



Construction crew at Harold Interlocking (NY)

July 2021

Executive Summary

The Northeast Corridor (NEC) commuter and intercity rail system, long the nation's busiest passenger railroad, has been a cornerstone of the region's development and continues to be a driver of its economic success. With stations in the center of every major and mid-size city and in many small towns, the NEC can continue to be the region's mode of choice for even more trips by 2035, following 15 years of transformative investment guided by the CONNECT NEC 2035 (C35) plan.

The implementation of C35 will result in a modern and resilient railroad with safe, reliable, and more frequent service; connections to new markets; and reduced travel times between communities.

C35



Passengers at Baltimore Penn Station (MD)

What is CONNECT NEC 2035?

C35 represents the most ambitious reinvestment program in the NEC's history and a new way of planning: a multi-agency, multi-year, shared action plan guided by a long-term vision. The state governments of the Northeast, the federal government, eight commuter rail agencies, and Amtrak have come together through the NEC Commission as never before to develop a detailed and efficient sequencing of infrastructure investments over 15 years. If funded, this program will achieve significant progress on improving service and **eliminating the state-of-good-repair (SOGR) backlog**, while keeping this critical system running **safely and reliably**, and supporting our economy.

C35 is the first phase of the long-term vision for the corridor established in the Federal Railroad Administration's 2017 NEC FUTURE plan. The Commission looks forward to completing this first phase of critical backlog work and initial investment in higher speed and capacity on existing infrastructure shared by commuter rail and Amtrak, while also advancing the planning and development of new rail segments between New Haven, CT - Providence, RI and Maryland - Delaware that can provide even greater speed and capacity benefits for all customers.

CONNECT NEC is also the start of an ongoing, iterative process. The Commission will refine the plan as new project, resource, and funding information becomes available. C35 will be updated in two years, with CONNECT NEC 2037 [C37] expected to be completed by fall 2023.

2035 Benefits of a Renewed NEC and Thriving Northeast



IMPROVE MOBILITY AND CONNECTIONS

- Travel time savings valued at nearly \$140 million annually for intercity and commuter rail passengers corridor-wide
- Nearly 30 minutes faster for Acela riders traveling from DC to NYC & NYC to Boston
- 25 minutes faster for commuters traveling from New Haven to NYC
- Daily Amtrak NEC service will increase by 33% and double for several commuter railroads
- New one-seat ride services in NJ, NY, and CT into Penn Station New York



COMBAT CLIMATE CHANGE

- 60 million new rail trips using a lower carbon emitting mode than air/bus/auto
- Invests in hardened infrastructure to build a more resilient railroad



SUPPORT DESIRABLE CITIES AND COMMUNITIES

- Supports innovation districts and is a catalyst for ongoing development initiatives in places such as Newark, DE, Philadelphia, PA, Providence, RI, and Boston, MA
- Provides reliable, frequent access to support and sustain transit-oriented development



CREATE ECONOMIC OPPORTUNITY

- Generates nearly 1.7 million new jobs and \$90 billion in earnings over 15 years throughout the US
- Enhanced and new connections between affordable housing and job centers
- New off-peak and reverse-peak services offer opportunities to underserved markets



