

# Northeast Corridor One-Year Implementation Plan

Fiscal Year 2020

October 2019





Congress established the Northeast Corridor Commission to develop coordinated strategies for improving the Northeast's core rail network in recognition of the inherent challenges of planning, financing, and implementing major infrastructure improvements that cross multiple jurisdictions. The expectation is that by coming together to take collective responsibility for the NEC, these disparate stakeholders will achieve a level of success that far exceeds the potential reach of any individual organization.

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



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# Introduction

## The Northeast Corridor

Each day, the Northeast Corridor—both the NEC main line and connecting corridors to Harrisburg, PA; Spuyten Duyvil, NY; and Springfield, MA—serves over 800,000 railroad trips on nine commuter railroads and Amtrak’s intercity services. The 457-mile main line railroad still includes many bridges and tunnels that date back to the period between the Civil War and the New Deal.

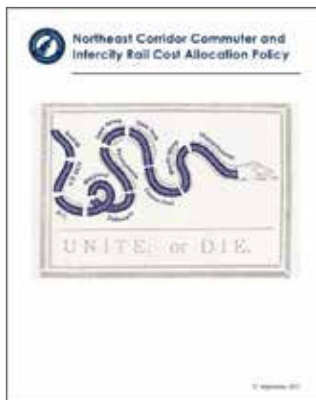
Service disruptions caused by infrastructure failures, rail traffic congestion, and other factors already cost the economy \$500 million per year in lost productivity. Without higher levels of capital investment, those losses are likely to grow. A loss of all NEC services for just one day would cost the economy an estimated \$100 million.

## The Northeast Corridor Commission

Congress established the Northeast Corridor Commission to develop coordinated strategies for improving the Northeast’s core rail network in recognition of the inherent challenges of planning, financing, and implementing major infrastructure improvements that cross multiple jurisdictions. The expectation is that by coming together to take collective responsibility for the NEC, these disparate stakeholders will achieve a level of success that far exceeds the potential reach of any individual organization.

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

## The NEC Commuter and Intercity Rail Cost Allocation Policy



In September 2015, the Commission adopted the NEC Commuter and Intercity Rail Cost Allocation Policy. The Policy outlines a partnership built on three pillars.

First, it established a framework for allocating approximately \$1.2 billion annually in shared operating costs and capital normalized replacement values among the NEC’s four right-of-way owners and ten passenger rail operators. The agencies’ financial obligations are calculated annually through the NEC Commission’s Cost Allocation Model and are based on agencies’ relative use of NEC infrastructure. Right-of-way owners use agencies’ capital obligations, referred to as Baseline Capital Charges

(BCCs), to fund the normalized replacement of basic infrastructure assets (i.e., sufficient funding to replace these assets on a regular schedule if not for the state-of-good-repair backlog).

Second, the Policy established a framework for transparency, collaboration, and accountability, including a first-ever corridor-wide capital planning process. The One-Year Implementation Plan is a key component of that NEC-wide planning process. The final pillar of the Policy called for a strong Federal role in providing dependable and consistent funding so that the NEC could be restored to a state-of-good-repair.

## The NEC One-Year Implementation Plan

The NEC One-Year Implementation Plan: Fiscal Year 2020 is a consolidated cross-agency record of the anticipated capital project activity in the upcoming federal fiscal year based on available capital funding.

This plan was created to comply with the Policy which calls for the collection of scope, schedule, and budget information for capital investments such that reports on their implementation can be generated on a quarterly and annual basis. Also, the Fixing America's Surface Transportation Act calls on the Commission to report annually to Congress on the delivery of the five-year NEC Capital Investment Plan. The One-Year Implementation Plan is the first year of the five-year plan and serves as the baseline against which those reports will measure performance in FY20.

## Other NEC Capital Plans and Reports

The Commission produces two other plans and reports on an annual basis to comply with the Policy and FAST Act requirements:

- **NEC Capital Investment Plan:** The five-year Capital Investment Plan combines anticipated investments based on available funding and resources with capital investments that could occur with additional funding to restore and improve the condition of the NEC.
- **NEC Annual Report:** The Annual Report documents the operational performance of NEC trains and the implementation of the capital program for the past federal fiscal year. The report also contains recommendations from the Commission, as appropriate.

Download a copy of the Policy and all NEC plans and reports at: [www.nec-commission.com](http://www.nec-commission.com).

## Overview of FY20 NEC Capital Investments

The FY20 One-Year Implementation Plan focuses on two types of capital investments:

- **Capital renewal of basic infrastructure** includes the routine repair, replacement, or renewal of existing basic infrastructure assets. The Policy defines basic infrastructure assets as “components that require annual renewal to keep the NEC’s structures and systems functioning properly and in a state-of-good-repair for safe train operations.” According to the Policy, basic infrastructure includes “rails, ties, ballast, communication systems, electric traction power systems, under-grade bridges, and other similar items.” Additionally, basic infrastructure may include individual, component parts of major bridges and tunnels.
- **Special projects** include “major backlog projects” which represent the complete overhaul or replacement of major bridges and tunnels, and “improvement projects” aimed at creating new infrastructure above and beyond existing assets or replacing existing structures with markedly superior ones.

In FY20, NEC stakeholders plan to spend a total of \$1.78 billion on infrastructure investment on the NEC. Of that amount, stakeholders will spend over \$800 million on capital renewal of basic infrastructure and over \$975 million on special projects.

**Table 1. FY20 NEC Capital Investment by Owner or Coordinating Agency**

<b>Investment Type</b>	<b>FY20 Investment</b>
<b>Capital Renewal of Basic Infrastructure</b>	<b>\$803,434,832</b>
Amtrak-owned territory	\$593,062,176
Connecticut DOT-owned territory	\$168,200,000
MBTA-owned territory	\$24,543,530
Metro-North Railroad-owned territory	\$17,629,126
<b>Special Projects</b>	<b>\$975,708,900</b>
Amtrak	\$299,303,981
Connecticut DOT	\$179,500,000
Delaware DOT	\$37,000,000
Long Island Rail Road	\$287,000,000
Maryland DOT	\$8,545,000
MBTA	\$23,750,000
Metro-North Railroad	\$32,000,000
MTA Capital Construction	TBD
NJ TRANSIT	\$45,450,000
Pennsylvania DOT	\$10,850,000
Rhode Island DOT	\$17,800,000
SEPTA	\$20,509,919
VRE	\$14,000,000
<b>Total</b>	<b>\$1,779,143,732</b>

## Capital Renewal Investments and Baseline Capital Charges

Capital renewal of basic infrastructure investments can be funded with Baseline Capital Charges (BCCs) allocated to operators<sup>1</sup> based on methods described in the Northeast Corridor Commuter and Intercity Rail Cost Allocation Policy. According to the Policy, right-of-way owners must invest operators' BCCs on eligible assets within the operators' service territories, and this investment is intended to occur in the year the BCCs are contributed.<sup>2</sup> BCC obligations are listed by service operator and RoW owner territory in Table 2 below.

Table 2. FY20 BCC Obligations by Operator and Owner Territory

Service Operator	RoW Owner Territory				Total
	Amtrak	MBTA	CTDOT	MNR	
Amtrak	\$266,895,411	\$10,281,930	\$16,482,710	\$2,432,125	<b>\$296,092,176</b>
MBTA	\$1,584,964	\$17,355,770			<b>\$18,940,734</b>
Rhode Island DOT	\$2,187,665				<b>\$2,187,665</b>
CTDOT (Shore Line East)	\$4,605,590		\$1,075,888		<b>\$5,681,479</b>
CTDOT (Hartford Line)	\$6,377,893		\$218,763		<b>\$6,596,656</b>
CTDOT (New Haven Line)			\$46,816,840		<b>\$46,816,840</b>
MTA Metro-North Railroad				\$13,128,410	<b>\$13,128,410</b>
MTA Long Island Rail Road <sup>1</sup>	\$25,956,371				<b>\$25,956,371</b>
NJ TRANSIT <sup>2</sup>	\$91,129,522				<b>\$111,129,522</b>
SEPTA	\$40,921,301				<b>\$40,921,301</b>
Delaware DOT	\$2,629,028				<b>\$2,629,028</b>
Maryland DOT	\$17,518,268				<b>\$17,518,268</b>
Virginia Railway Express	\$600,543				<b>\$600,543</b>
<b>Total</b>	<b>\$460,406,556</b>	<b>\$27,637,700</b>	<b>\$64,594,201</b>	<b>\$15,560,535</b>	<b>\$568,198,992</b>

Notes: (1) Long Island Rail Road's obligation is subject to revision based on actual expenditures per Amtrak-LIRR agreement. (2) NJ TRANSIT's FY20 BCC obligation reflects the NJ TRANSIT-Amtrak BCC variance for Portal North Bridge, approved by the Commission in August 2019.

<sup>1</sup> The Policy defines "operator" as an entity responsible for, or established to provide, commuter or intercity passenger rail transportation, that is subject to the cost-sharing requirements set forth in 49 U.S.C. § 24905(c). This includes Amtrak, the Massachusetts Bay Transportation Authority, the Rhode Island Department of Transportation, the Connecticut Department of Transportation, the New York Metropolitan Transportation Authority, New Jersey Transit Corporation, the Southeastern Pennsylvania Transportation Authority, the Delaware Department of Transportation, the Maryland Department of Transportation, Virginia Railway Express, any successor agencies and any entity created by one or more such agencies for the purpose of operating, or contracting for the operation of, commuter or intercity service.

<sup>2</sup> The Policy (Section 6.3) allows owners, under certain conditions, to invest an operator's BCCs beyond the year they are contributed. The Policy also allows owners to apply operators' BCCs to system-wide projects (investments that span multiple BCC segments and/or are not physically located in their service territory) if certain criteria are met.



As BCCs are a funding source for capital renewal investments with specific eligibility requirements as outlined in the Policy, owners' total planned capital renewal expenditure may exceed BCC obligations during a given fiscal year. Capital renewal expenditures that exceed the BCC obligations for the current fiscal year are labeled as "Above BCC Obligations" throughout the plan. Table 3 includes the total planned capital renewal expenditure, including Above BCC Obligations, in each right-of-way owners' territory and the corresponding amount planned for each operator's territory.

**Table 3. FY20 Planned Capital Renewal Expenditure by Operator and Owner Territory**

Service Operator	RoW Owner Territory				Total
	Amtrak	MBTA	CTDOT	MNR	
Amtrak	\$399,412,789	\$7,187,760	\$16,482,710	\$2,432,125	<b>\$425,515,384</b>
MBTA	\$1,584,964	\$17,355,770			<b>\$18,940,734</b>
Rhode Island DOT	\$2,187,665				<b>\$2,187,665</b>
CTDOT (Shore Line East)	\$4,605,590		\$1,075,888		<b>\$5,681,479</b>
CTDOT (Hartford Line) <sup>1</sup>	\$6,377,893		\$218,763		<b>\$6,596,656</b>
CTDOT (New Haven Line)			\$150,422,639		<b>\$150,422,639</b>
MTA Metro-North Railroad				\$15,197,001	<b>\$15,197,001</b>
MTA Long Island Rail Road	\$26,094,612				<b>\$26,094,612</b>
NJ TRANSIT	\$91,129,522				<b>\$91,129,522</b>
SEPTA	\$40,921,301				<b>\$40,921,301</b>
Delaware DOT	\$2,629,028				<b>\$2,629,028</b>
Maryland DOT	\$17,518,268				<b>\$17,518,268</b>
Virginia Railway Express	\$600,543				<b>\$600,543</b>
<b>Total</b>	<b>\$593,062,176</b>	<b>\$24,543,530</b>	<b>\$168,200,000</b>	<b>\$17,629,126</b>	<b>\$803,434,832</b>

A key purpose of this plan is to facilitate an exchange of information between right-of-way owners and operators regarding the owners' ability to spend BCC obligations for their respective territories during the upcoming fiscal year.

To that end, Table 4 shows the difference between owners' planned FY20 capital renewal expenditures and agencies' FY20 BCC obligations. Expenditure data provided by right-of-way owners suggests that three of the four owners (Amtrak, Connecticut DOT, and Metro-North Railroad) will likely spend the entire BCC obligation for their territory and one owner (MBTA) will likely fall short of the BCC obligation level by approximately \$3 million. It should be noted that this plan is a snapshot in time and actual work completed during FY20 and funded with BCCs may vary.

For more detail regarding planned capital renewal and BCC investment by territory, see each segment page or Appendix A.

**Table 4. FY20 Planned Capital Renewal Expenditure and BCC Obligation Comparison**

Service Operator	RoW Owner Territory				Total
	Amtrak	MBTA	CTDOT	MNR	
Amtrak	\$132,517,378	(\$3,094,170)	\$0	\$0	<b>\$129,423,208</b>
MBTA	\$0	\$0			<b>\$0</b>
Rhode Island DOT	\$0				<b>\$0</b>
CTDOT (Shore Line East)	\$0		\$0		<b>\$0</b>
CTDOT (Hartford Line)	\$0		\$0		<b>\$0</b>
CTDOT (New Haven Line)			\$103,605,799		<b>\$103,605,799</b>
MTA Metro-North Railroad				\$2,068,591	<b>\$2,068,591</b>
MTA Long Island Rail Road <sup>1</sup>	\$138,241				<b>\$138,241</b>
NJ TRANSIT	\$0				<b>\$0</b>
SEPTA	\$0				<b>\$0</b>
Delaware DOT	\$0				<b>\$0</b>
Maryland DOT	\$0				<b>\$0</b>
Virginia Railway Express	\$0				<b>\$0</b>
<b>Total</b>	<b>\$132,655,619</b>	<b>(\$3,094,170)</b>	<b>\$103,605,799</b>	<b>\$2,068,591</b>	<b>\$235,235,839</b>

Notes: (1) Long Island Rail Road's obligation is subject to revision based on actual expenditures per Amtrak-LIRR agreement.

## BCC Segments

As discussed on page 4, right-of-way owners invest operators' BCCs within their respective service territories. Therefore, this plan is divided into 31 BCC segments generally defined as points on the NEC where the mix of owners and/or operators changes. Each segment then has a distinct set of operators whose BCCs may be applied to capital renewal investments.

**Table 5. Owner and Operators by BCC Segment**

BCC Segment	Owner	Operators
1. Boston South Station to MA/RI State Line	MBTA	Amtrak, MBTA
2. MA/RI State Line to Providence	Amtrak	Amtrak, MBTA
3. Providence to Wickford Junction	Amtrak	Amtrak, MBTA (on behalf of RIDOT)
4. Wickford Junction to New London	Amtrak	Amtrak
5. New London to New Haven	Amtrak	Amtrak, CT <i>rail</i> Shore Line East
6. New Haven to CT/NY State Line	CTDOT	Amtrak, MNR (on behalf of CTDOT)
7. CT/NY State Line to New Rochelle	MNR	Amtrak, MNR
8. New Rochelle to Harold	Amtrak	Amtrak
9. Harold to F Interlocking	Amtrak	Amtrak, LIRR
10. F Interlocking to Penn Station New York	Amtrak	Amtrak, LIRR, NJT
11. Penn Terminal	Amtrak	Amtrak, LIRR, NJT
12. Penn Station New York to Trenton	Amtrak	Amtrak, NJT
13. Trenton to Morris	Amtrak	Amtrak, NJT, SEPTA
14. Morris to Holmes	Amtrak	Amtrak, SEPTA
15. Holmes to Shore	Amtrak	Amtrak, SEPTA
16. Shore to Girard	Amtrak	Amtrak, NJT, SEPTA
17. Girard to Philadelphia 30th Street	Amtrak	Amtrak, NJT
18. Philadelphia 30th Street to Arsenal	Amtrak	Amtrak
19. Arsenal to Marcus Hook	Amtrak	Amtrak, SEPTA
20. Marcus Hook to Bacon	Amtrak	Amtrak, SEPTA (on behalf of DelDOT)
21. Bacon to Perryville	Amtrak	Amtrak
22. Perryville to WAS	Amtrak	Amtrak, MARC
23. Washington Union Terminal	Amtrak	Amtrak, MARC, VRE
24. WAS to CP Virginia	Amtrak	Amtrak, VRE
25. Springfield to New Haven	Amtrak	Amtrak, CT <i>rail</i> Hartford Line
26. Poughkeepsie - Spuyten Duyvil (exempt from plan)	MNR	Amtrak, MNR
27. Spuyten Duyvil to Penn Station New York	Amtrak	Amtrak
28. Penn to 36th Street	Amtrak	Amtrak
29. 36th Street to Thorndale	Amtrak	Amtrak, SEPTA
30. Thorndale to Harrisburg	Amtrak	Amtrak
31. Amtrak System-wide	Amtrak	Amtrak

## NEC Capital Renewal Planning and Reporting Update

The FY20 NEC One-Year Implementation Plan reflects continued progress in addressing one of the key challenges identified by NEC stakeholders during the Commission's first capital planning and reporting cycle (fiscal year 2016): Amtrak's plan submissions lacked geographic specificity and sufficient scope, schedule, and budget detail for capital renewal investments.

Last year's plan—the FY19 NEC One-Year Implementation Plan—reflected a transitional year where Amtrak provided geographic specificity and scope, schedule, and budget detail for approximately 60 percent of its capital renewal portfolio (as a share of total planned expenditure). In approving the FY19 one-year plan, NEC right-of-way owners, including Amtrak, committed to providing this information for all capital renewal investments beginning in FY20. In keeping with that commitment, this year's plan includes geographic specificity and scope, schedule, and budget detail for planned capital renewal investments as appropriate and/or available from right-of-way owners.<sup>3</sup> Since NEC one-year plans serve as the baseline for NEC Quarterly Capital Program Delivery Reports, the additional detail for capital renewal investments included in this document is expected to promote more informative FY20 quarterly reports.

While the FY20 plan represents a significant milestone for the Commission, sustained efforts will be needed to realize the full potential of the new planning/reporting framework. Most critically, as new planning processes mature in Amtrak Engineering that incorporate geographic specificity and improved scope, schedule, and budget details, stakeholders are seeking to review draft plans earlier in the planning cycle and have more opportunities for collaboration and discussions about priorities. Amtrak is also still working to ensure that Engineering-initiated planning and reporting reforms are reflected throughout the company, including in Amtrak's company-wide financial and performance tracking systems. Last, Commission stakeholders would like to see more consistency in the level of detail both across right-of-way owners' plans as well as within an individual owner's plan. NEC stakeholders feel positively about the changes implemented to-date and will continue to support Amtrak and all right-of-way owners during this transition.

<sup>3</sup> Investment details vary within and across right-of-way owners' capital renewal submissions due to the diversity and nature of these activities. For example, some capital renewal investments inherently apply to a broad geography (e.g., capital program administration) and/or lack certain details, such as specific schedule dates, due to their reactive nature.

## Amtrak Engineering Organizational Update

Over the past two years, Amtrak has realigned the structure of its Engineering Department to streamline the organization and improve its planning processes, project delivery, and accountability. The Engineering portfolio has been divided into regional and system-wide projects/programs and major capital projects. Regional projects and programs are split among seven geographic territories (Mid-Atlantic South, Mid-Atlantic North, New Jersey-New York, New England, Empire, Central, and West), each of which is managed by a regional portfolio director.

This regionalized approach is intended to improve planning and project delivery in each territory, facilitate the identification of risks and opportunities, and provide a single point of contact within each region for external stakeholders. Major capital projects (such as B&P tunnel) and system-wide projects and programs (such as system undercutting) are also managed by a single point of contact to enhance efficiency and accountability within the organization.

As a result, this plan organizes FY20 investments by BCC segment into the following regions:

- Attleboro Line (MA-owned)  
Segment 1
- New England (Amtrak-owned)  
Segments 2, 3, 4, 5, 25
- New Haven Line (CT- and NY-owned)  
Segments 6, 7
- New Jersey–New York<sup>4</sup> (Amtrak-owned)  
Segments 8, 9, 10, 11, 12, 13, 27
- Mid-Atlantic North<sup>4</sup> (Amtrak-owned)  
Segments 14, 15, 16, 17, 18, 19, 20, 28, 29, 30
- Mid-Atlantic South<sup>4</sup> (Amtrak-owned)  
Segments 21, 22, 23, 24
- System-wide (Amtrak-owned)  
Segment 31

In addition, Amtrak’s capital renewal investments are further categorized as:

- Regionally managed projects and programs: which includes most capital renewal investments under the purview of the four Amtrak Engineering disciplines (track, communications and signals, electric traction, and structures); or
- System-wide projects and programs: which includes projects like software or wireless communication installation, track production programs (such as system undercutting and TLS concrete tie replacement), and other system-wide programs within Engineering.

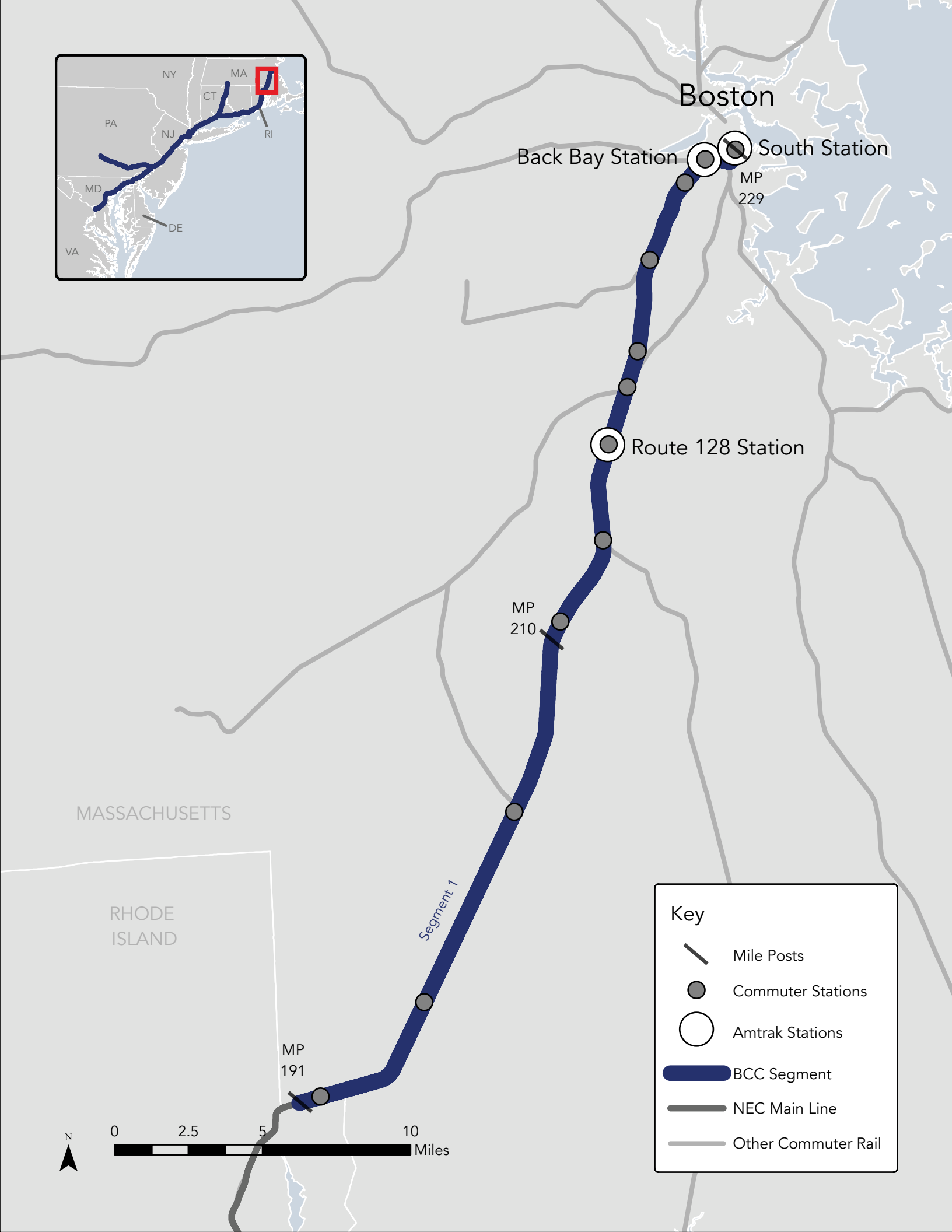
<sup>4</sup> Note: The region as shown in this plan differs slightly from the Amtrak region due to BCC segment boundaries.



# FY20 Investment Detail:

## Attleboro Line (Massachusetts-owned)

BCC Segment	Owner	Operator(s)	See Page
1. Boston to MA/RI State Line	MBTA	Amtrak, MBTA	12



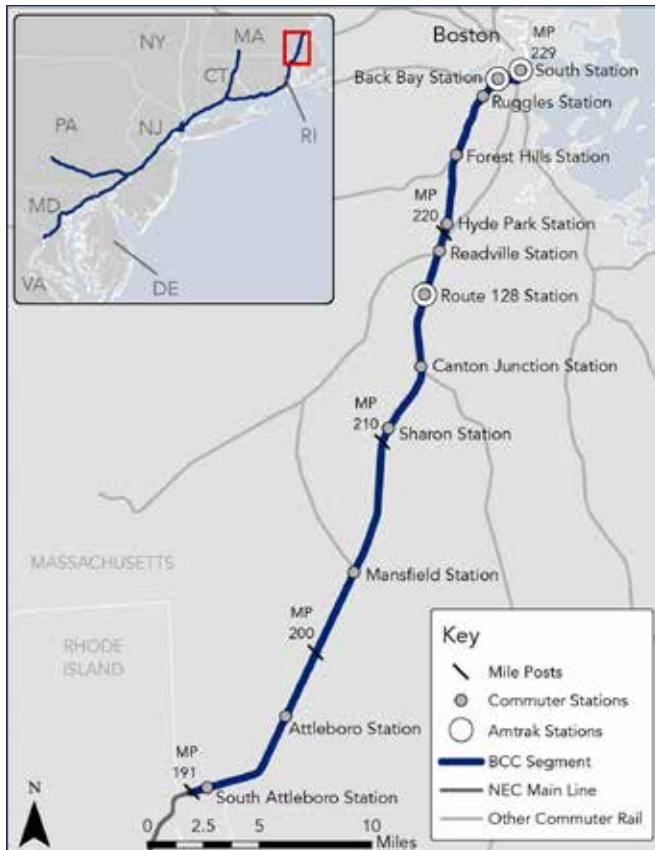
### Key

- Mile Posts
- Commuter Stations
- Amtrak Stations
- BCC Segment
- NEC Main Line
- Other Commuter Rail



0 2.5 5 10 Miles

# Segment 1: BOS to MA/RI State Line



Segment 1 covers nearly 38 miles from Boston South Station to the Massachusetts/Rhode Island state line and is owned by MBTA, with train operations from MBTA and Amtrak.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$50 million on infrastructure investment in Segment 1 in federal fiscal year 2020. MBTA plans to spend almost \$19 million on 26 capital renewal programs and over \$5 million on 4 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest over \$25 million to advance 4 special projects coordinated by MBTA and Amtrak.

## FY20 Planned Expenditure in Segment 1

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$24,543,530</b>
Projects	\$18,964,155
Programs	\$5,579,375
<b>Special projects by coordinating agency</b>	<b>\$25,650,000</b>
MBTA	\$22,750,000
Amtrak	\$2,900,000
<b>Total</b>	<b>\$50,193,530</b>

## Capital Renewal Highlights

In Segment 1, MBTA plans to spend \$7 million of Amtrak's BCCs and \$17 million of its own BCCs to fund capital renewal work.

Of the \$24.5 million MBTA plans to spend on capital renewal in this segment, almost \$10 million will be spent on track work including replacing two crossovers, 100,000 passing feet of face surfacing and 60,000 feet of surfacing, and replacing one switch slip at Tower One Interlocking. Other program investments include beginning the design phase for South Bay Interlocking upgrades and installing 4,500 feet of fencing in Hyde Park, MA.

In addition, MBTA plans to spend \$5 million to complete four capital renewal projects in FY20. Investment highlights include upgrading and installing 21,000 feet of cable between Read and Forest interlockings, upgrading remote terminal units and signal assets at five different interlockings, and installing new LED platform pit lighting at Back Bay Station.

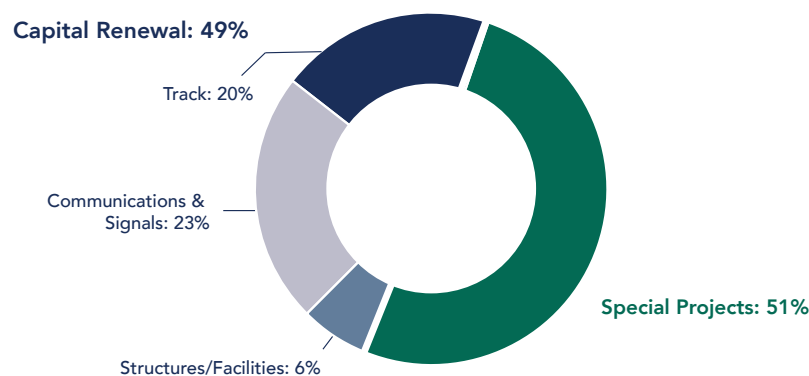
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$24,543,530</b>
Amtrak	\$7,187,760
MBTA	\$17,355,770
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$24,543,530</b>

## Special Project Highlights

In FY20, NEC stakeholders plan to invest over \$22 million in special projects coordinated by MBTA. Highlights include finalizing design of Tower 1 Interlocking, part of the Boston South Station Expansion project, and opening the upgraded platform and elevators at Ruggles Street Station. Amtrak plans to spend almost \$3 million on construction within the storage and inspection facility (S&I) at Southampton St. Yard in support of the Next-Generation High-Speed Rail.

## Planned Investment in Segment 1 by Category and Discipline



## FY20 Investments in Segment 1 (BOS to MA/RI State Line)

Capital Renewal Programs			
Program	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Communications &amp; Signals</b>			<b>\$6,404,622</b>
<b>Battery Bank Replacement Program</b>			<b>\$204,736</b>
Replace Battery Banks at Interlockings between MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	1 Lump Sum	
<b>Fuse Upgrade Program</b>			<b>\$138,000</b>
Upgrade to slow burn fuses at interlockings between MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	1 Lump Sum	
<b>Gas Hot Air Switch Blower Install</b>			<b>\$400,000</b>
Install Gas Hot Air Blower Switch Heaters (4 Units) - Location TBD	April 1, 2020 - Sep 20, 2020	4 Units	
<b>M3 Switch Machine Upgrades</b>			<b>\$336,103</b>
Upgrade to M3 Switch Machines at 8 Location TBD	Oct 1, 2019 - Sep 30, 2020	8 Units	
<b>Switch Heater Cabinet / Control Upgrades</b>			<b>\$350,000</b>
Replace Switch Heater Cabinet / Controls - Plains I/L	June 1, 2020 - Aug 31, 2020	1 Units	
<b>TAMS - Forest Hills Sta - TAMS Upgrades</b>			<b>\$371,969</b>
Upgrade TAMS system at Forest Hills Station (Boston, MA), MP 223.8	Aug 1, 2020 - Sep 30, 2020	1 Lump Sum	
<b>Track Lead Replacement Program</b>			<b>\$370,000</b>
Replace Track Leads between MP190.9 and MP229.0	Oct 1, 2019 - Sep 30, 2020	1 Lump Sum	
<b>TAMS - Canton Junction Sta - TAMS Upgrades</b>			<b>\$685,958</b>
Upgrade TAMS system at Canton Junction Station (Canton, MA), MP 213.7	April 1, 2020 - June 1, 2020	1 Lump Sum	
<b>TAMS - Ruggles Sta - TAMS Upgrades</b>			<b>\$362,708</b>
Upgrade TAMS system at Ruggles Station (Boston, MA), MP 226.4	June 1, 2020 - Aug 1, 2020	1 Lump Sum	
<b>Southampton Street and South Bay I/L Upgrades</b>			<b>\$2,885,148</b>
Begin the design phase for the South Bay I/L upgrades and backup generators. Procure and install DTMF switches at Southampton Street Yard. Procure and install transformer at South Bay I/L.	Oct 1, 2019 - Sep 30, 2020	1 Lump Sum	
<b>Track Circuit Protection</b>			<b>\$300,000</b>
Surge Protector replacements between MP190.9 and MP229.0.	Oct 1, 2019 - Sep 30, 2020	1 Lump Sum	



Capital Renewal Programs			
Program	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Structures/Facilities</b>			<b>\$2,693,059</b>
<b>R.O.W. Fence Upgrades</b>			<b>\$2,150,000</b>
Install impasse fence in Hyde Park, MA along Track 3.	April 1, 2020 - June 1, 2020	4,500 Linear Feet	
<b>Readville Material Control Warehouse - Construction</b>			<b>\$100,000</b>
Design of a material control warehouse at Yard 5, Readville, MA.	Oct 1, 2019 - Sep 30, 2020	1 Lump Sum	
<b>Undergrade Bridge Upgrades</b>			<b>\$443,059</b>
Install anti-graffiti coating installed at four undergrade bridges (MP203.85, MP204.44, 206.42, and MP212.02)	April 1, 2019 - Sep30, 2020	1 Lump Sum	
<b>Track</b>			<b>\$9,866,474</b>
<b>Crossover Replacement</b>			<b>\$3,817,397</b>
Transfer 21 Crossover Replacement / Transfer 12 Turnout Replacement	July 1, 2020 - August 31, 2020	2 Locations	
<b>CWR Upgrades</b>			<b>\$520,000</b>
2000 LF Rail - Cove I/L	May 1, 2020 - June 30, 2020	2000 LF	
<b>Insulated Joint Upgrades</b>			<b>\$165,230</b>
20 Insulated Joints - MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	20 Units	
<b>Int Steel Replacement Program</b>			<b>\$685,764</b>
Replace 5 Units Interlocking Steel - MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	5 Units	
<b>Joint Elimination Program</b>			<b>\$262,750</b>
50 Thermite Welds - MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	50 Units	
<b>Out Of Face Surfacing</b>			<b>\$762,168</b>
100,000 Pass-Feet of Out-of-Face High Speed Surfacing - MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	100,000 Pass-Feet	
<b>Rail Grinding</b>			<b>\$250,000</b>
Rail Grinding - Location TBD	Dates - TBD	1 Lump Sum	
<b>Spot Surfacing</b>			<b>\$2,726,887</b>
60,000 Feet of Spot Surfacing - MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	60,000 Feet	
<b>Spot Undercutting</b>			<b>\$814,332</b>
150 Feet of Spot Undercutting - MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	150 Feet	

Segment 1 Investment Detail continued on next page &gt;&gt;&gt;

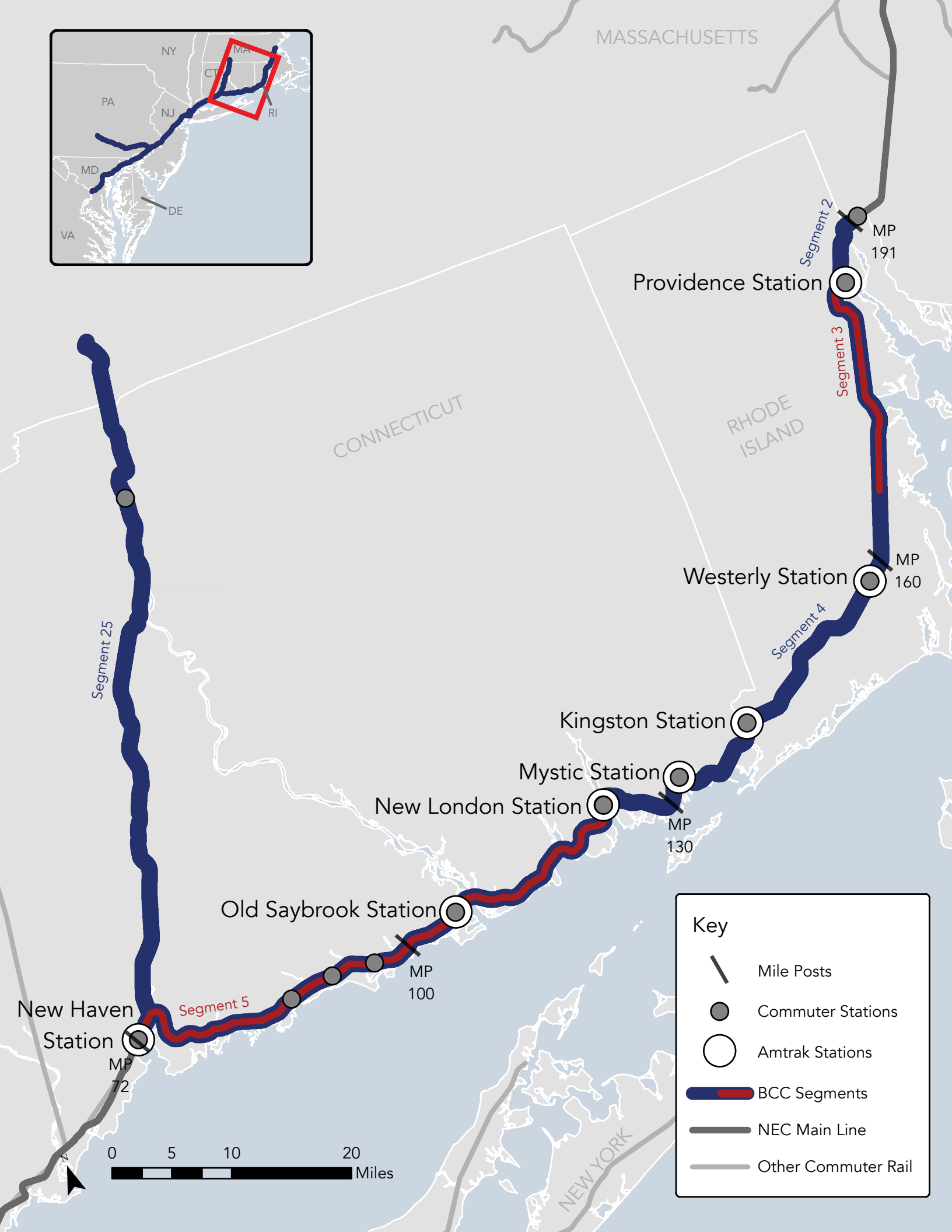
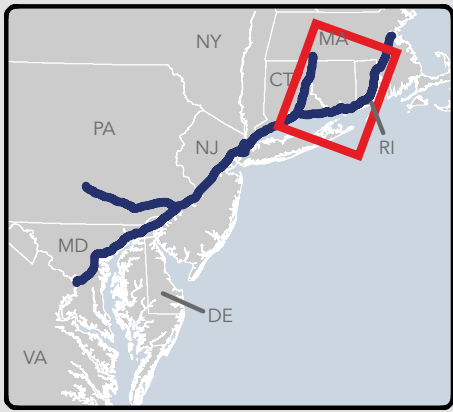
Capital Renewal Programs			
Program	FY20 Schedule	FY20 Units	FY20 Expenditure
Tie/Timber Program			\$154,500
Replace 800 ties/timbers - MP190.9 - MP229.0	Oct 1, 2019 - Sep 30, 2020	800 Units	
Tree Cutting			\$669,939
20 week tree cutting program - MP190.9 - MP229.0	Apr 1, 2020 - Aug 31, 2020	20 Weeks	
Tower One Int - Slip Switch Upgrades			\$1,800,000
532/35 Slip Switch Replacement - Tower One	Sep 1, 2020 - Sep 30, 2020	1 Slip Switch	
TOTAL SEGMENT 1 CAPITAL RENEWAL PROGRAMS EXPENDITURE			\$18,964,155

Capital Renewal Projects		
Project Name & FY20 Scope	FY20 Expenditure	
Communications & Signals	\$5,172,764	
Interlocking RTU Upgrades. MBTA, Amtrak.	\$481,087	
Upgrade remote terminal units at Hebronville I/L and Holden I/L.		
<ul style="list-style-type: none"><li>Construction Start: March 2020</li><li>Construction End: June 2020</li></ul>		
Interlocking Signal LED Upgrades. MBTA, Amtrak.	\$94,450	
Upgrade signal assets to LED bulbs at South Bay, Cabot, Loop, and Broad Interlockings.		
<ul style="list-style-type: none"><li>Construction Start: October 2019</li><li>Construction End: December 2019</li><li>Project Closeout: February 2020</li></ul>		
Power and Express Cable Upgrade. MBTA, Amtrak.	\$4,597,227	
Upgrade and Install 21,000 feet of power, express, and communication cable between Read I/L and Forest I/L.		
<ul style="list-style-type: none"><li>Construction Start: October 2019</li><li>Construction End: September 2020</li></ul>		
Structures/Facilities	\$406,611	
Back Bay Pit Lighting. MBTA, Amtrak.	\$406,611	
Install new LED platform pit lighting along tracks 1, 2, & 3 at Back Bay Station.		
<ul style="list-style-type: none"><li>Construction Start: September 2019</li><li>Construction End: November 2019</li><li>Project Closeout: January 2020</li></ul>		
TOTAL SEGMENT 1 CAPITAL RENEWAL PROJECTS EXPENDITURE		\$5,579,375

<b>Special Projects</b>	
<b>Project Name, Partner Agencies, &amp; FY20 Scope</b>	<b>FY20 Expenditure</b>
<b>Boston South Station: Tower 1 Interlocking. MBTA/MassDOT. Amtrak.</b> FY 2020 will primarily consist of finalizing the design plans, putting together the detailed work plan and schedule, and procuring and awarding the contract. Certain elements of construction will begin in 2020 including procurement of materials and track and signal construction as detailed in the construction phasing plans. <ul style="list-style-type: none"> <li>• Completion of 100% design</li> <li>• Procuring and awarding contract</li> <li>• Materials Procurement Process</li> <li>• Construction Commencement</li> </ul>	<b>\$8,000,000</b>
<b>MBTA Station Improvements - Ruggles Street Station. MBTA. MassDOT.</b> Completion of lower busway grading and placement of pavement. Opening of platform. Replacement and re-opening of elevators. <ul style="list-style-type: none"> <li>• Platform opening: March 2020</li> <li>• Elevator opening: May 2020</li> </ul>	<b>\$12,400,000</b>
<b>MBTA Station Improvements - South Attleboro Station. MBTA. MassDOT.</b> FY20 will primarily consist of preparing documents to advertise for construction procurement. <ul style="list-style-type: none"> <li>• Procurement and awarding contract</li> <li>• Construction commencement</li> </ul>	<b>\$2,350,000</b>
<b>Next Generation High Speed Fleet Infrastructure: Southampton St. Yard Facility Improvements. Amtrak.</b> S&I Mod: Construction within S&I Facility. <ul style="list-style-type: none"> <li>• S&amp;I Modification: GC NTP – November 2019 - FY2020</li> </ul>	<b>\$2,900,000</b>
<b>TOTAL SEGMENT 1 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$25,650,000</b>

## FY20 Investment Detail: New England (Amtrak-owned)

BCC Segment	Owner	Operator(s)	See Page
2. MA/RI State Line to Providence	Amtrak	Amtrak, MBTA	20
3. Providence to Wickford Junction	Amtrak	Amtrak, MBTA (on behalf of RIDOT)	26
4. Wickford Junction to New London	Amtrak	Amtrak	32
5. New London to New Haven	Amtrak	Amtrak, Shore Line East (CTrail)	40
25. Springfield to New Haven	Amtrak	Amtrak, Hartford Line (CTrail)	48



MASSACHUSETTS

CONNECTICUT

RHODE ISLAND

NEW YORK

Providence Station

Westerly Station

Kingston Station

Mystic Station

New London Station

Old Saybrook Station

New Haven Station

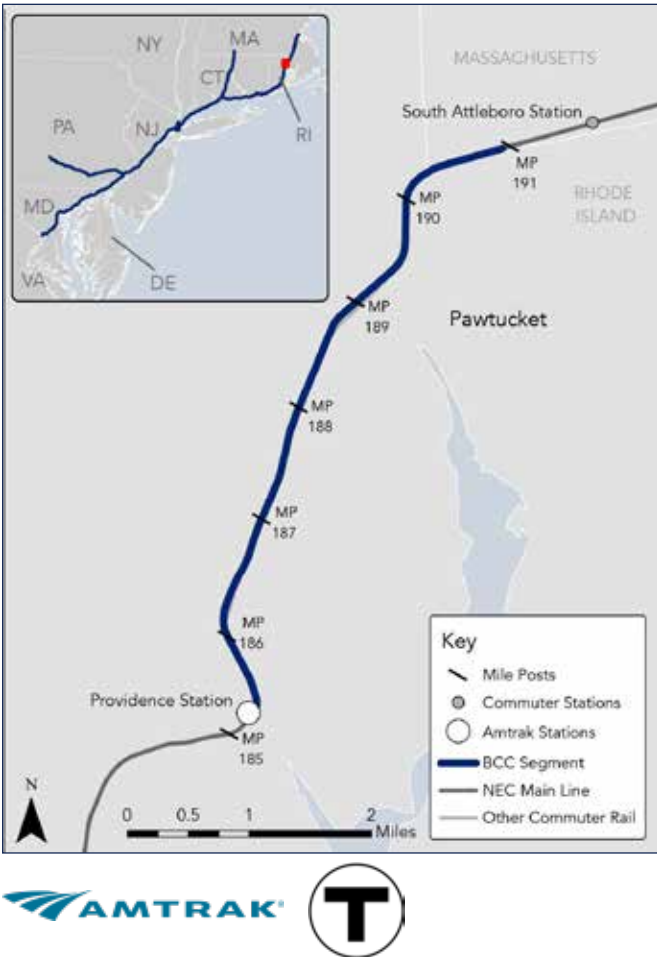
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Key

- Mile Posts
- Commuter Stations
- Amtrak Stations
- BCC Segments
- NEC Main Line
- Other Commuter Rail



# Segment 2: MA/RI State Line to Providence



Segment 2 covers nearly 6 miles from the Massachusetts/ Rhode Island state line to Providence, RI and is owned by Amtrak, with train operations from MBTA and Amtrak.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$23 million on infrastructure investment in Segment 2 in federal fiscal year 2020. Amtrak plans to spend almost \$7 million on 12 capital renewal programs in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$17 million to advance 2 special projects coordinated by MBTA and Rhode Island DOT.

## FY20 Planned Expenditure in Segment 2

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$6,837,218</b>
Projects	\$0
Programs	\$6,835,953
<b>Special projects by coordinating agency</b>	<b>\$17,000,000</b>
MBTA	\$1,000,000
Rhode Island DOT	\$16,000,000
<b>Total</b>	<b>\$23,837,218</b>

## Capital Renewal Highlights

In Segment 2, Amtrak plans to spend \$1.6 million of MBTA's BCCs and \$5 million of its own BCCs to fund capital renewal work.

Of the \$7 million Amtrak plans to spend on capital renewal in this segment, it will spend \$1.6 million completing almost 25 miles of high-speed surfacing, \$0.7 million on track undercutting at Pawtucket Station, and \$1.3 million on the New England Track Program in this region. Program highlights include replacing 100 concrete ties and 100 wood ties, spot surfacing 20,000 feet, and spot undercutting 1,000 feet. Other investments include \$1.6 million upgrading approximately 5,400 feet of fence and \$0.5 million on signal system upgrades.

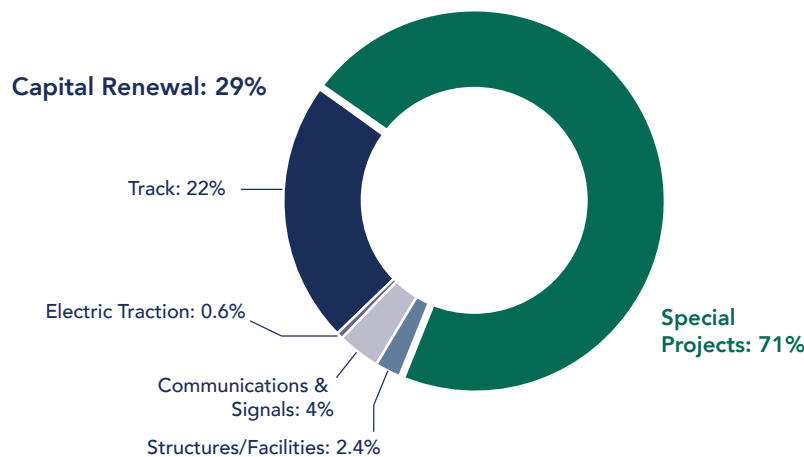
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$6,837,218</b>
Amtrak	\$5,252,254
MBTA	\$1,584,964
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$6,837,218</b>

## Special Project Highlights

During FY20, Rhode Island DOT plans to coordinate approximately \$16 million in design work for the new Pawtucket/Central Falls Station until completion in April. NEC stakeholders plan to invest \$1 million to begin design of the Pawtucket Layover Facility, which will be coordinated by MBTA.

## Planned Investment in Segment 2 by Category and Discipline



## FY20 Investments in Segment 2 (MA/RI State Line to Providence)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Catenary Program. PG00029. C.EN.101836.</b>			<b>\$107,169</b>
Contingency			\$10,969
<b>New England Catenary Hardware Renewal Program</b>			<b>\$94,935</b>
AB Line MP185.1-190.9	10/01/19 - 09/30/20		\$94,935
Project/Program Management			\$1,265
<b>New England Communications Program. PG00030. C.EN.101837.</b>			<b>\$139,316</b>
Contingency			\$5,689
<b>New England Communications Program</b>			<b>\$133,627</b>
Battery Communications and Battery Bank Replacement MP185.1-190.9	10/01/19 - 09/30/20	8 EA	\$5,558
Providence Interlocking Substation - SCADA/RTU	10/01/19 - 12/01/19	1 EA	\$128,069
<b>New England Facilities Program. PG00031. C.EN.101811.</b>			<b>\$485,289</b>
Contingency			\$59,050
<b>New England Maintenance of Way Base Program</b>			<b>\$422,414</b>
Providence, RI - Substation Transformer	10/01/19 - 09/30/20	100 PCT	\$422,414
Project/Program Management			\$3,826
<b>New England Signals Program. PG00033. C.EN.101839.</b>			<b>\$562,523</b>
Contingency			\$22,783
<b>New England C&amp;S Signal System Upgrades</b>			<b>\$538,458</b>
Circuit Protection AB Line MP185.1-190.9	10/01/19 - 09/30/20	50 EA	\$105,572
Orms Interlocking Cabinet and Control Upgrades	10/01/19 - 09/30/20	1 EA	\$432,885
Project/Program Management			\$1,283
<b>New England Structures Program. PG00034. C.EN.101840.</b>			<b>\$88,970</b>
Contingency			\$27,229
<b>Design</b>			<b>\$60,513</b>
Lawn Tower Wall Upgrades MP 188.5	10/01/19 - 09/30/20	100 PCT	\$60,513
Project/Program Management			\$1,228
<b>New England Substations Program. PG00035. C.EN.101841.</b>			<b>\$41,502</b>
Contingency			\$4,952
<b>New England Substations Program</b>			<b>\$36,550</b>
Providence Battery Upgrades	03/01/20 - 04/01/20	2 EA	\$36,550
<b>New England Track Program. PG00036. C.EN.101842.</b>			<b>\$1,296,823</b>
Contingency			\$58,150
<b>New England Concrete Tie Replacement</b>			<b>\$284,017</b>
AB Line MP185.1-190.9	10/01/19 - 09/30/20	100 EA	\$284,017

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Division Interlocking Steel</b>			<b>\$218,500</b>
AB Line MP185.1-190.9	10/01/19 - 09/30/20	100 PCT	\$218,500
<b>New England Insulated Joint Replacement</b>			<b>\$145,341</b>
AB Line MP185.1-190.9	10/01/19 - 09/30/20	13 EA	\$145,341
<b>New England Joint Elimination</b>			<b>\$81,152</b>
AB Line MP185.1-190.9	10/01/19 - 09/30/20	30 EA	\$81,152
<b>New England Rail Lubricator</b>			<b>\$9,641</b>
Portec Lubricator Upgrade	10/01/19 - 09/30/20	100 PCT	\$9,641
<b>New England Spot Surfacing</b>			<b>\$276,449</b>
AB Line - MP185.1-190.9	10/01/19 - 09/30/20	20000 FT	\$276,449
<b>New England Spot Undercutting</b>			<b>\$101,988</b>
AB Line MP185.1-190.9	10/01/19 - 09/30/20	1000 FT	\$101,988
<b>New England Wood Tie Replacement</b>			<b>\$120,347</b>
AB Line MP185.1-190.9	10/01/19 - 09/30/20	100 EA	\$120,347
<b>Project/Program Management</b>			<b>\$1,239</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$92,077</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$3,857</b>
New England Division	N/A		\$3,857
<b>Ansaldo Servier Migration</b>			<b>\$17,500</b>
Line 3 - Boston South Station to and Including Mill River	N/A		\$17,500
<b>Burns Engineering Fixed Database Build</b>			<b>\$29,903</b>
New England Division	N/A		\$29,903
<b>Interoperability - MBTA</b>			<b>\$6,108</b>
Cove/CP3 Boundary Upgrades	N/A		\$6,108
<b>Redundant Transponders</b>			<b>\$34,709</b>
New England Division	N/A		\$34,709
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$38,403</b>
<b>New England Division</b>			<b>\$38,403</b>
Communication Local Distribution Shelter Power Upgrades	N/A		\$14,401
Substation SCADA - RTU Upgrades	N/A		\$24,002

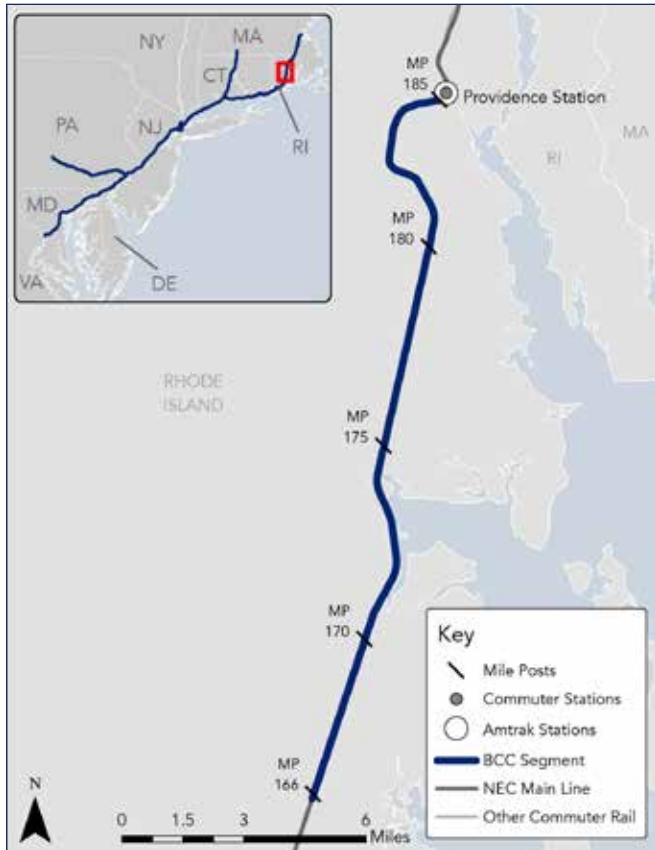
Segment 2 Investment Detail continued on next page >>>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Fence Upgrades Program. PG00069. C.EN.101854.			\$1,637,292
Northeast Corridor			\$1,637,292
Providence Phase 2 (Royal Little Road)	04/06/20 - 05/08/20	5482 FT	\$1,637,292
Production High Speed Surfacing Program. PG00060. C.EN.101855.			\$1,598,004
AB Line			\$1,598,004
MP 185.1-190.9	10/01/19 - 09/30/20	24.69 MI	\$1,598,004
Track Undercutting Program. PG00062. C.EN.100269.			\$749,850
Pawtucket Station (MP 187.8) Track 1			\$374,925
Pawtucket Station (MP 187.8) Track 1	11/15/19 - 11/18/19		\$374,925
Pawtucket Station (MP 187.8) Track 2			\$374,925
Pawtucket Station (MP 187.8) Track 2	12/06/19 - 12/09/19		\$374,925
<b>TOTAL SEGMENT 2 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$6,837,218</b>

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>MBTA Layover Facilities - Pawtucket Layover Facility. MBTA. MassDOT.</b> FY20 will consist of procuring design and commencing design plans for 30% submittal. <ul style="list-style-type: none"> <li>• Design NTP</li> <li>• 30% Submittal</li> <li>• 75% Submittal</li> </ul>	\$1,000,000
<b>Pawtucket/ Central Falls Station. RIDOT. MBTA.</b> Continue with design and construction activities for this design/build project per the contractor's schedule and resources. Install drainage, utilities, and foundations within Amtrak ROW. Amtrak Force Account covers safety men; utilities; design review; and construction activities. <ul style="list-style-type: none"> <li>• Complete permit process: March 2020</li> <li>• Complete design: April 2020</li> </ul>	\$16,000,000
<b>TOTAL SEGMENT 2 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$17,000,000</b>

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## Segment 3: Providence to Wickford Junction



Segment 3 covers 19 miles from Providence, RI to Wickford Junction, RI and is owned by Amtrak, with train operations from Amtrak and MBTA, under contract with RIDOT.

### FY20 Planned Work Overview

NEC stakeholders plan to spend almost \$5.8 million on infrastructure investment in Segment 3 in federal fiscal year 2020. Amtrak plans to spend \$3.9 million on 11 capital renewal programs and \$0.05 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$1.8 million to advance 2 special projects coordinated by Rhode Island DOT.

### FY20 Planned Expenditure in Segment 3

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$3,983,213</b>
Projects	\$53,568
Programs	\$3,929,646
<b>Special projects by coordinating agency</b>	<b>\$1,800,000</b>
Rhode Island DOT	\$1,800,000
<b>Total</b>	<b>\$5,783,213</b>

## Capital Renewal Highlights

In Segment 3, Amtrak plans to spend \$2.2 million of Rhode Island DOT's BCCs and \$1.8 million of its own BCCs to fund capital renewal work.

Of the almost \$4 million Amtrak plans to spend on capital renewal in this segment, \$1.5 million will go towards its New England Track Program. Program highlights in this segment include completing approximately 20,000 feet of spot surfacing, replacing 100 concrete ties and 200 wood ties, and renewing interlocking steel between MP 165.9 and 185.1. Additionally, Amtrak will spend \$0.7 million completing high speed surfacing on over 9.9 miles of track. Amtrak also anticipates spending \$0.05 million to complete the renewal of Davisville Interlocking near Wickford Junction.

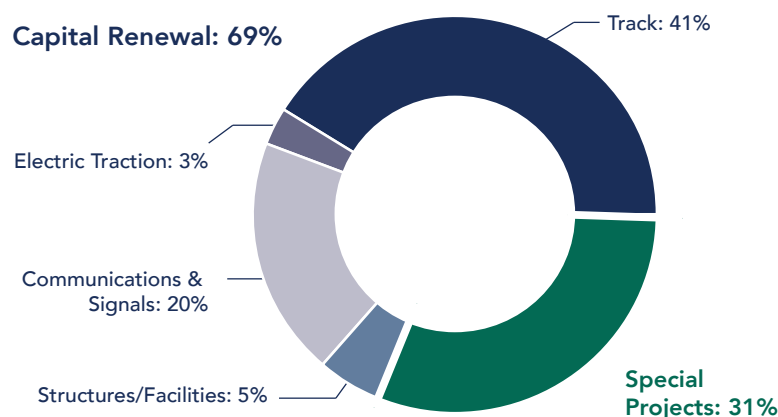
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$3,983,213</b>
Amtrak	\$1,795,549
Rhode Island DOT	\$2,187,665
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$3,983,213</b>

## Special Project Highlights

NEC stakeholders plan to spend approximately \$0.8 million this year to advance the Warwick/ T.F. Green Airport Station project, which is coordinated by Rhode Island DOT. Planned work includes beginning preliminary engineering to design the infrastructure necessary to bring electrified, intercity service to T.F. Green Airport. In FY20, Rhode Island DOT also plans to complete project initiation agreements and advance final design of the Providence Station renewal project.

## Planned Investment in Segment 3 by Category and Discipline





## FY20 Investments in Segment 3 (Providence to Wickford Junction)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Catenary Program. PG00029. C.EN.101836.</b>			<b>\$133,604</b>
Contingency			\$36,311
<b>New England Catenary Hardware Renewal Program</b>			<b>\$94,935</b>
AB Line MP165.9-185.1	10/01/19 - 09/30/20		\$94,935
Project/Program Management			\$2,359
<b>New England Communications Program. PG00030. C.EN.101837.</b>			<b>\$180,774</b>
Contingency			\$18,833
<b>New England Communications Program</b>			<b>\$160,635</b>
Battery Communications and Battery Bank Replacement MP165.9-185.1	10/01/19 - 09/30/20	46 EA	\$32,566
Warwick Substation - SCADA/RTU	05/01/20 - 07/01/20	1 EA	\$128,069
Project/Program Management			\$1,306
<b>New England Facilities Program. PG00031. C.EN.101811.</b>			<b>\$208,140</b>
Contingency			\$195,475
Project/Program Management			\$12,665
<b>New England Signals Program. PG00033. C.EN.101839.</b>			<b>\$469,273</b>
Contingency			\$75,418
<b>New England C&amp;S Signal System Upgrades</b>			<b>\$389,610</b>
Circuit Protection AB Line MP165.9-185.1	10/01/19 - 09/30/20	50 EA	\$105,572
Fuse Replacement AB Line MP165.9-185.1	12/02/19 - 12/08/19	1000 EA	\$92,937
M3 Switch Machine AB Line MP165.9-185.1	10/01/19 - 09/30/20	6 EA	\$191,101
Project/Program Management			\$4,246
<b>New England Structures Program. PG00034. C.EN.101840.</b>			<b>\$94,202</b>
Contingency			\$90,137
Project/Program Management			\$4,064
<b>New England Substations Program. PG00035. C.EN.101841.</b>			<b>\$52,942</b>
Contingency			\$16,392
<b>New England Substations Program</b>			<b>\$36,550</b>
Elmwood/Kingston Battery Upgrades	04/01/20 - 05/01/20	2 EA	\$36,550
<b>New England Track Program. PG00036. C.EN.101842.</b>			<b>\$1,485,913</b>
Contingency			\$192,497
<b>New England Concrete Tie Replacement</b>			<b>\$284,017</b>
AB Line MP165.9-185.1	10/01/19 - 09/30/20	100 EA	\$284,017
<b>New England Division Interlocking Steel</b>			<b>\$218,500</b>
AB Line MP165.9-185.1	10/01/19 - 09/30/20	100 PCT	\$218,500

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Insulated Joint Replacement</b>			<b>\$55,901</b>
AB Line MP165.9-185.1	10/01/19 - 09/30/20	5 EA	\$55,901
<b>New England Joint Elimination</b>			<b>\$81,152</b>
AB Line MP165.9-185.1	10/01/19 - 09/30/20	30 EA	\$81,152
<b>New England Rail Lubricator</b>			<b>\$31,916</b>
Portec Lubricator Upgrade	10/01/19 - 09/30/20	100 PCT	\$31,916
<b>New England Spot Surfacing</b>			<b>\$276,449</b>
AB Line - MP165.9-185.1	10/01/19 - 09/30/20	20000 FT	\$276,449
<b>New England Spot Undercutting</b>			<b>\$101,988</b>
AB Line MP165.9-185.1	10/01/19 - 09/30/20	1000 FT	\$101,988
<b>New England Wood Tie Replacement</b>			<b>\$239,394</b>
AB Line MP165.9-185.1	10/01/19 - 09/30/20	200 EA	\$239,394
<b>Project/Program Management</b>			<b>\$4,101</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$284,586</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$12,766</b>
New England Division	N/A		\$12,766
<b>Ansaldo Servier Migration</b>			<b>\$57,932</b>
Line 3 - Boston South Station to and Including Mill River	N/A		\$57,932
<b>Burns Engineering Fixed Database Build</b>			<b>\$98,989</b>
New England Division	N/A		\$98,989
<b>Redundant Transponders</b>			<b>\$114,898</b>
New England Division	N/A		\$114,898
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$127,127</b>
<b>New England Division</b>			<b>\$127,127</b>
Communication Local Distribution Shelter Power Upgrades	N/A		\$47,673
Substation SCADA - RTU Upgrades	N/A		\$79,455
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$703,707</b>
<b>AB Line</b>			<b>\$703,707</b>
MP 165.9-185.1	10/01/19 - 09/30/20	9.92 MI	\$703,707

Segment 3 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Track Undercutting Program. PG00062. C.EN.100269.			\$189,378
Kingston to Davisville Track 2			\$189,378
B&B Support	09/14/20 - 11/12/20		\$5,442
C&S Support	09/14/20 - 11/12/20		\$26,032
ET Support	09/14/20 - 11/12/20		\$3,270
Installation	09/14/20 - 11/12/20	20000 FT	\$148,339
T&E Support	09/14/20 - 11/12/20		\$6,294
<b>TOTAL SEGMENT 3 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$3,929,646</b>

Capital Renewal Projects	
Regionally-Managed Projects	FY20 Expenditure
Davisville Interlocking - Upgrade to Microlock 2 Project. P000009. C.EN.100727.	
Complete testing and cutover of new Microlok II, complete civil site work, closeout project. <ul style="list-style-type: none"> <li>Construction Punchlist: 10/1/2019 - 10/31/2019</li> <li>Project Closeout: 11/1/2019 - 12/31/2019</li> </ul>	
<b>TOTAL SEGMENT 3 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	
<b>\$53,568</b>	

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
Providence Station. RIDOT. Amtrak.	
Complete project initiation agreements with FRA and Amtrak; award final design contract; begin advancement of final design <ul style="list-style-type: none"> <li>Procurement start: Nov 2019</li> <li>NTP to be issued: Mar 2020</li> </ul>	
RIDOT Stations: Warwick/ T.F. Green Airport. RIDOT. Amtrak.	
Commence preliminary engineering to design the infrastructure necessary to bring electrified, intercity service to TF Green, including platform(s), a Track 4 siding, interlockings, catenary, crossovers, passenger station space, and pedestrian circulation between platforms. Commence preparation of an approved NEPA document. <ul style="list-style-type: none"> <li>Procurement start: Nov 2019</li> <li>NTP to be issued: Mar 2020</li> <li>Complete draft PE drawings: Sept 2020</li> </ul>	
<b>TOTAL SEGMENT 3 SPECIAL PROJECTS EXPENDITURE</b>	
<b>\$1,800,000</b>	

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# Segment 4: Wickford Junction to New London



Segment 4 covers nearly 43 miles from Wickford Junction, RI to New London, CT and is owned by Amtrak, with train operations from Amtrak only.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$22 million on infrastructure investment in Segment 4 in federal fiscal year 2020. Amtrak plans to spend \$19 million on 14 capital renewal programs and \$1.5 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$1.6 million to advance 1 special project coordinated by Amtrak.

## FY20 Planned Expenditure in Segment 4

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$21,123,458</b>
Projects	\$1,499,893
Programs	\$19,623,565
<b>Special projects by coordinating agency</b>	<b>\$1,600,000</b>
Amtrak	\$1,600,000
<b>Total</b>	<b>\$22,723,458</b>

## Capital Renewal Highlights

In Segment 4, Amtrak plans to spend \$2 million of its own BCCs and \$19 million of its own capital above the BCCs to fund capital renewal work.

Of the \$21 million Amtrak plans to spend on capital renewal in this segment, Amtrak will spend \$4 million undercutting 51,000 feet and \$3 million on 55 miles of high-speed surfacing. Other track investments include \$0.7 million to replace 350 concrete ties and \$0.6 million to upgrade two crossings in Mystic, CT. Additional planned investments include \$1.5 million on signal system upgrades including replacing 10,000 feet of cable in two locations. Amtrak also plans to spend \$0.5 million replacing 176 bridge timbers at Mystic River Bridge and \$1.5 million to initiate design of the Pawcatuck River Bridge replacement project.

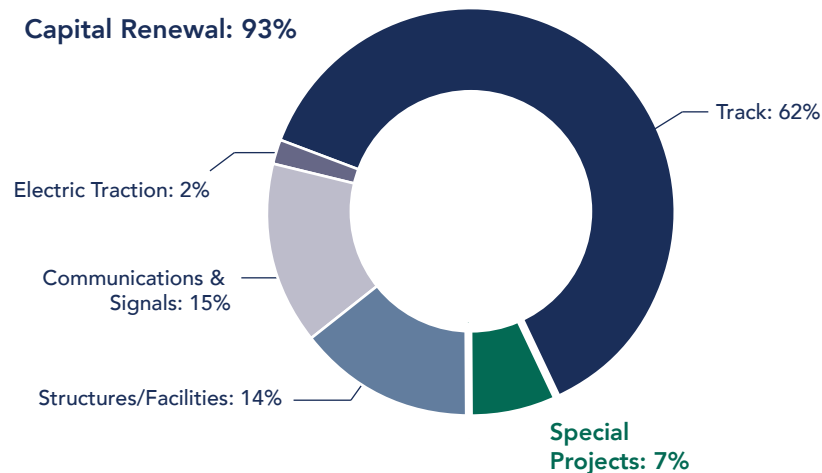
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$2,239,126</b>
Amtrak	\$2,239,126
<b>Above BCC</b>	<b>\$18,884,332</b>
Amtrak	\$18,884,332
<b>Capital Renewal Total</b>	<b>\$21,123,458</b>

## Special Project Highlights

NEC stakeholders will invest \$1.6 million this year to complete final design of Veltri Interlocking, an Amtrak coordinated project.

## Planned Investment in Segment 4 by Category and Discipline



## FY20 Investments in Segment 4 (Wickford Junction to New London)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Catenary Program. PG00029. C.EN.101836.</b>			<b>\$370,013</b>
<b>Contingency</b>			<b>\$81,321</b>
<b>New England Catenary Hardware Renewal Program</b>			<b>\$282,697</b>
AB Line MP122.9-158.0	10/01/19 - 09/30/20		\$83,097
AB Line MP158.0-165.9	10/01/19 - 09/30/20		\$94,935
MP RI146.25 Bradford Road Access Stairs	10/01/19 - 09/30/20	1 EA	\$34,889
MP RI148.41 Burdickville Road Access Stairs	10/01/19 - 09/30/20	1 EA	\$34,889
MP RI149.95 Kings Factory Road Access Stairs	10/01/19 - 09/30/20	1 EA	\$34,889
<b>Project/Program Management</b>			<b>\$5,995</b>
<b>New England Communications Program. PG00030. C.EN.101837.</b>			<b>\$101,779</b>
<b>Contingency</b>			<b>\$42,178</b>
<b>New England Communications Program</b>			<b>\$55,581</b>
Battery Communications and Battery Bank Replacement MP122.9-165.9	10/01/19 - 09/30/20	80 EA	\$55,581
<b>Project/Program Management</b>			<b>\$4,021</b>
<b>New England Facilities Program. PG00031. C.EN.101811.</b>			<b>\$466,147</b>
<b>Contingency</b>			<b>\$437,783</b>
<b>Project/Program Management</b>			<b>\$28,364</b>
<b>New England Signals Program. PG00033. C.EN.101839.</b>			<b>\$2,239,283</b>
<b>Contingency</b>			<b>\$168,905</b>
<b>Design</b>			<b>\$321,406</b>
Design - High Street Upgrade MicroLok 2	10/01/19 - 09/30/20	100 PCT	\$321,406
<b>New England C&amp;S Signal System Upgrades</b>			<b>\$1,522,352</b>
AB Line - ABS Cable Replacement - MP122.8/126	10/01/19 - 09/30/20	7500 FT	\$394,676
AB Line - Pawcatuck, CT Palmer Street Crossing	10/28/19 - 11/03/19	1 EA	\$190,773
Circuit Protection AB Line MP122.9-141.35	10/01/19 - 09/30/20	50 EA	\$105,572
Circuit Protection AB Line MP141.35-165.9	10/01/19 - 09/30/20	50 EA	\$105,572
Fuse Replacement AB Line MP141.35-165.9	12/09/19 - 12/15/19	1000 EA	\$92,937
M3 Switch Machine AB Line MP141.3-165.9	10/01/19 - 09/30/20	6 EA	\$191,101
Mystic River Bridge - ABS Cable Replacement	10/01/19 - 09/30/20	2500 FT	\$441,721
<b>New England SCADA-RTU Upgrades</b>			<b>\$217,112</b>
AB Line - Mystic Interlocking	10/01/19 - 09/30/20	1 EA	\$108,556
AB Line - Palmer Cove Interlocking	10/01/19 - 09/30/20	1 EA	\$108,556
<b>Project/Program Management</b>			<b>\$9,509</b>

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Structures Program. PG00034. C.EN.101840.</b>			<b>\$1,288,911</b>
<b>Contingency</b>			<b>\$201,870</b>
<b>Design</b>			<b>\$216,940</b>
Design - Catenary, MP 132.16/122.65/106.89	10/01/19 - 09/30/20	100 PCT	\$182,007
MP CT132.16 Mystic River Electrical Upgrades	10/01/19 - 09/30/20	100 PCT	\$34,932
<b>New England Bridge Timber Replacement Program</b>			<b>\$545,215</b>
MP CT132.16 Mystic River Bridge Timber Replacement - TK1	02/01/20 - 04/01/20	54 EA	\$139,942
MP CT132.16 Mystic River Bridge Timber Replacement - TK2	02/01/20 - 04/01/20	122 EA	\$405,273
<b>New England Undergrade Bridge Program</b>			<b>\$315,784</b>
MP RI165.90 Ten Rod Road Abutment Upgrades	04/01/20 - 09/30/20	100 PCT	\$246,493
Strike Mitigation MP122.9-158.0	10/01/19 - 09/30/20	10 EA	\$69,290
<b>Project/Program Management</b>			<b>\$9,102</b>
<b>New England Substations Program. PG00035. C.EN.101841.</b>			<b>\$56,934</b>
<b>Contingency</b>			<b>\$36,710</b>
<b>New England Substations Program</b>			<b>\$18,275</b>
Stonington Battery Upgrades	10/01/19 - 09/30/20	1 EA	\$18,275
<b>Project/Program Management</b>			<b>\$1,949</b>
<b>New England Track Program. PG00036. C.EN.101842.</b>			<b>\$3,792,836</b>
<b>Contingency</b>			<b>\$431,113</b>
<b>New England Concrete Tie Replacement</b>			<b>\$730,242</b>
AB Line MP122.9-158.0	10/01/19 - 09/30/20	250 EA	\$446,225
AB Line MP158.0-165.9	10/01/19 - 09/30/20	100 EA	\$284,017
<b>New England Crossing Upgrade</b>			<b>\$604,247</b>
AB Line - Wamphassuc Road Mystic, CT Track 1 and 2	07/17/20 - 07/19/20	110 FT	\$299,547
AB Line Latimer Point Road Mystic, CT Track 1 and 2	04/24/20 - 04/26/20	120 FT	\$304,699
<b>New England Division Interlocking Steel</b>			<b>\$319,799</b>
AB Line MP122.9-158.0	10/01/19 - 09/30/20	100 PCT	\$101,299
AB Line MP158.0-165.9	10/01/19 - 09/30/20	100 PCT	\$218,500
<b>New England Insulated Joint Replacement</b>			<b>\$43,452</b>
AB Line MP122.9-158.0	10/01/19 - 09/30/20	2 EA	\$21,091
AB Line MP158.0-165.9	10/01/19 - 09/30/20	2 EA	\$22,360

Segment 4 Investment Detail continued on next page &gt;&gt;&gt;



Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Joint Elimination</b>			<b>\$210,389</b>
AB Line MP122.9-158.0	10/01/19 - 09/30/20	35 EA	\$129,237
AB Line MP158.0-165.9	10/01/19 - 09/30/20	30 EA	\$81,152
<b>New England Rail Lubricator</b>			<b>\$71,479</b>
Portec Lubricator Upgrade	10/01/19 - 09/30/20	100 PCT	\$71,479
<b>New England Spot Surfacing</b>			<b>\$962,759</b>
AB Line - MP122.9-158.0	10/01/19 - 09/30/20	45000 FT	\$686,310
AB Line - MP158.0-165.9	10/01/19 - 09/30/20	20000 FT	\$276,449
<b>New England Spot Undercutting</b>			<b>\$170,780</b>
AB Line MP122.9-158.0	10/01/19 - 09/30/20	200 FT	\$68,792
AB Line MP158.0-165.9	10/01/19 - 09/30/20	1000 FT	\$101,988
<b>New England Wood Tie Replacement</b>			<b>\$239,394</b>
AB Line MP158.0-165.9	10/01/19 - 09/30/20	200 EA	\$239,394
<b>Project/Program Management</b>			<b>\$9,184</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$637,353</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$28,592</b>
New England Division	N/A		\$28,592
<b>Ansaldo Servier Migration</b>			<b>\$129,744</b>
Line 3 - Boston South Station to and Including Mill River	N/A		\$129,744
<b>Burns Engineering Fixed Database Build</b>			<b>\$221,694</b>
New England Division	N/A		\$221,694
<b>Redundant Transponders</b>			<b>\$257,324</b>
New England Division	N/A		\$257,324
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$284,713</b>
<b>New England Division</b>			<b>\$284,713</b>
Communication Local Distribution Shelter Power Upgrades	N/A		\$106,767
Substation SCADA - RTU Upgrades	N/A		\$177,945
<b>Fence Upgrades Program. PG00069. C.EN.101854.</b>			<b>\$672,805</b>
<b>Northeast Corridor</b>			<b>\$672,805</b>
Westerly Yard and Tower	10/04/19 - 12/10/19	2200 FT	\$672,805

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$3,386,600</b>
<b>AB Line</b>			<b>\$3,386,600</b>
MP 122.9-143.1	10/01/19 - 09/30/20	23.91 MI	\$1,810,585
MP 143.1-165.9	10/01/19 - 09/30/20	31.29 MI	\$1,576,014
<b>Rail Replacement Program. PG00003. C.EN.101856.</b>			<b>\$197,919</b>
<b>Northeast Corridor</b>			<b>\$197,919</b>
Curve 59 (MP 159), Track 1	05/29/20 - 06/01/20	2400 FT	\$197,919
<b>Track Rehabilitation Program . PG00063. C.EN.101859.</b>			<b>\$1,836,975</b>
<b>Northeast Corridor</b>			<b>\$1,836,975</b>
Groton Yard New Track and Concrete Tie Staging Area Installation	01/06/20 - 04/17/20		\$1,836,975
<b>Track Undercutting Program. PG00062. C.EN.100269.</b>			<b>\$4,291,296</b>
<b>High Street to Liberty Track 2</b>			<b>\$3,867,169</b>
B&B Support	08/05/19 - 10/31/19		\$185,652
C&S Support	08/05/19 - 10/31/19		\$228,352
ET Support	08/05/19 - 10/31/19		\$111,543
Installation	08/05/19 - 10/31/19	31000 FT	\$3,126,911
T&E Support	08/05/19 - 10/31/19		\$214,712
<b>Kingston to Davisville Track 2</b>			<b>\$424,127</b>
B&B Support	09/14/20 - 11/12/20		\$12,188
C&S Support	09/14/20 - 11/12/20		\$58,302
ET Support	09/14/20 - 11/12/20		\$7,323
Installation	09/14/20 - 11/12/20	20000 FT	\$332,218
T&E Support	09/14/20 - 11/12/20		\$14,096
<b>TOTAL SEGMENT 4 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$19,623,565</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Pawcatuck River RI Bridge Replacement Project. P000125. C.EN.101866.</b>	
Procure design consultant, initiate design and permitting effort,	
<ul style="list-style-type: none"> <li>Design Procurement: 10/1/2019 - 12/31/2019</li> <li>Design NTP: 1/1/2020 - 2/1/2020</li> <li>Preliminary Design: 2/1/2020 - 9/30/2020</li> </ul>	
<b>TOTAL SEGMENT 4 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	
<b>\$1,499,893</b>	

Segment 4 Investment Detail continued on next page &gt;&gt;&gt;

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Veltri Interlocking (Formerly New England Interlocking Improvements). Amtrak.</b> Complete design of interlocking and begin long lead procurement and specific advanced construction activities. <ul style="list-style-type: none"> <li>• 60% Design: January 2020</li> <li>• Final Design: May 2020</li> <li>• LL Procurement begin: February 2020</li> <li>• Construction Procurement begin: June 2020</li> </ul>	<b>\$1,600,000</b>
<b>TOTAL SEGMENT 4 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$1,600,000</b>

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# Segment 5: New London, CT to New Haven, CT



Segment 5 covers nearly 50 miles from New London, CT to New Haven, CT and is owned by Amtrak, with train operations from Amtrak and Connecticut's Shore Line East.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$88 million on infrastructure investment in Segment 5 in federal fiscal year 2020. Amtrak plans to spend \$31 million on 14 capital renewal programs and \$5.7 million on 2 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$51 million to advance 5 special projects coordinated by Amtrak and Connecticut DOT.

