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November 1, 2013

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT STATEMENT/REPORT

PROJECT NAME	: South Coast Rail Project
PROJECT MUNICIPALITY	: South Coast Region
PROJECT WATERSHED	: Buzzards Bay, Taunton River, Narragansett Bay, Mount Hope Bay, Neponset River, Ten Mile River, Boston Harbor, Charles River
EEA NUMBER	: 14346
PROJECT PROPONENT	: Massachusetts Department of Transportation
DATE NOTICED IN MONITOR	: September 25, 2013

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and Section 11.07 of the MEPA regulations (301 CMR 11.00), I hereby determine that the Final Environmental Impact Statement/Environmental Impact Report (FEIS/R) submitted for this project ***adequately and properly complies*** with MEPA and its implementing regulations. The Massachusetts Department of Transportation (MassDOT) may proceed with State permitting.

Project Description

The South Coast Rail project involves the development of a public transit system to connect the cities of Fall River and New Bedford to Boston and to enhance regional mobility, while supporting smart growth planning and development strategies in affected communities. Fall River and New Bedford are historically underserved areas with respect to public transportation options. The South Coast Rail is a priority transportation initiative of the Patrick Administration and is a component of MassDOT's efforts to increase transit access throughout the Commonwealth. MassDOT, in conjunction with the communities and regional planning agencies (RPAs), have developed the South Coast Rail Economic Development and Land Use Corridor Plan (Corridor Plan). The Corridor Plan identifies sustainable development principles to

manage both the projected growth in the region under business as usual conditions and the induced growth associated with the project. MassDOT, other state agencies, the RPAs and municipalities have made significant progress in implementation of the Corridor Plan.

The project has the potential to improve regional air quality and reduce greenhouse gas (GHG) emissions by increasing the number of people using public transit, reducing automobile use and GHG and pollutant emissions associated with vehicle miles travelled (VMT). Implementation of the Corridor Plan has the potential to mitigate direct and indirect impacts associated with the project by reducing land consumption and related impacts that might otherwise occur if existing development patterns continue.

The South Coast Rail will provide commuter service to South Station using the Northeast Corridor, Stoughton Line, New Bedford Main Line, and Fall River Secondary Line. The New Bedford to Boston route is 54.9 miles long and the Fall River to Boston route is 52.4 miles long. Travel time during peak periods has been reduced to 77 minutes for the New Bedford line and 75 minutes for the Fall River line. The project requires upgrades to track infrastructure along the existing Stoughton line including reconstruction of tracks from Canton Junction to Stoughton, construction of new tracks from Stoughton to Winter Street in Taunton, for a distance of 15 miles, on an abandoned right-of-way which crosses through the Hockomock Swamp and the Pine Swamp. Reconstruction of tracks is also proposed from Winter Street in Taunton to Weir Junction, a distance of 1.7 miles. The project requires reconstruction of tracks in the Southern Triangle, which includes the New Bedford Main Line and the Fall River Secondary. Infrastructure improvements associated with the project include constructing, reconstructing, or widening 45 bridges, and constructing or reconstructing 46 railroad at-grade crossings.

The project includes ten new rail stations: North Easton, Easton Village, Raynham Park, Taunton, Taunton Depot, King's Highway, Whale's Tooth, Freetown, Fall River Depot, and Battleship Cove. New stations will include high-level platforms (4 feet above track), canopies, commuter parking, a drop-off area for buses, and areas for kiss and ride. Platforms will be designed to handle a 9-car train set (approximately 800 feet long). The station designs include bike storage areas and pedestrian connections to neighboring streets.

The project includes two overnight layover facilities, one on the New Bedford Main Line (Wamsutta site) and one on the Fall River Secondary (Weaver's Cove East site). MassDOT is also proposing an expansion of South Station as well as mid-day layover facilities in Boston to address existing and future Massachusetts Bay Transit Authority (MBTA) and Amtrak capacity needs that are independent of the South Coast Rail project.[1] The expansion in Boston will support infrastructure requirements associated with this project. The traction power system will include a substation in Easton and one in New Bedford, two switching stations (one in Canton and another in Berkeley), and six paralleling stations (Easton, Taunton, New Bedford, fall River, and two in Freetown).

Numerous routing and mode options were evaluated in the Environmental Notification Form (ENF) and reduced to eight alternatives for evaluation in the Draft Environmental Impact

[1] The layover facility was most recently addressed in the South Station Expansion Project (EEA #15028).

Statement/Report (DEIS/R). The DEIS/R presented electric and diesel options for three rail routes; Attleboro, Stoughton, and Whittenton (a variant of the Stoughton route), as well as a Rapid Bus route, and a No-Build/Enhanced Bus scenario. The DEIS/R demonstrated that the Attleboro alternative was not operationally feasible, and that both the Whittenton and Rapid Bus alternatives were less effective compared to the Stoughton alternative in meeting the project purpose. It also demonstrated that the Rapid Bus alternative was not practicable. In selecting among alternatives for this project, MassDOT considered air quality, climate change, transit access, and public safety as well as wetland, rare species and biodiversity impacts to find a balanced preferred alternative.

The Certificate on the DEIS/R indicated that MassDOT had adequately supported the advancement of the Stoughton Electric Alternative as the Preferred Alternative in the FEIS/R. The Certificate specifically noted that use of diesel trains should be eliminated from consideration because of increases in air emissions, compared to electric trains. The Scope for the FEIS/R outlined the outstanding issues that must be addressed, including the development of specific and detailed mitigation plans. For the purpose of the FEIS, the Army Corps of Engineers (ACOE) continued to analyze alternatives, including the Whittenton Alternative. Because a joint document has been filed, the FEIS/R includes additional analysis of the Whittenton Alternative. Based on this analysis, the FEIS/R indicates that the Stoughton Alternative is the Least Environmentally Damaging Practicable Alternative (LEDPA). Although this additional analysis was not required as part of MEPA review, it does support MassDOT's selection of the Stoughton Electric Alternative as the Preferred Alternative.

The Certificate on the DEIS/R identified the role of the MEPA process in providing a forum for the collection and review of environmental documents and comments on a project thereby reflecting various points of view. However, reconciling all of the identified (and sometimes competing) concerns and identifying a preferred alternative that achieves consensus support among all interested parties, is beyond the scope of MEPA. MEPA review is intended to facilitate environmental planning for Projects requiring Agency Action. It is not a permitting process. It requires public study, disclosure, and development of feasible mitigation for a proposed project. It does not pass judgment on whether a project is environmentally beneficial, or whether a project can or should receive a particular permit. Those decisions are left to the permitting agencies. MEPA review occurs before permitting agencies act, to ensure that the permitting agencies know the environmental consequences of a project. No state agency can issue permits needed for the project until MEPA review is complete.

As set forth in further detail herein, MassDOT has submitted a FEIS/R that comprehensively evaluates the relative benefits and impacts of this large-scale transportation infrastructure project. Amongst the project's benefits are improved access to transit and the corresponding traffic, safety, air quality, and greenhouse gas reduction benefits associated with increased use of public transit. The project also has significant potential to facilitate sustainable land use and development patterns and will service Environmental Justice communities. The proposed route does however involve substantial environmental impacts. The FEIS/R refines previous estimates of impacts and clearly identifies the extent of impacts. Impacts are associated with alteration of wetlands and elimination or fragmentation of habitat (including rare species habitat and loss of biodiversity) as well as induced secondary growth and noise-related impacts.

The habitat areas impacted by the project include the Hockomock Swamp ACEC, which is one of the largest unfragmented wetland systems in the state, and the Pine Swamp conservation area in Raynham. The impacts of this project are significant; however, any project of this scope and scale will bear environmental impacts. The challenge is to balance the relative environmental benefits and negative impacts of this large-scale regional initiative.

Development of a detailed mitigation plan for unavoidable impacts was a core requirement of the FEIS/R; however, it was anticipated that the FEIS/R would be submitted at a more advanced state of project design. The project, and associated mitigation, is presented at a conceptual design level. Where specific detailed plans are not provided, such as wetland replication plans, a process for refining and detailing the mitigation is identified.

Interagency and Community Involvement

The filing of the FEIS/R is part of a joint environmental review process, which has included a comprehensive alternatives analysis under both the state and federal review procedures. I appreciate MassDOT's commitment to this joint review process. MassDOT has also conducted an extensive stakeholder involvement process that includes an Interagency Coordinating Group (ICG), the Southeastern Massachusetts Commuter Rail Task Force, and a broad civic engagement process.

I have received numerous comments from public officials, state agencies, environmental advocates, local residents, and other members of the public concerning the benefits of the project and associated environmental impacts. I thank the many parties who have provided comments on the FEIS/R and the many agencies that have participated in its development. In particular, I note the comments from Senator Brian A. Joyce, Representative Carole A. Fiola, Representative William Galvin, Representative William M. Straus, Representative Louis L. Kafka, and Representative Robert M. Koczera. Comments were received from the Town of Raynham, Town of Stoughton, The Town of Easton, the City of New Bedford, the Town of Lakeville and the Town of Berkley. I expect that MassDOT will review and consider all of the comment letters received on this project.

I would like to reiterate my thanks to the Commuter Rail Task Force, the Interagency Coordinating Group (ICG), as well as members of the public for their participation in the environmental review of this project. This Certificate requires MassDOT to continue its commitment to stakeholder outreach and public input as it proceeds through design and permitting of the project, including regular consultation with the wetlands subgroup and the smart growth subgroup of the ICG and publication of a final mitigation plan and revised Section 61 Findings for public review and comment through the MEPA Office.

Permitting and MEPA Jurisdiction

The proposed project is subject to MEPA review because it is being undertaken by a State Agency and because it meets or exceeds the review thresholds set forth in the MEPA regulations, including thresholds for a mandatory EIR. The project is undergoing environmental review pursuant to the following sections of the MEPA regulations: Section 11.03(6)(a)(1)(5)

because it involves construction of a new rail or rapid transit line along a new, unused or abandoned right-of-way; Section 11.03(3)(a)(1)(a) because it will result in alteration of more than one acre of Bordering Vegetated Wetlands (BVW); Section 11.03(3)(a)(2) because it involves alteration requiring a variance in accordance with the Wetlands Protection Act; Section 11.03(1)(a)(1) and (2) because it is will result in alteration of 50 or more acres of land and creation of 10 or more acres of new impervious area; Section 11.03(11)(b) because it is located within a designated Area of Critical Environmental Concern (ACEC); Section 11.03(1)(b)(3) because it involves conversion of land held for natural resource purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth; Section 11.03(2)(b)(2) because it would result in more than two acres of disturbance of designated priority habitat that results in a take of a state-listed species; and Section 11.03(10)(b)(1) and (2) because it may result in demolition of a part of a state-listed historic structure or destruction of a state-listed archaeological site. The project may also meet or exceed other MEPA review thresholds depending upon its final design.

The project requires a 401 Water Quality Certification, a C.91 License, and a Variance from the Wetlands Protection Act (WPA) from the Massachusetts Department of Environmental Protection (MassDEP). The project also requires local Orders of Conditions under the WPA (and, on appeal only, Superseding Order(s) from MassDEP). Other permits or approvals required for the project include a Conservation and Management Permit from the Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program (NHESP), a land disposition agreement with the Department of Conservation and Recreation (DCR) as well as approval from the legislature and the Division of Capital Asset Management (DCAM) for a disposition of land protected by Article 97 of the Amendments to the Constitution of the Commonwealth. The project is subject to the MEPA Greenhouse Gas Emissions Policy and Protocol. The project is subject to review by the Massachusetts Historical Commission and the Office of Coastal Zone Management. At the Federal level, the project requires a Section 404 permit from the U.S. Army Corps of Engineers, an Air Quality Conformance Determination, a National Pollutant Discharge Elimination System (NPDES) Construction Permit, and is subject to review under Section 106 of the National Historic Preservation Act.

Because the proposed project is being undertaken by a state agency MEPA jurisdiction is broad and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment as defined in the MEPA regulations.

REVIEW OF THE FEIS/R

MEPA regulations indicate that I shall determine that a Final EIR is adequate, even if certain aspects of the Project or issues require additional analysis of technical details, provided that the Secretary finds that the aspects and issues have been clearly described and their nature and general elements analyzed in the EIR or during MEPA review, that the aspects and issues can be fully analyzed prior to any Agency issuing its Section 61 Findings, and that there will be meaningful opportunities for public review of the additional analysis prior to any Agency taking agency action on the project. Based on a review of the FEIS/R, consultation with State Agencies and a review of comment letters, I am hereby determine that the FEIS/R is adequate.

The project and associated infrastructure (including tracks, stations, traction facilities, and layover facilities) have been fully described through the MEPA process. The Preferred Alternative emerged from a robust and detailed alternatives analysis. Project impacts are clearly identified and will be refined as the project design proceeds and additional delineation, field surveys and analysis are developed. The FEIS/R includes mitigation to address impacts including air pollution, wetlands, water quality, waterways, threatened and endangered species, fisheries, open space, traffic, public safety, noise, vibration, cultural resources and solid and hazardous waste. Where mitigation has not been specifically identified, or is limited in detail because of the conceptual nature of the design, a process for refining and detailing the mitigation is identified and MassDOT will provide additional opportunity for public input.

Aspects of the project and issues do require additional technical analysis, in particular, the identification of wetland replication/restoration sites and development of specific and detailed mitigation plans to address impacts to wetlands and rare species; however, the stage of mitigation development is consistent with the conceptual design of the overall project.

To ensure input from State Agencies, advocacy organizations and the public is reflected in its final mitigation plan, MassDOT has agreed to continue consultation with the wetlands and the smart growth subgroups of the ICG and to file a Mitigation Plan, including revised Draft Section 61 Findings, with the MEPA Office for public review and comment. The purpose of this filing will be limited to providing additional public process, prior to final Agency Action, on wetlands and rare species mitigation. The timing of the filing will be developed based on consultation between the MEPA Office, MassDEP and MassDOT, to ensure it supports public review of mitigation plans and the effectiveness of the permitting process. It is anticipated that project plans and mitigation would be advanced, at a minimum, to a 25% design phase prior to filing of the Mitigation Plan.

Project Changes Since Filing of the DEIS/R

The FEIS/R identifies changes to the project since the review of the DEIS/R. Changes were shaped by the Certificate on the DEIS/R, associated comments and refinement of the project design. The changes have not substantively changed the overall project impacts, and have reduced impacts in some categories. The following changes are identified:

- Designs of the track, stations and layover facilities were advanced to address the project's impacts on wetlands and natural resources;
- Wetland delineations throughout the project corridor were refined in the field for certain resource areas;
- The operating plan was refined to optimize performance and ridership, and new ridership estimates were developed;
- Layover facilities were identified, including the Wamsutta site in New Bedford Line and Weaver's Cove East in Fall River line;
- Design of other stations were advanced;

- Stoughton Station was shifted to the south, with access from Brock Street, to reduce conflicts with vehicular traffic and to meet access requirements;
- Mitigation measures to avoid, minimize, and/or mitigate impacts to the environment associated with the Preferred Alternative were identified in more detail ;
- An Evaluation Plan with a monitoring component was developed to assess the effectiveness of the smart growth implementation plan and to identify changes or corrections, as needed.

Station Locations and Design

The proposed Stoughton route includes ten new stations from the existing Stoughton station south to New Bedford and Fall River. Battleship Cove is identified as a seasonal station. Proposed new stations consist of high-level platforms (4 feet above track), canopies, commuter parking, a drop-off area for buses, and areas for kiss and ride. Platforms will be designed to handle a 9-car train set (800 feet long approximately). The station designs include bike storage areas and pedestrian connections to neighboring streets. Transit Oriented Development (TOD) is proposed at many of the proposed stations to support residential and commercial development in close proximity to station locations.

The FEIS/R includes additional information on station sites, including analysis of decked parking and Environmentally Sensitive Site Design (ESSD). ESSD and LID practices are incorporated into the design of proposed stations and parking facilities. ESSD techniques include the removal of unnecessary impervious areas and maintaining existing mature vegetation. LID features include promoting groundwater recharge through bioretention and infiltration basins, filter strips and vegetated swales. Structured parking is proposed at the Fall River Depot station; the FEIS/R indicates that structured parking is not cost effective at most station sites. The MBTA will also explore implementing green technologies such as solar panels, Energy Star-compliant products, and environmentally friendly designs to the maximum extent practicable.

The FEIS/R identifies one change to a station locations since the review of the DEIS/R. Stoughton Station was relocated to eliminate grade crossing conflicts and to support downtown revitalization efforts. The FEIS/R includes a discussion of the alternative sites considered for the Stoughton Station relocation. Station layout, parking, grading, and drainage designs for the North Easton, Raynham Park, Taunton, Taunton Depot, and Freetown locations have been advanced since completion of the DEIS/R.

Stoughton Station is the terminal station on the Stoughton Branch of the MBTA commuter rail service (located off Route 138). Stopped trains contribute to congestion in downtown Stoughton because they block Wyman Street while passengers board and alight the train. Expanding commuter rail service will require modifications to this station to accommodate a second track, which will exacerbate the traffic congestion at the Wyman Street at-grade crossing. In addition, the low-level platforms must be replaced by a high-level platform to meet the Americans with Disabilities Act (ADA) requirements.