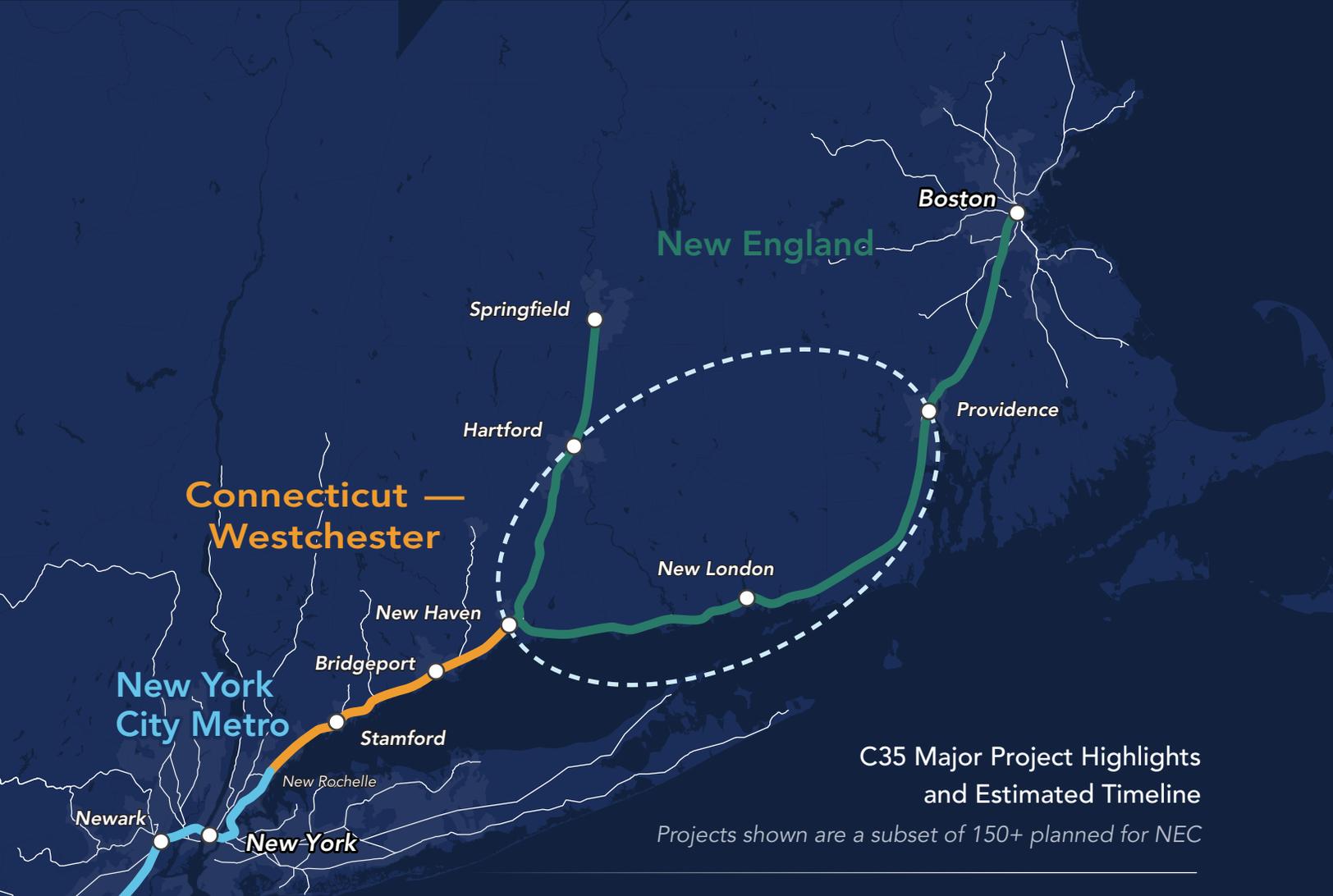
Planning/Design for High Speed Segments



Commuter Rail Lines



Figure E-1
Source: C35 Analysis, 2021



C35 Major Project Highlights and Estimated Timeline

Projects shown are a subset of 150+ planned for NEC

CONSTRUCTION STARTS BY

2025

TERRITORY LOCATION (COLOR) AND PROJECT TYPE (ICON)

-  Providence Station
-  Connecticut River Bridge Replacement
-  Stamford Station
-  Walk Bridge Program
-  East River Tunnel Rehabilitation
-  Penn Station Reconstruction & Expansion
-  Gateway: Hudson Tunnel Project
-  Gateway: Portal North Bridge
-  Gateway: Sawtooth Bridge
-  Harrisburg Line Interlocking projects
-  Harrisburg Line Catenary & Signal projects
-  30th Street Station Improvements
-  Susquehanna River Bridge Replacement Phase 1
-  Baltimore Penn Station Improvements
- Baltimore & Potomac Tunnel Replacement
- Washington Union Station

CONSTRUCTION STARTS BY

2030

-  Boston South Station Expansion
-  New Haven Line Track & Speed Improvements
-  Hartford Station Relocation
-  Devon Bridge Replacement
-  Saugatuck River Bridge Replacement
-  Cos Cob Bridge Replacement
-  Pelham Bay Bridge Replacement
-  Wilmington Station Improvement Project
-  Bush River Bridge Major Rehabilitation

CONSTRUCTION STARTS BY

2035

-  Gateway: Highline Renewal and State of Good Repair
-  Gunpowder River Bridge Major Rehabilitation

