4.10 PROTECTED OPEN SPACE AND AREAS OF CRITICAL ENVIRONMENTAL CONCERN

4.10.1 Introduction

This chapter describes existing conditions and analyzes potential impacts on protected open space and state-designated ACECs. Although not subject to regulatory jurisdiction, important privately owned conservation lands adjacent to each alternative are also included, where applicable. An overview is presented below of the definition of the resources, their regulatory context and the methodology used to inventory the resources and evaluate potential impacts. Section 4.10.2 identifies the project study area, summarizes regional public or private open space and ACEC resources, and describes the protected public and selected private open space and ACECs along each alternative alignment. Section 4.10.3 identifies the effects to protected open space or designated ACECs that may result from implementing each of the South Coast Rail alternatives, and describes potential mitigation measures that may be implemented to offset direct impacts to protected open spaces and ACECs. A summary of the regulatory programs that address protected open spaces and ACECs is provided in Section 4.10.4.

The Secretary of the EEA issued a certificate on the ENF on April 3, 2009. The certificate included a number of requirements that defined the scope of the DEIR. Specific requirements for protected open spaces and ACECs were:

- "The DEIR should identify ecosystems within each ACEC and conservation area that would be impacted by the various alternatives, and include a quantitative and qualitative analysis of impacts to wetlands and water quality, wildlife habitat, water supply, and floodplain."

- "The DEIR should include a detailed analysis of the proposed disposition [of DCR property in the Blue Hills Reservation], which should include a quantitative and qualitative description of potential land impacts, a map showing the area that would require a disposition, and a demonstration of how the disposition would comply with the EOEEA's Article 97 Land Disposition Policy. The DEIR should include an evaluation of feasible alternatives to the disposition. The DEIR should also identify and describe any other potential impacts to DCR property."

- "The DEIR should include a detailed analysis of the potential impacts of project alternatives on the Hockomock Wildlife Management Area and other protected open space. The DEIR should identify all Article 97 lands that would be impacted by the alternatives, clarify if state or municipality owned, describe potential impacts and, where applicable, discuss consistency with EOEEA's Article 97 Land Disposition Policy."

The Secretary's Certificate on the DEIR, dated June 29, 2011, included the following requirements for the FEIR in regard to open space:

- "*Hockomock Swamp Wildlife Management Area*. The proposed Stoughton route uses an inactive railroad Right-of-Way that crosses through the Hockomock Swamp [Wildlife Management Area]. The FEIR should include a detailed analysis of the project's potential impacts to open space within the Hockomock Swamp, including any impacts relating to infrastructure, such as access roads for construction or ongoing maintenance of the trestle and rail ROW. The FEIR should include a detailed plan to avoid and minimize impacts and/or

to mitigate unavoidable impacts to open space. The FEIR should clarify whether proposed work falls within the existing ROW or to what degree it will extend beyond it."

- "*Taunton Wild and Scenic River*. The FEIR should include an update on consultations with the National Park Service regarding the status of Taunton River as a National Wild and Scenic River, and to discuss issues relating to water quality impacts from construction and stormwater runoff, rail line crossings of the Taunton and its tributaries, impacts to natural and cultural landscape features, selection and siting of layover facilities, and construction of the Fall River Depot station."

- "*Acushnet Cedar Swamp National Natural Landmark*. The FEIR should describe proposed measures to avoid and minimize construction and train operational noise impacts during critical wildlife breeding season in spring and early summer."

- "*Article 97 and other Open Space*. The open space impact estimates presented in the DEIR's summary tables are limited to Article 97 land and are not representative of the full range of potential impacts to open space. The FEIR should quantify all open space impacted by the project and describe mitigation commitments. The FEIR should expand upon the evaluation in the DEIR/S to demonstrate consistency with the EEA Article 97 Land Disposition Policy. MassDOT should consult with the Department of Conservation and Recreation during FEIR preparation to discuss policy requirements and a land disposition agreement."

4.10.1.1 Resource Definition

Protected public open space includes public parks, public conservation areas, public recreation areas, and wildlife refuges owned by a public agency, such as the local or state government. Ballfields, athletic fields, or playgrounds associated with public schools have also been included where such resources are publicly accessible. Private open space preserved for conservation and owned by a non-profit land trust, or other similar entity that is available for public use or benefit is also included in the analysis. Public benefit may include activities for the public, such as educational programs or recreation, and/or ecological services provided by the open space, such as wildlife habitat or vital ecosystems. Privately owned recreational facilities such as golf courses are not included.

ACECs are places in Massachusetts that receive special recognition because of the quality, uniqueness, and significance of their natural and cultural resources. These areas are identified and nominated at the community level and are reviewed and designated by the state's Secretary of Environmental Affairs. Under the state program, ACECs are designated to promote awareness and stewardship of these important natural areas, although developed areas may be included within an ACEC's boundaries. The designation works through the existing state environmental regulatory and review framework and does not change local regulations or zoning.[1] The ACEC program is managed by the Massachusetts Department of Conservation and Recreation (DCR).

4.10.1.2 Regulatory Context

Projects within an ACEC that are subject to state agency jurisdiction or regulation requiring a state permit, or are funded by a state agency, are reviewed with close scrutiny to avoid or minimize adverse environmental impacts.[2] The principal state agencies with regulations referring to ACECs are the

[1] DCR. 2009. ACEC Regulatory Summary. Website http://www.mass.gov/dcr/stewardship/acec/reqsum.htm.
[2] Ibid

Massachusetts Office of Coastal Zone Management (CZM), the MEPA Office, and MassDEP. MEPA regulations require that state agencies study the environmental consequences of their actions, including permitting and financial assistance, and take all feasible measures to avoid, minimize, and mitigate damage to the environment.[3] The proponent of any project (as defined by the MEPA regulations) located within an ACEC must file an ENF for MEPA review, unless the project consists solely of one single-family dwelling. The ENF for the South Coast Rail project was filed in November 2008 and the Secretary of the Executive Office of EEA's Certificate[4] on the ENF requires that an EIR be filed.

Article 97 of the Massachusetts Constitution protects all publicly owned lands used for conservation or recreation purposes. This provision protects lands acquired for natural resources values, meaning "conservation, development and utilization of the agricultural, mineral, forest, water, air, and other natural resources."[5] Before these properties can be sold, transferred, or converted to a different use, the following is required: action by the local Conservation Commission and Parks and Recreation Commission; a two-thirds vote by the municipal government; and a roll call two-thirds vote of the State House of Representatives and Senate.

According to the EEA's Division of Conservation Services, conservation and recreation land within a community is protected (also referred to as "in perpetuity") if it is owned by the local Conservation Commission, a state conservation agency, a nonprofit land trust, or if the municipality received state or federal monies for the improvement or purchase of the land.[6] Private property can also be permanently protected if there is a deed restriction, if the land is listed as having an Agricultural Preservation Restriction, or if the MassDEP has placed a restriction on the property for wetland conservation. Typically, land owned by other agencies (such as a municipal Parks and Recreation Commission or the local school system) may not be presumed to be permanently protected.

Publicly owned open space may also be subject to protection under Section 4(f) of the Department of Transportation Act of 1966[7] for any actions undertaken by the Federal Transit Administration, Federal Railroad Administration, or Federal Highway Administration. Section 4(f) of the Act states, "the Secretary of Transportation will not approve any program or project that requires the use of any publicly-owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use."

Section 4(f) resource categories include:

- Public parks;
- Public recreation areas;

[3] MEPA Regulations 301 CMR 11.00. ACECs are specifically addressed at 301 CMR 11.03(11).

[4] EEA. 2009. *South Coast Rail Project: Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form*, April 3, 2009. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs: Boston.

[5] Article XCVII of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts. Website http://www.mass.gov/legis/const.htm.

[6] DCS. 2008. *Open Space and Recreation Plan Requirements*, Website http://www.mass.gov/Eoeea/docs/eea/dcs/osplanreq08.pdf.

[7] United States Department of Transportation Act of 1966, Section 4(f). In 1983, the Act was re-codified and Section 4(f) is now 49 USC, Section 303, "Policy on lands, wildlife and waterfowl refuges, and historic sites."

- Publicly-owned wildlife and waterfowl refuges of national, state, or local significance; and
- Historic sites of national, state, or local significance (including properties listed in or eligible for listing in the National Register of Historic Places and archaeological sites warranting preservation in place).

Playgrounds on public school properties are also considered Section 4(f) public recreation areas if they are publicly owned, open to the public after normal school hours, used for recreation, and are considered a significant recreational resource in the community by the officials having jurisdiction over the resource.

4.10.1.3 Methodology

Available mapping (2005 MassGIS data), supplemented by field visits and information provided by South Coast municipalities, were used to identify, characterize, and map open space and ACECs within 0.25 mile distance of each section of the alternative corridors that is not currently in passenger transportation use. The distance of 0.25 mile was selected as the maximum extent of resource areas that could potentially be affected by the alternatives. Each municipality through which an alternative passes received a letter in December 2008 requesting information on additional public or private open space parcels not identified by MassGIS. The request letters and municipality responses received are provided in Appendix 4.10-A.

4.10.2 Existing Conditions

This section identifies public parks, public conservation areas, public recreation areas, and wildlife refuges (protected open space) and ACECs within 0.25 mile of each proposed alternative. Although not subject to regulatory jurisdiction, important privately owned conservation lands adjacent to each corridor are also identified and described. These open space parcels are described below and depicted in Figures 4.10-3a-d through 4.10-9a-b.

4.10.2.1 Regional Overview

The South Coast Rail project would serve and could impact the following ten communities: Canton, Stoughton, Easton, Taunton, Raynham, Berkley, Lakeville, Freetown, Fall River and New Bedford. South Coast Rail alternative alignments pass through these communities, and new station sites are within or near each. Accordingly, these ten communities constitute the Public Open Space and ACECs study area. Protected public open space, selected private open space, and ACECs within each of these municipalities, relative to the alternative alignments and station sites, are discussed below.

In 2008, just over 18 percent of the South Coast communities'[8] land area was considered permanently protected public open space.[9] Of the ten communities impacted by the Build Alternatives, most of the protected public open space is in Easton and the coastal communities of Fall River and New Bedford, and the towns of Freetown, Lakeville and Taunton. An important permanently protected public area is the Freetown-Fall River State Forest, which includes 5,441 acres of public open space. The southern

[8] This refers to the 27 South Coast communities analyzed in the DEIS/DEIR, not the 10 communities that constitute the Public Open Space and ACEC Study Area in this FEIS/FEIR.

[9] EOT and Massachusetts Office of Housing and Economic Development. 2009. *South Coast Rail Economic Development and Land Use Corridor Plan.* Commonwealth of Massachusetts, Executive Office of Transportation and Office of Housing and Economic Development. Prepared by Goody Clancy: Boston.

coastal communities generally contain more undeveloped land than the northern inland communities within the South Coast region.

Public open space within the study area includes one National Historic Park (New Bedford Whaling National Historic Park), the Freetown-Fall River State Forest, conservation areas, and recreation areas. Recreation areas, both developed parks and natural forested areas, are the most common types of public open space. Although not permanently protected, fields and play areas at public schools within the study area have also been identified.[10]

In addition to the protected public open space properties described below, several properties owned by non-profit and/or non-governmental organizations are located within 0.25 mile of the South Coast Rail corridors. Figure 4.10-1 depicts the major public and private open space and recreation resources.[11]

ACECs in the South Coast Rail study that are either crossed by or adjacent to the Build Alternatives include Canoe River Aquifer, Hockomock Swamp, Three Mile River, and Fowl Meadow and Ponkapoag Bog (Figure 4.10-2).

4.10.2.2 Existing Conditions within the Study Corridor

Southern Triangle (Common to All Build Alternatives)

All Build Alternatives would require improvements to the existing active rail infrastructure south of Weir Junction in Taunton (the New Bedford Main Line and the Fall River Secondary). This section identifies and describes the state-designated ACECs and public parks, public conservation areas, public recreation areas, and wildlife refuges within 0.25 mile of the New Bedford Main Line (Figures 4.10-3a-d) and the Fall River Secondary (Figures 4.10-4a-c). Identified privately owned open space is also described.

Areas of Critical Environmental Concern

No designated ACECs are present in the areas adjacent to the New Bedford Main Line and Fall River Secondary.

Protected Public Open Space

Table 4.10-1 lists all of the identified protected public open space within 0.25 mile from the New Bedford Main Line and the Fall River Secondary. Selected protected public open spaces adjacent to the New Bedford Main Line or the Fall River Secondary are described below.

Howland Road Area—The Howland Road Area[12] is in the southwestern portion of Lakeville (Figure 4.10-3c), adjacent to the New Bedford Main Line and the Assonet Cedar Swamp Wildlife Sanctuary (owned by the Massachusetts Audubon Society and described below). The Town of Lakeville owns the 636-acre parcel surrounding a 560-acre farmland.

[10] Public school fields and play areas are only public if they are open to the general public after hours. This report includes all fields as hours of operation and availability of these resources were not available at the time of this report.

[11] Major public and private open spaces are those that are generally greater than 20 acres and visible at the scale of the figure.

[12] Southeastern Regional Planning and Economic Development District, Town of Lakeville Priority Development and Priority Protection Area Plan, June 2008, page 12.

Table 4.10-1 Southern Triangle Protected Public Open Space

City/Town	Name	Ownership	Type
New Bedford Main Line			
Lakeville	Howland Road Area	Town	C
	Apponoquet Regional High School sports fields[13]	Town	E
New Bedford	Acushnet Cedar Swamp	State-DCR	C
	Brooklawn Park	City	R
	Abraham Lincoln School sports fields	City	E
	Hayden/McFadden Play Area	City	E
	Clasky Common Park	City	R
	New Bedford Whaling National Historic Park	Federal – NPS	H/C
	Fisherman's Wharf Pier #3	City	R
	Rasmus Tonnessen Park	City	R
	State Pier	State – DCR	R
	Coast Guard Park	City	R
	Wings Court	City	R
	Salvation Army Play Area	City	R
	Baby Kenny's Tot Lot	City	R
Fall River Secondary			
Freetown	Forge Pond	Town	B
	Freetown-Fall River State Forest	State – DCR	B
Fall River	North Park	City	R
	Bicentennial Park	City	R
	Fall River Heritage State Park and walkway	State - DCR	R
	Turner Playground	City	R
	Heritage Park	City	R
	Ponta Delgada Plaza	City	R

Sources: MassGIS 2002, 2005; municipal data 2009, aerial mapping and online research (various).
Key: NPS National Park Service; DCR Massachusetts Department of Conservation and Recreation.
R = Recreation; C = Conservation; B = Conservation and Recreation; E = Educational Facility with publicly used recreation facilities; H/C = Historic/Cultural

Acushnet Cedar Swamp State Reservation—The Acushnet Cedar Swamp State Reservation is an approximately 1,000-acre property owned by DCR in New Bedford and Dartmouth, north of the New Bedford Airport and adjacent to portions of the New Bedford Main Line (Figures 4.10-3d). It includes an outstanding example of an Atlantic white cedar swamp and provides habitat for state-listed rare wetlands wildlife and other state-listed rare, endangered, or special concern species. This is one of eight cedar swamps in public ownership in Massachusetts, and has been designated as a National Natural Landmark.[14] The New Bedford Main Line, currently used for freight rail service, forms the eastern boundary of the State Reservation.

