



TIER 1 FINAL ENVIRONMENTAL IMPACT STATEMENT  
VOLUME 1 (PREFERRED ALTERNATIVE)

## 7.1 Summary of Findings



## 7.1 SUMMARY OF FINDINGS

### 7.1.1 Introduction

This chapter provides an overview of the Environmental Consequences and benefits documented in Chapters 7.2–7.21. It also includes an overview of the effects and benefits identified in Chapter 5, Transportation, and Chapter 6, Economic Effects and Growth, and Indirect Effects, since the findings in these chapters also influence the analyses conducted for some of the resources presented in Chapter 7. Appendix EE, organized by resource, provides detailed information for the Preferred Alternative, by state and by county. Appendix AA, Mapping Atlas of the Preferred Alternative, provides a visual overview of where resources are located in relation to the Existing Northeast Corridor (NEC) + Hartford/Springfield Line and Preferred Alternative.

The Preferred Alternative focuses improvements on the Existing NEC + Hartford/Springfield Line and incorporates several new segments that allow for increased through-put and travel-time savings throughout the NEC. The Preferred Alternative calls for enhanced service and electrification of the Existing Hartford/Springfield Line.<sup>1</sup> Environmental impacts are associated with the proposed improvements to the Existing NEC + Hartford/Springfield Line as well identified new segments; however, impacts are greater in association with new segments. This Tier 1 Final Environmental Impact Statement (Tier 1 Final EIS) presents a conservative assessment of potential environmental consequences because the analytical approach is based on conceptual engineering and a qualitative level of detail.

#### 7.1.1.1 No Action Alternative

The definition of the No Action Alternative has not changed between the Tier 1 Draft EIS and Tier 1 Final EIS. Similarly, the approach to the analysis of the No Action Alternative has not changed. The No Action Alternative encompasses existing and planned service improvements as well modified and new infrastructure. Because the physical limits of the specific improvements that will be made under No Action Alternative are unknown, the Federal Railroad Administration (FRA) did not quantitatively assess the footprint-related effects of the No Action Alternative.

The FRA did develop a representational footprint for both the Existing NEC and Existing Hartford/Springfield Line, and uses that as a point of reference for potential physical impacts of the projects that will be implemented under the No Action Alternative. Note that quantities shown for the Existing NEC + Hartford/Springfield Line in the Tier 1 Final EIS differ from the quantities shown for the Existing NEC in the Tier 1 Draft EIS (see Chapter 2).

The FRA did quantify service-related effects of the No Action Alternative. For a definition of the No Action Alternative, refer to Chapter 4, Preferred Alternative, and Volume 2, Appendix B. For more

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<sup>1</sup> For the purposes of this assessment, the No Action Alternative includes the existing Northeast Corridor (NEC) and Hartford/Springfield Line. Service and improvements on the Hartford/Springfield Line are integral to the Preferred Alternative service plans for the NEC, so it was necessary to provide a baseline or No Action condition for that line for comparison purposes. In the Tier 1 Draft EIS, the Hartford/Springfield Line was included as a connecting corridor, or in the case of Alternative 2, a parallel corridor for service between New Haven and Hartford, CT.

detail on how the FRA evaluated the No Action Alternative, see Chapter 7, Introduction and Guide to Effects Assessment.

Volume 2, Chapter 7.1, defines the No Action Alternative as the following:

“The FRA defined a No Action Alternative that identifies improvements to highway, freight rail, transit, air, and maritime modes that will occur by 2040 regardless of NEC FUTURE. The No Action Alternative represents a “snapshot in time” of reasonably foreseeable future transportation conditions in the Study Area while avoiding being speculative, since there is uncertainty in economic conditions, available funding, and political support for transportation projects.”

As discussed in Volume 2, Chapter 7.1, most of the projects and activities included as part of the No Action Alternative occur within the NEC right-of-way. Under the No Action Alternative, passenger rail service along the NEC operates and provides approximately the same level of service as provided today. As a result, “service-related” effects of the No Action Alternative on noise and vibration are unlikely. However, service-related effects on air quality could result due to increased congestion within the overall transportation network, caused by the lack of improvement in rail to absorb the growth in passengers. “Footprint” effects on environmental resources under the No Action Alternative vary, depending on the scope of the project being implemented. Refer to Volume 2, Chapter 7.1, for a summary of potential effects associated with the No Action Alternative along the NEC.