C35 Delivers Faster and More Convenient Service by 2035

Peak Express Service to Central Business Districts

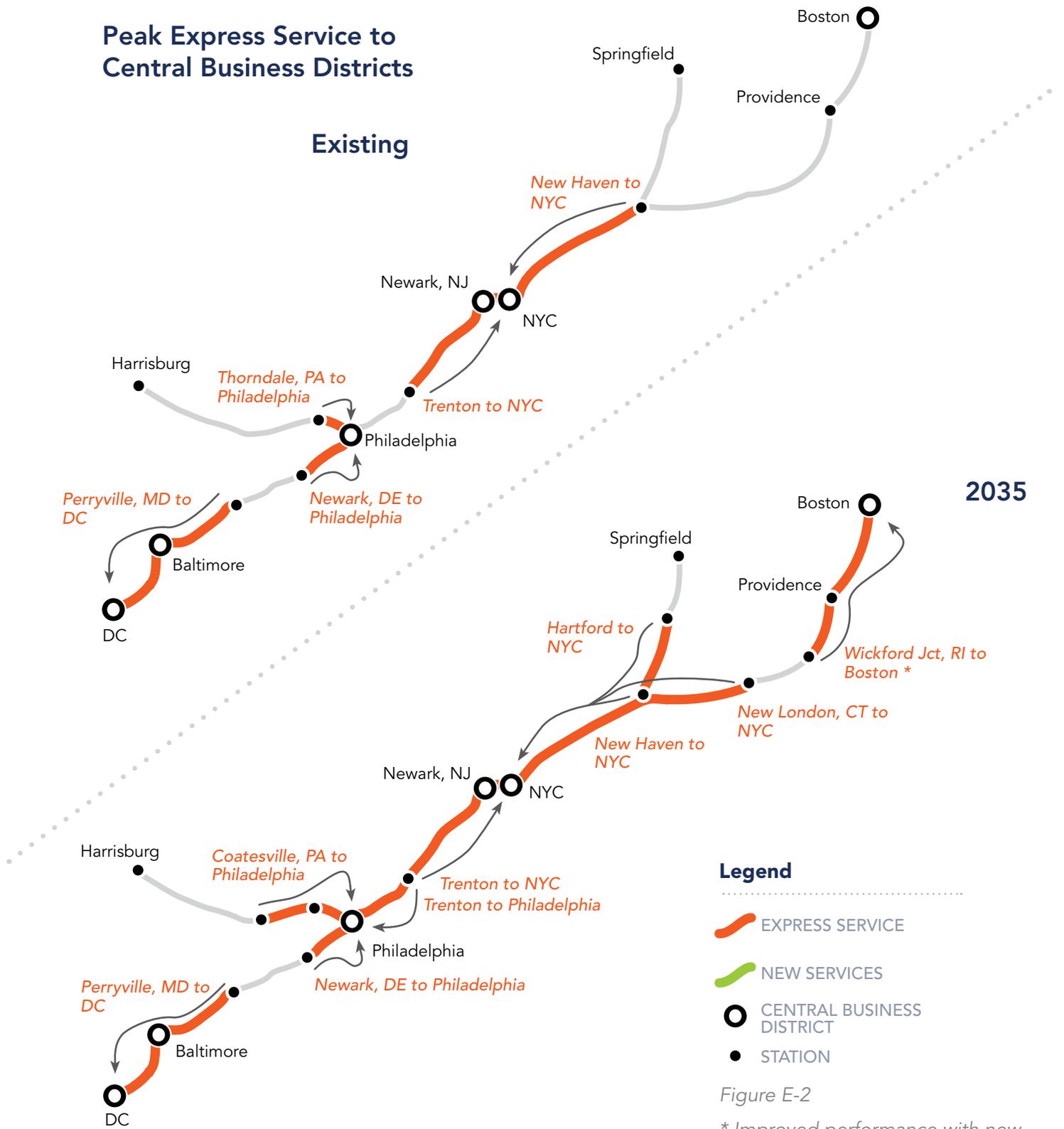
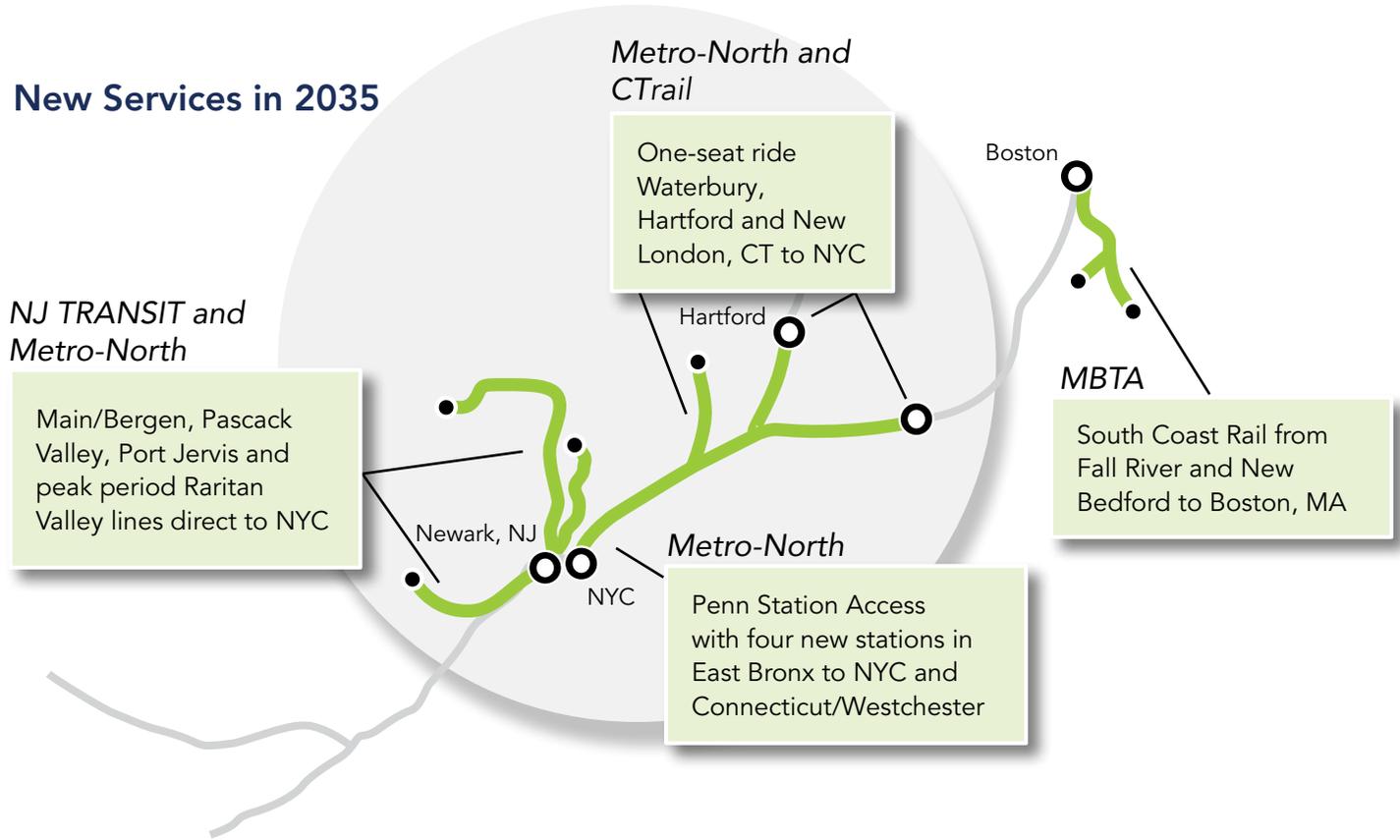


