

## 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 Areas of Critical Environmental Concern (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.

#### 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. 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.<sup>1</sup> The ACEC program is managed by the Massachusetts Department of Conservation (DCR).

#### 4.10.1.2 REGULATORY CONTEXT

ACEC - 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.<sup>2</sup> The principal state agencies with regulations referring to ACECs are the Massachusetts Office of Coastal Zone Management (CZM), the Massachusetts Environmental Policy Act (MEPA) Office, and the Department of Environmental Protection (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

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<sup>1</sup> DCR. 2009. ACEC Regulatory Summary. Website <http://www.mass.gov/dcr/stewardship/acec/reqsum.htm>.

<sup>2</sup> *Ibid*

environment.<sup>3</sup> 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 Energy and Environmental Affairs' (EEA's) Certificate<sup>4</sup> on the ENF requires that an Environmental Impact Report (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."<sup>5</sup> 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 (DCS), 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.<sup>6</sup> 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<sup>7</sup> 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;
- 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).

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<sup>3</sup> MEPA Regulations 301 CMR 11.00. ACECs are specifically addressed at 301 CMR 11.03(11).

<sup>4</sup> 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.

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

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

<sup>7</sup> 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."

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-g.

##### 4.10.2.1 REGIONAL OVERVIEW

Table 4.10-1 lists the communities that would be served or could be impacted by the South Coast Rail project. The South Coast Rail alternative railroad or highway alignments pass through or near these 27 communities, and new station sites are within or near each. 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.

**Table 4.10-1 Public Open Space and ACECs: Study Area Communities**

Acushnet	Foxborough	Raynham
Attleboro	Freetown	Rehoboth
Berkley	Lakeville	Rochester
Canton	Mansfield	Sharon
Dartmouth	Mattapoisett	Somerset
Dighton	Middleborough	Stoughton
Easton	New Bedford	Swansea
Fairhaven	North Attleborough	Taunton
Fall River	Norton	Westport

In 2008, just over 18 percent of the South Coast communities' land area was considered permanently protected public open space.<sup>8</sup> 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, Rochester, and Taunton. An important permanently protected public area is the Freetown-Fall River State Forest, which includes 5,441 acres of public open space. In addition, areas in Mattapoisett, Westport, and Dartmouth contain concentrations of permanently protected open space, many of which provide public access to waterfront areas. The southern coastal communities generally contain more undeveloped land than the northern inland communities within the South Coast region; however, many of these properties have development constraints. Acushnet, Berkley, Dighton, Mattapoisett, and Norton contain the least amount of permanently protected public open space in the South Coast region.

More than eighty protected public open space parcels have been identified in the South Coast region; they range in size from two acres to 5,000 acres. Public open space within the study area includes one National Historic Park (New Bedford Whaling National Historic Park), open space associated with state property such as the Brockton Veterans Affairs Hospital, 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.<sup>9</sup>

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.<sup>10</sup>

ACECs in the South Coast Rail study area include Canoe River Aquifer, Hockomock Swamp, Three Mile River, and Fowl Meadow and Ponkapoag Bog (Figure 4.10-2). These four ACECs are crossed by or adjacent to at least one of the South Coast Rail proposed alternatives.

#### 4.10.2.2 EXISTING CONDITIONS WITHIN THE STUDY CORRIDOR

##### **Southern Triangle (Common to All Rail Alternatives)**

All rail alternatives would require improvements to the existing active rail infrastructure south of Cotley 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.

<sup>8</sup> 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.

<sup>9</sup> 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.

<sup>10</sup> Major public and private open spaces are those that are generally greater than 20 acres and visible at the scale of the figure.

**Protected Public Open Space**

Table 4.10-2 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.

**Table 4.10-2 Southern Triangle Protected Public Open Space**

City/Town	Name	Ownership	Type
<b>New Bedford Main Line</b>			
Lakeville	Howland Road Area	Town	C
	Apponoquet Regional High School sports fields <sup>11</sup>	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
<b>Fall River Secondary</b>			
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).  
 NPS=National Park Service; DCR Massachusetts Department of Conservation and Recreation.  
 Key: R = Recreation; C = Conservation; B = Conservation and Recreation; E = Educational Facility with publicly used recreation facilities; H/C = Historic/Cultural

**Howland Road Area**

The Howland Road Area<sup>12</sup> 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.

<sup>11</sup> 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.

<sup>12</sup> Southeastern Regional Planning and Economic Development District, Town of Lakeville Priority Development and Priority Protection Area Plan, June 2008, page 12.

### *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.<sup>13</sup> The New Bedford Main Line, currently used for freight rail service, forms the eastern boundary of the State Reservation.

### *New Bedford Whaling National Historic Park*

The New Bedford Whaling National Historic Park (NHP) is in downtown New Bedford (Figure 4.10-3e). The NHP 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 NHP 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 four 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

<sup>13</sup> Sorrie, Bruce A. and Henry 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.

Streets. According to the description from the latest Fall River Open Space and Recreation Plan,<sup>14</sup> 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.<sup>15</sup>

#### *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 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, which is not accessible to the public, 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.

<sup>14</sup> 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.

<sup>15</sup> DCR. 2009. Fall River Heritage State Park. Website. <http://www.mass.gov/dcr/parks/southeast/frhp.htm> accessed on January 12, 2009.

### Attleboro Alternative

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 Northeast Corridor, Attleboro Bypass, and the Attleboro Secondary (Figures 4.10-5a-e and 4.10-6a-c). Identified privately owned open space is also described and shown on the referenced figures.

#### *Areas of Critical Environmental Concern*

The Attleboro Alternatives pass through three ACECs: the Fowl Meadow and Ponkapoag Bog ACEC, the Canoe River ACEC, and the Three Mile River ACEC (Figure 4.10-2). The Fowl Meadow and Ponkapoag Bog ACEC, the Canoe River ACEC, and the Three Mile River Watershed ACEC are described below.

#### *Fowl Meadow and Ponkapoag Bog*

The Fowl Meadow and Ponkapoag Bog ACEC encompasses approximately 8,350 acres<sup>16</sup> 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 (Figures 4.10-5a-b). 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 eight-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 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.

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<sup>16</sup> DCR. 2009. Fowl Meadow and Ponkapoag Bog. Website <http://www.mass.gov/dcr/stewardship/acec/acecs/l-fowmed.htm>. Accessed September 1, 2009.

*Canoe River Aquifer ACEC*

The Canoe River Aquifer ACEC covers approximately 17,200 acres<sup>17</sup> in Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton. The associated areas within this ACEC include Snake River, Watson Pond, and Lake Sabbatia. The Northeast Corridor passes through this ACEC in Sharon and Foxborough (Figures 4.10-5c-d). 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 Northeast Corridor forms the western boundary of the ACEC from Mohawk Street in Sharon to Oakland Street in Mansfield.

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.

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 over a thousand acres of productive farmland and cranberry bogs. The ACEC also includes municipal and nonprofit conservation and recreational lands, and rich archaeological and historic resources.

*Three Mile River Watershed ACEC*

The recently-designated Three Mile River Watershed ACEC covers approximately 14,276 acres<sup>18</sup> 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 passes through the Three Mile River Watershed ACEC from Dean Street in Norton to Crane Avenue in Taunton (Figures 4.10-6a-b).

The Three Mile River Watershed was designated an ACEC on August 25, 2008, and it 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

<sup>17</sup> DCR. 2009. Canoe River Aquifer, Snake River, Watson Pond, and Lake Sabbatia. Website <http://www.mass.gov/dcr/stewardship/acec/acecs/l-canriv.htm>. Accessed on September 1, 2009.

<sup>18</sup> DCR. 2009. Three Mile River Watershed. Website <http://www.mass.gov/dcr/stewardship/acec/acecs/l-thrmil.htm>. Accessed on September 1, 2009.

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.

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 4.10-3 lists all of the identified protected public open space within 0.25 mile of the Northeast Corridor, Attleboro Secondary, and Attleboro Bypass. Selected protected public open spaces adjacent to these alignments are briefly described, based on readily available information, in the following paragraphs.

#### ***Gilbert Street Rear***

The 49.3-acre Gilbert Street Rear parcel is vacant land owned by the Town of Mansfield for conservation (Figure 4.10-5e).

#### ***Chartley Pond Conservation Area***

Chartley Pond Conservation Area is a 1.58-acre parcel adjacent to Chartley Pond in Norton (Figure 4.10-6a). The area is primarily pond, wetland, and floodplain with a portion of upland. A MassHighway guardrail prohibits access from Route 123 but is a potential access point for Chartley Pond. The property is sometimes utilized for fishing.

Chartley Pond is a 37.0-acre waterbody that was donated to the Norton Conservation Commission for passive recreation and wildlife habitat use. The pond is used for fishing, kayaking, and boating as well as ice fishing in winter. There is no official public access boat launch area.

#### ***Union Road Lot***

This 0.98-acre parcel, off of Union Road, is owned by the Town of Norton for passive recreation and watershed protection (Figure 4.10-6a). This parcel is adjacent to a 4.0-acre parcel owned by the Land Preservation Society of Norton, which is under a municipal conservation restriction.

### ***Private Open Space***

Private open space located within 0.25 mile of the Northeast Corridor, Attleboro Bypass, and Attleboro Secondary is described below and shown on Figures 4.10-5a-e and 4.10-6a-c.

**Table 4.10-3 Attleboro Alternatives, Northeast Corridor  
Protected Public Open Space**

City/Town	Name	Ownership	Type
<b>Northeast Corridor</b>			
Boston	Wolcott Square	City	H
	Camp Meigs	State (DCR)	H
Canton	Blue Hills Reservation	State (DCR)	H
	Neponset River Reservation	State (DCR)	C
	Canton High School sports fields	Town	E
	Conservation Land off Tolman's	Town	C
Sharon	Canton Town Line Property	Town	C
	Massapoag Trail and Brook	Town	C
	Saw Mill Pond/Beaver Brook and wetlands	Town	C
	Town of Sharon Land off Upland Road	Town	C
	Petee's Hill Sliding Area	Town	R
	Wilber School sports fields	Town	E
	25 Pleasant Park Road	Town	R
	Deborah Sampson Park	Town	R
	Cedar Park Wetlands	Town	C
	Burkhardt's Rail Spur	Town	C
	Sturges Road Wetlands	Town	C
	East Foxboro Street	Town	C
	Cedar Swamp Wetlands	Town	C
	Mohawk Street Wetlands	Town	C
	Broken Wheel Ranch	Town	C
	Nauset Road Wetlands	Town	C
	Barefoot Hill	Town	B
	Canoe River Wetlands	Town	C
	Canoe River Water Conservation Project	Town	C
	Foxborough	Canoe River Wilderness Area	Town
Burrage Pond Wildlife Management Area		State (DFG)	C
Rumford River Greenbelt		Town	B
Bannon off Morse Street		Town	B
Mansfield	County Street Area	Town	B
	Maple Park Conservation Area	Town	C
	North Common	Town	R
	Fulton Pond	Town	C
	Great Woods	Town	C
	Cabot Forbs Parcels	Town	C
	West Common	Town	R
	Zecher Lot	Town	C
	Sweet-Kaling Conservation Area	Town	C
Gilbert Street/Otis Street Recreation Area		Town	R
	Gilbert Street Rear	Town	C

