

# 1

## Introduction and Background

---

### 1.1 Introduction

The Green Line Extension Project is an initiative of the Executive Office of Transportation and Public Works (EOT) and the Massachusetts Bay Transportation Authority (MBTA) to enhance transit services in order to improve mobility and regional access for residents in the communities of Cambridge, Somerville and Medford. The Project is required by the State Implementation Plan (SIP) and fulfills a longstanding commitment of the Central Artery/Tunnel (CA/T) Project to increase public transit. The Massachusetts Air Pollution Control Regulations (310 CMR 7.36) require that EOT complete this Project by December 31, 2014.

Numerous studies over the last 40 years have explored extending transit from Lechmere Station (the current terminus of the Green Line) along the existing MBTA Lowell or MBTA Fitchburg Line commuter rail rights-of-way (Figure 1-1). Most recently, the *Beyond Lechmere Northwest Corridor Study* conducted a Major Investment Study/Alternatives Analysis that evaluated a wide range of technologies and operating plans for a future extension. The *Beyond Lechmere Northwest Corridor Study* did not identify a preferred alternative, but rather investigated a range of cost-effective transit solutions that would increase transit accessibility, improve corridor mobility, increase transit services, and support opportunities for smart growth initiatives and sustainable development.

An Expanded Environmental Notification Form (EENF) was submitted to the Executive Office of Environmental Affairs (EEA) on October 10, 2006. The Secretary of EEA issued a Certificate on the EENF on December 1, 2006, hereafter referred to as the Secretary's Certificate, requiring a Draft Environmental Impact Report (DEIR) for the Proposed Project. The Secretary's Certificate indicated that the Massachusetts Environmental Policy Act (MEPA) review of the Project could be streamlined if the DEIR provides a reasonably complete and stand-alone description and analysis of the Project, Project alternatives, and environmental impacts, and adequately addresses mitigation. This Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) has been prepared to meet these goals and EOT anticipates

that the Secretary will be able to determine that the DEIR, after public review and comment, will serve as the Final EIR.

Because EOT is seeking funding through the Federal Transit Administration (FTA), the Project also requires review under the National Environmental Policy Act (NEPA). Therefore, this document also serves as the EA for the Proposed Project. This document will serve as a joint DEIR/EA. EOT expects Project funding will come both from the FTA and from state bonds.

Since the submission of the EENF, the Project Area has been expanded to include the relocation of Lechmere Station. Relocating Lechmere Station was previously reviewed under MEPA as part of the NorthPoint development project (EEA 12651), but has not been reviewed under NEPA. This DEIR/EA includes an evaluation of relocating Lechmere Station to the location previously reviewed under MEPA. This evaluation includes the need to relocate the station, alternatives evaluated, and the environmental consequences of moving the station. EOT anticipates that the final determined NorthPoint developer will fund the station relocation.

The Green Line Extension Project documented in this DEIR/EA includes:

- Extending Green Line service to Medford within the existing MBTA Lowell Line commuter railroad right-of-way (the Medford Branch), from a newly relocated Lechmere Station terminating at either Medford Hillside in the vicinity of College Avenue with intermediate stations at Brickbottom, Lowell Street, Gilman Square, and Ball Square; or at Mystic Valley Parkway/Route 16.
- Extending Green Line service to Union Square in Somerville (the Union Square Branch), either within the existing MBTA Fitchburg Line commuter railroad right-of-way, or using an in-street running option (a new at-grade alignment along Somerville Avenue), with a station near Union Square.

---

## 1.2 Project Summary

The purpose of the Green Line Extension Project is to improve corridor mobility, boost transit ridership, improve air quality, ensure equitable distribution of transit services, and support opportunities for smart growth initiatives and sustainable development in the Project Area of Cambridge, Somerville, and Medford.

Six "Build" Alternatives and a Baseline Alternative are evaluated in this DEIR/EA. The Baseline Alternative is evaluated, as required by the FTA, to identify the best option for meeting the transportation needs of the study area with smaller capital investments than are proposed in the Build Alternatives. The Baseline Alternative evaluated in this document includes enhanced MBTA bus service within the study area, including enhancing the existing Route 80 between Lechmere Station and

Mystic Valley Parkway/Route 16 parallel to the MBTA Lowell Line commuter rail right-of-way, and a new shuttle bus service between Lechmere Station and Union Square, parallel to the MBTA Fitchburg Line.

The six Build Alternatives evaluated in this DEIR/EA are summarized in Table 1-1 and described in detail in Chapter 3, *Alternatives*. All of these alternatives include relocating Lechmere Station and include a new layover/maintenance facility. The Build Alternatives are:

- Alternative 1 – Green Line Extension to Medford Hillside and Union Square (via commuter rail rights-of-way);
- Alternative 2 – Green Line Extension to Mystic Valley Parkway/Route 16 and Union Square (via commuter rail rights-of-way);
- Alternative 3 – Green Line Extension to Medford Hillside (via commuter rail right-of-way) and Union Square (in-street running);
- Alternative 4 – Green Line Extension to Mystic Valley Parkway/Route 16 (via commuter rail right-of-way) and Union Square (in-street running);
- Alternative 5 – Green Line Extension to Mystic Valley Parkway/Route 16 (via commuter rail right-of-way); and
- Alternative 6 – Green Line Extension to Union Square (via commuter rail right-of-way).

