

## 7.0 Proposed Mitigation and MassDOT Proposed Section 61 Findings

### 7.1 INTRODUCTION

According to the Council on Environmental Quality (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA) (40 CFR 1500.2(f)), project proponents shall, to the fullest extent possible:

“Use all practicable means consistent with the requirements of the Act and other essential considerations of nation policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions on the quality of the human environment.”<sup>1</sup>

In accordance with the NEPA regulations, this chapter identifies and evaluates measures that would avoid or minimize impacts. As summarized in this chapter and discussed in greater detail in Chapter 4, certain impacts to environmental resources are unavoidable. For those impacts measures that minimize adverse impacts have been identified. These measures are discussed at the end of each resource section in Chapter 4 and summarized in this chapter.

The Massachusetts Environmental Policy Act (MEPA) regulations, at 301 CMR 11.07(j), outline mitigation measures to be addressed in the Environmental Impact Report (EIR) process, including an “assessment of physical, biological and chemical measures and management techniques designed to limit negative environmental impacts or to cause positive environmental impacts during development and operation of a Project.” The Secretary’s Certificate on the ENF for the South Coast Rail Project included requirements for the scope of the Draft EIR. The Certificate required that the Draft EIR include a mitigation chapter that:

- Includes a summary table of all mitigation commitments;
- Includes proposed Massachusetts General Law (M.G.L.) Chapter 30, Section 61<sup>2</sup> findings for all state permits with a clear commitment to mitigation, an estimate of the individual costs of the proposed mitigation and the identification of the parties responsible for implementing the mitigation.

This chapter (Section 7.4) provides a description of MassDOT’s commitments to mitigation for impacts on each of the environmental and social resources identified in the Secretary’s Certificate on the ENF, with a summary table listing all of the mitigation commitments (Table 7.4-2). A draft Section 61 Finding is included as Section 7.2.

### 7.2 PROPOSED SECTION 61 FINDINGS

*This section of this joint DEIS/DEIR was contributed by MassDOT, which is solely responsible for its content. The information contained in this section is pertinent to the DEIR only, pursuant to the proponents’ responsibilities under the Massachusetts Environmental Policy Act. The U.S. Army Corps of Engineers is not a proponent, does not have a role in MEPA compliance and does not have a position with regard to the data contained herein.*

<sup>2</sup> Massachusetts General Law, Chapter 30, Section 61: Determination of Impact by Agencies; Damages to Environment; Prevention or Minimization; Foreseeable Climate Change Impacts. <http://www.mass.gov/legis/laws/mgl/30-61.htm>.

<sup>2</sup> Massachusetts General Law, Chapter 30, Section 61: Determination of Impact by Agencies; Damages to Environment; Prevention or Minimization; Foreseeable Climate Change Impacts. <http://www.mass.gov/legis/laws/mgl/30-61.htm>.

Massachusetts General Law Chapter 30, Section 61 authorizes state agencies with permitting responsibilities to make an official determination regarding potential impacts from a proposed project and whether impacts have been avoided, minimized, and/or mitigated for appropriately. The Law requires agencies/authorities to issue a determination that includes a finding describing the environmental impact, if any, of the project and whether all feasible measures have been taken to avoid or minimize said impact.

This section provides a brief overview of the project, explains the history of the MEPA review process for the proposed South Coast Rail Project, outlines required state and federal permits and their authorities, summarizes mitigation commitments for permanent and construction-related impacts, and provides draft Section 61 determination language for state agencies.

### 7.2.1 PROJECT DESCRIPTION

The South Coast Rail Project is an initiative of the Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transportation Authority (MBTA) to bring public transportation to the South Coast region that will increase access to transit for an underserved area of the state, increase transit ridership, improve regional air quality, reduce greenhouse gas emissions, and support opportunities for smart growth and economic development.

The South Coast Rail Project, to restore passenger rail service to the South Coast region, has been extensively studied for almost twenty years. In 2002, a Final Environmental Impact Report (FEIR), prepared by the MBTA, concluded that the Stoughton Alternative was the most practicable and feasible of the alternatives and identified it as the preferred route. On August 30, 2002, the Massachusetts Environmental Policy Act (MEPA) Secretary of Environmental Affairs issued a Final Certificate (Executive Office of Environmental Affairs [EOEA] File # 10509) stating that the FEIR adequately and properly complied with MEPA and its implementing regulations. The Certificate authorized MassDOT to proceed with planning for the South Coast Rail Project as an extension of the existing Stoughton Line. However, until now, the Project had not undergone the federal environmental review process. For the project to proceed to construction, it is necessary to obtain a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (the Corps). The federal Section 404 permit application process and the associated federal environmental review according to the National Environmental Policy Act (NEPA) both require alternatives analyses as part of the decision making process. A draft NEPA alternatives analysis is provided in Chapter 3 of this document. Determination of the LEDPA will occur as a component of completing a Final Environmental Impact Statement/FEIR.

MassDOT's project purpose is "to more fully meet the existing and future demand for public transportation between Fall River/New Bedford and Boston, and to enhance regional mobility, while supporting smart growth planning and development strategies in affected communities." However, for purposes of defining mitigation requirements under Section 404, the Corps uses the overall project purpose, which is: "to more fully meet the existing and future demand for public transportation between Fall River/New Bedford and Boston, and to enhance regional mobility." In addition to the No-Build Alternative, MassDOT is evaluating seven transportation alternatives connecting Fall River and New Bedford with Boston:

- The Attleboro Alternatives, which would use existing commuter and freight rail tracks (the Northeast Corridor, Attleboro Secondary, New Bedford Main Line, and Fall River Secondary) and a segment of new right-of-way (the Attleboro Bypass). Three existing commuter rail stations would be modified (Canton Junction, Sharon, Mansfield) and eight new stations constructed (Barrowsville, Downtown

Taunton, Taunton Depot, Freetown, Fall River Depot, Battleship Cove, King's Highway and Whale's Tooth). Both electric and diesel options are evaluated.

- The Stoughton Alternatives, which would use existing commuter and freight rail tracks (the Northeast Corridor, Stoughton Line, New Bedford Main Line, and Fall River Secondary) and a segment of out-of-service rail right-of-way (the Stoughton Line south of Stoughton Station). Three existing commuter rail stations would be modified (Canton Junction, Canton Center, Stoughton) and ten new stations constructed (Easton Village, North Easton, Raynham, Taunton, Taunton Depot, Freetown, Fall River Depot, Battleship Cove, King's Highway and Whale's Tooth). Both electric and diesel options are evaluated.
- The Whittenton Alternatives, which would use existing commuter and freight rail tracks (the Northeast Corridor, Stoughton Line, Attleboro Secondary, New Bedford Main Line, and Fall River Secondary) and two segments of out-of-service rail right-of-way (the Stoughton Line south of Stoughton Station, and the former Whittenton Branch). Three existing commuter rail stations would be modified (Canton Junction, Canton Center, Stoughton) and ten new stations constructed (Easton Village, North Easton, Raynham, Downtown Taunton, Taunton Depot, Freetown, Fall River Depot, Battleship Cove, King's Highway and Whale's Tooth). Both electric and diesel options are being evaluated.
- The Rapid Bus Alternative, which would use existing highway rights-of-way (Route 140, Route 24, and I-93), and in some locations in a new dedicated bus lane. Rapid Bus routes would use 6 new stations (Downtown Taunton, Galleria Mall, Freetown, Fall River Depot, King's Highway, and Whale's Tooth).

The proposed project also includes two overnight layover facilities, one in Fall River and one in New Bedford. Three alternative sites (ISP, Weaver's Cove East, Weaver's Cove West) are under consideration in Fall River, and two alternatives sites (Church Street and Wamsutta) in New Bedford.

