

Woburn, Winchester, Medford,
Somerville, Everett, and Boston,
Massachusetts

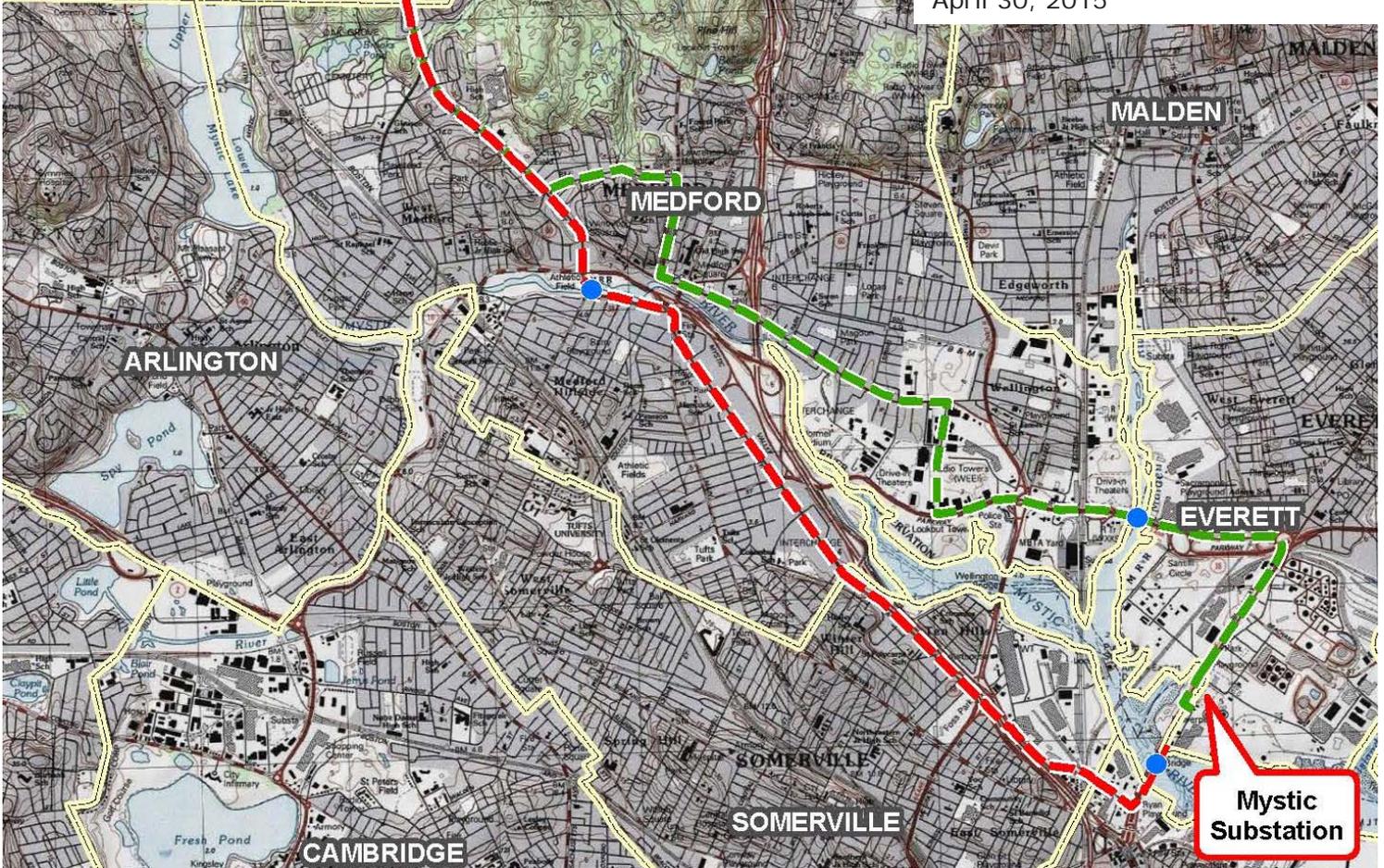
Mystic to Woburn Transmission Project

Environmental Notification Form

Prepared For:

**NSTAR Electric Company d/b/a
Eversource Energy**

April 30, 2015



N0998-11-04
April 30, 2015



Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: **Environmental Notification Form (ENF)
Mystic to Woburn Transmission Project
Woburn, Winchester, Medford, Somerville, Everett, and Boston, MA**

Dear Secretary Beaton:

On behalf of NSTAR Electric Company d/b/a Eversource Energy ("Eversource" or "Company"), Tighe & Bond is submitting this Environmental Notification Form (ENF) for the Mystic to Woburn Transmission Project located in Woburn, Winchester, Medford, Somerville, Everett, and Charlestown (Boston), Massachusetts. The project triggers review under the Massachusetts Environmental Policy Act (MEPA) with an ENF per:

- 301 CMR 11.03(1)(b)(3): Conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97.
- 301 CMR 11.03(3)(b)1.f.: Alteration of one half or more acres of any other wetlands (Riverfront Area, Bordering Land Subject to Flooding, and potentially Land Under Water).

This ENF describes activities necessary to install approximately 7.7 miles of new underground electric transmission line, parallel to an existing underground electric transmission line, between the Eversource Woburn and Mystic Substations. This project is needed to improve the reliability of the electric grid in the Greater Boston area, and specifically to address thermal overloads in the existing line.

The attached ENF and narrative includes detailed project information including a comprehensive alternatives analysis, and a discussion of impacts and mitigation measures for the MEPA review thresholds triggered.

Please notice this ENF in the Environmental Monitor to be published on May 6, 2015. Should you have any questions or require additional information, please contact Tracy J. Adamski at (413) 572-3256 or me at (413) 875-1312.

Very truly yours,

TIGHE & BOND, INC.

A handwritten signature in blue ink, appearing to read "D. Rukakoski", is positioned above the printed name of the signatory.

Daniel P. Rukakoski, PWS
Principal Environmental Scientist - Associate

Enclosures: Environmental Notification Form and Attachments

Copy: Refer to the Distribution and Circulation List provided in Attachment C
Kevin McCune, Eversource Energy
Michael Zylich, Eversource Energy
David Velez, Eversource Energy
David Rosenweig, Keegan Werlin LLP

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Environmental Notification Form

Attachments

Attachment A: Project Description

Attachment B: Figures

Figure 1: Project Location

Figure 1A: Candidate Route Alternatives

Figure 2: Existing Conditions

Figure 3: ACEC and Rare Species

Figure 4: Historical Resources

Figure 5: Water Resources

Figure 6: Impaired Waterbodies

Figure 7: Article 97 Lands

Figure 8: Aberjona River Crossing South of Bridge Trenchless Alternative

Figure 9: Aberjona River Crossing Trenched Alternative

Figure 10: Aberjona River Crossing North of Bridge Trenchless Alternative

Figure 11: Mystic River Crossing Trenchless Alternative

Attachment C: Distribution List

Attachment D: List of Permits and Approvals

Attachment E: Excerpts from Massachusetts Year 2012 Integrated List of Waters

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: _____

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Mystic to Woburn Transmission Project		
Street Address: Multiple streets in Woburn, Winchester, Medford, Somerville, Everett, and Boston		
Municipality: Woburn, Winchester, Medford, Somerville, Everett, Boston		Watershed: Boston Harbor (Mystic River)
Universal Transverse Mercator Coordinates: North End: 322927.27 4703298.27 South End: 329820.18 4695411.22		Latitude: Longitude: North End: 42 27' 42" N -71 09' 20" W South End: 42 23' 33" N -71 04' 04" W
Estimated commencement date: April 2017		Estimated completion date: December 2018
Project Type: Utility		Status of project design: 30 %complete
Proponent: NSTAR Electric d/b/a Eversource Energy		
Street Address: One NSTAR Way, NE250		
Municipality: Westwood	State: MA	Zip Code: 02090
Name of Contact Person: Daniel Rukakoski		
Firm/Agency: Tighe & Bond		Street Address: 53 Southampton Road
Municipality: Westfield		State: MA Zip Code: 01085
Phone: 413-875-1312	Fax: 413-562-5317	E-mail: DPRukakoski@TigheBond.com
<p>Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:</p> <p>a Single EIR? (see 301 CMR 11.06(8)) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No a Special Review Procedure? (see 301CMR 11.09) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No a Waiver of mandatory EIR? (see 301 CMR 11.11) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No a Phase I Waiver? (see 301 CMR 11.11) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)</i></p> <p>Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)? <u>301 CMR 11.03(1)(b)(3): conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97; and 301 CMR 11.03(3)(b)1.f.: Alteration of one half or more acres of any other wetlands (will include Riverfront Area and Bordering Land Subject to Flooding and, depending on project alternative selected, may include Land Under Water).</u></p>		

Which State Agency Permits will the project require? Ch. 91 Waterways authorization (Determination of Applicability), 401 Water Quality Certificate, and potentially Utility-Related Abatement Measures ("URAM") from MassDEP; DPU Approval under MGL c.164 Sec 72 and M.G.L. c. 40A, s. 3; MassDOT Highway Access Permit; a Construction and Access Permit and an Article 97 long term easement from the DCR; MBTA Access Permit; MWRA Section 8(m) Permit; approvals from local conservation commissions under the Massachusetts Wetland Protection Act. A full list of permits is included in Attachment D.

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres: Department of Conservation and Recreation (DCR) – up to 0.5 acres – Article 97 access agreements

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	~115 acres		
New acres of land altered		~ 4.5 acres	
Acres of impervious area	0	0	0
Square feet of new bordering vegetated wetlands alteration		0	
Square feet of new other wetland alteration		~23,200 sf	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage	0	0	0
Number of housing units	0	0	0
Maximum height (feet)	0	0	0
TRANSPORTATION			
Vehicle trips per day	0	0	0
Parking spaces	0	0	0
WASTEWATER			
Water Use (Gallons per day)	0	0	0
Water withdrawal (GPD)	0	0	0
Wastewater generation/treatment (GPD)	0	0	0
Length of water mains (miles)	0	0	0
Length of sewer mains (miles)	0	0	0
<p>Has this project been filed with MEPA before? <input type="checkbox"/> Yes (EEA # _____) <input checked="" type="checkbox"/> No</p>			
<p>Has any project on this site been filed with MEPA before? <input type="checkbox"/> Yes (EEA # _____) <input checked="" type="checkbox"/> No</p>			
<p>1 The site acreage reported here is the approximate land area contained within the substations, and assumed 40 foot wide roadway ROWs along the project route. 2 New acres of land altered includes the direction drilling construction at the upper Mystic River crossing and potential impacts at the Aberjona River crossing. The additional 3.5 acres are temporary impacts associated with an assumed 4 foot wide work area for the installation of underground utilities within existing roadways. 3 No change in impervious surfaces is anticipated 4 New other wetland alteration includes temporary impacts in Riverfront Area, BLSF and Land Under Water. 5 The number of vehicles traveling to and from the substations will not change as a result of the Project. Peak construction vehicle trips would occur during trench soil hauling, which would be on average 8 trips per hour for 8-hour shifts or 64 total trips.</p>			

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

The proposed Mystic to Woburn Transmission Project (“Project”) proposed by NSTAR Electric d/b/a Eversource Energy (“Proponent” or “Eversource”) is the installation of a new 115 kV underground electric transmission line between the existing Eversource Woburn Substation in Woburn and the Mystic Substation in Everett. The Project is located in the municipalities of Woburn, Winchester, Medford, Somerville, Everett and Charlestown (Boston). The project also involves upgrades at the Eversource Woburn and Mystic Substations. The Project is needed to relieve potential overloads on the existing underground Line. The new underground line (the “New Line”) will operate in parallel with and increase the capacity of the existing transmission line. Figure 1 provides an overview of the Preferred Route, as well as the locations of the Mystic and Woburn substations. Figure 2 shows the EFSB Preferred and Noticed Alternative routes and existing conditions within the project area.

The Project purpose is to improve the reliability of electric transmission within the Greater Boston area and address thermal overloads within the existing electric transmission line. In combination with other planned Greater Boston Area transmission upgrades, the Project provides a system with substantial flexibility to accommodate load growth.

The Project (substation to substation) will consist of 7.7 miles of new underground line to be operated in parallel with the existing underground Line. This new line will be a high pressure fluid filled pipe type cable (“HPFF-PTC”) system consisting of three stranded and insulated copper cables installed in a sealed and 8-inch steel pipe filled with dielectric fluid.

The 8-inch steel pipe, along with two-inch diameter polyvinyl chloride (“PVC”) conduits for relay and communication cables, will be installed in a nominal 24-inch wide by 60-inch deep trench. Manholes for pulling in and splicing cables, line testing, and maintenance will be installed at spacing intervals of approximately 2,000 to 2,400 linear feet. Preliminary estimates indicate approximately 17 manholes will need to be installed for the system.

The Project also includes the installation of a new series reactor at Woburn Substation to balance power flows between the existing and new lines, and modifications to the line termination connections at Mystic Substation. Construction in the Woburn Substation will include construction of foundations for the series reactor and trenching for HPFF-PTC installation.

Additional project information including an alternatives analysis and assessment of impacts and proposed mitigation measures is included in Attachment A.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

- Yes (Specify _____)
- No (See Figure 3)

if yes, does the ACEC have an approved Resource Management Plan? N/A
If yes, describe how the project complies with this plan.

Will there be stormwater runoff or discharge to the designated ACEC? N/A;
If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC. _____

RARE SPECIES:

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)

- Yes No

The Project crosses one area mapped by NHESP as Priority Habitat, PH 1448. The proposed work in this area will be the installation of a new underground electric transmission line within an existing easement that contains the existing electric transmission line. The Proponent will consult with NHESP to discuss any requirements to assess this area and mitigate any potential impact. Priority Habitat 1448 also abuts the Project for approximately 670 Linear feet along the Winter Pond side of Woodside Road in Winchester but no impacts to Habitat are expected because work is within the existing paved roadway. Figure 3 shows the extent of Priority and Estimate Habitats with respect to the Routes. Mitigation measures consist of construction period erosion and sediment controls and limiting work to the existing road extent to avoid impacts to Habitat. Furthermore, per 321 CMR 10.14 (6), construction, repair, replacement or maintenance of ... utility lines, ... within existing paved areas and lawfully developed and maintained lawns or landscaped areas, provided there is no expansion of such existing paved, lawn and landscaped areas are exempt from the requirements of 321 CMR 10.18 through 10.23 and therefore the work in Woodside Road does not require review by the Division of Fisheries and Wildlife.

HISTORICAL /ARCHAEOLOGICAL RESOURCES:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

- Yes No

The Project passes through National and/or Local Historic Districts with numerous individually registered historic residential homes or properties. There are Individually Inventoried historic properties abutting the Project Route. As the Project will include installation of underground utilities and work within existing substations, no impact to historic resources is anticipated. Figure 4 shows the extent of historical and archeological resources. Further detail on Historical and Archeological Resources is included in the Project Description in Attachment A.

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? Yes No

WATER RESOURCES:

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site?

- Yes No

if yes, identify the ORW and its location. Figure 5 shows the locations of Outstanding Resource Waters in relation to the Project. Using GIS mapping, there are three Certified Vernal Pools located within a half-mile radius of the Project, as follows:

CVP Number	Criteria	Certified Date
3864	Fairy Shrimp	3/21/2006
1594	Fairy Shrimp	7/29/1998
1595	Fairy Shrimp	7/29/1998

The northwestern end of the project is located within an area designated as an Outstanding Resource Water for the public water supply associated with Horn Pond, which historically served as surplus water supply for the City of Woburn.

No impact to resource areas is anticipated.

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? Yes No
; if yes, identify the water body and pollutant(s) causing the impairment:

Based on GIS maps created using the Project route and the Final Massachusetts Year 2012 Integrated List of Waters, a number of impaired waterbodies are within a half-mile radius of the Project Preferred Route and the Noticed alternative route analyzed. Figure 6 shows the names and locations of these waterbodies. The following table summarizes the name of the waterbody and category. Attachment E includes a copy of excerpts from the 2012 Integrated List of Waters showing the pollutants of concern.

Segment ID	Waterbody Name	Category
MA71-01	Aberjona River	5
MA71-02	Mystic River	5
MA71-05	Malden River	5
MA71-13	Unnamed Tributary	5
MA71047	Winter Pond	5
MA71045	Wedge Pond	5
MA71019	Horn Pond	5
MA71043	Upper Mystic Lake	5
MA71-03	Mystic River	5
MA71004	Bellevue Pond	3

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? Yes No

Based on review of the Water Resources Commission Stressed Basins in Massachusetts report dated December 13, 2001, the upper portion of the Boston Harbor – Mystic River basin is considered High Stress. Due to the quality of maps available showing the basins and associated stress, it is unclear exactly where the High Stress and No Data line is in related to the Project, and therefore we have been conservative by saying yes. However, the Project will not result in water withdrawals.

