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CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: South Coast Rail Project
PROJECT MUNICIPALITY	: South Coast Region
PROJECT WATERSHED	: Buzzards Bay, Taunton River, Narragansett Bay, Ten Mile River, Boston Harbor, Charles River
EEA NUMBER	: 14346
PROJECT PROPONENT	: Executive Office of Transportation and Public Works
DATE NOTICED IN MONITOR	: November 24, 2008

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of an Environmental Impact Report (EIR).

This project involves the re-establishment of commuter rail service from the South Coast communities of Fall River and New Bedford to Boston, which has been discontinued since 1958. The project spans a stretch of approximately sixty miles and potentially passes through or otherwise impacts thirty-one cities or towns in the South Coast corridor. The project has the potential to increase transit accessibility and ridership, improve regional air quality, and support opportunities for smart growth and sustainable development in the South Coast region. In addition, the availability of convenient and reliable public transportation options is a crucial component of the Commonwealth's strategy for reducing greenhouse gas emissions and tackling the problem of global climate change. At the same time, the project also has the potential to result in considerable impacts to natural resources and wildlife habitat in areas of Southeastern Massachusetts with significant ecological value. Selection of a preferred alternative that

balances the relative environmental benefits and harms of this large-scale regional initiative is therefore a fundamental objective of this environmental review process.

The project was previously reviewed under MEPA from 1995 to 2002. However, federal environmental review under the National Environmental Policy Act (NEPA) was not undertaken at that time. As a result, the project is now undergoing a joint environmental review process, including a comprehensive alternatives analysis, under both the state and federal review procedures to provide fresh information on the project's environmental impacts that can serve as a basis for obtaining the required federal and state permits needed to construct the project.

An informed and objective alternatives analysis is at the heart of the MEPA process. Only in this way can a state agency meet its statutory obligations to take all feasible measures to avoid, minimize or mitigate damage to the environment. As described in further detail below, and as documented in the ENF and related documents, numerous routing and mode options have been evaluated by the South Coast Rail project to date. Based on the results of that analysis (including the Ridership Memorandum) and comments received during the public comment period, the Draft Environmental Impact Report (DEIR) will be required to narrow those options to eight remaining feasible alternatives for the project.[1] These eight alternatives represent three primary routing alternatives (Attleboro, Stoughton, and Rapid Bus), a no-build/enhanced bus scenario, as well as several variations on the three basic routes. The DEIR will be required to present a thorough and detailed comparison of the relative environmental impacts and benefits of each of the alternatives to serve as the basis for selection of a preferred alternative that meets the project's stated purpose with a minimum of environmental impact.

Project Description

The purpose of the project as articulated by the Executive Office of Transportation and Public Works (EOT) is to more fully meet the existing and future demand for public transportation between Fall River/New Bedford and Boston, and to enhance regional mobility, while supporting smart growth planning and development strategies in affected communities.

The Environmental Notification Form (ENF) describes five primary project routing and mode alternatives that were brought forward for further investigation as a result of a screening process (the Phase I Alternatives Analysis), which included a comprehensive review of 65 alternatives. The five alternatives include the No-build/Enhanced Bus alternative, the Attleboro, Stoughton and Middleborough rail alternatives, and a Rapid Bus transit alternative. The three rail alternatives include several variations; the Attleboro route (diesel and electric), the Stoughton route (diesel, electric, and the Whittenton diesel variation), the Middleborough Full (includes improvements to the Old Colony line), the Middleborough Simple (no improvements to the Old Colony line), and the Attleboro-Middleborough hybrid alternative.

[1] As noted above, the project is undergoing both state and federal environmental review. If the federal review process results in the evaluation of alternatives in the Draft Environmental Impact Statement beyond those that have been identified in this Certificate, the proponent should consult with the MEPA Office to discuss whether an amendment to the Scope for the Draft Environmental Impact Report set forth below is required.

The project includes eighteen proposed new stations, which EOT has recommended for further analysis as a result of a screening process that considered seventy-three potential rail and bus station sites. A key component of the project is a proposed land use and economic development corridor, which is being developed in parallel with the transportation corridor to promote transit-oriented development and smart growth in and around the proposed station sites.

The proposed project has the potential to result in significant impacts to natural resources and wildlife habitat. There are five Areas of Critical Environmental Concern (ACEC) and several other conservation areas that would be impacted by the various alternatives. These include the Hockomock Swamp ACEC, which is one of the largest unfragmented wetland systems in the state, the Fowl Meadow/Ponkapoag ACEC, and the Pine Swamp conservation area in Raynham. The proposed rail alignments cross priority and estimated habitat for rare species and approximately twenty-five state-listed species have been found within or adjacent to the railroad right of ways for the various alternatives. As further detailed in the ENF, the rail alternatives are estimated to result in impacts to wetland resources in the range of approximately 3.6-10 acres, depending on the route selected. The Rapid Bus alternative is estimated to result in approximately 1.3 acres of wetlands impact. Other resource impacts include potential impacts from the project on biodiversity and drinking water supplies.

However, the project also has the potential to significantly improve regional air quality and reduce greenhouse gas (GHG) emissions by increasing the number of people using public transit, thereby reducing automobile use and the GHG and pollutant emissions associated with vehicle miles travelled (VMT). Any reduction in VMT achieved as a result of the project may also have a positive impact upon the currently congested transportation infrastructure network along major highways between the South Coast region and Boston. Thus, the potential environmental benefits of this large scale regional project in the form of improvements to air quality, reductions in GHG emissions, and reduced traffic congestion are important factors to be balanced against the impacts to environmental resources noted above.

Finally, the alternatives presented in the ENF represent a significant range in terms of the quality of service, constructability, schedule, and overall costs for the project. For example, travel times predicted for the various alternatives range from 68 to 96 minutes for a trip from New Bedford to South Station in Boston, or from 62 to 94 minutes from Fall River to South Station. Dates of completion range from 2016 to 2020, and estimated costs range from 0.5 to 3 billion dollars. Given the significant variation in these project-feasibility factors, the ridership projections for each of the alternatives represent an important consideration in evaluating the practicability and utility of the different alternatives. Supplemental information on ridership was circulated during the extended ENF review process. Based on this data, projections for 2030 show an increase in linked transit trips ranging from 1,400 to 5,900 trips per day for the range of alternatives. The latent demand for transit in the South Coast region is estimated in the ENF at 8,000 daily work trips from the South Coast to Boston (based on 2000 Journey-to-Work data).

Project Background and MEPA History

A prior proposal for the New Bedford/Fall River Commuter Rail Extension (EEA# 10509) previously underwent MEPA review approximately a decade ago. The prior project

review consisted of an ENF, a Draft Environmental Impact Report (DEIR), a Supplemental Draft Environmental Impact Report (SDEIR) and a Final Environmental Impact Report (FEIR). A Certificate on the FEIR for the project was issued on August 30, 2002 indicating that the FEIR adequately and properly complied with MEPA and its implementing regulations. At that time, the Stoughton alternative was identified as the preferred alternative for the project. The Middleborough and Attleboro alternatives had been evaluated in the DEIR and SDEIR but were eliminated from consideration by the time the FEIR was prepared. Specifically, the Middleborough Alternative was considered infeasible because its ridership was not comparable to existing commuter rail lines at the time, and the Attleboro Alternative was deemed no longer practicable due to capacity constraints along the Amtrak high-speed rail lines between Boston and New York City.

Due to the lapse of time since the Final EIR was Certified, a new ENF was filed for the current project as required by the MEPA regulations. In the current ENF, the Attleboro alternative includes a third track, which was not considered during the previous review, to address the capacity constraints noted above. Other significant developments that have occurred since the previous filing include: further development of the Land Use and Economic Development Corridor Plan (also referred to in the ENF as the Smart Growth Corridor Plan); EOT's Station Siting report and transit ridership analysis; an extensive civic engagement process; the filing of a Department of the Army permit application pursuant to Section 404 of the federal Clean Water Act; and the establishment of an Interagency Coordinating Group to initiate a comprehensive alternatives analysis as part of the U.S. Army Corps of Engineers' ("Corps") federal permit review process. The Corps' alternatives analysis is ongoing as of this date.

MEPA/NEPA Process

In addition to the requirement to prepare an EIR to meet state environmental review requirements under MEPA, the proposed project is subject to federal requirements of the National Environmental Policy Act (NEPA). On May 7, 2008, the Corps determined that an Environmental Impact Statement (EIS) is necessary to meet the NEPA requirements of this proposal. As the lead federal agency, the Corps will prepare the EIS. The federal action required is a Department of the Army permit under Section 404 of the Clean Water Act to discharge fill material to waters of the United States, including adjacent wetlands. In order to streamline the environmental review process and to facilitate public involvement, MEPA and the Army Corps are coordinating review of a joint EIS/EIR with the intent to provide the information and analysis required for both federal and state review.

Interagency and Community Involvement

EOT has conducted an extensive stakeholder involvement process that includes an Interagency Coordinating Group, the Southeastern Massachusetts Commuter Rail Task Force, and a broad civic engagement process. I commend EOT for these notable outreach efforts. In addition, I would like to thank the Commuter Rail Task Force, the Interagency Coordinating Group, as well as members of the public for their input to date—I appreciate the ongoing participation of all stakeholders during the environmental review of this project. I hope and

expect that EOT will continue its commitment to stakeholder outreach and public input as it prepares the Draft and Final EIR/EIS documents for this project.

Permits and 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(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 11.02(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 may 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(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) because it may result in demolition of a part of a state-listed historic structure. The project may also meet or exceed other MEPA review thresholds depending upon its final design.

The project requires Water Quality Certification pursuant to Section 401 of the Clean Water Act, a Chapter 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 review by the Massachusetts Historical Commission and the Office of Coastal Zone Management. The project is also subject to the MEPA Greenhouse Gas Emissions Policy and Protocol.

At the Federal level, the project requires a Section 404 permit from the Corps, an Air Quality Conformance Determination, National Pollutant Discharge Elimination System (NPDES) Construction Permit(s) from U.S. Environmental Protection Agency, 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 ENVIRONMENTAL NOTIFICATION FORM (ENF)

Alternatives Screening Process- Phase I Analysis

The ENF includes a chapter on the Phase I Alternatives Analysis and a description of the process used by EOT to identify, evaluate, and eliminate or retain alternatives for further analysis. In addition to the summary chapter, the ENF includes as an appendix the complete Phase I Report on the alternatives analysis that provides details on the methodology and results of the analysis.