The Existing Hartford/Springfield Line is an existing rail corridor with improvements currently occurring under the No Action Alternative as part of the CTrail Hartford Line.<sup>2</sup> Improvements occurring along this line as part of the No Action Alternative will result in a range of environmental impacts to resources along the corridor.

Effects are likely to occur to various resources that exist within and adjacent to the Existing NEC and along the Existing Hartford/Springfield Line (see Chapter 7, Introduction, for an explanation of the approach to identifying effects associated with the No Action Alternative). Benefits resulting from the Preferred Alternative, such as increased mobility, accessibility, and connectivity will not occur under the No Action Alternative. Unmet capacity will require travelers to continue to rely on automobiles, air, and intercity bus for travel in the corridor as they do today. Under the No Action Alternative, transportation congestion will increase because of projected population growth and continued reliance on automobiles. As a result, the increased congestion will result in negative effects on energy consumption and air quality.

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<sup>2</sup> Additional information regarding the New Haven-Hartford-Springfield Rail Program can be found in the FRA’s *Environmental Assessment/Environmental Impact Evaluation for the New Haven–Hartford–Springfield High-Speed Intercity Rail Program* (2012). <http://www.nhhsrail.com/>

### 7.1.1.2 Preferred Alternative

The Preferred Alternative achieves sufficient capacity, connectivity, and performance to meet future Northeast mobility needs for 2040 and beyond, while allowing for the adoption of advanced service concepts that will enhance the passenger rail experience. The Preferred Alternative also incorporates new segments along with improving the NEC that together expand capacity to grow the role of rail and have the greatest potential for operational benefit. Unlike the Action Alternatives presented and evaluated in the Tier 1 Draft EIS, the Preferred Alternative proposes a service that splits in New Haven, CT, with end points in Springfield and Boston, MA.

The Preferred Alternative results in both “service-related” and “footprint” effects on the built and natural environment. The Preferred Alternative representative routes and construction characteristics are the basis for the analysis in the NEC FUTURE Tier 1 EIS. They illustrate necessary improvements to achieve the Preferred Alternative service and performance objectives. Appendix AA, Mapping Atlas of the Preferred Alternative, illustrates the representative routes (part 1) and construction characteristics (part 2) used to analyze the Preferred Alternative.

Service effects result from changes in the existing rail service, such as increased frequencies or speeds. Footprint effects result from expanding existing infrastructure or providing new infrastructure to support the proposed rail service. As stated in Chapter 5, Transportation, service provided by the implementation of the Preferred Alternative would dramatically change rail transportation in the Northeast by providing up to 5 times as much Intercity rail service, significantly reducing trip times, increasing frequency of Regional trains, and ultimately providing a more reliable service. Additionally, the implementation of the Preferred Alternative would result in changes to economic activity throughout the Study Area (see Chapter 6, Economic Effects and Growth, and Indirect Effects). While some of these changes would be more immediate, others would occur over a period of time. Increased frequencies in train service and more direct rail connections expand the existing labor market. An expanded range of service and price options results in the ability for travelers to weigh the effects of travel costs versus time and provides more flexibility. The expansion of rail services under the Preferred Alternative results in more immediate construction jobs as well as additional hiring to operate and maintain the service.

Changes in service levels and speeds also result in changes in noise and vibration, air quality, and energy consumption. All counties along the Representative Route of the Preferred Alternative would have moderate to severe noise impacts; fewer counties would be affected by vibration. However, implementation of the Preferred Alternative would result in net benefits to air quality within the Study Area and a net total decrease in greenhouse gases (GHG). Service changes result in an overall decrease in energy use.