[13] Schools have been listed in this report because they contain recreational resources; however, school fields are only considered public open space if they are available to the public after hours. It was not currently possible to confirm this information. Additionally, school properties are not considered protected because they may be sold in the future.

[14] Sorrie, B.A. and H.L. Woolsey, 1987. The Status and Distribution of Atlantic White Cedar in Massachusetts. In A. Laderman, Atlantic White Cedar Wetlands, Westview Press. pp. 135-142.

New Bedford Whaling National Historic Park—The New Bedford Whaling National Historic Park is in downtown New Bedford (Figure 4.10-3d). The park is generally the area between MacArthur Drive, Union Street, Acushnet Avenue, and Kempton Street. Established in 1996 as a National Historic Landmark District, the park's mission is to preserve, protect, and interpret certain districts, structures, and artifacts that are associated with the history of whaling and related social, economic, and environmental themes for the benefit and inspiration of this and future generations. Some of the properties within the boundary of the park are owned by the National Park Service (NPS).

Forge Pond—Forge Pond is the uppermost and largest pond along the Assonet River in Freetown (Figure 4.10-4a). The Fall River Secondary passes through the protected public open space associated with Forge Pond and adjacent to the pond itself. Forge Pond is approximately 4 acres and is managed by the Town of Freetown Board of Selectmen. The protected open space shown on Figure 4.10-4a associated with Forge Pond is accessible only from the water at Forge Pond. The pond's primary purpose is passive recreation and conservation.

Freetown-Fall River State Forest—The Freetown-Fall River State Forest is a 5,441-acre property with access from Slab Bridge Road in Freetown and located along the Fall River Secondary (Figures 4.10-4a-b). The State Forest provides recreational facilities, including a picnic area and 50 miles of unpaved roads and trails used for hiking, mountain biking, horseback riding, and snowmobiling. Hunting and fishing are also popular uses of the State Forest, particularly Rattlesnake Brook, which is stocked with brook trout. The Freetown-Fall River State Forest abuts the existing Fall River Secondary in Freetown. None of the active public recreation areas or trails is adjacent to the Fall River Secondary tracks.

Turner Playground—Turner Playground is a small parcel of approximately 2.4 acres located adjacent to the Fall River Secondary in Fall River (Figure 4.10-4c). The playground is at the intersection of Cherry and Locust Streets. According to the description from the latest Fall River Open Space and Recreation Plan,[15] the playground is in poor condition. The playground contains two lighted basketball courts and one playground.

Fall River Heritage State Park—Fall River Heritage State Park is adjacent to the Fall River Secondary in Fall River Figure 4.10-4c), and is owned and operated by the DCR. The approximately 8.5-acre park overlooks Battleship Cove and is home to the World War II battleship, U.S.S. Massachusetts. The park follows the shore of the Taunton River (Mount Hope Bay) and has a boardwalk, benches, groves of trees, an antique carousel, public sailing programs, and a 3-acre meadow used for summer concerts, craft festivals, and family picnics.[16]

Heritage Park—Owned and managed by the City of Fall River, Heritage Park is separated from Heritage State Park by Route 79. It is adjacent to the Fall River Secondary in Fall River (Figure 4.10-4c) and is approximately 2.7 acres. Heritage Park is used primarily as a neighborhood park, providing green space and walking trails to nearby residents.

Ponta Delgada Plaza—The Ponta Delgada Plaza (also called Gates of the City Plaza) is a 2.2-acre site on Water Street adjacent to the Fall River waterfront and the Fall River Secondary (Figure 4.10-4c); this is the site of the proposed Battleship Cove Station. The site is a rectangular-shaped parcel, currently

[15] Green Futures. 2004. *Open Space and Recreation Plan for the City of Fall River.* Green Futures website accessed at: http://www.greenfutures.org/projects/osp/default.html on January 16, 2009.

[16] DCR. 2009. Fall River Heritage State Park. Website. http://www.mass.gov/dcr/parks/southeast/frhp.htm accessed on January 12, 2009.

owned by the City of Fall River. It contains the Gates of the City, a large triple archway that is a replica of gates in Ponta Delgada, Sao Miguel, Azores, Fall River's sister city. The site also contains parking and a grassed area.

Private Open Space

Private open space located adjacent to the New Bedford Main Line or the Fall River Secondary is briefly described below, based on readily available information.

Assonet Cedar Swamp Wildlife Sanctuary—The Assonet Cedar Swamp Wildlife Sanctuary is a 1,000-acre parcel of conservation land owned by the Massachusetts Audubon Society in southwest Lakeville, near the Berkley and Freetown town lines (Figure 4.10-3b). The New Bedford Main Line passes through the wildlife sanctuary and the Fall River Secondary passes nearby. This property consists largely of the wetlands bordering the Cedar Swamp River south of Myricks Junction. These wetlands include extensive Atlantic white cedar swamps and support numerous state-listed species.

Stoughton and Whittenton Alternatives

This section identifies and describes the state-designated ACECs and public parks, public conservation areas, public recreation areas, and wildlife refuges within 0.25 mile of the Stoughton Electric and Diesel Alternatives (Figures 4.10-5a-e), as well as within 0.25 mile of the Whittenton Electric and Diesel Alternatives (Figures 4.10-6a-b). Identified privately owned open space is also described. In general, protected open space and ACECs adjacent to the Northeast Corridor alignment segment have been excluded from the existing conditions discussion as the Build Alternatives do not include any construction activity along the Northeast Corridor.

Areas of Critical Environmental Concern

The Stoughton and Whittenton Alternatives pass through or near four ACECs: Fowl Meadow and Ponkapoag Bog, Hockomock Swamp, The Canoe River Aquifer, and the Three Mile River Watershed (Figure 4.10-2, Figure 4.10-5a-e and Figures 4.10-6a-b). These resources are described below.

Fowl Meadow and Ponkapoag Bog—The Fowl Meadow and Ponkapoag Bog ACEC, designated in 1992, encompasses approximately 8,350 acres[17] and is located in the metropolitan Boston region, including Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood. The Northeast Corridor passes through the Fowl Meadow portion of this ACEC from near the Readville Station to near the Canton Junction Station (Figure 4.10-5a). The ACEC is fragmented by several major transportation corridors, including I-95, I-93, Route 24, Route 138, Route 1, and other roadways. It also includes upland areas that are developed commercial and residential lands as well as undeveloped forested upland and farmland.

The central resource features of the Fowl Meadow and Ponkapoag Bog ACEC are the Neponset River and the Ponkapoag Pond and Bog. An 8-mile stretch of the Neponset River and its tributaries, the adjacent wetlands and floodplains, the associated aquifers and public water supplies, and the diverse habitats form the core resources of the Fowl Meadow portion of the ACEC. Ponkapoag Bog and Pond and the natural communities and wildlife habitats form the core resources of the Ponkapoag Bog

[17] DCR. 2013. Fowl Meadow and Ponkapoag Bog. Website: http://www.mass.gov/eea/agencies/dcr/conservation/acec/fowl-meadow-and-ponkapoag-bog.html.

portion of the ACEC. Historical and archaeological resources and the recreational and educational values of both areas support their overall significance to the people and communities of the area.

The Fowl Meadow area includes the largest wetland and floodplain areas in the Neponset River basin. There are several municipal public wells that provide water to the communities of Canton, Dedham, and Westwood. The northern Fowl Meadow area and Ponkapoag Bog have been designated a National Environmental Study Area by the NPS. Approximately 2,330 acres of the ACEC are owned by DCR, and are managed as part of the Blue Hills Reservation.

The Northeast Corridor forms the eastern boundary of the ACEC between Neponset Street in Canton and I-95, and forms the western boundary of the ACEC southwest of the I-95/I-93 interchange. The Northeast Corridor passes through the ACEC north of I-95, where the existing rail line parallels the Neponset River.

Hockomock Swamp ACEC—The Hockomock Swamp ACEC, designated in 1990 includes approximately 16,950 acres[18] in Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater. The ACEC is fragmented by several major transportation corridors, including Routes 24, I-495, 138, 106, other major roadways, and the existing, abandoned MBTA-owned railroad grade/right-of-way and it includes substantial upland areas within the watershed of the Hockomock Swamp. These uplands include developed commercial and residential lands as well as undeveloped forested upland and farmland. The Stoughton and Whittenton alignments pass through the Hockomock Swamp ACEC from near Purchase Street in Easton to Bridge Street in Raynham (Figures 4.10-5c-d), along the aforementioned abandoned MBTA-owned railroad grade/right-of-way.

The Hockomock Swamp and associated wetlands and water bodies are described by DCR as the largest vegetated freshwater wetland system in Massachusetts, with outstanding natural resource qualities. The wetlands, which include Hockomock Swamp, Dead Swamp, Titicut Swamp, and Little Cedar Swamp, serve as the headwaters of the Town River, a tributary of the Taunton River, and overlay a system of high and medium yield aquifers that supply public drinking water through wells in Raynham and West Bridgewater.

The Hockomock Swamp ACEC provides habitat for several species listed as rare, endangered, or of special concern by the NHESP and much of the ACEC is designated as BioMap Core Habitat. The DCR describes the Hockomock Swamp ACEC as one of the most extensive inland wildlife habitats in southeastern Massachusetts. The Atlantic white cedar swamp and acidic fen wetland communities scattered throughout the ACEC are considered to be outstanding examples of these unique natural communities. The ACEC is important for its significant scenic sites.

The Massachusetts Division of Fisheries and Wildlife (DFW) owns approximately 5,000 acres within the Hockomock Swamp. The Hockomock Swamp Wildlife Management Area (WMA) provides public access to the swamp and to several recreational areas. Additional public and nonprofit lands are located within the ACEC. The area is popular for hunting, fishing, boating, canoeing, swimming, and for observing and studying flora and fauna.

The MBTA has continued to own the railroad right-of-way through the WMA and the ACEC from Route 123 in Easton to I-495 in Raynham. This land was acquired by the MBTA from the New York, Hartford

[18] DCR. 2009. Hockomock Swamp. Website http://www.mass.gov/dcr/stweardship/acec/acecs/l-hcksmp.htm. Accessed on September 1, 2009.

and New Haven Railroad in 1973 and reserved as a public transportation corridor. Although the right-of- is used as an informal recreation trail, including the use of all-terrain vehicles both on and off the right-of-way, this is not an authorized use, as this is a designated transportation land and cannot be converted to recreational use. The right-of-way is not subject to Article 97 because it is not a public "land or easement taken or acquired for the conservation of forest, water, air, and other natural resources."

Canoe River Aquifer ACEC—The Canoe River Aquifer ACEC, designated in 1991, covers approximately 17,200 acres[19] in Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton. The associated areas within this ACEC include Snake River, Watson Pond, and Lake Sabbatia. As the Whittenton Branch crosses the Raynham-Taunton town boundary, it passes near this ACEC (Figure 4.10-6a).The ACEC is fragmented by several major transportation corridors, including I-495, Route 123, Route 106, and other major roadways. It includes substantial upland areas that are developed commercial and residential lands as well as undeveloped forested upland and farmland.

The Canoe River Aquifer ACEC is located adjacent to the Hockomock Swamp ACEC and within the Taunton River basin. It is generally defined by the Canoe River watershed and the underlying aquifer. It has an extensive system of surface waters, wetlands, floodplains, and high-yield aquifers. The aquifers provide high quality drinking water from wells to four of the towns located within the ACEC, Easton, Sharon, Mansfield and Norton.

The ACEC provides a rich and diverse habitat for wildlife including rare and endangered species habitat and Atlantic white cedar swamps. The upland portions of the area are a mix of open fields, deep woods, transitional woodlands, and more than 1,000 acres of productive farmland and cranberry bogs. The ACEC also includes municipal and nonprofit conservation and recreational lands, and rich archaeological and historic resources, as further detailed in Chapter 4.8, *Cultural Resources*.

Three Mile River Watershed ACEC—The Three Mile River Watershed ACEC, designated in 2008, covers approximately 14,276[20] acres in Dighton, Norton, and Taunton. The ACEC is fragmented by Route 140, a major transportation corridor, and several other major roadways. It includes substantial upland areas that are developed commercial and residential lands as well as undeveloped forested upland and farmland. The Attleboro Secondary and Whittenton Branch are in close proximity to the Three Mile River Watershed ACEC in the vicinity of Whittenton Junction (Figure 4.10-6a).

The Three Mile River Watershed is located south and adjacent to two other designated ACECs, the Canoe River Aquifer and Hockomock Swamp. The ACEC includes a wetland and stream complex tributary to the Taunton River and is located within the Taunton River Watershed. The resources of the area include fishery habitat, inland wetlands, inland surface waters, water supply areas, natural hazard areas including floodplains, agricultural areas including farmland and forestry land, archaeological and historical resources, habitat resources including state-listed rare species habitat, and special use areas including undeveloped natural areas, public recreational areas, and scenic areas.

The Three Mile River Watershed ACEC provides habitat for at least seven species listed as rare, endangered, or of special concern by the Natural Heritage and Endangered Species Program (NHESP) and contains many important habitats. Approximately 5,881 acres within the ACEC are identified as Core

[19] DCR. 2013. Canoe River Aquifer, Snake River, Watson Pond, and Lake Sabbatia. Website: http://www.mass.gov/eea/agencies/dcr/conservation/acec/canoe-river-aquifer-snake-river-watson-pond.html.

[20] DCR. 2013. Three Mile River Watershed. Website: http://www.mass.gov/eea/agencies/dcr/conservation/acec/three-mile-river-watershed.html.

Habitat Area according to the NHESP's BioMap data. The floodplain provides essential breeding habitat for many reptile and amphibian species, including several NHESP listed species, as further detailed in Chapter 4.15, *Threatened and Endangered Species*.

The surface waters of the Three Mile River are the core of the ACEC and were a former herring run. Currently, the river provides one of the best warm water fisheries in the area. The quality of the water in the river, due in part to the largely undeveloped river corridor and surrounding lands, enables the Three Mile River Watershed to provide a large area of outstanding habitat.

Protected Public Open Space

Table 4.10-2 lists the protected public open space within 0.25 mile of the Stoughton Line and the Whittenton Branch, shown in Figures 4.10-5a-e and 4.10-6a-b. Selected protected public open spaces adjacent to the Stoughton Line are briefly described, based on readily available information, in the following paragraphs.

D. Forbes Estate—Located in Stoughton, adjacent to the Stoughton Line (Figure 4.10-5a), the D. Forbes Estate is conservation land owned and managed by the Town of Stoughton Conservation Commission. The conservation land totals approximately 22 acres and has limited access. The only frontage is approximately 200 feet on Island Street.

Stoughton Memorial Conservation Land—The Town of Stoughton's Memorial Conservation Land (which includes the Bird Street Conservation Lands) is a 675-acre parcel west of the Stoughton Line (Figure 4.10-5b), extending from Plain Street to the Easton town line and west of the Bird Street Conservation Area (which is not within 0.25 mile of the corridor). The Stoughton Conservation Memorial Lands represent the largest contiguous conservation area owned by the Town of Stoughton.[21] The area includes the original 55-acre parcel owned by the Bird family from the mid-1700s through the 1870s before becoming a dairy farm owned by the Connor family.