**Table 4.10-4 Attleboro Alternatives, Attleboro Bypass and Attleboro Secondary Protected Public Open Space**

City/Town	Name	Ownership	Type
<b>Attleboro Bypass</b>			
Mansfield	Gilbert Street Rear	Town	C
Attleboro	City of Attleboro Conservation Area	Town	C
Norton	Eisenhower Swamp	Town	C
<b>Attleboro Secondary</b>			
Attleboro	Chartley Brook	City	B
	Unnamed parcel (Conservation Commission)	City	C
Norton	Barrows Street APR/Conservation Land	Town	C
	Barrowsville Pond/Conservation Area	Town	B
	Chartley Pond/Conservation Area	Town	B
	Everett Leonard Field / Conservation Area	Town	B
	Lions Park Ballfield	Town	B
	Rose Farm Conservation Area	Town	C
	Shpack Superfund Site Conservation Land	Town	C
	Solomonese School Fields	Town	E
	Union Road Lot	Town	B
	Taunton	Bristol Plymouth Vocational Technical School sports fields	City
Memorial Park		City	R
Mill River Park		City	R
Union Plaza		City	C
Weir Riverfront Park		City	R
Woodward Springs		City	C

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

Key: R = Recreation; C = Conservation; B = Conservation and Recreation; E = Educational Facility; H/C = Historic/Cultural

#### *Land Preservation Society of Norton*

The Land Preservation Society of Norton<sup>19</sup> is on Richardson Avenue in Norton and adjacent to the Attleboro Bypass. The Society owns over 800 acres of land set aside for the conservation of plant and animal species. A large amount of the land is not easily reached, or lacks paths, and is purely for conservation and wetland protection; other parts of the land are very accessible for walking, cross-country skiing, snowshoeing, and bird watching. The Trust owns and manages ten conservation areas, five of which are within 0.25 mile of the proposed Attleboro Bypass and Attleboro Secondary (Figure 4.10-6a):

- **Clover Lot** – approximately 1.1 acres accessible from Union Road and set aside for passive recreation and contains potential vernal pool habitat.
- **Medeiros Family Wildlife Preserve** – approximately 33.3 acres accessible from Richardson Avenue near the Attleboro City line.
- **Misty Meadows-Antonio Medeiros Wildlife Refuge** – approximately 32.0 acres accessible from Richardson Avenue.
- **Union Road Lot** – approximately 4.1 acres located off of Union Road. This parcel, protected by a municipal conservation restriction, is set aside for passive recreation and watershed protection.
- **Wetherell's Island** – approximately 5.0 acres set aside for passive recreation, walking, and wildlife habitat viewing of Chartley Pond.

<sup>19</sup> Norton Land Trust. 2009. Website: <http://www.nortonlandpreservation.org/index.html>, Accessed on January 12, 2009.

### *Attleboro Land Trust*

The Attleboro Land Trust owns land on Richardson Avenue in Attleboro, near the Attleboro Bypass. The Trust owns and manages eight conservation areas of which the Nickerson Walking Woods Preserve (56.6 acres of wooded area accessed from Richardson Avenue; Figure 4.10-6a) is the closest to the proposed Attleboro Bypass.<sup>20</sup> Most of the areas owned by the Attleboro Land Trust, including this property, have walking trails which are open to the public.

### **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 4.10-7a-e), as well as within 0.25 mile of the Whittenton Electric and Diesel Alternatives (Figures 4.10-8a-b). Identified privately owned open space is also described.

### **Areas of Critical Environmental Concern**

The Attleboro Alternatives passes through or near two ACECs, the Fowl Meadow and Ponkapoag Bog and the Hockomock Swamp (Figure 4.10-2 and Figures 4.10-7a-e). The Fowl Meadow and Ponkapoag Bog ACEC were described in the previous Attleboro Alternative section. The Hockomock Swamp ACEC is described below.

### *Hockomock Swamp ACEC*

The Hockomock Swamp ACEC includes approximately 16,950 acres<sup>21</sup> in Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater. The ACEC is fragmented by several major transportation corridors, including Route 24, I-495, Route 138, Route 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 Line passes through the Hockomock Swamp ACEC from near Purchase Street in Easton to Bridge Street in Raynham (Figures 4.10-7c-d).

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

<sup>20</sup> Attleboro Land Trust. 2009. Website <http://www.attleborolandtrust.org/properties/properties.htm>. Accessed on January 12, 2009.

<sup>21</sup> DCR. 2009. Hockomock Swamp. Website <http://www.mass.gov/dcr/stewardship/acec/acecs/l-hcksmp.htm>. Accessed on September 1, 2009.

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 and New Haven Railroad in 1973 and reserved as a public transportation corridor. Although the right-of-way is used as an informal recreation trail, including the use of All Terrain Vehicles (ATVs) 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.”

### ***Protected Public Open Space***

Table 4.10-5 lists the protected public open space within 0.25 mile of the Stoughton Line and the Whittenton Branch, shown in Figures 4.10-7a-e and 4.10-8a-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 4.10-7a), 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 4.10-7b), 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.<sup>22</sup> 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

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<sup>22</sup> 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 4.10-5 Stoughton Alternatives Protected Public Open Space**

City/Town	Name	Ownership	Type
<b>Stoughton Line</b>			
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
<b>Whittenton Branch</b>			
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).  
 DCR-Massachusetts Division of Conservation and Recreation; DFW- Massachusetts Division of Forestry and Wildlife  
 Key: R = Recreation; C = Conservation; B = Conservation and Recreation; E = Educational Facility; H/C = Historic/Cultural

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.

#### *Hockomock Swamp Wildlife Management Area*

This area is described within the Hockomock Swamp ACEC under the Stoughton Alternatives.

#### *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 Line crosses the swamp in a one mile segment from King Phillip Street to East Britannia Street (Figure 4.10-7-d). This 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 4.10-7e). 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 4.10-7b). 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 kids.

### Rapid Bus Alternative Study Area

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 Rapid Bus Alternative (Figures 4.10-9a-g). Privately owned open space is also described where information is available.

#### *Areas of Critical Environmental Concern*

Portions of Route 24 that will be used for the Rapid Bus Alternative pass through the Hockomock Swamp ACEC (Figures 4.10-9e-f), which was discussed above under the Stoughton Alternatives.

#### *Protected Public Open Space*

Table 4.10-6 lists the protected public open space within 0.25 mile of Rapid Bus Alternative. Selected protected public open spaces adjacent to the highway alignments are briefly described, based on available information, in the following paragraphs. The Hockomock Swamp WMA was described above as part of the Hockomock Swamp ACEC.

**Table 4.10-6 Rapid Bus Alternative Protected Public Open Space**

City/Town	Name	Ownership	Type
Braintree, Quincy, Randolph	Blue Hills Reservation	State - DCR	B
Stoughton	T.L. Edwards Estate	Town	C
Brockton	Hancock Field	City	R
	Stone Farm	City	B
	Brockton Veterans Administration Hospital	Federal - Department of Defense	R
West Bridgewater	West Meadows	Town	R
	West Bridgewater State Forest	State – DCR	R
West Bridgewater, Bridgewater	Hockomock Swamp WMA	State – DFW	R
Bridgewater	Handi Kids	Town	R
Raynham	Merrill/Laliberte Elementary School fields	Town	E
	Kransberg Conservation Area at Dam Lot Brook	Town	B
	Woodland Conservation Area	Town	B
Taunton	Terra Property	City	C
	Bristol-Plymouth Vocational Technical School sports fields	City	E

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

#### *Blue Hills Reservation*

The Blue Hills Reservation (Figures 4.10-9a-b), owned by the DCR, stretches over 7,000 acres from Quincy to Dedham and Milton to Randolph, providing the largest open space within 35 miles of Boston. Interstate 93 runs through the reservation in Quincy and Randolph. Approximately 2,330 acres of the reservation includes the Fowl Meadow and Ponkapoag Bog ACEC. There are more than 125 miles of

trails that traverse a diversity of habitats including upland and wetland forests, swamps, ponds, meadows and an Atlantic white cedar bog. It provides habitat for several state-listed species. The Blue Hills Reservation was created in 1894 to preserve natural scenery for the use and enjoyment of the public. It offers numerous outdoor activities including hiking, biking, horseback riding, skiing, and viewing of wildlife and nature. The Great Blue Hill, the highest of the 22 hills in the Blue Hills chain, reaches a height of 635 feet.<sup>23</sup>

#### *West Bridgewater State Forest*

The DCR-owned West Bridgewater State Forest is adjacent to the West Meadows and West Meadows WMA (Figures 4.10-9d-e). The State Forest totals approximately 147 acres and contains approximately 15 miles of trails. The trails are primarily used by mountain bikers and hikers. The State Forest is open for hunting during the Massachusetts hunting season and also is used for fishing at West Meadow Brook Pond.

#### ***Private Open Space***

No private open space has been identified within 0.25 mile of the Rapid Bus Alternative.

### **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 National Environmental Policy Act (NEPA) Council on Environmental Quality (CEQ), 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, the Massachusetts Environmental Policy Act (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.”

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<sup>23</sup> DCR. 2009. Blue Hills Reservation. Websites: <http://www.mass.gov/dcr/parks/metroboston/blue.htm> and [http://www.mass.gov/dcr/parks/metroboston/blue\\_hills\\_brochure.pdf](http://www.mass.gov/dcr/parks/metroboston/blue_hills_brochure.pdf). Accessed on January 12, 2009.

The Secretary of the EEA issued a certificate on the ENF on April 3, 2009. The certificate includes a number of requirements defining the scope of the Draft Environmental Impact Report (DEIR). Specific requirements for protected open spaces and ACECs are:

- “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 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, constructing entirely new railroads, replacing existing railroad bridges and culverts, constructing new permanent or temporary railroad bridges, reconfiguring at-grade road/railroad crossings, constructing new grade-separated road/railroad crossings, constructing new dedicated bus lanes and any associated highway widening, and replacing any highway interchanges or bridges.

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.

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.
- Section 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.
- Section 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.
- Section 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.

### **Southern Triangle (Common to All Rail Alternatives)**

Portions of the rail lines within the southern part of the South Coast Rail Study Area are common to all rail 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 rail alternatives. The northern part of the South Coast Rail Study Area is described in subsequent sections.

#### ***Fall River Secondary Rail Segment***

The existing Fall River Secondary (as shown in Figure 1.4-1) freight track would be upgraded to Federal Rail Administration (FRA) Class 5<sup>24</sup> for the South Coast Rail project. The 11.8-mile long single track alignment would have three sidings. 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 constructed along the length of the line, and electric substations 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, the Weaver's Cove West site, or the ISP site. Potential impacts to protected open spaces and ACECs resulting from constructing and using the new stations and layover facilities along the Fall River Secondary are considered in Sections 4.10.3.10 and 4.10.3.11, 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

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<sup>24</sup> FRA. 2009. 49 CFR 213.9 Classes of Track: Operating Speed Limits. US Department of Transportation, Federal Rail Administration.

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 existing New Bedford Main Line (as shown in Figure 1.4-1) freight track would be upgraded to FRA Class 5 for the South Coast Rail project. Two to three tracks would be constructed between Weir Junction and Myricks Junction, and a single track with three sidings from Myricks Junction to New Bedford, over a total length of 18.9 miles. 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 electric substations 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 or the Church Street site. Potential impacts to protected open spaces and ACECs resulting from constructing and using the new stations and layover facilities along the New Bedford Main Line are considered in Sections 4.10.3.10 and 4.10.3.11, respectively.

