



TIER 1 FINAL ENVIRONMENTAL IMPACT STATEMENT
VOLUME 2



7.4 Parklands and Wild and Scenic Rivers

7.4 PARKLANDS AND WILD AND SCENIC RIVERS

7.4.1 Introduction

This chapter provides a brief description of parklands and wild and scenic rivers in the Affected Environment and broader Context Area and includes the evaluation of potential environmental consequences of the Tier 1 Draft Environmental Impact Statement (Tier 1 Draft EIS) Action Alternatives on these resources. The Federal Railroad Administration (FRA) further examines those parkland resources identified in this chapter as potentially affected as part of the Section 4(f) and Section 6(f) evaluations (Chapter 7.16).

7.4.1.1 Definition of Resource

For the purposes of this analysis, parklands include parks and outdoor recreational facilities, bird sanctuaries, wildlife preserves, resource management areas, federal and state forests, and similar resources that are publicly owned.

Wild and scenic rivers are those rivers listed on the National Rivers Inventory and defined as “rivers of the U.S. which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.” (Public Law 90-542; 16 U.S.C. 1271 et seq.) These rivers may also be classified as Wild River Areas, Scenic River Areas, or Recreational River Areas, but regardless of the classification, they are administered with the goal of protecting and enhancing the values that caused it to be designated.

7.4.1.2 Effects-Assessment Methodology

The FRA developed an effects-assessment methodology for parklands and wild and scenic rivers (see Appendix E, Section E.04, Parklands and Wild and Scenic Rivers Effects-Assessment Methodology Report). The methodology provides a definition of each resource type, data sources, an explanation on how the Affected Environment was defined and established, and how the effects on each resource were evaluated and reported. Table 7.4-1 summarizes key factors associated with the methodologies for the evaluation of parkland and wild and scenic rivers. In keeping with the Tier 1 level assessment, the FRA identified only federal, state, and county parklands. The FRA will collect information regarding municipal and local parklands and recreational facilities during subsequent project-level environmental assessments.

Key Resource: Parklands

- Section 4(f) of the U.S. DOT Act protects publicly owned parks, recreation areas, and wildlife/waterfowl refuges, and historic properties. Impacts on these resources are discouraged and require additional analysis to determine the type of impact and whether identified impacts can be avoided or minimized.
 - Analysis of parklands informs Section 4(f) analysis.
 - Types of effects can include conversion of parkland resources to non-recreational uses, visual changes, noise and vibration, and access.
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Table 7.4-1: Effects-Assessment Methodology Summary: Parklands and Wild and Scenic Rivers

Resource	Affected Environment	Type of Assessment	Outcome
Parklands and Wild and Scenic Rivers	2,000-foot-wide swath centered along Representative Route for each Action Alternative	Quantitative: Acres	Identification of federal, state, and county parklands and wild and scenic rivers affected by the Action Alternatives and where the Action Alternative may cross a resource and result in a land conversion, or cause proximity effects, such as visual or noise effects

Source: NEC FUTURE Parklands and Wild and Scenic Rivers Effects-Assessment Methodology, Appendix E, Section E.04.A, 2014.

7.4.2 Resource Overview

Implementation of the No Action or Action Alternatives could result in conversion of existing parklands to non-recreational uses and expanded or new crossings of designated wild and scenic rivers. Conversions of parklands may occur through modifications to existing rail infrastructure or constructing new rail infrastructure within parklands. Crossing a wild and scenic river may affect the visual character or setting that may be important to the designation. Implementation of the No Action or Action Alternatives could also result in proximity effects, such as noise and vibration effects caused by new service on new routes or changes in service on existing routes. Parklands exist throughout the 2,000-foot-wide Affected Environment, with higher acreages of these lands found in Maryland, New York, Connecticut, Rhode Island, and Massachusetts. Higher acreages of parklands are located in areas where the Action Alternatives diverge from the existing NEC and create new segments or extend off-corridor, primarily in New York under Alternative 3, and Connecticut and Rhode Island under all the Action Alternatives.

The most parks occur within the Affected Environment of Alternative 2, and the highest total park acreages occur within the Affected Environment of Alternative 3. There is one wild and scenic river—White Clay Creek in New Castle, Delaware—in the Affected Environment of all of the Action Alternatives.

Key findings for the analysis of NEC FUTURE Action Alternatives' effects on parklands are listed below.

▶ **Benefits:**

- Implementation of the Action Alternatives can improve access to existing and future parklands. Examples of parklands near new station locations or areas that would experience increased service include the following:
 - East Coast Greenway: Pennsylvania segment (all Action Alternatives)
 - Rhode Island Greenway (Alternatives 2 and 3)
 - Pelham Bay Park (all Action Alternatives)

▶ **Impacts:**

- Parkland conversions primarily would occur with new off-corridor segments.
 - The majority of parkland conversions associated with Alternatives 1 and 2 would occur in Rhode Island.

- Under Alternative 3, the majority of parkland conversions would occur in Rhode Island and New York.
- All Action Alternatives cross a wild and scenic river, the White Clay Creek in New Castle, Delaware. Alternative 3 creates a new crossing south of the existing NEC, whereas Alternatives 1 and 2 expand the existing crossing.
- Alternative 3 would affect the most parks (between 116 and 130 parks).
- Alternative 3 would affect the most park acreages (up to 905 acres).
- The parks that would have the highest acreage potentially affected by the Action Alternatives are listed below. Note that the greatest acreages do not necessarily imply that an Action Alternative would result in the greatest overall impact to the resource. For example, Alternative 1 would affect approximately 180 acres of the Rhode Island Greenway in Washington County, RI, which is less than 1 percent of the total park area. As such, the effects to the park are likely to be minimal.
 - The Rhode Island Greenway, which crosses Kent, Providence, and Washington Counties, RI, would be crossed by Alternative 1 (affecting approximately 180 acres in Washington County); by Alternative 2 (affecting approximately 95 acres in Providence County); and by Alternative 3 (affecting about 100 acres in Providence County).
 - Pelham Bay Park in Bronx, NY, would have approximately 70 acres converted to a transportation use under Alternative 3.
 - Patuxent Research Refuge in Anne Arundel, MD, would have approximately 60 acres converted to a transportation use by Alternative 3.
 - The Great Swamp Management Area/Great Swamp in Washington, RI, would have approximately 50 acres converted to a transportation use by Alternative 1.
 - Eisenhower County Park in Nassau, NY, and Gunpowder Falls State Park in Baltimore County, MD, would have approximately 40 acres converted to a transportation use under Alternative 3.
 - Saxon Woods County Park in Westchester, NY, and Norfolk County Canoe River Wilderness in Norfolk, MA, would have approximately 30 acres converted to a transportation use by Alternative 3.
 - Natchaug State Forest in Windham, CT, would have 25 acres converted to a transportation use under both Alternatives 2 and 3.