**Table 1-1 Comparison of DEIR/EA Build Alternatives**

Alternative	Medford Branch	Union Square Branch	Daily Ridership (2030)	Capital Cost <sup>1</sup> (\$M)
1	Medford Hillside	Commuter Rail ROW	7,500	\$804.8
2*	Mystic Valley Parkway/Route 16	Commuter Rail ROW	8,900	\$959.3
3	Medford Hillside	In-street	7,700	\$829.8
4*	Mystic Valley Parkway/Route 16	In-street	8,700	\$984.3
5*	Mystic Valley Parkway/Route 16	None	10,500	\$870.0
6	None	Commuter Rail ROW	3,900	\$370.6

1 2008 dollars

2 These results include 300 parking spaces at Mystic Valley Parkway/Route 16 Station. With no parking at this station, the ridership would be 8,600 new systemwide boardings daily, and the capital cost would be \$951.8 million.

The Medford Branch of the Green Line Extension would be constructed within the existing MBTA Lowell Line commuter rail right-of-way, owned by the MBTA. The existing commuter rail tracks would be shifted approximately 13 feet toward the east side of the right-of-way, using retaining walls where necessary to avoid property impacts. The new light rail track and overhead catenary systems would be added within the western half of the right-of-way.

For the Proposed Project, five stations would be constructed on this branch:

- south of Washington Street (Brickbottom Station);
- at Gilman Square;
- at Lowell Street;
- at Ball Square, north of Broadway; and
- at College Avenue.

Alternatives 2, 4, and 5 would include an additional station just south of the Mystic Valley Parkway/Route 16. Stations would generally consist of a single center-island platform with sidewalk access and would be designed as walk-up stations without parking. The Mystic Valley Parkway/Route 16 Station was evaluated both without parking and to potentially include a 300-car parking structure.

Although all of the Medford Branch alternatives would be constructed within the existing MBTA right-of-way, several existing roadway and rail bridges would need to be reconstructed to accommodate the new light rail tracks. These include:

- former Red Bridge (rail) (Somerville);
- Washington Street (rail) (Somerville);
- Walnut Street (roadway) (Somerville);
- Medford Street (roadway) (Somerville);
- School Street (roadway) (Somerville);
- Lowell Street (roadway) (Somerville);
- Cedar Street (roadway) (Somerville);
- Broadway (roadway) (Somerville);
- Harvard Street (rail) (Medford); and
- College Avenue (roadway) (Medford).

Two additional bridges would be reconstructed for the Future Full-Build Alternative:

- Winthrop Street (roadway) (Medford); and
- North Street (roadway) (Medford).

The Union Square Branch of the Green Line Extension, for Alternatives 1, 2, and 6, would be constructed within the existing MBTA Fitchburg Line commuter rail right-of-way, owned by the MBTA. The existing commuter rail tracks would be shifted approximately 10 to 14 feet toward the south side of the right-of-way, using retaining walls where necessary to avoid property impacts. The new light rail track and overhead catenary systems would be added within the northern half of the right-of-way. A station would be constructed along the rail corridor at Prospect Street near Union Square. The station would be designed as a walk-up station without parking. The Union Square Branch would require reconstructing the Medford Street rail bridge in Somerville.

The Union Square Branch of the Green Line Extension, for Alternatives 3 and 4, would function as a single-track loop with portions operating as an in-street running alignment. The alignment will start its outbound service at Lechmere Station and head north to the Red Bridge and then west along the MBTA Fitchburg Line. In the vicinity of the Monsignor O'Brien Highway overpass, the Union Square Branch would split off from the MBTA Fitchburg Line and travel on a new alignment and along a portion of McGrath Highway and connect into Somerville Avenue where embedded tracks would accommodate in-street running in the roadway. At the intersection of Somerville Avenue and Prospect Street, the tracks would turn south along Prospect Street and then be routed inbound along the MBTA Fitchburg Line, where it would join with the outbound tracks near the McGrath Highway overpass.

All of the Build Alternatives would include a layover/maintenance facility. A separate alternatives analysis (described in Chapter 3) was developed to evaluate sites for this facility. The analysis determined that the most practicable location was the area known as "Yard 8," a six-acre former railroad yard located adjacent to the proposed Green Line alignment and accessed from Innerbelt Road in Somerville. The layover facility would include four tracks (providing storage capacity for 80 cars), an approximate 100-vehicle employee parking lot, and a vehicle maintenance building.

The Build Alternatives include relocating Lechmere Station to the east side of the Monsignor O'Brien Highway, on a new viaduct. The relocated station would include reconstructing the 234 existing parking spaces and providing a new bus turnaround.