Following the completion of public review of the DEIS/DEIR, the Corps will identify the Least Environmentally Damaging Preferred Alternative (the only alternative for which the Corps can issue a Section 404 permit).

## 7.2.2 HISTORY OF MEPA REVIEW

The restoration of passenger rail service to the South Coast region has been extensively studied for almost twenty years. Prior to 1958, the Middleborough, Stoughton, and Attleboro rail lines were part of the Old Colony Railroad System that provided service to Fall River and New Bedford from Boston's South Station, via Canton Junction, along the Stoughton Branch railroad. Since discontinuation of this service, commuter rail has only been available to southeastern Massachusetts along the Boston-Providence Shore Line, with stops in Attleboro and South Attleboro, and the Old Colony Middleborough Line, which terminates in Lakeville. However, none of these provide an opportunity for commuters from the Fall River or New Bedford areas to easily or efficiently access rail transportation to Boston.

In 2000, the MBTA completed a Draft Environmental Impact Report (DEIR) that analyzed six alternative routes for providing improved transportation between downtown Boston and the cities of Fall River and New Bedford. The DEIR focused on what were viewed then as the three most viable alternatives: (1) extending the existing MBTA Stoughton Line, (2) extending the existing MBTA Middleborough Line, and (3) providing new service, branching off from the Providence Line near Attleboro.

In 2002, a FEIR, submitted by the MBTA, concluded that extending the Stoughton Line was the most practicable and feasible of the alternatives and MassDOT received state-level approval from the Secretary of Environmental Affairs to proceed with planning for the South Coast Rail Project as an extension of the existing Stoughton Line. On August 30, 2002, the MEPA Secretary issued a Final Certificate (Executive Office of Environmental Affairs [EOEA] File # 10509) stating that the FEIR adequately and properly complied with MEPA and its implementing regulations. Due to the lapse of time, MassDOT has undertaken a new review under MEPA.

An Environmental Notification Form (ENF) was submitted for review under MEPA on November 15, 2008. After public review, the Secretary of EOEEA issued a Certificate on the ENF on April 2, 2009. The Certificate found that an Environmental Impact Report was required, and provided a detailed scope for that document.

**7.2.3 RELATED PERMITS AND APPROVALS**

In addition to compliance with the National Environmental Policy Act (NEPA) and the Massachusetts Environmental Policy Act (MEPA), a number of local, state, and federal permits are needed for the proposed Project, as listed in Table 7.2-1.

**Table 7.2-1 Required Permits and Approvals**

<b>Issuing Agency</b>	<b>Approval or Permit</b>
U.S. Army Corps of Engineers	Clean Water Act, Section 404 Individual Permit
U.S. Environmental Protection Agency Region I	National Pollutant Discharge Elimination System, Construction General Permit
Federal Highway Administration	Approvals for modification to Interstate 93 (required for the Rapid Bus Alternative)
Massachusetts Office of Coastal Zone Management	Coastal Zone Management, Federal Consistency Determination
Massachusetts Executive Office of Energy and Environmental Affairs	Public Benefits Determination
Massachusetts Department of Environmental Protection	Massachusetts Wetlands Protection Act Variance Massachusetts Public Waterfront Act License(s) (Chapter 91) Clean Water Act, Section 401 Water Quality Certificate
Massachusetts Department of Fish and Game	Section 61 Finding Massachusetts Endangered Species Act Conservation and Management Permit
Massachusetts Historical Commission	Review of project for impacts to historic and archaeological properties and approval for compliance with M.G.L. Chapter 9, Sections 26-27C Memorandum of Agreement (with Corps and MassDOT) Section 61 Finding

**7.2.4 REGULATORY COMPLIANCE**

The Secretary’s Certificate on the Environmental Notification Form (ENF) stated that the draft Environmental Impact Report should:

- Describe how the project will meet the regulatory standards for a Variance under the Massachusetts Wetlands Protection Act;

- Demonstrate how the project will comply with applicable stormwater regulations;
- Discuss consistency with EEA’s Article 97 Land Disposition Policy; and
- Include an evaluation of the project’s consistency with Coastal Zone Management policies.

The project’s consistency with the CZM policies is included in Section 4.18.5 of this DEIS/DEIR. Consistency with the Article 97 Land disposition Policy is discussed in Section 4.10.4.2 of this DEIS/DEIR. The following sections describe the South Coast Rail project’s compliance with the Wetlands Protection Act, including the regulatory standards for a Variance and compliance with the WPA stormwater regulations. Regulatory compliance for other pertinent programs is discussed in Chapter 4 of this DEIS/DEIR:

- Water Quality Certification – see Section 4.16.4.2;
- Section 404 of the Clean Water Act – see Section 4.16.4.3;
- Chapter 91 – see Section 4.18.4.2;
- MESA Conservation and Management Permit – see Section 4.15.4.2; and
- MHC Review and Section 106 Compliance – see Section 4.8.

#### **7.2.4.1 MASSACHUSETTS WETLANDS PROTECTION ACT – VARIANCE ORDER OF CONDITIONS**

The Massachusetts WPA Regulations establish performance standards for work proposed within each of the state wetland resource areas and require review of any work proposed within 100 feet of a wetland resource to determine if that work would alter the resource area.

Construction of the proposed South Coast Rail project, for any of the alternatives under consideration, would require the Commissioner of the DEP to issue a Variance to MassDOT from the MA WPA Regulations. The South Coast Rail project would not meet the MA WPA performance standards for any of the wetland resource areas affected by the project (Bordering Vegetated Wetland, Bordering Land Subject to Flooding, Bank, Land under a Waterway, Riverfront Area) because the proposed project would exceed the numerical thresholds for alteration, would result in short- or long-term impacts to the habitat of state-listed rare wildlife species, and would not provide compensatory mitigation in accordance with the performance standards for Bordering Vegetated Wetland.

The Secretary’s Certificate on the ENF stated that the DEIR must:

- Address the three criteria of the Wetlands Protection Act Regulations (310 CMR 10.05) regarding granting of a Variance request:
  1. Demonstrate that there are no reasonable conditions or alternatives that would allow the project to proceed in compliance with the wetlands regulations;
  2. Propose mitigation measures that will allow the project to be conditioned so as to contribute to the protection of the interests identified in the Wetlands Protection Act; and
  3. Demonstrate that the variance is necessary to accommodate an overriding community, regional, state or national public interest, or that it is necessary to avoid an unconstitutional taking of property without compensation;
- Demonstrate that source controls, pollution prevention measures, erosion and sediment controls, and the post-development drainage system will be designed in compliance with the performance standards in the Massachusetts Stormwater Management regulations (310 CMR 10.00).

Variations may be granted by the Commissioner only if a proposed project meets the three criteria above.<sup>3</sup> These criteria and the proposed South Coast Rail Project's compliance with them according to MassDOT are presented below.

#### **Criterion 1 - No Reasonable Conditions or Alternatives**

*"There are no reasonable conditions or alternatives that would allow the project to proceed in compliance with 310 CMR 10.21 through 10.60."*

An extensive alternatives analysis was undertaken for the South Coast Rail Project, as described in Chapter 3, *Alternatives*. This analysis examined seven alternatives to determine whether they could potentially meet the project purpose and may be practicable to construct and operate:

- Attleboro Electric
- Attleboro Diesel
- Stoughton Electric
- Stoughton Diesel
- Whittenton Electric
- Whittenton Diesel
- Rapid Bus

The analysis of wetland impacts, provided in Section 4.16 of the DEIS/DEIR, shows that each of these seven alternatives would have unavoidable impacts to wetland resource areas, particularly Bordering Vegetated Wetland, that would exceed the performance standards in 310 CMR 10.00. There are no alternatives that would allow the project to proceed in compliance with the Wetlands Protection Act Regulations.