The DEIS/R described the station relocation south towards Brock Street, out of the Wyman Street at-grade crossing. At this proposed location, the station will be on a track curve and, due to spatial constraints of train cars on the curve, will need to maintain low-level platforms with "mini-high" sections to allow persons with disabilities to enter or exit the cars. However, low-level platforms with mini-high platforms do not meet current ADA accessibility requirements that stipulate high-level platforms at all new or reconstructed stations, where possible. MassDOT analyzed four location options (with one additional variation); each option relocates the station south of the current Wyman Street at-grade crossing and provides high-level platforms to meet ADA accessibility requirements. Option 3 was advanced for analysis in the FEIS/R as it was purported to provide the best balance of cost and convenience. It consists of realigning tracks and relocating the station north of Brock Street with high level platforms and parking on the west side of the tracks. This option is close to downtown, will open 2.5 acres of land east of the tracks for potential development, accommodate a second track, and has two means of crossing the tracks (pedestrian bridge and at-grade crossing). It will require acquisition of up to 0.2 acre of residential and 9.6 acres of industrial or commercial properties, and vertical circulation (pedestrian bridge). Modifications to the tracks and platforms will require a new parking layout to the west of the platforms which will provide 636 total spaces. Driveway access is proposed from Brock Street and Morton Street. A 100-foot pick-up/drop-off area will accommodate two 40-foot buses and provide a waiting area for kiss and ride. Sidewalks will be constructed to connect with existing sidewalks and pedestrians may use the existing at-grade pedestrian crossing at Brock Street. The estimated cost of this option is $16 million.

Modifications to the Canton Center Station, located off of Washington Street, include addition of a second track, redesign of the parking lot and addition of a walkway to Washington Street. Two new 800-foot-long low-level platforms with mini-high platforms are proposed adjacent to each track. No changes are proposed to the number of parking spaces (210); however, modifications to the parking lot are proposed to improve circulation, and to accommodate track and platform requirements. A walkway is proposed from the platforms to existing sidewalks on Washington Street.

The North Easton Station will be located at the rear of the existing Roche Brothers plaza off Route 138. The station will serve primarily drive-in customers although it may attract walk-in customers also from existing development on the site as well as nearby residences. An access driveway from Roche's Brothers Way will accommodate two 40-foot buses, 501 parking spaces are proposed and five kiss and ride parking spaces. The station will include a double track, a center platform with a pedestrian bridge, and a sidewalk to connect with the existing sidewalk along Roche Bros. Way. No feeder bus connections are proposed for this station.

The Easton Village Station will be located immediately south of the historic Old Colony Railroad station that is part of the H.H. Richardson National Historic Landmark on Sullivan Street in Easton. It will include one side platform and a single track. It is within walking distance of downtown Easton and will serve walk-in and bike-in customers. The DEIR/S proposes using 12 of the existing parking spaces at the historic train station for kiss and ride. Existing driveway access is from Mechanic Street. No bus accommodation is proposed. Pedestrian access is proposed via ramps connecting to an existing sidewalk on Oliver Street and an existing underpass (under the tracks) to connect with an existing sidewalk on the west side of Sullivan

Street. A shuttle bus is proposed for Stonehill College and an extension of the Brockton Area Transit (BAT) Route 9.

The Raynham Place Station will be located adjacent to the Raynham-Park Simulcast Center (formerly, the Raynham-Taunton Greyhound Park) off Route 138. The site has been identified as an opportunity for TOD. It is designed to serve walk-in, bike-in, and drive-in customers. 432 parking spaces are proposed. Access to the parking area and bus drop-off will be from Route 138 through the existing development complex. The access driveway will accommodate two 40-foot buses and a waiting area for kiss and ride. A double-track and one center platform with a pedestrian bridge is proposed. Walkways will be installed around the exterior of the parking facilities for future walkway connections. No feeder bus service is proposed at this location. I note that a project proposed by the owners of the Simulcast Center, Raynham Park Casino, underwent MEPA review recently (EEA #15098) and have submitted an application to the Gaming Commission to construct and operate a Category 2 gaming facility (slots). The ENF included the proposed station on its site and identified it on project plans.

The Taunton Station will be located along Arlington Street near Dean Street (Route 44) adjacent to an historic train station. The City of Taunton has begun remediation of the site to accommodate the station. The site is within walking distance of downtown Taunton and is proposed for use as a TOD site. It is designed to serve walk-in, walk-in, and drive-in customers. It will include a side platform with a single track and freight siding. 210 parking spaces are proposed. The driveway access is proposed from Arlington Street and will accommodate two 40-foot buses and a waiting area for kiss and ride. Walkways are proposed to connect the platform and access driveway to Arlington Street. The existing Greater Attleboro Taunton Regional Transit Authority (GATRA) Route 7 bus will be re-routed to access the station and Routes 6 and 18 will be rerouted for better transfer access at the Taunton Green intersection, in the center of Taunton.

The Taunton Depot Station will be located off Route 140 at the rear of a shopping plaza. It will include a center platform with a pedestrian bridge over the tracks with stairs and ramps. Triple tracks are proposed (two for commuter rail and one for freight). It is designed to serve walk-in, drive-in and drop-off passengers. 398 parking spaces are proposed. Access will be provide through the Target Plaza and a new driveway will be constructed behind the Target store to access the parking lot. The new driveway will accommodate three 40-foot buses and a waiting area for kiss and ride. A sidewalk is proposed to connect with the existing sidewalk on Taunton Depot Drive. The existing GATRA Route 8 will be extended a short distance to access the station.

The Freetown Station will be located on South Main Street. The site includes a self-storage business and is near the Fall River Executive Park and the proposed Riverfront Business Park. It will include a side platform and a double track. The station will serve drive-in customers and customers shuttled between the station and industrial parks. 173 parking spaces are proposed. The driveway access will be off South Main Street and will handle two 40-foot buses and a waiting area for kiss and ride. Sidewalks are proposed out to South Main Street for future pedestrian connections. The existing Southeastern Regional Transit Authority (SRTA) Route 2 will be extended one mile to the proposed station.

The Fall River Depot Station will be located one mile north of downtown Fall River at Route 79 and Davol Street. It is the site of an historic train station. It will include a side platform and double track. A parking deck is proposed to limit surface parking and provide space for future TOD. The station will serve walk-in, bike-in, and drive-in customers. 518 parking spaces are proposed. The driveway access will be from Davol Street and Pearce Street and will accommodate up to four 40-foot buses and 10 kiss and ride parking spaces. Sidewalks will be installed throughout the site and along the frontage of Davol, Pearce, and Turner Streets connecting to existing sidewalks in the vicinity of the station. Pedestrian connections will provide access to SRTA Route 2. SRTA Route 14 will be re-routed to access the station.

The Battleship Cove Station will be located behind the Ponta Delgada monument along Water Street in Fall River and is identified as a seasonal platform-only station. A side platform and a single track are proposed. It will serve walk-in and pick-up/drop-off customers in the downtown and the Battleship Cove tourist area. The City of Fall River constructed the Ponta Delgada monument, which includes a pick-up/drop off loop road, to support use of this site as a commuter rail station. Work on Battleship Cove Station requires coordination with the Route 79 construction project proposed by MassDOT (EEA #14917). The paved loop driveway will accommodate three 40-foot buses as well as passenger vehicles for pick-up and drop-off. SRTA Routes 6 and 7 have been rerouted to provide access to the station.

The King's Highway Station will be located in northern New Bedford along King's Highway, immediately east of Route 140. The station is located on the site of an existing shopping plaza and is designed to serve walk-in, bike-in and drive-in passengers. It includes a side platform and a double track. Access will be provided through the existing commercial development. 360 parking spaces are proposed within a shared parking area associated with an existing movie theater. The station will accommodate two 40-foot buses and a waiting area for kiss and ride. A ramp and sidewalks will be constructed to connect to existing sidewalks on King's Highway. The SRTA Route 8 bus will continue to provide service to the site.

The Whale's Tooth Station will be located on Acushnet Avenue at the existing Whale's Tooth parking lot. The lot was constructed by the City of New Bedford to support the rail project. The station will include a side platform and a single track. It will include intermodal connections, buses, and may include ferry service. The site will serve walk-in, bike-in and drive-in customers. 748 parking spaces are proposed. Driveway access is off Acushnet Avenue and the proposed bus drop-off area will accommodate two 40-foot buses and a waiting area for kiss and ride. Ramps and stairs will be installed to connect with existing sidewalks adjacent to the parking facility and pedestrian connections to the station will be improved to access the SRTA Routes 1, 3 and 11 which will be extended to provide service to the station.

MassDOT is planning an expansion at South Station, independent of the South Coast Rail project, to support expansion of intercity and high speed rail and to improve operations and service delivery by Amtrak and MBTA. It involves the addition of up to seven new tracks (included in the no-build/enhanced bus baseline analysis) and construction of a layover facility in Boston. An ENF (EEA #15028) was filed in March 2013.

The FEIS/R provides a discussion of the feeder bus system and potential benefits. Three regional transit authorities, BAT, SRTA and GATRA currently provide local bus service to the project corridor. The FEIS/R indicates that potential route modifications to existing bus routes to integrate the project and local bus services were identified to the extent possible. The FEIS/R indicates that several of the station designs do not have viable options for accommodating feeder bus service. Some of the reasons include seasonal ridership (Battleship Cove Station), no available bus systems (North Easton Station), and no nearby developments to which bus service could connect (Raynham Place station). As noted above, bus service will be provided to Taunton Station, Taunton Depot Station, Freetown Station, Fall River Depot Station, Battleship Cove, King's Highway Station, and Whale's Tooth Station. The FEIS/R details measures to enhance service to the proposed stations. All station designs include measures to support pedestrian and bicycle access.

The Scope required an update on the new 2010 Journey to Work (JTW) data including a sensitivity analysis based on comparison of the more recent data with the 2000 data used for the ridership analysis and an update of ridership estimates to account for any significant changes in JTW trends. The FEIS/R indicates that JTW data was not collected as part of the 2010 decennial U.S. Census and is collected by the U.S. Census Bureau's American Community Survey (ACS) and reported in estimates based on multiple years of sample data. The FEIS/R includes the 2011 CTPS memo regarding work trips to Boston based on the 2000 Census data and a 2013 CTPS memo discussing the 2006-2010 ACS journey to work data. An exact comparison of the 2000 Census and 2006-2010 ACS data is not possible because of changes in the level of geographic detail available. However, comparing the total work commutes to all of Boston shows an increase in commute trips between 2000 and 2010 of 8.9 percent. ACS data that currently has been released is limited to town level flows, does not include information regarding mode, and has a higher level of error associated with it. The 2030 ridership presented in the DIES/DEIR was updated for a 2035 projection year and revised land use assumptions (which incorporated 2010 Census population information).

Accommodations for freight traffic have been made at each station site where freight currently operates. Changes to existing freight routes are not envisioned, and stations that are not located along freight routes have not been designed to accommodate freight trains.

Layover Facilities

The DEIS/R included five potential layover facilities. The FEIS/R indicates that the Wamsutta site was selected as the preferred alternative for the New Bedford Line layover facility and the Weaver's Cove East site as the preferred alternative for the Fall River Secondary Line layover facility. The FEIS/R includes conceptual plans for layover facilities consisting of general layouts and footprints. The FEIS/R identifies, through text and site plans, wetland resources, tidelands, and potential impacts to environmental justice communities, and cultural resources. The FEIS/R includes a rationale for selection of the preferred layover facilities and for elimination of the three other sites from further consideration. The evaluation of impacts associated with layover sites includes a discussion of existing and future land use on and in the vicinity of the sites.

Impacts associated with the facilities are addressed in multiple sections. The FEIS/R does not include a summary table that clearly identifies land alteration, impervious area, wetland and water quality impacts, traffic impacts, air quality, noise and vibration, impacts to conservation lands/open space, and impacts to Environmental Justice populations as required by the Scope.

The FEIS/R identifies property acquisition associated with the layover facilities. It indicates that an area of 5.9 acres is required for the Wamsutta site and 18.43 acres is required for the Weaver's Cove East site. The FEIS/R states that stormwater management will be designed to fully comply with the Massachusetts Stormwater Standards. Neither layover facility will impact jurisdictional wetlands, conservation lands/open space, or habitat of threatened and endangered species. Neither layover facility will result in significant impacts to environmental justice populations. Moderate noise impacts are associated with the Weaver's Cove East site and will result in an increase in approximately 3.3 dBA.

The Weavers Cove East layover facility will affect the visual environment from the adjacent neighborhood and the Taunton River. Mitigation to minimize visual impacts will include landscaping to provide a visual buffer from the neighborhood. Mitigation will be advanced during the design phase of the project.

The Wamsutta site will require construction in landlocked tidelands within coastal zone and is exempt from licensing under 310 CMR 9.04(2). The construction of the site will require a Public Benefit Determination (PBD) under 301 CMR 13.00. The Weaver's Cove East Layover Facility is subject to c.91 licensing and compliance with 310 CMR 9.37(2) because it includes construction in filled tidelands. The facility is considered a nonwater-dependent Infrastructure Facility (310 CMR 9.55). This classification may waive some of the provisions for water-dependent uses, as long as feasible mitigation or compensation measures are provided. The layover facility will be located entirely within the coastal zone. Neither of the proposed layover sites is within a Designated Port Area (DPA). Both facilities will require Federal Consistency Certification by CZM. The FEIS/R identifies the consistency of these facilities with the CZM policies, including avoiding impacts to water quality and coastal resource areas.

South Coast Rail Economic Development and Land Use Corridor Plan

The FEIS/R provides an update on implementation of the Corridor Plan and Executive Order 525 (EO 525) issued by Governor Deval Patrick in the fall of 2010. EO 525 requires state investments to be consistent with the Corridor Plan's recommendations to the maximum extent feasible. It acknowledges that these state actions have significant potential to leverage local and private investments in the priority areas. The FEIS/R indicates that MassDOT will continue to participate in the Corridor Plan, support TOD planning around the rail stations, and continue to support implementation of EO 525. For the past 6 years, MassDOT has provided an average of $200,000 a year to RPAs to provide technical assistance to municipalities. MassDOT has indicated that it will continue to provide technical assistance at an equivalent level through the design phase of the South Coast Rail project.

Monitoring and Reporting Plan

The FEIS/R includes a long-term evaluation and monitoring plan to evaluate the accuracy of impact projections and allow for mid-course corrections and adaptive strategies as needed. It identifies a mechanism for periodic reporting to the public and other agencies on progress. The 31 performance metrics identified in the Smart Growth Evaluation Plan include general metrics which assess impacts such as growth projections (also impacts to forestland, farmland and wetlands), PDA metrics, conservation and PPA metrics, TOD metrics, and social equity metrics. Data sources and frequency of data collection is identified. MassDOT has made a commitment to use the CAPS analysis to evaluate the effectiveness of wetland replication/restoration sites and culvert design. I expect that MassDOT, upon further consultation with project partners, will evaluate the use of the CAPS analysis to develop a biodiversity metric (i.e. evaluate the change in IEI value of impacted areas and mitigation sites). Metrics to monitor the social equity benefits of the Corridor Plan focus on Chapter 40B and inclusionary zoning, which are primarily associated with housing. I encourage MassDOT to consider whether these metrics can be expanded to include other socio-economic factors.

Monitoring and data collection will be conducted for a 20-year period and responsibility will be shared by RPAs, State Agencies, and municipalities. Data collection will begin during the first year of construction and will establish the project baseline. Subsequently, State Agencies will collect data every year and RPAs will collect data three years. MassDOT will identify funding to offset the cost of the initial data collection. MassDOT will draft the evaluation report and publish the report on its website. The first report will be published approximately four years after the commencement of South Coast Rail Service. Subsequent reports will be issued every three years, for a maximum of 20 years. The first report will include data collected for the baseline year (the first year of construction of the project) and the following three years.

Traffic and Transportation

The FEIS/R includes a detailed analysis of transportation in the region addressing existing conditions as well as historical and future trends. The FEIS/R identifies the need for the project based on adverse roadway and related air quality conditions, transit mode choice and equity, and implementation of the Commonwealth's Transportation policies. The analysis documents the growth in traffic volume over the past decade, which is 2-3 percent overall and 5 percent in some communities, that has created roadway congestion on the limited set of highways connecting commuters from the southeast region to Boston and Cambridge. These consistently congested conditions result in a Level of Service (LOS) of F and increased vehicular accidents on the three major highways serving this region. There has been an overall increase of seven percent in accidents, injuries and fatalities during the 2004-2006 study period with some routes showing increases of almost 30 percent in accidents or fatalities. Fall River and New Bedford had the first and third highest number of vehicle crashes during this period. As new households continue to be added to the region, the projected growth in commuter trips and VMT will exacerbate existing congestion problems, further compromising automobile safety and increasing emissions of mobile source pollutants that have an adverse impact on air quality and climate change.

The FEIS/R includes a detailed analysis of ridership and traffic estimates associated with the project, which were developed and calibrated by the Central Transportation Planning Staff (CTPS) using its Regional Travel Demand Model (RTDM). The inputs for the RTDM included land use assumptions, transportation service assumptions, and modeling methods. Total daily ridership for the project is estimated to be 4,570 in 2035, with an increase in total commuter rail system daily ridership of 10,300 in 2035. The travel time between New Bedford and Boston during the peak period will be approximately 77 minutes and between Fall River and Boston it will be approximately 75 minutes.

The FEIS/R summarizes existing and No Build freeway capacity analyses for the year 2030 on two freeway segments on Interstate 93 (I-93), nine segments on Route 24, and two segments on Route 140. The results of the analysis indicate that freeway LOS are expected to decline (typically by one-letter grade) in the peak direction (northbound in the morning peak hour and southbound in the evening) on a number of segments. On eleven segments, the decline results in a deficient LOS, especially in the northbound direction during the morning peak hour. The project will not result in any serious degradation in LOS on the freeway segments analyzed in the Study Area compared to the No-Build in 2030, and will result in an improvement to the majority of freeway segments.