Based on the analyses presented in this DEIR/EA, Alternative 1, Green Line Extension to Medford Hillside and Union Square (using commuter rail rights-of-way), has been selected as the "Proposed Project" for the Green Line Extension Project, as it provides a balance of cost, ridership, and environmental impacts. EOT also believes that this alternative will help the Commonwealth achieve its goal of providing expanded transportation services and improve regional air quality. This alternative extends to Union Square via the MBTA Fitchburg Line right-of-way, which would require fewer acquisitions of private property, have more operational reliability, and have a lower capital cost than the Somerville Avenue option. Alternative 1 would meet all Project goals, would be operationally practical, and would generate a high number of new systemwide transit trips. This is the Project for which EOT is currently seeking approval by the FTA.

A total of seven stations are included in the Proposed Project, at Lechmere, Brickbottom, Gilman Square, Lowell Street, Ball Square, College Avenue and at Union Square. The route length would be about three miles to Medford Hillside with an approximately one-mile spur to Union Square. The primary infrastructure improvements of the Proposed Project would include relocating existing commuter rail lines, and constructing approximately four miles of new light rail track and systems, four multi-span viaducts, a maintenance facility and reconstructing 11 bridge structures to support the extension service. Parking will not be provided at

any of the stations. The Proposed Project is expected to generate new systemwide transit ridership of 7,900 boardings per day (projected to the year 2030). The Project complies with the SIP and with the regulations of the Massachusetts Department of Environmental Protection (MassDEP). EOT anticipates starting construction of the Proposed Project by 2011 and completing construction prior to the required December 31, 2014 opening date.

Although the FTA action evaluated in this document is the Proposed Project described above, EOT has selected as its Preferred Alternative, Alternative 2, Green Line Extension to Mystic Valley Parkway/Route 16, with no parking at Mystic Valley Parkway/Route 16 Station, and Union Square (using commuter rail rights-of-way). This alternative also meets all of the Project goals and provides additional regional benefits. However, because of the constraints placed on EOT by federal funding requirements and the economic crisis facing the Commonwealth, at this time EOT is not able to identify sufficient funding to support the construction of the Medford Hillside to Mystic Valley Parkway/Route 16 segment within the 2014 timeframe mandated by the State Implementation Plan.

As of the filing of this document, the Boston Region Metropolitan Planning Organization has voted to 'flex' funding dedicated to the construction of highways to fund the construction of the Medford Hillside to Mystic Valley Parkway/Route 16 segment. These funds will be available sometime between 2016 and 2020 and may allow this portion of the Green Line Extension to be constructed shortly after the 2014 schedule for the Proposed Project has been completed.

Therefore, EOT's Preferred Alternative is proposed to be built in two phases with an initial operating segment (or the "Proposed Project") being constructed to Medford Hillside in the vicinity of College Avenue on the Medford Branch and a spur to Union Square, which is described and evaluated in this DEIR/EA as Alternative 1. The second phase of this Project, the "Future Full-Build Alternative" will include extending the Project from College Avenue Station to Mystic Valley Parkway/Route 16 Station in the future and has been described and evaluated in the DEIR/EA as Alternative 2.

The environmental impacts of both the Proposed Project, referred to as Alternative 1, and of the Future Full-Build Alternative, referred to as Alternative 2, have been fully evaluated and are described in detail in this DEIR/EA. For federal action, the Proposed Project to Medford Hillside is the subject of this DEIR/EA, as the extension to Mystic Valley Parkway/Route 16 is not envisioned to be constructed within the three-year MEPA or NEPA time frame and would, therefore, require re-assessment at a future date. However, construction of the initial operating segment of the Project will not preclude a future extension of the Preferred Alternative or Future Full-Build Alternative to Mystic Valley Parkway/Route 16, should funding become available in the future.

---

## 1.3 Permits and Approvals

The Green Line Extension Project is subject to mandatory preparation of an EIR under MEPA because it will require a state permit and will alter more than 50 acres of land and consists of a new rapid transit line along a new right-of-way (the in-street portion of the Union Square Branch in Alternatives 3 and 4) for transportation of passengers. Because the proponent is a state agency and will use state funding, MEPA jurisdiction extends to all aspects of the Project that may cause significant damage to the environment.

The Green Line Extension Project also requires review under NEPA because EOT is requesting Federal funding for the Project. The regulations of the Council on Environmental Quality (CEQ) implementing NEPA ensure that information on the social and environmental impacts of any Federally funded action is available to public officials and citizens before decisions are made and before actions are taken.

NEPA regulations direct Federal agencies to integrate into their planning and decision-making the natural and social sciences, environmental amenities and values, and the design arts along with the necessary engineering and economic considerations. The objective is to balance infrastructure development, economic prosperity, health and environmental protection, community and neighborhood preservation, and quality of life. The FTA uses the NEPA process as the overarching umbrella under which the mandates and considerations of all laws affecting transit project development are considered. The FTA's NEPA process provides a forum for interested agencies and the public to learn about proposed transportation actions and to react to those proposals. The formal review process requires the transit agency to develop and evaluate a range of reasonable alternatives, in addition to the Proposed Project, in order to determine the best option for addressing transportation problems, respecting the community, and protecting the environment. Because the proposed Green Line Extension Project would be primarily within existing active commuter rail rights-of-way and would be beneficial to the communities, EOT has prepared this EA in coordination with the FTA, and anticipates that the FTA will issue a Finding of No Significant Impact (FONSI) at the conclusion of the NEPA review.