The majority of the land is wooded, but it also contains large areas of open fields. The area supports a variety of habitats, including a former quarry, old fields, a pond, marshes, forested wetlands, and forested uplands. The 14-acre pond is used for swimming and fishing. The principal access to the property is off Bird Street. The gated entrance allows pedestrians to access a system of trails used for hiking, horseback riding, and cross-country skiing that extend throughout the area and provide additional pedestrian access from West Street and Plain Street. The Conservation Commission has developed an inventory of plant and animal species observed on the property and has published a guide to the nature trails established on the land.

The area extends to the right-of-way in two locations, with a total of approximately 1,500 feet of frontage. One location is a narrow strip where the railroad closely parallels Route 138 south of Morton Street. The second location is south of Totman Farm Road, extending to the Easton town line on the west side of the right-of-way. The majority of the area and all of the developed trail system are more than 1,000 feet from the MBTA right-of-way.

[21] Town of Stoughton. 2006. Town of Stoughton Open Space and Recreation Plan. Prepared by Horsley Witten Group, public review draft. April 2006, page 38.

Table 4.10-2 Stoughton Alternatives Protected Public Open Space

City/Town	Name	Ownership	Type
Stoughton Line			
Canton	Neponset River Reservation	State - DCR	B
	Canton High fields	Town	E
	Curtis Road Conservation Area (3 parcels)	Town	C
	Bolivar Pond and Swimming Area	Town	R
	Cabot Devoll Field	Unknown	R
Stoughton	D. Forbes Estate	Town	C
	Stoughton School Fields	Town	E
	Elm Street Field	Town	R
	Lipsky Field	Town	R
	Lehan Field	Town	R
	Marks Field	Town	R
	Halibran Field (Jones School)	Town	E
	Meads Meadow	Town	R
	Cedar Swamp (Stonehill College Gift Area and Sumner Gardens)	Town	C
	Stoughton Memorial Conservation Land	Town	B
	Libby Farm	Town	B
Easton	Conservation Land, off Wedgewood Drive	Town.	C
	Conservation Land, off Cobblestone Road	Town	C
	Veterans Memorial Park	Town	R
	Ricker Field	Town	R
	Conservation Land, off Purchase Street	Town	C
	Old Baldwin Street Dump	Town	C
	Frothingham Park	Town	R
	Hockomock Swamp WMA	State - DFW	C
	Conservation Land, off Prospect Street	Town	C
	Southeastern Regional Vocational Technical School sports fields	Southeastern Regional School District	E
	Town Land (near Black Brook)	Town	C
Raynham	Pine Swamp Conservation Area	Town	B
Taunton	Hartshorn Park	City	R
	Plonka Property	City	C
	Weir Park	City	R
	Summer Street School sports fields	City	E
Whittenton Branch			
Taunton	Unnamed parcel, off Third Avenue	City	R
	Mill River Park	City	R
	Memorial Park	City	R

Sources: MassGIS 2002, 2005; municipal data 2009, aerial mapping and online research (various).
Key: DCR Massachusetts Division of Conservation and Recreation; DFW Massachusetts Division of Forestry and Wildlife
R = Recreation; C = Conservation; B = Conservation and Recreation; E = Educational Facility; H/C = Historic/Cultural

Hockomock Swamp Wildlife Management Area—A description of this area is included above in the discussion of the Hockomock Swamp ACEC.

Pine Swamp Conservation Area—Pine Swamp is a 275-acre wetland system located in western Raynham and consisting of several properties that are owned by the Town of Raynham Conservation Commission. The Stoughton Alternatives crosses the swamp in a 1-mile segment from King Phillip Street to East Britannia Street (Figure 4.10-5-d); however, the Whittenton Alternatives would avoid crossing this area as the Whittenton Branch diverges to the southwest at Raynham Junction, north of the Pine Swamp. The Pine Swamp Conservation Area consists of forested and marsh wetlands associated with Pine Swamp, an area that is located within estimated habitat of several rare wetlands species, and supports an Atlantic white cedar swamp community. The former railroad bed through the Conservation Area is owned by the Taunton Municipal Light Corporation, and maintained as a utility corridor with an overhead power line. As indicated by the Town of Raynham municipal assessor office's maps, the utility corridor right-of-way is not owned by the Town of Raynham as Conservation Land.

The Taunton Municipal Light Corporation periodically maintains the right-of-way by clearing vegetation on the right-of-way and in the adjacent wetland. Although there are no trails or designated points of public entry, the former rail right-of-way is used by pedestrians, all-terrain vehicles, off-road motorbikes, and other vehicles.

Hartshorn Park—Hartshorn Park is off Longmeadow Road and adjacent to the Stoughton Line in Taunton. The park is immediately east of the proposed Taunton (Dean Street) Station site (Figure 4.10-5e). Owned by the City of Taunton and operated by the Parks and Recreation Department, Hartshorn Park contains two baseball diamonds used for adult softball and a children's play area.

Private Open Space

Private open space within 0.25 mile of the Stoughton Line or the Whittenton Branch consists of the Sheep Pasture area described below.

Sheep Pasture—Sheep Pasture is east of the Stoughton Line and southeast of Easton Village in Easton (Figure 4.10-5b). The pasture is adjacent to the Old Baldwin Street Dump. The approximately 154-acre Sheep Pasture is owned and managed by the Natural Resources Trust of Easton and serves as the Natural Resources Trust of Easton's headquarters. Sheep Pasture is a wildlife sanctuary and the Natural Resources Trust of Easton operates many educational programs from this site, including day camps for children.

4.10.3 Analysis of Impacts and Mitigation

This section identifies the effects to protected open space or designated ACECs that may result from implementing each of the proposed South Coast Rail project alternatives (including railroad or highway alignments, train or bus stations, and layover facilities).

4.10.3.1 Impact Assessment Methodology

As required by the CEQ under NEPA, the analysis of the environmental consequences includes discussion of the direct and indirect effects of a proposed action, and their significance. Direct effects are defined as those "which are caused by the action and occur at the same time and place." Indirect

effects are defined as those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."

Similarly, MEPA requires "a detailed description and assessment of the negative and positive potential environmental impacts of the Project and its alternatives. The EIR [Environmental Impact Report] shall assess (in quantitative terms, to the maximum extent practicable) the direct and indirect potential environmental impacts from the Project that are within the Scope. The assessment shall include both short-term and long-term impacts for all phases of the Project (e.g., acquisition, development, and operation) and cumulative impacts of the Project, any other Projects, and other work or activity in the immediate surroundings and region."

- The impact assessment focuses on acquisition of property within protected open spaces or ACECs, responding to these aspects of the Certificate requirements listed above. Other requirements, such as evaluation of wetlands, water resources, biodiversity, and rare species within protected open spaces or ACECs, are addressed in detail in other sections specific to those issues and summarized in this section.

The methods for evaluating of potential direct and indirect effects of the South Coast Rail alternatives to protected open spaces and ACECs are described below.

Method for Assessing Direct Impacts

Potential direct impacts to protected open spaces and ACECs were evaluated by reviewing areas where new construction would be required for each of the alternative alignments with respect to mapped sites to identify where the corridors passed through, were adjacent to, or were proximate to (within 0.5 mile of) these sites. For the purposes of this evaluation, "new construction" is defined as upgrading existing rail lines, reconstructing rail lines along historic railroad alignments, replacing existing railroad bridges and culverts, constructing new permanent or temporary railroad bridges, reconfiguring at-grade road/railroad crossings, and constructing new grade-separated road/railroad crossings.

The analysis was conducted to determine if:

- Land acquisition would be required; or
- The temporary or permanent use of protected open space or ACECs would adversely affect traffic patterns near or access to or within those protected open spaces or ACECs.

For the purposes of this evaluation, "land acquisition" is defined as taking a greater than 500-square-foot portion, or a sliver great than 10 feet wide, of any parcel outside of the existing rights-of-way to accommodate permanent construction impacts, and are based upon conceptual engineering plans. Parcel acquisition below this threshold was excluded because using small portions of the protected open space or ACEC is unlikely to change the conservation or recreation function of the parcel. Final engineering for the selected alternative would allow more specific identification of land acquisition requirements of small portions of parcels. Minor open spaces, such as landscaping elements along public roadways, were also not considered in the evaluation of land acquisition. Temporary construction impacts outside of the existing rights-of-way would not require land acquisition and are therefore not considered in this evaluation. However, obtaining a temporary construction easement in an Article 97

land could require approval by the legislature. Land acquisition within ACECs was only reviewed with respect to publicly owned parcels.

Aerial photographs were examined in reference to preliminary engineering plans to identify encroachments into protected open spaces or ACECs, and to identify potential substantive changes access to the sites based upon any necessary road closures or realignments. Final engineering plans may show an increase or decrease of the actual area of acquisition required.

The most current version of the South Coast Rail design was reviewed to identify where open space impacts may occur. Potentially impacted locations were evaluated to determine acquisition requirements and ascertain the nature and extent of certain open space resources, such as visual and recreational values (e.g., Wild and Scenic River designation), at each location.

Specific resource aspects of protected open spaces or ACECs are addressed in other chapters, as follows:

- Chapter 4.14, *Biodiversity, Wildlife, and Vegetation*, includes an assessment of the alternatives' impact to biodiversity in protected open spaces or ACECs.
- Chapter 4.11, *Farmland Soils*, includes a review of agricultural development to identify locations where activities associated with each alternative could adversely impact prime farmland, unique farmland, or farmland of statewide or local importance, within protected open spaces or ACECs.
- Chapter 4.8, *Cultural Resources*, includes a review of cultural resources data to identify locations where alternatives could adversely impact historic or archaeological resources in protected open spaces or ACECs.
- Chapter 4.15, *Threatened and Endangered Species*, includes a review of biological data to identify locations where alternatives could adversely impact rare species in protected open spaces or ACECs.
- Chapter 4.17, *Water Resources*, includes a review of hydrologic data to identify locations where alternatives could adversely impact water quality or hydrology in protected open spaces or ACECs.
- Chapter 4.16, *Wetlands*, identifies wetlands where alternatives could adversely impact the functions and values of these resources in protected open spaces or ACECs.

Method for Assessing Indirect Impacts

Potential indirect effects to protected open spaces and ACECs are addressed in Chapter 5, *Summary of Indirect Effects and Cumulative Impacts.* The analysis of indirect effects was conducted to identify any growth-inducing effects and other effects related to induced changes that may result in a change in use of protected open spaces or ACECs.

4.10.3.2 Impacts of Alternatives by Element

No-Build (Enhanced Bus) Alternative

The No-Build Alternative (Enhanced Bus) would improve transit service to Boston from New Bedford, Fall River, and Taunton by adding more buses but using smaller capital investments than are proposed in the Build Alternatives. Under this alternative, no new rail or bus service would be provided to Southeastern Massachusetts.

The No-Build Alternative plan includes bus schedule enhancements, transportation demand management, and transportation policy enhancements for commuter bus. In addition to these enhancements, and incentives would enable the private commuter bus service operators to acquire a new fleet of fuel efficient and clean emission buses. Ideally, these buses would provide rider comfort and amenities comparable to commuter rail service.

Existing commuter bus service to Boston from New Bedford, Fall River, and Taunton is currently provided by three commuter bus carriers: DATTCO provides Boston – New Bedford service; Peter Pan provides Boston – Fall River bus service; and Bloom provides Boston – Taunton service.

Some of these alignments and associated Park and Ride facilities pass through or are in proximity to protected open spaces and/or ACECs. However, given that these alignments would not change and no new construction or land acquisition would be required for the No-Build Alternative, this alternative would not directly affect protected open spaces and/or ACECs. Should three of the Park-and-Ride facilities that are at capacity need to be expanded or relocated, such could be achieved without requiring construction within protected open spaces and/or ACECs.

Southern Triangle (Common to All Build Alternatives)

Portions of the rail lines within the southern part of the South Coast Rail study area are common to all Build Alternatives. These rail lines form a rough triangular shape running south from Myricks Junction to Fall River (the Fall River Secondary) and from Weir Junction through Myricks Junction to New Bedford (the New Bedford Main Line), and are therefore referred to as the Southern Triangle (Figure 1.4-1). The following sections describe the environmental consequences to protected open spaces and ACECs that may result from new construction for these two components of the Build Alternatives. The northern part of the South Coast Rail study area is described in subsequent sections.

Fall River Secondary Rail Segment

The 12.3 miles of existing freight track along the existing Fall River Secondary freighttrack would be upgraded and maintained to Federal Rail Administration (FRA) Class 7 options[22] for the South Coast Rail project. The line would be double-track from Weir Junction to Myricks Junction, with a 0.9-mile third track for freight movements near Taunton Depot Station. A short segment of the line would be double-track south of Myricks Junction, 0.8 mile. The remainder of the line would be single-track, with the exception of a 1.8-mile double-track section in Freetown and a 1.7-mile section in New Bedford. Public at-grade road/railroad crossings that would remain open would be reconfigured and/or improved to meet current safety standards. The existing freight service using the Fall River Secondary is diesel-powered; no electrical infrastructure is present. New catenary supports and wires would need to be

[22] FRA. 2009. 49 CFR 213.9 Classes of Track: Operating Speed Limits. US Department of Transportation, Federal Rail Administration.

constructed along the length of the line, and traction power facilities at selected locations, for the electric alternatives.

Two new stations would be constructed in Fall River (Battleship Cove and Fall River Depot) and one new station would be constructed in Freetown (Freetown). One new layover facility would be constructed in Fall River, at the Weaver's Cove East site. Potential impacts to protected open spaces and ACECs resulting from constructing and using the new stations and layover facility along the Fall River Secondary are considered in Sections 4.10.3.3 and 4.10.3.4, respectively.

Several protected open spaces are adjacent to the Fall River Secondary. No ACECs are present along this corridor and, accordingly, no direct effects to ACECs would result from the Fall River Secondary construction activities. Although protected open spaces are near the Fall River Secondary, no protected open space land would be acquired for improving the line for either the electric or the diesel alternatives. Figure 4.10-4a-c shows the Fall River Secondary alignment construction disturbance limits and the nearby protected open spaces.

Access to protected open spaces along the Fall River Secondary would not be affected by the Build Alternatives.

New Bedford Main Line Rail Segment

The 19.4-mile existing freight tack along the New Bedford Main Line would be upgraded to FRA Class 7 options for the South Coast Rail project. The line would be double-track from Weir Junction to Myricks Junction, with a 0.9-mile third track for freight movements near Taunton Depot Station. A short segment of the line would be double-track south of Myricks Junction, 0.8 mile. The remainder of the line would be single-track, with the exception of 1.8-mile double-track section in Freetown and a 1.7-mile section in New Bedford. Public at-grade road/railroad crossings that would remain open would be reconfigured and/or improved to meet current safety standards. The existing freight service using the New Bedford Main Line is diesel-powered; no electrical infrastructure is present. New catenary supports and wires would need to be constructed along the length of the line, and traction power facilities at selected locations, for the electric alternatives. Two new train stations would be constructed in New Bedford (King's Highway and Whale's Tooth) and one new train station would be constructed in Taunton (Taunton Depot). One new layover facility would be constructed in New Bedford at either the Wamsutta site. Potential impacts to protected open spaces and ACECs resulting from constructing and using the new stations and layover facility along the New Bedford Main Line are considered in Sections 4.10.3.3 and 4.10.3.4, respectively.