Transportation analyses were conducted for all the planned station locations. The FEIS/R presents the results of the 2030 No-Build and Build analyses for signalized and unsignalized intersections by community. The results identify locations that where degradation in LOS, compared to No-Build, warrants mitigation, including the following:

- Taunton Depot - The intersection of Route 140 at Hart Street during the morning and evening peak hours would continue operating at a deficient LOS, declining from LOS E to LOS F;
- Taunton Station – The intersection of Arlington Street at School Street identifies a significant degradation in LOS, declining from LOS D to LOS E in the evening peak hour;
- Stoughton Station - The eastbound Brock Street approach and westbound Kinsley Street approach would deteriorate from LOS E to LOS F and LOS D to LOS F, respectively, during the morning peak hour;
- North Easton - The signalized intersection of Route 138 at Belmont Street would decline from LOS D to LOS E, during the morning peak hour and remain at LOS F during the evening peak hour. Only one change in LOS is identified at an unsignalized location; Lincoln Street at Barrows Street will degrade from LOS D to LOS F; and,
- Raynham - During the morning peak hour, the intersection of Route 138 at Wilbur Street will decline from LOS E to LOS F. The unsignalized intersection of the existing driveway with Route 138, which would also serve as the station driveway, will decline from LOS D to F.

The FEIS/R identifies specific commitments to address traffic impacts and ensure safe, multio-modal access to the stations. Mitigation measures include, but are not limited to: pedestrian crosswalks; sidewalks; intersection geometry, signal timing and phasing adjustments; traffic signals; and coordination with municipalities for design and improvements of

municipally-owned roadways. Specific mitigation measures for each location are identified in Table 7.4.1 and listed in the Mitigation Section of this Certificate. The FEIS/R includes further analysis of at-grade crossings, including a quantitative incident prediction analysis. In order to evaluate the potential for increases in accidents as a result of proposed crossings, the FEIS/R includes a safety analysis and a grade crossing incident analysis. The incident analysis indicates that for the ten municipalities along the corridor, the highest probability of an incident occurring ranges from one incident every 11 years (Washington Street in Canton) to one incident every 42 years (Malbone Street in Lakeville). The FEIS/R indicates that the precautions and measures taken by MassDOT will reduce the predicted frequency of an incident within the corridor (0.036 per year).

The FEIS/R identifies safety and mitigation measures associated with grade crossings and details these improvements in Table 4.1-87. In general, the following measures are considered to to maximize safety at each at-grade crossing: rail vehicle type and condition; geometry; signage and markings; crossing surface; site conditions; illumination; traffic signal pre-emption; signals and operations (visual and audible warning devices); gated warning devices; gate timing; vital signal logic; Automatic Highway Crossing Warning systems; general safety enhancements; and additional site specific improvements ranging from minor (installing a traffic signal pre-emption at existing intersections) to major construction (potential at-grade separation). The following safety measures are proposed at all at-grade crossings that will remain active: install new gates, signals and signal cases; remove vegetation to improve sight distance; evaluate the need for guardrails at each location; and, evaluate the need to remove or relocate utility poles, walls, boulders and fences. The project will include a comprehensive grade-crossing safety awareness program. The FEIS/R includes specific improvements within each municipality. The traffic study identifies existing LOS at grade crossings and intersections within the study area and, as described previously, it includes revised traffic mitigation plans.

Construction Period

The FEIS/R includes additional information on construction and provides construction staging plans. As part of the construction period phase, MassDOT will develop transportation management plans to detour traffic around construction areas. These plans will be closely coordinated with the cities and towns affected by each construction element, including emergency response representatives. An outreach program will be developed, notifying the public of construction activities through telephone calls, emails, website notices, and flyer distributions. Public information meetings will be conducted, identifying bridge construction and roadway closure locations, intersection construction activities, construction schedules, and temporary traffic, safety, and pedestrian detours through construction areas.

Wetlands and Biodiversity

The FEIS/R includes a description of wetland systems identified along the proposed alignment for the Stoughton route, and at the proposed station and layover sites. The FEIS/R documents revisions to wetland boundaries and project-related impacts based on more detailed field delineations. Field surveys were conducted along the entire length of the project right-of-way (ROW) to delineate Bank, BVW, and Coastal Bank. The identification of LUW and

Riverfront Area is based on the delineation of Bank. The extent of BLSF is based on published Federal Emergency Management Agency (FEMA) flood elevations. MassDOT has received confirmation of all wetland delineations through Orders of Resource Area Delineation (ORADs) issued by each municipality's Conservation Commission (and MassDEP for Easton). BLSF was excluded from the ORAD submitted to three municipalities (Stoughton, Easton, and Raynham).

The FEIS/R describes the assessment methodology and discusses mitigation goals in the context of state and federal regulatory requirements, including the criteria for a variance from the Wetlands Protection Act (WPA) performance standards which require MassDOT to:

1. Demonstrate that there are no reasonable conditions or alternatives that will 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 WPA; and
3. Demonstrate that the variance is necessary to accommodate an overriding community, regional, state or national public interest.

MEPA review and the associated alternatives analysis have demonstrated that there are no reasonable conditions or alternatives that could proceed without a variance due to the length of the corridor and the proximity of wetlands to the railbed. The project offers significant opportunities to avoid minimize and mitigate wetlands impacts and contribute to the protection of the interests identified in the WPA. These measures will continue to be developed and refined during final design; however no reasonable conditions have been identified that that would allow the project to proceed in compliance with the regulations.

The FEIS/R indicates that the project is proposed by a public authority that provides a public function (i.e. mass transit) and indicates that the project serves an over-riding public interest because it will address major transportation needs and deficiencies including: lack of transportation capacity to downtown Boston; congestion on highway and transit facilities serving the region; and air quality that does not meet federal Clean Air Act standards. It indicates that overriding public interests include:

- Improving regional air quality with a reduction of 255,932 vehicle miles traveled daily in 2035, and consequently, reducing greenhouse gas emissions by 60,859 tons per year;
- Adding transportation capacity between Fall River, New Bedford, and Boston;
- Reducing congestion on highway and transit facilities;
- Improving travel times;
- Improving regional mobility;
- Improving access to jobs;
- Providing equity to Environmental Justice populations; and
- Promoting smart growth planning.

I note the comments from MassDEP, The Nature Conservancy, MassAudubon, Taunton River Watershed Alliance, and others which request that MassDOT further develop information to satisfy the Variance requests from the Wetlands Protection Act and Water Quality

Certification regulations. Commenters specifically recommend a collaboration with UMASS to use the Conservation Assessment and Prioritization System (CAPS) model to refine details on the project's direct and indirect impacts, evaluate the effects of specific mitigation measures and investigate the restoration potential of identified mitigation sites. The CAPS analysis will be an effective tool in assisting MassDOT to demonstrate that the project has provided an appropriate level of mitigation for the project.

Comments from MassDEP indicate that MassDOT will need to more fully develop the data necessary to demonstrate that the project provides an overriding public interest. In particular, MassDEP indicates that the benefits of enhanced regional mobility, and supporting smart growth planning and development strategies, should be further developed prior to submitting variance applications. The comments identify the potential benefits of smart growth, and acknowledge MassDOT's significant efforts to develop and implement the Corridor Plan and EO 525; however, MassDOT must be able to more clearly identify the tangible benefits of corridor planning to support MassDEP incorporation of these benefits in its regulatory determinations.

The FEIS/R includes a discussion of mitigation measures to address the variance criteria and to offset the project's direct, indirect, and cumulative impacts. The FEIS/R identifies a total of 25 Potential Wetland Establishment Sites (Table 4.16 – 54) and 38 PPAs. Preliminary site selection is based on proximity to the project corridor, the size of wetland areas adjacent to the site, the ability to provide compensatory flood storage, and other known or potential environmental resources nearby, such as rare species habitat or protected open space. Seven of these sites were advanced to the conceptual design stage. Wetland restoration or establishment is proposed at up to seven potential sites to meet state mitigation goals by providing mitigation of at least:

- 19.2 acres of wetlands to offset impacts to BVW (2:1 mitigation);
- 1.9 acres of wetlands to offset impacts to LUW (1:1 mitigation); and
- 6.7 acres of wetlands or compensatory flood storage to offset impacts to BLSF. Final design of BLSF mitigation will also assess the volume of compensatory storage to be provided.

Bank and BLSF will be replaced at a 1:1 ratio and will be replaced in kind to the extent practicable. Compensatory mitigation areas will also be designed to provide vernal pool habitat on a 3:1 basis of replacement of lost vernal pool areas and preservation of VP-upland complexes.

The proposed conceptual wetland mitigation plan identifies specific locations to serve as suitable wetland resource mitigation areas, demonstrates its ability to replicate wetland functions and ecological values, and provides wetland mitigation at the required ratios. The FEIS/R identifies the design, elevation, vegetation types, planting plans, soils, wildlife habitat features, construction guidelines, invasive species control, monitoring, performance standards for success, and final assessments. The seven potential establishment sites (all located within the Taunton watershed) include:

- Site A: 5.4-acre site in Easton, north of the power line easement on Route 138;
- Site B: 12.4-acre site in Raynham, across the ROW from Dog Track;
- Site C: 1.7-acre site in Raynham, east of Carver Street/Route 495;
- Site D: 3.5-acre site in Raynham, adjacent to Pine Swamp;
- Site E: 4.3-acre site in Raynham, Pine Swamp auto junkyard;
- Site F: 0.4-acre site in Freetown, Terry Pond Brook; and
- Site G: 61.3-acre site in Hanson, Burrage Pond Wildlife Management Area.

The FEIS/R mitigation plan includes restoration within the Hockomock Swamp ACEC. Site A and Site B are within the Hockomock ACEC, and wetland establishment is proposed at both sites. At the current level of design for the project, mitigation plans are not sufficiently accurate to determine the amount of wetland establishment that is practicable in a given area and will likely change when detailed field conditions are evaluated. The proposed mitigation sites provide more acreage than is necessary to satisfy the identified mitigation ratios and will provide flexibility to address unknown site constraints and/or site larger areas of mitigation in a specific geographic area or mitigation is distributed throughout the watershed.

The FEIS/R expands upon the analysis of wetlands functions and values in the DEIR/S to include a more detailed analysis for the project. The FEIS/R includes narrative descriptions of wetlands functions and values for each wetland impacted, directly or indirectly, and depicts them on figures. The FEIS/R describes its approach to mitigation and how the lost functions and values will be mitigated. The FEIS/R identifies the total potential mitigation at the seven sites as 76.1 acres for BVW (19.2 acres required), 7.0 acres for LUW (1.9 acres required), and 13.1 acres for BLSF (6.7 acres required). Comments from MassDEP confirm that the identified sites demonstrate that sufficient acreage is available to meet identified requirements. MassDOT, in consultation with State resource agencies, will identify specific mitigation sites and develop detailed mitigation plans through preliminary and final design.

Permanent and temporary impacts were determined based on the limits of disturbance (plus a 4-foot wide buffer zone for temporary impacts) for the project at the current level of design. Wetland impacts for each project component (tracks, stations, and layover facilities) were not separately quantified. The project will result in: permanent alteration of 16,813 linear feet of Bank; permanent and temporary alteration of 9.6 acres and 5.4 acres, respectively, of BVW; permanent and temporary alteration of 1.9 acres and 0.3 acres, respectively, of LUW; permanent and temporary impacts to 1.5 acres and 1.5 acres, respectively, of ORW; permanent impacts to 1.7 acres of wetlands within an ACEC; permanent alteration of 6.7 acres of BLSF (volume of BLSF was not determined in the FEIS/R); 7.9 acres of new development and 11.7 acres of redevelopment in Riverfront Area; permanent impacts to 274 linear feet of Coastal Bank; and permanent alteration of 0.6 acres of Land Subject to Coastal Storm Flowage (LSCSF). Direct impacts in the Hockomock Swamp in Easton and Raynham are avoided through the placement of the tracks on an elevated trestle. In addition to direct impacts, the FEIS/R includes an analysis of indirect impacts and estimates that an additional 13.3 acres of wetlands will be impacted by induced growth associated with the rail project; 12.8 acres of wetlands will be impacted by the No-Build scenario. The project will result in the loss of approximately 182.27 acres of upland habitat and 12.3 acres of wetland habitat.

The FEIS/R includes a conceptual watershed approach to wetlands mitigation and indicates that the project will require 21.1 acres (BVW and LUW) of compensatory wetlands mitigation under state guidelines and 33.7 acres under federal guidelines for permanent resource impacts. Federal and state mitigation requirements overlap in many instances, however isolated wetlands are federally jurisdictional and the federal requirements for compensatory mitigation vary from the WPA requirements. Based on MassDOT's assessment, mitigation will be required in the Buzzards Bay Watershed (2.4 acres), Mount Hope Bay Watershed (0 acres), Neponset River Watershed (<0.2 acres), and the Taunton River Watershed (18.5 acres).

Restoring out-of-service rail ROW through Stoughton, Easton, Raynham and Taunton will require that vegetation within the ROW, adjacent to wetlands, be removed to the proposed width of the ballast (ranging from 40 feet along the length of the trestle to 100 feet, depending on the topography and the number of tracks). The canopy gap could impede the movement of birds across the ROW, reducing the effective size of the forest block, and will create new "edge effects" of increased light and temperature, and decreased humidity, adjacent to the ROW. The barrier effects will extend upward from the tracks as a result of the overhead catenary system which will also potentially affect bird movement. This gap will divide the Hockomock Swamp south of Foundry Street into two units west and east of the rail.

The FEIS/R does not include information on the location and volume of BLSF impacted by the project. The FEIS/R acknowledges that a full topographic survey is required to accurately calculate BLSF and indicates that a detailed survey will be performed at a more advanced stage of design (e.g. 25%). The FEIS/R indicates that BLSF will be permanently impacted in 32 locations. The largest BLSF impacts are in Raynham and are associated with relocation of the perennial stream. Mitigation measures for impacts to BLSF are provided at a conceptual level. BLSF requires mitigation at a 1:1 ratio to provide compensatory flood storage. The final design will involve further analysis to accurately estimate the extent of BLSF and impacts to BLSF to ensure compliance with the performance standards.

The WPA regulations require that compensatory storage be provided at or near the points of impact. While flexibility exists to consolidate mitigation for some resource impacts into more centralized areas within the watershed rather than individual mitigation sites at each mitigation location, this approach does not necessarily apply to BLSF. In the event that on-site elevation-specific compensatory storage for lost flood storage is required, or if such compensatory storage cannot be provided, MassDOT must: demonstrate that the project would result in an insignificant increase in flooding; demonstrate that any incremental increase in flooding could be contained on MassDOT's property; or acquire flood easements.

Riverfront Area was evaluated where the USGS 7.5 Minute map showed a perennial stream crossing the ROW. Riverfront Area will be permanently impacted in 22 locations, with a total of 7.9 acres of new development of naturally vegetated land outside of the existing ballast and other active rail elements. Redevelopment within Riverfront Area will impact an additional 11.7 acres. The FEIS/R identifies impacts to Riverfront Area by municipality. The largest Riverfront Area impacts are also in Raynham associated with the relocation of the perennial stream. The FEIS/R does not describe how work proposed in the Riverfront Area will meet applicable performance standards; it indicates that further analysis is required to determine if any

of the 22 affected areas provide important wildlife habitat and will require compensatory mitigation. The performance standards for Riverfront Area (310 CMR 10.58(4)) do not specify mitigation requirements. However, where this resource is significant to important wildlife habitat functions, the regulatory standards at 310 CMR 10.60(3) apply. These regulations require that alterations of wildlife habitat characteristics beyond permissible thresholds (i.e. 5,000 sf in Riverfront Area,) be restored onsite or replicated offsite. Work within Riverfront Area is unavoidable due to the location of the ROW and the number of perennial streams crossed. Although primarily redevelopment, portions of work within Riverfront Area will occur within habitat of protected or rare species and will not conform to the performance standards thereby requiring a variance from MassDEP. During a subsequent design phase, the project's ability to comply with the compensatory storage performance standard and wildlife habitat performance standard will be evaluated. The FEIS/R does not provide detailed mitigation for riverfront impacts.

The Scope required a more expansive level of vernal pool assessment, including indirect impacts to upland habitat for vernal pools up to 750 feet on either side of the ROW. MassDOT claims that it is not practicable to conduct complete searches of the entire area within 750 feet from the ROW, because of the size of the area (approximately 15 square miles), and that the majority of the land is in private ownership. The impact analysis identifies known certified and potential vernal pools within 750 feet of the ROW (78 vernal pools) and field-verified vernal pools within (27 vernal pools) or directly adjacent to the ROW (42 vernal pools).

According to the FEIS/R, the original analysis did not attempt to quantify direct impacts to vernal pools themselves; rather, it defined direct impact as "loss of a wetland where a vernal pool occurs." The updated analysis clarifies specific impacts to vernal pools, as well as habitat surrounding vernal pools. The different areas were defined as follows:

- Impacts to Vernal Pools: Direct impacts (fill) to vernal pools;
- Impacts to Vernal Pool Habitat: Impacts to any wetland area within 100 feet of the boundary of a vernal pool, where the pool is within that wetland;
- Impacts to Upland Buffer Habitat: Impacts to any undisturbed, natural upland area within 100 feet of the boundary of a vernal pool; and
- Impacts to Surrounding Upland Habitat: Impacts to any undisturbed, natural upland area between 100 and 750 feet from the boundary of a vernal pool.

The estimate for impacts to vernal pools and surrounding habitat includes: 0.53 acres of direct fill affecting 19 vernal pools; 1.43 acres of vernal pool habitat loss affecting 40 vernal pools; 9.29 acres of upland buffer habitat loss affecting 57 vernal pools; and 43.40 acres of surrounding upland habitat loss affecting 136 vernal pools. No impacts to vernal pool habitat will occur in the area under the proposed trestle.