In addition, the Green Line Extension Project will require the state and Federal permits and approvals listed below:

- Determination of Effect to Historic or Archaeological Resources [Section 106 of the National Historic Preservation Act] (FTA);
- Section 4(f) Determination (FTA);
- National Pollutant Discharge Elimination System General Permit, Section 402, Federal Clean Water Act (U.S. Environmental Protection Agency); and
- Massachusetts Highway Department access permit(s).

EOT will initiate these permit applications when the appropriate designs are available and the MEPA process has been satisfied.

---

## 1.4 Consistency With Federal, State, and Local Planning

The proposed Green Line Extension Project is consistent with all applicable Federal, state, and local planning. It is fully consistent with the SIP and highly supportive of local, regional, state, and Federal policies related to transportation facilities including transit, pedestrian, and bicycle facilities and services. The Proposed Project's consistency with local planning is described in more detail in Section 3.9, *Coordination with Regional Projects*, and Section 5.15, *Indirect and Cumulative Effects*. In addition to the SIP, the Project is consistent with the Urban Ring and the Somerville Community Path projects described below.

---

### 1.4.1 State Implementation Plan

The SIP and Air Pollution Control Regulations (310 CMR 7.36) require EOT to construct a Green Line Extension to Medford Hillside with a Green Line Union Square spur. The currently proposed Green Line Extension Project includes alternatives that would extend service to the area north of Medford Hillside in response to the requirements of the Secretary's Certificate, public comments, and support for providing light rail service to a larger population.

---

### 1.4.2 Urban Ring Project

The Urban Ring project, in the planning stages during the development of this DEIR/EA, is a three-phased, circumferential transit improvement project within a corridor approximately two miles outside the downtown Boston core. The project includes segments within the municipalities of Boston, Cambridge, Somerville, Brookline, Everett, Medford, and Chelsea; these areas include some of the fastest growing areas around Boston. The Urban Ring would provide new transit services that would connect to existing radial transit lines (subway, commuter rail, and bus) to create shorter transit trips and fewer transfers in the corridor. The Urban Ring would connect with the Green Line Extension at Lechmere Station.

---

### 1.4.3 Somerville Community Path

The City of Somerville is pursuing the construction of a bicycle/pedestrian facility linking the existing linear park at Davis Square to Lechmere Station. The project envisions the use of the abandoned segment of the Lexington & Arlington Railroad between Cedar and Lowell Streets. The City of Somerville completed a Feasibility



Study in July 2006. Concept design for the Community Path is being developed as part of the Green Line Extension Project. In addition to coordinating the physical arrangements of the proposed Community Path project, there is also an opportunity to integrate the Community Path's neighborhood connections into the transit stations, particularly where the Community Path will cross local streets at-grade. As directed by the Secretary's Certificate on the EENF, the alignments under consideration for the Green Line Extension Project are being coordinated with the Community Path project, and this DEIR/EA includes conceptual designs for the Community Path (see Chapter 3 for more details on the Community Path design).

---

## 1.5 Public Involvement and Agency Coordination

The Green Line Extension Project has received significant public input throughout the planning process. As noted in the Secretary's Certificate, the approximately 90 comment letters on the EENF reflect a substantial interest in the future of the corridor from elected officials and municipal representatives; city, state, and regional agencies; environmental, bicycle, and pedestrian advocacy groups; neighborhood groups; groups that represent the disabled; businesses; residents; and the general public.

To plan and develop the Green Line Extension Project in coordination with this wide range of interests, EOT established a public involvement process that included an Advisory Group, open public meetings, and coordination with the staff and elected officials of Cambridge, Somerville and Medford as well as other stakeholders along the corridor. This process continued the public involvement that began in 2004, during the *Beyond Lechmere Northwest Corridor* study. The Project website ([www.mass.gov/greenlineextension](http://www.mass.gov/greenlineextension)) contains all of the materials used at the Advisory Group and public meetings, including comments and responses to comments, fact sheets, Project updates, maps, and graphics.

Eleven Advisory Group meetings were held during preparation of this DEIR/EA, between September 2007 and August 2009. One round of public meetings, attended by 226 people, was held in January 2008, in two different locations. Station workshops were held to obtain neighborhood input on station locations, access, and potential impacts and mitigation measures. Five station workshops were held in January and February 2008. A second round of public meetings was held in March 2009, in two different locations, in which over 600 people attended. In addition to these meetings, the Project Team also attended numerous community and neighborhood briefings.