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

This Project consists of installation of an underground electric transmission line and manhole system primarily within existing paved roadways. The proposed Project will be designed to comply with the MassDEP Stormwater Management Policy and Handbook. Surface contours, pavement, vegetation, soils, and other natural and man-made features will be maintained or restored to pre-work conditions. Best Management Practices (BMPs) will be employed to minimize erosion and other potential

environmental impacts during construction as further detailed in Attachment A, Project Description.

MASSACHUSETTS CONTINGENCY PLAN:

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes No; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):

Based on initial research, the Project is located adjacent to no known active MCP sites. Contaminated soils/hazardous materials encountered during construction will be handled, stored, transported and disposed of in accordance with MCP requirements (310 CMR 40), MassDEP policies and all other applicable State and Town regulations. The Proponent will coordinate with an LSP to review release sites identified by the MassDEP in the work area to conduct a pre-construction soil characterization of the route, and to develop a Utility Release Abatement Measure (URAM) plan prior to construction, if required. The URAM would detail procedures to follow for the Contractor installing the new line in suspected contamination and include information on the correct handling and disposal of any contaminated material.

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes No ; if yes, describe which portion of the site and how the project will be consistent with the AUL:_____

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes No; if yes, please describe:_____

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood: N/A

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes No; if yes, please consult state asbestos requirements at <http://mass.gov/MassDEP/air/asbhom01.htm>

Describe anti-idling and other measures to limit emissions from construction equipment: The Contractor will be required to follow MassDEP's anti-idling requirements.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes No

Based on review of the January 2015 listing of National Wild and Scenic Rivers, the project site is not located within a defined federal or state designated Wild and Scenic River
<http://www.rivers.gov/documents/rivers-table.pdf>

If yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River?

Yes ___ No ___; if yes, specify name of river and designation: _____; if yes, will the project result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.

Yes ___ No ___ ;

if yes, describe the potential impacts to one or more of the “outstandingly remarkable” resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document.

Attachment A: Project Narrative

Attachment B: Figures

- Figure 1: Project Location
- Figure 1A: Candidate Route Alternatives
- Figure 2: Existing Conditions
- Figure 3: ACEC and Rare Species
- Figure 4: Historical Resources
- Figure 5: Water Resources
- Figure 6: Impaired Waterbodies
- Figure 7: Article 97 Lands
- Figure 8: Aberjona River Crossing South of Bridge Trenchless Alternative
- Figure 9: Aberjona River Crossing Trenched Alternative
- Figure 10: Aberjona River Crossing North of Bridge Trenchless Alternative
- Figure 11: Mystic River Crossing Trenchless Alternative

Attachment C: Distribution List

Attachment D: List of Permits and Approvals

Attachment E: Excerpts from Massachusetts 2012 Integrated List of Waters

2. U.S.G.S. map (good quality color copy, 8-1/2 x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.

Please see Figure 1 in Attachment A.

3. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.

Please see Figure 2 in Attachment B.

4. Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.

Please see Figures 3 through 11 in Attachment B.

5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).

Not applicable – see Project Description

6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).

Please see Attachment C.

7. List of municipal and federal permits and reviews required by the project, as applicable.
Please see Attachment D.

LAND SECTION

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1))
 Yes No; if yes, specify each threshold:

11.03 (1)(b)3: Conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97.

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Footprint of buildings	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Internal roadways	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Parking and other paved areas	<u>34 ac</u>	<u>0</u>	<u>34 ac</u>
Other altered areas*	<u>80 ac</u>	<u>0</u>	<u>80 ac</u>
Undeveloped areas	<u>1 ac</u>	<u>0</u>	<u>1 ac</u>
Total: Project Site Acreage	<u>115 ac</u>	<u>0</u>	<u>115 ac</u>

* Electric Substations

B. Has any part of the project site been in active agricultural use in the last five years?

Yes No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?

Yes No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? Yes No; if yes, describe:

Figure 7 shows the extent of the Project and Article 97 lands. The Project crosses DCR-owned land that is subject to Article 97 at the Aberjona River and upper Mystic River crossings, Ginn Field owned by the Town of Winchester, as well as the City of Boston's Ryan's Playground at the lower Mystic River crossing. More detail on potential impacts to Article 97 lands is included in the Project Description in Attachment A.

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction?

Yes No; if yes, does the project involve the release or modification of such restriction?
 ___ Yes ___ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? Yes No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes No; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan

<u>Title: City of Woburn Master Plan</u>	<u>Date: 2004</u>
<u>Title: City of Woburn Open Space and Recreation Plan</u>	<u>Date: 2005</u>
<u>Title: Winchester Master Plan – Phase I Report on Housing Neighborhoods Town Center Economic Development</u>	<u>Date: April 8, 2010</u>
<u>Title: Medford Five Year Consolidated Plan</u>	<u>Date: 2010-2015</u>
<u>Title: Medford Square Master Plan</u>	<u>Date: November 2005</u>
<u>Title: Medford Open Space and Recreation Plan Update</u>	<u>Date: 2011</u>
<u>Title: Everett Lower Broadway District Master Plan</u>	<u>Date: Underway</u>
<u>Title: SomerVision – City of Somerville Comprehensive Plan 2010-2030</u>	<u>Date: April 19, 2012</u>

The Project is consistent with the above listed Plans as it will reinforce the electric transmission system and be constructed within an existing utility facility and existing roadways. This project is part of a greater reliability project to support electricity needs in the Boston area and will support the goals in the numerous community's planning documents.

B. Describe the project's consistency with that plan with regard to:

- 1) economic development: The Project will support development and redevelopment projects critical to contributing to the future economic well-being of the area
- 2) adequacy of infrastructure: This project is intended to provide a continued reliable source of electricity to Eversource customers
- 3) open space impacts: This project will not permanently impact open space. Work is proposed within DCR lands, Ginn Field in Winchester, and City of Boston's Ryan Playground. Impacted areas will be restored upon construction completions. The majority of the work is proposed to be completed in existing disturbed areas (roadways or on existing substation parcels). More detail on potential impacts to open space is presented in the Project Description in Attachment A.
- 4) compatibility with adjacent land uses: This project will result in conditions prior to construction being restored post construction, and there the final project will not result in a change to land uses or conflict with adjacent land uses.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA) RPA: Metropolitan Area Planning Council (MAPC)

MAPC has a number of regional plans that apply to economic development, housing, the environment, land use, and the future of the metro area. <http://www.mapc.org/>

D. Describe the project's consistency with that plan with regard to:

- 1) economic development: The Project will support development and redevelopment projects critical to contributing to the future economic well-being of the area, consistent with the economic development goals and plans presented in MAPC's numerous documents.
- 2) adequacy of infrastructure: This project is intended to provide a continued reliable source of electricity to Eversource customers, which supports the numerous economic,

housing, environmental, land use, and metro area goals of MAPC as described in their numerous planning documents.

3) open space impacts: This project will not permanently impact open space. Work is proposed within DCR lands and City of Boston's Ryan Playground. Impacted areas will be restored upon construction completions. The majority of the work is proposed to be completed in existing disturbed areas (roadways or on existing substation parcels), and therefore the project is consistent with MAPC's planning initiatives related to land use and the environment presented on their website.

RARE SPECIES SECTION

I. Thresholds / Permits

- A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? Yes No; if yes, specify, in quantitative terms:

The Project crosses one area mapped by NHESP as Priority Habitat, PH 1448. The proposed work in this area will be the installation of a new underground electric transmission line within an existing easement that contains the existing electric transmission line. The Proponent will consult with NHESP to discuss any requirements to assess this area and mitigate any potential impact. Priority Habitat 1448 also abuts the Project for approximately 670 Linear feet along the Winter Pond side of Woodside Road in Winchester but no impacts to Habitat are expected because work is within the existing paved roadway. Figure 3 shows the extent of Priority and Estimate Habitats with respect to the Routes. Mitigation measures consist of construction period erosion and sediment controls and limiting work to the existing road extent to avoid impacts to Habitat. Furthermore, per 321 CMR 10.14 (6), *construction, repair, replacement or maintenance of ... utility lines, ... within existing paved areas and lawfully developed and maintained lawns or landscaped areas, provided there is no expansion of such existing paved, lawn and landscaped areas* are exempt from the requirements of 321 CMR 10.18 through 10.23 and therefore the work in Woodside Road does not require review by the Division of Fisheries and Wildlife.

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

- B. Does the project require any state permits related to **rare species or habitat**? Yes No
- C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? Yes No.
- D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

- A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? Yes No. If yes,
1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? Yes No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes ___ No; if yes, attach the letter of determination to this submission.
 2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? Yes No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts: Eversource will work with NHESP to identify the species and habitat within the work area and develop construction alternatives to minimize impacts.

3. Which rare species are known to occur within the Priority or Estimated Habitat?

An information request has been prepared for submittal to NHESP under the MESA Process. Feedback from NHESP will identify the rare species known to occur within the Priority Habitat within the work area.

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? Yes No

4. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? Yes No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? Yes No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? Yes No; if yes, specify, in quantitative terms:

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? Yes No; if yes, specify which permit:

Order of Conditions from Winchester and Medford
Chapter 91 RDA from MassDEP

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? Yes No; if yes, has a Notice of Intent been filed? Yes No; if yes, list the date and MassDEP file number: _____; if yes, has a local Order of Conditions been issued? ___ Yes ___ No; Was the Order of Conditions appealed? ___ Yes ___ No. Will the project require a Variance from the Wetlands regulations? ___ Yes ___ No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

As shown on Figure 5 in Attachment B, the new electric transmission line will be installed underground in urban streets, however, the Preferred Route proposes to cross the Mystic River in two locations (in Medford and between Charlestown/Boston and Everett) and the Aberjona River in one location in Winchester. The Company proposes to use an existing spare conduit to route the new line beneath the "lower" Mystic River crossing (between Charlestown/Boston and Everett). The installation of the new electric transmission line will involve temporary alterations within areas subject to protection under the Wetlands Protection Act and 310 CMR 10.02, including the Riverfront Area, Bordering Land Subject to Flooding, Bank, Land Under Water and 100-foot buffer zone.

The Project will require three river crossings as follows:

- the “lower” Mystic River from Boston to Everett, just south-west of the Mystic Substation
- the “upper” Mystic River in the Town of Medford, from South Street to Winthrop Street; and
- the Aberjona River in the Town of Winchester, where Bacon Street crosses the River.

The “lower” Mystic River crossing will not result in resource area impacts as existing conduit will be used to cross the river. Three options are being considered for the Aberjona River crossing in Winchester, to determine a feasible option that minimizes impacts.

1. Trenchless technology (horizontal directional drill or jack and bore) to the south of Bacon Street (Figure 8)
2. Open cut trenching to the south of Bacon Street (Figure 9)
3. Trenchless technology to the north of Bacon Street (Figure 10)

Under Scenario 1, trenchless technology to the south of Bacon Street (Figure 8), the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 1,600 square feet of impact to Bordering Land Subject to Flooding
- Approximately 17,100 square feet of impact to Riverfront Area

Under Scenario 2, trenching to the south of Bacon Street (Figure 9), the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 2,500 square feet of impact to Bordering Land Subject to Flooding
- Approximately 10,000 square feet of impact to Riverfront Area
- Approximately 1,200 square feet of impact to Land Under Water
- Approximately 60 linear feet to Bank

Under Scenario 3, trenchless technology to the north of Bacon Street (Figure 10), the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 4,500 square feet of impact to Bordering Land Subject to Flooding
- Approximately 12,500 square feet of impact to Riverfront Area

Eversource is continuing to assess these three alternative crossing scenarios to determine the most feasible option which minimizes overall resource area impacts as well as impacts to the parklands located on either side of the crossing.

For the crossing from the Mystic River within the Town of Medford, trenchless technology is proposed to be used (Figure 11). Trenchless technology will result in the least impact to wetland resource areas.

Under this scenario, the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 3,000 square feet of impact to Bordering Land Subject to Flooding
- Approximately 13,500 square feet of impact to Riverfront Area

Under this scenario, the following additional temporary impacts to inland wetland resource areas are anticipated in the pipe makeup area:

- Approximately 500 square feet of impact to Bordering Land Subject to Flooding
- Approximately 4,000 square feet of impact to Riverfront Area

- C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Note that all measurements presented below reflect the potential maximum impact to each resource area based on the above-described alternatives.

<u>Coastal Wetlands</u>	<u>Area (square feet) or Length (linear feet)</u>	<u>Temporary or Permanent Impact?</u>
Land Under the Ocean	0	N/A
Designated Port Areas	0	N/A
Coastal Beaches	0	N/A
Coastal Dunes	0	N/A
Barrier Beaches	0	N/A
Coastal Banks	0	N/A
Rocky Intertidal Shores	0	N/A
Salt Marshes	0	N/A
Land Under Salt Ponds	0	N/A
Land Containing Shellfish	0	N/A
Fish Runs	0	N/A
Land Subject to Coastal Storm Flowage	0	N/A
<u>Inland Wetlands</u>		
Bank (lf)	60 lf	T
Bordering Vegetated Wetlands	0	N/A
Isolated Vegetated Wetlands	0	N/A
Land under Water	~1,200 sf	T
Isolated Land Subject to Flooding	0	N/A
Bordering Land Subject to Flooding	~4,500 sf	T
Riverfront Area	~17,500 sf	T

- D. Is any part of the project:

1. proposed as a **limited project**? Yes No; if yes, what is the area (in sf)? ~33,000 sf Riverfront Area
2. the construction or alteration of a **dam**? Yes No; if yes, describe:
3. fill or structure in a **velocity zone** or **regulatory floodway**? Yes No
4. dredging or disposal of dredged material? Yes No; if yes, describe the volume of dredged material and the proposed disposal site:
5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? Yes No
6. subject to a wetlands restriction order? Yes No; if yes, identify the area (in sf):
7. located in buffer zones? Yes No; if yes, how much (in sf) approximately 35,000 sf

- E. Will the project:

1. be subject to a local wetlands ordinance or bylaw? Yes No
2. alter any federally-protected wetlands not regulated under state law? Yes No; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

- A. Does the project site contain waterways or tidelands (including filled former tidelands) that are

subject to the Waterways Act, M.G.L.c.91? Yes No; if yes, is there a current Chapter 91 License or Permit affecting the project site? Yes No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

License No. 4687, June 11, 1963 for Mystic River Crossing in Medford

License No. 4702, June 18, 1963 for Aberjona River Crossing in Winchester

License No. 4701, January 24, 1964 for Mystic River Crossing in Boston/Everett

D. Does the project require a new or modified license or permit under M.G.L.c.91? Yes No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current ___ Change ___ Total ___

** Chapter 91 authorization for non-tidal crossings granted under Final WPA Order of Conditions

If yes, how many square feet of solid fill or pile-supported structures (in sf)? N/A

C. For non-water-dependent use projects, indicate the following:

Area of filled tidelands on the site: _____

Area of filled tidelands covered by buildings: _____

For portions of site on filled tidelands, list ground floor uses and area of each use:

_____ Does the project include new non-water-dependent uses located over flowed tidelands?

Yes ___ No ___

Height of building on filled tidelands _____

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

E. Is the project located on landlocked tidelands? Yes No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:
There is potential for landlocked tideland areas within existing roadways and disturbed areas of the proposed project

F. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? Yes No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? Yes No; (NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

G. Does the project include dredging? Yes No; if yes, answer the following questions:

What type of dredging? Improvement ___ Maintenance ___ Both ___

What is the proposed dredge volume, in cubic yards (cys) _____

What is the proposed dredge footprint ___ length (ft) ___ width (ft) ___ depth (ft);

Will dredging impact the following resource areas?

Intertidal Yes ___ No ___; if yes, ___ sq ft

Outstanding Resource Waters Yes ___ No ___; if yes, ___ sq ft

Other resource area (i.e. shellfish beds, eel grass beds) Yes ___ No ___; if yes ___ sq ft

If yes to any of the above, have you evaluated appropriate and practicable steps

to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?

If no to any of the above, what information or documentation was used to support this determination?

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

Sediment Characterization

Existing gradation analysis results? ___Yes ___No: if yes, provide results.

Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes ___No; if yes, provide results.

