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CHAPTER 1

Rebuilding for the Future

The NEC rail system, long the nation's busiest passenger railroad, was 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 C35 plan. The implementation of C35 will result in a more reliable railroad that provides more service, connects new markets, and reduces travel times between communities.

The NEC depends on bridges and tunnels over 100 years old. Continued failure to address the NEC's backlog of state-of-good-repair (SOGR) needs will further impact service reliability and jeopardize the economic well-being of the Northeast region and the entire nation. In addition, continued failure to address the NEC's backlog will greatly reduce the NEC's potential to improve equitable access to public transportation and reduce greenhouse gas (GHG) emissions. C35 will create a more resilient railroad, built to modern safety standards, with faster speeds, greater capacity, and enhanced reliability.

What is CONNECT NEC 2035?

C35 is an unprecedented corridor-wide action plan for the NEC. Building toward the long-term vision for the corridor established in the FRA's 2017 NEC FUTURE plan, C35 provides detailed project sequencing to deliver a first phase of measurable benefits for the region.

C35 is the result of an intensely collaborative process where Commission member agencies worked together for two and a half years to develop and analyze the infrastructure investments necessary to meet ambitious first phase SOGR and service objectives by 2035.

C35 will substantially increase, and in some cases double, commuter rail service; speed up trips with new express services; and connect residents from more parts of the region with one-seat service from their homes to employment centers and other destinations. For the Amtrak Acela traveler, C35 will shave 26 minutes off trips from Washington, DC to New York City and 28 minutes on trips from New York City to Boston, MA.

At the same time, implementing C35 will vastly improve service reliability for all users by replacing or rehabilitating century-old major bridges and tunnels, and upgrading signal and power supply systems.

As part of C35, Commission member agencies have not only analyzed the eventual outcomes resulting from new infrastructure investment; they have developed a detailed guide for how to invest in the NEC in a manner that aims to preserve as much existing service as possible during construction and have identified workforce and other resources needed to deliver the plan.

The result is an ambitious plan for what can be done primarily within the existing NEC footprint to help minimize potential community impacts during construction and generate long-term social, economic, and environmental benefits.

C35 Analysis Framework

The C35 analysis identified a viable and efficient sequence for completing a comprehensive set of special projects and capital renewal activities by 2035 that support agencies' service goals and make significant progress towards eliminating the NEC SOGR backlog. The analysis was conducted with a focus on maximizing the productivity and efficiency of track outages and minimizing service impacts to passengers.

Importantly, the analysis was not constrained by funding and other resources, such as the workforce and equipment that will be available to complete this ambitious—yet critical—set of investments. As discussed in Chapter 10, Commission member agencies are mobilizing to better understand these constraints in the context of this plan, develop strategies for addressing any implementation barriers, and refine the project delivery analyses based on realistic funding and workforce levels, that will inform future iterations of our CONNECT NEC planning process.

This Commission-led CONNECT NEC effort will continue to evolve and will be updated as new project, resource, and funding information becomes available. The delivery analysis and formal documentation, including any changes to sequencing, will be updated roughly every two years, with the next iteration (CONNECT NEC 2037 [C37]) to be completed by fall 2023.

Why Invest in the NEC?

Today's NEC is the product of investments made by various private companies and governments over the last two centuries, spurring various waves of growth and development. Starting in the 1830s, new towns and commercial districts clustered around stations as the first NEC railroad segments extended from Washington, DC to Baltimore, MD; Philadelphia, PA, to Trenton, NJ; New York City, to New Haven, CT; and Boston, MA to Providence, RI.

The final links in today's NEC were put in place in the early twentieth century when the Pennsylvania Railroad completed the original New York Penn Station, and East and North River tunnels (1910), and in a joint effort with New York, New Haven, and Hartford Railroad, the Hell Gate Bridge (1917). Fully electric service south of New Haven, CT to Washington, DC was in place by 1938. Fully electric service from Boston, MA to Washington, DC was established in 2000 with Federal investment for the introduction of the Amtrak Acela.