During the course of the public involvement process for the Project, a number of key issues were raised involving technical analysis and Project outreach including, but not limited to:

- **Ridership Modeling** – Based on requests for additional information by Advisory Group members, EOT held technical tutorials on ridership modeling.
- **Maintenance Facility** – Based on requests for additional information by Advisory Group members, EOT held a site tour of the Green Line Riverside facility and conducted a technical tutorial. Due to concerns about the proposed location of the support facility, EOT and the Project team also produced a full study of the site selection process and evaluated numerous additional alternatives based on feedback and suggestions by members of the public.
- **Station Siting** – Early in the Project, members of the Advisory Group members and of the public expressed interest in the siting of stations in the Project area neighborhoods. As a result, EOT held a series of five station workshops where members of the public could discuss their concerns in small groups with the Project team about station siting, including locations of drop-off and pick-up areas, platform locations, bicycle/pedestrian access, and Americans with Disabilities Act (ADA) accessibility. Based on the feedback received at these meetings, some station locations received additional analysis and/or were reconfigured to address concerns raised by the public.
- **Tunnel Alignment Alternatives** – Several members of the public suggested constructing tunnels for segments of the Green Line Extension. Based upon this interest, EOT and the Project team performed an extensive analysis of tunneling as an alternative to at-grade construction, as documented in Appendix B as "Consideration of Tunnel Alignment Alternatives." Ultimately, the report found tunneling to be cost-prohibitive for this Project.
- **Construction Impacts** – Members of the public expressed concerns with regard to impacts during construction. EOT developed a detailed construction staging plan to help minimize the impacts to neighborhoods, including vehicular traffic, pedestrian traffic, on-street parking, public access, and emergency access to local businesses and residences.

With regard to public outreach, EOT responded to requests for meeting materials in alternative formats, including audio tapes and large-print. These requests were in addition to the standard outreach approaches, including translating materials and meeting notices into multiple languages and other formats. Based on feedback from the public, EOT also expanded the Project database by sending notices of the March 2009 public meetings to all property owners in Medford, Somerville and East Cambridge.

---

### 1.5.1 Project Advisory Group

EOT established a Project Advisory Group of municipal officials, community representatives, and other interested individuals to help guide the public process, build consensus, and advise EOT on issues of concern. The members were recommended by the respective municipalities and appointed by the Secretary of Transportation.<sup>1</sup> The Advisory Group provides important guidance and input to EOT and the consultant team on a range of issues relating to the Project.

The Advisory Group has met approximately monthly throughout this process and serves as the Project's liaison to the community. Members review information and advise on the preferred alternatives, station stops, and recommendations. Several members have made independent recommendations as well. Advisory Group meeting presentations, materials, and summary meeting minutes are posted on the Project website to keep the public apprised of issues that arise during meetings. All Advisory Group meetings are open to the public. Several meetings were filmed for local cable access broadcast. Eleven Advisory Group meetings have taken place between September 2007 and August 2009.

---

### 1.5.2 Agency Coordination

EOT facilitated 35 interagency meetings with federal and state regulatory agencies, and 48 public agency and local official briefings to guide the environmental review process. Meetings included representatives of:

- Federal Transit Administration (FTA);
- Massachusetts Bay Transportation Authority (MBTA);
- Massachusetts Department of Conservation and Recreation (DCR);
- Massachusetts Department of Environmental Protection (MassDEP);
- Massachusetts Executive Office of Energy and Environmental Affairs (EEA);
- Massachusetts Environmental Policy Act Office (MEPA);
- Massachusetts Highway Department (MassHighway);
- Massachusetts Historical Commission (MHC);
- Central Transportation Planning Staff (CTPS);
- City of Cambridge;
- City of Somerville; and
- City of Medford.

---

<sup>1</sup> The Advisory Group consists of: Lee Auspitz, Davis Square Task Force; Paul Cote, Appointed by City of Cambridge; William Deignan, City of Cambridge; Councilor Frederick DelloRusso, City of Medford; Rita Donnelly, Appointed by City of Medford; Mimi Graney, Union Square Main Streets; Joe Guelpa, Appointed by City of Somerville; David Jordan, Appointed by City of Somerville; Kenneth Krause, Appointed by City of Medford; Monica Lamboy, City of Somerville; Barbara Lucas, MAPC; Steve Mackey, Somerville Chamber of Commerce; Jim McGinnis, Appointed by City of Somerville; Ellin Reisner, STEP/Green Line Forum; Barbara Rubel, Tufts University; Carrie Russell, Conservation Law Foundation; William Wood, Appointed by City of Medford.

---

### 1.5.3 Meetings

#### Advisory Group Tutorials

EOT has facilitated tutorial sessions for Advisory Group members to help them gain a deeper understanding of aspects of the Project. Three tutorial sessions were offered during the Summer of 2008: a ridership modeling presentation and discussion led by the CTPS; a presentation and discussion of the proposed Community Path design; and a tour of the existing Riverside Green Line support facility with a presentation about the proposed layover/support facility for the Project.

#### General Public Meetings

Two public meetings were held in Medford in January and February 2008 to provide Project background and context. Meetings included a half-hour open house for participants to talk with Project Team members, followed by a presentation and a question and answer session. Attendance was over 100 at each meeting.