The FEIS/R describes potential measures to avoid, minimize, and mitigate impacts to vernal pools. The project will avoid impacts by modifying slopes in the final design stage. Slope modification could include redesign of grading to create steeper slopes, including retaining walls, or a combination of both. Construction of the trestle portion of rail over the majority of the Hockomock Swamp will avoid: direct and indirect impacts to 9 vernal pools in Easton; impeding

wildlife movement between pools across the existing berm (including small amphibians); fragmentation of two clusters of vernal pools in Easton. Where avoidance is not possible, impacts will be minimized to the maximum extent practicable. Final design will include design elements to avoid and minimize impacts such as steeper slopes and retaining walls where practicable.

Mitigation measures include wildlife passages, protection, and habitat enhancement. The project will mitigate for habitat fragmentation caused by constructing new tracks and widening existing berms by constructing wildlife crossings and replacing existing culverts to allow for the passage of small amphibians across the ROW. These wildlife crossings and culvert upgrades may support reconnection of pools that are likely to experience fragmentation from a larger cluster of pools and reestablish connectivity where existing culverts have failed or collapsed. Crossings will be placed in areas where habitat fragmentation is most likely to occur, and they will be located at or near areas where clusters of vernal pools exist.

Potential mitigation measures also include purchasing land or placing a conservation restriction on land containing vernal pools to protect these areas and any associated vernal pool habitat, buffer habitat, and surrounding upland habitat from further encroachment. Three clusters of vernal pools in Easton are on land owned by the Southeastern Regional Vocational Technical High School (SRVTHS), the Town of Easton, and private ownership, respectively. MassDOT will work with these adjacent landowners to protect vernal pools adjacent to the ROW at these locations through conservation restrictions or similar measures. Comments from NHESP indicate its strong support for this mitigation option. The trestle through the Hockomock Swamp will protect existing vernal pool areas by limiting access, including all-terrain-vehicle (ATV) usage. Signs discouraging usage are proposed elsewhere along the ROW. MassDOT will work with SRVTHS and the Town of Easton to identify measures to protect the vernal pools from ATV damage, potentially including fencing. I refer MassDOT to the comments from NHESP include suggestions for the provision of alternate public access to mitigate lost access along the ROW.

Impacts to vernal pools and their associated habitats can also be mitigated by enhancing remaining habitats and creating new habitats. Mitigation for pools that are filled will include creation of new pools, where feasible, in nearby areas. For example, VP 13 in Taunton is located within the ROW and will be completely filled. The two adjacent parcels on either side of the ROW consist of undeveloped land under the same private ownership. MassDOT will work with adjacent landowners to identify and develop replacement sites. I note the comments from NHESP which advise caution when attempting to recreate vernal pools because of their record of mixed success. Expansion of existing vernal pools that will receive fill is one potential option for mitigating vernal pool impacts. Plantings around pools can help maintain healthy vernal pool ecosystems (shading, temperature regulation, and invasive species minimization) and support reestablishment of native vegetation. During final design, additional field data will be collected to better define the limits of actual breeding pools, potential for expansion of existing pools and potential for creation of larger or new pools near impacted pools.

ROW maintenance will be conducted in accordance with an approved Vegetated Management Plan (VMP) and Yearly Operating Plan (YOP) that will be reviewed by the Massachusetts Department of Agricultural Resources (DAR) and made available for public

comment. DAR regulations prohibit or restrict the application of herbicide in sensitive areas such as close proximity to wetlands and public or private drinking water supplies. Under existing conditions, several sections of track are maintained in accordance with approved VMPs and YOPs by other entities. To protect state-listed species, as well as aquatic organisms and water quality, MassDOT commits to treating the entire portion of the corridor through the Hockomock Swamp (from Foundry Street to the Raynham Park Station) and through Pine Swamp as No-Application sensitive areas. In addition, in accordance with the DAR requirements, the following will be designated as No-Application zones: areas within 10 feet of a surface water or wetland; areas within 50 feet of a private drinking water supply; areas within 100 feet of a surface water public water supply; and areas within 400 feet of a public water supply well (Zone 1). These specific locations will be identified and shown on detailed project plans during the final design and permitting phase. Disturbed areas outside of the trackbed will be seeded with an appropriate stabilization seed mix using native species and are expected to revegetate within one growing season.

The FEIS/R includes the evaluation of potential mitigation measures to improve habitat connectivity by methods such as wildlife passage structures through the rail bed and improvements to stream crossings to facilitate passage of fish and wildlife. 15 wildlife crossings are proposed including seven between-tie and three tunnel crossings. Tunnels and between-tie crossings will be sited within known habitat for turtles and salamanders at upland locations where there are no existing culverts or bridges, such as within the Hockomock Swamp, Pine Swamp, Assonet Cedar Swamp, and Acushnet Cedar Swamp. Crossings will be placed at vernal pool complexes and near grade crossings to provide turtle passage. The FEIS/R includes plans that identify potential locations for these structures. The actual type of wildlife crossing will be determined during final design and will be based on topography. The FEIS/R includes a typical culvert cross section and between-tie cross-section, but does not provide specific design details for wildlife crossings.

The FEIS/R includes details on the existing conditions at stream crossings and identifies mitigation recommendations for each stream crossing. There are 128 structures (23 bridges and 105 culverts) along the project alignment (comprised of the Stoughton Line, New Bedford Main Line, and Fall River Secondary) that may have biodiversity value by connecting ecosystems and allowing passage of fish and wildlife. Many of these structures also have a hydrologic function, allowing water to flow under or through the railroad structure. No new river or stream crossings are proposed.

Bridges over water will be replaced to meet the Stream Crossing Standards unless prevented by site-specific constraints. Bridges over land will be replaced in kind. The project includes the construction of a new bridge to replace a washed-out culvert, and a trestle through Hockomock Swamp. The FEIS/R describes the proposed substructure for the bridges and trestle that could impact fish and wildlife passage; typical bridge cross-sections for single-span and two-span structures are provided. Bridge replacements will be designed to: minimize impacts to stream hydrology and fish habitat and offer opportunities to improve wildlife passage on stream and river banks (wildlife shelves). Mitigation will include consideration of DMF's recommendations for time-of-year (TOY) restrictions for diadromous fish and use of

construction techniques (e.g., containment structures) that do not affect fish passage or use of spawning riffles.

An 8,500-foot long trestle will be constructed over a portion of the Hockomock Swamp, above the abandoned railroad bed. The trestle will be elevated three to four feet above the existing railroad berm to provide for large animal passage underneath. Existing culverts within this segment of the railroad will be "daylighted" (top section removed) to enhance their ecological value.

Criteria regarding the surrounding land development density and use, IEI value, and suitable available habitat for fish and wildlife were developed to identify appropriate culvert sites warranting mitigation measures. Based on these criteria, a decision tree was developed to assist in determining mitigation recommendations for each culvert including: replace to meet Stream Crossing Standards; replace in kind; daylight; or a range of recommended outcomes subject to a hydraulic analysis. Of the 105 culverts identified, 33 connect areas of high biodiversity, provide a water-body related function connecting areas of high biodiversity, and did not provide hydrologic control; these culverts will be replaced to comply with the Stream Crossing Standards to the extent practicable and will be designed to meet the General standards, in particular the 1.2 times bankfull width, open bottom, and 0.82 openness ratio requirements, where the culvert is not constrained by engineering requirements. Fifty culverts will be replaced in kind, additional hydraulic analysis is proposed for 14 culverts, six culverts beneath the proposed trestle will be daylighted, and two culverts will be eliminated.

The FEIS/R includes a typical culvert cross-section to demonstrate compliance with the Stream Crossing Standards. The actual specifications for each structure will be determined on a location-specific basis during preliminary design. A preliminary engineering review of the 33 culverts recommended to meet the Standards, determined that 20 culverts did not have sufficient cover to accommodate a typical 4-foot high structure. Raising the track bed to meet this cover requirement is not practicable due to the elevation change constraints of a high-speed commuter railroad. Actual specifications for each culvert will be determined during final design; the 0.82 openness ratio will be incorporated if feasible. Smaller openness ratios may be necessary to accommodate the cover requirements. The river and stream crossing standards for bridges and culverts include provisions if it is not possible to meet all of the applicable Standards. Replacement of any of these structures will take into consideration other specifications of the General standards to the extent practical.

The FEIS/R includes typical cross-sections for proposed culverts and bridges; it does not provide detailed designs. The FEIS/R evaluates which culverts appear to provide hydrologic control of an upstream wetland. The FEIS/R does not evaluate potential direct and indirect hydrological changes for bridges, including those that may impact adjoining wetlands, nor does it evaluate indirect hydrological changes for culverts. The FEIS/R includes an evaluation of culvert extension/modification impacts to fish, amphibians, reptiles, and other wildlife passage to determine how to reconstruct them to protect or enhance wildlife or fisheries passage, while not affecting hydrology. The Scope required the FEIS/R to evaluate opportunities for maximizing hydrological connections between wetlands for enhancement and restoration as well as for flood capacity. The FEIS/R recommends hydraulic analysis at locations where culverts will be

replaced, to determine if a change in the culvert dimensions could provide wetland enhancement or restoration. Hydraulic analysis will be important in the final design phase to ensure that culvert modifications do not adversely affect wetland hydrology or flood storage functions.

The FEIS/R evaluates the relocation of the perennial stream that runs along the former railroad berm near the Raynham Dog Track. The FEIS/R indicates that the stream is not a natural formation that was channelized to construct the original railroad. It was created by the construction of drainage ditches, located on either side of the railroad berm, to channel water away from the berm. The ditches have become blocked and have diverted flow onto the ROW of the original railroad. A culvert under the Site B access road on the east side of the ROW is mostly blocked, resulting in water becoming impounded on the south side of the access road. During and after rain events, water overtops the bank and flows across the access road, discharging to the west side of the ROW. The FEIS/R indicates that the stream does not provide any functions or values other than drainage. A preliminary design concept for relocating the stream was presented to the ICG; however, relocation was deemed impractical because it required excavation through bedrock, increased the cost of the project and increased impacts to box turtle habitat. The consensus of ICG reviewing agencies was that resources should be invested in other mitigation efforts. The original channel of the stream will be restored in place on the west side of the ROW, and the stream will discharge into the wetlands adjacent to Site B.

The FEIS/R includes the Hockomock Trestle Memorandum which summarizes the concepts evaluated for constructing a trestle structure through the Hockomock Swamp. The trestle will be constructed through swamp on the existing ROW. The evaluation includes a subsurface soil exploration, consideration of the trestle type and materials, trestle design, impacts to sensitive areas adjacent to the ROW, and construction cost and maintenance. The recommended foundation type for the trestle is driven steel H-piles bearing on the underlying bedrock. Considering environmental impact, cost, and constructability, the recommended design is adjacent pre-stressed concrete box beams with 50-foot spans. Access for operations and maintenance of the trestle will be from the trestle structure.

The South Coast Rail Pine Swamp Trestle Memorandum compares the current at-grade design through the Pine Swamp with a trestle option similar to the structure proposed for the Hockomock Swamp. As documented in the memorandum, a trestle could be constructed through Pine Swamp but MassDOT has concluded, based on the analysis, that it is not practicable based on cost ($50 million versus $5 million), particularly when considered in the context of impacts to biological resources. The FEIS/R indicates that Pine Swamp does not provide significant biodiversity or rare species benefits.

The Scope required that the FEIS/R include an evaluation of the feasibility of removing targeted portions of the existing rail bed that will not be used for the new rail line and an evaluation of potential ecological benefits of rail bed modification using the CAPS analysis. The mitigation plan should include a proposal for removal of portions that can be performed without adversely affecting adjacent wetland resources, including sensitive wetlands on either side of the berm. The FEIS/R provides a summary of the CAPS analysis that was presented in the DEIS/DEIR. Unfortunately, MassDOT did not consult with UMass or resource agencies regarding use of the CAPS analysis. The CAPS analysis has been refined (CAPS Scenario

Builder) to evaluate the landscape level impacts of development projects and mitigation options such as wetland creation, restoration and culvert replacement.

The FEIS/R includes an evaluation of potential restoration/preservation of Atlantic white cedar wetlands. The Burrage Pond Wildlife Management Area site (Site G – Area C) may be a suitable area to provide restoration of Atlantic white cedar habitat. Mitigation proposed consists of removing the berm around the existing cranberry bog and excavating to provide hydrology suitable for Atlantic white cedar. Creation of this specific wetland habitat will require a detailed study of the target area and the hydrology of the surrounding area to ensure long-term success of the wetland.

Stormwater

The FEIS/R discusses the potential direct and indirect effects on water resources from the project, and identifies areas where stormwater management systems will be required. The FEIS/R concludes that with mitigation and drainage features in place, the project will not impair any water resources. The project will create over 10 acres of new impervious area and includes stormwater discharges to two ACEC/ORW waterbodies and nine non-ORW waterbodies, as well as six discharges to Zone II water protection areas, one discharge to a Zone A water protection area, and two discharges in Interim Wellhead Protection Areas (IWPA).

The FEIS/R describes how the project will comply with the Wetlands Regulations and associated stormwater standards for work proposed in wetland resource areas and buffer zones. Stormwater analyses are provided for five stations (North Easton, Raynham Park, Taunton, Taunton Depot, and Freetown), and both layover facilities. A stormwater report will be issued for the relocated Stoughton Station once the conceptual design is complete. The FEIS/R indicates that work is limited to reconstruction/construction of the platform and canopy at five stations (Canton, Easton Village, Battleship Cove, King's Highway, and Whale's Tooth) and will not increase impervious area. Construction of a platform and structured parking at the Fall River Station is considered redevelopment.

The project must demonstrate consistency with 310 CMR 10.05(6)(k) and 314 CMR 9.06(6), as well as other state and federal requirements (including Total Maximum Daily Load (TMDL) requirements) for stormwater discharges to existing outfalls and/or for the proposed layover facilities. The project will require an assessment of its ability to meet the ten Massachusetts Stormwater Standards. Where redevelopment is proposed that includes demolition of all existing structures, MassDOT should strive to meet the Stormwater Standards, rather than redevelopment standards, as physical constraints will be eliminated and increase opportunities for advanced stormwater design.

MassDOT should carefully review comments from MassDEP, NHESP and cities and towns regarding information that should be included in the Notices of Intent. Review of the project by the conservation commissions and MassDEP will require an advanced stage of design (at least 25%) and demonstration that the project can meet applicable stormwater standards. The NOIs should include: a detailed evaluation of Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) practices to manage stormwater at proposed stations, parking

areas, and layover facilities; identification of specific ESSD and LID measures that will be incorporated into the project design and operation; and, identification of parking design capacity at each station. Further analysis should include evaluation of smaller parking stalls and circulation lanes; porous pavement; pavement disconnection versus traditional curb and gutter drainage; retention of existing mature non-invasive plants; exfiltrating bioretention in place of raised traffic islands; and tree box filters.

In particular, MassDOT should address the following comments from MassDEP:

- Provide analysis and demonstrating compliance with the requirements of 310 CMR 10.05(6)(k) to the maximum extent practicable for all project elements within or discharging to wetland resource areas or their buffers including layover facilities, stations and park-and-ride lots;
- Provide additional stormwater treatment for layover facilities and stations classified as Land Uses with Higher Potential Pollutant Loading (LUHPPL) subject to review pursuant to the WPA and WQC regulations;
- Demonstrate compliance with stormwater requirements required by the EPA NPDES Multi-Sector General Permit (for the layover facilities) and Construction General Permit (for the entire project);
- Reevaluate the presence of BLSF at layover facilities, stations and park-and-ride lots;
- Provide appropriate setbacks and treatment for stormwater discharges to or near a critical area, such as vernal pools or public drinking waters; and
- Consider the implications of climate change and associated changes in precipitation in designing flood compensatory storage areas, stormwater recharge and treatment areas, providing accommodations for resource area movement as wetlands adjust to higher water levels and longer dry periods between inundation cycles, sizing crossings for anticipated peak stream flow, and appropriate track elevations.

Rare Species and Wildlife

The FEIS/R includes the results of endangered species impact of mapped habitat within 100 feet of the right-of-way (ROW) of the Stoughton route. The FEIS/R identifies five Priority Habitats within the study area and five Estimated Habitats. Ten state-listed species are documented to occur within these habitats, including amphibians, reptiles, crustaceans, dragonflies, butterflies, moths, and plants. These species are likely to occur adjacent to the ROW (defined in the FEIS/R as within 100 feet of the centerline of the ROW). Additional state-listed species may occur beyond that area and may be impacted by habitat alteration associated with project construction and operation. The FEIS/R indicates that habitat associated with 14 additional state-listed species may be found adjacent to the project corridor.

Raynham Place is the only station site located within mapped habitat of state-listed species. The platform is located within mapped habitat; however, it is a disturbed site and does not provide potential habitat. The layover facilities are not located within mapped habitat.

The state-listed species known to occur in areas intersecting or adjacent to the ROW include the Blue-Spotted Salamander (Special Concern), Blanding's Turtle (Threatened), Eastern Box Turtle (Special Concern), Coastal Swamp Amphipod (Special Concern), Mocha Emerald (dragonfly of Special Concern), Hessel's Hairstreak (butterfly of Special Concern), Pale Green Pinion Moth (Special Concern), Water Willow Stem Borer (Threatened moth), Gypsywort (Endangered plant), and Long-leaved Panic Grass (Threatened).

The FEIS/R describes the methodology used to assess impacts to endangered species and their habitats. MassDOT indicates that it consulted with NHESP regarding the habitat analysis and the impact analyses. At the direction of NHESP, MassDOT focused on the analysis of impacts to vegetation cover types that provide habitat to listed species: early successional upland, wetlands, vernal pools, aquatic habitats, and Atlantic white cedar swamps.

