convenient transit access in the future.

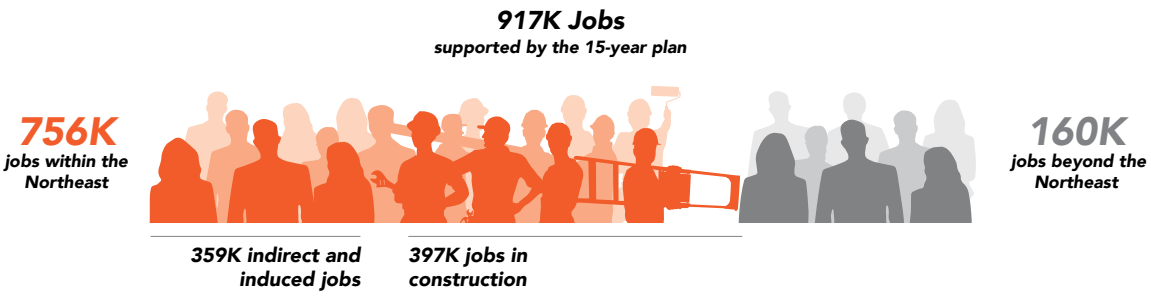
New express and one-seat ride services put more opportunities within reach of communities throughout the Northeast. Riders will enjoy the comfort of new one-seat commuter rail services between New York City and Waterbury, CT on Metro-North. New MARC limited-stop service will provide riders with quick transit between Baltimore and Washington, D.C. Riders will enjoy new Amtrak run-through service between New York City; Hartford, CT; and Springfield, MA.

Commuter rail services will offer more all-day and reverse-peak services to better support journeys outside the typical peak hours, improving service for people that don't work typical 9am-5pm office jobs. For example, riders across the Washington, D.C.-Baltimore corridor will benefit from increased MARC service with round trips increasing from 27 today to 37 in 15 years, which will include off-peak and reverse trips.

High-quality job and career opportunities

If fully funded, C37 investment will support over 900,000 jobs over 15 years, including public and private sector construction-related jobs, indirect jobs, and induced jobs throughout the United States. In addition to over 750,000 jobs along the NEC, C37 investment will support 160,000 jobs outside of the NEC, in the industries supplying materials and equipment for construction.

- **Direct jobs** are positions that execute a project, such as construction workers, project managers, or engineers.
- **Indirect jobs** provide the goods and services needed to support the execution of a project, through positions such as construction material manufacturers, transportation providers, or consultants.
- **Induced jobs** are generated by the personal spending from direct and indirect employees, which includes employees at restaurants, child care facilities, clothing stores, or grocery stores.

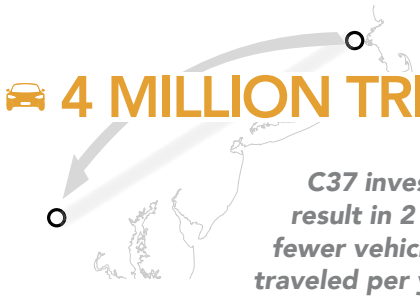


Environmental Quality

Reduced greenhouse gas emissions by moving more people by train

An improved NEC and enhanced rail services will accommodate 51 million more travelers each year, shifting approximately 38 million annual car trips and nearly 600,000 short-haul plane trips to rail, in addition to the trips avoided by millions of travelers using the existing rail system.

Up to 750,000 metric tons of annual greenhouse gas emissions will be eliminated as a result of this shift to rail from plane, car, or bus, in addition to the emissions avoided by millions of travelers using the existing rail system over more polluting modes. The significant reduction in greenhouse gas emissions from enabling more people to choose rail travel factors in policy predictions for electric vehicle adoption and commitments to achieve carbon neutrality across Northeast Corridor states.



4 MILLION TRIPS

C37 investments result in 2 billion fewer vehicle miles traveled per year, the equivalent of driving from Boston to Washington, D.C. over 4 million times

A resilient rail network for a changing climate

C37 investments in the NEC will keep riders moving reliably, avoiding delays and cancellations due to flooding, extreme heat, and other weather events. Track rehabilitation projects will improve resiliency to flooding. Projects like Delco Lead in New Jersey will provide safe storage for trains during flooding events, avoiding costs like the $120 million to replace a quarter of NJ TRANSIT's fleet when Superstorm Sandy flooded the yards where equipment was stored. Replacement of catenary infrastructure will make power systems less susceptible to outages in heat and cold weather. Projects like the Hudson Tunnel Project will improve reliability, add redundancy, and allow for the rehabilitation of the existing tunnels to keep trains moving in the event of severe weather emergencies.

Flood damage to NJ TRANSIT tracks and rail bridge

Corridor-wide | Timeline

2023
TODAY
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039

In five years

Amtrak, LIRR, and Metro-North riders will benefit from enhanced reliability and fewer delays as a result of new conflict-free routes through Harold Interlocking, the busiest rail junction in the nation. Amtrak riders will also enjoy entirely new trainsets on Acela and Regional service in the next three years, including panoramic windows, convenient food options, better wi-fi connectivity and charging, and more comfortable seating choices for individuals and groups. New Regional trainsets will feature dual diesel-electric engines that provide a near seamless transition between electric service on the NEC and diesel service on connecting corridors to the north, south, and west.

In twelve years

Riders traveling between Newark, NJ and New York City, the most congested 10-mile section of the Northeast Corridor today, will experience more reliable service and increased capacity with the completion of improvements that will provide four mainline tracks where there are only two today. The new Portal North and Portal South Bridges over the Hackensack River will add capacity for more train service, without the reliability problems of the existing movable bridge along with other Gateway Program projects including Harrison Fourth Track, and Sawtooth Bridges replacement.

In fifteen years

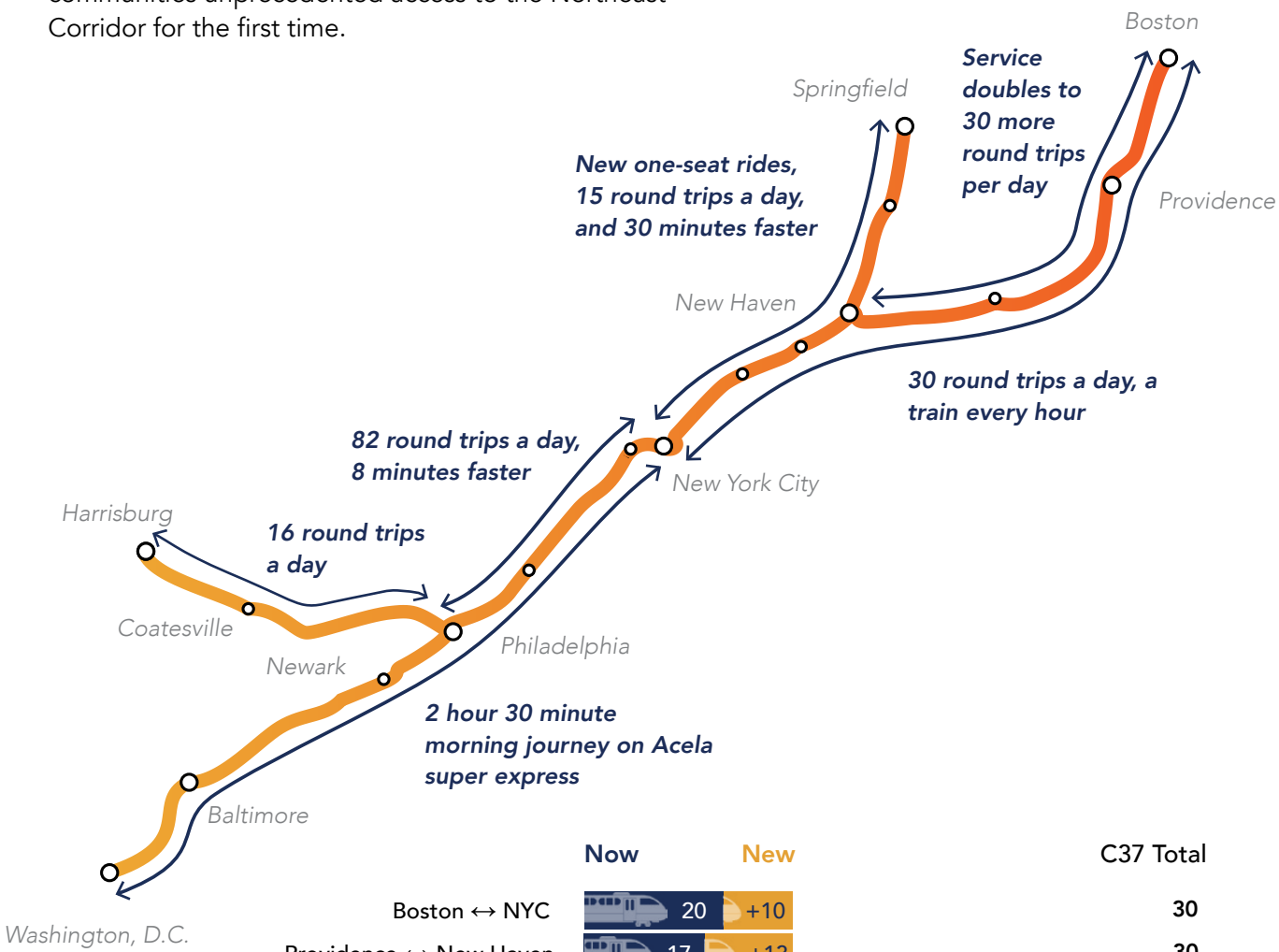
Acela frequencies will more than double between Philadelphia, New York, and Washington, D.C. with an increase from 11 to 23 daily round trips; riders will wait no more than 30 minutes between trains in peak periods and an hour at other times. Between New York and Boston, service will increase from 19 trains a day to 30; 15 of those trains will be Acela, allowing for hourly service with no gaps, unlike today. Riders will enjoy service that is faster, more comfortable, and more flexible to better fit their schedule.

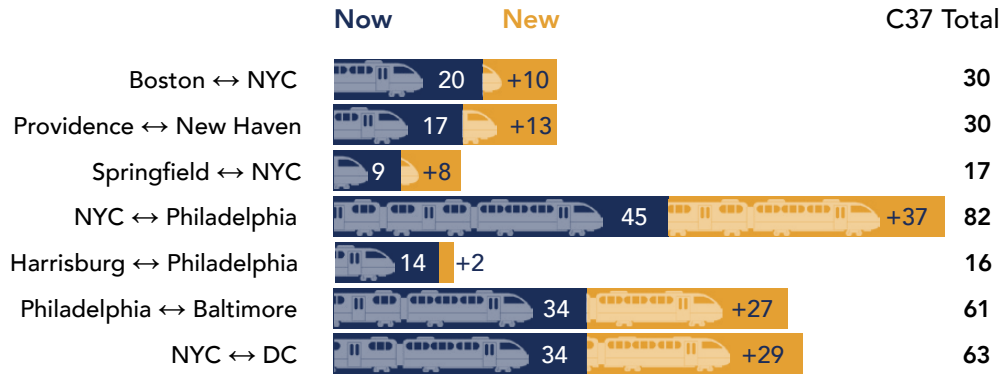
Baltimore Washington Monument

Corridor-wide | Highlighted Service Improvements

Amtrak Service Improvements

Through C37, Amtrak travelers across the corridor will see significant benefits to travel time, all-day frequency, and reliability. Riders will experience an increased number of trains and a reduction in travel times between key cities and economic hubs, giving communities unprecedented access to the Northeast Corridor for the first time.