Depending on identification of the Preferred Alternative, subsequent project phases would further examine the relevant parks listed above to avoid or minimize impacts.

7.4.3 Affected Environment

For each of the Action Alternatives, the following sections and Table 7.4-2 identify the number of federal, state, and county parks, total park acreage, and percentage of the total park acreage within the Affected Environment. One wild and scenic river exists in the Affected Environment of all of the Action Alternatives: White Clay Creek, in New Castle, DE.

Table 7.4-2: Parklands and Wild and Scenic Rivers Resources within the Affected Environment

Geography	Total Acres of Resources*	Resources in the Affected Environment											
		Existing NEC			Alternative 1			Alternative 2			Alternative 3		
		# of Parks	Acres	% of Total Park Acres	# of Parks	Acres	% of Total Park Acres	# of Parks	Acres	% of Total Park Acres	# of Parks	Acres	% of Total Park Acres
D.C.	1,162	8	200	17%	8	200	17%	8	200	17%	8	210	18%
MD	108,124	78	1,020	1%	87	1,030	1%	89	1,090	1%	129	1,880	2%
DE	1,115	12	240	22%	12	240	22%	12	240	22%	12	245	22%
PA	10,628	50	560	5%	50	560	5%	47	780	7%	70	750	7%
NJ	4,792	14	210	4%	14	210	4%	14	225	5%	15	230	5%
NY	11,314	49	745	7%	49	750	7%	57	760	7%	66–91	1,265–1,855	11%–16%
CT	63,280	26	825	1%	28	865	1%	36	2,275	4%	7–32	1,470–2,555	1%–4%
RI	321,459	30	4,305	1%	31	4,910	2%	38	5,765	2%	27–38	4,025–5,765	1%–2%
MA	6,227	8	180	3%	8	180	3%	8	180	3%	8–20	180–330	3%–5%
TOTAL	528,101	275	8,285	2%	287	8,945	2%	309	11,515	2%	342–415	10,255–13,820	1%

Sources: National Rivers Inventory; Land and Water Conservation Fund; National Atlas of the United States; National Park Service; U.S. Department of Agriculture – Natural Resources Conservation Service; U.S. Fish and Wildlife Service; District of Columbia Data Catalogue; Washington, D.C., Department of Parks and Recreation; Maryland Department of Natural Resources; Delaware Forest Service; Delaware Division of Parks and Recreation; Pennsylvania Spatial Data Access; Pennsylvania Department of Conservation and Natural Resources; Connecticut Department of Energy and Environmental Protection; New Jersey Department of Environmental Protection; New York State Office of Parks, Recreation and Historic Preservation; University of Connecticut; Rhode Island Geographic Information System; Rhode Island Division of Planning; Rhode Island Department of Environmental Management; Massachusetts Department of Conservation and Recreation

Note: There is one wild and scenic river, White Clay Creek, in the Affected Environment of all of the Action Alternatives. It is located in New Castle, DE.

Note: All Action Alternatives assume improvements to the existing NEC; therefore, the number of resources presented is inclusive of the existing NEC as well as any new option or off-corridor route associated with each Action Alternative.

* Most of the resources are only partially located in the Affected Environment. The total number of acres represents the total acreage of the parklands, including acreages outside and inside the Affected Environment of the existing NEC or any alternatives.

The counties that have the most parks in the Affected Environment are Baltimore City, MD (51 to 93 parks, depending on the Action Alternative); Philadelphia, PA (39 to 59 parks); and Queens, NY (14 to 40 parks). The counties that have the most park acreage in the Affected Environment for the alternatives include Washington County, RI (3,200+ acres); Providence County, RI (up to 2,200 acres); and Windham County, CT (over 1,000 acres). (See Appendix E, Section E.04, for a complete list and the acreages of parklands and wild and scenic rivers identified.) Some of the largest parks in the Affected Environment include the Rhode Island Greenway, which goes through Kent, Providence, and Washington, RI; Natchaug State Forest in Windham, CT; and the Great Swamp Management Area in Washington, RI.

7.4.4 Environmental Consequences

Table 7.4-3 presents the number and acreage of parks that are within the Representative Route of each Action Alternative. This acreage represents the area of parkland crossed by an Action Alternative that may result in a land conversion of a parkland resource to a transportation resource. Parklands within the Affected Environment that are adjacent to the existing NEC and Action Alternatives could experience proximity effects such as visual interference or noise that may affect the designated use for which the parkland was intended¹. Proximity effects could result from new service or infrastructure, such as new noise and vibration impacts from an increase in trains passing, and visual impacts resulting from new construction and operation of the proposed service. For example, a park designated for meditative purposes could no longer be useable for meditative purposes if a proposed action introduces a proximity effect, such as new noise. However, parklands experiencing the greatest effects would be those where all or portions of the parkland are within the Representative Route of an Action Alternative. More specifically, the following general effects on parklands could occur as a result of the various construction types and methods proposed:

- ▶ At-grade: Direct physical disturbance to existing parklands through the construction and introduction of new track bed and landscaping, and the installation of utilities and/or catenary poles and potential proximity effects (i.e., visual, noise, vibration)
- ▶ Trench: Direct physical disturbance to existing parklands through the construction and introduction of new trenches and landscaping, and the installation of utilities and/or catenary poles and potential proximity effects (i.e., visual, noise, vibration)
- ▶ Embankment: Direct physical disturbance to existing parklands through the introduction of new retaining walls and/or earthen berms and potential proximity effects (i.e., visual, noise, vibration)
- ▶ Aerial Structure or Major Bridge: Direct physical disturbance to existing parklands at the site of abutments and/or pilings on land and in waterways and disturbance to existing parklands through the introduction of new aerial structures and potential proximity effects (i.e., visual, noise, vibration)
- ▶ Tunnel: Direct physical disturbance to existing parklands at tunnel boring machine launch sites, ventilation shafts and egress points, and potential proximity effects through vibrations

¹ The FRA did not identify designated parkland uses for this Tier 1 EIS. Designated parkland uses would be identified during Tier II studies.