## FY20 Planned Expenditure in Segment 5

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$37,031,889</b>
Projects	\$5,710,306
Programs	\$31,321,583
<b>Special projects by coordinating agency</b>	<b>\$51,350,000</b>
Amtrak	\$15,350,000
Connecticut DOT	\$36,000,000
<b>Total</b>	<b>\$88,381,889</b>

### Capital Renewal Highlights

In Segment 5, Amtrak plans to spend \$4.6 million of Connecticut DOT’s BCCs and \$32 million of its own BCCs to fund capital renewal work.

Of the \$37 million Amtrak plans to spend on capital renewal in this segment, \$16.5 million will be spent on the Track Undercutting Program through which Amtrak will undercut over 121,000 feet of track. Other planned track investments include spending \$4.2 million on New England track program to replace 1,000 concrete ties, complete 90,000 feet of spot surfacing, and eliminate 70 joints. Other capital renewal program highlights include spending over \$2 million on 7,600 feet of fence upgrades in Madison, CT and \$1.8 million on New England signals program including replacing 11,000 feet of ABS cable. Amtrak also plans to spend \$5.7 million on bridge replacement projects at Quinnipiac River and Shaw’s Cove.

### FY20 Capital Renewal Contribution

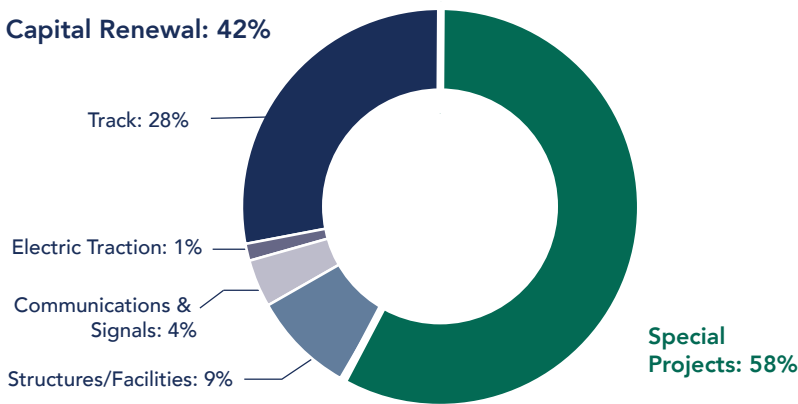
Contribution Type	Amount
Baseline Capital Charges	\$37,031,889
Amtrak	\$32,426,299
Connecticut DOT (SLE)	\$4,605,590
Above BCC	\$0
Capital Renewal Total	\$37,031,889

### Special Project Highlights

NEC stakeholders plan to spend over \$36 million on Connecticut DOT-coordinated special projects in Segment 5. During FY20 Connecticut plans to advance construction at Clinton station, continue design and construction on elements of the New Haven Yard Master Complex improvements, and continue construction of the SLE track and catenary improvements.

NEC stakeholders also plan to spend \$15 million on two Amtrak-coordinated projects in Segment 5. During FY20 Amtrak will continue final design of the Connecticut River Bridge Replacement project and continue procurement for the Fitter Interlocking project.

### Planned Investment in Segment 5 by Category and Discipline



## FY20 Investments in Segment 5 (New London to New Haven)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Catenary Program. PG00029. C.EN.101836.</b>			<b>\$287,583</b>
<b>Contingency</b>			<b>\$115,173</b>
<b>New England Catenary Hardware Renewal Program</b>			<b>\$166,193</b>
AB Line MP72.9-73.5	10/01/19 - 09/30/20		\$83,097
AB Line MP73.5-122.9	10/01/19 - 09/30/20		\$83,097
<b>Project/Program Management</b>			<b>\$6,216</b>
<b>New England Communications Program. PG00030. C.EN.101837.</b>			<b>\$637,606</b>
<b>Contingency</b>			<b>\$49,632</b>
<b>New England Communications Program</b>			<b>\$584,531</b>
Battery Communications and Battery Bank Replacement MP72.9-73.5	10/01/19 - 09/30/20	16 EA	\$11,116
Battery Communications and Battery Bank Replacement MP73.5-122.9	10/01/19 - 09/30/20	88 EA	\$61,139
Branford Interlocking Substation SCADA/RTU	12/01/19 - 02/01/20	1 EA	\$128,069
Mill River Interlocking Substation - SCADA/RTU	10/01/19 - 12/01/19	1 EA	\$128,069
New London Substation - SCADA/RTU	08/01/20 - 09/30/20	1 EA	\$128,069
Old Saybrook Interlocking Substation - SCADA/RTU	01/01/20 - 03/01/20	1 EA	\$128,069
<b>Project/Program Management</b>			<b>\$3,443</b>
<b>New England Facilities Program. PG00031. C.EN.101811.</b>			<b>\$548,536</b>
<b>Contingency</b>			<b>\$515,159</b>
<b>Project/Program Management</b>			<b>\$33,377</b>
<b>New England Signals Program. PG00033. C.EN.101839.</b>			<b>\$1,789,207</b>
<b>Contingency</b>			<b>\$198,758</b>
<b>Design</b>			<b>\$566,017</b>
Design - Guilford Interlocking MicroLok 2	10/01/19 - 09/30/20	100 PCT	\$566,017
<b>New England C&amp;S Signal System Upgrades</b>			<b>\$796,131</b>
AB Line - ABS Cable Replacement - MP 82.1/82.9	10/01/19 - 09/30/20	11000 FT	\$584,986
Circuit Protection AB Line MP72.9-73.5	10/01/19 - 09/30/20	50 EA	\$105,572
Circuit Protection AB Line MP73.5-122.9	10/01/19 - 09/30/20	50 EA	\$105,572
<b>New England SCADA-RTU Upgrades</b>			<b>\$217,112</b>
AB Line - Conn Interlocking	10/01/19 - 09/30/20	1 EA	\$108,556
AB Line - Shaws Cove Interlocking	10/01/19 - 09/30/20	1 EA	\$108,556
<b>Project/Program Management</b>			<b>\$11,189</b>
<b>New England Structures Program. PG00034. C.EN.101840.</b>			<b>\$1,146,950</b>
<b>Contingency</b>			<b>\$237,550</b>

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Design</b>			<b>\$505,853</b>
Design - Catenary, MP 132.16/122.65/106.89	10/01/19 - 09/30/20	100 PCT	\$214,176
Design - MP CT106.89 Connecticut River Bridge Ties	10/01/19 - 09/30/20	100 PCT	\$58,326
MP CT118.21 Waterford Culvert Upgrades	10/01/19 - 09/30/20	100 PCT	\$117,849
MP CT122.65 Shaws Cove Electrical Upgrades	10/01/19 - 09/30/20	100 PCT	\$32,613
MP CT96.89 Hull Street Bridge Strike Beam	10/01/19 - 09/30/20	100 PCT	\$82,888
<b>New England Bridge Timber Replacement Program</b>			<b>\$392,837</b>
MP CT0.70 Middletown Avenue	07/01/20 - 09/30/20	90 EA	\$392,837
<b>Project/Program Management</b>			<b>\$10,711</b>
<b>New England Substations Program. PG00035. C.EN.101841.</b>			<b>\$903,735</b>
<b>Contingency</b>			<b>\$43,199</b>
<b>New England Substations Program</b>			<b>\$860,536</b>
Branford Battery Upgrades	10/01/19 - 09/30/20	1 EA	\$18,275
Grove Beach Battery Upgrades	10/01/19 - 09/30/20	1 EA	\$18,275
MP 198.9 Norton Interlocking Sub Transformer Upgrades	05/01/20 - 09/30/20	1 EA	\$678,670
New London and Millstone Pump Replacement	10/01/19 - 09/30/20	2 EA	\$45,166
Saybrook/Branford Transformer Replacement	10/01/19 - 09/30/20	2 EA	\$100,149
<b>New England Track Program. PG00036. C.EN.101842.</b>			<b>\$4,209,396</b>
<b>Contingency</b>			<b>\$507,310</b>
<b>New England Concrete Tie Replacement</b>			<b>\$1,567,588</b>
AB Line MP72.9-73.5	10/01/19 - 09/30/20	500 EA	\$783,794
AB Line MP73.5-122.9	10/01/19 - 09/30/20	500 EA	\$783,794
<b>New England Division Interlocking Steel</b>			<b>\$202,599</b>
AB Line MP72.9-73.5	10/01/19 - 09/30/20	100 PCT	\$101,299
AB Line MP73.5-122.9	10/01/19 - 09/30/20	100 PCT	\$101,299
<b>New England Insulated Joint Replacement</b>			<b>\$137,094</b>
AB Line MP72.9-73.5	10/01/19 - 09/30/20	8 EA	\$84,365
AB Line MP73.5-122.9	10/01/19 - 09/30/20	5 EA	\$52,728
<b>New England Joint Elimination</b>			<b>\$258,474</b>
AB Line MP72.9-73.5	10/01/19 - 09/30/20	35 EA	\$129,237
AB Line MP73.5-122.9	10/01/19 - 09/30/20	35 EA	\$129,237
<b>New England Rail Lubricator</b>			<b>\$84,112</b>
Portec Lubricator Upgrade	10/01/19 - 09/30/20	100 PCT	\$84,112

Segment 5 Investment Detail continued on next page &gt;&gt;&gt;



Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Spot Surfacing</b>			<b>\$1,372,620</b>
AB Line - MP72.9-73.5	10/01/19 - 09/30/20	45000 FT	\$686,310
AB Line - MP73.5-122.9	10/01/19 - 09/30/20	45000 FT	\$686,310
<b>New England Spot Undercutting</b>			<b>\$68,792</b>
AB Line MP73.5-122.9	10/01/19 - 09/30/20	200 FT	\$68,792
<b>Project/Program Management</b>			<b>\$10,807</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$811,222</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$33,645</b>
New England Division	N/A		\$33,645
<b>Ansaldo Servier Migration</b>			<b>\$152,675</b>
Line 3 - Boston South Station to and Including Mill River	N/A		\$152,675
<b>Burns Engineering Fixed Database Build</b>			<b>\$260,877</b>
New England Division	N/A		\$260,877
<b>Interoperability - MNR</b>			<b>\$61,220</b>
Mill River/CP274 Boundary Upgrades	N/A	CPI	\$61,220
<b>Redundant Transponders</b>			<b>\$302,804</b>
New England Division	N/A		\$302,804
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$335,034</b>
<b>New England Division</b>			<b>\$335,034</b>
Communication Local Distribution Shelter Power Upgrades	N/A		\$125,638
Substation SCADA - RTU Upgrades	N/A		\$209,396
<b>Fence Upgrades Program. PG00069. C.EN.101854.</b>			<b>\$2,204,695</b>
<b>Northeast Corridor</b>			<b>\$2,204,695</b>
Madison, CT (Grove School) Copse Rd to Fort Path Rd.	05/11/20 - 07/31/20	7600 FT	\$2,204,695
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$21,990</b>
<b>AB Line</b>			<b>\$21,990</b>
MP 73.5-122.9	10/01/19 - 09/30/20	73.97 MI	\$21,990
<b>Total Track Renewal Program. PG00061. C.EN.101871.</b>			<b>\$1,210,612</b>
<b>Northeast Corridor</b>			<b>\$1,210,612</b>
Branford Station Track 1	03/27/20 - 03/30/20		\$411,462
Branford Station Track 2	04/17/20 - 04/20/20		\$411,462
Seabrook Track 1	12/06/19 - 12/09/19		\$387,687

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Track Undercutting Program. PG00062. C.EN.100269.</b>			<b>\$16,540,276</b>
<b>Crescent (MP 115.2) heading east Track 1</b>			<b>\$362,945</b>
Crescent (MP 115.2) heading east Track 1	11/01/19 - 11/04/19	1200 FT	\$362,945
<b>Crescent (MP 115.2) heading east Track 2</b>			<b>\$362,945</b>
Crescent (MP 115.2) heading east Track 2	11/08/19 - 11/11/19	1200 FT	\$362,945
<b>Saybrook to Brook to Guilford Track 1</b>			<b>\$9,407,847</b>
B&B Support	04/07/20 - 07/16/20		\$364,675
C&S Support	04/07/20 - 07/16/20		\$998,223
ET Support	04/07/20 - 07/16/20		\$256,971
Installation	04/07/20 - 07/16/20	72864 FT	\$7,464,705
T&E Support	04/07/20 - 07/16/20		\$323,275
<b>View to Crescent Track 2</b>			<b>\$6,406,539</b>
B&B Support	07/20/20 - 09/10/20		\$265,218
C&S Support	07/20/20 - 09/10/20		\$652,433
ET Support	07/20/20 - 09/10/20		\$139,429
Installation	07/20/20 - 09/10/20	45936 FT	\$5,042,728
T&E Support	07/20/20 - 09/10/20		\$306,732
<b>Turnout Renewal Program. PG00065. C.EN.101860.</b>			<b>\$674,744</b>
<b>Shoreline Junction #51 Turnout</b>			<b>\$674,744</b>
Installation	09/14/20 - 09/28/20		\$674,744
<b>TOTAL SEGMENT 5 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$31,321,583</b>
Capital Renewal Projects			
Regionally Managed Projects			FY20 Expenditure
<b>Quinnipiac River CT Bridge Replacement Project. P000126. C.EN.101790.</b>			<b>\$2,678,380</b>
Complete design and permitting effort.			
<ul style="list-style-type: none"> <li>Environmental Permitting: 7/1/2018 - 6/1/2020</li> <li>100% Design: 3/1/2019 - 12/31/2019</li> </ul>			
<b>Shaws Cove CT Swing Bridge Fender Replacement Project. P000127. C.EN.101584.</b>			<b>\$3,031,926</b>
Procure contractor and begin construction			
<ul style="list-style-type: none"> <li>Contractor Procurement: 10/1/2019 - 12/31/2019</li> <li>Issue NTP: 1/1/2020 - 2/1/2020</li> <li>Fender Replacement - Phase 1: 2/1/2020 - 7/15/2020</li> </ul>			
<b>TOTAL SEGMENT 5 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>			<b>\$5,710,306</b>

Segment 5 Investment Detail continued on next page &gt;&gt;&gt;

<b>Special Projects</b>	
<b>Project Name, Partner Agencies, &amp; FY20 Scope</b>	<b>FY20 Expenditure</b>
<b>Connecticut River Bridge Replacement. Amtrak. Connecticut DOT.</b> Proceeding with Phase B Final Design in order to complete construction documents by FY21. <ul style="list-style-type: none"> <li>• Complete 60% Plans, Costs &amp; Schedule: April 2020</li> <li>• Complete 90% Plans, Costs &amp; Schedule: July 2020</li> <li>• Complete 100% Plans, Costs &amp; Schedule: October 2020</li> </ul>	<b>\$5,850,000</b>
<b>Fitter Interlocking (formerly Yale Interlocking). Amtrak. Connecticut DOT.</b> Procurement of C&S, ET and Track materials (signal huts, turnouts, cat poles, hangers, cable, wire, etc.), C&S construction at Lancaster Shops, Contractor construction of catenary pole foundations, civil roadbed work and access road. <ul style="list-style-type: none"> <li>• Environmental Permitting complete: December 2019</li> <li>• LL Procurement C&amp;S: May 2020</li> <li>• LL Procurement Track: August 2020</li> <li>• Contractor begin foundations: April 2020</li> <li>• Contractor begin civil work: April 2020</li> <li>• Begin Catenary structure erection: June 2020</li> </ul>	<b>\$9,500,000</b>
<b>New Haven Yard Master Complex Improvements. Connecticut DOT. Amtrak.</b> Continue design and construction efforts for various projects (East End Connector, West End Yard, Building 10 Demolitions, Pedestrian Overpass, etc.) Various milestones for each project: <ul style="list-style-type: none"> <li>• Construction for East End Connector will continue until summer 2022.</li> <li>• Construction for West End will continue until Fall 2021.</li> </ul>	<b>\$20,000,000</b>
<b>Shore Line East Track &amp; Catenary Improvements. Connecticut DOT. Amtrak.</b> Begin Construction to electrify the siding at the New London Station <ul style="list-style-type: none"> <li>• Begin Construction and install foundations by 4th quarter FY'20.</li> </ul>	<b>\$4,000,000</b>
<b>SLE Station Improvements. Connecticut DOT.</b> Advance Construction of the Clinton Railroad Station by adding a Platform on the New Haven bound side along with a pedestrian overpass <ul style="list-style-type: none"> <li>• Complete elevator/stair cores and set pedestrian bridge by 3rd quarter FY'20.</li> </ul>	<b>\$12,000,000</b>
<b>TOTAL SEGMENT 5 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$51,350,000</b>

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# Segment 25: Springfield to New Haven



Segment 25 covers 60 miles from Springfield, MA to New Haven, CT and is owned by Amtrak, with train operations from Amtrak and the CTrail Hartford Line Service.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$9 million on infrastructure investment in Segment 5 in federal fiscal year 2020. Amtrak plans to spend \$7 million on 10 capital renewal programs and \$0.8 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$1 million to advance 1 special project coordinated by Connecticut DOT.

## FY20 Planned Expenditure in Segment 25

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$8,178,475</b>
Projects	\$763,338
Programs	\$7,415,137
<b>Special projects by coordinating agency</b>	<b>\$1,000,000</b>
Connecticut DOT	\$1,000,000
<b>Total</b>	<b>\$9,178,475</b>

### Capital Renewal Highlights

In Segment 25, Amtrak plans to spend \$6 million of Connecticut DOT's BCCs and \$1.8 million of its own BCCs to fund capital renewal work.

Of the \$8 million Amtrak plans to spend on capital renewal in this segment, \$2.1 million will be spent on tie/timber replacement at four locations. Other track investments include spending \$0.7 million spot surfacing 45,000 feet and \$0.8 million replacing 1,500 wood ties/timbers. Amtrak also plans to spend \$0.7 million to renew Spring Interlocking in Springfield, MA.

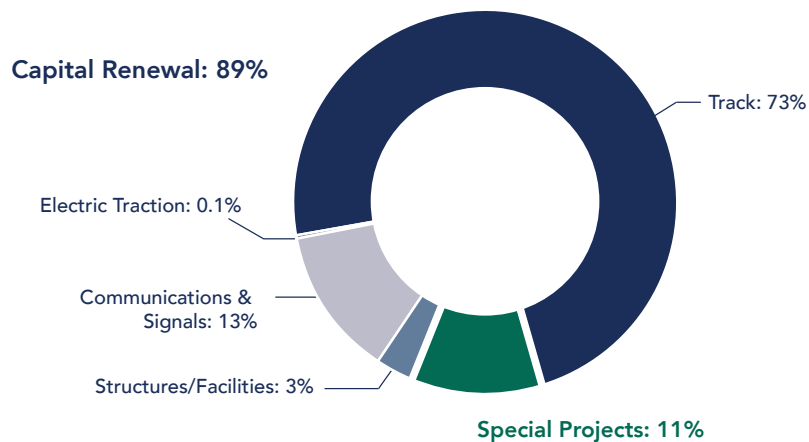
### FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$8,178,475</b>
Amtrak	\$1,800,582
Connecticut DOT (HL)	\$6,377,893
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$8,178,475</b>

### Special Project Highlights

NEC stakeholders plan to invest \$1 million toward the *CTrail* Hartford Line Rail Program Phase 3B – 5, a special project coordinated by Connecticut DOT. In FY20, Connecticut DOT plans to begin construction of the platform at Windsor Station and construction of Windsor Locks Station.

### Planned Investment in Segment 25 by Category and Discipline



## FY20 Investments in Segment 25 (Springfield to New Haven)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
New England Communications Program. PG00030. C.EN.101837.			\$138,172
Contingency			\$10,103
New England Communications Program			\$128,069
Elmwood Interlocking Substation - SCADA/RTU	11/01/19 - 01/01/20	1 EA	\$128,069
New England Facilities Program. PG00031. C.EN.101811.			\$111,658
Contingency			\$104,864
Project/Program Management			\$6,794
New England Signals Program. PG00033. C.EN.101839.			\$42,736
Contingency			\$40,459
Project/Program Management			\$2,278
New England Structures Program. PG00034. C.EN.101840.			\$169,455
Contingency			\$48,355
Design			\$118,920
Design - MP36.99 Hart Tunnel Drainage Upgrades	10/01/19 - 09/30/20	100 PCT	\$118,920
Project/Program Management			\$2,180
New England Substations Program. PG00035. C.EN.101841.			\$8,793
Contingency			\$8,793
New England Track Program. PG00036. C.EN.101842.			\$3,051,050
Contingency			\$103,267
New England Crossing Upgrade			\$382,199
SPG Line Macktown Road MP45.1	06/01/20 - 06/30/20	180 FT	\$382,199
New England Division Interlocking Steel			\$303,898
AS Line MP1.5-33.6	10/01/19 - 09/30/20	100 PCT	\$101,299
AS Line MP33.6-55.8	10/01/19 - 09/30/20	100 PCT	\$101,299
AS Line MP55.8-62.0	10/01/19 - 09/30/20	100 PCT	\$101,299
New England Insulated Joint Replacement			\$154,426
AS Line MP1.5-33.6	10/01/19 - 09/30/20	5 EA	\$51,475
AS Line MP33.6-55.8	10/01/19 - 09/30/20	5 EA	\$51,475
AS Line MP55.8-62.0	10/01/19 - 09/30/20	5 EA	\$51,475
New England Joint Elimination			\$387,711
AS Line MP1.5-33.6	10/01/19 - 09/30/20	35 EA	\$129,237
AS Line MP33.6-55.8	10/01/19 - 09/30/20	35 EA	\$129,237
AS Line MP55.8-62.0	10/01/19 - 09/30/20	35 EA	\$129,237

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New England Rail Lubricator</b>			<b>\$17,122</b>
Portec Lubricator Upgrade	10/01/19 - 09/30/20	100 PCT	\$17,122
<b>New England Spot Surfacing</b>			<b>\$691,265</b>
AS Line - MP1.5-33.6	10/01/19 - 09/30/20	15000 FT	\$230,422
AS Line - MP33.6-55.8	10/01/19 - 09/30/20	15000 FT	\$230,422
AS Line - MP55.8-62.0	10/01/19 - 09/30/20	15000 FT	\$230,422
<b>New England Spot Undercutting</b>			<b>\$206,376</b>
AS Line MP1.5-33.6	10/01/19 - 09/30/20	200 FT	\$68,792
AS Line MP33.6-55.8	10/01/19 - 09/30/20	200 FT	\$68,792
AS Line MP55.8-62.0	10/01/19 - 09/30/20	200 FT	\$68,792
<b>New England Track Wood Tie/Timber</b>			<b>\$802,587</b>
AS Line MP1.5-33.6	10/01/19 - 09/30/20	500 EA	\$267,529
AS Line MP33.6-55.8	10/01/19 - 09/30/20	500 EA	\$267,529
AS Line MP55.8-62.0	10/01/19 - 09/30/20	500 EA	\$267,529
<b>Project/Program Management</b>			<b>\$2,200</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$654,715</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$6,849</b>
New England Division	N/A		\$6,849
<b>Ansaldo Servier Migration</b>			<b>\$471,905</b>
Line 5 - Springfield Line	N/A		\$471,905
<b>Burns Engineering Fixed Database Build</b>			<b>\$53,103</b>
New England Division	N/A		\$53,103
<b>Interoperability - MNR</b>			<b>\$61,220</b>
Inwood/CP12 Boundary Upgrades	N/A	CPI	\$61,220
<b>Redundant Transponders</b>			<b>\$61,638</b>
New England Division	N/A		\$61,638

Segment 25 Investment Detail continued on next page &gt;&gt;&gt;



Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$334,910</b>
<b>New England Division</b>			<b>\$334,910</b>
Communication Local Distribution Shelter Power Upgrades	N/A		\$25,574
Fiber Optic Transport System Upgrade	N/A		\$266,711
Substation SCADA - RTU Upgrades	N/A		\$42,624
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$2,177,884</b>
<b>AS Line - Production Units</b>			<b>\$2,177,884</b>
Hayden to Field	12/02/19 - 03/19/20		\$544,471
Holt to Willow	12/02/19 - 03/19/20		\$544,471
Willow to Wood	12/02/19 - 03/19/20		\$544,471
Wood to Hart	12/02/19 - 03/19/20		\$544,471
<b>Turnout Renewal Program. PG00065. C.EN.101860.</b>			<b>\$725,763</b>
<b>Field #12 Turnout</b>			<b>\$725,763</b>
Installation	10/01/20 - 09/30/20		\$725,763
<b>TOTAL SEGMENT 25 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$7,415,137</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>SPRING (Springfield, MA) Interlocking Renewal Project. P000046. C.EN.101777.</b>	
Procure design contractor and progress signal design, order long lead material for C&S and track, and pursue construction access agreement with CSXT.	
<ul style="list-style-type: none"> <li>Track Design: 10/1/2018 - 1/31/2020</li> <li>C&amp;S Design: 3/1/2019 - 9/30/2020</li> <li>Material Procurement: 7/1/2020 - 7/30/2021</li> </ul>	
<b>TOTAL SEGMENT 25 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	
<b>\$763,338</b>	

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>CTrail Hartford Line Rail Program Phase 3B - 5. Connecticut DOT, Amtrak.</b>	
Begin Construction of short high-level platform at Windsor Station; Begin construction of Windsor Locks Station	
<ul style="list-style-type: none"> <li>Start Construction Windsor High-level: May 2020</li> <li>Start Construction Windsor Locks: July 2020</li> </ul>	
<b>TOTAL SEGMENT 25 SPECIAL PROJECTS EXPENDITURE</b>	
<b>\$1,000,000</b>	

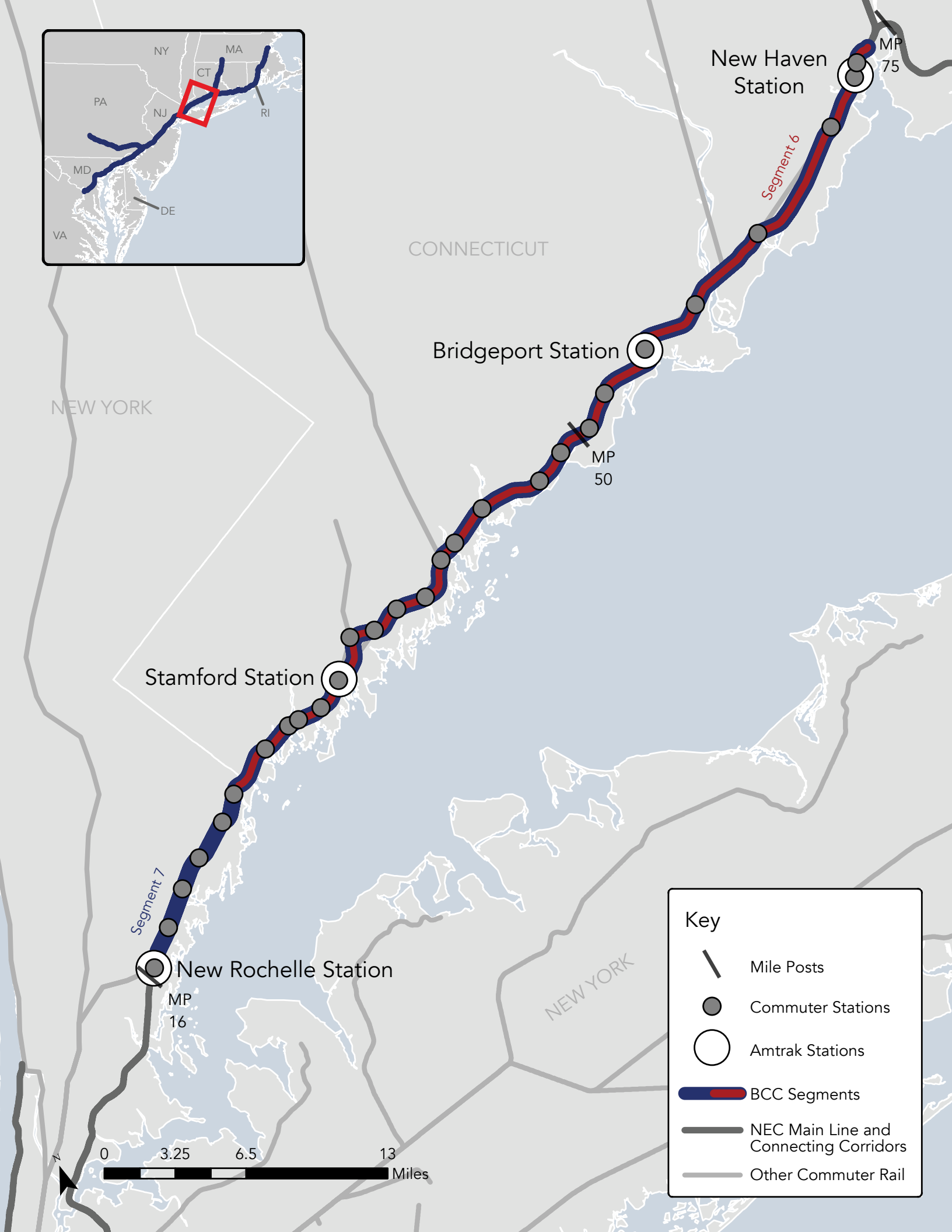
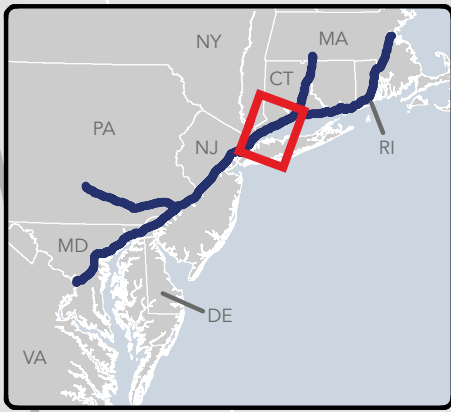
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# FY20 Investment Detail:







## New Haven Line

### (Connecticut and New York owned)

BCC Segment	Owner	Operator(s)	See Page
6. New Haven to CT/NY State Line	Connecticut DOT	Amtrak, Metro-North Railroad (contracted by Connecticut DOT)	56
7. CT/NY State Line to New Rochelle	Metro-North Railroad	Amtrak, Metro-North Railroad	62

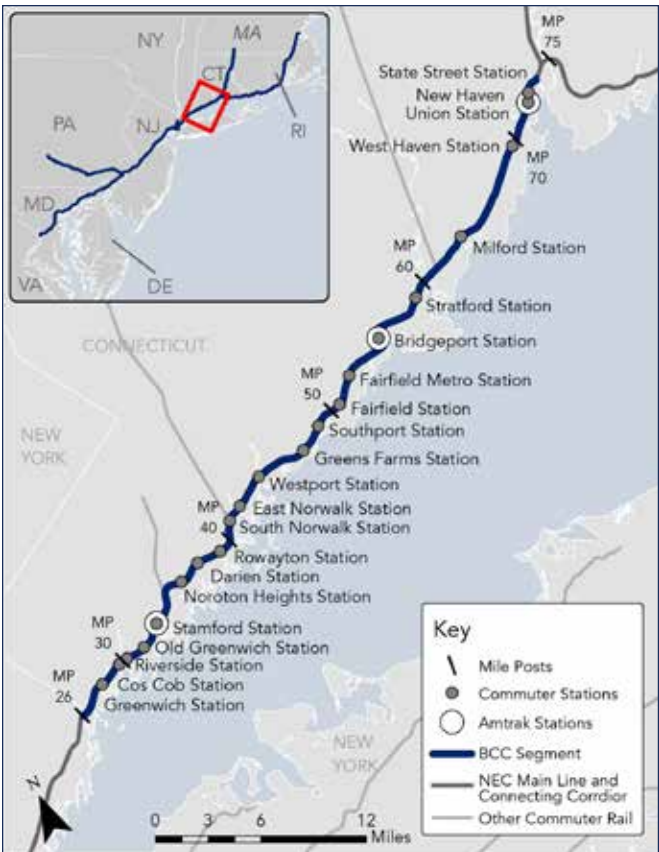


### Key

-  Mile Posts
-  Commuter Stations
-  Amtrak Stations
-  BCC Segments
-  NEC Main Line and Connecting Corridors
-  Other Commuter Rail



# Segment 6: New Haven to CT/NY State Line



Segment 6 covers 46 miles from New Haven, CT to the Connecticut/ New York state line and is owned by Connecticut DOT, with train operations from Metro-North Railroad, under contract with CTDOT, and Amtrak.

## FY20 Planned Work Overview

NEC stakeholders will spend approximately \$310 million on infrastructure investment in Segment 6 in federal fiscal year 2020. Connecticut DOT plans to spend \$168 million on 13 capital renewal projects and programs.

In addition, during FY20, NEC stakeholders plan to invest \$142 million to advance 4 special projects coordinated by Connecticut DOT.

## FY20 Planned Expenditure in Segment 6

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$168,200,000</b>
Projects / Programs	\$168,200,000
<b>Special projects by coordinating agency</b>	<b>\$142,500,000</b>
Connecticut DOT	\$142,500,000
<b>Total</b>	<b>\$310,700,000</b>

## Capital Renewal Highlights

In Segment 6, Connecticut DOT plans to spend \$16 million of Amtrak's BCCs, \$0.2 million of Hartford Line's BCCs, \$1 million of Shore Line East's BCCs, \$47 million of its own BCCs, and \$104 million of its own capital above BCC levels to fund capital renewal work.

Connecticut DOT plans to spend \$35 million of its FY20 capital renewal program installing positive train control along the New Haven Line. In addition, it plans to spend \$38 million on bridge rehabilitation or replacement including the replacement of Atlantic Street, East Avenue, Osbourne and Fort Point Bridges. Other planned capital renewal investments include spending \$10 million replacing 6 different substations on the New Haven Line, as well as spending \$20 million installing wood ties, surfacing, and installing new rail through the New Haven Line CT Track Program (or C Program).

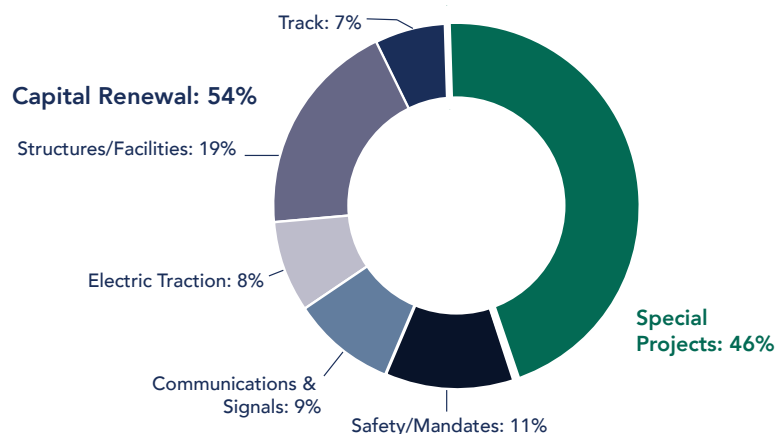
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$64,594,201</b>
CTDOT (NHL)	\$46,816,840
CTDOT (HL)	\$218,763
CTDOT (SLE)	\$1,075,888
Amtrak	\$16,482,710
<b>Above BCC</b>	<b>\$103,605,799</b>
CTDOT	\$103,605,799
<b>Capital Renewal Total</b>	<b>\$168,200,000</b>

## Special Project Highlights

All planned special project investment in Segment 6 will go towards projects coordinated by Connecticut DOT. The largest planned special project investment is approximately \$125 million to continue progressing the design of the Walk Bridge Program as well as continuing construction on the two enabling projects at CP243 and Dockyard. Other special project highlights include completing construction of Stamford Station, completing design of Phase 3 of the New Haven Line Network Infrastructure Upgrade, and continuing design activities for the replacement of Devon Bridge.

## Planned Investment in Segment 6 by Category and Discipline



## FY20 Investments in Segment 6 (New Haven to CT/NY State Line)

Capital Renewal Projects / Programs			
Project / Program	FY20 Scope/Location	FY20 Schedule	FY20 Expenditure
Communications & Signals			\$29,000,000
NHL CT - Network Infrastructure Upgrade - All Phases			\$14,000,000
DOT03000XXXPE (Network Infrastructure Upgrade Phase 4). Network Infrastructure Upgrade for Security between Greenwich and Westport, and three branches.	MP 26 - MP 33	01/20 - 09/20	
NHL CT - Signal System Replacement Phase 1			\$15,000,000
DOT03010154CN (Signal System). Replacement of existing signal system from CP-229 to CP-243.	MP 29 - MP 43	01/20 - 09/20	
Electric Traction			\$47,200,000
NHL CT - Catenary Replacement			\$10,000,000
Segments C1A and C2 - Construction (DOT03010145CN). Replacement of existing Catenary with Auto-Tension Catenary CP-241 to CP248(C1A) and CP255 to CP261(C2)	Track 4 will be completed in sections C1A and C2. Conductor Rail installation on tracks 3 and 1 for section C2 on Devon Bridge. Project will be completed.		
Substation Repairs/Improvements			\$5,000,000
Substation Replacements			\$10,000,000
DOT03010072CN (5 Substations). DOT03010153CN ( 6th Substation). Substation replacements at Woodmont (Substation No. 964), Devon (Substation No. 865), East Bridgeport (Substation No. 814), Bridgeport (Substation No. 736), East Norwalk (Substation No. 537), Substation replacement at South Norwalk ( Substation no 524).			
Safety/Mandates			\$35,000,000
Positive Train Control			\$35,000,000
Installation of Positive Train Control for the entire New Haven Line.	MP 26 - MP 72		
Structures / Facilities			\$59,200,000
NHL - ALL Movable Bridge Repairs			\$12,000,000
ED WALK (DOT03010172CN)			
DEVON Repairs			
NHL CT - Bridge Design			\$3,200,000
NHL CT - Bridge Replacement/Repair Program.			\$8,000,000

Capital Renewal Projects / Programs			
Project / Program	FY20 Scope/Location	FY20 Schedule	FY20 Expenditure
<b>NHL CT - Bridges - Atlantic Street Bridge, Stamford including Yard/Platform/Catenary</b>			<b>\$20,000,000</b>
There are three projects ongoing in the Stamford area. Project # 301-163 involves the lowering of the catenary system to the standard configuration height, Project 135-301 involves replacement of Atlantic Street bridge and Project # 135-326 is Utility Breakout project (Phase I) for Atlantic Street bridge.	MP34	2020 - 2021	
<b>NHL CT - Bridges - East Ave, Osbourne and Fort Point Bridges</b>			<b>\$10,000,000</b>
Replacement of all three Bridges.	MP 41.79, MP 41.96, MP 42.15		
<b>NHL S program/Timber Program</b>			<b>\$6,000,000</b>
DOT03000161CN (Bridge Timber Program). Replacement of bridge timber at various location on NH Line.	MP 33.75, MP 40.89, MP 41.28, MP 55.03 and MP 29.90, MP 29.90, MP 29.48, MP 29.68	04/19 - 05/20	\$2,900,000
DOT03000XXXXCN (S-23). Major steel and masonry repairs on various bridges.	MP 33.75, MP 34.17, MP 33.72, MP 43.97, MP 49.66, MP 54.58, MP 56.35, MP 57.46, MP70.36	05/19 - 12/19	\$3,100,000
<b>Track</b>			<b>\$20,000,000</b>
<b>NHL CT - Track Program (C Program)</b>			<b>\$20,000,000</b>
C-31 (DOT03000190CN). Purchase and install wood ties, surface track, install 16 track miles of new 136lb rail for various curves, purchase and install Switch at CP 272. MP 26 - MP 72	Install wood ties	04/19 - 08/20	\$1,500,000
	Out of Face Surfacing	06/19 - 05/20	\$1,200,000
	Rail Installation	07/19 - 11/19 04/20 - 05/20	\$4,400,000
	Switches CP 272	09/19 - 12/20	\$2,500,000
C-32 (DOT03000206CN). Purchase and install wood ties, surface track, install 16 track miles of new 136lb rail for various curves, purchase and install Switch at CP 271, Drainage Improvements at various locations.	Install wood ties	07/20 - 09/20	\$1,500,000
	Out of Face Surfacing	09/19 - 12/20	\$1,200,000
	Rail Installation	09/19 - 11/20	\$2,200,000
	Switches CP 271/ Stamford	09/20 - 12/20	\$5,500,000
<b>TOTAL SEGMENT 6 CAPITAL RENEWAL PROJECTS / PROGRAMS EXPENDITURE</b>			<b>\$168,200,000</b>

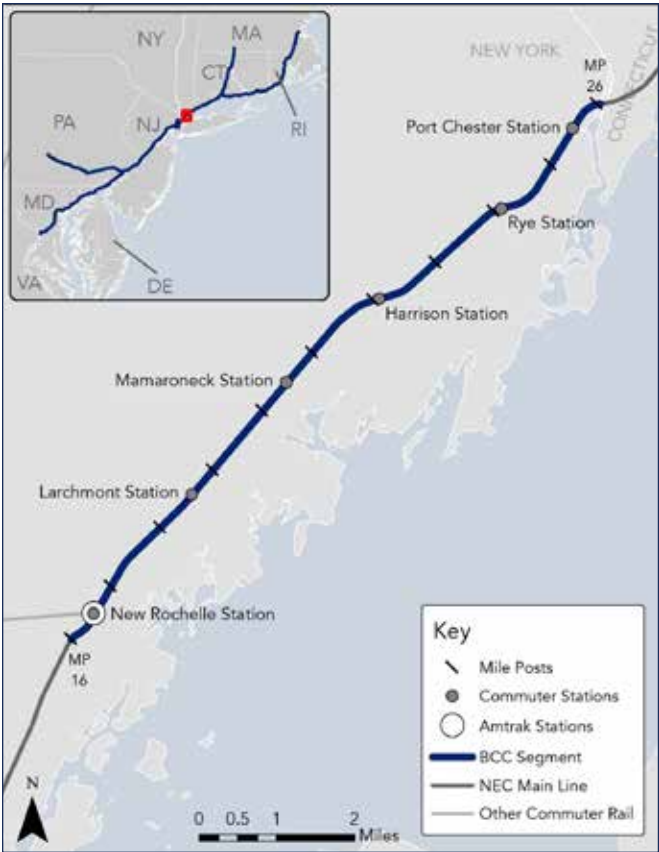
Segment 6 Investment Detail continued on next page &gt;&gt;&gt;



Special Projects		
Project Name, Partner Agencies, & FY20 Scope	FY20 Schedule	FY20 Expenditure
<b>Devon Bridge Replacement. Connecticut DOT, Amtrak.</b>		<b>\$1,500,000</b>
Design activities for the replacement of the bridge.		
Progress the design from 30 percent to 60 percent.	Not available.	
<b>New Haven Line Network Infrastructure Upgrade. Connecticut DOT.</b>		<b>\$12,000,000</b>
Complete the design of Phase 3 and start the construction phase		
Construction Start	Spring 2020	
<b>New Haven Line Stations Improvements: Stamford and New Haven Stations. Connecticut DOT, Amtrak.</b>		<b>\$4,000,000</b>
Complete the construction of Stamford Station. Obligate Build Grant for escalator and elevator replacement.		
Obligate Build Grant	Sept. 2020	
<b>Walk Bridge Program. Connecticut DOT, Amtrak.</b>		<b>\$125,000,000</b>
Progressing the design of the Walk Bridge (301-0176) and other program projects from the current 60% to 90% and then 100% design plans. The two advanced projects necessary to support construction of the Walk Bridge, the CP243 interlocking (301-0181A) and the Danbury Dockyard improvements (301-0180), are currently in construction phase and will continue throughout all of FY20. CP243 plans to complete track #4 activities (track replacement, drainage, soil nail walls/slope stabilization) and then shift to track #3 (track replacement, drainage, soil nail walls/slope stabilization, signal system infrastructure install) before moving to track #1 activities. Dockyard plans to complete Ann St. bridge and reinstall track over bridge, complete catenary portals and substation installation.		
Walk Bridge 100%/GMP 'Guaranteed Maximum Price'	Spring 2020	
Walk Bridge NTP	Summer 2020	
<b>TOTAL SEGMENT 6 SPECIAL PROJECTS EXPENDITURE</b>		<b>\$142,500,000</b>

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# Segment 7: CT/NY State Line to New Rochelle



Segment 7 covers nearly 10 miles from the Connecticut/New York state line to New Rochelle, NY and is owned by Metro-North Railroad, with train operations from Metro-North and Amtrak.

## FY20 Planned Work Overview

NEC stakeholders will spend almost \$18 million on infrastructure investment in Segment 6 in federal fiscal year 2020. Metro-North Railroad plans to spend all \$18 million on 12 capital renewal projects and programs.

## FY20 Planned Expenditure in Segment 7

Investment Category	Amount
Capital renewal by type	\$17,629,126
Projects / Programs	\$17,629,126
Special projects by coordinating agency	\$0
Total	\$17,629,126

## Capital Renewal Highlights

In Segment 7, Metro-North Railroad plans to spend \$2 million of Amtrak's BCCs, \$13 million of its own BCCs, and approximately \$2 million of its own capital above BCCs to fund capital renewal work.

Of the \$18 million Metro-North plans to spend on capital renewal in Segment 7, over \$12 million of that will be spent on work occurring in Port Chester, NY. In this area, Metro-North will continue the replacement and rehabilitation of the Willet Avenue and Highland Road undergrade bridges as well as replace an existing retaining wall. Other program highlights include replacing two substations near Mamoroneck and Harrison, continuing installation and testing of the Positive Train Control system, and replacing customer service information communication systems, including display boards and speaker systems, at New Rochelle station.

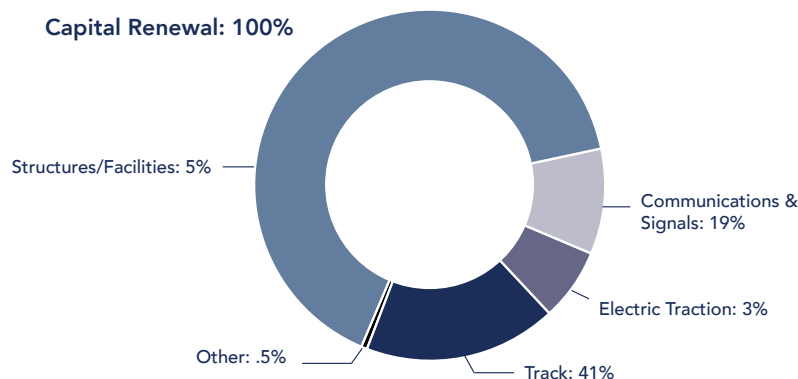
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$15,560,535</b>
Metro-North Railroad	\$13,128,410
Amtrak	\$2,432,125
<b>Above BCC</b>	<b>\$2,068,591</b>
Metro-North Railroad	\$2,068,591
<b>Capital Renewal Total</b>	<b>\$17,629,126</b>

## Special Project Highlights

There are no special projects in Segment 7 with planned work in FY20.

## Planned Investment in Segment 7 by Category and Discipline



## FY20 Investments in Segment 7 (CT/NY State Line to New Rochelle)

Capital Renewal Projects / Programs		
Project / Program	FY20 Scope & Schedule Information	FY20 Expenditure
<b>Communications &amp; Signals</b>		<b>\$1,692,063</b>
<b>PBX Replacement.</b> M7040105	This project provides for the system-wide replacement of Metro-North's Private Branch Exchange system, which assists communications between the Rail Traffic Controller, Operations Control Center and sites in the field.	<b>\$45,000</b>
<b>Positive Train Control.</b> M7040103	This project provides for the continued installation and testing of the Positive Train Control system for MNR territory. Testing in BCC Segment 7 is anticipated between February and April 2020, with necessary outages in the off-peak and nights and weekends. Service plans have been developed by MNR with input from Amtrak. No reduction in service is expected.	<b>\$1,647,063</b>
<b>Electric Traction</b>		<b>\$1,220,000</b>
<b>Replace Substations 128 and 178.</b> M7050109	This project provides for the design of replacement substations 128 (approx MP 20, near Mamaroneck) and 178 (approx MP 22.5, near Harrison). Construction is anticipated in the 2020-2024 Capital Program.	<b>\$1,220,000</b>
<b>Other</b>		<b>\$96,000</b>
<b>Independent Engineer.</b> M7080104	This project provides oversight and program monitoring for the Capital Program Oversight Committee of the MTA.	<b>\$46,000</b>
<b>Program Administration.</b> M7080106	This project funds the costs of departments or individuals that provide administrative support to the capital program but do not charge time directly to specific projects.	<b>\$30,000</b>
<b>Program Scope Development.</b> M7080107	This project funds the costs of those departments and individuals that scope capital projects and provide other related support functions to the capital program; includes a study for New Rochelle Annex substation power improvements for NHL.	<b>\$8,000</b>
<b>Railroad Protective Liability.</b> M7080103	This project provides for costs associated with Railroad Protective Liability	<b>\$12,000</b>
<b>Structures / Facilities</b>		<b>\$11,533,333</b>
<b>Customer Communication-Stations.</b> M7020207	This project provides for the replacement of customer service information communications systems, including display boards and speaker systems at the New Rochelle station. Other stations on the NHL are also receiving these upgrades (of sole benefit and not included in the segment expenditures).	<b>\$1,133,333</b>
<b>Undergrade Bridge Rehabilitation.</b> M7030203	This project continues the repair or replacement of bridges listed in serious to critical states of repair. Work in this segment includes the superstructure replacement and substructure rehabilitation of the Willet Avenue (MP 25.74) and Highland Road (MP 25.83) Bridges on the NHL in Port Chester. This work will require a mix of off-peak, weekend, and continuous outages on Track 4 between CP 223 and CP 229 beginning in February 2020 to the end of FY2020. This work is planned in parallel with the replacement of retaining walls in Port Chester, NY.	<b>\$10,400,000</b>

Capital Renewal Projects / Programs		
Project / Program	FY20 Scope & Schedule Information	FY20 Expenditure
<b>Track</b>		<b>\$3,087,730</b>
<b>Cyclical Track Program.</b> M7030101	<p>This project includes cyclical replacement of ties and rail, along with surfacing and grade crossing renewal, system wide, including the NEC on the NHL. Specific locations for the 2019 Cyclical Track Program are still being finalized, but assumes the following scope system-wide:</p> <ul style="list-style-type: none"> <li>• 24,000 tie replacements</li> <li>• 5 miles of rail replacement</li> <li>• 5 miles of 119lb rail replacement;</li> <li>• 140 miles of rail resurfacing</li> <li>• 1,000 rail welds, as needed (also includes track elements at select grade crossings)</li> </ul>	<b>\$494,000</b>
<b>Purchase MoW Equipment.</b> M7030109	This project provides for the replacement of Maintenance of Way Equipment items that have reached the end of their useful life.	<b>\$593,730</b>
<b>Rebuild Retaining Walls.</b> M7030107	This project provides for the replacement of an existing retaining wall located on the New Haven Line in Port Chester, NY. This work will require a mix of off-peak, weekend, and continuous outages on Track 4 between CP 223 and CP 229 beginning in February 2020 to the end of FY2020. This work is planned in parallel with the replacement of Willet Av and Highland Road Bridges in Port Chester, NY.	<b>\$2,000,000</b>
<b>TOTAL SEGMENT 7 CAPITAL RENEWAL PROJECTS / PROGRAMS EXPENDITURE</b>		<b>\$17,629,126</b>

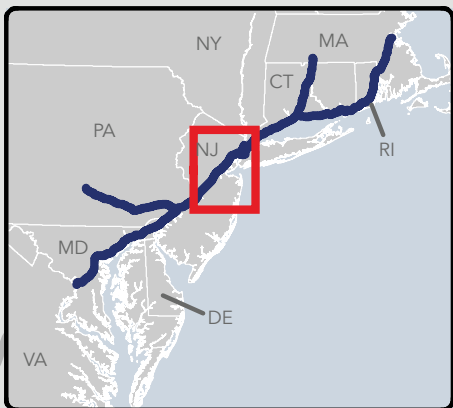
## FY20 Investment Detail:

### New Jersey – New York (Amtrak-owned)

BCC Segment	Owner	Operator(s)	See Page
8. New Rochelle to Harold	Amtrak	Amtrak	68
9. Harold to F Interlocking	Amtrak	Amtrak, LIRR	74
10. F Interlocking to Penn Station New York	Amtrak	Amtrak, LIRR, NJT	80
11. Penn Terminal	Amtrak	Amtrak, LIRR, NJT	86
12. Penn Station New York to Trenton	Amtrak	Amtrak, NJT	92
13. Trenton to Morris	Amtrak	Amtrak, NJT, SEPTA	104
27. Spuyten Duyvil to Penn Station New York	Amtrak	Amtrak	110

NEW JERSEY

NEW YORK



New Rochelle Station

MP 19

MP 11

Segment 27

Segment 8

New York Penn Station

MP 1

Segment 11

Segment 9

Newark Penn Station

Newark Airport Station

MP 20

Metropark Station

New Brunswick Station

MP 40

Segment 12

Princeton Junction Station

MP 58

Trenton Station

Segment 13

### Key



Mile Posts



Commuter Stations



Amtrak Stations



BCC Segments



NEC Main Line and Connecting Corridor



Other Commuter Rail

0 5 10 20 Miles





## Segment 8: New Rochelle, NY to Harold



Segment 8 covers 16 miles from New Rochelle, NY to Harold Interlocking and is owned by Amtrak, with train operations from Amtrak only.

### FY20 Planned Work Overview

NEC stakeholders plan to spend almost \$40 million on infrastructure investment in Segment 8 in federal fiscal year 2020. Amtrak plans to spend \$4.7 million on 8 capital renewal programs and \$2.7 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$32.5 million to advance 2 special projects coordinated by Amtrak and Metro-North Railroad.

### FY20 Planned Expenditure in Segment 8

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$7,492,267</b>
Projects	\$2,769,987
Programs	\$4,722,280
<b>Special projects by coordinating agency</b>	<b>\$32,500,000</b>
Amtrak	\$500,000
Metro-North Railroad	\$32,000,000
<b>Total</b>	<b>\$39,992,267</b>

## Capital Renewal Highlights

In Segment 8, Amtrak plans to spend \$1.7 million of its own BCCs and \$5.7 million of its own capital above BCCs to fund capital renewal work.

Of the \$7.5 million Amtrak plans to spend on capital renewal in this segment, it plans to spend \$1.3 million on its New York Structures Program which includes upgrades to Gate Interlocking and Signal Bridge as well as rehabilitation of the undergrade bridge at Northern Boulevard. Amtrak also plans to spend \$0.9 million to continue design of upgrades to the Hellgate Substations #45, #46, and #47.

## FY20 Capital Renewal Contribution

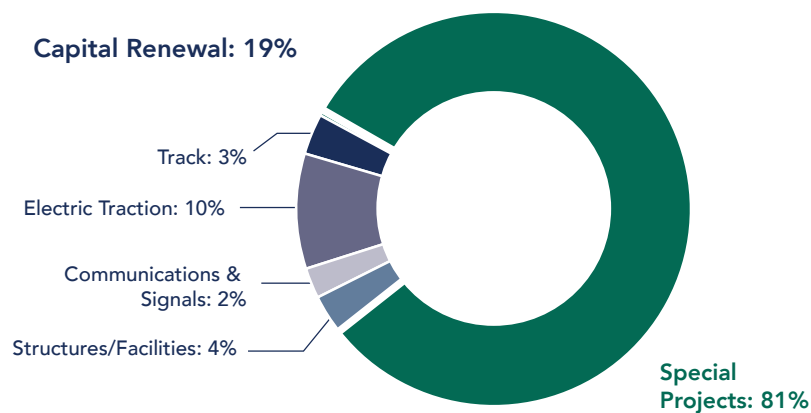
Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$1,698,635</b>
Amtrak	\$1,698,635
<b>Above BCC</b>	<b>\$5,793,632</b>
Amtrak	\$5,793,632
<b>Capital Renewal Total</b>	<b>\$7,492,267</b>

## Special Project Highlights

NEC stakeholders plan to invest \$32 million to advance preliminary design and complete environmental review process of the Penn Station Access project, which is coordinated by Metro-North Railroad.

NEC stakeholders also plan to invest \$0.5 million to start NEPA and preliminary engineering of the Pelham Bay Bridge Replacement project which is coordinated by Amtrak.

## Planned Investment in Segment 8 by Category and Discipline



## FY20 Investments in Segment 8 (New Rochelle to Harold)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Catenary Program. PG00037. C.EN.101843.</b>			<b>\$91,572</b>
<b>Contingency</b>			<b>\$22,893</b>
<b>New York Catenary Pole Program</b>			<b>\$68,679</b>
Catenary Pole Replacements	08/03/20 - 09/30/20	20 EA	\$68,679
<b>New York Communications Program. PG00038. C.EN.101844.</b>			<b>\$15,262</b>
<b>New York Communications Program</b>			<b>\$15,262</b>
	04/01/19 - 07/30/19		\$15,262
<b>New York Facilities Program. PG00039. C.EN.101845.</b>			<b>\$118,280</b>
<b>Contingency</b>			<b>\$54,180</b>
<b>Design</b>			<b>\$51,280</b>
Design - Facilities	10/01/19 - 09/30/20	100 PCT	\$51,280
<b>Project/Program Management</b>			<b>\$12,820</b>
<b>New York Signals Program. PG00041. C.EN.101846.</b>			<b>\$346,439</b>
<b>Contingency</b>			<b>\$71,121</b>
<b>New York C&amp;S Signal System Upgrades</b>			<b>\$275,318</b>
Code Relays	10/01/19 - 09/30/20	100 PCT	\$61,048
Hellgate - Cable Repair and Replacement	04/01/20 - 09/30/20	FT	\$214,270
<b>New York Structures Program. PG00042. C.EN.101847.</b>			<b>\$1,268,917</b>
<b>Contingency</b>			<b>\$453,575</b>
<b>Design</b>			<b>\$73,258</b>
Design - Culvert Program	10/01/19 - 09/30/20	100 PCT	\$73,258
<b>New York Signal Bridge Program</b>			<b>\$509,499</b>
Gate Interlocking - Signal Bridge Fall Protection Upgrades - MP5.3	10/01/19 - 12/31/19	1 EA	\$317,120
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$192,379
<b>New York Undergrade Bridge Program</b>			<b>\$214,270</b>
Northern Boulevard - Concrete Rehab - MP4.77			\$214,270
<b>Project/Program Management</b>			<b>\$18,314</b>
<b>New York Substations Program. PG00043. C.EN.101848.</b>			<b>\$998,560</b>
<b>Contingency</b>			<b>\$141,479</b>
<b>Design</b>			<b>\$857,082</b>
Design - Hellgate Line Substations 45-47 - Replacement	10/01/19 - 09/30/20	100 PCT	\$857,082

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
New York Track Program. PG00044. C.EN.101849.			\$1,286,960
Contingency			\$981,906
New York Division Interlocking Steel			\$72,037
Steel Interlocking - Maintenance Support	10/01/19 - 09/30/20	100 PCT	\$72,037
New York Joint Elimination			\$196,389
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$196,389
New York Spot Undercutting			\$18,314
Project/Program Management			\$18,314

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.			\$596,288
Alstom WIU to MicroLok Conversion			\$12,210
New York Division	N/A		\$12,210
Ansaldo Servier Migration			\$379,521
Line 6 - New York Penn Station to CP216	N/A		\$379,521
Burns Engineering Fixed Database Build			\$94,671
New York Division	N/A		\$94,671
Redundant Transponders			\$109,886
New York Division	N/A		\$109,886
<b>TOTAL SEGMENT 8 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$4,722,280</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
Hellgate Substation 45-47 Upgrade Project. P000018. C.EN.101745.	\$2,769,987

Advertise and award contract for a design consultant. Complete designs for relay replacement, structural and civil rehabilitation at all three substations. Procure contractor and start construction of replacement trolley and feeder breakers. Replace one 2H (138kV) breaker at Substation 46. Advertise and award contract for construction to replace relays and civil work.

Segment 8 Investment Detail continued on next page >>>

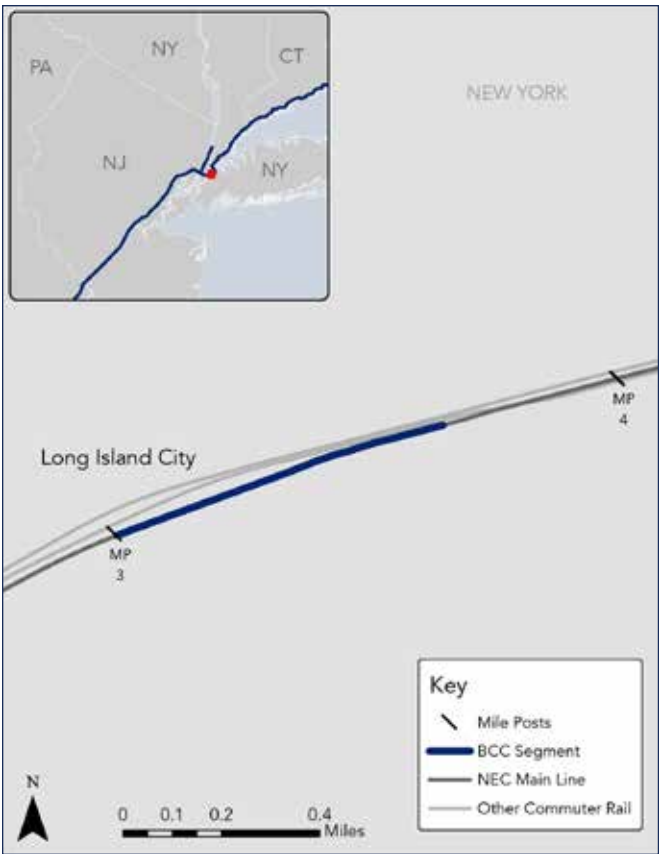
Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<ul style="list-style-type: none"> <li>Design Relay &amp; Civil upgrades: 11/1/2019 - 7/28/2020</li> <li>Replace 2H Breaker at Sub 46: 3/1/2020 - 4/15/2020</li> <li>3P to perform civil rehabilitation at Sub 45: 3/1/2020 - 4/30/2020</li> <li>3P to replace breakers: 5/1/2020 - 6/30/2020</li> <li>3P to perform civil rehabilitation at Sub 47: 5/1/2020 - 6/30/2020</li> <li>3P to replace relays: 10/1/2020 - 5/31/2020</li> <li>3P to perform civil rehabilitation at Sub 46: 10/1/2020 - 11/30/2020</li> <li>Replace one Motor Generator: 10/1/2020 - 2/1/2021</li> <li>Close Out: 2/1/2021 - 5/1/2021</li> </ul>	
<b>TOTAL SEGMENT 8 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$2,769,987</b>

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Pelham Bay Bridge Replacement. Amtrak.</b>  The FY20 scope of work for the project will be to develop, advertise and award Request for Proposal (RFP) for NEPA and Preliminary Engineering consultants and start NEPA and Preliminary Engineering. <ul style="list-style-type: none"> <li>Award RFP for NEPA and Preliminary Engineering: Oct 2019 (Dependent on FRA class action determination)</li> <li>Begin NEPA and Preliminary Engineering: Nov 2019 (Dependent on FRA class action determination)</li> </ul>	<b>\$500,000</b>
<b>Penn Station Access. Metro-North Railroad. Amtrak.</b>  Advance preliminary design in coordination with Amtrak. Complete NEPA environmental review process with FTA as lead agency. Issue Request for Qualifications for Design/Build contractors. Execute Design/Build Phase Agreement with Amtrak. <ul style="list-style-type: none"> <li>Advance 30% design: 3rd Qtr. 2020.</li> <li>Obtain FONSI: 1st Qtr. 2020.</li> <li>Issue RFQ: 4th Qtr. 2019.</li> <li>Execute D/B Agreement 2nd Qtr, 2020.</li> </ul>	<b>\$32,000,000</b>
<b>TOTAL SEGMENT 8 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$32,500,000</b>

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# Segment 9: Harold to F Interlocking



Segment 9 covers 0.7 miles from Harold Interlocking to F Interlocking and is owned by Amtrak, with train operations from Amtrak and Long Island Rail Road.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$20 million on infrastructure investment in Segment 9 in federal fiscal year 2020. Amtrak plans to spend \$8 million on 8 capital renewal programs and \$3 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$9 million to advance 2 special projects coordinated by Amtrak and MTA Capital Construction.

## FY20 Planned Expenditure in Segment 9

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$11,190,567</b>
Projects	\$2,946,218
Programs	\$8,244,348
<b>Special projects by coordinating agency</b>	<b>\$8,900,000</b>
Amtrak	\$8,900,000
MTA Capital Construction	TBD
<b>Total</b>	<b>\$20,090,567</b>

## Capital Renewal Highlights

In Segment 9, Amtrak plans to spend \$3 million of its own BCCs and \$8 million of its own capital above BCCs to fund capital renewal work.

Of the \$11 million Amtrak plans to spend on capital renewal in this segment, \$2.7 million will be spent renewing 6,500 wood ties at Sunnyside Yard and \$2 million on 23,200 feet of track renewal and rail replacement at Sunnyside Yard. Amtrak will also spend \$2 million on wood tie/timber replacement from Sunnyside Yard to Loop and \$2.9 million to continue construction of C&S replacement at Q Interlocking.

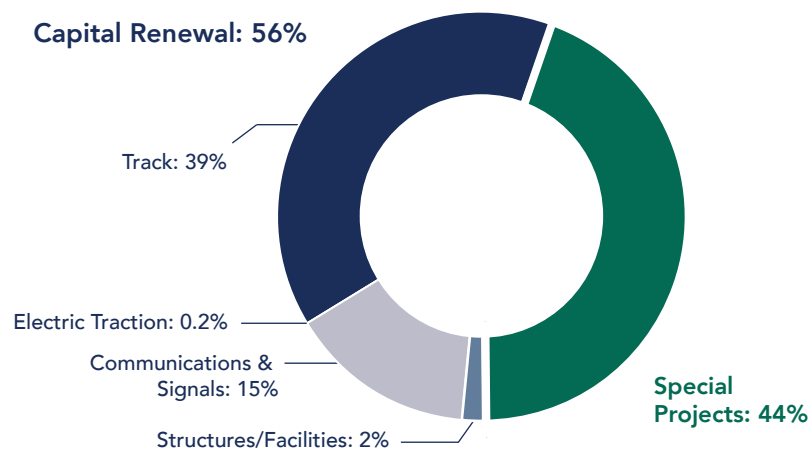
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$3,084,441</b>
Amtrak	\$3,084,441
Long Island Rail Road	\$0
<b>Above BCC</b>	<b>\$8,106,126</b>
Amtrak	\$8,106,126
<b>Capital Renewal Total</b>	<b>\$11,190,567</b>

## Special Project Highlights

Amtrak plans to invest \$8.9 million to continue construction within the storage and inspection (S&I) facility and design ready tracks at Sunnyside Yard. FY20 information on Harold Interlocking is pending discussions between Amtrak and MTA.

## Planned Investment in Segment 9 by Category and Discipline





## FY20 Investments in Segment 9 (Harold to F Interlocking)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Catenary Program. PG00037. C.EN.101843.</b>			<b>\$3,163</b>
<b>New York Catenary Pole Program</b>			<b>\$3,163</b>
Catenary Pole Replacements	08/03/20 - 09/30/20	20 EA	\$3,163
<b>New York Facilities Program. PG00039. C.EN.101845.</b>			<b>\$304,835</b>
<b>Contingency</b>			<b>\$2,495</b>
<b>Design</b>			<b>\$2,362</b>
Design - Facilities	10/01/19 - 09/30/20	100 PCT	\$2,362
<b>New York Maintenance of Equip Facilities Program</b>			<b>\$299,979</b>
Sunnyside Yard - Water Main Replacement	10/01/19 - 09/30/20	100 PCT	\$299,979
<b>New York Signals Program. PG00041. C.EN.101846.</b>			<b>\$6,087</b>
<b>Contingency</b>			<b>\$3,275</b>
<b>New York C&amp;S Signal System Upgrades</b>			<b>\$2,811</b>
Code Relays	10/01/19 - 09/30/20	100 PCT	\$2,811
<b>New York Structures Program. PG00042. C.EN.101847.</b>			<b>\$33,122</b>
<b>Contingency</b>			<b>\$20,888</b>
<b>Design</b>			<b>\$3,374</b>
Design - Culvert Program	10/01/19 - 09/30/20	100 PCT	\$3,374
<b>New York Signal Bridge Program</b>			<b>\$8,860</b>
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$8,860
<b>New York Substations Program. PG00043. C.EN.101848.</b>			<b>\$27,943</b>
<b>Contingency</b>			<b>\$6,515</b>
<b>New York Frequency Converter Program</b>			<b>\$21,427</b>
Sunnyside Yard - Access Control, Camera, Signage Upgrades	01/01/19 - 04/30/19	100 PCT	\$21,427
<b>New York Track Program. PG00044. C.EN.101849.</b>			<b>\$5,800,151</b>
<b>Contingency</b>			<b>\$45,219</b>
<b>New York Division Interlocking Steel</b>			<b>\$2,380,946</b>
SSYD Body Track Renewal	10/01/19 - 09/30/20	10000 FT	\$1,242,768
Steel Interlocking - Maintenance Support	10/01/19 - 09/30/20	100 PCT	\$3,317
Sunnyside Yard - Rail Replacement - Day Maintenance	10/01/19 - 09/30/20	3300 FT	\$192,021
Sunnyside Yard - Rail Replacement - Night Maintenance	10/01/19 - 09/30/20	3300 FT	\$130,030
Sunnyside Yard - Rail Replacement Welding	10/01/19 - 09/30/20	3300 FT	\$243,247
Sunnyside Yard - Steel Interlocking - Day Maintenance	10/01/19 - 09/30/20	3300 FT	\$162,449

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Sunnyside Yard - Steel Interlocking - Night Maintenance	10/01/19 - 09/30/20	100 PCT	\$407,114
<b>New York Joint Elimination</b>			<b>\$495,537</b>
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$9,044
Sunnyside Yard - Joint Elimination Welding	10/01/19 - 09/30/20	300 EA	\$486,492
<b>New York Spot Surfacing</b>			<b>\$132,848</b>
Sunnyside - Spot Vac & Surfacing - Day	10/01/19 - 09/30/20	10500 FT	\$132,848
<b>New York Track Wood Tie/Timber</b>			<b>\$2,745,601</b>
Sunnyside - Spot Ties - Day Maintenance	10/01/19 - 09/30/20	1300 EA	\$1,041,354
Sunnyside - Spot Ties - Maintenance Division Support	10/01/19 - 09/30/20	1300 EA	\$475,620
Sunnyside - Spot Ties - Maintenance Production Support	10/01/19 - 09/30/20	1300 EA	\$537,390
Sunnyside Yard - Spot Tie Welding	10/01/19 - 09/30/20	1300 EA	\$99,850
Sunnyside Yard - Spot Ties - Night Maintenance	10/01/19 - 09/30/20	1300 EA	\$591,386

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$26,898</b>
<b>Ansaldo Servier Migration</b>			<b>\$17,478</b>
Line 6 - New York Penn Station to CP216	N/A		\$17,478
<b>Burns Engineering Fixed Database Build</b>			<b>\$4,360</b>
New York Division	N/A		\$4,360
<b>Redundant Transponders</b>			<b>\$5,061</b>
New York Division	N/A		\$5,061
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$2,042,151</b>
<b>AN Line - Production Units</b>			<b>\$2,042,151</b>
SSYD to Loop	01/06/20 - 04/30/20		\$2,042,151
<b>TOTAL SEGMENT 9 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$8,244,348</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Q Interlocking C&amp;S Equipment Replacement Project. P000066. C.EN.100676.</b>	<b>\$2,946,218</b>
Trenching and cross track digs, install a new QRT house; construction of the foundation for the CIH; construction of cable paths from the new CIH to QW and QE cases; construction of cable paths from the QRT house, new cases for the Communications House; and set interface cases	

Segment 9 Investment Detail continued on next page &gt;&gt;&gt;

<b>Capital Renewal Projects</b>	
<b>Regionally Managed Projects</b>	<b>FY20 Expenditure</b>
<ul style="list-style-type: none"> <li>Complete Final Design: 4/1/2019 - 9/31/2019</li> <li>Construction: 10/1/2019 - 9/30/2021</li> <li>Complete Construction: 2/1/2019 - 9/31/2023</li> </ul>	
<b>TOTAL SEGMENT 9 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$2,946,218</b>

<b>Special Projects</b>	
<b>Project Name, Partner Agencies, &amp; FY20 Scope</b>	<b>FY20 Expenditure</b>
<b>Harold Interlocking. MTA Capital Construction. Amtrak.</b> FY20 information to be updated pending discussions between MTA and Amtrak. <ul style="list-style-type: none"> <li>FY20 information to be updated pending discussions between MTA and Amtrak.</li> </ul>	<b>TBD</b>
<b>Next Generation High Speed Fleet Infrastructure: Sunnyside Yard Facility Improvements. Amtrak.</b> S&I Mod: Construction within S&I Facility. Ready Tracks: Design Development <ul style="list-style-type: none"> <li>S&amp;I Modification: GC NTP – November 2019 - FY2020</li> <li>Ready Tracks: Complete 100% Design – June 2020</li> </ul>	<b>\$8,900,000</b>
<b>TOTAL SEGMENT 9 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$8,900,000</b>

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# Segment 10: F Interlocking to PSNY



Segment 10 covers nearly 3 miles from F Interlocking to Penn Station New York and is owned by Amtrak, with train operations from Amtrak, Long Island Rail Road, and NJ TRANSIT.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$102 million on infrastructure investment in Segment 10 in federal fiscal year 2020. Amtrak plans to spend \$5 million on 9 capital renewal programs and \$17 million on 3 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest over \$79 million to advance 3 special projects coordinated by Amtrak and Long Island Rail Road.

## FY20 Planned Expenditure in Segment 10

Investment Category	Amount
Capital renewal by type	\$22,562,296
Projects	\$17,306,155
Programs	\$5,256,141
Special projects by coordinating agency	\$79,760,000
Amtrak	\$5,760,000
Long Island Rail Road	\$74,000,000
<b>Total</b>	<b>\$102,322,296</b>

## Capital Renewal Highlights

In Segment 10, Amtrak plans to spend \$16 million of Long Island Rail Road's BCCs and \$6 million of its own BCCs to fund capital renewal work.

Of the \$22 million Amtrak plans to spend on capital renewal in this segment, \$3 million will go toward improvements to or rehabilitation of the East River, Long Island City, and 1st Avenue Tunnels. Additionally, Amtrak plans to spend \$1.2 million to renew JO #143 crossover. Amtrak plans to manage two capital renewal projects in the East River Tunnel during FY20: one to replace track and another to replace radio antenna. Amtrak will also begin preliminary engineering of the Sunnyside Yard Frequency Converter Project.

## FY20 Capital Renewal Contribution

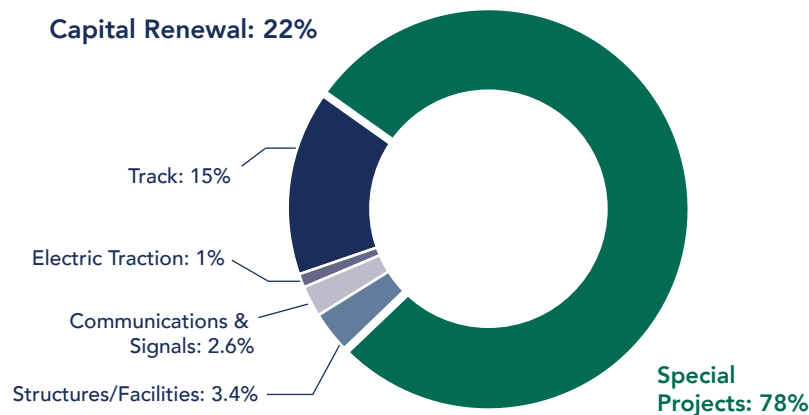
Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$22,562,296</b>
Amtrak	\$6,326,970
Long Island Rail Road	\$16,235,326
NJ TRANSIT	\$0
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$22,562,296</b>

## Special Project Highlights

In FY20, NEC stakeholders plan to spend \$5.8 million to continue advancing design of the East River Tunnel Rehabilitation project which is coordinated by Amtrak.