The New Bedford Main Line passes through or is adjacent to several protected open spaces (Figures 4.10-3a-d). No ACECs are present along this corridor and, accordingly, no direct effects to ACECs would result from the New Bedford Main Line construction activities.

No protected open space would be acquired for improving the New Bedford Main Line, and public access to nearby protected open spaces would not be impacted.

Stoughton Electric Alternative

The Stoughton Electric Alternative north of the Southern Triangle would comprise two segments: a portion of the Northeast Corridor and all of the Stoughton Line. This alternative would use the Northeast Corridor from South Station to Canton Junction. From Canton Junction, the existing Stoughton Line

would be used to the existing Stoughton Station. Commuter rail service would be extended, reconstructing a railroad on an out-of-service railroad bed, south through Raynham Junction to Weir Junction in Taunton. This alignment joins the New Bedford Main Line at Weir Junction, the northern end of the Southern Triangle.

This evaluation focuses on the existing and extended Stoughton Line segment. No construction would be required in the Northeast Corridor segment for this alternative, and the Southern Triangle portions were addressed above.

The existing single track commuter rail line would be upgraded and maintained to FRA Class 7. A new second track would be constructed from Canton Junction to the existing Stoughton Station, a distance of 3.8 miles, where existing passenger service ends. A new double track would extend south of Stoughton Station to the proposed North Easton Station. The remainder of the line south to Weir Junction would be single- track, with a 2.2-mile long double-track section in Raynham, and a 0.6 mile long double-track section in Taunton. Approaching Weir Junction, an additional 0.4 mile siding track would be provided for freight use only. All of the existing at-grade road/railroad crossings would be reconfigured and/or improved to meet current safety standards. New catenary supports and wires would be constructed along the length of the line, and electric substations at selected locations.

One existing train station along the Stoughton Line would be reconstructed (Canton Center). Four new train stations would be constructed along this alignment (Stoughton, North Easton, Easton Village, Raynham Park, and Taunton). No new layover facilities would be constructed along this segment. Potential impacts to protected open spaces and ACECs from reconstructing the existing and developing the new stations along the Stoughton Line are considered in Section 4.10.3.3.

One ACEC is present along this corridor, the Hockomock Swamp ACEC. The Stoughton Line passes through the Hockomock Swamp ACEC beginning at Depot Street in Easton and extending south to near I-495 in Raynham. A 1.6-mile long trestle would be constructed where the Stoughton Line passes through the Hockomock Swamp within the ACEC. The Stoughton Line also passes through or is adjacent to numerous protected open spaces, including Pine Swamp south of Taunton.

The estimated area of protected open space and publicly owned parcels in the ACEC required for constructing the Stoughton Electric Alternative north of the Southern Triangle is listed in Table 4.10-3 and shown in Figures 4.10-5a-e. As a result of the ongoing refinement of the design since publication of the DEIS/DEIR, and in particular the track alignment, acquisition requirements of Article 97-protected properties have been reduced by avoiding or minimizing encroachments into these properties. For example the DEIS/DEIR estimated that the Stoughton Electric Alternative would impact 0.29 acre of Easton Conservation Land, an Article 97-protected property. However, the current design of the Stoughton Electric Alternative no longer requires that land acquisition. Based on the current level of design, this alternative would require the acquisition of a small portion of one parcel of Article 97-protected property.

The required acquisition in Stoughton, a 0.16-acre portion of the 19.38-acre Stoughton Memorial Conservation Land, would be used to re-route Morton Street (Figure 4.10-7). This acquisition of Article 97-protected land would be necessary in order to accommodate the western edge of the new road and an embankment sloping down from the road bed to the adjacent natural ground surface. The Easton acquisition would be used for a traction power facility (TPSS-1).

Table 4.10-3 Stoughton Electric Alternative Protected Open Space Acquisition

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Stoughton	Stoughton Memorial Conservation Land	Public	Conservation/Recreation	0.16
Easton	Southeast Regional Vocational Tech School	Public	Recreation	0.50
Total				0.66

Sources: MassGIS 2002, 2005; municipal data 2009, aerial mapping and online research (various).

No land would be acquired from the Hockomock Swamp WMA or the Pine Swamp protected open space. The existing railroad grade is already owned by MBTA and is therefore not Article 97 land.

The existing right-of-way through the Hockomock Swamp is typically 66 feet wide, and all work for the trestle would be accomplished within the right-of-way. No land acquisition from the Massachusetts Division of Fisheries and Wildlife would be required within the Hockomock Swamp WMA. Access for constructing the trestle would be from the north at Foundry Street and from the south at Racetrack Crossing. There would be no requirement for a separate access road, either within or outside the right-of-way. Access for operations and maintenance would be from the trestle structure. A track turnout is proposed on the superstructure for maintenance vehicles. Areas below the superstructure would be accessed from each of the piers with a ladder. There would be no need for vehicular access at ground level.

Impacts to the Hockomock Swamp open space would include the loss of public access to the swamp along the railroad alignment, and a 0.5 acre property acquisition for the construction of a traction power facility (TPSS-1) within the Hockomock Swamp ACEC, located at the Southeast Regional Vocational Tech School in Easton.

No street closures in the immediate vicinity of protected open spaces or the ACEC are planned for the Stoughton Electric Alternative. During operations, temporary delays in traffic flow may occur at any road/railroad at-grade crossings; none of these delays are considered likely to substantively impact access to protected open spaces or the ACEC. Access to the Hockomock Swamp ACEC and WMA would be impacted along the Stoughton Line railroad bed: informal recreational usage of the railroad bed by pedestrians, bicyclists, all-terrain vehicles, and other similar users would be terminated. Those users would be forced to seek other sites or abandon these activities. It is not known if relocated recreational activities would be likely to occur elsewhere within the Hockomock Swamp or at other sites that are not either protected open spaces or ACECs.

Stoughton Diesel Alternative

The Stoughton Diesel Alternative is identical to the Stoughton Electric Alternative with the exception of the locomotive power source. Diesel-powered train service differs from electric-powered service in not requiring electrical infrastructure. There would be no overhead catenary system or traction power facilities for the Stoughton Diesel Alternative. All other aspects of the Stoughton Diesel Alternative are common with the Stoughton Electric Alternative, as described above.

The estimated area of protected open space required for constructing the Stoughton Diesel Alternative in Stoughton Line segment is listed in Table 4.10-4 and shown in Figure 4.10-7. This land acquisition is necessary for the rerouting of Morton Street. This parcel is owned by the Town of Stoughton, and would therefore be considered Article 97 land subject to the provisions of the EEA's Article 97 Land Disposition Policy.

Table 4.10-4 Stoughton Diesel Alternative Protected Open Space Acquisition

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Stoughton	Stoughton Memorial Conservation Land	Public	Conservation/Recreation	0.16

Sources: MassGIS 2002, 2005; municipal data 2009, aerial mapping and online research (various).

Whittenton Electric Alternative

The Whittenton Electric Alternative is identical to the Stoughton Electric Alternative alignment described above except for the segment of the Stoughton Line between Raynham and Weir Junctions. Specifically, at Raynham Junction the Whittenton Alternative would divert to the southwest to connect to the abandoned Whittenton Branch. The Whittenton Branch would extend south and west to the Attleboro Secondary at Whittenton Junction. Along the Attleboro Secondary, the Whittenton Electric Alternative would extend to Weir Junction in Taunton. Track infrastructure improvements would include 3.6 miles of new single-track on the Whittenton Branch and 2.2 miles of single-track reconstruction on the Attleboro Secondary with a 0.3-mile siding reserved for the proposed Dana Street Station. The southernmost portion of the Stoughton Line, from Raynham Junction to Weir Junction (a distance of 5.1 miles), would not be used if this alternative is selected.

This evaluation focuses on the Whittenton Branch and Attleboro Secondary components; other portions of this alternative are described in in the preceding Southern Triangle and Stoughton Electric Alternative sections.

New track would be placed on the out-of-service Whittenton Branch railroad bed from Raynham Junction to Whittenton Junction, and 2.5 miles of the Attleboro Secondary track infrastructure would be reconstructed. Existing public at-grade road/railroad crossing would be reconfigured and/or improved to current safety standards. New catenary supports and wires would be constructed along the length of the line. One new station (Dana Street) would be constructed along the Attleboro Secondary.

The Whittenton Branch and Attleboro Secondary do not pass through nor are they adjacent to any ACEC. Although these portions of the Whittenton Electric Alternative are near the Canoe River Aquifer ACEC, the Three Mile River ACEC and the southern limit of the Hockomock Swamp ACEC, no ACECs or protected open space would be acquired. Additionally, the Whittenton Electric Alternative would not use the southernmost portion of the Stoughton Line, and would therefore not pass through the Pine Swamp protected open space, south of Raynham.

Refinements to the track design of the Whittenton Electric Alternative have eliminated the protected open space acquisition described in Section 4.10.3.2 of the DEIS/DEIR. No protected open space, including land protected by Article 97, would be acquired for the Whittenton Branch or Attleboro Secondary. Thus the Whittenton Electric Alternative would have the same impacts on protected open space and ACECs as the Stoughton Electric Alternative (see Table 4.10-3 above).

No public street closures in the vicinity of the protected open space or the Hockomock Swamp ACEC are planned. During operations, temporary delays in traffic flow may occur at the road/railroad at-grade crossings; none of these delays are considered likely to permanently impact access to the protected open space or the ACEC.

Whittenton Diesel Alternative

The Whittenton Diesel Alternative is identical to the Whittenton Electric Alternative with the exception of the locomotive power source. As described above for the Stoughton Diesel Alternative, diesel-powered train service differs from electric-powered service in not requiring electrical infrastructure. The footprint of the affected area would be smaller since power traction facilities would not be necessary. The Whittenton Diesel Alternative would not require the acquisition of any protected open space, including land protected by Article 97, along the Whittenton Branch or Attleboro Secondary portions of the alignment. As such, the Whittenton Diesel Alternative would have the same impacts on protected open space and ACECs as the Stoughton Diesel Alternative (see Table 4.10-4above).

4.10.3.3 Stations

This section provides basic descriptions of each train station, an indication of its location in or near any protected open space or ACEC, and a qualitative evaluation of the direct and indirect impacts to these sites potentially resulting from constructing (or reconstructing) and using each station for the South Coast Rail project. Because stations have different types of impacts and settings and are in several cases shared among multiple alternatives they were addressed separate from the alignments, in order to avoid redundant discussion.

Battleship Cove Station

The Battleship Cove Station (Figure 4.10-8) would be a new station constructed along the Fall River Secondary that would serve all Build Alternatives. It would be located on Water Street in Fall River, near the southern terminus of the Fall River Secondary. The Battleship Cove Station would not include any parking facilities; it is intended as a drop-off/pick-up station.

The Battleship Cove Station site is immediately adjacent to land previously developed by the city for the Ponta Delgada Plaza, a protected open space. The site is also near three other protected open spaces: Fall River Heritage State Park, Heritage Park, and Turner Playground. This site is not within or near any ACECs. No protected open space acquisition would be required for constructing the Battleship Cove Station. An agreement with the City of Fall River would be negotiated to use the Ponta Delgada Plaza as a drop-off/pick-up point for passengers using the train station.

Increased automobile traffic at the Ponta Delgada Plaza may result from using the new Battleship Cove Station there, as the commuters may use cars to transport themselves to and from the drop-off/pick-up station. Water Street also provides access to the Fall River Heritage State Park; access to this protected open space may also be impacted by increased traffic congestion at the Battleship Cove Station. However, the level of service on the adjacent streets would not change, and peak traffic usage (morning and evening commute times) would not coincide with likely park recreational use (mid-day).

Canton Center Station

The Canton Center Station (Figure 4.10-9) is an existing train station along the Stoughton Line that would be reconstructed and would serve all Build Alternatives. Located at 710 Washington Street in Canton, this station is an active transit facility that is near the Curtis Road Conservation Area and Bolivar Swimming Area protected open spaces. This site is not within or near any ACECs.

The Canton Center Station is located on Washington Street, which also provides local access to the nearby Curtis Road Conservation Area. The Bolivar Swimming Area is accessible from Bolivar Street,

which intersects Washington Street. Given the current active use of the Canton Center Station as a transit facility and the distance to these protected open spaces, substantive changes in access to the Curtis Road Conservation Area or the Bolivar Swimming Area are unlikely to occur as a result of further developing the Canton Center Station.

Dana Street Station

The Dana Street Station (Figure 4.10-10) would be a new station constructed along the Attleboro Secondary that would serve the Whittenton Alternative only. The proposed Dana Street Station site is located just south of the Danforth Street grade crossing, on the east side of the railroad between the alignment and Dana Street.

The Dana Street Station site is a currently vacant lot that is not near any protected open spaces or ACECs. No protected open space land would be acquired for constructing the Dana Street Station.

Easton Village Station

The Easton Village Station (Figure 4.10-11) would be a new train station constructed along the Stoughton Line that would serve all Build Alternatives. The Easton Village Station site is on Sullivan Avenue at the transition point to Mechanic Street (near the intersection with Pond Street) in Easton.

The Easton Village Station site is a partially developed parcel that is adjacent to the Veterans Memorial Park, Frothingham Park, and Ricker Field protected open spaces. It is not within or near any ACECs. No protected open space land would be acquired for constructing the Easton Village Station.

The Easton Village Station site is on Sullivan Street, across the road from Veterans Memorial Park. Local traffic likely uses Sullivan Street to access the park. Temporary delays due to traffic congestion resulting from commuters accessing the Easton Village Station may impact traffic patterns and access to this proximate protected open space. However, peak traffic usage (morning and evening commute times) would not coincide with likely park recreational use (mid-day). Frothingham Park is accessed from Barrows Street or Sheridan Street, neither of which would be directly impacted by the Easton Village Station. Ricker Field is accessed from Main Street, a surface street separated from Sullivan Street by the Stoughton Line. Access to Ricker Field is unlikely to be impacted by use of the Easton Village Station.

Fall River Depot Station

The Fall River Depot Station (Figure 4.10-12) would be a new station constructed along the Fall River Secondary to serve all Build Alternatives. It would be located near the intersection of North Davol Street and Pearce Street in Fall River.

The Fall River Depot Station site is a previously developed parcel that is near five protected open spaces. This site is not within or proximate to any ACECs. No protected open space land would be acquired for constructing the Fall River Depot Station.

Local traffic is unlikely to use the surface streets in the immediate vicinity of the Fall River Depot Station site to access the nearby protected open spaces, all of which are separated from the site by major highways (Routes 138 and 79) or the existing Fall River Secondary, and have better access from other streets. No changes in access to the protected open spaces are expected.

Freetown Station

The Freetown Station (Figure 4.10-13) would be a new station constructed along the Fall River Secondary to serve all Build Alternatives. It would be located along South Main Street in Freetown.