There were over 800,000 trips per day in 2019 along the NEC, which includes the main line between Boston, MA and Washington, DC and the connecting corridors. Over 760,000 of these daily trips were on one of the eight commuter railroads, with the remaining 40,000 intercity trips hosted by Amtrak.[2] At this level of ridership, Amtrak carried more intercity travelers within the Northeast than all airlines combined in 2019. All this activity is meaningful; **if the NEC shut down for just a single day, it would cost the economy $100 million in lost productivity due to additional congestion and other transportation impacts.**[3]

Passenger crowding in the NJ TRANSIT Concourse at Penn Station New York (NY)

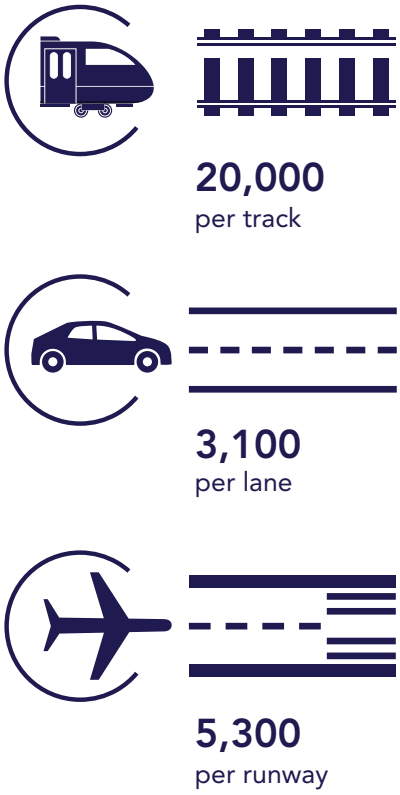
Today, 35 percent of residents and 45 percent of jobs in the Northeast are within five miles of an NEC commuter or intercity station. Of those residents, 23 percent are living in low-income households and a third are living in households without an automobile. The Northeast is projected to grow by an additional seven million new residents and five million new jobs over the next 30 years, putting even more demand on its increasingly overburdened transportation network.[4]

I-95, a 1,900-mile-long interstate highway which runs parallel to the NEC throughout most of the Northeast, is already one of the most congested interstates in the nation. It is predicted that I-95's crowding issues will only worsen in the future, with a projected 474 miles (or 25 percent) of the entire interstate highway operating at 27 mph or less during peak periods by 2030, up from 165 miles in 2010.[5]

Air travel in the region is capacity constrained due to the region's airports' small physical footprints and significant airspace congestion. Passengers using NEC's regional airports in 2019 were subjected to $973 million in delay costs while costing airline operators $37 million in operating expenses.[6] Moving more regional travelers to rail will help the region's airports handle continuing growth in long-distance travel using their existing facilities.

C35, with its service frequency, reliability, and travel time benefits, is expected to cost $117 billion over 15 years. This investment will improve an efficient high-capacity transportation mode for trips between the key destinations in the Northeast, providing travelers with direct access into the central business districts of the region's major cities where the highest concentration of traffic delays are found, and where traveling without a car has many advantages. For comparison, **one additional lane of I-95 from Boston, MA to Washington, DC in each direction could cost approximately $75 billion, but provide less marginal capacity per dollar than rail investment.[7]**

Figure 1-1: Capacity by Mode (people per hour)



Source: WSDOT UHSGT Business Case Analysis, 2019

MBTA train at Providence Station (RI)

Rail is an energy efficient and low polluting mode of transportation. If all the NEC's pre-pandemic travelers were diverted from rail to highway and air, it would add 3.9 million metric tons of GHG per year, the equivalent of 2.9 million cars driving from New York City to Los Angeles, CA.[8]

Rail-based commercial and residential development has cascading environmental and social benefits by supporting walkable land use patterns that enable overall lower automobile use. These factors all make the NEC, which already connects places where people live and want to go, uniquely situated to meet the region's future mobility needs.

Rendering of Expanded Washington Union Station (DC)

Why CONNECT NEC 2035 Now?

We are in a moment of great uncertainty. Where is our economy going? How will people travel? Although the coronavirus 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 travel will continue to be an important mode of travel for residents 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.

C35 BENEFITS

IMPROVE MOBILITY AND CONNECTIONS

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

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

CREATE ECONOMIC OPPORTUNITY

Generate skilled jobs, and support social equity and underserved communities

SUPPORT DESIRABLE CITIES AND COMMUNITIES

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

People walking through Moynihan Train Hall (NY)