#### Preferred Alternative – Fast Facts

- **Total Route Miles (existing):**  
NEC: 457 miles  
Hartford/Springfield Line: 60 miles
- **Approximate Miles of New Segments:**  
220 miles
- **Approximate Miles of New Track:**  
NEC: 100 route miles  
Hartford/Springfield Line: 30 route miles
- **Total Number of Chokepoint Relief Projects:** 12 projects
- **Regional Stations Upgraded to Major Hub and Hub Stations:** 5 stations
- **New Major Hub and Hub Stations:** 9 stations
- **New Local Stations:** 13 stations

Table 7.1-1 summarizes effects of the Preferred Alternative presented in Chapter 7. For comparison, effects to resources associated with the Existing NEC + Hartford/Springfield Line are provided. As described in Chapter 7, Introduction, effects for the Preferred Alternative are inclusive of those identified for the Existing NEC + Hartford/Springfield Line.

The Preferred Alternative has the potential to contribute to indirect and cumulative effects. Induced growth is a likely outcome of implementing the Preferred Alternative. People will have greater options of connecting places of employment to their residences. This may result in increased development densities around stations and people choosing to live further out and driving to nearby stations. Expansion of infrastructure in these areas could result in environmental impacts to resources evaluated. Furthermore, effects identified could contribute cumulatively to effects on like resources by other projects within the Study Area.

### New or Upgraded Segments

Effects are greater where new or upgraded segments are proposed. The FRA has determined the necessity for new segments in particular geographic sections of the NEC in order to meet the Purpose and Need, and has identified a representative route for each potential new segment. The FRA or another federal agency providing funding for a particular project will evaluate specific locations for new segments as part of the Tier 2 project studies, prior to making any decision regarding new segment locations.

The following provides a description of the environmental effects associated with each proposed new or upgraded segment. In this summary, information is primarily given on the *amount* of impact; for more discussion on the *type of impact that would occur in the affected areas, please see the relevant Chapter 7 resource discussion.* The discussion is divided by those elements that occur south of New York City (between Washington, D.C., and the Hudson County, NJ/New York City, NY line) and those that occur north of New York City (between the Hudson County, NJ/New York City, NY, line to Springfield, MA, and to Boston, MA).

**Table 7.1-1: Summary of Effects**

Resource (Chapter #)	Existing NEC + Hartford/Springfield Line	Preferred Alternative
<b>Land Cover (7.2)</b>		
Land Cover – Potential Conversion – Developed (acres)	7,280	9,855
Land Cover – Potential Conversion – Undeveloped (acres)	1,800	2,710
Land Cover – Potential Acquisitions – Developed (Existing NEC removed from Preferred Alt) (acres)*	—	2,535
Land Cover – Potential Acquisitions – Undeveloped (Existing NEC removed from Preferred Alt) (acres)*	—	1,035
<b>Agricultural Lands (Prime Farmland and Timberlands) (7.3)</b>		
Prime Farmland (acres)	315	555
Prime Timberland (acres)	1,570	2,425
<b>Parklands and Wild &amp; Scenic Rivers (7.4 &amp; 7.16)</b>		
Parklands (total # of resources)	111	128
Section 6(f) parks (total # of resources)	21	24
Wild and Scenic Rivers (# of crossings)	1	1
<b>Hydrologic Resources (7.5)</b>		
Wetlands (Total freshwater and saltwater acres)	500	835
Floodplains (acres)	1,345	1,920
Coastal Zone (route miles)	198	279
Navigable Waterways crossed	20	22
<b>Ecological Resources (7.6)</b>		
Ecologically Sensitive Habitat – Terrestrial and Aquatic (acres)	1,355	2,350
Threatened and Endangered (# of species)	17	18
Essential Fish Habitat (# of species)	7	17
Essential Fish Habitat (# of crossings)	49	54
<b>Geologic Resources (7.7)</b>		
Sole Source Aquifers (presence # of counties)	11	13
Karst Terrain (presence # of counties)	0	1
Naturally Occurring Asbestos (presence # of counties)	0	0
Landslide Susceptibility (presence # of counties)	9	11

Note: Effects shown represent the areas/number of a given resource identified within the Representative Route unless otherwise noted to be associated with the Affected Environment. Values have been rounded for area calculations.

\* Acquisitions could result in future displacements; those displacements will be quantified only as part of Tier 2 project studies.