In March 2009, EOT held two public meetings in Somerville and Medford, where it presented an overview of the Project, an environmental analysis, recommendations for station sites, and the preferred Project alignment. At both meetings, there was a one-hour Open House, where members of the Project Team were available to answer questions about the Project. The meeting presentation, followed by a public question and comment period, lasted two hours. These meetings were advertised in local newspapers, noticed to the Project database, and all residents of Somerville, Medford, and portions of East Cambridge received notices of the meetings. The distribution list for these meetings totaled approximately 37,000 individuals. Meeting notices were also translated into multiple languages including Spanish, Portuguese and Haitian Creole. Approximately 265 individuals attended the Medford meeting, and 346 attended the Somerville meeting.

#### Station Workshops

Beginning in late January 2008 and continuing throughout February, residents of Cambridge, Somerville, and Medford came in the hundreds to a series of five station workshops for the Green Line Extension Project. As the alternatives analysis phase began, EOT reached out to communities early in the process to help incorporate residents' everyday knowledge of the corridor into the analysis. The meetings began with a half-hour open house for participants to review maps of the corridor and talk with Project Team members. After a brief overview of the Project and its current phase, the meetings broke into workshop style sessions with participants surrounding tables of maps and providing input regarding station locations, station access, traffic intersections, pedestrian, bus, and bike path connections, and desired station amenities. With attendance reaching 100 or more at some workshops, this robust series of meetings allowed residents to express both their excitement and their concerns about the Green Line Extension. The Project Team wrote down participants'

comments on flipcharts near the station tables, while participants themselves filled out worksheets for the Project Team to collect and review.

Members of the Project distribution list were mailed notices of these meetings, and abutters to the proposed station locations received flyers about the meetings. Flyers in multiple languages were also distributed at nearby commuter rail and Orange Line stations. Flyers in multiple languages were sent to area libraries and city clerks' offices for posting.

### **Briefings for Public Agencies and Elected Officials**

EOT has had over 70 meetings with public agencies, municipal officials, elected officials, and municipal disability commissions in Cambridge, Somerville and Medford.

### **Briefings for Neighborhood Groups and Institutions**

EOT has attended over 17 meetings with neighborhood groups. The team provided brief presentations at these neighborhood meetings (targeted by EOT and upon request by a group) and for the disability communities (municipal disability commissions and the MBTA Access Advisory Committee) in Cambridge, Somerville and Medford.

---

#### **1.5.3.1 Website**

EOT has maintained an informative and up-to-date interactive Project website, [www.mass.gov/greenlineextension](http://www.mass.gov/greenlineextension). Between November 2007 and March 2009, the site attracted more than 23,000 new visitors and had a total of more than 145,775 page views. Along with a brief overview of the Project's history and current phase, the website provides access to various reference materials, including documents from previous phases of the Project as well as the most up-to-date Project materials. Interested individuals are also able to sign up to be part of the Project mailing list. Individuals are also able to post comments about the Project publicly as well as use the website to ask questions of EOT and the Project Team. Materials from the Project website have been converted into audio tapes upon request from members of the public.

---

#### **1.5.3.2 Written Materials**

The Project Team has also provided documents summarizing Project meetings, activities, and information on a regular basis. These materials have been provided to the 1,967 names in the Green Line Extension database.

## Summary Meeting Minutes

The Project Team provided summary minutes of every EOT-hosted meeting, including Public meetings, Advisory Group meetings and tutorials, and agency briefings (Table 1-2). These notes highlight the presentation, key issues raised, and participants' concerns. They are posted on the website and printed versions are available in different formats upon request.

## Fact Sheets

The Project Team prepared one fact sheet in advance of the January/February 2008 public meetings to outline the issues and options under review and indicate how and when comments can be shared or submitted. The Project Team also prepared an additional fact sheet and frequently asked questions (FAQs) sheet in advance of the March 2009 public meetings. The fact and FAQ sheets are available in print and are formatted for downloading from the Project website. Fact and FAQ sheets are available in multiple languages as well as in a large-print, text-only version.

**Table 1-2 Meeting Summary (as of August 5, 2009)**

Meeting Type	Number of Meetings to Date
Advisory Group Meetings	11
Station Taskforce Meetings	5 <sup>1</sup>
Interagency Meetings	35
Neighborhood Briefings	17
Public Agency and Local Official Briefings	48
Institutions/Business Groups Briefings	4
Public Meetings	4 <sup>2</sup>
EOT Tutorials	3

1 Attendance at these five meetings was 83, 114, 98, 89, and 74, respectively.

2 Attendance at these four meetings was 138, 88, 264, and 350, respectively.

## 1.5.4 Environmental Justice

EOT and the Project Team are committed to reaching out to environmental justice populations. The Green Line Extension will bring major benefits of improved accessibility and mobility to numerous environmental justice neighborhoods located throughout the study corridor. The team reached out to these communities to ensure their participation in the DEIR/EA process and to achieve compliance with state and Federal guidelines.