The New Bedford Main Line passes through or is adjacent to several protected open spaces (Figures 4.10-3a-e). 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.

### **Attleboro Electric Alternative**

The Attleboro Electric Alternative would provide commuter rail service to South Station using the Northeast Corridor, proposed Attleboro Bypass, and Attleboro Secondary, as well as the aforementioned Southern Triangle components (Fall River Secondary and New Bedford Main Line). The New Bedford route would be 60.4 miles long and the Fall River route would be 57.9 miles long. Figure 1.4-1 shows the route of the Attleboro Alternative.

This alternative requires improvements to track infrastructure along the Northeast Corridor (construct a third track between the proposed Attleboro Bypass and the Readville Station in Boston, a distance of 18.7 miles); the Attleboro Bypass (a new two-track railroad on a new right-of-way between the Northeast Corridor and the Attleboro Secondary, a distance of 2.8 miles); and the Attleboro Secondary (reconstruct existing freight rail tracks from the Attleboro Bypass to Weir Junction, as a single track with one siding, a distance of 9.7 miles).

The Attleboro Electric Alternative passes through three ACECs, the Fowl Meadow and Ponkapoag Bog ACEC, the Canoe River ACEC, and the Three Mile River ACEC. This alignment also passes through or is adjacent to numerous protected open spaces. Potential impacts to protected open spaces and ACECs

resulting from developing these three segments of the Attleboro Electric Alternative are described below.

**Northeast Corridor Segment of the Attleboro Alternative**

The existing Northeast Corridor line would be used for the Attleboro Electric Alternative from Boston’s South Station to the northern end of the Attleboro Bypass (as shown in Figure 1.4-1). The existing double-track line supports both electric- and diesel-powered regional freight and passenger service.

A third track would be added along the Northeast Corridor from the Readville station south to the new Attleboro Bypass (described in Section 4.10.3.3). Constructing the third track would require earthwork for the expanded railroad bed, installing new three-track catenary supports with wires along the length of the line, reconstructing three existing stations (Canton Junction, Mansfield, and Sharon), and reconstructing numerous bridges. A new bridge would be required adjacent to the historic Canton Viaduct, which is of insufficient width to accommodate the third track. No electric substations would be constructed within protected open spaces or the ACEC along the Northeast Corridor for the Attleboro Electric Alternative. No changes in road/railroad crossing configurations are planned. No layover facilities are planned within this segment. Potential impacts to protected open spaces and ACECs resulting from reconstructing and using the existing stations along the Northeast Corridor are considered in Section 4.10.3.10.

The Northeast Corridor alignment passes through the Fowl Meadow and Ponkapoag Bog ACEC, the Canoe River Aquifer ACEC, and numerous protected open spaces.

The estimated area of protected open space or publicly owned parcels within ACECs required for constructing the Attleboro Electric Alternative in the Northeast Corridor is listed in Table 4.10-7 and shown in Figures 4.10-5a-c. All of this area would be used for the widened right-of-way necessary for the railroad improvements. No electrical substations would be constructed within protected open spaces along the Northeast Corridor for the Attleboro Electric Alternative.

**Table 4.10-7 Attleboro Electric Alternative, Northeast Corridor  
Protected Open Space and ACEC Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Sharon	Saw Mill Pond/Beaver Brook	Public	Conservation	0.07
	Deborah Sampson Park	Public	Recreation	0.22
	Town of Sharon Land in Canoe River Aquifer ACEC	Public	Conservation	0.02
Mansfield	Great Woods	Public	Conservation	0.58
	Gilbert Street Rear	Public	Conservation	0.94
<b>Total</b>				<b>1.83</b>

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

Each of these parcels is owned by either the Town of Sharon or the Town of Mansfield, and would therefore be considered Article 97 land subject to the provisions of the EEA’s Article 97 Land Disposition Policy.

No road/railroad crossings will be altered for constructing the Attleboro Electric Alternative in the Northeast Corridor. Access to protected open spaces and ACECs are not anticipated to be impacted by using the Northeast Corridor for the Attleboro Electric Alternative.

**Attleboro Bypass Rail Segment of the Attleboro Electric Alternative**

A new double-track FRA Class 5 segment, the Attleboro Bypass, would be constructed for the Attleboro Electric Alternative to connect the existing Northeast Corridor line with the existing Attleboro Secondary (as shown in Figure 1.4-1). The Attleboro Bypass would pass through undeveloped land, crossing and adjacent to an existing National Grid electric transmission line corridor. Constructing this segment for the Attleboro Electric Alternative would require building catenary supports and wires along the length of the line, and one new electric substation. Two new road/railroad crossings would be required for the Attleboro Bypass. The Richardson Avenue and Pleasant Street (Route 123) crossings, in Norton, would be at-grade crossings with lights and gates. No new stations or layover facilities are planned within this segment.

The Attleboro Bypass alignment passes through or is adjacent to several protected open spaces. No ACECs are present along this alignment and, accordingly, no direct effects to ACECs would result from constructing the Attleboro Bypass.

The estimated area of protected open space acquisition required for constructing the Attleboro Bypass is listed in Table 4.10-8 and shown in Figure 4.10-6a-c. All of this area would be used for the new right-of-way necessary for the railroad alignment. No electrical substations would be constructed within protected open spaces along the Attleboro Bypass for the Attleboro Electric Alternative.

**Table 4.10-8 Attleboro Electric Alternative, Attleboro Bypass Protected Open Space Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Mansfield	Gilbert Street Rear	Public	Conservation	3.34
Norton	Medeiros Family Wildlife Preserve	Private	Conservation	0.65
Attleboro	Nickerson Walking Woods Preserve	Private	Conservation	<u>2.07</u>
<b>Total</b>				<b>6.06</b>

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

The Gilbert Street Rear parcel is owned by the Town of Mansfield, and would therefore be considered Article 97 land subject to the provisions of the EEA’s Article 97 Land Disposition Policy. The two privately owned parcels would also be considered Article 97 land subject to the provisions of the EEA’s Article 97 Land Disposition Policy.

During operations, temporary delays in traffic flow may occur at the Richardson Avenue and Pleasant Street at-grade crossings, which allow access to each of the protected open spaces along this corridor. Access to protected open spaces is not anticipated to be permanently impacted by the Attleboro Bypass.

Access *within* the three protected open spaces would be limited by the new railroad line: portions of each protected open space would be divided from the rest of the parcels. The northwestern corners of

the Gilbert Street Rear and Medeiros Family Wildlife Preserve protected open spaces would be divided; however, these sites are conservation-oriented and public usage is limited. The eastern portion of the Nickerson Walking Woods Preserve would also be divided. This area was previously disturbed by the electrical transmission line corridor, and the new Attleboro Bypass alignment would be an incremental addition to this disturbance.

The Medeiros Family Wildlife Preserve, Gilbert Street Rear, and the Nickerson Walking Woods parcels would be fragmented by the new alignment, potentially changing the conservation functions of these protected open spaces.

#### ***Attleboro Secondary Rail Segment of the Attleboro Electric Alternative***

The existing Attleboro Secondary (as shown in Figure 1.4-1) freight track would be upgraded to FRA Class 5 for the Attleboro Electric Alternative. All of the existing public at-grade road/railroad crossing would be reconfigured and/or improved to meet current safety standards. The freight service using the Attleboro Secondary is diesel-powered; no electrical infrastructure is present. New catenary supports and wires would be constructed along the length of the line, and electric substations at selected locations. Two new train stations would be constructed along this alignment in Norton and Taunton (Barrowsville and Downtown Taunton, respectively). No new layover facilities would be constructed along this segment. Potential impacts to protected open spaces and ACECs from constructing and using the new stations along the Attleboro Secondary are considered in Section 4.10.3.10.

One ACEC is present along this corridor, the Three Mile River Watershed ACEC (Figures 4.10-6a-c). The Attleboro Secondary alignment also passes through or is adjacent to several protected open spaces. However, no protected open space or publicly owned parcels within ACECs would be acquired for improving the Attleboro Secondary.

Construction activities are not expected to impact traffic patterns near or access to any proximate protected open space or the ACEC. During operations, temporary delays in traffic flow may occur at the Union Road at-grade crossing in Norton, which allows local access to five nearby protected open spaces. Access to proximate protected open spaces and ACECs are not anticipated to be substantively impacted by the Attleboro Secondary.

#### **Attleboro Diesel Alternative**

The Attleboro Diesel Alternative north of the Southern Triangle is comprised of the same three railroad segments as the Attleboro Electric Alternative: the Northeast Corridor, the Attleboro Bypass, and the Attleboro Secondary (shown in Figure 1.4-1).

Diesel-powered train service differs from electric-powered service in not requiring electrical infrastructure. There would be no overhead catenary system necessary for the Attleboro Diesel Alternative. However, the existing overhead catenary system supplying power to electric-powered trains along the Northeast Corridor would be upgraded to accommodate the additional width for the third track, even though the overhead catenary system would not be used for this alternative. Electric substations would not be necessary; the footprint of the area impacted is therefore smaller. However, since none of the electric substations planned for the Attleboro Electric Alternative would be within a protected open space or ACEC (as described in Section 4.10.3.3), there would be no difference in the amount of protected open space or ACEC land acquisition required for the Attleboro Diesel Alternative

as compared to the Attleboro Electric Alternative along any of the three segments. All other aspects of the Attleboro Diesel Alternative relevant to protected open spaces and ACECs are the same as for the Attleboro Electric Alternative described in Section 4.10.3.3.

### **Stoughton Electric Alternative**

The Stoughton Electric Alternative north of the Southern Triangle would be comprised of 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 (a third track would not be added to this segment, unlike for the Attleboro Alternatives). From Canton Junction, the existing Stoughton Line would be used to the 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 in Section 4.10.3.2.

The existing Stoughton Line commuter rail double track from Canton Junction to Stoughton Station, a distance of 3.8 miles, would be upgraded to FRA Class 5 for the Stoughton Electric Alternative. New FRA Class 5 single or double track would be placed on the out-of-service railroad bed from Stoughton Station south to Winter Street in Taunton, a distance of 15.0 miles. New FRA Class 5 single track would replace existing freight track from Winter Street to Weir Junction, a distance of 1.7 miles. 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. (An additional electrical substation required for this alternative would be constructed within the New Bedford Main Line segment, as described in the Southern Triangle section.)

Two existing train stations along the Stoughton Line would be reconstructed (Canton Center and Stoughton). Four new train stations would be constructed along this alignment (North Easton, Easton Village, Raynham Place, 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 4.10.3.10.

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 4.10-9 and shown in Figures 4.10-7a-e. This area would be used for the widened right-of-way necessary for the railroad improvements or construction, and for a traction power facility.

The two entries for Easton in Table 4.10-9 represent one 0.94-acre parcel, for a traction power facility. The site is entirely within the Hockomock Swamp ACEC. One of these parcels is designated for conservation purposes, and would therefore be considered Article 97 land subject to the provisions of the EEA's Article 97 Land Disposition Policy.

**Table 4.10-9 Stoughton Electric Alternative Protected Open Space Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Stoughton	Stoughton Memorial Conservation Land	Public	Conservation/Recreation	0.15
Easton	Southeast Regional Vocational Tech School	Public	Recreation	0.65
	Easton Conservation Land	Public	Conservation	<u>0.29</u>
<b>Total</b>				<b>1.09</b>

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

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

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 the 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 Wildlife Management Area would be impacted along the Stoughton Line railroad bed: informal recreational usage of the railroad bed by pedestrians, 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. As described above for the Attleboro Diesel Alternative, 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 in Section 4.10.3.5.