**Table 7.1-1: Summary of Effects (continued)**

Resource (Chapter #)	Existing NEC + Hartford/Springfield Line	Preferred Alternative
<b>Hazardous Waste and Contaminated Material (7.8)</b>		
National Priority List Superfund (# sites)	0	0
Brownfields (# sites)	26	46
RCRA CORRACTS (# sites)	1	1
RCRA Info (# sites)	9	16
RCRA TSDF (# sites)	3	3
State-listed Hazardous Waste and Contaminated Material Databases (# sites)	60	91
<b>Cultural Resources and Historic Properties (7.9 &amp; 7.16)</b>		
National Historic Landmarks (#)	0	5
National Register of Historic Properties (#)**	51	142
<b>Visual and Aesthetic Resources (7.10)</b>	<ul style="list-style-type: none"> <li>▪ New visual elements introduced through planned projects included in the No Action Alternative.</li> </ul>	<ul style="list-style-type: none"> <li>▪ New visual elements introduced with new segments and electrification of Hartford/Springfield Line.</li> </ul>
<b>Environmental Justice (7.11)</b>		
Total Population (Affected Environment)	4,869,980	4,995,997
Minority Population (Affected Environment)	2,610,355	2,658,763
Low-Income Population (Affected Environment)	804,868	801,721
Percentage Minority (Affected Environment)	54%	53%
Percentage Low Income (Affected Environment)	17%	17%
Environmental Justice Populations (# EJ Tracts)	731	744

Note: Effects shown represent the areas/number of a given resource identified within the Representative Route unless otherwise noted to be associated with the Affected Environment. Values have been rounded for area calculations.

RCRA CORRACTS = Resource Conservation and Recovery Act Corrective Actions; RCRA Info = Resource Conservation and Recovery Act Information Systems; RCRA TSDF = Resource Conservation and Recovery Act Treatment, Storage, and Disposal Facilities

\*\*The FRA also considered National Register-eligible (NRE) rail-related properties in the NEC as designated by the National Park Service in prior environmental studies. The NRE properties identified are included in the total count for the National Register of Historic Properties.



**Table 7.1-1: Summary of Effects (continued)**

Resource (Chapter #)	Existing NEC + Hartford/Springfield Line	Preferred Alternative
<b>Noise and Vibration (7.12)</b>	<ul style="list-style-type: none"> <li>▪ Current conditions continue along Existing NEC.</li> <li>▪ Estimated 40–50% increase in noise over existing conditions along Hartford/Springfield line due to planned service increases.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased train speeds and frequencies result in greater portion of population along the rail line exposed to noise and vibration</li> </ul>
<b>Air Quality (7.13)</b>	<ul style="list-style-type: none"> <li>▪ Increased congestion results in degradation of air quality</li> </ul>	<ul style="list-style-type: none"> <li>▪ Net total decrease in GHGs</li> </ul>
<b>Energy (7.14)</b>	<ul style="list-style-type: none"> <li>▪ Increased congestion, reliance on automobiles results in increases in energy consumption</li> </ul>	<ul style="list-style-type: none"> <li>▪ Net decrease in energy consumption</li> </ul>
<b>Climate Change – Counties with largest number of acres at risk by flooding type (current conditions) (7.15)</b>		
Sea level rise flooding	<ul style="list-style-type: none"> <li>▪ New London, CT</li> <li>▪ Hudson, NJ</li> <li>▪ New Haven, CT</li> </ul> <p>These counties account for 50 percent of the total # acres at risk.</p>	<ul style="list-style-type: none"> <li>▪ New London, CT</li> <li>▪ Harford, MD</li> <li>▪ Hudson, NJ</li> </ul> <p>These counties account for 42 percent of total # acres at risk.</p>
Storm surge flooding	<ul style="list-style-type: none"> <li>▪ New London, CT</li> <li>▪ New Haven, CT</li> <li>▪ New Castle, DE</li> </ul> <p>These counties account for 55 percent of the total # acres at risk.</p>	<ul style="list-style-type: none"> <li>▪ New Haven, CT</li> <li>▪ New York, NY</li> <li>▪ New Castle, DE</li> </ul> <p>These counties account for 42 percent of total # of acres at risk.</p>
Riverine flooding	<ul style="list-style-type: none"> <li>▪ New London, CT</li> <li>▪ New Haven, CT</li> <li>▪ Hartford, CT</li> </ul> <p>These counties account for 40 percent of the total # acres at risk.</p>	<ul style="list-style-type: none"> <li>▪ New London, CT</li> <li>▪ Harford, MD</li> <li>▪ New Haven, CT</li> </ul> <p>These counties account for 31 percent of total # acres at risk.</p>

Note: Effects shown represent the areas/number of a given resource identified within the Representative Route unless otherwise noted to be associated with the Affected Environment. Values have been rounded for area calculations.