Proposed improvements within the Southern Triangle may result in the loss of potential habitat of up to seven state-listed species that are known to be present within the Priority Habitats crossed by the New Bedford Main Line and Fall River Secondary rail segments. While portions of the Southern Triangle are bordered by areas of suitable upland habitat for Eastern Box Turtle, the existing tracks are a barrier to the movement of the species; the FEIS/R claims that reconstructing the existing railbed and tracks will not result in the loss of Eastern Box Turtle habitat or create a barrier to turtle movement. It notes that in some locations, Eastern Box Turtle movement may be enhanced, as there are existing culverts along the New Bedford Main Line rail segment that will be reconstructed to meet Stream Crossing Standards; between-the-ties crossings will be added, and the Cedar Swamp River Bridge will be reconstructed with wildlife shelves. Reconstruction of the railbed will result in the permanent loss of 1.3 acres of wetland and require the temporary alteration of 0.9 acres of wetland, which may affect the habitat of Hessel's Hairstreak, Coastal Swamp Amphipod, Mocha Emerald, Pale Green Pinion Moth, and Water-Willow Stem Borer. Streams may also provide habitat and breeding areas for the Mocha Emerald. None of the wetland resource areas that will be filled provides suitable habitat for the mocha emerald. There are no open coastal plain pond or sandy wetland habitats adjacent to the railbed that provide suitable habitat for Long-leaved Panic Grass.

The power traction substations are located within Priority and Estimated Habitat and would result in a loss of 7.5 acres of forested upland habitat (Blue-Spotted Salamander and Blanding's Turtle) in Easton and the loss of 1.25 acres of upland habitat (Eastern Box Turtle) in New Bedford.

North of Weir Junction, the route crosses two areas mapped as Priority Habitat including land within the Hockomock Swamp and Pine Swamp. The project has the potential to affect habitat of five state-listed species in this corridor, including the Blue-spotted Salamander, Blanding's Turtle, Eastern Box Turtle, Hessel's Hairstreak, and Gypsywort, and to interrupt a migratory corridor used by turtles and salamanders. Within the Hockomock Swamp, impacts include loss of 12.5 acres of upland habitat for Blanding's Turtle, 7.5 acres for Blue-Spotted Salamander, and 12.6 acres for Eastern Box Turtle. The total estimated loss of habitat for Hessel's Hairstreak in Pine Swamp is approximately 18,578 sf of wetland loss, including 35 Atlantic white cedar trees. The Stoughton route is not anticipated to have any adverse effect on the existing population of gypsywort.

Overall, the project will impact habitat of eight state-listed species including Blue-Spotted Salamander, Blanding's Turtle, Eastern Box Turtle, Coastal Swamp Amphipod, Mocha Emerald, Hessel's Hairstreak, Pale Green Pinion Moth and Water Willow Stem Borer. The FEIS/R identifies potential impacts to these species including habitat loss (primarily associated with altering wetlands) and habitat fragmentation (primarily due to constructing new track in areas that do not currently have track along the out-of-service portions of the Stoughton Line). Upland habitat loss includes: 12.5 acres for Blanding's turtle; 7.5 acres for Blue-spotted Salamander; and 12.6 acres for Eastern Box Turtle. Wetland habitat loss includes: 18,578 sf for Hessel's hairstreak; 9,474 sf for Mocha Emerald; and 11,691 sf for Coastal Swamp Amphipod, Pale Green Pinion Moth, and Water-willow Stem Borer. Within the Hockomock Swamp, north and south of the proposed trestle, the project will impact migratory corridors for rare species. North of the trestle, the barrier effect will be approximately 1.9 miles and 0.4 miles within areas used by Blanding's Turtle and Blue-spotted Salamander, respectively. South of the trestle, the barrier effect will be approximately 0.9 miles within areas used by Eastern Box Turtle, for a total barrier effect of 3.2 miles.

Indirect impacts to rare species associated with the project include: loss of migratory routes (barrier effect); increase in habitat fragmentation resulting from construction within currently undeveloped forested land, widening the canopy gap within the Hockomock Swamp, and ROW maintenance; increased mortality of turtles crossing tracks; increased mortality of moths and butterflies due to herbicide use near streams and wetland habitat; and clearing in the vicinity of vernal pools.

NHESP has determined that the project will result in a "take" of the Blanding's Turtle, Eastern Box Turtle, and Blue-Spotted Salamander. NHESP has determined, based on the preliminary design, that reconstruction of the track in the Southern Triangle would constitute a "take" under MESA. Comments from NHESP indicate that the FEIS/R includes a comprehensive assessment of compliance with MESA regulatory standards and how the project will meet the "net benefit" standard for each listed species.

MESA regulations at 321 CMR 10.23(7) establish certain performance standards including mitigation ratios for state threatened species (2:1) or species of special concern (1.5:1) to achieve the long-term Net Benefit performance standard. These ratios are based on the amount of areal habitat impacted and the category of state-listed species. MassDOT has committed to the following:

> Blanding's Turtle (2:1 mitigation ratio) – The project will impact approximately 12.5 acres of potential upland habitat, and approximately 1.9 miles of new track will create a barrier to movement in three segments. The new track will include a new bridge, enhanced culverts, and between-ties crossing structures. To provide a net benefit, MassDOT has agreed to provide funding to NHESP to protect 25 acres of land potentially used by the Hockomock Swamp population of Blanding's turtle, as well as to fund a study of this population that would determine the size and status of the population, identify nesting areas, identify important non-breeding areas, and identify locations where migratory pathways cross Route 138.

Eastern Box Turtle (1.5:1 mitigation ratio) – The project will impact approximately 12.6 acres of potential habitat and approximately 0.9 miles of new track will create a barrier to movement. The track will include between-ties crossing structures. To provide a net benefit, MassDOT has agreed to either provide funding to the Eastern Box Turtle mitigation bank equivalent to protection of 17 acres or to protect 17 acres of turtle habitat.

Blue-Spotted Salamander (1.5:1 mitigation ratio) – The project will impact approximately 7.5 acres of upland habitat and approximately 0.4 mile of new track will create a barrier to movement in two locations. The new track will include enhanced culverts and a dry wildlife crossing. To provide a net benefit, MassDOT has agreed to provide funding to protect approximately 11 acres of land potentially used by the Hockomock Swamp population of Blue-Spotted Salamander.

MassDOT anticipates that the land protection for the Blanding's Turtle and Blue-spotted Salamander may overlap, and may be combined with wetlands preservation required for wetland mitigation. The FEIS/R includes descriptions of mitigation measures including: wildlife corridors/passages, including enhanced stream culverts/oversized culverts, bridges, the 8,500 lf trestle in the Hockomock Swamp, between tie crossings, underpasses, and under-rail troughs. Impacts to Water-willow Stem Borer Moth and Pale Green Pinion Moth habitat will be mitigated by restoring the altered wetlands within the Acushment Cedar Swamp segment (9,758 sf).

Comments from NHESP indicate that the rare species mitigation plan presented in the FEIS/R is adequate for this stage of the project review process. The letter identifies issues that will be addressed through advancing the design and in the permitting process. The comments note that MassDOT has agreed to address indirect impacts associated with habitat fragmentation by increasing mitigation for the Blue-spotted Salamander. In addition, the letter notes that the location, number, and design parameters of crossing structures will undergo additional review and refinement during project permitting to maximize their potential utility. As reiterated in other comments, NHESP indicates that MassDOT should mitigate for rare species impacts by prioritizing the permanent protection of habitats within the Hockomock Swamp before providing funding for off-site land acquisition.

Fisheries

The FEIS/R identifies 52 river and stream crossings on the New Bedford main line and the Fall River Secondary, and 48 on the Stoughton line (on the abandoned railroad ROW). The FEIS/R provides updated fisheries information for the Stoughton Alternative based on information provided by DMF and DFW. The FEIS/R indicates there are 35 freshwater, anadromous, or diadromous fish recorded from the waterways crossed by the Stoughton Alternative.

The FEIS/R provides an evaluation of impacts to fishery resources. Bridges will be reconstructed with the same or wider opening, maintaining habitat connectivity and the riverine substrate. The capacity of these waters to support aquatic diversity will not be adversely affected.

In-water work is restricted to removing the existing abutments and adding riprap, if necessary to stabilize the new shoreline. The FEIS/R indicates that the only stocked trout water is Rattlesnake Brook. No work is proposed within or adjacent to the waterway at this location, as Rattlesnake Brook is below Route 24, which is bridged by the railroad. The FEIS/R describes Best Management Practices (BMPs) that will be implemented for erosion and sedimentation control and to minimize stormwater impacts to fisheries.

To avoid and minimize impacts to fisheries resources, MassDOT will observe time-of-year restrictions for in-water work within the Assonet River, Cedar Swamp River, Cotley River, Fall Brook, Terry Brook Pond, Black Brook, Mill River, Pine Swamp Brook, and Whitman Brook. DMF's suggested TOY restrictions for the Taunton River allows a 2-month, winter, work period for reconstruction of each of the four Taunton River bridges which does not allow sufficient time to complete the installation of bridge supports. Therefore, MassDOT will coordinate with MassDEP and DMF to identify TOY restrictions and/or construction methods for the Taunton River that are adequate to protect fisheries resources while allowing bridge construction to be completed. The FEIS/R indicates that according to DMF, a mapping effort has been underway to identify fish passage and spawning locations and a draft GIS layer summarizing this information will be made available when finalized.

Biodiversity and Wildlife Habitat

The FEIS/R includes a description of bioregions (or ecoregions) within the study area, which include the Southeastern Massachusetts Bioreserve, the Hockomock Important Bird Areas (IBA), the Freetown/Fall River State Forest/Southeastern Massachusetts Bioreserve IBA, BioMap Core Habitats, and Living Waters Core Habitats. The FEIS/R also includes an overview of plant communities, wetland and upland cover types, vernal pools, and wildlife including mammals, reptiles, amphibians, fish and bird species within the study area.

The Southern Triangle portion of the project involves upgrades to the New Bedford Main and Fall River Secondary lines, which pass through or adjacent to several areas of core habitat including the Acushnet Cedar Swamp, Assonet Cedar Swamp, Forge Pond, Turner Pond, and Freetown/Fall River State Forest. The New Bedford Main Line is adjacent to a large unfragmented wetland in Berkley and crosses Cotley River, Cedar Swamp River, Fall Brook and Assonet River, which are all important fisheries habitats.

The Stoughton Alternative includes improvements to existing active freight lines (track sections from Dean Street in Taunton to Cotley Junction, and north of Stoughton Station), as well as construction of tracks for commuter rail on an abandoned ROW between Dean Street and Stoughton Station. The FEIS/R indicates that the ROW provides suitable migratory habitat for wildlife because there are no ties and tracks to prevent turtles, amphibians, and small mammals from moving across the ROW. The FEIS/R indicates that the ROW does not likely provide suitable nesting, breeding or foraging habitat due in part to erosion resulting from unauthorized use by All Terrain Vehicles (ATVs), bicycles and pedestrians. The Stoughton Route crosses through Core Habitat in the Hockomock Swamp and Pine Swamp in Raynham. It crosses the Hockomock Swamp for approximately 1.6 miles and crosses three miles of Biomap Core Habitat within the Hockomock Swamp ACEC, as well as approximately one mile in the Pine Swamp and

Core Habitat BM1196. The Stoughton Alternative crosses Taunton River, mapped by NHESP as a Living Water Core Habitat and identified as a fisheries habitat. Other fisheries habitat crossed by the Stoughton Alternative include Whitman Brook, Queset Brook, Black Brook, Pine Swamp Brook, and Mill River. The FEIS/R includes information on vernal pools identified along the Stoughton route mostly within the Hockomock Swamp. The Stoughton alternative also crosses and is adjacent to large wetland and upland areas in Stoughton and Easton including the Stoughton Memorial Conservation Land, which includes the Bird Street Conservation Lands.

The FEIS/R discusses potential direct impacts such as vegetation clearing and site grading and impacts related to culvert and bridge construction or reconstruction. The FEIS/R estimates a total direct loss of habitat for the Stoughton route to be 182.27 acres (upland), 12.3 acres (wetland), 1.43 acres (vernal pools), and 43.40 acres (supporting vernal pool upland habitat).

Indirect impacts such as fragmentation and edge effects, wildlife movement and migratory barrier effects are also discussed in the FEIS/R. The Stoughton Alternative will result in barriers to wildlife movement and related fragmentation impacts. It will also increase canopy gap through portions of the Hockomock Swamp in areas where the forest canopy has closed since abandonment of the historic rail line, resulting in edge effects with changes in light, temperature and humidity.

An analysis of biodiversity value and potential impacts of project alternatives was conducted by University of Massachusetts, Amherst using CAPS (the Conservation Assessment and Prioritization System). The analysis was conducted for baseline conditions, and for the Stoughton alternative. The study area included the entire Taunton River watershed and a 5 kilometer buffer around the project elements outside of the watershed (NEC, New Bedford Main Line and Fall River Secondary). The Stoughton alternative was modeled with and without a trestle through the Hockomock Swamp. The CAPS analysis provides a quantitative assessment of ecological integrity to compare the relative habitat impacts of alternative development scenarios and/or the benefits of habitat management or environmental restoration options. It is a useful tool for environmental impact assessment and decision-making. CAPS defines ecological integrity as the ability of an area to support biodiversity and the ecosystem processes necessary to sustain biodiversity, over the long term. The output of the analysis is an Index of Ecological Integrity (IEI), based on a model that takes into account connectivity between various points on the landscape, habitat type and similarity, influence of nearby roads and traffic, and other metrics related to ecology and development. The CAPS model assigns a value of 0 to 1 for each point in the landscape, based on the ability of a point to serve as wildlife habitat, and generates an IEI score. Locations with the best habitat score 1.0 and lower quality habitat scores are closer to 0. Direct and indirect effects of the project degrade the value of that landscape point (or cell) to serve as wildlife habitat (as do other stressors such as roadways).

The FEIS/R reiterates the results of the CAPS analysis provided in the DEIS/R as well as a description of the methodology and assumptions. Overall, the route through the Hockomock Swamp showed a significant estimated loss in ecological integrity. The trestle alternatives through Hockomock Swamp reduced the modeled loss of ecological integrity somewhat, although many of the benefits of a trestle are likely to occur at a local scale below that of the

CAPS analysis. Excluding the Southern Triangle, the loss in ecological integrity is 312.1 units for Stoughton (no trestle). When the trestle is included, the modeled loss in ecological integrity for the Stoughton Alternative is 302 units. The Southern Triangle results in an IEI loss of 172.5 units for a total estimated project loss of 474.5 units associated with the Stoughton Alternative.

The biodiversity analysis splits the project-related loss in ecological integrity into direct and indirect loss. The direct loss is primarily associated with the proposed stations. Most of the projected loss overall is associated with indirect impacts. The Stoughton route with the trestle will result in a loss of approximately 17.6 units of ecological integrity from direct impacts and 456.9 units will be lost as a result of indirect impacts. At MassDEP's request, UMass Amherst evaluated the degree to which important habitat (with IEI>0.6) in the baseline assessment would be compromised as a result of the Stoughton alternative's one-mile transit of the Pine Swamp, a 275-acre unfragmented high quality wetland. The results indicated that the Stoughton route would impact 13.5 additional units that had a high value for wildlife habitat. As noted in MassDEP's letter, UMass calculates that the loss of 13.5 units would be equivalent to 18 acres of Pine Swamp no longer being characterized as important wildlife habitat (i.e. not in the top 40 percent of IEI scores). The FEIS/R does not include a summary of the CAPS analysis of ecological integrity impacts associated with the proposed project and the results of additional analysis on the potential improvements in the IEI as a result of proposed mitigation measures.

The FEIS/R includes the results of breeding bird surveys and other studies conducted to refine the wildlife impact assessment and mitigation plans. MassAudubon has designated two IBAs within the study area: the Hockomock Swamp and the Freetown Fall River State Forest/Southeastern Massachusetts Bioreserve. Other key bird habitats are large, relatively intact forested areas and include Pine Swamp in Raynham, the Assonet Cedar Swamp in Lakeville, and the Acushnet Cedar Swamp in New Bedford. Some of the bird monitoring efforts at the Freetown-Fall River State Forest/Southeastern Massachusetts IBA include: Christmas Bird Counts, spring migration bird counts, Breeding Bird Surveys, and Biodiversity Day events. According to the FEIS/R, there are potentially 101 breeding birds along the Stoughton Alternative, in the key habitat areas. The impacts to breeding bird habitats include: increase in canopy gap; potential reduction in available breeding habitats; and increased train passage. The FEIS/R indicates that the National Migratory Bird Treaty Act does not explicitly prohibit or regulate the incidental take of birds, bird nests, or bird eggs caused by land clearing. However, MassDOT will not undertake vegetation removal in critical areas (Pine Swamp, Hockomock Swamp, Assonet Swamp, Acushnet Swamp) during the nesting season for migratory birds (May 1 through July 15).

Based on the biodiversity analysis, the Stoughton Alternative will result in substantial direct and indirect ecological impacts for which mitigation should be provided. MassDOT developed a conceptual mitigation plan as outlined in the Mitigation section.

Open Space and Conservation Lands

The FEIS/R describes potential impacts to open space along the South Coast Rail alignment. Proposed construction falls within the existing ROW except at the proposed stations and layover facilities, proposed transfer power substations, and proposed frontage road in

Stoughton. There are a limited number of additional areas where narrow strips of land outside of the existing ROW will be required for grading. The FEIS/R describes the property acquisition requirements for the current level of design which includes 0.66 acres of open space and 124.4 acres of private land (136.7 acres of total land).