Temporary construction effects could occur where access roads are created and at staging and lay-down areas. Impacts could include temporary disturbance to existing parklands. Chapter 8, Construction Effects, presents a qualitative description and examples of potential construction-related effects for parklands.

Table 7.4-3: Environmental Consequences: Representative Route – Parklands

Geography	Existing NEC		Alternative 1		Alternative 2		Alternative 3*	
	# of Parks	Acres within the Alignment	# of Parks	Acres within the Representative Route	# of Parks	Acres within the Representative Route	# of Parks	Acres within the Representative Route
D.C.	3	10	3	10	3	10	4	25
MD	15	10	15	10	17	25	24	190
DE	5	5	5	5	5	5	6	15
PA	17	20	17	20	18	45	19	50
NJ	5	2	5	2	6	10	6	15
NY	9	50	9	50	9	50	13–16	115–125
CT	17	50	18	55	23	105	21–23	60–90
RI	19	265	20	350	25	345	18–25	265–350
MA	5	25	5	25	5	25	5–7	25–45
TOTAL	95	435	97	525	111	620	116–130	760–905

Source: NEC FUTURE team, 2015

Note: All Action Alternatives assume improvements to the existing NEC; therefore, the number of resources presented is inclusive of the existing NEC as well as any new option or off-corridor route associated with each Action Alternative.

Note: There is one wild and scenic river—White Clay Creek in New Castle, Delaware—which is crossed by the existing NEC and all Action Alternatives. Alternative 3 creates a new crossing.

* The range represents the Representative Route design options for Alternative 3. See the Alternative 3 discussion below.

Of the Action Alternatives, Alternative 3 would affect the most parks (between 116 and 130 parks). Alternative 3 would also affect the most park acreages (up to 905 acres). There is one wild and scenic river—White Clay Creek in New Castle, Delaware—which is crossed by the existing NEC and all Action Alternatives. Alternative 3 creates a new crossing. (See Appendix E, Section E.04, for a complete list of all parklands and wild and scenic rivers that would be affected.)

7.4.4.1 No Action Alternative

Effects of the No Action Alternative are not quantified as part of this analysis as explained in the introduction to Chapter 7. However, projects being implemented under the No Action Alternative would occur within or adjacent to the NEC right-of-way. Land uses in the existing NEC are already dedicated to support existing train operations and the right-of-way contains rail infrastructure and ancillary facilities located adjacent to parklands and wild and scenic rivers. It is expected that land uses would not change under the No Action Alternative and train operations would remain essentially the same as existing conditions; therefore, no new noise or vibration impacts are expected. The introduction of new or modified infrastructure associated with No Action Alternative projects may result in visual effects to parks and wild and scenic rivers within the Affected Environment for the existing NEC. Additional effects could also include sliver² takes in parklands

² Sliver takes refers to a very narrow take on the fringes of a parkland resource.

directly adjacent to existing infrastructure. Project sponsors of the No Action Alternative would be responsible for determining the effects on these resources as part of the project.

7.4.4.2 Alternative 1

Table 7.4-4 lists the parks that fall outside of the footprint of the existing NEC and would likely be affected by Alternative 1. The potential effects are also described within the table.

7.4.4.3 Alternative 2

Table 7.4-5 lists the parks that fall outside of the footprint of the existing NEC and that would likely be affected by Alternative 2. The potential effects are also described within the table.

7.4.4.4 Alternative 3

Table 7.4-6 summarizes the number of parks and parks acreage that would be affected by the Alternative 3 options.

Washington, D.C., to New York City

Table 7.4-7 lists the parks that fall outside of the footprint of the existing NEC and that would likely be affected by Alternative 3 (Washington, D.C., to New York City). The potential effects are also described within the table.

New York City to Hartford

Via Central Connecticut

Table 7.4-8 lists the parks that fall outside of the footprint of the existing NEC and that would likely be affected by Alternative 3 (New York City to Hartford via Central Connecticut). The potential effects are also described within the table. No wild and scenic rivers would be affected.

Via Long Island

Table 7.4-9 lists the parks that fall outside of the footprint of the existing NEC and that would likely be affected by Alternative 3 (New York City to Hartford via Long Island). The potential effects are also described within the table. No wild and scenic rivers would be affected.

Hartford to Boston

Via Providence

Table 7.4-10 lists the parks that fall outside of the footprint of the existing NEC and that would likely be affected by Alternative 3 (Hartford to Boston via Providence). The potential effects are also described within the table. No wild and scenic rivers would be affected.

Via Worcester

Table 7.4-11 lists the parks that fall outside of the footprint of the existing NEC and would likely be affected by Alternative 3 (Hartford to Boston via Worcester). The potential effects are also described within the table. No wild and scenic rivers would be affected.