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Beach Nourishment ___

Unconfined Ocean Disposal ___

Confined Disposal:

Confined Aquatic Disposal (CAD) ___

Confined Disposal Facility (CDF) ___

Landfill Reuse in accordance with COMM-97-001 ___

Shoreline Placement ___

Upland Material Reuse ___

In-State landfill disposal ___

Out-of-state landfill disposal ___

(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? Yes No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan? Yes No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? Yes No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? Yes No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Municipal or regional water supply	_____	_____	_____
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. _____

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? _____ Will the project require an increase in that withdrawal? ___ Yes ___ No; if yes, then how much of an increase (gpd)? _____

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___ No. If yes, describe existing and proposed water supply facilities at the project site:

	<u>Permitted Flow</u>	<u>Existing Avg Daily Flow</u>	<u>Project Flow</u>	<u>Total</u>
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes ___ No
2. a Watershed Protection Act variance? ___ Yes ___ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___ Yes ___ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? Yes No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? Yes No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for

existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Discharge of sanitary wastewater	_____	_____	_____
Discharge of industrial wastewater	_____	_____	_____
TOTAL	_____	_____	_____

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Discharge to groundwater	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Discharge to municipal or regional wastewater facility	_____	_____	_____
TOTAL	_____	_____	_____

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

	<u>Permitted</u>	<u>Existing Avg Daily Flow</u>	<u>Project Flow</u>	<u>Total</u>
Wastewater treatment plant capacity (in gallons per day)	_____	_____	_____	_____

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes ___ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes ___ No; if yes, what is the capacity (tons per day):

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Treatment	_____	_____	_____

Processing _____
 Combustion _____
 Disposal _____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? Yes No if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? Yes No; if yes, specify which permit:

MassDOT Highway Access Permit and a Construction and Access Permit and an Article 97 long term easement from the DCR

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces	<u>0</u>	<u>0</u>	<u>0</u>
Number of vehicle trips per day	<u>0</u>	<u>0</u>	<u>0</u>
ITE Land Use Code(s):	<u>*</u>		

* The Project primarily consists of installation of underground utilities. Minor modifications at the Woburn and Mystic substations are proposed; however, no change in the post-construction traffic to the substations is anticipated.

B. What is the estimated average daily traffic on roadways serving the site? The project will have temporary impacts related to construction. No change to average daily traffic is proposed.

Roadway	Existing	Change	Total
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement: The Project will not permanently impact traffic, transit or transportation facilities. Temporary impacts will occur during construction but will be mitigated through implementation of Traffic Management Plans as discussed in Section 4.5 of Attachment A.

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site? N/A – Project is underground infrastructure and will not result in increased traffic.

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? Yes No ; if yes, describe if and how will the project will participate in the TMA: N/A – Project is underground infrastructure and will not result in increased traffic.

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? Yes No; if yes, generally describe: The project will cross the MBTA railroad near Assembly Square Drive in Somerville. The project will also result in work along MBTA bus routes.

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)? N/A

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services: The Project will not permanently impact traffic, transit or transportation facilities.

Temporary impacts will occur during construction but will be mitigated through implementation of Traffic Management Plans as discussed in Section 4.5 of Attachment A. The installation of the electric transmission line under the MBTA railroad in Somerville will be done through trenchless method to avoid impacts to the railroad.

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? Yes No ; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? Yes No; if yes, specify which permit:

MassDOT Highway Crossing Permit; a Construction and Access Permit and an Article 97 long term easement from the DCR; MBTA Access Permit.

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site: See Section 3.5 of Attachment A for a list of transportation facilities along the Project Route.

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)?

Potential 60 If _____

2. Cutting of living public shade trees (number)?

_____ No _____

3. Elimination of stone wall (in linear feet)? No

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan: The Project will not permanently impact traffic, transit or transportation facilities. Temporary impacts will occur during construction but will be mitigated through implementation of Traffic Management Plans as discussed in the Project Description in Attachment A.

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))?

Yes No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? Yes No; if yes, specify which permit: DPU Approval under MGL c.164 Sec 72 and M.G.L. c. 40A, s. 3

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Capacity of electric generating facility (megawatts)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Length of fuel line (in miles)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Length of transmission lines (in miles)	<u>7.7*</u>	<u>7.7</u>	<u>7.7</u>
Capacity of transmission lines (in kilovolts)	<u>115 kV</u>	<u>0</u>	<u>115 kv</u>

* Work is proposed in existing easements and roadways. Expansion of easements may be required for River crossings at the Aberjona River and the upper Mystic River crossing. The easement expansions will be less than 1 mile in length.

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)? N/A
2. the facility's current and proposed cooling source(s)? N/A

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? Yes No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services: The Project will support reliability of the electric grid in the Greater Boston area.

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services: The Project purpose is to improve the reliability of electric transmission within the Greater Boston area and address thermal overloads within the existing transmission line. In combination with other planned Greater Boston Area transmission upgrades, the Project provides a system with substantial flexibility to accommodate load growth and potential generator retirements into the foreseeable future.

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? Yes No ; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? Yes No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No; if yes, describe existing and proposed emissions (in tons per day) of:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? Yes No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? Yes No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ___ Yes ___ No; if yes, what is the volume (in tons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ___ Yes ___ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	<u>Existing</u>	<u>Change</u>	<u>Total</u>
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?
___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? Yes No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? Yes No; if yes, attach correspondence

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? Yes No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? Yes No; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? Yes No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes ___ No; if yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources: The Project elements adjacent to historic properties or districts will consist only of in-street installation of the duct bank and cable system. The construction and operation of

the Project will not affect any buildings or structures. The Project Description in Attachment A includes additional detail on Historical and Archeological Resources.

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources: The Proponent will coordinate with the MHC and the local historical commissions, complete any required pre-construction surveys and review, and comply with any construction-related requirements designed to ensure that there are no adverse effects to historic and archaeological resources from the Project.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

(Name) <u>Boston Globe North Zone</u>	(Date) <u>5/3</u>
(Name) <u>Medford Transcript</u>	(Date) <u>5/7</u>
(Name) <u>Somerville Journal</u>	(Date) <u>5/7</u>
(Name) <u>Winchester Star</u>	(Date) <u>5/7</u>
(Name) <u>Woburn Advocate</u>	(Date) <u>5/7</u>

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

4/29/15 

4/30/15 

Date Signature of Responsible Officer
or Proponent

Date Signature of person preparing
NPC (if different from above)

Michael J. Zylich, P.G., LSP
Name (print or type)

Daniel P. Rukakoski, PWS, CWS, PSS
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Attachment A

Project Description

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Section 1

Project Description

The Mystic to Woburn Transmission Project (“Project”) proposed by NSTAR Electric Company d/b/a Eversource Energy (“Company” or “Eversource”) involves the installation of approximately 7.7 miles of new electric transmission line between Eversource’s existing Woburn Substation in Woburn and Mystic Substation in Everett and modifications at the Woburn and Mystic Substations. Modifications within the substations will be within the existing station fence limits. The Project is located in the municipalities of Woburn, Winchester, Medford, Somerville, Everett, and Charlestown (Boston), Massachusetts. The Project is needed to relieve potential overloads on the existing underground electric transmission Line. The new underground line (the “Project”) will operate in parallel with and increase the capacity of the existing electric transmission line. The Project triggers the need for the submittal of an Environmental Notification Form (“ENF”) and other Massachusetts Environmental Policy Act (“MEPA”) review if required by the Secretary of the Executive Office of Energy and Environmental Affairs under MEPA in accordance with the following thresholds in the Code of Massachusetts Regulations (“CMR”):

- 301 CMR 11.03(1)(b)(3): Conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97.
- 301 CMR 11.03(3)(b)1.f.: Alteration of one half or more acres of any other wetlands (Riverfront Area, Bordering Land Subject to Flooding, and potentially Land Under Water).

This narrative provides a description of the proposed Project including existing conditions, project alternatives, project impacts and proposed mitigation measures for review under the MEPA process.

1.1 Proposed Project

The Project involves the installation of a new underground electric transmission line between the existing Woburn Substation and Mystic Substation and parallel to the existing underground electric transmission line (primarily within streets), through the communities of Woburn, Winchester, Medford, Somerville, Charlestown (Boston) and Everett. The Project also involves minor upgrades within the Woburn and Mystic Substations.

The Project will consist of 7.7 miles of new underground electric transmission line to be operated in parallel with the existing underground transmission line. This new line will be a high pressure fluid filled pipe type cable (“HPFF-PTC”) system consisting of three stranded and insulated copper cables installed in a sealed 8-inch steel pipe filled with dielectric fluid.

The 8-inch steel pipe, along with two-inch diameter polyvinyl chloride (“PVC”) conduits for relay and communication cables, will be installed in a nominal 24-inch wide by 60-inch deep trench. Manholes for pulling in and splicing cables, line testing, and maintenance will be installed at spacing intervals of approximately 2,000 to 2,400 linear feet. Preliminary estimates indicate approximately 17 manholes will need to be installed for the system.

The Project also includes the installation of a new series reactor at Woburn Substation to balance power flows between the existing and new lines and modifications to the line termination connections at Mystic Substation. Construction at the Woburn Substation will include construction of foundations for the series reactor and trenching for HPFF-PTC installation.

1.1.1 Project Route

Figure 1 in Attachment B indicates the “Preferred Route” (the Project) and a “Noticed Alternative Route”. The Company, pursuant to M.G.L. c. 164, § 69J and in support of its petition, currently under development, to the Energy Facility Siting Board (“EFSB” or “Siting Board”), conducted a comprehensive alternatives analysis, including a Project Alternatives analysis and a Route Alternatives analysis consistent with the requirements of M.G.L. c. 164, §§ 69H and 69J, to provide a transmission solution that is designed to improve the reliability of the electric system, while minimizing community and environmental impacts and costs. The route alternatives analysis for the Project is summarized in Section 3 of this document. The Project route is primarily located within existing roadways parallel to the existing electric transmission line. The Preferred Route is approximately 7.7 miles long and traverses parallel to the existing underground electric transmission Line and is described below.

Commencing from the Woburn Substation south across an existing electric transmission easement and between existing residences, the proposed route crosses Pond Street in Winchester and continues south on Woodside Avenue to Fletcher Street. Proceeding southwest on Fletcher Street, the route crosses Church Street, which transitions to Bacon Street, and crosses the Aberjona River, through a rotary onto Main Street (Route 38). The route proceeds on Main Street into Medford to another rotary where it heads south on Winthrop Street across the Mystic River and turns east on South Street. At the intersection with Main Street (Route 38), just south of Medford Center, the route transitions to Mystic Avenue in Somerville. Through the rotary, the route traverses south approximately 1,000 feet along Winthrop Street to the Mystic River crossing over Mystic Valley Reservation land – Veterans Memorial Park adjacent to the Winthrop Street Bridge, where it turns on South Street heading east. The Preferred Route proceeds east 1,700 feet to Route 38 and turns south on Route 38/Mystic Avenue on the west side of I-93, traversing approximately 9,050 feet in the Medford and Somerville commercial district along Route 38, crosses McGrath Highway (Route 28) and crosses under the elevated portion of I-93 in Somerville. Turning northeast, the Preferred Route crosses under I-93 on Shore Drive and takes an immediate turn south on the east side of I-93 onto the parallel residential street named Bailey Road for 1,800 feet. Continuing further south, the Preferred Route crosses the Route 28/McGrath Highway intersection on the east side of I-93 and proceeds 2,400 feet on Route 38/Mystic Avenue on the east side of I-93 to the Home Depot parking lot where it transitions at an angle off Mystic Avenue through the parking lot for about 550 feet on private property adjacent to the Line 211-514, and then crosses under Assembly Square Drive and the MBTA railroad by trenchless method approximately 500-600 feet to Arlington Avenue where it traversing 1,150 feet. The Route makes a final turn east, traversing approximately 500 feet on and across Alford Street to the existing conduit/tunnel crossing under the Mystic River to the nearby Mystic Substation entry location.

1.1.2 Ancillary Facilities

The Project will require upgrades at Eversource’s Woburn and Mystic Substations. The locations of these substations are shown on Figure 1. The installation of a new electric

transmission line will require the installation of a new series reactor at Woburn Substation to balance power flows between the existing and new lines, and modifications to the line termination connections at Mystic Substation. The modifications for the Project will not require an expansion of the fence lines at either of these substations. Construction in the Woburn Substation will involve construction of foundations and support structures for the series reactor. The work at both substations will also include trenching for the line installation.

1.2 Project Alternatives

The Company's alternatives analysis included evaluating:

- The "No Action" Alternative
- Transmission Solution Alternatives
- Non-Transmission Alternatives
- Transmission Route Alternatives

These alternatives are described in detail in Section 3 and depicted in Figure 1-A.

Section 2

Existing Conditions and Potential Impacts

2.1 Land Uses

The Project is located within highly urbanized areas of Woburn, Winchester, Medford, Somerville, Boston and Everett. The Project extends between two existing Eversource substations: the Woburn Substation and the Mystic Substation. Exiting the Woburn Substation in the southeast corner, the route parallels the existing electric transmission line within an existing easement that traverses residential properties to connect to the local roadways (Pond Street at Woodside Road). From this point, the route in between the two substations primarily follows existing roadway rights-of-way through urbanized areas, including dense and moderately dense residential areas, mixed commercial areas and transportation corridors, including MBTA rail lines and MassDOT roadways. The Project crosses through a Home Depot parking lot in Somerville. The Project also traverses parkland including Ginn Recreational Park at the Aberjona River Crossing in Winchester, Mystic Valley Parkland and Veterans Memorial Park recreational fields at the upper Mystic River crossing in Medford and Ryan Playground at the lower Mystic River crossing in Boston. Parkland impacts are discussed in more detail below. Figure 2 shows existing land-use conditions.

Land use density was assessed by tallying the total number of residential housing units, commercial, industrial uses, sensitive receptors (i.e. police and fire stations, hospitals, schools, nursing homes, funeral homes, churches, daycares, state and municipal parks and recreation facilities, and elder care facilities) along the candidate routes. Table 2-1 tallies the relative density of the residential housing units, commercial/industrial buildings, sensitive receptors, and open space/recreation areas along the Project route. Since the proposed Project would be installed entirely underground in streets, there are no direct or permanent impacts to land uses along either route. Access to the land uses listed in Table 2-1 would be temporarily effected during construction, and under some circumstances would be affected by noise and dust during trench construction and pipe installation along the Project Route. In summary, the Project Route traverses approximately 4.0 miles of primarily single residence housing, with two apartment buildings located on Winthrop Street near the Route 38/High Street/Winthrop Street Rotary all the way to the junction of South Street and Route 38. The remaining approximate 3.2 miles of the Preferred Route is located in mixed commercial use areas primarily along Route 38/Mystic Avenue.

Land Use	Preferred Route Noticed Alternative Route
Residential Housing Units	633
Commercial/Industrial Buildings	80
Sensitive Receptors	7
Open Space/Recreation Areas	5

2.2 Historical and Archeological Resources

The Project evaluation of historic resources along the Preferred Route included a search of archival records at the Massachusetts Historic Commission (“MHC”) offices to inventory buildings, local historic districts, known archeological sites, and National Register-listed individual buildings and districts. Historic resources that are tourist attractions or recreational uses were also included in the search. Locations that were listed on the federal or state historic registers and archeological record were evaluated as part of the historic resource category. Figure 4 shows the extent of historical and archeological resources.

The Project Route will pass in close proximity to or traverse Inventoried Historic Areas or Local and National Register Historic District boundaries, and a number of Individually Inventoried or listed (state or federal) buildings or structures. The Project Route passes within 500 feet of three known pre-historic archeological sites. There are approximately 64 Individually Inventoried historic properties abutting the Preferred Route. The Project elements in proximity to such Historic and Pre-historic archaeological resources will consist of in-street installation of the pipe and cable system. The in-street construction and operation of the Project will not adversely affect any historic buildings or structures.

In parallel with the MEPA review process, the Company will coordinate with the local historical commissions, and initiate formal consultation with the MHC, complete any subsequent MHC-required pre-construction surveys and review if required, and comply with any warranted construction-related requirements (e.g., Site Avoidance and Protection Plan (“SAPP”)) designed to ensure that there are no adverse effects to historic and archaeological resources from the Project.

2.3 Wetlands and Waterways

As previously described and shown on Figure 5, the majority of the new electric transmission line will be installed underground in urban streets, however, the Preferred Route proposes to cross the Mystic River in two locations (in Medford and between Charlestown/Boston and Everett) and the Aberjona River in one location in Winchester. The Company proposes to use an existing spare conduit to route the new line beneath the “lower” Mystic River crossing (between Charlestown/Boston and Everett), thereby avoiding associated impacts with a new crossing of the river.

The installation of the new electric transmission line will involve temporary alterations within areas subject to protection under the Wetlands Protection Act and 310 CMR 10.02, including the Riverfront Area, Bordering Land Subject to Flooding, Bank, Land Under Water and 100-foot buffer zone.

The Project will require two new river crossings as follows:

- the “upper” Mystic River in the Town of Medford, from South Street to Winthrop Street; and
- the Aberjona River in the Town of Winchester, where Bacon Street crosses the River.