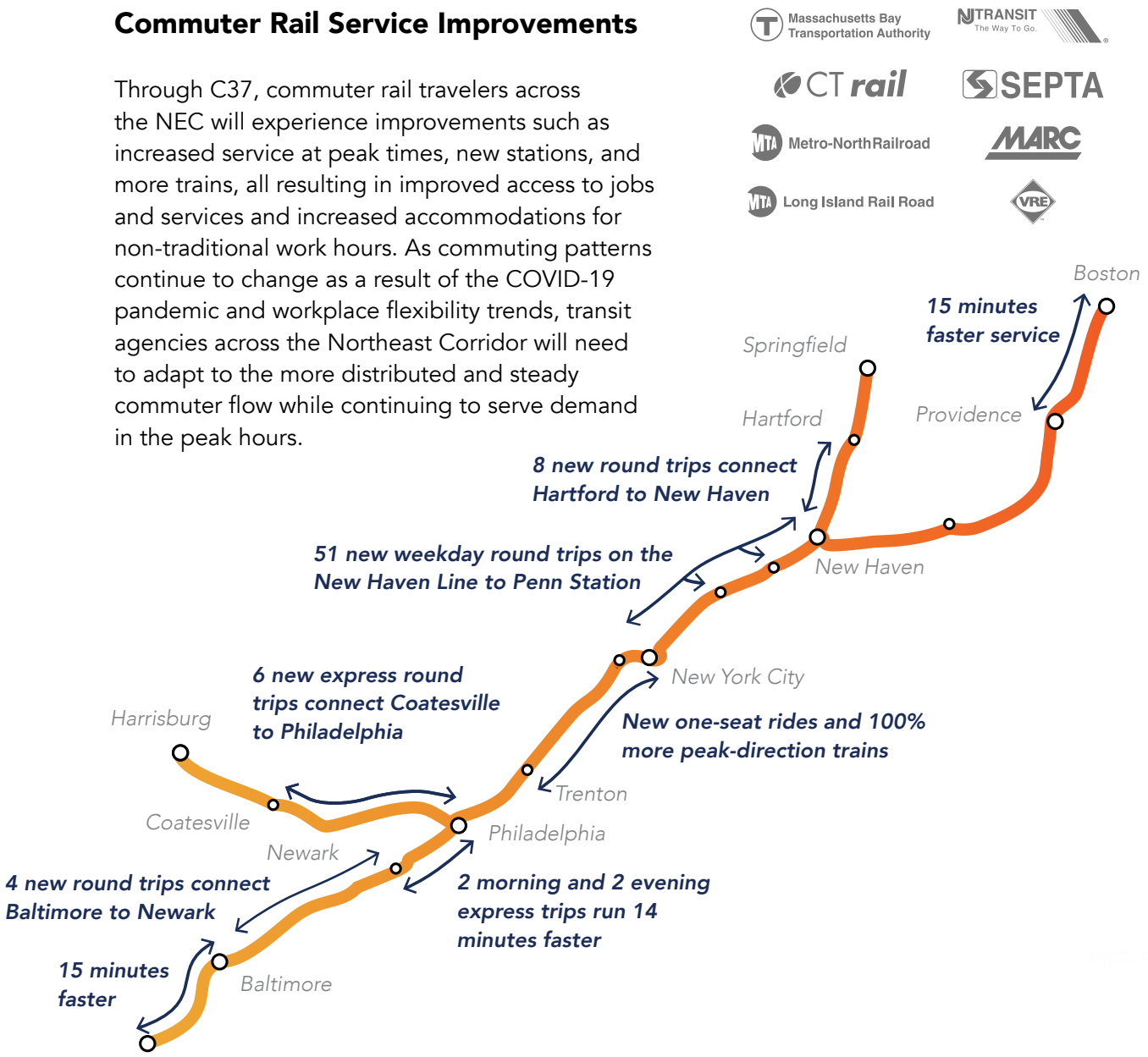


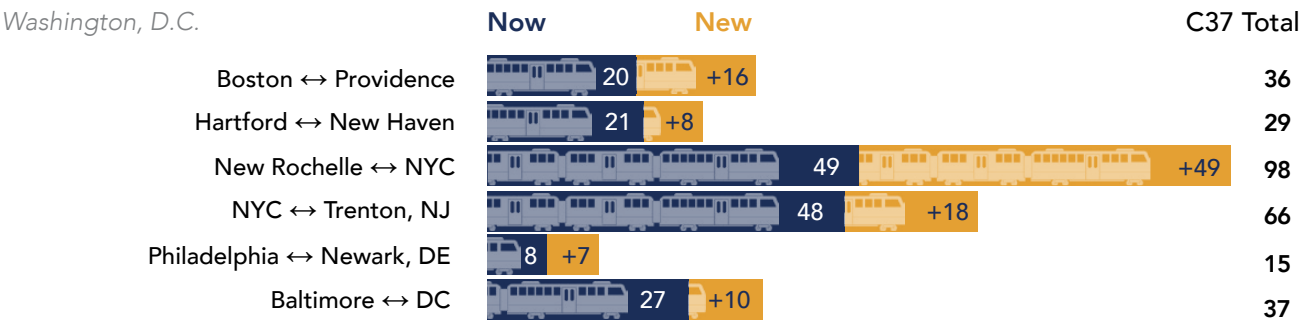


Increase in Daily Amtrak Round Trip Service
based on NECC analysis

Commuter Rail Service Improvements

Through C37, commuter rail travelers across the NEC will experience improvements such as increased service at peak times, new stations, and more trains, all resulting in improved access to jobs and services and increased accommodations for non-traditional work hours. As commuting patterns continue to change as a result of the COVID-19 pandemic and workplace flexibility trends, transit agencies across the Northeast Corridor will need to adapt to the more distributed and steady commuter flow while continuing to serve demand in the peak hours.

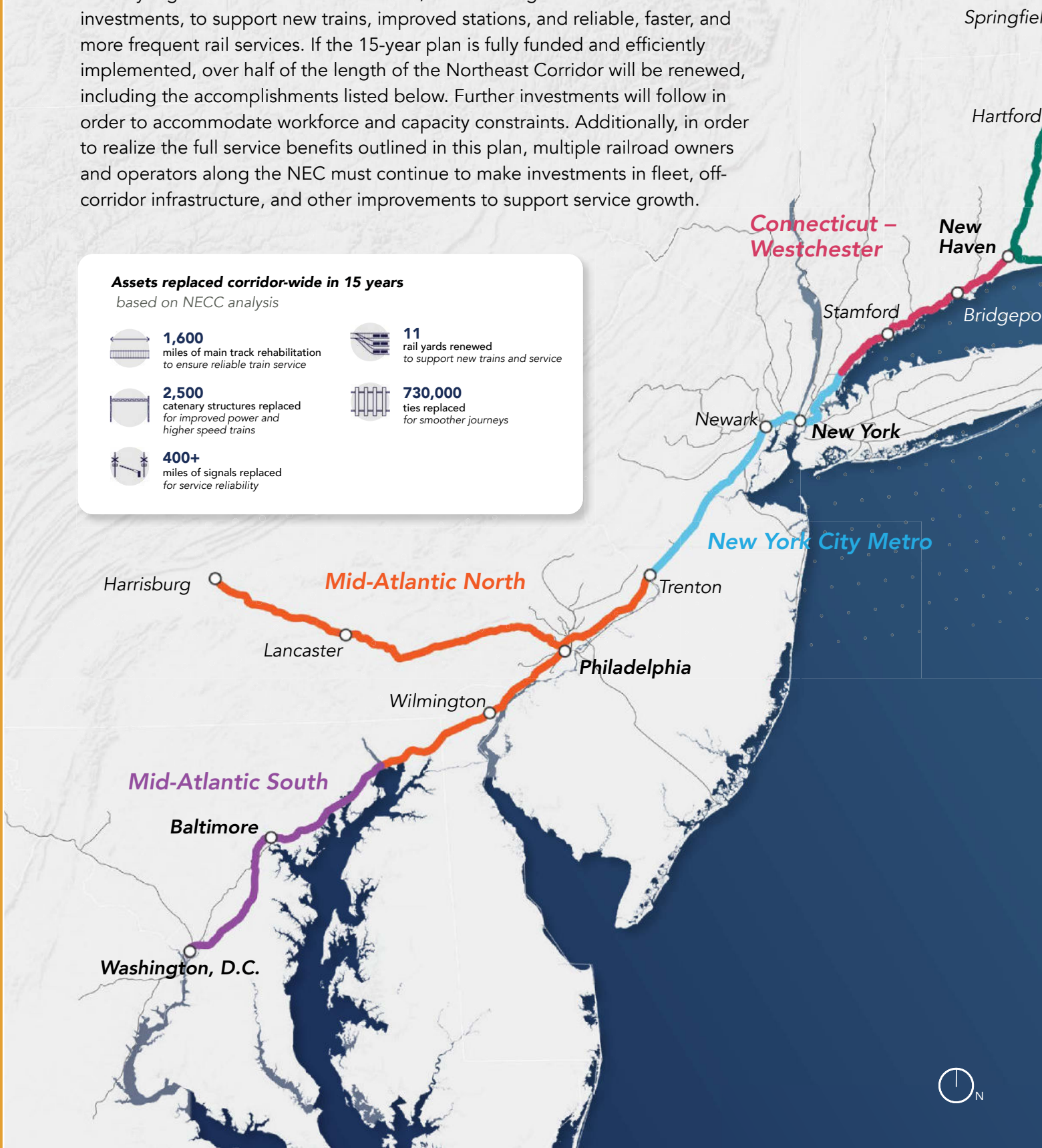




Increase in Daily Commuter Round Trip Rail Service
based on NECC analysis

Corridor-wide Investment Summary

These corridor-wide benefits are achieved through the coordinated implementation of major projects, capital renewal, and asset replacement in every region of the Northeast Corridor, as well as significant off-corridor investments, to support new trains, improved stations, and reliable, faster, and more frequent rail services. If the 15-year plan is fully funded and efficiently implemented, over half of the length of the Northeast Corridor will be renewed, including the accomplishments listed below. Further investments will follow in order to accommodate workforce and capacity constraints. Additionally, in order to realize the full service benefits outlined in this plan, multiple railroad owners and operators along the NEC must continue to make investments in fleet, off-corridor infrastructure, and other improvements to support service growth.



Assets replaced corridor-wide in 15 years

based on NECC analysis

1,600
miles of main track rehabilitation
to ensure reliable train service

11
rail yards renewed
to support new trains and service

2,500
catenary structures replaced
for improved power and higher speed trains

730,000
ties replaced
for smoother journeys

400+
miles of signals replaced
for service reliability

C37 Major Project Highlights

New England

Providence Station Improvements

Connecticut River Bridge Replacement (Shore Line)

Hartford Line Rail Program Double Track (Phase 3B) Project

High Capacity Signaling between Boston and Canton

Massachusetts Third Track between Readville and Canton

Connecticut River Bridge Replacement (Hartford Line)

Capacity Improvements at Providence Station

Boston South Station Expansion

Connecticut – Westchester

WALK Bridge Replacement

SAUGATUCK River Bridge Replacement

DEVON Bridge Replacement

TIME Program: TIME-1, TIME-2, TIME-5

Stamford Station Improvements

New Haven Line Signal System Replacement

New Haven Line Power Improvement Program

New Haven Union Station Improvements

New York City Metro

Penn Station Access

East River Tunnel Rehabilitation

Gateway: Portal North Bridge

Gateway: Sawtooth Bridges Replacement

New York Penn Station Reconstruction

Gateway: New York Penn Station Expansion

Gateway: Hudson Tunnel Project

Mid-Atlantic North

Harrisburg Line Signal Upgrades

Penn Coach Yard Intercity Trainset Maintenance Facility

Harrisburg Line Track 2 Restoration between Paoli and Frazer

30th Street West Catenary Replacement

Mid-Atlantic OCS Replacement between Zoo and Paoli

Philadelphia 30th Street District Plan

Keystone Interlocking Improvements

Mid-Atlantic South

Next Generation Acela Infrastructure Upgrades to Baltimore Penn Station

Burgos Interlocking

Aberdeen, MD High-Level Platforms Project

Washington, D.C. First Street Tunnel

Baltimore Penn Station Track Capacity Program

Frederick Douglass Tunnel Program

Susquehanna River Bridge Replacement Program

CONNECT 2037

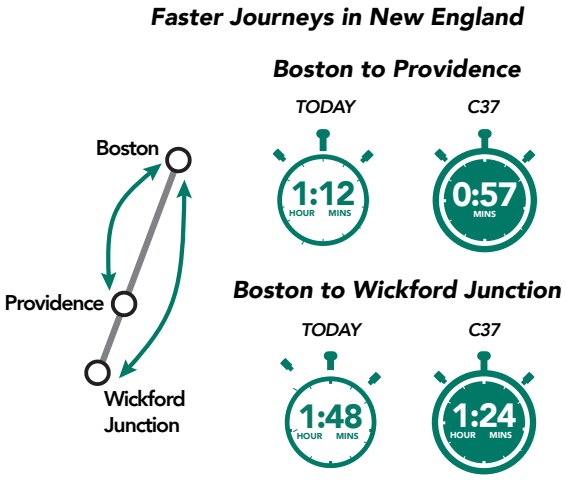
New England Benefits

Back Bay, Boston

If the C37 plan is fully funded and implemented, rail travelers along the Northeast Corridor in the Boston and Providence area will enjoy hourly bidirectional service throughout the day in 15 years, with new electric MBTA service featuring higher reliability, reduced travel times, and lower emissions in adjacent communities. Amtrak rail travelers in the Connecticut River Valley and along the eastern shoreline will enjoy more direct services into New York, with no need to transfer trains.