The Freetown Station site is a previously developed parcel that is near the Freetown-Fall River State Forest protected open space. It is not proximate to or within any ACECs. No protected open space land would be acquired for constructing the Freetown Station.

The portion of the Freetown-Fall River State Forest proximate to the Freetown Station site is an isolated parcel, separated from the main body of the state forest by Route 24 and the existing Fall River Secondary. The isolated parcel is also separated from the Freetown Station site by the Fall River Secondary. Access to this isolated parcel is unlikely to be affected by constructing or using the Freetown Station.

King's Highway Station

The King's Highway Station (Figure 4.10-14) would be a new station constructed along the New Bedford Main Line to serve all Build Alternatives. It would be located near the intersection of King's Highway and Tarkiln Hill Road in New Bedford. The intersection would be reconfigured as part of the South Coast Rail project.

The King's Highway Station site is a previously developed parcel that is near two protected open spaces: the Charles S. Ashley School and Brooklawn Park. This location is not within or near any ACEC. No protected open space land would be acquired for constructing the King's Highway Station.

The nearby protected open spaces are a school and a neighborhood park, both with several surface street access options. Commuter automobile traffic to and from the King's Highway Station would be using different routes and generally moving away from, rather than toward, these protected open spaces. And, peak traffic usage (morning and evening commute times) would not coincide with likely park recreational use (mid-day). Access to the protected open spaces would not be impacted by the reconfigured intersection or the King's Highway Station.

North Easton Station

The North Easton Station (Figure 4.10-15) would be a new train station constructed along the Stoughton Line that would serve all Build Alternatives. It would be located at 21 Washington Street in Stoughton, behind the Roche Brothers Shopping Plaza.

The North Easton Station site is an undeveloped parcel that is near Town of Easton Conservation Land, Wedgewood Drive Area, and Stoughton Memorial Conservation Land protected open spaces. It is not within or near any ACECs. No protected open space land would be acquired for constructing the North Easton Station.

Local traffic likely uses Washington Street (Route 138) to access the nearby Easton Conservation Land and the Stoughton Memorial Conservation Land. Temporary delays due to congestion resulting from commuters accessing the North Easton Station may impact access to these nearby protected open spaces. Access to the Wedgewood Drive Area is from alternate routes distant from the station site.

Raynham Park Station

The Raynham Park Station (Figure 4.10-16) would be a new train station constructed along the Stoughton Line that would serve the Build Alternatives. It would be located at 1958 Broadway in Raynham, at the former Raynham Park greyhound dog racing facility.

The Raynham Park site is a developed parcel that is near the Hockomock Swamp WMA-protected open space and partially within the Hockomock Swamp ACEC. No protected open space or publicly owned parcels in the ACEC would be acquired for constructing the Raynham Park Station.

Commuters accessing the Raynham Park Station would use Broadway (Route 138), passing through the former Raynham Park greyhound dog racing facility property. Broadway also provides access to the Hockomock Swamp WMA and ACEC at numerous points distant from the Raynham Park Station site. Temporary delays due to traffic congestion on Broadway may result during peak usage periods, but are unlikely to impact access to the protected open space or ACEC.

Stoughton Station

The relocated Stoughton Station (Figure 4.10-17) would be a new train station that would serve all Build Alternatives. The station would be constructed along the Stoughton Line, west of the existing railroad tracks and north of Brock Street. The site is a previously developed area consisting of commercial/industrial businesses, parking areas, and some undeveloped wooded land.

The Stoughton Station site is privately owned and does not include public open space. The site is proximate to five protected open spaces but is not within or proximate to any ACECs. No protected open space land would be acquired for reconstructing the Stoughton Station.

Local traffic likely uses Park Street, Washington Street, and Cushing Street to access the nearby protected open spaces (Marks Field, Woods Pond, Meads Meadow, Halbran Field, and Lehan Field). These streets are located in the vicinity of the Stoughton Station. Use of these streets by commuters during morning and evening commute times would not coincide with the use of these streets to access to nearby protected open spaces during the mid-day. Given the current, active use of the Stoughton Station for commuter rail service, no additional direct impact to access to nearby protected open spaces from implementing the South Coast Rail project is likely.

Taunton Station

The Taunton Station (Figure 4.10-18) would be a new train station constructed along the Stoughton Line that would serve the Stoughton Alternatives. It would be located near the intersection of East Arlington Street and William Hooke Lane in Taunton.

The Taunton Station site is a previously developed parcel near the Hartshorn Park and Plonka Property protected open spaces. It is not within or proximate to any ACECs. No protected open space land would be acquired for constructing the Taunton Station.

Commuters would likely access the Taunton Station by Arlington Street or Dean Street (Route 44). Temporary delays due to congestion during peak usage periods may result on these roads. Both Hartshorn Park and the Plonka Property are accessed from Longmeadow Road, which intersects Dean Street east of the proposed station location. Traffic congestion near the site is unlikely to extend as far as the intersection with Longmeadow Drive. Additionally, peak traffic usage (morning and evening

commute times) would not coincide with likely park recreational use (mid-day). Traffic patterns near and access to these protected open spaces would not be impacted by use of the Taunton Station.

Taunton Depot Station

The Taunton Depot Station (Figure 4.10-19) would be a new station constructed along the New Bedford Main Line that would serve all Build Alternatives. It would be located at 872 County Street in Taunton, behind the existing Target Plaza.

The Taunton Depot Station site is an undeveloped parcel that is not within or near any protected open spaces or ACECs.

Whale's Tooth Station

The Whale's Tooth Station (Figure 4.10-20) would be a new station constructed along the New Bedford Main Line constructed to serve all Build Alternatives. It would be located near the intersection of Acushnet Avenue and Hillman Street, near the southern terminus of the New Bedford Main line. The City of New Bedford has constructed a parking lot at this site in anticipation of the future station.

The Whale's Tooth Station site is a previously developed parcel that is near the New Bedford Whaling National Historic Park, Fisherman's Wharf Pier #3, State Pier, Clasky/Common Park, and the John Avery Parker School protected open spaces. Several un-named protected open spaces are also proximate to this site. No ACECs are near the Whale's Tooth Station site. No protected open space land would be acquired for constructing the Whale's Tooth Station.

Local traffic may use Acushnet Avenue, Hillman Street, or the nearby Herman Melville Boulevard to access the New Bedford Whaling National Historic Park and the adjoining Fisherman's Wharf Pier #3 or State Pier. Commuter traffic to and from the Whale's Tooth Station may temporarily increase congestion on these roads during high usage periods, causing temporary delays in accessing these protected open spaces. However, peak traffic periods (morning and evening commute times) are unlikely to coincide with use of these protected open spaces (mid-day). No changes in access to the other proximate protected open spaces are expected.

4.10.3.4 Layover Facilities

The Build Alternatives would require midday storage in the Boston area. The mid-day train layover facility is being investigated separately as part of the South Station Expansion Project. Two overnight layover facilities are planned for the Southern Triangle: one each at or near the end of the Fall River Secondary and the New Bedford Main Line. Of the three alternative sites identified in Fall River, the Weaver's Cover East site has been selected as the preferred layover facility site. Of the two alternative sites in New Bedford, the Wamsutta site been identified as the preferred site. This section provides descriptions of each layover facility, an indication of its location in or near any protected open space or ACEC and any parcel acquisition requirements, and a qualitative evaluation of the direct and indirect impacts to these sites potentially resulting from constructing and using these facilities for the South Coast Rail project.

Wamsutta Layover Facility

The Wamsutta site layover facility (Figure 4.10-21) would be constructed along the New Bedford Main Line and would serve all Build Alternatives. It would be located near the intersection of Wamsutta Street and Herman Melville Boulevard, near the southern terminus of the New Bedford Main line.

The Wamsutta layover facility alternative location is a previously developed site that is near the Clasky/Common Park and John Avery Parker School. This site is not within or near any ACECs. No protected open space land would be acquired for constructing a layover facility at the Wamsutta site.

Traffic on Hermann Melville Boulevard would pass by the Wamsutta site, but access to the nearby protected open spaces is afforded by other surface streets which are separated from the Wamsutta site by Route 18. No changes in access to the other protected open spaces are expected.

Weaver's Cove East Layover Facility

The Weaver's Cove East site layover facility (Figure 4.10-22) would be constructed along the Fall River Secondary and would serve all Build Alternatives. It would be located in Fall River off of Main Street between the existing Fall River Secondary freight line and Main Street, approximately 2.5 miles from the southern terminus of the Fall River Secondary.

The Weaver's Cove East site is a partially developed parcel that is not located within or near any protected open space or ACECs.

4.10.3.5 Summary of Impacts by Alternative

This section summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing each of the South Coast Rail project alternatives. The individual components of each element are grouped by alternative, and the potential direct impacts to protected open spaces and ACECs are tabulated.

Stoughton Electric Alternative

The Stoughton Electric Alternative (Figure 1.4-2) would comprise the elements listed in Table 4.10-5, which also summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

For the Stoughton Electric Alternative, approximately 0.66 acre of land would be acquired from protected open spaces. Legal access to protected open spaces and ACECs would not be significantly impacted by constructing, reconstructing, or using the railroad alignments, stations, or layover facilities. Unauthorized access to protected open space and ACECs along the out-of-service portion of the Stoughton Line would cease.

Table 4.10-5 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Stoughton Electric Alternative

Element/Component	Direct Effects	
	Acquisition Area (acres)	Number of Parcels
Railroad Alignments		
Northeast Corridor	0	
Stoughton Line	0.66	2
Fall River Secondary	0	
New Bedford Main Line	0	
Stations		
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Park	0	
Taunton	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King's Highway	0	
Whale's Tooth	0	
Layover Facility Alternatives		
Wamsutta Site	0	
Weaver's Cove East Site	0	
TOTAL	**0.66**	**2**

The Stoughton Electric Alternative's impacts to ACEC key functions and values are summarized below:

- **Biodiversity**: The Stoughton Electric Alternative is expected to affect biodiversity in the Hockomock Swamp ACEC areas adjacent to the reconstructed track to a limited degree as a result of increased train traffic that would reduce habitat quality for some wildlife species and would create a partial barrier to wildlife movement. Although partially mitigated by the Hockomock Swamp Trestle, using this railroad bed would affect the connectivity of adjacent habitats and their overall biodiversity value, as described in Chapter 4.14.

- **Farmland soils**: The Stoughton Electric Alternative would impact designated farmland soils that occur at traction power station TPSS-1, located within the Hockomock Swamp ACEC. Construction of this site would impact 1.1 acres of designated farmland soils.

- **Historic and archaeological resources**: The Stoughton Electric Alternative would not affect historic/archaeological properties known to be listed or eligible for listing in the National Register of Historic Places within any ACEC. As a result of installing the overhead catenary system, this alternative would require construction in areas of moderate sensitivity for archaeological resources. This alternative would also require construction (installing pilings for the trestle) in areas of moderate sensitivity for archaeological resources. Additional investigation would be required to determine if any archaeological resources within the Hockomock Swamp ACEC would be affected.

- **Rare species**: The Stoughton Electric Alternative would potentially impact rare species habitat within the Hockomock Swamp ACEC and Pine Swamp, as it crosses two Priority and

Estimated Habitat polygons (PH1392/EH59 and PH1297/EH1077, respectively). This alternative would result in the loss of potential habitat to species known to be present within the Priority Habitats crossed by this segment, including the eastern box turtle (*Terrepene carolina carolina*), Blanding's turtle (*Emydoidea blandingii*), blue spotted salamander (*Ambystoma laterale*), gypsywort (*Lycopus rubellus*), and Hessel's hairstreak (*Callophrys hesseli*). The Hockomock Swamp ACEC provides habitat for at least 13 species listed as rare, endangered, or of special concern by the NHESP. Within the part of the ACEC crossed by the Stoughton Alternative, four state listed species (blue-spotted salamander, Blanding's turtle, eastern box turtle, and gypsywort) are known to be present.

- **Water resources**: The Stoughton Electric Alternative would not create a new or additional discharge to the Neponset River and Sprague Pond where the Northeast Corridor passes through the Fowl Meadow and Ponkapoag Bog ACEC. The Hockomock Swamp and Fowl Meadow ACECs would also potentially be impacted from stormwater discharges to Black Brook and the East Branch of the Neponset River, respectively, from the Stoughton Electric Alternative. However, minimal impacts to ACECs from stormwater discharges would result from the project and surface or groundwater resources within the ACECs would not be impaired.

- **Wetlands**: Potential permanent wetland and waterway impacts along the Stoughton Line include the loss of 1.7 acres within the Hockomock Swamp ACEC, out of a total of 8,260 acres of wetlands within this ACEC.

Stoughton Diesel Alternative

The Stoughton Diesel Alternative would comprise the same elements as Stoughton Electric Alternative listed above (shown in Figure 1.4-2) but would not need electrical infrastructure. Table 4.10-6 summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

For the Stoughton Diesel Alternative, approximately 0.16 acre of land would be acquired from protected open spaces. No publicly owned parcels of ACEC land would be acquired. Access to protected open spaces and ACECs would not be significantly impacted by constructing, reconstructing, or using the railroad alignments, stations, or layover facilities.

The Stoughton Diesel Alternative's impacts to ACEC key functions and values are summarized below:

- **Biodiversity**: The Stoughton Diesel Alternative is expected to affect biodiversity in the Hockomock Swamp ACEC areas adjacent to the reconstructed track to a limited degree as a result of increased train traffic which would reduce habitat quality for some wildlife species and would create a partial barrier to wildlife movement. Although partially mitigated by the Hockomock Swamp Trestle, using this railroad bed would affect the connectivity of adjacent habitats and their overall biodiversity value, as described in Chapter 4.14.

- **Farmland soils**: The Stoughton Diesel Alternative would not impact any mapped areas of designated farmland soils within an ACEC.

Table 4.10-6 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Stoughton Diesel Alternative

	Direct Effects	
Element/Component	Acquisition Area (acres)	Number of Parcels
Railroad Alignments		
Northeast Corridor	0	
Stoughton Line	0.16	1
Fall River Secondary	0	
New Bedford Main Line	0	
Stations		
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Park	0	
Taunton	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King's Highway	0	
Whale's Tooth	0	
Layover Facility Alternatives		
Wamsutta Site	0	
Weaver's Cove East Site	0	
TOTAL	**0.16**	**1**

- **Historic and archaeological resources**: The Stoughton Diesel Alternative would not affect known archaeological resources within any ACEC. This alternative would require construction (installing pilings for the trestle) in areas of moderate sensitivity for archaeological resources. Additional investigation would be required to determine if any archaeological resources within the Hockomock Swamp ACEC would be affected.

- **Rare species**: The Stoughton Diesel Alternative would potentially impact rare species habitat within the Hockomock Swamp ACEC and Pine Swamp, as it crosses two Priority and Estimated Habitat polygons (PH1392/EH59 and PH1297/EH1077, respectively). This alternative would result in the loss of potential habitat to species known to be present within the Priority Habitats crossed by this segment, including the eastern box turtle (*Terrepene carolina carolina*), Blanding's turtle (*Emydoidea blandingii*), blue spotted salamander (*Ambystoma laterale*), gypsywort (*Lycopus rubellus*), and Hessel's hairstreak (*Callophrys hesseli*). The Hockomock Swamp ACEC provides habitat for at least 13 species listed as rare, endangered, or of special concern by the NHESP. Within the part of the ACEC crossed by the Stoughton Alternative, four state listed species (blue-spotted salamander, Blanding's turtle, eastern box turtle, and gypsywort) are known to be present.