Three options are being considered for the Aberjona River crossing in Winchester, to determine a feasible option that minimizes impacts.

1. Trenchless technology (horizontal directional drill or jack and bore) to the south of Bacon Street (Figure 8)
2. Open cut trenching to the south of Bacon Street (Figure 9)
3. Trenchless technology to the north of Bacon Street (Figure 10)

Under Scenario 1, trenchless technology to the south of Bacon Street (Figure 8), the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 1,600 square feet of impact to Bordering Land Subject to Flooding
- Approximately 17,100 square feet of impact to Riverfront Area

Under Scenario 2, trenching to the south of Bacon Street (Figure 9), the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 2,500 square feet of impact to Bordering Land Subject to Flooding
- Approximately 10,000 square feet of impact to Riverfront Area
- Approximately 1,200 square feet of impact to Land Under Waterbody
- Approximately 60 linear feet to Bank

Under Scenario 3, trenchless technology to the north of Bacon Street (Figure 10), the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 4,500 square feet of impact to Bordering Land Subject to Flooding
- Approximately 12,500 square feet of impact to Riverfront Area

Eversource is continuing to assess these three alternative crossing scenarios to determine the most feasible option which minimizes overall resource area impacts as well as impacts to the parklands located on either side of the crossing.

For the crossing from the Mystic River within the Town of Medford, trenchless technology is proposed to be used (Figure 11). Trenchless technology will result in the least impact to wetland resource areas. Under this scenario, the following temporary impacts to inland wetland resource areas are anticipated in the workspace area:

- Approximately 3,000 square feet of impact to Bordering Land Subject to Flooding
- Approximately 13,500 square feet of impact to Riverfront Area

Under this scenario, the following additional temporary impacts to inland wetland resource areas are anticipated in the pipe makeup area:

- Approximately 500 square feet of impact to Bordering Land Subject to Flooding
- Approximately 4,000 square feet of impact to Riverfront Area

The Mystic River and Aberjona River are subject to regulation under Chapter 91 Waterways regulations administered by the MassDEP, and therefore Chapter 91 authorization would need to be installed to allow for construction work. A record review at MassDEP confirmed

that there are existing Chapter 91 licenses for the existing electric transmission line under the “upper” and “lower” Mystic River, and Aberjona River issued in 1963 and 1964.

The installation of the new transmission line under the “lower” Mystic River will not result in any impacts since existing conduit will be used, and a Chapter 91 license was obtained for that installation.

A Chapter 91 authorization for the Aberjona River and “upper” Mystic River could be obtained with a Final Order of Conditions issued under the Wetlands Protection Act (“WPA”) per the Chapter 91 regulations 310 CMR 9.05(3)(g)3., which allows for *“placement in a non-tidal river or stream subject to jurisdiction under 310 CMR 9.04(1)(e) of fill or structures for which a final Order of Conditions has been issued under M.G.L. c. 131, § 40 and 310 CMR 10.00: Wetlands Protection, and which does not reduce the space available for navigation; such fill or structures are limited to...pipelines, cables, conduits, sewers, and aqueducts entirely embedded in the soil beneath such river or stream.”*

2.4 Rare Species

The Project crosses an area mapped by NHESP as Priority Habitat, PH 1448. The proposed work in this area will be the underground installation of a new electric transmission line parallel to the existing line within an existing easement. The Company will consult with NHESP to discuss any requirements to assess this area and mitigate any potential impact. PH 1448 also abuts both the Preferred Route and Noticed Alternative Route for approximately 670 linear feet along the Winter Pond side of Woodside Road in Winchester. Figure 3 shows the extent of Priority and Estimate Habitats with respect to the Routes. Mitigation measures consist of construction period erosion and sediment controls and limiting work to the existing road extent to avoid impacts to Habitat.

Per 321 CMR 10.14 (6), *construction, repair, replacement or maintenance of ... utility lines,... within existing paved areas and lawfully developed and maintained lawns or landscaped areas, provided there is no expansion of such existing paved, lawn and landscaped areas* is exempt from the requirements of 321 CMR 10.18 through 10.23 and therefore does not require review by the Division of Fisheries and Wildlife.

2.5 Article 97 Lands

The Project route crosses DCR-owned land that is subject to Article 97 of the Amendments to the Constitution of the Commonwealth (“Article 97”) at Mystic Valley Parkway and Mystic Lakes at the Aberjona River crossing in Winchester, Mystic Valley Parkland and Veterans Memorial Park recreational fields at the “upper” Mystic River crossing, as well as the City of Boston’s Ryan Playground at the “lower” Mystic River crossing. According to Article 97, projects involving the “conversion of land” held or owned by the Commonwealth for natural resource purposes are subject to legislative approval. Along the Project route both sides of the Aberjona River and Mystic River (at the upper crossing) are owned by the Commonwealth of Massachusetts and managed by the DCR. The land associated with Ryan Playground along the lower Mystic River crossing along the Project route is owned by the City of Boston and managed by Boston Parks and Recreation. Eversource has an existing easement on Ryan Playground for underground conduit and cables that cross this property. Eversource is evaluating using this easement for the installation of the new electric transmission line cable. Figure 7 shows Article 97 lands and roadways.

2.6 Public Shade Trees

Massachusetts General Law Chapter 87 defines public shade trees as all trees within a public way or on the boundaries thereof. Based on field reconnaissance the Company does not currently anticipate the need to cut any public shade trees in the public way or along boundaries of the public way to facilitate construction of the Project. Nonetheless, a final assessment will be conducted in consultation with the applicable municipal tree wardens.

2.7 Land Disturbance and Stormwater Runoff

The Project consists of installation of an underground pipe and manhole system primarily within existing roadway rights-of-way, except for the proposed river crossings described in Section 2.3, and railroad crossings. As such, land disturbance will be limited to relatively narrow trenches and soil will be hauled off-site to a managed soil handling site and not be stockpiled over night or during rain events in the streets. Therefore, the potential for land disturbance and soil erosion or sedimentation is minimal. As described in Section 4.4, the Company comply with applicable provisions of the MassDEP Stormwater Management Policy and will implement Best Management Practices (“BMPs”) for the control of soil removed and hauled from street work zone, and for control of erosion and sedimentation at work areas near wetland resources and at soil management areas.

2.8 Traffic Congestion and Transportation Resources

Table 2-2 summarizes the percentage of road segment lengths with low, moderate, and high potential traffic congestion for the Preferred and Noticed Alternative Routes. Due to the general location of the Project in a dense urban area, the Project route is located on roads with daily high-volume commuter traffic, including Route 38/Bacon Street/Main Street in Winchester (residential land use), and Route 38/Winthrop Street/Mystic Avenue in Medford and Somerville, which are all commercial districts. Approximately 3.6 miles of the Preferred Route traverse MBTA bus routes. The Project also crosses MBTA railroad in Somerville.

Traffic Congestion Potential Rank	Preferred Route (In. ft.)/Percent of Entire Length of Route
Low Potential	3,950/ 10%
Moderate Potential	19,900/ 53%
High Potential	12,430/ 33%

The Project will not permanently impact roadways or result in increased traffic on roadways. Construction impacts will be mitigated through traffic management plans, use of trenchless technology under railroad crossings, maintaining two-way traffic as much as possible, and timing work during off-peak times as practicable.

2.9 Noise

This Section evaluates the potential for noise generated during construction to affect noise receptors along the Preferred Route and Noticed Alternative Route.

The potential for noise impacts from construction in public roads is a function of the equipment used and their operating noise levels, the hours of operation, ambient noise levels, and the proximity of sensitive receptors to the construction work zone or activity. Civil construction that may generate temporary noise above ambient levels includes trenching and manhole excavation, ledge removal, and pipe installation, backfilling, cable splicing, and repaving operations.

All of the potential noise impacts associated with the Project will be limited to the localized construction zone area. Noise from construction will have the potential to affect adjacent residences and commercial businesses and pedestrians near the work zone.

Construction associated with the installation of the Project is anticipated to extend through a 20-month period from April 2017 through December 2018, with the potential for final pavement restoration to extend beyond the end of the construction period as it may be scheduled around seasonal restrictions.

Construction and installation of the new electric transmission cable system will follow the same basic construction sequence regardless of the route selected. Consequently, the types and duration of construction-related noise will be similar regardless of the route. The relative impact of construction-related noise along each route will depend in part on the total length of the active work zone and the proximity of residences, commercial businesses and pedestrians along each route.

2.10 Dust Control/Air Quality

Similar to other utility infrastructure in the streets such as water and sewer pipelines, there is the minor potential for fugitive dust and emissions from the trench construction process along the Project Route. As described in detail in section 4.8, the Company will minimize the potential for airborne dust from earth disturbing activities by requiring its contractors to place water trucks with misters in or near the work areas during construction activities. In addition, excavated soils will be directly transferred from the trench to a covered truck to minimize the potential for the release of dust and for soil migration from the work area.

Section 3

Project Alternatives

Pursuant to the ENF requirement to describe the feasible project alternatives, this section describes the alternatives analysis undertaken by the Company to avoid or minimize damage to the environment to the greatest extent feasible. As previously noted, the Company, pursuant to M.G.L. c. 164, § 69J and in support of its petition to the EFSB conducted a comprehensive alternatives analysis, including a Project Alternatives analysis and a Route Alternatives analysis. The Company's alternatives analysis included evaluating:

- The "No Action" Alternative
- Transmission Solution Alternatives
- Non-Transmission Alternatives
- Transmission Route Alternatives

The Company's overriding goal throughout the planning, alternatives analysis, and design phases of the Project has been to select the Project approach alternative that best meets the Project need, with a minimum impact on the environment, at the lowest possible cost.

3.1 No Action Alternative

Conceptually, the Company first assessed a no-action solution. With the No-Action alternative, the Company would not pursue construction or the development of any new transmission facilities nor supply resources such as Demand Side Management ("DSM") measures and new generation sources, but instead would continue to rely upon the existing electric system configuration. The Independent System Operator – New England ("ISO-NE") Working Group and the Company concluded that the overloads on the existing transmission Line cannot be resolved or mitigated by relying on the existing facilities' configuration. Moreover, these overloads cannot be mitigated by interim solutions such as generation re-dispatch or other system operator action. Accordingly, the No-Action Alternative was dismissed from consideration.

3.2 Transmission Solution Alternatives

After a thorough evaluation, ISO-NE selected a comprehensive transmission solution called the "AC Plan" to bolster the region's electric power grid in the Greater Boston Area and ensure continued reliability into the future, including the Project, a new underground electric transmission line between Woburn Substation and Mystic Substation that increases the existing electric transmission line's capacity and thereby increase system reliability.

The proposed Project solution includes parallel connections of new cables with the cables of the existing transmission line to operate as one circuit with higher capacity. This solution requires substation upgrades, all within the existing fence lines of the Woburn and Mystic Substations. The substation upgrades associated with increasing the existing transmission line's capacity include installing a new series reactor at Woburn Substation to balance power flows between the existing and new cables, and swapping the substation termination with the existing termination for the existing transmission line at Mystic

Substation. A summary of the Company's evaluation of Transmission Solution Alternatives follows.

In the course of developing the proposed transmission solution to the existing Line overloads for the AC Plan, the Company considered two basic types of transmission solution alternatives: (1) options to increase the existing Line's capacity so that it does not overload ("Type 1"), and (2) adding new lines, series circuit breakers or autotransformers elsewhere to address the contingencies that can cause existing Line overloads ("type 2").

As part of the Greater Boston Updated Needs Assessment ("Needs Assessment"), the ISO-NE Working Group used load flow analysis to assess the performance of the area transmission system under a series of defined "contingency" situations. The Company recognized early that the sheer volume of new facilities in a Type 2 solution would lead to many distinct projects and a much higher cost as compared to the simpler Type 1 options for increasing the existing Line's capacity. Therefore, a type 2 solution was not further considered.

The Company evaluated Type 1 Transmission Alternatives. Because there are no overhead transmission line right-of-ways or options available between the Woburn and Mystic Substations, the Company initially identified four underground transmission line alternatives that could increase the existing Line's capacity and potentially resolve the existing Line overloads identified Needs Assessment. All four options would increase the capacity of the existing Line between the Woburn Substation and Mystic Substation, but not by equal amounts. In order to resolve the overloads, a Type 1 transmission solution would need to yield a minimum summer long-term emergency ("LTE") rating of the existing Line.

After concluding that two options, an HPFF-PTC cable system, and an XLPE cable system were the best transmission solution alternatives to meet the identified need, the Company further compared these two options. The Company first determined that the environmental and community impacts during construction would be similar for these two options, except that the XLPE option may involve additional impacts associated with more manholes and with a crossing of the lower Mystic River where its cables cannot be placed within an existing spare pipe, as the HPFF-PTC option can. Other considerations for comparing these two transmission solution options are electrical performance, reliability and cost.

Overall, the Company determined that the preferred transmission solution option is to install a new HPFF-PTC system to operate in parallel with the existing Line. The HPFF-PTC system is preferable for this Project because it will require fewer manholes, which is significant with respect to existing dense utility conditions, and HPFF-PTC has a much lower cost for this application; particularly because of the availability of the existing spare pipe beneath the Mystic River.

The proposed solution includes parallel connections of these cables with the cables of the existing Line to operate as one circuit with higher capacity. This solution requires substation upgrades at Woburn and Mystic Substations. The substation upgrades associated with increasing the existing Line capacity include installing a new series reactor at Woburn Substation to balance power flows between the existing and new cables, and

swapping the substation termination with the existing termination for the existing Line at Mystic Substation and the existing line pressurization equipment.

3.3 Non-Transmission Solution Alternatives

The Company engaged London Economics International (“LEI”) to assess the feasibility and cost of non-transmission alternatives (“NTA”) to the Mystic to Woburn Transmission Project. As input to the LEI Report, the Company identified the specific size of resources and their specific locations within the transmission system that would be needed to mitigate contingency transmission overloads absent construction of the new Line.

Also as input to the non-transmission study, the Company also conducted dispatch optimization analyses to determine the resources needed to address thermal overloads in the Greater Boston study area if construction of the new Line were to be deferred.¹ This assessment considered the reliability needs for the projected 2023 transmission system serving the Greater Boston study area under contingency conditions. The analysis identified the specific size of resources and their specific locations within the transmission system that would be needed to mitigate transmission overloads seen on the 2023 transmission system absent construction of the new Line.

Using this information, LEI began by identifying a broad range of possible NTA technologies for consideration, including several types of generation sources, utility-scale solar with and without storage, distributed-scale solar with and without storage, battery storage, active demand response, and passive demand response (e.g. energy efficiency).

LEI assessed the ability of various non-transmission technologies to address contingency conditions at each location. LEI also identified the gross and net levelized cost of entry (“LCOE”) for each technically feasible technology, and used this information to calculate the annual cost to ratepayers of deferring construction of the new line using these technologies. LEI determined that the total net direct cost of the least cost technically feasible NTA solution would be significantly higher than the proposed underground transmission Line project. The higher cost to customers of the non-transmission alternative to the transmission Line, combined with the physical and logistical difficulties of implementing such a solution in a timely and lasting fashion, makes an NTA a substantially less desirable solution to the identified need. Overall, the Mystic to Woburn Transmission Project better meets the goal of providing a robust, secure and reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

3.4 Transmission Route Alternatives

Following an analysis of a variety of potential project alternatives, as described in Section 3.2, the Company determined that the preferred solution to meet the identified Project need at the lowest reasonable cost and meet reliability standards is to install a new underground HPFF-PTC transmission line between the existing Woburn Substation and the Mystic Substation. This section describes the process the Company conducted to select a Preferred Route and a Noticed Alternative Route for the proposed new underground transmission line.

¹ The modeling assumed that all other elements of the AC Solution Plan are built.

The Company together with its engineering and environmental consultants, developed and implemented a comprehensive analytical process to identify a reasonable variety of potential candidate transmission routes for screening and analysis in order to ensure that a superior route was not overlooked and that the optimal route was selected consistent with the EFSB's standards and applicable precedents, as well as MEPA environmental standards and thresholds.

The route selection process was initiated by defining a geographic "study area" for potential route corridors and developing objective initial route corridor guidelines and candidate alternative route evaluation criteria for later ranking and scoring. The Company, while looking for "geographic diversity", initially identified the Route Study Area using United States Geological Survey (USGS) maps, Massachusetts Geographic Information System (MassGIS) data, aerial photography, and field reconnaissance to identify existing linear corridors that would support routing of a new circuit between the Woburn and Mystic substations.

The focus of this initial mapping exercise was to find existing infrastructure corridors for a potential transmission line route that are located adjacent to or within existing ROWs or corridors, including roadways, railroads, electric transmission lines, and natural gas pipelines. These existing corridors are typically relatively direct, have few turns, avoid private property, and were found to generally minimize the overall length of the proposed line between the Woburn and Mystic Substations. This initial mapping was also used to identify potential resource areas important to the evaluation process such as parks, conservation land or reservations; water supply reservoirs; and, wetland and river crossings.