Table 7.4-4: Environmental Consequences: Representative Route – Parklands (Alternative 1)

State	County	Resource of Interest	Total Area of Resource (acres)*	Number of Acres Affected	% of Total Area Affected	Construction Type	Potential Impact
CT	Fairfield	Saugatuck River Water Access	1	1	100%	Major Bridge	Visual effects
	New London	Mystic Oral School Water Access	70	10	14%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
	Total CT		71	11	15%		
RI	Washington	Bradford/Bradford Dye/Grills Preserve	480	15	3%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Bradford/Grills/Hopkinton Land Trust	160	10	6%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Burlingame Management Area/Burlingame Management	990	1	<1%	Trench	Potential land conversion; Visual and noise effects
		Burlingame MA/Drew	210	10	5%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Burlingame MA/Holley	165	5	3%	At-grade, Trench	Potential land conversion.; Potential acquisition; Visual and noise effects
		Burlingame MA/Phantom Bog	260	5	2%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Great Swamp MA/Great Swamp	2,835	50	2%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Great Swamp MA/Pelky	10	1	13%	Embankment, Aerial	Potential land conversion; Visual effects
		Greenway	104,570	180	<1%	Embankment, Aerial, At-grade, Trench	Potential land conversion; Potential acquisition; Visual effects
		Stripped	310	1	<1%	Embankment, Aerial, At-grade	Potential land conversion; Potential acquisition; Visual effects
Total RI		109,990	278	<1%			
TOTAL ALTERNATIVE		110,061	289	<1%			

Source: NEC FUTURE team, 2015

*The total number of acres represents the total acreage of the resource, including acres outside and inside the Affected Environment of Alternative 1.

Table 7.4-5: Environmental Consequences: Representative Route – Parklands (Alternative 2)

State	County	Resource of Interest	Total Area of Resource (acres)	Acres Affected under Alt 2	% of Total Area Affected	Construction Type	Potential Impact
MD	Harford	North Deen Park	10	5	50%	Trench	Potential land conversion; Potential acquisition; Visual and noise effects
	Cecil	Fletchwood Community Park	25	10	40%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		West Branch Community Park	20	5	25%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
	Total MD		55	20	36%		
PA	Delaware	BicyclePA Route E	295	10	3%	Embankment, Aerial, At-grade	Potential land conversion; Potential acquisition; Visual and noise effects
		John Heinz National Wildlife Refuge At Tinicum	1,070	1	<1%	Embankment, Major Bridge	Potential land conversion; Visual and noise effects
	Philadelphia	Bartram's Garden	50	5	10%	Embankment and Aerial	Potential land conversion; Visual and noise effects
		East Park	610	10	2%	Embankment, Major Bridge	Potential land conversion; Visual effects
		John Heinz National Wildlife Refuge At Tinicum	1,075	15	1%	Embankment, Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
		Schuylkill River Water Trail	520	1	<1%	Major Bridge	Visual effects
		West Park	1,295	10	1%	Major Bridge	Crosses into and follows park for 0.5 mi.; Visual and noise effects
Total PA		4,915	52	1%			
NJ	Middlesex	Merrill Park	180	10	6%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
	Union	Merrill Park	180*	1	<1%	Embankment	Potential land conversion; Visual and noise effects
	Total NJ		180	11	6%		
NY	Bronx	Pelham Parkway	80	1	1%	At-grade	Potential land conversion; Potential acquisition; Visual and noise effects
		Starlight Park	15	5	33%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
	Total NY		95	6	6%		

Table 7.4-5: Environmental Consequences: Representative Route – Parklands (Alternative 2) (continued)

State	County	Resource of Interest	Total Area of Resource (acres)**	Acres Affected under Alt 2	% of Total Area Affected	Construction Type	Potential Impact
CT	Fairfield	Mianus River Water Access	15	10	67%	Embankment, Aerial, Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
		Saugatuck River Water Access	1	1	94%	Aerial	Potential land conversion; Visual effects
	New Haven	Quinnipiac River Marsh Wildlife Area	560	10	2%	Embankment, Aerial, and Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
	Hartford	Silver Lake Water Access	40	1	3%	At-grade	Potential land conversion.; Potential acquisition; Visual and noise effects
	Tolland	Nathan Hale State Forest	1,550	10	1%	Trench	Potential land conversion; Potential acquisition; Visual and noise effects
	Windham	Airline State Park Trail	201	1	<1%	Embankment	Potential land conversion; Visual effects
		Natchaug State Forest	12,600	25	<1%	Embankment, Trench	Potential land conversion; Potential acquisition; Visual and noise effects
		Total CT	14,967	58	<1%		
RI	Providence	Greenway	104,570	110	<1%	Embankment, Aerial, At-grade	Potential land conversion; Potential acquisition; Visual and noise effects
		Killingly Pond MA/Bissel	30	1	3%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Killingly Pond MA/Cate	150	1	1%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Killingly Pond MA/Shippee	370	15	4%	Embankment, Aerial, Trench	Potential land conversion; Potential acquisition; Visual and noise effects
		Harris Preserve ASRI Natural Area	50	1	<1%	Embankment	Potential land conversion; Visual and noise effects
		Snake Den State Park/Snake Den	780	15	2%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Ten Mile River Greenway	10	1	10%	Aerial, At-grade, Trench	Potential land conversion; Visual and noise effects
		Total RI	105,960	144	<1%		
		TOTAL ALTERNATIVE	126,172	291	<1%		

Source: NEC FUTURE team, 2015

MA: Management Area

*Not included in total to avoid double-counting.

** The total number of acres represents the total acreage of the resource, including acres outside and inside the Affected Environment of Alternative 2.

Table 7.4-6: Environmental Consequences: Representative Route of Alternative 3 Route Options – Parklands

Geography	D.C. to NYC		New York City to Hartford				Hartford to Boston			
	# of Parks	Acres	via Central Connecticut		via Long Island		via Providence		via Worcester	
			# of Parks	Acres	# of Parks	Acres	# of Parks	Acres	# of Parks	Acres
D.C.	4	25	—	—	—	—	—	—	—	—
MD	24	190	—	—	—	—	—	—	—	—
DE	6	15	—	—	—	—	—	—	—	—
PA	19	50	—	—	—	—	—	—	—	—
NJ	6	15	—	—	—	—	—	—	—	—
NY	—	—	13	115	16	125	—	—	—	—
CT	—	—	20	55	18	50	3	35	3	10
RI	—	—	—	—	—	—	25	350	18	265
MA	—	—	—	—	—	—	5	45	7	25
TOTAL	59	295	33	170	34	175	33	430	28	300

Source: NEC FUTURE team, 2015

Note: All Action Alternatives assume improvements to the existing NEC; therefore, the number of resources presented is inclusive of the existing NEC as well as any new option or off-corridor route associated with each Action Alternative.