NEC stakeholders also plan to spend \$74 million on two Long Island Rail Road-coordinated projects. In FY20 Long Island Rail Road plans to continue the Right-of-Way Infrastructure Improvements Project also in East River Tunnel and begin construction of flood walls and continue design of the East River Tunnel portal flood protection as part of the River-to-River Rail Resiliency projects.

## Planned Investment in Segment 10 by Category and Discipline



## FY20 Investments in Segment 10 (F Interlocking to PSNY)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Catenary Program. PG00037. C.EN.101843.</b>			<b>\$17,471</b>
Contingency			\$4,368
<b>New York Catenary Pole Program</b>			<b>\$13,103</b>
Catenary Pole Replacements	08/03/20 - 09/30/20	20 EA	\$13,103
<b>New York Communications Program. PG00038. C.EN.101844.</b>			<b>\$2,912</b>
<b>New York Communications Program</b>			<b>\$2,912</b>
	04/01/19 - 07/30/19		\$2,912
<b>New York Facilities Program. PG00039. C.EN.101845.</b>			<b>\$22,567</b>
Contingency			\$10,337
Design			\$9,784
Design - Facilities	10/01/19 - 09/30/20	100 PCT	\$9,784
<b>Project/Program Management</b>			<b>\$2,446</b>
<b>New York Signals Program. PG00041. C.EN.101846.</b>			<b>\$25,216</b>
Contingency			\$13,569
<b>New York C&amp;S Signal System Upgrades</b>			<b>\$11,647</b>
Code Relays	10/01/19 - 09/30/20	100 PCT	\$11,647
<b>New York Structures Program. PG00042. C.EN.101847.</b>			<b>\$3,483,331</b>
Contingency			\$86,537
Design			\$13,977
Design - Culvert Program	10/01/19 - 09/30/20	100 PCT	\$13,977
<b>New York Signal Bridge Program</b>			<b>\$36,704</b>
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$36,704
<b>New York Tunnel Program</b>			<b>\$3,342,618</b>
East River Tunnels - Tunnel Improvements	10/01/19 - 09/30/20	100 PCT	\$1,285,622
Long Island City and 1st Avenue - Generators and Waterproofing Project	10/01/19 - 09/30/20	100 PCT	\$342,833
New York 1st Avenue - Ventilation Complex	10/01/19 - 09/30/20	100 PCT	\$1,714,163
<b>Project/Program Management</b>			<b>\$3,494</b>
<b>New York Substations Program. PG00043. C.EN.101848.</b>			<b>\$26,993</b>
Contingency			\$26,993
<b>New York Track Program. PG00044. C.EN.101849.</b>			<b>\$245,538</b>
Contingency			\$187,337
<b>New York Division Interlocking Steel</b>			<b>\$13,744</b>
Steel Interlocking - Maintenance Support	10/01/19 - 09/30/20	100 PCT	\$13,744

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Joint Elimination</b>			<b>\$37,469</b>
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$37,469
<b>New York Spot Undercutting</b>			<b>\$3,494</b>
			\$3,494
<b>Project/Program Management</b>			<b>\$3,494</b>
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$233,686</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$2,329</b>
New York Division	N/A		\$2,329
<b>Ansaldo Servier Migration</b>			<b>\$72,409</b>
Line 6 - New York Penn Station to CP216	N/A		\$72,409
<b>Burns Engineering Fixed Database Build</b>			<b>\$18,062</b>
New York Division	N/A		\$18,062
<b>Interoperability - LIRR</b>			<b>\$118,359</b>
Gate & F Tower/Hudson Boundary Upgrades	N/A		\$118,359
<b>Interoperability - NJT</b>			<b>\$1,562</b>
Graw/Union Boundary Upgrades	N/A		\$1,562
<b>Redundant Transponders</b>			<b>\$20,965</b>
New York Division	N/A		\$20,965
<b>Turnout Renewal Program. PG00065. C.EN.101860.</b>			<b>\$1,198,427</b>
<b>JO #143 Crossover</b>			<b>\$1,198,427</b>
B&B Support	09/08/20 - 10/05/20		\$26,392
C&S Support	09/08/20 - 10/05/20		\$181,917
ET Support	09/08/20 - 10/05/20		\$33,226
Installation	09/08/20 - 10/05/20		\$916,538
T&E Support	09/08/20 - 10/05/20		\$40,354
<b>TOTAL SEGMENT 10 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$5,256,141</b>

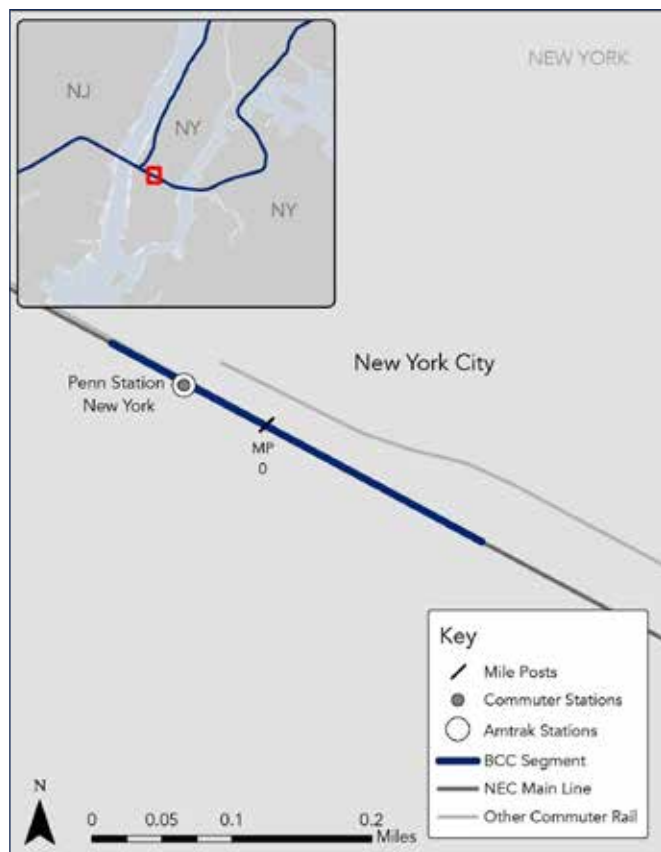
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Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>East River Tunnels Radio Antenna Replacement Project. P000012. C.EN.101780.</b> Continue the installation of cable and hangers, removal of existing cable and installing new cable in the East River Tunnel. <ul style="list-style-type: none"> <li>Construction: 3/1/2019 - 12/31/2021</li> </ul>	<b>\$2,362,331</b>
<b>East River Tunnels Track Replacement Project. P000021. C.EN.100755.</b> Replacement of the rail, ties, 3rd rail, and improvements to drainage in the East River Tunnel Line 4 from MP 1.22 to MP 3 <ul style="list-style-type: none"> <li>Procure Long Lead Material: 10/15/2019 - 4/13/2020</li> <li>ERT Line 4 Track Panel Replacement: 4/17/2020 - 8/10/2020</li> <li>ERT Line 4 Third Rail Replacement: 4/17/2020 - 8/10/2020</li> <li>ERT Line 4 CWR Installation: 8/14/2020 - 8/31/2020</li> <li>Close Out: 9/1/2020 - 11/1/2020</li> </ul>	<b>\$13,872,994</b>
<b>Sunnyside Yard Frequency Converter Upgrade Project. P000077. C.EN.101239.</b> Award design contract begin preliminary engineering and produce 30% design/build documents for procurement of a DB contractor <ul style="list-style-type: none"> <li>Conceptual/PE/NEPA: 10/1/2019 - 6/3/2020</li> <li>Award and Issue NTP for Preliminary Engineering design: 10/1/2019 - 9/31/2020</li> <li>Procurement: 6/3/2020 - 12/2/2020</li> <li>Construction: 12/2/2020 - 20/2/2023</li> <li>Award and Issue NTP for Design Builder: 1/1/2021 - 12/31/2023</li> <li>Procure Design Build contractor: 9/31/2020 - 12/31/2020</li> </ul>	<b>\$1,070,829</b>
<b>TOTAL SEGMENT 10 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$17,306,155</b>
Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>East River Tunnel - Right of Way Infrastructure Improvements. Long Island Rail Road.</b> ERT Stray Current Study will continue. Communications Antenna replacement will continue in ERT 3 or 4. Total track replacement will restart (since 2016) in ERT Line 4 with 13 planned weekend tunnel outages. Amtrak FY2020 SOGR of Tracks 11, 14 and various switches. <ul style="list-style-type: none"> <li>50% ERT Antenna completion by Sep 30.</li> <li>Completion of ERT 4 Total Track Rehab by Sep 30.</li> <li>Completion FY2020 SOGR of Tracks 11, 14 and various switches by Sep 30.</li> </ul>	<b>\$34,000,000</b>
<b>East River Tunnel Rehabilitation. Amtrak. Long Island Rail Road, NJ TRANSIT.</b> The FY20 scope of work for this project will advance the design of the tunnel rehab from nominally 60% to nominally 90%; prepare the conceptual design(s) of the various "enabling projects" which are necessary to fortify the routes into and out of Sunnyside Yard during the continuous outages of ERT 1 and ERT 2. <ul style="list-style-type: none"> <li>Advance the design nominally 60% to nominally 90%</li> </ul>	<b>\$5,760,000</b>
<b>River-to-River Rail Resiliency Projects (R4). Long Island Rail Road. Amtrak.</b>	<b>\$40,000,000</b>

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<p>Begin Construction of the Queens Perimeter flood walls. Begin Construction of the West Side Yard flood walls. Continue design of the ERT Portal Flood Protection.</p> <ul style="list-style-type: none"> <li>• Award Queens Perimeter flood walls Design-Build contract - Nov 30.</li> <li>• Award Construction of the West Side Yard flood walls Design-Build - Nov 30.</li> </ul>	
<b>TOTAL SEGMENT 10 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$79,760,000</b>

# Segment 11: Penn Station Terminal



Segment 11 covers Penn Station New York and is owned by Amtrak, with train operations from Amtrak, Long Island Rail Road, and NJ TRANSIT.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$245 million on infrastructure investment in Segment 11 in federal fiscal year 2020. Amtrak plans to spend \$10 million on 6 capital renewal programs and \$22 million on 3 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$214 million to advance 2 special projects coordinated by NJ TRANSIT and Long Island Rail Road.

## FY20 Planned Expenditure in Segment 11

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$31,868,453</b>
Projects	\$21,737,688
Programs	\$10,130,765
<b>Special projects by coordinating agency</b>	<b>\$214,000,000</b>
Long Island Rail Road	\$213,000,000
NJ TRANSIT	\$1,000,000
<b>Total</b>	<b>\$245,868,453</b>

## Capital Renewal Highlights

In Segment 11, Amtrak plans to spend \$9.8 million of Long Island Rail Road's BCCs and \$22 million of its own BCCs to fund capital renewal work.

Of the \$31 million Amtrak plans to spend on capital renewal in this segment, \$8 million will be spent on the New York Track Program which includes direct fixation to Tracks 11 and 12, and replacing 1300 wood tie/timbers. Amtrak also plans to spend \$0.7 million on section switch replacement material at PSNY #43 substation. Amtrak also plans to continue the Penn Station infrastructure Renewal Project in FY20 and will spend \$15 million renewing two turnouts and Tracks 14 and 11. Amtrak will spend another \$5.9 million on two other Penn Station projects to replace 17 sectionalizing switches and continue design on the replacement of the existing SCADA (supervisory control and data acquisition) system.

## FY20 Capital Renewal Contribution

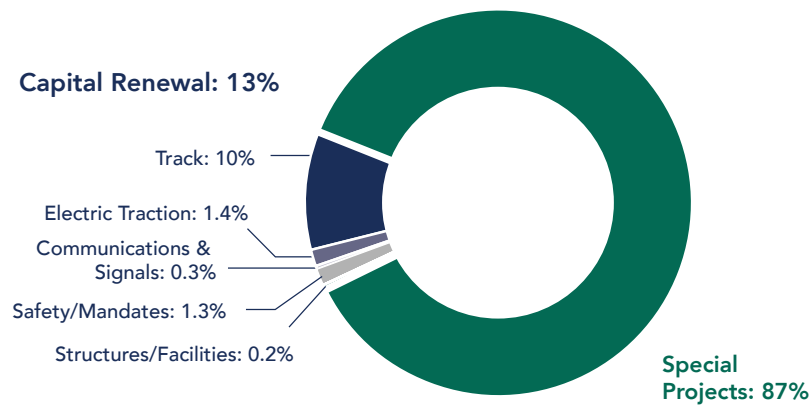
Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$31,868,453</b>
Amtrak	\$22,009,166
Long Island Rail Road	\$9,859,286
NJ TRANSIT	\$0
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$31,868,453</b>

## Special Project Highlights

NEC stakeholders plan to invest \$213 million toward Long Island Rail Road's Penn Station Projects. In FY20, Long Island Rail Road plans to complete a new entrance, escalators, and staircases at Penn Station.

NEC stakeholders also plan to spend \$1 million to continue design of NJ TRANSIT-coordinated projects at Penn Station.

## Planned Investment in Segment 11 by Category and Discipline



## FY20 Investments in Segment 11 (Penn Station Terminal)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Facilities Program. PG00039. C.EN.101845.</b>			<b>\$599,957</b>
<b>New York Stations Program</b>			<b>\$599,957</b>
New York Penn Station - Life Safety Facility Improvements	10/01/19 - 09/30/20	100 PCT	\$599,957
<b>New York Signals Program. PG00041. C.EN.101846.</b>			<b>\$122,134</b>
New York C&S Signal System Upgrades			\$122,134
<b>New York Structures Program. PG00042. C.EN.101847.</b>			<b>\$4,250</b>
<b>Contingency</b>			<b>\$2,984</b>
<b>New York Signal Bridge Program</b>			<b>\$1,266</b>
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$1,266
<b>New York Substations Program. PG00043. C.EN.101848.</b>			<b>\$771,373</b>
<b>New York Substations Program</b>			<b>\$771,373</b>
PSNY #43 - Section Switch Replacement Material	10/01/19 - 6/5/2020	17 EA	\$771,373
<b>New York Track Program. PG00044. C.EN.101849.</b>			<b>\$8,061,025</b>
<b>Contingency</b>			<b>\$6,460</b>
<b>New York Direct Fixation</b>			<b>\$6,513,820</b>
New York Penn Station - Track 11 Direct Fixation	02/28/20 - 04/09/20	580 EA	\$3,599,743
New York Penn Station - Track 12 Direct Fixation	01/10/20 - 02/24/20	30 EA	\$2,914,078
<b>New York Division Interlocking Steel</b>			<b>\$883,785</b>
New York Penn Station - Rail Replacement - Day Maintenance	10/01/19 - 09/30/20	3300 FT	\$132,540
New York Penn Station - Steel Interlocking - Day Maintenance	10/01/19 - 09/30/20	100 PCT	\$751,245
<b>New York Joint Elimination</b>			<b>\$1,292</b>
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$1,292
<b>New York Track Wood Tie/Timber</b>			<b>\$655,667</b>
PSNY - Spot Ties - Day Maintenance	10/01/19 - 09/30/20	1300 EA	\$655,667
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$539,702</b>
<b>Ansaldo Servier Migration</b>			<b>\$474,401</b>
Line 6 - New York Penn Station to CP216	N/A		\$2,497
Line 8 - New York Penn Station to CP12	N/A		\$471,904

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Bumper Stops</b>			<b>\$61,220</b>
New York Penn Station	N/A		\$61,220
<b>Interoperability - LIRR</b>			<b>\$4,081</b>
Gate & F Tower/Hudson Boundary Upgrades	N/A		\$4,081
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$32,324</b>
<b>AN Line - Production Units</b>			<b>\$32,324</b>
Zoo to JO Interlocking	03/20/20 - 06/05/20		\$32,324
<b>TOTAL SEGMENT 11 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$10,130,765</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Penn Station NY - Infrastructure Renewal Project. P000059. C.EN.101104.</b>	<b>\$15,829,033</b>
Renewal of the 435 Turnout, the 103 Turnout, timber renewal of the 547 and 549 Turnouts, renewal of Track 14 and Track 11	
<ul style="list-style-type: none"> <li>• Replace #103 (55 Hr Outages): 10/4/2019 - 10/21/2019</li> <li>• Replace #435 (55 Hr Outages): 10/25/2019 - 11/4/2019</li> <li>• Timber Renewal #547: 11/15/2019 - 11/18/2019</li> <li>• Timber Renewal #549: 11/22/2019 - 11/25/2019</li> <li>• PSNY Yard Track Rehab: 11/26/2019 - 1/9/2020</li> <li>• Track 14 Rehab: 1/10/2020 - 2/24/2020</li> <li>• Track 11 Rehab: 2/28/2020 - 4/9/2020</li> <li>• Close Out FY 20 Tasks: 4/10/2020 - 6/30/2020</li> </ul>	
<b>Penn Station NY Scada Phase II Project. P000060. C.EN.100081.</b>	<b>\$3,214,056</b>
Continue to develop Design Work Packages 2 and 3. Package 2 consists of system and software administration upgrades, Empire ventilation control upgrades, NY service building panel upgrades, and sump pump monitoring upgrades. Package 3 consists of PSNY substation panel upgrades, ERT portal panel upgrades, Brookfield ventilation control upgrades, and network architecture upgrades.	
<ul style="list-style-type: none"> <li>• N/A</li> </ul>	
<b>Penn Station NY Sectionalizing Project. P000037. C.EN.101783.</b>	<b>\$2,694,599</b>
Construction, testing/commissioning of replacement of all 17 switches on both Walkover 36 and Walkover 45 with 240VAC motor mechanisms and switches. Start replacement of 4000G, 6000G and 7000G switches at substation.	
<ul style="list-style-type: none"> <li>• Sectionalizing Switch Replacement WO 36: 10/1/2019 - 6/11/2020</li> <li>• Sectionalizing Switch Replacement WO 45: 10/1/2019 - 7/31/2020</li> <li>• Sectionalizing Switch Replacement Substation: 4/1/2020 - 5/21/2021</li> <li>• Close Out: 4/1/2020 - 6/30/2020</li> <li>• Sectionalizing Switch Replacement WO 18: 10/1/2020 - 6/28/2021</li> <li>• Sectionalizing Switch Replacement ERT: 10/1/2021 - 3/31/2022</li> </ul>	
<b>TOTAL SEGMENT 10 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	
<b>\$21,737,688</b>	

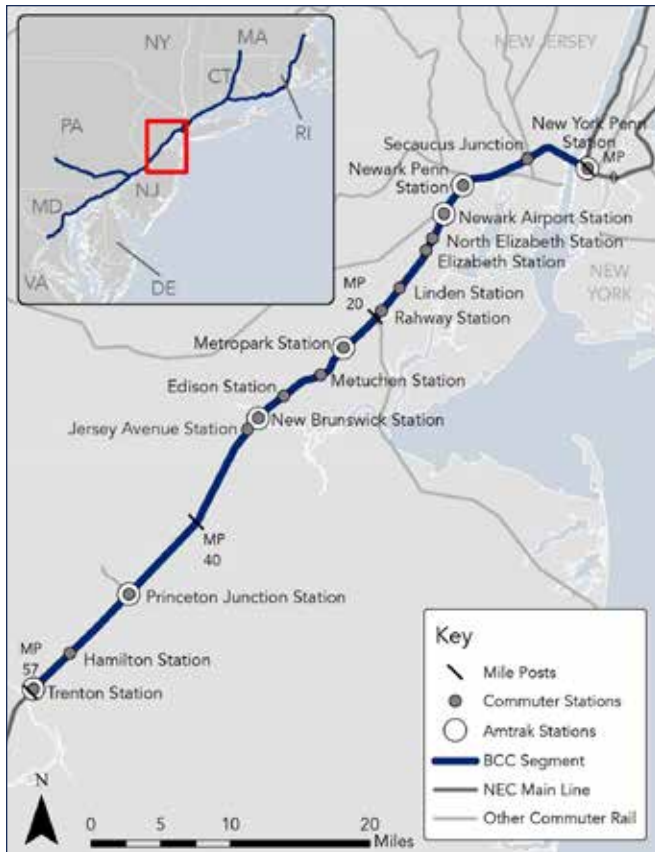
Segment 11 Investment Detail continued on next page &gt;&gt;&gt;

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Penn Station New York - LIRR Projects. Long Island Rail Road. Amtrak, NJ TRANSIT.</b>	<b>\$213,000,000</b>
Construction of New Entrance and new Elevator. Train Hall Renovation: Widening of 33rd Street corridor, heightened ceilings, wayside and lighting improvements, new finishes, expanded HVAC and improved retail spaces. Continue refurbishment of elevators and escalators. Staircase replacements.	
<ul style="list-style-type: none"> <li>• New Entrance &amp; New Elevator completion - Dec 30.</li> <li>• Escalator &amp; Elevator completion Sep 30.</li> <li>• Award of Train Hall Renovation Contract - Oct 1. Platform 11</li> <li>• Staircases completion - Sep 30.</li> </ul>	
<b>Penn Station New York - NJ TRANSIT Projects. NJ TRANSIT. Amtrak.</b>	<b>\$1,000,000</b>
Design of the relocation of the currently displayed Art is expected to continue. The design of the Unified Signage Program project will continue.	
<ul style="list-style-type: none"> <li>• Transit Arts Design Comp, Sep '19</li> <li>• Issue TA NTP, Jan 2020</li> </ul>	
<b>TOTAL SEGMENT 11 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$214,000,000</b>

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## Segment 12: Penn Station NY to Trenton, NJ



Segment 12 covers 57 miles from Penn Station New York to Trenton, NJ and is owned by Amtrak, with train operations from Amtrak and NJ TRANSIT.

### FY20 Planned Work Overview

NEC stakeholders plan to spend over \$310 million on infrastructure investment in Segment 12 in federal fiscal year 2020. Amtrak plans to spend \$51 million on 18 capital renewal programs and \$67 million on 7 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$191 million to advance 14 special projects coordinated by Amtrak and NJ TRANSIT.

### FY20 Planned Expenditure in Segment 12

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$118,439,987</b>
Projects	\$67,019,362
Programs	\$51,420,624
<b>Special projects by coordinating agency</b>	<b>\$191,861,981</b>
Amtrak	\$147,611,981
NJ TRANSIT	\$44,250,000
<b>Total</b>	<b>\$310,101,968</b>

## Capital Renewal Highlights

In Segment 12, Amtrak plans to spend \$91 million of NJ TRANSIT's BCCs and \$27 million of its own BCCs to fund capital renewal work.

Of the \$37 million Amtrak plans to spend on capital renewal programs in Segment 12, it will spend almost 1/3 (\$16 million) on the New York Track Program. Program highlights include replacing 10,150 wood tie/timbers and surfacing 115,000 feet of track. Other capital renewal program highlights include undergrade bridge upgrades at Hazelwood Ave and Parsonage Road, replacing 40,000 feet of rail from Ham to Midway, and track renewal on Track A at Newark Penn Station.

Capital renewal project highlights include spending over \$26 million to install catenary foundations and poles as part of the Clark to Ham Constant Tension Upgrade Project, \$8.5 million to finalize upgrades to the Metuchen Frequency Converter, and \$6 million to start construction associated with installing the New Hackensack Substation 42 control house.

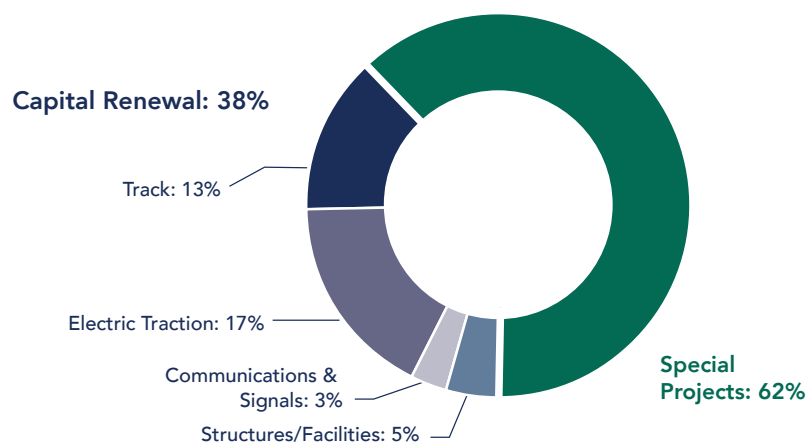
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$118,439,987</b>
Amtrak	\$27,310,461
NJ TRANSIT	\$91,129,522
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$118,439,987</b>

## Special Project Highlights

In FY20, almost \$70 million will be spent on construction of Moynihan Station Train Hall. Gateway partners will continue design and property acquisition preparation for the Hudson Tunnel project and Portal North Bridge, begin preliminary engineering for Sawtooth Bridge, and close out the Hudson Yards Concrete Casing project. Planned investment toward NJ TRANSIT-coordinated projects includes \$15 million to the Delco Lead project to create a safe haven storage facility to protect rolling stock from storm surge, \$10 million on design of the Elizabeth Station upgrade project, and \$8 million to continue construction at New Brunswick station.

## Planned Investment in Segment 12 by Category and Discipline



## FY20 Investments in Segment 12 (Penn Station NY to Trenton)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Catenary Program. PG00037. C.EN.101843.</b>			<b>\$1,306,257</b>
Contingency			\$86,301
<b>New York Catenary Pole Program</b>			<b>\$255,739</b>
Catenary Pole Replacements	08/03/20 - 09/30/20	20 EA	\$255,739
<b>New York Switch Heater Program</b>			<b>\$578,530</b>
Fair Interlocking - Switch Heaters Installation	10/01/19 - 12/05/19	100 PCT	\$224,984
Swift Interlocking - Switch Heaters Installation	05/01/20 - 07/30/20	1 EA	\$353,546
<b>New York Transmission Program</b>			<b>\$385,687</b>
Bergan - Section Break Upgrades - MP3.0	10/01/19 - 09/30/20	2 EA	\$385,687
<b>New York Communications Program. PG00038. C.EN.101844.</b>			<b>\$57,534</b>
New York Communications Program			\$57,534
	04/01/19 - 07/30/19		\$57,534
<b>New York Facilities Program. PG00039. C.EN.101845.</b>			<b>\$636,016</b>
Contingency			\$201,750
<b>Design</b>			<b>\$190,951</b>
Design - Facilities	10/01/19 - 09/30/20	100 PCT	\$190,951
<b>New York Stations Program</b>			<b>\$194,986</b>
MetroPark - Low Level Platform Replacement - MP23.2	01/01/20 - 02/28/20	100 PCT	\$194,986
<b>Project/Program Management</b>			<b>\$48,329</b>
<b>New York Signals Program. PG00041. C.EN.101846.</b>			<b>\$1,321,382</b>
Contingency			\$264,832
<b>New York C&amp;S Signal System Upgrades</b>			<b>\$705,147</b>
Adams - Event Recorder	10/01/19 - 09/30/20	1 EA	\$107,135
Code Relays	10/01/19 - 09/30/20	100 PCT	\$227,324
Delco Event Recorder	10/01/19 - 09/30/20	1 EA	\$107,135
Haynes Interlocking - West End LED Upgrades	10/01/19 - 09/30/20	100 PCT	\$263,553
<b>New York SCADA-RTU Upgrades</b>			<b>\$351,403</b>
Edison Interlocking - RTU Upgrade	10/01/19 - 09/30/19	1 EA	\$175,702
Menlo Interlocking - RTU Upgrade	10/01/19 - 09/30/19	1 EA	\$175,702
<b>New York Structures Program. PG00042. C.EN.101847.</b>			<b>\$8,008,814</b>
Contingency			\$1,685,987
<b>Design</b>			<b>\$307,071</b>
Design - Culvert Program	10/01/19 - 09/30/20	100 PCT	\$272,788
Design - Kearny, NJ - NJ Access Road	03/15/20 - 05/30/20	100 PCT	\$34,283

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Bridge Timber Replacement Program</b>			<b>\$171,416</b>
<b>New York Culvert Program</b>			<b>\$899,936</b>
New Jersey Line - Culvert-Culvert Replacement - MP27.24	10/01/19 - 09/30/20	1 EA	\$642,811
Two Mile Run - Culvert Extension	06/08/20 - 07/30/20	100 PCT	\$257,124
<b>New York Interlocking Lighting Program</b>			<b>\$214,270</b>
Adams - Interlocking Light Installation - MP35.4	07/01/20 - 09/30/20	100 PCT	\$214,270
<b>New York Movable Bridges Program</b>			<b>\$385,687</b>
Dock Bridge - Drives Upgrade	10/01/19 - 07/30/19	1 EA	\$214,270
Portal Bridge - Circuit Controllers Replacement - MP6.1	02/01/20 - 02/28/20	100 PCT	\$85,708
Portal Bridge - Operating Motor and Drive Replacement - MP6.1	12/01/19 - 12/30/19	100 PCT	\$85,708
<b>New York Retaining Walls Upgrade Program</b>			<b>\$1,285,622</b>
Hazelwood Ave - Retaining Wall	04/13/20 - 09/10/20	100 PCT	\$1,285,622
<b>New York Signal Bridge Program</b>			<b>\$715,093</b>
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$715,093
<b>New York Tunnel Program</b>			<b>\$857,082</b>
North River Tunnels - Tunnel Improvements	10/01/19 - 09/30/20	100 PCT	\$857,082
<b>New York Undergrade Bridge Program</b>			<b>\$1,417,609</b>
Hazelwood Ave - Bridge Upgrade	04/13/20 - 09/03/20	100 PCT	\$1,289,046
Parsonage Road - Strike Mitigation	03/16/20 - 04/16/20	100 PCT	\$128,562
<b>Project/Program Management</b>			<b>\$69,040</b>
<b>New York Substations Program. PG00043. C.EN.101848.</b>			<b>\$2,292,411</b>
<b>Contingency</b>			<b>\$526,822</b>
<b>New York Substations Program</b>			<b>\$1,765,588</b>
Bergan Interlocking - RTU Replacement	11/15/19 - 12/05/19	1 EA	\$308,549
Monmouth #36 - Control House Replacement	06/01/19 - 09/30/19	100 PCT	\$1,285,622
Waverly #40 - Battery Bank Tie Breaker Replacement	05/01/19 - 07/30/19	1 EA	\$171,416
<b>New York Track Program. PG00044. C.EN.101849.</b>			<b>\$15,991,269</b>
<b>Contingency</b>			<b>\$3,649,848</b>
<b>New York Direct Fixation</b>			<b>\$2,142,704</b>
Newark Penn Station - Track A Block Ties	10/01/19 - 11/21/20	1410 EA	\$2,142,704

Segment 12 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Division Interlocking Steel</b>			<b>\$1,342,519</b>
Adams - Rail Replacement - Day Maintenance	10/01/19 - 09/30/20	3300 FT	\$78,826
Adams - Rail Replacement - Night Maintenance	10/01/19 - 09/30/20	3300 FT	\$201,358
Adams - Steel Interlocking - Night Maintenance	10/01/19 - 09/30/20	100 PCT	\$285,408
Hunter - Rail Replacement - Day	10/01/19 - 09/30/20	3300 FT	\$222,828
Hunter - Steel Interlocking - Day Maintenance	10/01/19 - 09/30/20	100 PCT	\$158,560
Morrisville - Rail Replacement - Day Maintenance	10/01/19 - 09/30/20	3300 FT	\$76,623
Steel Interlocking - Maintenance Support	10/01/19 - 09/30/20	100 PCT	\$268,242
Union - Rail Replacement - Day Maintenance	10/01/19 - 09/30/20	3300 FT	\$50,674
<b>New York Drainage-Road Bed Improvements</b>			<b>\$505,678</b>
Ham to Fair Interlockings - Ditching	10/01/19 - 09/30/20	15840 FT	\$128,562
Menlo, Iselin, Ham Interlockings - Ditching	10/01/19 - 09/30/20	42240 FT	\$377,116
<b>New York Joint Elimination</b>			<b>\$1,012,954</b>
Adams - E/A Boutet Welding	10/01/19 - 09/30/20	300 EA	\$282,956
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$729,998
<b>New York Spot Surfacing</b>			<b>\$2,228,412</b>
Adams - Surfacing	10/01/19 - 09/30/20	26000 FT	\$985,644
Hunter - Surfacing - Night	10/01/19 - 09/30/20	26000 FT	\$985,644
Lane, Tracks 1,2,3 - Surfacing	10/01/19 - 09/30/20	63360 FT	\$257,124
<b>New York Spot Undercutting</b>			<b>\$69,040</b>
<b>New York Track Wood Tie/Timber</b>			<b>\$4,971,073</b>
Adams - Spot Ties - Day Maintenance	10/01/19 - 09/30/20	1300 EA	\$814,228
Adams - E/A Boutet Welding - Spot Ties	10/01/19 - 09/30/20	1300 EA	\$115,706
Adams - Spot Ties - Night Maintenance	10/01/19 - 09/30/20	1300 EA	\$437,112
Elmora to Iselin, A Track - Ties/Timbers	10/01/19 - 09/30/20	400 EA	\$214,270
Elmora to Roads, B Track - Ties/Timbers	10/01/19 - 09/30/20	350 EA	\$214,270
Hunter - Spot Ties - Day Maintenance	10/01/19 - 09/30/20	1300 EA	\$827,084
Lane - Ties/Timbers	10/01/19 - 09/30/20	1600 EA	\$1,028,498
Morrisville - Spot Ties - Day	10/01/19 - 09/30/20	1300 EA	\$792,801
Union - Spot Ties - Day	10/01/19 - 09/30/20	1300 EA	\$527,105
<b>Project/Program Management</b>			<b>\$69,040</b>
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$1,782,791</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$46,027</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
New York Division	N/A		\$46,027
<b>Ansaldo Servier Migration</b>			<b>\$771,485</b>
Line 1 - PHL 30th Street Station to and Including REA Interlocking	N/A		\$299,580
Line 7 - Hudson Interlocking to New York Penn Station	N/A		\$471,905
<b>Bumper Stops</b>			<b>\$61,220</b>
Newark Penn Station	N/A		\$61,220
<b>Burns Engineering Fixed Database Build</b>			<b>\$352,525</b>
New York Division	N/A		\$352,525
<b>Interoperability - NJT</b>			<b>\$142,351</b>
Cape/Hudson Boundary Upgrades	N/A	CPI	\$36,732
Graw/Union Boundary Upgrades	N/A		\$32,154
Jersey/Shore Boundary Upgrades	N/A	CPI	\$36,732
Newark/High Boundary Upgrades	N/A	CPI	\$36,732
<b>Redundant Transponders</b>			<b>\$409,183</b>
New York Division	N/A		\$409,183
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$67,512</b>
<b>System</b>			<b>\$67,512</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$67,512
<b>Fence Upgrades Program. PG00069. C.EN.101854.</b>			<b>\$1,837,812</b>
<b>Northeast Corridor</b>			<b>\$1,837,812</b>
Metuchen, NJ (MP 26.9 - MP 26.23)	06/08/20 - 07/31/20	4000 FT	\$1,185,682
Parsonage Road	05/04/20 - 06/05/20	2200 FT	\$652,130
<b>Production Concrete Tie/Timber Replacement Program. PG00067. C.EN.101870.</b>			<b>\$3,470,152</b>
<b>Northeast Corridor</b>			<b>\$3,470,152</b>
Portal to Allied, Track 2	03/02/20 - 06/05/20		\$2,351,401
West Fair to Ham, Track 4	01/13/20 - 02/27/20		\$1,118,751
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$3,116,041</b>
<b>AN Line</b>			<b>\$3,116,041</b>
MP 0.1-11.0	10/01/19 - 09/30/20	3.51 MI	\$600,085
MP 11.0-56.7	10/01/19 - 09/30/20	67.93 MI	\$2,515,956

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Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$2,996,458</b>
<b>AN Line - Production Units</b>			<b>\$2,996,458</b>
Dock Interlocking	11/11/19 - 07/02/20		\$1,874,408
Fair Interlocking - North High	05/26/20 - 06/04/20		\$595,496
General Tires Siding	07/06/20 - 07/09/20		\$77,235
Hunter Interlocking	11/04/19 - 11/07/19		\$211,584
Portal Bridge - East and West End - Track 2	10/01/19 - 09/30/20		\$237,735
<b>Rail Grinding Program. PG00064. C.EN.101794.</b>			<b>\$71,681</b>
<b>Northeast Corridor</b>			<b>\$71,681</b>
Grinding Ham to Midway Track 4	11/01/20 - 03/15/20		\$71,681
<b>Rail Replacement Program. PG00003. C.EN.101856.</b>			<b>\$3,562,440</b>
<b>Northeast Corridor</b>			<b>\$3,562,440</b>
Ham to Midway, Track 4 (40,000')	01/06/20 - 02/27/20	40000 FT	\$3,562,440
<b>Total Track Renewal Program. PG00061. C.EN.101871.</b>			<b>\$3,561,068</b>
<b>Northeast Corridor</b>			<b>\$3,561,068</b>
Newark Penn Station Track A	09/30/19 - 11/20/19		\$3,561,068
<b>Track Undercutting Program. PG00062. C.EN.100269.</b>			<b>\$558,168</b>
<b>County To Lincoln Track 2</b>			<b>\$558,168</b>
B&B Support	09/28/20 - 11/12/20		\$21,296
C&S Support	09/28/20 - 11/12/20		\$97,831
ET Support	09/28/20 - 11/12/20		\$7,422
Installation	09/28/20 - 11/12/20		\$406,945
T&E Support	09/28/20 - 11/12/20		\$24,674
<b>Turnout Renewal Program. PG00065. C.EN.101860.</b>			<b>\$782,821</b>
<b>Bergen #32A Turnout</b>			<b>\$782,821</b>
B&B Support	11/04/19 - 11/18/19	EA	\$13,465
C&S Support	11/04/19 - 11/18/19	EA	\$164,772
ET Support	11/04/19 - 11/18/19	EA	\$6,698

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Installation	11/04/19 - 11/18/19	EA	\$582,751
T&E Support	11/04/19 - 11/18/19	EA	\$15,133
<b>TOTAL SEGMENT 12 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$51,420,624</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Clark to Ham Constant Tension Upgrade Project. P000011. C.EN.101765.</b> Installation of catenary foundations and poles with the erection of temporary platforms at 2 NJT stations and other associated support. <ul style="list-style-type: none"> <li>Procurement: 6/1/2019 - 12/1/2022</li> <li>Design: 7/1/2019 - 1/1/2020</li> <li>Construction: 3/1/2020 - 3/1/2024</li> </ul>	<b>\$26,462,395</b>
<b>Dock Fender Replacement Project. P000128. C.EN.101867.</b> Start construction of the new composite fender system including navigation lighting main power cables. <ul style="list-style-type: none"> <li>Complete final design: 10/1/2018 - 12/31/2019</li> <li>Procure Contractor: 1/1/2020 - 4/1/2020</li> <li>Issue NTP to Contractor: 4/1/2020 - 6/31/2022</li> <li>Construction: 4/1/2020 - 6/23/2021</li> </ul>	<b>\$5,457,474</b>
<b>Fair Interlocking Renewal Project. P000026. C.EN.101277.</b> Removal and replacement of Switches 43 and 68 including 300 feet of track in Hill Yard as well as continued removal of fouled ballast and replacement of switch machines and switch heaters. <ul style="list-style-type: none"> <li>Replace #43 crossover: 9/23/2019 - 10/21/2019</li> <li>Switch Machine &amp; Heater Conversion - West End: 10/1/2019 - 11/15/2019</li> <li>Install new #68 turnout: 10/21/2019 - 11/4/2019</li> <li>Switch Machine &amp; Heater Conversion - East End: 11/15/2019 - 4/30/2020</li> </ul>	<b>\$5,249,119</b>
<b>Kearny to Waverly Transmission Tower Upgrade Project. P000036. C.EN.101787.</b> Obtain permits, procure contractor, complete construction, test/commission and closeout. <ul style="list-style-type: none"> <li>Project Management: 7/1/2019 - 12/17/2020</li> <li>Procurement: 9/2/2019 - 12/30/2019</li> <li>Construction Management: 9/2/2019 - 9/30/2020</li> <li>Construction: 1/1/2020 - 9/29/2020</li> </ul>	<b>\$9,610,399</b>
<b>Metuchen Frequency Converter - Equipment Upgrades Project. P000042. C.EN.101747.</b> Complete rotary frequency converter upgrades, provide the integration of HMI system and controls, replacement of brush holder and the installation of a fire suppression and dust collection systems. After physical completion continue to test, commission, accept and closeout the project. <ul style="list-style-type: none"> <li>Design: 8/1/2018 - 12/1/2019</li> <li>Construction Outage: 1/1/2020 - 4/30/2020</li> <li>Construction Closeout: 5/1/2020 - 7/1/2020</li> <li>Pre Construction: 9/15/2020 - 11/1/2019</li> </ul>	<b>\$8,046,872</b>

Segment 12 Investment Detail continued on next page >>>



Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>New Hackensack Substation 42 Control House Project. P000048. C.EN.101535.</b> Procure and award the construction contract, procure long lead components, review submittals, and start construction of site improvements including grounding and retaining walls. <ul style="list-style-type: none"> <li>Final Design: 1/2/2017 - 10/31/2019</li> <li>Project Management: 7/1/2019 - 10/31/2021</li> <li>ROW/Easements: 8/15/2019 - 11/13/2019</li> <li>Construction Management: 8/15/2019 - 8/1/2021</li> <li>Procurement: 11/13/2019 - 3/12/2020</li> <li>Construction: 3/12/2020 - 7/5/2021</li> </ul>	<b>\$5,623,665</b>
<b>Signal System Upgrade to 562 - County To Elmora Project. P000129. C.EN.101817.</b> Complete design, install express cable and signal power cable, begin installing houses and begin installing new interlocking signal heads (including "c lights"). <ul style="list-style-type: none"> <li>Design: 10/1/2018 - 8/2/2022</li> <li>Construction: 10/1/2018 - 7/4/2023</li> <li>Construction Management: 10/1/2018 - 7/31/2023</li> <li>Project Management: 10/1/2018 - 9/30/2023</li> </ul>	<b>\$6,569,439</b>
<b>TOTAL SEGMENT 12 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$67,019,362</b>
Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Delco Lead Project. NJ TRANSIT. Amtrak.</b> NJ Transit's Board of Directors are expected to award Contracts GC.01 and GC.02 and, NTP is anticipated to be issued for both contracts soon thereafter. <ul style="list-style-type: none"> <li>Board Approvals, Oct 2019</li> <li>Issue NTP's, Jan 2020</li> </ul>	<b>\$15,000,000</b>
<b>Elizabeth Station. NJ TRANSIT.</b> The design plans are expected to advance towards a 100% completion for this Design / Build Project. Other elements of the ongoing construction work will continue. <ul style="list-style-type: none"> <li>Complete 100% Design, Dec 2020.</li> </ul>	<b>\$10,000,000</b>
<b>Gateway: Harrison Fourth Track. Amtrak. NJ TRANSIT, Gateway Development Corporation, Port Authority of NY &amp; NJ.</b> Complete 30% preliminary design and process NEPA documents for approval with FRA. <ul style="list-style-type: none"> <li>NTP to be issued: Oct 2019</li> <li>30% Design package to be submitted: March 2020.</li> </ul>	<b>\$750,000</b>
<b>Gateway: Hudson Tunnel Project. Amtrak. NJ TRANSIT, Gateway Development Corporation, Port Authority of NY &amp; NJ.</b> Completion of PE and NEPA, supplemental geotechnical borings, contract packaging and risk analysis, commencement of final design of interior tunnel systems, property acquisition, start of construction of Hudson Yards Concrete Casing Section 3 Early Work/Utility Relocation (HYCC-3). <ul style="list-style-type: none"> <li>NTP to be issued for final design: Jan 2020</li> <li>NTP to be issued for HYCC-3 Early Work/Utility Relocation: Jan 2020</li> </ul>	<b>\$31,692,000</b>

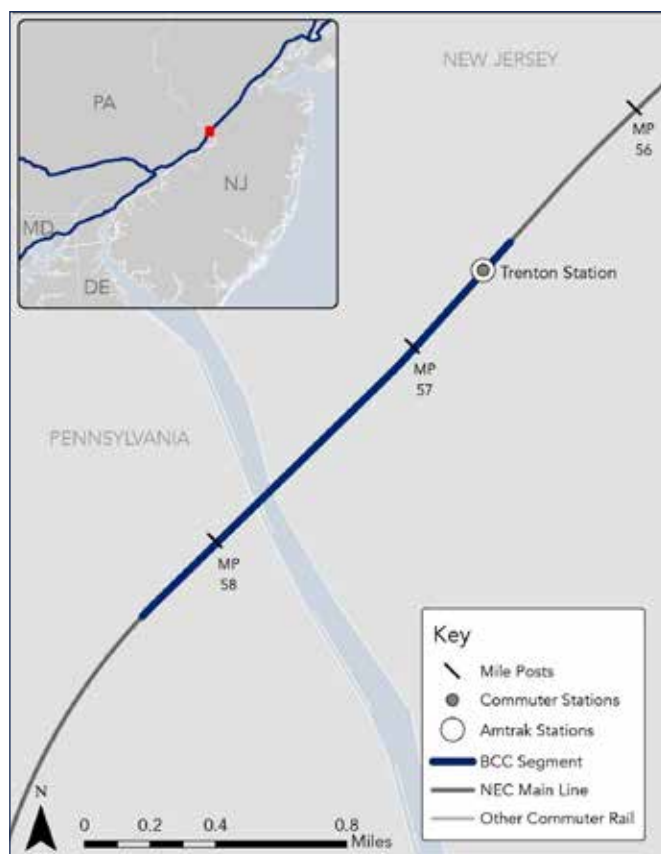
Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Gateway: Hudson Yards Concrete Casing. Amtrak. Long Island Rail Road, Gateway Development Corporation, Port Authority of NY &amp; NJ.</b>	<b>\$6,475,805</b>
<p>Ongoing costs associated with completion of HYCC-1, including returning the LIRR Maintenance of Equipment (MOE) Building to service: project management; LIRR Force Account labor; and settlement costs related to ongoing litigation over the delay of the LIRR MOE building.</p> <ul style="list-style-type: none"> <li>Settlement of litigation claim: estimated May 2020.</li> <li>Project close out: June 2020.</li> </ul>	
<b>Gateway: NJ TRANSIT Storage Yard. NJ TRANSIT. Amtrak, Gateway Development Corporation, Port Authority of NY &amp; NJ.</b>	<b>\$150,000</b>
<p>Planning study currently in progress, investigating NJT future needs and potential rail yard areas in northern NJ. Study expected to be complete in FY 20.</p> <ul style="list-style-type: none"> <li>Final report anticipated January 2020.</li> </ul>	
<b>Gateway: Portal North Bridge. NJ TRANSIT. Amtrak, Gateway Development Corporation, Port Authority of NY &amp; NJ.</b>	<b>\$3,000,000 (NJT)</b> <b>\$26,402,509 (Amtrak)</b>
<p>Design activities will continue with the finalization of the plans and specifications. Labor Clearance and Division of Work meetings will continue with Amtrak. Preparations will continue to hold a Contractor Outreach event as part of a Special Prequalification initiative to procure the services of the next contractor. Property Acquisition activities will continue with the onset of negotiations with various property owners to secure temporary and permanent easements.</p> <ul style="list-style-type: none"> <li>Outreach Event: 1st QTR CY 2020</li> <li>Issue IFB Package: 2nd QTR CY 2020</li> <li>Award Contract: 4th QTR CY 2020</li> <li>Issue Notice to Proceed (NTP): 1st QTR CY 2021</li> </ul>	
<b>Gateway: Sawtooth Bridge. Amtrak. NJ TRANSIT, Gateway Development Corporation, Port Authority of NY &amp; NJ.</b>	<b>\$7,091,667</b>
<p>Commencement of preliminary engineering of the Sawtooth Bridge Replacement Project.</p> <ul style="list-style-type: none"> <li>NTP for P.E. contract to be issued: Dec 2019</li> </ul>	
<b>Moynihan Station (Phase 2). Amtrak. Long Island Rail Road, Empire State Development Corporation, Port Authority of NY &amp; NJ, US Postal Service.</b>	<b>\$69,600,000</b>
<p>Construction of the Moynihan Train Hall will proceed toward completion during FY2020. The construction of Amtrak's back of house facilities and the fit-out and furnishings of all spaces, including systems and customer amenities, is targeted for a fourth quarter CY2020 completion.</p> <ul style="list-style-type: none"> <li>Amtrak Back of House Construction Complete Sep 2020.</li> </ul>	
<b>New Brunswick Station. NJ TRANSIT. Amtrak.</b>	<b>\$8,000,000</b>
<p>Rehabilitation of the existing Elevator will continue, in addition to the replacement of the Escalator. Construction of the new Walkway Overpass is expected to get underway.</p>	

Segment 12 Investment Detail continued on next page &gt;&gt;&gt;

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<ul style="list-style-type: none"> <li>Complete Elevator: Aug 2020</li> <li>Issue Escalator NTP: Nov 2019</li> <li>Issue Overpass NTP: Mar 2020</li> </ul>	
<b>New Jersey HSR Improvement Program. Amtrak. NJ TRANSIT.</b>	<b>\$4,700,000</b>
<p>Removal of catenary assets retired by the construction performed under the NJ High Speed Rail Improvement Project, including catenary structures, cat, body and steady spans, aerial signal power line. Final punch list and close out of project tasks. Program management, construction management and procurement services in support of the Project.</p> <ul style="list-style-type: none"> <li>Complete removal of retired catenary structures: Sep 2020</li> </ul>	
<b>Newark Penn Station Platform Rehabilitation. Amtrak. NJ TRANSIT.</b>	<b>\$700,000 (Amtrak) \$200,000 (NJT)</b>
<p>Structural movement Assessment: The Structural Movement assessment will also determine how to stabilize the structure. Design Of platforms: Design for full depth replacement and partial replacement of high level platform. Execution of FRA Grant Agreement: Coordination among Amtrak, FRA, and NJ TRANSIT is expected to result in a finalized grant agreement by April 2020 for Platform D rehabilitation.</p> <ul style="list-style-type: none"> <li>Structural movement Study 100%: January 2020</li> <li>Procurement for Design of platforms: February 2020</li> <li>NTP Design of platforms: April 2020</li> <li>Execute grant agreement (Platform D): April 2020</li> <li>30% Design: June 2020</li> <li>60% Design: September 2020</li> </ul>	
<b>NJ TRANSITGRID. NJ TRANSIT. Amtrak.</b>	<b>\$7,500,000</b>
<p>Central Power Plant Project: The Design-Build contract is expected to be executed with construction beginning in November 2019. NTP for the DBOM contract is to be issued in November 2019. Distributed Generation Project: The DG contract will be executed in August, 100% design will be completed in March 2020 with NTP to be issued in April 2020.</p> <ul style="list-style-type: none"> <li>CPP D/B Contract Executed: Oct 2019</li> <li>CPP Begin Construction: Nov 2019</li> <li>DBOM Contract NTP: Nov 2019</li> <li>DG Begin Construction: Apr 2020</li> <li>DG Complete Design: Apr 2020</li> </ul>	
<b>Princeton Junction Station. NJ TRANSIT. Amtrak.</b>	<b>\$600,000</b>
<p>This project is finally anticipated to begin construction during the FY 20 fiscal year.</p> <ul style="list-style-type: none"> <li>Issue NTP: Oct 2019</li> <li>Project Complete: Feb 2020</li> <li>Closeout Complete: Jun 2020</li> </ul>	
<b>TOTAL SEGMENT 12 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$191,861,981</b>

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## Segment 13: Trenton to Morris



Segment 13 covers 1 mile from Trenton, NJ to Morris in Pennsylvania and is owned by Amtrak, with train operations from Amtrak, NJ TRANSIT, and SEPTA.

### FY20 Planned Work Overview

NEC stakeholders plan to spend almost \$3 million on infrastructure investment in Segment 13 in federal fiscal year 2020. Amtrak plans to spend \$2 million on 12 capital renewal programs and \$1 million on 1 capital renewal project in this segment.

### FY20 Planned Expenditure in Segment 13

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$3,031,415</b>
Projects	\$964,217
Programs	\$2,067,198
<b>Special projects by coordinating agency</b>	<b>\$0</b>
<b>Total</b>	<b>\$3,031,415</b>

## Capital Renewal Highlights

In Segment 13, Amtrak plans to spend \$3 million of its own BCCs to fund capital renewal work.

Of the \$3 million Amtrak plans to spend on capital renewal in this segment, \$1 million is budgeted to continue design of the Washington Avenue Bridge Replacement Project. Other capital renewal highlights include plans to spend \$0.4 million on a switch machine upgrade at Morris Interlocking, \$0.7 million on turnout renewal at Morris interlocking, and \$0.3 million on wood tie/timber replacement at Fair Interlocking.

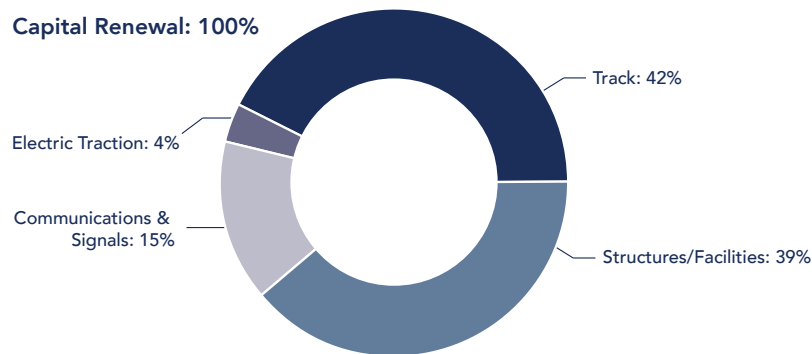
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$3,031,415</b>
Amtrak	\$3,031,415
NJ TRANSIT	\$0
SEPTA	\$0
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$3,031,415</b>

## Special Project Highlights

There are no special projects in Segment 13 with planned work in FY20.

## Planned Investment in Segment 13 by Category and Discipline



## FY20 Investments in Segment 13 (Trenton to Morris)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Catenary Program. PG00037. C.EN.101843.</b>			<b>\$9,639</b>
Contingency			\$2,410
<b>New York Catenary Pole Program</b>			<b>\$7,229</b>
Catenary Pole Replacements	08/03/20 - 09/30/20	20 EA	\$7,229
<b>New York Communications Program. PG00038. C.EN.101844.</b>			<b>\$1,607</b>
<b>New York Communications Program</b>			<b>\$1,607</b>
	04/01/19 - 07/30/19		\$1,607
<b>New York Facilities Program. PG00039. C.EN.101845.</b>			<b>\$12,451</b>
Contingency			\$5,703
<b>Design</b>			<b>\$5,398</b>
Design - Facilities	10/01/19 - 09/30/20	100 PCT	\$5,398
<b>Project/Program Management</b>			<b>\$1,349</b>
<b>New York Signals Program. PG00041. C.EN.101846.</b>			<b>\$416,741</b>
Contingency			\$7,486
<b>New York C&amp;S Signal System Upgrades</b>			<b>\$409,254</b>
Code Relays	10/01/19 - 09/30/20	100 PCT	\$6,426
Morris Interlocking - Switch Machine Upgrade	10/01/19 - 09/30/19	4 EA	\$402,828
<b>New York Structures Program. PG00042. C.EN.101847.</b>			<b>\$206,197</b>
Contingency			\$47,745
<b>Design</b>			<b>\$7,711</b>
Design - Culvert Program	10/01/19 - 09/30/20	100 PCT	\$7,711
<b>New York Signal Bridge Program</b>			<b>\$20,250</b>
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$20,250
<b>New York Undergrade Bridge Program</b>			<b>\$128,562</b>
Washington Street - Track 2 Bearing Rehab - MP58.03	04/01/20 - 04/15/20	100 PCT	\$128,562
<b>Project/Program Management</b>			<b>\$1,928</b>
<b>New York Substations Program. PG00043. C.EN.101848.</b>			<b>\$100,601</b>
Contingency			\$14,892
<b>New York Substations Program</b>			<b>\$85,708</b>
Morrisville #34 - Battery Bank Tie Breaker Replacement	10/01/19 - 09/30/20	100 PCT	\$85,708

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
New York Track Program. PG00044. C.EN.101849.			\$178,324
Contingency			\$103,359
New York Division Interlocking Steel			\$7,583
Steel Interlocking - Maintenance Support	10/01/19 - 09/30/20	100 PCT	\$7,583
New York Drainage-Road Bed Improvements			\$42,854
Fair Interlockings to Delaware Bridge - Ditching	10/01/19 - 09/30/20	5280 FT	\$42,854
New York Joint Elimination			\$20,673
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$20,673
New York Spot Undercutting			\$1,928
Project/Program Management			\$1,928

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.			\$31,301
Alstom WIU to MicroLok Conversion			\$1,285
New York Division	N/A		\$1,285
Ansaldo Servier Migration			\$8,484
Line 1 - PHL 30th Street Station to and Including REA Interlocking	N/A		\$8,484
Burns Engineering Fixed Database Build			\$9,965
New York Division	N/A		\$9,965
Redundant Transponders			\$11,567
New York Division	N/A		\$11,567
Communications System Upgrades Program. PG00083. C.EN.101857.			\$1,908
System			\$1,908
Washington to New York - Redundant Communications Cable Installation	N/A		\$1,908
Production High Speed Surfacing Program. PG00060. C.EN.101855.			\$88,086
AN Line			\$88,086
MP 56.7-58.3	10/01/19 - 09/30/20	4.54 MI	\$88,086
Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.			\$314,020
AN Line - Production Units			\$314,020
Fair Interlocking - Track 0	05/04/20 - 05/21/20		\$311,833
General Tires Siding	07/06/20 - 07/09/20		\$2,187

Segment 13 Investment Detail continued on next page &gt;&gt;&gt;



Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Turnout Renewal Program. PG00065. C.EN.101860.			\$706,325
Morris Interlocking			\$706,325
Subgrade Replacement	11/22/19 - 12/16/19		\$706,325
<b>TOTAL SEGMENT 13 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$2,067,198</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
Washington Ave. Bridge Replacement Project. P000132. C.EN.101586.	\$964,217
Develop a design scope document and procure a design consultant to perform preliminary engineering.	
<ul style="list-style-type: none"> <li>• Project Management: 8/8/2019 - 6/28/2024</li> <li>• Preliminary Design: 1/2/2020 - 12/31/2020</li> </ul>	
<b>TOTAL SEGMENT 13 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$964,217</b>

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## Segment 27: Spuyten Duyvil to PSNY



Segment 27 covers nearly 11 miles from Spuyten Duyvil, NY to Penn Station New York and is owned by Amtrak, with train operations from Amtrak only.

### FY20 Planned Work Overview

NEC stakeholders plan to spend over \$16 million on infrastructure investment in Segment 27 in federal fiscal year 2020. Amtrak plans to spend \$3 million on 9 capital renewal programs and \$13 million on 2 capital renewal projects in this segment.

### FY20 Planned Expenditure in Segment 27

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$16,388,033</b>
Projects	\$13,168,864
Programs	\$3,219,169
<b>Special projects by coordinating agency</b>	<b>\$0</b>
<b>Total</b>	<b>\$16,388,033</b>

Capital Renewal Highlights

In Segment 27, Amtrak plans to spend \$1.7 million of its own BCCs and \$14.7 million of its own capital above BCCs to fund capital renewal work.

Of the \$16 million Amtrak plans to spend on capital renewal in this segment, \$1 million will go toward the New York Tunnel Program which includes the Empire, Long Island City, and 1st Avenue Tunnels. Most of Amtrak’s planned capital renewal spending in this segment (almost \$12 million) will be on the Spuyten Duyvil Fenders System Upgrades Project. In FY20 Amtrak will spend \$12 million to start construction. Amtrak also plans to spend \$1.4 million to continue design and start construction on the Empire Line Lighting Upgrade Project.

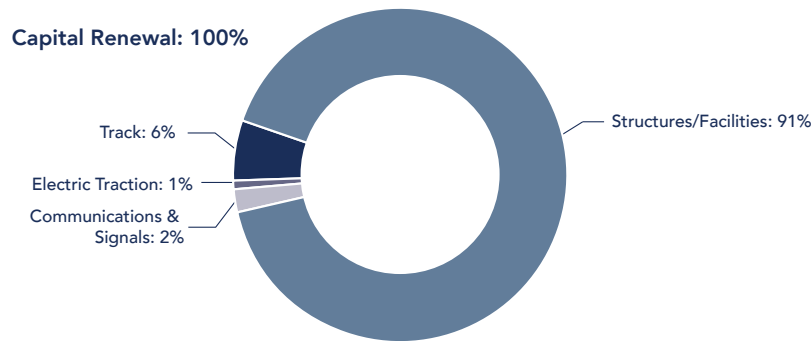
FY20 Capital Renewal Contribution

Contribution Type	Amount
Baseline Capital Charges	\$1,732,212
Amtrak	\$1,732,212
Above BCC	\$14,655,821
Amtrak	\$14,655,821
Capital Renewal Total	\$16,388,033

Special Project Highlights

There are no special projects in Segment 27 with planned work in FY20.

Planned Investment in Segment 27 by Category and Discipline



## FY20 Investments in Segment 27 (Spuyten Duyvil to PSNY)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
New York Catenary Program. PG00037. C.EN.101843.			\$65,064
Contingency			\$16,266
New York Catenary Pole Program			\$48,798
Catenary Pole Replacements	08/03/20 - 09/30/20	20 EA	\$48,798
New York Communications Program. PG00038. C.EN.101844.			\$10,844
New York Communications Program			\$10,844
	04/01/19 - 07/30/19		\$10,844
New York Facilities Program. PG00039. C.EN.101845.			\$84,041
Contingency			\$38,496
Design			\$36,436
Design - Facilities	10/01/19 - 09/30/20	100 PCT	\$36,436
Project/Program Management			\$9,109
New York Signals Program. PG00041. C.EN.101846.			\$93,909
Contingency			\$50,533
New York C&S Signal System Upgrades			\$43,376
Code Relays	10/01/19 - 09/30/20	100 PCT	\$43,376
New York Structures Program. PG00042. C.EN.101847.			\$1,689,663
Contingency			\$322,277
Design			\$266,322
Design - Culvert Program	10/01/19 - 09/30/20	100 PCT	\$52,051
Design - St Clair Viaduct	04/20/20 - 06/04/20	100 PCT	\$214,270
New York Bridge Timber Replacement Program			\$94,279
Spuyten Duyvil - Machine Timber Replacement - MP8.5	05/01/20 - 06/30/20	20 EA	\$94,279
New York Signal Bridge Program			\$136,690
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$136,690
New York Tunnel Program			\$857,082
Empire Tunnel - Tunnel Improvements	10/01/19 - 09/30/20	100 PCT	\$857,082
Project/Program Management			\$13,013
New York Substations Program. PG00043. C.EN.101848.			\$100,524
Contingency			\$100,524
New York Track Program. PG00044. C.EN.101849.			\$914,419
Contingency			\$697,670

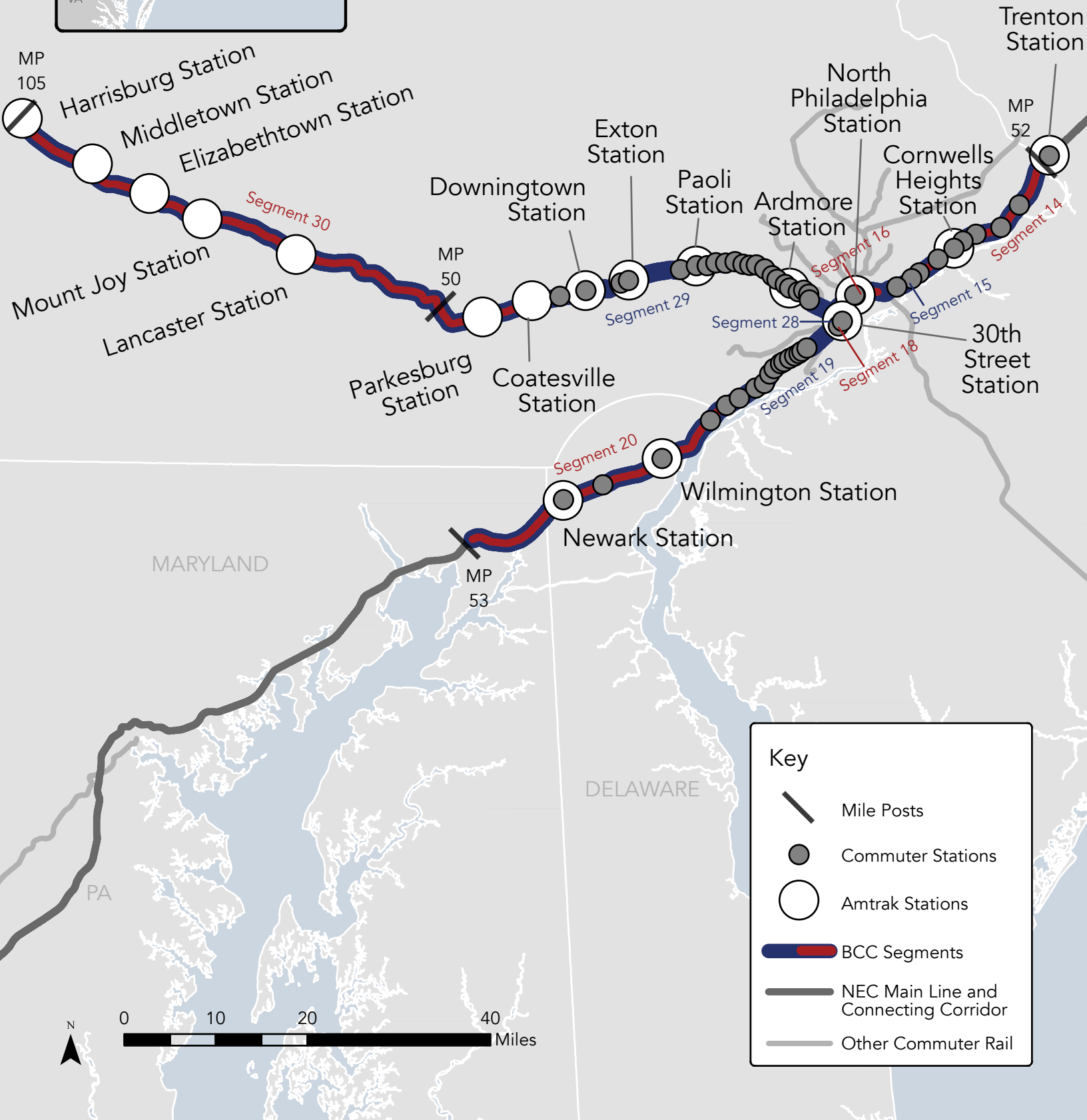
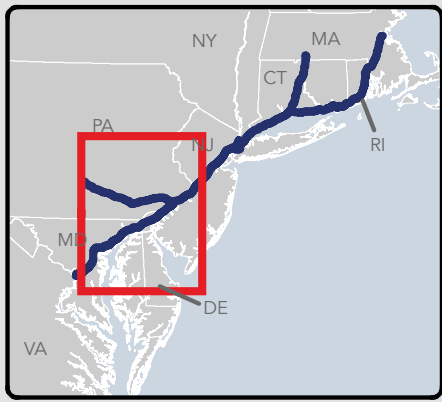
Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>New York Division Interlocking Steel</b>			<b>\$51,184</b>
Steel Interlocking - Maintenance Support	10/01/19 - 09/30/20	100 PCT	\$51,184
<b>New York Joint Elimination</b>			<b>\$139,540</b>
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$139,540
<b>New York Spot Undercutting</b>			<b>\$13,013</b>
<b>Project/Program Management</b>			<b>\$13,013</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$154,019</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$8,675</b>
New York Division	N/A		\$8,675
<b>Burns Engineering Fixed Database Build</b>			<b>\$67,266</b>
New York Division	N/A		\$67,266
<b>Redundant Transponders</b>			<b>\$78,077</b>
New York Division	N/A		\$78,077
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$106,684</b>
<b>New York Division</b>			<b>\$106,684</b>
Communications Equipment House Replacements	N/A		\$106,684
<b>TOTAL SEGMENT 27 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$3,219,169</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Empire Line Lighting Upgrade Project . P000136. C.EN.100732.</b>	<b>\$1,424,898</b>
The project will progress the design and secure a contractor to start the construction which will continue into FY21. There will also be Project Management and Construction management support of the project.	
<b>Spuyten Duyvil Fenders System Upgrades Project. P000049. C.EN.101791.</b>	<b>\$11,743,966</b>
Procure and award construction contract; start construction; remove existing timber fenders; install a new concrete and steel fender with new navigation lighting and new main power cables.	
<ul style="list-style-type: none"> <li>Procure Contractor: 7/16/2019 - 10/1/2019</li> <li>Issue NTP for construction: 10/1/2019 - 10/1/2019</li> <li>Project Close-Out: 7/1/2020 - 6/30/2020</li> </ul>	
<b>TOTAL SEGMENT 27 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$13,168,864</b>

## FY20 Investment Detail: Mid-Atlantic North (Amtrak-owned)

BCC Segment	Owner	Operator(s)	See Page
14. Morris to Holmes	Amtrak	Amtrak, SEPTA	116
15. Holmes to Shore	Amtrak	Amtrak, SEPTA	122
16. Shore to Girard	Amtrak	Amtrak, NJT, SEPTA	128
17. Girard to Philadelphia 30th Street	Amtrak	Amtrak, NJT	134
18. Philadelphia 30th Street to Arsenal	Amtrak	Amtrak	140
19. Arsenal to Marcus Hook	Amtrak	Amtrak, SEPTA	144
20. Marcus Hook to Bacon	Amtrak	Amtrak, SEPTA (on behalf of DelDOT)	152
28. 30th St Station to 36th St	Amtrak	Amtrak	160
29. 36th St to Thorndale	Amtrak	Amtrak, SEPTA	164
30. Thorndale to Harrisburg	Amtrak	Amtrak	172





## Segment 14: Morris to Holmes



Segment 14 covers nearly 19 miles from Morris to Holmes in Pennsylvania and is owned by Amtrak, with train operations from Amtrak and SEPTA.

### FY20 Planned Work Overview

NEC stakeholders plan to spend almost \$8 million on infrastructure investment in Segment 14 in federal fiscal year 2020. Amtrak plans to spend \$8 million on 13 capital renewal programs.

### FY20 Planned Expenditure in Segment 14

Investment Category	Amount
Capital renewal by type	\$7,899,034
Projects	\$0
Programs	\$7,899,034
Special projects by coordinating agency	\$0
<b>Total</b>	<b>\$7,899,034</b>

## Capital Renewal Highlights

In Segment 14, Amtrak plans to spend \$1 million of SEPTA's BCCs and \$7 million of its own BCCs to fund capital renewal work.

Of the almost \$8 million Amtrak plans to spend on capital renewal in this segment, almost \$2 million will be spent on the Track Program through which Amtrak will weld over 1,000 joints. Amtrak plans to spend \$1 million on high speed surfacing over 30 miles and \$1 million to replace wood tie/timbers at five locations. Amtrak also plans to service and possibly replace 4 transformers at Grundy #33 substation.

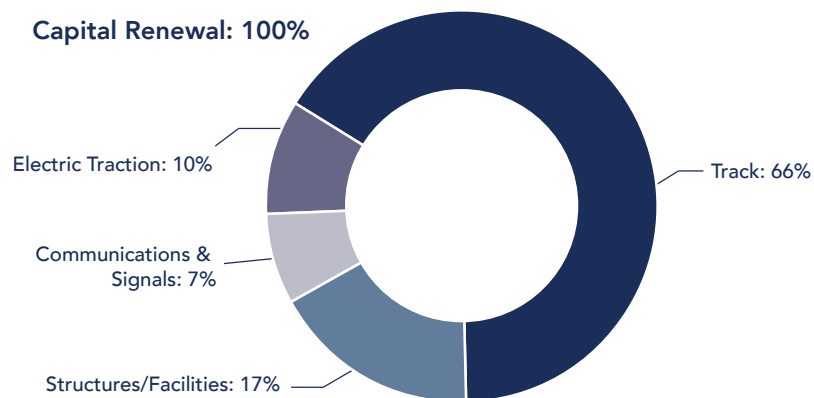
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$7,899,034</b>
Amtrak	\$6,924,583
SEPTA	\$974,451
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$7,899,034</b>

## Special Project Highlights

There are no special projects in Segment 14 with planned work in FY20.

## Planned Investment in Segment 14 by Category and Discipline



## FY20 Investments in Segment 14 (Morris to Holmes)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Track Program. PG00020. C.EN.101828.</b>			<b>\$264,400</b>
<b>Mid-Atlantic North Concrete Tie Replacement</b>			<b>\$84,312</b>
AN Line - MP76.0/77.2		28 EA	\$84,312
<b>Mid-Atlantic North Insulated Joint Replacement</b>			<b>\$22,513</b>
AN Line - MP76.0/77.2		2.1 EA	\$22,513
<b>Mid-Atlantic North Joint Elimination</b>			<b>\$33,270</b>
AN Line - MP76.0/77.2		5.8 EA	\$33,270
<b>Mid-Atlantic North Spot Surfacing</b>			<b>\$50,310</b>
AN Line - MP76.0/77.2		1204 FT	\$50,310
<b>Mid-Atlantic North Spot Undercutting</b>			<b>\$14,753</b>
AN Line - MP76.0/77.2		0 MI	\$14,753
<b>Mid-Atlantic North Steel Interlocking Renewal</b>			<b>\$37,156</b>
Steel Interlocking Renewal - AN Line - MP76.0/77.2			\$37,156
<b>Mid-Atlantic North Track Wood Tie/Timber Replacement</b>			<b>\$22,086</b>
AN Line - MP76.0/77.2	07/27/20 - 08/02/20	23.9 EA	\$22,086
<b>New York Catenary Program. PG00037. C.EN.101843.</b>			<b>\$113,863</b>
<b>Contingency</b>			<b>\$28,466</b>
<b>New York Catenary Pole Program</b>			<b>\$85,397</b>
Catenary Pole Replacements	08/03/20 - 09/30/20	20 EA	\$85,397
<b>New York Communications Program. PG00038. C.EN.101844.</b>			<b>\$18,977</b>
<b>New York Communications Program</b>			<b>\$18,977</b>
	04/01/19 - 07/30/19		\$18,977
<b>New York Facilities Program. PG00039. C.EN.101845.</b>			<b>\$147,072</b>
<b>Contingency</b>			<b>\$67,369</b>
<b>Design</b>			<b>\$63,763</b>
Design - Facilities	10/01/19 - 09/30/20	100 PCT	\$63,763
<b>Project/Program Management</b>			<b>\$15,941</b>
<b>New York Signals Program. PG00041. C.EN.101846.</b>			<b>\$164,342</b>
<b>Contingency</b>			<b>\$88,433</b>
<b>New York C&amp;S Signal System Upgrades</b>			<b>\$75,908</b>
Code Relays	10/01/19 - 09/30/20	100 PCT	\$75,908
<b>New York Structures Program. PG00042. C.EN.101847.</b>			<b>\$1,225,605</b>
<b>Contingency</b>			<b>\$563,985</b>

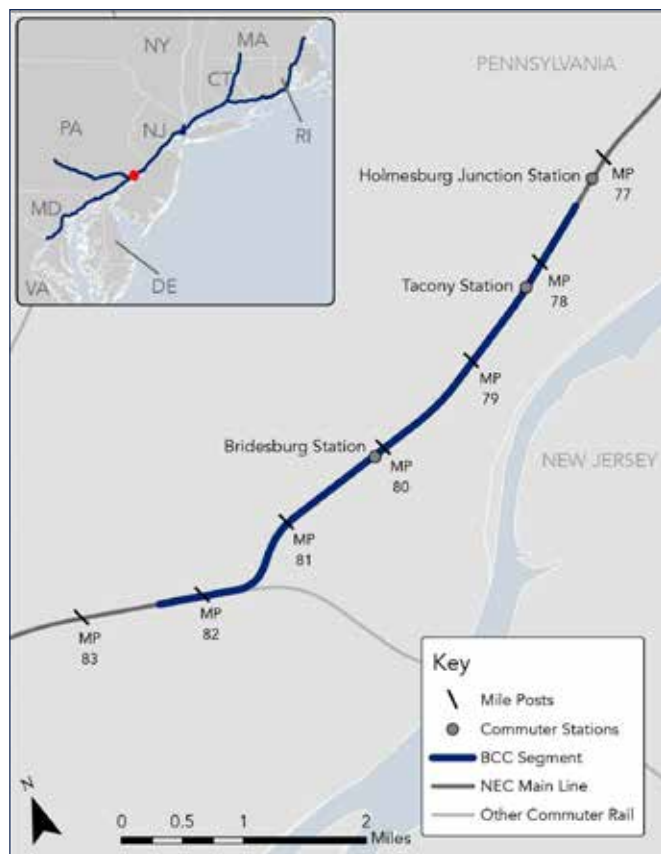
Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Design</b>			<b>\$91,090</b>
Design - Culvert Program	10/01/19 - 09/30/20	100 PCT	\$91,090
<b>New York Signal Bridge Program</b>			<b>\$419,195</b>
New Jersey Line - Signal Bridge Fall Protection - MP64.90	10/01/19 - 12/15/19	1 EA	\$179,987
Signal Bridge	04/13/20 - 09/30/20	100 PCT	\$239,208
<b>New York Undergrade Bridge Program</b>			<b>\$128,562</b>
Jefferson Street - Bridge Rehab - MP66.22	10/01/19 - 11/30/19	100 PCT	\$128,562
<b>Project/Program Management</b>			<b>\$22,773</b>
<b>New York Substations Program. PG00043. C.EN.101848.</b>			<b>\$647,313</b>
<b>Contingency</b>			<b>\$175,918</b>
<b>New York Substations Program</b>			<b>\$471,395</b>
Grundy #33 - Service and Potential Transformer Replacement	10/01/19 - 10/31/19	4 EA	\$128,562
Morris to Grundy - Signal Line Upgrades	04/01/20 - 06/30/20	4 EA	\$342,833
<b>New York Track Program. PG00044. C.EN.101849.</b>			<b>\$1,985,920</b>
<b>Contingency</b>			<b>\$1,220,923</b>
<b>New York Division Interlocking Steel</b>			<b>\$89,572</b>
Steel Interlocking - Maintenance Support	10/01/19 - 09/30/20	100 PCT	\$89,572
<b>New York Joint Elimination</b>			<b>\$244,194</b>
Joint Elimination Welding - Production	10/01/19 - 09/30/20	1040 EA	\$244,194
<b>New York Spot Undercutting</b>			<b>\$22,773</b>
<b>New York Track Wood Tie/Timber</b>			<b>\$385,687</b>
Grundy - Ties/Timbers	10/01/19 - 09/30/20	600 EA	\$385,687
<b>Project/Program Management</b>			<b>\$22,773</b>
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$378,435</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$15,182</b>
New York Division	N/A		\$15,182
<b>Ansaldo Servier Migration</b>			<b>\$100,214</b>
Line 1 - PHL 30th Street Station to and Including REA Interlocking	N/A		\$100,214

Segment 14 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Burns Engineering Fixed Database Build</b>			<b>\$117,716</b>
New York Division	N/A		\$117,716
<b>Interoperability - SEPTA</b>			<b>\$8,689</b>
Zoo/Gerard Boundary Upgrades	N/A		\$8,689
<b>Redundant Transponders</b>			<b>\$136,635</b>
New York Division	N/A		\$136,635
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$22,544</b>
<b>System</b>			<b>\$22,544</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$22,544
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$1,241,137</b>
<b>AN Line</b>			<b>\$1,241,137</b>
MP 58.3-76.0	10/01/19 - 09/30/20	26.68 MI	\$974,451
MP 76.0-82.1	10/01/19 - 09/30/20	4.99 MI	\$266,686
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$1,068,694</b>
<b>AN Line - Production Units</b>			<b>\$1,068,694</b>
Croy Industrial Siding	07/13/20 - 07/16/20		\$92,617
Eddington Siding	10/01/19 - 09/30/20		\$334,202
General Tires Siding	07/06/20 - 07/09/20		\$25,836
Grundy Interlocking - Track 0	10/01/19 - 09/30/20		\$50,626
Grundy Interlocking - Track 5	10/01/19 - 09/30/20		\$565,413
<b>Rail Replacement Program. PG00003. C.EN.101856.</b>			<b>\$620,732</b>
<b>Northeast Corridor</b>			<b>\$620,732</b>
Curve 2.94, Track 2 High Rail	12/06/19 - 12/09/19	3200 FT	\$310,366
Curve 2.94, Track 2 Low Rail	12/13/19 - 12/16/19	3200 FT	\$310,366
<b>TOTAL SEGMENT 14 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$7,899,034</b>

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## Segment 15: Holmes to Shore



Segment 15 covers nearly 5 miles from Holmes to Shore in Pennsylvania and is owned by Amtrak, with train operations from Amtrak and SEPTA.