Figure E-2

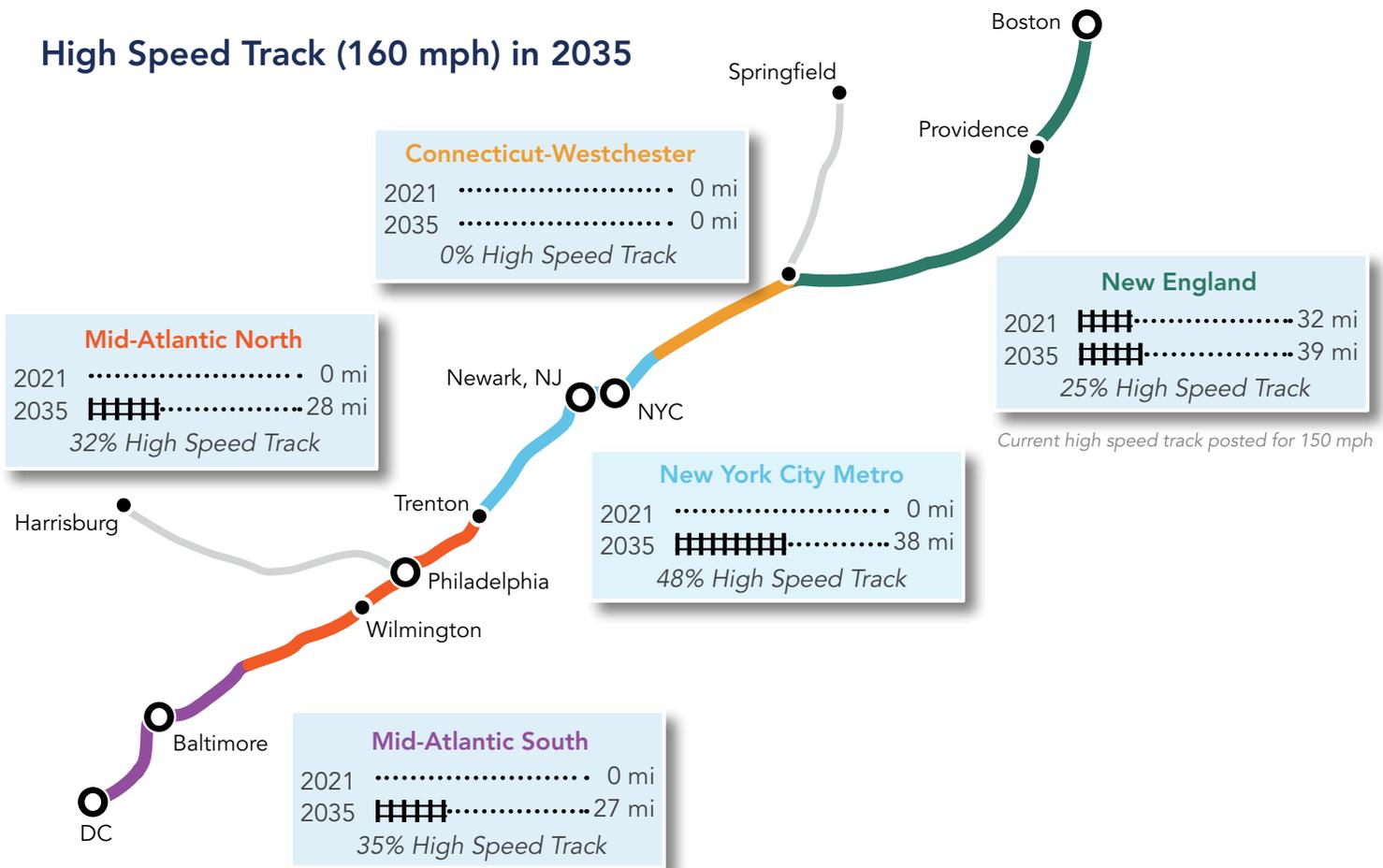
* Improved performance with new electric vehicles

Source: C35 Analysis, 2021

New Services in 2035



High Speed Track (160 mph) in 2035



Why Invest in the NEC?

Improving the NEC commuter and intercity rail system is the region’s most critical infrastructure need. Before the coronavirus pandemic, the NEC supported 760,000 daily trips on eight commuter railroads and 40,000 daily trips on Amtrak. However, those services rely on bridges and tunnels over 100 years old, and aging track, signal, and power supply systems prone to breakdowns that cause service disruptions.

Continued failure to address the NEC SOGR backlog will impact service, safety, and reliability, and jeopardize the economic well-being of the Northeast region and the nation. **A single day without service on the NEC would cost the economy \$100 million** in lost productivity and other transportation-related impacts.¹ C35 will address the NEC’s backlog and build a foundation for growth.



IMPROVE MOBILITY AND CONNECTIONS

Provide more reliable, frequent, and faster NEC service while implementing new service patterns that provide express and one-seat rides



Why CONNECT NEC 2035 Now?