— = Not applicable within that alternative/route option.

Table 7.4-7: Environmental Consequences: Representative Route – Parklands and Wild and Scenic Rivers Resources (Alternative 3 – Washington, D.C., to New York City)

Geography	County	Resource of Interest	Total Area of Resource (acres)**	Acres Affected under Alt 3	% of Total Area Affected	Construction Type	Potential Impact
D.C.	Washington	Arboretum/Rec Center Grounds	450	1	<1%	Embankment	Potential land conversion; Potential sliver acquisition
		Anacostia Park, Section G	570	20	4%	Embankment, Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
		Baltimore Washington Pkwy	30	10	33%	Embankment, Major Bridge	Potential land conversion; Potential acquisition; Visual effects
		Total D.C.	1,050	31	3%		
MD	Prince George's	Folly Branch Stream Valley Park	235	5	2%	At-Grade	Potential land conversion; Potential acquisition; Visual and noise effects
		Fran Uhler Natural Area	320	10	3%	Embankment, Aerial	Potential land conversion; Visual and noise effects
	Anne Arundel	Patuxent Research Refuge	12,820	60	<1%	Embankment, Aerial, Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
		Midland Park	20	10	50%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Patapsco Valley State Park	13,950	30	<1%	At-Grade, Embankment, Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
	Baltimore	Herring Run Park	550	1	<1%	Embankment, Aerial	Potential land conversion; Visual and noise effects
		Gunpowder Falls State Park	15,950	40	<1%	Aerial	Crosses the park; Visual effects
		Patapsco Valley State Park	13,950	1	<1%	Major Bridge	Crosses the feature near edge for 1.5 miles; Visual effects

Table 7.4-7: Environmental Consequences: Representative Route – Parklands and Wild and Scenic Rivers Resources (Alternative 3 – Washington, D.C., to New York City) (continued)

Geography	County	Resource of Interest	Total Area of Resource (acres)**	Acres Affected under Alt 3	% of Total Area Affected	Construction Type	Potential Impact
MD	Harford	Anita C. Leight Estuary Center	90	10	11%	Embankment, Trench	Potential land conversion; Potential acquisition; Visual and noise effects
		Belcamp Park	10	1	10%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Bush Declaration Natural Resources MA	270	1	<1%	Embankment, Aerial	Potential land conversion; Visual and noise effects
		David Craig Park	1	1	100%	Major Bridge	Crosses Park; Visual effects
		Havre De Grace Activity Center	5	1	20%	At-grade, Trench	Potential land conversion; Potential acquisition; Visual and noise effects
		North Deen Park	10	1	10%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Perryman Park	90	5	6%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Fletchwood Community Park	25	10	40%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		West Branch Community Park	30	10	33%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Total MD	58,326	197	<1%		

Table 7.4-7: Environmental Consequences: Representative Route – Parklands and Wild and Scenic Rivers Resources (Alternative 3 – Washington, D.C., to New York City) (continued)

Geography	County	Resource of Interest	Total Area of Resource (acres)**	Acres Affected under Alt 3	% of Total Area Affected	Construction Type	Potential Impact
DE	New Castle	Banning Park	150	1	1%	At-grade	Potential land conversion; Visual and noise effects
		Cool Run Park	35	1	3%	At-grade	Potential land conversion; Visual and noise effects
		Fox Point State Park	90	10	11%	Aerial, At-grade	Follows outside edge for entire length of feature; Potential land conversion; Potential acquisition; Visual and noise effects
		Harmony Hills Park	50	1	<1%	At-grade	Potential land conversion; Visual and noise effects
		Pleasant Hills Park	20	1	<1%	Aerial	Portion of park in the route; Visual and noise effects
		Rutherford Park	10	1	10%	At-grade	Potential land conversion; Visual and noise effects
		White Clay Creek Wild and Scenic River	700	2	<1%	Embankment, Aerial, At-grade	Crosses creek; Visual effects
		Total DE	1,055	17	2%		

Table 7.4-7: Environmental Consequences: Representative Route – Parklands and Wild and Scenic Rivers Resources (Alternative 3 – Washington, D.C., to New York City) (continued)

Geography	County	Resource of Interest	Total Area of Resource (acres)**	Acres Affected under Alt 3	% of Total Area Affected	Construction Type	Potential Impact
PA	Delaware	BicyclePA Route E	290	15	5%	Embankment, Aerial, At-grade	Potential land conversion; Visual and noise effects
	Philadelphia	BicyclePA Route E	290*	1	<1%	Embankment, Aerial	Potential land conversion; Visual and noise effects
		East Coast Greenway	160	1	<1%	Embankment, Aerial, At-grade	Potential land conversion; Visual and noise effects
		Heitzman Playground	1	1	100%	Embankment, Aerial	Potential land conversion; Visual and noise effects
		Part Disston Park	20	10	50%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Pennypack Creek Park	1,330	1	<1%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Pennypack Trail	40	1	3%	Aerial	Visual effects
		Schuylkill River Water Trail	520	1	<1%	Major Bridge	Visual effects
		Trenton & Auburn Playground	1	1	100%	Trench	Potential land conversion; Visual and noise effects
	Bucks	D & L Trail – Delaware Canal Towpath	210	1	<1%	Embankment, Aerial, At-grade	Potential land conversion; Visual and noise effects
		Delaware Canal	910	1	<1%	Embankment, Aerial, At-grade	Potential land conversion; Visual and noise effects
		Total PA	3,192	33	1%		
NJ	Middlesex	Merrill Park	180	20	11%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
	Union	Merrill Park	180*	1	<1%	Embankment	Potential land conversion; Visual and noise effects
			Total NJ	180	21	12%	
		TOTAL ALTERNATIVE	64,098	299	<1%		

Source: NEC FUTURE team, 2015

MA: Management Area

*Total Area not included in overall total to avoid double-counting.