### FY20 Planned Work Overview

NEC stakeholders plan to spend over \$10 million on infrastructure investment in Segment 15 in federal fiscal year 2020. Amtrak plans to spend \$10 million on 12 capital renewal programs.

### FY20 Planned Expenditure in Segment 15

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$10,169,739</b>
Projects	\$0
Programs	\$10,169,739
<b>Special projects by coordinating agency</b>	<b>\$0</b>
<b>Total</b>	<b>\$10,169,739</b>

## Capital Renewal Highlights

In Segment 15, Amtrak plans to spend \$4.9 million of SEPTA's BCCs and \$5 million of its own BCCs to fund capital renewal work.

Of the \$10 million Amtrak plans to spend on capital renewal in this segment, \$8 million is budgeted for the TLS Concrete Tie Replacement Program on Track 1 between Holmes and Shore and Shore and Clearfield. Amtrak will spend another \$1.2 million on other track work such as replacing 117 concrete ties and 98 wood tie/timbers, spot surfacing 4,900 feet, and replacing or eliminating 23 joints.

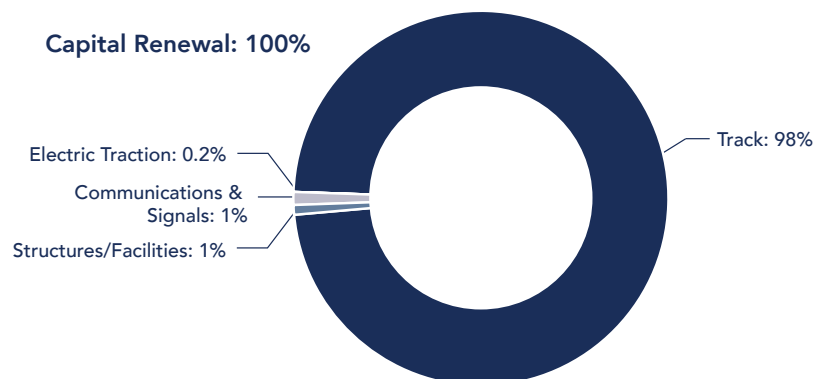
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$10,169,738</b>
Amtrak	\$5,292,007
SEPTA	\$4,877,731
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$10,169,738</b>

## Special Project Highlights

There are no special projects in Segment 15 with planned work in FY20.

## Planned Investment in Segment 15 by Category and Discipline





## FY20 Investments in Segment 15 (Holmes to Shore)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.			\$3,643
Project/Program Management			\$3,643
Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.			\$47,724
Contingency			\$44,081
Project/Program Management			\$3,643
Mid-Atlantic North Signals Program. PG00017. C.EN.101825.			\$48,416
Contingency			\$15,629
Mid-Atlantic North C&S Signal System Upgrades			\$29,144
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$14,572
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$14,572
Project/Program Management			\$3,643
Mid-Atlantic North Structures Program. PG00018. C.EN.101826.			\$39,243
Contingency			\$35,600
Project/Program Management			\$3,643
Mid-Atlantic North Substations Program. PG00019. C.EN.101827.			\$17,268
Contingency			\$13,625
Project/Program Management			\$3,643
Mid-Atlantic North Track Program. PG00020. C.EN.101828.			\$1,165,980
Contingency			\$72,861
Mid-Atlantic North Concrete Tie Replacement			\$344,278
AN Line - MP77.2/82.1		117 EA	\$344,278
Mid-Atlantic North Insulated Joint Replacement			\$91,927
AN Line - MP77.2/82.1		8.7 EA	\$91,927
Mid-Atlantic North Joint Elimination			\$135,853
AN Line - MP77.2/82.1		23.8 EA	\$135,853
Mid-Atlantic North Rail Lubricator			\$2,550
Portec Rail Lubricator Parts Upgrade			\$2,550
Mid-Atlantic North Spot Surfacing			\$205,432
AN Line - MP77.2/82.1		4916.6 FT	\$205,432
Mid-Atlantic North Spot Undercutting			\$60,242
AN Line - MP77.2/82.1		0 MI	\$60,242
Mid-Atlantic North Steel Interlocking Renewal			\$151,722
New Jersey Line - Steel Interlocking Renewal - MP77.2/82.1			\$151,722

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Track Wood Tie/Timber Replacement</b>			<b>\$90,186</b>
AN Line - MP77.2/82.1	07/27/20 - 08/02/20	97.9 EA	\$90,186
<b>Project/Program Management</b>			<b>\$10,929</b>

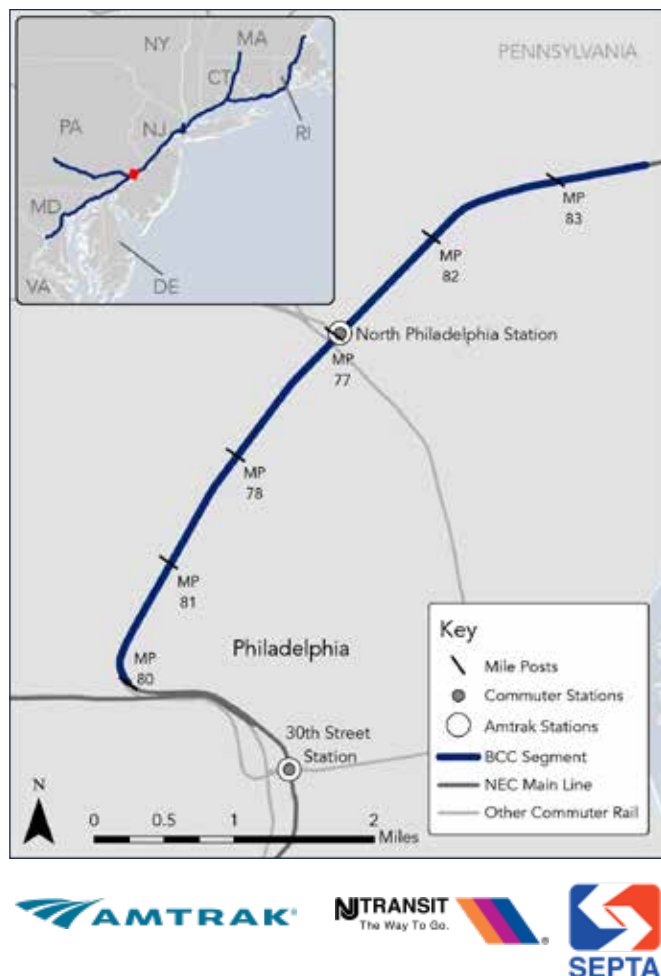
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$59,317</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$1,671</b>
Mid-Atlantic Division	N/A		\$1,671
<b>Ansaldo Servier Migration</b>			<b>\$25,981</b>
Line 1 - PHL 30th Street Station to and Including REA Interlocking	N/A		\$25,981
<b>Burns Engineering Fixed Database Build</b>			<b>\$12,953</b>
Mid-Atlantic Division	N/A		\$12,953
<b>Interoperability - SEPTA</b>			<b>\$3,678</b>
Zoo/Gerard Boundary Upgrades	N/A		\$3,678
<b>Redundant Transponders</b>			<b>\$15,035</b>
Mid-Atlantic Division	N/A		\$15,035
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$5,845</b>
<b>System</b>			<b>\$5,845</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$5,845
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$69,141</b>
<b>AN Line</b>			<b>\$69,141</b>
MP 76.0-82.1	10/01/19 - 09/30/20	4.99 MI	\$69,141
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$676,996</b>
<b>AN Line - Production Units</b>			<b>\$676,996</b>
General Tires Siding	07/06/20 - 07/09/20		\$6,698
Shore to Holmes Track 0			\$670,298
<b>Rail Grinding Program. PG00064. C.EN.101794.</b>			<b>\$32,816</b>
<b>Northeast Corridor</b>			<b>\$32,816</b>
Grinding Holmes to Shore Track 1	11/01/20 - 03/15/20		\$23,895
Grinding Shore to Clearfield Track 1	11/01/20 - 03/15/20		\$8,921

Segment 15 Investment Detail continued on next page >>>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
TLS Concrete Tie Replacement Program. PG00057. C.EN.101652.			\$8,003,350
Holmes to Shore Track 1			\$5,663,927
B&B Support	09/23/19 - 10/24/19		\$75,677
C&S Support	09/23/19 - 10/24/19		\$585,329
ET Support	09/23/19 - 10/24/19		\$63,332
Installation	09/23/19 - 10/24/19		\$4,877,731
T&E Support	09/23/19 - 10/24/19		\$61,859
Shore to Clearfield Track 1			\$2,339,423
B&B Support	10/10/19 - 11/07/19		\$37,670
C&S Support	10/10/19 - 11/07/19		\$239,945
ET Support	10/10/19 - 11/07/19		\$31,525
Installation	10/10/19 - 11/07/19	7128 EA	\$1,999,491
T&E Support	10/10/19 - 11/07/19		\$30,792
<b>TOTAL SEGMENT 15 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$10,169,739</b>

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## Segment 16: Shore to Girard



Segment 16 covers 5 miles from Shore to Girard in Pennsylvania and is owned by Amtrak, with train operations from Amtrak, SEPTA, and NJ TRANSIT.

### FY20 Planned Work Overview

NEC stakeholders plan to spend over \$17 million on infrastructure investment in Segment 16 in federal fiscal year 2020. Amtrak plans to spend \$17 million on 13 capital renewal programs in this segment.

### FY20 Planned Expenditure in Segment 16

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$17,209,781</b>
Projects	\$0
Programs	\$17,209,781
<b>Special projects by coordinating agency</b>	<b>\$0</b>
<b>Total</b>	<b>\$17,209,781</b>

## Capital Renewal Highlights

In Segment 16, Amtrak plans to spend \$17 million of its own BCCs to fund capital renewal work.

Of the \$17 million Amtrak plans to spend on capital renewal in this segment, almost \$4 million will be spent undercutting over 19,000 feet between Lehigh and Mantua. Amtrak will spend another \$5.6 million using the TLS to replace over 4,400 ties in the same area. Other highlights include planning to invest \$1.7 million to replace 1,800 wood ties/timbers and \$0.8 million on the Mid-Atlantic North Frequency Converter Program.

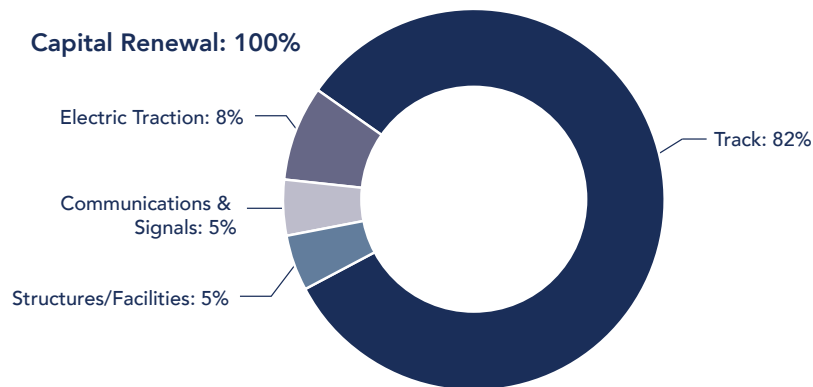
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$17,209,781</b>
Amtrak	\$17,209,781
NJ TRANSIT	\$0
SEPTA	\$0
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$17,209,781</b>

## Special Project Highlights

There are no special projects in Segment 16 with planned work in FY20.

## Planned Investment in Segment 16 by Category and Discipline



## FY20 Investments in Segment 16 (Shore to Girard)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.</b>			<b>\$325,569</b>
<b>Mid-Atlantic North Switch Heater Program</b>			<b>\$321,406</b>
Mantua Interlocking Switch Heater Replacement - AN Line - MP87.11		3 EA	\$321,406
<b>Project/Program Management</b>			<b>\$4,163</b>
<b>Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.</b>			<b>\$54,542</b>
<b>Contingency</b>			<b>\$50,378</b>
<b>Project/Program Management</b>			<b>\$4,163</b>
<b>Mid-Atlantic North Signals Program. PG00017. C.EN.101825.</b>			<b>\$655,290</b>
<b>Contingency</b>			<b>\$17,861</b>
<b>Mid-Atlantic North C&amp;S Signal System Upgrades</b>			<b>\$633,265</b>
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$16,654
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$16,654
Girard RTU Upgrade	10/01/19 - 09/30/20	1 EA	\$599,957
<b>Project/Program Management</b>			<b>\$4,163</b>
<b>Mid-Atlantic North Structures Program. PG00018. C.EN.101826.</b>			<b>\$794,795</b>
<b>Contingency</b>			<b>\$40,686</b>
<b>Mid-Atlantic North Signal Bridge Program</b>			<b>\$321,406</b>
New Jersey Line, Lehigh - WBHS Signal Bridge Upgrades - MP85.07			\$160,703
New Jersey Line, Mantua - WBHS Signal Bridge Upgrades - MP81.68			\$160,703
<b>Mid-Atlantic North Undergrade Bridge Program</b>			<b>\$428,541</b>
New Jersey Line, Philadelphia - 17th Street - MP84.83			\$214,270
New Jersey Line, Philadelphia - Lehigh Avenue - MP84.97	04/01/20 - 06/30/20		\$214,270
<b>Project/Program Management</b>			<b>\$4,163</b>
<b>Mid-Atlantic North Substations Program. PG00019. C.EN.101827.</b>			<b>\$1,048,233</b>
<b>Contingency</b>			<b>\$15,571</b>
<b>Design</b>			<b>\$214,270</b>
Design - Richmond - GIS Camera			\$26,784
Design - Richmond - GIS Gas Monitor System			\$26,784
Design - Richmond - HVAC System			\$160,703

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Frequency Converter Program</b>			<b>\$814,228</b>
Richmond - Access Control/Cameras/Signage Upgrades		1 EA	\$117,849
Richmond - Battery Replacements		1 EA	\$160,703
Richmond - Puffer Breakers Overhaul		6 EA	\$535,676
<b>Project/Program Management</b>			<b>\$4,163</b>
<b>Mid-Atlantic North Track Program. PG00020. C.EN.101828.</b>			<b>\$3,665,285</b>
<b>Contingency</b>			<b>\$83,270</b>
<b>Mid-Atlantic North Concrete Tie Replacement</b>			<b>\$179,462</b>
AN Line - MP82.1/87.7		61 EA	\$179,462
<b>Mid-Atlantic North Insulated Joint Replacement</b>			<b>\$140,867</b>
AN Line - MP82.1/87.7		13 EA	\$140,867
<b>Mid-Atlantic North Joint Elimination</b>			<b>\$524,991</b>
AN Line - MP82.1/87.7		92.2 EA	\$524,991
<b>Mid-Atlantic North Rail Lubricator</b>			<b>\$2,914</b>
Portec Rail Lubricator Parts Upgrade			\$2,914
<b>Mid-Atlantic North Spot Surfacing</b>			<b>\$267,071</b>
AN Line - MP82.1/87.7		6391.8 FT	\$267,071
<b>Mid-Atlantic North Spot Undercutting</b>			<b>\$346,761</b>
AN Line - MP82.1/87.7		MI	\$346,761
<b>Mid-Atlantic North Steel Interlocking Renewal</b>			<b>\$443,826</b>
New Jersey Line - Steel Interlocking Renewal - MP82.1/87.7	04/03/20 - 04/04/20		\$443,826
<b>Mid-Atlantic North Track Wood Tie/Timber Replacement</b>			<b>\$1,663,632</b>
AN Line - MP82.1/87.7		1807 EA	\$1,663,632
<b>Project/Program Management</b>			<b>\$12,490</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$142,643</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$1,909</b>
Mid-Atlantic Division	N/A		\$1,909
<b>Ansaldo Servier Migration</b>			<b>\$29,693</b>
Line 1 - PHL 30th Street Station to and Including REA Interlocking	N/A		\$29,693

Segment 16 Investment Detail continued on next page &gt;&gt;&gt;



Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Burns Engineering Fixed Database Build</b>			<b>\$14,803</b>
Mid-Atlantic Division	N/A		\$14,803
<b>Interoperability - NJT</b>			<b>\$39,748</b>
Graw/Union Boundary Upgrades	N/A		\$3,016
Kearny/Swift Boundary Upgrades	N/A	CPI	\$36,732
<b>Interoperability - SEPTA</b>			<b>\$39,306</b>
Lehigh/Westmore Boundary Upgrades	N/A	CPI	\$36,732
Zoo/Gerard Boundary Upgrades	N/A		\$2,574
<b>Redundant Transponders</b>			<b>\$17,183</b>
Mid-Atlantic Division	N/A		\$17,183
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$6,680</b>
<b>System</b>			<b>\$6,680</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$6,680
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$308,303</b>
<b>AN Line</b>			<b>\$308,303</b>
MP 82.1-87.7	10/01/19 - 09/30/20	2.44 MI	\$308,303
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$572,565</b>
<b>AN Line - Production Units</b>			<b>\$572,565</b>
General Tires Siding	07/06/20 - 07/09/20		\$7,655
Mantua Interlocking	03/20/20 - 06/05/20		\$564,910
<b>Rail Grinding Program. PG00064. C.EN.101794.</b>			<b>\$29,311</b>
<b>Northeast Corridor</b>			<b>\$29,311</b>
Grinding Lehigh to Mantua Track 1	11/01/20 - 03/15/20		\$19,116
Grinding Shore to Clearfield Track 1	11/01/20 - 03/15/20		\$10,195
<b>TLS Concrete Tie Replacement Program. PG00057. C.EN.101652.</b>			<b>\$5,639,765</b>
<b>Lehigh to Mantua Track 1</b>			<b>\$2,966,139</b>
B&B Support	10/28/19 - 11/20/19		\$67,268
C&S Support	10/28/19 - 11/20/19		\$89,865
ET Support	10/28/19 - 11/20/19		\$56,295
Installation	10/28/19 - 11/20/19	4488 EA	\$2,697,725
T&E Support	10/28/19 - 11/20/19		\$54,986

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Shore to Clearfield Track 1</b>			<b>\$2,673,626</b>
B&B Support	10/10/19 - 11/07/19		\$43,051
C&S Support	10/10/19 - 11/07/19		\$274,223
ET Support	10/10/19 - 11/07/19		\$36,028
Installation	10/10/19 - 11/07/19	7128 EA	\$2,285,132
T&E Support	10/10/19 - 11/07/19		\$35,191
<b>Track Undercutting Program. PG00062. C.EN.100269.</b>			<b>\$3,966,803</b>
<b>Lehigh to Mantua Track 1</b>			<b>\$1,906,772</b>
C&S Support	08/10/20 - 08/27/20		\$300,542
ET Support	08/10/20 - 08/27/20		\$33,646
Installation	08/10/20 - 08/27/20	9504 FT	\$1,465,228
T&E Support	08/10/20 - 08/27/20		\$107,356
<b>Lehigh to Mantua Track 4</b>			<b>\$2,060,031</b>
C&S Support	08/31/20 - 09/17/20		\$313,065
ET Support	08/31/20 - 09/17/20		\$36,050
Installation	08/31/20 - 09/17/20	10032 FT	\$1,595,892
T&E Support	08/31/20 - 09/17/20		\$115,024
<b>TOTAL SEGMENT 16 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$17,209,781</b>

## Segment 17: Girard to Philadelphia 30th St



Segment 17 covers 1 mile from Girard to Philadelphia 30th Street Station and is owned by Amtrak, with train operations from Amtrak, and NJ TRANSIT.

### FY20 Planned Work Overview

NEC stakeholders plan to spend \$18 million on infrastructure investment in Segment 17 in federal fiscal year 2020. Amtrak plans to spend \$7.5 million on 11 capital renewal programs and almost \$6.5 million on 6 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$4 million to advance 2 special projects coordinated by Amtrak and SEPTA.

### FY20 Planned Expenditure in Segment 17

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$14,170,241</b>
Projects	\$7,576,414
Programs	\$6,593,827
<b>Special projects by coordinating agency</b>	<b>\$4,298,886</b>
Amtrak	\$1,360,000
SEPTA	\$2,938,886
<b>Total</b>	<b>\$18,469,127</b>

## Capital Renewal Highlights

In Segment 17, Amtrak plans to spend \$14 million of its own BCCs to fund capital renewal work.

Of the \$14 million Amtrak plans to spend on capital renewal in this segment, \$4 million will be spent on renewing Track 9 at 30th Street Station. Amtrak will spend another \$1 million on track rehabilitation at Penn Coach Yard and \$0.6 million replacing 16 switches motor/cables at North Penn Interlocking. In addition, Amtrak will spend approximately \$22 million (\$3 million of which is BCC-eligible) on the 30th Street Station Façade Restoration Project and another \$2 million on mast lighting, paving improvements, and water main replacement at Penn Coach Yard.

## FY20 Capital Renewal Contribution

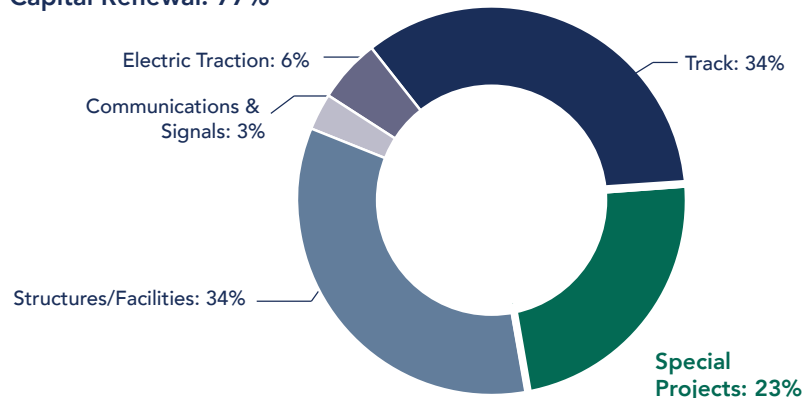
Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$14,170,241</b>
Amtrak	\$14,170,241
NJ TRANSIT	\$0
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$14,170,241</b>

## Special Project Highlights

SEPTA plans to spend almost \$3 million to initiate construction on the replacement and upgrade of the overhead contact system including catenary structures from 30th Street Station to 'K' Interlocking and the Powelton Yard Complex. Amtrak plans to spend \$1.4 million to complete the procurement process and select a developer for the 30th Street Station District Implementation Plan.

## Planned Investment in Segment 17 by Category and Discipline

**Capital Renewal: 77%**



## FY20 Investments in Segment 17 (Girard to Philadelphia 30th St)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.</b>			<b>\$643,926</b>
<b>Mid-Atlantic North Catenary Hardware Renewal Program</b>			<b>\$642,811</b>
North Penn Interlocking - Section Switch Motor/ Cable Replacement	10/01/19 - 09/30/20	16 EA	\$642,811
<b>Project/Program Management</b>			<b>\$1,115</b>
<b>Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.</b>			<b>\$14,609</b>
<b>Contingency</b>			<b>\$13,494</b>
<b>Project/Program Management</b>			<b>\$1,115</b>
<b>Mid-Atlantic North Signals Program. PG00017. C.EN.101825.</b>			<b>\$443,362</b>
<b>Contingency</b>			<b>\$4,784</b>
<b>Mid-Atlantic North C&amp;S Signal System Upgrades</b>			<b>\$437,463</b>
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$4,461
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$4,461
Penn RTU Upgrade	10/01/19 - 09/30/20	1 EA	\$428,541
<b>Project/Program Management</b>			<b>\$1,115</b>
<b>Mid-Atlantic North Structures Program. PG00018. C.EN.101826.</b>			<b>\$12,013</b>
<b>Contingency</b>			<b>\$10,898</b>
<b>Project/Program Management</b>			<b>\$1,115</b>
<b>Mid-Atlantic North Substations Program. PG00019. C.EN.101827.</b>			<b>\$85,638</b>
<b>Contingency</b>			<b>\$4,171</b>
<b>Mid-Atlantic North Substations Program</b>			<b>\$80,351</b>
Witmer #68 - RTU Replacement		1 EA	\$80,351
<b>Project/Program Management</b>			<b>\$1,115</b>
<b>Mid-Atlantic North Track Program. PG00020. C.EN.101828.</b>			<b>\$74,166</b>
<b>Contingency</b>			<b>\$22,304</b>
<b>Mid-Atlantic North Concrete Tie Replacement</b>			<b>\$2,430</b>
New Jersey/Philadelphia Line - Concrete Tie Replacement - MP87.7/1.4		1 EA	\$2,430
<b>Mid-Atlantic North Steel Interlocking Renewal</b>			<b>\$44,766</b>
New Jersey/Philadelphia Line - Steel Interlocking Renewal - Girard/30th Street			\$44,766
<b>Mid-Atlantic North Track Wood Tie/Timber Replacement</b>			<b>\$1,320</b>
New Jersey/Philadelphia Line - Tie/Timber Replacement - MP87.7/1.4		1.43 EA	\$1,320
<b>Project/Program Management</b>			<b>\$3,346</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$82,946</b>
<b>Ansaldo Servier Migration</b>			<b>\$13,158</b>
Line 1 - PHL 30th Street Station to and Including REA Interlocking	N/A		\$7,953
Line 2 - Washington Union Station to Philadelphia 30th Street Station	N/A		\$5,205
<b>Bumper Stops</b>			<b>\$61,220</b>
Philadelphia 30th Street Station	N/A		\$61,220
<b>Burns Engineering Fixed Database Build</b>			<b>\$3,965</b>
Mid-Atlantic Division	N/A		\$3,965
<b>Redundant Transponders</b>			<b>\$4,602</b>
Mid-Atlantic Division	N/A		\$4,602
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$1,789</b>
<b>System</b>			<b>\$1,789</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$1,789
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$80,557</b>
<b>AP Line</b>			<b>\$80,557</b>
MP 1.4-2.7	10/01/19 - 09/30/20	0 MI	\$49,349
MP 87.7-1.4	10/01/19 - 09/30/20	0 MI	\$31,208
<b>Total Track Renewal Program. PG00061. C.EN.101871.</b>			<b>\$4,045,003</b>
<b>Northeast Corridor</b>			<b>\$4,045,003</b>
30th Street Station - Track 9	01/06/20 - 03/12/20	MI	\$4,045,003
<b>Track Rehabilitation Program . PG00063. C.EN.101859.</b>			<b>\$1,109,816</b>
<b>Northeast Corridor</b>			<b>\$1,109,816</b>
Penn Coach Yard Wood Tie and Crossing Replacement	12/02/19 - 03/13/20		\$1,109,816
<b>TOTAL SEGMENT 17 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$6,593,827</b>

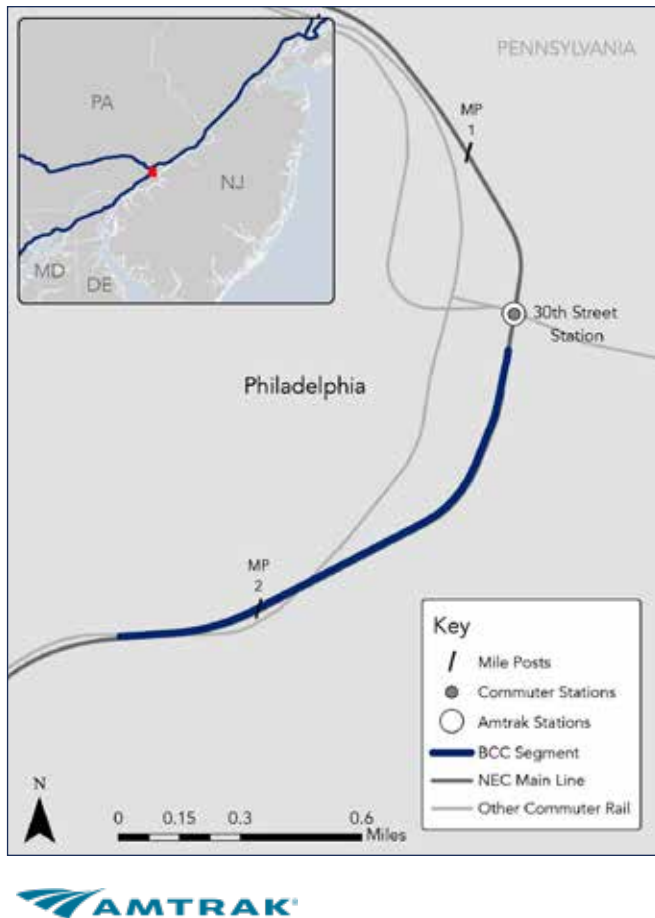
Segment 17 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>30th Street Station Facade Restoration Project. P000091. C.EN.100039.</b> Reconstruction of the north parapet wall including the protection of the existing signal room on the north side of the building and miscellaneous limestone and brick masonry repairs on the north side of the building. <ul style="list-style-type: none"> <li>Misc. masonry repairs- 50%: 9/1/2019 - 8/31/2020</li> <li>Signal room protection: 9/15/2019 - 11/15/2019</li> <li>Temporary roof repairs: 9/20/2019 - 11/30/2019</li> <li>North parapet wall reconstruction: 11/15/2019 - 11/15/2020</li> </ul> <i>Note that Amtrak's planned FY20 expenditure on this project is \$22,712,663. Of that amount, \$3,406,899 is BCC-eligible.</i>	<b>\$3,406,899</b>
<b>Penn Coach Yard High Mast Lighting Project. P000112. C.EN.101874.</b> Procure and award a design contract, develop the design and procure a construction contractor. <ul style="list-style-type: none"> <li>Preliminary Engineering: 10/1/2019 - 10/28/2019</li> <li>Final Design: 10/1/2019 - 10/28/2019</li> <li>Construction Management: 10/1/2019 - 6/29/2020</li> <li>Project Administration: 10/1/2019 - 9/30/2020</li> <li>Construction: 1/28/2020 - 6/1/2020</li> </ul>	<b>\$1,524,778</b>
<b>Penn Coach Yard Paving Improvements Project. P000135. C.EN.101807.</b> Complete design, obtain permits, procure a construction contractor and construction management support. <ul style="list-style-type: none"> <li>Design Award: 10/30/2019 - 11/30/2019</li> <li>Design Development: 12/1/2019 - 6/1/2020</li> <li>Construction RFP and Award: 8/1/2020 - 9/30/2020</li> </ul>	<b>\$651,918</b>
<b>Penn Coach Yard Water Main Replacement Project. P000114. C.EN.101876.</b> Procure and award a design contract, develop the design and procure a construction contractor. <ul style="list-style-type: none"> <li>Design Award: 10/30/2019 - 11/30/2019</li> <li>Design Development: 12/1/2019 - 7/1/2020</li> <li>Construction RFP and Award: 8/1/2020 - 9/30/2020</li> </ul>	<b>\$687,272</b>
<b>South Penn Interlocking Improvements Project. P000116. C.EN.100679.</b> Install the new # 13 turnout and new #25 switch for the crossover, relocate OCS for the new Penn Coach yard switch with all PTC and CETC/SCADA modifications <ul style="list-style-type: none"> <li>Install #13 Switch: 10/11/2019 - 10/13/2019</li> <li>Install #25 Switch: 10/18/2019 - 10/20/2019</li> <li>Relocate OCS for WY Switch: 12/1/2019 - 12/14/2019</li> </ul>	<b>\$1,014,213</b>
<b>Zoo to Paoli Catenary Structure Upgrade Project. P000090. C.EN.201264.</b> Continue permitting; procurement of long lead materials, procurement of a CM firm and construction contractor; start construction if permits obtained. <ul style="list-style-type: none"> <li>Procure Construction Contractor: 9/3/2019 - 5/1/2020</li> <li>Proj. Mngmt: 10/1/2019 - 11/18/2025</li> <li>Procure Long Lead Material: 12/20/2019 - 12/18/2020</li> <li>Construction Mngmt: 4/6/2020 - 10/31/2025</li> <li>Construction: 6/8/2020 - 9/30/2025</li> </ul>	<b>\$291,333</b>
<b>TOTAL SEGMENT 17 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$7,576,414</b>

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>30th Street West Catenary Replacement. SEPTA.</b> Replacement and upgrade of the overhead contact system including catenary structures from 30th Street Station to 'K' Interlocking and the Powelton Yard Complex. Work also includes repairs to aging catenary foundations, retaining walls, tunnels and site drainage. <ul style="list-style-type: none"> <li>SEPTA forces and contractors are expected to initiate construction in the Winter of 2020. Project schedule is contingent upon a resolution with PennDOT/Turnpike funding.</li> </ul>	<b>\$2,938,886</b>
<b>Philadelphia 30th Street Station District Plan Implementation. Amtrak. SEPTA.</b> Planned activities for FY2020 include completing the procurement process and selecting a best value developer for 30th Street Station with the expectation a Development Agreement will be executed in Summer 2020. <ul style="list-style-type: none"> <li>Final Request for Proposal Issued: October 2019</li> <li>Proposals Due: Feb 2020. Selection of Developer: April 2020</li> <li>Executed Development Agreement: Summer 2020</li> <li>NTP for Design: Fall 2020</li> </ul>	<b>\$1,360,000</b>
<b>TOTAL SEGMENT 17 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$4,298,886</b>



# Segment 18: Philadelphia 30th St to Arsenal



Segment 18 covers nearly 2 miles from Philadelphia 30th Street Station to Arsenal and is owned by Amtrak, with train operations from Amtrak only.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$12 million on infrastructure investment in Segment 18 in federal fiscal year 2020. Amtrak plans to spend \$1.4 million on 9 capital renewal programs and \$0.8 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$10.5 million to advance 1 special project coordinated by SEPTA.

## FY20 Planned Expenditure in Segment 18

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$2,169,125</b>
Projects	\$811,371
Programs	\$1,357,754
<b>Special projects by coordinating agency</b>	<b>\$10,489,862</b>
SEPTA	\$10,489,862
<b>Total</b>	<b>\$12,658,987</b>

### Capital Renewal Highlights

In Segment 18, Amtrak plans to spend \$1.4 million of its own BCCs and \$.7 million of its own capital above BCCs to fund capital renewal work.

Of the \$2 million Amtrak plans to spend on capital renewal in this segment, \$1.2 million will be spent on the Mid-Atlantic Track Program. Highlights include spending \$0.4 million replacing 402 wood ties/timber, eliminating 28 joints, and 3,300 feet of spot undercutting. Additionally, Amtrak plans to spend \$0.8 million on improvements to South Penn Interlocking.

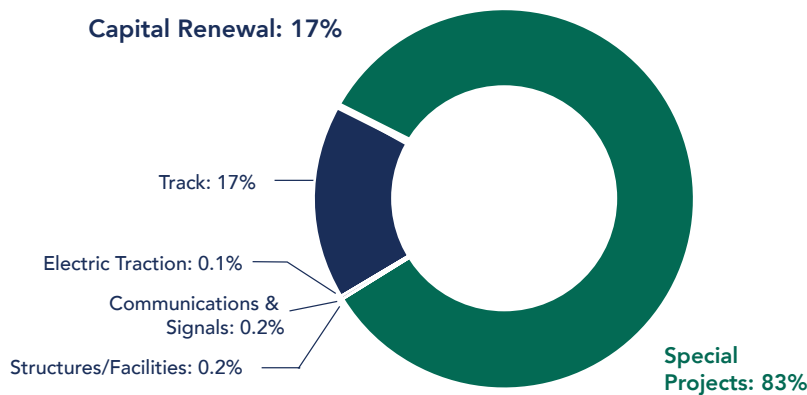
### FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$1,391,570</b>
Amtrak	\$1,391,570
<b>Above BCC</b>	<b>\$777,556</b>
Amtrak	\$777,556
<b>Capital Renewal Total</b>	<b>\$2,169,125</b>

### Special Project Highlights

SEPTA plans to spend \$10.5 million on construction of the Southwest Connection Improvement Project, which includes the reconfiguration and rebuilding of Regional Rail signals, track, catenary, and interlockings from 30th Street Station to Phil Interlocking (in University City).

### Planned Investment in Segment 18 by Category and Discipline



## FY20 Investments in Segment 18 (Philadelphia 30th St to Arsenal)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.			\$12,986
Mid-Atlantic North Catenary Pole Program			\$12,986
Philadelphia to Wilmington - Catenary Pole Replacements	10/01/19 - 11/30/19	17 EA	\$12,986
Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.			\$10,795
Contingency			\$10,795
Mid-Atlantic North Signals Program. PG00017. C.EN.101825.			\$10,965
Contingency			\$3,827
Mid-Atlantic North C&S Signal System Upgrades			\$7,137
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$3,569
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$3,569
Mid-Atlantic North Structures Program. PG00018. C.EN.101826.			\$8,718
Contingency			\$8,718
Mid-Atlantic North Substations Program. PG00019. C.EN.101827.			\$3,337
Contingency			\$3,337
Mid-Atlantic North Track Program. PG00020. C.EN.101828.			\$1,259,024
Contingency			\$17,843
Mid-Atlantic North Concrete Tie Replacement			\$46,897
AP Line - MP1.4/2.7		16 EA	\$46,897
Mid-Atlantic North Insulated Joint Replacement			\$41,106
AP Line - MP1.4/2.7		3.9 EA	\$41,106
Mid-Atlantic North Joint Elimination			\$162,041
AP Line - MP1.4/2.7		28 EA	\$162,041
Mid-Atlantic North Spot Surfacing			\$138,039
AP Line - MP1.4/2.7		3303.7 FT	\$138,039
Mid-Atlantic North Spot Undercutting			\$97,421
AP Line - MP1.4/2.7		MI	\$97,421
Mid-Atlantic North Steel Interlocking Renewal			\$382,259
AP Line - MP1.4/2.7			\$382,259
Mid-Atlantic North Track Wood Tie/Timber Replacement			\$370,740
AP Line - MP1.4/2.7		402.8 EA	\$370,740
Project/Program Management			\$2,677

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$11,018</b>
<b>Ansaldo Servier Migration</b>			<b>\$4,164</b>
Line 2 - Washington Union Station to Philadelphia 30th Street Station	N/A		\$4,164
<b>Burns Engineering Fixed Database Build</b>			<b>\$3,172</b>
Mid-Atlantic Division	N/A		\$3,172
<b>Redundant Transponders</b>			<b>\$3,682</b>
Mid-Atlantic Division	N/A		\$3,682
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$1,431</b>
<b>System</b>			<b>\$1,431</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$1,431
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$39,479</b>
<b>AP Line</b>			<b>\$39,479</b>
MP 1.4-2.7	10/01/19 - 09/30/20	0 MI	\$39,479
<b>TOTAL SEGMENT 18 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$1,357,754</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>South Penn Interlocking Improvements Project. P000116. C.EN.100679.</b>	
Install the new # 13 turnout and new #25 switch for the crossover, relocate OCS for the new Penn Coach yard switch with all PTC and CETC/SCADA modifications	
<ul style="list-style-type: none"> <li>Install #13 Switch: 10/11/2019 - 10/13/2019</li> <li>Install #25 Switch: 10/18/2019 - 10/20/2019</li> <li>Relocate OCS for WY Switch: 12/1/2019 - 12/14/2019</li> </ul>	
<b>TOTAL SEGMENT 18 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	
<b>\$811,371</b>	

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Southwest Connection Improvement Project. SEPTA. Amtrak.</b>	
Reconfiguration and rebuilding of signals, track, catenary, and interlockings from 30th Street Station to Phil Interlocking. Work includes new track special work, Overhead Contact Systems (OCS), and switch and lock mechanisms, as well as the addition of new Positive Train Control (PTC) systems. Design and construction will progress in phases with construction outages scheduled for the summer of 2018, 2019 and 2020. As part of this project, SEPTA will assume maintenance responsibility for Amtrak's tracks on a segment where SEPTA is the sole operator.	
<ul style="list-style-type: none"> <li>Summer construction outage in 2020.</li> </ul>	
<b>TOTAL SEGMENT 18 SPECIAL PROJECTS EXPENDITURE</b>	
<b>\$10,489,862</b>	

## Segment 19: Arsenal to Marcus Hook



Segment 19 covers 14 miles from Arsenal to Marcus Hook in Pennsylvania and is owned by Amtrak, with train operations from Amtrak and SEPTA.

### FY20 Planned Work Overview

NEC stakeholders plan to spend almost \$22 million on infrastructure investment in Segment 19 in federal fiscal year 2020. Amtrak plans to spend \$22 million on 11 capital renewal programs in this segment.

### FY20 Planned Expenditure in Segment 19

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$21,716,273</b>
Projects	\$0
Programs	\$21,716,273
<b>Special projects by coordinating agency</b>	<b>\$0</b>
<b>Total</b>	<b>\$21,716,273</b>

Capital Renewal Highlights

In Segment 19, Amtrak plans to spend \$17 million of SEPTA’s BCCs and \$5 million of its own BCCs to fund capital renewal work.

Of the \$22 million Amtrak plans to spend on capital renewal in this segment, \$10 million will be spent renewing 7 crossovers at Hook Interlocking. Amtrak also plans to spend \$2 million replacing 2,500 wood tie/timbers, \$1 million spot surfacing 26,000 feet, and \$0.8 million replacing 277 concrete ties.

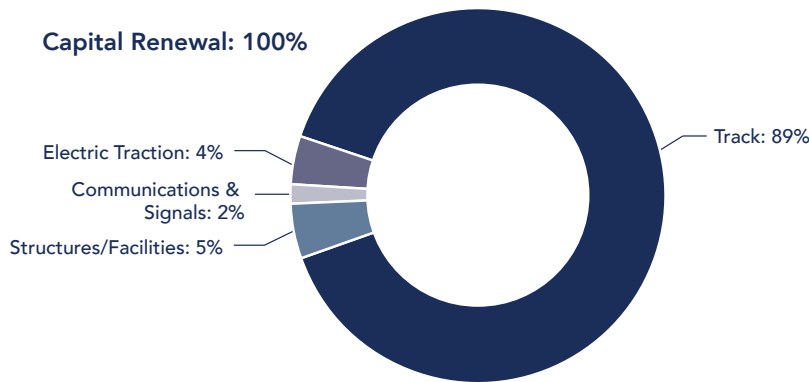
FY20 Capital Renewal Contribution

Contribution Type	Amount
Baseline Capital Charges	\$21,716,273
Amtrak	\$5,112,480
SEPTA	\$16,603,793
Above BCC	\$0
Capital Renewal Total	\$21,716,273

Special Project Highlights

There are no special projects in Segment 19 with planned work in FY20.

Planned Investment in Segment 19 by Category and Discipline



## FY20 Investments in Segment 19 (Arsenal to Marcus Hook)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.</b>			<b>\$646,545</b>
<b>Design</b>			<b>\$63,882</b>
Design - SAP Installation - Wilmington Subdivision, Bell to Baldwin			\$63,882
<b>Mid-Atlantic North Catenary Hardware Renewal Program</b>			<b>\$415,232</b>
SAP Installation - Wilmington Subdivision, Bell to Baldwin		400 EA	\$415,232
<b>Mid-Atlantic North Catenary Pole Program</b>			<b>\$155,833</b>
Philadelphia to Wilmington - Catenary Pole Replacements	10/01/19 - 11/30/19	17 EA	\$155,833
<b>Project/Program Management</b>			<b>\$11,598</b>
<b>Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.</b>			<b>\$141,142</b>
<b>Contingency</b>			<b>\$129,544</b>
<b>Project/Program Management</b>			<b>\$11,598</b>
<b>Mid-Atlantic North Signals Program. PG00017. C.EN.101825.</b>			<b>\$143,176</b>
<b>Contingency</b>			<b>\$45,929</b>
<b>Mid-Atlantic North C&amp;S Signal System Upgrades</b>			<b>\$85,649</b>
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$42,824
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$42,824
<b>Project/Program Management</b>			<b>\$11,598</b>
<b>Mid-Atlantic North Structures Program. PG00018. C.EN.101826.</b>			<b>\$919,732</b>
<b>Contingency</b>			<b>\$104,620</b>
<b>Design</b>			<b>\$160,703</b>
Design - AP Line, Chester, PA - Yarnall Street Bridge Timber Replacement, Track 3 - MP14.94	07/01/20 - 07/31/20		\$107,135
Design - AP Line, Darby, PA - Retaining Wall Installation - MP04.85			\$53,568
<b>Mid-Atlantic North Bridge Timber Replacement Program</b>			<b>\$214,270</b>
Philadelphia Line, Chester, PA - Yarnall Street, Track 3 - MP14.94	07/01/20 - 07/31/20	113 EA	\$214,270
<b>Mid-Atlantic North Retaining Walls Upgrade Program</b>			<b>\$428,541</b>
Philadelphia Line, Ridley Park, PA - Sellers Avenue Retaining Wall - MP10.30	03/01/20 - 06/30/20	100 PCT	\$428,541
<b>Project/Program Management</b>			<b>\$11,598</b>

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic North Substations Program. PG00019. C.EN.101827.			\$265,910
Contingency			\$40,041
Mid-Atlantic North Substations Program			\$214,270
Lamokin #11 - 11&21 Air Break Switch Upgrades		2 EA	\$214,270
Project/Program Management			\$11,598
Mid-Atlantic North Track Program. PG00020. C.EN.101828.			\$6,521,870
Contingency			\$214,122
Mid-Atlantic North Concrete Tie Replacement			\$809,075
AP Line - MP2.7/6.4		14 EA	\$39,611
AP Line - MP6.4/17.1		29 EA	\$84,700
AP Line - Philadelphia to Baldwin		234 EA	\$684,764
Mid-Atlantic North Drainage/Road Bed Improvements			\$642,811
Philadelphia to Chester 1 and 4 Tracks - 5,000 Feet - 09/01/20 - 09/29/20			\$214,270
Roadside Ditch			
Wilmington - Mud Across 3 and 4 Tracks - MP14.2/14.6			\$214,270
Wilmington 4 Track, Curves 308 and 309 - Roadside Ditch - MP6.7/7.2			\$214,270
Mid-Atlantic North Insulated Joint Replacement			\$92,594
AP Line - MP2.7/6.4		2.3 EA	\$24,505
AP Line - MP6.4/17.1		6.4 EA	\$68,089
Mid-Atlantic North Joint Elimination			\$390,992
AP Line - MP2.7/6.4		18.1 EA	\$103,001
AP Line - MP6.4/17.1		50.6 EA	\$287,991
Mid-Atlantic North Rail Lubricator			\$8,900
Portec Rail Lubricator Parts Upgrade			\$8,900
Mid-Atlantic North Spot Surfacing			\$1,105,959
AP Line - MP2.7/6.4		4971.2 FT	\$207,712
AP Line - MP6.4/17.1		21498 FT	\$898,247
Mid-Atlantic North Spot Undercutting			\$320,055
AP Line - MP2.7/6.4		MI	\$77,084
AP Line - MP6.4/17.1		MI	\$242,971
Mid-Atlantic North Steel Interlocking Renewal			\$530,446
AP Line - MP2.7/6.4			\$175,277
AP Line- MP6.4/17.1			\$355,168

Segment 19 Investment Detail continued on next page &gt;&gt;&gt;



Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Track Wood Tie/Timber Replacement</b>			<b>\$2,370,694</b>
AP Line - MP2.7/6.4		2124 EA	\$1,955,155
AP Line - MP6.4/17.1		451 EA	\$415,539
<b>Project/Program Management</b>			<b>\$36,223</b>
Drainage-Road Bed Program Management			\$4,104
Project/Program Management			\$32,118

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$217,209</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$4,909</b>
Mid-Atlantic Division	N/A		\$4,909
<b>Ansaldo Servier Migration</b>			<b>\$49,966</b>
Line 2 - Washington Union Station to Philadelphia 30th Street Station	N/A		\$49,966
<b>Burns Engineering Fixed Database Build</b>			<b>\$38,066</b>
Mid-Atlantic Division	N/A		\$38,066
<b>Interoperability - SEPTA</b>			<b>\$80,084</b>
Phil/60th North Penn Boundary Upgrades	N/A	CPI	\$36,732
Phil/Arsenal Boundary Upgrades	N/A	CPI	\$36,732
Zoo/Gerard Boundary Upgrades	N/A		\$6,620
<b>Redundant Transponders</b>			<b>\$44,184</b>
Mid-Atlantic Division	N/A		\$44,184
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$17,176</b>
<b>System</b>			<b>\$17,176</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$17,176
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$556,980</b>
<b>AP Line</b>			<b>\$556,980</b>
MP 2.7-6.4	10/01/19 - 09/30/20	0.53 MI	\$256,885
MP 6.4-17.1	10/01/19 - 09/30/20	12.5 MI	\$300,095

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>TLS Concrete Tie Replacement Program. PG00057. C.EN.101652.</b>			<b>\$1,970,611</b>
<b>Hook to Holly Track 3</b>			<b>\$1,970,611</b>
B&B Support	07/06/20 - 08/06/20		\$51,715
C&S Support	07/06/20 - 08/06/20		\$195,117
ET Support	07/06/20 - 08/06/20		\$58,456
Installation	07/06/20 - 08/06/20	8976 EA	\$1,625,978
T&E Support	07/06/20 - 08/06/20		\$39,344
<b>Turnout Renewal Program. PG00065. C.EN.101860.</b>			<b>\$10,315,922</b>
<b>Hook #12 Crossover</b>			<b>\$1,565,643</b>
B&B Support	01/06/20 - 03/23/20		\$26,931
C&S Support	01/06/20 - 03/23/20		\$329,544
ET Support	01/06/20 - 03/23/20		\$13,397
Installation	01/06/20 - 03/23/20		\$1,165,505
T&E Support	01/06/20 - 03/23/20		\$30,267
<b>Hook #19 Crossover</b>			<b>\$1,565,640</b>
B&B Support	04/27/20 - 06/08/20		\$26,930
C&S Support	04/27/20 - 06/08/20		\$329,543
ET Support	04/27/20 - 06/08/20		\$13,398
Installation	04/27/20 - 06/08/20		\$1,165,504
T&E Support	04/27/20 - 06/08/20		\$30,266
<b>Hook #21 Crossover</b>			<b>\$1,565,640</b>
B&B Support	01/06/20 - 03/09/20		\$26,930
C&S Support	01/06/20 - 03/09/20		\$329,543
ET Support	01/06/20 - 03/09/20		\$13,398
Installation	01/06/20 - 03/09/20		\$1,165,504
T&E Support	01/06/20 - 03/09/20		\$30,266
<b>Hook #23 Crossover</b>			<b>\$922,068</b>
B&B Support	09/08/20 - 10/05/20		\$13,465
C&S Support	09/08/20 - 10/05/20		\$164,772
ET Support	09/08/20 - 10/05/20		\$6,698
Installation	09/08/20 - 10/05/20		\$721,999
T&E Support	09/08/20 - 10/05/20		\$15,133

Segment 19 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Hook #34 Crossover</b>			<b>\$1,565,643</b>
B&B Support	01/06/20 - 04/06/20		\$26,931
C&S Support	01/06/20 - 04/06/20		\$329,544
ET Support	01/06/20 - 04/06/20		\$13,397
Installation	01/06/20 - 04/06/20		\$1,165,505
T&E Support	01/06/20 - 04/06/20		\$30,267
<b>Hook #43 Crossover</b>			<b>\$1,565,643</b>
B&B Support	01/06/20 - 04/27/20		\$26,931
C&S Support	01/06/20 - 04/27/20		\$329,544
ET Support	01/06/20 - 04/27/20		\$13,397
Installation	01/06/20 - 04/27/20		\$1,165,505
T&E Support	01/06/20 - 04/27/20		\$30,267
<b>Hook #91 Crossover</b>			<b>\$1,565,643</b>
B&B Support	05/11/20 - 06/22/20		\$26,931
C&S Support	05/11/20 - 06/22/20		\$329,544
ET Support	05/11/20 - 06/22/20		\$13,397
Installation	05/11/20 - 06/22/20		\$1,165,505
T&E Support	05/11/20 - 06/22/20		\$30,267
<b>TOTAL SEGMENT 19 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$21,716,273</b>

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# Segment 20: Marcus Hook to Bacon



Segment 20 covers nearly 34 miles from Marcus Hook in Pennsylvania to Bacon in Maryland and is owned by Amtrak, with train operations from Amtrak and SEPTA, under contract with DelDOT.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$65 million on infrastructure investment in Segment 20 in federal fiscal year 2020. Amtrak plans to spend \$27 million on 22 capital renewal programs and \$1 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$37 million to advance 3 special projects coordinated by Delaware DOT.

## FY20 Planned Expenditure in Segment 20

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$28,675,421</b>
Projects	\$1,293,801
Programs	\$27,381,620
<b>Special projects by coordinating agency</b>	<b>\$37,000,000</b>
Delaware DOT	\$37,000,000
<b>Total</b>	<b>\$65,675,421</b>

## Capital Renewal Highlights

In Segment 20, Amtrak plans to spend \$2.6 million of Delaware DOT's BCCs, \$21 million of its own BCCs, and \$5 million of its own capital above BCCs to fund capital renewal work.

Of the \$29 million Amtrak plans to spend on capital renewal in this segment, \$7 million will be spent on the TLS to replace almost 12,000 concrete ties between Hook to Holly, and between Yard and Brandy. Amtrak will spend another \$3.7 million replacing 46,400 feet of rail. Other notable planned investments include \$0.7 million on 25 miles of high speed surfacing, \$0.9 million on drainage improvements, and \$0.4 million on spot surfacing 9,800 feet.

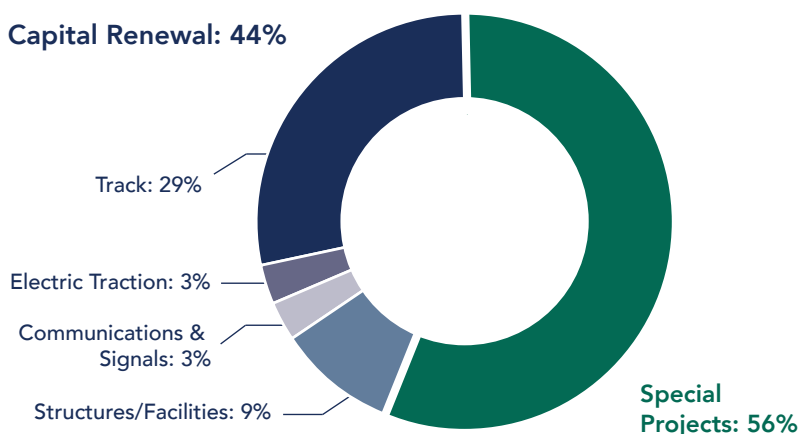
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$23,701,393</b>
Amtrak	\$21,072,364
Delaware DOT	\$2,629,028
<b>Above BCC</b>	<b>\$4,974,028</b>
Amtrak	\$4,974,028
<b>Capital Renewal Total</b>	<b>\$28,675,421</b>

## Special Project Highlights

NEC stakeholders plan to invest \$37 million in 3 special projects in this segment, all of which are coordinated by Delaware DOT. In FY20, Delaware DOT plans to begin construction of the Claymont Regional Transportation Center as well as continue construction of Delaware 3rd Track and the Newark Regional Transportation Center.

## Planned Investment in Segment 20 by Category and Discipline



## FY20 Investments in Segment 20 (Marcus Hook to Bacon)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.</b>			<b>\$1,504,213</b>
<b>Design</b>			<b>\$150,389</b>
Design - SAP Installation - Wilmington Subdivision, Bell to Baldwin			\$150,389
<b>Mid-Atlantic North Catenary Hardware Renewal Program</b>			<b>\$977,526</b>
SAP Installation - Wilmington Subdivision, Bell to Baldwin		400 EA	\$977,526
<b>Mid-Atlantic North Catenary Pole Program</b>			<b>\$366,857</b>
Philadelphia to Wilmington - Catenary Pole Replacements	10/01/19 - 11/30/19	17 EA	\$366,857
<b>Project/Program Management</b>			<b>\$9,442</b>
<b>Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.</b>			<b>\$5,447,165</b>
<b>Contingency</b>			<b>\$114,250</b>
<b>Mid-Atlantic North Maintenance of Equip Facilities Program</b>			<b>\$5,323,472</b>
Wilmington Administrative Building - HVAC Upgrade			\$107,135
Wilmington CNOC CETC Generator Phase 1 & 2			\$349,444
Wilmington Powerhouse - Floor			\$428,541
Wilmington Powerhouse - Roof			\$1,821,298
Wilmington Rubb Building - Cover Replacement			\$267,838
Wilmington Training Center - Roof Replacement	10/01/19 - 09/30/20		\$1,077,544
Wilmington Yard - Fluid Storage and Distribution System			\$1,271,671
<b>Project/Program Management</b>			<b>\$9,442</b>
<b>Mid-Atlantic North Signals Program. PG00017. C.EN.101825.</b>			<b>\$125,486</b>
<b>Contingency</b>			<b>\$40,507</b>
<b>Mid-Atlantic North C&amp;S Signal System Upgrades</b>			<b>\$75,537</b>
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$37,769
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$37,769
<b>Project/Program Management</b>			<b>\$9,442</b>
<b>Mid-Atlantic North Structures Program. PG00018. C.EN.101826.</b>			<b>\$101,711</b>
<b>Contingency</b>			<b>\$92,269</b>
<b>Project/Program Management</b>			<b>\$9,442</b>

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic North Substations Program. PG00019. C.EN.101827.			\$205,459
Contingency			\$35,314
Mid-Atlantic North Substations Program			\$160,703
W Phila #1A - Battery/Charger Replacement	10/01/19 - 10/15/19	1 EA	\$53,568
West Yard #13 - P 13 & 14 POT SERV Transformer Replacement	10/01/19 - 09/30/20	1 EA	\$107,135
Project/Program Management			\$9,442
Mid-Atlantic North Track Program. PG00020. C.EN.101828.			\$2,691,473
Contingency			\$188,843
Mid-Atlantic North Concrete Tie Replacement			\$73,030
AP Line - MP17.1/29.6		25 EA	\$73,030
Mid-Atlantic North Drainage/Road Bed Improvements			\$428,541
Wilmington 4 Track - Ditch West of Access Road - MP17.3/17.7	06/01/20 - 06/15/20		\$214,270
Wilmington 4 Track - Roadside Ditch - MP19.3/19.5	06/16/20 - 06/30/20		\$214,270
Mid-Atlantic North Insulated Joint Replacement			\$49,484
AP Line - MP17.1/29.6		4.7 EA	\$49,484
Mid-Atlantic North Joint Elimination			\$255,283
AP Line - MP17.1/29.6		44 EA	\$255,283
Mid-Atlantic North Rail Lubricator			\$6,609
Portec Rail Lubricator Parts Upgrade			\$6,609
Mid-Atlantic North Spot Surfacing			\$412,587
AP Line - MP17.1/29.6		9874.5 FT	\$412,587
Mid-Atlantic North Spot Undercutting			\$119,654
AP Line - MP17.1/29.6		MI	\$119,654
Mid-Atlantic North Steel Interlocking Renewal			\$480,015
AP Line - MP17.1/29.6			\$480,015
Mid-Atlantic North Track Wood Tie/Timber Replacement			\$647,212
AP Line - MP17.1/29.6		703.2 EA	\$647,212
Project/Program Management			\$30,215
Drainage-Road Bed Program Management			\$1,888
Project/Program Management			\$28,327

Segment 20 Investment Detail continued on next page &gt;&gt;&gt;



Capital Renewal Programs				
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure	
Mid-Atlantic South Catenary Program. PG00021. C.EN.101829.				\$137,588
Contingency				\$84,670
Mid-Atlantic South Signal Power Program				\$42,335
Fulton Interlocking Install 352 Signal Power Breaker	10/01/19 - 09/30/20	1 EA	\$42,335	
Project/Program Management				\$10,584
Mid-Atlantic South Communications Program. PG00022. C.EN.101830.				\$116,421
Contingency				\$5,292
Mid-Atlantic South Communications Program				\$42,335
Mid-Atlantic South Communications Program		100 PCT	\$42,335	
Mid-Atlantic South Radio Program				\$63,502
Mid-Atlantic South Radio Program			\$63,502	
Project/Program Management				\$5,292
Mid-Atlantic South Facilities Program. PG00023. C.EN.101831.				\$79,378
Contingency				\$63,502
Project/Program Management				\$15,876
Mid-Atlantic South Signals Program. PG00025. C.EN.101832.				\$49,743
Contingency				\$12,700
Mid-Atlantic South C&S Signal System Upgrades				\$31,751
Solid State Code Relays to Replace Obsolete Equipment	10/01/19 - 09/30/20	10 EA	\$31,751	
Project/Program Management				\$5,292
Mid-Atlantic South Structures Program. PG00026. C.EN.101833.				\$564,182
Contingency				\$254,009
Mid-Atlantic South Signal Bridge Program				\$267,838
Signal Bridge Fall Protection Upgrades - AP Line - MP41.4	07/01/20 - 09/30/20	100 PCT	\$267,838	
Project/Program Management				\$42,335
Mid-Atlantic South Substations Program. PG00027. C.EN.101834.				\$63,502
Contingency				\$52,919
Project/Program Management				\$10,584
Mid-Atlantic South Track Program. PG00028. C.EN.101835.				\$1,508,568
Contingency				\$372,077
Design				\$211,674
Design - AP Line - MP103.5			\$105,837	
Design - AP Line - MP53.7			\$105,837	

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic South Division Interlocking Steel</b>			<b>\$107,135</b>
AP Line - MP29.6/41.4	10/01/19 - 09/30/20	100 PCT	\$107,135
<b>Mid-Atlantic South Drainage-Road Bed Improvements</b>			<b>\$107,135</b>
AP Line - MP29.6/41.4	02/10/20 - 02/22/20	100 PCT	\$53,568
AP Line - MP41.4/51.0	02/21/20 - 02/23/20	100 PCT	\$53,568
<b>Mid-Atlantic South Insulated Joint Replacement</b>			<b>\$133,919</b>
AP Line - MP29.6/41.4	10/01/19 - 09/30/20	6 EA	\$80,351
AP Line - MP41.4/51.0	10/01/19 - 09/30/20	4 EA	\$53,568
<b>Mid-Atlantic South Joint Elimination</b>			<b>\$80,351</b>
AP Line - MP41.4/51.0		15 EA	\$80,351
<b>Mid-Atlantic South Ride Quality Improvement</b>			<b>\$428,541</b>
Drainage Improvements - AP Line - MP 29.6/41.4		100 PCT	\$267,838
Drainage Improvements - AP Line - MP 41.4/51.0		100 PCT	\$160,703
<b>Project/Program Management</b>			<b>\$67,736</b>
Project/Program Management		100 PCT	\$52,919
Project/Program Management - Drainage/Road Bed Improvements		100 PCT	\$14,817

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$322,816</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$11,557</b>
Mid-Atlantic Division	N/A		\$11,557
<b>Ansaldo Servier Migration</b>			<b>\$117,629</b>
Line 2 - Washington Union Station to Philadelphia 30th Street Station	N/A		\$117,629
<b>Burns Engineering Fixed Database Build</b>			<b>\$89,613</b>
Mid-Atlantic Division	N/A		\$89,613
<b>Redundant Transponders</b>			<b>\$104,016</b>
Mid-Atlantic Division	N/A		\$104,016
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$40,436</b>
<b>System</b>			<b>\$40,436</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$40,436

Segment 20 Investment Detail continued on next page &gt;&gt;&gt;

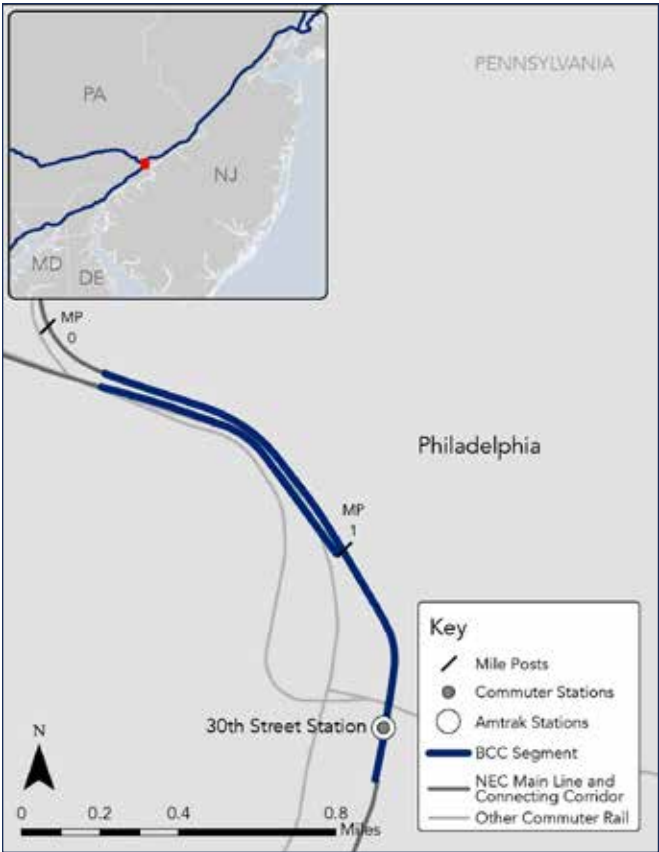
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Fence Upgrades Program. PG00069. C.EN.101854.</b>			<b>\$180,385</b>
<b>Northeast Corridor</b>			<b>\$180,385</b>
Wilmington Parking Lot	06/08/20 - 06/26/20	550 FT	\$180,385
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$715,431</b>
<b>AP Line</b>			<b>\$715,431</b>
MP 17.1-29.6	10/01/19 - 09/30/20	10.99 MI	\$283,293
MP 29.6-41.4	10/01/19 - 09/30/20	14.48 MI	\$230,474
MP 41.4-51.0	10/01/19 - 09/30/20	0 MI	\$201,664
<b>Rail Grinding Program. PG00064. C.EN.101794.</b>			<b>\$143,367</b>
<b>Northeast Corridor</b>			<b>\$143,367</b>
Grinding Davis to Shellpot Track 1	11/01/20 - 03/15/20		\$47,789
Grinding Iron to Davis to Ruthby Track A	11/01/20 - 03/15/20		\$23,895
Grinding Landlith to Holly Track 2	11/01/20 - 03/15/20		\$23,895
Grinding Ragan to Davis Track 3	11/01/20 - 03/15/20		\$47,789
<b>Rail Replacement Program. PG00003. C.EN.101856.</b>			<b>\$3,686,079</b>
<b>Northeast Corridor</b>			<b>\$3,686,079</b>
Curve 330, Track 2	12/06/19 - 12/09/19	3200 FT	\$311,049
Curve 332, Track 2	12/13/19 - 12/16/19	3200 FT	\$311,049
Ragan to Davis, Track 3 (40,000')	01/06/20 - 02/27/20	40000 FT	\$3,063,982
<b>TLS Concrete Tie Replacement Program. PG00057. C.EN.101652.</b>			<b>\$7,163,630</b>
<b>Hook to Holly Track 3</b>			<b>\$4,639,146</b>
B&B Support	07/06/20 - 08/06/20		\$121,745
C&S Support	07/06/20 - 08/06/20		\$459,339
ET Support	07/06/20 - 08/06/20		\$137,615
Installation	07/06/20 - 08/06/20	8976 EA	\$3,827,824
T&E Support	07/06/20 - 08/06/20		\$92,623
<b>Yard to Brandy Track 1</b>			<b>\$2,524,484</b>
B&B Support	06/15/20 - 07/02/20		\$73,995
C&S Support	06/15/20 - 07/02/20		\$249,438
ET Support	06/15/20 - 07/02/20		\$61,924
Installation	06/15/20 - 07/02/20	2904 EA	\$2,078,642
T&E Support	06/15/20 - 07/02/20		\$60,484

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Track Rehabilitation Program . PG00063. C.EN.101859.</b>			<b>\$1,482,483</b>
<b>Northeast Corridor</b>			<b>\$1,482,483</b>
West Yard Wood Tie Replacement with Concrete Ties	12/02/19 - 03/13/20		\$669,355
Wilmington Yard Track Panel and Turnout Installation for MOFE Facility	12/02/19 - 03/13/20		\$813,129
<b>Turnout Renewal Program. PG00065. C.EN.101860.</b>			<b>\$1,052,102</b>
<b>Wilmington Yard</b>			<b>\$1,052,102</b>
Turnout	10/01/20 - 09/30/20		\$1,052,102
<b>TOTAL SEGMENT 20 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$27,381,621</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Mid-Atlantic South Signal System Upgrades to 562 Project. P000120. C.EN.101872 .</b>	
Begin construction of the ABS Signal System Upgrades from Oak I/L to Bush I/L and design ABS Signal System Upgrades from Bush I/L to Wood I/L. Work includes: Switch and signal case replacement including new switch and signal cables and new track wires, interlocking signals replacement and replacement of air operated switches with electric machines.	
<ul style="list-style-type: none"> <li>Start Construction Oak to Bush: 10/1/2019 - 9/1/2020</li> <li>Start Design Bush to Wood: 10/1/2019 - 8/31/2020</li> </ul>	
<b>TOTAL SEGMENT 20 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	
<b>\$1,293,801</b>	

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Claymont Regional Transportation Center. Delaware DOT.</b>	
Performance of site preparation of work and testing. Design submissions from the design/build contractor and multiple party reviews. Commencement of building and platform and garage construction.	
<ul style="list-style-type: none"> <li>Completion of site preparation work November 2019.</li> <li>Commencement of building, garage and platform construction in Spring 2020.</li> </ul>	
<b>Delaware Third Track Program. Delaware DOT. Amtrak.</b>	
Complete installation of panels at Mill Creek Bridge. Perform cut and throw work to connect Track 1 South End. Install 300 feet of track to finish construction of new Track 3. Connect track to existing track 2.	
<ul style="list-style-type: none"> <li>Commence panel installation; cut and throw work and Track 3 connection work in August 2020.</li> <li>Commence installation of 300 feet of new track on Track 3 line by February 2020.</li> </ul>	
<b>Newark (DE) Regional Transportation Center. Delaware DOT. Amtrak. SEPTA.</b>	
Completion of Contract 2, Station Building construction. Completion of Contract 3A, Catenary and Signal foundation work. Award of contract 3B, Pedestrian Bridge and Platform work.	
<ul style="list-style-type: none"> <li>Completion of Contract 2, Station Building construction by November 2019.</li> <li>Completion of Contract 3A, Catenary and Signal foundation work by December 2019.</li> <li>Award of contract 3B, Pedestrian Bridge and Platform work by January 2020.</li> </ul>	
<b>TOTAL SEGMENT 20 SPECIAL PROJECTS EXPENDITURE</b>	
<b>\$37,000,000</b>	

# Segment 28: 30th St Station to 36th St



Segment 28 covers 2 miles from Philadelphia 30th Street Station to 36th Street in Pennsylvania and is owned by Amtrak, with train operations from Amtrak only.

## FY20 Planned Work Overview

NEC stakeholders plan to spend \$0.7 million on infrastructure investment in Segment 28 in federal fiscal year 2020. Amtrak plans to spend \$0.7 million on 10 capital renewal programs.

## FY20 Planned Expenditure in Segment 28

Investment Category	Amount
Capital renewal by type	\$767,319
Projects	\$0
Programs	\$767,319
Special projects by coordinating agency	\$0
Total	\$767,319

### Capital Renewal Highlights

In Segment 28, Amtrak plans to spend \$0.7 million of its own BCCs to fund capital renewal work.

Of the \$0.7 million Amtrak plans to spend on capital renewal in this segment, highlights include spending \$0.48 million on wood tie/timber replacement between Zoo and JO Interlocking and \$0.13 million on two substation replacements.

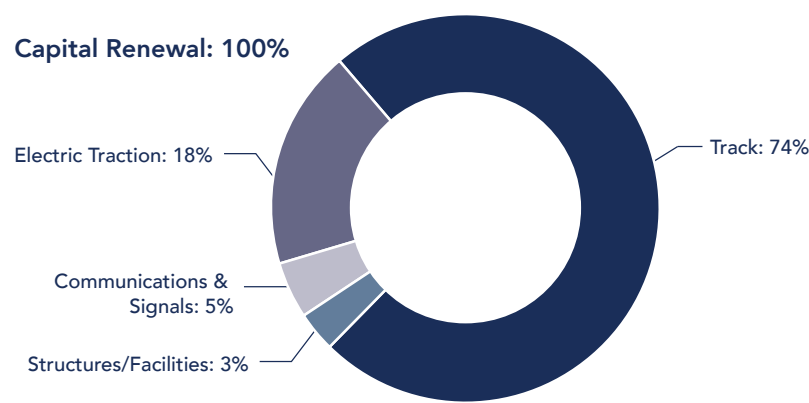
### FY20 Capital Renewal Contribution

Contribution Type	Amount
Baseline Capital Charges	\$767,319
Amtrak	\$767,319
Above BCC	\$0
Capital Renewal Total	\$767,319

### Special Project Highlights

There are no special projects in Segment 28 with planned work in FY20.

### Planned Investment in Segment 28 by Category and Discipline



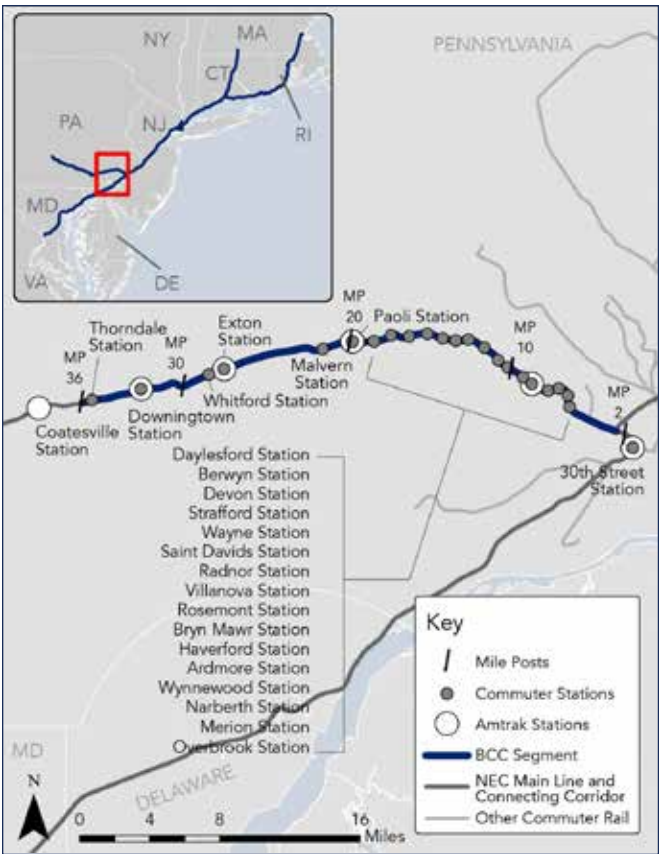
## FY20 Investments in Segment 28 (30th St Station to 36th St)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.			\$1,115
Project/Program Management			\$1,115
Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.			\$14,609
Contingency			\$13,494
Project/Program Management			\$1,115
Mid-Atlantic North Signals Program. PG00017. C.EN.101825.			\$14,821
Contingency			\$4,784
Mid-Atlantic North C&S Signal System Upgrades			\$8,922
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$4,461
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$4,461
Project/Program Management			\$1,115
Mid-Atlantic North Structures Program. PG00018. C.EN.101826.			\$12,013
Contingency			\$10,898
Project/Program Management			\$1,115
Mid-Atlantic North Substations Program. PG00019. C.EN.101827.			\$139,205
Contingency			\$4,171
Mid-Atlantic North Substations Program			\$133,919
Witmer #68 - RTU Replacement		1 EA	\$80,351
Zoo #9 - Battery/Charger Replacement	10/01/19 - 10/15/19	1 EA	\$53,568
Project/Program Management			\$1,115
Mid-Atlantic North Track Program. PG00020. C.EN.101828.			\$25,650
Contingency			\$22,304
Project/Program Management			\$3,346
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.			\$15,387
Ansaldo Servier Migration			\$6,819
Line 4 - Harrisburg Station to Philadelphia 30th Street Station	N/A		\$6,819
Burns Engineering Fixed Database Build			\$3,965
Mid-Atlantic Division	N/A		\$3,965
Redundant Transponders			\$4,602
Mid-Atlantic Division	N/A		\$4,602

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Communications System Upgrades Program. PG00083. C.EN.101857.			\$5,396
Mid-Atlantic Division			\$5,396
Communications Equipment House Replacements	N/A		\$1,542
Harrisburg Line - Fiber Optic Transport System Upgrade	N/A		\$3,854
Production High Speed Surfacing Program. PG00060. C.EN.101855.			\$54,268
AH Line			\$54,268
MP 1.9-20.2	10/01/19 - 09/30/20	2.03 MI	\$54,268
Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.			\$484,854
AN Line - Production Units			\$484,854
Zoo to JO Interlocking	03/20/20 - 06/05/20		\$484,854
<b>TOTAL SEGMENT 28 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$767,319</b>



# Segment 29: 36th St to Thorndale



Segment 29 covers 33 miles from 36th Street to Thorndale, PA and is owned by Amtrak, with train operations from Amtrak and SEPTA.