Table 7.1-1: Summary of Effects (continued)

Resource (Chapter #)	Existing NEC + Hartford/Springfield Line	Preferred Alternative
Electromagnetic Fields/Electromagnetic Interference (7.17)	NA	<ul style="list-style-type: none"> <li>▪ Electrification of Hartford/Springfield Line introduces new source of EMF/EMI.</li> </ul>
Safety (7.18)	Current conditions continue.	Results in safer trip making due to shift from highways to rail.
Public Health (7.19)	NA	<p>Potential risks to public health include:</p> <ul style="list-style-type: none"> <li>▪ Degradation of water quality, including public drinking supplies</li> <li>▪ Disturbance of hazardous waste and contaminated materials</li> <li>▪ Increased or prolonged exposure to noise and vibration</li> <li>▪ Temporary construction-related effects on air quality, such as fugitive dust emissions and operation of construction equipment and disruption in traffic during construction</li> </ul>
Cumulative Effects (7.20)	Actions included in the No Action Alternative likely contribute to cumulative effects.	Contributes to cumulative effects on resources within the Study Area.
Irreversible and Irrecoverable Commitment to Resources (7.21)	N/A	Implementation of the Preferred Alternative would result in effects on resources that are considered scarce and rare, and once used, are irretrievable.

Source: NEC FUTURE team, 2016

Note: Effects shown represent the areas/number of a given resource identified within the Representative Route unless otherwise noted to be associated with the Affected Environment. Values have been rounded for area calculations.

## Elements South of New York City

- ▶ **Maryland/Delaware – Bayview to Newport (new segment)** – The Bayview to Newport new segment would include potential acquisitions of developed and undeveloped land in Baltimore, Hartford, and Cecil Counties, MD, and New Castle County, DE. Many of the potential acquisitions would occur adjacent to existing freight rail and highway transportation corridors. However, the segment would contain the highest (within the Affected Environment of the Preferred Alternative) acreages of impacts to prime farmland (approximately 180 acres) and the second-highest acreages of impacts to prime timberland (approximately 405 acres); the majority of such impacts would occur in Harford and Cecil Counties, MD.

This new segment would affect approximately 270 acres of special flood hazard areas (SFHA) and 130 acres of wetlands, intersect soils associated with moderate landslide susceptibility in Baltimore, Baltimore City, Harford, and Cecil Counties, MD; and New Castle County, DE; and encounter karst terrain in Harford County, MD. The FRA identified four hazardous waste and contaminated material (HWCM) sites, eighteen parks, and five National Register of Historic Places (NRHP)-listed properties (Delaware Boundary Markers, the Newark Passenger Station and Woodstock in Delaware, and the Havre de Grace Historic District and Sophia’s Dairy in Maryland) and one National Register–eligible (NRE) property (Susquehanna River Bridge). At the Havre de Grace Historic District, the construction changes from embankment to aerial structure.

- ▶ **Delaware – Wilmington Segment (bypasses Wilmington Station)** – The Preferred Alternative would include potential acquisitions of developed and undeveloped land in New Castle County. Many of the potential acquisitions would occur adjacent to existing freight rail and highway transportation corridors with small impacts to prime timberland (approximately 20 acres).

This new segment would affect approximately 60 acres of SFHA and 30 acres of wetlands, run through the coastal zones, and result in an additional Navigable Waterway crossing at the Christina River via tunnel. The Delaware River Streamflow/New Jersey Coastal Plains Aquifer sole source aquifer would be encountered in New Castle County, DE. The FRA identified one HWCM site, one park, and two identified NRHP properties: Woodstock and Delaware Boundary Markers in Delaware.