#### **Criterion 2 - Mitigating Measures**

*"Mitigating measures are proposed that will allow the project to be conditioned so as to contribute to the protection of the interests identified in M.G.L. c.131, §40."*

After receiving public comment on the DEIS/DEIR, the Corps of Engineers will identify the Least Environmentally Damaging Practicable Alternative (LEDPA). As described in Section 4.16 of this DEIS/DEIR, MassDOT will develop specific mitigation measures for the LEDPA during the preliminary and final design process. A wetland mitigation plan will be developed for the LEDPA that identifies specific on-site or off-site locations proposed to serve as suitable wetland resource mitigation areas, demonstrates its ability to successfully replicate wetland functions and ecological values, and provides wetland mitigation at a ratio of 2:1 or more. A watershed approach to wetland mitigation would be taken to compensate for direct impacts associated with the proposed work.

During the preparation of this DEIS/DEIR, MassDOT convened a wetland mitigation working group (working group) and consulted with state and federal resource agencies (DEP, DCR, NHESP, DER, EPA, Corps), as well as with conservation and planning organizations within the South Coast region (The Nature Conservancy, Mass Audubon, SRPEDD, Taunton River Watershed Association). The purpose of these efforts was to identify potential priority areas for wetland restoration and preservation within

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<sup>3</sup> 310 CMR 10.05 (10)(a), Wetlands Protection Act Regulations.

each of the study area watersheds. The working group provided insights on wetland restoration and preservation and identified several potential wetland restoration and preservation sites including the Burrage Pond WMA site formerly proposed as a mitigation bank. (if the Burrage Pond site were pursued as a mitigation option, this would not be as part of a mitigation bank). The working group discussed the types and locations of mitigation that could potentially be acceptable under different regulatory programs. The working group considered that, while one or a few large consolidated wetland restoration areas could provide substantial ecological value, small on-site wetland creation or restoration efforts may also be appropriate to meet specific goals (such as replacing lost flood storage). This coordination effort established that there are sufficient opportunities within the South Coast region's watersheds to provide adequate compensatory mitigation for any of the alternatives.

The seven alternatives evaluated in this DEIS/DEIR have a wide range of impacts to wetlands in terms of geography, magnitude, and types of functions and values affected. Considering that only the LEDPA will be advanced for more detailed design and associated mitigation, the Corps and EOEAA agreed that a detailed wetland mitigation plan consisting of specific, committed sites and strategies will be prepared once the LEDPA has been identified. Such specific mitigation sites and strategies would then be developed by MassDOT in consultation with the resource agencies.

### **Criterion 3 - Overriding Public Interest**

*“The variance is necessary to accommodate an overriding community, regional, state or national public interest; or that it is necessary to avoid an Order that so restricts the use of the property as to constitute an unconstitutional taking without compensation.”*

This DEIS/DEIR documents the need for transportation improvements in the South Coast region and substantiates the statement of the state's Project Purpose (see Chapter 2, *Purpose and Need*), which is to:

“More fully meet the existing and future demand for public transportation between Fall River/New Bedford and Boston, Massachusetts to enhance regional mobility, while supporting smart growth planning and development strategies in affected communities.”

The South Coast Rail Project is an initiative of the Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transportation Authority (MBTA) which will, by bringing public transportation to the South Coast region, provide these public benefits which constitute the overriding public interest of the South Coast Rail Project:

- Increase transit accessibility;
- Ensure equitable distribution of transit services;
- Increase transit ridership;
- Improve regional air quality;
- Advance a climate solution; and
- Support opportunities for smart growth and sustainable development.

According to MassDOT the public interest served by the South Coast Rail Project is similar to the public interests provided by other commuter rail projects for which the Commissioner of DEP has granted a variance under the Wetlands Protection Act. Some examples include:

- Newburyport Commuter Rail (March, 1996). The variance decision states that this “will serve the public interest by reducing automobile congestion and its associated air emissions. ... effectively increasing the use of public transportation and decreasing automobile commuter traffic serves an overriding public interest.”
- Old Colony Railroad Neponset River Bridge Crossing (January, 1993). “the public interest to be served by the project is that of providing mass transit commuter rail service to a portion of the Commonwealth currently poorly served by public transportation.” The OCRR project “is one of an overriding public interest which greatly improves the quality of life for a large region of the Commonwealth.”
- Ashland Commuter Rail Station (November, 2000). “The public purposes to improve regional traffic flows, reduce traffic congestion in downtown Boston, and improve air quality in the Boston Metropolitan Region. The overriding public interest is to improve the regional transportation network and air quality for a large region of the Commonwealth.”
- Old Colony Railroad Rehabilitation (Greenbush Line, July, 2004). “In summary, the Greenbush Line a) addresses an important regional public transportation need; b) reduces automobile use and provides overall air quality benefits, and c) is included as one project in a package of air quality mitigation measures for the CA/T Project. More specifically, the Greenbush Line will increase the number of travelers that choose to use public transit for work trips from the South Shore to Boston and Cambridge, and thereby reduce the VMTs by automobiles and their associated air emissions.”

The following summarizes the need for the project and aspects that relate to regional mobility and quality of service:

- Inadequate capacity of the existing transportation system to Downtown Boston;
- Congestion of the roadway system;
- Lack of regional mobility;
- Safety issues associated with the existing roadway system;
- Air quality issues and greenhouse gas emissions associated with the existing transportation system;
- Demand for transportation services;
- Inadequate public transit services; and
- Absence of other regional transportation improvements to address the identified transportation needs

A more detailed discussion of the problems identified above, as well as other considerations, is provided in Sections 2.2.2.1 through 2.2.2.10.

#### **7.2.4.2 MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS**

As described in Section 4.17 of this DEIS/DEIR, The South Coast Rail Project requires work by MassDOT within wetland resource areas and buffer zones as defined and regulated under the MA WPA. As MassDOT project subject to the jurisdiction of the MA WPA, the South Coast rail project must comply with the Massachusetts 2008 Stormwater Management Standards (310 CMR 10.05).

The South Coast Rail Project is currently at a conceptual level of design, which does not allow a detailed demonstration of how each element of the project will comply with the Stormwater Standards. Drainage collection, conveyance and treatment systems will be designed for the LEDPA in the subsequent preliminary and final design phases of the project. During the final design, each element of the South Coast Rail project will be developed in full compliance with the Stormwater Standards, in accordance with the guidelines presented below. Although the project’s level of design detail does not



yet allow a detailed discussion of site-specific compliance with the standards, the general concepts to be incorporated into the LEDPA are discussed below to demonstrate the project's ability to meet stormwater management standards once the project has been advanced to greater design detail.

The Stormwater Management Standards define the requirements for stormwater management for new or re-development sites in the State of Massachusetts. The ten performance standards and compliance requirements applicable to the South Coast Rail project are outlined below.

- **Standard 1:** No new stormwater conveyances may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The stormwater conveyance systems for track segments, stations, and layover facilities will be designed so that untreated stormwater is not discharged directly into wetlands or waters of the Commonwealth. All outlets from the stormwater management systems will be designed to prevent erosion into wetlands or waterways.

- **Standard 2:** Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

The stormwater conveyance systems for stations and layover facilities, and other areas which will be paved, will be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. As documented in Section 4.17, the conceptual designs for proposed stations have been configured such that they can accommodate stormwater detention and infiltration systems sized to meet this standard. Calculations for each element of the LEDPA will be prepared during the design and permitting phase and submitted for agency review.

- **Standard 3:** Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type.