The estimated area of protected open space required for constructing the Stoughton Diesel Alternative in Stoughton Line segment is listed in Table 4.10-10 and shown in Figures 4.10-7a-e. This area would be used for the widened right-of-way necessary for the railroad improvements. No publicly owned parcels within an ACEC would be required for this alternative.

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. The direct impacts to access to and within protected open spaces along the Stoughton Line for the Stoughton Diesel Alternative would be identical to the Stoughton Electric Alternative described above.

**Table 4.10-10 Stoughton Diesel Alternative Protected Open Space Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Stoughton	Stoughton Memorial Conservation Land	Public	Conservation/Recreation	0.15

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

### Whittenton Electric Alternative

The Whittenton Electric Alternative is a variant of the Stoughton Electric Alternative alignment described in Section 4.10.3.5. Specifically, at Raynham Junction near the southern end of the Stoughton Line, the route would divert to the southwest, following the out-of-service Whittenton Branch. A single track would be constructed along this right-of-way, for a distance of 3.5 miles. The Whittenton Branch connects with the Attleboro Secondary at Whittenton Junction in Taunton, and then continues toward the southeast to connect with the New Bedford Main Line at Weir Junction, at the northern end of the Southern Triangle. 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 component; other components of this alternative are described in Sections 4.10.3.3 and 4.10.3.5. Only a 2.4-mile long segment of the southern portion of the Attleboro Secondary and a 16.2-mile long segment of the northern portion of the Stoughton Line would be used for the Whittenton Electric Alternative.

New track would be placed on the out-of-service Whittenton Branch railroad bed from Raynham Junction to Whittenton Junction. 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. No electrical substations would be constructed along the Whittenton Branch; an electrical substation uniquely required for this alternative would be constructed within the Attleboro Secondary segment. No new stations or layover facilities would be constructed along the Whittenton Branch.

The Whittenton Branch does not pass through nor is it adjacent to any ACEC. It is near (within 0.5 mile of) the southern limit of the Hockomock Swamp ACEC. It is noted that the portion of the Attleboro Secondary used for the Whittenton Electric Alternative is outside of the Three Mile River Watershed ACEC and no protected open space would be acquired along that segment for this alternative. 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.

The estimated area of protected open space acquisition required for constructing the Whittenton Electric Alternative along the Whittenton Branch is listed in Table 4.10-11 and shown in Figures 4.10-8a-b. This area would be used for the widened right-of-way necessary for the railroad improvements.

This parcel is owned by the Town of Taunton for recreation purposes, and would therefore not be considered Article 97 land subject to the provisions of the EEA's Article 97 Land Disposition Policy.

**Table 4.10-11 Whittenton Electric Alternative Protected Open Space Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Taunton	City of Taunton parcel, off Pleadwell Street	Public	Recreation	0.15

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

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 along the Whittenton Branch; 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 Attleboro Diesel Alternative and the Stoughton Diesel Alternative, diesel-powered train service differs from electric-powered service in not requiring electrical infrastructure. Electrical substations would not be necessary; the footprint of the area impacted is therefore smaller. However, the electrical substation planned for the Whittenton Electric Alternative (which would actually be located along the Attleboro Secondary) would not be within a protected open space or ACEC. There would be no difference in the amount of protected open space or ACEC land acquisition required for the Whittenton Diesel Alternative as compared to the Whittenton Electric Alternative. All other aspects of the Whittenton Diesel Alternative are also common with the Whittenton Electric Alternative; Section 4.10.3.7 provides an evaluation of these common aspects.

### Rapid Bus Alternative

The Rapid Bus Alternative would provide rapid express bus service to South Station in Boston from Fall River and New Bedford via I-93, Route 140, and Route 24. North of I-495, buses would use a combination of new zipper bus lanes, new reversible bus lanes, two-way bus lanes, existing zipper High Occupancy Vehicle (HOV) lanes, and existing HOV lanes, along with a short section in mixed traffic. South of the I-495 interchange in Raynham, the buses would travel in the general purpose lanes with mixed traffic.

This alternative requires improvements to highway infrastructure along Route 24 (constructing third lane from Route 140 to I-495, a distance of 5.4 miles; widening Route 24 to accommodate movable barriers; constructing zipper bus lane from I-495 to Harrison Boulevard, a distance of 15.7 miles); and Route 128/I-93 (constructing reversible bus lane from Harrison Boulevard on Route 24 to Logan Express Lot, a distance of 4.2 miles; and constructing two-lane bus roadway from Logan Express Lot to existing HOV zipper lane on the Southeast Expressway, a distance of 1.6 miles). Infrastructure improvements also include constructing, reconstructing, or widening 20 bridges and reconstructing 11 highway interchanges.

This evaluation focuses on those portions of the Rapid Bus Alternative where new construction is required, from Braintree to Taunton.

Six bus stations are proposed for the Rapid Bus Alternative (King’s Highway, Whale’s Tooth, Cove, Fall River Depot, Freetown, Galleria, and Downtown Taunton). One mid-day layover facility site has been identified (Logan Express, in Boston). Overnight layover facility sites are currently being studied and will be separately analyzed for this alternative. Potential impacts to protected open spaces and ACECs from the bus stations and mid-day layover facility are considered in Sections 4.10.3.10 and 4.10.3.11, respectively.

Two ACECs are present along this corridor, the Fowl Meadow and Ponkapoag Bog ACEC and the Hockomock Swamp ACEC. The Rapid Bus highway alignment passes through the Fowl Meadow and Ponkapoag Bog ACEC for a short segment at the I-93/Route 24 interchange, and through the Hockomock Swamp ACEC from near the Route 24/Route 106 interchange to the Route 24/I-495 interchange.

The Rapid Bus alignment also passes through or is adjacent to several protected open spaces, but avoids incursions into the Blue Hills Reservation. No publicly owned parcels in ACECs would be acquired for constructing the Rapid Bus Alternative. The estimated area of protected open space acquisition required for constructing the Rapid Bus Alternative is listed in Table 4.10-12 and shown in Figure 4.10-9a-g. This area would be used for the widened right-of-way necessary for the interchange ramp improvements.

**Table 4.10-12 Rapid Bus Alternative Protected Open Space Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
West Bridgewater, Bridgewater	Hockomock Swamp WMA	Public	Conservation	0.19
Raynham	Woodland Conservation Area	Public	Conservation	<u>4.31</u>
<b>Total</b>				<b>4.50</b>

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

These parcels are owned by the Commonwealth of Massachusetts and the Town of Raynham for conservation purposes, and would therefore be considered Article 97 land subject to the provisions of the EEA’s Article 97 Land Disposition Policy.

Traffic delays on highways through and near the protected open spaces and ACECs may occur when constructing the bus or traffic lanes, or constructing new ramps at the interchanges, but the construction activities are not expected to impact streets directly accessing these sites. Access to protected open spaces and ACECs are not anticipated to be substantively impacted by implementing the Rapid Bus Alternative.

**4.10.3.10 STATIONS**

This section provides basic descriptions of each train and/or bus 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.

### **Barrowsville Station**

The Barrowsville Station (Figure 4.10-10) would be a new train station constructed along the Attleboro Secondary that would serve the Attleboro Alternatives. It would be located at 205 South Worcester Street in Norton.

The Barrowsville Station site is an undeveloped 7-acre parcel that is near, but not within, the Three Mile River Watershed ACEC as well as the Lions Park Ball Field and the Barrowsville Pond Conservation Area protected open spaces. No protected open space or publicly owned parcels in the ACEC would be acquired for constructing the Barrowsville Station.

The Barrowsville Station would be located on the west side of South Worcester Street, opposite the Three Mile River Watershed ACEC on the east side of South Worcester Street. Except for possible minor delays due to traffic congestion at peak usage periods, commuters accessing the Barrowsville Station would not impact access to the nearby Three Mile River Watershed ACEC.

The Barrowsville Pond Conservation Area and the Lions Park Ball Field are located north and south, respectively, of the site. The Barrowsville Pond Conservation Area is accessed off of Barrow Street, a side street from South Worcester Street. The Lions Park Ball Field is on Dean Street (a continuation of South Worcester Street) and is accessible from either the north (passing the Barrowsville Station site) or south. Access to these protected open spaces would not be substantively impacted by development of the Barrowsville Station.

### **Battleship Cove Station**

The Battleship Cove Station (Figure 4.10-11) would be a new train station constructed along the Fall River Secondary that would serve all rail 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 4.10-12) is an existing train station along the Stoughton Line that would serve the Stoughton and Whittenton Alternatives. It is located at 710 Washington Street in Canton. This station would be reconstructed for the Stoughton and Whittenton Alternatives.

The Canton Center 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.

### **Canton Junction Station**

The Canton Junction Station (Figure 4.10-13) is an existing train station at the junction of the Stoughton Line with the Northeast Corridor; it would serve all rail alternatives. It is located at the intersection of Beaumont and Sherman Streets in Canton. This station would be reconstructed to accommodate the third track of the Northeast Corridor.

The Canton Junction Station site is a developed parcel that is not within or near any protected open spaces. The station is within the Fowl Meadow and Ponkapoag Bog ACEC, but no publicly owned parcels within the ACEC would be acquired.

### **Downtown Taunton Station**

The Downtown Taunton Station (Figure 4.10-14) would be a new train or bus station constructed along the Attleboro Secondary that would serve the Attleboro Alternatives, the Whittenton Alternatives, or the Rapid Bus Alternative. It would be located at 22 Oak Street, near the intersection of Mason Street and Wales Street, in Taunton.

The Downtown Taunton Station site is a previously developed parcel that is near the Mill River Park protected open space in Taunton, but is neither within or near any ACECs. No protected open space land would be acquired for constructing the Downtown Taunton Station.

Local traffic may use Oak Street to access Mill River Park, passing the Downtown Taunton Station site. Temporary traffic congestion on Oak Street during peak usage periods may result from commuters accessing the Downtown Taunton Station, minimally changing traffic patterns on local streets and/or delaying access to Mill River Park. The level of service at the intersection of Washington Street and Court Street, near Mill River Park, would degrade one level at both the morning and evening weekday peak hours. However, the level of service on other nearby streets would not change and peak traffic usage (morning and evening commute times) would not coincide with likely park recreational use (mid-day).

### **Easton Village Station**

The Easton Village Station (Figure 4.10-15) would be a new train station constructed along the Stoughton Line that would serve the Stoughton and Whittenton 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 4.10-16) would be a new train or bus station constructed along the Fall River Secondary to serve all rail alternatives or the Rapid Bus Alternative. 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 4.10-17) would be a new train or bus station constructed along the Fall River Secondary to serve all rail alternatives or the Rapid Bus Alternative. 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.

### **Galleria Station**

The Galleria Station (Figure 4.10-18) is an existing parking lot that would serve the Rapid Bus Alternative. It is located at the Silver City Galleria Mall, near the intersection of Routes 140 and 24 in Taunton. The Galleria Station improvements would include re-surfacing and re-striping existing pavement to improve traffic flow and meet the expected parking needs for the Rapid Bus Alternative.