A total of 65 alternatives were identified as a result of EOT's civic engagement process. A four- step evaluation process was undertaken to narrow the alternatives to a reasonable number of practicable options to carry forward to a more detailed level of analysis in the EIR. Step 1 of the process evaluated alternatives on the basis of whether they met the project purpose, Step 2 evaluated alternatives on the basis of their practicability, and Step 3 evaluated alternatives in the context of environmental impacts (a preliminary analysis based on available GIS-level information). The ENF described the screening criteria used and the rationale for dismissing certain alternatives. A fourth step in the process consisted of a re-evaluation of the conclusions of the screening process, a final selection of nine alternatives for further analysis, and a consolidation of similar alternatives that resulted in five corridor options: Alternative 1- through Attleboro, Alternative 2-through Middleborough, Alternative 3 – through Attleboro and Middleborough (hybrid), Alternative 4 - through Stoughton, and Alternative 5 - the Rapid Bus corridor.

Alternatives Rejected – Phase I Analysis

The ENF includes a comprehensive review of the alternatives considered and the reasons for rejection. These include Monorail and commuter rail along Route 24, Diesel Multiple Units, the Attleboro route without a bypass, and the Mansfield route. EOT concludes that monorail is not feasible because it is not a proven technology, its reliability is questionable and because implementation would exceed EOT's proposed budget for the project. According to the ENF, the longest existing monorail is 15 miles (in Japan), whereas the proposed South Coast transit corridor is sixty miles long. The ENF also highlights reliability and cost issues associated with monorail efforts in Las Vegas and Seattle. The commuter rail option along Route 24 was also rejected on the basis of practicability, in part because it would require rebuilding twenty highway interchanges, many bridges, and extensive earth moving. In addition, the ENF concludes that commuter rail along Route 24 would not support smart growth and economic development as well as other potential project alternatives.

Diesel Multiple Units (DMUs), which are self-propelled rail cars that can be combined into multiple car trains, were also dismissed from further consideration. DMUs could increase regional mobility by providing more frequent trains than traditional rail. However, because of the increased frequency of operation, they would require double-tracks throughout the corridors, thereby increasing costs and environmental impacts. The DMU alternatives would have longer

travel times and less reliability than other alternatives because transfer to the existing rail system would be required.

The Attleboro route without a bypass was considered but rejected as it was considered impracticable. While this alternative would avoid the impacts associated with the 2.6-mile bypass (described in further detail below), it would require the train to reverse into Attleboro station thereby increasing travel time, causing potential mechanical problems and creating impacts associated with an additional track at the station. The Mansfield route, which would use the abandoned rail right-of-way from the Attleboro secondary in Taunton, north to the existing Mansfield station along the Northeast corridor was also rejected for reasons of impracticability.

I acknowledge the comments received requesting that some of the alternatives eliminated during the Phase I analysis be reconsidered in the DEIR. However, based upon my review of the ENF and the Phase I Alternatives Analysis Report, I am satisfied that a comprehensive alternatives screening process was conducted and that a reasonable explanation for the elimination of alternatives was presented in the ENF.

Alternatives Evaluated in the ENF

The ENF describes the proposed No-Build/Enhanced Bus alternative and the five build alternatives, and discusses the operational issues, required infrastructure, project schedule/cost, and opportunities for smart growth associated with each alternative. The ENF also identifies potential station sites for each of the transit corridor options, and includes a detailed station siting report with results from the civic engagement process and the evaluation and selection of recommended sites. The ENF recommends that the no-build/enhanced bus, Stoughton route, Middleborough Simple, and Rapid bus alternatives be brought forward to the Draft EIR (DEIR) stage. The ENF recommends eliminating the Attleboro alternative, the Middleborough Full, and the Attleboro/Middleborough Hybrid alternatives from further review.

As noted above, supplemental information was submitted with ridership projections to assist in the comparison and selection of alternatives for review in the DEIR. Based upon the information provided to date, and as detailed further below, I concur with EOT that the Middleborough Full and Attleboro/Middleborough Hybrid are not practicable and need not be brought forward for additional analysis in the DEIR. I have also determined that the Middleborough Simple alternative does not require additional analysis in the DEIR. However, I believe the Attleboro alternatives are potentially feasible alternatives worthy of further analysis in the DEIR. The alternatives section in the Scope below outlines the specific alternatives to be retained and additional variations to be evaluated in the DEIR.

The alternatives presented in the ENF are as follows.

a) No-Build Alternative – Enhanced Bus

This alternative consists of enhancements to the existing transit system serving the project area, which includes currently programmed and funded improvements to the system and associated infrastructure such as commuter rail stations and park-and-ride lots. The no-build

alternative includes bus schedule enhancements, new and expanded park-and-ride facilities, transportation demand management and transportation policy enhancements for commuter bus. The ENF also recommends support for private commuter bus service operators to acquire a new fleet of fuel-efficient and clean emission buses.

The no-build option includes more frequent service with shorter headways and a more flexible schedule for the Fall River and New Bedford commuter bus. No enhancements are proposed for the Taunton bus service, which is considered in the ENF to be adequate to meet current demand. The ENF identifies opportunities for expansion of park-and-ride lots in the vicinity of the Mount Pleasant lot in New Bedford as well as the Silver City Galleria and Route 24/140 highway interchange in Taunton. Another possible enhancement identified in the ENF is a joint ticketing system for bus and rail which would allow bus operators to offer the same type of transit pass as commuter rail which currently provides free access to MBTA buses and rapid transit for those who purchase a monthly pass. The No-Build/Enhanced Bus alternative should be further evaluated in the DEIR as outlined in the Scope below.

b) Build Alternatives

Four of the five build alternatives consist of proposals for rail transit. Each of these requires upgrades to existing freight lines in what is referred to in the ENF as the "Southern Triangle" portion of the project that includes the New Bedford Main from New Bedford to Cotley Junction in Taunton, and the Fall River Secondary from Fall River to Myricks Junction. All the rail alternatives would require capacity improvements at South Station, including new tracks. The alternatives would also require new mid-day layover, overnight storage, and maintenance facilities.

In terms of the assumptions used in modeling capacity and ridership, the alternative rail routes assume six peak period trains from the South Coast area to Boston, with three coming from Fall River and three from New Bedford. The exception to this is the Middleborough Simple, which cannot accommodate additional trains without improvements to the Old Colony line; therefore this alternative includes expansion of existing service only, which would provide three peak period trains in total.

Alternative 1 – through Attleboro

The Attleboro alternative includes both diesel (Option 1A) and electric (Option 1B) trains providing commuter rail service to Boston via the Attleboro Secondary, proposed Attleboro Bypass, and the Northeast Corridor. Nine stations are proposed: Battleship Cove, Fall River Depot, Freetown, State Pier, Whale's Tooth, King's Highway, East Taunton (North), Taunton Depot, and Barrowsville.

The analysis conducted for this alternative shows that a third track is needed on the Northeast Corridor to handle the addition of more than one new peak period train. The third track is required between the proposed Attleboro Bypass track and the existing Transfer Interlocking located just south of Readville. Construction of the third track requires significant earthworks for the new track bed, installation of three track overhead contact systems, reconstruction of three

commuter rail stations at Mansfield, Canton and Sharon, and reconstruction of 22 railroad and highway bridges as well as a new bridge parallel to the Canton Viaduct. The Attleboro bypass is a proposed new 2.55 mile double track line. The Attleboro route alternative requires 44 grade crossings and reconstruction of 51 bridges in total.

Both the electric and diesel variations of the Attleboro alternative should be further evaluated in the DEIR as outlined in the Scope below.

Alternative 2 – through Middleborough

This alternative provides commuter rail service from the South Coast area to South Station in Boston through Middleborough using the Old Colony Middleborough and Main Line corridors. The Middleborough Full is a variation of this alternative that includes major infrastructure improvements to the Old Colony line between Braintree and South Station, including a 1.3-mile tunnel under Quincy Center Station and relocation of the MBTA Red Line. As noted above, I concur with the proponent that this alternative is impracticable due to its low projected ridership numbers, high cost and significant construction-related disruption to the existing public transit system and to the City of Quincy.

The Middleborough simple alternative does not include the major infrastructure improvements of the "full". However, without these improvements it cannot meet the minimum capacity requirements of MBTA for quality of service and does not appear to meet the project's stated goals. In addition, the ridership projections are significantly lower than other alternatives. I therefore determine that this option may be eliminated from further review in the DEIR.

Alternative 3- through Attleboro and Middleborough

This option consists of commuter service to South Station using the Old Colony line and the Northeast Corridor. The proposal under this alternative was designed to send half the trains from the South Coast area via Attleboro and half via Middleborough to avoid the need for major infrastructure upgrades on either the Amtrak Northeast Corridor or the Old Colony line. However, as noted above, it appears that the addition of more than one new peak period train would still necessitate construction of a third track on the Northeast Corridor. Consequently, this alternative would result in significantly increased costs and environmental impacts associated with both Alternative 1 (Attleboro) and 2B (Middleborough Simple) combined, while achieving similar ridership outcome as Alternative 1 alone. Therefore, I concur with EOT that this hybrid alternative is impracticable and can be removed from further consideration in the DEIR.

Alternative 4-through Stoughton

This alternative would provide commuter rail from the South Coast area to Boston via Stoughton and would connect with the existing Stoughton line. A variation of this alternative would also serve the Whittenton section of Taunton. Both electric and diesel options are being considered for the Stoughton route; Option 4A-diesel, Option 4B-electric, and Option 4C-diesel via Whittenton branch. The train service to Boston under this alternative consists of an extension to the existing Stoughton line service to Weir Junction in Taunton along an abandoned railbed

right-of-way, partially located within the Hockomock Swamp. Trains from New Bedford and Fall River would be provided using upgraded Fall River secondary and New Bedford Main, connecting to the Stoughton extension at Weir Junction in Taunton.

The Stoughton electric alternative would require 9.5 miles of new catenary wire on a portion of the Northeast Corridor. It would require new track construction from Stoughton to Taunton, which includes a proposed mile-long trestle through the Hockomock Swamp. The Stoughton alternative requires 50 grade crossings (60 for the Whittenton option) and 47 bridge reconstructions.

This alternative includes eleven proposed new stations; two in Fall River, three in New Bedford, one in Freetown, two in Taunton, one in Raynham and two in Easton. The existing Canton Center and Stoughton stations would be reconstructed. The Whittenton option (4C) includes a station at Whittenton in lieu of the Taunton station proposed for 4A and 4B. The Stoughton alternative and its variations, including an electric Whittenton variation, should be evaluated further in the DEIR.