The majority of the Advisory Group meetings were covered by local cable to ensure that individuals could view the proceedings even if they were not able to attend the meetings in person. Meeting presentations and minutes were transcribed onto audio tape on behalf of the visually impaired at the request of participants.

The series of station workshops was held in local environmental justice neighborhoods, and flyers advertising these workshops and other meetings were distributed at Orange Line and local bus stops in Spanish, English and Portuguese. These flyers were also distributed door-to-door to potential abutters to the stations (both residential and business in these environmental justice neighborhoods) in advance of the meeting. EOT used local media for press announcements and paid advertisements of these meetings. At the public meetings and station workshops, interpreters were also available upon request for participants. All English-language meeting announcements included a statement in Spanish, Portuguese and Haitian Creole offering to translate the announcement.

The Project fact sheet was translated into Spanish and English. A large-print fact sheet was developed for the visually impaired. These materials were distributed at public meetings, on the Project website and upon request. Audio equipment was employed at all meetings to accommodate hearing impaired participants in the community.

Environmental justice issues were discussed in numerous meetings with community planning and elected officials. The Project Team also met with many neighborhood and community organizations to provide Project briefings to community members and listen to their concerns. These organizations included the Disability Commissions in Cambridge, Somerville and Medford.

The Project database includes multiple community, neighborhood, and environmental justice organizations in the three affected communities. Meeting announcements for the final set of public meetings were mailed to all residents of East Cambridge, Somerville and Medford to assure the widest possible outreach to environmental justice residents.

---

## 1.6 Requirements of Secretary's Certificate

The Secretary's Certificate on the EENF (December 1, 2006) identified the critical general issues to be addressed in the DEIR, as well as specific requirements for the scope of the DEIR. The general issues included:

- The Project should be designed to maximize benefits for local residents while preserving the integrity and character of existing neighborhoods.
- Additional analysis, information and commitment to mitigation measures is necessary to ensure the success of the Project, specifically with regard to:
  - Enhanced land use planning;
  - Station locations;
  - Land takings;
  - Mitigation of noise and vibration impacts;
  - Stormwater;

- Good access for pedestrians, bicyclists, and disabled persons;
- Coordination of bridge design and reconstruction; and
- Traffic management and parking.

The Secretary's Certificate indicated that the MEPA review of the Project could be streamlined if the DEIR provides a reasonably complete and stand-alone description and analysis of the Project, Project alternatives, and environmental impacts, and adequately addresses mitigation. This DEIR/EA has been prepared to meet these goals and EOT anticipates that the Secretary will be able to determine that the DEIR, after public review and comment, will serve as the Final EIR (FEIR).

The general requirements of the Secretary's Certificate, and the sections of this DEIR/EA that address these requirements, are provided in Table 1-3. Detailed, point-by-point responses to the Secretary's Certificate are provided with the other responses to comments in Appendix A.

**Table 1-3 Requirements of the Secretary's Certificate**

Category	Requirement	Addressed In
Project Description	Include a detailed Project description, schedule, and funding plan	Section 3.7
	Existing conditions plan	Chapter 4
	Proposed conditions plan with plans, designs, renderings, and illustrations/photos	Section 3.7 Chapter 5
	Detailed information on station locations, designs, lighting and access, including circulation plans	Sections 3.6, 3.7
	Descriptions of track locations/relocations and bridge replacements	Sections 3.6, 3.7
	Requirements for maintenance facility, including parking	Section 3.3
	Describe electrical systems, including catenary/support structures, substations, and signal/communication systems; respond to comments on capacity for future electrification of commuter rail	Sections 3.3.1, 3.6
	Operating plans for future service	Sections 3.6, 3.7.4
	Identify temporary and permanent land takings	Sections 3.7.1, 5.2
	List of required permits and approvals, with status of each	Sections 1.3, 6.5
Smart Growth/Land Use	Develop a detailed corridor study that examines zoning, development opportunities, and the relationship of environmental justice communities to the Project	Sections 5.2, 5.4, 5.15
	Describe how communities can plan to address potential for the Project to change the character of their communities	Section 5.15
	Assess opportunities to minimize environmental impacts (solar lighting, use recycled materials, retaining wall alternatives)	Sections 3.7.3, 5.12



Table 1-3 Requirements of the Secretary's Certificate (continued)