As stated, existing routing opportunities identified in the Project study area include existing transmission ROWs, active and abandoned rail beds, and road and highway ROWs. Use of private lands, undeveloped "greenfield" parcels, and lands in active recreations or open space use were observed and documented, but not considered as practical routing opportunities.

Using mapping and field verification, the Company eliminated two of the four preliminary route corridors from further consideration and evaluation because they were considerably longer and had identified constraints that would otherwise not provide opportunities to minimize environmental and community effects when compared to the other two initial route corridors.

The Company then identified six alternative candidate routes and proceeded to evaluate these candidate routes (see Figure 1). Each of the six candidate routes was scored and ranked based on eighteen built, natural resource, and design/construction criteria.

A scoring and weighting system was developed to allow for unweighted and weighted ranking of the candidate routes with respect to each other. The Company used these scores, together with conceptual cost estimates and a reliability assessment of each candidate route, to select a Preferred Route and a geographically-distinct Noticed Alternative Route (see Figure 1-A).

The Company has therefore determined that the Preferred Route is overall the best of the candidate routes in terms of the balance of built and natural resource environment, design/construction feasibility, and overall costs. The Preferred Route represents the shortest and most direct route, and it avoids, to the extent possible, major traffic congestion complications and disruptions in municipal centers with a high concentration of commercial or residential units. The Preferred Route also has the fewest road segments with narrow street widths and utility-dense roadways. The Company also selected a

feasible alternative or “Noticed Alternative”. The Preferred and Noticed Alternative Routes are further described and a summary of a comparison are provided as follows.

Both routes are depicted on the figures in Attachment B.

3.4.1 The Selection of the Preferred and Noticed Alternative Routes

Preferred Route

The **Preferred Route** for the new Mystic to Woburn Transmission Project is approximately 7.7 miles long and traverses parallel to the existing underground electric transmission line, heading from the Woburn Substation from the southeast corner through an existing easement to the Pond Street/Woodside Road intersection in Winchester. The route then follows existing roads through Winchester, Medford, Somerville, and Charlestown (Boston), terminating at the Mystic Substation in Everett. This route requires two river crossing: the Aberjona River in Winchester and the Mystic River in Medford (the “upper” Mystic River crossing). The new transmission line will be installed in existing conduit under the Mystic River between Charlestown (Boston) and Everett (the “lower” Mystic River crossing), and will exit the conduit in an existing manhole in the Mystic Substation.

Noticed Alternative Route

The **Noticed Alternative Route** is approximately 9.2 miles and proceeds from the southeastern corner of the Woburn Substation parallel to the existing underground transmission line through an existing easement to the Pond Street/Woodside Road intersection in Winchester. The route then follows existing roads through Winchester, Medford and Everett. This route includes one river crossing at the Malden River, between Medford and Everett.

Ancillary Facilities

The Project will require changes at the Company’s Woburn and Mystic Substations. Regardless of the route selected, the installation of a new electric transmission line will require a new series reactor at Woburn Substation to balance power flows between the existing and new lines and swapping the existing termination for the existing transmission line at Mystic Substation. The modifications for this Project will not require an expansion of the fence lines at either substation site, and will not require a zoning exemption in the Town of Woburn, or any environmental resource permits. Therefore, ancillary facilities associated with the Project do not materially affect the choice between the Preferred Route and the Noticed Alternative Route.

3.4.2 Preferred Route and Noticed Alternative Route Comparison

Conclusion

The built and environmental resource comparison between the Preferred Route and Noticed Alternative Route for the Mystic to Woburn Transmission Project revealed the following differences.

1. The Preferred Route is approximately 1.5 miles shorter than the Noticed Alternative Route.
2. The Preferred Route abuts 471 fewer residential units, 88 fewer commercial/industrial buildings, eleven fewer sensitive receptors, and has one additional recreational area than the Noticed Alternative Route.

3. Based on its shorter length and fewer linear feet of high potential traffic congestion roadways and roadways with MBTA bus service, the Company determined that the Preferred Route has the lower potential for construction-related traffic impacts, which will result in fewer construction costs, and less potential to adversely affect the construction schedule.
4. Overall, because the Preferred Route is shorter and has significantly less residential, commercial and industrial buildings, work along the Preferred Route has the potential to result in less construction noise impacts overall, and for a significantly fewer number of residences, commercial and industrial buildings, and sensitive receptors.
5. The Preferred Route does not traverse in the vicinity of active MCP sites, while the Noticed Alternative Route traverses in the vicinity of seven. The Company has concluded that the Preferred Route has significantly less potential to encounter contaminated soil during construction.
6. Construction of the New Line would entail the same primary construction activities and sequence regardless of the route selected. Generally dust and emissions from equipment can be sufficiently mitigated with appropriate BMPs and emissions controls. However, because the Preferred Route is approximately 1.5 miles shorter than the Noticed Alternative Route, the potential for adverse effects from dust and equipment emissions would be less along the Preferred Route as there are a lesser number of residences, businesses and sensitive receptors along this route.
7. The Preferred Route passes fewer total individual historic places or buildings. Neither route passes individual structures that are open to visitation by the public. The Preferred Route passes fewer historic places (i.e. 64 vs. 71) than the Noticed Alternative Route, however, since the Project will have little potential to adversely impact these individual properties during construction, the Company determined that there is no meaningful difference between the Preferred Route and Noticed Alternative Route with respect to their potential to impact historic properties or buildings.
8. While the proposed trenchless methods for river crossings would avoid direct impacts to river and wetland resources, the river crossings for the both the Preferred Route and Noticed Alternative Route are subject to filing a NOI application under the WPA regulations administered by the Winchester and Medford Conservation Commissions, and other associated resource permits (i.e. local wetland by-laws/ordinances, Chapter 91 Waterways and ACOE Section 10). The Company determined that there is no meaningful difference between the Preferred Route and Noticed Alternative Route in terms of wetland resource filing requirements.
9. Both the Preferred Route and Noticed Alternative Route involve routing and potential easement acquisitions within Article 97 jurisdiction. The Company has determined that these permitting implications are comparably similar and does not appreciably affect the determination of the selection of the Preferred and Noticed Alternative.

Table 3-1 summarizes the environmental comparison results for the Preferred and Noticed Alternative Routes. Primarily because of its greater length, the Noticed Alternative Route has greater potential for disruption and construction impacts associated with the built environment, including more potential disruption of individual residences, commercial

businesses, and sensitive receptors; more potential to adversely affect traffic congestion; more potential to elevate noise and dust levels near residences, commercial businesses, sensitive receptors and environmental resources. On the basis of this analysis, the Company has concluded that the Preferred Route is superior to the Noticed Alternative Route with respect to built and environmental resource impact criteria and there is no material difference between the routes in terms of reliability. A +/-/- rating is used to summarize the results and compare the routes, with a + symbol indicating that the route would have the lesser amount of impact for that particular criterion. Therefore, the Preferred Route for the new Mystic to Woburn Transmission Project will best meet the identified need at the lowest reasonable cost and with the least environmental impact.

Table 3-1 Comparison of Preferred Route and Noticed Alternative Route Effects		
Built and Environmental Resource Impact Criteria	Preferred Route	Noticed Alternative Route
Land Use	+	-
Traffic Congestion	+	-
Noise	+	-
Contaminated Soil (Oil and Hazardous Materials)	+	-
Dust/Air Quality	+	-
Historic/Archaeological Resources	=	=
Wetlands/Waterways/Article 97 Filings	=	=
Land Disturbance/Erosion Control	+	-
+ indicates less potential for impact = indicates no difference between routes - indicates more potential for impact		

Section 4

Mitigation Measures

This Section summarizes the mitigation, compliance and monitoring measures the Company proposes to implement in order to minimize impacts during construction of the proposed Project.

Potential impacts to the built environment and natural resource environment resulting from the construction process will be temporary in nature and will be mitigated. Construction mitigation measures include traffic management, construction noise control, stormwater runoff and sediment migration control, dust control to protect air quality, protection of public shade trees, and the appropriate management of excavated soils. These measures are discussed in greater detail in the following sections.

At various points in the trenching and construction process, it will be necessary to excavate open trenches that may temporarily impede access to residences, businesses, and parking. During the trenching and pipe installation procedures, the Company and the construction contractor will make every reasonable effort to notify affected residences and businesses prior to construction in their area, and take measures to maintain access such as using steel plates over open trenches when not working directly on the pipe installation process. At the end of each work day, any remaining open trenches will be covered with securely-anchored steel plates to withstand traffic loading.

4.1 Land Use Mitigation

Land use and facility access impacts associated with the Project will be temporary in nature and confined to the area of construction work zone that ranges from 100 to 400 linear feet and associated work time. On average, under normal trenching conditions, the duration of construction activity associated with pipe installation at any one location is about seven days. In some locations, evening construction may be more appropriate. Work hours along the construction route will be restricted, to the extent possible, to the most appropriate work hours when progressing through areas with sensitive receptors such as hospitals, schools, and playgrounds. The Company will coordinate closely with municipal officials, including Police, Fire and School Department officials, and Recreation and Park Managers to identify land and facility use timeframes and concerns, develop work schedules that minimize access constraints, and implement appropriate mitigation measures to minimize disruption during construction.

4.2 Historical and Archeological Resource Mitigation

As previously noted, the Project will involve trench and manhole excavation in urban streets through inventoried historic districts with a number of Individually Inventoried or listed (state or federal) buildings or structures. Trench and manhole excavations in the streets will not likely affect abutting buildings or structures. Notwithstanding the unlikelihood of impacts to historic places from this activity, Eversource will undergo the MHC review process for historic resources as described below.

Historic archaeological resources or places could be affected during construction by potentially disturbing undiscovered archeological resources during trench excavation, or disrupting access to historic places, and/or generating noise and dust that can be a temporary nuisance to residents or patrons of historic places.

The Company will coordinate with the MHC and the local historical commissions, complete any required pre-construction surveys and review, and comply with any construction-related requirements designed to ensure that there are no adverse effects to historic and archaeological resources from the Project.

4.3 Wetlands/ Waterways Mitigation

Most work will occur within the limits of existing roadways and disturbed areas. A total of three waterway crossings are proposed (one existing and two proposed): the Aberjona River in Winchester, the upper Mystic River in Medford and the lower Mystic River between Charlestown (Boston) and Everett. The lower Mystic River crossing will use existing conduit to avoid impacts to the river. The upper Mystic River crossing is proposed to use trenchless technology to avoid work within the waterway. The construction set-up for the trenchless method will involve temporary alterations within the regulated resources defined in the Massachusetts WPA and 310 CMR 10.02, including Riverfront Area. Eversource is conducting a comprehensive alternatives analysis of trench and trenchless design/construction options and opportunities to minimize wetland resource area impacts at the Aberjona River crossing. Potential impacts to Riverfront Area, Bordering Land Subject to Flooding, Bank and Land Under Water are anticipated. The Project will comply with the applicable provisions and mitigation requirements under the Wetland Protection Act regulations 310 CMR 10.00 et seq, Chapter 91 Waterways regulations 310 CMR 9.00, and Water Quality Certification regulations 314 CMR 9.00.

The Project will require a NOI application filing under the WPA regulations administered by the Winchester and Medford Conservation Commissions, the Town of Winchester Chapter 13 – Wetlands By-laws, the City of Medford Chapter 87 – Wetlands Ordinance, and Chapter 91 authorization under the Public Waterfront Act. In addition, the Project crosses the natural causeway of Winter Pond in Winchester on Woodside Avenue. In its local and state applications, the Company will identify work procedures and indicate on project drawings the location of and installation procedures where erosion and sedimentation control barriers and dewatering basins, if necessary, will be installed, and a description of soil and vegetation restoration procedures following construction.

4.4 Land Disturbance/Erosion Control Mitigation

During excavation activities associated with the Project, the Company will implement appropriate BMPs for the control of erosion and sedimentation in active work zones. Regular inspections will be undertaken by the Environmental Inspector to ensure that erosion and sediment control procedures and features are implemented and maintained. In any location of the street work zone where stormwater runoff discharges to a local storm drain or catch basin in an active construction zone or trench area catch basin inlet protection will be installed prior to construction. Catch basin inlet protection procedures will be site-specific, but may consist of one or a combination of techniques, including the use of geotextile filter fabric “socks”, filter bags, and straw or fiber rolls/blocks or bales, as appropriate, to filter or intercept sediment prior to discharging to the collection system. When the disturbed excavation area is stabilized with temporary or permanent patch or

pavement, catch basin inlet protection will be removed and any accumulated sediment properly disposed.

Excavated soil will be loaded directly into trucks and transported to an off-site soil stockpile area or shipping directly to the applicable disposal facility. This will minimize the potential for soils to migrate into the municipal storm drain system. Excess soil will be tested and disposed of properly.

The temporary disturbance of the work zone will be confined to the 2-4 foot wide trench area. Most phases of construction will result in very limited exposed soil, and disturbed soils will be covered at the end of each work day until the trench is backfilled with flowable fill and a temporary patch of sidewalk or street is applied.

Control measures will be maintained in place from the commencement of construction activity until final site stabilization is achieved. The road surface in the vicinity of the active construction zone will be maintained and swept to ensure that any spilled soils are promptly removed from the road surface to limit the potential for off-site transport or tracking.

Best management practices will be implemented to minimize the volume of stormwater runoff from adjacent areas from entering the excavation areas or trench. This will minimize trench dewatering requirements and facilitate soil management activities. Structural controls will be used to divert stormwater runoff flows away from disturbed areas, or otherwise limit the discharge of sediment from exposed areas.

Following extended rainfall events, if storm water is not sufficiently prevented from discharging to open trench, trench dewatering may be necessary. If water is encountered in the trench, the preferred method for the management of dewatering effluent will be to return the dewatering effluent back to another section of open trench. If necessary, dewatering pumps, or fractionation tanks and associated appurtenances necessary will be implemented for the removal of groundwater from the excavation and temporary storage of this water. If disposal is required, local, state and federal requirements will be followed. If trench dewatering becomes necessary following a rain event or for relatively small volumes of ground water, trench water will be pumped from the trench using a temporary gravel sump or elevated off of the trench bottom to avoid unnecessary removal of sediments. To facilitate this, sections of the trench not in the immediate work area for pipe installation may be segregated using an earthen berm, sandbags or other suitable material, such as flowable fill, to provide a contained location for the pumped water.

4.5 Traffic Mitigation

Traffic impacts associated with the Project will be temporary in nature and confined to the area of construction work zone that ranges from 100 to 400 linear feet and associated work time. The Company will coordinate closely with municipal Departments of Public Works and Traffic Departments to develop appropriate Traffic Management Plans ("TMPs"), and will implement a variety of mitigation measures to minimize traffic disruption, inconvenience to drivers, and parking and bus service patrons during construction. A summary of the municipal coordination and the development of TMPs that the Company is committed to undertaking is provided below.

Open trenching and pipe installation will necessitate lane restrictions and some closures on narrow or constrained streets. The Company will conduct pre-construction municipal outreach meetings with appropriate municipal representatives and representatives of the affected businesses in commercial areas. The Company is aware of the potential traffic impacts during construction. Every effort will be made to carefully coordinate the construction activities, schedule, and the development of TMPs to minimize impacts on businesses and others relying on these transportation corridors. Prior to commencing construction, the Company will consider and incorporate the following elements into the street-specific TMPs.

- Develop ongoing coordination with police and fire departments;
- Provide provisions for emergency vehicle access;
- Establish appropriate lane location adjustments and ensure safe travel widths within the work zone to maintain safe traffic passage and flow with appropriate roadway level of service and minimize effects due to short-term lane closure(s);
- Organize work schedules and construction duration of proposed lane closures, road closures, and/or detours where necessary;
- Install appropriate traffic-control devices such as barricades, reflective barriers, advance warning signs, traffic regulation signs, traffic control drums, flashers, detour signs, and other protective devices as approved by the various municipalities and MassDOT;
- Identify locations where temporary provisions may be made to maintain access to homes and businesses;
- Establish sufficient routing and safeguarding of pedestrian and bicycle traffic;
- Maintain continuity of MBTA, school bus, and private motor coach routes;
- Communicate with adjacent businesses to avoid interruptions to critical product deliveries; and,
- Develop a system to notify municipal officials, local businesses, and the public of the timing and duration of closed curbside parking spaces and travel restrictions.

The TMPs will be developed with input from the municipalities and business groups, and submitted for review and approval by appropriate municipal authorities prior to construction. Traffic control plans will be developed consistent with the Federal Highway Administration's *Manual on Uniform Traffic Control Devices for Streets and Highways* and MassDOT's publication, *Work Zone Safety*.