Alternative 5 – Rapid Bus

The Rapid Bus alternative would provide express bus service to South station using a dedicated primarily reversible bus lane to be built along Route 24 and I-93/128, the existing Interstate-93/Route 3 High Occupancy Vehicle (HOV) zipper lane, and a short portion through mixed traffic. Modern rapid transit buses with passenger amenities to encourage ridership are proposed to be used. Various fuel options including diesel, biodiesel, compressed natural gas, hybrid and electric technologies will be investigated for this alternative.

Under the Rapid Bus alternative, buses from Fall River and Taunton would use Route 24, Route 128 and I-93. Buses originating in New Bedford would use these routes as well as Route 140. Construction required for the Rapid bus alternative includes new exclusive bus lanes, installation of zipper lanes and reconfiguration of existing interchanges. Seven stations are proposed at: Fall River Depot, Freetown Park, State Pier, Whales Tooth, King's Highway, Taunton Depot and the Galleria. Express bus service from each station will be provided to Boston at 15-minute headways, providing eight peak period trips to each terminal.

This alternative would require new berthing facilities at South Station and a bus layover facility. It also requires reconstruction of twenty-six highway bridges, and rebuilding of eight interchanges on Route 24, the Braintree split and the Route 24/I-93 interchange in Randolph. The ENF outlines other improvements along the highway corridors that would be required including widening of a 5.8-mile section of Route 24-Route 140 in Raynham, improvements to a 11.6 mile section of Route 24-104 in Taunton, widening of the median and/or other improvements to a 9-mile portion of Route 24 (Elm Street Bridge to Harrison Boulevard) and construction of bus lanes from Harrison Boulevard interchange to the Logan Express parking lot in Braintree, with a bridge structure connection to the lot.

The DEIR should include additional information and analysis of the Rapid Bus alternative as further detailed in the Scope below.

Comparison of Alternatives Based on Ridership Projections

During the extended ENF review period, EOT submitted a Supplemental Ridership Memorandum that includes ridership projections for the alternative transit routes with an overview of the model used and the assumptions used as inputs to the model. The ridership projections are based on a regional travel demand model used by the Central Transportation Planning Staff (CTPS) of the Boston Region Metropolitan Planning Organization, which is consistent with that used by CTPS for other major transportation projects in eastern Massachusetts. The model has been refined and tailored for the study area, which includes 182 cities and towns in eastern Massachusetts. The Memorandum summarizes major features of the model and the four-step methodology used. The model was run for the forecast year 2030. As noted in the Memorandum, the model simulates existing travel conditions and forecasts future year travel on the entire transportation system in eastern Massachusetts for the transit, auto and walk/bike modes. Key inputs to the model include population, employment, number of households, automobile ownership, highway and transit levels of service, downtown parking costs, automobile operating costs and transit fares. The model uses demographic forecasts that were created by local Regional Planning Agencies (RPAs) and used in their last adopted Regional Transportation Plan (RTP). Transportation assumptions include projects that are most likely to be built by 2030 and that are included in the last federally approved and fiscally constrained RTP for the RPAs in the model area.

The model was run for the Base Year 2006, and for the year 2030 it was run for the No-Build/Enhanced Bus alternative, the Attleboro Diesel (1A) and Electric (1B) alternatives, the Middleborough Full (2A) and Simple (2B) alternatives, the Stoughton Diesel (4A) and Electric (4B) alternatives, and the Rapid Bus alternative (5). The operating plan for the Attleboro, Middleborough Full and Stoughton rail alternatives assume three peak period trains from each terminal (New Bedford and Fall River) in the morning and three to each terminal in the evening peak period. The Middleborough Simple plan assumes three peak period trains in total. The Rapid Bus operating plan assumes one bus trip every 15 minutes with express service from each station to Boston. The operating assumptions are designed to meet the minimum services acceptable under the MBTA Service Delivery Policy. The travel times projected reflect assumptions about future improvements along the corridors.

The performance measures used to compare alternatives are based on 1) changes in linked transit trips (entire trip taken by transit), 2) changes in boardings by mode, 3) the number of boardings at proposed new stations and 4) changes in vehicle miles of travel (VMT). The results of the analysis indicate a similarity between the Attleboro and Stoughton routes in terms of the number of new linked transit trips indicating a projected decrease in automobile use (for example, 5,900 new linked trips for Stoughton electric and 5,700 for Attleboro electric). The electric options appear to attract more riders compared with diesel due to the faster run times. Ridership projections for Middleborough Full and Simple are significantly lower than for the Attleboro and Stoughton alternatives (3,900 new linked trips for Middleborough full and 1,400 for the Middleborough Simple). The lower estimates are due to inferior run times and lack of connectivity to the orange line at Back Bay station. The Rapid Bus alternative is expected to

result in 3,500 new linked trips. Additional information regarding the model and assumptions used, and additional analysis of ridership will be required in the DEIR.

The Memorandum also included an estimate of the reduction in peak period VMT expected. The Attleboro and Stoughton alternatives are expected to reduce VMT by 228,000 and 241,900 respectively for the electric options (195,000 and 178,600 for diesel). The analysis shows a decrease in VMT of 163,800 for the Middleborough Full alternative and 64,400 for Middleborough Simple. The Rapid bus alternative is expected to reduce VMT by 157,500. Based on the total peak period VMT data in the Ridership Memorandum, the estimated reductions for the alternatives correlate to a VMT decrease of approximately 0.1 to 0.4 percent of overall AM and PM peak period VMT for eastern Massachusetts. The corresponding air quality benefits for the alternatives, including potential greenhouse gas (GHG) emission reductions should be included in the DEIR as further detailed in the Scope below.

Comparison of Alternatives Based on Environmental Impacts

Based on the analysis in the ENF, Alternative 1 through Attleboro will require approximately 9.1 acres of wetlands fill for the diesel option and 9.4 acres for the electric option. Alternative 4 through Stoughton will require approximately 6.7 acres of fill for the diesel option and 7.3 acres for the electric option (including 0.78-0.83 acres in the Hockomock Swamp ACEC). Wetlands impacts for the Whittenton option have not yet been estimated (but are expected to be reduced based on avoidance of wetlands in Pine Swamp). Certified and potential vernal pools are located in proximity to both rail alignments. Some comment letters received, including those from state agencies, suggest that the quality of the wetlands impacted by the Stoughton route may be more significant in terms of their function and values compared to the areas proposed for fill under the Attleboro alternative. Therefore, an analysis of the aquatic resource impacts of the alternatives cannot be based on acreage alone. A complete and comparative assessment of wetland functions and values, is necessary to determine the relative environmental consequences of the alternatives under consideration.

The Attleboro route would impact wetlands within the Three-Mile River ACEC and the Fowl Meadow/Ponkapaog ACEC and the Stoughton alternative would affect the Pine Swamp Conservation Area and Hockomock Swamp ACEC. The Whittenton variation of the Stoughton alternative would reduce wetlands impacts in Pine Swamp. The ENF states that the Attleboro alternative would have a low level of impact to state-listed rare species habitat while the Stoughton route would have a high level of impact to rare species. The Stoughton route is anticipated to have a greater impact on biological diversity due to its impacts on rare species and fragmentation of habitat and wildlife populations.

Both the Stoughton and Attleboro alternatives would have some impacts to historic resources. The Attleboro route would substantially affect the Canton viaduct, a state-listed historic structure, while the Stoughton alternative may have indirect adverse effects to historic resources including those within the Easton Historic district.

In comparison to the rail alternatives, the Rapid Bus alternative would have substantially fewer environmental impacts, resulting in a total of 1.3 acres of wetlands fill, which includes

impacts within the Hockomock Swamp associated with Route 24 construction (the ENF does not quantify the amount of fill within Hockomock swamp for this alternative). The Rapid bus alternative is not expected to have a significant impact on rare species habitat. This alternative would, however, impact the Blue Hills Reservation, conservation land that is protected under Article 97. According to the ENF, the Attleboro and Stoughton routes would not require a disposition of land under Article 97.

Both the Attleboro and Stoughton alternatives are expected to support smart growth by promoting revitalization of downtown New Bedford and Fall River and Transit-Oriented Development (TOD) opportunities for stations along the transit corridor. While the Rapid bus alternative is expected to promote revitalization of downtown New Bedford and Fall River, the ENF indicates it will have less potential to support smart growth, when compared with the rail alternatives, because of the expectation that investors in TOD will be more likely to invest in the vicinity of a fixed rail station rather than a Rapid Bus Transit system.

As indicated in the supplemental information provided with the ridership projections, all the alternatives are expected to improve air quality and reduce greenhouse gas emissions by reducing the number of cars on the road. I expect the DEIR to include an in-depth comparative analysis of the air quality benefits of project alternatives as further detailed in the Scope below.

SCOPE

General

EOT should prepare a Draft EIR (DEIR) in accordance with the general guidance for outline and content found in Section 11.07 of the MEPA regulations as modified by this Scope. The DEIR should include maps, plans and other graphics that describe existing and proposed conditions, environmental impacts, proposed structures and other project components. EOT should consult with the Interagency Coordinating Group to determine the appropriate scale to use for DEIR graphics. The DEIR should include a project summary and schedule, a list of permits required and a description of any changes since the filing of the ENF. The DEIR should include a list of all applicable MEPA review thresholds.

The Project summary should include a discussion of the project's purpose and need and associated goals and objectives. The project description and assessment of impacts should include construction and operational phases, and address all components of the project alternatives including the rail alignment, stations and layover facilities, substations and other improvements necessary for the construction, maintenance and operation of each alternative and Transit-Oriented Development (TOD) areas. The impact assessments in the DEIR should include temporary and permanent impacts, direct and indirect, and secondary and cumulative impacts.

Land Alteration

The DEIR should include cumulative totals for land alteration and impervious area, as well as a breakdown for specific elements of the project such as stations and layover facilities.

The DEIR should include a comparative analysis of land alteration for the alternatives, which should include a breakdown of the different types and amounts of land altered, for example: forest; woodland; wetland resource area (bordering vegetated wetlands, riverfront, bank, etc.); wetland buffer; priority habitat; previously disturbed area (specify land type/use).

The DEIR should describe in detail the proposed parking plans for each station and how parking is being designed to effectively support increased transit use while minimizing impervious area and land alteration. The DEIR should consider structured parking, and efficient use of parking facilities as recommended in the comments from the Metropolitan Area Planning Council (MAPC).