## FY20 Planned Work Overview

NEC stakeholders plan to spend \$39 million on infrastructure investment in Segment 29 in federal fiscal year 2020. Amtrak plans to spend \$22 million on 12 capital renewal programs and \$8 million on 2 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$9 million to advance 5 special projects coordinated by SEPTA and Pennsylvania DOT.

## FY20 Planned Expenditure in Segment 29

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$29,766,755</b>
Projects	\$7,967,964
Programs	\$21,798,791
<b>Special projects by coordinating agency</b>	<b>\$9,004,248</b>
SEPTA	\$7,081,171
Pennsylvania DOT	\$1,923,077
<b>Total</b>	<b>\$38,771,003</b>

## Capital Renewal Highlights

In Segment 29, Amtrak plans to spend \$18 million of SEPTA's BCCs and \$11 million of its own BCCs to fund capital renewal work.

Of the \$30 million Amtrak plans to spend on capital renewal in this segment, \$6.8 million will go toward renewing four crossovers at Overbrook and Paoli interlockings. Amtrak also plans to invest \$3 million on wood tie/timber replacement, \$1.5 million to renew or replace 5 undergrade bridges, and \$1.2 million to replace 12,000 feet of rail. Other highlights include plans to spend \$1.4 million on drainage/road bed improvements and \$2.1 million on 35 miles of high speed surfacing.

## FY20 Capital Renewal Contribution

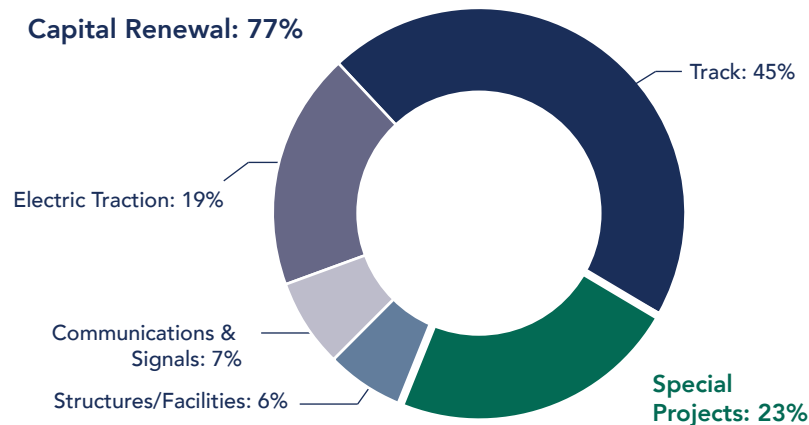
Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$29,766,755</b>
Amtrak	\$11,301,431
SEPTA	\$18,465,326
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$29,766,755</b>

## Special Project Highlights

During FY20, SEPTA plans to invest over \$11 million in this segment on the projects it will manage. Highlights include beginning construction of improvements to Ardmore Station and Phase 3 of the Frazer Rail Shop and Yard upgrade.

In FY20, Pennsylvania DOT will coordinate 3 projects with activity in this segment. PennDOT plans to spend \$1 million toward design of Downingtown Station improvements while also coordinating with the FRA, Amtrak, and SEPTA to advance the Zoo Interlocking Project and the Automatic Block Signal System from Park to Paoli.

## Planned Investment in Segment 29 by Category and Discipline



## FY20 Investments in Segment 29 (36th St to Thorndale)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.</b>			<b>\$345,940</b>
<b>Mid-Atlantic North Catenary Hardware Renewal Program</b>			<b>\$321,406</b>
Thorn Interlocking - Hardware Renewal			\$321,406
<b>Project/Program Management</b>			<b>\$24,535</b>
<b>Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.</b>			<b>\$321,406</b>
<b>Contingency</b>			<b>\$296,871</b>
<b>Project/Program Management</b>			<b>\$24,535</b>
<b>Mid-Atlantic North Signals Program. PG00017. C.EN.101825.</b>			<b>\$647,473</b>
<b>Contingency</b>			<b>\$105,254</b>
<b>Mid-Atlantic North C&amp;S Signal System Upgrades</b>			<b>\$517,684</b>
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20		\$98,139
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20		\$98,139
Overbrook to Bryn Mawr - Cable ID/Replacement	10/01/19 - 09/30/20		\$321,406
<b>Project/Program Management</b>			<b>\$24,535</b>
<b>Mid-Atlantic North Structures Program. PG00018. C.EN.101826.</b>			<b>\$2,085,587</b>
<b>Contingency</b>			<b>\$239,754</b>
<b>Mid-Atlantic North Signal Bridge Program</b>			<b>\$321,406</b>
AH Line, Bryn Mawr - EBHS Signal Bridge Upgrades - MP10.32			\$160,703
AH Line, Bryn Mawr - WBHS Signal Bridge Upgrades - MP09.97			\$160,703
<b>Mid-Atlantic North Undergrade Bridge Program</b>			<b>\$1,499,893</b>
AH Line, Devon, PA - Pedestrian Tunnel - MP16.94	04/01/20 - 09/30/20		\$214,270
AH Line, Devon, PA - Stream - MP16.49	10/01/19 - 12/31/19		\$535,676
AH Line, Exton, PA - Ship Road - MP26.70			\$267,838
AH Line, Exton, PA - Walkertown Road - MP27.47			\$160,703
AH Line, Frazer, PA - Stream -MP23.99	10/01/19 - 12/31/19		\$321,406
<b>Project/Program Management</b>			<b>\$24,535</b>
<b>Mid-Atlantic North Substations Program. PG00019. C.EN.101827.</b>			<b>\$426,987</b>
<b>Contingency</b>			<b>\$91,760</b>
<b>Mid-Atlantic North Substations Program</b>			<b>\$310,692</b>
Frazer #64 - Battery Bank Replacement		1 EA	\$128,562
Paoli #4 - Battery Bank Replacement		1 EA	\$128,562
Paoli #4 - Battery/Charger Replacement	10/01/19 - 10/10/19	1 EA	\$53,568
<b>Project/Program Management</b>			<b>\$24,535</b>

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Track Program. PG00020. C.EN.101828.</b>			<b>\$5,217,746</b>
<b>Contingency</b>			<b>\$490,696</b>
<b>Mid-Atlantic North Drainage/Road Bed Improvements</b>			<b>\$1,430,714</b>
AH Line - MP1.9/20.2			\$1,392,758
AH Line - MP20.2/35.3			\$37,956
<b>Mid-Atlantic North Insulated Joint Replacement</b>			<b>\$11,349</b>
AH Line - MP1.9/20.2		0.678 EA	\$9,216
AH Line - MP20.2/35.3		0.678 EA	\$2,133
<b>Mid-Atlantic North Joint Elimination</b>			<b>\$426,531</b>
AH Line - MP1.9/20.2	03/30/20 - 03/31/20	78 EA	\$363,167
AH Line - MP20.2/35.3		13.6 EA	\$63,364
<b>Mid-Atlantic North Rail Lubricator</b>			<b>\$17,174</b>
Portec Rail Lubricator Parts Upgrade			\$17,174
<b>Mid-Atlantic North Spot Surfacing</b>			<b>\$396,370</b>
AH Line - MP1.9/20.2		2323.5 FT	\$151,847
AH Line - MP20.2/35.3		3741.6 FT	\$244,523
<b>Mid-Atlantic North Spot Undercutting</b>			<b>\$789,068</b>
AH Line - MP1.9/20.2		MI	\$775,851
AH Line - MP20.2/35.3		MI	\$13,217
<b>Mid-Atlantic North Steel Interlocking Renewal</b>			<b>\$621,393</b>
AH Line - MP1.9/20.2			\$514,286
AH Line - MP20.2/35.3			\$107,106
<b>Mid-Atlantic North Track Wood Tie/Timber Replacement</b>			<b>\$955,941</b>
AH Line - MP1.9/20.2		1397 EA	\$612,168
AH Line - MP20.2/35.3		784.5 EA	\$343,772
<b>Project/Program Management</b>			<b>\$78,511</b>
Drainage-Road Bed Program Management			\$4,907
Project/Program Management			\$73,604

Segment 29 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$401,670</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$11,250</b>
Mid-Atlantic Division	N/A		\$11,250
<b>Ansaldo Servier Migration</b>			<b>\$150,028</b>
Line 4 - Harrisburg Station to Philadelphia 30th Street Station	N/A		\$150,028
<b>Burns Engineering Fixed Database Build</b>			<b>\$87,234</b>
Mid-Atlantic Division	N/A		\$87,234
<b>Interoperability - SEPTA</b>			<b>\$51,903</b>
Paxon & Valley/Jeff Boundary Upgrades	N/A	CPI	\$36,732
Zoo/Gerard Boundary Upgrades	N/A		\$15,171
<b>Redundant Transponders</b>			<b>\$101,254</b>
Mid-Atlantic Division	N/A		\$101,254
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$135,668</b>
<b>Mid-Atlantic Division</b>			<b>\$135,668</b>
Communications Equipment House Replacements	N/A		\$33,917
Communications Shelter Alarm System Upgrades	N/A		\$16,959
Harrisburg Line - Fiber Optic Transport System Upgrade	N/A		\$84,793
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$2,117,133</b>
<b>AH Line</b>			<b>\$2,117,133</b>
MP 1.9-20.2	10/01/19 - 09/30/20	2.03 MI	\$1,193,889
MP 20.2-35.3	10/01/19 - 09/30/20	35.69 MI	\$923,244
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$2,049,026</b>
<b>AH Line - Production Units</b>			<b>\$2,049,026</b>
Downs Interlocking/Chester Valley Siding	05/18/20 - 05/29/20		\$227,280
Glenn Interlocking	08/03/20 - 08/28/20		\$568,068
Thorn Interlocking	08/31/20 - 10/16/20		\$916,202
Thorn to Paoli - Track 4	07/15/19 - 10/11/19		\$337,476
<b>Rail Replacement Program. PG00003. C.EN.101856.</b>			<b>\$1,244,195</b>
<b>AH Line</b>			<b>\$1,244,195</b>
Curve 628, Track 1	11/15/19 - 11/18/19	3200 FT	\$311,049
Curve 628, Track 4	11/22/19 - 11/25/19	3200 FT	\$311,049
Curve 629, Track 1	12/06/19 - 12/09/19	3200 FT	\$311,049
Curve 629, Track 4	12/13/19 - 12/16/19	3200 FT	\$311,049

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Turnout Renewal Program. PG00065. C.EN.101860.			<b>\$6,805,961</b>
<b>Overbrook #13 Crossover</b>			<b>\$1,929,425</b>
B&B Support	08/03/20 - 08/31/20		\$52,783
C&S Support	08/03/20 - 08/31/20		\$336,739
ET Support	08/03/20 - 08/31/20		\$17,863
Installation	08/03/20 - 08/31/20		\$1,441,331
T&E Support	08/03/20 - 08/31/20		\$80,709
<b>Overbrook #15 Crossover</b>			<b>\$1,929,425</b>
B&B Support	07/06/20 - 08/03/20		\$52,783
C&S Support	07/06/20 - 08/03/20		\$336,739
ET Support	07/06/20 - 08/03/20		\$17,863
Installation	07/06/20 - 08/03/20		\$1,441,331
T&E Support	07/06/20 - 08/03/20		\$80,709
<b>Paoli #27 Crossover</b>			<b>\$1,473,557</b>
B&B Support	05/18/20 - 06/29/20		\$52,784
C&S Support	05/18/20 - 06/29/20		\$336,739
ET Support	05/18/20 - 06/29/20		\$17,864
Installation	05/18/20 - 06/29/20		\$985,460
T&E Support	05/18/20 - 06/29/20		\$80,709
<b>Paoli #29 Crossover</b>			<b>\$1,473,555</b>
B&B Support	05/04/20 - 06/15/20		\$52,783
C&S Support	05/04/20 - 06/15/20		\$336,739
ET Support	05/04/20 - 06/15/20		\$17,863
Installation	05/04/20 - 06/15/20		\$985,460
T&E Support	05/04/20 - 06/15/20		\$80,709
<b>TOTAL SEGMENT 29 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$21,798,791</b>

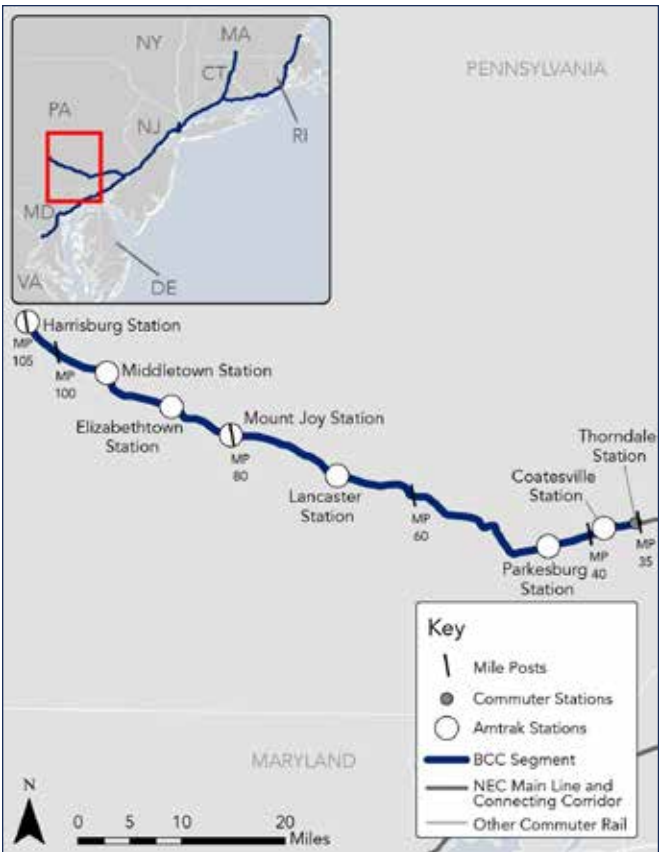
Segment 29 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Track Circuits Upgrades to 562 - Park to Paoli Project. P000117. C.EN.101770.</b> Continue the design and construction of the ABS Signal System from Park to Paoli including: Switch and signal case replacement with new switch and signal cables and new track wires, interlocking signals replacement and replacement of air operated switches with electric machines. <ul style="list-style-type: none"> <li>Construction Paoli to Frazer: 8/1/2018 - 7/1/2020</li> <li>Design - Caln Interlocking: 9/4/2018 - 3/1/2020</li> <li>Construction Park to Thorn: 3/1/2019 - 9/30/2020</li> </ul>	<b>\$1,558,644</b>
<b>Zoo to Paoli Catenary Structure Upgrade Project. P000090. C.EN.201264.</b> Continue permitting; procurement of long lead materials, procurement of a CM firm and construction contractor; start construction if permits obtained. <ul style="list-style-type: none"> <li>Procure Construction Contractor: 9/3/2019 - 5/1/2020</li> <li>Proj. Mngmt: 10/1/2019 - 11/18/2025</li> <li>Procure Long Lead Material: 12/20/2019 - 12/18/2020</li> <li>Construction Mngmt: 4/6/2020 - 10/31/2025</li> <li>Construction: 6/8/2020 - 9/30/2025</li> </ul>	<b>\$6,409,320</b>
<b>TOTAL SEGMENT 29 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$7,967,964</b>
Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Ardmore Station ADA Improvements. SEPTA, Amtrak, Pennsylvania DOT.</b> Improvements to the Ardmore Transportation Center on SEPTA's Paoli/Thorndale Regional Rail Line and Amtrak's Keystone Corridor will be completed in two phases. Phase 1 will make this station fully ADA accessible with enhancements that include a new inbound station building; outbound shelters; high and low-level platforms; canopies; passenger amenities; tunnel accessibility improvements; elevators and accessible pathways; improved lighting; new signage; landscaping and site improvements including stormwater management; and installing foundations for a future parking garage. Phase 1 costs include design for Phase 2. There is a separate project for parking at the Station (Ardmore Station Parking Improvements in the FY 2019-2023 NEC Capital Investment Plan). SEPTA currently leases this station from Amtrak. <ul style="list-style-type: none"> <li>Construction is expected to begin in the summer 2019. The project schedule is contingent upon availability of Amtrak support.</li> </ul>	<b>\$4,836,256</b>
<b>Frazer Rail Shop and Yard Upgrade. SEPTA.</b> Phased upgrade of the Frazer Maintenance Facility to accommodate the expansion of SEPTA's railcar and locomotive fleets including multi-level cars. Work includes extending existing storage tracks and adding new storage tracks; major upgrades to the repair shop and equipment, including the wheel truing machine and drop table; construction of a shop extension, new cleaning track, train washer building, storage building and yardmaster building; utility upgrades and stormwater improvements. In addition, the roof will be replaced and mechanical equipment will be replaced. <ul style="list-style-type: none"> <li>Bidding and award of Phase 3A construction, and completion of final design for Phase 3B.</li> </ul>	<b>\$2,132,915</b>
<b>Harrisburg Line Station Improvements: Downingtown. Pennsylvania DOT, Federal Railroad Administration, Federal Transit Administration.</b> PennDOT to hire a consultant for 30% design of the Amtrak Bridge over US 322. <ul style="list-style-type: none"> <li>NTP: Sept 2019</li> <li>30% design: Oct 2020</li> </ul>	<b>\$1,000,000</b>

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Villanova Station ADA Improvements. SEPTA.</b> <p>This project will modernize Villanova Station on the Paoli/Thorndale Regional Rail Line, making the station fully ADA accessible, and will advance in phases. Phase 1 will improve station accessibility and will include construction of a new, wider pedestrian tunnel with access ramps and stairs, additional parking spaces, stormwater management improvements, new signage, lighting, and passenger amenities. Phase 2 will make the station fully ADA accessible and includes full length high-level platforms, new canopies, station building improvements, passenger shelters, security improvements and passenger amenities. SEPTA currently leases this station from Amtrak.</p> <ul style="list-style-type: none"> <li>• Closeout of Phase 1A</li> </ul>	<b>\$112,000</b>
<b>Harrisburg Line Automatic Block Signal System – Park to Paoli. Pennsylvania DOT, Amtrak, SEPTA, Federal Railroad Administration.</b> <p>Design of ABS - Park to Paoli to be finalized Dec 2019. Amtrak design review will be required. Amtrak construction to initiate work in 2020.</p> <ul style="list-style-type: none"> <li>• 60% Design review: 9/27/19</li> <li>• 100% design review: 12/20/19</li> <li>• Amtrak NTP: Feb 2020</li> </ul>	<b>\$923,077 (in Segment 29)</b>
<b>TOTAL SEGMENT 29 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$9,004,248</b>



# Segment 30: Thorndale to Harrisburg



Segment 30 covers nearly 70 miles from Thorndale, PA to Harrisburg, PA and is owned by Amtrak, with train operations from Amtrak only.

## FY20 Planned Work Overview

NEC stakeholders plan to spend over \$30 million on infrastructure investment in Segment 30 in federal fiscal year 2020. Amtrak plans to spend \$14 million on 12 capital renewal programs and \$7 million on 3 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$9 million to advance 4 special projects coordinated by Pennsylvania DOT.

## FY20 Planned Expenditure in Segment 30

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$21,377,379</b>
Projects	\$6,906,108
Programs	\$14,471,271
<b>Special projects by coordinating agency</b>	<b>\$8,926,923</b>
Pennsylvania DOT	\$8,926,923
<b>Total</b>	<b>\$30,304,302</b>

## Capital Renewal Highlights

In Segment 30, Amtrak plans to spend \$3 million of its own BCCs and \$18 million of its own capital above BCCs to fund capital renewal work.

Of the \$21 million Amtrak plans to spend on capital renewal in this segment, \$3 million will be spent on replacing wood/tie timber between Thorn and Park and \$1.9 million on almost 29,000 feet of spot surfacing. Amtrak will also spend \$0.8 million on the North-Cork/Conestoga Switch Renewal, \$0.7 million on 59 miles of high speed surfacing, and \$0.6 million on fence upgrades in Parkesburg, PA.

Amtrak also plans to spend \$3.1 million on field studies, pole designs and new line routing for the Conestoga to Royalton Transmission Project and \$0.4 million on design of the Conestoga substation improvements.

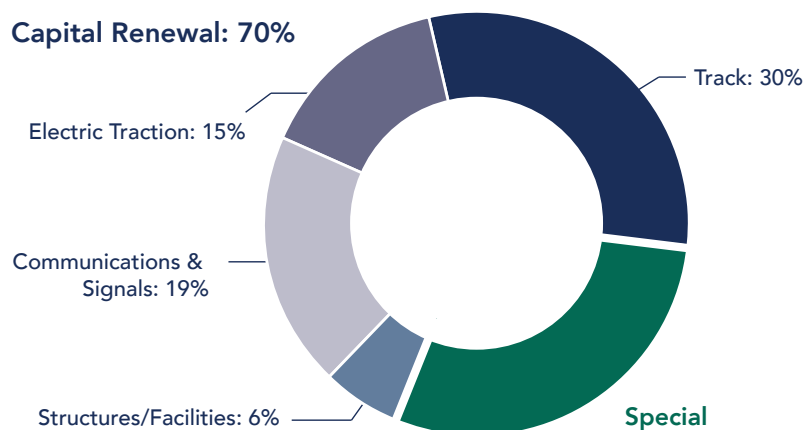
## Special Project Highlights

Pennsylvania DOT will coordinate 4 projects with activity in FY20 in this segment. PennDOT plans to spend over \$8 million toward design and/or construction at Coatesville, Middletown, and Parkesburg Stations. In addition, PennDOT will initiate construction of the Automatic Block Signal System from Park to Paoli.

## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$2,819,781</b>
Amtrak	\$2,819,781
<b>Above BCC</b>	<b>\$18,557,597</b>
Amtrak	\$18,557,597
<b>Capital Renewal Total</b>	<b>\$21,377,379</b>

## Planned Investment in Segment 30 by Category and Discipline



## FY20 Investments in Segment 30 (Thorndale to Harrisburg)

Capital Renewal Programs				
Regionally-Managed Programs		FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic North Catenary Program. PG00013. C.EN.101822.				\$131,874
Mid-Atlantic North Signal Power Program				\$80,351
Royalton Substation #71-352 - Breaker Installation	10/01/19 - 10/20/19		1 EA	\$80,351
Project/Program Management				\$51,523
Mid-Atlantic North Facilities Program. PG00015. C.EN.101824.				\$674,952
Contingency				\$623,429
Project/Program Management				\$51,523
Mid-Atlantic North Signals Program. PG00017. C.EN.101825.				\$1,541,823
Contingency				\$221,034
Mid-Atlantic North C&S Signal System Upgrades				\$1,269,266
Code Relay Replacement - AP Line - MP6.4/17.1	10/01/19 - 09/30/20			\$206,092
Code Replay Replacement - AP Line - MP17.1/29.6	10/01/19 - 09/30/20			\$206,092
North-Cork/Conestoga Switch Renewal	10/01/19 - 09/30/20			\$857,082
Project/Program Management				\$51,523
Mid-Atlantic North Structures Program. PG00018. C.EN.101826.				\$1,144,250
Contingency				\$503,483
Mid-Atlantic North Culvert Program				\$160,703
AH Line, Mount Joy, PA - MP81.68				\$160,703
Mid-Atlantic North Retaining Walls Upgrade Program				\$428,541
AH Line, Coatesville, PA - Retaining Wall - MP39.10			100 PCT	\$428,541
Project/Program Management				\$51,523
Mid-Atlantic North Substations Program. PG00019. C.EN.101827.				\$479,917
Contingency				\$192,696
Mid-Atlantic North Substations Program				\$235,697
Parkesburg #66 - Battery/Charger Replacement	10/01/19 - 10/10/19		3 EA	\$53,568
Royalton #71 - Battery/Charger Replacement	10/01/19 - 10/10/19		1 EA	\$53,568
West Yard #13 - Break Replacement	10/01/19 - 11/30/19		3 EA	\$128,562
Project/Program Management				\$51,523
Mid-Atlantic North Track Program. PG00020. C.EN.101828.				\$4,593,854
Contingency				\$1,030,461
Design				\$374,973
Design - AH Line, Mount Joy, PA - Flood Correction Study				\$374,973
Mid-Atlantic North Drainage/Road Bed Improvements				\$17,667
AH Line - MP35.3/105.2				\$17,667

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic North Insulated Joint Replacement</b>			<b>\$19,229</b>
AH Line - MP35.3/105.2		0.678 EA	\$19,229
<b>Mid-Atlantic North Joint Elimination</b>			<b>\$269,172</b>
AH Line - MP35.3/105.2		57 EA	\$269,172
<b>Mid-Atlantic North Rail Lubricator</b>			<b>\$36,847</b>
Portec Rail Lubricator Parts Upgrade			\$36,847
<b>Mid-Atlantic North Spot Surfacing</b>			<b>\$1,894,891</b>
AH Line - MP35.3/105.2		28994.9 FT	\$1,894,891
<b>Mid-Atlantic North Spot Undercutting</b>			<b>\$766</b>
AH Line - MP35.3/105.2		MI	\$766
<b>Mid-Atlantic North Steel Interlocking Renewal</b>			<b>\$47,456</b>
AH Line - MP35.3/105.2			\$47,456
<b>Mid-Atlantic North Track Wood Tie/Timber Replacement</b>			<b>\$737,296</b>
AH Line - MP35.3/105.2		1682.6 EA	\$737,296
<b>Project/Program Management</b>			<b>\$165,097</b>
Drainage-Road Bed Program Management			\$10,528
Project/Program Management			\$154,569
<b>Mid-Atlantic South Substations Program. PG00027. C.EN.101834.</b>			<b>\$204,954</b>
<b>Mid-Atlantic South Substations Program</b>			<b>\$204,954</b>
Perryville S16 Air Break Switch Replacement on 4 Lines to Conestoga	10/01/19 - 09/30/20	4 EA	\$204,954

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$795,729</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$23,626</b>
Mid-Atlantic Division	N/A		\$23,626
<b>Ansaldo Servier Migration</b>			<b>\$315,058</b>
Line 4 - Harrisburg Station to Philadelphia 30th Street Station	N/A		\$315,058
<b>Bumper Stops</b>			<b>\$61,220</b>
Harrisburg Station	N/A		\$61,220
<b>Burns Engineering Fixed Database Build</b>			<b>\$183,192</b>
Mid-Atlantic Division	N/A		\$183,192
<b>Redundant Transponders</b>			<b>\$212,634</b>
Mid-Atlantic Division	N/A		\$212,634

Segment 30 Investment Detail continued on next page &gt;&gt;&gt;

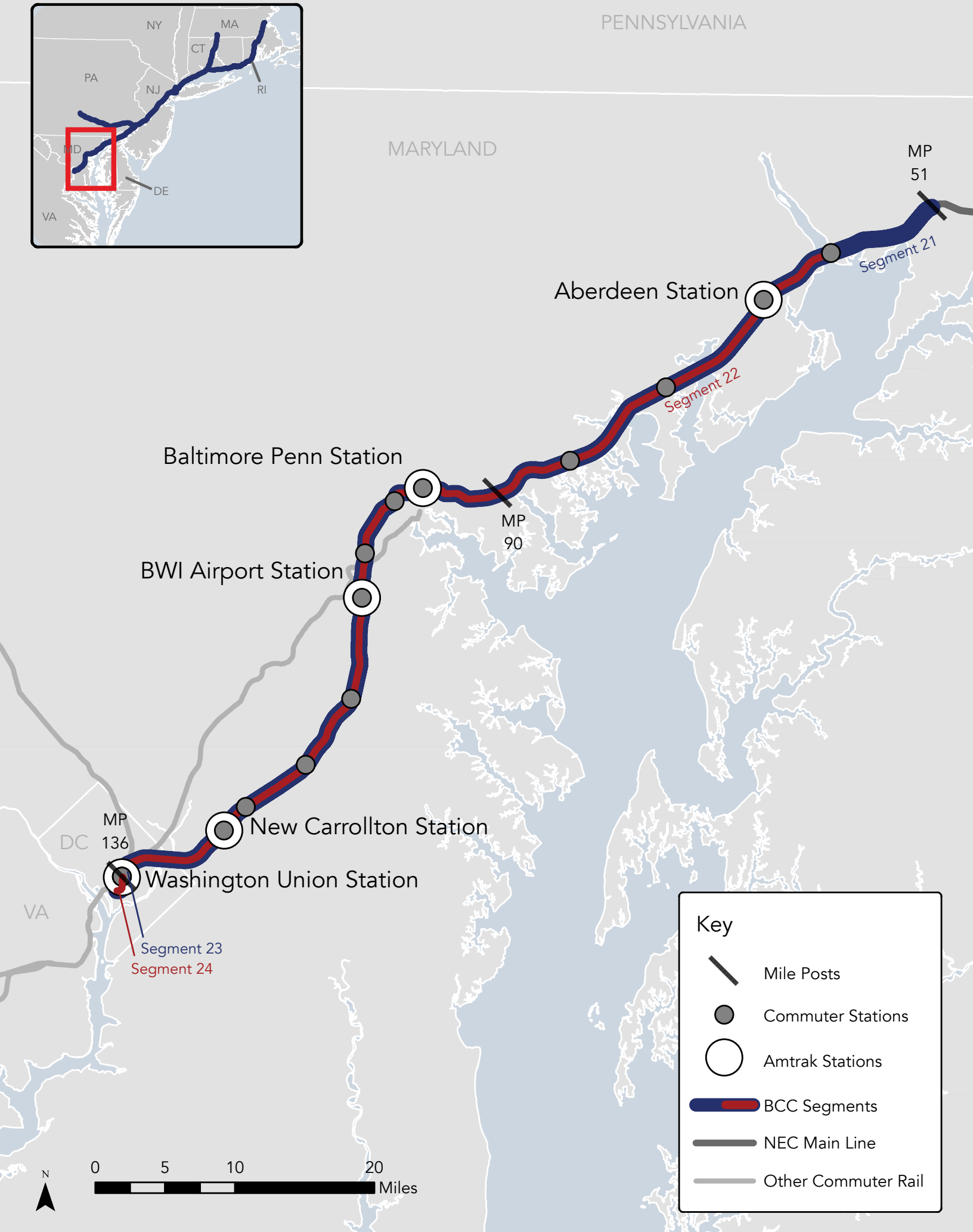
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$285,674</b>
<b>Mid-Atlantic Division</b>			<b>\$285,674</b>
Communications Equipment House Replacements	N/A		\$71,226
Communications Shelter Alarm System Upgrades	N/A		\$36,384
Harrisburg Line - Fiber Optic Transport System Upgrade	N/A		\$178,064
<b>Fence Upgrades Program. PG00069. C.EN.101854.</b>			<b>\$622,488</b>
<b>Northeast Corridor</b>			<b>\$622,488</b>
Parkesburg, PA - Bridge Street to Gay Street	05/04/20 - 06/05/20	2100 FT	\$622,488
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$734,960</b>
<b>AH Line</b>			<b>\$734,960</b>
MP 35.3-105.2	10/01/19 - 09/30/20	59.47 MI	\$734,960
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$3,260,796</b>
<b>AH Line - Production Units</b>			<b>\$3,260,796</b>
Thorn to Park - Track 1	10/14/19 - 11/22/19		\$1,652,274
Thorn to Park - Track 4	03/23/20 - 05/15/20		\$1,608,522
<b>TOTAL SEGMENT 30 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$14,471,271</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>Conestoga Substation Improvements Project. P000111. C.EN.101877.</b>	<b>\$482,108</b>
Procure a design consultant, initiate design development and advance the design to 30%, initiate NEPA/SHPO coordination,	
<ul style="list-style-type: none"> <li>Preliminary Design: 12/1/2019 - 2/28/2020</li> <li>Environmental/NEPA: 3/1/2020 - 7/31/2020</li> <li>60% Design: 7/1/2020 - 10/31/2020</li> </ul>	
<b>Conestoga to Royaltown Transmission Line Replacement Project. P000014. C.EN.101785.</b>	<b>\$3,150,846</b>
Advance the design, continue NS and utility coordination, continue the environmental and historical permitting process for NEPA compliance.	
<ul style="list-style-type: none"> <li>Environmental: 10/1/2019 - 2/28/2020</li> <li>Preliminary Design: 10/1/2019 - 11/29/2019</li> <li>60% Design: 1/2/2020 - 6/15/2020</li> <li>90% Design: 5/1/2020 - 8/31/2020</li> <li>Procure Construction Contractor: 5/30/2020 - 10/15/2020</li> <li>ROW/Easements: 8/3/2020 - 12/18/2020</li> <li>Final Design: 8/24/2020 - 10/30/2020</li> </ul>	

<b>Capital Renewal Projects</b>	
<b>Regionally Managed Projects</b>	<b>FY20 Expenditure</b>
<b>Track Circuits Upgrades to 562 - Park to Paoli Project. P000117. C.EN.101770.</b> Continue the design and construction of the ABS Signal System from Park to Paoli including: Switch and signal case replacement with new switch and signal cables and new track wires, interlocking signals replacement and replacement of air operated switches with electric machines. <ul style="list-style-type: none"> <li>• Construction Paoli to Frazer: 8/1/2018 - 7/1/2020</li> <li>• Design - Caln Interlocking: 9/4/2018 - 3/1/2020</li> <li>• Construction Park to Thorn: 3/1/2019 - 9/30/2020</li> </ul>	<b>\$3,273,153</b>
<b>TOTAL SEGMENT 30 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$6,906,108</b>
<b>Special Projects</b>	
<b>Project Name, Partner Agencies, &amp; FY20 Scope</b>	<b>FY20 Expenditure</b>
<b>Harrisburg Line Station Improvements: Coatesville. Pennsylvania DOT, Amtrak, Federal Railroad Administration, Federal Transit Administration.</b> 90% and 100% design reviews of foundations and track/signals. Amtrak construction to start in 2020. <ul style="list-style-type: none"> <li>• 90% Design review: October 2019</li> <li>• 100% design review: January 2020</li> <li>• Amtrak NTP: August 2020</li> </ul>	<b>\$650,000</b>
<b>Harrisburg Line Station Improvements: Middletown. Pennsylvania DOT, Amtrak, Federal Railroad Administration, Federal Transit Administration.</b> Amtrak shift of #1 track and Catenary. PennDOT contractor to start and install foundations. <ul style="list-style-type: none"> <li>• Amtrak track shift complete: June 2020</li> <li>• PennDOT contractor NTP: June 2020</li> </ul>	<b>\$6,800,000</b>
<b>Harrisburg Line Station Improvements: Parkesburg. Pennsylvania DOT, Amtrak, Federal Railroad Administration, Federal Transit Administration.</b> Design of ADA access between East bound and West Bound areas with additional parking at current location. <ul style="list-style-type: none"> <li>• Amtrak Labor Clearance: Aug 2019</li> <li>• PennDOT designer NTP: Oct 2019</li> <li>• Design Complete: Aug 2020</li> </ul>	<b>\$800,000</b>
<b>Harrisburg Line Automatic Block Signal System – Park to Paoli. Pennsylvania DOT, Amtrak, SEPTA, Federal Railroad Administration.</b> Design of ABS - Park to Paoli to be finalized Dec 2019. Amtrak design review will be required. Amtrak construction to initiate work in 2020. <ul style="list-style-type: none"> <li>• 60% Design review: 9/27/19</li> <li>• 100% design review: 12/20/19</li> <li>• Amtrak NTP: Feb 2020</li> </ul>	<b>\$676,923</b> <b>(in Segment 30)</b>
<b>TOTAL SEGMENT 30 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$8,926,923</b>

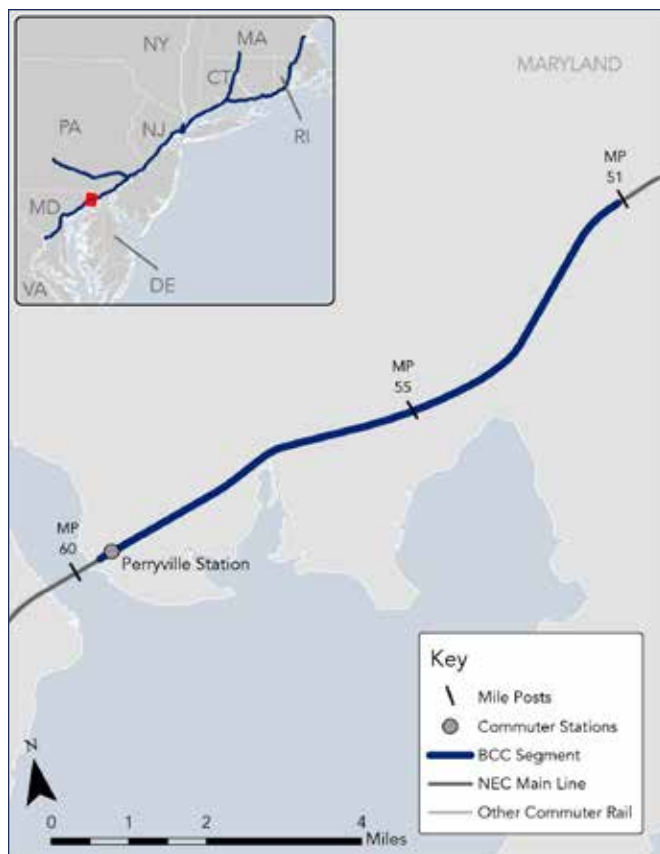
## FY20 Investment Detail: Mid-Atlantic South (Amtrak-owned)

BCC Segment	Owner	Operator(s)	See Page
21. Bacon to Perryville	Amtrak	Amtrak	180
22. Perryville to WAS	Amtrak	Amtrak, MARC	186
23. Washington Union Terminal	Amtrak	Amtrak, MARC, VRE	198
24. WAS to CP Virginia	Amtrak	Amtrak, VRE	204





## Segment 21: Bacon to Perryville



Segment 21 covers 8 miles from Bacon to Perryville in Maryland and is owned by Amtrak, with train operations from Amtrak only.

### FY20 Planned Work Overview

NEC stakeholders plan to spend over \$8 million on infrastructure investment in Segment 21 in federal fiscal year 2020. Amtrak plans to spend \$5 million on 11 capital renewal programs and \$3 million on 2 capital renewal projects in this segment.

### FY20 Planned Expenditure in Segment 21

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$8,250,974</b>
Projects	\$3,410,625
Programs	\$4,840,348
<b>Special projects by coordinating agency</b>	<b>\$0</b>
<b>Total</b>	<b>\$8,250,974</b>

## Capital Renewal Highlights

In Segment 21, Amtrak plans to spend \$2 million of its own BCCs and \$6 million of its own capital above BCCs to fund capital renewal work.

Of the \$8 million Amtrak plans to spend on capital renewal in this segment, \$2 million will be spent on the Mid-Atlantic South Track Program through which Amtrak will replace 400 wood ties/timbers. Amtrak will also spend \$0.5 million to complete 3.5 miles of high speed surfacing and \$0.8 million replacing Charleston Culvert. Amtrak also plans to spend \$3 million to closeout the removal of Prince Interlocking at MP 57.3.

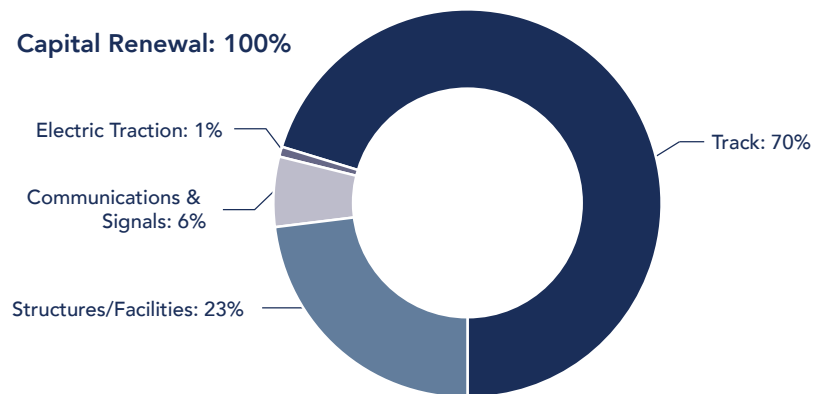
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$2,088,319</b>
Amtrak	\$2,088,319
<b>Above BCC</b>	<b>\$6,162,655</b>
Amtrak	\$6,162,655
<b>Capital Renewal Total</b>	<b>\$8,250,974</b>

## Special Project Highlights

There are no special projects in Segment 21 with planned work in FY20.

## Planned Investment in Segment 21 by Category and Discipline



## FY20 Investments in Segment 21 (Bacon to Perryville)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic South Catenary Program. PG00021. C.EN.101829.			\$54,516
Contingency			\$33,548
Mid-Atlantic South Signal Power Program			\$16,774
Fulton Interlocking Install 352 Signal Power Breaker	10/01/19 - 09/30/20	1 EA	\$16,774
Project/Program Management			\$4,194
Mid-Atlantic South Communications Program. PG00022. C.EN.101830.			\$46,129
Contingency			\$2,097
Mid-Atlantic South Communications Program			\$16,774
Mid-Atlantic South Communications Program		100 PCT	\$16,774
Mid-Atlantic South Radio Program			\$25,161
Mid-Atlantic South Radio Program		100 PCT	\$25,161
Project/Program Management			\$2,097
Mid-Atlantic South Facilities Program. PG00023. C.EN.101831.			\$513,560
Contingency			\$25,161
Mid-Atlantic South Maintenance of Way Base Program			\$482,108
Perryville MW Base Parking lot Drainage System Repairs	10/01/19 - 11/30/19	100 PCT	\$214,270
Perryville MW Base Sprinkler and Fire Alarm Repairs	01/01/20 - 03/30/20	100 PCT	\$267,838
Project/Program Management			\$6,290
Mid-Atlantic South Signals Program. PG00025. C.EN.101832.			\$19,710
Contingency			\$5,032
Mid-Atlantic South C&S Signal System Upgrades			\$12,581
Solid State Code Relays to Replace Obsolete Equipment	10/01/19 - 09/30/20	10 EA	\$12,581
Project/Program Management			\$2,097
Mid-Atlantic South Structures Program. PG00026. C.EN.101833.			\$1,403,042
Contingency			\$100,645
Mid-Atlantic South Culvert Program			\$803,514
Charleston Culvert Replacement - AP Line - MP54.06	04/01/20 - 07/01/20	1 EA	\$803,514
Mid-Atlantic South Undergrade Bridge Program			\$482,108
Principio Creek Bridge Upgrades - AP Line - MP56.92	10/01/19 - 09/30/20	100 PCT	\$321,406
Substructure Rehab, Bridge - AP Line - MP56.51	03/01/20 - 05/01/20	100 PCT	\$160,703
Project/Program Management			\$16,774

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic South Substations Program. PG00027. C.EN.101834.			\$25,161
Contingency			\$20,968
Project/Program Management			\$4,194
Mid-Atlantic South Track Program. PG00028. C.EN.101835.			\$2,186,570
Contingency			\$147,427
Design			\$83,871
Design - AP Line - MP103.5			\$41,935
Design - AP Line - MP53.7			\$41,935
Mid-Atlantic South Joint Elimination			\$267,838
AP Line - MP51.0/59.4		50 EA	\$267,838
Mid-Atlantic South Ride Quality Improvement			\$107,135
Drainage Improvements - AP Line - MP 51.0/59.4		100 PCT	\$107,135
Mid-Atlantic South Spot Surfacing			\$267,838
AP Line - MP51.0/59.4	10/01/19 - 12/30/19	3000 FT	\$267,838
Mid-Atlantic South Spot Undercutting			\$214,270
AP Line - MP51.0/59.4		1000 FT	\$214,270
Mid-Atlantic South Track Wood Tie/Timber			\$1,071,352
AP Line - MP51.0/59.4		400 EA	\$1,071,352
Project/Program Management			\$26,839
Project/Program Management		100 PCT	\$20,968
Project/Program Management - Drainage/Road Bed Improvements		100 PCT	\$5,871

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.			\$79,990
Alstom WIU to MicroLok Conversion			\$2,864
Mid-Atlantic Division	N/A		\$2,864
Ansaldo Servier Migration			\$29,147
Line 2 - Washington Union Station to Philadelphia 30th Street Station	N/A		\$29,147
Burns Engineering Fixed Database Build			\$22,205
Mid-Atlantic Division	N/A		\$22,205
Redundant Transponders			\$25,774
Mid-Atlantic Division	N/A		\$25,774

Segment 21 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$10,020</b>
<b>System</b>			<b>\$10,020</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$10,020
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$477,756</b>
<b>AP Line</b>			<b>\$477,756</b>
MP 51.0-59.4	10/01/19 - 09/30/20	3.52 MI	\$477,756
<b>Rail Grinding Program. PG00064. C.EN.101794.</b>			<b>\$23,895</b>
<b>Northeast Corridor</b>			<b>\$23,895</b>
Grinding Perry to Prince Track 2	11/01/20 - 03/15/20		\$23,895
<b>TOTAL SEGMENT 21 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$4,840,348</b>
Capital Renewal Projects			
Regionally Managed Projects			FY20 Expenditure
<b>Mid-Atlantic South Signal System Upgrades to 562 Project. P000120. C.EN.101872.</b>			<b>\$320,588</b>
Begin construction of the ABS Signal System Upgrades from Oak I/L to Bush I/L and design ABS Signal System Upgrades from Bush I/L to Wood I/L. Work includes: Switch and signal case replacement including new switch and signal cables and new track wires, interlocking signals replacement and replacement of air operated switches with electric machines.			
<ul style="list-style-type: none"> <li>Start Construction Oak to Bush: 10/1/2019 - 9/1/2020</li> <li>Start Design Bush to Wood: 10/1/2019 - 8/31/2020</li> </ul>			
<b>Prince Interlocking Renewal Project. P000131. C.EN.101778.</b>			<b>\$3,090,037</b>
Design, CETC and SCADA software modifications, construction, testing, startup, acceptance and closeout of the removal of Prince Interlocking at MP 57.3. Removal of crossovers, associated catenary wire, signal houses, and installation of track will be included.			
<ul style="list-style-type: none"> <li>Design: 10/1/2019 - 12/23/2019</li> <li>Procurement: 12/23/2019 - 6/2/2020</li> <li>Construction: 6/2/2020 - 9/4/2020</li> </ul>			
<b>TOTAL SEGMENT 21 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>			<b>\$3,410,625</b>

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## Segment 22: Perryville, MD to Washington, DC



Segment 22 covers 76 miles from Perryville, MD to Washington, DC and is owned by Amtrak, with train operations from Amtrak and MARC.

### FY20 Planned Work Overview

NEC stakeholders plan to spend over \$184 million on infrastructure investment in Segment 22 in federal fiscal year 2020. Amtrak plans to spend \$71 million on 17 capital renewal programs and \$12 million on 3 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$101 million to advance 12 special projects coordinated by Amtrak, Maryland DOT, and VRE.

### FY20 Planned Expenditure in Segment 22

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$83,582,546</b>
Projects	\$11,948,253
Programs	\$71,634,293
<b>Special projects by coordinating agency</b>	<b>\$101,345,000</b>
Amtrak	\$78,800,000
Maryland DOT	\$8,545,000
VRE	\$14,000,000
<b>Total</b>	<b>\$184,927,546</b>

## Capital Renewal Highlights

In Segment 22, Amtrak plans to spend \$18 million of Maryland DOT's BCCs and \$66 million of its own BCCs to fund capital renewal work.

Of the \$83 million Amtrak plans to spend on capital renewal in this segment, \$23 million will be spent on the Track Undercutting Program through which Amtrak will undercut over 155,000 feet of track. Other track investments include using the TLS to replace over 6,000 concrete ties, replacing 2,000 wood ties/timbers, and spending \$4 million on drainage roadbed improvements. Other capital renewal project highlights include spending over \$8 million on replacing approximately 960 feet of slab track, block ties and rail inside B&P Tunnel and completing design of the Collington Ave, MD bridge replacement

## FY20 Capital Renewal Contribution

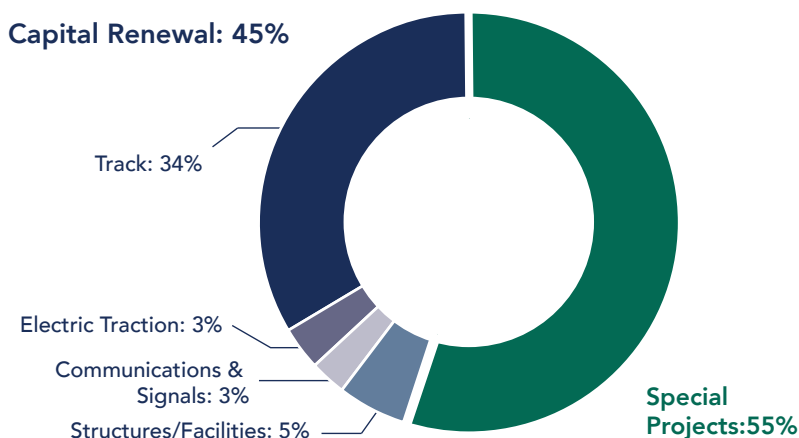
Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$83,582,546</b>
Amtrak	\$66,064,277
Maryland DOT	\$17,518,268
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$83,582,546</b>

## Special Project Highlights

The majority of special project investment (\$79 million) in Segment 22 will be spent on Amtrak coordinated projects. Highlights include continuing design work for the Baltimore & Potomac Tunnel and Susquehanna River Bridge Replacement projects, installing a new signal bridge and overhead catenary system at the new Hanson Interlocking, and continuing construction of modifications to the storage and inspection (S&I) facility at Ivy City.

NEC stakeholders also plan to invest \$1 million to complete right-of-way acquisition for Maryland DOT's Martin State Airport storage improvements and \$14 million to complete preliminary design of VRE's mid-day storage facility.

## Planned Investment in Segment 22 by Category and Discipline





## FY20 Investments in Segment 22 (Perryville to Washington)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic South Catenary Program. PG00021. C.EN.101829.			\$3,855,739
Contingency			\$301,936
Mid-Atlantic South Catenary Hardware Renewal Program			\$1,757,017
Hanson and Bridge Interlockings Track 2	10/01/19 - 10/30/19	500 EA	\$1,757,017
Mid-Atlantic South Catenary Pole Program			\$964,217
Bowie Interlocking Catenary Pole Upgrades (Foundations Complete)		8 EA	\$964,217
Mid-Atlantic South Signal Power Program			\$150,968
Fulton Interlocking Install 352 Signal Power Breaker	10/01/19 - 09/30/20	1 EA	\$150,968
Mid-Atlantic South Switch Heater Program			\$642,811
Charles Interlocking Switch Heater Installation	05/01/20 - 09/30/20	1 EA	\$214,270
Paul Interlocking Switch Heater Installation		1 EA	\$214,270
Wood Interlocking Switch Heater Installation		1 EA	\$214,270
Project/Program Management			\$38,790
Mid-Atlantic South Communications Program. PG00022. C.EN.101830.			\$416,209
Contingency			\$19,395
Mid-Atlantic South Communications Program			\$150,968
Mid-Atlantic South Communications Program		100 PCT	\$150,968
Mid-Atlantic South Radio Program			\$226,452
Mid-Atlantic South Radio Program		100 PCT	\$226,452
Project/Program Management			\$19,395
Mid-Atlantic South Facilities Program. PG00023. C.EN.101831.			\$2,159,503
Contingency			\$226,452
Mid-Atlantic South Maintenance of Equip Facilities Program			\$1,750,000
Ivy City Coach Yard - Substation Upgrade	01/01/20 - 09/01/20	100 PCT	\$1,071,352
Ivy City/Washington Terminal: Compressor Upgrade	03/01/20 - 05/01/20	100 PCT	\$803,514
Project/Program Management			\$58,185
Mid-Atlantic South Signals Program. PG00025. C.EN.101832.			\$634,493
Contingency			\$46,548
Mid-Atlantic South C&S Signal System Upgrades			\$425,000
Bridge Interlocking - 5E Switch Machine Upgrades	10/01/19 - 09/30/20	8 EA	\$241,054
Cable Replacement - AP Line - MP114.5/110.2	10/01/19 - 09/30/20	4 MI	\$214,270
Solid State Code Relays to Replace Obsolete Equipment	10/01/19 - 09/30/20	10 EA	\$113,226
Project/Program Management			\$19,395

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic South Structures Program. PG00026. C.EN.101833.			\$7,565,238
Contingency			\$905,807
Mid-Atlantic South Culvert Program			\$3,214,056
Baltimore City Culvert Replacement - AP Line - MP100.18		1 EA	\$803,514
BWI Culvert Replacement - AP Line - MP106.08	04/01/20 - 07/01/20	1 EA	\$803,514
Chase Culvert Replacement - AP Line - MP83.54	04/01/20 - 07/01/20	1 EA	\$535,676
Glendale Culvert Replacement - AP Line - MP122.91		1 EA	\$535,676
Magnolia Culvert Replacement - AP Line - MP77.47		1 EA	\$535,676
Mid-Atlantic South Retaining Walls Upgrade Program			\$267,838
Baltimore Retaining Wall - AP Line - MP95.54/95.61	10/01/19 - 09/30/20	100 PCT	\$267,838
Mid-Atlantic South Tunnel Program			\$2,223,055
Gilmore Street Tunnel Lighting Project	09/06/20 - 09/30/20	100 PCT	\$267,838
Gilmore Street Tunnel Sewage Pump Project	04/01/20 - 04/17/20	100 PCT	\$187,487
John Street Tunnel Lighting Project	05/01/20 - 06/14/20	100 PCT	\$267,838
Track 2 and 3 Slab Grouting and Repairs	06/01/20 - 08/01/20	100 PCT	\$160,703
Union Tunnel Lighting Project	10/01/19 - 05/01/20	100 PCT	\$1,071,352
Wilson Street Tunnel Lighting Project	06/14/20 - 09/06/20	100 PCT	\$267,838
Mid-Atlantic South Undergrade Bridge Program			\$803,514
Range Road Pier Rehab - AP Line - MP115.61	10/01/19 - 09/30/20	100 PCT	\$803,514
Project/Program Management			\$150,968
Mid-Atlantic South Substations Program. PG00027. C.EN.101834.			\$2,652,715
Contingency			\$188,710
Design			\$1,055,282
Design - Baltimore #20 Signal Converter		100 PCT	\$412,471
Design - Jericho Park OCB Design and Replacement		2 EA	\$642,811

Segment 22 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic South Substations Program</b>			<b>\$1,369,933</b>
Landover #24 Air Break Switch Replacement 12 and 21 Tie Switches	10/01/19 - 09/30/20	2 EA	\$428,541
Perryville S16 Air Break Switch Replacement on 4 Lines to Conestoga	10/01/19 - 09/30/20	4 EA	\$223,587
S17 Perryman RTU Replacement		1 EA	\$160,703
S18 Gunpow RTU Replacement		1 EA	\$160,703
S19 North Point Replace Battery Bank Bus Tie Breaker		1 EA	\$128,562
S20 Baltimore Replace Battery Bank Bus Tie Breaker		1 EA	\$128,562
S24 Landover Install New Service and Potential Transformers		4 EA	\$139,276
<b>Project/Program Management</b>			<b>\$38,790</b>
<b>Mid-Atlantic South Track Program. PG00028. C.EN.101835.</b>			<b>\$14,002,432</b>
<b>Contingency</b>			<b>\$1,326,839</b>
<b>Design</b>			<b>\$754,839</b>
Design - AP Line - MP103.5			\$377,419
Design - AP Line - MP53.7			\$377,419
<b>Mid-Atlantic South Division Interlocking Steel</b>			<b>\$428,541</b>
AP Line - MP59.4/79.3	10/01/19 - 09/30/20	100 PCT	\$428,541
<b>Mid-Atlantic South Concrete Tie Replacement</b>			<b>\$321,406</b>
AP Line - MP79.3/131.6		400 EA	\$321,406
<b>Mid-Atlantic South Drainage-Road Bed Improvements</b>			<b>\$3,267,624</b>
AP Line - MP103.9		100 PCT	\$3,214,056
AP Line - MP59.4/79.3	02/24/20 - 03/04/20	100 PCT	\$53,568
<b>Mid-Atlantic South Insulated Joint Replacement</b>			<b>\$53,568</b>
AP Line - MP59.4/79.3	10/01/19 - 09/30/20	4 EA	\$53,568
<b>Mid-Atlantic South Joint Elimination</b>			<b>\$1,499,893</b>
AP Line - MP59.4/79.3		80 EA	\$428,541
AP Line - MP79.3/131.6		200 EA	\$1,071,352
<b>Mid-Atlantic South Ride Quality Improvement</b>			<b>\$107,135</b>
Drainage Improvements - AP Line - MP 59.4/79.3		100 PCT	\$107,135
<b>Mid-Atlantic South Spot Undercutting</b>			<b>\$642,811</b>
AP Line - MP59.4/79.3		1250 FT	\$267,838
AP Line - MP79.3/131.6		2000 FT	\$374,973
<b>Mid-Atlantic South Track Wood Tie/Timber</b>			<b>\$5,356,760</b>
AP Line - MP79.3/131.6	05/01/20 - 09/01/20	2000 EA	\$5,356,760

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Project/Program Management</b>			<b>\$243,017</b>
Project/Program Management			\$188,710
Project/Program Management - Drainage/Road Bed Improvements			\$54,307
Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$783,276</b>
<b>Alstom WIU to MicroLok Conversion</b>			<b>\$27,922</b>
Mid-Atlantic Division	N/A		\$27,922
<b>Ansaldo Servier Migration</b>			<b>\$262,324</b>
Line 2 - Washington Union Station to Philadelphia 30th Street Station	N/A		\$262,324
<b>Bumper Stops</b>			<b>\$61,220</b>
Baltimore Penn Station	N/A		\$61,220
<b>Burns Engineering Fixed Database Build</b>			<b>\$199,846</b>
Mid-Atlantic Division	N/A		\$199,846
<b>Redundant Transponders</b>			<b>\$231,964</b>
Mid-Atlantic Division	N/A		\$231,964
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$276,874</b>
<b>Mid-Atlantic Division</b>			<b>\$186,698</b>
Washington, DC - 1st Street Tunnel Radio Improvements	N/A		\$186,698
<b>System</b>			<b>\$90,176</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$90,176
<b>Fence Upgrades Program. PG00069. C.EN.101854.</b>			<b>\$1,897,106</b>
<b>Northeast Corridor</b>			<b>\$1,897,106</b>
Baltimore, (3) Locations	06/22/20 - 08/07/20	3000 FT	\$889,268
Odenton, MD Old Camp Meade Road	05/04/20 - 06/19/20	3400 FT	\$1,007,837
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$1,337,227</b>
<b>AP Line</b>			<b>\$1,337,227</b>
MP 59.4-79.3	10/01/19 - 09/30/20	13.07 MI	\$1,255,603
MP 79.3-131.6	10/01/19 - 09/30/20	84.57 MI	\$81,624

Segment 22 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$4,224,031</b>
<b>AP Line - Production Units</b>			<b>\$4,224,031</b>
Baltimore Station	03/02/20 - 06/05/20		\$1,874,007
Bowie Wye - North and South Leg	07/20/20 - 07/31/20		\$286,958
Landover Interlocking	11/04/19 - 11/26/19		\$1,074,921
Point Interlocking	07/06/20 - 07/17/20		\$281,156
River Interlocking	06/01/20 - 07/03/20		\$706,990
<b>Rail Grinding Program. PG00064. C.EN.101794.</b>			<b>\$95,581</b>
<b>Northeast Corridor</b>			<b>\$95,581</b>
Grinding Bowie to Grove Track 1	11/01/20 - 03/15/20		\$23,895
Grinding Carroll to Bowie Track 1	11/01/20 - 03/15/20		\$23,895
Grinding Hanson to Carroll Track 1	11/01/20 - 03/15/20		\$23,895
Grinding MP 83 to Gunpow Track 1	11/01/20 - 03/15/20		\$23,895
<b>TLS Concrete Tie Replacement Program. PG00057. C.EN.101652.</b>			<b>\$5,751,607</b>
<b>Bridge to Fulton Track 3</b>			<b>\$543,724</b>
B&B Support	09/14/20 - 09/24/20		\$11,660
C&S Support	09/14/20 - 09/24/20		\$177,002
ET Support	09/14/20 - 09/24/20		\$9,758
Installation	09/14/20 - 09/24/20	1056 EA	\$336,080
T&E Support	09/14/20 - 09/24/20		\$9,224
<b>MP 99.4 to Bridge Track 2</b>			<b>\$374,495</b>
B&B Support	09/28/20 - 10/08/20		\$36,997
C&S Support	09/28/20 - 10/08/20		\$147,186
ET Support	09/28/20 - 10/08/20		\$30,962
Installation	09/28/20 - 10/08/20		\$129,109
T&E Support	09/28/20 - 10/08/20		\$30,242
<b>MP 99.4 to Bridge Track 3</b>			<b>\$2,943,836</b>
B&B Support	08/31/20 - 09/10/20		\$73,995
C&S Support	08/31/20 - 09/10/20		\$294,372
ET Support	08/31/20 - 09/10/20		\$61,924
Installation	08/31/20 - 09/10/20	3432 EA	\$2,453,061
T&E Support	08/31/20 - 09/10/20		\$60,484

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Point to River Track 3</b>			<b>\$1,889,553</b>
B&B Support	08/10/20 - 08/27/20		\$73,995
C&S Support	08/10/20 - 08/27/20		\$181,410
ET Support	08/10/20 - 08/27/20		\$61,924
Installation	08/10/20 - 08/27/20	2112 EA	\$1,511,740
T&E Support	08/10/20 - 08/27/20		\$60,484
<b>Total Track Renewal Program. PG00061. C.EN.101871.</b>			<b>\$1,957,458</b>
<b>Northeast Corridor</b>			<b>\$1,957,458</b>
Bowie Track 1	02/28/20 - 03/02/20		\$387,687
BWI Track 1	02/07/20 - 02/17/20		\$794,395
Odenton Track 1	01/10/20 - 01/20/20		\$775,375
<b>Track Undercutting Program. PG00062. C.EN.100269.</b>			<b>\$23,696,074</b>
<b>Grove To Bridge Track 1</b>			<b>\$15,921,301</b>
B&B Support	03/16/20 - 06/25/20		\$205,936
C&S Support	03/16/20 - 06/25/20		\$2,387,784
ET Support	03/16/20 - 06/25/20		\$119,011
Installation	03/16/20 - 06/25/20	73920 FT	\$12,863,497
T&E Support	03/16/20 - 06/25/20		\$345,072
<b>Gunpow to River Track 3</b>			<b>\$1,940,806</b>
C&S Support	08/19/19 - 11/07/19		\$293,498
ET Support	08/19/19 - 11/07/19		\$30,762
Installation	08/19/19 - 11/07/19	51744 FT	\$1,518,391
T&E Support	08/19/19 - 11/07/19		\$98,154
T&E Support	03/16/20 - 06/25/20		\$345,072
<b>MP 104 to Bridge Track 2</b>			<b>\$5,833,968</b>
B&B Support	06/29/20 - 08/06/20		\$228,817
C&S Support	06/29/20 - 08/06/20		\$554,378
ET Support	06/29/20 - 08/06/20		\$120,166
Installation	06/29/20 - 08/06/20	30096 FT	\$4,533,725
T&E Support	06/29/20 - 08/06/20		\$396,880
<b>Turnout Renewal Program. PG00065. C.EN.101860.</b>			<b>\$328,729</b>
<b>Wye Bridge #632 Turnout</b>			<b>\$328,729</b>
Turnout	09/08/20 - 09/14/20		\$328,729
<b>TOTAL SEGMENT 22 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$71,634,292</b>

Segment 22 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
<b>B&amp;P Block Tie Replacement Project. P000130. C.EN.101885.</b> Replacement of 960'+ of slab track, block ties and rail on Track No 2 at the Pennsylvania Ave opening in the B&P Tunnel. <ul style="list-style-type: none"> <li>Procurement: 8/5/2019 - 11/4/2019</li> <li>Construction: 11/4/2019 - 4/3/2019</li> </ul>	<b>\$8,875,477</b>
<b>Collington Ave MD Bridge Replacement Project. P000121. C.EN.201018.</b> Initiate and complete design. <ul style="list-style-type: none"> <li>Procure Design Contractor: 10/1/2019 - 11/30/2019</li> <li>Final Design: 12/1/2019 - 11/30/2020</li> <li>Procure Contractor: 12/1/2020 - 2/28/2021</li> <li>Construction: 3/1/2021 - 3/30/2022</li> <li>Construction Management: 3/1/2021 - 3/30/2022</li> </ul>	<b>\$187,487</b>
<b>Mid-Atlantic South Signal System Upgrades to 562 Project. P000120. C.EN.101872.</b> Amtrak will continue the designing and construction of the ABS Signal System Upgrades including: Switch and signal case replacement including new switch and signal cables and new track wires, interlocking signals replacement and replacement of air operated switches with electric machines. <ul style="list-style-type: none"> <li>Start Construction Oak to Bush: 10/1/2019 - 9/1/2020</li> <li>Start Design Bush to Wood: 10/1/2019 - 8/31/2020</li> </ul>	<b>\$2,885,290</b>
<b>TOTAL SEGMENT 22 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$11,948,253</b>
Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Baltimore &amp; Potomac Tunnel Replacement: Enabling Components. Amtrak, Maryland DOT.</b> Design 60% Utility Relocations and new Power Feeder Ducts plus Street Alterations; advance design for relocating Substation #20; begin Priority Property Acquisition; advance design of Franklinton Road & Warwick Avenue; replacement bridges; advance design CSX Bridge Pier Relocation Bid Package; advance design of new interlocking south of Tunnel Proper; develop Contract Packaging Plan; conduct HABS/HAER and Prepare Building Demolition Package; advance development of Programmatic Agreement required historic displays; conduct historic property boundary delineation per Programmatic Display. <ul style="list-style-type: none"> <li>Exterior HABS/HAER Documentation: June/2020</li> <li>Design to 60% Franklinton Road and Warwick Avenue bridges: Nov 2019</li> <li>Design to 90% Franklinton Road and Warwick Avenue bridges: Sep 2020</li> <li>Jones Falls retaining wall design to 60%: June 2020</li> </ul>	<b>\$4,000,000</b>
<b>Baltimore &amp; Potomac Tunnel Replacement: The Tunnel Proper. Amtrak, Maryland DOT.</b> Advance tunnel design, including approaches, ancillary spaces, and ventilation system. Perform additional geotechnical investigation <ul style="list-style-type: none"> <li>Design completed to 45%: September 2020</li> </ul>	<b>\$8,000,000</b>

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Baltimore Penn Station Infrastructure Improvements. Amtrak, Maryland DOT.</b> Upgrading the C&S signals at the south end of Tracks 1 & 3, performing demolition of the current Platform 2, and beginning construction on the New Platform 2 at Baltimore Penn Station. There may also be some signal work at the south end of Track 7 and Track F performed this year but it may end up being pushed to FY21. <ul style="list-style-type: none"> <li>• Amtrak Signal Work: October 2019</li> <li>• Issue NTP Construction: November 2019</li> <li>• Station Platform Demo/Construction Start: January 2020</li> </ul>	<b>\$16,000,000</b>
<b>Baltimore Penn Station Master Plan. Amtrak, Maryland DOT.</b> Complete review and approval of the preliminary design and master plan for the redevelopment of Baltimore Penn Station and surrounding properties. This work will include advancing the real estate transaction from Commercial Close to Financial Close with the execution of long-term ground leases for the master development station properties. All Amtrak program management personnel, technical consultant support, and legal fees will continue through FY20 as the design for the Master Development Partnership program advances into construction. <ul style="list-style-type: none"> <li>• Approval of 15% Designs for full Master Plan Development: Jan-Feb 2020 Agreement with Master Developer on funding allocation across Project Elements: Mar 2020</li> <li>• Commercial close with the execution of leases for the station property and adjacent Lanvale lot: Apr-Jun 2020</li> </ul>	<b>\$1,000,000</b>
<b>Hanson Interlocking. Amtrak, Maryland DOT.</b> New signal bridge installation and associated C&S work. Access road completion. Continuation of OCS installation. <ul style="list-style-type: none"> <li>• Foundations to be completed: Nov 2019</li> <li>• Pepco Duct Bank: Mar 2020</li> <li>• Signal Bridge Steel installation: Apr 2020</li> </ul>	<b>\$10,400,000</b>
<b>MARC Storage Improvements - Martin Airport. Maryland DOT.</b> ROW Acquisition required for Project is anticipated during FY20. 4.199 Ac in fee simple and associated easements have been Appraised and MTA received FTA concurrence for on March 6, 2019. <ul style="list-style-type: none"> <li>• ROW Acquisition: Oct 2019</li> <li>• Procurement Start: Oct 2019</li> <li>• Construction NTP: May 2021</li> </ul>	<b>\$8,545,000</b>
<b>Maryland Section Reliability Improvements. Amtrak, Maryland DOT.</b> Track alignment shifts and ET wire shifts between Grove and Bridge. C&S and PTC upgrades between New Hanson and Bridge. <ul style="list-style-type: none"> <li>• Start Construction at Grove: Mar 2020</li> <li>• Complete Construction: Aug 2020</li> <li>• Testing and commissioning: Sep 2020</li> </ul>	<b>\$3,100,000</b>

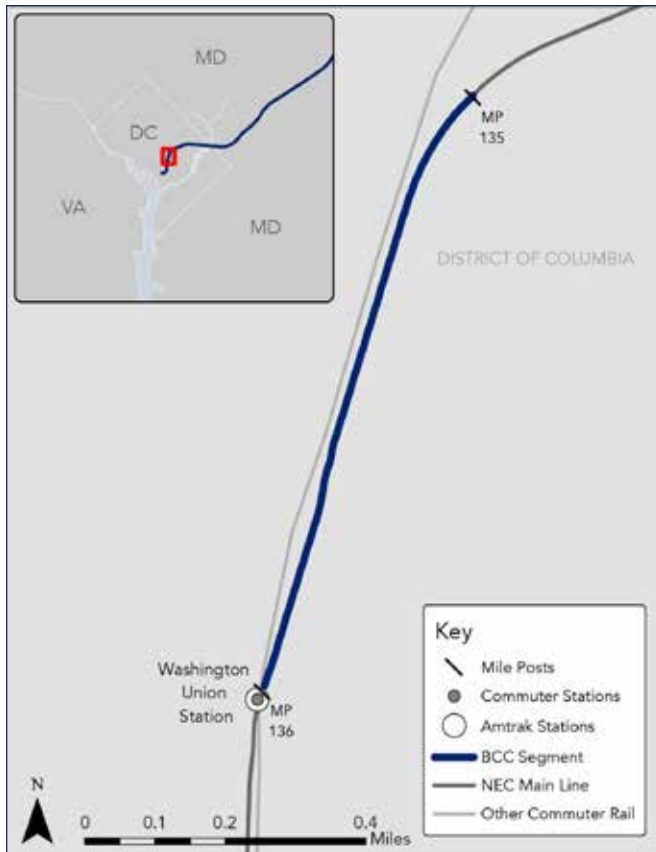
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<b>Special Projects</b>	
<b>Project Name, Partner Agencies, &amp; FY20 Scope</b>	<b>FY20 Expenditure</b>
<b>New Carrollton Station - Acela 21. Amtrak.</b> Finalize WMATA Adjacent construction review and wrap up design phase of the project. Once the design has been completed, construction procurement process to begin. Amtrak to coordinate any 3rd party or in-house construction that can begin prior to NTP. These items would include PEPCO relocation of transmission lines, gauntlet track construction and Track 1 realignment. <ul style="list-style-type: none"> <li>• 100% Design completion/IFB: Dec 2019</li> <li>• Procurement start: Dec 2019</li> <li>• Issue NTP Construction: Mar 2020</li> <li>• Track 1 realignment start: Mar 2020</li> <li>• ET construction start: Mar 2020</li> <li>• C&amp;S construction start: Mar 2020</li> <li>• Gauntlet Track construction start: Mar 2020</li> </ul>	<b>\$17,700,000</b>
<b>New Carrollton Station - SOGR &amp; ADA. Amtrak, Maryland DOT.</b> Complete design documents including cost estimate and schedule. <ul style="list-style-type: none"> <li>• Design NTP: Oct 2020</li> <li>• 30% Design submission: Dec 2020</li> <li>• Design complete, Issue For Bid (IFB): May 2020</li> <li>• Construction procurement complete: Sep 2020</li> </ul>	<b>\$1,000,000</b>
<b>Next Generation High Speed Fleet Infrastructure: Ivy City/ Washington Terminal Yard Facility Improvements. Amtrak.</b> S&I Mod: Construction within S&I Facility. Ready Tracks: Finalize Design, Procure GC, and Begin Construction. <ul style="list-style-type: none"> <li>• S&amp;I Modification: GC NTP: Nov 2019</li> <li>• North Storage Tracks: GC NTP: Jan 2020</li> </ul>	<b>\$13,600,000</b>
<b>Susquehanna River Bridge Replacement Project. Amtrak, Maryland DOT.</b> Design to 60%. <ul style="list-style-type: none"> <li>• Structural - Main River Bridge, Lewis Lane OH bridge, 5 approach UG Bridges, Retaining Walls and Slab Track: Sep 2020</li> <li>• Civil - Warren Street, Amtrak Access and IKEA Roads: Sep 2020</li> <li>• Track - Interlockings and slab track designs: Sep 2020</li> <li>• Power - line diagrams, substations, RTU plans, lighting, signal power and switch heaters: Sep 2020</li> <li>• C&amp;S - communications distribution and communications for signals and CCTV: Sep 2020</li> <li>• Geotechnical - Continue the Subsurface Investigation Program including additional borings: Sep 2020</li> </ul>	<b>\$4,000,000</b>
<b>VRE Mid-day Storage. VRE.</b> Complete preliminary design and start final design <ul style="list-style-type: none"> <li>• Complete PD: Dec 2019</li> <li>• Initiate FD Jan 2020</li> <li>• Initiate property acquisition Dec 2020</li> </ul>	<b>\$14,000,000</b>
<b>TOTAL SEGMENT 22 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$101,345,000</b>

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## Segment 23: Washington Union Station



AMTRAK

MARC



Segment 23 covers Washington Union Station and is owned by Amtrak, with train operations from Amtrak, MARC, and VRE.

### FY20 Planned Work Overview

NEC stakeholders plan to spend almost \$30 million on infrastructure investment in Segment 23 in federal fiscal year 2020. Amtrak plans to spend \$4 million on 12 capital renewal programs and \$0.5 million on 1 capital renewal project in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$25 million to advance 4 special projects coordinated by Amtrak.

### FY20 Planned Expenditure in Segment 23

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$4,821,630</b>
Projects	\$535,676
Programs	\$4,285,954
<b>Special projects by coordinating agency</b>	<b>\$25,122,000</b>
Amtrak	\$25,122,000
<b>Total</b>	<b>\$29,943,630</b>

## Capital Renewal Highlights

In Segment 23, Amtrak plans to spend \$0.4 million of VRE's BCCs, \$3.9 million of its own BCCs, and \$0.5 million of its own capital above BCCs to fund capital renewal work.

Of the \$4.8 million Amtrak plans to spend on capital renewal in this segment, \$1.6 million will be spent on wood tie/timber replacement at Washington Union Station. Amtrak will also spend \$1 million renewing signal bridges H, J, and K as well as \$0.4 million spot surfacing 4,000 feet and spot undercutting 500 feet. Amtrak will also invest \$0.5 million to initiate an initial assessment of the Washington Terminal & Ivy City Facility Upgrades Project.

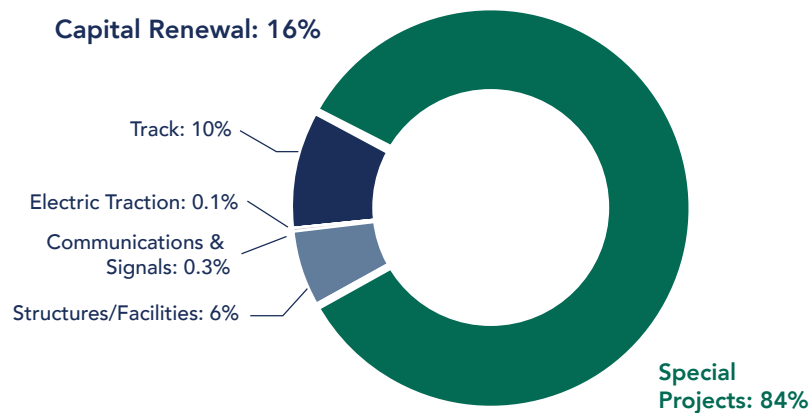
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$4,285,954</b>
Amtrak	\$3,899,681
Maryland DOT	\$0
VRE	\$386,273
<b>Above BCC</b>	<b>\$535,676</b>
Amtrak	\$535,676
<b>Capital Renewal Total</b>	<b>\$4,821,630</b>

## Special Project Highlights

NEC stakeholders plan to invest over \$25 million in four special projects at Union Station, all of which are coordinated by Amtrak. The largest planned investment is \$17 million to complete construction of the Amtrak Police Department building as part of the Claytor Concourse Modernization Program. Amtrak will also complete design of the subbasement reconstruction, continue advancing the long-term expansion plan, and advance design and construction activities for the near-term rail plan.