**The total number of acres represents the total acreage of the resource, including acres outside and inside the Affected Environment of Alternative 3.

Table 7.4-8: Environmental Consequences: Representative Route – Parklands and Wild and Scenic Rivers Resources (Alternative 3 – New York City to Hartford via Central Connecticut)

State	County	Resource of Interest	Total Area of Resource (acres)*	Acres Affected under Alt 3	% of Total Area Affected	Construction Type	Potential Impact
NY	Bronx	Edgewater Park	5	1	20%	Aerial	Portion of park in route; Visual and noise effects
		James A Young Memorial Park	1	1	100%	At-grade	Potential land conversion; Visual and noise effects
		Pelham Parkway	80	1	1%	Embankment and At-grade	Potential land conversion; Visual and noise effects
		Pelham Bay Park	2,110	70	3%	Embankment, Aerial, At-grade	Potential land conversion; Potential acquisition; Visual and noise effects
		Starlight Park	15	10	67%	Aerial, At-grade, Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
	Westchester	Saxon Woods County Park	690	30	4%	Embankment, Aerial, Trench	Potential land conversion; Potential acquisition; Visual and noise effects
		Silver Lake Preserve	240	1	<1%	Aerial	Portion of park in route; Visual effects
Total NY			3,141	114	4%		
CT	Fairfield	Saugatuck River Water Access	1	1	94%	Major Bridge	Portion of park in route; Visual effects
	New Haven	George C. Waldo State Park Scenic Reserve	150	1	2%	Aerial	Portion of park in route; Visual effects
	Total CT			151	2	<1%	
TOTAL ALTERNATIVE			3,292	116	4%		

Source: NEC FUTURE team, 2015

*The total number of acres represents the total acreage of the resource, including acres outside and inside the Affected Environment of Alternative 3.

Table 7.4-9: Environmental Consequences: Representative Route – Parklands and Wild and Scenic Rivers Resources (Alternative 3 – New York City to Hartford via Long Island)

State	County	Resource of Interest	Total Area of Resource (acres)*	Acres Affected under Alt 3	% Total Area Affected	Construction Type	Potential Impact
NY	Queens	Daniel A Haggerty Park	1	1	100%	Embankment, Aerial	Potential land conversion; Visual and noise effects
		Forest Park	540	20	4%	Aerial	Portion of park in route; Visual and noise effects
		Jacob Riis Triangle	1	1	100%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Prospect Cemetery	5	1	20%	Aerial	Portion in route; Visual and noise effects
	Nassau	Eisenhower County Park	940	40	4%	Trench	Potential land conversion; Potential acquisition; Visual and noise effects
	Suffolk	Connetquot River State Park Preserve	3,470	10	<1%	Trench	Potential land conversion; Potential acquisition; Visual and noise effects
		Lakeland County Park	70	1	1%	Trench	Potential land conversion; Potential acquisition; Visual and noise effects
		South Setauket County Nature Preserve	100	1	1%	Aerial	Visual effects
			Total NY	5,127	75	1%	
CT	Fairfield	Saugatuck River Water Access	1	1	100%	Major Bridge	Portion of park in route; Visual effects
		Total CT	1	1	100%		
		TOTAL ALTERNATIVE	5,128	76	1%		

Source: NEC FUTURE team, 2015

*The total number of acres represents the total acreage of the resource, including acres outside and inside the Affected Environment of Alternative 3.

**Table 7.4-10: Environmental Consequences: Representative Route – Parklands and Wild and Scenic Rivers Resources
(Alternative 3 – Hartford to Boston via Providence)**

State	County	Resource of Interest	Total Area (acres)*	Acres Affected under Alt 3	% of Resource Area Affected	Construction Type	Potential Impact
CT	Tolland	Nathan Hale State Forest	1,550	10	1%	Trench	Potential land conversion; Potential acquisition; Visual and noise effects
	Windham	Airline State Park Trail	200	1	<1%	Embankment	Potential land conversion; Visual effects
		Natchaug State Forest	12,600	25	<1%	Embankment, Trench	Potential land conversion; Potential acquisition; Visual and noise effects
			Total CT	14,350	36	<1%	
RI	Providence	Greenway	104,570	98	<1%	Embankment, Aerial, Major Bridge	Potential land conversion; Potential acquisition; Visual and noise effects
		Killingly Pond MA/Bissel	30	1	3%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Killingly Pond MA/Cate	150	1	1%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Killingly Pond MA/Shippee	370	10	3%	Embankment, Aerial	Potential land conversion; Potential acquisition; Visual and noise effects
		Harris Preserve ASRI Natural Area	50	1	2%	Embankment	Potential land conversion; Visual and noise effects
		Snake Den State Park/Snake Den	780	10	1%	Embankment	Potential land conversion; Potential acquisition; Visual and noise effects
		Ten Mile River Greenway	10	1	10%	Aerial, At-grade, Trench	Potential land conversion; Visual and noise effects
			Total RI	105,960	122	<1%	
MA	Norfolk	Bay Circuit Trail	1,125	1	0%	At-grade	Potential land conversion; Visual and noise effects
		Norfolk County Canoe River Wilderness	140	30	21%	Embankment, At-grade	Potential land conversion; Potential acquisition; Visual and noise effects
			Total MA	1,265	31	2%	
TOTAL ALTERNATIVE			121,575	189	<1%		

Source: NEC FUTURE team, 2015

*The total number of acres represents the total acreage of the resource, including acres outside and inside the Affected Environment of Alternative 3.