Alternatives

As noted above, I concur with the proponent and other commenters that the Middleborough Full, Middleborough Simple, and Attleboro/Middleborough Hybrid can be eliminated from further analysis in the Draft EIR. The DEIR should include a detailed analysis of the following eight alternatives, which include one new alternative (4D) as outlined below:

- No Build-Enhanced Bus
- Attleboro Diesel - Alternative 1A
- Attleboro Electric – Alternative 1B
- Stoughton Diesel – Alternative 4A
- Stoughton Electric – Alternative 4B
- Stoughton /Whittenton Diesel variation – Alternative 4C
- Stoughton/Whittenton Electric variation – Alternative 4D
- Rapid Bus – Alternative 5

The DEIR should include a comparative analysis of the environmental impacts of the nine alternatives, including a detailed evaluation of:

- Air quality and greenhouse gas emissions;
- Secondary growth;
- Transportation;
- Wetlands;
- Rare Species;
- Biodiversity;
- Water supply resources;
- Historical and archaeological resources; and
- Environmental Justice.

With respect to secondary growth impacts, each alternative should be analyzed under three different scenarios:

a) the baseline condition, which evaluates environmental conditions in the absence of the proposed rail under the assumption that current travel and development patterns continue and that there are no changes in municipal zoning (i.e. "business as usual");

b) build without mitigation, which evaluates impacts, including induced growth, associated with each alternative in the absence of transit-oriented development, green building, zoning changes, transfer of development rights (TDR), wetlands restoration, habitat protection, or other mitigation measures; and

c) build with mitigation, which evaluates impacts associated with the alternatives assuming implementation of the Land Use and Economic Development Corridor Plan, transit-oriented development in and around the stations, habitat protection (including priority protection areas (PPAs), and other proposed mitigation.

EOT should consult with the MEPA Office to discuss the alternatives analysis. I recommend that a small working group, including representatives of EOT, the Executive Office of Energy and Environmental Affairs (EEA), MassDEP and others, is convened to develop a methodology for the DEIR assessment of GHG, secondary growth, and other impacts associated with alternative development scenarios. One of the key issues to be addressed is how the analysis will examine the project's potential impacts on land use and the incorporation of smart growth and Transit Oriented Development (TOD). The DEIR should describe in detail the methodology used and the results of the analysis.

The DEIR should discuss the alternatives and their viability in the context of statewide transportation improvement plans and other state and regional plans and policies. The DEIR alternatives analysis should provide a detailed assessment of the relative ability of the respective alternatives to achieve the stated project goals in a cost-effective manner. The DEIR should include a comparative evaluation of the alternatives in terms of quality of service, constructability, schedule, cost (including mitigation costs), and opportunity for smart growth.

The DEIR should describe the method and criteria used in the comparative analysis of alternatives. This should include a discussion of the relative importance of factors such as ridership, cost and smart growth planning in the evaluation process, and the metrics and approach to weighting used when quantifying impacts to the environment. Given the substantial difference in state-listed species and wetland resource impacts among the alternatives, it is particularly important that the potential benefits and costs be clearly understood. The DEIR should include a comprehensive analysis and quantification of the trade-offs involved.

Stoughton Alternative-Whittenton Variation

The ENF indicates that the Whittenton alternative is less favorable because of the additional run time. However, the ENF considered only a diesel alternative, not an electric

alternative for this variation of the Stoughton route. The DEIR should include run times and ridership estimates for a Whittenton electric alternative, as well as an evaluation of wetlands impacts. This alternative could avoid impacts to wetlands resources in the Pine Swamp conservation area in Raynham. The DEIR should also include information on the historical use of this portion of the route, which may have been in use more recently than the alignment proposed through Pine Swamp.

No-Build/Enhanced Bus Alternative

The DEIR should expand upon the enhancements suggested in the ENF and present new concept plans and strategies, including but not limited to enhanced bus service, to improve the commute from the Fall River and New Bedford areas to Boston in a manner that would avoid and minimize environmental impacts, and the need for new infrastructure. The DEIR should include detailed descriptions of potential enhancements for the no-build alternative. The DEIR should include estimates for reduction in Vehicle Miles Traveled (VMT) associated with the no-build/enhanced bus component of this alternative.

The DEIR should identify transportation improvements and other projects assumed to be in place by the project build year, including development projects as well as, transit, parking and other transportation improvements.

Financial Analysis

As discussed in the ENF, cost is one of the key factors being used by EOT in selection of alternatives. The DEIR should include a detailed analysis of costs, including construction, operation and mitigation costs, for each of the alternatives. EOT is also basing its elimination and selection of alternatives on the basis of smart growth opportunities along the corridor. The DEIR should include an assessment of costs associated with implementation of the smart growth aspects of the project for each alternative, to fully understand the overall costs and rationale for selection of alternatives. The DEIR should address how the proposed rail and/or bus routes, and associated Land Use and Economic Development Corridor Plan will be financed. The DEIR should include an estimated cost per rider based on the results of the ridership analysis for each alternative.

Public/Private Partnerships

Several commenters have suggested that EOT consider partnerships with Amtrak and other rail or freight providers. The DEIR should address these comments in the context of potential cost savings and service improvements, and the selection of alternatives.

Ridership Projections

The ridership model is a critical component of the analysis, with implications for the selection of alternatives, the identification of the Least Environmentally Damaging Practicable Alternative (LEDPA), the Wetlands Protection Act variance application, and related issues of practicability, smart growth, and consistency with project need and purpose. While the CTPS

travel demand model used in the analysis appears to be a reliable model to project ridership and vehicle miles travelled for transportation planning and analysis, additional information is required in the DEIR to more fully explain the model and facilitate review and comment on the model itself as well as a thorough comparison of the alternatives. EOT should continue to refine the ridership model in consultation with the Inter-agency Coordinating Group and individual regulatory agencies.

The Ridership Memorandum submitted during ENF review included a summary of the modeling process and ridership analysis. The draft EIR should include a detailed description of the model used, sources of data, and assumptions and limitations inherent in the model. The Ridership Memorandum indicates that the model has been refined and tailored for the study area. The DEIR should explain how the model was refined to enable reviewers to comment on the model's inputs, particularly land use, service plans, station locations, and alignment/connectivity assumptions. The DEIR should include information on how the model or other analysis methodologies will account for implementation of smart growth strategies in the study area. For example, the DEIR should describe the extent to which Transportation-Oriented Development (TOD) near proposed rail or bus stations would affect ridership projections.

As noted in the comments from NHESP, the model is sensitive to cost, relative travel times, income and other demographic data and there is some uncertainty in the estimation of each of these variables. The DEIR should consider presenting a range of projected boardings for each alternative (rather than a single number) based on consideration of uncertainty factors and sensitivity of the model. EOT should consult with the Interagency Coordinating Group to determine the appropriate level of detail for a sensitivity analysis in the DEIR. The DEIR should describe the model variables in detail and include a detailed justification for the assumptions used. The DEIR should discuss the use of Southeastern Regional Planning and Economic Development District (SRPEDD) versus Metropolitan Area Planning Council (MAPC) demographic data in the model, and how this may affect ridership projections. The DEIR should continue to present ridership projections for the build year and forecast year 2030 for each alternative.

The DEIR should present the results of the ridership analysis for each of the eight alternatives, and provide a rationale for the selection of the preferred alternative and elimination of others from further consideration. The ridership projections should include a breakdown for each alternative that shows projected ridership numbers from the New Bedford, Fall River and other station areas. The DEIR should clarify the number of new transit trips originating from the New Bedford and Fall River areas versus areas further north that are currently served by transit. The Draft EIR should include a breakdown of the total boarding numbers to show how many new boardings there will be at each of the new stations, and the existing stations. The DEIR should include a detailed explanation of the boarding and linked trip data, and clarify how many new riders and new trips are expected. The DEIR should provide greater specificity with regard to the geographic origin and destination of new and existing riders and whether they represent new riders or mode shifts. The DEIR should clarify how many of the increased trips projected for rail are a result of riders switching mode from bus service or automobile use, and explain how this is accounted for in the overall assessment of air quality benefits.

The DEIR should expand on the performance measures used in the ridership analysis to include air quality impacts. The DEIR should explain how boarding numbers, linked transit trips and other measures are used to calculate estimated reductions in auto use and vehicle miles travelled (VMT) and related greenhouse gas (GHG) and other emission estimates.

The DEIR should include ridership projections based on running the model with and without the proposed Mansfield parking expansion and Downtown Attleboro station improvements. SRPEDD and other commenters have indicated that implementation of these projects is questionable and may artificially inflate the ridership estimates for the Attleboro alternatives.

In discussing the ridership projections, the DEIR should also include information on fares and parking fees, and other aspects of financing for the transit system. The DEIR should explain how the ridership analysis accounts for variables such as commuter willingness to shift modes, compatibility of varying work schedules and transit service, and the comparative expense for users of different modes of travel (including parking expenses). The DEIR should also discuss how future developments that may affect ridership numbers are accounted for in the alternatives analysis.

The modeling assumed commuter rail fares ranging from $1.48 to $5.68 for a one-way trip and did not account for fare increases from current to projected conditions in 2030. Based on the current fare structure at the MBTA, fares currently range from $1.70 to $7.75 for a one-way fare and these fares are likely to increase over time. The modeling should reflect actual current fares and realistic future fares for the build and forecast years. The DEIR should discuss how the model accounts for fare changes over time.

Because the model was developed prior to the recently announced infusion of federal financial aid to Amtrak's Northeast Corridor line, it did not reflect whether the anticipated improvements in Amtrak service would affect the model's projected outcomes for the Attleboro alternative. The DEIR should address and (if feasible and appropriate) quantify the extent to which stimulus funded improvements will affect the model's assumptions on travel time and ridership. Where those improvements involve work on the roadbed and related infrastructure, the DEIR should also discuss how the nature and timing of that work may impact construction cost and schedule factors estimated in the ENF for the Attleboro Alternative.

Many commenters have questioned the need for the project as well as the ridership demand estimate of 8,000 daily work trips for the South Coast region presented in the ENF (which is based on the U.S. Census 2000 Journey to Work data). Some commenters believe the number of trips is underestimated, others believe it to be excessive. EOT should consider the comments from the municipalities, regional planning agencies and others regarding the inputs to the ridership model. I expect the analysis in the DEIR to resolve many of the outstanding questions and provide well documented, valid projections of ridership to support the analysis of impacts and mitigation, and the selection of alternatives.

Secondary Growth and Cumulative Impacts

The development of such a significant public transit system is likely to induce secondary growth beyond the immediate station and proposed TOD centers. This growth may have positive economic impacts, and contribute to the ridership levels and GHG reductions anticipated in the context of EOT's Land Use and Economic Development Corridor Plan. However, it is also possible, as many commenters noted, that the induced growth, if not properly managed could create additional impacts that might offset the air quality benefits associated with the projected reduction in vehicle miles traveled. Therefore, it is very important that the DEIR presents a thorough and robust analysis of the secondary and cumulative impacts, both positive and negative, related to induced growth in communities affected by the rail and bus alternatives, and explain how implementation of the Land Use and Economic Development Corridor Plan is expected to mitigate potential adverse impacts.