- **Water resources**: The Stoughton Diesel Alternative would not create a new or additional discharge to the Neponset River and Sprague Pond where the Northeast Corridor passes through the Fowl Meadow and Ponkapoag Bog ACEC. The Hockomock Swamp and Fowl Meadow ACECs would potentially be impacted by stormwater discharges to Black Brook and the East Branch of the Neponset River, respectively, from the Stoughton Diesel Alternative.

However, minimal impacts to ACECs from stormwater discharges would result from the project, and surface or groundwater resources within the ACECs would not be impaired.

- **Wetlands**: Potential permanent wetland and waterway impacts along the Stoughton Line include the loss of 1.7 acres within the Hockomock Swamp ACEC, out of a total of 8,260 acres of wetlands within this ACE.

Whittenton Electric Alternative

The Whittenton Electric Alternative (Figure 1.4-3) would comprise the elements listed in Table 4.10-7, which also summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

For the Whittenton Electric Alternative, approximately 0.66 acre of land would be acquired from protected open spaces. Legal access to protected open spaces and ACECs would not be significantly impacted by constructing, reconstructing, or using the railroad alignments, stations, or layover facilities.

Unauthorized access to protected open space and ACECs along the out-of-service portion of the Stoughton Line would cease.

The Whittenton Electric Alternative's impacts to ACEC key functions and values are summarized below:

- **Biodiversity**: The Whittenton Electric Alternative is expected to affect biodiversity in the Hockomock Swamp ACEC areas adjacent to the reconstructed track to a limited degree as a result of increased train traffic which would reduce habitat quality for some wildlife species and would create a partial barrier to wildlife movement. Although partially mitigated by the Hockomock Swamp Trestle, using this railroad bed would affect the connectivity of adjacent habitats and their overall biodiversity value, as described in Chapter 4.14.

- **Farmland soils**: The Whittenton Electric Alternative would impact designated farmland soils that occur at traction power station TPSS-1, located within the Hockomock Swamp ACEC. Construction of this site would impact 1.1 acres of designated farmland soils.

- **Historic and archaeological resources**: The Whittenton Electric Alternative would not affect known archaeological resources within any ACEC. This alternative, as a result of installing the overhead catenary system, would require construction in areas of moderate sensitivity for archaeological resources. This alternative would also require construction (installing pilings for the trestle) in areas of moderate sensitivity for archaeological resources. Additional investigation would be required to determine if any archaeological resources within the Hockomock Swamp ACEC would be affected.

- **Rare species**: The Whittenton Electric Alternative would potentially impact rare species habitat within the Hockomock Swamp ACEC and Three Mile River ACEC, as it crosses two Priority and Estimated Habitat polygons (PH1392/EH59 and PH261/EH153, respectively). This alternative would result in the loss of potential habitat to species known to be present within the Priority Habitats used by the eastern box turtle, Blanding's turtle and blue spotted salamander along either side of the right-of-way would be impacted by the construction of the railroad. The Hockomock Swamp ACEC provides habitat for at least 13 species listed as rare, endangered, or of special concern by the NHESP. Within the part of

the ACEC crossed by the Stoughton Alternative, four state listed species (blue-spotted salamander, Blanding's turtle, eastern box turtle, and gypsywort) are known to be present.

Table 4.10-7 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Whittenton Electric Alternative

	Direct Effects	
Element/Component	Acquisition Area (acres)	Number of Parcels
Railroad Alignments		
Northeast Corridor	0	
Stoughton Line	0.66	2
Whittenton Branch	0	
Attleboro Secondary	0	
Fall River Secondary	0	
New Bedford Main Line	0	
Stations		
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Park	0	
Dana Street	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King's Highway	0	
Whale's Tooth	0	
Layover Facility Alternatives		
Wamsutta Site	0	
Weaver's Cove East Site	0	
TOTAL	**0.66**	**2**

- **Water resources**: The Whittenton Electric Alternative would not create a new or additional discharge to the Neponset River and Sprague Pond where the Northeast Corridor passes through the Fowl Meadow and Ponkapoag Bog ACEC. The Hockomock Swamp and Fowl Meadow ACECs would potentially be impacted by stormwater discharges to Black Brook and the East Branch of the Neponset River, respectively, from the Whittenton Electric Alternative. However, minimal impacts to ACECs from stormwater discharges would result from the project, and surface or groundwater resources within the ACECs would not be impaired.

- **Wetlands**: Potential permanent wetland and waterway impacts along the Stoughton Line include the loss of 1.7 acres within the Hockomock Swamp ACEC, out of a total of 8,260 acres of wetlands within this ACEC.

Whittenton Diesel Alternative

The Whittenton Diesel Alternative would comprise the same elements as Whittenton Electric Alternative listed above (shown in Figure 1.4-3). Table 4.10-8 summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

For the Whittenton Diesel Alternative, approximately 0.16 acre of land would be acquired from protected open spaces. Legal access to protected open spaces and ACECs would not be significantly impacted by constructing, reconstructing, or using the railroad alignments, stations, or layover facilities.

Unauthorized access to protected open space and ACECs along the out-of-service portion of the Stoughton Line would cease.

The Whittenton Diesel Alternative's impacts to ACEC key functions and values are summarized below:

- **Biodiversity**: The Whittenton Diesel Alternative is expected to affect biodiversity in the Hockomock Swamp ACEC areas adjacent to the reconstructed track to a limited degree as a result of increased train traffic which would reduce habitat quality for some wildlife species and would create a partial barrier to wildlife movement. Although partially mitigated by the Hockomock Swamp Trestle, using this railroad bed would affect the connectivity of adjacent habitats and their overall biodiversity value, as described in Chapter 4.14.

- **Farmland soils**: The Whittenton Diesel Alternative would not impact any mapped areas of designated farmland soils within an ACEC.

- **Historic and archaeological resources**: The Whittenton Diesel Alternative would require construction (installing pilings for the trestle) in areas of moderate sensitivity for archaeological resources. Additional investigation would be required to determine if any archaeological resources within the Hockomock Swamp ACEC would be affected.

- **Rare species**: The Whittenton Diesel Alternative would potentially impact rare species habitat within the Hockomock Swamp ACEC and Three Mile River ACEC, as it crosses two Priority and Estimated Habitat polygons (PH1392/EH59 and PH261/EH153, respectively). This alternative would result in the loss of potential habitat to species known to be present within the Priority Habitats used by the eastern box turtle, Blanding's turtle and blue spotted salamander along either side of the right-of-way would be impacted by the construction of the railroad. The Hockomock Swamp ACEC provides habitat for at least 13 species listed as rare, endangered, or of special concern by the NHESP. Within the part of the ACEC crossed by the Stoughton Alternative, four state listed species (blue-spotted salamander, Blanding's turtle, eastern box turtle, and gypsywort) are known to be present.

- **Water resources**: The Whittenton Diesel Alternative would not create a new or additional discharge to the Neponset River and Sprague Pond where the Northeast Corridor passes through the Fowl Meadow and Ponkapoag Bog ACEC. Potential impacts to the Hockomock Swamp and Fowl Meadow ACECs would result from stormwater discharges to Black Brook and the East Branch of the Neponset River, respectively, from the Whittenton Diesel Alternative. However, minimal impacts to ACECs from stormwater discharges would result from the project, and surface or groundwater resources within the ACECs would not be impaired.

Table 4.10-8 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Whittenton Diesel Alternative

Element/Component	Direct Effects	
	Acquisition Area (acres)	Number of Parcels
Railroad Alignments		
Northeast Corridor	0	
Stoughton Line	0.16	1
Whittenton Branch	0	
Attleboro Secondary	0	
Fall River Secondary	0	
New Bedford Main Line	0	
Stations		
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Park	0	
Dana Street	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King's Highway	0	
Whale's Tooth	0	
Layover Facility Alternatives		
Wamsutta Site	0	
Weaver's Cove East Site	0	
TOTAL	**0.16**	**1**

- **Wetlands**: Potential permanent wetland and waterway impacts along the Stoughton Line include the loss of 1.7 acres within the Hockomock Swamp ACEC, out of a total of 8,260 acres of wetlands within this ACEC.

Summary of Impacts

Table 4.10-9 provides a summary of the direct effects to protected open spaces and publicly owned parcels in ACECs for all alternatives.

Table 4.10-9 Summary of Potential Direct Effects to Protected Open Spaces and Publicly Owned Parcels in ACECs from All Alternatives

Alternative	Direct Effects	
	Acquisition Area (acres)	Number of Parcels
Stoughton Electric	0.66	2
Stoughton Diesel	0.16	1
Whittenton Electric	0.66	2
Whittenton Diesel	0.16	1

The area of protected open space and publicly owned parcels within ACECs required for improving or constructing the alternatives is very similar among the alternatives. For all alternatives, the overall impact would be small relative to the total area of protected open space within the South Coast Rail

project area. All of the alternatives would impact considerably less than 0.01 percent of the total area of protected open space. The Stoughton Electric and the Whittenton Electric Alternatives would impact the same amount of protected open space, 0.66 acre. The Stoughton Diesel and Whittenton Diesel Alternatives would impact 0.5 acre less than their electric counterparts, or 0.16 acre.

4.10.3.6 Mitigation

Mitigation measures are categorized in order of preference: avoidance measures, intended to avoid direct impacts to a resource, are preferred. The second category of mitigation measures, minimization, accepts that direct impacts to the resource would occur, but uses engineering design or management controls to minimize the impact. The final level, mitigation, is used to offset direct impacts by compensating for the impact through some financial or physical analog for the impacted resource. In reality, some combination of these three measures would likely comprise a mitigation plan.

Each of these measures is considered, in turn, for each of the South Coast Rail alternatives in the following sections.

Avoidance

Measures taken to avoid impacts to protected open space and ACECs are described in the following subsections.

Common to All Build Alternatives

Conceptual engineering of the alternative alignments for the South Coast Rail project has focused upon using existing transportation corridors (in-service or out-of-service railroads, and in-service highways) to the extent practical. The rights-of-way established for these corridors do not encroach into protected open spaces. With few exceptions, the engineering design has avoided direct impacts to protected open spaces by delineating limits of work for the Build Alternatives within the rights-of-way.

Since publication of the DEIS/DEIR, acquisition requirements of Article 97-protected properties have been reduced by avoiding or minimizing encroachments into these properties. As listed in DEIS/DEIR Table 4.10-22, Summary of Article 97 Land Acquisition Requirements for All Alternatives, the Stoughton Electric Alternative at that time was projected to require acquisition of 1.09 acres of three Article 97-protected parcels. Based on the current level of design, the Stoughton Alternative would require the acquisition of a small (0.16 acre) portion of one parcel of Article 97-protected property. No other part of the railroad alignment and none of the stations or layover facilities would require acquisition of an Article 97-protected open space.

ACECs (as more geographically broad designations) generally include both disturbed and undisturbed areas, including transportation corridors such as the railroad and highway alignments considered for the South Coast Rail alternatives. Design options to avoid direct impacts to ACECs are therefore extremely limited, and would require extensive impractical re-routing of the alignments.

For the new station and layover facility alternatives, these sites were selected to specifically avoid direct impacts to protected open spaces or ACECs.[23] Expanding or reconstructing existing stations took into consideration adjacent protected open spaces to the extent practicable.

These types of impact avoidance efforts have been made for all alternatives. The following sections summarize the measures taken for each alternative to avoid direct impacts to protected open spaces and ACECs.

Stoughton Alternatives

The Stoughton Alternatives (Electric and Diesel) use existing in-service or out-of-service rail lines for the entire alignment; no new railroad alignments would be included in this alternative. Where the alignments pass through or are immediately adjacent to protected open spaces or ACECs, the limits of work for construction activities within each of these segments lie within the rights-of-way except for in a very few locations as described elsewhere in this section. Incursions into protected open spaces at these locations were minimized to the extent practicable.

The out-of-service segment of the Stoughton Line passes through the Hockomock Swamp ACEC and Pine Swamp protected open space. There are no practicable alternatives for this alignment that do not pass through these areas; however, only one publicly owned parcel within the ACEC would be acquired for a traction power facility for the Stoughton Electric Alternative. Traction power facilities must be sited within certain distances of power sources, based upon engineering constraints, and there are no feasible alternatives for the facility that would be located outside of the Hockomock Swamp ACEC. Sites for other traction power facilities were chosen to avoid any protected open space or ACECs.

The new station and layover facility sites were selected in part to avoid using protected open spaces or ACECs. None of the station or layover facility construction or operation activities would be within protected open spaces or ACECs.

Whittenton Alternatives

The Whittenton Alternatives (Electric and Diesel) use existing in-service or out-of-service rail lines for the entire alignment; no new railroad alignments would be included in this alternative. Where the alignments pass through or are immediately adjacent to protected open spaces or ACECs, the limits of work for construction activities within each of these segments lie within the rights-of-way except for in a very few locations as described elsewhere in this section. Incursions into protected open spaces at these locations were minimized to the extent practicable, as described in the Minimization section.

The out-of-service segment of the Stoughton Line passes through the Hockomock Swamp ACEC. There are no practicable alternatives for this alignment that do not pass through these areas; however, only one publicly owned parcel within this ACEC would be acquired for a traction power facility for the Whittenton Electric Alternative. As described above, traction power facility locations are constrained by engineering considerations, and sites for all other traction power facilities were chosen to avoid protected open spaces and ACECs. It should be noted that the Whittenton Alternatives do not use the southernmost portion of the Stoughton Line, thereby avoiding any impacts to the Pine Swamp protected open space.

[23] EOT. 2009. *Station Siting Report: EOT's Final Recommendations*. Commonwealth of Massachusetts, Executive Office of Transportation and Public Works. Prepared by Vanasse Hangen Brustlin, Inc.: Boston.

The new station and layover facility sites were selected in part to avoid using protected open spaces or ACECs, None of the existing station or layover facility construction or operation activities would be within protected open spaces or ACECs.

Minimization

Measures taken to minimize impacts to protected open space and ACECs are described in the following subsections.

Minimization Measures Common to All Build Alternatives

Minimizing direct impacts to protected open spaces and ACECs can be accomplished by applying engineering controls where encroachments into these areas are inevitable. For example, retaining walls may be constructed in areas of cut or fill to diminish the footprint of a slope that, if left at the angle of repose, would encroach into a protected open space. Some linear resources, such as streams or rivers, may be crossed by replacement bridges with one or two spans rather than the six or eight spans of the original bridge. These types of impact minimization efforts have been made for all alternatives at the conceptual design level evaluated in this section. Further impact minimization may result from final design of the selected alternative. The following sections summarize the measures taken for each alternative to minimize direct impacts to protected open spaces and ACECs.