Faster, more frequent, and more direct service

- MBTA riders will travel from Boston to Providence in less than an hour, and from Boston to Wickford Junction in less than 90 minutes, saving 15 and 24 minutes respectively each trip.
- MBTA will offer a train every 30 minutes on the Providence Line, simplifying connections and commutes with service scheduled at consistent intervals.
- Amtrak will provide hourly service without gaps between Boston and New Haven, on new, modern trains, offering almost 60% more service than today.



New England | Key C37 Highlights

1. **MBTA riders will be able to get from Boston to Providence in less than an hour**, saving 15 minutes, and from **Boston to Wickford Junction in less than 90 minutes**, saving 24 minutes
2. **Amtrak will provide new hourly service between Boston and New Haven** on new, modern trains
3. Through the implementation of the new Enfield station on the Hartford line, **CT*rail* riders will experience frequent, direct access to the NEC**
4. **Amtrak will provide new hourly one-seat rides between Springfield, Hartford, and New York City throughout the day,** resulting in five times more direct service than today

Greater access to affordable housing and employment opportunities

- Construction required to deliver C37 will support over 133,000 individual jobs in New England over the 15-year plan, including more than 100,000 jobs in Connecticut alone. Nearly 60% of construction jobs will be available to employees without any college degree.
- New stations on the Hartford Line will provide new direct access to the NEC to over 7,000 existing households within 15 minutes of these stations today.
- Communities in the Connecticut River Valley will enjoy new hourly Amtrak service, providing five times more direct access to economic hubs in Southwestern Connecticut, New York, Philadelphia, and Washington, D.C.

Jobs Supported in the Region by C37 Investments
during the 15-year plan

	Direct Jobs	Indirect Jobs	Induced Jobs
Connecticut	70,600	12,500	18,100
Massachusetts	12,600	5,400	9,700
Rhode Island	2,700	700	1,500

Cleaner air and reduced greenhouse gas emissions

- Over 760,000 fewer cars trips annually on highways between Boston and Providence will reduce over 33 million vehicle miles traveled per year, in addition to the vehicle trips avoided by millions of travelers using the existing rail system.
- More journeys by rail in Massachusetts and Rhode Island will reduce greenhouse emissions by more than 151,000 metric tons per year.
- Electrification of MBTA service on the Providence Line will provide faster, more reliable service for travelers than diesel trains and remove exhaust fumes many historically disadvantaged communities along the corridor.
- Nearly 215 miles of main track rehabilitation and 68 miles of signal replacement in Connecticut, Massachusetts, and Rhode Island will help futureproof the rail network against weather events, provide more reliable service, and reduce costs of emergency response.

C37 investment in the NEC will reduce the ***equivalent of driving from Boston to New Haven over 2.8 Million times***

New England | Timeline

2023

TODAY

2024

2025

In six years

Service on the MBTA Providence/Stoughton Line will become more reliable through investments in train signaling and the completion of a new track from Readville to Canton Junction, which will support 16 more daily round trips on the Providence Line and 10 more daily round trips on the Stoughton Line.

2026

2027

2028

2029

In ten years

Hartford station will be relocated, helping to improve travel times and increase service capacity. In combination with other Hartford Line improvements, travelers will enjoy 8 more daily CT*rail* round trips from Hartford to New Haven, and 8 more daily Amtrak round trips between Springfield, MA and New York City.

2030

2031

2032

2033

In fifteen years

Riders will enjoy an improved Boston South Station with increased capacity and more reliable intercity and commuter rail service, including 36 weekday MBTA round trips to Providence and 30 weekday Amtrak round trips to New York City.

2034

2035

2036

2037

2038

2039

New England | Investment Summary

If the C37 plan is fully funded, these regional benefits will be achieved through a variety of capacity enhancing projects including the significant expansion of Boston South Station, the replacement of the Connecticut River Bridge on the Shore Line, the construction of new Amtrak Veltri and Fitter interlockings in Connecticut, and the construction of over five miles of new third track between Readville to Canton in Massachusetts. Capacity improvements at both Attleboro and Providence stations will also support the operational flexibility needed to deliver these service improvements.

On the Hartford Line, these benefits will require double tracking of remaining single-track sections, rebuilding of a second Connecticut River Bridge, relocation and improvement of Hartford Station, and construction of new stations.

The Connecticut River Bridge Replacement Project is part of the Brook Project Group

Project Groups Defined

Project Groups combine major backlog, improvement, and capital renewal projects based on geography, construction requirements, and operational dependencies for more efficient project delivery with reduced impacts to existing services and customers during construction. Key individual projects from the Project Groups are highlighted and may be completed sooner than the entire group.

Project Groups with Select Projects

	In 5 years	In 10 years	In 15 years
P1 **Boston**	◐	◐	●
Boston South Station Expansion	○	◐	●
P2 **Canton**	◐	●	●
Massachusetts Third Track Readville to Canton	◐	●	●
P3 **Attleboro**	◐	◐	●
P4 **South Attleboro**	●	●	●
P5 **Pawtucket**	◐	◐	●
P6 **Mystic**	◐	●	●
Veltri Interlocking	●	●	●
P7 **New London**	◐	◐	●
P8 **Brook**	◐	◐	◐
Connecticut River Bridge Replacement Project	◐	●	●
P9 **Fitter**	●	●	●
Fitter Interlocking	●	●	●
P10 **Hartford**	◐	◐	◐
Hartford Line Double Track	●	●	●
Hartford Station Relocation	◐	●	●
P11 **NE Planning**	●	●	●
P12 **Warwick**	◐	◐	●
Warwick/T.F.Green Airport Station Expansion	◐	◐	●
P13 **MBTA Yards**	◐	◐	●
P14 **Shore Line East**	○	○	●
P15 **Boston-Canton**	◐	●	●
High Capacity Signaling Boston to Canton Junction	●	●	●
P16 **North Haven**	◐	●	●

Project Groups

- ● Complete
- ◐ Ongoing
- ○ Not Started

Select Projects

- ● Complete
- ◐ Ongoing
- ○ Not Started

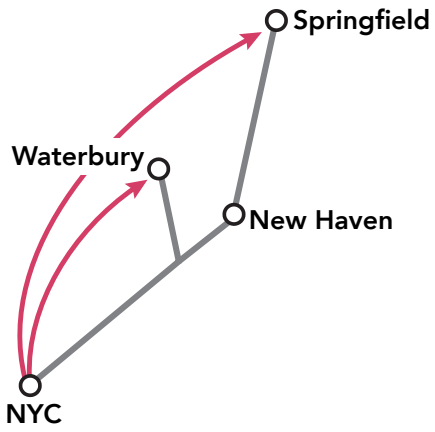
Connecticut-Westchester Benefits

Yale University, New Haven, Connecticut

Through a fully funded and implemented C37 plan, travelers in Connecticut and New York will enjoy more reliable, faster, and higher frequency Metro-North, Amtrak, and CT***rail*** service, and the addition of new one-seat and express services linking communities from Springfield and Waterbury to New York.

Faster speeds and more direct and express services to reduce travel time

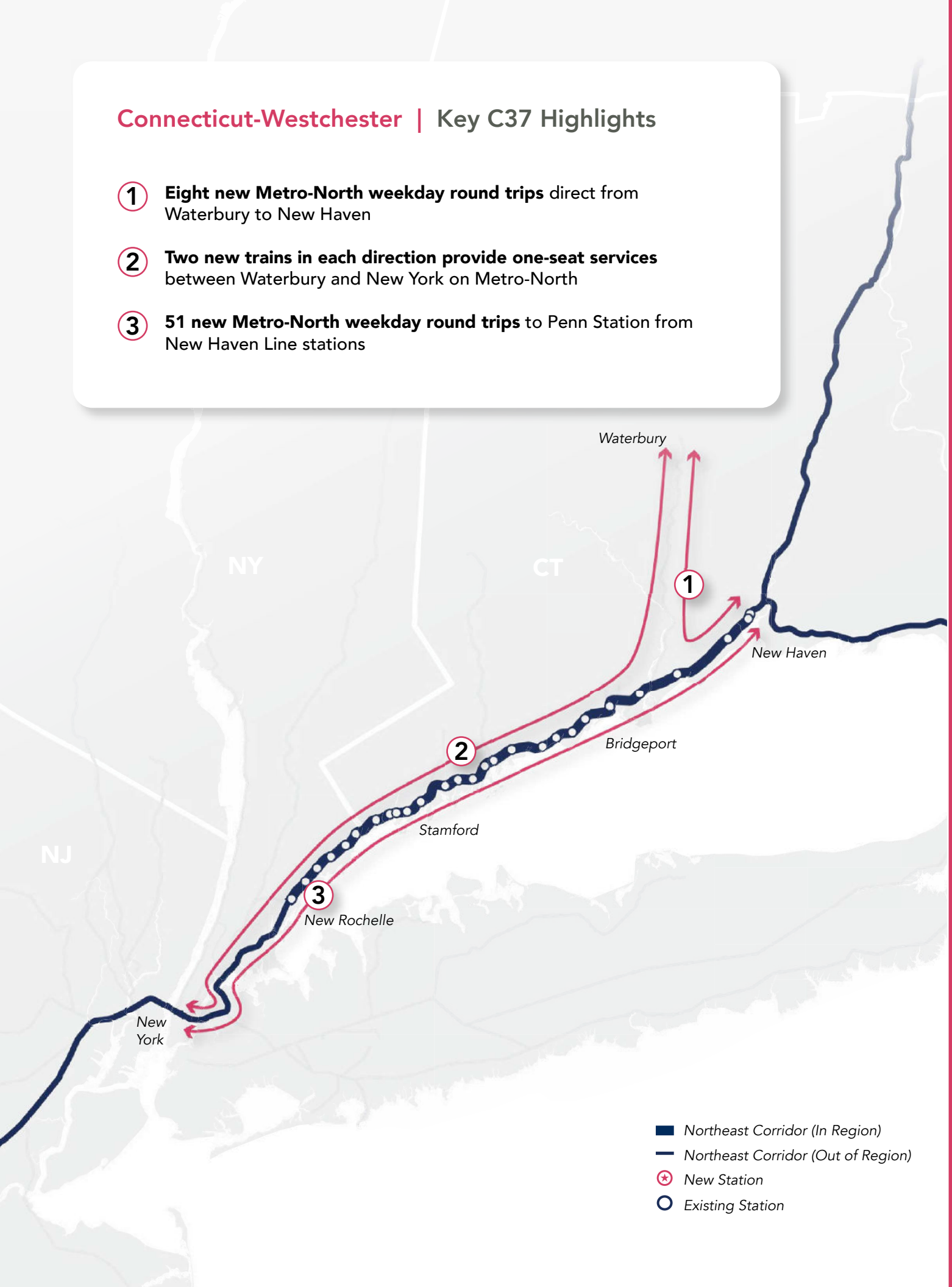
- Metro-North riders will enjoy 51 weekday round trips to Penn Station from New Haven Line stations, and faster express service to Grand Central with eight minutes saved on trips from New Haven.
- Travelers from Waterbury to New York will enjoy two seamless, one-seat Metro-North trains in each direction, saving 20 minutes with no transfer in Bridgeport.
- New hourly Amtrak one-seat rides will carry passengers between New York City, Connecticut, and Springfield, MA throughout the day, resulting in five times more direct service than today.