As noted in the Alternatives section above, each of the eight alternatives should be evaluated under three different scenarios, including the build with mitigation—i.e., implementation of the Land Use and Economic Development Corridor Plan. The full range of potential environmental impacts associated with implementation of this plan should be evaluated including impacts to biodiversity, wetlands, endangered species, air quality and greenhouse gas emissions, transportation, municipal infrastructure, and water resources. The DEIR should define the study area for evaluation of secondary growth impacts and explain the rationale for the boundaries selected. The DEIR should discuss different scenarios for induced growth and explain how this has been incorporated in modeling for the alternative analysis.

The DEIR should discuss the findings and recommendations of the Land Use and Economic Development Corridor Plan and how they are integrated as part of the various alternatives. The DEIR should describe potential growth scenarios and include projections of where growth is expected to occur, and at what rate, under each of the alternatives, including the no-build. The DEIR should identify areas where sprawl may occur under certain alternatives and include mitigation plans to concentrate development and protect natural resources. As indicated elsewhere in this Certificate, the DEIR should discuss the trade-offs inherent in project alternatives, such as increased impacts on certain resources for environmental benefits in other areas.

The ENF highlights the potential smart growth benefits of the project in the context of TOD and concentrated economic development in urban areas. The DEIR should also evaluate the alternatives on the basis of other smart growth principles, including conservation of open space and use of existing infrastructure. The DEIR should include maps and other graphics identifying Priority Protection Areas (PPAs) and Priority Development Areas (PDAs). The DEIR should include details on specific mechanisms that will be used to ensure that the smart growth goals of the project will be realized, including funding commitments and mechanisms for conservation of PPAs and acquisition and development of PDAs. The DEIR should describe in detail how land use will be controlled and priority conservation areas permanently protected.

The DEIR should clarify indicators and metrics to be used for evaluation of smart growth, and propose a long-term monitoring and evaluation plan. The DEIR should describe the

tools and resources needed by individual communities to take advantage of the economic development potential of the proposed rail line in a manner that protects critical resources and is consistent with the Commonwealth's Sustainable Development Principles. The DEIR should describe specific strategies and resources, including state funding commitments, to ensure successful implementation of the proposed Land Use and Economic Development Corridor Plan. The DEIR should also include information on any municipal land use or policy commitments that have been made.

Air Quality

EOT should consult with MassDEP to determine the detailed air quality modeling parameters and assumptions for the mesoscale, microscale, and GHG air quality analyses to be presented in the Draft EIR. As noted above, I have recommended that a small working group be convened to develop the methodology for assessment of GHG emissions and secondary growth as part of the alternative analysis.

Mesoscale and Microscale Analyses

The DEIR should include a mesoscale air quality analysis of regional emissions associated with each of the project alternatives including the diesel and electric options. The mesoscale analysis should evaluate volatile organic compounds (VOCs), nitrogen oxide (NOx), carbon dioxide (CO_2), carbon monoxide (CO), and particulate matter 2.5 micrometers and 10 micrometers in diameter ($PM_{2.5}$ and PM_{10}).

The DEIR should also include a microscale analysis to determine if the project will cause of exacerbate existing CO, $Pm_{2.5}$, or PM_{10} localized "hotspots". The analysis should address emission impacts from both automobiles and locomotives in the vicinity of proposed transit stations and commuter parking areas. The air quality and emissions analysis should include emissions from trains while idling as well as when moving.

Greenhouse Gases

The DEIR should include an analysis of project's GHG emissions in accordance with the MEPA Greenhouse Gas Policy and Protocol for each alternative and a comparative analysis of the alternatives. The GHG analysis should evaluate 1) direct emissions for a project alternative associated with consumption of fuels, 2) emissions related to station sites, and 3) cumulative GHG emissions for each of the eight alternatives, including projected emissions associated with secondary growth. EOT should consult with MassDEP and the MEPA Office during preparation of the DEIR to discuss the appropriate methodology for evaluating the GHG impacts associated with the various alternatives under different development scenarios.

1. Fuels

The DEIR should include a comparative analysis of GHG emissions for the proposed rail routes using diesel fuel and electric power. The use of biodiesel should also be evaluated as an alternative fuel. In addition, EOT should evaluate the feasibility of utilizing renewable energy

technologies on the railway routes or cars. For the Rapid Bus alternative, the DEIR should evaluate GHG emissions associated with the use of diesel, biodiesel, compressed natural gas, hybrid and electric technologies.

The DEIR should consider whether use of a particular fuel will increase emissions of criteria pollutants (for example, diesel could reduce GHG emissions but could increase emissions of NOx and PM). In considering the GHG impacts of the electric rail alternatives, the DEIR should evaluate emissions associated with off-site generation of electricity required for these alternatives. The DEIR should include data on emissions under different technology/fuel scenarios.

2. Stations Sites

The DEIR should evaluate GHG emissions associated with energy use and traffic generation at each of the proposed stations, in accordance with the MEPA GHG Policy and Protocol, and include a cumulative assessment of station-related GHG emissions for each alternative. The GHG analysis should evaluate CO_2 emissions for the baseline, build and design years for each of the project alternatives, and quantify direct and indirect generation of CO2 from on-site fuel burning and/or consumption of off-site energy generation. The DEIR should quantify estimated GHG emissions associated with the project under baseline conditions and quantify GHG reductions that would be achieved using design appropriate mitigation measures. In accordance with the MEPA GHG Policy, EOT's energy model must comply with Chapter 780 10.00 7th edition of the Massachusetts State Building Code, which adopts and integrates the International Energy Conservation Code (IECC) 2006 with 2007 supplement. I refer EOT to the policy and to MassDEP's comment letter for additional guidance.

The DEIR should discuss the project in the context of Executive Order 484 Leading by Example-Clean Energy and Efficient Buildings. The DEIR should consider the recommendations of the Massachusetts Zero New Energy Buildings Task Force and how they can be incorporated into station design.

As part of its evaluation of station sites and related GHG emissions and mitigation, the DEIR should include a description of proposed buildings and additional information as further detailed in the comment letter from MassDEP, which incorporates comments from the Division of Energy Resources (DOER). The DEIR should discuss the specific mitigation measures outlined for consideration in the MassDEP comment letter, and for any that are not adopted, the DEIR should provide technical and cost justification. I strongly encourage EOT to investigate and adopt energy efficiencyand conservation measures and renewable energy generation (such as the use of solar photovoltaic arrays or ground source heat pumps) in project design, construction and operation, and to commit to Leadership in Energy and Environmental Design (LEED) and/or EnergyStar elements.

3. Cumulative GHG emissions

This component of the GHG analysis should compare the alternatives, including total emissions associated with fuels for rail and bus, vehicle emissions associated with travel to and

from stations, and emissions associated with stationary sources (station sites and associated TOD development). As outlined above in the alternatives section, the comparative analysis of GHG emissions should be undertaken for three scenarios; baseline conditions; build without mitigation; and build with mitigation. The GHG analysis should include projections for the build year and the forecast year (2030).

As part of the air quality and GHG emissions analysis, the DEIR should consider whether the proposed rail transit could negatively affect freight services and evaluate potential shifts from freight lines to roadways that might result in increased truck traffic.

Mitigation

In addition to the GHG mitigation commitments required under the MEPA GHG Emissions Policy, the DEIR should propose construction and operational air quality mitigation measures. The DEIR should include a draft standard operating procedure for use of plug-ins and electric block heaters at layover facilities as recommended by MassDEP. The DEIR should describe how the project will meet federal locomotive standards and the schedule for engine rebuilds and retrofits of all older locomotives.

The DEIR should describe proposed mitigation for construction-period impacts of diesel emissions. I strongly encourage EOT to commit to participation in the MassDEP Diesel Retrofit Program and to implementation of emission controls and a construction period oversight program as recommended by MassDEP.

Transportation

The DEIR should include an analysis of the project's impacts on transportation, both the potential beneficial impacts of reducing traffic congestion by improving public transit, and the potential adverse impacts associated with construction and induced growth. In the context of the project's purpose and need, the DEIR should include data on current and projected traffic congestion, and current and future demographic and economic data, to support and justify the proposed project and its anticipated benefits.

The transportation analysis should evaluate the project's potential impacts on traffic, including level of service evaluations, in the vicinity of the proposed stations. The traffic analysis should evaluate impacts at local and regional levels. In addition to traffic associated with ridership of the proposed rail or bus, the DEIR should evaluate traffic impacts associated with secondary growth. Potential traffic impacts associated with each alternative should be evaluated for three different scenarios (as outlined in the alternative section above): baseline conditions; build without mitigation; and build with mitigation.

The DEIR should provide a breakdown of proposed ridership for each proposed station into arrival and departure modal split data for park & ride, drop-off, walk, bicycle, and public transportation users. This data should be utilized to define proposed infrastructure improvements, including platforms, stations, parking, drop-off and bicycle facilities. Study intersections may need to be adjusted or added based on proposed locations of the new station facilities.

The DEIR should include a list of all grade crossings, clarify the number of grade crossings associated with each alternative, and identify those currently in use and those that are new, for each community affected. The DEIR should include an analysis of the traffic and safety impacts associated with grade crossings for each of the alternatives. Accident safety records should be reviewed to ascertain potential high-accident locations.

The DEIR should identify proposed locations for layover, storage and maintenance facilities and describe proposed expansion at the South Station terminal. The analysis of impacts in the DEIR, including land alteration, wetlands, traffic and public safety, should include impacts associated with potential layover, storage and maintenance facilities.

For the alternatives that include bus service, the DEIR should, in addition to intersection capacity analysis at the terminals, also analyze the effects of added lanes and busways to Route 24, especially at the interchanges and merge points with the local roadway network.

The DEIR should evaluate potential impacts of the project's construction and operational phases on existing transit services and transportation systems, including roadways, rail, and freight lines, South Station and other existing stations. The DEIR should include a detailed analysis of transportation impacts associated with highway improvements required for the Rapid Bus alternative, as well as impacts associated with roadway intersection and bridge reconstruction associated with the rail alternatives. The DEIR should respond to the comments and concerns raised by the cities and towns potentially affected by project alternatives, and include proposed mitigation plans.