The Galleria Station site is developed as an existing transit facility that is not within or near any protected open spaces or ACECs. No direct or indirect effects to protected open spaces or ACECs would result from using the Galleria Station for the Rapid Bus Alternative.

### **King's Highway Station**

The King's Highway Station (Figure 4.10-19) would be a new train or bus station constructed along the New Bedford Main Line to serve all rail alternatives or the Rapid Bus Alternative. 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.

### **Mansfield Station**

The Mansfield Station (Figure 4.10-20) is an existing train station along the Northeast Corridor that would serve the Attleboro Alternatives. It is located at 1 Crocker Street in Mansfield. This station would be reconstructed to accommodate the third track of the Northeast Corridor for the Attleboro Alternatives.

The Mansfield Station is an active transit facility that is adjacent to the North Common Park and near the Fulton Pond protected open spaces. This site is not within or near any ACECs. Reconstructing the Mansfield Station would include relocating the station building to accommodate the third track, additional parking, and traffic access (Figure 4.5-63). A new parking lot would encroach into the North Common Park. The estimated area of protected open space acquisition required for reconstructing the Mansfield Station is listed in Table 4.10-13.

**Table 4.10-13 Mansfield Station Protected Open Space Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Mansfield	North Common Park	Public	Recreation	0.21

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

North Common Park is owned by the City of Mansfield, and would therefore be considered Article 97 land subject to the provisions of the EEA's Article 97 Land Disposition Policy. North Common Park comprises approximately 0.70 acres; the proportion of the park required for expanding the Mansfield Station is approximately one third of the total area.

The North Common Park is immediately adjacent to the station, and public access to the park is from the station and Chauncy Street. Increased use of the station from implementing the Attleboro Alternatives may impact access to and use of the North Common Park, but the additional traffic is likely to be an insignificant change from the current status. Fulton Pond is approximately 0.5 mile south of the station and accessible from Rumford Avenue off of North Main Street. Surface streets accessing Fulton Pond are separated from the Mansfield Station by both distance and intervening blocks. Given the distance from the station and current use, access to Fulton Park are unlikely to change as a result of using the Mansfield Station.

#### **North Easton Station**

The North Easton Station (Figure 4.10-21) would be a new train station constructed along the Stoughton Line that would serve the Stoughton and Whittenton 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 the 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 Place Station**

The Raynham Place Station (Figure 4.10-22) would be a new train station constructed along the Stoughton line that would serve the Stoughton and Whittenton Alternatives. It would be located at 1958 Broadway in Raynham, at the existing Raynham Park greyhound dog racing facility.

The Raynham Place site is a developed parcel that is near the Hockomock Swamp Wildlife Management Area 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 Place Station.

Commuters accessing the Raynham Place Station would use Broadway (Route 138), passing through the existing, privately owned Raynham Park greyhound dog racing facility. Broadway also provides access to the Hockomock Swamp Wildlife Management Area and ACEC at numerous points distant from the Raynham Place 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.

### Sharon Station

The Sharon Station (Figure 4.10-23) is an existing train station along the Northeast Corridor that would serve the Attleboro Alternatives. It is located at 1 Upland Road in Sharon. This station would be reconstructed to accommodate the third track of the Northeast Corridor for the Attleboro Alternatives.

The Sharon Station is an active transit facility that is proximate to the Massachusetts Audubon Society Moose Hill Wildlife Sanctuary, Petee’s Hill Sliding Area, Wilbur Intermediate School, and two Town of Sharon Conservation Commission protected open spaces. This site is not within or near any ACECs. Reconstructing the Sharon Station would include reconfiguring the parking lot at the south end of the station site. This parking lot encroaches into Town of Sharon conservation land. The estimated area of protected open space acquisition required for reconfiguring the Sharon Station parking lot is listed in Table 4.10-14.

**Table 4.10-14 Sharon Station Protected Open Space Acquisition**

City/Town	Name	Ownership	Use	Acquisition Area (acres)
Sharon	Conservation Land	Public	Conservation	0.83

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

The Sharon Station is accessed from Upland Road and Depot Street. Petee’s Hill Sliding Area is across Depot Street from the station, accessible from both Depot Street and the intersecting Hillside Avenue. The two Town of Sharon Conservation Commission sites, and the Massachusetts Audubon Society Moose Hill Wildlife Sanctuary, are accessible from Upland Road as well as other surface streets distant from the Sharon Station area. Wilbur Intermediate School is accessible from Pond Street, separated from Sharon Station by several blocks and other thoroughfares.

### Stoughton Station

The Stoughton Station (Figure 4.10-24) is an existing train station along the Stoughton Line that would serve the Stoughton and Whittenton Alternatives. It is located at 45 Wyman Street in Stoughton. This station would be reconstructed for these alternatives.

The Stoughton Station is an active transit facility that is proximate to five protected open spaces. This site 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). Each of these streets intersects major streets passing the Stoughton Station. Temporary traffic congestion on any of the major streets may result during peak usage periods from commuters accessing

the Stoughton Station, potentially delaying access to the protected open spaces. However, peak traffic usage (morning and evening commute times) would not coincide with likely park recreational use (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 4.10-25) 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 that is 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 4.10-26) would be a new train station constructed along the New Bedford Main Line that would serve all rail 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 4.10-27) would be a new train or bus station constructed along the New Bedford Main Line constructed to serve all rail alternatives or the Rapid Bus Alternative. 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.

#### **4.10.3.11 LAYOVER FACILITIES**

One mid-day train layover facility is planned for the Boston area, but alternative sites have not been selected yet. One mid-day bus layover facility is also planned for the Boston area. Two 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. Three alternative sites have been identified in Fall River and two alternative sites in New Bedford. 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.

##### **Logan Express Bus Layover Facility**

The proposed Logan Express (Mid-Day Bus) layover facility, in Braintree would be constructed on Forbes Road, along Interstate 93 (Figure 4.10-28). Buses would have direct access to the proposed facility from dedicated bus lanes to be placed within the median of I-93. The proposed site is a large, existing Park and Ride lot for the Logan Express service offered by Massport.

There are no required changes to the site for layover functions therefore; there will be no impacts to protected open space or ACECs.

##### **Wamsutta Layover Facility**

The Wamsutta site layover facility (Figure 4.10-29) would be constructed along the New Bedford Main Line and would serve all rail 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.

##### **Church Street Layover Facility**

The Church Street site layover facility (Figure 4.10-30) would be constructed along the New Bedford Main Line and would serve all rail alternatives. It would be located between Church Street and Route

140, near where Route 140 crosses the New Bedford Main Line, approximately 4.5 miles from the southern terminus of the line.

The Church Street site is a previously developed parcel that is near the Acushnet Swamp State Reservation, but separated from that protected open space by Route 140. It is not within or near any ACECs. No protected open space land would be acquired for constructing a layover facility at the Church Street site.

Local traffic would likely use surface streets, south of the Church Street site, to access the Acushnet Cedar Swamp. These surface streets are separated from the Church Street site by Route 140. No changes in access to this nearby protected open space are expected.

#### **Weaver's Cove East Layover Facility**

The Weaver's Cove East site layover facility (Figure 4.10-31) would be constructed along the Fall River Secondary and would serve all rail 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.

#### **Weaver's Cove West Layover Facility**

The Weaver's Cove West site layover facility (Figure 4.10-31) would be constructed along the Fall River Secondary and would serve all rail alternatives. It would be located in Fall River between the existing Fall River Secondary freight line and the Taunton River, approximately 2.5 miles from the southern terminus of the Fall River Secondary.

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

#### **ISP Layover Facility**

The ISP site layover facility (Figure 4.10-32) would be constructed along the Fall River Secondary and would serve all rail alternatives. It would be located off of Main Street in Freetown between the existing Fall River Secondary freight line and the Taunton River, approximately 6 miles from the southern terminus of the Fall River Secondary.

The ISP site is an undeveloped parcel that is near one protected open space, the Freetown/Fall River State Forest. This location is not within or near any ACECs. No protected open space land would be acquired for constructing a layover facility at the ISP site.

The portion of the Freetown-Fall River State Forest proximate to the ISP site is an isolated parcel (separated from the main body of the state forest by Route 24 and the existing Fall River Secondary freight line), and traffic patterns near or access to this isolated parcel are unlikely to be affected by constructing or using a layover facility here.

**4.10.3.12 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.

**Attleboro Electric Alternative**

The Attleboro Electric Alternative (Figure 1.4-3) would be comprised of the elements listed in Table 4.10-15, which also summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

For the Attleboro Electric Alternative, approximately 8.93 acres of land would be acquired from protected open spaces or publicly owned parcels of ACEC land. Access to most protected open spaces and ACECs would not be significantly impacted by constructing, reconstructing, or using the railroad alignments, stations, or layover facilities. A portion of the Attleboro Bypass bisects protected open space, restricting access within those sites.

**Table 4.10-15 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Attleboro Electric Alternative**

Element/Component	Direct Effects	
	Acquisition Area (acres)	Number of Parcels
<b>Railroad Alignments</b>		
Northeast Corridor	1.83	8
Attleboro Bypass	6.06	3
Attleboro Secondary	0	
Fall River Secondary	0	
New Bedford Main Line	0	
<b>Stations</b>		
Canton Junction	0	
Sharon	0.83	1
Mansfield	0.21	1
Barrowsville	0	
Downtown Taunton	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King’s Highway	0	
Whale’s Tooth	0	
<b>Layover Facility Alternatives</b>		
Wamsutta Site	0	
Church Street Site	0	
Weaver’s Cove East Site	0	
Weaver’s Cove West Site	0	
ISP Site	0	
<b>TOTAL</b>	<b>8.93</b>	<b>13</b>

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

- **Biodiversity:** The Attleboro Electric Alternative is not expected to adversely affect biodiversity in the Fowl Meadow and Ponkapoag Bog ACEC or the Canoe River Aquifer ACEC, other than a small loss of habitat immediately adjacent to the Northeast Corridor. Reconstructing the Attleboro Secondary within portions of the Three Mile River ACEC would be expected to affect biodiversity in areas adjacent to the track as a result of increased train traffic which would reduce habitat quality for some wildlife species and would increase the severity of the existing barrier.
- **Farmland soils:** The Attleboro Electric Alternative would not impact farmland soils within any ACEC.
- **Historic and archaeological resources:** The Attleboro Electric Alternative would not affect known archaeological resources within any ACEC. The Attleboro Electric Alternative, as a result of installing the overhead catenary system, would require construction in areas of moderate sensitivity for archaeological resources. Additional investigation would be required to determine if any archaeological resources within the Fowl Meadow and Ponkapoag Bog, Canoe River Aquifer, or Three Mile River ACECs would be affected. The Attleboro Electric Alternative would have an adverse effect on one historic resource within the Fowl Meadow-Ponkapoag ACEC, the Canton Viaduct.
- **Rare species:** The Northeast Corridor would potentially impact rare species habitat within the Fowl Meadow and Ponkapoag Bog ACEC and the Canoe River Aquifer ACEC, which encompass most of Priority and Estimated Habitat polygons (PH12/EH73) and (PH298/EH198), respectively. Approximately 4.4 acres of habitat potentially used by Blanding's turtle and Long's bulrush would be impacted within the Fowl Meadow and Ponkapoag Bog ACEC; and approximately 4.6 acres of habitat potentially used by eastern box turtle would be impacted within the Canoe River Aquifer ACEC. Other species and their habitat may occur within the polygons or within the contiguous ACECs.
- The Attleboro Secondary would potentially impact rare species habitat within the Three Mile River ACEC, which completely encompasses Priority and Estimated Habitat polygon (PH1439/EH948). Approximately 1.0 acre of habitat potentially used by eastern box turtle would be impacted within the Three Mile River ACEC. Other species and their habitat may occur within the polygon or within the contiguous ACECs.
- **Water resources:** The Attleboro Electric Alternative would result in discharges to the Neponset River and Sprague Pond where the Northeast Corridor passes through the Fowl Meadow and Ponkapoag Bog ACEC. The Attleboro Electric Alternative would also discharge to Meadow Brook, Meadow Pond, and the Three Mile River within the Three Mile River ACEC. However, minimal impacts to ACECs from stormwater discharges would result from the project, and surface or ground water resources within the ACECs would not be impaired.
- **Wetlands:** Potential permanent wetland impacts along the Northeast Corridor include the loss of 2.1 acres within the Fowl Meadow and Ponkapoag Bog ACEC and 0.07 acres within the Canoe River Aquifer ACEC, out of 3,230 and 3,539 total acres of wetlands within these ACECs, respectively. Potential permanent wetland impacts along the Attleboro Secondary include 0.42 acres within the Three Mile River ACEC, out of 2,715 total acres of wetlands within this ACEC.