- ▶ **Pennsylvania – Philadelphia Segments (new segments)** – In Pennsylvania, new segments are proposed between Baldwin and Bridesburg. Most of the potential acquisitions would occur in Philadelphia County and include mostly developed land covers where a new two-track segment provides direct service to Philadelphia International Airport in a tunnel, continuing adjacent to existing freight rail, and reconnecting with the Existing NEC near the Schuylkill River and the University City section of Philadelphia.

One of these segments is in proximity to the CSX Chester Secondary right-of-way, which would minimize the impact to the John Heinz Wildlife Refuge, affecting approximately 25 acres of SFHA and 1 acre of wetlands. This segment is within the designated coastal zone; however, it would affect five fewer waterbodies with special water quality considerations than the Existing NEC. The segment would encounter the Delaware River Streamflow/New Jersey Coastal Plains Aquifer sole source aquifer in Delaware and Philadelphia Counties, PA.

- ▶ **New Jersey – New Brunswick to Secaucus (new segment)** – The new two-track segment spans Middlesex, Union, Essex, and Hudson Counties, NJ, running mostly parallel to the Existing NEC,

with small bump outs (where the new segment diverges and then converges with the Existing NEC) in multiple areas along 24-mile span. Most of the potential acquisitions would occur in Middlesex County and would include primarily developed land covers where the Representative Route is adjacent to the Existing NEC in short tunnel segments near Metuchen. Since the segment runs adjacent to the Existing NEC there would be minimal impacts to prime farmland, prime timberland, SFHA, and wetlands. The FRA identified 13 HWCM sites located within this segment, two parks, and one NRHP—the Mid-Town Historic District in Union, NJ—where the new segment tunnels would be deep beneath the district.

- ▶ **New Jersey – Secaucus/Bergen loop (new segment)** – The Preferred Alternative would include potential acquisitions of developed and undeveloped land along the Hackensack River in close proximity to the Existing NEC. The new loop would affect SFHA and wetlands.

### Elements North of New York

- ▶ **New York/Connecticut – New Rochelle to Greens Farms (new segment)** – The new segment begins west of the New Rochelle Rail Station and continues at grade or on embankment parallel to the Existing NEC to Rye in eastern Westchester County, into Fairfield County, CT. The segment runs parallel to I-95 typically on embankment or aerial structure through Greenwich, Stamford, and Norwalk; terminating in Westport west of Greens Farms Rail Station. Most of the potential acquisitions would occur in Fairfield County and would include primarily developed land covers, many adjacent to highway transportation corridors. The FRA identified three parks and two NRHP-listed properties: the Knickerbocker Press Building and the New Rochelle Railroad Station both in Westchester County.

This new segment would affect wetlands as well as SFHA while traversing the coastal zones for the entire length of the segment. This segment includes a new Cos Cob Harbor crossing at I-95. In Fairfield, CT, the new segment would result in an increase in ecologically sensitive habitat (ESH) acreage, and an increase in the number of threatened and endangered (T&E) species occurrence (adding two: piping plover, *Charadrius melodus*; and roseate tern, *Sterna dougalli*).

- ▶ **Connecticut/Rhode Island – Old Saybrook-Kenyon (new segment)** – The new segment beginning east of Old Saybrook Station, shifting north of the Existing NEC, crossing the Connecticut River in tunnel under Old Saybrook and Old Lyme. The Preferred Alternative includes potential acquisitions of developed and undeveloped land covers in Middlesex and New London Counties, CT, and Washington County, RI. Most potential acquisitions would occur in New London County and would include developed and undeveloped land covers in close proximity to I-95 across the Thames River in New London through Groton and Stonington.

This new segment of the Preferred Alternative would contain the highest (within the Affected Environment of the Preferred Alternative) acreages of impacts to prime timberland (approximately 415 acres). Additionally, there would be approximately 60 acres of impacts to prime farmland. The majority of these impacts would be located in New London and Washington Counties.

This new segment of the Preferred Alternative would cross two additional Navigable Waterways: the Connecticut and Thames Rivers. The entire segment is located within the coastal zone boundaries and would increase coastal zone route miles. The segment would affect

approximately 50 acres of SFHA and 80 acres of wetlands and would increase ESH acreage in Connecticut and Rhode Island. This segment intersects waterbodies with special water quality considerations, encounters the Pawcatuk River Aquifer sole source aquifer, and also crosses the Niantic, Mystic, and Pawcatuck Rivers, and Groton and Mystic Reservoirs.