The stormwater conveyance systems for stations and layover facilities, and other areas which will be paved, will be designed in greater detail to enable infiltration of stormwater runoff to the maximum extent practicable. After the LEDPA is selected, soil testing will be undertaken at station and layover facility sites to assist in refining the design of the stormwater management system and infiltration measures. As documented in Section 4.17, the conceptual designs for proposed stations have been configured such that they can accommodate stormwater detention and infiltration systems sized to meet this standard. Calculations for each element of the LEDPA will be prepared during the design and permitting phase of the Project and submitted for agency review.

- **Standard 4:** Stormwater management systems shall be designed to remove 80 percent of the average annual post-construction load of Total Suspended Solids (TSS).

The stormwater conveyance systems for stations and layover facilities, and other areas which will be paved, will be designed to remove 80 percent of the annual TSS loading. Calculations, for each element of the LEDPA will be prepared during the design and permitting phase and submitted for agency review.

- **Standard 5:** For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable.

As discussed in Section 4.17, the proposed layover facilities would be considered land uses with higher potential pollutant loading. These facilities will be designed with appropriate source control and pollution prevention measures to eliminate or reduce the discharge of contaminated stormwater to the extent practicable.

- **Standard 6:** Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures.

Any stormwater discharges in Zone II or IWPA's of public water supplies would be designed with specific source control and pollution prevention measures as specified in the DEP Stormwater Handbook. These discharges would be identified, and appropriate measures designed, after the LEDPA is identified.

- **Standard 7:** Redevelopment of previously-developed sites must meet the Stormwater Management Standards to the maximum extent practicable: When it is not practicable to meet all the standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.

Redevelopment of previously-developed sites (particularly station sites which are currently developed) would be designed to meet the Stormwater standards to the extent practicable, and to improve existing conditions.

- **Standard 8:** Erosion, sedimentation, and other pollutant sources must be controlled during construction and land disturbance activities to prevent impacts.

Erosion and sediment controls are proposed at the project's limit of work. Implementation of the LEDPA will require the issuance of an USEPA NPDES Stormwater Discharge Permit for Construction activities, which requires implementation of sedimentation and erosion controls. A Stormwater Pollution Prevention Plan (SWPPP) will be developed for the LEDPA during the design and permitting phases of the Project and will be included in permit applications for regulatory review.

- **Standard 9:** A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

A long-term operation and maintenance plan will be developed for each element of the LEDPA that includes structural stormwater conveyance and treatment systems, or that includes paved surfaces. Specific O&M plans are anticipated for each commuter rail station and layover facility, and for any stormwater systems associated with the railroad tracks.

- **Standard 10:** All illicit discharges to the stormwater management system are prohibited.

The stormwater conveyance and treatment system at each element of the LEDPA will be designed to preclude and prohibit illicit discharges.

### 7.2.5 PROPOSED SECTION 61 FINDINGS

Proposed Section 61 Findings for the Project have been prepared by MassDOT to comply with the requirements of Massachusetts General Laws, Chapter 30, Section 61, and MEPA regulations at 301 CMR 11.07(6)(k), which require state agencies and authorities to review, evaluate, and determine the impacts on the natural environment of all projects or activities requiring permits issued by the state. State agencies are also asked to issue findings describing environmental impacts and to certify that all feasible measures have been taken by MassDOT to avoid or minimize these impacts. Section 61 Findings will be required from agencies with responsibilities for issuing the following permits, and from MassDOT for funding for the construction:

- Section 401 Water Quality Certification;
- Wetlands Protection Act permit Variance;
- Massachusetts Endangered Species Act Conservation and Management Permit; and
- Massachusetts Public Waterfront Act (Chapter 91) License.

The italicized text in the following paragraphs is a proposed Section 61 Finding by MassDOT that extends to cover all potential impacts of the project.

*Project Name: South Coast Rail*  
*Project Location: Fall River/New Bedford to Boston*  
*Project Proponent: Massachusetts Department of Transportation*  
*EOEA Number: 14346*

*The potential environmental impacts of the project have been characterized and quantified in the Draft EIS/EIR, which are incorporated by reference into this Section 61 Finding. Throughout the planning and environmental review process, MassDOT has been working to develop measures to mitigate significant impacts of the proposed safety improvements. With the mitigation proposed and carried out in cooperation with state agencies, [Agency] finds that there are no significant unmitigated impacts.*

*MassDOT has prepared a Table of Mitigation (Table 7.4-2 of the DEIS/DEIR) that specify, for both temporary and permanent impacts, the mitigation that MassDOT will provide.*

*Therefore, [Agency] having reviewed the MEPA filings for the South Coast Rail Project, including the mitigation measures summarized in Chapter 7 of the DEIS/DEIR, finds pursuant to M.G.L. C. 30, §61 that, with the implementation of these mitigation measures, all practicable and feasible means and measures will have been taken to avoid or minimize potential damage from the project to the environment. In making this finding, [Agency] has considered reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise.*

### 7.3 AVOIDANCE AND MINIMIZATION

As described throughout this DEIS/DEIR, measures have been identified to avoid and minimize impacts, while meeting the transportation purpose and need of the project.

Each of the DEIS/DEIR alternatives has been designed by MassDOT to avoid impacts to environmental and social resources. Each of the alternatives was developed to maximize the use of existing transportation infrastructure corridors, thereby avoiding or minimizing impacts to undeveloped lands and natural resources. Chapter 3 documents the iterative process of identifying sites for potential

stations and layover facilities that sought to avoid impacts to wetlands, threatened and endangered species habitat, water resources, ACECs and open space, as well as to residential areas and businesses.

Each of the DEIS/DEIR alternatives has been designed by MassDOT to minimize unavoidable impacts to environmental and social resources. The rail alternatives would use single track, with passing sidings as needed, to reduce wetland impacts. The Stoughton and Whittenton Alternatives would use a trestle through the Hockomock Swamp ACEC, to minimize impacts to wildlife habitat and rare species. Stations have been designed to minimize traffic impacts, and to minimize land acquisitions.

MassDOT anticipates that additional measures to minimize unavoidable impacts would be undertaken during the preliminary and final design of the LEDPA through (among other elements) the refined grading design of tracks and roadways, station layout, and the design of bridges and culverts.

#### **7.4 PROJECT MITIGATION COMMITMENTS**

The South Coast Rail alternatives were developed to meet the critical transportation need of the Project, while recognizing the need to balance the Project's benefits with the direct and indirect impacts on natural resources, including the use of mitigation strategies. This has been an ongoing iterative process that will continue to identify and incorporate additional avoidance and minimization strategies through further, more detailed design, construction and operation. Some impacts to natural resources are unavoidable for any of the transportation improvement alternatives that meet the project purpose, as demonstrated in Chapter 3, *Alternatives*, of this Draft EIS/EIR.

MassDOT's mitigation commitments as described in this DEIS/DEIR are consistent with the requirements for federal environmental review by the Corps and reflect the level of design for multiple alternatives. The level of detail at of the designs for the alternatives at this stage is appropriate to support the environmental analysis, comparison of alternatives and development of conceptual mitigation measures. Once the LEDPA has been determined, more detailed design will be developed along with correspondingly more detailed and specific mitigation measures and comparison of mitigation alternatives.

Pursuant to the USEPA Section 404(b)(1) Guidelines, the Corps of Engineers, in their Section 404 review, applies a 3-tiered approach in evaluating mitigation proposals. In defining the LEDPA, the Corps must ensure (1) avoidance of impacts to the aquatic environment to the maximum extent practicable; (2) minimization of impacts to the aquatic environment to the extent practicable and finally (3) compensatory mitigation of unavoidable aquatic resource losses. Further, the LEDPA determination is made independent of evaluation of mitigation.

The following section provides an overview and outline of the conceptual mitigation measures for impacts identified in Chapter 4 that would be developed for the LEDPA. The mitigation measures for impacted resources described below also serves as a framework for the more specific, implementation-oriented mitigation measures to be developed for the more detailed design of the LEDPA.. The discussion of mitigation described below also responds to specific aspects raised in the Secretary's Certificate.