New one-seat Metro-North rides from NYC to Waterbury and hourly run-through Amtrak service from NYC to Springfield

Connecticut-Westchester | Key C37 Highlights

1. **Eight new Metro-North weekday round trips** direct from Waterbury to New Haven
2. **Two new trains in each direction provide one-seat services** between Waterbury and New York on Metro-North
3. **51 new Metro-North weekday round trips** to Penn Station from New Haven Line stations



Providing better connections to create healthy, bustling downtowns

- C37 projects will support over 100,000 individual jobs in Connecticut and over 260,000 jobs in New York during the 15-year plan if the plan is fully funded. The replacement of the DEVON and SAUGATUCK River Bridges in Connecticut will support over 25,000 jobs alone.
- The addition of 51 new weekday round trips on the New Haven Line and station renovations, including access improvements and passenger amenities, will support cities like New Haven and Stamford as they develop vibrant mixed-use neighborhoods around their stations.

Jobs Supported in the Region by C37 Investments
during the 15-year plan

	Direct Jobs	Indirect Jobs	Induced Jobs
New York	119,900	41,500	101,300
Connecticut	70,600	12,500	18,100

Reduced roadway congestion and greenhouse gas emissions

- Each year, 11 million new Metro-North rail trips between Connecticut and New York, combined with increased Amtrak ridership, has the potential to remove approximately 200,000 metric tons of greenhouse gas emissions from the atmosphere, in addition to the emissions avoided by using the existing rail system over more polluting modes.
- Between Connecticut and New York, C37 investments will result in more than 580 million fewer vehicle miles traveled by car per year, the equivalent of over 3.8 million cars driving round trip from New Haven to New York, in addition to the vehicle trips avoided by millions of travelers using the existing rail system.

200,000
metric tons of GHG
saved per year in CT and NY

is equivalent to carbon sequestered by

240,000
acres
US forests in one year

Connecticut-Westchester | Timeline

2023

TODAY

2024

2025

2026

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2034

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2036

2037

2038

2039

In five years

Riders will experience more reliable service between Greenwich and Norwalk through the implementation of improved signal systems, which allows for a higher capacity of trains to travel along this segment of the corridor, reduces headway between trains, and improves efficiency of recovery during service disruptions.

In ten years

New Haven Union Station will feature upgraded platforms, improved station amenities, and the addition of new signal infrastructure to improve reliability.

In fifteen years

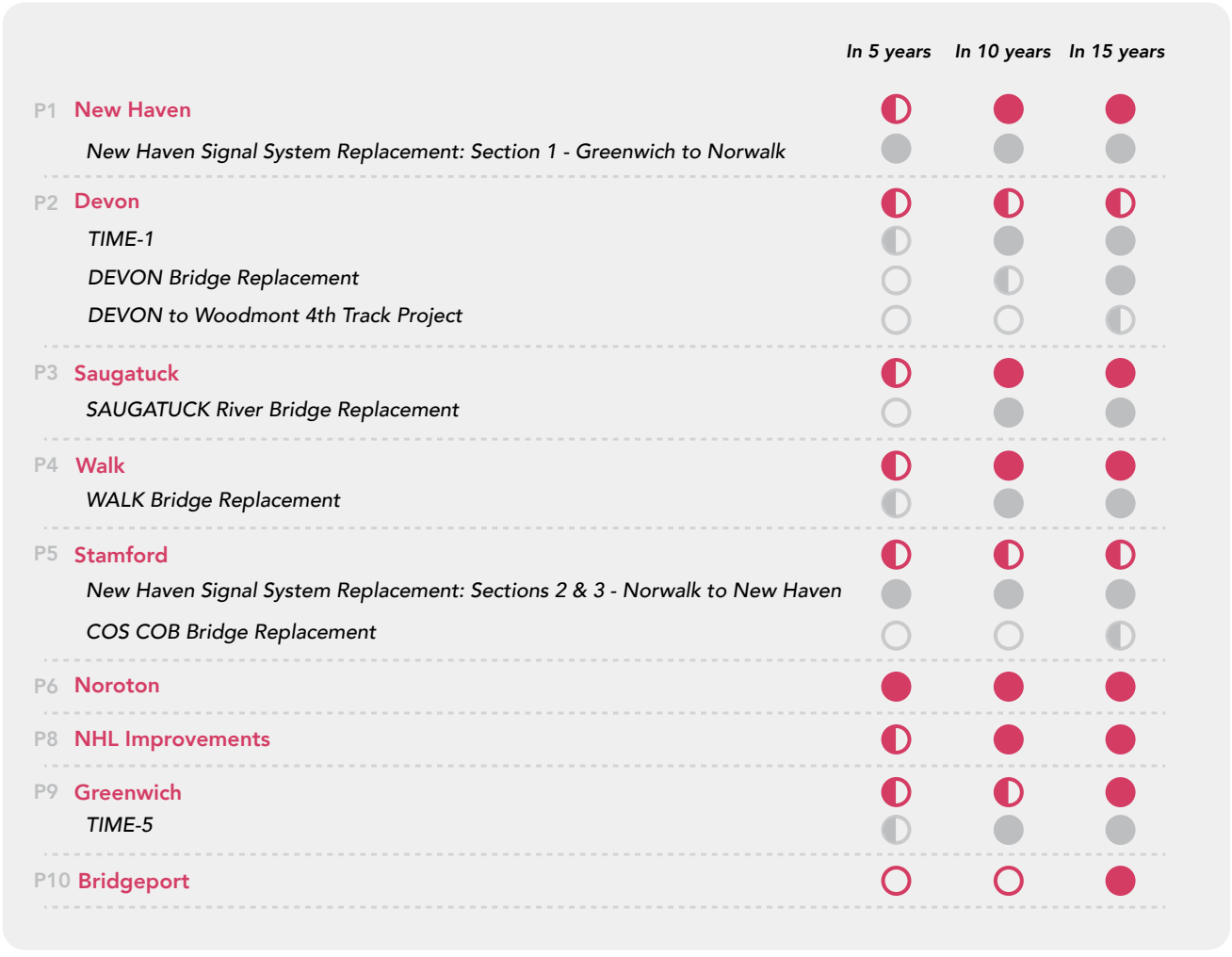
Replacement of three major backlog bridges in Stratford, Westport, and Norwalk, carrying Metro-North's New Haven Line and Amtrak Service will improve reliability, improve speeds, decrease service disruptions, and reduce vulnerabilities against future flooding and storm events.

Connecticut-Westchester | Investment Summary

These regional benefits are achieved through extensive rehabilitation of track, signal, and structures assets as part of the Time Improvement and Mobility Enhancement (TIME) Program, the replacement of four major movable bridges, the reinstallation of the fourth mainline track between Devon and Woodmont, and signal system upgrades between Greenwich and New Haven.

Project Groups combine major backlog, improvement, and capital renewal projects based on geography, construction requirements, and operational dependencies for more efficient project delivery with reduced impacts to existing services and customers during construction. Key individual projects from the Project Groups are highlighted and may be completed sooner than the entire group.

Project Groups with Select Projects



Project Groups
- Complete
- Ongoing
- Not Started

Select Projects
- Complete
- Ongoing
- Not Started

Stamford Station

New York City Metro Benefits


New York City

If the C37 plan is fully funded and implemented, more communities in both New York and New Jersey will enjoy direct, one-seat access to Midtown Manhattan via the NEC. Thanks to major capacity enhancements, communities with existing access to the NEC will enjoy more reliable and robust service in the reverse peak directions and throughout the day.

More frequent service, faster trips, and more communities served

- Four new stations in the Bronx will bring Metro-North New Haven Line service into Penn Station, vastly reducing public transit travel times to Manhattan, Westchester, and Connecticut.
- Riders will benefit from 100% more peak-direction trains between New York City and New Jersey, totaling 42 NJ TRANSIT and six Amtrak trains per hour, resulting from C37 investments and off-corridor improvements.
- Dozens of existing NJ TRANSIT stations on the Main, Bergen, Pascack Valley, Port Jervis, and outer portions of the Montclair-Boonton Lines will have new one-seat rides to Penn Station.
- New all-day NJ TRANSIT services to New York on the Raritan Valley Line and outer portions of the North Jersey Coast Line will offer one-seat rides and shorter travel time.

Cross-Hudson Trains after C37

6
Amtrak Trains
per hour

42
NJ TRANSIT Trains
per hour

New York City Metro | Key C37 Highlights

1. **More peak direction trains between New York City and New Jersey,** with 42 NJ TRANSIT and 6 Amtrak trains per hour
2. Dozens of NJ TRANSIT stations across New Jersey will have **new one-seat rides to Penn Station**
3. **New all-day NJ TRANSIT service to New York** on the Raritan Valley Line

Employment opportunities on the railroad and across the region

- C37 investments will support more than 260,000 individual jobs in New York, and nearly 160,000 jobs in New Jersey during the 15-year plan, including a combined 130,000 in the first five years alone. The Gateway Project is the region's primary driver of job creation, supporting more than 230,000 jobs. More than 190,000 of all jobs created in the New York region will be construction-related positions. Among construction jobs, more than 75% have no required work experience, creating career opportunities for employees looking to enter the construction industry.
- New stations in underserved communities in Co-Op City, Morris Park, Parkchester/Van Nest, and Hunts Point in the Bronx will bring over 200,000 households within 15 minutes of the NEC and its access to economic hubs from Manhattan to Stamford, CT.
- The new North Brunswick station will also provide access to the NEC to over 17,000 households located within 15 minutes of the station.

Jobs Supported in the Region by C37 Investments
during the 15-year plan

	Direct Jobs	Indirect Jobs	Induced Jobs
New York	119,900	41,500	101,300
New Jersey	73,200	24,800	59,800

Reliability, resiliency, redundancy, and fewer cars on the road

- NJ TRANSIT services will operate with increased reliability, particularly during extreme weather events, with a new inland storage yard for trains and modern, resilient tunnels under the Hudson River.
- Without considering regional population growth, C37 service improvements alone will generate 37,000,000 new rail trips annually between New Jersey and New York, reducing up to 400,000 metric tons of greenhouse gas emissions per year, in addition to the emissions avoided by millions of travelers using the existing rail system over more polluting modes.

+37m
Additional Annual **Rail** *Journeys*
between NY & NJ

equals a reduction of

−400k
Metric Tons of **GHG**
per year

New York City Metro | Timeline

2023

TODAY

2024

2025

2026

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2029

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2031

2032

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2034

2035

2036

2037

2038

2039

In four years

Four new accessible Metro-North stations will have opened in the Bronx, enabling people to travel more directly to and from Co-Op City, Parkchester/Van Nest, Morris Park, and Hunts Point, cutting travel times to Manhattan by as much as 50 minutes.

In twelve years

Hundreds of thousands of travelers will pass through the reconstructed and expanded New York Penn Station, with double the peak-hour train services, new accessible platforms, new entrances, and increased accessibility and comfort.