Although the pandemic dramatically reduced all travel throughout the U.S. and the world, the Commission expects rail travel to rebound just as it did following the ridership drops associated with other major events that disrupted the transportation industry like 9/11 and the 2008 recession. Rail will continue to be a primary mode of travel for many people, including those without access to a car, and we must provide high-quality service and equitable accessibility for these customers.

C35 can be a mobilizing force in putting people back to work by building a rail system that can reabsorb travel demand and support new travel patterns that may grow as our economy returns to full strength. Sustained investment in the NEC will deliver improved mobility for millions of Americans, create jobs, open access to opportunity, support our fight against the growing threat of climate change, and continue to make the Northeast a global economic powerhouse.



CREATE ECONOMIC OPPORTUNITY

Generate skilled jobs, and support social equity and underserved communities



A Unique Challenge and a New Way of Doing Business

The NEC is one of the nation's oldest passenger railroads with bridges and tunnels dating back to the 1800's and track, signal, and power supply systems beyond their useful life. The NEC is also the nation's busiest passenger railroad with capacity constraints that make it difficult to take tracks out of service for construction and that limit future growth.

Today, most construction projects advance independently and track outages are scheduled on a "ready to go" basis. Just like a utility company that rips up a road shortly after it's been repaved, when another project is identified in the same area, the same track is shut down again, impacting the same trains and customers.

In select areas, such as Penn Station New York where capacity constraints are most acute, railroads have collaborated on coordinated

track outages with as much programmed work as possible to minimize impacts on customers. C35's groundbreaking analytical approach applies this new construction paradigm to the entire NEC: **project delivery driven by efficient use of track outages, for everything from routine capital renewal to major improvement projects.**

C35's analytical approach also accounted for the fact that the NEC is a network of highly interdependent assets. Additional track capacity 30 miles from a major station may not provide any service frequency benefits if other capacity chokepoints exist at or near the station. C35 considered each individual project in the context of the overall infrastructure to ensure the sum of the plan is greater than its parts: **advancing projects that collectively unlock measurable and significant service benefits by 2035.**



People walking through Newark Penn Station (NJ)

Principles for an NEC Funding Program

C35 will require a strong federal-state funding partnership. The total investment needed to implement C35 over the 15-year period is estimated to be \$117 billion in 2020 dollars and the funding gap is approximately \$100 billion, to be shared between the federal government and states. Below are principles for a new or restructured funding program to implement C35.

- **Make Funding Predictable.** C35's immense workforce and other resource needs make funding predictability critically important. Agencies cannot hire workers, buy equipment, invest time and money in advancing projects through the design and development process when there is no certainty that funding will be available for future construction.
- **Fund the Plan Rather than Individual Projects.** C35 is a detailed sequencing of 15 years of NEC investment organized to maximize the productivity of construction during track outages while supporting existing service. The uncertainty inherent in project-based annual grant competitions and relying on a patchwork of FRA and FTA funding sources prevents agencies from executing work according to this kind of plan efficiently. Agencies should receive funding allocations that allow them to advance projects within the plan in the most efficient way possible.

Many C35 outcomes, such as reduced travel time, are achievable not through the implementation of individual projects, but by the synergies created by multiple projects at multiple locations, and in some cases, in multiple states. Less than full funding for the plan simply means those benefits will take longer than 15 years to achieve. Though C35's funding needs are large, they represent a once-in-many-generations investment to restore a vital asset and build a foundation for growth.



SUPPORT DESIRABLE CITIES AND COMMUNITIES

Improve access to current and future station area developments to enhance the value of our communities

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COMBAT CLIMATE CHANGE

Invest in improvements to the NEC that will have a positive impact on the environment through the reduction of greenhouse gas (GHG) emissions and more resilient infrastructure

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The NEC Commission is ready to rise to the challenge of advancing this plan. Less than full funding for the plan will delay the replacement of critical assets and needed travel time and capacity improvements across the corridor.

The foundation of partnership is strong. Together, we can at long last rebuild this critical public asset and ensure a bright future for this region and the nation.

Next Steps

The implementation of C35 will require new ways of working together, a much larger workforce, and innovative construction and project delivery methods. **Key next steps include: development of Program Management Plans, creation of a corridor-wide Program Coordination Office, targeted long-term workforce development plans, and continuation of the CONNECT NEC effort, in C37, to refine the plan as new information becomes available.**



People walking through Moynihan Train Hall (NY)