### 7.4.1 TRANSPORTATION

The Secretary's Certificate stated that "The DEIR should respond to the comments and concerns [regarding transportation impacts] raised by the cities and towns potentially affected by project alternatives, and include proposed mitigation plans."

Section 4.1.5 of this DEIS/DEIR provides an overview of the transportation mitigation measures that will be incorporated into the LEDPA. These traffic mitigation measures include:

- Crosswalk and pedestrian ramp improvements;
- Driveway and road reconfiguration;
- Grade crossing signal pre-emption;
- Intersection closure;
- Pedestrian timing improvements;
- Sidewalk construction;
- Signage improvements;
- Street widening to provide exclusive turn lanes;
- Street re-striping;
- Traffic signal phasing and timing modifications;
- Traffic signal installation;
- Remove gates and signals at existing crossings and replace them with new gates, signals, and signal cases;
- Remove vegetation at all grade crossings to improve sight distance;
- Evaluate the need for guardrail at each location during final design; and
- Evaluate the need to remove or relocate utility poles, walls, boulders and fences as appropriate during final design.

The specific mitigation measures and locations would be developed for the LEDPA during the subsequent preliminary and final design process, and reviewed with the individual municipalities as part of the final design process.

### 7.4.2 VISUAL

The Secretary's Certificate did not identify any specific requirements to mitigate for *visual* impacts resulting from any of the proposed South Coast Rail alternatives. MassDOT proposes to incorporate mitigation measures into the design of the rail alternatives, should one of these be selected as the LEDPA. Screening and design methods could successfully reduce and mitigate some potential visual impacts to properties associated with the reactivation of any of the historic railroads for the South Coast Rail project.

Section 4.5 of this DEIS/DEIR provides an overview of the visual mitigation measures that will be incorporated into the LEDPA. These mitigation measures include:

- Installing screening;
- Siting the power substations and stations where they would minimize changes to the landscape setting;
- Selecting lighting fixtures, designs and technologies that minimize night-sky impacts;
- Minimizing clear-cutting of trees and vegetation along the railroad rights-of-way; and
- Designing facilities or structures to blend with the surrounding visual context.

### 7.4.3 NOISE

The Secretary's Certificate on the ENF stated that "The DEIR should evaluate measures to avoid and minimize noise and vibration impacts, including plantings and other noise barriers." As described in Section 4.6 of this DEIS/DEIR, MassDOT will develop specific mitigation measures for the LEDPA during as the design process advances to a greater level of detail

Section 4.6.3.6 of this DEIS/DEIR provides an overview of the range of noise mitigation measures that would be incorporated into the LEDPA. These noise mitigation measures include:

- Where sensitive land uses such as residences are impacted at the Severe Noise Impact Level, provide noise walls or other noise measures designed to reduce the noise impact, if cost effective;
- Where noise walls are not cost-effective, or where noise walls cannot provide a sufficient level of noise reduction, appropriate and cost-effective noise mitigation treatments will be funded by MassDOT<sup>4</sup>.

### 7.4.4 VIBRATION

The Secretary's Certificate on the ENF stated that "The DEIR should evaluate measures to avoid and minimize noise and vibration impacts, including plantings and other noise barriers." As described in Section 4.7 of this DEIS/DEIR, MassDOT will develop specific mitigation measures for the LEDPA during the preliminary and final design process.

Section 4.7.3.7 of this DEIS/DEIR provides an overview of the vibration mitigation measures that will be incorporated into the LEDPA. These vibration mitigation measures include:

This mitigation will include the following measures:

- Install ballast mats under the track; and
- At selected locations, use rail devices called "frogs" that consist of spring-loaded mechanisms that close the gaps between the running rails, thereby reducing vibration.

### 7.4.5 CULTURAL RESOURCES

The Secretary's Certificate on the ENF stated that "The DEIR should describe measures to avoid and minimize adverse impacts, and propose mitigation for any unavoidable impacts to cultural resources." As described in Section 4.8.5 of this DEIS/DEIR, MassDOT will develop specific mitigation measures for the LEDPA during the preliminary and final design process. This mitigation will be memorialized in an agreement to be developed after the DEIS/DEIR and executed by the Corps of Engineers, MassDOT, the Massachusetts Historical Commission, and potentially other consulting parties. MassDOT has stated that it will analyze specific construction sites and select mitigation during Section 106 consultation for the LEDPA and conduct detailed site investigations and/or data recovery where impacts to archaeological resources are unavoidable, The following range of mitigation measures may be implemented to minimize impacts to historic resources:

- Prepare historic archival documentation;

<sup>4</sup> Similar to other projects and established cost-effectiveness standards, the cost-effectiveness limit for building noise mitigation will be \$5,000 per dwelling unit per decibel of noise impact projected above the Severe Noise Impact Level (not to exceed \$30,000 total). Thus, for example, if a dwelling unit is expected to have noise impacts 3 decibels (using the Ldn metric) above the Severe Noise Impact Level, the building noise mitigation measures will be funded not to exceed \$15,000 in cost for that dwelling unit.

- Provide interpretive signs;
- Inspect building foundations prior to construction and monitor building foundations during construction;
- Design stations to be compatible with character of surrounding historic properties;
- Monitor noise prior to and during early construction monitoring for impacts to specific resources with natural quiet as an element of setting;
- Install noise walls;
- Install rubber ballast mats (or equivalent) or moveable point frog turnouts (or equivalent);
- Design access changes and turnarounds sensitive to surrounding historic properties;
- Provide traffic calming elements (particular to Easton);
- Minimize vegetation clearing within or adjacent to historic properties; use screen planting and landscaping to lessen visual impacts;
- Within and adjacent to historic properties, minimize number of lighting poles, paint poles non-contrasting colors, use directed lights;
- Use non-contrasting paints on fences, roadway equipment, and signal bungalows; locate signs and fixtures in a sensitive manner within and adjacent to historic properties; and
- Match roadway and sidewalk curbing in places with existing granite curbing.

#### 7.4.6 AIR QUALITY

The Secretary's Certificate on the ENF stated that "In addition to the GHG mitigation commitments required under the MEPA GHG Emissions Policy, the DEIR should propose construction and operational air quality mitigation measures. The DEIR should include a draft standard operating procedure for use of plug-ins and electric block heaters at layover facilities as recommended by MassDEP. The DEIR should describe how the project will meet federal locomotive standards and the schedule for engine rebuilds and retrofits of all older locomotives. The DEIR should describe proposed mitigation for construction-period impacts of diesel emissions. I strongly encourage EOT to commit to participation in the MassDEP Diesel Retrofit Program and to implementation of emissions controls and a construction period oversight program as recommended by MassDEP."

Section 4.9.3.2 of this DEIS/DEIR provides an overview of the air quality mitigation measures expected to be incorporated into the LEDPA. These air quality mitigation measures include:

##### Construction Air Quality Impact Mitigation Measures

- Adhere to all applicable regulations regarding control of construction vehicles emissions;
- Prohibit excessive idling of construction equipment engines as required by MassDEP regulations in 310 CMR 7.11;
- Require that all diesel construction equipment used on-site will be fitted with after-engine emission controls such as diesel oxidation catalysts (DOCs) or diesel particulate filters (DPFs);
- Require use of ultralow sulfur diesel fuel for all off-road construction vehicles;
- Protect pedestrians and prevent dust and debris from leaving construction and demolition work sites or entering the surrounding community;

##### Operational Air Quality Impact Mitigation Measures

Overall, the Alternatives are expected to reduce air quality impacts. The following emission reduction measures will be implemented at rail layover facilities, especially for diesel alternatives.