## Planned Investment in Segment 23 by Category and Discipline



## FY20 Investments in Segment 23 (Washington Union Station)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic South Catenary Program. PG00021. C.EN.101829.			\$5,991
Contingency			\$3,994
Mid-Atlantic South Signal Power Program			\$1,997
Fulton Interlocking Install 352 Signal Power Breaker	10/01/19 - 09/30/20	1 EA	\$1,997
Mid-Atlantic South Communications Program. PG00022. C.EN.101830.			\$4,992
Contingency			\$19,395
Mid-Atlantic South Communications Program			\$1,997
Mid-Atlantic South Communications Program		100 PCT	\$1,997
Mid-Atlantic South Radio Program			\$2,995
Mid-Atlantic South Radio Program		100 PCT	\$2,995
Mid-Atlantic South Facilities Program. PG00023. C.EN.101831.			\$2,995
Contingency			\$2,995
Mid-Atlantic South Signals Program. PG00025. C.EN.101832.			\$1,498
Mid-Atlantic South C&S Signal System Upgrades			\$1,498
Solid State Code Relays to Replace Obsolete Equipment	10/01/19 - 09/30/20	10 EA	\$1,498
Mid-Atlantic South Structures Program. PG00026. C.EN.101833.			\$1,353,169
Contingency			\$11,982
Mid-Atlantic South Signal Bridge Program			\$1,071,352
Signal Bridges H, J, and K in Washington DC, Landover NBHS and SBHS	10/01/19 - 09/30/20	100 PCT	\$1,071,352
Mid-Atlantic South Undergrade Bridge Program			\$267,838
DC125.56 H Street Bridge Steel Upgrades	10/01/19 - 09/30/20	100 PCT	\$267,838
Project/Program Management			\$1,997
Mid-Atlantic South Substations Program. PG00027. C.EN.101834.			\$2,496
Contingency			\$2,496
Mid-Atlantic South Track Program. PG00028. C.EN.101835.			\$887,113
Contingency			\$17,551
Design			\$9,985
Design - AP Line - MP103.5			\$4,992
Design - AP Line - MP53.7			\$4,992
Mid-Atlantic South Division Interlocking Steel			\$160,703
AP Line - MP135.0/136.0	10/01/19 - 09/30/20	100 PCT	\$160,703
Mid-Atlantic South Concrete Tie Replacement			\$53,568
AP Line - MP135.0/136.0		40 EA	\$53,568

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Mid-Atlantic South Insulated Joint Replacement</b>			<b>\$53,568</b>
AP Line - MP135.0/136.0	10/01/19 - 09/30/20	4 EA	\$53,568
<b>Mid-Atlantic South Joint Elimination</b>			<b>\$53,568</b>
AP Line - MP135.0/136.0	10/01/19 - 09/30/20	10 EA	\$53,568
<b>Mid-Atlantic South Spot Surfacing</b>			<b>\$321,406</b>
AP Line - MP135.0/136.0		4000 FT	\$321,406
<b>Mid-Atlantic South Spot Undercutting</b>			<b>\$107,135</b>
AP Line - MP135.0/136.0		500 FT	\$107,135
<b>Mid-Atlantic South Track Wood Tie/Timber</b>			<b>\$107,135</b>
AP Line - MP135.0/136.0	10/01/19 - 09/30/20	40 EA	\$107,135
<b>Project/Program Management</b>			<b>\$2,496</b>

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
<b>Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.</b>			<b>\$70,402</b>
<b>Ansaldo Servier Migration</b>			<b>\$3,470</b>
Line 2 - Washington Union Station to Philadelphia 30th Street Station	N/A		\$3,470
<b>Bumper Stops</b>			<b>\$61,220</b>
Washington Union Station	N/A		\$61,220
<b>Burns Engineering Fixed Database Build</b>			<b>\$2,643</b>
Mid-Atlantic Division	N/A		\$2,643
<b>Redundant Transponders</b>			<b>\$3,068</b>
Mid-Atlantic Division	N/A		\$3,068
<b>Communications System Upgrades Program. PG00083. C.EN.101857.</b>			<b>\$1,193</b>
<b>System</b>			<b>\$1,193</b>
Washington to New York - Redundant Communications Cable Installation	N/A		\$1,193
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$50,419</b>
<b>AP Line</b>			<b>\$50,419</b>
MP 131.6-135.0	10/01/19 - 09/30/20	0 MI	\$24,011
MP 135.0-136.0	10/01/19 - 09/30/20	0 MI	\$26,408
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$1,576,956</b>
<b>AP Line - Production Units</b>			<b>\$1,576,956</b>
Washington Union Station	10/01/19 - 11/01/19		\$1,576,956

Segment 23 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Turnout Renewal Program. PG00065. C.EN.101860.			\$328,729
K #194 Turnout			\$328,729
Turnout	07/20/20 - 08/03/20		\$328,729
<b>TOTAL SEGMENT 23 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$4,285,954</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
Washington Terminal & Ivy City Facility Electrical Upgrades Project. P000074. C.EN.100850.	\$535,676
Initiate and complete initial assessment.	
<ul style="list-style-type: none"> <li>Project Administration: 10/1/2019 - 11/30/2022</li> <li>Final Design: 1/1/2020 - 1/31/2021</li> </ul>	
<b>TOTAL SEGMENT 23 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$535,676</b>

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
Washington Union Station: Claytor Concourse Modernization Program. Amtrak, Maryland DOT, VRE, Union Station Redevelopment Corporation, Federal Railroad Administration, WMATA.	\$17,247,000
Completion of construction of Amtrak Police Department building. Design completion and construction procurement underway for Concourse Modernization project.	
<ul style="list-style-type: none"> <li>Q2: APD building construction complete.</li> <li>Q2: Issue RFP for general contractor for concourse modernization.</li> <li>Q3 - Q4: final bid documents ready for concourse modernization; obtain building permit from FRA.</li> </ul>	
Washington Union Station: Long Term Station Expansion. Amtrak, Maryland DOT, VRE, Union Station Redevelopment Corporation, DDOT, Federal Railroad Administration.	\$2,015,000
Continuation of activities to support and advance the Station Expansion Project, including support for the EIS, Terminal Infrastructure and Constructability review.	
<ul style="list-style-type: none"> <li>Draft EIS released Q1</li> <li>Record of Decision hopefully by end of Q4 but contingent on FRA</li> </ul>	
Washington Union Station: Near Term Rail Program. Amtrak, Maryland DOT, VRE, Union Station Redevelopment Corporation.	\$4,555,000
Advance design and construction activities in support of Near Term rail projects.	
<ul style="list-style-type: none"> <li>Crew Base Renovation: Q1 design and constructability review completed; Q3 general contractor procurement commences.</li> <li>Satellite Commissary: Q2 general contractor notice to proceed and construction activities commence.</li> <li>Substation 25A: Q2 design complete; Q3 construction manager procurement begins.</li> </ul>	
Washington Union Station: Subbasement Program. Amtrak, Maryland DOT, VRE, Union Station Redevelopment Corporation, Federal Railroad Administration.	\$1,305,000
Continued design completion and preconstruction support of the Subbasement Reconstruction project.	

Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<ul style="list-style-type: none"> <li>• Q2 design completion and construction manager procurement underway;</li> <li>• Q4 construction manager NTP</li> </ul>	
<b>TOTAL SEGMENT 23 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$25,122,000</b>



# Segment 24: WAS to CP Virginia



Segment 24 covers 1 mile from Washington Union Station to CP Virginia in DC and is owned by Amtrak, with train operations from Amtrak and VRE.

## FY20 Planned Work Overview

NEC stakeholders plan to spend \$0.29 million on infrastructure investment in Segment 24 in federal fiscal year 2020. Amtrak plans to spend \$0.29 million on 8 capital renewal programs.

## FY20 Planned Expenditure in Segment 24

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$288,734</b>
Projects	\$0
Programs	\$288,734
<b>Special projects by coordinating agency</b>	<b>\$0</b>
<b>Total</b>	<b>\$288,734</b>

## Capital Renewal Highlights

In Segment 24, Amtrak plans to spend \$0.2 million of VRE's BCCs and \$0.07 million of its own BCCs to fund capital renewal work.

Of the \$0.29 million Amtrak plans to spend on capital renewal in this segment, \$0.25 million will be spent on the Mid-Atlantic South Track Program. Amtrak plans to spend \$0.2 million to complete spot surfacing over 2,500 feet.

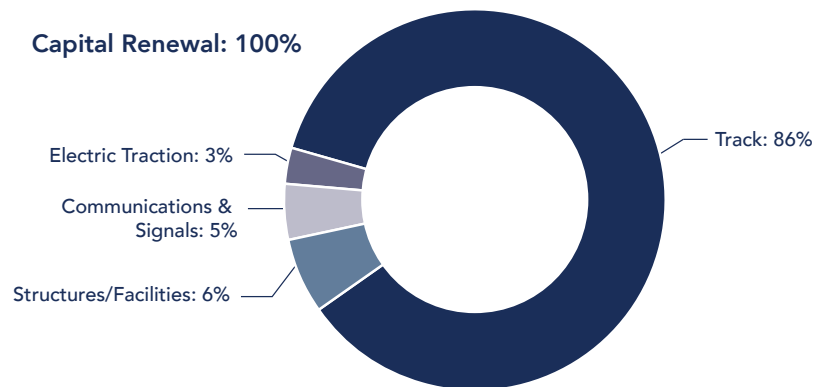
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$288,734</b>
Amtrak	\$74,464
VRE	\$214,270
<b>Above BCC</b>	<b>\$0</b>
<b>Capital Renewal Total</b>	<b>\$288,734</b>

## Special Project Highlights

There are no special projects in Segment 24 with planned work in FY20.

## Planned Investment in Segment 24 by Category and Discipline



## FY20 Investments in Segment 24 (WAS to CP Virginia)

Capital Renewal Programs			
Regionally-Managed Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Mid-Atlantic South Catenary Program. PG00021. C.EN.101829.			\$6,590
Contingency			\$4,393
Mid-Atlantic South Signal Power Program			\$2,197
Fulton Interlocking Install 352 Signal Power Breaker	10/01/19 - 09/30/20	1 EA	\$2,197
Mid-Atlantic South Communications Program. PG00022. C.EN.101830.			\$5,492
Mid-Atlantic South Communications Program			\$2,197
Mid-Atlantic South Communications Program		100 PCT	\$2,197
Mid-Atlantic South Radio Program			\$3,295
Mid-Atlantic South Radio Program		100 PCT	\$3,295
Mid-Atlantic South Facilities Program. PG00023. C.EN.101831.			\$3,295
Contingency			\$3,295
Mid-Atlantic South Signals Program. PG00025. C.EN.101832.			\$1,647
Mid-Atlantic South C&S Signal System Upgrades			\$1,647
Solid State Code Relays to Replace Obsolete Equipment	10/01/19 - 09/30/20	10 EA	\$1,647
Mid-Atlantic South Structures Program. PG00026. C.EN.101833.			\$15,376
Contingency			\$13,180
Project/Program Management			\$2,197
Mid-Atlantic South Substations Program. PG00027. C.EN.101834.			\$2,746
Contingency			\$2,746
Mid-Atlantic South Track Program. PG00028. C.EN.101835.			\$247,305
Contingency			\$19,306
Design			\$10,983
Design - AP Line - MP103.5			\$5,492
Design - AP Line - MP53.7			\$5,492
Mid-Atlantic South Spot Surfacing			\$214,270
AP Line - MP136.0/137.1		2500 FT	\$214,270
Project/Program Management			\$2,746

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.			\$6,283
Burns Engineering Fixed Database Build			\$2,908
Mid-Atlantic Division	N/A		\$2,908
Redundant Transponders			\$3,375
Mid-Atlantic Division	N/A		\$3,375
<b>TOTAL SEGMENT 24 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$288,734</b>

## FY20 Investment Detail: System-wide (Amtrak-owned)

BCC Segment	Owner	Operator(s)	See Page
31. Amtrak System-wide	Amtrak	Amtrak	210



# Segment 31: Amtrak System-wide



Segment 31 covers Amtrak system-wide projects and programs on Amtrak-owned territory from Washington, DC to the Massachusetts/ Rhode Island state line and the connecting corridors.

## FY20 Planned Work Overview

NEC stakeholders plan to spend almost \$66 million on infrastructure investment in Segment 31 in federal fiscal year 2020. Amtrak plans to spend \$47 million on 15 capital renewal programs and \$7.5 million on 5 capital renewal projects in this segment.

In addition, during FY20, NEC stakeholders plan to invest \$11.6 million to advance 2 system-wide special projects coordinated by Amtrak.

## FY20 Planned Expenditure in Segment 31

Investment Category	Amount
<b>Capital renewal by type</b>	<b>\$54,069,956</b>
Projects	\$7,513,859
Programs	\$46,556,097
<b>Special projects by coordinating agency</b>	<b>\$11,600,000</b>
Amtrak	\$11,600,000
<b>Total</b>	<b>\$65,669,956</b>

## Capital Renewal Highlights

In Segment 31, Amtrak plans to spend \$54 million of its own capital above BCCs to fund capital renewal work.

Capital renewal work in this segment includes much of the contingency, design, and program/project management work for system-wide capital renewal programs and projects. In addition, Amtrak is planning to spend \$5.6 million on computer hardware upgrades through the CETC Technology Renewal Program. Other planned software investments include almost \$6 million on the ARINC CETC and ARINC to AMTEC Software Upgrade projects.

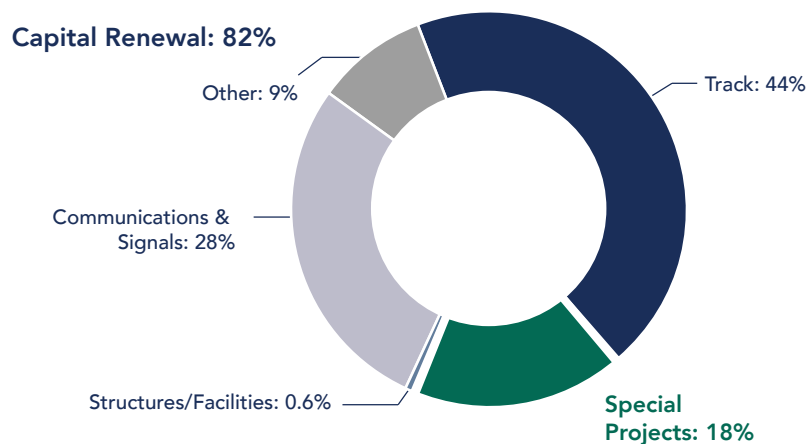
## FY20 Capital Renewal Contribution

Contribution Type	Amount
<b>Baseline Capital Charges</b>	<b>\$0</b>
Amtrak	\$0
<b>Above BCC</b>	<b>\$54,069,956</b>
Amtrak	\$54,069,956
<b>Capital Renewal Total</b>	<b>\$54,069,956</b>

## Special Project Highlights

Amtrak coordinates two Next Generation High-Speed Rail projects which are considered system-wide. In FY20, Amtrak plans to spend \$6 million on the Ride Quality Investment project and \$5 million on the Safety Mitigation project.

## Planned Investment in Segment 31 by Category and Discipline





## FY20 Investments in Segment 31 (Amtrak System-wide)

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Amtrak Owned Positive Train CTRL (PTC) Installation. PG00085. C.EN.201034.			\$4,355,089
Contingency			\$2,486,651
Design			\$205,700
Survey and Design			\$205,700
Infrastructure Modification Change Orders			\$171,416
Infrastructure Modification Change Orders	N/A		\$171,416
Project/Program Management			\$171,416
Rev 11 / Siemens			\$205,700
Rev 12 / Siemens			\$1,114,206
CETC Technology Renewal Program. PG00081. C.EN.101853.			\$5,681,487
Boston UPS Upgrades			\$233,126
CETC Boston UPS Upgrades	N/A	CPI	\$233,126
Computer Hardware Upgrades			\$1,681,208
CETC Chicago Computer Hardware Upgrades	N/A	CPI	\$64,281
CETC CNOC Computer Hardware Upgrades	N/A	CPI	\$481,294
CETC New York PSCC "CWEST/HUD" Computer Hardware Upgrades	N/A	CPI	\$64,281
CETC New York PSCC "LIRR" Computer Hardware Upgrades	N/A	CPI	\$1,071,352
Computer Software Upgrades			\$342,833
CETC Chicago Computer Software Upgrades	N/A	CPI	\$85,708
CETC CNOC Computer Software Upgrades	N/A	CPI	\$85,708
CETC New York PSCC "CWEST/HUD" Computer Software Upgrades	N/A	CPI	\$85,708
Contingency			\$1,136,297
Design			\$2,257,167
Project/Program Management			\$30,855
Communications System Upgrades Program. PG00083. C.EN.101857.			\$1,696,282
Project/Program Management			\$16,003
System			\$1,680,280
CETC Signal System Remote Diagnostic System	N/A		\$80,013
IT and Operations Network Bandwidth Augmentation	N/A		\$266,711
Network Upgrades	N/A		\$266,711
Operations Voice Recorder Upgrades	N/A		\$560,093

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Radio System Upgrades - Coverage Remediation	N/A		\$346,724
Radio Voter Upgrades	N/A		\$160,027
<b>Engineering Capital Program/Project Management. PG00077. C.EN.100418.</b>			<b>\$5,999,571</b>
Project/Program Management			\$5,999,571
<b>Fence Upgrades Program. PG00069. C.EN.101854.</b>			<b>\$3,197,707</b>
Contingency			\$3,108,314
Design			\$26,292
Project/Program Management			\$63,101
<b>Production Concrete Tie/Timber Replacement Program. PG00067. C.EN.101870.</b>			<b>\$424,141</b>
Contingency			\$389,429
Project/Program Management			\$34,712
<b>Production High Speed Surfacing Program. PG00060. C.EN.101855.</b>			<b>\$2,176,652</b>
Contingency			\$1,887,387
Project/Program Management			\$289,265
<b>Production Wood Tie/Timber Replacement Program. PG00071. C.EN.101858.</b>			<b>\$2,424,875</b>
Contingency			\$2,390,163
Project/Program Management			\$34,712
<b>Rail Grinding Program. PG00064. C.EN.101794.</b>			<b>\$97,640</b>
Contingency			\$49,429
Project/Program Management			\$48,211
<b>Rail Replacement Program. PG00003. C.EN.101856.</b>			<b>\$2,539,528</b>
Contingency			\$2,481,677
Project/Program Management			\$57,851
<b>TLS Concrete Tie Replacement Program. PG00057. C.EN.101652.</b>			<b>\$4,696,579</b>
Contingency			\$3,322,554
Project/Program Management			\$1,374,024
Contractor			\$385,694
CWR Distribution			\$578,530
Equipment Maintenance			\$96,429
Project/Program Management			\$313,370
<b>Total Track Renewal Program. PG00061. C.EN.101871.</b>			<b>\$1,235,695</b>
Contingency			\$1,200,984
Project/Program Management			\$34,712

Segment 31 Investment Detail continued on next page &gt;&gt;&gt;

Capital Renewal Programs			
System-wide Programs	FY20 Schedule	FY20 Units	FY20 Expenditure
Track Rehabilitation Program . PG00063. C.EN.101859.			\$2,682,361
Contingency			\$2,612,937
Project/Program Management			\$69,424
Track Undercutting Program. PG00062. C.EN.100269.			\$6,434,359
Contingency			\$5,642,620
Design			\$140,892
Project/Program Management			\$650,846
Contractor Services	N/A		\$96,422
Equipment Maintenance	N/A		\$96,422
Equipment Rentals	N/A		\$96,422
Neutral rail Temp Testing	N/A		\$48,211
Project/Program Management	N/A		\$313,370
Equipment Maintenance			\$96,429
Project/Program Management			\$313,370
Turnout Renewal Program. PG00065. C.EN.101860.			\$2,914,130
Contingency			\$2,714,915
Design			\$73,867
Project/Program Management			\$125,348
Equipment Rentals			\$28,927
Project/Program Management	N/A		\$96,422
<b>TOTAL SEGMENT 31 CAPITAL RENEWAL PROGRAMS EXPENDITURE</b>			<b>\$46,556,097</b>

Capital Renewal Projects	
Regionally Managed Projects	FY20 Expenditure
Wilmington Training Center Parking Access Improvements Project. P000119. C.EN.101879.	\$396,057
Procure a design consultant and develop design up to 60% and initiate permitting.	
<ul style="list-style-type: none"> <li>Proj. Mngmt: 10/1/2019 - 11/31/2022</li> <li>Environmental: 4/1/2020 - 8/14/2020</li> <li>60% Design: 6/1/2020 - 9/30/2020</li> <li>90% Design: 9/20/2020 - 12/31/2020</li> <li>Preliminary Design: 12/1/2020 - 6/15/2020</li> </ul>	
System-wide Projects	FY20 Expenditure
Concrete Tie Redesign Project. P000006. C.EN.101178 .	\$342,833
At the close of FY 19 ties were installed from MP 23.66 to MP 22.66 using the TLM. The UTP ties were installed on track 2 and will have instrumentation installed on them to collect data throughout the year. Track 3 which runs parallel to the test track has been newly installed with ties and rail 2 years ago and the data from that track will be used as analysis in the performance of the UTP ties.	
<ul style="list-style-type: none"> <li>Design: 1/1/2019 - 10/1/2019</li> <li>Construction: 10/1/2019 - 7/1/2019</li> </ul>	

Capital Renewal Projects	
System-wide Projects	FY20 Expenditure
<b>NEC PTC Secure Wireless Communication Project. P000030. C.EN.101537.</b> Perform final verification of secure wireless system, deploy and perform interoperability testing, acceptance and closeout.  <ul style="list-style-type: none"> <li>Construction: 2/1/2017 - 1/31/2020</li> <li>Final Design: 9/1/2017 - 9/1/2017</li> <li>Testing &amp; Commissioning: 9/1/2017 - 10/31/2019</li> <li>Project Administration: 10/1/2017 - 1/29/2021</li> </ul>	<b>\$1,131,155</b>
<b>NEC-ARINC CETC Project. P000045. C.EN.100119.</b> Wrap up ARINC support for the CETC dispatching function but continue with support for SCADA and closeout ARINC contract.  <ul style="list-style-type: none"> <li>Construction: 10/1/2019 - 9/30/2020</li> </ul>	<b>\$3,822,584</b>
<b>Washington to Boston ARINC to AMTEC Software Upgrade Project. P000085. C.EN.101767.</b> The FY20 scope will include the Transponder Renewal Program, Rollout 7, continued work on Interoperability, the Ansaldo STS migration/consolidation, Remote Download (ACSES View Live) project, and initiation of the Alstom WIU to Microlok conversion.  <ul style="list-style-type: none"> <li>Development tandem HW: 10/1/2019 - 12/31/2019</li> <li>AMTEC ICD SOFTWARE INST: 11/1/2019 - 3/1/2020</li> <li>Ned Field Simulation tests: 12/1/2019 - 4/1/2020</li> <li>NED workstation hardware: 1/1/2020 - 4/1/2020</li> <li>Phase 2 Construction Final: 4/1/2020 - 6/30/2020</li> </ul>	<b>\$1,821,230</b>
<b>TOTAL SEGMENT 31 CAPITAL RENEWAL PROJECTS EXPENDITURE</b>	<b>\$7,513,859</b>
Special Projects	
Project Name, Partner Agencies, & FY20 Scope	FY20 Expenditure
<b>Next Generation High Speed Fleet Infrastructure: Ride Quality Investment. Amtrak.</b> Upgrade Continuously Operating Reference Station (CORS) Network to cover entire NEC. NEC LiDAR Baseline Survey.  <ul style="list-style-type: none"> <li>CORS Procurement Start: Sep 2019. CORS NTP: Dec 2019.</li> <li>Upgrade CORS Network Complete Feb 2020. Baseline Survey Procurement Start: Sep 2019.</li> <li>Baseline Survey NTP: Feb 2020. Baseline Survey Complete Sep 2020</li> </ul>	<b>\$6,200,000</b>
<b>Next Generation High Speed Fleet Infrastructure: Safety Mitigation. Amtrak.</b> 1. As-Built drawings for 9 locations have been received to date. 2. As-Built drawings for 3 more locations should be received week of 07/15/2019. 3. Releasing 5 new SOW's for contractor bids for fence installation on 07/12.  <ul style="list-style-type: none"> <li>Amtrak Forces fabric installation percentage completed: 78% (Oct 2019); 85% (Nov 2019); 91% (Dec 2019)</li> </ul>	<b>\$5,400,000</b>
<b>TOTAL SEGMENT 31 SPECIAL PROJECTS EXPENDITURE</b>	<b>\$11,600,000</b>



## **Appendix A:**

# **Capital Renewal Detail**

## FY20 Capital Renewal Expenditure by Segment and Operator

The following table shows each owner's planned capital renewal expenditure by operator territory. The breakdown between planned capital renewal expenditure and capital renewal work funded by BCCs can be found on each segment page and in the introduction starting on page 4.

BCC Segment	Owner	Amtrak	MBTA	RIDOT	CTDOT (SLE)	CTDOT (HL)	CTDOT (NHL)
1	MBTA	\$7,187,760	\$17,355,770				
2	Amtrak	\$5,252,255	\$1,584,964				
3	Amtrak	\$1,795,549		\$2,187,665			
4	Amtrak	\$21,123,457					
5	Amtrak	\$32,426,299			\$4,605,590		
6	CTDOT	\$16,482,710			\$1,075,888	\$218,763	\$150,422,639
7	MNR	\$2,432,125					
8	Amtrak	\$7,492,267					
9	Amtrak	\$11,190,567					
10	Amtrak	\$6,326,970					
11	Amtrak	\$22,009,166					
12	Amtrak	\$27,310,461					
13	Amtrak	\$3,031,415					
14	Amtrak	\$6,924,583					
15	Amtrak	\$5,292,007					
16	Amtrak	\$17,209,781					
17	Amtrak	\$14,170,241					
18	Amtrak	\$2,169,126					
19	Amtrak	\$5,112,480					
20	Amtrak	\$26,046,392					
21	Amtrak	\$8,250,974					
22	Amtrak	\$66,064,277					
23	Amtrak	\$4,435,357					
24	Amtrak	\$74,464					
25	Amtrak	\$1,800,582				\$6,377,893	
27	Amtrak	\$16,388,033					
28	Amtrak	\$767,320					
29	Amtrak	\$11,301,431					
30	Amtrak	\$21,377,378					
31	Amtrak	\$54,069,956					
<b>Total</b>		<b>\$425,515,384</b>	<b>\$18,940,734</b>	<b>\$2,187,665</b>	<b>\$5,681,479</b>	<b>\$6,596,656</b>	<b>\$150,422,639</b>

Notes: (1) Long Island Rail Road's obligation is subject to revision based on actual expenditures per Amtrak-LIRR agreement.

MNR	LIRR <sup>1</sup>	NJT	SEPTA	DelDOT	MDOT	VRE	Total
							\$24,543,530
							\$6,837,218
							\$3,983,214
							\$21,123,457
							\$37,031,890
							\$168,200,000
\$15,197,001							\$17,629,126
							\$7,492,267
	\$0						\$11,190,567
	\$16,235,326	\$0					\$22,562,296
	\$9,859,286	\$0					\$31,868,453
		\$91,129,522					\$118,439,983
		\$0	\$0				\$3,031,415
			\$974,451				\$7,899,034
			\$4,877,731				\$10,169,738
		\$0	\$0				\$17,209,781
		\$0					\$14,170,241
							\$2,169,126
			\$16,603,793				\$21,716,273
				\$2,629,028			\$28,675,421
							\$8,250,974
					\$17,518,268		\$83,582,545
					\$0	\$386,273	\$4,821,630
						\$214,270	\$288,734
							\$8,178,475
							\$16,388,033
							\$767,320
			\$18,465,326				\$29,766,757
							\$21,377,378
							\$54,069,956
\$15,197,001	\$26,094,612	\$91,129,522	\$40,921,301	\$2,629,028	\$17,518,268	\$600,543	\$803,434,832

Notes: (1) Long Island Rail Road's obligation is subject to revision based on actual expenditures per Amtrak-LIRR agreement.



## Amtrak Capital Renewal Project General Information

The following table provides the general information on scope, schedule/milestones, and total project cost for Amtrak's capital renewal *projects*, listed in alphabetical order. Specific FY20 information can be found in the investment detail by region starting on page 10.

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>30th Street Station Facade Restoration Project. P000091. C.EN.100039. BCC Segment 17</b>		
The major project elements included the following masonry repairs, limestone repairs; reconstruction of the interior the of all parapets except 8th floor roof and east and west main elevations; repairs at the base of curtain wall areas including sills and mullions on the north, south, east, west and recessed north and recessed south elevations. Major metal restoration work included restoration of cast iron curtain wall areas of the building and removal and replacement of all steel double hung windows within the light court and roof areas; and the restoration the steel double hung and casement windows on the exterior faces of the building and the restoration of the clerestory windows above the concourse. Additional scope items were added to the project due to unforeseen conditions and potential safety issues. These included abatements of asbestos containing materials, the pinning of decorative limestone brackets, additional limestone repairs to cracks and spalls not visible during the initial design surveys. Additional spalled decorative limestone pieces were replaced at Amtrak's request. The conditions of the parapets above the fifth floor and adjacent to the light courts required that they be demolished and reconstructed.	<ul style="list-style-type: none"> <li>Misc. masonry repairs - 50%: 9/1/2019 - 8/31/2020</li> <li>Signal room protection: 9/15/2019 - 11/15/2019</li> <li>Temporary roof repairs: 9/20/2019 - 11/30/2019</li> <li>North parapet wall reconstruction: 11/15/2019 - 11/15/2020</li> </ul>	\$143,173,153
<b>B&amp;P Block Tie Replacement Project. P000130. C.EN.101885. BCC Segment 22</b>		
Replacement of all slab track, block ties and rail in the B&P Tunnel.	<ul style="list-style-type: none"> <li>Conceptual/PE/NEPA: 5/6/2019 - 7/1/2019</li> <li>Design: 7/1/2019 - 8/5/2019</li> <li>Procurement: 8/5/2019 - 11/4/2019</li> <li>Construction: 11/4/2019 - 4/3/2019</li> </ul>	\$70,000,000
<b>Clark to Ham Constant Tension Upgrade Project. P000011. C.EN.101765. BCC Segment 12</b>		
The project includes minor design modifications and integration, construction, testing, commissioning, acceptance and closeout for 7 route miles of 4-track mainline constant tension catenary, including new catenary structures (foundations, poles, portal beams), constant tension catenary hardware, and wire replacement. Also includes the removal of the retired catenary structures, installation of temporary platforms at 2 NJT stations and other support tasks.	<ul style="list-style-type: none"> <li>Conceptual/PE/NEPA: 11/1/2011 - 5/1/2016</li> <li>Procurement: 6/1/2019 - 12/1/2022</li> <li>Design: 7/1/2019 - 1/1/2020</li> <li>Construction: 3/1/2020 - 3/1/2024</li> </ul>	\$166,753,364

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Collington Ave MD Bridge Replacement Project. P000121. C.EN.201018. BCC Segment 22</b>		
Design for the replacement of structure built in 1916 which is at the end of its service life in order to not impact train operations.	<ul style="list-style-type: none"> <li>Procure Design Contractor: 10/1/2019 - 11/30/2019</li> <li>Final Design: 12/1/2019 - 11/30/2020</li> <li>Procure Contractor: 12/1/2020 - 2/28/2021</li> <li>Construction: 3/1/2021 - 3/30/2022</li> <li>Construction Management: 3/1/2021 - 3/30/2022</li> </ul>	\$2,000,000
<b>Concrete Tie Redesign Project. P000006. C.EN.101178. BCC Segment 31</b>		
Amtrak is using a railroad technical engineering and testing services (TTCI) to develop three areas of railroad technology. These areas include improved continuously welded rail (CWR) maintenance practices and procedure. CWR maintenance practices in the railroad industry have evolved due to FRA research. Amtrak will use technical support to improve its CWR plan that documents the adjustment, maintenance, and inspection practices on its rail network. Amtrak will also work to evaluate both under tie pads and post-tensioned concrete tie design for potential future use on the NEC. UTP's and Post tensioned concrete ties are new technology in North America. Each have the potential to reduce track geometry degradation, improve train ride quality, increase tie and ballast lifespans, and decrease maintenance costs.	<ul style="list-style-type: none"> <li>Design: 1/1/2019 - 10/1/2019</li> <li>Construction: 10/1/2019 - 7/1/2019</li> </ul>	\$2,000,000
<b>Conestoga Substation Improvements Project. P000111. C.EN.101877. BCC Segment 30</b>		
Design, permit (NEPA/SHPO), perform utility coordination, construct, test and commissioning, startup, accept substation improvements and Amtrak's Conestoga substation at Safe Harbor. New construction includes a new control house, replacement of the P7 and P8 transformers and low side breakers; replacement of switches and cabling, rehabilitation of gantry structure and general site improvements. All design and construction will be performed by outside companies.	<ul style="list-style-type: none"> <li>Preliminary Design: 12/1/2019 - 2/28/2020</li> <li>Environmental/NEPA: 3/1/2020 - 7/31/2020</li> <li>60% Design: 7/1/2020 - 10/31/2020</li> </ul>	\$7,000,000
<b>Conestoga to Royalton Transmission Line Replacement Project. P000014. C.EN.101785. BCC Segment 30</b>		
Design, permit (NEPA/SHPO), perform utility and NS coordination, construct, test and commission, startup, accept and closeout a rebuild of 29 miles of 138 kV transmission line (the line 11 circuit) from Safe Harbor substation to the Harrisburg Line's Royalton substation on an existing 24 mile utility easement along Norfolk Southern's tracks and 5 miles on local township ROWs. The rebuilt line 11 circuit will include 2-phase conductor wire, static wire, and associated insulators and reduce the number of transmission structures from 632 to approximately 350. New structures will have pre-cast concrete foundations and monolithic transmission poles. Design and Construction will be contracted to outside companies.	<ul style="list-style-type: none"> <li>Environmental: 10/1/2019 - 2/28/2020</li> <li>Preliminary Design: 10/1/2019 - 11/29/2019</li> <li>60% Design: 1/2/2020 - 6/15/2020</li> <li>90% Design: 5/1/2020 - 8/31/2020</li> <li>Procure Construction Contractor: 5/30/2020 - 10/15/2020</li> <li>ROW/Easements: 8/3/2020 - 12/18/2020</li> <li>Final Design: 8/24/2020 - 10/30/2020</li> </ul>	\$47,000,000

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Davisville Interlocking - Upgrade to Microlock 2 Project. P000009. C.EN.100727. BCC Segment 3</b>		
Design, procure, install, test, accept and closeout new Microlok II equipment in a new signal central instrument house (CIH) working in tandem with existing CIH at Davisville Interlocking to replace the existing Microlok I equipment, including CETC and SCADA modifications, site preparation, retaining wall, new express cable, and removal of 62 switches.	<ul style="list-style-type: none"> <li>Construction Punchlist: 10/1/2019 - 10/31/2019</li> <li>Project Closeout: 11/1/2019 - 12/31/2019</li> </ul>	\$2,408,000
<b>Dock Fender Replacement Project. P000128. C.EN.101867. BCC Segment 12</b>		
Design, permitting, NEPA/SHPO compliance, demolition of the existing fenders, construction, testing/commissioning and closeout of a new fender system including navigation lights and associated power cables.	<ul style="list-style-type: none"> <li>Complete final design: 10/1/2018 - 12/31/2019</li> <li>Procure Contractor: 1/1/2020 - 4/1/2020</li> <li>Issue NTP to Contractor: 4/1/2020 - 6/31/2022</li> <li>Construction: 4/1/2020 - 6/23/2021</li> </ul>	\$7,911,000
<b>East River Tunnels Radio Antenna Replacement Project. P000012. C.EN.101780. BCC Segment 10</b>		
Design, NEPA/SHPO compliance, construction, testing/commissioning and closeout of new radiating cabling on the Penn Station platforms and in each of the four East River Tubes (ERT) as part of the distributed antenna systems (DAS). Quantities are approximately 13,300 feet in Line 3 and 4 and 1,000 feet on Platforms 7 and 10.	<ul style="list-style-type: none"> <li>Construction: 3/1/2019 - 12/31/2021</li> </ul>	\$3,256,238
<b>East River Tunnels Track Replacement Project. P000021. C.EN.100755. BCC Segment 10</b>		
Project included work on two WBS numbers C.EN.100755 & C.EN.100756. In previous years replacement of rail, ties, and 3rd rail were performed on East River Tunnel Line 1 and 2. Going forward the rest of the lines will be improved.	<ul style="list-style-type: none"> <li>Procure Long Lead Material: 10/15/2019 - 4/13/2020</li> <li>ERT Line 4 Track Panel Replacement: 4/17/2020 - 8/10/2020</li> <li>ERT Line 4 Third Rail Replacement: 4/17/2020 - 8/10/2020</li> <li>ERT Line 4 CWR Installation: 8/14/2020 - 8/31/2020</li> <li>Close Out: 9/1/2020 - 11/1/2020</li> </ul>	\$79,883,978
<b>Empire Line Lighting Upgrade Project. P000136. C.EN.100732. BCC Segment 27</b>		
Project is to improve parking areas located in the Penn Coach yard facility. The work will include repaving app. 6.27 acres of existing gravel or hazardous surfaces. It will also include the installation of new filtration stormwater detention system to manage rain fall runoff.	<ul style="list-style-type: none"> <li>N/A</li> </ul>	\$13,300,000

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Fair Interlocking Renewal Project. P000026. C.EN.101277. BCC Segment 12</b>		
Construction, testing, commissioning, acceptance and closeout of turnout and crossover replacement including associated ballast and switch machines, including removal and replacement of five (5) crossovers; seven (7) turnouts; removal of the # 10 and # 15 crossovers and replacement with track panels; and approximately 300 feet of track in Hill Yard. Work also includes conversion of switch machines and heaters to electrically-operated.	<ul style="list-style-type: none"> <li>• Replace #16 turnout: 8/9/2019 - 8/26/2019</li> <li>• Replace #21 crossover: 8/26/2019 - 9/23/2019</li> <li>• Replace #43 crossover: 9/23/2019 - 10/21/2019</li> <li>• Switch Machine &amp; Heater Conversion - West End: 10/1/2019 - 11/15/2019</li> <li>• Install new #68 turnout: 10/21/2019 - 11/4/2019</li> <li>• Switch Machine &amp; Heater Conversion - East End: 11/15/2019 - 4/30/2020</li> </ul>	\$40,000,000
<b>Hellgate Substation 45-47 Upgrade Project. P000018. C.EN.101745. BCC Segment 8</b>		
Design, permitting, utility coordination, NEPA compliance; upgrades to relays, breakers, one motor generator and civil improvements; construction, testing/commissioning, acceptance and closeout of improvements to substations 45, 46 and 47 on the Hellgate Line.	<ul style="list-style-type: none"> <li>• Design Relay &amp; Civil upgrades: 11/1/2019 - 7/28/2020</li> <li>• Replace 2H Breaker at Sub 46: 3/1/2020 - 4/15/2020</li> <li>• 3P to perform civil rehabilitation at Sub 45: 3/1/2020 - 4/30/2020</li> <li>• 3P to replace breakers: 5/1/2020 - 6/30/2020</li> <li>• 3P to perform civil rehabilitation at Sub 47: 5/1/2020 - 6/30/2020</li> <li>• 3P to replace relays: 10/1/2020 - 5/31/2020</li> <li>• 3P to perform civil rehabilitation at Sub 46: 10/1/2020 - 11/30/2020</li> <li>• Replace one Motor Generator: 10/1/2020 - 2/1/2021</li> <li>• Close Out: 2/1/2021 - 5/1/2021</li> </ul>	\$4,846,481
<b>Kearny to Waverly Transmission Tower Upgrade Project. P000036. C.EN.101787. BCC Segment 12</b>		
Design, permitting, construction, testing/ commissioning and closeout of six new monopole structures that carry the four transmission circuit lines from Kearny Substation (MP 7.2) over the Passaic River to Waverly Substation (MP 12.2). The existing transmission towers have exceeded their useful life and will be removed and disposed of or salvaged.	<ul style="list-style-type: none"> <li>• Preliminary Design: 1/21/2014 - 3/31/2017</li> <li>• Final Design: 4/1/2017 - 9/30/2019</li> <li>• ROW/Utilities/Environmental: 7/27/2017 - 9/30/2019</li> <li>• Project Management: 7/1/2019 - 12/17/2020</li> <li>• Procurement: 9/2/2019 - 12/30/2019</li> <li>• Construction Management: 9/2/2019 - 9/30/2020</li> <li>• Construction: 1/1/2020 - 9/29/2020</li> </ul>	\$22,000,000
<b>Metuchen Frequency Converter - Equipment Upgrades Project. P000042. C.EN.101747. BCC Segment 12</b>		
Design, NEPA compliance, utility coordination, construction, testing, commissioning, acceptance and closeout of improvements to the Metuchen Rotary Frequency Converter Station. Improvements include - upgrades to the control room, MG set room, hydraulic system, 11kv switchgear interface, vibration monitoring system, and 2 new excitation systems, integration of HMI system and controls, brush holder replacement and new fire suppression and dust collection systems.	<ul style="list-style-type: none"> <li>• D/B Contract Award: 6/1/2018 - 10/30/2018</li> <li>• Design: 8/1/2018 - 12/1/2019</li> <li>• Construction Outage: 1/1/2020 - 4/30/2020</li> <li>• Construction Closeout: 5/1/2020 - 7/1/2020</li> <li>• Pre Construction: 9/15/2020 - 11/1/2019</li> </ul>	\$9,657,384

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Mid-Atlantic South Signal System Upgrades to 562 Project. P000120. C.EN.101872. BCC Segments 20, 21, and 22</b>		
Design, construct, test, accept and closeout a new 562 cab no wayside signal system to replace the existing 251/261 ABS system including new interlockings with new signal houses containing vital microprocessor equipment, new signal heads with clear block aspects. The existing wayside intermediate signals will be retired.	<ul style="list-style-type: none"> <li>Start Construction Oak to Bush: 10/1/2019 - 9/1/2020</li> <li>Start Design Bush to Wood: 10/1/2019 - 8/31/2020</li> </ul>	\$24,109,595
<b>NEC PTC Secure Wireless Communication Project. P000030. C.EN.101537. BCC Segment 31</b>		
Research and development of secure wireless network communications for PTC. Development of a plan to implement the secure wireless communications within 18 months of award of Grant. There will be interoperability with railroads that operate on the NEC. Once the specifications are fully developed, we will implement, test and commission the design.	<ul style="list-style-type: none"> <li>Construction: 2/1/2017 - 1/31/2020</li> <li>Final Design: 9/1/2017 - 9/1/2017</li> <li>Testing &amp; Commissioning: 9/1/2017 - 10/31/2019</li> <li>Project Administration: 10/1/2017 - 1/29/2021</li> </ul>	\$4,405,905
<b>NEC-ARINC CETC Project. P000045. C.EN.100119. BCC Segment 31</b>		
Design, develop, install, test, startup, accept and closeout a new server based CETC system including new hardware, software and field communication interface.	<ul style="list-style-type: none"> <li>Construction: 10/1/2019 - 9/30/2020</li> </ul>	\$69,800,000
<b>New Hackensack Substation 42 Control House Project. P000048. C.EN.101535. BCC Segment 12</b>		
Design, permitting, NEPA/SHPO compliance, construction, testing, commissioning acceptance and closeout of a new Control House for Sub 42 including demolition and site improvements.	<ul style="list-style-type: none"> <li>Preliminary Design: 2/1/2014 - 1/1/2017</li> <li>Final Design: 1/2/2017 - 10/31/2019</li> <li>Project Management: 7/1/2019 - 10/31/2021</li> <li>ROW/Easements: 8/15/2019 - 11/13/2019</li> <li>Construction Management: 8/15/2019 - 8/1/2021</li> <li>Procurement: 11/13/2019 - 3/12/2020</li> <li>Construction: 3/12/2020 - 7/5/2021</li> </ul>	\$11,868,241
<b>Pawcatuck River RI Bridge Replacement Project. P000125. C.EN.101866. BCC Segment 4</b>		
Design, permitting, NEPA/SHPO compliance, construction, testing/commissioning and closeout of a new UG BR at 146.39 in RI to replace the existing circa 1897 bridge.	<ul style="list-style-type: none"> <li>Design Procurement: 10/1/2019 - 12/31/2019</li> <li>Design NTP: 1/1/2020 - 2/1/2020</li> <li>Preliminary Design: 2/1/2020 - 9/30/2020</li> </ul>	\$38,425,000
<b>Penn Coach Yard High Mast Lighting Project. P000112. C.EN.101874. BCC Segment 17</b>		
Design, construct, test and accept new high mast lights and power distribution, demolish 3 - 100 ft. high mast lights and poles in Penn Coach Yard. Power upgrades include upgraded Wayside Power Panel near Track 32 and Car Shop Power Panel feeders.	<ul style="list-style-type: none"> <li>Preliminary Engineering: 10/1/2019 - 10/28/2019</li> <li>Final Design: 10/1/2019 - 10/28/2019</li> <li>Construction Management: 10/1/2019 - 6/29/2020</li> <li>Project Administration: 10/1/2019 - 9/30/2020</li> <li>Construction: 1/28/2020 - 6/1/2020</li> </ul>	\$2,000,000

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Penn Coach Yard Paving Improvements Project. P000135. C.EN.101807. BCC Segment 17</b>		
Design, permit, construct, accept and closeout parking area improvements at Penn Coach Yard facility including the repaving of 6.27 acres of existing gravel surfaces and installation of new filtration stormwater detention system. The design will be contracted out while the construction work will be performed by 3rd party contractor.	<ul style="list-style-type: none"> <li>• Design Award: 10/30/2019 - 11/30/2019</li> <li>• Design Development: 12/1/2019 - 6/1/2020</li> <li>• Construction RFP and Award: 8/1/2020 - 9/30/2020</li> </ul>	\$13,156,500
<b>Penn Coach Yard Water Main Replacement Project. P000114. C.EN.101876. BCC Segment 17</b>		
Design, permit, construct, test, accept and closeout a new water main to replace the 100 plus year old water main that services the Penn Coach yard. New hydrants fire protection and back flow preventers will also be installed. The design will be contracted out while the construction work will be performed by 3rd party contractor.	<ul style="list-style-type: none"> <li>• Design Award: 10/30/2019 - 11/30/2019</li> <li>• Design Development: 12/1/2019 - 7/1/2020</li> <li>• Construction RFP and Award: 8/1/2020 - 9/30/2020</li> </ul>	\$3,478,500
<b>Penn Station NY - Infrastructure Renewal Project. P000059. C.EN.101104. BCC Segment 11</b>		
Procure materials; replace milestone track components including concrete block tie, direct fixation and ballasted body tracks, turnouts, special track work and ballasted track in "A", "C", "JO" and "KN" Interlockings and Ladder Tracks.	<ul style="list-style-type: none"> <li>• Replace #103 (55 Hr Outages): 10/4/2019 - 10/21/2019</li> <li>• Replace #435 (55 Hr Outages): 10/25/2019 - 11/4/2019</li> <li>• Timber Renewal #547: 11/15/2019 - 11/18/2019</li> <li>• Timber Renewal #549: 11/22/2019 - 11/25/2019</li> <li>• PSNY Yard Track Rehab: 11/26/2019 - 1/9/2020</li> <li>• Track 14 Rehab: 1/10/2020 - 2/24/2020</li> <li>• Track 11 Rehab: 2/28/2020 - 4/9/2020</li> <li>• Close Out FY 20 Tasks: 4/10/2020 - 6/30/2020</li> </ul>	\$156,171,931
<b>Penn Station NY Scada Phase II Project. P000060. C.EN.100081. BCC Segment 11</b>		
Design, procure equipment and services, software and interface development, implementation, construction and installation of hardware, testing, validating, training, acceptance and closeout of new SCADA system (Supervisory Control And Data Acquisition) for Fire and Life Safety elements from Weehawken NJ to First Avenue Long Island City including New York Penn Station. The new system will replace the existing SCADA Fire and Life Safety System.	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	\$4,405,905

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Penn Station NY Sectionalizing Project. P000037. C.EN.101783. BCC Segment 11</b>		
Construction, testing/commissioning and closeout of 59 new sectionalizing switches, RTU's, motor mechanisms and feeder cables. Installation of new fiber cable and network equipment at each switch is also included.	<ul style="list-style-type: none"> <li>Sectionalizing Switch Replacement WO 36: 10/1/2019 - 6/11/2020</li> <li>Sectionalizing Switch Replacement WO 45: 10/1/2019 - 7/31/2020</li> <li>Sectionalizing Switch Replacement Substation: 4/1/2020 - 5/21/2021</li> <li>Close Out: 4/1/2020 - 6/30/2020</li> <li>Sectionalizing Switch Replacement WO 18: 10/1/2020 - 6/28/2021</li> <li>Sectionalizing Switch Replacement ERT: 10/1/2021 - 3/31/2022</li> </ul>	\$5,705,665
<b>Prince Interlocking Renewal Project. P000131. C.EN.101778. BCC Segment 21</b>		
Design, CETC and SCADA software modifications, construction, testing, startup, acceptance and closeout of the removal of Prince Interlocking at MP 57.3. Removal of crossovers, associated catenary wire, signal houses, and installation of track will be included.	<ul style="list-style-type: none"> <li>Conceptual/PE/NEPA: 2/23/2018 - 4/30/2019</li> <li>Design: 10/1/2019 - 12/23/2019</li> <li>Procurement: 12/23/2019 - 6/2/2020</li> <li>Construction: 6/2/2020 - 9/4/2020</li> </ul>	\$3,384,241
<b>Q Interlocking C&amp;S Equipment Replacement Project. P000066. C.EN.100676. BCC Segment 9</b>		
Design, permitting, NEPA/SHPO compliance, procurement, construction, testing/commissioning, acceptance and closeout of a new Q Interlocking including installation of signal and communication cables; installation of signal and communication houses, and track circuits. ACSES (PTC) wayside units and transponders will be provided with back office system changes to CETC for dispatcher control, power director control and PTC ACSES system software modifications to locomotives and power cars. Testing and systems interfaces will be checked before placed into service. Retirement or Demolition of the old Q Tower and cleanup is also included.	<ul style="list-style-type: none"> <li>Design: 10/1/2017 - 9/30/2019</li> <li>Complete Final Design: 4/1/2019 - 9/31/2019</li> <li>Construction: 10/1/2019 - 9/30/2021</li> <li>Complete Construction: 2/1/2019 - 9/31/2023</li> </ul>	\$13,984,572
<b>Quinnipiac River CT Bridge Replacement Project. P000126. C.EN.101790. BCC Segment 5</b>		
Design, permitting, NEPA/SHPO compliance, demolition of existing out-of-service bridge prior to construction, construction of replacement bridge, testing/commissioning and closeout of a new undergrade bridge at MP 3.48 over the Quinnipiac River for rail/vehicular access to Amtrak's West Class Yard in Hamden, CT.	<ul style="list-style-type: none"> <li>Environmental Permitting: 7/1/2018 - 6/1/2020</li> <li>100% Design: 3/1/2019 - 12/31/2019</li> </ul>	\$6,000,000
<b>Shaws Cove CT Swing Bridge Fender Replacement Project. P000127. C.EN.101584. BCC Segment 5</b>		
Design, permit, construct, test, accept and closeout the replacement of 1140 linear feet of existing timber fender system including installation of navigation lighting and power cables.	<ul style="list-style-type: none"> <li>Contractor Procurement: 10/1/2019 - 12/31/2019</li> <li>Issue NTP: 1/1/2020 - 2/1/2020</li> <li>Fender Replacement - Phase 1: 2/1/2020 - 7/15/2020</li> </ul>	\$10,000,000



Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Signal System Upgrade to 562 - County To Elmora Project. P000129. C.EN.101817. BCC Segment 12</b>		
Design, supply, procure, install, test, commission, accept, and closeout a new Rule 562 cab no wayside signal system between County Interlocking MP 32.8 and Elmora Interlocking MP 14.7. Existing Interlocking signals will be replaced with new signal head with clear block aspects. All intermediate signals between County and Elmora will be retired.	<ul style="list-style-type: none"> <li>Design: 10/1/2018 - 8/2/2022</li> <li>Construction: 10/1/2018 - 7/4/2023</li> <li>Construction Management: 10/1/2018 - 7/31/2023</li> <li>Project Management: 10/1/2018 - 9/30/2023</li> </ul>	\$38,035,592
<b>South Penn Interlocking Improvements Project. P000116. C.EN.100679. BCC Segments 17 and 18</b>		
Design, procurement of material, construction, testing/ commissioning, and closeout of replacement of 6 turnouts, new crossover, removal of existing slip switches, new electric switch machines, snow melters, new signal and track wires in South Penn Interlocking with signal and ET support including CETC/SCADA/ PTC modifications. Amtrak force account will perform all construction.	<ul style="list-style-type: none"> <li>Install #13 Switch: 10/11/2019 - 10/13/2019</li> <li>Install #25 Switch: 10/18/2019 - 10/20/2019</li> <li>Relocate OCS for WY Switch: 12/1/2019 - 12/14/2019</li> </ul>	\$9,521,970
<b>SPRING (Springfield, MA) Interlocking Renewal Project. P000046. C.EN.101777. BCC Segment 25</b>		
Design, procurement, permitting, construction, testing, acceptance and closeout of Spring Interlocking located just west of Springfield Station. This project plans to separate SPRING interlocking from SWEENEY Interlocking with the addition of a standalone CIH at SPRING. Interlocking renewal also includes a new No 8 crossover connecting tracks 2A and 4, rail, ties, ballast, signal transformers, signals cables, dwarf signals, switch heaters, switch machines, signal houses, and CETC/PTC modifications.	<ul style="list-style-type: none"> <li>Track Design: 10/1/2018 - 1/31/2020</li> <li>C&amp;S Design: 3/1/2019 - 9/30/2020</li> <li>Material Procurement: 7/1/2020 - 7/30/2021</li> </ul>	\$2,084,683
<b>Spuyten Duyvil Fenders System Upgrades Project. P000049. C.EN.101791. BCC Segment 27</b>		
Design, permit, construct, test, accept and closeout the replacement of existing timber fender with a concrete and steel fender; installation of navigation lighting; and installation of new main power cables.	<ul style="list-style-type: none"> <li>Complete Final Design: 10/1/2018 - 7/16/2019</li> <li>Procure Contractor: 7/16/2019 - 10/1/2019</li> <li>Issue NTP for construction: 10/1/2019 - 10/1/2019</li> <li>Project Close-Out: 7/1/2020 - 6/30/2020</li> </ul>	\$10,976,001
<b>Sunnyside Yard Frequency Converter Upgrade Project. P000077. C.EN.101239. BCC Segment 10</b>		
Design, supply, procure, install, test, commission, accept, and closeout 4 new static frequency converters, with sitework, switches and controls, RTU, SCADA including demolition of the existing frequency converter.	<ul style="list-style-type: none"> <li>Conceptual/PE/NEPA: 10/1/2019 - 6/3/2020</li> <li>Award and Issue NTP for Preliminary Engineering design: 10/1/2019 - 9/31/2020</li> <li>Procurement: 6/3/2020 - 12/2/2020</li> <li>Construction: 12/2/2020 - 20/2/2023</li> <li>Award and Issue NTP for Design Builder: 1/1/2021 - 12/31/2023</li> <li>Procure Design Build contractor: 9/31/2020 - 12/31/2020</li> </ul>	\$62,820,383



Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Track Circuits Upgrades to 562 - Park to Paoli Project. P000117. C.EN.101770. BCC Segments 29 and 30</b>		
Design, construct, test, accept and closeout a new 562 cab without wayside signal system to replace the existing ABS system including new interlockings with new signal houses containing vital microprocessor equipment, new signal heads with clear block aspects, new signal and track wires, and switch machines as well as upgrade the 261 existing signal system at Paoli. The existing wayside intermediate signals will be retired. The design is by an outside designer while the construction work is performed by division forces.	<ul style="list-style-type: none"> <li>Construction Paoli to Frazer: 8/1/2018 - 7/1/2020</li> <li>Design - Caln Interlocking: 9/4/2018 - 3/1/2020</li> <li>Construction Park to Thorn: 3/1/2019 - 9/30/2020</li> </ul>	\$18,270,308
<b>Washington Ave. Bridge Replacement Project. P000132. C.EN.101586. BCC Segment 13</b>		
Design, permitting, NEPA/SHPO compliance, utility and municipal coordination, demolition of the existing bridges, construction, testing/commissioning and closeout of new bridges PA 58.03 over Washington Street and PA 58.16 over Pennsylvania Ave., Morrisville, PA.	<ul style="list-style-type: none"> <li>Project Management: 8/8/2019 - 6/28/2024</li> <li>Preliminary Design: 1/2/2020 - 12/31/2020</li> <li>Construction Management: 12/31/2020 - 5/2/2024</li> <li>ROW/Utilities: 12/31/2021 - 3/31/2022</li> <li>Procurement: 3/1/2022 - 7/29/2022</li> <li>Construction: 7/29/2022 - 3/28/2024</li> <li>Final Design: 1/1/2021 - 12/31/2021</li> </ul>	\$10,000,000
<b>Washington Terminal &amp; Ivy City Facility Electrical Upgrades Project. P000074. C.EN.100850. BCC Segment 23</b>		
Assessment of Union Station's electrical infrastructure in order to address ongoing issues affecting operation and safety.	<ul style="list-style-type: none"> <li>Project Administration: 10/1/2019 - 11/30/2022</li> <li>Final Design: 1/1/2020 - 1/31/2021</li> <li>Procure Contractor: 3/1/2021 - 7/1/2021</li> <li>Construction: 8/1/2021 - 9/30/2022</li> <li>Construction Management: 8/1/2021 - 9/30/2022</li> </ul>	\$4,405,905
<b>Washington to Boston ARINC to AMTEC Software Upgrade Project. P000085. C.EN.101767. BCC Segment 31</b>		
Design, procure equipment and services, software and interface development, implementation, construction and installation of hardware, testing, validating, training, acceptance and closeout of new train dispatching systems to replace the current ARINC (Rockwell Collins) system with AMTEC at Boston and Wilmington including a backup redundant system.	<ul style="list-style-type: none"> <li>Development tandem HW: 10/1/2019 - 12/31/2019</li> <li>AMTEC ICD SOFTWARE INST: 11/1/2019 - 3/1/2020</li> <li>Ned Field Simulation tests: 12/1/2019 - 4/1/2020</li> <li>NED workstation hardware: 1/1/2020 - 4/1/2020</li> <li>Phase 2 Construction Final: 4/1/2020 - 6/30/2020</li> </ul>	\$4,950,000
<b>Wilmington Training Center Parking Access Improvements Project. P000119. C.EN.101879. BCC Segment 31</b>		
Design, permits, NEPA compliance, utility and DelDOT coordination, construction, acceptance and closeout of drainage and approximately 800 feet of access road improvements. Design and Construction will be contracted out.	<ul style="list-style-type: none"> <li>Proj. Mngmt: 10/1/2019 - 11/31/2022</li> <li>Environmental: 4/1/2020 - 8/14/2020</li> <li>60% Design: 6/1/2020 - 9/30/2020</li> <li>90% Design: 9/20/2020 - 12/31/2020</li> <li>Preliminary Design: 12/1/2020 - 6/15/2020</li> </ul>	\$1,554,860

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Zoo to Paoli Catenary Structure Upgrade Project. P000090. C.EN.201264. BCC Segments 17 and 29</b>		
<p>Design, permit, construct, test, commission, startup, accept and closeout the relocation the 138kV transmission line currently located off Amtrak's ROW to the Amtrak's ROW between Zoo and Paoli. Construction will include the new transmission line with approximately 620 new catenary structures, static wire and associated insulators, upgrading the existing Byrn Mawr switching station for 138kv service, SCADA modifications for the new transmission line and decommissioning the existing transmission line. Design and Construction will be contracted to outside companies. Force Account support will perform C&amp;S and E.T. for electrical tie ins.</p>	<ul style="list-style-type: none"> <li>• Procure Construction Contractor: 9/3/2019 - 5/1/2020</li> <li>• Proj. Mngmt: 10/1/2019 - 11/18/2025</li> <li>• Procure Long Lead Material: 12/20/2019 - 12/18/2020</li> <li>• Construction Mngmt: 4/6/2020 - 10/31/2025</li> <li>• Construction: 6/8/2020 - 9/30/2025</li> </ul>	\$196,823,000

## MBTA Capital Renewal Project General Information

The following table provides the general information on scope, schedule/milestones, and total project cost for MBTA's capital renewal *projects*, listed in alphabetical order. Specific FY20 information can be found in the investment detail by region starting on page 10.

Project Name & Scope	Schedule / Milestones	Total Project Cost
<b>Back Bay Pit Lighting. BCC Segment 1.</b>		
This project is for the installation of new LED platform pit lighting on Tracks 1, 2, and 3 at Back Bay Station consistent with the platform pit lighting project completed in FY19 at South Station, Boston, MA. The new platform pit lights will provide additional illumination improving the customer experience at Back Bay Station.	<ul style="list-style-type: none"> <li>Construction Start: September 2019</li> <li>Construction End: November 2019</li> <li>Project Closeout: January 2020</li> </ul>	\$506,611
<b>Interlocking RTU Upgrades. BCC Segment 1.</b>		
This project is for the installation of new Remote Terminal Units (RTU) at Hebronville I/L, Holden I/L, Mansfield I/L, and Junction I/L. The existing units have reached the end of their expected life (25 years) and parts are no longer manufactured to keep the system in a state of good repair. Two locations will be upgraded per year over a two-year project schedule.	<ul style="list-style-type: none"> <li>Construction Start: March 2020</li> <li>Construction End: June 2020</li> </ul>	\$962,174
<b>Interlocking Signal LED Upgrades. BCC Segment 1.</b>		
This project is for the replacement of the existing incandescent bulbs with LEDs at the signals for South Bay I/L, Cabot I/L, Loop I/L and Broad I/L. A total of 80 Red, 80 Yellow, and 80 Green signals and 240 lenses are to be replaced across the four interlockings to improve the visibility of the signal aspects to the train crews.	<ul style="list-style-type: none"> <li>Construction Start: October 2019</li> <li>Construction End: December 2019</li> <li>Project Closeout: February 2020</li> </ul>	\$185,981
<b>Power and Express Cable Upgrade. BCC Segment 1.</b>		
This project is for the installation and upgrade of approx. 21,000 feet of power, express, and communication cable between Read Interlocking (MP219.4) and Forest Interlocking (MP223.4). These cables have reached the end of their expected design life and this project will return this asset to a state of good repair and mitigate the potential for delays due to failures with the signal and communication system.	<ul style="list-style-type: none"> <li>Construction Start: October 2019</li> <li>Construction End: September 2020</li> </ul>	\$5,597,227

## **Appendix B:**

# **Special Project Detail**

## Special project listing by coordinating agency

The following is a list of NEC special projects organized by the coordinating agency and project type (which include Major Backlog Projects and Improvement Projects), listed alphabetically.

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# Special Projects: Amtrak (Major Backlog)

## Baltimore & Potomac Tunnel Replacement: Enabling Components

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Major Backlog
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The B&P Tunnel Replacement Project is located across three miles of the NEC in West Baltimore and consists of two major elements: the Tunnel Proper and Necessary Enabling Components. Necessary Enabling Components are numerous discrete components that can be individually managed and completed prior to and in anticipation of constructing the tunnel proper. These components are identified through an array of criteria including: third party infrastructure ownership/responsibility/coordination; stakeholder impacts; obligations associated with the Programmatic Agreement and Record of Decision; independent utility; contract size; long lead procurements; resource requirements; and specialty contractors. The list may be further modified as design development continues. Individual components may be combined in contract packages as appropriate to ensure cost and schedule efficiency. The components include, but are not necessarily limited to: Winans Interlocking Expansion and Track A Improvements from Winans to Bridge, Electric Traction Substation 20 Relocation and Modernization, Franklinton and Warwick Bridge Replacements, Gwynns Interlocking Installation, Utility Relocations, Reprofiting Franklin Mulberry Streets, Lafayette Avenue Bridge Modification, Edmondson Avenue Bridge Reconstruction, Property and Easement Acquisition, Building Demolition, CSX Bridge Pier Relocation, and BGE Jones Falls Transmission Tunnel Removal.

**Total project cost estimate:** \$395,000,000

- Construction Cost Estimate (dated March 2017) was based upon Preliminary Engineering (nominally 30% design) using 2017 dollars. The estimate Work Breakdown Structure (WBS) has been prepared to conform to the Federal Transit Administration (FTA) Standard Cost Categories (SCC) for Capital Projects. The Cost Estimate is a Class 3 Estimate as defined by the Association for the Advancement of Cost Engineering (AACE International) Cost Estimate Classification System. Escalation is included in the estimate at a rate of three percent (3%) per annum to the midpoint of construction, which was assumed to be July 2024.

#### **Project schedule:**

- Design: Oct 2011 - Sep 2024
- Construction: Mar 2020 - Sep 2025

### FY20 Information

**FY20 Scope:** Design 60% of Utility Relocations and new Power Feeder Ducts plus Street Alterations; advance design for relocating Substation #20; begin Priority Property Acquisition; advance design of Franklinton Road & Warwick Avenue; replacement bridges; advance design of CSX Bridge Pier Relocation Bid Package; advance design of new interlocking south of Tunnel Proper; develop Contract Packaging Plan; conduct HABS/HAER and Prepare Building Demolition Package; advance development of Programmatic Agreement required historic displays; conduct historic property boundary delineation per Programmatic Display.

#### **FY20 Milestones:**

- Exterior HABS/HAER Documentation: June 2020
- Jones Falls retaining wall design to 60%: June 2020
- Design to 60% Franklinton Road and Warwick Avenue bridges: Nov 2019
- Design to 90% Franklinton Road and Warwick Avenue bridges: Sep 2020

**FY20 Planned expenditure:** \$4,000,000

## B&P Tunnel Replacement: Enabling Components continued

### FY20 Cross-agency coordination:

- Project agreement status: Need agreements with City of Baltimore DOT and DPW (separate or combined) for modifying their infrastructure, design review, and possible ground improvement (not started); CSX for modifying their infrastructure and design review (broached); BGE modifying their infrastructure and design review (initiated); MDOT/MTA for ground improvement at North Avenue Station (not started).
- Resource needs from other agencies: Amtrak Project Management; Amtrak Design Review; Amtrak Law; Amtrak Real Estate. Minimal Amtrak Force Account to provide contractor protection for design contractors (ad hoc); Design review from City of Baltimore DOT and DPW; CSX; BGE; MDOT/MTA
- Track outages coordinated: N/A; construction not scheduled for FY20.
- Long-lead procurement items: N/A (for FY20), however, if Amtrak is successful with grant application(s) would order a turnout for WINANS in FY20 for installation in subsequent year. Also switches/crossover will need to be ordered in advance of GWYNNS interlocking construction.



## Baltimore & Potomac Tunnel Replacement: The Tunnel Proper

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Major Backlog
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The B&P Tunnel Replacement Project is located across three miles of the NEC in West Baltimore and consists of two major elements: the Tunnel Proper and Necessary Enabling Components. The Tunnel Proper will replace the functionally obsolete, low speed, two-track, mile and a half long B&P Tunnel with a modern four-track, two-mile long tunnel. The new tunnel will reduce trip-time by permitting speeds up to 100 mph, minimize operational conflicts among high-speed, intercity, and commuter passengers, and increase throughput capacity. The new tunnel will be constructed as four single track bores to provide an inherent resiliency and will provide robust Fire & Life Safety measures that meet contemporary standards. The increased throughput will allow for greater frequency as envisioned by NEC FUTURE to accommodate growing demand across all types of service. Although not a clearance project, infrastructure constructed as part of this project will not preclude the future passage of AAR Plate H (double stack equipment) if such clearances are provided on connecting segments.

**Total project cost estimate:** \$4,200,000,000

- Construction Cost Estimate (dated March 2017) was based upon Preliminary Engineering (nominally 30% design) using 2017 dollars. The estimate Work Breakdown Structure (WBS) has been prepared to conform to the Federal Transit Administration (FTA) Standard Cost Categories (SCC) for Capital Projects. The Cost Estimate is a Class 3 Estimate as defined by the Association for the Advancement of Cost Engineering (AACE International) Cost Estimate Classification System. Escalation is included in the estimate at a rate of three percent (3%) per annum to the midpoint of construction, which was assumed to be July 2024.

#### **Project schedule:**

- Design: Oct 2011- Sep 2024
- Construction: Oct 2022 - Sep 2032

### FY20 Information

**FY20 Scope:** Advance tunnel design, including approaches, ancillary spaces, and ventilation system. Perform additional geotechnical investigation.

#### **FY20 Milestones:**

- Design completed to 45%: Sep 2020

**FY20 Planned expenditure:** \$8,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: None required in FY20; but several will be initiated in FY20, including but not limited to: City of Baltimore, MDOT/MTA; BGE (probably combined with enabling projects).
- Resource needs from other agencies: Amtrak Project Management; Amtrak Design Review; Amtrak Law; Amtrak Real Estate. Minimal Amtrak Force Account to provide contractor protection for design contractors (ad hoc).
- Track outages coordinated: N/A; construction not scheduled for FY20.
- Long-lead procurement items: N/A (for FY20), but switches/crossover will need to be ordered in advance of CHARLES interlocking reconstruction.

## Connecticut River Bridge Replacement

- Coordinating agency: Amtrak
- Partner agency: Connecticut DOT
- Type: Major Backlog
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would replace the Connecticut River Bridge between Old Saybrook and Old Lyme, CT that carries Amtrak and Shore Line East trains. Completed in 1907, it is the oldest movable bridge between New Haven, CT and Boston, MA. The bridge has a movable span that is raised up to allow boats to pass. By law, the bridge must remain open from May through September for recreational boats to pass and closes only when trains approach. Plans would replace the Connecticut River Bridge with a new design that improves reliability and offers higher speeds for Amtrak and Shore Line East trains. FRA completed NEPA and issued a Finding of No Significant Impact (FONSI) for this project in January 2017. Preliminary design is underway, but no funding is available for final design or construction.

**Total project cost estimate:** \$759,000,000

- Initial estimate developed from "Inspection and Conceptual Engineering for the Reconstruction and Replacement of the Connecticut River Bridge Final Concept design Engineering Report," FY2007

#### **Project schedule:**

- Final Design: 2019 - 2022
- Construction: 2024 - 2030

### FY20 Information

**FY20 Scope:** Proceeding with Phase B Final Design in order to complete construction documents by FY21.

#### **FY20 Milestones:**

- Complete 60% Plans, Costs & Schedule: April 2020
- Complete 90% Plans, Costs & Schedule: July 2020
- Complete 100% Plans, Costs & Schedule: October 2020

**FY20 Planned expenditure:** \$5,850,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: N/A
- Resource needs from other agencies: 1) Protection is required to perform certain field operations needed to obtain design data. Surveying and geotechnical/soil boring investigations are activities which fall into that category. 2) Protection would be required, but only on a limited basis, for the duration of the particular field activity.
- Track outages coordinated: Track outages will be coordinated as needed for the particular field activity (i.e. surveying etc.).
- Long-lead procurement items: No long lead items are required at this time.

## East River Tunnel Rehabilitation

- Coordinating agency: Amtrak
- Partner agency: Long Island Rail Road, NJ TRANSIT
- Type: Major Backlog
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would rehabilitate East River Tunnel tubes 1 and 2 which connect Penn Station, NY to Queens, NY. Each tunnel is approximately 13,000 feet in length. Through this project, both tunnel tubes will be demolished down to the concrete liner and entirely rebuilt with new bench walls, communication systems, and modern electrical and signaling conduit. Rehabilitation of the track and drainage systems will require removal and replacement of track and ballast, new welded rail installations on a modern direct fixation track system, new impedance bond installations, new I joint installations, drainage system cleaning, and the removal and replacement of the third rail for the entire length of each tube. The tunnel renovations will also be designed to improve the safety and security (to the greatest extent practicable) in the tunnels. Some funding is available through FRA Superstorm Sandy recovery grants, but a significant funding gap remains.

**Total project cost estimate:** \$1,208,900,000

- This cost estimate was originally produced using regional-relevant modifiers applied to the Hudson Tunnel Project and assuming an “as early as possible” start of 2021 (2023 midpoint of construction). That time frame is not reasonable given the required preparatory work packages to allow and accommodate a persistent 3-tube operation under the East River for the required ~4 year construction duration. Later construction windows will add escalation costs currently assumed at 3.5% per annum.

#### **Project schedule:**

- NEPA/Final Design: Oct 2017 - Mar 2021
- Construction: Oct 2024 - Sep 2028

### FY20 Information

**FY20 Scope:** The FY20 scope of work for this project will advance the design of the tunnel rehab from nominally 60% to nominally 90%; prepare the conceptual design(s) of the various “enabling projects” which are necessary to fortify the routes into and out of Sunnyside Yard during the continuous outages of ERT 1 and ERT 2.

#### **FY20 Milestones:**

- Advance the design nominally 60% to nominally 90%

**FY20 Planned expenditure:** \$5,760,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: No project agreement is currently required to progress the current scope through 2020. Design coordination has been informally discussed with LIRR to potentially assume some aspect of ERT 3 and 4 signals system design (currently not in scope and being conceptually designed by an LIRR consultant)
- Resource needs from other agencies: 1) Ongoing weeknight Amtrak Force Account support will be required for survey / inspection outages in ERT 1 and 2. 2) F&LS Division support is required weekly at LIC Shaft during the Passive Phase of the Fire Detection Test Program (ongoing through 11/2019) 3) F&LS Equipment usage (lifted hi-rail) is of critical importance to complete approximately 4-5 remaining tunnel crown inspections in ERT-4 and NRT-5 to complete the “Interim Assessment, Prioritization and Repair Design” task. 4) Extensive Division / F&LS / Transportation / Emergency Management support will be required at Live Fire Test #2 (similar to the first test performed the weekend of April 13, 2019), currently scheduled for 11/9/19. 5) Scope additions to examine systems routing from the ERT 1 and 2 portals back to points of tie-in toward Substation 44 (SSYD) and Substation 43 (under NYP) will initiate field recon in FY20 and will require both Amtrak protection and perhaps isolated LIRR protection in Sunnyside Yard. Work is currently estimated to be 80/20 daytime/overnight. 6) Ongoing coordination with sister transit agencies/stakeholders that have in-region projects within the ERT design/construction time frame with regard to scheduling and operations planning (e.g. MTA Capital Construction and the Penn Station Access project team).

## East River Tunnel Rehabilitation continued

- Track outages coordinated: Yes. The local representative for weeknight outage coordination in NYC is involved in this effort, and the project is included on the Regional Outage Planning Committee weekly meetings / schedule look ahead as appropriate for weekend outages.
- Long-lead procurement items: N/A

## Gateway: Hudson Tunnel Project

- Coordinating agency: Amtrak
- Type: Major Backlog
- Partner agency: Gateway Program Development Corporation, Port Authority of NY & NJ, NJ TRANSIT
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will construct a new two-track rail tunnel beneath the Hudson River, rehabilitate and modernize the existing two-track North River Tunnel, and construct the third and final rail right-of-way preservation section beneath the extensive overbuild project that is planned to be constructed on a platform above the rail complex in Manhattan (immediately west of PSNY) known as "Hudson Yards." When complete, the project will provide increased reliability and operational flexibility for Amtrak and NJ TRANSIT on the NEC. The project has been accepted by the FTA into the Project Development phase of the Capital Investment Grant program.

**Total project cost estimate:** \$13,256,000,000 including financing charges / \$11,286,000,000 without financing charges

- The cost estimate is based on the 30% design of the new Hudson River Tunnel, 10% design of the rehabilitation of the North River Tunnel, and the 100% design of Section 3 of the Hudson Yards Concrete Casing. The \$13.3B cost estimate includes financing costs during the grant disbursement period; namely those associated with the proposed borrowing through federal financing programs. Financing costs have not been finalized and remain subject to negotiation between USDOT and the Gateway Program partners (Amtrak, Gateway Program Development Corporation, Port Authority of New York & New Jersey, and NJ TRANSIT).

#### **Project schedule:**

- PE/NEPA: 2016 - 2019
- New Tunnel and Concrete Casing (Major Construction): 2021 - 2029
- Rehab of North River Tunnel Construction: 2029-2032

### FY20 Information

**FY20 Scope:** Completion of PE and NEPA, supplemental geotechnical borings, contract packaging and risk analysis, commencement of final design of interior tunnel systems, property acquisition, start of construction of Hudson Yards Concrete Casing Section 3 Early Work/Utility Relocation (HYCC-3).

#### **FY20 Milestones:**

- NTP to be issued for final design: Jan 2020
- NTP to be issued for HYCC-3 Early Work/Utility Relocation: Jan 2020

**FY20 Planned expenditure:** \$31,692,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Yes. Multiple funding, finance, and other agreements will be required for the full project. Construction and development agreements required for HYCC-3 among Amtrak, LIRR, and related companies.
- Resource needs from other agencies: The Port Authority of New York and New Jersey has agreed to be the grant applicant to the Federal Transit Administration and the NEPA project sponsor. For HYCC-3: Design review from LIRR. Access/Protection from LIRR. Force account labor from LIRR.
- Track outages coordinated: No.
- Long-lead procurement items: No.

### Note

The information on this page is consistent with the HTP financial plan included in the most recent CIG application submitted on August 23, 2019.