Transit Oriented Development (TOD)

The DEIR should describe proposed station and potential TOD facilities, including plans for bicycle and pedestrian circulation, and bus pick-up and drop-off. The DEIR should explain how the TOD elements on and off-site will encourage more people to walk or bike to the stations. EOT should work with the host municipalities to provide a network of roadway enhancements as recommended by MassDEP to support pedestrian and bicycle transit. The DEIR should also consider the feasibility of incorporating bicycle and pedestrian paths along rail right of ways. The DEIR should include a parking needs assessment, and provide detail on proposed parking facilities, including number and type of parking, for each of the proposed station sites.

The DEIR should describe how interconnectivity will be provided between proposed stations, local and regional bus, and other commuter services to maximize the benefits of the proposed transit project. The DEIR should describe plans for expanded bus and shuttle connections between the stations and nearby retail, office and residential uses. EOT should coordinate with Regional Transit Authorities (RTAs) and Transportation Management Associations (TMAs) that provide service in the project areas in developing plans for expanded transit in support of the new rail, or rapid bus routes, and the station sites.

Endangered Species

The DEIR should include a detailed quantification and analysis of the relative impacts of the alternatives on state-listed species and their habitats. The analysis should include all components of the project alternatives, including the rail alignments (including the Southern Triangle), stations and layover facilities, and secondary growth impacts. The proponent should consult with NHESP to discuss additional endangered species habitat assessments and surveys required in order to adequately quantify relative impacts of the alternatives. I strongly encourage the EOT to consult with NHESP as soon as possible in advance of the 2009 spring field season to develop a plan for preparation of the required alternatives analysis.

As outlined in the alternatives section above, rare species impacts should be evaluated as part of the analysis for each of the eight alternatives under three scenarios a) baseline conditions, b) build without mitigation, and c) build with mitigation. The DEIR should include an endangered species impact analysis based on adequate species survey and habitat assessment for each alternative. The DEIR should describe the endangered species permitting process for each alternative based on consultations with NHESP, and discuss how costs associated with permitting, including mitigation requirements, are incorporated in the alternatives analysis. MESA requires that a project avoid and minimize impacts to rare species to the maximum extent feasible so the NHESP will need to review the project's alternatives analysis and conclusions in terms of overall project benefits and impacts as part of their Conservation and Management permitting process.

The DEIR should include an update on consultations with NHESP and describe the results of assessments and surveys conducted. The DEIR should describe how potential impacts of the alternatives will be avoided and minimized, and describe in quantitative and qualitative terms any unavoidable impacts, temporary and/or permanent, associated with the alternatives. The DEIR should include a detailed description of proposed mitigation measures for each alternative. The DEIR should include a detailed analysis of the viability of alternatives that would not require a Conservation and Management Permit under MESA.

The DEIR should include a detailed analysis of the environmental permitting pathways of the respective alternatives, including a thorough and realistic assessment of how environmental permitting will affect constructability, cost and schedule. For example, the proposed trestle through Hockomock Swamp may need to be extended or other effective crossing structures proposed. This and other changes that may be required to meet the overall net-benefit mitigation standard for the Conservation and Management Permit as well as other conditions to protect endangered species during construction, will affect the Stoughton alternative cost, constructability and schedule.

Wetlands

The DEIR should include a comprehensive qualitative and quantitative assessment of impacts to wetland resources for each of the alternatives, including direct and indirect, and permanent and temporary impacts. The analysis of wetlands impacts should be conducted for the

three scenarios: baseline conditions; build without mitigation, and build with mitigation, as outlined in the alternatives section above.

The DEIR should include an assessment of the impacts of alternatives on the ecological integrity of wetland complexes and the extent of wetland habitat fragmentation. The analysis should consider landscape context, regional significance, and habitat quality of the resources impacted. The analysis should include direct (e.g. wetland loss, direct hindrance to wildlife movement) and indirect impacts (e.g. edge effects, degradation of habitat quality).

The DEIR should include a detailed description of the methodology used for the assessment of wetlands functions and values. EOT should continue consultations with MassDEP, the Army Corps of Engineers and other members of the Interagency Coordinating Group for guidance on the appropriate methodology to use. I encourage EOT to consult with the local conservation commissions, Mass Audubon and other owners of properties potentially affected by the project, to discuss the approach to wetlands assessment.

Maps, plans and other graphics should be provided to supplement the narrative and show the specific locations and extent of wetland impacts. The DEIR should include tables to summarize wetlands impacts for each alternative, and indicate the municipalities where impacts occur, as well as the name of ACEC, conservation areas, or other affected ecosystem as applicable. The DEIR should clarify the discrepancies in wetlands impact estimates referenced in the MassDEP, Town of Middleborough and other comment letters.

The wetlands impact assessment in the DEIR should include riverfront area and all other wetlands resources affected, and describe and quantify impacts to floodplains, banks and streams, and buffer zone areas. The analysis should include all components of the project alternatives (including the Southern Triangle); rail and bus alignments and all proposed structures along the lines, stations and layover facilities. The assessment should include the acreage affected (or linear extent as applicable), as well as an evaluation of the quality and functions of wetland resources. The alternatives analysis in the DEIR should include a comparative analysis of impacts to the functions and values of critical areas including Priority Habitats, ACECs, vernal pools, Outstanding Resource Waters (ORWs), and the Assonet Cedar Swamp and other conservation areas. The DEIR should describe in detail how the proposed project will comply with applicable state and federal regulations and standards.

The DEIR should describe the current condition of the rail bed in the Hockomock Swamp, and identify areas where it serves as a stream channel, wildlife corridor, turtle nesting habitat, or other specific function. The DEIR should explain the need for double tracks on the Southern Triangle portion of the project.

The DEIR should describe and quantify alterations to floodplains and discuss how floodway and floodplain crossings will comply with applicable regulatory standards. The DEIR should evaluate potential flood level increases during the 100-year flood, and include supporting hydrological and hydraulic analyses. The DEIR should identify the location(s) and amount of compensatory storage that will be provided for all loss of Bordering Land Subject to Flooding (BLSF).

Delineation

The DEIR should include maps and plans delineating all wetland resources along the alternative routes and in the vicinity of proposed stations and layover facilities. The ENF proposes use of aerial photography and existing mapping including MassGIS, complemented by field-verification at critical areas. While I concur that approach is adequate for this stage of the alternatives analysis, I note that field delineations will be required to verify the limits of wetland resources for the FEIR study area. EOT should consult with MassDEP and the Interagency Coordinating Group to identify specific areas that will require field-delineation for the DEIR. The DEIR should discuss the extent and results of ground-truthing conducted to assess the validity of wetland delineations that are based on aerial photography and existing mapping. The DEIR should clarify which areas were delineated or verified in the field.

EOT should identify potential vernal pools, initially using maps and aerial photography, and then verify in the field, applying field methodology according to NHESP vernal pool certification criteria. This field work should be done in the Spring 2009 field season. Vernal pools should be certified where criteria warrant and the extent of vernal pool habitat, including migratory pathways, should be field verified. Potential vernal pool identification and certification should be conducted for areas within the right-of-way (ROW) of the rail alignment and within a reasonable distance of the ROW, as well as within and near station sites, layover facilities, and construction staging areas. As additional project impact areas become known, for example any upland mitigation areas, the vernal pool identification and certification process should be applied to these also. The DEIR should include the results of potential vernal pool investigations, including a description and mapping of those meeting the criteria for certification.

Vegetation Management and Herbicide Use

The DEIR should evaluate potential impacts to wetland resources associated with the use of herbicides along the right-of-way (ROW). The DEIR should identify areas proposed for herbicide use and those that would be designated as "no spray" areas. Several commenters expressed concern about spraying in the Hockomock Swamp, Acushnet Cedar Swamp and Assonet Cedar Swamp areas. The DEIR should address these comments and include clear commitments to "no spray" areas. The DEIR should include a draft Vegetation Management Plan, to include contingency planning for monitoring, identification and control of nuisance, non-native and/or invasive species.

Variance

The extent of wetlands impacts proposed will require a Variance from compliance with applicable performance standards in the Wetlands Regulations, 310 CMR 10.00. The DEIR should describe how the project will meet the regulatory standards for a variance provided in 310 CMR 10.05(10), including the need to demonstrate that there are no reasonable conditions or alternatives that would allow the project to proceed in compliance with 310 CMR 10.21 through 10.60; that mitigating measures are proposed that will allow the project to be conditioned so at to contribute to the protection of the interests identified in M.G.L. c. 131 § 40; and that the variance is necessary to accommodate an overriding community, regional, state or national public interest.

EOT has identified in the ENF multiple public interests which the project is expected to serve. In support of its request for a variance, the DEIR should include a comprehensive qualitative and quantitative assessment of those public interests EOT seeks to advance in seeking a variance, including without limitation, improvements to address public transportation needs, air quality and public safety. The DEIR should present a comparative analysis of alternatives based on core benefit metrics such as improvements to transportation capacity, ridership, and reduction in vehicle miles traveled, air pollutants, traffic congestion and accidents. The DEIR should specifically identify and quantify the environmental benefits expected from the proposed smart growth aspects of the project, and provide details on how these benefits would be secured (for example, by obtaining land preservation restrictions on sensitive habitat corridors). Similarly, in comparing alternatives based on their potential to achieve transportation or environmental benefits, the DEIR should provide sufficiently detailed information to allow agencies to independently evaluate the analysis.

401 Water Quality Certification

The DEIR should include information on the number and location of stream crossings associated with each alternative, and discuss compliance with the Stream Crossing Standards under 314 CMR 9.00 and as identified in the Corps' Massachusetts Programmatic General Permit (PGP) under Section 404 of the Clean Water Act (albeit this project does not qualify for PGP authorization). The DEIR should demonstrate how the project will avoid impacts to wetlands to the maximum extent practicable, and where impacts are unavoidable, that impacts have been minimized. Mitigation will be required for any impacts that are necessary to achieve the project purpose, after avoidance and minimization.

Outstanding Resource Waters (ORW)

As noted in the MassDEP comment letter, discharges to ORW will require a variance pursuant to 310 CMR 4.00. The DEIR should identify and describe any discharges to ORW associated with the project alternatives, and where a variance is required, the DEIR should provide supporting documentation for the variance request.

Mitigation

The DEIR should include a detailed description of measures to avoid and minimize wetland impacts for each of the alternatives. The DEIR should also include a comprehensive mitigation plan for any unavoidable impacts, explain why these impacts are unavoidable, and demonstrate how impacts will be avoided and minimized to the maximum extent feasible. The mitigation plan should address permanent and temporary impacts and construction-related impacts. Measures to minimize impacts should include an evaluation of the use of Mechanically Stabilized Earthen (MSE) walls or other engineering methods to limit the amount of fill in ACECs.