4.6 Noise Mitigation

All construction activities will be temporary in nature. Construction will occur during typical work hours (Monday through Friday, 7:00 A.M. to 5:00 P.M. and Saturday from 9 A.M. to 5 P.M.). In general, the construction crews involved in trench excavation and pipe installation are expected to progress at an average rate of approximately 100-200 feet per day. On average, under normal trenching conditions, the duration of construction activity associated with installation at any one location is about seven days. In some locations, such as those completely within commercial and industrial properties, evening construction may be more appropriate. Work hours along the construction route will be

restricted, to the extent possible, to the most appropriate work hours when progressing through areas with sensitive receptors such as hospitals, schools, and playgrounds.

Construction operations such as cable splicing and oil-filling utilize mechanical equipment. Splicing high-voltage transmission cable is a time-consuming, complex operation. The splicing activities will be continuous, typically taking place over four or five extended work days at each manhole location. The splicing operation requires a splicing van and a generator. The splicing van contains all of the equipment and material to make a complete splice. At times, an air conditioning unit will be used to control the moisture content in the manhole. A portable generator will provide the electrical power for the splicing van and air conditioning unit. The generator will be muffled to minimize noise. Construction activities will comply with municipal noise ordinances and bylaws.

In addition, the Company will implement the following procedures during construction to mitigate elevated noise levels:

- Require the use of well-maintained equipment with functioning mufflers as applicable;
- Require strict compliance with MassDEP's Anti-Equipment Idling regulations to prevent equipment from idling and producing unnecessary noise while not in productive use; and
- Provide construction contractors with training that highlights the Company's requirements with respect to well-maintained equipment, anti-idling and other relevant policies.

4.7 Construction Soils Management

Encountering contaminated soils during trench operations can slow excavation pace due to special soil handling procedures, and increase costs for soil disposal. The Company will implement pre-construction soil characterization testing to determine site specific potential of encountering soil contamination and develop a Soil and Groundwater Management Plan to provide its construction contractor(s) with information regarding soil and groundwater management requirements during construction of the Project. This plan will provide guidelines for the management of regulated and non-regulated materials for the protection of human health, safety, public welfare, and the environment. A Licensed Site Professional ("LSP") will coordinate soil management activities during construction to ensure compliance with the MCP.

Excavated soil will be managed in accordance with 310 CMR 40.0030 of the MCP (Management Procedures for Remediation Waste) pending off-site recycling/disposal. Soil excavated from along public roadways that is not reused as backfill will be loaded into trucks and transported off-site using a Material Shipping Record ("MSR"). Soil transported off-site may be taken to a designated staging area for temporary storage or transported directly to the recycling/disposal facility.

Following daily construction activities, soil stockpiles at the staging area(s), if any, will be covered with a minimum of 6-mil polyethylene sheeting as needed. Equipment and vehicles that leave the work area will be inspected and broom-cleaned or decontaminated to ensure that soils are not tracked off-site. In the event that wet soils are to be

transported off-site, appropriate measures shall be taken to ensure that no liquids are spilled from the trucks onto roadways (e.g., truck liners).

4.8 Dust Control and Air Quality Mitigation

To minimize the potential for airborne dust from earth disturbing activities, the Company will work with its contractors to place water trucks with misters in or near the work areas during construction activities as necessary. In addition, excavated soils will be directly transferred from the trench to a covered truck to minimize the potential for the release of dust and for soil migration from the work area.

To minimize air emissions for equipment operation, the Company will direct its contractors to retrofit any diesel-powered, non-road construction equipment rated 50 horsepower or above, whose engine is not certified to US EPA Tier 4 standards and that will be used for 30 days or more over the course of the Project, with US EPA-verified (or equivalent) emission control devices (e.g., oxidation catalysts or other comparable technologies).

The Company exclusively uses ultra-low-sulfur diesel ("ULSD") fuel in its own diesel powered construction equipment and will require its contractors to do the same for this Project. ULSD has a maximum sulfur content of 15 parts per million compared to 500 parts per million for low-sulfur diesel fuel (a 97 percent reduction).

The Company and its contractors will comply with state law (G.L. c. 90, § 16A) and MassDEP regulations (310 CMR 7.11 (1)(b)), which limit vehicle idling to no more than five minutes except for vehicles being serviced, vehicles making deliveries that need to keep their engines running, and vehicles that need to run their engines to operate accessories.

4.9 Management of Fuels, Waste Oil, and Hazardous Wastes

The Contractor will be required to conduct the work in an environmentally safe manner and in accordance with applicable regulations for the management of fuels, waste oils, and hazardous substances. Any hazardous materials will be transported, stored, and handled as recommended by the suppliers and/or manufacturers, and in compliance with applicable federal or state regulations.

The contractor will have available at all locations where work is taking place a spill kit.

4.10 Shade Tree Mitigation

Based on field reconnaissance the Company does not currently anticipate the need to cut any public shade trees in the public way or along boundaries of the public way to facilitate construction of the Project. Nonetheless, a final assessment will be conducted in consultation with the applicable municipal tree wardens. In most instances, public shade trees are located interior to the curb line and far enough removed from the likely cable trench location that they would not be adversely affected either by construction or by the long-term existence of the transmission cable. Street-tree root systems are typically confined to the close proximity of the tree base and do not commonly extend beyond the curb line and under paved streets because of high soil compaction, little interstitial space, and the general lack of sufficient oxygen, soil, water, and nutrients. Essentially, tree roots

will grow where there is space, and will therefore grow on the unimpeded edges of sidewalks and away from the street edge.

The Company will implement the following practices to protect public shade trees that could be impacted along the Mystic to Woburn Transmission Project:

- Erect and maintain a temporary fence around the perimeter of individual tree pits (the area between the curb and sidewalk where the tree resides) until construction in that area is complete.
- If excavation for new construction is required within the tree pit area and sidewalk, the Tree Warden will be contacted before any work begins.
- Trees and vegetation will be repaired or replaced in a manner approved by the Tree Warden at the Company's expense.

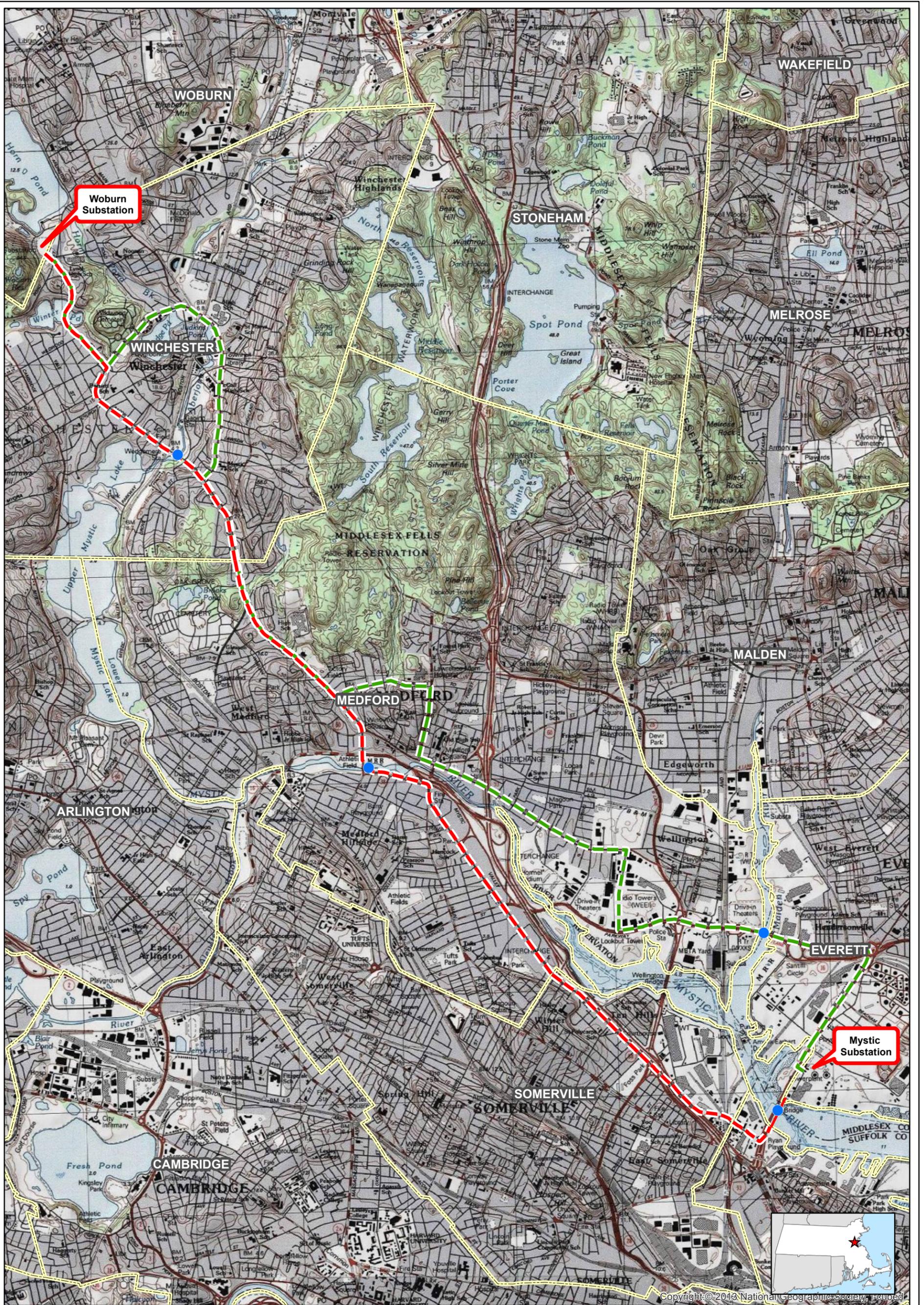
4.11 Community Relations Plan

The Company will develop a detailed Community Relations Plan for municipal coordination and community outreach during construction, including notification to residences and businesses 48 hours prior to street opening on their street, "No Parking" notification and instructions.

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Attachment B

Figures



Legend

- - - Preferred Route
- - - Noticed Alternative Route
- Existing Mystic River Crossing
- Waterbody Crossing
- Municipal Boundary



Basemap: This map presents land cover imagery for the world and detailed topographic maps for the United States. Copyright: © 2013 National Geographic Society, i-cubed

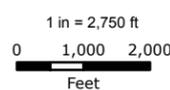
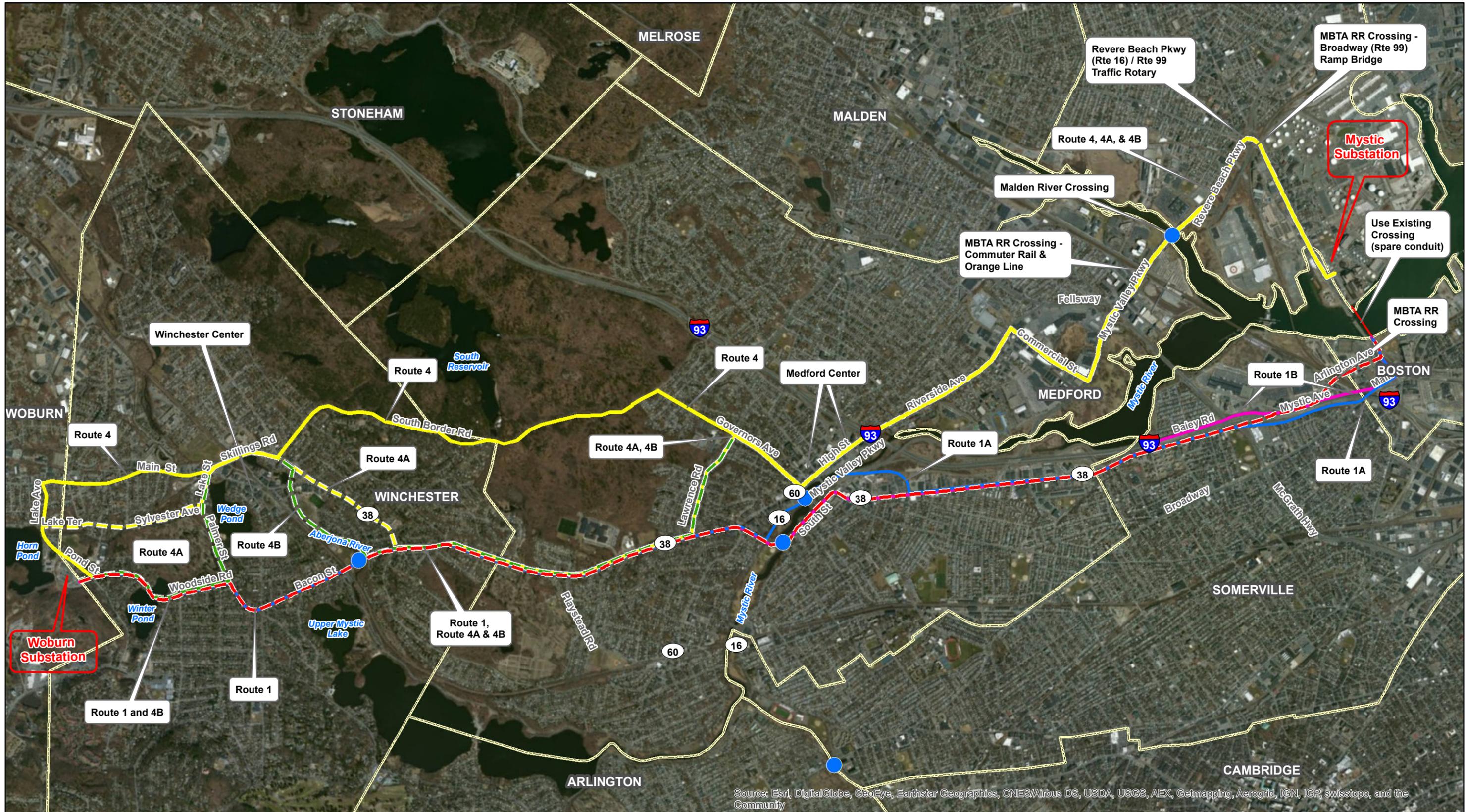


FIGURE 1 PROJECT LOCATION

Mystic to Woburn
Transmission Project
Preferred Route and
Noticed Alternative

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

- Route 1 (Parallel Lines 211/514)
- Route 1A (MBTA RR crossing; use Maffa Way Bridge & Rte 38 south ramp)
- Route 1B (MBTA RR Crossing; use Rte 38 (Main Street/Mystic Avenue) Bridge)
- Route 4
- Route 4A
- Route 4B
- Existing Mystic River Crossing
- Municipal Boundary
- Waterbody Crossing

Map Notes:
Basemap: 2011-2013 Orthophotographs, MassGIS

**Mystic to Woburn
Transmission Project**

**Figure 1-A
Preferred Route &
Noticed Alternative Routes**

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

Waterbody Crossing	Protected and Recreational Open Space	DOT Roads
Preferred Route	Inland Wetlands	Limited Access Highway
Noticed Alternative Route	Coastal Wetlands	Multi-Lane Highway, NOT Limited Access
Existing Mystic River Crossing	Public Surface Water Supply (PSWS)	Other Numbered Highway
Municipal Boundary	Lake, Pond, River or Impoundment (6)	Major Road - Collector
	Bay Estuary or other Salt Water Feature	

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts
 Executive Office of Environmental Affairs.
 Data valid as of March 2015.

0 500 1,000 2,000 Feet

Mystic to Woburn Transmission Project

Figure 2

Existing Conditions

Mapsheet 01 of 04

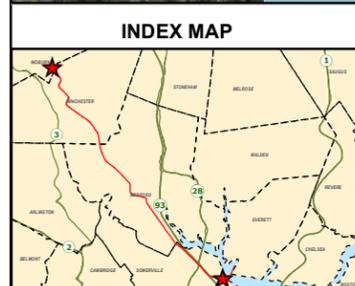
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend			
	Waterbody Crossing		Protected and Recreational Open Space
	Preferred Route		Inland Wetlands
	Noticed Alternative Route		Coastal Wetlands
	Existing Mystic River Crossing		Public Surface Water Supply (PSWS)
	Municipal Boundary		Lake, Pond, River or Impoundment (6)
			Bay Estuary or other Salt Water Feature
			DOT Roads
			Limited Access Highway
			Multi-Lane Highway, NOT Limited Access
			Other Numbered Highway
			Major Road - Collector

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.