- Use plug-ins and electric block heaters at rail layover facilities.

#### **7.4.7 BIODIVERSITY AND WILDLIFE HABITAT**

The Secretary’s Certificate on the ENF stated that “The DEIR should describe measures proposed to avoid and minimize impacts, and include a detailed mitigation plan to address biodiversity impacts. The plan should include an estimate of mitigation costs such as funding for land acquisition, ecological assessment and monitoring programs, wildlife crossings, and other biodiversity conservation efforts. The DEIR should describe in quantitative and qualitative terms the extent to which the mitigation proposed will support biodiversity conservation and reduce or compensate for project-related impacts.” As described in Section 4.14 of this DEIS/DEIR, MassDOT will develop specific mitigation measures for the LEDPA during the preliminary and final design process.

Section 4.14.3.6 of this DEIS/DEIR provides an overview of the types of biodiversity mitigation measures that will be incorporated into the LEDPA support biodiversity conservation and reduce or compensate for project-related impacts. These mitigation measures include:

- Adjusting the grading to reduce the loss of plant or wildlife communities.
- Evaluating all culverts to determine whether replacing a culvert could adversely impact, or benefit, biodiversity.
- Using retaining walls to reduce the loss of unique natural communities.
- Replanting disturbed areas.
- Developing and implementing an invasive species control plan.
- Constructing wildlife crossings;
- Enhancing or replacing habitat;
- Preserving important habitat areas;
- Developing construction phasing schedules to protect species.
- Development of a mitigation plan for the LEDPA to address biodiversity impacts, including an estimate of mitigation costs such as funding for land acquisition, ecological assessment and monitoring programs, wildlife crossings, and other biodiversity conservation efforts

#### **7.4.8 THREATENED AND ENDANGERED SPECIES**

The Secretary’s Certificate on the ENF stated that “The DEIR should describe the endangered species permitting process for each process based on consultations with NHESP, and discuss how costs associated with permitting, including mitigation requirements, are incorporated in the alternatives analysis. The DEIR should include a detailed description of proposed mitigation measures for each alternative.”

Section 4.15.3.6 of this DEIS/DEIR provides an overview of the endangered species mitigation measures that will be incorporated into the LEDPA. These mitigation measures include:

- Constructing wildlife corridors/passages (e.g., enhanced stream culverts/oversized culverts, bridges, and under-rail troughs);
- Timing and methods of construction;
- Post-construction maintenance;
- Enhancing and replacing habitat;
- Habitat Protection and Preservation (off-site mitigation); and
- Funding research programs to benefit state-listed species.



#### 7.4.9 WETLANDS

The Secretary's Certificate on the ENF stated that:

- The DEIR should include a detailed description of measures to avoid and minimize wetland impacts for each of the alternatives.
- The DEIR should include a comprehensive mitigation plan for any unavoidable impacts, explain why these impacts are unavoidable, and demonstrate how impacts will be avoided and minimized to the maximum extent feasible.
- The mitigation plan should address permanent and temporary impacts and construction-related impacts. Measures to minimize impacts should include an evaluation of the use of Mechanically Stabilized Earth (MSE) walls or other engineering methods to limit the amount of fill in ACECs.
- EOT should consult with MassDEP to discuss any concerns regarding proposed wetlands mitigation sites and to discuss appropriate protective measures and mitigation for vernal pools.
- The DEIR should describe proposed wetlands mitigation areas and identify locations on maps and site plans. As noted in the MassDEP comment letter, there is flexibility within the variance process to consolidate some mitigation into more centralized areas rather than individual mitigation sites at each impact location.
- The DEIR should describe how mitigation sites will be designed to preserve critical functions such as flood storage volume at each locality.
- The DEIR should discuss ownership of the sites and identify any proposed to be taken by eminent domain.
- The DEIR should provide details on any replication proposed including the timeframe anticipated and the methods proposed to achieve successful replication.
- The DEIR should include a monitoring and contingency plan to ensure success of mitigation.
- The DEIR should use the FEIR Certificate as a starting point for developing wetlands mitigation commitments, as recommended by MassDEP, and should specifically identify the proposed mitigation measures and ratios associated with each of the resource areas.
- EOT should consider the comments of MassAudubon and others regarding potential restoration of existing degraded areas as part of the mitigation plan, and potential use of wetlands banking.

As described in Section 4.16.3.6 of this DEIS/DEIR, MassDOT will develop specific mitigation measures for the LEDPA during the preliminary and final design process. A wetland mitigation plan will be developed for the LEDPA that identifies specific on-site and off-site locations proposed to serve as suitable wetland resource mitigation areas, demonstrates its ability to successfully replicate wetland functions and ecological values, and provides wetland mitigation at a ratio of 2:1 or more. A watershed approach to wetland mitigation would be taken to compensate for direct impacts associated with the proposed work.

During the preparation of this DEIS/DEIR, MassDOT convened a wetland mitigation working group (working group) and consulted with state and federal resource agencies (DEP, DCR, NHESP, DER, EPA, Corps), as well as with conservation and planning organizations within the South Coast region (The Nature Conservancy, Mass Audubon, SRPEDD, Taunton River Watershed Association). The purpose of these efforts was to identify potential priority areas for wetland restoration and preservation within each of the study area watersheds. The working group provided insights on wetland restoration and preservation and identified several potential wetland restoration and preservation sites. The working group discussed the types and locations of mitigation that could potentially be acceptable under different regulatory programs. The working group considered that, while one or a few large consolidated

wetland restoration areas could provide substantial ecological value, small on-site wetland creation or restoration efforts may also be appropriate to meet specific goals (such as replacing lost flood storage). This coordination effort established that there are sufficient opportunities within the South Coast region's watersheds to provide adequate compensatory mitigation for any of the alternatives.

The seven alternatives evaluated in this DEIS/DEIR have a wide range of impacts to wetlands in terms of geography, magnitude, and types of functions and values affected. Considering that only the LEDPA will be advanced for more detailed design and associated mitigation, the Corps and EOEAA agreed that a detailed wetland mitigation plan consisting of specific, committed sites and strategies will be prepared once the LEDPA has been identified. Such specific mitigation sites and strategies would then be developed by MassDOT in consultation with the resource agencies.

To guide the wetland mitigation process, MassDOT has developed preliminary estimates of the mitigation goals for each of the alternatives evaluated in this DEIS/DEIR. Permanent impacts associated with each alternative were identified by watershed and by cover type. Proposed mitigation would mitigate for impacted wetland cover types within the each watershed where impact would occur. Corps guidelines for mitigation ratios would be followed in conjunction with guidelines established by MA DEP. The table below summarizes the mitigation goals that would be required for each alternative.

**Table 7.4-1 Wetland Mitigation Goals for Each DEIS/DEIR Alternative**

Alternative	Loss (acres)	State Goal (acres) <sup>1</sup>	Federal Goal (acres) <sup>2</sup>
Attleboro Electric	20.6	40.8	54.2
Attleboro Diesel	20.3	40.2	53.3
Stoughton Electric	11.9	23.6	33.0
Stoughton Diesel	11.9	23.5	32.9
Whittenton Electric	10.3	20.2	28.4
Whittenton Diesel	10.3	20.2	23.3
Rapid Bus	21.5	42.9	59.3

1. Assumes a 2:1 mitigation ration for cover types other than Open Water; a 1:1 mitigation ratio is assumed for Open Water.