In fifteen years

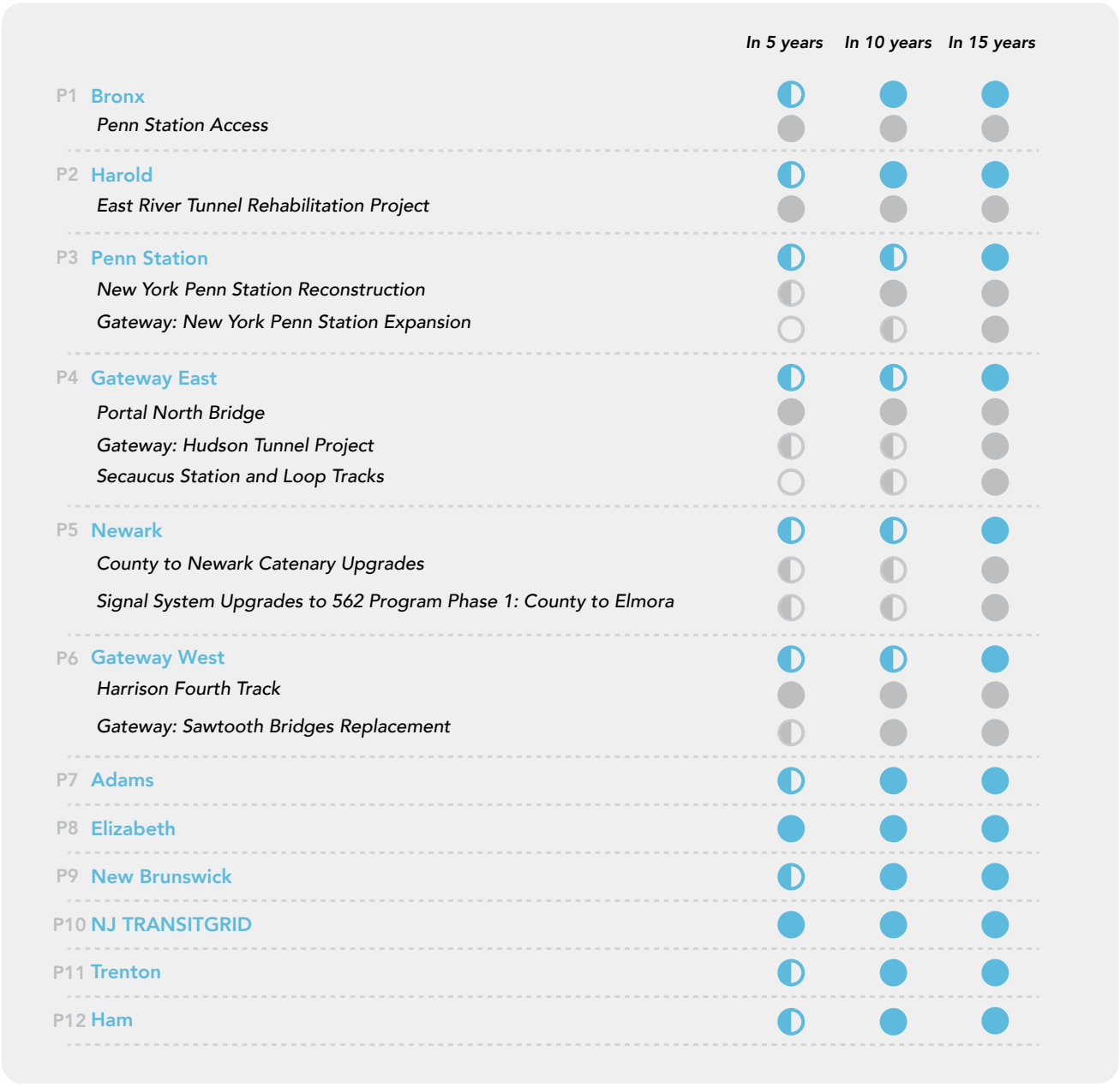
NJ TRANSIT riders will have double the amount of peak-hour service and increased off-peak service with completion of the Gateway Program. Overall, NJ TRANSIT service will be more reliable, and will grow over 120% with Gateway's new trans-Hudson capacity.

New York City Metro | Investment Summary

These regional benefits are achieved through construction of four new stations, rehabilitated and new rail infrastructure in the Bronx, restoration of the East River Tunnels, and the rehabilitation and expansion of Penn Station. The doubling of track capacity between Newark, New Jersey, and New York City with associated new tunnels and bridges in the Gateway Program will also support improvements across the region. Significant off-corridor investments will need to be made to realize the full benefits of the Gateway Program.

Project Groups combine major backlog, improvement, and capital renewal projects based on geography, construction requirements, and operational dependencies for more efficient project delivery with reduced impacts to existing services and customers during construction. Key individual projects from the Project Groups are highlighted and may be completed sooner than the entire group.

Project Groups with Select Projects



Project Groups

- Complete
- Ongoing
- Not Started

Select Projects

- Complete
- Ongoing
- Not Started

Mid-Atlantic North Benefits


Philadelphia skyline

If C37 is fully funded and implemented, rail travelers will enjoy faster and more frequent SEPTA and Amtrak services connecting Harrisburg, PA; Trenton, NJ; and Newark, DE with Philadelphia, PA, and increased reliability thanks to major state-of-good-repair investments. SEPTA growth will provide more bidirectional, all-day service, making rail an attractive option for all kinds of travel in addition to rush-hour commuting.

More frequent all-day service and access to new destinations

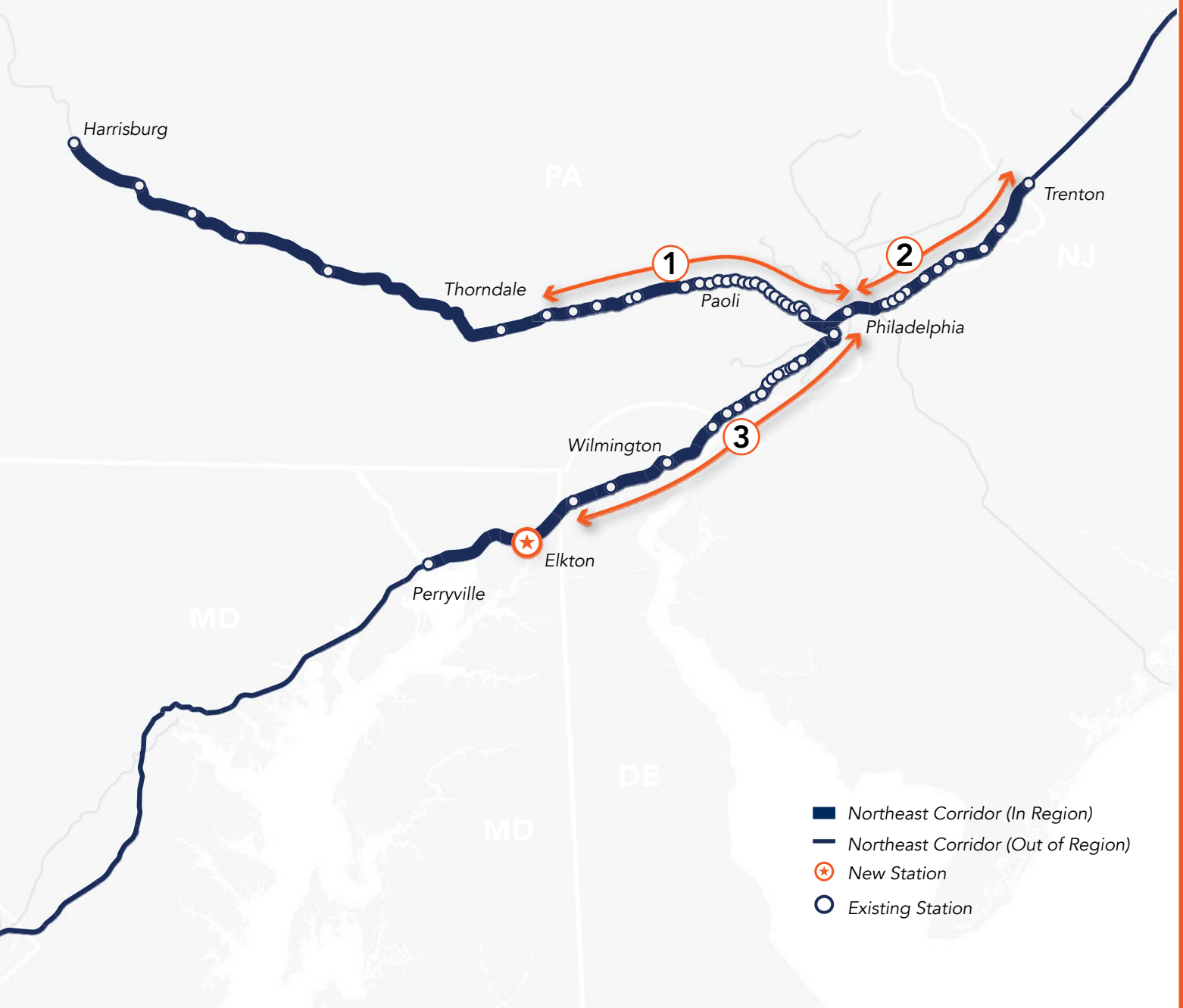
- Riders will enjoy faster more frequent express service between Newark, DE and Philadelphia, with four SEPTA express round trips per day that save 14 minutes each way.
- SEPTA riders will have at minimum half-hourly all-day service on the Paoli/Thorndale and Trenton Lines, with weekday round trips increasing over 50%, and higher service reliability thanks to major signal and electrical system rehabilitations.
- New Amtrak rail service will offer three new daily round trips between Reading, PA, Philadelphia, and New York City, expanding intercity travel options on new, modern trains.
- New Jersey communities like Cherry Hill, Hammonton, and Egg Harbor City will see NJ TRANSIT's Atlantic City Line service to Philadelphia grow from 12 to 20 weekday round trips.

+6

ADDITIONAL
AM & PM
SEPTA
EXPRESS
ROUND TRIPS

Mid-Atlantic North | Key C37 Highlights

1. **Six new morning and evening round-trip express services** on SEPTA's Paoli/Thorndale Line, as well as new half-hour, all day service
2. **SEPTA will provide new half-hour, all-day service with 15 additional weekday round trips** on the Trenton Line
3. **Four new SEPTA express round trip services** offer 14-minute faster trips between Philadelphia, PA and Newark, DE, with new connecting MARC service



Job opportunities and connections to new markets

- The work in C37 will support over 60,000 individual jobs in Pennsylvania and over 6,000 jobs in Delaware during the 15-year plan. Projects like the Philadelphia 30th St Station improvements will support more than 14,000 jobs alone. Approximately 75% of the nearly 35,000 construction jobs will be available without a college degree.

Jobs Supported in the Region by C37 Investments
during the 15-year plan

	Direct Jobs	Indirect Jobs	Induced Jobs
Pennsylvania	32,700	9,200	18,600
Delaware	3,100	920	2,000

- SEPTA's Paoli/Thorndale Line will offer six new morning and evening round-trip express services, resulting in new and improved access to Philadelphia from Coatesville, a community of 13,000.

Reduced roadway congestion and greenhouse gas emissions

- Investments will accommodate over 900,000 more journeys by rail per year, reducing the amount of driving in Pennsylvania and Delaware by more than 13 million vehicle miles per year, in addition to the vehicle trips avoided by millions of travelers using the existing rail system. This is the equivalent of driving from Philadelphia to Wilmington over 416,000 times per year.
- Greenhouse gas emissions will be reduced in Pennsylvania by 32,000 metric tons annually, equal to the emissions generated by powering over 6,400 homes for one year.

+910k
Additional Annual **Rail** *Journeys*

reduces

−13m
Vehicular *Miles*
in PA and DE per year

Harrisburg Station

Mid-Atlantic North | Timeline

2023
TODAY
2024
2025
2026
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2029
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2031
2032
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2034
2035
2036
2037
2038
2039

In five years

Riders on SEPTA's Paoli/Thorndale Line and Amtrak service will experience improved reliability and decreased service disruptions with modern bidirectional signals between Paoli and Frazer, providing operational flexibility and giving trains the ability to bypass tracks to avoid delays.

In ten years

SEPTA's Trenton Line riders will experience more reliable service and fewer service disruptions through improvements to the Morrisville Yard, increasing track capacity at Trenton Station.