Minimization Measures for the Stoughton Alternatives

Incursions into one of the two protected open spaces or publicly owned parcels in ACECs would be minimized along the Stoughton Electric Alternative alignment by reducing the footprint of the traction power facilities designated for installation at these locations. The second incursion at the Stoughton Memorial Conservation Land would be necessary in order to accommodate the western edge of the new road and an embankment sloping down from the road bed to the adjacent natural ground surface. Final engineering design, if one of these alternatives is selected, may further minimize, or avoid, these impacts.

Minimization Measures for the Whittenton Alternatives

Since publication of the DEIS/DEIR, refinements to the track design of the Whittenton Alternatives have eliminated the protected open space acquisition for the Whittenton Branch described in Section 4.10.3.2 of the DEIS/DEIR. The Whittenton Alternatives would have the same impacts on protected open space and ACECs as the Stoughton Alternatives. All of the incursions into protected open spaces for the Whittenton Alternatives are the same as those described above for the Stoughton Alternatives. Final engineering design, if one of these alternatives is selected, may further minimize, or avoid, these impacts.

Specific Mitigation Measures

Mitigation measures that may be taken to replace acquired parcels of protected open spaces or publicly owned parcels within ACECs are described below.

Mitigation Measures Common to All Build Alternatives

Current EEA policy requires directly mitigating impacts to publicly owned parcels within protected open spaces or ACECs, or privately owned protected open spaces covered by a conservation restriction, by

protecting an equivalent area (in both function and size). As described in Section 4.10.4.2, this policy applies to acquisition of parcels identified as Article 97 lands. Preferably, impacts to an area within a protected open space would be directly mitigated by acquiring and protecting a parcel adjoining the same protected open space. For example, if 0.5 acre of a protected open space would be acquired for the project, a separate 0.5-acre parcel adjoining that same open space, and providing similar functions as the lost area, would be purchased and given to the open space's owner to replace the lost functions of the area. If an equivalent parcel adjoining the affected parcel is not available, another area of equivalent (or greater) area and ecological value could be identified and acquired for conservation purposes, in accordance with applicable open space plans. In any case, there would be no net loss of the protected open space.

Mitigation Measures for the Stoughton Alternatives

Based upon the impacts indicated by conceptual engineering plans, direct mitigation for protected open spaces impacted by the Stoughton Alternatives would replace the lost functions for protected open spaces in the following municipalities:

Stoughton:

- 0.16 acre of Stoughton Memorial Conservation Land, in and owned by the Town of Stoughton; and

Easton (Electric Alternative only):

- 0.50 acre of conservation land in the Hockomock Swamp ACEC (consisting of 0.50 acre of the Southeast Regional Vocational Tech School sports fields), in and owned by the Town of Easton.

The parcel within the Hockomock Swamp ACEC would be used for a traction power substation for the Stoughton Electric Alternative and it would not be used for the Stoughton Diesel Alternative.

Mitigation Measures for the Whittenton Alternatives

Based upon the impacts indicated by conceptual engineering plans, direct mitigation for protected open spaces impacted by the Whittenton Alternatives would replace the lost functions for protected open spaces in the following municipalities:

Stoughton:

- 0.16 acre of Stoughton Memorial Conservation Land, in and owned by the Town of Stoughton; and

Easton (Electric Alternative only):

- 0.50 acre of conservation land in the Hockomock Swamp ACEC (consisting of 0.50 acre of the Southeast Regional Vocational Tech School sports fields), in and owned by the Town of Easton.

The parcel within the Hockomock Swamp ACEC would be used for a traction power substation for the Whittenton Electric Alternative and it would not be used for the Whittenton Diesel Alternative.

Summary

The South Coast Rail project alternatives would use existing railroad or highway alignments to the maximum extent possible, avoiding or minimizing impacts to protected open spaces. Where property acquisition of protected open spaces is necessary, direct mitigation would be required. Once the preferred alternative is selected and final design completed, such direct mitigation would be negotiated with the affected entity.

4.10.4 Regulatory Compliance

4.10.4.1 Introduction

This section summarizes the South Coast Rail project's compliance with regulations pertinent to open space, including Article 97 of the Massachusetts Constitution, the ACEC program, and Section 7 of the Wild and Scenic Rivers Act. Impacts to protected open spaces are regulated at the federal and state levels by both land management agencies and traditional regulatory agencies. None of the South Coast Rail alternatives require acquisition of any protected open spaces administered by a federal land management agency. Each alternative would require acquisition of protected open space administrated by the state or a municipality, or publicly owned parcels within an ACEC.

4.10.4.2 Article 97 of the Commonwealth of Massachusetts

The right of the Commonwealth's citizens to the quality of life that clean water and undeveloped open space can provide is mandated by Article 97 of the state constitution.[24] Article 97 of the Massachusetts Constitution provides that "[t]he people shall have the right to clean air and water, freedom from excessive and unnecessary noise, and the natural, scenic, historic, and esthetic qualities of their environment; and the protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other natural resources is hereby declared to be a public purpose."[25]

The EEA has defined lands subject to Article 97 as "land or interests in … land owned or held by the Commonwealth or its political subdivisions"[26] that protect these interests. It is assumed that the publicly owned open spaces below that have been identified are Article 97 lands subject to the EEA Article 97 Land Disposition Policy.

The goal of the EEA Policy is to ensure no net loss of Article 97 lands. As a general rule, the EEA and its agencies "shall not sell, transfer, lease, relinquish, release, alienate, or change the control or use of any right or interest of the Commonwealth in and to Article 97 land."

Exceptions to this goal are included in the EEA Policy; disposition of Article 97 land is not supported unless exceptional circumstances exist. All other options to avoid use of Article 97 land must be explored and no feasible and substantially equivalent alternatives exist. The requirements for land disposition are

[24] EEA. 2009. "How Is Land Protected?" Commonwealth of Massachusetts, Executive Office of Environmental Affairs website Hhttp://www.mass.gov/?pageID=eoeeaterminal&L=4&L0=Home&L1=Land+Use%2c+Habitats+%26+Wildlife&L2=Land+Use+%26+Conservation&L3=Land+Protection&sid=Eoeea&b=terminalcontent&f=eea_lf_land_protect_how&csid=Eoeea. Accessed 17 June 2009.

[25] *Constitution of the Commonwealth of Massachusetts*, Article XCVII. Approved and ratified on November 7, 1972.

[26] EEA. *1998. Article 97 Land Disposition Policy.* Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, Massachusetts Environmental Policy Act Office: Boston.

summarized in the ACEC Program Requirements section, and the application to each alternative is provided in subsequent sections.

Requirements

The policy requires that EEA agencies minimize land disposition occurrences. All Article 97 land disposition proposals are to be coordinated with the EEA, and any Article 97 land disposition that is recommended must be justified and explained to the Secretary of the EEA. Any Article 97 land disposition must be authorized by enacted legislation and approved by all municipal, state, and federal agencies, authorities, or other governmental bodies as required and empowered.

According to the EEA Policy, Article 97 land disposition cannot be supported unless EEA and its agencies determine that exceptional circumstances exist. A determination of "exceptional circumstances" is subject to all of the following conditions being met:

- All other options to avoid the Article 97 disposition have been explored and no feasible and substantially equivalent alternatives exist;
- The disposition of the subject parcel and its proposed use do not destroy or threaten a unique or significant resource;
- As part of the disposition, real estate of equal or greater fair market value or value in use of proposed use, whichever is greater, and significantly greater resource value are granted to the disposing agency or its designee;
- The minimum acreage necessary for the proposed use is proposed for disposition and, to the maximum extent possible, the resources of the parcel proposed for disposition continue to be protected;
- The disposition serves an Article 97 purpose or another public purpose without detracting from the mission, plans, policies and mandates of EEA and its appropriate department or division; and
- The disposition of a parcel is not contrary to the express wishes of the person(s) who donated or sold the parcel or interests therein to the Commonwealth.

To the extent possible based upon readily available information and conceptual engineering plans, an evaluation of each alternative with respect to these six criteria is provided in the following subsections.

Regulatory Compliance of the Stoughton Alternatives

Portions of two protected open spaces and publicly owned land within one ACEC subject to the EEA Policy would be acquired for the Stoughton Alternatives. One of these parcels would be used for traction power substation for the Stoughton Electric Alternative. The Stoughton Alternatives' use of these Article 97 lands complies with the exceptional circumstances criteria as follows:

- **Alternatives**: The Stoughton Alternatives would use existing, active rail lines, as well as new rail lines on currently out-of-service railroad beds, and impacts to Article 97 lands have been avoided or minimized to the extent feasible. The other alternatives under consideration for

the South Coast Rail project (the Whittenton Alternatives) are substantially equivalent and have the same impacts to Article 97 lands.

- **Unique or Significant Resources**: Disposition of the two parcels for the Stoughton Alternatives would not destroy or threaten a unique or significant resource. For each of the parcels, the converted area represents a very small proportion of the overall protected area.

- **Real Estate and Resource Value**: An evaluation of the real estate and resource value of replacement sites would be completed if one of the Stoughton Alternatives is the selected alternative.

- **Minimum Acreage**: The final design of either of the Stoughton Alternatives, if selected, would minimize the acreage necessary for the proposed use and the resources of the parcel proposed for disposition would continue to be protected to the maximum extent possible.

- **Purpose**: The disposition of the parcels for the Stoughton Alternatives would serve a public transportation purpose without detracting from the mission, plans, policies and mandates of EEA and its appropriate department or division.

- **Intent**: If either of the Stoughton Alternatives is selected, the express wishes of the person(s) who donated or sold any acquired Article 97 parcel or interests therein to the Commonwealth would be investigated to ensure that the project complied with the original intent of the donation or sale.

Regulatory Compliance of the Whittenton Alternatives

Portions of two protected open spaces and publicly owned land within one ACEC subject to the EEA Policy would be acquired for the Whittenton Alternatives. As with the Stoughton Alternatives, one of these parcels would be used for traction power substation for the Whittenton Electric Alternative. The Whittenton Alternatives' use of these Article 97 lands complies with the exceptional circumstances criteria as follows:

- **Alternatives**: The Whittenton Alternatives would use existing, active rail lines, as well as new rail lines on currently out-of-service railroad beds, and impacts to Article 97 lands have been avoided or minimized to the extent feasible. The other alternatives under consideration for the South Coast Rail project (the Stoughton Alternatives) are substantially equivalent and have similar impacts to Article 97 lands.

- **Unique or Significant Resources**: Disposition of the two parcels for the Whittenton Alternatives would not destroy or threaten a unique or significant resource. For each of the parcels, the converted area represents a very small proportion of the overall protected area.

- **Real Estate and Resource Value**: An evaluation of the real estate and resource value of replacement sites would be completed if one of the Whittenton Alternatives is the selected alternative.

- **Minimum Acreage**: The final design of either of the Whittenton Alternatives, if selected, would minimize the acreage necessary for the proposed use and the resources of the parcel proposed for disposition would continue to be protected to the maximum extent possible.

- **Purpose**: The disposition of the parcels for the Whittenton Alternatives would serve a public transportation purpose without detracting from the mission, plans, policies and mandates of EEA and its appropriate department or division.

- **Intent**: If either of the Whittenton Alternatives is selected, the express wishes of the person(s) who donated or sold any acquired Article 97 parcel or interests therein to the Commonwealth would be investigated to ensure that the project complied with the original intent of the donation or sale.

Summary

Table 4.10-10 provides a comparison of the Article 97 land acquisition requirements for each South Coast Rail alternative. All of the South Coast Rail alternatives would require a minimal amount of Article 97 land acquisition (0.16 acre).

As described above, compliance with the Article 97 land disposition exceptional circumstances criteria would be completed for the selected alternative once the engineering design is finalized and replacement sites identified.

Table 4.10-10 Summary of Article 97 Land Acquisition Requirements for All Alternatives

	Article 97 Lands	
Alternative	Acquisition Area (acres)	Number of Parcels
Stoughton Electric	0.16	1
Stoughton Diesel	0.16	1
Whittenton Electric	0.16	1
Whittenton Diesel	0.16	1

4.10.4.3 ACEC Program

ACECs are "those areas within the Commonwealth where unique clusters of natural and human resource values exist and which are worthy of a high level of concern and protection."[27] ACECs are designated by the EEA, and the ACEC program is administrated by the Massachusetts Department of Conservation and Recreation. Projects within an ACEC that are subject to state agency jurisdiction or regulations are reviewed with closer scrutiny than other projects to avoid or minimize adverse environmental impacts to these unique areas.

Requirements

According to Commonwealth regulations,[28] all EEA agencies must take action, administer programs, and revise regulations in order to acquire useful scientific data on the ACEC; preserve, restore, or enhance the resources of the ACEC; and ensure that activities in or impacting on the ACEC are carried out so as to minimize adverse effects on seven environmental resources, as addressed in other chapters:

[27] EEA. 2009. 301 CMR 12.03 Areas of Critical Environmental Concern, General Provisions. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs: Boston.

[28] EEA. 2009. 301 CMR 12.12: Effects of Designation. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs: Boston.

- Marine and Aquatic Productivity: Chapter 4.18, *Chapter 91 Compliance and Coastal Zone Consistency*; Chapter 4.14, *Biodiversity, Wildlife, and Vegetation*; Chapter 4.15, *Threatened and Endangered Species*; Chapter 4.16, *Wetlands*; Chapter 4.17, *Water Resources*.
- Surface and Groundwater Quality: Chapter 4.17, *Water Resources*.
- Habitat Values: Chapter 4.14, *Biodiversity*, *Wildlife, and Vegetation*; Chapter 4.15, *Threatened and Endangered Species*.
- Storm Damage Prevention or Flood Control: Chapter 4.16, *Wetlands*.
- Historic and Archaeological Resources: Chapter 4.8, *Cultural Resources*.
- Scenic and Recreational Resources: Chapter 4.5, *Visual and Aesthetic Resources*.
- Other Natural Resource Values of the Area: Chapter 4.16, *Wetlands* and Chapter 4.11, *Farmland Soils*.

Each alternative's impact on any of the applicable resources at each publicly owned parcel within an ACEC is discussed in the following subsections.

Stoughton Alternatives

One publicly owned parcel within the Hockomock Swamp ACEC in Easton would be acquired for the Stoughton Alternatives:

- 0.50 acre of the Southeastern Regional Vocational Tech School sports fields.

This land would be used for a traction power substation for the Stoughton Electric Alternative. This area represents a small proportion of the ACEC and acquisition would not substantively affect any of the resource areas of concern.

Whittenton Alternatives

One publicly owned parcel within the Hockomock Swamp ACEC in Easton would be acquired for the Whittenton Alternatives:

- 0.50 acre of the Southeastern Regional Vocational Tech School sports fields.

This land would be used for a traction power substation for the Whittenton Electric Alternative. This area represents a small proportion of the ACEC and acquisition would not substantively affect any of the resource areas of concern.

Summary

Table 4.10-11 provides a comparison of the ACEC land acquisition requirements for each South Coast Rail alternative. As described above, none of the ACEC land acquisitions would substantively impact any of the resources of concern for the respective ACECs.