Table 7.4-11: Environmental Consequences: Representative Route – Parklands Resources (Alternative 3 – Hartford to Boston via Worcester)

State	County	Resource of Interest	Total Area (acres)**	Number of Acres Affected	Percentage of Park Area Affected	Construction Type	Potential Impact
CT	Tolland	Nipmuck State Forest	9,540	1	<1%	Embankment	Potential land conversion; Visual effects
		Nye Holman State Forest	930	10	1%	Aerial, Trench	Potential land conversion; Potential sliver acquisition; Visual effects
	Windham	Nipmuck State Forest	9,540*	1	<1%	Embankment, Aerial	Potential land conversion; Potential sliver acquisition
	Total CT		10,470	12	<1%		
MA	Worcester	Midstate Trail	290	1	<1%	Aerial	Portion in route along Route 9; Potential sliver acquisition; Visual effects
		Quinsigamond State Park	40	1	3%	Aerial	Portion in route along Route 9; Potential sliver acquisition; Visual effects
	Total MA		330	2	1%		
TOTAL ALTERNATIVE			10,800	14	<1%		

Source: NEC FUTURE team, 2015

*Total Area not included in overall total to avoid double-counting.

**The total number of acres represents the total acreage of the resource, including acres outside and inside the Affected Environment of Alternative 3.

7.4.4.5 Stations

Table 7.4-12 summarizes the potential environmental consequences of the proposed stations on parklands. The table lists only those locations where impacts would occur, and shows only those affected parks that are outside of the alignment of the existing NEC.

Table 7.4-12: Environmental Consequences: Stations – Parklands

State	County	Station ID/Type	Station Name	Alt. 1	Alt. 2	Alt. 3
MD	Baltimore City	9/New	Upton	4 parks would be acquired <ul style="list-style-type: none"> ■ Douglas R. Morrison Park ■ Fitzgerald Park ■ Linden Ave Park ■ Park Avenue Median Park 	4 parks would be acquired <ul style="list-style-type: none"> ■ Douglas R. Morrison Park ■ Fitzgerald Park ■ Linden Ave Park ■ Park Avenue Median Park 	4 parks would be acquired <ul style="list-style-type: none"> ■ Douglas R. Morrison Park ■ Fitzgerald Park ■ Linden Ave Park ■ Park Avenue Median Park
		12/New	Broadway	2 parks would be acquired <ul style="list-style-type: none"> ■ Caroline & Hoffman Park ■ Ellsworth St Park 	2 parks would be acquired <ul style="list-style-type: none"> ■ Caroline & Hoffman Park ■ Ellsworth St Park 	2 parks would be acquired <ul style="list-style-type: none"> ■ Caroline & Hoffman Park ■ Ellsworth St Park
PA	Delaware	34/New	Baldwin	Potential partial acquisition of Bicycle Route/PA; potential noise and visual effects	Potential partial acquisition of Bicycle Route/PA; potential noise and visual effects	Potential partial acquisition of Bicycle Route/PA; potential noise and visual effects
NY	Bronx	81/New	Co-op City	Potential partial acquisition of Pelham Bay Park; potential noise and visual effects	Potential partial acquisition of Pelham Bay Park; potential noise and visual effects	Potential partial acquisition of Pelham Bay Park; potential noise and visual effects
RI	Providence	129/New	Providence Station H.S.	Potential partial acquisition of and visual and noise effects to: <ul style="list-style-type: none"> ■ Greenway ■ Roger Williams National Park 	Potential partial acquisition of and visual and noise effects to: <ul style="list-style-type: none"> ■ Greenway ■ Roger Williams National Park 	Potential partial acquisition of and visual and noise effects to: <ul style="list-style-type: none"> ■ Greenway ■ Roger Williams National Park

Source: NEC FUTURE team, 2015

Note: Quantities of potential impacts associated with stations are not shown. Acreage has been calculated only for new stations and is provided in Appendix E, Section E.04.

H.S. = high speed

7.4.5 Context Area

Alternative 1 contains over 1,900 parks in the Context Area, and Alternatives 2 and 3 contain over 2,000 parks in the Context Area. If the Representative Routes were to shift, it is likely that different parks as well as different acreages of the larger parks (those over 100 acres) within the Context Area would be encountered. A summary of the parks with large areas in the Context Area is provided below:

- ▶ Within the Context Area for all of the Action Alternatives in Washington, D.C., there are five parks with 100 or more acres in the Context Area: Anacostia Park, the National Arboretum, National Mall, East Potomac Park, and West Potomac Park/Lincoln Memorial/Vietnam Veterans Memorial. All of the Action Alternatives and the existing NEC cross Anacostia Park and the

National Arboretum; these parks extend south along the Anacostia River, away from the NEC. At its closest point, the National Mall is about 0.5 mile from all of the Action Alternatives and extends westward away from the NEC. Similarly, East and West Potomac Park are located roughly 2 miles south and west of the NEC.

- ▶ In Maryland, some of the larger parks that cross more than one county include Patuxent River Park, Patuxent Research Refuge, Patapsco Valley State Park, and Gunpowder Falls State Park. Patuxent River Park is located less than 1 mile from the Representative Routes of the Action Alternatives on the south side, while the Patuxent Research Reserve extends north and east away from the Representative Routes of the Action Alternative for approximately 8 miles. The Patapsco Valley State Park spans a roughly 20-mile distance, end to end, on both sides of the Northeast Corridor. At the closest point, Alternative 3 crosses this park while the existing NEC simply runs alongside it. All Action Alternatives cross Patapsco Valley State Park. Like Patapsco Valley State Park, Gunpowder Falls State Park is approximately 15 miles from end to end, and the Representative Routes of all of the Action Alternatives weave between the parcels that comprise the park.
- ▶ In Delaware, nine parks have over 100 acres in the Context Area for all of the Action Alternatives: White Clay Creek State Park, Middle Run Valley Natural Area, Iron Hill Park, Bellevue State Park, Alapocas Run State Park, White Clay Creek Wild and Scenic River, Banning Park, Brandywine Park, and Carousel Park. Unlike Maryland, most of these parks are located in the Context Area, but do not abut the Representative Routes. White Clay Creek State Park, Middle Run Valley Natural Area, and Carousel Park are in a cluster to the north and west of the Representative Routes of all the Action Alternatives at a distance of approximately 1 to 2 miles. Bellevue State Park, Alapocas Run State Park, and Brandywine Park are located in a second cluster about 1 mile to the north and west. White Clay Creek Wild and Scenic River has its headwaters in Pennsylvania approximately 15 miles northwest of the Representative Routes. The Representative Routes of all Action Alternatives cross branches of this designated river three times, as well as run immediately proximate to the south and east of Banning Park for 0.6 mile.
- ▶ In Pennsylvania, seven parks are located across more than one county: Bicycle PA Route E, Cobbs Creek Park, East Coast Greenway, Eastwick Regional Park, John Heinz National Wildlife Refuge at Tinicum, Schuylkill River Water Trail, and Tidal Delaware Water Trail. Currently, Bicycle PA Route runs from the Pennsylvania-Delaware border to the Delaware River crossing at Trenton. Since this trail spans 52 total miles, it is unsurprising that it crosses the various Representative Routes five times. Bicycle PA Route E is largely to the south of the Representative Routes, though it crosses to the north of them in Lower Northeast Philadelphia. The East Coast Greenway follows a similar pattern, though it has a slightly different geometry in Central Philadelphia. The Schuylkill and Delaware River Water Trails are located along these two bodies of water. The existing NEC and Alternatives 1 and 2 cross the Schuylkill River Water Trail at major bridges over the river, while the Tidal Delaware Water Trail is crossed by the Representative Routes by an existing bridge. Alternative 2 crosses the John Heinz National Wildlife Refuge for 1.5 miles on the southeastern edge. Eastwick Regional Park is located almost exactly halfway between the existing NEC/Alternative 1 and Alternative 2 at a distance of