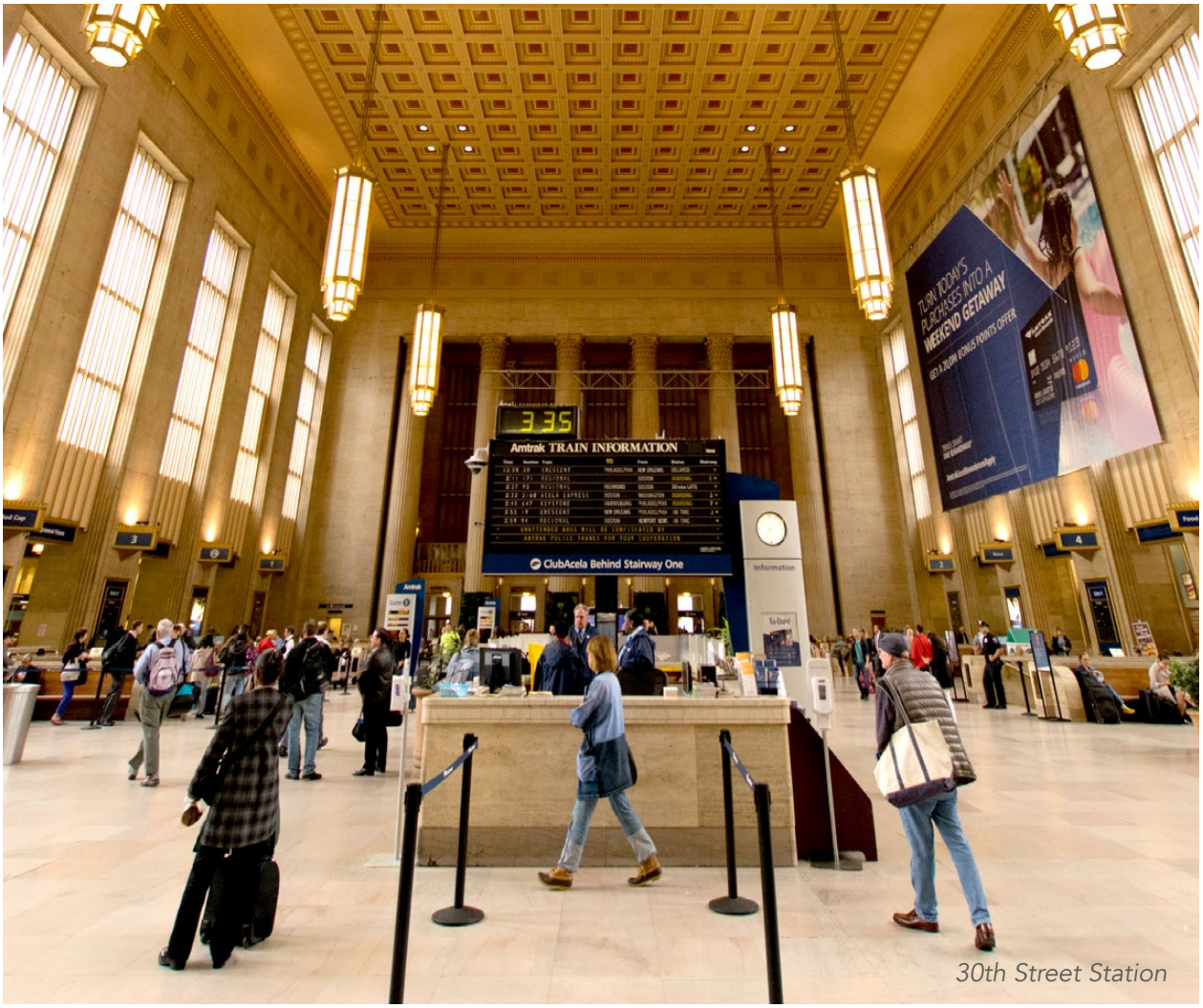
In fourteen years

Paoli Transportation Center Phase 2 improvements will enhance the station and intermodal connectivity for riders. With the addition of a new high-level platform, riders will experience high-level platforms at all stations from Philadelphia to Harrisburg to complement other improvements, facilitate higher operating speeds, and create a more reliable travel experience.

Mid-Atlantic North | Investment Summary

These benefits are achieved through investments such as upgrades to the current Track 1, a new third track, and improvements on multiple interlockings and the catenary system between Philadelphia and Wilmington. Station improvements at Coatesville, Parkesburg, Downingtown, and Churchman's Crossing will expand capacity and enhance overall passenger experience. On the Harrisburg Line, the benefits rely on the modernization of the current obsolete signal system, the restoration of over 14 miles of third track between Paoli to Thorn, and key interlocking, catenary system, and state-of-good-repair (SOGR) improvements.

Project Groups combine major backlog, improvement, and capital renewal projects based on geography, construction requirements, and operational dependencies for more efficient project delivery with reduced impacts to existing services and customers during construction. Key individual projects from the Project Groups are highlighted and may be completed sooner than the entire group.



30th Street Station

Project Groups with Select Projects

	In 5 years	In 10 years	In 15 years
P1 **Morrisville**	○	●	●
P2 **Bristol**	◐	◐	●
New Interlocking between Cornwells Heights and Eddington	○	◐	●
P3 **Philadelphia**	◐	◐	●
SEPTA Airport Line Separation Project	○	◐	●
P4 **Hook**	◐	◐	●
P5 **Claymont**	●	●	●
P6 **Wilmington**	◐	◐	●
Holly - Bell - Landlith Improvement Project	○	◐	●
Landlith Interlocking - Wine Interlocking NEC Section Improvement Project	○	◐	●
P7 **Ragan**	◐	●	●
P8 **Royalton**	●	●	●
P9 **Coatesville**	◐	◐	●
P10 **PennDOT ADA**	◐	●	●
P11 **Potts**	◐	◐	●
Potts Interlocking	○	◐	●
P12 **Paoli**	◐	◐	●
Ardmore Transportation Center: Phase 1 ADA Improvements	●	●	●
Harrisburg Line Track 2 Restoration: Paoli to Frazer	◐	●	●
P13 **Zoo**	◐	◐	●
Harrisburg Line Signal Upgrade: Park to Zoo	◐	◐	●
Harrisburg Line Signal Upgrade: Paoli to Overbrook	◐	◐	●

Project Groups

- ● Complete
- ◐ Ongoing
- ○ Not Started

Select Projects

- ● Complete
- ◐ Ongoing
- ○ Not Started

Mid-Atlantic South Benefits

Baltimore Penn Station

Travelers in Maryland, Washington, D.C., and Virginia will enjoy faster, more reliable, and more frequent service on both commuter and intercity railroads if C37 is fully funded and implemented. Replacement of major assets like the B&P Tunnel with the new Frederick Douglass Tunnel will address sources of delay and increase speeds for all trains. Full electrification of MARC service will make the overall railroad operate more efficiently while reducing emissions in communities along the NEC.

Faster trips and more all-day service for the Baltimore and Washington, D.C. regions

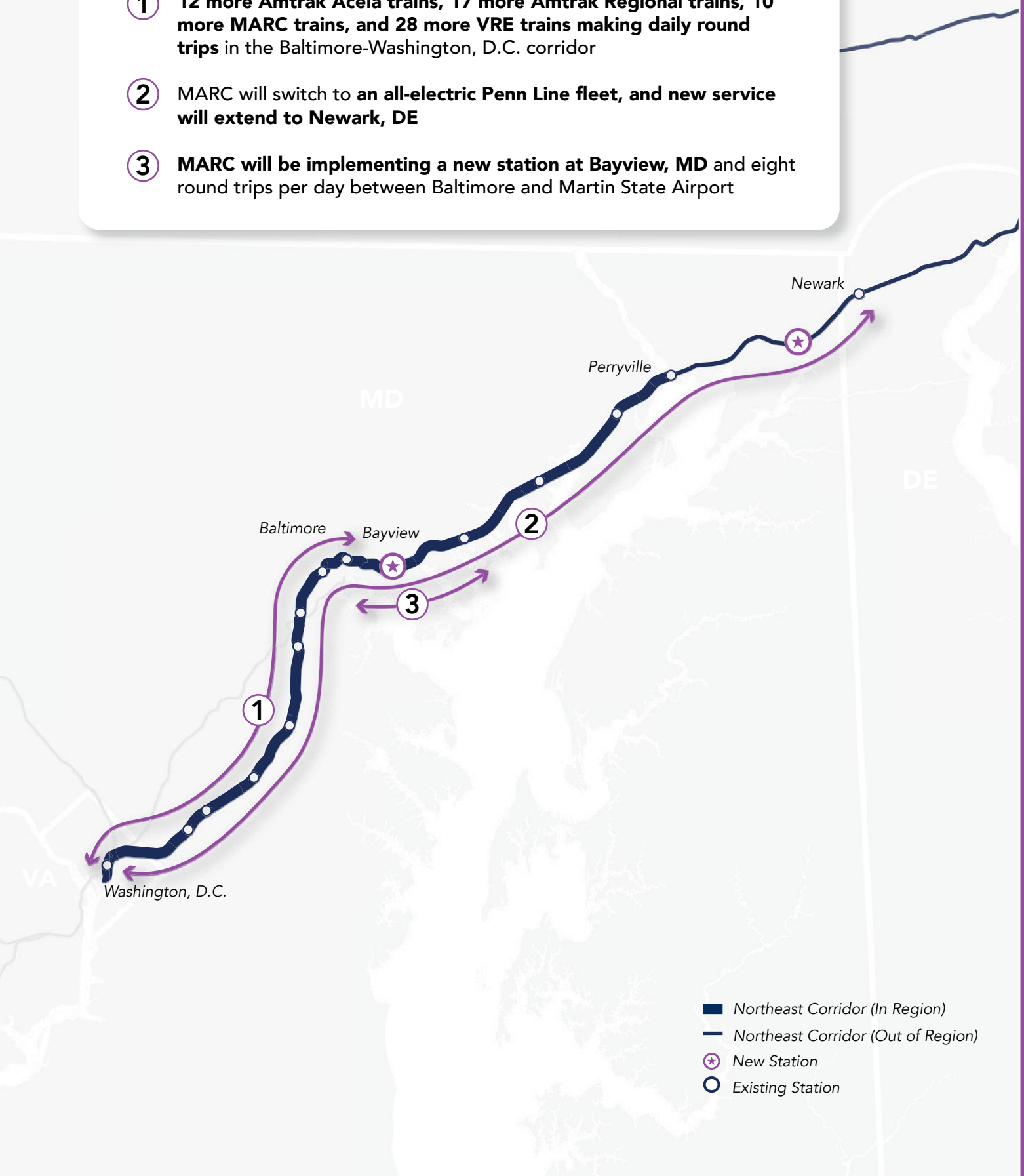
- Riders traveling between Baltimore and Washington, D.C. will have more flexibility to get where they need to go, through almost double the Acela service, an Amtrak Regional train every 30 mins, more off-peak MARC commuter services, and increased peak-hour VRE trains.
- Four daily round-trip MARC service extensions to Newark, DE, with new stations in Elkton and at Bayview in southeast Baltimore, MD and timed connections with SEPTA's Newark Line, will close a gap in the commuter rail network, bringing increased connectivity for all communities between Washington, D.C. and Philadelphia.

Daily Round Trip Service Increase in the Baltimore-Washington, D.C. Corridor

	Today		C37	
Acela	11	→	23	*trains*
Northeast Regional	22	→	39	*trains*
MARC	27	→	37	*trains*
VRE	16	→	44	*trains*

Mid-Atlantic South | Key C37 Highlights

1. **12 more Amtrak Acela trains, 17 more Amtrak Regional trains, 10 more MARC trains, and 28 more VRE trains making daily round trips** in the Baltimore-Washington, D.C. corridor
2. MARC will switch to **an all-electric Penn Line fleet, and new service will extend to Newark, DE**
3. **MARC will be implementing a new station at Bayview, MD** and eight round trips per day between Baltimore and Martin State Airport



Access to employment and housing opportunities

- C37 investment will support over 65,000 individual construction jobs in Maryland over the 15-year plan, as well as 42,000 indirect and induced jobs supporting construction efforts. Over 75% of the construction jobs created do not require a college degree, and 45% of the jobs require only short-term, on-the-job training, meaning these positions are open to those with little to no relevant work experience.

Jobs Supported in the Region by C37 Investments
during the 15-year plan

	Direct Jobs	Indirect Jobs	Induced Jobs
Maryland	65,600	14,600	27,700
Washington, D.C.	2,800	560	1,100
Virginia	12,700	2,600	5,200

- A new MARC station at Bayview in Southeast Baltimore, with eight round trips per day between Baltimore and Martin State Airport, will facilitate access to jobs and healthcare services in the vicinity of John Hopkins Bayview Medical Center, while providing 58,000 households with direct access to the NEC.

A more reliable and resilient NEC and lower congestion on other modes

- Passengers will experience fewer delays and disruptions with 165 miles of main track rehabilitation, over 136,000 ties replaced, and over 650 catenary structures replaced from Washington, D.C. to Perryville, MD. Every $1 spent on rail resilience improvements like these on the corridor saves passengers $4 in lost productivity, time, and expense if the network fails.
- Infrastructure improvements will reduce delays and speed up service in Maryland and Washington, D.C, enabling 375,000 more trips by rail instead of car. With additional shifts to rail from air travel, the region will reduce greenhouse gas emissions by 142,000 metric tons annually.
- Opening of the Frederick Douglass Tunnel will increase reliability and train speeds for all operators, but it will also align with MARC service transition to an all-electric Penn Line fleet, reducing emissions throughout the corridor.

142,000
metric tons of GHG
saved per year in MD and Washington, D.C.

is equivalent to carbon sequestered by

169,000
acres
US forests in one year

Mid-Atlantic South | Timeline

2023

TODAY

2024

2025

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2034

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2037

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2039

In one year

Baltimore Penn Station will feature two new platforms to support Acela overtakes of Amtrak Regional and MARC trains and track reconfigurations to increase train capacity and reliability for Acela, Northeast Regional and MARC trains as well as provide long-term improvements that will prepare the station for more high-speed rail service.