Where the new segment runs inland through Fairfield County, CT, T&E species occurrence would increase by one species (piping plover, *Charadrius melodus*). The FRA identified 13 parks along this new segment. The FRA identified three NRHP-listed Historic District (Historic Districts are inclusive of multiple historic properties) in the Representative Route of this new segment. These include the Old Lyme Historic District in Connecticut, where the representative construction type was changed to tunnel to avoid the use of an aerial structure from Alternative 1 between Old Saybrook and East Lyme, CT; the Bradford Village Historic District in Rhode Island, where it remains as an embankment; and the Shannock Historic District in Rhode Island, where the Existing NEC through the district remains at grade, and the new segment is an aerial structure south of the district boundaries.

- ▶ **Connecticut/Massachusetts – Hartford/Springfield Line (upgraded track/electrification)** – The Hartford/Springfield Line is an existing connecting corridor that runs roughly parallel to I-91 between New Haven, CT, and Springfield, MA. There is minimal potential for acquisitions or displacements within the existing right-of-way. However, the track upgrades (electrification) would affect the second-highest (within the Affected Environment of the Preferred Alternative) acreages of prime farmland (approximately 85 acres). Additionally, there would be a large area of impacts to prime timberland land (approximately 300 acres). Most of these impacts would be located in New Haven and Hartford Counties. Impacts in these counties would be mostly from at-grade construction types.

This upgrade would affect water resources, including 8 route miles of coastal zone (in New Haven County, CT), approximately 280 acres of SFHA, and 70 acres of wetlands in New Haven and Hartford Counties, CT, and Hampden County, MA. This segment would cross two Navigable Waterways at the Connecticut and Quinnipiac Rivers, and would intersect waterbodies with special water quality considerations. The corridor work would result in an increase of ESH acreage and the T&E species occurrence would increase by one species in Hartford County (dwarf wedgemussel, *Alasmodonta heterodon*). In Hartford County, CT, and Hampden County, MA, the corridor would intersect soils associated with high landslide susceptibility.

The FRA identified one HWCM sites in New Haven County and two HWCM in Hartford County. Four parks were identified along this segment. The Representative Route contains 25 NRHP sites—18 are in Hartford County, with the majority in the city of Hartford. Included in these are Bushnell Park, Union Station, and the Clay Hill Historic District, where the route is improved and remains at grade. North of Hartford, there are four historic districts at Newington Junction where the improved route remains at grade. In Massachusetts, the FRA identified only the NRHP-listed Downtown Springfield Historic District, where the route remains at grade.

### 7.1.2 Stations

Station effects would be localized, with the greatest potential effects occurring at new station locations. Table 7.1-2 summarizes the effects for new stations by county. Impacts and areas of concern related to stations are similar to those documented for the Representative Route impacts

for the Preferred Alternative. Station locations are approximate and would be refined and modified as part of subsequent environmental analysis. Station effects could be expected to the following resources:

- ▶ **Land Cover:** There is a potential for land cover conversion and acquisition of public or private property in areas where new stations are proposed. Acquisitions could result in future displacements, but those displacements are not quantified at this time.
- ▶ **Prime Farmland and Timberland:** Potential effects would be expected in areas where new stations are proposed to overlap existing prime farmland or timberland.
- ▶ **Parklands and Wild and Scenic Rivers:** Potential effects have been identified for parklands in station areas outside of the Existing NEC. As part of the Tier 1 EIS analysis, the FRA did not identify any potential effects to Wild and Scenic Rivers from station construction proposed in the Preferred Alternative.
- ▶ **Hydrologic/Water Resources:** Five of the new and modified stations would potentially affect SFHA, wetlands, and coastal zones.
- ▶ **Ecological Resources:** ESH, EFH, and T&E species have been identified in potential station areas. The greatest effects could occur in Delaware, New Jersey, New York, and Connecticut.
- ▶ **Geologic Resources:** There are new stations that geographically coincide with resources that could present engineering difficulties or challenges in obtaining approvals. These resources include sole source aquifers, high incidence of landslide occurrences, naturally occurring asbestos, karst terrain, and mineral resources.
- ▶ **Hazardous Waste and Contaminated Material:** Effects to HWCM sites may occur at stations where new stations are proposed and overlap with HWCM sites.
- ▶ **Cultural Resources:** Adverse or major effects may occur at new stations that affect NRHP-listed, NRHP-eligible, or National Historic Landmark (NHL) sites.
- ▶ **Environmental Justice:** The benefits and burdens to EJ populations will be assessed for each individual project as part of subsequent environmental analysis.
- ▶ **Noise and Vibration:** Due to the lack of detailed design information, the Tier 1 EIS does not include a quantitative analysis of impacts from stations.
- ▶ **Climate Change:** Under current, mid-century, and end-of-century climate conditions, stations at risk of inundation have been identified. Since no mapping of future riverine inundation hazard areas was undertaken, this assessment does not specifically identify where flood extents will change and therefore which additional stations may be at risk under mid-century climate conditions.