approximately 0.5 mile on either side. Cobbs Creek Park is located less than 1 mile north-northwest of the existing NEC and extends approximately 5 miles away from the existing NEC.

- ▶ In New York, 12 parks are located in more than one county: Astoria Athletic Field, Bethpage State Park, Bridge Park (George Washington), Cross Island Parkway, East River State Park, Field of Dreams Park, Hempstead Playground, Highland Park, Jackie Robinson Park, Laurelton Parkway, Pelham Bay Park, and Roberto Clemente State Park. All of these parks except Bethpage State Park and Roberto Clemente State Park are New York City parks. Eleven of the 12 parks are in a cluster near the border between Manhattan and the Bronx. Bethpage State Park is the only identified park on Long Island; it is located to the north of Alternative 3 at a distance of 0.25 mile.
- ▶ In Connecticut, 12 parks are located across more than one county: Cockaponset State Forest, Farmington Canal Line State Park Trail, Hammonasset Beach State Park, Hop River State Park Trail, and Hammonasset Natural Area Preserve, Lake Lillinonah Water Access, Mansfield Hollow Wildlife Area, Quinnipiac River Water Access, and Trimountain State Park Scenic Reserve. The existing NEC runs through parcels of the Cockaponset State Forest but does not cross the park. The far-western section in New Haven County immediately abuts the Representative Route, but to the east, the park parcels are about 1 mile from the Representative Route. The Farmington Canal Line State Park Trail runs south to north and crosses Alternative 3 once in southern Hartford County. Hammonasset Beach State Park and Hammonasset Natural Area Preserve are clustered together less than 1 mile immediately south of the existing NEC. Hop River State Park Trail is a 20-mile trail that is crossed by Alternative 3. Two parcels make up Lake Lillinonah Water Access, the closest of which is 0.5 mile north of Alternative 3. Mansfield Hollow Wildlife Area is a large, nearly 2,400-acre park that is crossed by Alternative 3. The crossing occurs at the northwestern end of the park; the majority of it is located south and east of the Representative Routes. The Quinnipiac River Water Access comprises three smaller parcels; the northernmost parcel is located less than 1 mile off Alternative 3. Finally, Trimountain State Park Scenic Reserve is located about 2 miles east of Alternative 3 near the New Haven/Middlesex County border.
- ▶ In Rhode Island, three parks are located across more than one county: Cranston Washington Secondary Bike Path, Greenway Trail, and Washington Secondary Bike Path. The Greenway Trail is a statewide recreational resource that crosses each Representative Route multiple times. The Cranston Washington Secondary Bike Path runs parallel to the existing NEC at a distance of between less than 1 to 2 miles. No Representative Routes crosses this trail feature. Similarly, the Washington Secondary Bike Path runs parallel to the existing NEC for 2 miles.
- ▶ Within the Context Area for all Action Alternatives in Massachusetts, the Context Area contains 28 parks with over 100 acres. Borderland State Park is located in two counties—Bristol and Norfolk Counties. Borderland State Park is located approximately 1.4 miles directly east of the Representative Routes.

7.4.6 Potential Mitigation Strategies

Parkland resources are unique in that they each may provide different recreational opportunities and activities. Potential mitigation should be based not only on the effect anticipated but also on the characteristics of the specific resource affected. Examples of potential mitigation strategies could include design or construction modifications to avoid conversion of a parkland resource, the

use of context-sensitive design in future stages of project development, the incorporation of natural design features such as earthen berms and tree plantings, as well as allocation of replacement parkland or open space. In addition, fencing and other approaches could be implemented to protect the safety of those using the parkland.

7.4.7 Subsequent Tier 2 Analysis

Subsequent analysis conducted during the planning process for Tier 2 projects would further define the effects to parklands and wild and scenic rivers, including municipal and local parks. Additionally, effects on privately held or non-profit recreational areas and conservation lands, such as the Last Green Valley National Heritage Corridor, would be evaluated and considered. Information would be collected with regard to activities (e.g., passive or active uses) and potentially affected user groups. As part of Tier 2 studies, alternatives would be developed to avoid the use of parklands where feasible and prudent, in accordance with Section 4(f) of the Department of Transportation Act of 1966. Where use cannot be avoided, the Tier 2 analysis would include the development of mitigation measures and designs that would avoid or minimize effects on parklands and wild and scenic rivers. The analysis would be conducted in accordance with federal as part of the Section 4(f) and Section 6(f) evaluations (Chapter 7.16) and state regulations. The requirements for subsequent Tier 2 evaluations include compliance with the regulations listed in Table 2 of the Parklands and Wild and Scenic Rivers Effects-Assessment Methodology Report.