In three years

Passengers will enjoy the modernized and expanded Claytor Concourse at Washington Union Station that has double the current concourse capacity, enhancing passenger comfort and improving overall accessibility to and from the trains.

In twelve years

Amtrak and MARC trains will roll through the new Frederick Douglass Tunnel in Baltimore, with increased speed and reliability.

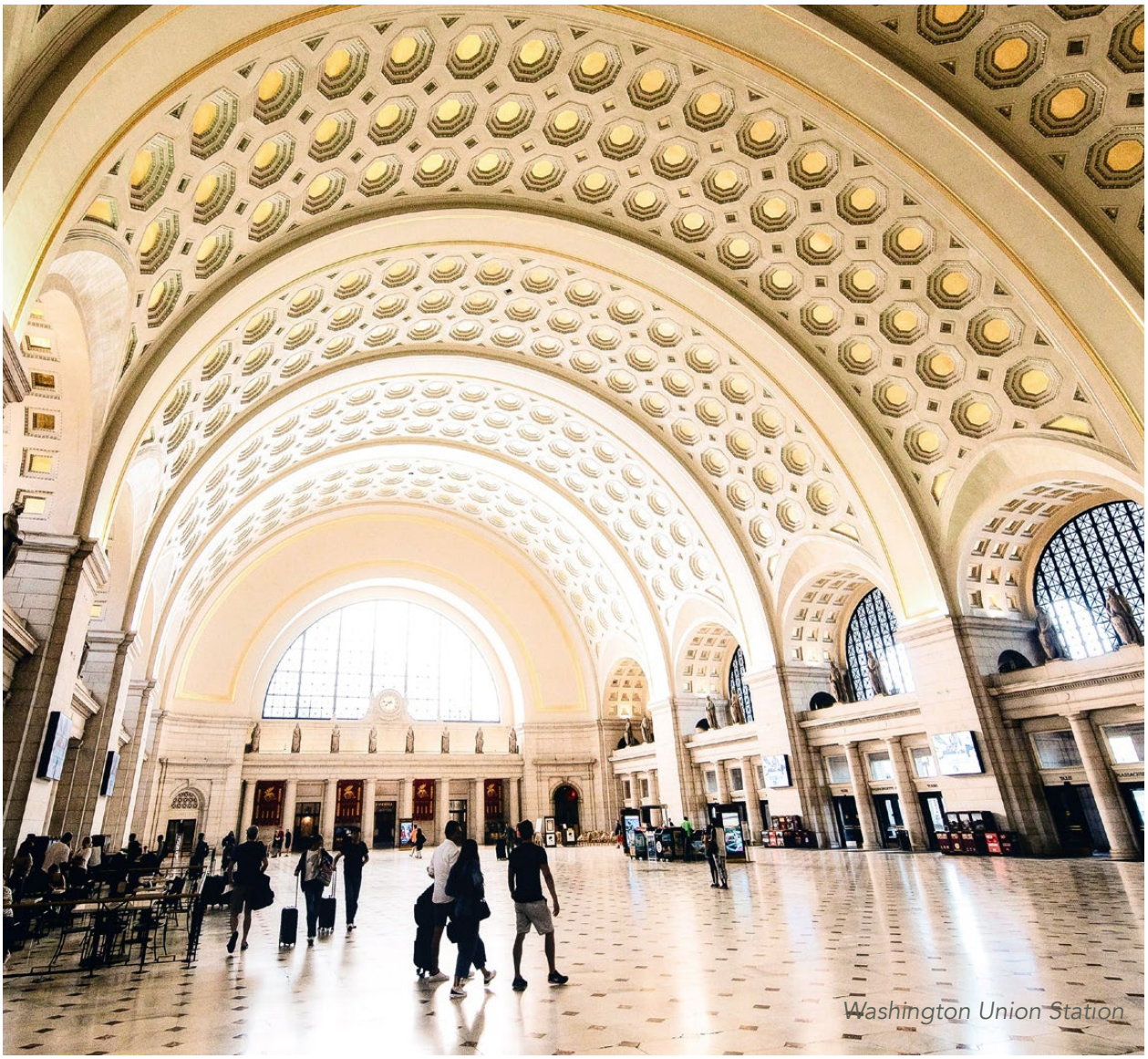
In fifteen years

The replacement of the 100+ year old Susquehanna River, Bush River, and Gunpowder River bridges with new modern structures will result in a smoother experience for riders, enhanced reliability, and faster operating speeds.

Mid-Atlantic South | Investment Summary

These regional benefits are achieved by the construction of the new Frederick Douglass Tunnel, the replacement of three major bridges (Susquehanna River Bridge, Bush River Bridge and Gunpowder River Bridge), and upgrades to signal systems and yard facilities.

Project Groups combine major backlog, improvement, and capital renewal projects based on geography, construction requirements, and operational dependencies for more efficient project delivery with reduced impacts to existing services and customers during construction. Key individual projects from the Project Groups are highlighted and may be completed sooner than the entire group.



Washington Union Station

Project Groups with Select Projects

		In 5 years	In 10 years	In 15 years
P1	Susquehanna	◐	◐	●
	Susquehanna River Bridge Replacement Program	◐	◐	●
P2	Aberdeen	◐	●	●
P3	Bush	○	◐	●
	Bush River Bridge Replacement Program	○	◐	●
P5	Gunpowder	◐	◐	●
	Gunpowder River Bridge Replacement Program	○	◐	●
P6	Martin	◐	◐	●
	MARC Bayview Station	○	◐	●
	Martin Airport Station Accessibility Improvements	◐	●	●
P7	Baltimore	◐	◐	●
	Frederick Douglass Tunnel Program	◐	◐	●
	Penn Camden Connector	◐	●	●
P8	New Carrollton	◐	●	●
	Burgos Interlocking	●	●	●
P9	Washington	◐	◐	◐
	VRE Midday Storage Facility	●	●	●
	Mid-Atlantic South Signal System Upgrades to 562 Project	◐	●	●
P10	MAS Planning	●	●	●
P11	Anacostia	●	●	●
P12	MARC Penn Line	◐	◐	◐
P13	BWI	○	●	●
P14	ACELA	●	●	●

Project Groups

- ● Complete
- ◐ Ongoing
- ○ Not Started

Select Projects

- ● Complete
- ◐ Ongoing
- ○ Not Started

Financial Strategy

The Bipartisan Infrastructure Law provided an installment of significant guaranteed and predictable funding to improve and renew aging Northeast Corridor infrastructure. While BIL funds will go a long way in addressing the backlog of assets on the NEC, long-term, predictable funding beyond FY 2026, efficient program implementation, and in some cases off-corridor investments, are necessary to realize the benefits of this plan including bringing the corridor closer toward a state of good repair and improving overall service. In addition, sustained and growing annual appropriations, which were authorized but not provided, with advanced funding under BIL, to Amtrak's Northeast Corridor Account, FSP, and other relevant programs will be critical to the corridor's success.

Funding the CONNECT NEC Program

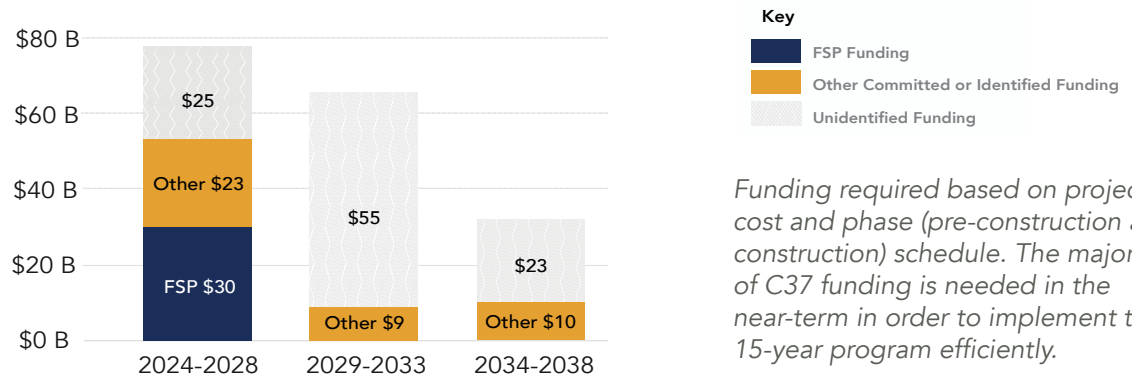
Project costs increase over time
due to rising material, equipment and labor costs

The total cost to implement C37 over the 15-year period is estimated to be $135 billion in 2023 dollars or $175 billion in year-of-expenditure dollars that account for inflation, based on current schedule assumptions. Of that amount, approximately forty percent is funded through existing or expected federal, state, and local sources, resulting in a funding gap of approximately $100 billion for the full C37 program. Out of that, $25 billion is needed to complete project phases (pre-construction or construction) that are underway or starting in the next five years. This funding does not include additional off-corridor investments necessary to realize the full potential of C37 investments.

Over a third of the available funding for C37 is expected to be provided by the Federal-State Partnership (FSP) for Intercity Passenger Rail grant program, which funds capital projects that reduce the state of good repair backlog, improve performance, or expand or establish new intercity passenger rail service. The remainder is funded by federal discretionary grants like the Consolidated Railroad Infrastructure and Safety Improvements (CRISI) and Capital Investment

Total Funding Required

Including local match assumptions



Funding required based on project cost and phase (pre-construction and construction) schedule. The majority of C37 funding is needed in the near-term in order to implement the 15-year program efficiently.

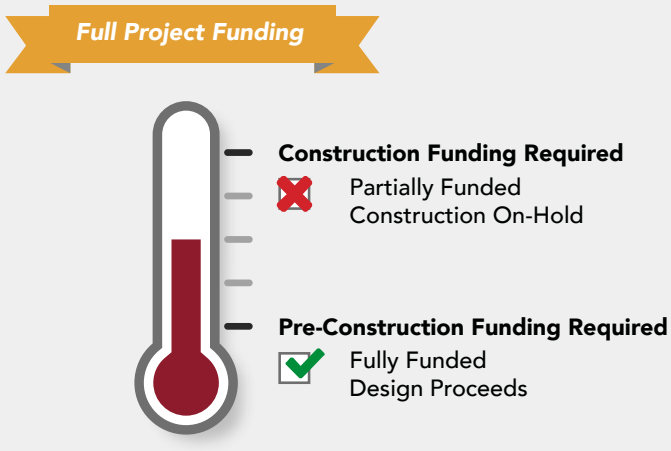
Grants (CIG), Amtrak's annual grants, Baseline Capital Charges (BCCs) as agreed to in the Commission's Cost Allocation Policy, and state and local funding.

The Federal Railroad Administration (FRA) made significant progress toward funding predictability with the announcement of FY22-23 FSP awards for NEC projects. These awards include fully funding seven major backlog projects through construction and six major backlog projects through planning or project development, making real progress toward addressing the backlog of century-plus-old structures on the NEC. Additionally, FSP awarded funding to 10 capital renewal, stations, and improvements projects, as well as two planning studies. The Fed-State program provides predictable, multi-year funding to complete the next phase of some of the largest, most pressing projects on the NEC through 2026.

In the next five years, 171 projects will be ready to commence construction. However out of those, only 74 projects have any funding available to support this phase of the work, and just 21 projects are currently fully funded. Projects without committed funding for construction will struggle to move forward. Without predictable funding beyond FY26, agencies may not be able to commit to the necessary long-term investments in project development and design, workforce development, and equipment procurement needed to advance projects.

In the future, Commission member agencies intend to work with Congress and the Administration to determine the best way to build on the success of the Bipartisan Infrastructure Law and provide guaranteed and predictable funding to improve and modernize the NEC beyond FY 2026.

Funding Large Infrastructure Projects



Funding certainty at the beginning of each project phase is critical for project delivery to enable adequate planning and implementation

Complex, multi-billion-dollar projects typically take many years to deliver due to significant project development and design, workforce ramp-up, and coordination requirements. However, funding certainty, particularly for construction phases, allows sponsors to forecast and plan for resource requirements far in advance to move the project forward as quickly as possible.