Table 4.10-11 Summary of ACEC Land Acquisition Requirements for All Alternatives

Alternative	ACEC Lands	
	Acquisition Area (acres)	Number of Parcels
Stoughton Electric	0.50	1
Stoughton Diesel	0	0
Whittenton Electric	0.50	1
Whittenton Diesel	0	0

A summary of each alternative's impacts to ACEC key functions is provided below:

- **Biodiversity**: The Stoughton and Whittenton Alternatives are expected to affect biodiversity in the Hockomock Swamp ACEC areas adjacent to the reconstructed track as a result of increased train traffic which would reduce habitat quality for some wildlife species and would create a barrier to wildlife movement. Although partially mitigated by the Hockomock Swamp Trestle, using this railroad bed would affect the connectivity of adjacent habitats and reduce their overall biodiversity value.

- **Farmland soils**: The Stoughton and Whittenton Electric Alternatives would impact designated farmland soils within the Hockomock Swamp ACEC at traction power station TPSS-1. Construction of this site would impact 1.1 acres of designated farmland soils. No farmland soils within an ACEC would be impacted by the Stoughton or Whittenton Diesel Alternatives.

- **Historic and archaeological resources**: None of the alternatives would affect known archaeological resources within any ACEC. The Stoughton and Whittenton Electric Alternatives, as a result of installing the overhead catenary system, would require construction in areas of moderate sensitivity for archaeological resources. The Stoughton and Whittenton Alternatives (both electric and diesel) would require construction (installing pilings for the trestle) in areas of moderate sensitivity for archaeological resources. Additional investigation would be required to determine if any archaeological resources within the Hockomock Swamp ACEC would be affected.

- **Rare species**: For the Stoughton and Whittenton Alternatives, approximately 22 acres of Priority and Estimated Habitat would be impacted within the Hockomock Swamp ACEC. Other species and their habitat may occur within the polygons or within the contiguous ACECs. There are no ACECs crossed by the Southern Triangle.

- **Water resources**: All Build Alternatives would discharge to the Neponset River and Sprague Pond where the Northeast Corridor passes through the Fowl Meadow and Ponkapoag Bog ACEC. Potential impacts to the Hockomock Swamp and Fowl Meadow ACECs would result from stormwater discharges to Black Brook and the East Branch of the Neponset River, respectively, from the Whittenton Diesel Alternative. However, minimal impacts to ACECs from stormwater discharges would result from the project, and surface or groundwater resources within the ACECs would not be impaired.

- **Wetlands**: The Stoughton and Whittenton Alternatives would potentially permanently impact 12.3 acres of waters of the United States along the Stoughton Line, including 1.9

acres of waterbodies/waterways and 10.4 acres of adjacent federal vegetated wetlands, as illustrated in Table 4.16-32. These waterbodies/waterways include the "stream" that diverted from its original course due to blockage and currently flows over the railroad grade south of Raynham Park. Relocating this stream to one side of the right-of-way would create impacts to 204 square feet of vegetated wetlands and over 1.5 acres of waterbodies/waterways to reconstruct the railroad and to construct Raynham Park Station. Mitigation measures would include re-establishing this stream's original channel, resulting in a beneficial impact.

4.10.4.4 Wild and Scenic Rivers Act

Section 7 of the Wild and Scenic Rivers Act directs federal agencies to protect the free-flowing condition and other values of designated rivers.

Requirements

A determination under Section 7 is required for water resources projects (such as dams) proposed in the bed or banks of a designated river, or on a tributary to a designated river, if the project has federal involvement (e.g., is proposed, authorized, or funded by a federal agency) and, for projects in tributaries, if the project is likely to result in effects to a designated river.[29] These circumstances apply to the South Coast Rail project's proposed replacement of the four bridges over the Taunton River and, potentially, the bridge over the tributary Mill River because of the requirement to obtain authorization from the Corps for the work under Section 404 of the Clean Water Act. Neither the Weaver's Cove East Layover Facility nor the Fall River Depot Station are water resources projects and therefore are not subject to this evaluation.

Federally assisted water resources projects (such as bridge replacement) are prohibited only if they would have a "direct and adverse effect" on the values for which a river was added to the National System of Wild and Scenic Rivers. The determination standard for tributaries is applied to projects under the "invade the area or unreasonably diminish" standard. Based on these different standards, the evaluation of impacts to the Taunton River and the Mill River is provided below.

The effects of the project elements on the Taunton River are discussed first, followed by an evaluation of impacts on the Taunton River and Mill River, and discussion of the required consultation with NPS.

Taunton River

The main stem of the Taunton River was designated as a Wild and Scenic River on March 30, 2009.[30] The river's designation is differentiated in four segments:

- The 18-mile segment from the confluence of the Town and Matfield Rivers to Route 24 in Raynham is designated as a scenic river;
- The 5-mile segment from Route 24 to 0.5 mile below Weir Bridge in Taunton is designated as a recreational river;
- The 8-mile segment from 0.5 mile below Weir Bridge to Muddy Cove in Dighton is designated as a scenic river; and

[29] Interagency Wild & Scenic Rivers Coordinating Council. 2004. Pg. 4.
[30] Omnibus Public Lands Management Act. Public Law 111-11. Section 5003. Taunton River, Massachusetts.

- The 9-mile segment from Muddy Cove to the confluence with the Quequechan River at the Route 195 bridge in Fall River is designated as a recreational river.

The following sections describe the impacts to the Taunton River from the bridges, layover facility, and station.

Bridges

Four bridges over the Taunton River and one bridge over the Mill River (a tributary to the Taunton River) would be replaced for the South Coast Rail project. The bridges are in Taunton (see Figure 4.10-23) and lie within a segment of the Taunton River designated as "recreational." The existing bridges are in deteriorating condition and have insufficient capacity for the expected loads and speeds of the South Coast Rail trains.

The bridges would be replaced with one- or two-span structures. The existing piles would be removed completely or to below grade. New cast-in-place concrete abutments would be constructed behind the existing abutments, which would then be wholly or partially removed to an elevation equal to the river's average seasonal high water elevation. The space between the existing and proposed abutments would be regraded to recreate the river banks on either side of the bridge. For the two-span bridges, a new, pile supported, cast-in-place concrete pier would be constructed in the center of the span. The Taunton River bridges would require approximately 1 year each to construct, while the Mill River bridge would require approximately 6 months to construct. The bridges must be constructed sequentially rather than simultaneously, in order to accommodate ongoing freight service.

The proposed new bridges would improve the navigational capacity and aesthetics along the rivers because of fewer, less visually intrusive pilings. The bridges would improve riparian conditions because they would be designed and constructed to meet Massachusetts River and Stream Crossing Standards, specifically by incorporating space along the river banks to allow wildlife passage. Stormwater runoff during bridge construction and railroad operation would be managed, and water quality in the Taunton and Mill Rivers would not be adversely impacted by stormwater runoff. The new bridges would not alter upland conditions nor change on-site conditions that would alter existing hydrologic or biologic processes. There would be no off-site changes that would affect the river system.

Replacing the bridges over the Taunton and Mill Rivers in Taunton would not adversely impact the recreational designation of the Taunton River in this reach.

Weaver's Cove East Layover Facility

The current level of design of the Weaver's Cove East layover facility incorporates stormwater management features in accordance with regulatory requirements. Constructing and operating a layover facility at the Weaver's Cove East site is not expected to result in any water quality impacts to the Taunton River from construction and stormwater runoff.

The segment of the Taunton River where the Weaver's Cove East Layover Facility is proposed has been designated as a "recreational river area," recognizing its low aesthetic value and developed shoreline. The Weaver's Cove East site is an undeveloped parcel on the east side of the existing active railroad. The shoreline in this segment is developed: a boat yard is north of the site and an industrial facility with a dock for fuel transfers is immediately south. Portions of the layover facility may be visible from the Taunton River, but are not expected to substantively change the visual environment from its current

condition. No impacts to the Taunton River are anticipated that would jeopardize its National Wild and Scenic River recreational designation in this reach.

Fall River Depot Station

The proposed Fall River Depot Station would be 1 mile north of downtown Fall River, on the west side of the Fall River Secondary rail line, between Pearce and Turner Streets on the north and south, respectively, and adjacent to North Davol Street on the west (see Figure 4.10-24).

The station site is visible from adjacent roads and nearby properties, and is within 750 feet of the Taunton River at its closest point, to the west. The intervening space is occupied by the State Route 79 and State Route 138 corridor and properties that have river frontage.

The current level of design of the station incorporates stormwater management features in accordance with regulatory requirements. Constructing and operating a station at the Fall River Depot site is not expected to result in any water quality impacts to the Taunton River; stormwater runoff would discharge to the Fall River sewer system.

This station is envisioned as a multi-modal transportation center with parking facilities. The 8-acre site is close to a dense residential neighborhood and an aging shopping plaza to the east. The station could catalyze redevelopment in that it offers a classic transit-oriented development opportunity that fits with the City of Fall River's plans for redeveloping the waterfront. The site is favorable from an environmental perspective as it was previously developed and does not contain wetlands, vernal pools, or priority habitats for rare species. It is not within the 100-year coastal floodplain.

The station would favorably affect the visual environment by replacing the existing vacant commercial buildings and parking lot with a new canopy, platform, and parking deck with 324 spaces. Its appearance would be an improvement compared to the existing vacant buildings and parking lots.

Constructing and operating the Fall River Depot Station would not detract from the recreational designation of the Taunton River in this reach and could enhance the city's waterfront area.

Taunton River Evaluation

Determining if a project would result in a direct and adverse effect to a designated river requires consideration of aspects of the project potentially impacting the river, and the scope of the evaluation should be consistent with the magnitude and complexity of the project. This section evaluates the potential impact to the Wild and Scenic River designation that may result from the proposed replacement of the Taunton River bridges, as required by Section 7.[31]

1. Define the proposed activity.

The project proponent, MassDOT, proposes to replace four bridges over the Taunton River because the existing bridges are in deteriorating condition and do not meet the safety and performance requirements for the South Coast Rail project. The four bridges are located in Taunton, Massachusetts, as shown on Figure 4.10-23. The bridge replacement project would require 4 years to complete and the bridges would be in operation indefinitely thereafter. The existing multi-span bridges, piers, and abutments would be removed; new abutments and superstructure would be installed. The replacement

[31] Interagency Wild and Scenic Rivers Coordinating Council. 2004. Appendix C: Evaluation Procedure Under "Direct and Adverse."

bridges would be one- or two-span structures. The riverbank would be graded to allow for wildlife passage.

2. Describe how the proposed activity will directly alter within-channel conditions.

The replacement activities would be conducted at the locations of the existing four bridges, largely within the footprint of the existing bridges. The new abutment locations, behind the existing abutment sites, would slightly extend the bridge length. There would be no changes to the active channel location, channel geometry, channel shape, channel form, or water quality parameters. Navigability of the river would be improved by replacing multi-span structures by one- or two-span structures. There would be no adverse impacts to outstanding resources values of the river channel.

3. Describe how the proposed activity will directly alter riparian and/or floodplain conditions.

New abutments would be constructed behind the existing abutments, expanding the riparian area and floodplain slightly. The riverbank at these locations would be re-graded consistent with the slope of the bank up- and downstream from the bridge location. The floodplain would be slightly expanded as a result of replacing the abutments. There would be no adverse impacts to outstanding resources values of the riparian area.

4. Describe how the proposed activity will directly alter upland conditions.

The project would not alter upland conditions. The work would be conducted within the existing railroad footprint, using rail-mounted equipment.

5. Evaluate and describe how changes in on-site conditions can/will alter existing hydrologic or biologic processes.

The project would not adversely alter existing hydrologic or biologic processes. All aspects of the bridge replacement would improve river flow characteristics by replacing the existing multi-span structures with one- or two-span bridges and moving the abutment locations up-bank. Potential impacts to water quality during construction would be managed in accordance with regulatory requirements of the National Pollutant Discharge Elimination System program, specifically described in a project-specific Stormwater Pollution Prevention Plan.

6. Estimate the magnitude and spatial extent of potential off-site changes.

There would be no off-site changes from the bridge replacement activities that would impact the river.

7. Define the time scale over which steps 3-6 are likely to occur.

The bridge construction activities are expected to require 4 years to complete. The bridges would be used indefinitely thereafter.

8. Compare project analyses to management goals.

The bridge replacements are not expected to adversely affect the achievement or timing of achievement of the management goals and objectives for the Taunton River, as described in the *Taunton River Stewardship Plan*.[32]

9. Make the Section 7 determination.

The bridge replacements would improve riparian area and floodplain conditions, and would not affect water quality, outstanding resources values, or the recreational river classification. Replacing and using four bridges over the Taunton River is not expected to result in a direct and adverse effect to the recreational nature of the Taunton River in this reach.

Mill River Evaluation

Determining if a project on a tributary to a designated river would adversely impact the Wild and Scenic River requires consideration of the proposed project's potential to either invade[33] the designated river or unreasonably diminish the scenic, recreational, fish, or wildlife values. This section evaluates the potential for the proposed replacement of the Mill River bridge to impact the Taunton River, as required by Section 7[34]:

The Mill River bridge replacement project activities would be similar to those described above for the Taunton River bridges: the work would be conducted largely within the footprint of the existing bridge and would not adversely impact any aspect of the river.

The evaluation requirement for tributaries is incorporated in this standard[35]:

> "Section 7(a) of the Act provides a specific standard for review of developments below or above or on a stream tributary to a designated river. Such developments may occur as long as the project "will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area as of the date of designation . . ." This standard applies to projects outside the river corridor but on the same river or a tributary."

The Mill River bridge is located approximately 1,250 feet upstream of the Mill River's confluence with the Taunton River. Given this distance and the construction activities summarized above, replacing the bridge would not encroach or intrude upon the Taunton River. The Taunton River in this segment is designated as "recreational." Replacing the Mill River bridge at a location 1,250 feet from the Taunton River that is not visible due to the winding river course and heavy vegetation would not diminish the recreational value of the Taunton River.

In summary, the Mill River bridge replacement project would not invade the Taunton River area or unreasonably diminish the recreational value of the Taunton River in this reach.

[32] Taunton River Stewardship Council. 2005. *Taunton River Stewardship Plan, Taunton River Wild & Scenic River Study.* Prepared by the Taunton Wild and Scenic River Study Committee, Southeastern Regional Planning & Economic Development District, and National Park Service—Northeast Region.

[33] "Invade" is defined as "encroach or intrude upon" by the US Department of Agriculture in regulations implementing Section 7, at 36 CFR 297.

[34] Interagency Wild and Scenic Rivers Coordinating Council. 2004. Appendix D: Evaluation Procedure Under "Invade the Area or Unreasonably Diminish.

[35] Ibid. Pg. 29.

Consultation

As explained in Chapter 4.5, *Visual and Aesthetic Resources* (Section 4.5.6.1), consultation with NPS is required. A meeting between MassDOT and representatives from the NPS Wild and Scenic Rivers Program was held in January 2012 to discuss the status of Taunton River as a National Wild and Scenic River. Detailed descriptions of the South Coast Rail project's potential impacts to the Taunton River from the proposed bridge replacement and Fall River Depot Station were requested. These are described above; and a discussion of impacts to the Taunton River, in the context of visual resources, is provided in Chapter 4.5 (Section 4.5.3.3). Further consultation with NPS is anticipated as the project advances through the design process.