### Attleboro Diesel Alternative

The Attleboro Diesel Alternative would be comprised of the same elements as Attleboro Electric Alternative listed above (shown in Figure 1.4-3) but would not need electrical infrastructure. The direct effects to protected open spaces and ACECs potentially resulting from implementing the Attleboro Diesel Alternative are the same as for the Attleboro Electric Alternative, as listed in Table 4.10-15.

For the Attleboro Diesel Alternative, approximately 8.93 acres of land would be acquired from protected open spaces and publicly owned parcels of ACEC land. Access to most protected open spaces and ACECs would not be significantly impacted by constructing, reconstructing, or using the railroad alignments, stations, or layover facilities. A portion of the Attleboro Bypass bisects protected open space, restricting access within those sites.

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

- **Biodiversity:** The Attleboro Diesel Alternative is not expected to adversely affect biodiversity in the Fowl Meadow and Ponkapoag Bog ACEC or Canoe River Aquifer ACEC, other than a small loss of habitat immediately adjacent to the Northeast Corridor. Reconstructing the Attleboro Secondary within portions of the Three Mile River ACEC would be expected to affect biodiversity in areas adjacent to the track as a result of increased train traffic which would reduce habitat quality for some wildlife species and would increase the severity of the existing barrier.
- **Farmland soils:** The Attleboro Diesel Alternative would not impact farmland soils within any ACEC.
- **Historic and archaeological resources:** The Attleboro Diesel Alternative would not affect known archaeological resources within any ACEC. Additional investigation would be required to determine if any archaeological resources within the Fowl Meadow and Ponkapoag Bog, Canoe River Aquifer, or Three Mile River ACECs would be affected. The Attleboro Diesel Alternative would have an adverse effect on one historic resource within the Fowl Meadow-Ponkapoag ACEC, the Canton Viaduct.
- **Rare species:** The Northeast Corridor would potentially impact rare species habitat within the Fowl Meadow and Ponkapoag Bog ACEC and the Canoe River Aquifer ACEC, which encompass most of Priority and Estimated Habitat polygons (PH12/EH73) and (PH298/EH198), respectively. Approximately 4.4 acres of habitat potentially used by Blanding's turtle and Long's bulrush would be impacted within the Fowl Meadow and Ponkapoag Bog ACEC; and approximately 4.6 acres of habitat potentially used by eastern box turtle would be impacted within the Canoe River Aquifer ACEC. Other species and their habitat may occur within the polygons or within the contiguous ACECs.

The Attleboro Secondary would potentially impact rare species habitat within the Three Mile River ACEC, which completely encompasses Priority and Estimated Habitat polygon (PH1439/EH948). Approximately 1.0 acre of habitat potentially used by eastern box turtle would be impacted within the Three Mile River ACEC. Other species and their habitat may occur within the polygon or within the contiguous ACECs.

- **Water resources:** The Attleboro Diesel Alternative would discharge to the Neponset River and Sprague Pond where the Northeast Corridor passes through the Fowl Meadow and Ponkapoag Bog ACEC. The Attleboro Diesel Alternative also would result in discharges to Meadow Brook, Meadow Pond, and the Three Mile River within the Three Mile River ACEC. However, minimal impacts to

ACECs from stormwater discharges would result from the project, and surface or ground water resources within the ACECs would not be impaired.

- Wetlands:** Potential permanent wetland impacts along the Northeast Corridor include the loss of 2.1 acres within the Fowl Meadow and Ponkapoag Bog ACEC and 0.07 acres within the Canoe River Aquifer ACEC, out of 3,230 and 3,539 total acres of wetlands within these ACECs, respectively. Potential permanent wetland impacts along the Attleboro Secondary include the loss of 0.42 acres within the Three Mile River ACEC, out of 2,715 total acres of wetlands within this ACEC.

**Stoughton Electric Alternative**

The Stoughton Electric Alternative (Figure 1.4-4) would be comprised of the elements listed in Table 4.10-16, which also summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

**Table 4.10-16 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
<b>Railroad Alignments</b>		
Northeast Corridor	0	
Stoughton Line	1.09	3
Fall River Secondary	0	
New Bedford Main Line	0.60	1
<b>Stations</b>		
Canton Junction	0	
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Place	0	
Taunton	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King’s Highway	0	
Whale’s Tooth	0	
<b>Layover Facility Alternatives</b>		
Wamsutta Site	0	
Church Street Site	0	
Weaver’s Cove East Site	0	
Weaver’s Cove West Site	0	
ISP Site	0	
<b>TOTAL</b>	<b>1.69</b>	<b>4</b>

For the Stoughton Electric Alternative, approximately 1.69 acres 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 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 Section 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, which encompasses most of Priority and Estimated Habitat polygon (PH1392/EH59). Approximately 22 acres of habitat potentially used by eastern box turtle (*Terrepena carolina carolina*) and areas potentially used by Blanding's turtle (*Emydoidea blandingii*), blue spotted salamander (*Ambystoma laterale*), wood turtle (*Clemmys insculpta*), Hessel's hairstreak (*Callophrys hesseli*) and three additional invertebrates would be impacted. An additional 11 state-listed species occur within the Hockomock Swamp polygon (PH1392/EH59). Other species and their habitat may occur within the polygons or within the contiguous ACECs.
- **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 ground water resources within the ACECs would not be impaired.
- **Wetlands:** Potential permanent wetland impacts along the Stoughton Line include the loss of 1.74 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 be comprised of the same elements as Stoughton Electric Alternative listed above (shown in Figure 1.4-4) but would not need electrical infrastructure. Table 4.10-17 summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

**Table 4.10-17 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Stoughton Diesel Alternative**

Element/Component	Direct Effects	
	Acquisition Area (acres)	Number of Parcels
<b>Railroad Alignments</b>		
Northeast Corridor	0	
Stoughton Line	0.15	1
Fall River Secondary	0	
New Bedford Main Line	0	
<b>Stations</b>		
Canton Junction	0	
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Place	0	
Taunton	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King’s Highway	0	
Whale’s Tooth	0	
<b>Layover Facility Alternatives</b>		
Wamsutta Site	0	
Church Street Site	0	
Weaver’s Cove East Site	0	
Weaver’s Cove West Site	0	
ISP Site	0	
<b>TOTAL</b>	<b>0.15</b>	<b>1</b>

For the Stoughton Diesel Alternative, approximately 0.15 acres 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 Section 4.14.

- **Farmland soils:** The Stoughton Diesel Alternative would not impact any mapped areas of designated farmland soils within an ACEC.
- **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, which encompasses most of Priority and Estimated Habitat polygon (PH1392/EH59). Approximately 22 acres of habitat potentially used by eastern box turtle (*Terrepena carolina carolina*) and areas potentially used by Blanding's turtle (*Emydoidea blandingii*), blue spotted salamander (*Ambystoma laterale*), wood turtle (*Clemmys insculpta*), Hessel's hairstreak (*Callophrys hesseli*) and three additional invertebrates would be impacted. An additional 11 state-listed species occur within the Hockomock Swamp polygon (PH1392/EH59). Other species and their habitat may occur within the polygons or within the contiguous ACECs.
- **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 ground water resources within the ACECs would not be impaired.
- **Wetlands:** Potential permanent wetland impacts along the Stoughton Line include the loss of 1.74 acres within the Hockomock Swamp ACEC, out of a total of 8,260 acres of wetlands within this ACEC.

#### Whittenton Electric Alternative

The Whittenton Electric Alternative (Figure 1.4-5) would be comprised of the elements listed in Table 4.10-18, which also summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

For the Whittenton Electric Alternative, approximately 1.24 acres of land would be acquired from protected open spaces. 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 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

**Table 4.10-18 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Whittenton Electric Alternative**

Element/Component	Direct Effects	
	Acquisition Area (acres)	Number of Parcels
<b>Railroad Alignments</b>		
Northeast Corridor	0	
Stoughton Line	1.09	3
Whittenton Branch	0.15	1
Attleboro Secondary	0	
Fall River Secondary	0	
New Bedford Main Line	0	
<b>Stations</b>		
Canton Junction	0	
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Place	0	
Downtown Taunton	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King’s Highway	0	
Whale’s Tooth	0	
<b>Layover Facility Alternatives</b>		
Wamsutta Site	0	
Church Street Site	0	
Weaver’s Cove East Site	0	
Weaver’s Cove West Site	0	
ISP Site	0	
<b>TOTAL</b>	<b>1.24</b>	<b>4</b>

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 Section 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, which encompasses most of Priority and Estimated Habitat polygon (PH1392/EH59). Approximately 22 acres of habitat potentially used by eastern box turtle (*Terrepena carolina carolina*) and areas potentially used by Blanding's turtle (*Emydoidea blandingii*), blue spotted salamander (*Ambystoma laterale*), wood turtle (*Clemmys insculpta*), Hessel's hairstreak (*Callophrys hesseli*) and three additional invertebrates would be impacted. An additional 11 state-listed species occur within the Hockomock Swamp polygon (PH1392/EH59). Other species and their habitat may occur within the polygons or within the contiguous ACECs.
- **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 ground water resources within the ACECs would not be impaired.
- **Wetlands:** Potential permanent wetland impacts along the Stoughton Line include the loss of 1.74 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 be comprised of the same elements as Whittenton Electric Alternative listed above (shown in Figure 1.4-5). Table 4.10-19 summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

For the Whittenton Diesel Alternative, approximately 0.3 acres 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 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 Section 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.