2. U.S. Army Corps of Engineers, New England District. 2010. New England District Compensatory Mitigation Guidance (7-20-2010) <<http://www.nae.usace.army.mil/reg/Mitigation/CompensatoryMitigationGuidance.pdf>> (January 4, 2011). Assumes a 2:1 mitigation ratio for marsh and scrub-shrub cover types, a 3:1 mitigation ratio for forested cover types, and a 1:1 mitigation ratio for Open Water

#### 7.4.10 WATER QUALITY

The Secretary's Certificate on the ENF stated that: "The DEIR should describe measures to avoid and minimize, or mitigate adverse impacts [to Zone I and II areas of public drinking water supplies traversed by the Stoughton alternative]." The Certificate also stated that "The stormwater analysis and mitigation should include the rail tracks as well as station sites and layover facilities, and address potential impacts from oil and lubricants as well as herbicide use."

Section 4.17.3.6 of this DEIS/DEIR provides an overview of the water quality and stormwater mitigation measures that will be incorporated into the LEDPA. These mitigation measures include:

- Existing drainage ditches along the rail corridors would be improved, expanded, or relocated as needed to ensure proper drainage during storms. This "country-style" drainage would use open channels and vegetation along the edges of the right-of-way to promote settling, infiltration, and evaporation and to convey any remaining runoff to stabilized outlets for discharge.

- Sediment forebays and check dams would be installed upstream of discharge points to provide additional sediment removal as measures which have been previously identified to improve stormwater quality on other projects, including on a rail line (such as the Greenbush Line).
- Drainage ditches within drinking water protection areas (IWPAs, Zone A, Zone I, or Zone II areas) will be lined to meet Massachusetts Stormwater Management Standards, minimizing the risk of spills or contaminants reaching ground water supplies.
- The potential for creosote contamination from the rail ties can be reduced or eliminated by using alternative rail tie materials such as concrete wherever possible to avoid the need for creosote treatment. The South Coast Rail project has specified concrete ties as a standard element for new tracks. Wooden ties may be preferred at some turnouts, switches, special track work, and anywhere noise is a primary concern, as wooden ties usually result in quieter train operations than concrete ties. During the preliminary design phase, MassDOT/MBTA will evaluate whether concrete ties are feasible, based on the MBTA's recent experience with the poor quality of concrete ties.
- Rail greasers will be required at numerous curves in the track. Filter fabric will be placed atop the ballast at greaser locations to capture excess grease. This fabric will be replaced periodically in order to prevent excessive grease accumulation that could lead to stormwater or ground water contamination.
- Herbicide will be used to keep the rail corridor free of intrusive and obstructive vegetation in order to ensure the stability of the railbed and the safety of trains. To minimize the potential for water quality impacts from herbicide use, MassDOT will adhere to the approved Vegetation Management Plan, as implemented with its Yearly Operating Plans, which restrict the use of herbicides in areas adjacent to wetlands or sensitive resources.
- Traction power substations will be designed with secondary containment structures that will surround the equipment and contain any leaks or spills until the hazardous material could be collected.
- Culverts will be evaluated for potential modification and upgrades to meet stream crossing standards and enhance wildlife, to the maximum extent practicable. Where feasible, culverts will be replaced in-kind at stream crossings to prevent hydrologic changes to local streams, improve and restore fish and wildlife passing, and improve connectivity between environmental resources. Design will be developed in consultation with DEP and according to the *Massachusetts River and Stream Crossing Standards*.<sup>5</sup> Detailed stream crossing information can be found in the *Environmental Consequences Technical Report – Threatened and Endangered Species*.<sup>6</sup>
- Retention ponds, rain gardens, and other treatment/control features will be provided at station sites as needed to control stormwater flows from any newly-paved or modified areas. The conceptual station designs include stormwater management areas that will be used for these BMPs in the final design of the LEDPA. Stormwater systems at the existing station sites will be upgraded as necessary to accommodate any additional pavement.
- Stormwater management systems at layover facilities will be designed to meet Stormwater Management Standards for Land Uses with Higher Potential Pollutant Loads (LUHPPLs) In addition to standard total suspended solids (TSS) removal BMPs for paved areas, the site will include specific drainage features to contain hazardous materials that may be encountered on the storage tracks. Drip trays and oil/water separators will be included in the layover facilities to capture and divert any pollutants that may collect under the locomotives.

<sup>5</sup> Stream Continuity Project, UMass-Amherst, Amherst, MA, March 1, 2006, <[http://www.streamcontinuity.org/pdf\\_files/MA\\_Crossing\\_Std\\_3-1-06.pdf](http://www.streamcontinuity.org/pdf_files/MA_Crossing_Std_3-1-06.pdf)> (January 4, 2011)

<sup>6</sup> Executive Office of Transportation and Public Works, South Coast Rail Environmental Consequences Technical Report – Threatened and Endangered Species, September 2009.

Construction-period mitigation measures will also include these mitigation measures as part of a Stormwater Pollution Prevention Plan (SWPPP):

- Any soil-disturbing activities will require erosion and sediment controls, including proper timing of construction to minimize the time that an area is left exposed, temporary stabilization of exposed areas using protective covers, and perimeter controls such as silt fences and straw bales to capture sediment before it leaves the site.
- Spill control procedures will be in place at designated fueling locations and temporary sanitary facilities to control any accidental spills of fuel or other hazardous materials. These locations will be isolated from surface waters and provided with spill-recovery equipment. Waste materials will be disposed of properly and not left in the open where they could contaminate soil or runoff.
- Any dewatering activities for excavation, channel relocation, or fill will require proper handling of the dewatering discharge. Any contaminated dewatering discharge will be stored and disposed of in accordance with Massachusetts waste disposal standards in coordination with MA DEP. Uncontaminated water will be discharged to a vegetated land surface or pumped into an upland settling basin surrounded by hay bales or silt fences.

#### **7.4.11 WATERWAYS**

The Secretary’s Certificate on the ENF stated that: “The DEIR should address compliance with 310 CMR 9.32(2) which requires that reasonable measures be taken to ensure structures within an ACEC avoid, minimize, and mitigation [sic] any encroachment into a waterway.”

Section 4.18 of the DEIS/DEIR provides an overview of the measures taken to avoid and minimize encroachments into jurisdictional waterways. As documented in this section, work within Chapter 91 waterways, for any alternative, will be limited to repairing or replacing existing bridges. Mitigation measures for work within Chapter 91 and ACEC waterways will be incorporated into the design of the LEDPA.

#### **7.4.12 SUMMARY OF PROJECT MITIGATION MEASURES**

The proposed South Coast Rail Project will result in impacts to social and natural resources, including transportation, land use, social and economic resources, visual and aesthetic resources, noise, vibration, historical and archaeological resources, protected open space and ACECs, biodiversity, threatened and endangered species, wetlands, water quality, and Chapter 91 Waterways. As documented in Chapter 4, the South Coast Rail project will have beneficial effects on transportation, environmental justice populations, regional mobility, land use, economics, air quality, and climate. Implementation of the smart growth scenario (such as envisioned by the Corridor Plan), as discussed in Chapter 5 will contribute to long-term benefits in land use, land protection, and economic development and will better allow corridor communities to control future sprawl. The analysis of secondary and cumulative impacts demonstrates that smart growth can contribute to additional benefits with respect to air quality and climate.

##### **7.4.12.1 PERMANENT IMPACTS**

Permanent impacts resulting from construction of the South Coast Rail Project would be mitigated, as described in Section 7.4 and summarized in Table 7.4-2. The mitigation measures listed in the table apply to one or several alternatives, depending on the impacts of each alternative, as described in Chapter 4.

### 7.4.12.2 CONSTRUCTION IMPACTS

Temporary, short-term impacts from construction activities would be mitigated to the extent practicable (see Table 7.4-2). Appropriate construction mitigation measures would be incorporated into the contract documents and specifications governing the activities of contractors and subcontractors constructing elements of the proposed project. Specific mitigation measures would be developed during the final design phase of the South Coast Rail Project and would be reviewed by the appropriate regulatory agencies as part of the permit applications. Construction-period mitigation requirements would be incorporated into the final plans and specifications that would serve as the basis for the construction contract.