EOT should consult with MassDEP to discuss any concerns regarding proposed wetlands mitigation sites and to discuss appropriate protective measures and mitigation for vernal pools.

The DEIR should describe proposed wetlands mitigation areas and identify locations on maps and site plans. As noted in the MassDEP comment letter, there is flexibility within the variance process to consolidate some mitigation into more centralized areas rather than individual mitigation sites at each impact location. The DEIR should describe how mitigation sites will be designed to preserve critical functions such as flood storage volume at each locality. The DEIR should discuss ownership of the sites and identify any proposed to be taken by eminent domain. The DEIR should provide details on any replication proposed including the timeframe anticipated and the methods proposed to achieve successful replication. The DEIR should include a monitoring and contingency plan to ensure success of mitigation.

The ENF indicates that EOT will rely on compensatory wetland mitigation areas referenced in the 2002 New Bedford/Fall River Commuter Rail FEIR, which identified more than 50 acres of compensatory wetlands. The DEIR should use the FEIR Certificate as a starting point for developing wetlands mitigation commitments, as recommended by MassDEP, and should specifically identify the proposed mitigation measures and ratios associated with each of the resource areas.

EOT should consider the comments of MassAudubon and others regarding potential restoration of existing degraded areas as part of the mitigation plan, and potential use of wetlands banking.

Waterways/Chapter 91

The DEIR should provide more detailed information on waterways that may be impacted by the various alternatives and identify those areas and project structures and uses that are subject to Chapter 91 jurisdiction. The DEIR should include a quantitative and qualitative analysis of potential impacts to tidal and inland waterways for each alternative. The DEIR should discuss the water dependency of structures and uses requiring Chapter 91 authorization and evaluate whether these structures and uses meet applicable performance standards. Areas subject to Chapter 91 include filled and flowed tidelands, navigable rivers and streams and great ponds. The DEIR should specify if any landlocked tidelands will be affected.

The DEIR should address compliance with 310 CMR 9.32(2) which requires that reasonable measures be taken to ensure structures within an ACEC avoid, minimize and mitigation any encroachment into a waterway. The DEIR should also assess compliance with other applicable standards including preservation of public rights in waterways and provision of open space for active or passive recreation at or near the water's edge.

Chapter 91 review and approval will be required for any construction or substantial enlargement of an existing, previously authorized rail facility or accessory structure, and for any proposed dredging or fill. I refer EOT to MassDEP's comment letter for additional guidance on Chapter 91 jurisdiction and permitting and additional information to include in the DEIR. I recommend that EOT consult with the MassDEP Chapter 91 program for assistance during preparation of the DEIR.

Biodiversity and Wildlife Habitat

There are five ACECs that could potentially be impacted by the project. These include the Canoe River ACEC, the Three Mile River ACEC, the Neponset River Estuary ACEC, Fowl Meadow/Ponkapoag Bog ACEC and the Hockomock Swamp ACEC. Other conservation areas potentially impacted include Pine Swamp in Raynham, the Freetown-Fall River State Forest, Acushnet Cedar Swamp, Bird Street Conservation Area, Assonet Cedar Swamp Wildlife Sanctuary, Blue Hills Reservation, and conservation lands in Norton, Attleboro, Easton and other communities. The DEIR should identify ecosystems within each ACEC and conservation area that would be impacted by the various alternatives, and include a quantitative and qualitative analysis of impacts to wetlands and water quality, wildlife habitat, water supply, and floodplain. The impact analysis in the DEIR should evaluate direct and indirect environmental impacts on wildlife and their habitats including but not limited to: hydrological changes; fragmentation of habitat and populations; edge effects; noise and vibration; and restrictions to wildlife mobility. The assessment should evaluate impacts to migratory birds and their habitats, including Important Bird Areas and Blue Heron nesting sites.

The DEIR should include a comprehensive analysis of biodiversity value in the project area and the biodiversity impacts associated with the project alternatives. The DEIR should also include a detailed draft mitigation plan to compensate for any loss of biodiversity associated with the project. EOT should continue consultations with EEA's Division of Conservation Services and the MEPA Office to develop the methodology for the assessment. The model under consideration is the Conservation Assessment and Prioritization System (CAPS) model, which has been developed at the University of Massachusetts-Amherst and funded in part by EEA. The CAPS model has been successfully applied in western Massachusetts and could serve as a valuable model to develop a meaningful assessment of baseline ecological conditions, biodiversity values, and impacts to biodiversity associated with project alternatives.

The DEIR should include the results of a baseline ecological assessment and maps/graphics indicating biodiversity values for the project area. The DEIR should describe the indicators and metrics used to assess biodiversity, including the weighting system used to differentiate among habitat values. The DEIR should evaluate impacts on biodiversity of each alternative and include a comparative analysis of the transit corridors, showing the location and type of changes that may result from the project. The DEIR should evaluate both negative and positive impacts including potential benefits from land protection associated with the Land Use and Economic Development Corridor Plan and zoning changes, as indicated in the ENF.

The DEIR should describe measures proposed to avoid and minimize impacts, and include a detailed mitigation plan to address biodiversity impacts. The plan should include an estimate of mitigation costs such as funding for land acquisition, ecological assessment and monitoring programs, wildlife crossings, and other biodiversity conservation efforts. The DEIR should describe in quantitative and qualitative terms the extent to which the mitigation proposed will support biodiversity conservation and reduce or compensate for project-related impacts.

Water Quality - Public Water Supplies

I have received many comment letters expressing concerns related to potential impacts on water quality, especially as it relates to the Stoughton alternative, which traverses zone I and II areas of public drinking water supplies. The DEIR should include a detailed analysis of potential impacts to public and private water supplies, existing and planned, during construction and operation of the project. The DEIR should describe measures to avoid and minimize, or mitigate adverse impacts. EOT should consult with MRWA regarding any potential impacts of the project on MWRA easements or other properties, and to identify any permit requirements. The DEIR should identify any MWRA permits required for stations, track improvements or layover facilities, and discuss compliance with applicable regulations.

Article 97 Lands

The Rapid Bus alternative (#5) would involve a disposition of DCR property within the Blue Hills Reservation. The DEIR should include a detailed analysis of the proposed disposition, which should include a quantitative and qualitative description of potential land impacts, a map showing the area that would require a disposition, and a demonstration of how the disposition would comply with EEA's Article 97 Land Disposition Policy. The DEIR should include an evaluation of feasible alternatives to the disposition. The DEIR should also identify and describe any other potential impacts to DCR properties.

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

Environmental Justice

The DEIR should define, and include maps identifying the location of, Environmental Justice (EJ) populations in the project area. The DEIR should describe specifically how the project will provide tangible benefits to the EJ communities as indicated in the ENF. The DEIR should identify any potential for disproportionate impacts on EJ communities that may result from the proposed project, and any proposed mitigation. The DEIR should discuss the project in the context of the EEA Environmental Justice Policy including strategies to enhance public participation in the environmental review process.

Fishery Resources

The DEIR should evaluate potential impacts to fishery resources including stocked trout waters and other resources identified in the NHESP and Division of Marine Fisheries comment letters. The DEIR should describe Best Management Practices for erosion and sedimentation controls and time of year restrictions on construction activity. The DEIR should include detailed information on culvert construction and replacement and demonstrate how the project will be

designed to meet applicable standards for river and stream crossings. I encourage EOT to consult with Division of Marine Fisheries and NHESP in preparing this section of DEIR.

Coastal Resources

The DEIR should discuss the compatibility of the proposed New Bedford and Fall River rail stations with the existing and future marine industrial uses in the area as recommended by CZM in its comment letter. As noted by CZM, the proposed Whale Tooth rail station is consistent with the 2002 state-approved New Bedford/Fairhaven Harbor Plan. However, the compatibility of transit oriented development, particularly residential development, with marine industrial uses should be considered. The DEIR should discuss potential rail station impacts, both positive and negative, to existing and future uses at the New Bedford State Pier. I encourage EOT to coordinate with the City of New Bedford and DCR is addressing State Pier compatibility issues.

One of the proposed Fall River stations appears to be within a Designated Port Area. The DEIR should discuss the Battleship Cove rail station compatibility with existing and future marine industrial uses, including cruise and ferry operations, and port uses. The DEIR should discuss the proposed Davol Street station in the context of improving access to waterfront recreational opportunities.

The DEIR should evaluate potential impacts to coastal resources of stormwater runoff from all rail stations or train layover facilities located in or near the coastal zone. The DEIR should describe proposed stormwater management practices, including Low Impact Development (LID) to control non-point source pollution and reduce impervious areas where appropriate.

The air quality analysis in the DEIR should quantify to the extent feasible, the potential impacts of the project on atmospheric deposition of nitrogen compounds into the state's coastal embayments. The DEIR should include a comparative analysis of diesel and electric trains in the context of atmospheric nitrogen and potential water quality impacts.

The project is subject to CZM federal consistency review. The DEIR should include an evaluation of the project's consistency with CZM's enforceable program policies.

Cultural Resources

The DEIR should describe potential impacts to scenic, cultural, historic and archaeological resources, including portions of the Taunton River that have been nominated for Federal Wild and Scenic River designation, and sites of significance to native people. The DEIR should include an update on consultations with the Wampanoag Tribe of Gay Head (Aquinnah), the Mashpee Wampanoag Tribe, the Narragansett Tribe and other Native American groups regarding potential impacts to sites of cultural significance, including but not limited to Peace Haven and Acushnet Cedar Swamp. The DEIR should summarize the results of historical and archaeological investigations for the project alternatives in a manner that does not reveal sensitive archaeological site locational information. The DEIR should describe measures to avoid

and minimize adverse impacts, and propose mitigation for any unavoidable impacts to cultural resources.

Noise and Vibration

The DEIR should include an analysis of noise and vibrational impacts associated with the project alternatives, for locations along the rail and bus routes, and at station sites. I note comments received highlighting concerns about potential noise impacts associated with the Attleboro Bypass in the Richardson Avenue area. The DEIR should evaluate measures to avoid and minimize noise and vibration impacts, including plantings and other noise barriers. The noise and vibration analysis in the DEIR should discuss consistency with applicable state and federal guidelines and regulations. The noise and vibration analysis should include an assessment of impacts to wildlife.

Stormwater

The DEIR should evaluate potential stormwater impacts associated with the project during construction and operation, and demonstrate how the project will comply with applicable stormwater regulations. The stormwater analysis and mitigation should include the rail tracks as well as station sites and layover facilities, and address potential impacts from oil and lubricants as well as herbicide use. The DEIR should include stormwater management plans indicating how stormwater will be collected, treated, and discharged. The DEIR should include details on proposed use of Low Impact Development (LID) techniques.