**Table 4.10-19 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
<b>Railroad Alignments</b>		
Northeast Corridor	0	
Stoughton Line	0	
Whittenton Branch	0.15	1
Attleboro Secondary	0	
Fall River Secondary	0	
New Bedford Main Line	0	
<b>Stations</b>		
Canton Junction	0	
Canton Center	0	
Stoughton	0	
North Easton	0	
Easton Village	0	
Raynham Place	0	
Downtown Taunton	0	
Taunton Depot	0	
Freetown	0	
Fall River Depot	0	
Battleship Cove	0	
King’s Highway	0	
Whale’s Tooth	0	
<b>Layover Facility Alternatives</b>		
Wamsutta Site	0	
Church Street Site	0	
Weaver’s Cove East Site	0	
Weaver’s Cove West Site	0	
ISP Site	0	
<b>TOTAL</b>	<b>0.15</b>	<b>1</b>

- Rare species:** The Whittenton Diesel Alternative would potentially impact rare species habitat within the Hockomock Swamp ACEC, which encompasses most of Priority and Estimated Habitat polygon (PH1392/EH59). Approximately 22 acres of habitat potentially used by eastern box turtle (*Terrepena carolina carolina*) and areas potentially used by Blanding’s turtle (*Emydoidea blandingii*), blue spotted salamander (*Ambystoma laterale*), wood turtle (*Clemmys insculpta*), Hessel’s hairstreak and three additional invertebrates would be impacted. An additional 11 state-listed species occur within the Hockomock Swamp polygon (PH1392/EH59). Other species and their habitat may occur within the polygons or within the contiguous ACECs.
- 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 ground water resources within the ACECs would not be impaired.

- **Wetlands:** Potential permanent wetland impacts along the Stoughton Line include the loss of 1.74 acres within the Hockomock Swamp ACEC, out of a total of 8,260 acres of wetlands within this ACEC.

**Rapid Bus Alternative**

The Rapid Bus Alternative (Figure 1.4-6) would be comprised of the elements listed in Table 4-10-20, which also summarizes the direct effects to protected open spaces and ACECs potentially resulting from implementing this alternative.

**Table 4.10-20 Summary of Potential Direct Effects to Protected Open Spaces and ACECs from the Rapid Bus Alternative**

Element/Component	Direct Effects	
	Acquisition Area (acres)	Number of Parcels
<b>Highway Alignments</b>		
Reversible Bus Lanes	0	
Interchange Improvements	4.5	2
<b>Stations</b>		
Downtown Taunton	0	
Galleria	0	
Freetown	0	
Fall River Depot	0	
King’s Highway	0	
Whale’s Tooth	0	
<b>TOTAL</b>	<b>4.5</b>	<b>2</b>

For the Rapid Bus Alternative, approximately 4.5 acres 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 highway alignments or stations.

The Rapid Bus Alternative’s impacts to ACEC key functions and values are summarized below:

- **Biodiversity:** The Rapid Bus Alternative is not anticipated to adversely affect biodiversity in the Hockomock Swamp ACEC other than a small loss of habitat immediately adjacent to the existing Route 24.
- **Farmland soils:** The Rapid Bus Alternative would not impact any mapped areas of designated farmland soils within an ACEC.
- **Historic and archaeological resources:** The Rapid Bus Alternative would not affect any areas of archaeological sensitivity within ACECs.
- **Rare species:** The Rapid Bus Alternative would potentially impact the Fowl Meadow and Ponkapoag Bog ACEC and the Hockomock Swamp ACEC, which encompass most of Priority and Estimated Habitat polygons (PH454/EH350), and (PH1392/EH59), respectively. Approximately 0.3 acres of habitat potentially used by marbled salamander (*Ambystoma opacum*) would be impacted within the Fowl Meadow and Ponkapoag Bog ACEC; and approximately 13 acres of habitat potentially used

by eastern box turtle (*Terrepenne carolina carolina*) would be impacted within the Hockomock Swamp ACEC. An additional 11 state-listed species occur within the Hockomock Swamp polygon (PH1392/EH59). Other species and their habitat may occur within the polygons or within the contiguous ACECs.

- **Water resources:** The Rapid Bus Alternative would discharge to the Neponset River within the Fowl Meadow and Ponkapoag Bog ACEC. Discharges to the Town River in Bridgewater, within the Hockomock Swamp ACEC, from the proposed Rapid Bus Alternative route would also be expected. Stormwater management for these discharges would be explored through the design process.
- **Wetlands:** Potential permanent wetland impacts along the Route 24 include the loss of 4.03 acres within the Hockomock Swamp ACEC, out of 8,260 total acres of wetlands within this ACEC.

### Summary of Impacts

Table 4.10-21 provides a summary of the direct effects to protected open spaces and publicly owned parcels in ACECs for all alternatives.

**Table 4.10-21 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
Attleboro Electric	8.93	13
Attleboro Diesel	8.93	13
Stoughton Electric	1.69	4
Stoughton Diesel	0.15	1
Whittenton Electric	1.24	4
Whittenton Diesel	0.15	1
Rapid Bus	4.50	2

The area of protected open space and publicly owned parcels within ACECs required for improving or constructing the alternatives varies considerably between the alternatives, but the overall impact would be small relative to the total area of protected open space within the South Coast Rail Project area. The total area of protected open space within the South Coast Rail study area is approximately 54,818 acres. All of the alternatives would impact well less than 0.01 percent of the total area of protected open space. The largest area and highest number of parcels of protected open spaces would be impacted by the Attleboro Alternatives, with no difference between the electric and diesel alternatives. The Stoughton Electric and the Whittenton Electric alternatives would impact approximately the same amount of protected open space, and the Stoughton Diesel and Whittenton Diesel alternatives would also impact the same acreage. The Rapid Bus Alternative would impact an intermediate amount of protected open spaces.

#### 4.10.3.13 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. Where entirely new rights-of-way would be required, such as for the Attleboro Bypass, protected open space was avoided to the extent practicable.

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.<sup>25</sup> 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.

#### ***Attleboro Alternatives***

The Attleboro Alternatives (Electric and Diesel) use existing infrastructure for the Northeast Corridor, Attleboro Secondary, Fall River Secondary, and New Bedford Main Line segments. 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 Section 4.10.3.13.2.

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<sup>25</sup> 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.

An entirely new alignment is required for the Attleboro Bypass. It was not possible to practicably avoid protected open spaces in selecting the alignment for the Attleboro Bypass.<sup>26</sup> The most logical alignment parallels an existing electrical transmission line corridor, and following this alignment would minimize overall environmental resource impacts and homes but would pass through three protected open spaces.

The new station and layover facility sites for the Attleboro Alternatives were selected in part to avoid using protected open spaces or ACECs. In only one case, for an existing station (Mansfield), would protected open space be impacted by station or layover facility construction or operation. The existing depot building at the Mansfield Station would need to be relocated to accommodate the third track, and the only logical location for the relocated building and parking lot encroaches into the North Common Park.

### ***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, as described in Section 4.10.3.13.2.

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

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<sup>26</sup> EOT. 2008. *South Coast Rail Environmental Notification Form*. Commonwealth of Massachusetts, Executive Office of Transportation and Public Works. Prepared by Vanasse Hangen Brustlin, Inc.: Boston.

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.

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.

### ***Rapid Bus Alternative***

The Rapid Bus Alternative would use existing highway alignments, avoiding protected open spaces or ACECs for all lane construction components and most interchange improvements (except ramp realignments at two locations). As originally conceived, the Rapid Bus Alternative included incursions into the Blue Hills Reservation; continuing refinement of the engineering design resulted in avoidance of the Blue Hills Reservation.

The new and existing bus station sites and mid-day layover facility site were selected, in part, to avoid 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 Attleboro Alternatives***

Incursions into 13 protected open spaces or publicly owned parcels in ACECs would be minimized along the Attleboro Alternatives alignment by the design methods noted above. The majority of the acquisition areas would be narrow slivers where all work required to upgrade the railroad cannot be accommodated in the available space (i.e., right-of-way), based upon conceptual design. Final engineering design, if one of these alternatives is selected, may further minimize, or avoid, these impacts.

The new Attleboro Bypass alignment would be the only segment within the Attleboro Alternatives that would not use an existing in-service rail line. The alignment was chosen to follow an existing electric transmission line corridor to the extent practical, taking into consideration other engineering and land ownership/use constraints. Following the electrical transmission line corridor minimizes impacts to undisturbed land, whether designated as protected open space or not.

#### ***Minimization Measures for the Stoughton Alternatives***

Incursions into two of the three 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 third incursion into a protected open space for the electric option, and the only incursion for the diesel option, would be a narrow sliver where all work required to upgrade the railroad cannot be accommodated in the available space (i.e., right-of-way), based upon conceptual design. Final engineering design, if one of these alternatives is selected, may further minimize, or avoid, these impacts.

#### ***Minimization Measures for the Whittenton Alternatives***

Three of the four incursions into protected open spaces for the Whittenton Alternatives are the same as the three incursions described above for the Stoughton Alternatives. The fourth incursion into a protected open space, applicable to both the electric and diesel options, would be a narrow sliver along the Whittenton Branch where all work required to upgrade the railroad cannot be accommodated in the available space (i.e., right-of-way), based upon conceptual design. Final engineering design, if one of these alternatives is selected, may further minimize, or avoid, these impacts.

#### ***Minimization Measures for the Rapid Bus Alternative***

The two incursions into protected open spaces for the Rapid Bus Alternative are for ramp improvements at two interchanges. Highway design parameters, engineering constraints, and land ownership/use limit the options available for ramp placement. To the extent possible, the footprints of the ramps within protected open spaces have been minimized based upon conceptual design. Final engineering design, if this alternative 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 4.10.4.1, 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 Attleboro Alternatives***

Based upon the impacts indicated by conceptual engineering plans, direct mitigation for protected open spaces impacted by the Attleboro Alternatives would replace the lost functions for Article 97 lands in the following municipalities:

- Sharon:
  - 0.07 acres of the Saw Mill Pond/Beaver Brook open space owned by the Town of Sharon; and
  - 0.02 acres of conservation land in the Canoe River Aquifer ACEC in and owned by the Town of Sharon.
  - Total for Sharon: 0.09 acres.
- Mansfield:
  - 4.28 acres of the Gilbert Street Rear protected open space owned by the Town of Mansfield;
  - 0.58 acres of the Great Woods protected open space owned by the Town of Mansfield; and
  - 0.21 acres of the North Common Park protected open space, in and owned by the Town of Mansfield.
  - Total for Mansfield: 5.07 acres.

#### ***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:
  - 0.15 acres of Stoughton Memorial Conservation Land, in and owned by the Town of Stoughton; and
- Easton (electric alternative only):
  - 0.94 acres of conservation land in the Hockomock Swamp ACEC (consisting of 0.29 acres of Town of Easton conservation land and 0.65 acres 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:
  - 0.15 acres of Stoughton Memorial Conservation Land, in and owned by the Town of Stoughton; and
- Easton (electric alternative only):
  - 0.94 acres of conservation land in the Hockomock Swamp ACEC (consisting of 0.29 acres of Town of Easton conservation land and 0.65 acres 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.

#### ***Mitigation Measures for the Rapid Bus Alternative***

Based upon the impacts indicated by conceptual engineering plans, direct mitigation for protected open spaces impacted by the Rapid Bus Alternative would replace the lost functions for:

- 0.19 acres of the Hockomock Swamp WMA, in the Town of Bridgewater and owned by the Commonwealth of Massachusetts; and
- 4.31 acres of the Woodland Conservation protected open space, in and owned by the Town of Raynham.