Article 97

The FEIS/R identifies impacts to land which is protected under Article 97 of the Amendments to the Massachusetts Constitution. Impacts are limited to a 0.16-acre portion of the 19.38-acre Stoughton Memorial Conservation Land in Stoughton and are associated with the re-routing of Morton Street. MassDOT will comply with the Article 97 Land Disposition Policy by identifying and acquiring a suitable replacement property. MassDOT will consult with the Town of Stoughton regarding acquisition of a replacement property and will be guided by the Stoughton *Open Space and Recreation Plan* (April 2007) and the *Stoughton Community Preservation Plan, FY2012-2015* (Draft, April 2012).

Hockomock Swamp Area of Critical Environmental Concern (ACEC) and Wildlife Management Area (WMA)

The FEIS/R describes how potential impacts to open space within the Hockomock Swamp will be avoided and mitigated. All work for the trestle will be accomplished within the ROW. Access for constructing the trestle will be from the north at Foundry Street and from the south at Racetrack Crossing. It indicates that operations and maintenance can be performed from the berm and trestle structure and, therefore, a separate access road is not required. No land acquisition will be required within the WMA.

Property acquisition within the Hockomock Swamp is limited to 0.5 acre for the construction of a traction power facility located at the SRVTS in Easton. These facilities must be sited within certain distances of power sources, and MassDOT indicates that there are no feasible alternatives for the facility outside of the ACEC. Commenters note that many people access the swamp along the railroad alignment and this access will be eliminated by the project. The FEIS/R notes that, although many people access the swamp through the berm, it is a railroad ROW and was not constructed for public access. The FEIS/R indicates that the WMA provides public access to the swamp and to several recreational areas.

Taunton Wild and Scenic River

The FEIS/R indicates that construction and operation of the five bridges, Fall River Depot Station, and Weaver's Cove East layover facility are not expected to impact the Taunton River's status within the Wild and Scenic River program. MassDOT has consulted with the National Park Service (NPS) and provided requested information on bridges, the layover facility, and the station in regard to potential impacts to the Taunton River's status as a Wild and Scenic River. The FEIS/R provides a discussion of the bridge over the Mill River (a tributary to the Taunton River) and its potential impact on the Wild and Scenic River designation of the Taunton River. MassDOT has provided this analysis to the NPS as well. The FEIS/R does not discuss

impacts associated with the reintroduction of the commuter rail such as noise, which will be limited in duration and frequency.

The bridges will be replaced with one- or two-span structures and will not impact the navigational capacity along the rivers. The bridges will be constructed in compliance with Massachusetts River and Stream Crossing Standards which will support fish passage, maintain stream continuity, and facilitate wildlife passage along the Riverfront Area. Stormwater runoff during bridge construction and railroad operation will be managed with a project-specific Stormwater Pollution Prevention Plan to avoid adverse impacts to water quality. The replacement bridges will not introduce alterations to site or upland conditions that would alter existing hydrologic or biologic processes. The FEIS/R indicates that further consultation with NPS is anticipated as the project advances through the design process. I encourage MassDOT to consult with NPC, DER, MassDEP and municipalities regarding the potential for bridge and culvert replacements associated with South Coast Rail to support flood control and environmental restoration along the Taunton River.

The FEIS/R indicates that there will be no impacts to Riverfront Area or to the Taunton River or its shoreline from the Weaver's Cove East layover facility.

Acushnet Cedar Swamp National Natural Landmark

The FEIS/R indicates that construction activities will be scheduled to avoid work in sensitive wildlife habitats (the Hockomock Swamp, Pine Swamp, and the Acushnet Cedar Swamp) during the breeding season for amphibians and birds (April through June). The FEIS/R discusses the barrier effects to wildlife movement in the Acushnet Cedar Swamp. The evaluation found that the existing railroad berm does not bisect an area of important wildlife habitat.

Coastal Resources

The Fall River Secondary crosses approximately 4,100 feet of filled tidelands in seven locations and three non-tidal rivers and streams potentially subject to C.91 Jurisdiction. Approximately 6.6 miles of the Fall River Secondary (in three segments) is located within the Coastal Zone and a total of 0.5 miles of the Fall River Secondary near the southern end of the project area is located within the Mount Hope Bay Designated Port Area (DPA) (approximately 2,100 feet near Weaver's Cove and 500 feet near Battleship Cove).

The New Bedford Main Line crosses several areas of filled tidelands south of Wamsutta Street in New Bedford (approximately 4,300 feet of filled tidelands in four locations) and eight potentially jurisdictional non-tidal rivers and streams. Approximately 1,600 feet of the New Bedford Main is located within the Coastal Zone and approximately 500 feet near the southern end of the New Bedford Main Line is located within the New Bedford/Fairhaven DPA.

The FEIS/R describes the proposed work at each crossing and provides a summary of the potential approvals necessary under c.91 and the CZM Program. The FEIS/R indicates that the corridor north of southern triangle is entirely within inland communities and does not include any work within filled tidelands, flowed tidelands or the Coastal Zone. However, there are 13

crossings of non-tidal rivers that are subject to c.91. I note MassDEP's comments that an additional segment (milepost 52.38) on the Fall River Secondary appears to be the Quequechan River and is surrounded by filled tidelands on which MassDEP has licensed activities. MassDEP comments indicate that this segment would also require some level of licensing review.

The FEIS/R discusses the consistency of proposed stations and layovers, and associated construction, with regulatory standards and policies. Four station sites are located on filled tidelands within the Coastal Zone: Battleship Cove, Fall River Depot, Freetown, and Whale's Tooth. Both layover facilities are located on filled tidelands and within the Coastal Zone. Battleship Cove and Whale's Tooth station sites, and the Wamsutta layover facility include landlocked tidelands, and require a Public Benefits Determination. The four stations and two layover facilities require compliance and consistency with Massachusetts Coastal Zone Management Program in accordance with 301 CMR 21.00 (federal consistency certification). The FEIS/R provides a discussion of project consistency with the applicable policies.

The FEIS/R addresses compatibility issues with regard to coastal zone protection and DPA uses for three segments of existing track within a Designated Port Area (DPA) (approximately 3,000 lf). None of the station sites or layover facilities are located within a DPA.

The FEIS/R discusses the project's consistency with the City of Fall River's harbor planning goals. MassDOT is assisting the City explore ways to improve pedestrian connections along Fall River's urban waterfront including new pedestrian connections between Broadway and Canal Street to the Battleship Cove Station site and improvements along Water and Ferry Streets.

Chapter 91 Licensing and Public Benefits Determination

As indicated above, Battleship Cove and Whale's Tooth station sites, and the Wamsutta layover facility include landlocked tidelands and require a Public Benefits Determination. A Public Benefit Determination (PBD) will be issued on the project within 30 days of the issuance of this Certificate. The FEIS/R describes how each of the stations and the layover facility provide public benefits consistent with the Chapter 168 of the Acts of 2007 and in accordance with the regulations at 301 CMR 13.00.

The FEIS/R indicates that the reconstruction of the existing railroad infrastructure will not affect public access to the shoreline because the active railroad ROW is not open to the public (in accordance with FRA safety regulations). Existing bridges in Fall River over roads that provide shoreline access will be reconstructed to maintain access.

The Weaver's Cove East Layover Facility is located on filled tidelands (MassDEP has established the presumptive line of jurisdiction) and requires licensing under c.91. The FEIS/R provides information on filled tidelands at the proposed Weaver's Cove East Layover Facility and updated jurisdictional determinations. It indicates that it will not affect public access to the Taunton River shoreline. The FEIS/R also includes an update on consultations with MassDEP.

The FEIS/R provides information on all components of the project requiring c.91 licensing, and whether they are water-dependent. The FEIS/R also provides detailed information on how the project will meet c.91 Licensing standards. In the case of landlocked tidelands, no license is required under 310 CMR 9.00, however a Public Benefits Determination will be required. MassDEP comments identify potential commitments that would be appropriate to incorporate into the Public Benefits Determination including: intermodal connections to the ferry service in New Bedford Harbor; the provision of secure bicycle parking, especially given the improvements to the bicycle lane adjacent to the Battleship Cove station in Fall River; expanding the length of sidewalk improvements up to the rail facilities for safe pedestrian connections; and streetscape improvements or landscaped open space with views of the water.

Proposed work along the Fall River Secondary will not occur in flowed tidelands. MassDOT was unable to locate licenses for the seven locations where the Fall River Secondary track crosses filled tidelands and is presuming that the continued use and permitted maintenance or minor modifications may be authorized under 310 CMR 9.05 provided no structural alteration has occurred since January 1, 1984. MassDOT anticipates new licenses will be required for the three non-tidal river crossings. Comments from MassDEP reiterate that if no authorization pursuant to c.91 is found for the existing rail structure(s), then a license application is expected to be submitted. MassDOT should refer to the exemption criteria at 310 CMR 9.05(3)(c). MassDOT should file a license application for any of the Fall River rail segments that have not been in continuous rail use.

Proposed work along the New Bedford Main Line will not occur in flowed tidelands. New Bedford Main Line track crossing filled tidelands in four jurisdictional locations include existing track and a portion of the proposed Whale's Tooth Station. These four crossings were originally authorized by Waterways License 166 in 1873. The FEIS/R does not indicate if modifications or amendments will be required to this license. The FEIS/R describes the proposed work at the eight non-tidal river and stream crossings and provides a summary of the potential approvals necessary under c.91. According to MassDEP, the New Bedford segments may qualify for maintenance or a minor modification.

The Stoughton Line from Weir Junction north to Canton Junction includes 13 crossings of non-tidal rivers that are subject to c.91. The FEIS/R summarizes the anticipated C.91 application required: a new license, license amendment or maintenance.

The FEIS/R describes the project's consistency with the New Bedford and Fall River Municipal Harbor Plans (MHP) (only New Bedford has an approved MHP). Intermodal connections from the Whale's Tooth Station to the New Bedford ferry terminal will be provided by the local transit authority. MassDEP indicates that in the license application should address the project's consistency with the MHPs per 310 CMR 9.34 and discuss how an intermodal connection to the ferry service in New Bedford would be achieved.

The FEIS/R discusses applicability with the requirements at 310 CMR 9.35 and 9.36 regarding how railroad components subject to licensing will preserve or enhance navigational capacity and maintain or enhance public access. The FEIS/R indicates that proposed culvert and bridge improvements will maintain or enhance existing navigability at jurisdictional crossings.

The FEIS/R provides a table of individual non-tidal river and stream crossings and describes the potential effect on public rights to navigation and free passage over and through the water. The FEIS/R does not explore opportunities on or near the layover facilities where MassDOT can "take reasonable measures to provide open space for active or passive recreation at the water's edge" pursuant to 310 CMR 9.55(2).

The FEIS/R addresses opportunities for planning for sea level rise. It notes that is not practicable to locate the proposed stations and layover facilities at higher or more inland locations due to the location of the existing railroad infrastructure and the location of the populations being served. The Weaver's Cove East layover facility will be located approximately 20 feet above the current shoreline and will likely not experience inundation under the highest predicted sea level rise by 2100. I expect that MassDOT will consult with MassDEP during project permitting to identify sites where additional analysis of sea level rise impacts and mitigation is warranted.

To support efficient permitting, MassDOT should submit additional information to MassDEP prior to submitting any applications to support determination of the appropriate regulatory pathway. The information should include a description of each rail activity that is within the geographic jurisdiction of c.91, identify the type of reconstruction, whether additional track will be constructed, and if the rail segment is in active use. MassDOT can consider grouping structures for licensing review as specified by MassDEP in its comments. MassDEP notes that for the nonwater-dependent rail segments, the performance standards of 310 CMR 9.54 and 9.55 would be applicable; the standards of 9.51 and 9.53 would not be applicable. In the license application package, MassDOT should explore where on or near the rail line, "reasonable measures to provide open spaces for active or passive recreation at the water's edge" can be provided pursuant to 9.55(2) including expansion of public pedestrian connections to the waterfront, provide/enhance views of the water, and landscaping for public open space.

Air Quality and Greenhouse Gas Emissions

The FEIS/R evaluates air quality impacts in the context of the National Ambient Air Quality Standards (NAAQS). The FEIS/R includes a mesoscale analysis that evaluates regional air quality impacts of the project alternatives with respect to emissions of Volatile Organic Compounds (VOCs), Nitrous oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO_2) and Particulate matter (PM). The analysis includes existing and future conditions (2035) in the study area. A microscale analysis was also conducted to look at hot spot areas where increases in CO and PM may occur at congested locations such as roadway intersections, and in the vicinity of stations and layover facilities. The FEIS/R explains the methodology used for the meso-scale and micro-scale analyses and includes model input data in the appendices. The vehicle emission factors used were obtained using EPA's Mobile 6.2 emissions model and are adjusted to reflect Massachusetts-specific conditions such as vehicle age distribution, the statewide maintenance and inspection program, and Stage II Vapor Recovery System.

The FEIS/R includes updated regional (mesoscale) air quality analysis for the 2035 analysis year and include updated ridership projections prepared by CTPS. Future alternative-related emission calculations are based upon changes in traffic and emission factor data. The

traffic data include traffic volumes, vehicle miles of travel (VMT), roadway operations, and physical roadway improvements. The emission factor data include emission reduction programs, years of analysis, and roadway speeds. The microscale analysis used the EPA computer model CAL3QHC to predict CO and PM concentrations at receptor locations at each intersection in the study area, which included 12 intersections in the vicinity of proposed stations. The EPA atmospheric model AERMOD was used to model locomotive emissions at stations, layover facilities and environmentally sensitive areas such as the Hockomock Swamp. Mobile vehicle emissions were modeled using EPA's Mobile 6.2 emission factor model and the CTPS regional travel demand model.

The FEIS/R includes the results of air quality analyses for rail operations, stations and layover facilities. The analysis demonstrates that the project will not contribute to violations of the NAAQS, and that the project will reduce emissions of NO_x, CO, and CO_2 compared to the No-Build Alternative. The electric trains produce less emissions than the diesel rail alternative. The microscale analysis did not identify any locations that would be degraded. The FEIS/R indicates that all pollutant concentrations will be below the NAAQS, including CO, PM_{10}, and $PM_{2.5}$.

The FEIS/R analyzes ridership demand and changes in travel patterns for the various alternatives to develop a projection for reduction in VMT as a result of the proposed project. The VMT reductions correspond to a reduction in CO_2 emissions due to shifts from automobile to transit use. At the regional level, CO_2 emissions (mobile vehicles) are estimated at 24,717,339 tons per year (tpy) for the No-Build/Enhanced Bus. The South Coast Rail reduces CO_2 emissions by 60,859 tpy compared to the 2035 No-Build/Enhanced bus alternative. The South Coast Rail project will reduce VMT by 255,932 daily in 2035. Travel time has been identified as a significant factor in influencing ridership and the resultant VMT reductions.

Because the project does not include conditioned buildings, opportunities to reduce stationary source GHG emissions are limited to use of renewable energy and efficient outdoor lighting. The FEIS/R did not include commitments to stationary source GHG reductions; however, MassDOT did indicate during the review period that it would use high-efficiency exterior lighting, such as LED, at rail facilities and it would evaluate the feasibility of renewable energy station sites consistent its GreenDOT policy and to avoid, minimize and mitigate GHG emissions to the maximum extent feasible.[2] In addition, MassDOT and the Smart Growth subgroup will consult with the Massachusetts Department of Energy Resources (DOER) Division of Green Communities and with utility companies for assistance in developing approaches to promote energy efficiency and GHG reduction in the south coast rail communities. These efforts are proposed to address GHG emissions associated with induced growth. In addition, MassDOT will continue to work with the RTAs to encourage use of alternative fuels.

Noise and Vibration

The FEIS/R includes an analysis of noise and vibration impacts associated with the project alternatives. The Federal Transit Authority (FTA) Noise and Vibration Impact Assessment Guidelines were used to evaluate existing conditions and assess potential impacts of

[2] Email dated November 1, 2013 from Jean Fox, South Coast Rail Project Manager.

the project. The FEIS/R describes the methodology for the study and the land use categories and metrics for evaluating transit-related impacts, including information on background noise levels and monitoring locations. The analysis assumed that horns will be sounded at all proposed grade crossings. Using the FTA guidelines, impacts are categorized as severe, moderate, or no impact depending on the projected increased level of exposure compared to existing noise levels. The FEIS/R indicates that temporary construction noise impacts are also expected and will be mitigated through incorporation of noise guidelines into construction documents.

In the Southern Triangle, electric train operations (operating train noise without horns) will result in 236 moderate and 47 severe impacts to residential receptors along the New Bedford Main line segment. The majority of these would occur in Taunton and New Bedford, in the Plain Street, Welby Road, and Worcester Street neighborhoods. Use of train horns along this segment will add 93 moderate and 76 severe impacts. Electric train operations for the Fall River Secondary will result in 466 moderate and 135 severe impacts to residential receptors. The majority of these occur in Fall River, in the Cory and Durfee Street neighborhoods. Use of train horns along this segment will add 98 moderate and 164 severe impacts. Electric train operations for the Stoughton line segment will result in 404 moderate and 159 severe impacts to residential receptors, the majority occurring in Raynham and Easton, in the Elm Street (Easton), Bridge Street and Elm Street (Raynham) neighborhoods. Use of train horns along the Stoughton line segment will add 437 moderate and 457 severe impacts. The sound level results and impacts of receptor locations along the Southern Triangle and the Stoughton Line are inclusive of impacts near train station sites and include the relocation of Stoughton Station.

The FEIS/R identifies noise impacts to residential receptors in the vicinity of the layover sites. It identifies a moderate impact to a receptor near the Weavers Cove East site. The project will include temporary construction noise impacts are also expected and control measures will be developed with noise guidelines incorporated into construction documents. The FEIS/R discusses potential noise mitigation measures in general for the train operational impacts.