## Gateway: Sawtooth Bridge

- Coordinating agency: Amtrak
- Type: Major Backlog
- Partner agency: NJ TRANSIT, Gateway Program Development Corporation, Port Authority of NY & NJ
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would replace Amtrak Bridges No. 7.80 and No. 7.96, collectively referred to as the “Sawtooth Bridges.” The existing bridges are located in the Town of Kearny, Hudson County, New Jersey between Newark Penn Station and Secaucus Junction, and are located directly above or in close proximity to several important rail lines, including the NJ TRANSIT Morris and Essex Line, the former Conrail Center Street Branch, and the PATH WTC rail line. The proposed project would replace an approximately 1.1-mile long segment of existing transportation right-of-way along Amtrak’s Northeast Corridor with new structures that would result in a four-track segment of the NEC with improved design speeds.

**Total project cost estimate:** \$1,600,000,000

- Cost estimate is preliminary and based on conceptual planning. Conceptual cost estimate is shown in future dollars assuming a 2022 - 2027 construction period.

**Project schedule:**

- PE/NEPA: 2019 - 2020
- Final Design: 2020 - 2029
- Construction: 2022 - 2029

### FY20 Information

**FY20 Scope:** Commencement of preliminary engineering of the Sawtooth Bridge Replacement Project.

**FY20 Milestones:**

- NTP for P.E. contract to be issued: Dec 2019

**FY20 Planned expenditure:** \$7,091,667

**FY20 Cross-agency coordination:**

- Project agreement status: No.
- Resource needs from other agencies: NJT will be providing design reviews at intervals for 30%, 60%, 90%, and 100% design. Conrail which runs adjacent to our tracks will review the plans.
- Track outages coordinated: Protection & Outages may be required to conduct investigative work.
- Long-lead procurement items: No.

## Pelham Bay Bridge Replacement

- Coordinating agency: Amtrak
- Partner agency:
- Type: Major Backlog
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would replace the century-old movable Pelham Bay Bridge, which crosses the Hutchinson River in the Bronx, NY, with either a new mid-level movable bridge or a new low-level movable bridge with clearance for marine traffic. Additional funding is required for evaluation of these alternatives as well as the NEPA compliance for this project.

**Total project cost estimate:** \$546,000,000

- Initial estimate developed from the report "Pelham Bay Bridge Replacement/ Reconstruction Project Conceptual Engineering and Inspection Services Final Feasibility Report FY2015"

#### **Project schedule:**

- PE/NEPA: Oct 2019 - Sep 2022
- Final Design: Oct 2022 - Sep 2025
- Construction: Oct 2025 - Sep 2030

### FY20 Information

**FY20 Scope:** The FY20 scope of work for the project will be to develop, advertise and award Request for Proposal (RFP) for NEPA and Preliminary Engineering consultants and start NEPA and Preliminary Engineering.

#### **FY20 Milestones:**

- Award RFP for NEPA and Preliminary Engineering: Oct 2019 \*Dependent on FRA class action determination.
- Begin NEPA and Preliminary Engineering: Nov 2019 \*Dependent on FRA class action determination.

**FY20 Planned expenditure:** \$500,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: The project is still currently in planning phase. Amtrak is awaiting FRA to make a class action determination of the level of NEPA effort for this project. No project agreement can commence prior to this determination.
- Resource needs from other agencies: FRA to provide final determination of NEPA effort. Supporting documentation to perform an EA has been provided to FRA. Ongoing coordination with sister transit agencies/stakeholders that have in-region projects within the Pelham Bay Bridge Replacement project time frame with regard to scheduling and operations planning (e.g. the Penn Station Access project team).
- Track outages coordinated: N/A at this time.
- Long-lead procurement items: N/A at this time.

# Susquehanna River Bridge Replacement

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Major Backlog
- Benefit: Shared

## General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would replace the existing two-track movable Susquehanna River Bridge with two modern high-level, fixed structures, each with two tracks. The project would benefit commuter and intercity rail as well as Norfolk Southern, which uses the segment to access the Port of Baltimore. Using a \$22 million High-Speed Intercity Passenger Rail (HSIPR) grant, preliminary engineering and environmental review were completed in FY17. Additional funding is required for final design and construction.

**Total project cost estimate:** \$1,885,000,000

- Project Cost Estimate was based upon Preliminary Engineering Design. The Draft Cost Estimate of \$1.885 Billion was initially prepared November 2016, updated November 2017 and is based on 2017 Dollars. The updates consisted of Contingency and Project Management Costs aligning with Amtrak Project Management Manual Criteria.

### **Project schedule:**

- Final Design: May 2017 - Jun 2024
- Early Action/Enabling Projects: 2020 - 2024
- Construction: 2024 - 2030

## FY20 Information

**FY20 Scope:** Design to 60%.

### **FY20 Milestones:**

- Structural - Main River Bridge, Lewis Lane OH bridge, 5 approach UG Bridges, Retaining Walls and Slab Track: Sep 2020
- Civil - Warren Street, Amtrak Access and IKEA Roads: Sep 2020
- Track - Interlockings and slab track designs: Sep 2020
- Power - line diagrams, substations, RTU plans, lighting, signal power and switch heaters: Sep 2020
- C&S - communications distribution and communications for signals and CCTV: Sep 2020
- Geotechnical - Continue the Subsurface Investigation Program including additional borings: Sep 2020

**FY20 Planned expenditure:** \$4,000,000

### **FY20 Cross-agency coordination:**

- Project agreement status: N/A - not needed during design phase.
- Resource needs from other agencies: N/A - not needed during design phase.
- Track outages coordinated: N/A - not needed during design phase.
- Long-lead procurement items: N/A - construction is not contemplated for many years.



# Special Projects: Amtrak (Improvement)

## Baltimore Penn Station Infrastructure Improvements

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will construct two additional platforms to support scheduled Acela overtakes of Northeast Regional and MARC trains. The scope includes a new Track 8 (F) platform, including new vertical access and canopy. The Track 3 existing low-level platform will be rebuilt as an accessible high-level facility, including repairs to the existing elevator and stairs. Additional track, signal, and electric traction improvements are also included to support the platform addition and improvement.

**Total project cost estimate:** \$43,000,000

- Current overall project estimate was developed by the designer of Record; additional Amtrak ePMO estimates were provided at each phase of the project design submissions. The current estimate based on the 100% design submission is approximately \$43M.

#### **Project schedule:**

- Construction: Jan 2020 - Sep 2022

### FY20 Information

**FY20 Scope:** Upgrading the C&S signals at the south end of Tracks 1 & 3, performing demolition of the current Platform 2, and beginning construction on the New Platform 2 at Baltimore Penn Station. There may also be some signal work at the south end of Track 7 and Track F performed this year but it may end up being pushed to FY21.

#### **FY20 Milestones:**

- Amtrak Signal Work: October 2019
- Issue NTP Construction: November 2019
- Station Platform Demo/Construction Start: January 2020

**FY20 Planned expenditure:** \$16,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: The Baltimore Station Next Generation High Speed Rail project is funded under the RRIF loan funds so it is one part of Amtrak's agreement for the RRIF Loan funded projects.
- Resource needs from other agencies: For this project we will need on-track protection provided by force account employees as well as catenary outages provided by ET employees. We also have some signal relocation work that will be done by force account C&S employees, some track work that will be done by force account Track employees, and some ET catenary pole work that will be done by force account ET employees. We are also in the process of bringing on a firm to perform Construction Management services for this project as well.
- Track outages coordinated: I recently reached out to the Transportation department and the MARC liaison for Baltimore to find a construction plan that would reduce the impact on their groups. We plan to take track outages at Baltimore station during the day on Track 1 and Track 3 to perform our work. These tracks will be put back into service at the end of the day shift to allow for these tracks to be used overnight for the storage and servicing on MARC equipment.
- Long-lead procurement items: N/A

## Baltimore Penn Station Master Plan

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would provide a comprehensive and integrated approach for Baltimore Penn Station to advance key near-term state-of-good-repair projects while establishing a development framework to leverage under utilized assets and accommodate future growth and redevelopment, potentially through a public private partnership. Additional funding is required for design and construction of improvements.

**Total project cost estimate:** \$95,000,000

- Total project cost estimate is derived from the scope of work required to bring Baltimore Penn Station into a state of good repair, as well as station facility improvements and modernization. The bulk of the costs estimated are based on a 2014 visual assessment of the building, and a 2016 statement of program needs. Additional cost information will be the result of continued scope refinement, specific project definition and design.

**Project schedule:**

- Final Design: Apr 2019 - Apr 2020
- Construction: Jan 2020 - 2023

### FY20 Information

**FY20 Scope:** Complete review and approval of the preliminary design and master plan for the redevelopment of Baltimore Penn Station and surrounding properties. This work will include advancing the real estate transaction from Commercial Close to Financial Close with the execution of long-term ground leases for the master development station properties. All Amtrak program management personnel, technical consultant support, and legal fees will continue through FY20 as the design for the Master Development Partnership program advances into construction.

**FY20 Milestones:**

- Approval of 15% Designs for full Master Plan Development: Jan - Feb 2020
- Agreement with Master Developer on funding allocation across Project Elements: Mar 2020
- Commercial close with the execution of leases for the station property and adjacent Lanvale lot: Apr - Jun 2020

**FY20 Planned expenditure:** \$1,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: A Master Development Agreement has been executed for this project between Amtrak and the Master Developer, Penn Station Partners.
- Resource needs from other agencies: Access/protection and force account labor support from Amtrak; Design review from Amtrak, MTA, City of Baltimore; Project management from Penn Station Partners; FRA + NEPA & Section 106 Review.
- Track outages coordinated: No near term track outages needed. Long lead tracking of outages needed for future phased construction.
- Long-lead procurement items: No long-lead items identified yet. These will be identified during the design process.

## Fitter Interlocking (formerly Yale Interlocking)

- Coordinating agency: Amtrak
- Partner agency: Connecticut DOT
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would include the construction of a new, wired universal interlocking in Clinton, CT that would split the current 16-mile long block between Guilford and View Interlockings. Construction would include the installation of #24 clothoidal turn-outs, rail, switch ties, sub-grade, ballast, components of the overhead catenary system, signal transformers, signal cables, signal masts, switch heaters, switch machines, switch houses, instrument houses, and interlocking lighting. Additional funding is necessary for construction.

**Total project cost estimate:** \$34,100,000

- This interlocking reached Final Design, which included an engineer's estimate, in December of 2017. Amtrak's PM group then performed a "validation" effort with Division leadership to enhance the force account assumptions, resulting in the current estimate, in FY18 dollars, of \$32.4M. Some escalation was assumed for different tasks since this is a multi-year project.

#### **Project schedule:**

- Construction: Oct 2018 - Dec 2021

### FY20 Information

**FY20 Scope:** Procurement of C&S, ET and Track materials (signal huts, turnouts, cat poles, hangers, cable, wire, etc.), C&S construction at Lancaster Shops, Contractor construction of catenary pole foundations, civil roadbed work and access road.

#### **FY20 Milestones:**

- Environmental Permitting complete: December 2019
- LL Procurement C&S: May 2020
- LL Procurement Track: August 2020
- Contractor begin foundations: April 2020
- Contractor begin civil work: April 2020
- Begin Catenary structure erection: June 2020

**FY20 Planned expenditure:** \$9,500,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Yes, between Amtrak & ConnDOT. CT has agreed to the draft Project Authorization Letter (PAL) and is in the process of sending back to Amtrak for execution.
- Resource needs from other agencies: PM/CM and contractor services for construction in FY20. Force Account construction in FY20 will require all disciplines (BB, C&S, ET, and Track).
- Track outages coordinated: Most outages for FY20 will be nightly and weekends. No long term outages planned until FY21.
- Long-lead procurement items: LL procurement to begin in FY20, now that we have a path forward with ConnDOT for funding agreement, for Track and C&S, and possibly ET.

## Gateway: Harrison Fourth Track

- Coordinating agency: Amtrak
- Type: Improvement
- Partner agency: NJ TRANSIT, Gateway Program Development Corporation, Port Authority of NY & NJ
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project includes the design and construction of approximately 2,000 ft. of additional main track along the Northeast Corridor through the city of Harrison, NJ on the western side of the corridor with new embankment and/or retaining structures, track, signal and third rail systems to allow shifting of the westbound PATH track to this new alignment. The project will identify and design changes necessary to connect the new track with the existing infrastructure and also be coordinated with PATH's on-going Harrison Station replacement project.

**Total project cost estimate:** TBD

- Project in early stages of development; cost information not yet available.

**Project schedule:**

- PE/NEPA: 2019 - 2020
- Final Design/Construction: 2020 - 2024

### **FY20 Information**

**FY20 Scope:** Complete 30% preliminary design and process NEPA documents for approval with FRA.

**FY20 Milestones:**

- NTP to be issued: Oct 2019
- 30% Design package to be submitted: March 2020

**FY20 Planned expenditure:** \$750,000

**FY20 Cross-agency coordination:**

- Project agreement status: Yes. Completing negotiation of design phase agreement with PATH.
- Resource needs from other agencies: PATH will be providing design reviews at intervals for 30%, 60%, 90%, and 100% design.
- Track outages coordinated: Worker Protection and Track outages will be required to conduct survey work once PATH agreement has been executed.
- Long-lead procurement items: No.

## Gateway: Hudson Yards Concrete Casing

- Coordinating agency: Amtrak
- Type: Improvement
- Partner agency: Long Island Rail Road, NJ TRANSIT, Gateway Program Development Corporation, Port Authority of NY & NJ
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** Construction of an underground concrete casing to protect the future right-of-way of the Hudson Tunnel Project beneath the extensive overbuild project that is being constructed on a platform above the rail complex in Manhattan (immediately west of PSNY) known as “Hudson Yards.” The project encompasses approximately 1,000 linear feet from 10th Avenue in Manhattan to 11th Avenue. This project’s total cost estimate has increased due to the additional spending on the project over the previous year. As Phase I and Phase II have been wrapping up and closing out (The 11th Avenue section - Phase II - is now closed), costs continue to accrue (Phase I in particular has experienced challenges to closing out the LIRR Maintenance of Equipment building element). The third and final phase is now included as part of the Hudson Tunnel Project.

**Total project cost estimate:** \$301,116,428

- Cost estimate is based on expended dollars and completion of construction.

#### **Project schedule:**

- Construction (Phase 1, Section 1): Aug 2013 - Oct 2017
- Construction (Phase 2, Section 2 - 11th Ave): Dec 2014 - Oct 2017

### **FY20 Information**

**FY20 Scope:** Ongoing costs associated with completion of HYCC-1, including returning the LIRR Maintenance of Equipment (MOE) Building to service: project management; LIRR Force Account labor; and settlement costs related to ongoing litigation over the delay of the LIRR MOE building.

#### **FY20 Milestones:**

- Settlement of litigation claim: estimated May 2020.
- Project close out: June 2020.

**FY20 Planned expenditure:** \$6,475,805

#### **FY20 Cross-agency coordination:**

- Project agreement status: No.
- Resource needs from other agencies: Force account labor from LIRR; Limited LIRR track outages
- Track outages coordinated: Yes.
- Long-lead procurement items: No.

## Hanson Interlocking

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would improve operational flexibility at New Carrollton station and reduce delays for Amtrak and MARC service. A new interlocking would allow universal moves and reduce conflicts that occur when trains must pass other trains stopped at New Carrollton. Construction of Hanson Interlocking would also advance a state of good repair by allowing for the retirement of aging Landover Interlocking.

**Total project cost estimate:** \$90,000,000

- Total project cost was reassessed in 2017.

**Project schedule:**

- Construction: Oct 2011 - Dec 2023

### FY20 Information

**FY20 Scope:** New signal bridge installation and associated C&S work. Access road completion. Continuation of OCS installation.

**FY20 Milestones:**

- Foundations to be completed: Nov 2019
- Pepco Duct Bank: Mar 2020
- Signal Bridge Steel installation: Apr 2020

**FY20 Planned expenditure:** \$10,400,000

**FY20 Cross-agency coordination:**

- Project agreement status: Existing agreement from 2011: MD will pay first \$36M of project.
- Resource needs from other agencies: Construction Phase Services from Gannett Fleming; Construction support for ET and C&S from Amtrak; Force Account Labor from Amtrak, ET & C&S; Contractor to complete foundations (continuation from FY19 – not a new contractor); Pepco to help relocate their transmission lines to install signal bridges and catenary poles; Possibly an escort from WMATA as the catenary pole arms on the east side extend over their fence and potentially in their zone of influence; Project and Construction Management from Amtrak.
- Track outages coordinated: Will need nightly outages but not continuous or 55 hour outages.
- Long-lead procurement items: Steel for catenary poles and signal bridges.

## Maryland Section Reliability Improvements

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will upgrade 30 miles of existing Track 1 in Maryland and make associated signal system and track upgrades for higher speed operations on the Washington-to-Baltimore section of the NEC.

**Total project cost estimate:** \$20,600,000

- The Order of Magnitude (OOM) estimate was developed based on a conceptual design. The design did not include any C&S work for signal system modification, Positive Train Control equipment changes or ET catenary wire realignment. There was a new approach developed by the project team to mitigate additional costs associated with the C&S and ET constructions costs.

**Project schedule:**

- Construction: Mar 2019 - Mar 2019 - Aug 2020

### **FY20 Information**

**FY20 Scope:** Track alignment shifts and ET wire shifts between Grove and Bridge. C&S and PTC upgrades between New Hanson and Bridge.

**FY20 Milestones:**

- Start Construction at Grove: Mar 2020
- Complete Construction: Aug 2020
- Testing and commissioning: Sep 2020

**FY20 Planned expenditure:** \$3,100,000

**FY20 Cross-agency coordination:**

- Project agreement status: N/A
- Resource needs from other agencies: 1) Amtrak Track Productions Forces, Amtrak ET MAD Division Gang, C&S Production and MAD Gang; 2) Design review from Amtrak Engineering; 3) Designs by HNTB for Track Design and Gannett Flemming for ET Design. C&S Signal System and PTC Design by Amtrak Engineering.
- Track outages coordinated: Yes, extended track outages are required for this project. Hanson to Grove I/O started March 3, 2019. Grove to Bridge are now planned Mar through May 2020.
- Long-lead procurement items: None pending. The SAP assemblies required to shift the catenary were the only long lead item. The SAP fabrication shop has been able to meet our supply needs with minimum delay.

## Moynihan Station (Phase 2)

- Coordinating agency: Amtrak
- Type: Improvement
- Partner agency: Long Island Rail Road, Empire State Development Corporation, Moynihan Station Development Corporation, US Postal Service
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project expands Penn Station New York into the historic James A. Farley Post Office building, which will function as a joint Amtrak and Long Island Rail Road facility. Phase 1, which was completed in FY17, included the expansion and enhancement of the 33rd Street Connector between Penn Station and the West End Concourse; the extension and widening of the West End Concourse to serve nine of Penn Station's eleven platforms; new vertical access points and passenger circulation space; new entrances into the West End Concourse through the 31st and 33rd Street corners of the Farley building; and installation of an emergency ventilation system to improve life safety. Phase 2 (currently underway and associated with the funding and schedule information below) includes the construction of a new train hall occupying a sky-lit atrium section in the Farley building; construction of an emergency platform ventilation system at the perimeter of the Farley building; and improvements to the 33rd Street sub-street corridor connecting Penn Station and Moynihan Station. Moynihan Station Development Corporation (MSDC), the building owner, is coordinating the design of non-train hall work in collaboration with Amtrak and Long Island Rail Road. The project is being managed by the MSDC, a subsidiary of the Empire State Development Corporation, a public benefit corporation of the state of New York and the Port Authority of New York New Jersey, in cooperation with Amtrak and Long Island Rail Road.

**Total project cost estimate:** \$1,600,000,000

- The total project cost estimate was not developed by Amtrak, it was developed by New York State's Empire State Development Corporation (ESD).

#### **Project schedule:**

- Construction: May 2017 - Jan 2021

### FY20 Information

**FY20 Scope:** Construction of the Moynihan Train Hall will proceed toward completion during FY2020. The construction of Amtrak's back of house facilities and the fit-out and furnishings of all spaces, including systems and customer amenities, is targeted for a fourth quarter CY2020 completion.

#### **FY20 Milestones:**

- Amtrak Back of House Construction Complete: Sep 2020

**FY20 Planned expenditure:** \$69,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Amtrak, MTA, NYS, and the building's developer will enter into a condominium agreement for the operation and maintenance of the facility.
- Resource needs from other agencies: Project Management from Empire State Development has been provided. Amtrak has contracted for additional program management support. Resources Needed from Amtrak: Design Review, Force Account labor, Program and Construction Management.
- Track outages coordinated: Yes. Outages will be coordinated and planned with all stakeholders as required to complete the project.
- Long-lead procurement items: N/A



## New Carrollton Station - Acela 21

- Coordinating agency: Amtrak
- Partner agency:
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The scope of work of the New Carrollton Station (NCR) Acela 2021 project includes: 1. New 1,050-foot side platform adjacent to an upgraded Track 1; 2. New vertical access (escalators, elevator and stairs) and required station modifications to access NCR at ground level below the elevated track; and 3. Reinstallation of a freight gauntlet along Track 2 to preserve wide load service through NCR, per Amtrak's statutory freight railroad access requirements.

**Total project cost estimate:** \$35,837,881

- The Total Project Cost Estimate was last updated in October 2018 based on 90% design documents. This estimate includes cost for full design services (15% Design through Issued for Bid Documents); project management; construction phase; construction management; environmental; and contingency costs for Design and Construction phases.

#### **Project schedule:**

- Construction: Mar 2019 - Dec 2021

### FY20 Information

**FY20 Scope:** Finalize WMATA Adjacent construction review and wrap up design phase of the project. Once the design has been completed, construction procurement process to begin. Amtrak to coordinate any 3rd party or in-house construction that can begin prior to NTP. These items would include PEPCO relocation of transmission lines, gauntlet track construction and Track 1 realignment.

#### **FY20 Milestones:**

- 100% Design completion/IFB: Dec 2019
- Procurement start: Dec 2019
- Issue NTP construction: Mar 2020
- Track 1 realignment start: Mar 2020
- ET construction start: Mar 2020
- C&S construction start Mar 2020
- Gauntlet Track construction start: Mar 2020

**FY20 Planned expenditure:** \$17,700,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Agreements are needed with WMATA for adjacent construction and for a real estate agreement. Both of these have been started and Amtrak Departments have been notified. Engineering is working through the adjacent construction agreement with Amtrak Legal and Legal has begun the conversation with Real Estate. Agreements are also needed with PEPCO. This is underway and will be finalized once the Design is complete.
- Resource needs from other agencies: 1) Force account labor from Amtrak for Track work, OCS, Inspections and RWP, Linemen. 2) WMATA Design Review and monitoring during the construction phase.
- Track outages coordinated: Coordination has started. Amtrak Construction PM is coordinating efforts.
- Long-lead procurement items: Not yet started.

## New Carrollton Station - SOGR & ADA

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The scope of work of the New Carrollton Station (NCR) State of Good Repair (SOGR) and Accessibility (ADA) project includes existing platform and station renovations to address SOGR and ADA deficiencies throughout the station. Scope includes: platform repairs; restrooms renovations; passengers' path of travel and other station improvements.

**Total project cost estimate:** \$8,400,000

- The Total Project Cost Estimate is based on SOGR and ADA Assessments reports completed between 2017 and 2018.

#### **Project schedule:**

- Construction: Jul 2019 - Jan 2021

### **FY20 Information**

**FY20 Scope:** Complete design documents including cost estimate and schedule.

#### **FY20 Milestones:**

- Design NTP: Oct 2020
- 30% Design submission: Dec 2020
- Design complete, Issue For Bid (IFB): May 2020
- Construction procurement complete: Sep 2020

**FY20 Planned expenditure:** \$1,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Possible agreement needed with WMATA.
- Resource needs from other agencies: Force Account labor from Amtrak and possible design review from WMATA.
- Track outages coordinated: Not yet started.
- Long-lead procurement items: Not yet started.

## New Jersey HSR Improvement Program

- Coordinating agency: Amtrak
- Partner agency: NJ TRANSIT
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** With \$450 million in funding from the U.S. Department of Transportation, Amtrak is upgrading its rail infrastructure to support more frequent high-speed rail service and to improve the reliability of current service between New York and Washington. This project will upgrade electrical power, signal systems, tracks and overhead catenary wires along a 23-mile section of track between Trenton and New Brunswick, New Jersey. Amtrak is upgrading 24 miles of rail infrastructure to support faster, more reliable and more frequent service for all NEC users. The project will overhaul power supply systems, signal systems, track infrastructure, and overhead catenary wire between Trenton and New Brunswick, NJ. Modern infrastructure will allow Acela services to reach 160 mph, their highest speed anywhere on the NEC.

**Total project cost estimate:** \$499,100,000

- This cost was derived on construction costs in the current fiscal years – 2017, 2018, 2019. Total project cost includes NJ HSR Improvement Program Task 1 for upgraded rail infrastructure between Trenton and New Brunswick to support faster, more reliable service. Total project cost does not include Task 2 for improvements to the I-ladder in Penn Station.

#### **Project schedule:**

- Demolition: Oct 2019 - Feb 2020

### **FY20 Information**

**FY20 Scope:** Removal of catenary assets retired by the construction performed under the NJ High Speed Rail Improvement Project, including catenary structures, cat, body and steady spans, aerial signal power line. Final punch list and close out of project tasks. Program management, construction management and procurement services in support of the Project.

#### **FY20 Milestones:**

- Complete removal of retired catenary structures: Feb 2020

**FY20 Planned expenditure:** \$4,700,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: N/A
- Resource needs from other agencies: Amtrak force account labor: request was submitted per Engineering's FY20 request.
- Track outages coordinated: No continuous outages needed; nightly outages are coordinated with the Division and Transportation.
- Long-lead procurement items: N/A

## Newark Penn Station Platform Rehabilitation

- Coordinating agency: Amtrak
- Partner agency: NJ TRANSIT
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project involves improvements to the condition, appearance and functionality on Platforms A, B, C and D in Newark Penn Station. Both Amtrak and NJ TRANSIT have responsibility to maintain to a state of good repair. To date, work on Platform E has been completed. This scope of this project includes the design and rehabilitation of Platforms A, B, C, and D; their roof/ canopy structures; and any other repairs deemed necessary by the initial structure assessment. The structural assessment is complete. Once the final document is produced, Amtrak will prepare a "Make Safe Plan" for platform repairs. A FRA grant (as part of the Federal-State SOGR Partnership Program) was recently announced for Platform D rehabilitation. Details and schedule for the Platform D work are now being refined.

**Total project cost estimate:** \$123,262,000

- This estimate was created from the Structural Assessment in conjunction with the Force Account Estimate (it was Preliminary as of FY18).

#### **Project schedule:**

- Construction: Jun 2020 - May 2028

### FY20 Information

#### **FY20 Scope:**

- Structural movement assessment: The Structural Movement assessment will also determine how to stabilize the structure
- Design of platforms: Design for full depth replacement and partial replacement of high level platform.
- Execution of FRA grant agreement: Coordination among Amtrak, FRA, and NJ TRANSIT is expected to result in a finalized grant agreement by April 2020 for Platform D rehabilitation.

#### **FY20 Milestones:**

- Structural movement study 100%: Jan 2020
- Procurement for design of platforms: Feb 2020
- NTP design of platforms: Apr 2020
- Execute grant agreement (Platform D): April 2020
- 30% Design: Jun 2020
- 60% Design: Sep 2020

**FY20 Planned expenditure:** \$900,000 total (\$700,000 from Amtrak; \$200,000 from NJ TRANSIT)

#### **FY20 Cross-agency coordination:**

- Project agreement status: Yes. New Jersey Transit, PATH & Amtrak. Status: cost-sharing in process.
- Resource needs from other agencies: Access/protection from Amtrak, Force account labor from Amtrak, Design review from NJT & Path.
- Track outages coordinated: Yes. For safety repairs outages are being coordinated with B&B and Track disciplines.
- Long-lead procurement items: Yes. For safety repairs B&B is ordering Metal Safety Edges.

## Next Generation High Speed Fleet Infrastructure: Ivy City/ Washington Terminal Yard Facility Improvements

- Coordinating agency: Amtrak
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will satisfy the anticipated facility and infrastructure improvements and maintenance requirements of a new Tier III High Speed Rail (HSR) fleet, the existing Acela fleet and accommodate an increase in service operations. The Tier III train sets are configured differently from the current Acela trainsets and will require modifications to the existing HSR S&I facilities to adequately service both the existing Acela fleet and the Tier III train sets. Scope of Work for Modifications to Existing HSR S&I includes design and Construction Phase Services (CPS) related to: upper level platforms, 480 VAC wayside power, center platform, potable/wastewater water, Inspection pit, split rail system, Alstom office and material storage, nose access platform, monorail crane and sanding system.

**Total project cost estimate:** \$13,000,000

- Is factoring in: Final Design, Construction & Construction Management

#### **Project schedule:**

- Construction: Mar 2019 - Oct 2020

### **FY20 Information**

**FY20 Scope:** There are two aspects to this project – work within the S&I Facility and the additional Ready Tracks in the yard. S&I Mod: Construction within S&I Facility. Ready Tracks: Finalize Design, Procure GC, and Begin Construction.

#### **FY20 Milestones:**

- S&I Modification: GC NTP: Nov 2019
- North Storage Tracks: GC NTP: Jan 2020

**FY20 Planned expenditure:** \$13,600,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: S&I Mod: None. North Storage Tracks: None.
- Resource needs from other agencies: S&I Mod: Amtrak Project Management; Construction Management; Amtrak Procurement; Minimal Amtrak Force Account due to work being contained within S&I Facility. North Storage Tracks: Amtrak Project Management; Construction Management; Amtrak Procurement; Amtrak Force Account for Contractor Protection and system tie-in.
- Track outages coordinated: S&I Mod: N/A – Construction within S&I Facility; North Storage Tracks: Yes, needed within Yard Limits.
- Long-lead procurement items: S&I Mod: No; North Storage Tracks: Engaged Material Control for Amtrak supplied track material, including switches.

## Next Generation High Speed Fleet Infrastructure: Ride Quality Investment

- Coordinating agency: Amtrak
- Partner agency: This is a shared project on the NEC spine that will benefit all commuter rail operators.
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project, which consists of two parts, will establish the means and methodology for performing reference surfacing on the NEC main line with the potential for expansion to other lines and maintenance and construction operations. The first project element is the establishment of the positioning network and data management system. This will include a survey of all tracks on the NEC. The second element is the acquisition of three sets of equipment for the ongoing surfacing of the NEC. The purpose of this project is to improve current surfacing practices, which will result in more efficient maintenance operations and better ride quality.

**Total project cost estimate:** \$67,000,000

- The total project estimate was developed from a conceptual white paper called “Development of a Reference Surfacing System for the NEC.”

#### **Project schedule:**

- Survey, design and equipment purchase: Oct 2019 - Sep 2021

### FY20 Information

**FY20 Scope:** Upgrade Continuously Operating Reference Station (CORS) Network to cover entire NEC. NEC LiDAR Baseline Survey.

#### **FY20 Milestones:**

- CORS Procurement Start: Sep 2019
- CORS NTP: Dec 2019
- Upgrade CORS Network Complete: Feb 2020
- Baseline Survey Procurement Start: Sep 2019
- Baseline Survey NTP: Feb 2020
- Baseline Survey Complete: Sep 2020

**FY20 Planned expenditure:** \$6,200,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: No
- Resource needs from other agencies: 1) Amtrak Track Engineering needed to perform design reviews; 2) Force account to provide force account RWP protection; 3) Contractor Services – Design Phase Services.
- Track outages coordinated: Yes, overnight or weekend outages will be required to perform Reference Track Surfacing testing.
- Long-lead procurement items: Yes, currently developing a bid packages for contractor services to perform the Baseline LiDAR survey of the NEC between Boston and Washington.

## Next Generation High Speed Fleet Infrastructure: Safety Mitigation

- Coordinating agency: Amtrak
- Partner agency: This is a shared project on the NEC spine that will benefit all / several of commuter rail operators.
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will make several investments to allow Amtrak to permit operation of Tier III Trainsets on the NEC at up to the maximum speed of FRA Tier III standards. Amtrak undertook a detailed and lengthy risk analysis that demonstrates that this standard can be met with a limited investment in infrastructure improvements designed to limit intrusions on to the right of way and/or high-speed tracks in designated high-speed zones expected to be used by Acela. These investments include 20 miles of security fencing, 1/2 mile of guardrails, and other provisions associated with the Tier III FRA Waiver.

**Total project cost estimate:** \$90,000,000

- The total estimate of \$90M was provided by Amtrak Engineering prior to the RRIF funding authorization granted in August 2016.

#### **Project schedule:**

- Construction: Sep 2017 - Mar 2021

### FY20 Information

**FY20 Scope:** Fencing: During FY2019, 18 out of the selected 20 locations under the RRIF program will be completed. FY2020 spending will complete 2 locations in the Mid-Atlantic Division with fabric/pickets, bringing the completion count for locations under the RRIF program to 20.

#### **FY20 Milestones:**

- Amtrak Forces fabric installation percentage completed:
  - 78%: Oct 2019
  - 85%: Nov 2019
  - 91%: Dec 2019

**FY20 Planned expenditure:** \$5,400,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: The RRIF program is a program/project funded by the FRA. This program/project will be completed by 2nd quarter of 2020.
- Resource needs from other agencies: Protection is needed for surveyors, contractors, and union forces on the New York, Mid Atlantic and New England Divisions.
- Track outages coordinated: N/A
- Long-lead procurement items: N/A

## Next Generation High Speed Fleet Infrastructure: Southampton St. Yard Facility Improvements

- Coordinating agency: Amtrak
- Type: Improvement
- Partner agency:
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The project scope includes the design and construction of infrastructure improvements for Southampton Street Yard to support the Next Generation High-Speed Rail (HSR). This project will satisfy the anticipated facility and infrastructure improvements and maintenance requirements of a new Tier III High Speed Rail (HSR) fleet, the existing Acela fleet and accommodate an increase in service operations. The Tier III train sets are configured differently from the current Acela trainsets and will require modifications to the existing HSR S&I facilities to adequately service both the existing Acela fleet and the Tier III train sets. More specifically, Scope of Work includes: (1) a HSR Train Scanner (an 18' x 28' train diagnostic facility); foundation with support bungalow and electric and telecommunications located before the Train Wash; (2) new storage tracks for servicing operations; and (3) an office trailer shell with telecommunications and HVAC for a staff of 10 (Alstom).

**Total project cost estimate:** \$10,312,000

- This total project cost estimate factors in: Preliminary Engineering, Final Design, Construction, and Construction Management.

#### **Project schedule:**

- Construction: Apr 2019 - Nov 2020

### **FY20 Information**

**FY20 Scope:** There are two aspects to this project – work within the S&I Facility and the additional Ready Tracks in the yard. S&I Mod: Construction within S&I Facility.

#### **FY20 Milestones:**

- S&I Modification: GC NTP: Nov 2019

**FY20 Planned expenditure:** \$2,900,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: S&I Mod: None.
- Resource needs from other agencies: S&I Mod: Amtrak Project Management; Construction Management; Amtrak Procurement; Minimal Amtrak Force Account due to work being contained within S&I Facility. Amtrak Project Management; Construction Management; Amtrak Procurement; Minimal Amtrak Force Account due to work being contained within S&I Facility.
- Track outages coordinated: S&I Mod: N/A – Construction within S&I Facility.
- Long-lead procurement items: S&I Mod: No.



## Next Generation High Speed Fleet Infrastructure: Sunnyside Yard Facility Improvements

- Coordinating agency: Amtrak
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

**Project scope:** The project scope includes the design and construction of infrastructure improvements for Sunnyside Yard in Queens, NY to support the Next Generation High-Speed Rail (HSR) trainsets. The project elements funded by the RRIF loan include: A new separate two-track, 2-story HSR S&I facility, including welfare space on the second floor; and three (3) new storage / service ready tracks with a run-through track and improvements to the Eastward Engine Track.

**Total project cost estimate:** \$339,900,000

#### **Project schedule:**

- Construction: Aug 2018 - Mar 2021

### **FY20 Information**

**FY20 Scope:** There are two aspects to this project – work within the S&I Facility and the additional Ready Tracks in the yard. S&I Mod: Construction within S&I Facility. Ready Tracks: Design Development

#### **FY20 Milestones:**

- S&I Modification: GC NTP: Nov 2019
- Ready Tracks: Complete 100% Design: Jun 2020

**FY20 Planned expenditure:** \$8,900,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: S&I Mod: None; Ready Tracks: None.
- Resource needs from other agencies: S&I Mod: Amtrak Project Management; Construction Management; Amtrak Procurement; Minimal Amtrak Force Account due to work being contained within S&I Facility. Ready Tracks: Amtrak Project Management and Amtrak Design Review; Construction planned to start FY21.
- Track outages coordinated: S&I Mod: N/A – Construction within S&I Facility. Ready Tracks: N/A – Construction planned to start FY21.
- Long-lead procurement items: S&I Mod: No. Ready Tracks: Switches (number dependent upon selected option of Ready tracks).

## Philadelphia 30th Street Station District Plan Implementation

- Coordinating agency: Amtrak
- Partner agency: SEPTA
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project includes immediate and long-term improvements to passenger and rail facilities. Work currently underway includes the completion of a comprehensive assessment of state of good repair needs and focusing on design projects to enhance the customer experience and expanding the capacity of concourse to accommodate anticipated growth in Amtrak ridership. Conceptual design of key station improvement projects has now been completed. As established in the Philadelphia 30th Street Station District Plan, the plan for the station is multi-phased and incremental strategy designed to enable sustainable operational growth of 30th Street Station, while unlocking the development potential of the real estate assets over the course of a 35-year horizon. The next key project milestone is a two-phased master developer procurement process that will identify a master development partner to assist Amtrak with implementing state of good repair improvements, developing commercial assets, and maximizing the overall value of 30th Street Station.

**Total project cost estimate:** \$517,000,000

- Total project cost estimate is based on a compilation of various plans and reports, specifically the 2014 District Plan, an ongoing Penn Coach Yard Plan (2018), completed 10% concept designs for Station Plaza (2017), North Concourse Expansion (2016), and the West Underground Concourse (2017), in addition to the State of Good Repair Assessment (2018).

#### **Project schedule:**

- Finalize Feasibility/Conceptual Design: Oct 2018 - Dec 2020
- Final Design: Jan 2021 - Jan 2035
- Construction: Jan 2035 - Jan 2050

### FY20 Information

**FY20 Scope:** Planned activities for FY2020 include completing the procurement process and selecting a best value developer for 30th Street Station with the expectation a Development Agreement will be executed in Summer 2020.

#### **FY20 Milestones:**

- Final Request for Proposal Issued: Oct 2019
- Proposals Due: Feb 2020
- Selection of Developer: Apr 2020
- Executed Development Agreement: Summer 2020
- NTP for Design: Fall 2020.

**FY20 Planned expenditure:** \$1,360,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Yes, a Development Agreement will be executed between Amtrak and the selected Developer. The project is still under a procurement process, the expectation is that an Agreement will be executed in 2020.
- Resource needs from other agencies: To be determined based on proposal submissions and selection of Developer.
- Track outages coordinated: No
- Long-lead procurement items: No

## Veltri Interlocking (formerly New England Interlocking Improvements)

- Coordinating agency: Amtrak
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would design and install a new universal interlocking VELTRI at MP133 in Mystic, CT. Construction would include the installation of turn-outs, rail, ties, sub-grade, ballast, overhead catenary, signal transformers, signal cables, signal bridges, switch heater, switch machines, switch houses, instrument houses, and interlocking lighting. This new interlocking will be an Amtrak sole use asset.

**Total project cost estimate:** \$31,500,000

- Project cost estimate was derived as an order of magnitude from similar, recent projects. This project is currently in the RFP stage of acquiring a professional engineering firm to perform final design and construction phase services. The design process will include an engineer's estimate as well as a construction schedule.

#### **Project schedule:**

- Final Design: Jan 2019 - Mar 2020
- Construction: Oct 2019 - Sep 2023

### **FY20 Information**

**FY20 Scope:** Complete design of interlocking and begin long lead procurement and specific advanced construction activities.

#### **FY20 Milestones:**

- 60% Design: January 2020
- Final Design: May 2020
- LL Procurement begin: February 2020
- Construction Procurement begin: June 2020

**FY20 Planned expenditure:** \$1,600,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: N/A
- Resource needs from other agencies: PM/CM and Engineering design review; construction scheduled to start in late FY20 will require all F/A disciplines.
- Track outages coordinated: Track outages are required for FY20 for construction.
- Long-lead procurement items: LL procurement began for track material (#24 and #20 switches) will begin for ET & CS in early FY20.

## Washington Union Station: Claytor Concourse Modernization Program

- Coordinating agency: Amtrak
- Type: Improvement
- Partner agency: Maryland DOT, VRE, Union Station Redevelopment Corporation, Federal Railroad Administration, WMATA
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This program provides design and construction of immediate operational, safety, and passenger experience improvements to the existing passenger concourse at Washington Union Station, known as the Claytor Concourse. Prior to realizing the full Concourse Modernization, there are two predicate projects that need to be implemented. The Amtrak Police Department (APD) requires relocation from their current location in the station to a new, improved facility outside the Claytor Concourse. Design of the new APD 10,000 sf facility was completed in FY18 and construction is expected from FY19-20. In FY18, Amtrak completed the first predicate project – the relocation and replacement of critical Heating, Ventilation, and Air Conditioning (HVAC) infrastructure. The full Claytor Concourse Modernization will include the renovation of critical passenger areas, the installation of the new glass curtain wall as an entrance to the station from the platforms and the footprint for a new, expanded Metropolitan Lounge (formerly known as the ClubAcela lounge). The modernization will also include constructing back of the house uses on the First Street Level so as to relocate the existing support space from the concourse floor. It will also support the improvement of critical building infrastructure needed to enable the concourse expansion. This infrastructure includes a new emergency generator for the building as well as a new, expanded electrical substation.

**Total project cost estimate:** \$171,145,000

- APD project costs based on executed Construction Manager and General Contractor contracts and detailed cost estimates for project support. Concourse Modernization estimates based on 100% design in FY18.

#### **Project schedule:**

- Construction (APD and Electric Workshop Relocation): Oct 2018 - Mar 2020
- Construction (Concourse Modernization Project): Apr 2019 - Mar 2022

### FY20 Information

**FY20 Scope:** Completion of construction of Amtrak Police Department building. Design completion and construction procurement underway for Concourse Modernization project.

#### **FY20 Milestones:**

- Q2: APD building construction complete
- Q2: Issue RFP for general contractor for concourse modernization
- Q3 - Q4: final bid documents ready for concourse modernization; obtain building permit from FRA

**FY20 Planned expenditure:** \$17,247,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Multiple agreements are needed for this project between Amtrak and various station owners and stakeholders. Agreements are needed with USRC; WMATA; FRA; USI; PGP (Station Place owner). These agreements are in various stages of being drafted and will advance in FY20.
- Resource needs from other agencies: Design review and approval needed from FRA, USRC, and USI; building permit needed from FRA.
- Track outages coordinated: N/A
- Long-lead procurement items: Once the design is finalized and contractor is on board, material will be ordered. Some items will be long lead items such as elevators and other materials.

## Washington Union Station: Long Term Station Expansion

- Coordinating agency: Amtrak
- Type: Improvement
- Partner agency: Maryland DOT, VRE, Union Station Redevelopment Corporation, DDOT, Federal Railroad Administration
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The Long Term Program builds on the 2012 Washington Union Terminal Master Plan which outlined a long-term vision to redevelop the station to address capacity constraints and aging infrastructure as well as coordinate with the air rights project known as Burnham Place. The Long Term Program consists of a large-scale station expansion including a complete redesign and reconstruction of the rail terminal. This will also include the construction of Burnham Place, which is Akridge's air rights project over the tracks and platforms. This program has begun and is undergoing an Environmental Impact Statement (EIS), a process being led by the Federal Railroad Administration (FRA) and targeted to be complete in FY20. Once that process has concluded, the Long Term Program will require funding for advanced design and program management to begin implementation of the finalized concept followed by full construction. Currently specific projects within this program include: Terminal Infrastructure (concept design of reconstruction of tracks, platforms and related rail infrastructure at Washington Union Station); Station Expansion EIS; Geotechnical work; Constructability reviews; and H Street Bridge (a project being funded by District DOT) coordination.

**Total project cost estimate:** \$8,000,000,000

- This is a high level, order of magnitude estimate, based off concept level design.

#### **Project schedule:**

- PE/NEPA: Nov 2015 - Jan 2020
- Full Design: Dec 2020 - Dec 2024
- Future Precedent Projects: Dec 2020 - Dec 2024
- Construction: 2025 - 2040

### **FY20 Information**

**FY20 Scope:** Continuation of activities to support and advance the Station Expansion Project, including support for the EIS, Terminal Infrastructure, and Constructability review.

#### **FY20 Milestones:**

- Draft EIS released Q1
- Record of Decision hopefully by end of Q4 but contingent on FRA

**FY20 Planned expenditure:** \$2,015,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Current agreement with USRC and Akridge for funding and management of the 2nd Century consultants. Future agreements will be needed with USRC, Akridge and/or FRA after the Record of Decision in order to design and construction. Depending on date of ROD, agreements could advance in FY20.
- Resource needs from other agencies: N/A for FY20.
- Track outages coordinated: N/A for FY20.
- Long-lead procurement items: N/A for FY20.

## Washington Union Station: Near Term Rail Program

- Coordinating agency: Amtrak
- Type: Improvement
- Partner agency: Maryland DOT, VRE, Union Station  
Redevelopment Corporation
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The Near Term Rail program provides design and construction of critical rail and infrastructure projects needed to enhance current operational flexibility of the Washington Union Station rail terminal and to provide for the phasing and capacity expansion of the Long Term Program. Projects within the Near Term Rail Program include: (1) Electrification of Tracks 8 & 9 (slated for completion in FY19); (2) Substation 25A Relocation and Catenary Sectionalizing; (3) Crew Base Renovation; (4) Satellite Commissary Relocation; and (5) Raising platform at Tracks 15/16.

**Total project cost estimate:** \$78,500,000

- This cost includes design of the projects in previous fiscal years. Cost estimates are based on Amtrak and contractor cost estimates during design and into construction. All estimates based off at least 60% design except for Substation 25A which is currently close to 30% (October 2018).

#### **Project schedule:**

- Construction (Relocation of Satellite Commissary): Jun 2019 - Jul 2020
- Construction (Crew Base Relocation): Jun 2019 - Nov 2020
- Construction (Substation 25A Relocation): Oct 2020 - Sep 2022
- Construction (Tracks 15/16 Platform Rehab): Jan 2022 - Sep 2023

### **FY20 Information**

**FY20 Scope:** Advance design and construction activities in support of Near Term rail projects.

#### **FY20 Milestones:**

- Crew Base Renovation: Q1 design and constructability review completed
- Q3 general contractor procurement commences
- Satellite Commissary: Q2 general contractor notice to proceed and construction activities commence
- Substation 25A: Q2 design complete
- Q3 construction manager procurement begins.

**FY20 Planned expenditure:** \$4,555,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: No agreements currently assumed.
- Resource needs from other agencies: Amtrak Engineering and Transportation support needed for construction and design review. Amtrak procurement needed for procurement activities.
- Track outages coordinated: No
- Long-lead procurement items: Steel for relocated catenary pole to allow satellite commissary construction was ordered in FY19 and should be delivered by Q1 FY20. Substation 25A will have long lead items but will likely not be procured in FY20.

## Washington Union Station: Subbasement Program

- Coordinating agency: Amtrak
- Partner agency: Maryland DOT, VRE, Union Station Redevelopment Corporation, Federal Railroad Administration
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This program includes two projects Track 22 and the Subbasement Reconstruction. The Track 22 project will not only provide Amtrak and VRE with an additional revenue track by which to board and alight trains, it is a necessary precursor to the Subbasement Structural Replacement project so as to provide an additional run-through track to remain open during the Subbasement project. The Subbasement Reconstruction project will replace the bridging structure at the north portal of the First Street Tunnel spans rail tracks over a back of house station area (known as the Subbasement). The structure is in a state of disrepair and requires replacement. The critical SOGR Project will replace the structurally deficient beams, girders and columns with a new structural support system. The track slab will be replaced and railroad infrastructure will be replaced in kind.

**Total project cost estimate:** \$163,000,000

- Subbasement cost is based off of 30% design estimates; Track 22 estimated was developed based off final design in 2017 and updated in 2018.

#### **Project schedule:**

- Construction (Track 22): Jan 2019 - Jun 2021
- Construction (Subbasement): Jan 2020 - Dec 2022

### **FY20 Information**

**FY20 Scope:** Continued design completion and preconstruction support of the Subbasement Reconstruction project.

#### **FY20 Milestones:**

- Q2: Design completion and construction manager procurement underway
- Q4: Construction manager NTP

**FY20 Planned expenditure:** \$1,305,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Agreement will be needed with USRC, FRA and USI (the station's owners) to advance to construction since the station agreements have not been drafted but could begin to be drafted in FY20.
- Resource needs from other agencies: Design review and approval needed from FRA, USRC, and USI; building permit needed from FRA (not likely in FY20).
- Track outages coordinated: No track outages anticipated in FY20.
- Long-lead procurement items: N/A for FY20.

# Special Projects: Connecticut DOT (Major Backlog)

## Devon Bridge Replacement

- Coordinating agency: Connecticut DOT
- Partner agency: Amtrak
- Type: Major Backlog
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would replace the functionally obsolete 111-year-old Devon Bridge. The bridge, which carries four New Haven Line tracks over the Housatonic River, has experienced serious deterioration, and is the next most critical movable bridge for replacement on the New Haven Line portion of the NEC after the Walk Bridge Program. Additional funding is required for design and construction of a replacement bridge.

**Total project cost estimate:** \$1,500,000,000

- Project in early stages of development. Construction estimates are preliminary.

#### **Project schedule:**

- PE/NEPA: End Apr 2021
- Final Design: End Apr 2023
- Construction (include early construction activities): 2023 - 2027

### FY20 Information

**FY20 Scope:** Design activities for the replacement of the bridge.

#### **FY20 Milestones:**

- Progress the design from 30 percent to 60 percent.

**FY20 Planned expenditure:** \$1,500,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: CTDOT - Metro-North Force Account Agreement is in Place for the Design Phase.
- Resource needs from other agencies: Force account labor from Metro-North for design activities.
- Track outages coordinated: No - Design Phase.
- Long-lead procurement items: Not Applicable - Design Phase.



## Walk Bridge Program

- Coordinating agency: Connecticut DOT
- Partner agency: Amtrak
- Type: Major Backlog
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will replace the functionally obsolete 120-year-old Walk Bridge which has experienced increasing deterioration of electrical and mechanical components. Connecticut DOT has committed to replace this asset with a combination of federal and state funds. Construction will require an extended continuous outage of two tracks where normally four are operational. This change in track availability could cause changes in schedule, decreases in reliability, or even reductions in service. Two additional capital projects in the vicinity of Walk Bridge will help address these concerns. The construction of CP243 interlocking will shorten the block length between Westport and Norwalk while increasing operational flexibility. Additionally, improvements at Dock Yard including the electrification of the lower Danbury Branch will allow for Metro-North trains to turn at Norwalk without increasing congestion on the main line of the NEC. FTA completed NEPA and issued a Finding of No Significant Impact (FONSI) for this project in July 2017.

**Total project cost estimate:** \$1,170,000,000

- Final Design

#### **Project schedule:**

- Construction (Phase 1 - CP243/ Dock Yard): Jan 2021
- Construction (Phase 2 - Walk): Jun 2019 - Sep 2023

### FY20 Information

**FY20 Scope:** Progressing the design of the Walk Bridge (301-0176) and other program projects from the current 60% to 90% and then 100% design plans. The two advanced projects necessary to support construction of the Walk Bridge, the CP243 interlocking (301-0181A) and the Danbury Dockyard improvements (301-0180), are currently in construction phase and will continue throughout all of FY20. CP243 plans to complete track #4 activities (track replacement, drainage, soil nail walls/slope stabilization) and then shift to track #3 (track replacement, drainage, soil nail walls/slope stabilization, signal system infrastructure install) before moving to track #1 activities. Dockyard plans to complete Ann St. Bridge and reinstall track over bridge, complete catenary portals and substation installation.

#### **FY20 Milestones:**

- Walk Bridge 90%: August 2019
- Walk Bridge 100%/GMP 'Guaranteed Maximum Price': Spring 2020
- Walk Bridge NTP: Summer 2020

**FY20 Planned expenditure:** \$125,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: CTDOT - Metro-North Force Account Agreement is in Place.
- Resource needs from other agencies: Force account for protective services/access from Metro-North. Design support from Metro-North engineering staff.
- Track outages coordinated: Yes - Ongoing coordination efforts for construction activities and forecasting/planning for future needs currently underway.
- Long-lead procurement items: Yes - Track crossover switches for CP243 being procured under CP243 early procurement project (301-0181).

# Special Projects: Connecticut DOT (Improvement)

## CTrail Hartford Line Rail Program Phase 3B - 5

- Coordinating agency: Connecticut DOT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The program is being progressed in phases to rebuild and upgrade infrastructure between New Haven, CT and Springfield, MA. The final phases, not yet funded for construction, include adding a second track between Hartford and Enfield, rehabilitating or replacing many bridges and culverts, and improving stations at Windsor and Windsor Locks. The program also includes costs associated with replacing the elevated track structure through Hartford and the Connecticut River Bridge in Windsor Locks.

**Total project cost estimate:** \$250,250,000

- Preliminary Design

#### **Project schedule:**

- Construction: 2020 - 2023

### FY20 Information

**FY20 Scope:** Begin Construction of short high-level platform at Windsor Station; Begin construction of Windsor Locks Station

#### **FY20 Milestones:**

- Start Construction Windsor High-level: May 2020
- Start Construction Windsor Locks: July 2020

**FY20 Planned expenditure:** \$1,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: CTDOT - Amtrak Force Account Agreement is in Place.
- Resource needs from other agencies: Force account labor from Amtrak for design and construction activities.
- Track outages coordinated: Yes, ongoing coordination efforts for construction activities.
- Long-lead procurement items: No.

## New Haven Line Network Infrastructure Upgrade

- Coordinating agency: Connecticut DOT
- Partner agency:
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will upgrade the communications network infrastructure along the New Haven Line segment of the NEC by installing fiber optic communication cable and equipment to support closed circuit television safety cameras at vulnerable passenger stations and bridges. This system will also be capable of supporting passenger information displays and other amenities at passenger stations.

**Total project cost estimate:** \$70,000,000

- Total project cost derivation details not available.

#### **Project schedule:**

- Construction (Phase 1): 2021
- Construction (Phase 2): 2020 - 2022

### **FY20 Information**

**FY20 Scope:** Complete the design of Phase 3 and start the construction phase

#### **FY20 Milestones:**

- Contract Development Start: Summer 2019
- Construction Start: Spring 2020

**FY20 Planned expenditure:** \$12,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: CTDOT - Metro-North Force Account Agreement is in Place.
- Resource needs from other agencies: Force account labor from Metro-North for design activities.
- Track outages coordinated: No - Design Phase.
- Long-lead procurement items: Not Applicable - Design Phase.

## New Haven Line Stations Improvements: Stamford and New Haven Stations

- Coordinating agency: Connecticut DOT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This program will upgrade and repair the Stamford Station to ensure continued safe operation and improve the passenger experience. Work will increase canopy and windscreen coverage, provide additional pedestrian paths, repair and replace platform sections that are failing due to their age, and ensure ADA compliance. The future program also includes the construction of a pedestrian bridge at Stamford Station as well as a new parking garage. Additionally, the program includes a new parking garage for New Haven Station and the installation of real time audio and video systems at all main line stations.

**Total project cost estimate:** \$320,000,000

- Projects are at different stages of design

**Project schedule:**

- Construction: 2020 - 2022

### **FY20 Information**

**FY20 Scope:** Complete the construction of Stamford Station. Obligate Build Grant for escalator and elevator replacement.

**FY20 Milestones:**

- Construction Completion Date: Summer 2019
- Obligate Build Grant by Sept. 2020

**FY20 Planned expenditure:** \$4,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: CTDOT - Metro-North Force Account Agreement is in Place.
- Resource needs from other agencies: Force account labor from Metro-North.
- Track outages coordinated: Yes, ongoing coordination effort for both projects.
- Long-lead procurement items: No.

## New Haven Yard Master Complex Improvements

- Coordinating agency: Connecticut DOT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project is a multi-year initiative that receives funding on an annual basis to store and maintain the rail fleet and spare parts. Connecticut received \$9 million in FTA Emergency Relief funds to install a backup feeder as an alternative power source at New Haven Yard. Additional funding would design and construct other modernization elements, including new facilities to improve efficiency and allow for growth.

**Total project cost estimate:** \$750,000,000

- Conceptual design

#### **Project schedule:**

- Final Design: Jan 2017 - 2020
- Construction: 2019 - Feb 2023

### **FY20 Information**

**FY20 Scope:** Continue design and construction efforts for various projects (East End Connector, West End Yard, Building 10 Demolitions, Pedestrian Overpass, etc.)

#### **FY20 Milestones:**

- Various milestones for each project: Construction for East End Connector will continue until summer 2022.
- Construction for West End will continue until Fall 2021.

**FY20 Planned expenditure:** \$20,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: CTDOT - Metro-North Force Account Agreement is in Place.
- Resource needs from other agencies: Force account labor from Metro-North.
- Track outages coordinated: Yes, ongoing coordination effort for various construction projects.
- Long-lead procurement items: Yes - switches, etc.

## Shore Line East Track & Catenary Improvements

- Coordinating agency: Connecticut DOT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

**Project scope:** This project will install electric catenary along key stretches of track in Old Saybrook, Guilford, and New London. The project will enable the transition of Shore Line East from diesel-powered trains to electric powered equipment and allow for future service expansion.

**Total project cost estimate:** \$20,000,000

**Project schedule:**

- Construction: Aug 2018

### FY20 Information

**FY20 Scope:** Begin Construction to electrify the siding at the New London Station.

**FY20 Milestones:**

- Begin Construction and install foundations by 4th quarter FY'20

**FY20 Planned expenditure:** \$4,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: Amtrak will acquire property rights.
- Resource needs from other agencies: Amtrak force account Project Authorization letter under master agreement.
- Track outages coordinated: Yes, no long term outage anticipated.
- Long-lead procurement items: No.

## SLE Station Improvements

- Coordinating agency: Connecticut DOT
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project is a series of investments to expand and improve stations, constructing two high-level platforms, improved waiting areas, and expanded parking at several stations. Work is underway at Clinton, Madison, and New Haven State Street. In addition, the state will study the feasibility of constructing a new station in Niantic, CT.

**Total project cost estimate:** \$70,000,000

- Total project cost derivation details not available.

**Project schedule:**

- Construction: Sep 2020

### **FY20 Information**

**FY20 Scope:** Advance Construction of the Clinton Railroad Station by adding a Platform on the New Haven bound side along with a pedestrian overpass.

**FY20 Milestones:**

- Complete elevator/stair cores and set pedestrian bridge by 3rd quarter FY '20

**FY20 Planned expenditure:** \$12,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: Lease agreement with Amtrak in place.
- Resource needs from other agencies: Amtrak force account for Railroad Protective services and overhead wire adjustment.
- Track outages coordinated: Yes, no long term outage anticipated.
- Long-lead procurement items: No.

# Special Projects: Delaware DOT (Improvement)

## Claymont Regional Transportation Center

- Coordinating agency: Delaware DOT
- Partner agency:
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will replace the existing Claymont, DE train station. The new station will be located north of the current site to the former Evraz Steel Site in Claymont, Delaware. It will meet all current ADA standards, with two high-level platforms and a pedestrian overpass over the NEC. The new station will be a multi-modal transportation center with improved access for bus transit, bicycles, and pedestrians as well as added parking capacity.

**Total project cost estimate:** \$45,612,000

- The project costs were developed based on the conceptual plan developed for the RFP. The estimate will be updated before the end of 2018 once we have awarded the Design/Build contract. The estimate was updated in the Summer of 2018.

#### **Project schedule:**

- Construction: Dec 2018 - Dec 2020

### FY20 Information

**FY20 Scope:** Performance of site preparation of work and testing. Design submissions from the design/build contractor and multiple party reviews. Commencement of building and platform and garage construction.

#### **FY20 Milestones:**

- Completion of site preparation work November 2019
- Commencement of building, garage and platform construction in Spring 2020

**FY20 Planned expenditure:** \$24,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Construction Project Initiative ("PI") needed between DelDOT and Amtrak for construction services. PI is being drafted.
- Resource needs from other agencies: Amtrak protective services; Amtrak design and DelDOT design reviews from design/builder; and access to ROW from Amtrak.
- Track outages coordinated: No track outages are anticipated.
- Long-lead procurement items: ET materials. Amtrak was to perform ET work but is no longer able to due to a reported ET emergency in New Jersey. Design/Builder will be doing the work and ordering the material some of which has been identified as having a long lead time.



## Delaware Third Track Program

- Coordinating agency: Delaware DOT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will increase capacity for intercity and commuter service between Wilmington and Newark, DE by eliminating a current two-track bottleneck and thereby restoring a third track through most of the state. This joint Amtrak/Delaware DOT project is funded by a combination of federal and state sources.

**Total project cost estimate:** \$49,000,000

#### **Project schedule:**

- Construction: Aug 2020 - Jun 2021

### **FY20 Information**

**FY20 Scope:** Complete installation of panels at Mill Creek Bridge. Perform cut and throw work to connect Track 1 South End. Install 300 feet of track to finish construction of new Track 3. Connect track to existing track 2.

#### **FY20 Milestones:**

- Commence panel installation; cut and throw work and Track 3 connection work: August 2020
- Commence installation of 300 feet of new track on Track 3 line by February 2020

**FY20 Planned expenditure:** \$7,200,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: FRA Grant requires extension. A proposed grant extension to June 2021 has been submitted to the FRA. This date was selected by FRA and DTC to allow Amtrak time to complete punch list, testing and billing closeout activities after the 2020 Amtrak project work is completed. The FRA is holding the extension submission pending Amtrak's decision whether it will proceed with replacement of the Shipley Street Bridge portion of the project. The Shipley Street Bridge does not relate to the third track work. The Shipley Street Bridge work is to be funded by Amtrak and DTC only.
- Resource needs from other agencies: Amtrak forces are needed to perform the remaining work.
- Track outages coordinated: 3 weeks of track outages commencing in August 2020 will be experienced.
- Long-lead procurement items: None are anticipated at this time.

## Newark (DE) Regional Transportation Center

- Coordinating agency: Delaware DOT
- Partner agency: Amtrak, SEPTA
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will construct an updated Regional Transportation Center in Newark, DE that will increase capacity and support additional SEPTA service between Newark and Wilmington, DE. The project includes construction of a new station house, a new platform, a new freight track connection, and a new pedestrian bridge so passengers are not forced to cross an active track. The project will make the station ADA-compliant, eliminate conflicts with freight operations, and permit expansion of regional and commuter service. This project is funded by a combination of federal, state, and local sources.

**Total project cost estimate:** \$57,000,000

- Several of the contracts have been awarded, so the estimates are based on contract award amounts. The remaining contract estimate is based on final design plans. The estimate was updated in the Summer of 2018.

#### **Project schedule:**

- Construction: Jul 2017 - May 2021

### FY20 Information

**FY20 Scope:** Completion of Contract 2, Station Building construction. Completion of Contract 3A, Catenary and Signal foundation work. Award of contract 3B, Pedestrian Bridge and Platform work.

#### **FY20 Milestones:**

- Completion of Contract 2, Station Building construction by November 2019
- Completion of Contract 3A, Catenary and Signal foundation work by December 2019
- Award of Contract 3B, Pedestrian Bridge and Platform work by January 2020

**FY20 Planned expenditure:** \$5,800,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Contract 3B is to be bid and awarded in FY2020.
- Resource needs from other agencies: Amtrak protective services; Amtrak design and DeIDOT design reviews from design/builder; and access to ROW from Amtrak.
- Track outages coordinated: Outages anticipated with regard to Contract 3B but none have been announced by Amtrak to-date.
- Long-lead procurement items: None known at this time.

# Special Projects: Long Island Rail Road (Improvement)

## East River Tunnel - Right of Way Infrastructure Improvements

- Coordinating agency: Long Island Rail Road
- Partner agency:
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project includes several initiatives in the East River Tunnels, including: Stray Current Study; Communications antenna replacement in lines 3 and 4; Total track replacement in line 4; and 1st Avenue substation replacement. Work would evaluate and mitigate stray current in the tubes, improve radio system infrastructure in the tunnels and on the platforms at Penn Station New York used by Amtrak and LIRR, renew track and track-bed infrastructure in East River Tunnels 3 & 4, and install a new fully operational AC-DC traction power substation to replace a substation that was damaged by Hurricane Sandy. These projects would improve reliability and reduce delays and maintenance costs by replacing and/or upgrading existing equipment. Some funding for these improvements is available. Additional funding is required for other improvements.

**Total project cost estimate:** \$88,500,000

- Total project cost derivation details not available.

#### **Project schedule:**

- Construction: Jan 2017 - Dec 2022

### FY20 Information

**FY20 Scope:** ERT Stray Current Study will continue. Communications Antenna replacement will continue in ERT 3 or 4. Total track replacement will restart (since 2016) in ERT Line 4 with 13 planned weekend tunnel outages. Amtrak FY2020 SOGR of Tracks 11, 14 and various switches.

#### **FY20 Milestones:**

- 50% ERT Antenna completion by Sep 30
- Completion of ERT 4 Total Track Rehab by Sep 30
- Completion FY2020 SOGR of Tracks 11, 14 and various switches by Sep 30

**FY20 Planned expenditure:** \$34,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: LIRR Funding Authorization to Amtrak for the FY2020 SOGR.
- Resource needs from other agencies: Force Account labor from Amtrak.
- Track outages coordinated: ERT Antenna scope will be based on availability of ERT outages in competition with other priority Amtrak & LIRR projects, and maintenance requirements.
- Long-lead procurement items: N/A

## Penn Station New York - LIRR Projects

- Coordinating agency: Long Island Rail Road
- Partner agency: Amtrak, NJ TRANSIT
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will widen and raise the ceiling of the 33rd Street Corridor at Penn Station New York. This project will also repair and improve other assets at Penn Station New York. Work would include replacing elevators and escalators, upgrading customer service facilities, installing new HVAC equipment, improving lighting, and rehabilitating platforms. Elevators and escalators assets have reached the end of their useful life, stairways are in poor condition, and rehabilitation or upgrades are needed to HVAC, platforms, and lighting. Some funding for these improvements is available. Additional funding is required for other improvements.

**Total project cost estimate:** \$315,677,829

- Total project cost derivation details not available.

#### **Project schedule:**

- Construction: Jan 2020 - Dec 2024

### FY20 Information

**FY20 Scope:** Construction of New Entrance and new Elevator. Train Hall Renovation: Widening of 33rd Street corridor, heightened ceilings, wayside and lighting improvements, new finishes, expanded HVAC and improved retail spaces. Continue refurbishment of elevators and escalators. Staircase replacements.

#### **FY20 Milestones:**

- New Entrance & New Elevator completion: Dec 30
- Escalator & Elevator completion: Sep 30
- Award of Train Hall Renovation Contract: Oct 1
- Platform 11 Staircases completion: Sep 30

**FY20 Planned expenditure:** \$213,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Train Hall Renovation - MTA and Amtrak Agreement needs to be signed.
- Resource needs from other agencies: Force Account labor from Amtrak.
- Track outages coordinated: Track outages will be required for the New Entrance and Train Hall Renovation, which will be coordinated via the weekly Amtrak Regional Schedule coordination.
- Long-lead procurement items: N/A

## River-to-River Rail Resiliency Projects (R4)

- Coordinating agency: Long Island Rail Road
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This program will protect the East River Tunnels and the West Side Yard against flood hazards to ensure connectivity at New York Penn Station for Amtrak, LIRR, and NJ TRANSIT. The program consists of multiple elements, including West Side Yard perimeter protection and drainage improvements, hardening the Queens Portals of the East River Tunnels, resiliency improvements within the East River Tunnels, including the installation of permanent emergency generators, and waterproofing of the entrances and manhole/conduit points of entry to two ventilation facilities.

**Total project cost estimate:** \$108,100,000

- Total project cost derivation details not available.

#### **Project schedule:**

- Construction: Start 2019

### **FY20 Information**

**FY20 Scope:** Begin Construction of the Queens Perimeter flood walls. Begin Construction of the West Side Yard flood walls. Continue design of the ERT Portal Flood Protection.

#### **FY20 Milestones:**

- Award Queens Perimeter flood walls Design-Build contract: Nov 30
- Award Construction of the West Side Yard flood walls Design-Build: Nov 30

**FY20 Planned expenditure:** \$40,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Queens Permit-To-Enter and Queens Site Access Agreement required from Amtrak.
- Resource needs from other agencies: Force Account labor from Amtrak required for the Queens Perimeter Flood Walls.
- Track outages coordinated: N/A
- Long-lead procurement items:

# Special Projects: Maryland DOT (Improvement)

## MARC Storage Improvements - Martin Airport

- Coordinating agency: Maryland DOT
- Partner agency:
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will construct additional storage tracks and related infrastructure at the Martin State Airport Facility. MARC trains lack adequate storage along the Penn Line and often are required to run empty trains between Perryville and Baltimore, MD, using up track capacity and increasing operating costs.

**Total project cost estimate:** \$16,465,000

- Total Project Cost is based on combined Project Phase costs. Preliminary Planning/Preliminary Engineering allocation of \$1.5 MM for Planning and Design, ROW acquisition allocation of \$2.2 MM for purchase of required private property in fee and associated easements, Construction Phase allocation of \$12.76 MM. Combined project cost is estimated using Standard MTA methodology for the current status at 85% design.

#### **Project schedule:**

- Construction: Jun 2018 - Dec 2019

### FY20 Information

**FY20 Scope:** ROW Acquisition required for Project is anticipated during FY20. 4.199 Ac in fee simple and associated easements have been Appraised and MTA received FTA concurrence for on March 6, 2019. Complete 100% Design; Issue NTP; Begin Procurement.

#### **FY20 Milestones:**

- Complete 100% Design: Sep 2019
- ROW Acquisition: Oct 2019
- Procurement Start: Oct 2019
- Construction NTP: May 2021

**FY20 Planned expenditure:** \$8,545,000 (\$2,183,000 ROW + \$6,362,000 CONSTRUCTION)

#### **FY20 Cross-agency coordination:**

- Project agreement status: AMTRAK PI 60 in place for Design review. AMTRAK PI for construction being prepared by MARC.
- Resource needs from other agencies: Design Review from AMTRAK. Force Account Labor from AMTRAK.
- Track outages coordinated: Track outages will be coordinated by MARC with AMTRAK.
- Long-lead procurement items: No.

# Special Projects: MBTA (Improvement)

## Boston South Station: Tower 1

- Coordinating agency: MassDOT/MBTA
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The complete redesign of Tower 1 Interlocking is part of the Boston South Station Expansion project. Tower 1 Interlocking is the railway “intersection” that provides operational flexibility for trains converging on South Station. It distributes each train to and from its platform track at the station. The goal of the Tower 1 Early Action project is to address current reliability and resiliency issues. Potential elements of the project may include: replacing the existing signal system with a state-of-the-art microprocessor system; addressing settling that has occurred at switch points; providing conduits to allow easier access to wires and cables; evaluating the ability to raise the tracks to remove an existing dip caused by ground settlement; addressing ways to make Tower 1 more resilient to effects of climate change (flooding, extreme rain/snow events, heat stress, etc.); upgrading existing communications and providing redundancy; and evaluating the ability to host longer trains by extending the platforms. The Federal Railroad Administration and MassDOT issued the Final Environmental Assessment and Section 4(f) Determination and the Finding of No Significant Impact (FONSI) for the South Station Expansion project on October 27, 2017.

**Total project cost estimate:** TBD

- Project cost information included in Boston South Station Expansion project.

**Project schedule:**

- Final Design: Mar 2018 - Dec 2019
- Construction: Jun 2021 - Jun 2025

### FY20 Information

**FY20 Scope:** FY 2020 will primarily consist of finalizing the design plans, putting together the detailed work plan and schedule, and procuring and awarding the contract. Certain elements of construction will begin in 2020 including procurement of materials and track and signal construction as detailed in the construction phasing plans.

**FY20 Milestones:**

- Completion of 100% design
- Procuring and awarding contract
- Materials Procurement Process
- Construction Commencement

**FY20 Planned expenditure:** \$8,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: MassDOT and Amtrak have an agreement in place to close out final design. Additional coordination with all agencies will be required as the design is finalized and the project advances into construction.
- Resource needs from other agencies: Coordination with Amtrak will be necessary as design is finalized and construction commences. Amtrak resources will be required for construction services.
- Track outages coordinated: Draft construction phasing and staging plans are being reviewed by FRA and Amtrak and coordination will continue through final design, including identifying necessary track outages.
- Long-lead procurement items: Long lead procurement items will be identified as part of the design package and will be an early action item as part of the construction package.

## MBTA Layover Facilities - Pawtucket Layover Facility

- Coordinating agency: MBTA
- Partner agency: MassDOT
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will implement improvements to the existing Pawtucket Layover Facility, where the MBTA stores and services some trains for the Providence/Stoughton Line. Enhancements will allow MBTA to perform fueling and some light equipment maintenance in Pawtucket, relieving pressure on other MBTA facilities. Phase 1, completed in 2013, included a 700 feet inspection pit. Phase 2 is to install layover fluid handling equipment and other associated equipment. It includes systems for dispensing of diesel fuel, sanding, anti-freeze, and lube oil, some electrical work, and fencing. Future project is Roof Shelter over existing pit from Phase 1.

**Total project cost estimate:** \$21,985,929

- Not available.

**Project schedule:**

- Construction: 2018 - 2020

### **FY20 Information**

**FY20 Scope:** FY20 will consist of procuring design and commencing design plans for 30% submittal.

**FY20 Milestones:**

- Design NTP
- 30% Submittal
- 75% Submittal

**FY20 Planned expenditure:** \$1,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: Executed between MBTA and RIDOT
- Resource needs from other agencies: Keolis Design review; Internal MBTA design review
- Track outages coordinated: Outages will be needed during construction FY21
- Long-lead procurement items: N/A



## MBTA Station Improvements - Ruggles Street Station

- Coordinating agency: MBTA
- Partner agency: MassDOT
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will construct a new platform and make other improvements at Ruggles Station to enable all inbound and outbound MBTA trains to serve the station and to increase system capacity along this segment of the NEC. The project will improve accessibility by upgrading the existing elevators and adding one new elevator in the lower busway, and make interior and exterior repairs to bring the station to code. A TIGER grant partially funds this project, which is part of a larger initiative to modernize the Ruggles Station which requires additional funding for full construction.

**Total project cost estimate:** \$36,500,000

#### **Project schedule:**

- Feasibility/ Conceptual Design: 2020 - 2021

### **FY20 Information**

**FY20 Scope:** Completion of lower busway grading and placement of pavement. Opening of platform. Replacement and re-opening of elevators.

#### **FY20 Milestones:**

- Platform opening: March 2020
- Elevator opening: May 2020

**FY20 Planned expenditure:** \$12,400,000 (Construction: \$9,300,000)

#### **FY20 Cross-agency coordination:**

- Project agreement status: Yes, MBTA Amtrak PI #DCA1788
- Resource needs from other agencies: Force account labor from Amtrak.
- Track outages coordinated: Not yet coordinated, but future outages for retaining wall demo and platform construction expected.
- Long-lead procurement items: Yes. Amtrak responsible for catenary materials. Elevators (MBTA responsibility)

## MBTA Station Improvements - South Attleboro Station

- Coordinating agency: MBTA
- Partner agency: MassDOT
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will improve South Attleboro Station including rehabilitation of stairways, pedestrian walkways, establishment of a new bus stop for RIPTA, accessible parking improvements, pedestrian crossings, and two side-by-side mini-high platforms. Emergency repairs currently are underway, but permanent improvements are needed.

**Total project cost estimate:** \$3,900,000

#### **Project schedule:**

- Construction: 2018 - 2020

### **FY20 Information**

**FY20 Scope:** FY20 will primarily consist of preparing documents to advertise for construction procurement.

#### **FY20 Milestones:**

- Procurement and awarding contract
- Construction commencement

**FY20 Planned expenditure:** \$2,350,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: MBTA is awaiting Amtrak PI approval
- Resource needs from other agencies: Amtrak Flagging PI Force Account; Building Permit
- Track outages coordinated: N/A
- Long-lead procurement items: N/A

# Special Projects: Metro-North Railroad (Improvement)

## Penn Station Access

- Coordinating agency: Metro-North Railroad
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will open a new Metro-North Railroad link directly into Penn Station New York from the New Haven Line in Westchester and the State of Connecticut. Four new Metro-North stations will be built in the Bronx – near Co-op City, Morris Park, Parkchester/Van Nest, and Hunts Point. The project also includes upgrading the power and signal systems along the Hell Gate Line; adding new interlockings and tracks, and modifying existing ones and curves on a portion of the line; modifying existing over-the-street railroad bridges as necessary; and reinforcing the Bronx River Bridge.

**Total project cost estimate:** \$695,000,000

**Project schedule:** TBD

### FY20 Information

**FY20 Scope:** Advance preliminary design in coordination with Amtrak. Complete NEPA environmental review process with FTA as lead agency. Issue Request for Qualifications for Design/Build contractors. Execute Design/Build Phase Agreement with Amtrak.

#### **FY20 Milestones:**

- Advance 30% design: 3rd QTR 2020
- Obtain FONSI: 1st QTR 2020
- Issue RFQ: 4th QTR 2019
- Execute D/B Agreement: 2nd QTR 2020

**FY20 Planned expenditure:** \$32,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Yes. MOU with Amtrak executed Feb. 2019. Design Phase Agreement under negotiation and Design/Build Phase Agreement to be executed prior to construction.
- Resource needs from other agencies: Access/Protection and dedicated review staff from Amtrak.
- Track outages coordinated: N/A in FY 2020.
- Long-lead procurement items: Yes. Procurement of long lead items to commence in FY 2020.