**Table 7.1-2: Environmental Consequences: Preferred Alternative – Modified or New Stations**

State	County	Station ID	Station Type	Station Name	Land Conversions	Prime Farmland	Prime Timberland	Parklands	Hydrologic/Water Resources	Ecologically Sensitive Habitat	Essential Fish Habitat	Threatened and Endangered Species	Geologic Resources	Hazardous Waste and Contaminated Material Sites	Cultural Resources	Climate Change Inundation Effects Mid-Century
MD	Anne Arundel	5	Modified	Odenton	X		X			X						
	Baltimore City	13	New	Bayview	X					X			X			
	Cecil	23	New	Elkton								X	X		X	
DE	New Castle	26	New	Newport			X				X	X	X	X		X
		28		Edgemoor					X		X	X				
PA	Delaware	34	New	Baldwin				X				X	X	X		X
		44		Philadelphia Segments				X	X		X	X				X
NJ	Mercer	61	Modified	Princeton Junction			X			X		X	X		X	
	Middlesex	62	New	North Brunswick	X	X				X		X			X	
		64	Modified	New Brunswick								X		X	X	
		68	New	Metropark H.S.								X		X	X	
	Hudson	76	Modified	Secaucus	X				X	X					X	X
NY	Bronx	78	New	Hunts Point								X				
		79		Parkchester								X				
		80		Morris Park								X				
		81		Co-op City	X			X	X	X	X	X				
	Westchester	87	New	Cross-Westchester								X				

**Table 7.1-2: Environmental Consequences: Preferred Alternative – Modified or New Stations (continued)**

State	County	Station ID	Station Type	Station Name	Land Conversions	Prime Farmland	Prime Timberland	Parklands	Hydrologic/Water Resources	Ecologically Sensitive Habitat	Essential Fish Habitat	Threatened and Endangered Species	Geologic Resources	Hazardous Waste and Contaminated Material Sites	Cultural Resources	Climate Change Inundation Effects Mid-Century
CT	Fairfield	94	New	Stamford H.S.								X		X		X
		101	Modified	Greens Farms	X				X	X		X		X		X
		107	New	Barnum									X			
	New Haven	189	New	Orange	X	X	X			X		X				
	New London	124	New	Mystic/New London H.S.	X		X			X		X				
RI	Kent	127	Modified	TF Green								X		X		
	Providence	130	New	Pawtucket								X				
<b>Hartford/Springfield Line</b>																
CT	New Haven	157	New	North Haven	X		X		X	X		X			X	X
	Hartford	161	New	Newington	X		X			X		X			X	
		186		West Hartford							X	X		X		
		163	Modified	Hartford								X	X	X	X	
		187	New	Enfield	X		X					X	X		X	

Source: NEC FUTURE team, 2016

Notes: Land conversions for new stations are inclusive of acquisitions and possible displacements since the FRA assumed that all new station would require acquisitions. There are no wild and scenic rivers or other water resources identified near new stations. EJ populations were identified on a county level and not affiliated with individual station effects.

X = Potential for Effects

Blank Cell = No effects identified for subject resource for listed station for specified alternative.

Noise and vibration impacts were not assessed for individual stations for the Tier 1 EIS.