The FEIS/R indicates that the MBTA noise mitigation policy (including cost effectiveness criteria that considers expenditure of up to $30,000 per residence) is used to provide consistent treatment to all noise impacted locations, across projects and geographies. It indicates that mitigation for moderate impacts is not required under the FTA noise and vibration guidance manual. The FEIS/R includes specific measures to mitigate noise impacts. The noise mitigation plan includes noise barriers at four severely impacted noise sensitive areas (approximately 5,500 feet in total), and building insulation for the remaining severely impacted sensitive receptors. The FEIS/R provides a discussion of quiet zones at grade crossings. It indicates that municipalities must initiate the process to establish quiet zones. Although some quiet zones have been established in Massachusetts, the FEIS/R indicates that MassDOT does not support the establishment of quiet zones because of associated safety concerns.

The rail corridor passes through densely developed areas in several municipalities that will experience sever and moderate impacts; however, based on the guidelines identified in the FEIS/R, the project does not identify mitigation for moderate impacts. As project planning continues and MassDOT develops mitigation agreements with municipalities, I encourage MassDOT to reconsider measures to minimize and mitigate moderate and severe impacts.

The FEIS/R includes information on the vibration measurements conducted to evaluate existing conditions. Projected vibration levels are compared to FTA criteria which indicate that 80 Velocity level in decibel units (VdB) is a level at which human annoyance is experienced for residential receptors exposed to infrequent events (less than 30 per day). The criteria are lower for more frequent events. The FEIS/R indicates that most of the vibration impacts are in the 80-83 VdB range. For receptors closer to the tracks, levels are in the 85-89 Vdb range. The FEIS/R provides the FTA criteria indicating that 90 VdB typically elicits human response of difficulty with tasks such as reading a computer screen and 100 Vdb is the level at which minor cosmetic damage to fragile buildings may occur. The vibration assessment of the track switches identifies a receptor (residence located on Ingell Street near Weir Junction) within 225 feet of a switch that will experience a vibration impact of 80 VdB. The FEIS/R indicates that frogs with spring-loaded mechanisms which substantially reduce the vibration emanating from switches may be used. No vibration impacts were found at the two selected layover facilities (Weaver's Cove East and Wamsutta).

For the section of the project corridor between Stoughton Station and Myricks Junction, the total number of daily train operations is 40; therefore the FTA criterion of 75 VdB for residential receptors that experience occasional train events was used to assess impacts along this corridor. This approach to the vibration criteria differs from the DEIS/DEIR vibration analysis where an 80 VdB impact threshold was used for all areas. For the section of the rail corridor between Myricks Junction and New Bedford, and Myricks Junction and Fall River, the total number of daily train operations is 20 for each of these lines; therefore the FTA vibration impact criterion of 80 VdB for residential receptors that experience infrequent train events was used to assess impacts along these corridors.

The vibration impact assessment indicates that 215 residences will be impacted by vibration associated with the project in the Southern Triangle section of the corridor, primarily in Fall River. Eight of these impacted receptors are multi-unit apartment buildings; the remainder are single-family homes. North of the Southern Triangle, 154 receptors will be impacted by vibration levels of 75 VdB or higher, primarily in Easton. The FEIS/R concludes that station and other historic buildings in Easton Village would experience impacts, including minor structural damage to fragile and historic buildings, below the 100 VdB vibration threshold. The FEIS/R indicates that a more detailed vibration analysis will be conducted during final design to address impacts to the historic structures in Easton Village.

The FEIS/R does not provide a comparison of the estimated vibration levels to existing conditions to describe the actual change that will be experienced. The vibration analysis is based on FTA vibration impact criteria, which uses a relationship between train speed and the distance that vibration may propagate, rather than a comparison to existing vibration levels. The FEIS/R argues that monitoring existing vibration levels is not useful, since these levels are not determinative in the impact analysis (unlike noise where existing noise level influences whether or not a receptor is impacted). The FEIS/R also states that it is rare for vibration from train operations to cause building damage, even minor cosmetic damage. The vibration threshold for minor cosmetic damage, such as possible cracks in plaster walls, is 100 VdB for fragile buildings, and this level is not expected to occur at any receptor location.

Several measures to mitigate vibration were assumed to be incorporated in the project design and were included in the vibration modeling analysis: continuously welded rail which minimizes vibrations caused by wheels impacting rail joints; ballast and sub-ballast to reduce transmission of vibration from the tracks to the ground; turnouts located at least 100 feet away from homes and other sensitive buildings, to minimize higher vibration levels due to passage of wheels over the gap in turnout frogs; and trains and track maintained to minimize vibration generated by the trains, including regular wheel re-truing to eliminate wheel flats. The vibration mitigation plan includes ballast mats for up to 296 impacted receptors (39 locations) which provide vibration reductions of between 3 and 10 VdB. The FEIS/R indicates that effectiveness of ballast mats is dependent on source-receiver soil conditions. A more detailed evaluation of these conditions will be conducted during final design to assess the effectiveness of ballast mats at specific locations.

Environmental Justice

The FEIS/R includes information on Environmental Justice populations in the project area, discusses relevant state and federal policies, and analyzes potential impacts to environmental justice populations. The FEIS/R identifies areas in which there will be a disproportionate impact to Environmental Justice populations as a result of noise and vibration, and describes the potential benefits in terms of economic development and improved access to transportation, jobs and education. Environmental Justice neighborhoods are located in portions of the following eight municipalities that may be directly affected or benefit from the project: Canton, Dartmouth, Fairhaven, Fall River, Mansfield, New Bedford, Stoughton, Swansea, and Taunton. The FEIS/R evaluates impacts related to neighborhood fragmentation, noise level increases, and residence or job losses associated with property acquisition. The analysis examines whether adverse impacts will be predominantly borne, or experienced in more severity, by Environmental Justice populations in comparison to non-EJ populations in the same communities.

The Southern Triangle portion of the project contains a larger Environmental Justice population compared to areas further north along the alignment; 36 percent of the Environmental Justice population is around the Fall River Secondary and 50.4 percent around the New Bedford Main Line. Populations include those meeting the low income criteria as well as minority populations. The area within 0.5 miles of the Battleship Cove Station site in Fall River contains 88.7 percent of the population living within Environmental Justice-designated neighborhoods in the City.

The FEIS/R evaluates time of travel for the various alternatives in relation to access to jobs for populations in New Bedford, Fall River and Taunton. The study concludes that the Environmental Justice populations in Fall River will benefit the most in terms of improved access to basic jobs.

The electric alternatives will not adversely affect air quality in the region or local air quality in Environmental Justice neighborhoods. The noise impact analysis for the Stoughton

Electric alternative concluded that 1,446 residences[3] would be impacted by moderate and severe noise levels. The number of residences within Environmental Justice communities is 361, approximately 25 percent of the total. There are no Environmental Justice neighborhoods along the project corridor in Berkley, Easton, Freetown, Lakeville, or Raynham. Residences impacted by noise within Environmental Justice neighborhoods include 58.9 percent in Fall River, 26.5 percent in New Bedford, 6.7 percent in Stoughton, and 22.6 percent in Taunton. The FEIS/R identifies two areas of severe impacts within Environmental Justice neighborhoods. Mitigation within these areas will include noise barriers (36 receptors) and building insulation (38 receptors).

The FEIS/R provides the results of an updated vibration impact analysis. Environmental Justice neighborhoods contain 23 percent of the impacted sensitive receptors (369 total residences impacted by vibration). The potential for disproportionate vibration impacts exists at the local level in Fall River where 62 percent of impacts will occur in Environmental Justice communities. The FEIS/R indicates that the majority of vibration impacts will be mitigated with the incorporation of such measures as continuously welded rail, the appropriate placement of ballast, sub-ballast and turnouts, and the maintenance of trains and track. The FEIS/R indicates that vibration impacts to residences could be mitigated by using ballast mats beneath the rail lines as well as special pile-driving methods to reduce construction-related impacts.

The proposed Battleship Cove, Fall River Depot, Whale's Tooth, King's Highway, and Taunton station sites are expected to catalyze redevelopment and improve access to transit, as well as employment and educational opportunities for Environmental Justice populations in the area. Data included in the FEIS/R indicates that 20.7 percent of households in Fall River and 21.7 percent of households in New Bedford do not own a car compared with the state-wide average of 12.7 percent. The FEIS/R projects that the value of homes in the vicinity of proposed stations will increase as a result of the project and related TOD.

The FEIS/R evaluates impacts associated with property acquisition and concludes that acquiring nine parcels as proposed in Fall River will result in a tax revenue loss for the City which would affect financial resource availability for the surrounding Environmental Justice neighborhood. The acquisition of commercial and industrial buildings on the properties may also result in job losses for the nearby Environmental Justice population. The proposed Fall River Depot station is expected to spur growth and catalyze redevelopment of the waterfront area. In addition, the relocated Stoughton Station will require partial or full acquisition of six parcels/. Acquisition of these parcels has the potential to displace businesses and may result in associated job losses. The FEIS/R indicates that property acquisition will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policy Act; accordingly, MassDOT will work with affected property owners to identify possible relocation sites. Because the project is expected to generate new jobs in the vicinity of the stations, mitigation is not proposed for adverse financial impacts or indirect displacements that may occur,. Adverse impacts to affected businesses may be offset should they be relocated within close proximity to their existing site.

[3] These values are based upon a combination of train operations and horn use at crossings.

The FEIS/R acknowledges that Environmental Justice communities may be negatively affected by increased property values in their neighborhood. The FEIS/R refers to several state and local programs that provide assistance to renters and home buyers but does not identify mitigation to address this potential impact.

The FEIS/R describes the outreach efforts to Environmental Justice communities, including planned consultation with building owners that may be adversely affected by increases in noise. The FEIS/R indicates that the project is designed to address public safety concerns throughout the corridor and that neighborhoods within Environmental Justice areas will not be disproportionately impacted.

Cultural Resources

The FEIS/R includes an update on historical and archaeological studies conducted since the DEIS/R and an update on consultations with the MHC. The FEIS/R includes a detailed evaluation of historic and archaeological resources in the Area of Potential Effect (APE) and identifies specific historic districts and buildings that may be adversely affected by the project, as well as sites of cultural value to Native American people. The Wampanoag Tribe of Gay Head/Aquinnah has indicated that the Hockomock Swamp and the Pine Swamp are regarded as traditionally culturally sensitive lands. Impacts to traditional cultural properties will be determined based on further consultation with the Tribes. The project will have direct and indirect, as well as temporary and permanent, impacts on above-ground historic resources. Impacts evaluated in the FEIS/R include noise and vibration, traffic, visual, physical modifications, and air quality.

Based on the analysis in the FEIS/R, traffic and air quality impacts to historic and archaeological resources are expected to be minor. Temporary vibration impacts during construction may result in vibration levels that could cause structural damage in the vicinity of certain bridges. The FEIS/R evaluates project elements that may cause permanent impacts to viewsheds including catenary and other electrification infrastructure, vegetation clearing, grade crossings and traffic controls, fences, noise walls, parking lots, and new building construction.

An initial historic resources reconnaissance survey was followed by supplemental surveys which provided more detail on the current route. The subsequent intensive survey collected information on potentially National Register-eligible historic resources and produced recommendations for eligibility. The FEIS/R identifies historic properties within the APE and describes those potentially eligible for National Register (NR) listing. The project may affect: 22 areas/districts and 30 individual properties which are NR Eligible; 19 areas/districts and 43 individual properties which are NR Listed or previously determined eligible; and 7 areas/districts and 12 individual properties that are considered ineligible for NR listing.

The FEIS/R describes direct impacts to five above-ground historic properties, including one National Historic Landmark (specifically, the existing Old Colony Railroad Station which is part of the H.H. Richardson National Historic Landmark, located in North Easton). The FEIS/R indicates that changes to infrastructure and the introduction of new structures will have indirect visual effects on the H.H. Richardson Historic District. The design of project station and

parking/drop-off areas will introduce new modern rail elements that will have an adverse effect on the Ames Shovel Shop and North Easton station. The FEIS/R acknowledges that the choice of electric trains will result in greater visual indirect effects because of the associated overhead electrical infrastructure and traction power substations required. The FEIS/R also identifies indirect effects associated with changes in setting and/or increased noise that could affect the setting directly or indirectly through introduction of noise barriers.

The project could impact ten known archaeological sites that are eligible for the National Register (NR) and it may affect archaeological resources and areas of archaeological sensitivity (which would require further investigation to determine if archaeological resources were present) that have not been identified. Based on the results of the Intensive Archaeological Survey, the project will affect three sites between Route 138 and Weir Junction: the King Philip Street Site, the Chickering Road site, and the East Brittania Street Site. Each of these sites yielded a low density of quartz chipping debris and other stone tools. The FEIS/R indicates that the Corps will address traditional cultural properties in a separate document pursuant to Section 106 of the National Historic Preservation Act.

The FEIS/R indicates that additional areas with a moderate sensitivity to project-related disturbances such as overhead catenary structures, including support footings, may require an intensive (locational) survey. A number of potential work areas that have not been surveyed include grade crossing/intersection modifications, temporary and permanent construction easements, property takings outside of the ROW, and electrification facilities.

The figures in the FEIS/R show locations of historic resources within the APE. The FEIS/R discusses potential conflicts with proposed station parking at the site of the historic H.H. Richardson train station in Easton and addresses local concerns relating to visual and cultural resource impacts. MassDOT has met with representatives of Easton Historical Society regarding the historic Easton Village H.H. Richardson train station. The FEIS/R indicates that the historic Stoughton Station has been declared surplus by the MBTA and will be sold. The sale will include a protective covenant.

The FEIS/R discusses potential mitigation measures for impacts to significant historical and archaeological resources. Minimization of impact to historic properties or archaeological resources will be focused on reducing the extent of ground disturbance, establishing vegetated buffers, and designing noise barriers and sound insulation to be compatible with the historic setting, and will be addressed in the Adverse Effects documentation for each individual resource. The Adverse Effects documents prepared in support of the Programmatic Agreement (PA) will outline the mitigation approaches that will be taken for each cultural resource including districts. The mitigation plans will be developed after all stages of intensive (locational) survey and, as needed, evaluative testing are completed and the results of the investigations are evaluated. Specific mitigation commitments for cultural resources will be informed by more detailed archeological survey fieldwork and additional design detail and consultation with the applicable consulting parties (including, but not limited to, federal agencies such as the Advisory Council on Historic Preservation, federally recognized Indian Tribes, and MHC acting as the State Historic Preservation Officer). Mitigation measures to address above-ground historic resources include engineering methods to reduce noise and/or vibration, and visual barriers to minimize

aesthetic impacts. For unavoidable adverse impacts, MassDOT will consider mitigation through data recovery, treatment plans, and photographic documentation.

Comments from MHC directed to the Corps, indicate that current project information for the project including scaled existing and proposed conditions plan, should be submitted for its review and comment as they are developed, along with the Corps' opinion regarding the need for additional archaeological survey. In addition, a request to amend the State Archaeologist's permit for archaeological surveys should be submitted to the MHC by the PAL when archaeologically sensitive project impact areas have been identified. MHC also notes that the draft Programmatic Agreement (version 6) included in the FEIS/R should be updated to incorporate its comments on version 4 of the draft Programmatic Agreement.