Mystic to Woburn Transmission Project

Figure 2

Existing Conditions

Mapsheet 02 of 04

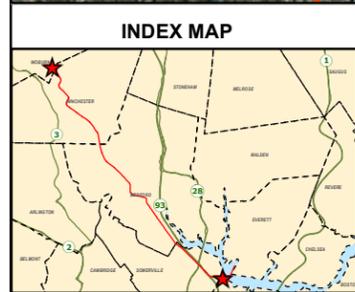
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

Waterbody Crossing	Protected and Recreational Open Space	DOT Roads
Preferred Route	Inland Wetlands	Limited Access Highway
Noticed Alternative Route	Coastal Wetlands	Multi-Lane Highway, NOT Limited Access
Existing Mystic River Crossing	Public Surface Water Supply (PSWS)	Other Numbered Highway
Municipal Boundary	Lake, Pond, River or Impoundment (6)	Major Road - Collector
	Bay Estuary or other Salt Water Feature	

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.



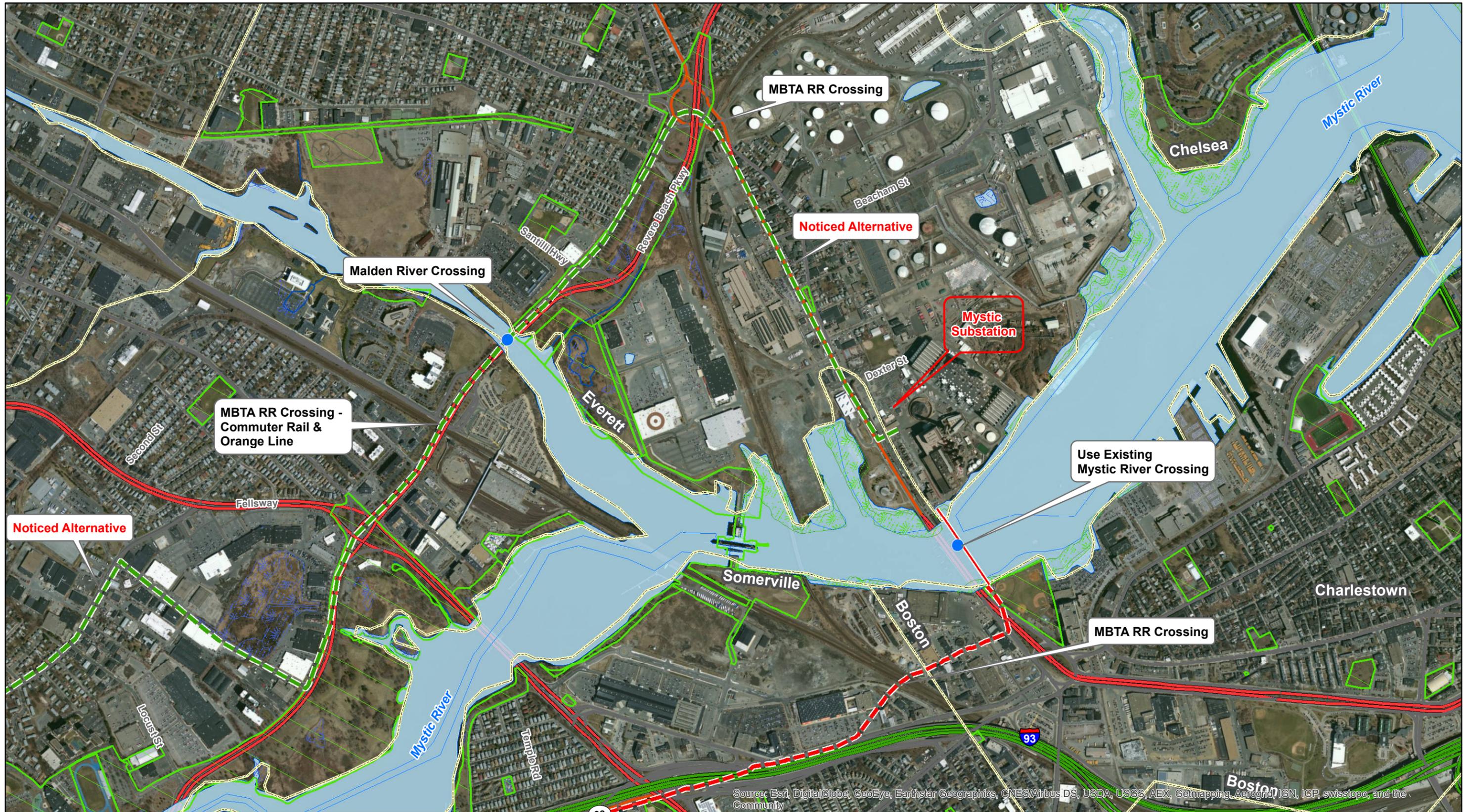
Mystic to Woburn Transmission Project

Figure 2
 Existing Conditions
 Mapsheet 03 of 04

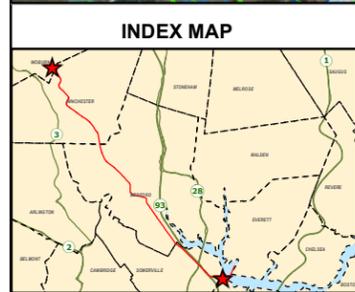
EVERSOURCE ENERGY

POWER ENGINEERS **Tighe & Bond**
 Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

Waterbody Crossing	Protected and Recreational Open Space	DOT Roads
Preferred Route	Inland Wetlands	Limited Access Highway
Noticed Alternative Route	Coastal Wetlands	Multi-Lane Highway, NOT Limited Access
Existing Mystic River Crossing	Public Surface Water Supply (PSWS)	Other Numbered Highway
Municipal Boundary	Lake, Pond, River or Impoundment (6)	Major Road - Collector
	Bay Estuary or other Salt Water Feature	

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.



Mystic to Woburn Transmission Project

Figure 2

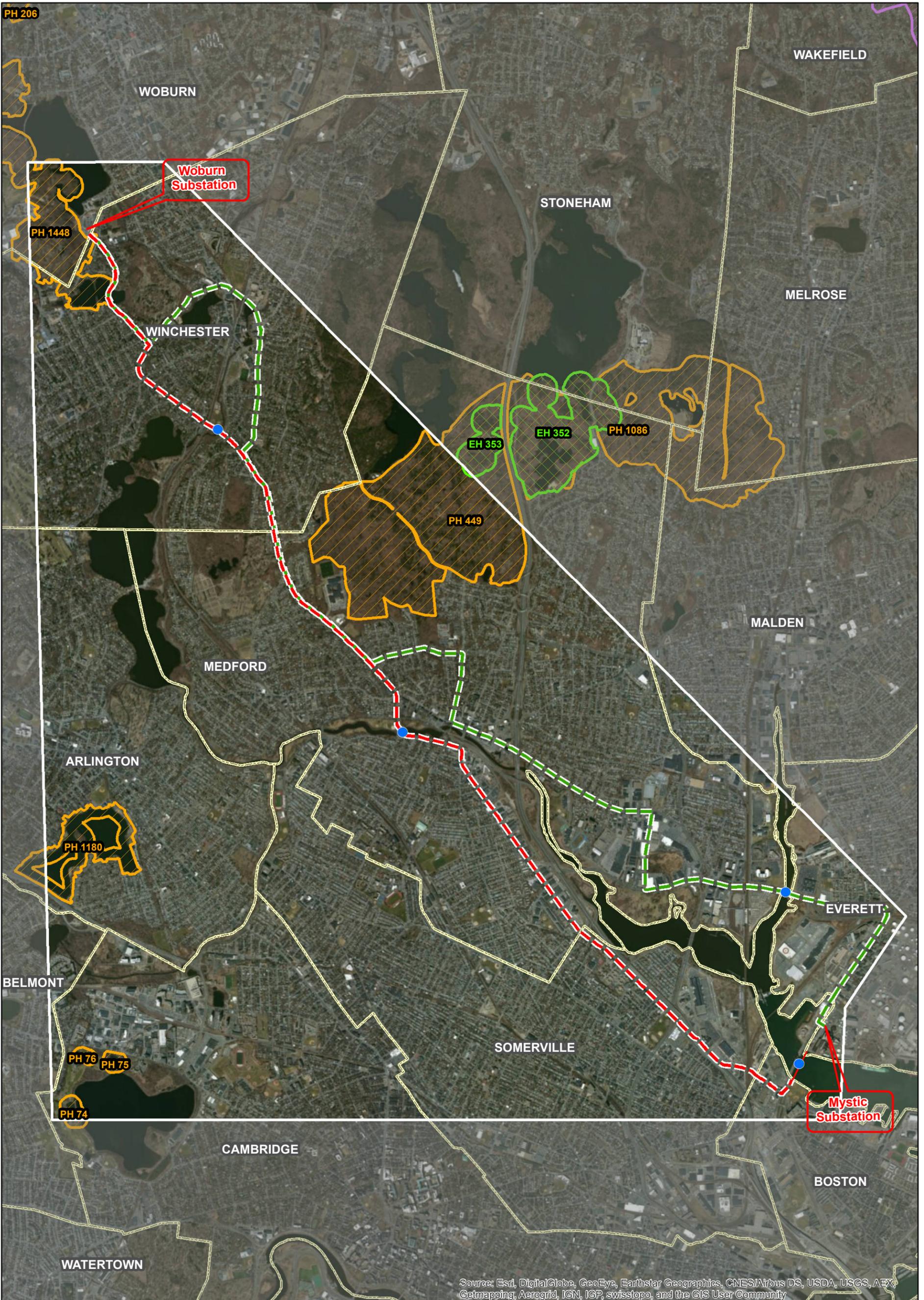
Existing Conditions

Mapsheet 04 of 04

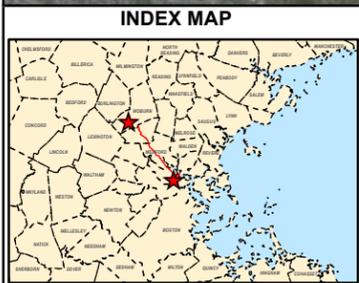
EVERSOURCE ENERGY

POWER ENGINEERS **Tighe & Bond**
 Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Map Notes:
Basemap: USGS Quadrangle Basemap, MassGIS

- Legend**
- Waterbody Crossing
 - Preferred Route
 - Noticed Alternative Route
 - Existing Mystic River Crossing
 - Municipal Boundary
 - Outside Study Area
 - Area of Critical Environmental Concern (ACEC)
 - NHPSP Estimated Habitats for Rare Wildlife
 - NHPSP Priority Habitats for Rare Species

**Mystic to Woburn
Transmission Project**

Figure 3

ACEC and Rare Species

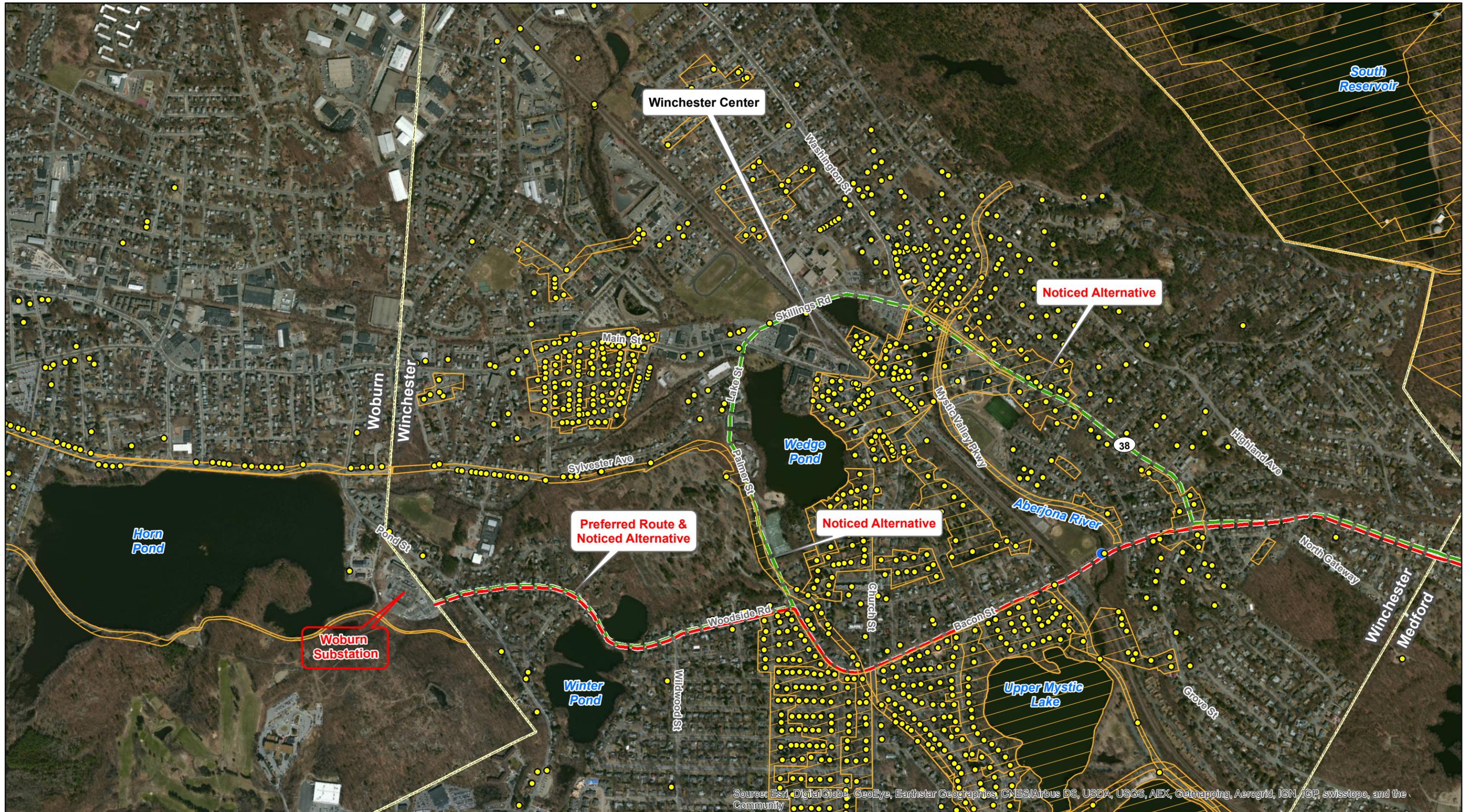


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Feet

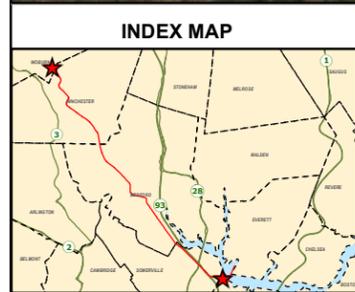
EVERSOURCE
ENERGY

POWER ENGINEERS **Tighe & Bond**
Environmental Services Div.

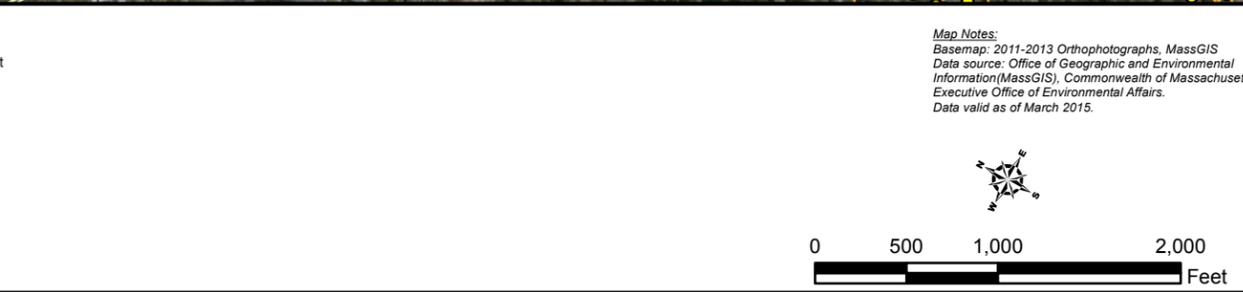
April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



- Legend**
- Waterbody Crossing
 - - - Preferred Route
 - - - Noticed Alternative Route
 - - - Existing Mystic River Crossing
 - Municipal Boundary
 - Historic Point
 - Historic Area



**Mystic to Woburn
Transmission Project**

Figure 4

Historical Resources

Mapsheet 01 of 04

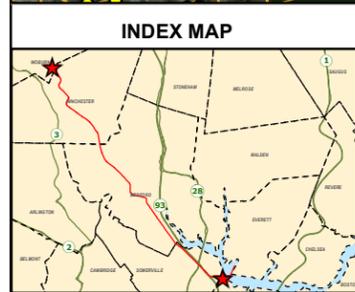
EVERSOURCE ENERGY

POWER ENGINEERS **Tighe & Bond**
 Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

Waterbody Crossing	Historic Point
Preferred Route	Historic Area
Noticed Alternative Route	
Existing Mystic River Crossing	
Municipal Boundary	



**Mystic to Woburn
Transmission Project**

Figure 4

Historical Resources

Mapsheets 02 of 04

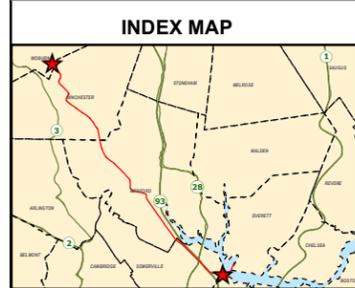
EVERSOURCE ENERGY

POWER ENGINEERS **Tighe & Bond**
 Environmental Services Div.