EOT should consult with MassDEP on post-construction peak rate attenuation, stormwater recharge, water quality treatment, and source control along the rail alignment, as well as construction issues which could cause stormwater contamination, particularly in areas where discharges are located in Zone I's, Zone A's and ORWs (including vernal pools).

I refer EOT to the MassDEP comment letter for further detail on new statewide stormwater regulations (314 CMR 21.00) which are expected to take effect in 2009. The DEIR should discuss how the project will meet the new stormwater requirements. I encourage EOT to consult with MassDEP to discuss applicable standards and approaches to stormwater management for the proposed project, including the approach used for the Greenbush Rail project.

Streams in Norton along the Attleboro Secondary (i.e., Goose Brook and Meadow Brook) should be included in the impact analysis. Existing culverted streams in the right-of-way should be analyzed as relevant for various flood conditions, including a 100-year flood. In the evaluation of existing culverted streams, impacts associated with downstream flow and upstream ponding should be assessed.

Oil and Hazardous Materials

As noted in the MassDEP comment letter, railbeds are frequently contaminated with oil or hazardous materials from a variety of sources, some which may be exempt from the reporting

requirements of the Massachusetts Contingency Plan (MCP). However, once moved the materials may be subject to the MCP. I encourage EOT to undertake a detailed pre-characterization of soils as recommended by MassDEP for the station sites and all areas on the right of way where construction or rehabilitation is proposed, and to include a draft soil management plan in the DEIR.

Monitoring and Evaluation

The DEIR should include a draft Monitoring and Evaluation Plan for the long-term assessment of project impacts and mitigation, to assess the accuracy of projected impacts and the effectiveness of mitigation measures.

Mitigation, Permitting and Section 61 Findings

The DEIR should include a separate chapter on mitigation measures, which should include a summary table of all mitigation commitments as well as detailed proposed Section 61 Findings for all state permits. The Section 61 Findings should describe proposed mitigation measures, contain clear commitments to mitigation and a schedule for implementation, and identify parties responsible for funding and implementing the mitigation measures. The proposed Section 61 Findings will serve as the primary template for permit conditions. Final Section 61 Findings will be included with all state permits issued for this project and will include conditions considered binding upon the proponent as mitigation commitments.

Response to Comments

In order to ensure that the issues raised by commenters are addressed, the DEIR should include a response to comments to the extent they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the scope of the DEIR beyond what has been expressly identified in this Certificate. The DEIR should also include a copy of this Certificate and a copy of each comment letter received on the ENF and the Ridership Memorandum.

Circulation

The DEIR should be circulated in compliance with Section 11.16 of the MEPA regulations and copies should be sent to the list of "comments received" below. A copy of the DEIR should be made available for public review at the Public Libraries in the South Coast region municipalities.

April 3, 2009

Ian A. Bowles, Secretary

Comments Received

12/05/09 City of Taunton Office of the Mayor
12/05/09 Henry Foley
12/08/08 Town of Norton Board of Selectmen
12/08/08 Donald J. Michaud
12/09/08 Arthur Slate
12/11/08 Paul Costa
12/11/08 Town of Norton Fire-Rescue Department
12/11/08 James M. Azevedo
12/15/08 Frederick C. Dreyer Jr.
12/23/08 Massachusetts Historical Commission
12/23/09 North Raynham Water District
12/23/08 Town of Stoughton Board of Selectmen
12/30/08 Greater Attleboro Taunton Regional Transit Authority
12/31/08 Town of Norton Conservation Commission
12/31/08 Town of Easton, Board of Selectmen

1/2/09 R. Warren Ross
1/2/09 Robert Melz
1/5/09 State Representative Steven J. D'Amico
1/5/09 Town of Norton
1/5/09 Jean Shea
1/6/09 Linda Paolucci
1/6/09 Jennifer and Brian Reardon
1/6/09 Kari Mekler
1/6/09 Melinda Ailes
1/6/09 Barbara Craveiro
1/6/09 Doug and Heather Lewis
1/6/09 Mr. and Mrs. Brian Lewis
1/6/09 Mrs. Helen Lewis
1/6/09 Mr. and Mrs. Mark Lewis
1/6/09 New Bedford Area Chamber of Commerce
1/6/09 Virginia A. Buchanan
1/6/09 Leatham & Associates
1/6/09 Nathan Viveiros
1/7/09 Fran Turner
1/7/09 Rick Pace
1/7/09 Fernandes & Charest, P.C.
1/7/09 Elizabeth Isherwood, Moore and Isherwood Communications, Inc.
1/7/09 New Bedford CEO Council
1/7/09 Bishop Stang High School
1/7/09 Southeastern Regional Planning and Economic Development District
1/7/09 SouthCoast Media Group
1/7/09 Massachusetts Water Resources Authority

1/7/09 State Representative Michael J. Rodrigues
1/7/09 Town of Easton Office of the Town Administrators
1/7/09 Town of Lakeville Conservation Commission
1/7/09 Neponset River Watershed Association
1/7/09 WalkBoston
1/7/09 William H. Reidy
1/8/09 Rebecca Turley
1/8/09 Laura D.
1/8/09 Avery L. Williams
1/8/09 David Mittell
1/8/09 Dottie Fulginiti
1/8/09 Forrest Lindwall
1/8/09 New Bedford Area Chamber of Commerce
1/8/09 City of Quincy Department of Planning and Community Development
1/8/09 Commonwealth of Massachusetts, Office of Coastal Zone Management
1/8/09 Town of Easton Historical Commission
1/8/09 Easton Historical Society
1/8/09 Greenwich Bay Watershed Group
1/8/09 State Representative Robert M. Koczera
1/8/09 Senator Joan M. Menard
1/8/09 State Representative John F. Quinn
1/8/09 State Senator Brian A. Joyce
1/8/09 State Representative Stephen R. Canessa
1/8/09 State Representative Elizabeth A. Poirier
1/8/09 State Representative Antonio Cabral
1/8/09 Member of Congress Barney Frank
1/8/09 Linda Grub
1/8/09 Gerald J. McDonald
1/8/09 Mark Sweeney
1/9/09 Ardis Johnson
1/9/09 Wendy Van Dyke
1/9/09 Susan McGrath
1/9/09 George Spatcher
1/9/09 Peter J. Muise, First Citizen's Federal Credit Union
1/9/09 Ron O'Reilly
1/9/09 Louis Gitto
1/9/09 Edgar Adams
1/9/09 Heather Graf, Citizens Concerned About Tracks
1/9/09 Citizens Against the Rail Extension
1/9/09 Frances Shirley
1/9/09 Lynne Loewald
1/9/09 Jim Sullivan
1/9/09 Stephen Keohane
1/9/09 Patricia Hunt and Phillip Tunner
1/9/09 Massachusetts Highway Department
1/9/09 Department of Environmental Protection

1/9/09 Division of Marine Fisheries
1/9/09 Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program
1/9/09 U.S. Environmental Protection Agency
1/9/09 State Representatives Louis L. Kafka and William C. Galvin
1/9/09 State Representative Steven J. D'Amico (additional comments)
1/9/09 State Senator Marc Pacheco
1/9/09 Metropolitan Area Planning Council
1/9/09 Town of Middleborough Conservation Commission
1/9/09 Town of Middleborough Office of Economic and Community Development
1/9/09 Town of Middleborough Planning Board
1/9/09 Town of Middleborough Planning Department
1/9/09 Town of Raynham Selectmen and Board of Health
1/9/09 City of New Bedford Conservation Commission
1/9/09 City of New Bedford Planning Board/Office of City Planning
1/9/09 City of New Bedford Economic Development Council
1/9/09 Mayor Scott W. Lang, City of New Bedford
1/9/09 Town of Lakeville Board of Selectmen
1/9/09 Town of Easton Department of Planning and Community Development
1/9/09 Town of Easton Conservation Commission
1/9/09 Town of Stoughton
1/9/09 The Nature Conservancy
1/9/09 MassAudubon
1/9/09 Public Employees for Environmental Responsibility
1/9/09 Greater Fall River Land Conservancy
1/9/09 Green Futures
1/9/09 Taunton River Watershed Alliance
1/9/09 Leon Litchfield
1/9/09 Paul Vigeant
1/9/09 Elaine K. Dahlgren
1/9/09 Walter and Lisa Galas
1/9/09 Bristol Community College
1/9/09 Department of Conservation and Recreation
1/10/09 Neil and Karen Gibbons
1/10/09 Old Colony Planning Council
1/16/09 City of Boston Environment Department
1/18/09 Paula Schmidt
1/20/09 Senator James E. Timilty

Comments on Supplemental Ridership Information

1/29/09 South Coast CEO Council
2/21/09 Donald J. Michaud
2/27/09 Senator James E. Timilty
3/09/09 West Bridgewater Board of Selectmen
3/13/09 Donald J. Michaud (addendum to previous comments)

3/13/09	Frederick Magee
3/15/09	Barbara Anzivino
3/16/09	Joint letter from State Representatives Stephan R. Canessa, Kevin Aguiar, Steven J. D'Amico, Patricia A. Haddad, Robert M. Koczera, Joan M. Menard, Mark C. Montigny, Marc R. Pacheco, John F. Quinn, Michael J. Rodrigues, and David B. Sullivan.
3/16/09	Town of Easton
3/16/09	Town of Norton, Board of Selectmen
3/16/09	Town of Stoughton Planning Board
3/16/09	Doug and Heather Lewis
3/16.09	Fred Kurtz
3/16/09	Linda Grubb, Lakeville Representative to the South Coast Commuter Rail Task Force
3/17/09	Southeastern Regional Planning and Economic Development District
3/17/09	The United Regional Chamber of Commerce
3/17/09	Joint letter from Mass Audubon, Mystic River Watershed Association, Ipswich River Watershed Association, Neponset River Watershed Association, Massachusetts Association of Conservation Commissions, Parker River Clean Water Association, and Massachusetts Sierra Club
3/17/09	Mass Audubon
3/1/709	Mark C. Sweeney
3/17/09	Paul Fitzpatrick
3/17/09	Public Employees for Environmental Responsibility
3/18/09	Citizens Concerned About Tracks
3/18/09	Town of Middleborough Conservation Commission
3/18/09	Old Colony Planning Council
3/18/09	Louis F. Gitto, Stoughton Representative to the South Coast Commuter Rail Task Force
3/18/09	Mark J. Turley
3/18/09	Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program
3/20/09	Department of Environmental Protection

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