**Table 7.4-2 Proposed Project Mitigation Commitments**

<b>Environmental Categories</b>	<b>Mitigation Measure</b>	<b>Implementation Schedule</b>	<b>Implementation Responsibility</b>
Transportation	Crosswalk and pedestrian ramp improvements	During Construction	MassDOT/ MBTA
	Grade crossing signal pre-emption	During Construction	MassDOT/MBTA
	Intersection closures	During Construction	MassDOT/MBTA
	Pedestrian timing improvements	During Construction	MassDOT/MBTA
	Sidewalk construction	During Construction	MassDOT/MBTA
	Street widening to provide exclusive turn lanes	During Construction	MassDOT/MBTA
	Traffic signal phasing and timing modifications	During Construction	MassDOT/MBTA
	New traffic signals	During Construction	MassDOT/MBTA
Visual	Grade crossing safety improvements	During Construction	MassDOT/MBTA
	Install screening	During Construction	MassDOT/MBTA
	Install lighting that minimizes night-sky impacts	During Construction	MassDOT/MBTA
	Avoid unnecessary tree clearing along rights-of-way	During Construction	MassDOT/MBTA
Noise	Design facilities and structures to blend with the surrounding landscape	Prior to Construction	MassDOT/MBTA
	Provide noise walls or other noise measures where sensitive land uses are affected (if cost-effective)	During Construction	MassDOT/MBTA
	Provide funding for building noise mitigation where sensitive land uses are affected but walls are not cost-effective	During Construction	MassDOT/MBTA
	Maintain mufflers on construction equipment	During Construction	MassDOT/MBTA
	Keep truck idling to a minimum in accordance with MA anti-idling regulations	During Construction	MassDOT/MBTA
	Fit any air-powered equipment with pneumatic exhaust silencers	During Construction	MassDOT/MBTA
	Do not allow nighttime construction	During Construction	MassDOT/MBTA

**Table 7.4-2 (Continued) Proposed Project Mitigation Commitments**

<b>Environmental Categories</b>	<b>Mitigation Measure</b>	<b>Implementation Schedule</b>	<b>Implementation Responsibility</b>
Vibration	Where needed to reduce vibration impacts, install ballast mats under the tracks or install special trackwork	During Construction	MassDOT/MBTA
Cultural Resources	Where impacts to historic resources are unavoidable, prepare archival documentation and provide interpretive signs	During Construction	MassDOT/MBTA
	In areas where there is a potential for vibration damage to structures, inspect building foundations prior to construction and monitor foundations during construction	During Construction	MassDOT/MBTA
	Design stations to be compatible with character of surrounding historic properties	Prior to Construction	MassDOT/MBTA
	Reduce visual impacts by reducing clearing and using screening planting and landscaping	Prior to Construction	MassDOT/MBTA
	Minimize number of lighting poles adjacent to historic properties; paint poles a non-contrasting color	Prior to Construction	MassDOT/MBTA
	Evaluate specific construction sites and conduct detailed site investigations and/or data recovery where impacts to archaeological resources are unavoidable	During and Prior to Construction	MassDOT/MBTA
	Air Quality	Prohibit excessive idling of construction equipment and trucks in accordance with MA anti-idling regulations	During Construction
Require that all diesel equipment used on-site will be fitted with after-engine emission controls, including diesel oxidation catalyst and/or particulate filters		During Construction	MassDOT/MBTA
Require use of ultralow sulfur diesel fuel for all off-road construction vehicles		During Construction	MassDOT/MBTA
Provide dust protection at work sites		During Construction	MassDOT/MBTA
Install plug-ins and block heaters at layover facilities		During Construction	MassDOT/MBTA
Biodiversity	Prepare a mitigation plan to address biodiversity impacts and support biodiversity conservation	Prior to Construction	MassDOT/MBTA
	Adjusting the grading to reduce the loss of plant or wildlife communities.		
	Evaluating all culverts to determine whether replacing a culvert could adversely impact, or benefit, biodiversity.	Prior to Construction	MassDOT/MBTA

**Table 7.4-2 (Continued) Proposed Project Mitigation Commitments**

<b>Environmental Categories</b>	<b>Mitigation Measure</b>	<b>Implementation Schedule</b>	<b>Implementation Responsibility</b>
	Using retaining walls to reduce the loss of unique natural communities.	Prior to Construction	MassDOT/MBTA
	Replanting disturbed areas.		
	Developing and implementing an invasive species control plan.	Prior to Construction	MassDOT/MBTA
	Constructing wildlife crossings	During Construction	MassDOT/MBTA
	Enhancing or replacing habitat;	Prior to Construction	MassDOT/MBTA
	Preserving important habitat areas;	During Construction	MassDOT/MBTA
	Developing construction phasing schedules to protect species.	During Construction	MassDOT/MBTA
		Prior to Construction	MassDOT/MBTA
		Prior to Construction	MassDOT/MBTA
Threatened and Endangered Species	Construct wildlife corridors and passages in areas where needed to maintain population continuity for state-listed wildlife	Prior to and During Construction	MassDOT/MBTA
	Enhance and replace habitat for affected state-listed species	Prior to and During Construction	MassDOT/MBTA
	Implement habitat protection and preservation measures for habitat of state-listed species	Prior to and During Construction	MassDOT/MBTA
	Develop and implement a post-construction maintenance and monitoring plan for structural mitigation measures	Prior to Construction and Post-Construction	MassDOT/MBTA
Wetlands	Restore/create wetlands at a 2:1 or higher replacement:/loss ratio	Prior to and During Construction	MassDOT/MBTA
	Monitor compensatory wetlands for success and invasive plant species, and implement an invasive species control plan.	5-year period following construction	MassDOT/MBTA
	Implement erosion and sedimentation control measures according to the Soil Erosion and Sediment Control Plan	During Construction	MassDOT/MBTA
Water Quality	Develop and implement a comprehensive Soil Erosion and Sediment Control Plan in accordance with NPDES and DEP standards	During Construction	MassDOT/MBTA
	Apply water to dry soil to prevent dust production	During Construction	MassDOT/MBTA
	Stabilize any highly erosive soils with erosion control blankets and other stabilization methods, as necessary	During Construction	MassDOT/MBTA

Table 7.4-2 (Continued)

## Proposed Project Mitigation Commitments

<b>Environmental Categories</b>	<b>Mitigation Measure</b>	<b>Implementation Schedule</b>	<b>Implementation Responsibility</b>
	Use sediment control methods (such as silt fences and hay bales), during excavation to prevent silt and sediment entering the stormwater system and waterways	During Construction	MassDOT/MBTA
	Maintain equipment to prevent oil and fuel leaks.	During Construction	MassDOT/MBTA
	Improve existing railroad drainage system to promote settling and infiltration	During Construction	MassDOT/MBTA
	Install sediment forebays and check dams upgradient of discharge points	During Construction	MassDOT/MBTA
	Line drainage ditches within drinking water protection areas	During Construction	MassDOT/MBTA
	Design traction power stations (for electric alternatives) with secondary containment structures	During Construction	MassDOT/MBTA
	Install retention ponds, rain gardens, and other treatment/control features at stations sites	During Construction	MassDOT/MBTA
	Design and install stormwater management systems at layover facilities to meet stormwater management standards for LUHPPLs	During Construction	MassDOT/MBTA
	Design all new and replaced stream crossings to comply with Massachusetts Stream Crossing Standards and enhance wildlife passage	Prior to Construction	MassDOT/MBTA
Hazardous Materials and Solid Waste	Pre-characterize any materials that would be excavated from the Project areas to determine course of action for removal	During Construction	MassDOT/MBTA