# Special Projects: MTA Capital Construction (Improvement)

## Harold Interlocking

- Coordinating agency: MTA Capital Construction
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will construct new conflict-free train routes through Harold Interlocking, the busiest switch point on the NEC. Located in Queens, NY, this interlocking sorts Amtrak, LIRR, and NJ TRANSIT trains as they travel north and east of Penn Station or access Sunnyside Yard for service and storage.

**Total project cost estimate:** \$763,870,448

#### **Project schedule:**

- Construction: End Jul 2025

### FY20 Information

**FY20 Scope:** FY20 information to be updated pending discussions between MTA and Amtrak.

#### **FY20 Milestones:**

- FY20 information to be updated pending discussions between MTA and Amtrak.

**FY20 Planned expenditure:** FY20 information to be updated pending discussions between MTA and Amtrak.

**FY20 Cross-agency coordination:** FY20 information to be updated pending discussions between MTA and Amtrak.

- Project agreement status:
- Resource needs from other agencies:
- Track outages coordinated: .
- Long-lead procurement items:

# Special Projects: NJ TRANSIT (Major Backlog)

## Gateway: Portal North Bridge

- Coordinating agency: NJ TRANSIT
- Partner agency: Amtrak, Gateway Program Development Corporation, Port Authority of NY & NJ, NJ Turnpike Authority
- Type: Major Backlog
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would replace the century-old swing-span Portal Bridge over the Hackensack River with a new two-track, fixed-span bridge, allowing a modest expansion of capacity. Amtrak and NJ TRANSIT have completed final design and environmental review. The project has been accepted by FTA into project development for its Capital Investment Grant - Core Capacity grant program and is pending review by FTA. Once complete, the new bridge will save upwards of \$1.3 million annually in reduced maintenance and operating costs due to the replacement of a swing bridge with a fixed bridge.

**Total project cost estimate:** \$1,873,000,000

- The estimated cost of the Portal North Bridge (PNB) Project at \$1.873 billion is consistent with the September 2019 CIG submission to FTA. This higher cost incorporates new mandates such as 5% escalation and using a "P65" probability of cost factor. The Project is at a 100% level of design completion as the design phase was generally completed in 2013.

**Project schedule:**

- Construction Phase 2: 2nd QTR FY 2020 - 1st QTR FY 2026

### FY20 Information

**FY20 Scope:**

- NJ TRANSIT: Design activities will continue with the finalization of the plans and specifications. Labor Clearance and Division of Work meetings will continue with Amtrak. Preparations will continue to hold a Contractor Outreach event as part of a Special Prequalification initiative to procure the services of the next contractor. Property Acquisition activities will continue with the onset of negotiations with various property owners to secure temporary and permanent easements.
- Amtrak: Completion of ongoing contract packaging work; modifications to final design, and property acquisition.

**FY20 Milestones:**

- Outreach Event: 1st QTR FY 2020
- Issue IFB Package: 2nd QTR FY 2020
- Award Contract: 4th QTR FY 2020
- Issue Notice to Proceed (NTP): 1st QTR FY 2021

**FY20 Planned expenditure:**

- NJ TRANSIT: \$3,000,000 / Amtrak: \$26,402,509

**FY20 Cross-agency coordination:**

- Project agreement status: Multiple Agreements have already been entered into between NJ Transit, Amtrak, the Port Authority of NY and NJ, Gateway Program Development Corp, the NJ Economic Development Authority, and NJ Turnpike Authority.
- Resource needs from other agencies: Several temporary and permanent easement agreements are still required to be entered into to obtain the use of - or access over - properties owned by private parties.
- Track outages coordinated: No Track Outages are anticipated to be needed during the FY '20 fiscal year.
- Long-lead procurement items: No Long Lead items will be required during FY '20. However, several specialized trackwork components will be required to be fabricated during the latter years of the Project.

# Special Projects: NJ TRANSIT (Improvement)

## Delco Lead Project

- Coordinating agency: NJ TRANSIT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will construct a safe haven storage facility on the NEC south of the New Brunswick station to protect rail rolling stock against damage resulting from a storm surge. A service and inspection facility that is part of the project will facilitate the rapid return of equipment to service following a storm event. This project is supported by FTA Emergency Relief Program funds. Phase I of the Delco Lead Project is the County Yard project which will expand the existing County Storage Yard from its current footprint to include an unused part of an adjacent rail freight yard. The Delco Lead project, with County Yard improvements, will provide safe storage capacity for up to 444 rail cars in the event of flooding at other locations.

**Total project cost estimate:** \$245,992,000

- The project is currently at a 60% level of design completion, but will soon be at 90%. The estimate was prepared by the Engineer-of-Record, Jacobs Engineering Group, during its preparation of the design plans in 2016.

#### **Project schedule:**

- Construction: Jul 2019 - May 2023

### FY20 Information

**FY20 Scope:** NJ Transit's Board of Directors are expected to award Contracts GC.01 and GC.02 and, NTP is anticipated to be issued for both contracts soon thereafter.

#### **FY20 Milestones:**

- Board Approvals: Oct 2019
- Issue NTP's: Jan 2020

**FY20 Planned expenditure:** \$15,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Negotiations remain underway with Amtrak to finalize easement and Project Initiation agreements
- Resource needs from other agencies: Amtrak Flag Protection Services may be required.
- Track outages coordinated: No Track Outages are anticipated to be needed during the FY '20 fiscal year.
- Long-lead procurement items: No Long Lead items will be required during FY '20.

## Edison Station

- Coordinating agency: NJ TRANSIT
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would relocate an existing freight turn-out switch to a location north of Plainfield Avenue by Edison Station and then extend the existing outbound high-level platform by 425 feet for a total platform length of approximately 1,020 feet. Additional funding is required for design and construction.

**Total project cost estimate:** \$7,072,000

- Due to the unavailability of funding, the project currently remains at a 0% - 5% level of design completion. The 2013 cost estimate was prepared by NJ TRANSIT's Project Management staff as a ball-park estimate, and is based upon the scope of similar civil and railroad systems construction projects.

#### **Project schedule:**

- PE/NEPA: 2019 - 2020
- Final Design: 2020 - 2022
- Construction: 2022 - 2024

### **FY20 Information**

**FY20 Scope:** This project remains on hold at this time and will be throughout FY 20.

#### **FY20 Milestones:**

- N/A

**FY20 Planned expenditure:** \$0

#### **FY20 Cross-agency coordination:**

- Project agreement status: N/A
- Resource needs from other agencies: Amtrak Flag Protection Services may be required.
- Track outages coordinated: No Track Outages are anticipated to be needed at this time.
- Long-lead procurement items: None.

## Elizabeth Station

- Coordinating agency: NJ TRANSIT
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would reconstruct two side high-level concrete passenger platforms and two station buildings including new elevators, stairs, ticketing offices, operational office spaces, and retail spaces. Additional funding is required for design and construction.

**Total project cost estimate:** \$71,000,000

- This project is being advanced under a "Design/Build" concept. A 30% level design package was completed by NJ TRANSIT's internal staff in 2015. The contractor/engineering team will complete the design as well as construct the project.

**Project schedule:**

- 100% Final Design: Jun 2018 - Dec 2022
- Construction: Oct 2018 - Dec 2022

### **FY20 Information**

**FY20 Scope:** The design plans are expected to advance towards a 100% completion for this Design / Build Project. Other elements of the ongoing construction work will continue.

**FY20 Milestones:**

- Complete 100% Design: Dec 2020

**FY20 Planned expenditure:** \$10,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: NJ Transit has entered into a Right-of-Entry Agreement with Amtrak.
- Resource needs from other agencies: Amtrak Flag Protection Services will be required.
- Track outages coordinated: No Track Outages are anticipated to be needed during fiscal year FY '20.
- Long-lead procurement items: The fabrication of Elevators are the only Long Lead items included in this Project.



## Gateway: NJ TRANSIT Storage Yard

- Coordinating agency: NJ TRANSIT
- Type: Improvement
- Partner agency: Amtrak, Gateway Program Development Corporation, Port Authority of NY & NJ
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would locate a new rail yard in New Jersey to support the capacity and service increase goals of the Gateway Program. Additional funding is needed for NEPA/PE, design and construction.

**Total project cost estimate:** TBD

- The project is in early stages of development, full cost information is not yet available.

**Project schedule:**

- Planning/Feasibility: 2019 - 2020
- ROW: 2023 - 2024

### **FY20 Information**

**FY20 Scope:** Planning study currently in progress, investigating NJT future needs and potential rail yard areas in northern NJ. Study expected to be complete in FY 20.

**FY20 Milestones:**

- Final report anticipated January 2020

**FY20 Planned expenditure:** \$150,000

**FY20 Cross-agency coordination:**

- Project agreement status: No agreement in place. NJT plans to coordinate and share initial findings with Amtrak in Fall 2019.
- Resource needs from other agencies: None anticipated at this time.
- Track outages coordinated: N/A
- Long-lead procurement items: TBD

## New Brunswick Station

- Coordinating agency: NJ TRANSIT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would extend the current eastbound platform at New Brunswick Station by approximately 230 feet. Additional funding is required to design and construct an extension of the westbound platform and upgrade customer amenities at the station. The station is slated to undergo significant rehabilitation of its exterior brick facade; installation of new lighting, windows, HVAC system, and escalator; and painting.

**Total project cost estimate:** \$20,303,000

- This is a multi-tiered project consisting of 8 different components. Each component was cost estimated by NJ TRANSIT staff or by a Task Order Consultant (TOC) under contract to NJ TRANSIT. And, each has a separate start and completion date for each phase of the Project; New Elevator Tower; Pedestrian Walkway Overpass; Elevator Rehabilitation; Escalator Replacement; Escalator Rehabilitation; NEC Eastbound Extension; Station Repairs and, Soft Costs. The total estimated cost is in 2017 dollars.

**Project schedule:**

- Construction: Sep 2010 - Mar 2022

### FY20 Information

**FY20 Scope:** Rehabilitation of the existing Elevator will continue, in addition to the replacement of the Escalator. Construction of the new Walkway Overpass is expected to get underway.

**FY20 Milestones:**

- Complete Elevator: Aug 2020
- Issue Escalator NTP: Nov 2019
- Issue Overpass NTP: Mar 2020

**FY20 Planned expenditure:** \$8,000,000

**FY20 Cross-agency coordination:**

- Project agreement status: Separate Elevator and Escalator funding reimbursement agreements are being worked on with NJDOT. An extension to an agreement with the New Brunswick Parking Authority is being planned.
- Resource needs from other agencies: Amtrak Flag Protection Services may be required.
- Track outages coordinated: No Track Outages are anticipated to be needed at this time.
- Long-lead procurement items: The fabrication of the new Elevator and Escalator are the only Long Lead items included in this Project.

## NJ TRANSITGRID

- Coordinating agency: NJ TRANSIT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will create a microgrid power generation and distribution system as a backup to the regional power network, allowing transit systems to function during storms or other times when the centralized power grid is compromised. NJ TRANSITGRID will incorporate renewable energy, distribution generation, and other technologies to provide resilient power to key NJ TRANSIT stations, maintenance facilities, bus garages, and other buildings. The project will also provide resilient electric traction power to NJ TRANSIT trains on critical corridors, including portions of the NEC, to continue to operate even when the traditional power grid fails.

**Total project cost estimate:** \$577,353,000

- The project is currently at a 20% level of design completion. The 2016 cost estimate was prepared by the Engineers-of-Record, Jacobs Engineering Group and AECOM.

**Project schedule:**

- Construction: May 2019 - Oct 2026

### **FY20 Information**

**FY20 Scope:** Central Power Plant Project: The Design-Build contract is expected to be executed with construction beginning in November 2019. NTP for the DBOM contract is to be issued in November 2019. Distributed Generation Project: The DG contract will be executed in August, 100% design will be completed in March 2020 with NTP to be issued in April 2020.

**FY20 Milestones:**

- CPP D/B Contract Executed: Oct 2019
- CPP Begin Construction: Nov 2019
- DBOM Contract NTP: Nov 2019
- DG Begin Construction: Apr 2020
- DG Complete Design: Apr 2020

**FY20 Planned expenditure:** \$7,500,000

**FY20 Cross-agency coordination:**

- Project agreement status: An MOU has already been executed between NJ Transit, the NJ Board of Public Utilities and the US Dept of Energy.
- Resource needs from other agencies: NJ Transit Flag Protection will be needed for any work that conducted near the r-o-w of the rail line.
- Track outages coordinated: No Track Outages are anticipated to be needed at this time.
- Long-lead procurement items: A few components of this major electrical project will be long lead items, including specialized transformers and other key, related electrical equipment.

## Penn Station New York - NJ TRANSIT Projects

- Coordinating agency: NJ TRANSIT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would make much needed improvements to Penn Station New York. Among the projects being advanced are extending the existing Central Concourse to allow for more vertical access to existing train platforms, improving the existing Hilton Corridor so it better connects between vertical access points to platforms, and improving signage and wayfinding to facilitate the safe and efficient movement of passengers and visitors. While some funding is programmed for this work, additional funding is needed to make all the necessary improvements.

**Total project cost estimate:** \$75,000,000

- The repairs proposed to be undertaken for Penn Station New York currently include multiple projects, including Refurbishing and Expanding the Hilton Corridor; a Unified Signage Program, and; Relocation of the 7th Avenue Artwork. As each project has a different start and completion time, the design completion levels range from 0% to 100%. The 2018 cost estimate was prepared by NJ TRANSIT's Project Management staff.

#### **Project schedule:**

- Construction: Sep 2018 - Jul 2022

### FY20 Information

**FY20 Scope:** Design of the relocation of the currently displayed Art is expected to continue. The design of the Unified Signage Program project will continue.

#### **FY20 Milestones:**

- Transit Arts Design Comp, Sep 2019
- Issue TA NTP, Jan 2020

**FY20 Planned expenditure:** \$1,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: A Project Initiation (PI) agreement is being finalized with Amtrak.
- Resource needs from other agencies: Amtrak Flag Protection Services may be required.
- Track outages coordinated: No Track Outages are anticipated to be needed at this time.
- Long-lead procurement items: None.

## Princeton Junction Station

- Coordinating agency: NJ TRANSIT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will install a tactile edge panel at each of the three platforms where passengers load onto trains bound for Trenton and Newark as well as the local Dinky to Princeton. Interim repairs to the platforms will also be undertaken as needed.

**Total project cost estimate:** \$747,000

- The project is currently at a 100% level of design completion. The 2018 cost estimate was prepared by NJ TRANSIT's Project Management staff.

**Project schedule:**

- Construction: Apr 2019 - Dec 2019

### **FY20 Information**

**FY20 Scope:** This project is finally anticipated to begin construction during the FY 20 fiscal year.

**FY20 Milestones:**

- Issue NTP: Oct 2019
- Project Complete: Feb 2020
- Closeout Complete: Jun 2020

**FY20 Planned expenditure:** \$600,000

**FY20 Cross-agency coordination:**

- Project agreement status: Property easements are be secured. The agreement with Amtrak has been finalized.
- Resource needs from other agencies: Amtrak Flag Protection Services may be required.
- Track outages coordinated: Track Outages are not required to execute the work of this Project.
- Long-lead procurement items: None.

# Special Projects: Pennsylvania DOT (Improvement)

## Harrisburg Line Automatic Block Signal System – Park to Paoli

- Coordinating agency: Pennsylvania DOT
- Partner agency: Amtrak, SEPTA, Federal Railroad Administration
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** Recognizing that the signal system on Amtrak's Keystone Corridor and SEPTA's Paoli-Thorndale Regional Rail Line is functionally obsolete, PennDOT, in coordination with Federal Railroad Administration, SEPTA and Amtrak, are proposing to upgrade the signal system. Currently, the Keystone Corridor has ABS signals between Harrisburg and Park interlocking. Between Park Interlocking and Philadelphia, train traffic is controlled with single direction wayside signals. This project is to design and construct / install new automatic Block Signal System between Park Interlocking and Paoli Interlocking. The ABS signal system is already designed between Paoli Interlocking and Philadelphia. PennDOT and Amtrak are coordinating the installation of the signals between Paoli and Philadelphia.

**Total project cost estimate:** \$10,000,000

- The cost estimate was developed based on the 30% design submission submitted in 2014. The budget amount is subject to change based on timing and Amtrak's final budget for support costs

#### **Project schedule:**

- Final Design: Oct 2018 - Dec 2019
- Construction: Jan 2020 - Dec 2021

### FY20 Information

**FY20 Scope:** Design of ABS - Park to Paoli to be finalized Dec 2019. Amtrak design review will be required. Amtrak construction to initiate work in 2020.

#### **FY20 Milestones:**

- 60% Design review: 9/27/19
- 100% design review: 12/20/19
- Amtrak NTP: Feb 2020

**FY20 Planned expenditure:** Design \$600,000; Amtrak construction \$1,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Amtrak/PennDOT construction agreement is needed. Status is Draft to be developed.
- Resource needs from other agencies: Amtrak design review. Amtrak C&S Construction. PennDOT funding.
- Track outages coordinated: Yes. Night work anticipated.
- Long-lead procurement items: Signal hut fabrication.

## Harrisburg Line Interlocking Improvements: Zoo

- Coordinating agency: Pennsylvania DOT
- Partner agency: Amtrak, SEPTA
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** Recognizing that the interlockings on Amtrak's Keystone Corridor and SEPTA's Paoli-Thorndale Regional Rail Line have far exceeded their useful life and are functionally obsolete, PennDOT, in coordination with SEPTA and Amtrak, advanced a comprehensive conceptual design effort to evaluate and reconfigure the system of interlockings along the Line. The purpose of the conceptual design was to determine how to address the infrastructure condition and functionality to achieve both a state of good repair and optimal service performance on the highly utilized segment of the Keystone Corridor. Through an advanced conceptual design effort, which was last updated in 2015, PennDOT, Amtrak and SEPTA agreed that the following infrastructure replacements or reconfiguration would best support current and future growth along the corridor, as described below. Following the conceptual design phase, PennDOT led preliminary engineering of all interlockings and final design of Zoo Interlocking in coordination with Amtrak and SEPTA. The total project cost for Zoo Interlocking is an estimated \$119.5M.

Given the importance of this project, PennDOT has worked with Amtrak and SEPTA to identify an early action scope of work for completing the Zoo Interlocking state of good repair improvements. The Project will first include the replacement of two stone masonry retaining walls, totaling 1,400 feet of new infrastructure. The current retaining walls are listing or leaning significantly and at risk of failure that could cause damage to track, signal, and electrification infrastructure and destabilize the slope. The first phase of track work will modernize the Track 2 through track, including the replacement of wooden ties with concrete ties and continuous welded rail. The second phase of the Project will require track reconfiguration and state of good repair updates on the western end of the ZOO Interlocking, including the construction of new concrete tie tracks, the removal of one turnout and 500 feet of existing track, and various signal and OCS improvements to create a through movement for westbound trains. The retaining wall construction and first and second phase of track work can begin in the early calendar year 2020 and can be fully completed by 2024. These projects have the potential to save 45 – 70 seconds per train. The cost of this early action scope of work is \$55.2M.

**Total project cost estimate:** \$119,500,000

- The cost estimate was developed based on the 90% design submission. The budget amount is subject to change based on timing and Amtrak's final budget for support costs.

#### **Project schedule:**

- Final Design: Jan 2020 - Jan 2024

### FY20 Information

**FY20 Scope, FY20 Milestones, FY20 Planned expenditure:** Coordination has started and is ongoing with PennDOT, FRA, FTA, Amtrak and SEPTA to clarify and refine the scope of work, project schedule and funding.

#### **FY20 Cross-agency coordination:**

- Project agreement status: Coordination has started and is ongoing with PennDOT, FRA, FTA, Amtrak and SEPTA to clarify and develop design review, reimbursement and construction agreements.
- Resource needs from other agencies: Coordination for FRA is required for NEPA Re-Evaluation, and to obligate grant funding. In addition, coordination with Philadelphia Water Department (PWD) is required for proposed bridging over water line as well as for E&S and NPDES permit.
- Track outages coordinated: Coordination has started and is ongoing with PennDOT, FRA, FTA, Amtrak and SEPTA to review track outage requirements based on operational considerations.
- Long-lead procurement items: Coordination has started and is ongoing with PennDOT, FRA, FTA, Amtrak and SEPTA to review and identify long lead procurement items. One potential item is OCS Steel which has a long lead procurement - approximately 1-year

## Harrisburg Line Station Improvements: Coatesville

- Coordinating agency: Pennsylvania DOT
- Type: Improvement
- Partner agency: Amtrak, Federal Railroad Administration, Federal Transit Administration
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will eventually modernize the Amtrak station at Coatesville, along the Harrisburg Line. PennDOT is leading construction. The new station will provide ADA access with high-level boarding platforms, improved/expanded parking, and multimodal connections. This project will improve the passenger experience and lead to community and economic development. Coatesville Station is fully funded.

**Total project cost estimate:** \$46,600,000

- The cost estimate was developed based on the 90% design submission submitted in 2018. The budget amount is subject to change based on timing and Amtrak's final budget for support costs.

#### **Project schedule:**

- Final Design: Oct 2015 - Oct 2022
- Construction: Oct 2019 - Oct 2022

### **FY20 Information**

**FY20 Scope:** 90% and 100% design reviews of foundations and track/signals. Amtrak construction to start in 2020.

#### **FY20 Milestones:**

- 90% Design review: Oct 2019
- 100% design review: Jan 2020
- Amtrak NTP: Aug 2020

**FY20 Planned expenditure:** Design \$400,000; Amtrak construction \$250,000.

#### **FY20 Cross-agency coordination:**

- Project agreement status: Amtrak/PennDOT construction agreement is needed. Status is Draft to be developed.
- Resource needs from other agencies: Amtrak design review; Amtrak Construction; PennDOT funding.
- Track outages coordinated: Yes. Night work anticipated.
- Long-lead procurement items: No.



## Harrisburg Line Station Improvements: Downingtown

- Coordinating agency: Pennsylvania DOT
- Partner agency: Amtrak, Federal Railroad Administration, Federal Transit Administration
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will eventually modernize the Amtrak station at Downingtown, along the Harrisburg Line. PennDOT is leading construction. The new station will provide ADA access with high-level boarding platforms, improved/expanded parking, and multimodal connections. This project will improve the passenger experience and lead to community and economic development. Downingtown Station still requires additional funding.

**Total project cost estimate:** \$115,500,000

- The cost estimate was developed based on conceptual estimates in 2018.

#### **Project schedule:**

- Final Design: Feb 2019 - Feb 2022
- Construction: Apr 2021 - Apr 2026

### **FY20 Information**

**FY20 Scope:** PennDOT to hire a consultant for 30% design of the Amtrak Bridge over US 322.

#### **FY20 Milestones:**

- NTP: Sept 2019
- 30% design: Oct 2020

**FY20 Planned expenditure:** Design \$1,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Amtrak/PennDOT design review agreement is needed. Status is not started.
- Resource needs from other agencies: Design review from Amtrak along with conceptual meetings.
- Track outages coordinated: No.
- Long-lead procurement items: No.

## Harrisburg Line Station Improvements: Middletown

- Coordinating agency: Pennsylvania DOT
- Type: Improvement
- Partner agency: Amtrak, Federal Railroad Administration, Federal Transit Administration
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will eventually modernize the Amtrak station at Middletown, along the Harrisburg Line. PennDOT is leading construction. The new station will provide ADA access with high-level boarding platforms, improved/expanded parking, and multimodal connections. This project will improve the passenger experience and lead to community and economic development. Middletown station is fully funded.

**Total project cost estimate:** \$35,000,000

- The cost estimate was developed based on the 100% design submission submitted in 2015. The budget amount is subject to change based on timing and Amtrak's final budget for support costs

#### **Project schedule:**

- Construction: Sept 2018 - Aug 2022

### **FY20 Information**

**FY20 Scope:** Amtrak shift of #1 track and Catenary. PennDOT contractor to start and install foundations.

#### **FY20 Milestones:**

- Amtrak track shift complete: Jun 2020
- PennDOT contractor NTP: Jun 2020

**FY20 Planned expenditure:** Track Shift - NA; Contractor \$6,000,000; Protection \$800,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Amtrak/PennDOT construction agreement is needed. Status is final Draft near complete.
- Resource needs from other agencies: Amtrak design review; Amtrak Construction; PennDOT funding.
- Track outages coordinated: Yes. Night work anticipated.
- Long-lead procurement items: No.

## Harrisburg Line Station Improvements: Parkesburg

- Coordinating agency: Pennsylvania DOT
- Type: Improvement
- Partner agency: Amtrak, Federal Railroad Administration, Federal Transit Administration
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will eventually modernize the Amtrak station at Parkesburg, along the Harrisburg Line. PennDOT is leading construction. The new station will provide ADA access with high-level boarding platforms, improved/expanded parking, and multimodal connections. This project will improve the passenger experience and lead to community and economic development. Parkesburg Station still requires additional funding.

**Total project cost estimate:** \$49,000,000

- The cost estimate was developed based on conceptual estimates in 2018.

#### **Project schedule:**

- Design: Oct 2020 - Dec 2023
- Construction: Mar 2024 - Mar 2027

### **FY20 Information**

**FY20 Scope:** Design of ADA access between East bound and West Bound areas with additional parking at current location.

#### **FY20 Milestones:**

- Amtrak Labor Clearance: Aug 2019
- PennDOT designer NTP: Oct 2019
- Design Complete: Aug 2020

**FY20 Planned expenditure:** Designer \$800,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Amtrak / PennDOT design review agreement and Labor Clearance are needed. Status is not started.
- Resource needs from other agencies: Amtrak site design review.
- Track outages coordinated: No.
- Long-lead procurement items: No.

# Special Projects: Rhode Island DOT (Improvement)

## Pawtucket/ Central Falls Station

- Coordinating agency: Rhode Island DOT
- Partner agency: MBTA
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will build a new infill commuter rail station along MBTA's Providence Line in Pawtucket, RI with an anticipated opening in 2021/2022. The scope includes station platforms, a pedestrian overpass, and associated pedestrian access points. The project was the recipient of a 2016 USDOT TIGER Award.

**Total project cost estimate:** \$40,000,000

- The estimate is based on a 10% conceptual design developed in 2018 using 2018 dollars. It is based on a main line station stop.

#### **Project schedule:**

- Final Design: Nov 2018 - Nov 2019
- Construction: Apr 2019 - Jul 2022

### FY20 Information

**FY20 Scope:** Continue with design and construction activities for this design/build project per the contractors schedule and resources. Install drainage, utilities, and foundations within Amtrak ROW. Amtrak Force Account covers safety men; utilities; design review; and construction activities.

#### **FY20 Milestones:**

- Complete permit process: Mar 2020
- Complete design: Apr 2020

**FY20 Planned expenditure:** \$16,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Completed with Amtrak Force Account; Pending with City, MBTA (operation), and Amtrak Lease.
- Resource needs from other agencies: Amtrak access; Amtrak Force Account labor; design review by Amtrak/RIDOT/MBTA; PM by RIDOT.
- Track outages coordinated: Yes, Force Account with Amtrak for safe operations.
- Long-lead procurement items: Yes, procurement initiated for long-lead materials.

## Providence Station

- Coordinating agency: Rhode Island DOT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would construct interior layout changes, emergency platform egress, and pedestrian access improvements to Providence Station. The PE/NEPA phase included a full assessment of the station's condition, development of short- and long-term improvements for both the station's interior and exterior, 30 percent design for recommended short-term improvements, and an environmental review on the preferred alternative. Long-term actions could include connections to adjacent retail centers, enhance bus/intermodal connections, increased parking, and station expansion. RIDOT is pursuing a separate project to develop a transit hub adjacent and connected to Providence Station.

**Total project cost estimate:** \$28,750,000

- The estimate is based on a 10% conceptual design developed in 2018 using 2018 dollars. It is based on a main line station stop.

#### **Project schedule:**

- PE/NEPA: Sep 2011 - Dec 2017
- Final Design: Oct 2019 - Sep 2020
- Construction: Oct 2020 - Sep 2022

### **FY20 Information**

**FY20 Scope:** Complete project initiation agreements with FRA and Amtrak; award final design contract; begin advancement of final design

#### **FY20 Milestones:**

- Procurement start: Nov 2019
- NTP to be issued: Mar 2020

**FY20 Planned expenditure:** \$1,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Grant agreement needed with FRA; Project agreement needed with Amtrak.
- Resource needs from other agencies: Amtrak design review; Amtrak access/protection; Project support from RIDOT.
- Track outages coordinated: N/A
- Long-lead procurement items: N/A

## Warwick/ T.F. Green Airport

- Coordinating agency: Rhode Island DOT
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project would expand Warwick/T.F. Green Airport rail station which opened in 2010. In that project, the Rhode Island Airport Corporation constructed a station house and a single high-level platform to support the introduction of MBTA commuter rail services to the Airport and to new communities south of Providence. For this project, RIDOT and Amtrak have proposed expanding the station with additional track and platform capacity to accommodate intercity rail.

**Total project cost estimate:** \$110,000,000

- Capital cost estimates are from the 2017 Feasibility Study for Intercity Rail Service to TF Green Airport. The ongoing Track and Platform Conceptual Design effort between Amtrak and RIDOT is expected to refine this cost estimate.

#### **Project schedule:**

- Engineering study: Oct 2018 - Dec 2019
- PE/NEPA: Oct 2019 - Jun 2021
- Final Design: July 2021 - June 2022
- Construction: July 2022 - June 2024

### FY20 Information

**FY20 Scope:** Commence preliminary engineering to design the infrastructure necessary to bring electrified, intercity service to TF Green, including platform(s), a Track 4 siding, interlockings, catenary, crossovers, passenger station space, and pedestrian circulation between platforms. Commence preparation of an approved NEPA document.

#### **FY20 Milestones:**

- Procurement start: Nov 2019
- NTP to be issued: Mar 2020
- Complete draft PE drawings: Sept 2020

**FY20 Planned expenditure:** \$800,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Grant agreement needed with FRA. Project agreement needed with Amtrak.
- Resource needs from other agencies: Amtrak design review; Amtrak access/protection; project management from RIDOT.
- Track outages coordinated: N/A
- Long-lead procurement items: N/A

# Special Projects: SEPTA (Improvement)

## 30th Street West Catenary Replacement

- Coordinating agency: SEPTA
- Partner agency:
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will replace and modernize the SEPTA overhead catenary system from 30th Street Station westbound to K and Zoo Interlockings, an area that includes SEPTA's Powelton Yard. Work also includes repairs to aging catenary support structures, foundations, retaining walls, tunnels, and site drainage.

**Total project cost estimate:** \$77,000,000

- The cost estimate was developed during the scoping phase of the project. The project design is currently 90% complete.

#### **Project schedule:**

- Construction: Jan 2020 - Jan 2022

### FY20 Information

**FY20 Scope:** Replacement and upgrade of the overhead contact system including catenary structures from 30th Street Station to 'K' Interlocking and the Powelton Yard Complex. Work also includes repairs to aging catenary foundations, retaining walls, tunnels and site drainage.

#### **FY20 Milestones:**

- SEPTA forces and contractors are expected to initiate construction in the Winter of 2020.

**FY20 Planned expenditure:** \$2,938,886

#### **FY20 Cross-agency coordination:**

- Project agreement status: Agreements are executed (for design) and pending (for construction).
- Resource needs from other agencies: Design review and approval from Amtrak will be needed. Access protection will be needed during the construction.
- Track outages coordinated: Yes.
- Long-lead procurement items: Yes

## Ardmore Station ADA Improvements

- Coordinating agency: SEPTA
- Partner agency: Amtrak, Pennsylvania DOT
- Type: Improvement
- Benefit: Shared

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will make ADA improvements to Ardmore Station on SEPTA's Paoli-Thorndale Regional Rail Line and Amtrak's Keystone Corridor to make the station fully ADA compliant. The project includes a new station building, high-level platforms, modifications to the existing pedestrian tunnel, new canopies and passenger shelters, and site and circulation improvements. There is a separate project for construction of a parking garage at the station (see Ardmore Station Parking Improvements in the FY19-23 NEC Capital Investment Plan). SEPTA currently leases this station from Amtrak.

**Total project cost estimate:** \$53,600,000

- The cost estimate was developed based on the 100% design submission. A Project Agreement between SEPTA and Amtrak for Amtrak's project support cost was executed in August 2019.

#### **Project schedule:**

- Construction: Aug 2019 - Mar 2022

### FY20 Information

**FY20 Scope:** Improvements to the Ardmore Transportation Center on SEPTA's Paoli/Thorndale Regional Rail Line and Amtrak's Keystone Corridor will be completed in two phases. Phase 1 will make this station fully ADA accessible with enhancements that include a new inbound station building; outbound shelters; high and low-level platforms; canopies; passenger amenities; tunnel accessibility improvements; elevators and accessible pathways; improved lighting; new signage; landscaping and site improvements including storm water management; and installing foundations for a future parking garage. Phase 1 costs include design for Phase 2. There is a separate project for parking at the Station (Ardmore Station Parking Improvements in the FY 2019-2023 NEC Capital Investment Plan). SEPTA currently leases this station from Amtrak.

#### **FY20 Milestones:**

- Construction is expected to begin in the summer 2019. The project schedule is contingent upon availability of Amtrak support.

**FY20 Planned expenditure:** \$4,836,256

#### **FY20 Cross-agency coordination:**

- Project agreement status: Agreement was executed.
- Resource needs from other agencies: Access / protection will be needed from Amtrak for construction.
- Track outages coordinated: Yes
- Long-lead procurement items: No



## Frazer Rail Shop and Yard Upgrade

- Coordinating agency: SEPTA
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will make significant renovations and expand the Frazer Rail Shop and Yard facilities. SEPTA recently acquired new locomotives and is in the process of procuring a fleet of multi-level cars for the Regional Rail System and needs to accommodate the increased fleet size. The initial phase will include significant earthwork and storm water improvements at the 40-acre site to create space for additional yard tracks. Additional phases of work will include extending three existing storage tracks and adding three new storage tracks; major upgrades to the repair shop and equipment, including the wheel truing machine and drop table; construction of a shop extension, new cleaning track, vehicle washer building, and yardmaster building; and utility upgrades. Also, the roof will be upgraded and mechanical equipment and electrical connections will be replaced.

**Total project cost estimate:** \$139,000,000

- The project budget is based on the completion of design and construction for Phase 1, substantial completion of design and construction for Phase 2 and 30% design submission of Phase 3.

**Project schedule:**

- Construction: Mar 2016 - Sep 2022

### **FY20 Information**

**FY20 Scope:** Phased upgrade of the Frazer Maintenance Facility to accommodate the expansion of SEPTA's railcar and locomotive fleets including multi-level cars. Work includes extending existing storage tracks and adding new storage tracks; major upgrades to the repair shop and equipment, including the wheel truing machine and drop table; construction of a shop extension, new cleaning track, train washer building, storage building and yardmaster building; utility upgrades and storm water improvements. In addition, the roof will be replaced and mechanical equipment will be replaced.

**FY20 Milestones:**

- Closeout of Phase 2, bidding and award of Phase 3A construction, and completion of final design for Phase 3B.

**FY20 Planned expenditure:** \$2,132,915

**FY20 Cross-agency coordination:**

- Project agreement status: N/A
- Resource needs from other agencies: N/A
- Track outages coordinated: N/A
- Long-lead procurement items: No

## Southwest Connection Improvement Project

- Coordinating agency: SEPTA
- Partner agency: Amtrak
- Type: Improvement
- Benefit: Shared

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** Reconfiguration and rebuilding of Regional Rail signals, track, catenary, and interlockings from 30th Street Station to Phil Interlocking (in University City). Work includes new track special work, Overhead Contact Systems (OCS), and switch and lock mechanisms, as well as the addition of new Positive Train Control (PTC) systems. The existing signal block layout will be modified. Design and construction will progress in phases with construction outages scheduled for the summer of 2018, 2019 and 2020. As part of the project, SEPTA will assume maintenance responsibility for Amtrak's tracks on a segment where SEPTA is the sole operator.

**Total project cost estimate:** \$70,990,000

- Total project cost derivation details not available.

**Project schedule:**

- Construction: Mar 2017 - Dec 2020

### **FY20 Information**

**FY20 Scope:** Reconfiguration and rebuilding of signals, track, catenary, and interlockings from 30th Street Station to Phil Interlocking. Work includes new track special work, Overhead Contact Systems (OCS), and switch and lock mechanisms, as well as the addition of new Positive Train Control (PTC) systems. Design and construction will progress in phases with construction outages scheduled for the summer of 2018, 2019 and 2020. As part of this project, SEPTA will assume maintenance responsibility for Amtrak's tracks on a segment where SEPTA is the sole operator.

**FY20 Milestones:**

- Summer construction outage in 2020

**FY20 Planned expenditure:** \$10,489,862

**FY20 Cross-agency coordination:**

- Project agreement status: Agreements are executed for current work. Additional agreements will be needed for future work.
- Resource needs from other agencies: Access/protection will be needed from Amtrak.
- Track outages coordinated: Yes
- Long-lead procurement items: Yes.

## Villanova Station ADA Improvements

- Coordinating agency: SEPTA
- Partner agency:
- Type: Improvement
- Benefit: Sole

### **General Project Information**

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** This project will modernize Villanova Station on SEPTA's Paoli-Thorndale Regional Rail Line. Work includes high-level platforms with canopies, a new pedestrian underpass with ramps and stairs, station building exterior improvements, parking lot modifications, storm water management, and new signage, lighting, passenger amenities, and landscaping. The improvements will make the station fully ADA accessible. The project will be advanced in phases. Phase 1 activities will improve station accessibility, through the construction of a new pedestrian tunnel with access ramps and stairs, and modify the parking lot to improve storm water management. Phase 2 will build high-level platforms, canopies, and an improved station building and is currently programmed in FY 2024. SEPTA currently leases this station from Amtrak.

**Total project cost estimate:** \$32,200,000

- The cost estimate was developed based on substantial completion of Phase 1 construction and 90% design submission of Phase 2.

#### **Project schedule:**

- Construction (Phase 1): Substantially complete

### **FY20 Information**

**FY20 Scope:** This project will modernize Villanova Station on the Paoli/Thorndale Regional Rail Line, making the station fully ADA accessible, and will advance in phases. Phase 1 will improve station accessibility and will include construction of a new, wider pedestrian tunnel with access ramps and stairs, additional parking spaces, storm water management improvements, new signage, lighting, and passenger amenities. Phase 2 will make the station fully ADA accessible and includes full length high-level platforms, new canopies, station building improvements, passenger shelters, security improvements and passenger amenities. SEPTA currently leases this station from Amtrak.

#### **FY20 Milestones:**

- Closeout of Phase 1A.

**FY20 Planned expenditure:** \$112,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Agreements are executed for FY 2020 work.
- Resource needs from other agencies: Access/protection will be needed from Amtrak.
- Track outages coordinated: No
- Long-lead procurement items: No.

# Special Projects: VRE (Improvement)

## VRE Midday Storage Facility

- Coordinating agency: VRE
- Partner agency: District DOT, Federal Railroad Administration, Amtrak
- Type: Improvement
- Benefit: Sole

### General Project Information

*For full project details, see the FY20-24 NEC Capital Investment Plan, published in March 2019.*

**Project scope:** The Midday Storage Facility project will replace the current storage space leased from Amtrak at the Ivy City Coach Yard in the District of Columbia. The project will include planning, designing, and constructing a permanent midday storage facility for VRE trains that travel to the District. The proposed facility will be used to store commuter trains on weekdays between the inbound morning commute and the outbound afternoon commute.

**Total project cost estimate:** \$89,666,508

- Total project cost derivation details not available.

#### **Project schedule:**

- Property Acquisition: May 2018 - Jul 2021
- Final Design: Sep 2019 - Feb 2021
- Construction: Mar 2021 - Jul 2023

### FY20 Information

**FY20 Scope:** Complete preliminary design and start final design

#### **FY20 Milestones:**

- Complete PD: Dec 2019
- Initiate FD Jan 2020
- Initiate property acquisition Dec 2020

**FY20 Planned expenditure:** \$14,000,000

#### **FY20 Cross-agency coordination:**

- Project agreement status: Amtrak design agreement to be negotiated/executed
- Resource needs from other agencies: Design review by Amtrak
- Track outages coordinated: N/A
- Long-lead procurement items: N/A

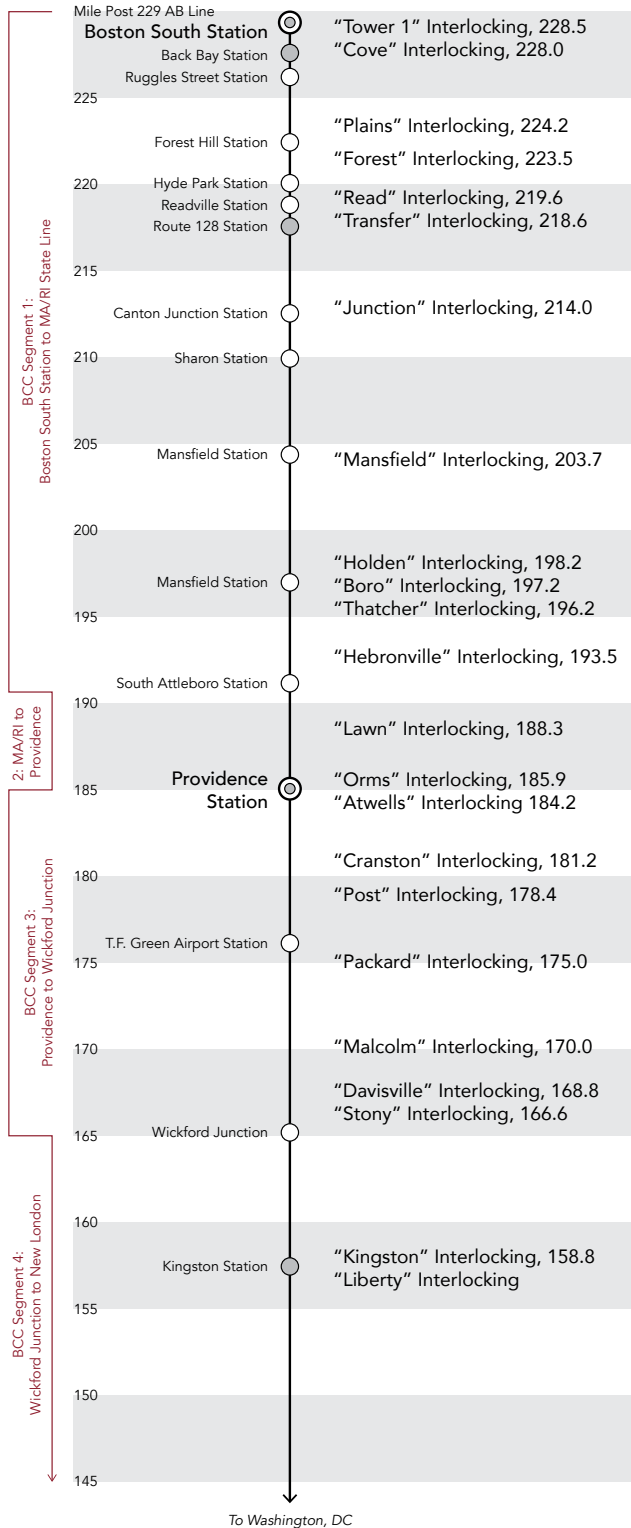
## **Appendix C:**

# **Reference Information**

# NEC Track Diagrams

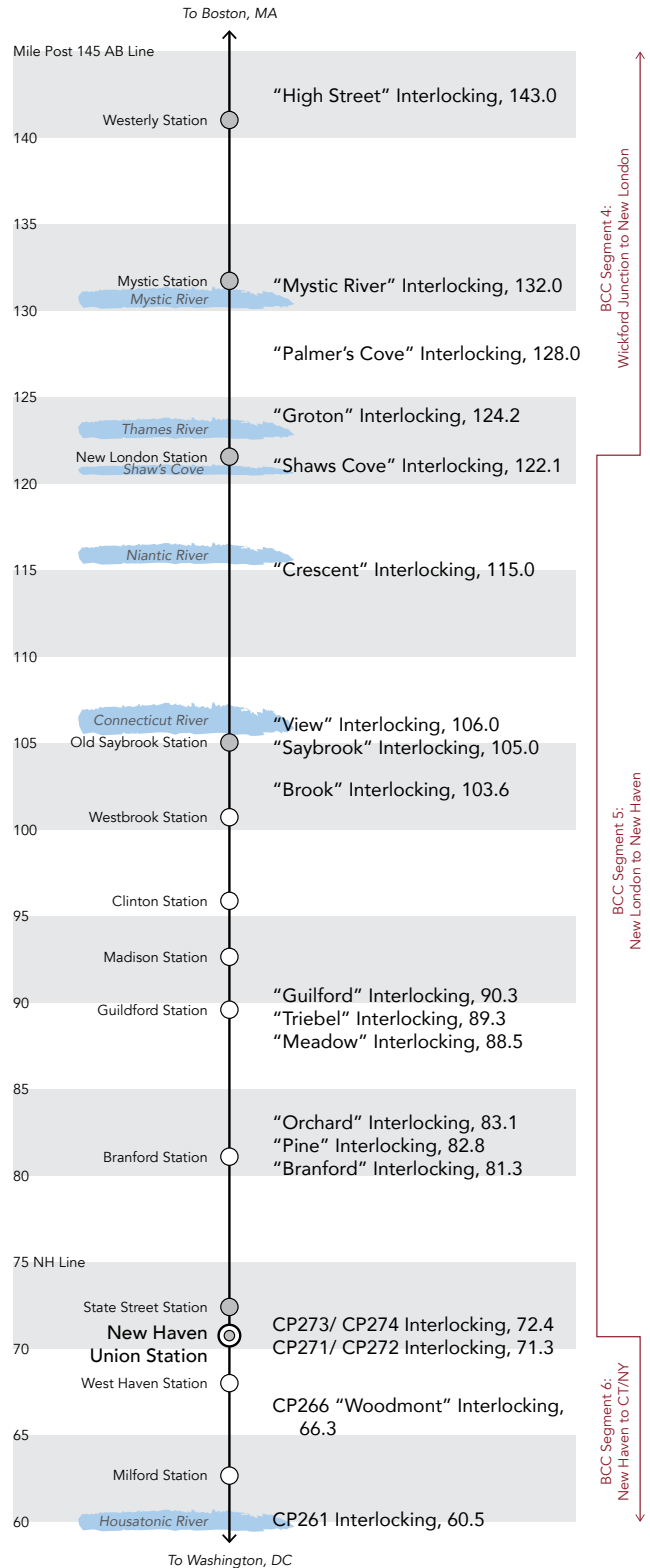
## NEC Main Line

Boston, MA to Shore Line East



## NEC Main Line

Shore Line East to New Haven, CT Area



Schematic not to scale.  
Locations are approximate.

**Major Station** (Large circle with dot)

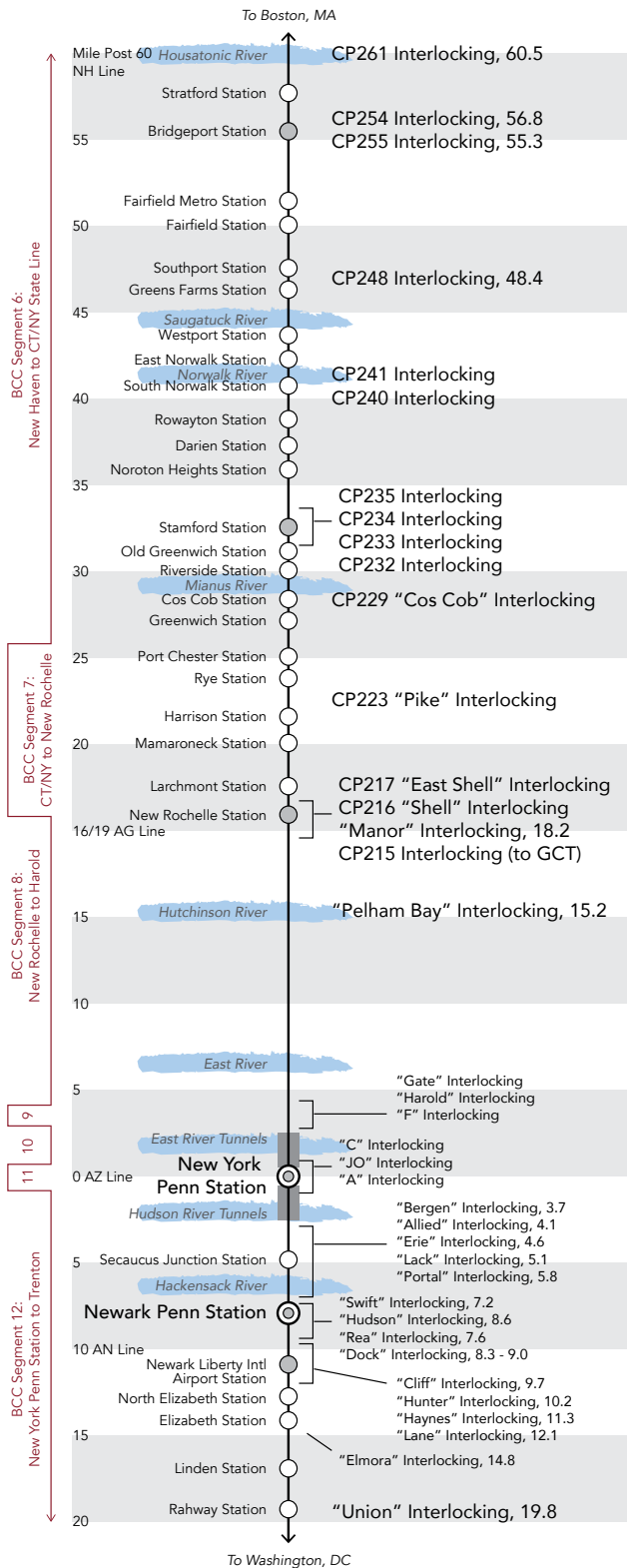
Intercity & commuter station (Medium circle)

Commuter station only (Small circle)

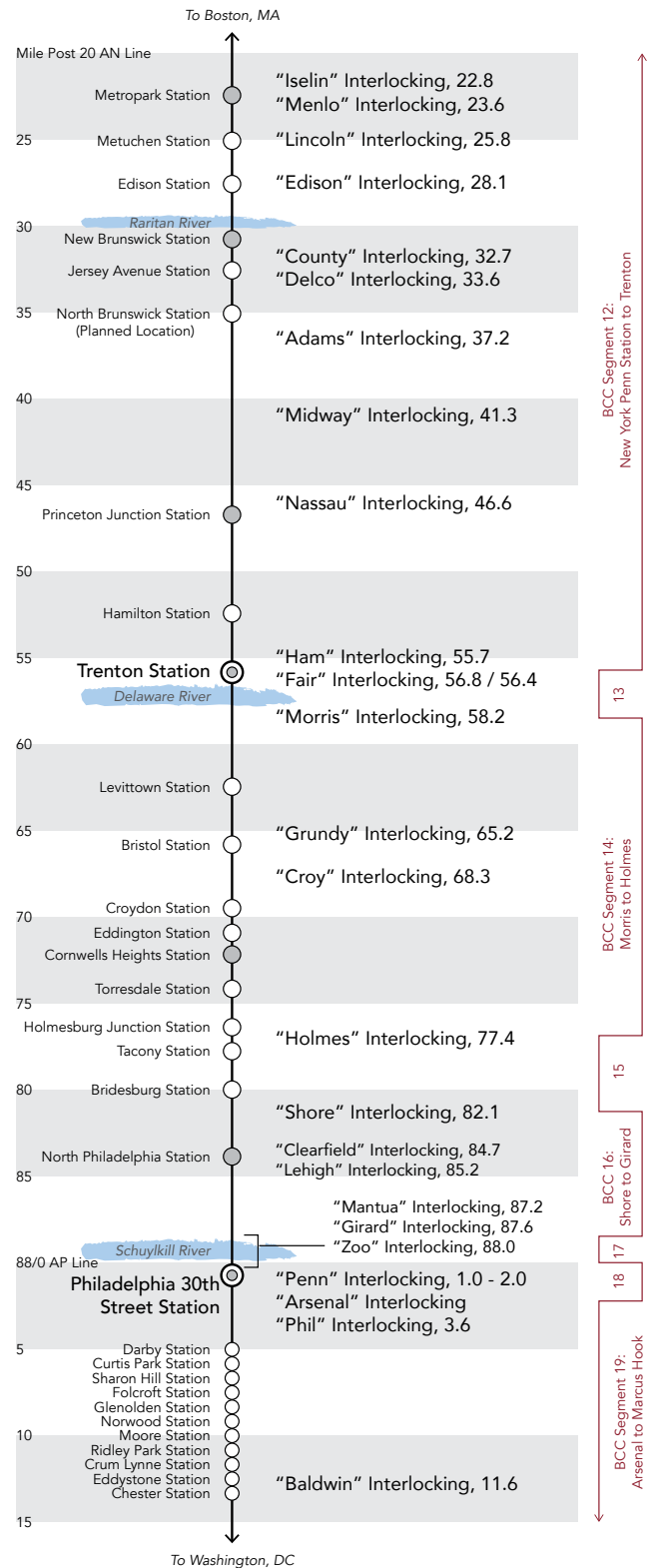
Bodies of water (Blue shaded area)

**NEC Main Line**

New Haven, CT Area to Metropark, NJ Area

**NEC Main Line**

Metropark, NJ Area to South Philadelphia, PA Area



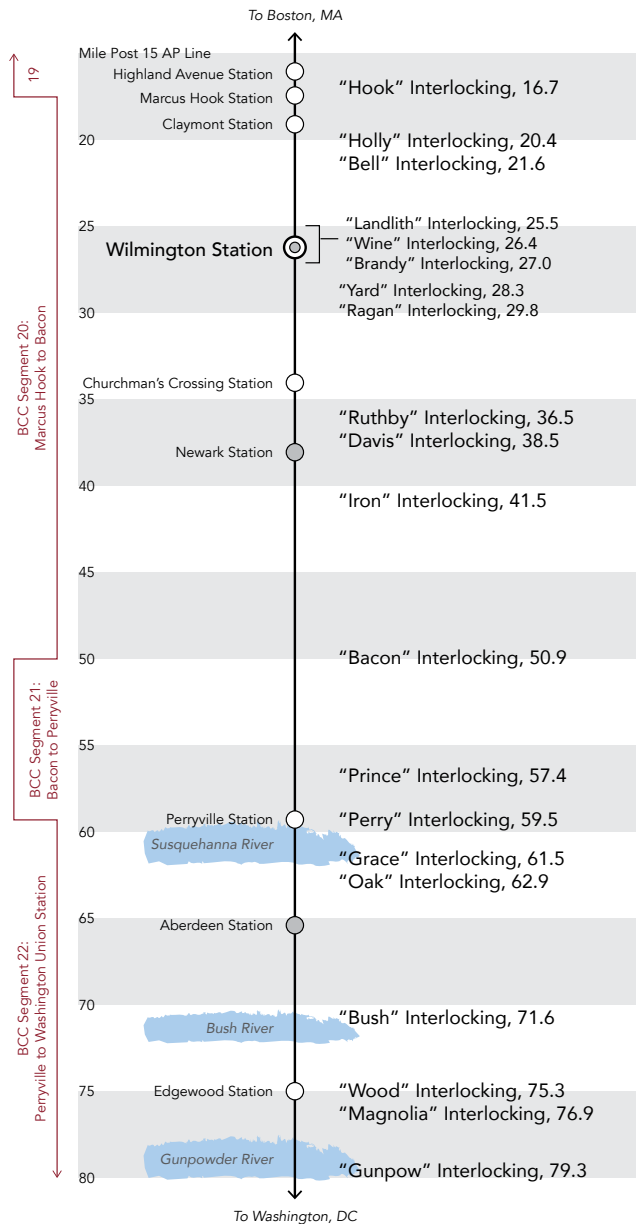
Schematic not to scale.  
Locations are approximate.

**Major Station** (Large circle with dot)  
Intercity & commuter station (Circle with dot)  
Commuter station only (Empty circle)

Bodies of water (Blue shaded area)

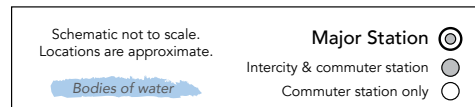
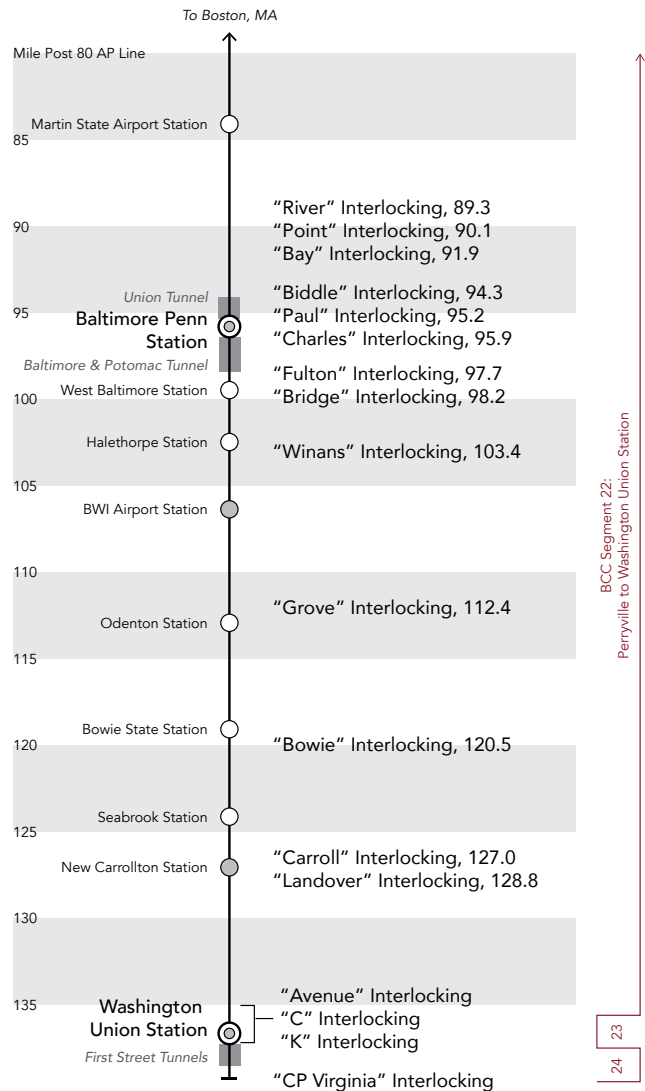
## NEC Main Line

Wilmington, DE Area to North Baltimore, MD Area



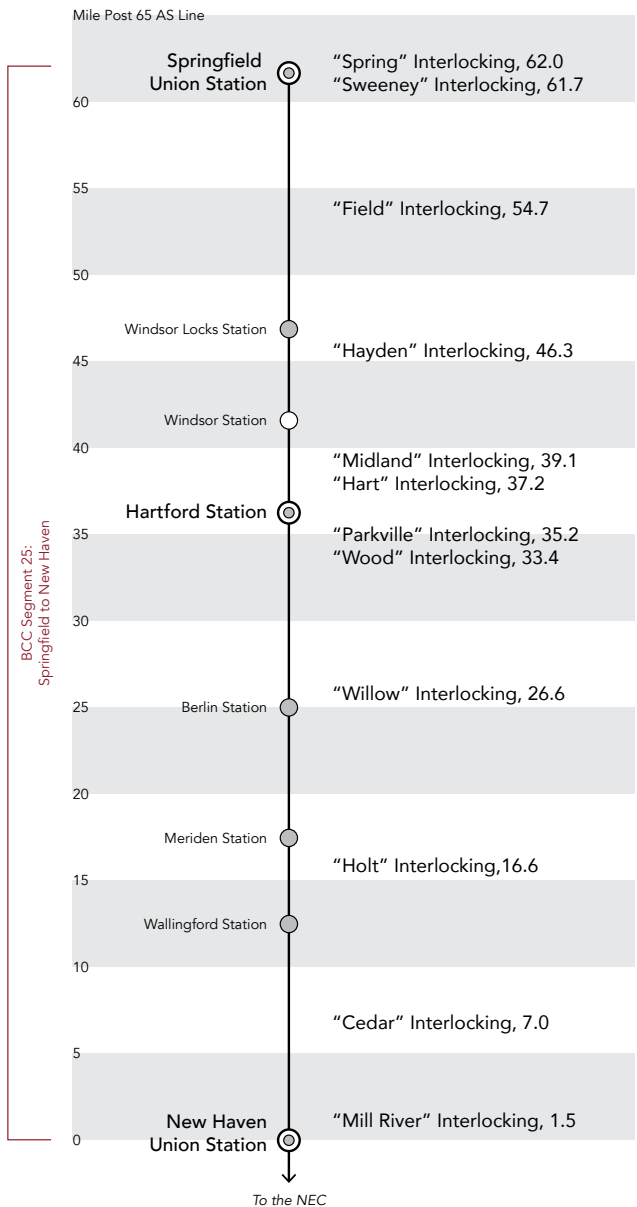
## NEC Main Line

North Baltimore, MD Area to Washington, DC

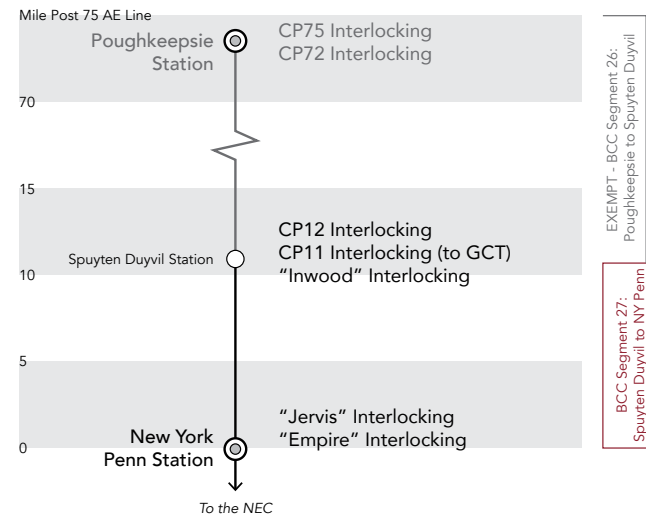




**NEC Connecting Corridor: Springfield Line**  
Springfield, MA to New Haven, CT



**NEC Connecting Corridor: Empire Line**  
Poughkeepsie, NY to New York Penn Station



Schematic not to scale.  
Locations are approximate.

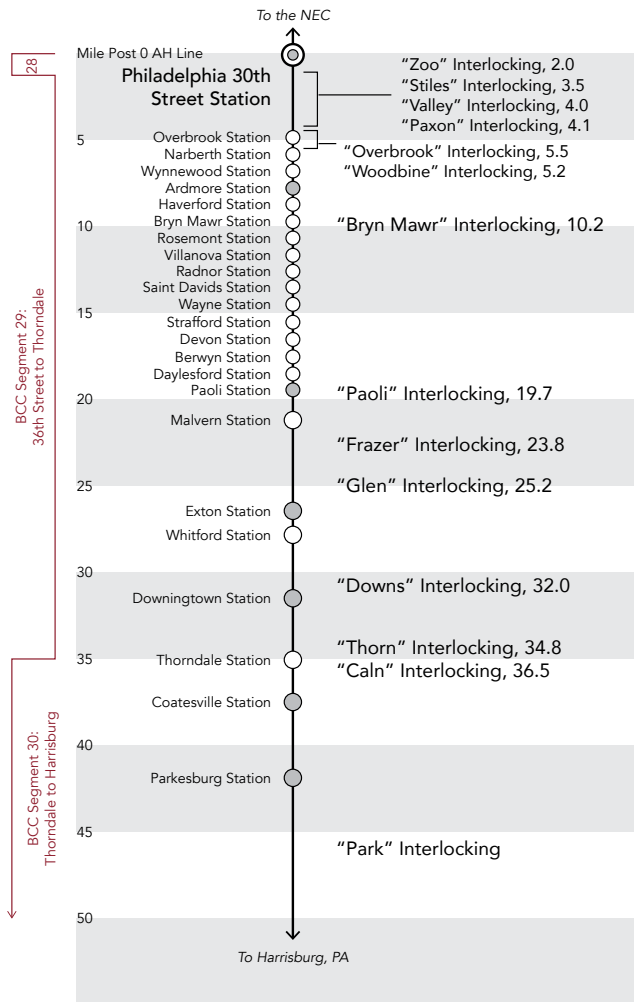
**Major Station**

Bodies of water

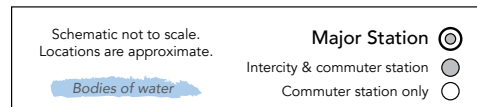
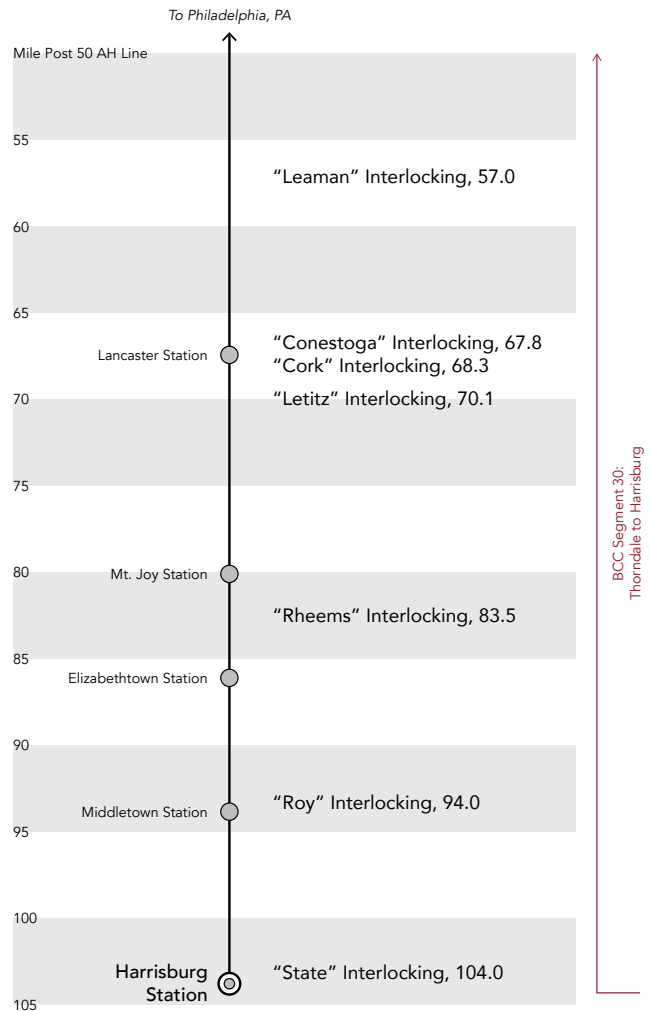
Intercity & commuter station

Commuter station only

## NEC Connecting Corridor: Harrisburg Line Philadelphia, PA to Parkesburg, PA



## NEC Connecting Corridor: Harrisburg Line Parkesburg, PA to Harrisburg, PA



## Glossary of Terms

**At grade:** Railroad tracks or roads and railroad tracks that cross at ground level. When a train crosses another set of tracks at grade, it momentarily blocks other trains from using those tracks. Conversely, an underpass, tunnel, or flyover allows a train to cross other tracks without passing through them, thereby ensuring free flow of traffic on both sets of tracks.

**Ballast:** Permeable layer of crushed rock that supports the track, holds it in place, and spreads out the load.

**Basic infrastructure:** Infrastructure components that require annual renewal to keep the NEC's structures and systems functioning properly and in a state-of-good-repair for safe train operations. It includes rails, ties, ballast, communication systems, electric traction power systems, undergrade bridges and other similar items.

**Baseline Capital Charge (BCC):** The capital charge assigned to each operator based on factors that reflect asset condition and relative use that is calculated as a percentage of the Normalized Replacement amount.

**Backlog:** Rehabilitation or replacement work that has not been covered by regular maintenance. Typically includes major bridge or tunnel assets that are beyond their anticipated lifespans.

**Capacity:** The number of trains (and/or riders) that can pass through an area in a certain period of time (e.g., trains per hour), depending on the quantity and configuration of tracks. A section of rail is said to be "at capacity" when it can accommodate no additional trains during busy hours. For example, both of the single-track tunnels below the Hudson River carry their maximum of twenty-four trains per hour during peak travel times.

**Catenary:** Electrical wires suspended above railroad tracks from which passing trains draw power using a mechanical arm called a pantograph mounted on top of a train.

**Commuter Authority:** Means, as defined in 49 U.S.C. § 24102(2), a State, local, or regional entity established to provide, or make a contract providing for, commuter rail passenger transportation, as defined in 49 U.S.C. § 24102(3). Commuter Authorities on the Northeast Corridor are required to implement the formula developed under 49 U.S.C. § 24905(c) and include the Massachusetts Bay Transportation Authority, the Rhode Island Department of Transportation, Connecticut Department of Transportation, the New York Metropolitan Transportation Authority, Metro-North Railroad, Long Island Railroad, New Jersey Transit Corporation, the Southeastern Pennsylvania Transportation Authority, the Delaware Department of Transportation, the Maryland Department of Transportation, Maryland Transit Administration, Virginia Railway Express, any successor agencies and any entity created by one or more such agencies for the purpose of operating, or contracting for the operation of, commuter service.

**Commuter rail:** Passenger rail service that carries riders over medium distances (typically 10 to 75 miles), often between suburban locations and urban cores with highest frequencies during morning and evening rush hours. Commuter rail can share track and stations with, but is distinct from, intercity rail, which operates over longer distances and generally runs at lower frequencies. Commuter rail is also distinct from rail rapid transit (subway or metro), which operates on separate track facilities over shorter distances.

**Connecting corridor:** Rail corridors on which trains branch off from and flow into the NEC main line between Washington and Boston. Examples include corridors from Richmond, VA (connecting at Washington); Harrisburg, PA (connecting at Philadelphia); Albany, NY (connecting at New York); and Springfield, MA (connecting at New Haven). As defined in PRIIA 212, connecting corridors to Harrisburg, PA, Springfield, MA and Spuyten Duyvil, NY (on the corridor to Albany, NY) are considered part of the Northeast Corridor along with the NEC main line.

**Conventional rail:** Intercity trains that travel at speeds of 125 mph or slower. Though definitions of conventional and high-speed rail vary, for the purposes of this report, all non-Acela Express Amtrak trains that operate on the NEC (i.e. Northeast Regional, Keystone, etc.) are referred to as conventional rail.

**Crossover:** A pair of switches and a connecting track that connects two parallel tracks.

**Federal Railroad Administration (FRA):** The federal agency responsible for oversight of the nation's railroads. FRA is a division within the U.S. Department of Transportation. The agency sets standards for safety and performs other regulatory duties. It also oversees the High Speed Intercity Passenger Rail (HSIPR) Program, which has funded improvements to portions of the nation's railroad network served by passenger trains.

**Fiscal Year:** Refers to the federal fiscal year, beginning on October 1 and ending September 30.

**Flyover:** A form of bridge that carries one or more tracks up and over another set of tracks. Flyovers enable trains to cross over a set of tracks without interfering with the movement of trains below.

**Freight rail:** A form of rail service that principally carries materials other than passengers, such as consumer goods and industrial commodities. Freight rail operators on the NEC include Conrail Shared Assets Operations, CSX Transportation, Norfolk Southern and the Providence & Worcester Railroad.

**Grade-separated:** Railroad tracks or roads and railroad tracks that cross without intersecting. Underpasses, flyovers, bridges, or tunnels allow all traffic to move freely, without conflict.

**Gross Ton Mile:** The movement of a ton of transportation equipment and contents over one mile.

**High-speed rail:** Intercity trains that travel at speeds of 125 mph or greater. Though definitions of high-speed and conventional rail vary, for the purposes of this report, only Acela Express Amtrak trains that operate on the NEC are referred to as high-speed rail.

**Improvement:** Project that introduces new assets above and beyond existing NEC infrastructure, facilities, and equipment to improve reliability, increase capacity, reduce travel time, or improve the customer experience.

**Intercity rail:** Passenger rail service that carries travelers over longer distances (typically 100 to 500 miles), often between major urban centers. Examples of intercity rail services on the NEC include Amtrak's Northeast Regional and Acela Express trains serving major cities and stations between Washington and Boston.

**Interlocking:** A place on a railroad where one or more tracks converge, diverge, or cross, controlled by signals to prevent conflicting movements of trains. An interlocking may be where a connecting line joins a main line, where a railroad adds to or subtracts from its number of main line tracks, or simply where a railroad enables trains to switch between tracks.

**Main line:** The core line of the NEC, which runs between Washington Union Station and Boston South Station via New York Penn Station.

**Major Backlog:** Means projects necessary for achieving a state-of-good repair, but are not undertaken on a routine basis, such as rehabilitation or replacement of major bridges and tunnels. These projects include basic infrastructure components and may include improvement elements where in-kind replacement is impossible or undesirable. When replacing a major structure, it makes sense to scope all contemplated work into a single project to save both time and money.

**Mandated:** Capital projects required by law or regulation or to protect public health. These include environmental remediation, right-of-way fencing, infrastructure and station resiliency and security systems, Positive Train Control (PTC), and station access improvements.

**Milepost:** A convention used by railroads and others to define specific locations or sections along the NEC.

**Movable bridge:** A bridge that carries railroad tracks over a body of water that is required to open for boat traffic to pass. A movable bridge may be a "swing bridge," where a segment swivels 90 degrees to create an opening, or a "bascul bridge," where a span tilts up to allow passage.

**New Haven Line (NHL):** The Metro-North Railroad operated and dispatched Northeast Corridor service territory between New Rochelle, NY and New Haven, CT, owned by the New York Metropolitan Transportation Authority for the segment within the State of New York and owned by the Connecticut Department of Transportation within the State of Connecticut.

**Normalized Replacement:** Regular renewal of basic system components, such as railroad ties, to ensure safe operation. Does not include major projects such as bridge or tunnel replacements.

**Northeast Corridor (NEC):** The segment of the continuous railroad line between Boston, MA, and Washington, DC, which is part of the national rail transportation system, as defined in 49 U.S.C. § 24102(5)(A) and the branch lines: New Haven, CT to Springfield, MA; New York Penn Station to Spuyten Duyvil; and Philadelphia, PA to Harrisburg, PA.

**Operator:** An entity responsible for, or established to provide, commuter or intercity passenger rail transportation, that is subject to the cost-sharing requirements set forth in 49 U.S.C. § 24905(c). This includes Amtrak, the New York Metropolitan Transportation Authority, the Connecticut Department of Transportation, the Delaware Department of Transportation, Maryland Department of Transportation, the Rhode Island Department of Transportation, the Southeastern Pennsylvania Transportation Authority, New Jersey Transit Corporation, the Massachusetts Bay Transportation Authority, Virginia Railway Express, any successor agencies and any entity created by one or more such agencies for the purpose of operating, or contracting for the operation of, commuter or intercity service.

**Owner:** Means an infrastructure or station owner of the Northeast Corridor that is also required to implement the formula under 49 U.S.C. § 24905(c). Unless the context indicates otherwise, an owner also means an entity that is responsible for capital project or program delivery.

**Project stage:** The specific phases or steps in a project's development from initial conception to completion. Examples of project stages include:

- **Feasibility/Conceptual Engineering:** The earliest stage of project planning where problems are defined, potential solutions are developed, and any fatal flaws that might preclude a proposed solution are identified. This stage broadly outlines proposed improvements for additional analysis.
- **Preliminary Engineering/Environmental Analysis:** The project stage where engineers generate more detailed designs and conduct more thorough analyses of proposed improvements. Projects are sufficiently defined to allow planners and engineers to estimate its likely impact on the surrounding environment. To ensure compliance with the National Environmental Policy Act (NEPA), projects are reviewed for effects on both natural and manmade resources, covering issues ranging from wildlife and air quality to community and social justice.
- **Final Design:** The stage where engineers determine the ultimate designs and specifications for constructing improvements, including more precise estimates of construction cost.
- **Construction:** The stage in which improvements are built.
- **Operation:** The stage in which improvements support enhanced service.

**Reliability:** The degree to which trains operate according to their scheduled departure and arrival times.

**Service and Inspection (S&I) facility:** A shop located at a rail yard where trains are monitored and maintained to ensure safe, reliable, and efficient operations.

**Signals:** A system used to control the movement of trains on a railroad to ensure safe distances and prevent collisions.

**Shared/Joint/Common infrastructure:** NEC assets mutually agreed to provide benefit and utility to more than one operator.

**Sole-benefit infrastructure:** NEC assets mutually agreed to provide benefit and utility only to one operator.

**State-of-good-repair:** The conditions in which existing physical assets, individually and as a system, a) are functioning as designed within their expected useful lives; and b) are sustained through regular maintenance and normalized replacement programs.

**Substation:** Electrical system facility that connects the railroad's catenary to the regional power grid.

**Switch (also known as turnout):** Switches control train movement and routing, including moving trains from one track to another. Switches can be controlled by air, electrical, pneumatic, or hand power. An area of interconnected or controlled switches and signals is an interlocking.

**System wide projects:** Projects that benefit one or more Baseline Capital Charge segments beyond the immediate segment in which they are located, or are located off of the right-of-way and therefore do not incur territory specific costs.

**Ties:** Wood or concrete supports used to carry the rail and hold it in correct alignment.

**Track surfacing:** The lifting of track so that new layers of ballast can be added, then tamped, and shaped to the contour necessary for a smooth ride.

**Track undercutting:** The process whereby ballast is scooped out beneath track, vacuumed up and cleaned, and returned to the roadbed, which is realigned to ensure a smooth surface and correct profile.

**Turnout:** See definition for switch.

**Undergrade bridge:** A railroad bridge that allows creeks, roadways, and other natural or manmade features to pass below tracks.

**Unit Miles:** Scheduled number of individual cars, locomotives or MUs multiplied by the number of miles in an operating segment. A consist scheduled with 1 locomotive and 5 cars, traveling through a 10-mile segment is counted as 60-unit miles.

**Yard:** An area consisting of a network of tracks where trains are stored and/or maintained.