C37 Estimated Funding Need

Projects and Capital Renewal
(Billion Year of Expenditure $)

Investment	State	Total Remaining Cost	Total Spend Between FY24-FY38	Total Remaining Available Funding	Total C37 Funding Need Yr 1-15
Select Projects					
Boston South Station Expansion	MA	3.0	3.0	<0.1	3.0
Providence-Boston Traction Power Upgrades	MA, RI	0.7	0.7		0.7
South-Side Maintenance and Layover Facility	MA	0.7	0.7		0.7
Hartford Station Relocation	CT	0.6	0.6		0.6
Connecticut River Bridge Replacement Project	CT	1.3	1.3	1.3	
New Haven Line Yard and Facility Program	CT	0.8	0.8		0.8
DEVON Bridge Replacement	CT	4.3	4.3	0.3	4.0
TIME-1	CT	1.1	1.1	0.1	1.0
SAUGATUCK River Bridge Replacement	CT	0.8	0.8	<0.1	0.7
WALK Bridge Replacement*	CT	0.6	0.6	0.6*	
COS COB Bridge Replacement	CT	4.3	3.6		4.3
TIME-5	CT	1.4	1.4		1.4
Penn Station Access*	NY	2.0	2.0	2.0*	
East River Tunnel Rehabilitation Project	NY	1.6	1.6	1.6	
Gateway: New York Penn Station Expansion	NY	10.9	10.9		10.9
New York Penn Station Reconstruction	NY	7.0	7.0		7.0
Gateway: Hudson Yard Concrete Casing 3	NY	0.8	0.8	0.3	0.5
Gateway: Hudson Tunnel Project*	NY, NJ	15.4	15.4	15.4*	
Gateway: Secaucus Station and Loop Tracks	NJ	3.5	3.5		3.5
Gateway: Portal North Bridge	NJ	1.5	1.5	1.2	0.3
Gateway: Portal South Bridge	NJ	2.5	2.5		2.5
NJ TRANSITGRID	NJ	0.7	0.7	0.6	0.1
Gateway: Sawtooth Bridges Replacement	NJ	2.0	2.0	0.2	1.8
Choke Point Relief: Westbound Waterfront Connection	NJ	0.6	0.6		0.6
Gateway: NJ Transit Gateway Storage Yard	NJ	2.4	2.4	<0.1	2.3

** Assumes full funding for construction will be identified. See Project Information Appendix for funding plan details as of November 2023.*

Investment	State	Total Remaining Cost	Total Spend Between FY24-FY38	Total Remaining Available Funding	Total C37 Funding Need Yr 1-15
Select Projects					
County-Newark Catenary Upgrades	NJ	0.6	0.6	<0.1	0.6
Delco Lead	NJ	0.7	0.7	0.5	0.2
Midline Loop	NJ	0.9	0.9	<0.1	0.8
Philadelphia 30th Street District Plan	PA	2.2	2.2	<0.1	2.2
Landlith Interlocking - Wine Interlocking NEC Section Improvement Project	DE	1.3	1.3		1.3
Susquehanna River Bridge Replacement Program	MD	2.6	2.6	2.6	
Bush River Bridge Replacement Program	MD	0.7	0.7	<0.1	0.7
Gunpowder River Bridge Replacement Program	MD	1.3	1.3	<0.1	1.3
Frederick Douglass Tunnel Program	MD	5.8	5.8	5.8	
Washington Union Station: Long Term Station Expansion	DC	11.6	11.3	<0.1	11.6
ALL OTHER PROJECTS - Major Backlog		1.2	1.2	0.5	0.7
ALL OTHER PROJECTS - Improvement		9.2	9.2	1.6	7.7
ALL OTHER PROJECTS - Capital Renewal		5.7	5.7	1.1	4.6
ALL OTHER PROJECTS - Stations		6.3	6.0	1.0	5.3[3]
ALL OTHER PROJECTS - Planning Studies		<0.1	<0.1	<0.1	<0.1
Total Projects		**120.5**	**119.2**	**36.8**	**83.7**
Total C37 Programmatic Capital Renewal		**55.7**	**55.7**		**55.7**
Additional Identified Funding					
Future Federal-State Partnership (Including Local Match Assumption)				9.7	(9.7)
Future Baseline Capital Charges (BCCs)				16.6	(16.6)
Future Amtrak Annual Grants (Base Needs)				9.1	(9.1)
Total Additional Identified Funding				**35.4**	**(35.4)**
Total C37		**176.3**	**174.9**	**72.2**	**104.1**

1. *Additional Identified Funding subject to annual approvals and will be impacted over time by escalation, service changes, and other factors. Future Amtrak Annual Grant is based on Amtrak's FY24 Grant and Legislative Request base needs capital request for the types of Annual Grant funded work in C37 and escalated using C37 methodology. Amtrak's BCC obligations to itself come from Annual Grant funding, but are included in the Future BCCs in this table.*
2. *Cost and funding values are in billion dollars, are adjusted to year of expenditure dollars and consider amounts already spent. Numbers may not add due to rounding.*
3. *For a few projects, construction is planned to start after FY38 and therefore are not included in the funding values for C37 in the table above.*

Next Steps

The unprecedented level of funding support secured through the Bipartisan Infrastructure Law has spurred agencies to ramp up efforts on project development and delivery and has led the Commission to develop an Implementation Coordination Program to help agencies advance the funded projects in the CONNECT NEC program.

At the same time, the Commission will continue its corridor-wide planning process with CONNECT NEC 2040, which will consider ridership trends, update service plans, and further address resource constraints and funding availability.

Future Service Goals

NEC operators' future service goals are a key input into the CONNECT NEC planning process. These service goals, which are revisited in each CONNECT NEC plan, are used to develop an NEC-wide future integrated operating plan which is tested against the capacity of planned infrastructure. In C37, most operators are planning a significant increase in overall service in the next fifteen years, straining the capacity of the NEC in certain regions even when future infrastructure investments are taken into account.

Importantly, the pandemic continues to impact travel and commuting patterns on the NEC. Some commuter services have fewer traditional weekday peak riders, and some have seen higher than average ridership throughout the day and on weekends. Amtrak has seen strong overall ridership recovery with a notable surge in weekend passengers. This emerging ridership profile suggests more consistent all-day and weekend service may be increasingly desirable, and these frequencies are included in C37 for many operators. Commission members will continue to analyze ridership and revenue trends as service assumptions are updated in the next plan.

CONNECT NEC Implementation and Project Delivery

Project sponsors will manage the planning, design, and delivery of individual projects in C37. However, there are significant challenges associated with project delivery on a complex railroad network with multiple operators providing a high level of service. It is critical to coordinate across organizations to advance project development in a timely fashion and deliver projects in a manner that minimizes impact on customers and maximizes the productivity of track outages and workforces. It is also critical to understand resource needs and resource availability across the entire program to establish realistic schedules for the development, design, and construction of individual projects.

NJ TRANSIT train at Princeton Junction Station

The Commission has launched an Implementation Coordination Program (ICP) to facilitate improved project delivery and facilitate the successful implementation of CONNECT NEC. The ICP aims to bring transparency to how projects are progressing through development and construction, provide early notice of issues that could affect program delivery, and inform how individual project progress or delays might impact the rest of the program.

While participating in the ICP, Commission members are also examining additional means to improve productivity. Typical track outage allowances, such as overnight or on weekends, may be reconsidered as travel patterns evolve. Extended weekend outages, for instance, could increase construction productivity, as could methods for optimizing the amount of construction that can progress during track outages. Commission members will carefully weigh the need for new delivery methods with the impact on customers, especially as travel patterns continue to evolve.

Finally, the availability of railroad workforce is a critical element in the successful implementation of Bipartisan Infrastructure Law-funded projects. Amtrak and other NEC infrastructure owners have been advancing aggressive workforce hiring and training programs to increase railroad staff available to deliver these unprecedented capital programs. Commission members will continue to investigate innovative approaches to meeting workforce needs.

CONNECT NEC Improvements

C37 further advanced the C35 planning approach with an enhanced focus on workforce requirements, service planning, more developed capital renewal assumptions, alignment with other Commission processes, and coordination among stakeholders. A planned 2025 update, C40, will include enhancements that build upon CONNECT NEC efforts to date.

The Commission and its member agencies will undertake the following specific improvements, including:

- Closer alignment between CONNECT NEC resource assumptions and actual railroad resources required to deliver work
- Incorporating lessons learned as the Commission grows its role in supporting member agencies in project implementation
- Scoping programmatic capital renewal and SOGR work to establish a more detailed, resource-loaded plan, especially for the first five years
- Updates to RoW owner systems and processes to provide updated asset data to support planning efforts, identify SOGR needs, and report out progress in eliminating the SOGR backlog
- Identifying specific investments that will achieve the 2040 Acela trip time goals
- Reviewing service plans to address pandemic ridership impacts, cost forecasts for additional service, and future capacity needs

The new Avelia Liberty trainsets that will replace the existing Acela rolling stock will include features such as an advanced tilting mechanism that will support an increase in Acela maximum speed to 160 mph.

Source Data

All source data, unless otherwise noted, is developed as part of the CONNECT NEC Planning Process and from the June 2023 analysis. The CONNECT NEC Planning Process includes service and capital; delivery; finance and funding; and benefits analyses that are further detailed in the NEC Planning Overview & Process section of the Appendix.

C37 Timeframe

C37 covers planned investments from FY24-38 (October 1, 2023 to September 30, 2038). The first five years of C37 are the FY24-28 Capital Investment Plan. For more information, refer to the NEC Planning Overview & Process section of the Appendix.

Glossary

For a full glossary of terms, refer to the Glossary section of the Appendix.

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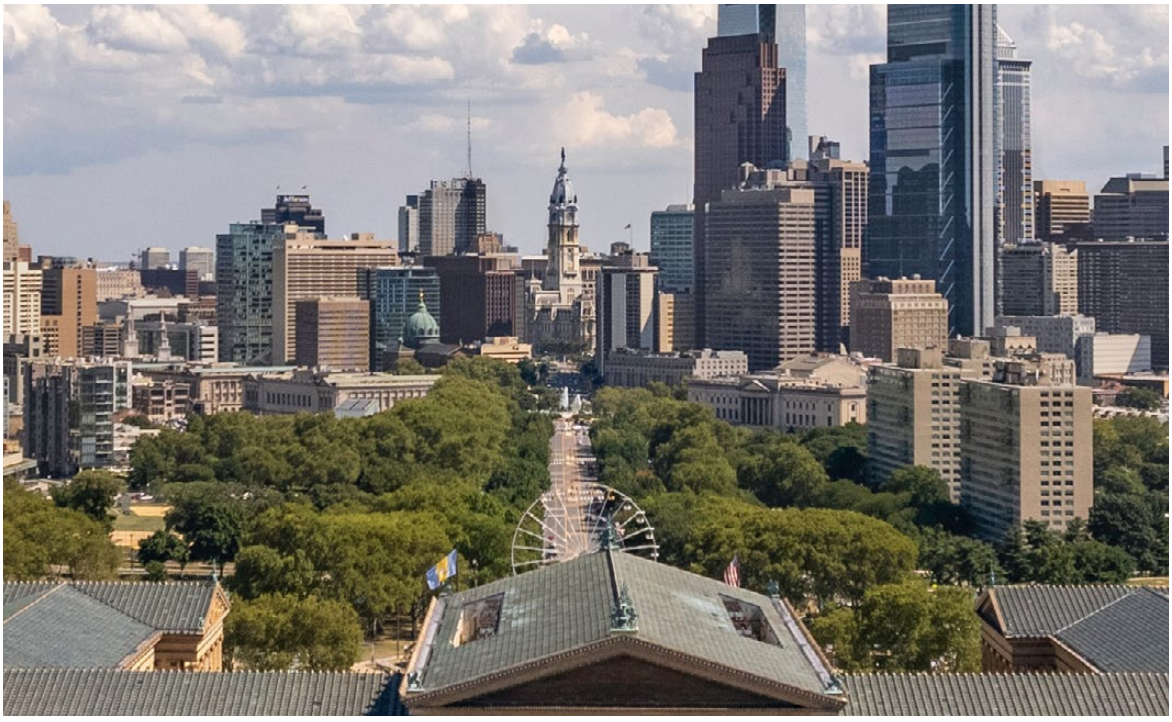

Philadelphia Museum of Art

NORTHEAST CORRIDOR COMMISSION