#### **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 will 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 regulatory programs that address protected open spaces and ACECs. 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 administered 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.<sup>27</sup> 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."<sup>28</sup>

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"<sup>29</sup> 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 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;

<sup>27</sup> EEA. 2009. "How Is Land Protected?" Commonwealth of Massachusetts, Executive Office of Environmental Affairs website [http://www.mass.gov/?pageID=eoeeaternal&L=4&LO=Home&L1=Land+Use%2c+Habitats+%26+Wildlife&L2=Land+Use+%26+Conservation&L3=Land+Protection&sid=Eoeea&b=terminalcontent&f=eea\\_if\\_land\\_protect\\_how&csid=Eoeea](http://www.mass.gov/?pageID=eoeeaternal&L=4&LO=Home&L1=Land+Use%2c+Habitats+%26+Wildlife&L2=Land+Use+%26+Conservation&L3=Land+Protection&sid=Eoeea&b=terminalcontent&f=eea_if_land_protect_how&csid=Eoeea). Accessed 17 June 2009.

<sup>28</sup> *Constitution of the Commonwealth of Massachusetts*, Article XCVII. Approved and ratified on November 7, 1972.

<sup>29</sup> EEA. 1998. *Article 97 Land Disposition Policy*. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, Massachusetts Environmental Policy Act Office: Boston.

- 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 Attleboro Alternatives***

Portions of four protected open spaces and publicly owned land within two ACECs subject to the EEA Policy would be acquired for the Attleboro Alternatives.

Five of these parcels would be used for an expanded right-of-way and one would be used to relocate the Mansfield Station for both the electric and diesel alternatives. The Attleboro Alternatives' use of these Article 97 lands complies with the exceptional circumstances criteria as follows:

- **Alternatives:** the Attleboro Alternatives would use existing, active rail lines and one short new railroad segment, 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, Whittenton, and Rapid Bus Alternatives) are substantially equivalent and have similar impacts to Article 97 lands.
- **Unique or Significant Resources:** Disposition of the six parcels for the Attleboro Alternatives would not destroy or threaten a unique or significant resource. For four of the parcels, the converted area represents a very small proportion of the overall protected area. For the Gilbert Street Rear parcel and the North Common Park parcel, the disposition would be of a substantive portion of these protected open spaces. However, the acquired portions of both do not contain unique or significant resources.
- **Real Estate and Resource Value:** An evaluation of the real estate and resource value of replacement sites will be completed if one of the Attleboro Alternatives is the selected alternative.
- **Minimum Acreage:** The final design of either of the Attleboro 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 Attleboro 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 Attleboro 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 Stoughton Alternatives***

Portions of three protected open spaces and publicly owned land within one ACEC subject to the EEA Policy would be acquired for the Stoughton Alternatives. Three of these parcels would be used for traction power substations 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 Attleboro, Whittenton, and Rapid Bus Alternatives) are substantially equivalent and have similar impacts to Article 97 lands.
- **Unique or Significant Resources:** Disposition of the four 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 will 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 four 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, three of these parcels would be used for traction power substations 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 Attleboro, Stoughton, and Rapid Bus Alternatives) are substantially equivalent and have similar impacts to Article 97 lands.

- **Unique or Significant Resources:** Disposition of the five 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 will 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.

#### ***Regulatory Compliance of the Rapid Bus Alternative***

Portions of two protected open spaces subject to the EEA Policy would be acquired for the Rapid Bus Alternative. These parcels would be used for reconfiguring on- and off-ramps at interchanges to accommodate the wider highway alignment for the additional bus and/or automobile lanes. The Rapid Bus Alternative's use of these Article 97 lands complies with the exceptional circumstances criteria as follows:

- **Alternatives:** the Rapid Bus Alternative would use existing, active highway alignments 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 Attleboro, Stoughton, and Whittenton Alternatives) are substantially equivalent and have similar impacts to Article 97 lands.
- **Unique or Significant Resources:** Disposition of the two parcels for the Rapid Bus Alternative 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 will be completed if the Rapid Bus Alternative is the selected alternative.
- **Minimum Acreage:** The final design of the Rapid Bus Alternative, 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 Rapid Bus Alternative 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 the Rapid Bus Alternative 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 4.10-22 provides a comparison of the Article 97 land acquisition requirements for each South Coast Rail alternative. 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.

The Attleboro Alternatives and the Rapid Bus Alternative would require similar total area of Article 97 land acquisition. The Stoughton and Whittenton Electric Alternatives would require acquisition of approximately one fifth of those alternatives, and the Stoughton and Whittenton Diesel Alternatives would require a minimal amount of Article 97 land acquisition

**Table 4.10-22 Summary of Article 97 Land Acquisition Requirements for All Alternatives**

ALTERNATIVE	Article 97 Lands	
	Acquisition Area (acres)	Number of Parcels
Attleboro Electric	5.16	5
Attleboro Diesel	5.16	5
Stoughton Electric	1.09	3
Stoughton Diesel	0.15	1
Whittenton Electric	1.09	3
Whittenton Diesel	0.15	1
Rapid Bus	4.50	2

**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.”<sup>30</sup> 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.

<sup>30</sup> EEA. 2009. 301 CMR 12.03 Areas of Critical Environmental Concern, General Provisions. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs: Boston.

## Requirements

According to Commonwealth regulations,<sup>31</sup> 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:

- Marine and Aquatic Productivity: Chapter 4.18 - *Chapter 91 Compliance and Coastal Zone Consistency*; Chapter 4.14 – *Biodiversity*; 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*; 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 4.16 - *Farmlands*.

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

### ***Attleboro Alternatives***

Two publicly owned parcels within ACECs would be acquired for the Attleboro Alternatives:

- 0.02 acres of the Canoe River Aquifer ACEC in the Town of Sharon; and
- 0.02 acres of the Three Mile River Watershed ACEC in the Town of Norton.

These parcels would be used for an expanded right-of-way for both the electric and diesel alternatives. These small areas, totaling 0.04 acres, represent a small proportion of the respective ACECs, and acquisition would not substantively affect any of the resource areas of concern.

### ***Stoughton Alternatives***

Two adjoining publicly owned parcels within the Hockomock Swamp ACEC in Easton would be acquired for the Stoughton Alternatives:

- 0.65 acres of the Southeastern Regional Vocational Tech School sports fields; and
- 0.29 acres of adjoining Town of Easton conservation land.

These parcels would be used for a traction power substation for the Stoughton Electric Alternative (they would not be used for the Stoughton Diesel Alternative). These small areas, totaling 0.94 acres, represent a small proportion of the ACEC and acquisition would not substantively affect any of the resource areas of concern.

### ***Whittenton Alternatives***

Two adjoining publicly owned parcels within the Hockomock Swamp ACEC in Easton would be acquired for the Whittenton Alternatives:

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<sup>31</sup> EEA. 2009. 301 CMR 12.12: Effects of Designation. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs: Boston.

- 0.65 acres of the Southeastern Regional Vocational Tech School sports fields; and
- 0.29 acres of adjoining Town of Easton conservation land.

These parcels would be used for a traction power substation for the Whittenton Electric Alternative (they would not be used for the Whittenton Diesel Alternative). These small areas, totaling 0.94 acres, represent a small proportion of the ACEC and acquisition would not substantively affect any of the resource areas of concern.

### ***Rapid Bus Alternative***

No publicly owned parcels within ACECs would be acquired for the Rapid Bus Alternative.

### **Summary**

Table 4.10-23 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 4.10-23 Summary of ACEC Land Acquisition Requirements for All Alternatives**

<b>Alternative</b>	<b>ACEC Lands</b>	
	<b>Acquisition Area (acres)</b>	<b>Number of Parcels</b>
Attleboro Electric	0.04	2
Attleboro Diesel	0.04	2
Stoughton Electric	0.94	2
Stoughton Diesel	0	0
Whittenton Electric	0.94	2
Whittenton Diesel	0	0
Rapid Bus	0	0

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

- Biodiversity:
  - The Attleboro Alternatives are not expected to adversely affect biodiversity in the Fowl Meadow and Ponkapoag ACEC or Canoe River Aquifer ACEC, other than a small loss of habitat immediately adjacent to the existing Northeast Corridor rail line. Reconstructing the Attleboro Secondary within portions of the Three Mile River ACEC would be expected to affect biodiversity in areas adjacent to the track as a result of increased train traffic which would reduce habitat quality for some wildlife species and would increase the severity of the existing barrier.
  - 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.
  - The Rapid Bus Alternative is not anticipated to adversely affect biodiversity in the Hockomock Swamp ACEC other than a small loss of habitat immediately adjacent to the existing Route 24.

- Farmland soils:
  - The Attleboro Alternatives would not impact any farmland soils within an ACEC.
  - 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.
  - The Rapid Bus Alternative would not impact any farmland soils within an ACEC.
- Historic and archaeological resources:
  - None of the alternatives would affect known archaeological resources within any ACEC.
  - The Attleboro Electric Alternative, as a result of installing the overhead catenary system, would require construction in areas of moderate sensitivity for archaeological resources. Additional investigation would be required to determine if any archaeological resources within the Fowl Meadow and Ponkapoag Bog, Canoe River Aquifer, or Three Mile River ACECs would be affected. The Attleboro Alternatives (both electric and diesel) would have an adverse effect on one historic resource within the Fowl Meadow and Ponkapoag Bog ACEC, the Canton Viaduct.
  - 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.
  - The Rapid Bus Alternative would not affect any areas of archaeological sensitivity within ACECs.
- Rare species:
  - Three ACECs that contain three Priority and Estimated Habitats would be impacted by the Attleboro Alternatives. Within the Northeast Corridor, approximately 4.4 acres of habitat would be impacted within the Fowl Meadow and Ponkapoag Bog ACEC; and approximately 4.6 acres of habitat would be impacted within the Canoe River Aquifer ACEC. Within the Attleboro Secondary, approximately 1.0 acre of habitat would be impacted within the Three Mile River ACEC. Other species and their habitat may occur within the polygons or within the contiguous ACECs. There are no ACECs crossed by the Attleboro Bypass or by the Southern Triangle.
  - 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.
  - The Rapid Bus Alternative would impact two ACECs that contain two Priority and Estimated Habitats. Approximately 0.3 acres of habitat would be impacted within the Fowl Meadow and Ponkapoag Bog ACEC, and approximately 22 acres of habitat would be impacted within the Hockomock Swamp ACEC. Other species and their habitat may occur within the polygons or within the contiguous ACECs.
- Water resources:
  - All rail 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 ground water resources within the ACECs would not be impaired.

- The Rapid Bus Alternative would discharge to the Neponset River within the Fowl Meadow and Ponkapoag Bog ACEC. Discharges to the Town River in Bridgewater, within the Hockomock Swamp ACEC, from the proposed Rapid Bus Alternative route would also be expected. Stormwater management for these discharges would be explored through the design process.
- Wetlands:
  - The Attleboro Alternatives would potentially permanently impact 2.1 acres of wetland along the Northeast Corridor within the Fowl Meadow and Ponkapoag Bog ACEC and 0.07 acres within the Canoe River Aquifer ACEC. Potential permanent wetland impacts along the Attleboro Secondary include 0.42 acres within the Three Mile River ACEC.
  - The Stoughton and Whittenton Alternatives would potentially permanently impact 1.74 acres of wetlands along the Stoughton Line. This includes the “stream” that diverted from its original course due to blockage and currently flows over the railroad grade south of the Raynham dog track. While this is a water of the U.S., it is not a wetland. Mitigation measures would include re-establishing this stream’s original channel, resulting in a beneficial impact.
  - The Rapid Bus Alternative would potentially permanently impact 4.03 acres of wetlands along the Route 24 within the Hockomock Swamp ACEC.