Mitigation and Section 61 Findings

The FEIS/R includes an updated and revised Mitigation Section and Draft Section 61 Findings. It addresses permanent and construction-related project impacts for transportation, land use, visual and aesthetic resources, noise, vibration, historical and archaeological resources, protected open space, wetlands, water quality, waterways, biodiversity, rare species, and construction period impacts. Mitigation measures are identified at varying levels of specificity. The FEIS/R acknowledges that some mitigation measures will not be identified with additional specificity until the project design is advanced. The FEIS/R identifies parties responsible for mitigation and a schedule for mitigation. The following measures are proposed to avoid, minimize and mitigate project impacts:

Transportation

- Roadway and intersection improvements include, but are not limited to: improve crosswalks and pedestrian ramps at locations specified; reconfigure driveways and roads at locations; pre-empt crossing signals; close intersections at certain locations; improve pedestrian timing at certain locations; construct sidewalks at certain locations; improve signage at certain locations; widen streets to provide exclusive turn lanes; re-stripe streets; modify traffic signal phasing and timing; install traffic signals; and, improve grade crossing safety.
- Specific roadway and intersection improvements are identified in Table 7.4-1, including:
  North Easton Station
  - Revise signal timing at Route 138 at Roche Bros. Way
  - Revise signal timing, including longer pedestrian timings, at Route 138 at Main Street
  - Widen Route 138 at Elm Street to provide two lanes northbound and southbound and install a traffic signal
  - Widen Route 138 Route 138 at Union Street to provide two lanes northbound and southbound and install a traffic signal

  Easton Village Station
  - Revise signal phasing and timings at Route 138 at Belmont Street
  - Install pavement markings and signage improvements at Main Street at Center Street/Lincoln Street

- Install pavement markings and signage improvements at Lincoln Street at Barrows Street

Raynham Park Station
- Revise signal timing, including longer pedestrian timings at Route 138 at Elm St.
- Arlington Street at School Street - re-align Robinson Street to create 4-way intersection, widen Route 138 to provide two lanes northbound and southbound, and install traffic signal

Taunton Station
- Revise signal timing at Broadway and Washington Street
- Restripe Longmeadow Street to provide two southbound lanes Revise signal timing, including longer pedestrian timings at Dean Street at Longmeadow Street
- Install pavement marking and signage improvements at Dean Street at Prospect Street
- Reconstruct traffic signal system based on new adjacent grade crossing equipment and widen Arlington Street to provide two southbound lanes at Dean Street/Arlington Street intersection
- Convert to all-way stop at Arlington Street at School Street

Taunton Depot Station
- Revise signal timing at Route 140 at Hart Street
- Reconstruct traffic signal system based on new adjacent grade crossing equipment Widen Arlington Street to provide two southbound lanes at Taunton Depot Drive

King's Highway Station
- Install signal interconnect infrastructure between Mount Pleasant Street and Church Street at King's Highway
- Revise signal phasings and timings at Mount Pleasant Street at Jones Road/King's Highway
- Improve signal equipment, phasing and timing to provide concurrent pedestrian crossing at King's Highway and Shaw's Drive
- Pre-empt grade crossing signals and reconfigure Stop & Shop Drive to accommodate diverted Tarkiln Hill Road traffic at King's Highway and Stop & Shop Drive
- Pre-empt grade crossing signal and revise signal timing, including longer pedestrian timings, at Tarkiln Hill Road at Church Street

Whale's Tooth Station
- Improve crosswalks and pedestrian ramps at Acushnet Avenue at Hillman Street
- Construct approximately 300 feet of sidewalk along east side of Acushnet Avenue
- Revise signal timing, including longer pedestrian timings at Mill Street at Pleasant Street and Kempton Street
- Install traffic signal at Coggeshall Street at North Front Street

Freetown Station
- Construct approximately 1,600 feet of sidewalk along the east side of South Main Street
- Improve crosswalks and pedestrian ramps at South Main Street and Narrows Road and at South Main Street/Copicut Street

Fall River Depot Station
- North Main Street at President Avenue: Widen North Main Street to provide an exclusive northbound and southbound left-turn lane and modify traffic signal phasing to provide a westbound lead phase and exclusive pedestrian phase
- Improve pedestrian timing at President Avenue at N. Davol Street

Battleship Cove Station
- Improve crosswalks and pedestrian ramps at Broadway at Central Street
- Improve crosswalks and pedestrian ramps at Broadway at Anawan Street

Stoughton Station
- Install traffic signal at Brock Street at Washington Street
- Reconstruct intersection (eliminating driveways, realign Morton St. and install stop sign at Wyman Street at Summer Street/Morton Street

- 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
- Coordinate with local emergency service providers regarding grade crossing design
- MassDOT will continue to evaluate the following components to optimize safety at each at-grade crossing: rail vehicle type and condition; geometry; signage and markings; crossing surface; site conditions; illumination; traffic signal pre-emption; signals and operations (visual and audible warning devices); gated warning devices; gate timing; vital signal logic; Automatic Highway Crossing Warning systems; general safety enhancements; and additional site specific improvements ranging from minor (installing a traffic signal pre-emption at existing intersections) to major construction (potential at-grade separation).
- Specific measures to optimize safety at grade crossings as detailed in Table 4.1-87 of the FEIS/R.
- Bus service will be provided to Taunton Station, Taunton Depot Station, Freetown Station, Fall River Depot Station, Battleship Cove, King's Highway Station, and Whale's Tooth Station.
- All stations are designed to provide safe pedestrian and bicycle access
- MassDOT will incorporate high-efficiency exterior lighting at all stations and layover facilities.
- MassDOT will evaluate the feasibility of incorporating solar and/or wind at all stations and layover facilities.

Smart Growth and Corridor Plan

- MassDOT will continue to participate in implementation of the Corridor Plan and EO 525.
- MassDOT will monitor and evaluate the effectiveness of the Corridor Plan. Evaluation reports will be published on the MassDOT website. The first report will be published approximately four years after the commencement of South Coast Rail Service. Subsequent reports will be issued every three years, for a maximum of 20 years.
- MassDOT will continue funding to provide technical assistance to municipalities as part of the Corridor Plan. Funding will be provided consistent with previous levels (an average of $200,000 per year) through the design phase of the project.
- MassDOT will consult with DOER/Division of Green Communities to develop a joint approach to promote energy efficiency and GHG reductions in South Coast communities.

Visual

- Minimize removal of vegetation along right-of-way
- Install screening in selected locations to minimize visual impacts of the rail infrastructure
- Landscaping at the Weaver's Cove East layover facility to provide a visual buffer from the neighborhood
- Specification of station lighting fixtures, designs, and technologies that minimize night sky impacts
- Design facilities and structures to blend with the surrounding landscape

Noise

- Provide noise walls or other noise measures where sensitive land uses would be subject to severe impacts (if cost-effective according to MBTA and FTA criteria; e.g., less than $30,000 per dwelling unit).
- Noise walls will be provided at four locations along the alignment in Easton and Fall River: Center Street Area, Easton (Main St to Bridge St); Baldwin Street Area, Easton (Bridge St to Parker Terrace); Murray Street Area, Fall River (Brightman St to Cory St); and, Almy Street Area, Fall River (Cory St to President Ave)
- Provide funding for sound insulation for buildings where sensitive land uses would experience severe impacts but walls are not cost-effective. Mitigation will be provided, at a rate of $5,000 per dwelling unit per decibel of noise impact above the Severe level and up to a maximum of $30,000 for 235 residences: 21 in Stoughton, 56 in Easton, 23 in Raynham, 23 in Taunton, 14 in Berkley, 8 in Lakeville, 25 in Freetown, 12 in New Bedford, and 53 in Fall River

Vibration

- Incorporate vibration mitigation measures into the design and operating plan, including continuously welded rail, ballast and sub-ballast depth specifications, turnout locations at

least 100 feet away from sensitive receptors, and train and track maintenance (such as regular wheel re-truing) schedules.

- Install ballast mats under the tracks where mitigation is justified and soil testing confirms that conditions are appropriate for installation. Mats will be installed at up to 39 locations as specified in Section 4.7 of the FEIS/R:
  - Stoughton: Brock Street/Washington Street; Rogers Drive/Plain Street; and Smyth Street/Washington Street.
  - Easton: Center Street/Williams Street/Avis Circle/Baldwin Street; Laurel Drive; Short Street/Lantern Lane; Kennedy Circle; and Prospect Street.
  - Raynham: o Bridge Street; Elm Street West; Carver Street; Britton Street; and Wampanoag Road/King Phillip Street/Chickering Road.
  - Taunton: Thrasher Street/Malcolm Circle; Summer Street; High Street/Paul Bunker Drive; Hart Street/Alegi Avenue; and Williams Avenue/Plain Street.
  - Berkley: Padelford Street; Mill Street; and Adams Lane.
  - Freetown: Braley Road; Richmond Road; Forge Road; and High Street/Alexander Drive.
  - New Bedford: Lynn Street and Purchase Street.
  - Fall River: Leeward Road; Rolling Green Drive; North Main Street; Pickering Street/Clinton Street/St. James Street; Murry Street/Cory Street/Ballard Street/Almy Street/Railroad Avenue/North Court Street/Brownwell Street/Thompson Street; Dyer Road; Durfee Street/Cedar Street; Maple Street; and Meadow Street.

Cultural Resources

- Where impacts to historic resources are unavoidable, prepare archival documentation and provide interpretive signs that describe for the public the site's history, features, and significance
- Develop and implement a Cultural Resource Monitoring Program
- Develop a mitigation plan, in consultation with the USACE and MHC, to minimize adverse impacts to historic properties as identified in the Programmatic Agreement.
- Conduct additional archaeological survey in sensitive areas as identified in the Programmatic Agreement
- Evaluate specific construction sites (the Route 138 Grade Separation, proposed Stoughton Station) and conduct detailed site investigations and/or data recovery where impacts to archaeological resources are unavoidable
- In areas where there is a potential for vibration damage to historic structures, inspect building foundations prior to construction and monitor foundations during construction
- Install rubber ballast mats (or equivalent) or moveable point frog turnouts (or equivalent) to minimize potential for vibration-induced damage to historic buildings in Easton
- Design Easton Village Station to be compatible with character of surrounding historic properties such as the adjacent railroad station
- 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
- Within historic districts, reduce visual impacts by reducing clearing and using screening planting and landscaping

- Minimize number of lighting poles adjacent to historic properties; paint poles a non-contrasting color
- Include a protective covenant in sale of Stoughton Station building
- Identify and acquire replacement open space to compensate for the loss of 0.16 acre of public open space in Stoughton.

Wetlands

- Create/restore up to 33.7 acres of wetlands and waterways at up to seven sites, at ratios determined in consultation with MassDEP and the Corps, depending on cover type, for no net loss of wetland functions and values (Table 4.16-62)
- Based on level of impacts identified in the FEIS/R, mitigation will include: 19.2 acres of BVW at a 2:1 mitigation ratio and 1.9 acres of LUW at a 2:1 mitigation ratio. Total area of mitigation will vary based on impacts associated with final design and updated resource delineations.
- Based on level of impacts identified in the FEIS/R, create/restore up to 6.7 acres of BLSF to provide compensatory flood storage. Total area will vary based on impacts associated with final design and topographical surveys.
- If the area of federal wetland mitigation required, cannot be achieved through wetland establishment, enhancement, or restoration, select and preserve wetlands and adjacent developable uplands within Priority Preservation Areas
- Post-construction monitoring period (5 – 10 years) to evaluate effectiveness of mitigation areas and identification of thresholds for additional mitigation.

Water Quality

- Improve railroad drainage system to promote settling and infiltration.
- Install sediment forebays and check dams upgradient of discharge points.
- Line drainage ditches within drinking water protection areas.
- Design and install secondary containment structures within traction power substations.
- Install retention ponds, rain gardens, and other treatment/control features at station sites.
- Design and install stormwater management systems at layover facilities to meet stormwater management standards for LUHPPLs.
- Adhere to the approved Vegetation Management Plan, as implemented with MassDOT's Yearly Operating Plans, which restrict the use of herbicides in areas adjacent to wetlands or sensitive resources.
- ESSD and LID practices are incorporated into the design of proposed stations and parking facilities
- Structured parking at Fall River Depot station to minimize impervious surfaces.

Rare Species

- Provide funding or land acquisition to protect up to 25 acres of land (2:1 ratio) potentially used by the Hockomock Swamp population of Blanding's Turtle.

- Fund a study of the Hockomock Swamp population of Blanding's Turtle to assist NHESP in developing long-term protective measures. The study will determine the size and status of the population, identify nesting areas, identify important non-breeding areas, and identify locations where migratory pathways cross Route 138.
- Provide funding or land acquisition to protect up to 11 acres of land (1.5:1) potentially used by the Hockomock Swamp population of blue-spotted salamander.
- Provide funding to the NHESP Eeastern Box Turtle Mitigation Bank equivalent to protecting up to 17 acres of habitat (1.5:1), or directly protect up to 17 acres of habitat through land acquisition or restriction.

Biodiversity

- Install wildlife crossings (tunnel and between-tie crossings) to maintain population continuity for state-listed wildlife, at the locations specified in Chapter 4.14 of the FEIS/R.
- Where possible, replace bridges and culverts that connect areas of high biodiversity with structures that meet Massachusetts River and Stream Crossing Standards to facilitate fish and wildlife passage through the rail bed. Table 4.14-36 of the FEIS/R lists the culverts to be reconstructed to meet stream crossing standards.
- Replant disturbed areas.
- Develop and implement an invasive species control plan within the Hockomock Swamp
- Install wildlife crossings (tunnel and between-tie crossings) at the locations specified in Chapter 4.14, *Biodiversity* (Table 4.14-37)
- Consider slope modifications to avoid direct impacts to vernal pools
- Work with the Town of Easton and Southeast Regional Vocational School to identify measures to protect vernal pools on their respective properties from ATV damage
- Enhance natural vegetation within buffer zones to vernal pools, where appropriate.
- Adhere to the approved Vegetation Management Plan identified in Water Quality section.

Construction Period Impacts

- Avoid unnecessary tree clearing along rights-of-way.
- Maintain mufflers on construction equipment.
- Fit any air-powered construction equipment with pneumatic exhaust silencers.
- Prohibit excessive idling of construction equipment and trucks in accordance with MassDEP anti-idling regulations.
- Prohibit nighttime construction.
- In areas where there is a potential for vibration damage to structures, inspect building foundations prior to construction and monitor foundations during construction.
- Require that all diesel equipment used on-site will be fitted with after-engine emission controls, including diesel oxidation catalysts and/or particulate filters. This would include on-road vehicles on which catalysts or filters can be accommodated.
- Require use of ultra-low sulfur diesel fuel for all construction vehicles.
- Provide dust protection at work sites.

- Avoid tree clearing within the right-of-way in the Hockomock Swamp, Pine Swamp, Assonet Cedar Swamp and Acushnet Cedar Swamp from May 1 to July 15.
- Institute time-of-year construction restrictions, in consultation with MassDEP and NHESP, during breeding seasons in sensitive habitat areas including the Hockomock Swamp, Pine Swamp, and Acushnet Cedar Swamp.
- Observe time-of-year restrictions for in-water bridge work as identified in Table 4.14-33 of the FEIS/R (generally from March 15 to June 30). Consult with MassDEP and DMF to identify restrictions that protect fish spawning in the Taunton River while allowing bridge construction.
- Restrict construction in the Hockomock Swamp to daylight hours during amphibian breeding season (March-April).
- Install staked, entrenched siltation fences at all limits of work within rare species habitat.
- Install one-way turtle gates within areas of mapped habitat of listed turtle species.
- Daily monitoring of the work area within areas of mapped habitat of listed turtle species from spring through fall, as required by the Conservation and Management Permit. Any animals found within the work area will be relocated.
- Develop and implement a comprehensive Soil Erosion and Sediment Control Plan in accordance with NPDES and MassDEP standards.
- Apply water to dry soil to minimize fugitive dust.
- Stabilize any highly erosive soils with erosion control blankets and other stabilization methods.
- Use sediment control methods (such as silt fences and hay bales), during excavation to prevent silt and sediment entering the stormwater system and waterways.
- Maintain equipment to prevent oil and fuel leaks.
- Design a construction-phase SWPPP that incorporates the following: erosion and sediment controls, spill control procedures, and proper handling of dewatering discharges.
- Prepare Hazardous Materials and Solid Waste Management Plan, and Health and Safety Plan, to describe the regulatory context and procedures to be used during construction.
- Pre-characterize any materials that would be managed during the project to determine the course of action for excavation and disposal.
- Pre-characterize construction materials in buildings that would be demolished to identify special or hazardous waste and determine the course of action for removal and disposal.

As acknowledged in previous sections of this Certificate, additional development of mitigation is necessary as the project design advances. MassDOT will continue to meet with and consult with ICG wetlands subgroup on the development of final mitigation for impacts to wetlands and rare species, including evaluation of wetland restoration/replication sites and with the smart growth subgroup. MassDOT will file a draft mitigation plan, developed in consultation with the wetlands subgroup, which will be published through the MEPA Office for public review and comment. The filing of this document will provide an opportunity to gather additional input from State Agencies, advocacy organizations, municipalities and the public on the mitigation plan. The timing of this publication will be developed in consultation with the MEPA Office, MassDEP, and MassDOT to ensure it supports public review and effectively supports the permitting process.

Conclusion

Based on review of the FEIS/R, a review of comment letters and consultation with State Agencies, I have determined that the FEIS/R adequately and properly complies with MEPA and its implementing regulations. As noted above, a Mitigation Plan and revised Draft Section 61 Findings will be filed with the MEPA Office for public review and comment.

November 1, 2013

Richard K. Sullivan Jr.

Comments Received

10/25/2013	Massachusetts Department of Environmental Protection
10/21/2013	Massachusetts Historical Commission
10/25/2013	Division of Fisheries & Wildlife/NH&ESP
10/25/2013	MA Division of Marine Fisheries
10/23/2013	Representative Carole A. Fiola
10/24/2013	Senator Brian A. Joyce
10/25/2013	Representative William C. Galvin
10/25/2013	Representative William M. Straus
10/24/2013	Representative Louis L. Kafka
10/17/2013	Representative Robert M. Koczera
10/29/2013	Scott Jackson, UMASS Amherst
10/24/2013	The Nature Conservancy
10/25/2013	Mass Audubon, Advocacy Department
10/29/2013	Taunton River Watershed Alliance
10/25/2013	Massachusetts Association of Conservation Commission
10/25/2013	WalkBoston
10/25/2013	Old Colony Planning Council
10/25/2013	Southeastern Regional Planning/Economic Development District
10/25/2013	Spatcher Law Offices,The United Regional Chamber of Commerce
10/23/2013	Town of Berkley Board of Selectmen
10/25/2013	Town of Easton Historical Commission
10/24/2013	Easton Historical Society
10/25/2013	Town of Easton Office of the Town Administrators
10/26/2013	Linda Grubb, Lakeville Representative to South Coast Commuter Rail Task Force, Chairman, Lakeville Open Space Committee, Lakeville Conservation Commissioner
10/25/2013	Martha Schroeder member of Lakeville Conservation Commission
10/22/2013	Town of Raynham Director of Planning & Development
10/25/2013	Kopelman and Paige

10/28/2013	Mayor Jonathan F. Mitchell, City of New Bedford
10/21/2013	Jill Maclean, City Planner, Agent for the New Bedford Planning Board
10/22/2013	Harbor Development Commission
10/26/2013	William Pezzella
10/28/2013	Kyla Bennett, PhD,JD, Director, New England PEER
10/25/2013	Art Misiaszek
10/25/2013	Michael J. Jolliffe
10/24/2013	Forrest C. Lindwall, Planning & Engineering Consultant
10/25/2013	Michael Brillo
10/24/2013	Joseph E. Ingoldsby, ASLA, Environmental Design & Planning
10/25/2013	Heather & Doug Lewis
10/23/2013	Louis F. Gitto
10/17/2013	Mark Hess
10/17/2013	Stephen Castellina

RKS/PPP/ppp