Category	Requirement	Addressed In
Environmental Justice	Identify environmental justice areas and other sensitive populations, provide relevant socio-economic data, and describe how the Project is designed to avoid any disproportionate impacts	Sections 4.4, 5.4
	Consider strategies for allowing housing affordability	Section 5.15
	Locations for the stations and the storage and maintenance facility should be carefully assessed for community impacts and/or mitigated	Section 3.3 Chapter 5
	Take affirmative measures to ensure full public participation in the MEPA process	Section 1.5
Alternatives Analysis	Evaluate the No-Build Alternative: The Green Line Extension to Medford Hillside and Spur to Union Square Route 16 Terminus Alternative Union Spur via McGrath/Somerville Avenue Alternative	Sections 3.2, 3.5, 3.6 Chapter 5
	Describe the benefits and drawbacks of each alternative	Chapter 5
	Consider other alternatives that could meet the goal of a connection between the Green Line Extension and the MBTA Lowell Line	Chapter 3
	Evaluate feasible alternatives to the Yard 8 site	Section 3.3.2
	Quantify the amount of land altered, the amount of earthwork required, and the amount of impervious surfaces created, and investigate all feasible methods of avoiding, reducing, and minimizing impervious surfaces and impacts to land	Sections 3.7, 5.9
Land/Stormwater	Consider alternatives to concrete retaining walls to retain trees and vegetation while reducing noise, vibration, and stormwater impacts	Sections 5.7, 5.8, 5.12
	Provide an overall drainage plan and discuss consistency with the DEP Stormwater Management Standards.	Section 5.9
	Include a stormwater operations and management plan	Section 5.9
	Identify any stormwater discharge points and any drainage improvements associated with off-site roadway improvements	Section 5.9
	Identify specific station locations and identify the criteria used to identify station locations	Sections 3.3.1, 3.6, 3.7
Stations	Identify specific station locations and identify the criteria used to identify station locations	Sections 3.3.1, 3.6, 3.7
	Describe air quality benefits of the Project and its consistency with the SIP and DEP's Transit Regulations	Section 5.6
Air Quality	Assess emissions of VOCs, NOx, greenhouse gases, carbon monoxide, particulate matter (PM), and air toxics. Mesoscale analysis should look at regional impacts and predict total reductions. Microscale analysis should examine localized carbon monoxide (CO) conditions and identify traffic-related hot spots near stations.	Section 5.6
	Propose a design and operating plan that generates the highest level of ridership possible while balancing the use of MBTA resources and community impacts	Sections 3.6, 3.7
Transit Ridership	Describe the assumptions used to generate the ridership numbers and the operating parameters necessary to achieve them	Section 3.4
	Specify whether the vehicle miles traveled (VMT) reductions are based on new or diverted trips	Sections 3.4, 3.6, 3.7
	Discuss the impacts and benefits associated with various ridership levels and impacts on the central subway, Green Line, bus, and commuter rail services during and after construction	Section 5.5

Table 1-3 Requirements of the Secretary's Certificate (continued)

Category	Requirement	Addressed In
Traffic and Transportation	Analyze traffic for existing, build and no-build conditions with respect to intersection level of service (LOS), pedestrian and bicycle circulation	Sections 4.6, 5.5
	Address traffic circulation on all roadways adjacent to proposed stations, and include mitigation for areas where the Project will have a significant impact on traffic operations	Section 5.5
	The traffic analysis should include 10 specific intersections	Sections 4.6, 5.5
	Include strategies for mitigating traffic and parking impacts associated with proposed operations and stations	Section 5.5
	Identify changes in bus routes and incorporate these into the transit operation and traffic modeling	Section 5.5
	Identify bridges that must be reconstructed and include a commitment to coordinate design, scheduling and construction with city officials	Sections 3.7.2, 3.7.6, 5.5
	Evaluate the consistency of this Project with previous and on-going planning efforts and relevant transportation plans (Urban Ring, Reconstruction of Route 28, NorthPoint development, Lechmere Station, the Community Path, etc.)	Sections 3.8, 3.9
Freight Service	Identify what services will be affected and whether changes will result in increased truck traffic on local and regional roadways. Consider alternatives that would minimize or avoid the elimination of freight service.	Sections 4.5, 5.5
Noise/Vibration	Include an analysis of noise and vibration for existing and proposed conditions, identify sensitive receptors	Sections 4.8, 4.9 Sections 5.7, 5.8
	Include a detailed analysis consistent with the FTA guidelines	Sections 5.7, 5.8
	Identify specific mitigation measures for areas where mitigation is needed	Sections 5.7, 5.8
Open Space and Historic Resources	Consult with Massachusetts Historical Commission (MHC) to evaluate impacts and develop appropriate mitigation	Sections 4.15, 5.13
	Provide historic and cultural resource maps to identify historic resources and open spaces adjacent to the corridor and likely to be impacted by the Project	Sections 4.13, 4.15
	Describe measures that will be employed to avoid, minimize and mitigate impacts	Sections 5.11, 5.13
Hazardous Waste	Describe how contaminated soils will be evaluated, managed and disposed of	Section 5.14
	Include an updated list of hazardous waste sites	Sections 4.16, 5.14
	Consult with MassDEP to ensure that demolition and management of contaminated soils are consistent with applicable regulations	Section 5.14
Construction Period	Include a discussion of construction phasing, potential impacts associated with construction activities, and feasible measures to avoid or eliminate these impacts.	Section 3.7.6
	Identify temporary and permanent construction easements	Section 3.7.1
	Require contractors to retrofit construction equipment to reduce diesel exhaust	Section 5.6
Mitigation	Include a separate chapter on mitigation measures, including a proposed Section 61 findings for all state permits, and a schedule for implementation	Chapter 6
Responses to Comments	Include a copy of each comment received and respond to the substantive comments received	Appendix A