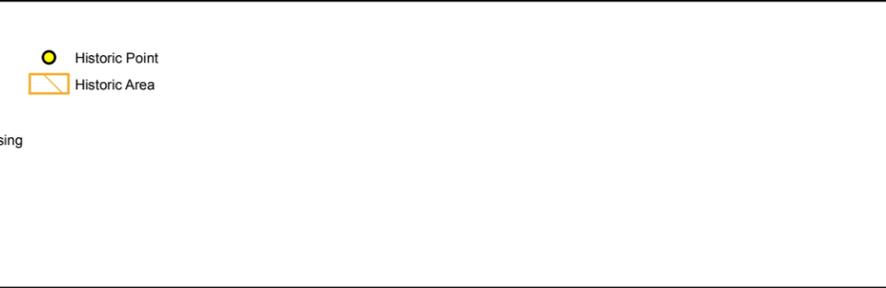
April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



- Legend**
- Waterbody Crossing
 - - - Preferred Route
 - - - Noticed Alternative Route
 - Existing Mystic River Crossing
 - Municipal Boundary
 - Historic Point
 - Historic Area



Mystic to Woburn Transmission Project

Figure 4

Historical Resources

Mapsheet 03 of 04

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POWER ENGINEERS

Tighe & Bond

Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

Waterbody Crossing	Historic Point
Preferred Route	Historic Area
Noticed Alternative Route	
Existing Mystic River Crossing	
Municipal Boundary	



**Mystic to Woburn
Transmission Project**

Figure 4

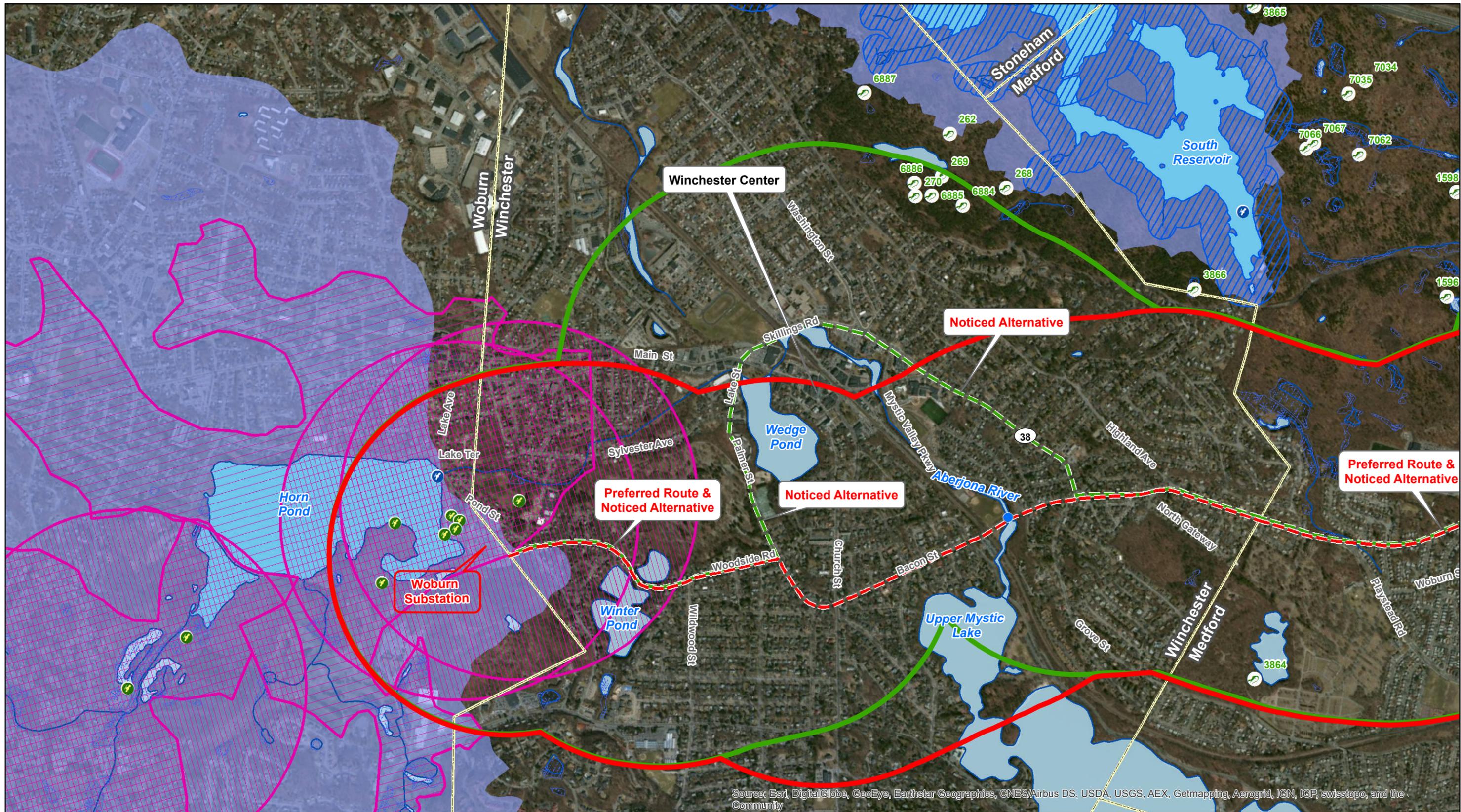
Historical Resources

Mapsheet 04 of 04

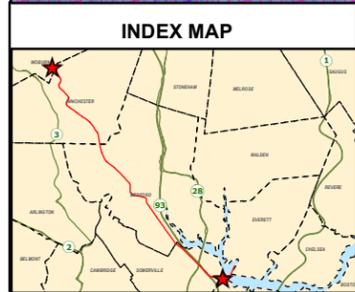
EVERSOURCE ENERGY

POWER ENGINEERS **Tighe & Bond**
 Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

- Waterbody Crossing
- Preferred Route
- Noticed Alternative Route
- Preferred Route Half Mile Radius
- Noticed Alternative Half Mile Radius
- Existing Mystic River Crossing
- Municipal Boundary
- NHESP Certified Vernal Pools
- Community Public Water Supply - Surface Water
- Community Public Water Supply - Groundwater
- Non-Community Non-Transient Public Water Supply
- Non-Community Transient Public Water Supply
- Public Surface Water Supply Protection Area (Zone A)
- Inland Wetlands
- Coastal Wetlands
- DEP Interim Wellhead Protection Area (IWPA)
- Public Surface Water Supply (PSWS)
- Lake, Pond, River or Impoundment
- Bay Estuary or other Salt Water Feature
- Public Water Supply Watershed

Outstanding Resource Waters

- Public Surface Water Supply Protection Area (Zone A)
- Inland Wetlands
- Coastal Wetlands
- DEP Approved Wellhead Protection Area (Zone II)

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.

0 500 1,000 2,000 Feet

Mystic to Woburn Transmission Project

Figure 5

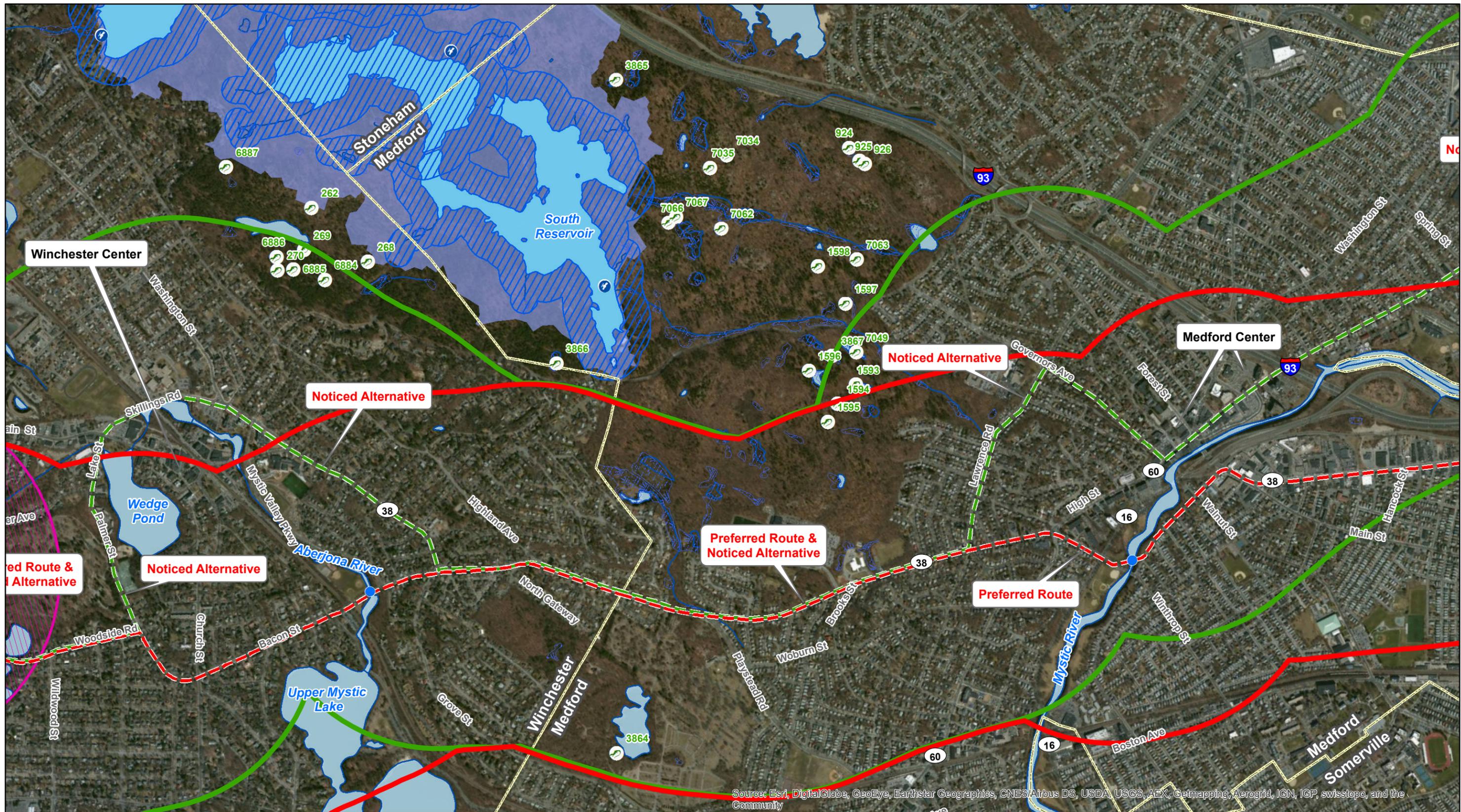
Water Resources

Mapsheet 01 of 04

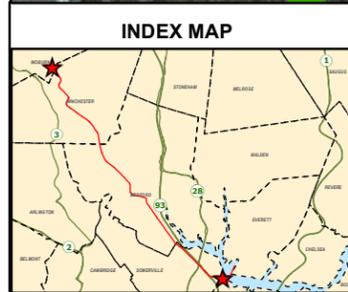
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 Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend	
Waterbody Crossing	Community Public Water Supply - Surface Water
Preferred Route	Community Public Water Supply - Groundwater
Noticed Alternative Route	Non-Community Non-Transient Public Water Supply
Preferred Route Half Mile Radius	Non-Community Transient Public Water Supply
Noticed Alternative Half Mile Radius	Public Surface Water Supply Protection Area (Zone A)
Existing Mystic River Crossing	Inland Wetlands
Municipal Boundary	Coastal Wetlands
NHESP Certified Vernal Pools	DEP Interim Wellhead Protection Area (IWPA)
	Public Surface Water Supply (PSWS)
	Lake, Pond, River or Impoundment
	Bay Estuary or other Salt Water Feature
	Outstanding Resource Waters
	Public Water Supply Watershed

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.

0 500 1,000 2,000 Feet

Mystic to Woburn Transmission Project

Figure 5

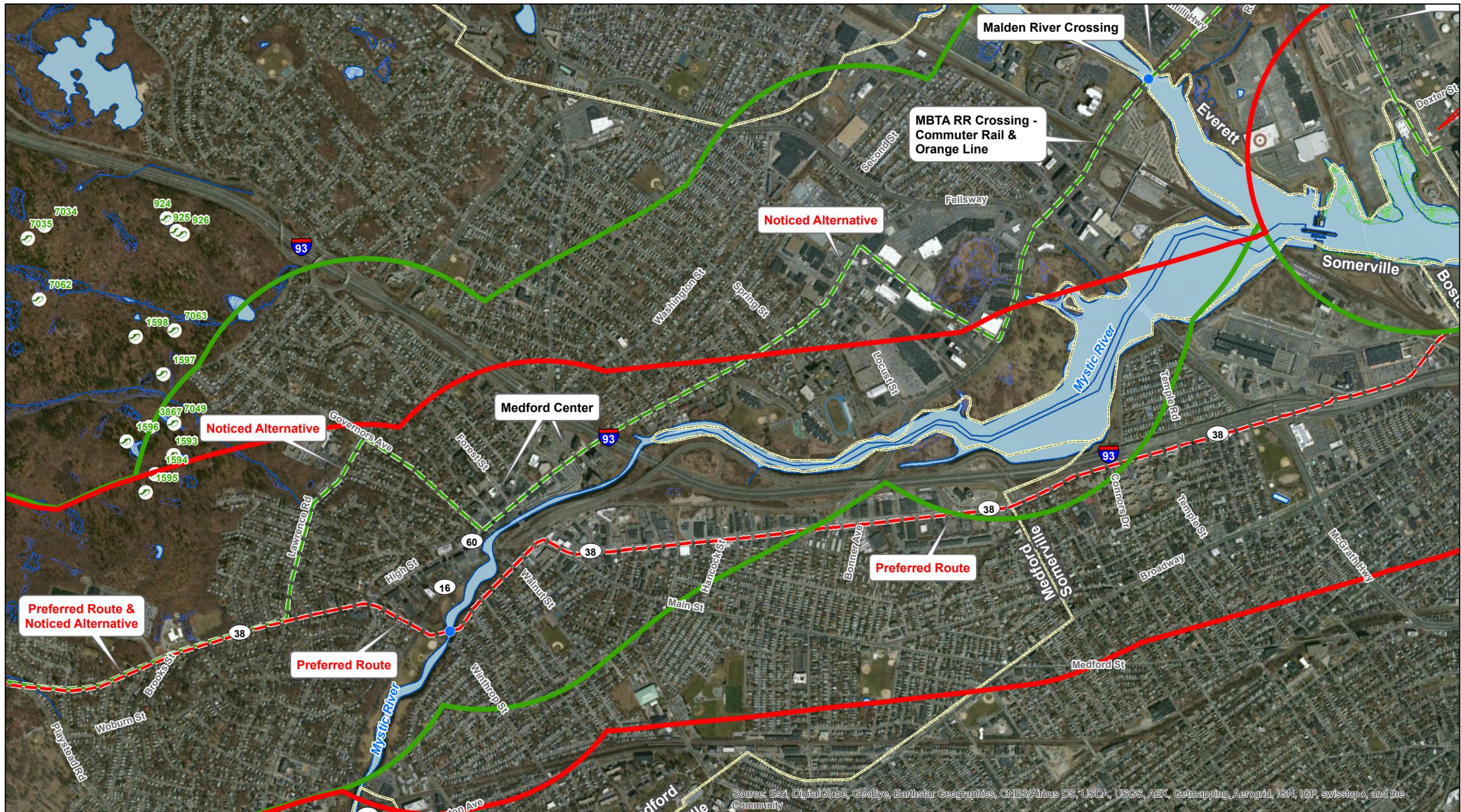
Water Resources

Mapsheet 02 of 04

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April 2015

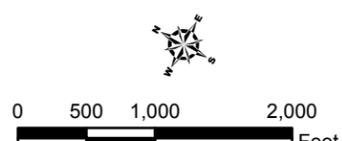


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend		Outstanding Resource Waters	
Waterbody Crossing	Community Public Water Supply - Surface Water	DEP Interim Wellhead Protection Area (IWPA)	Public Surface Water Supply (PSWS)
Preferred Route	Community Public Water Supply - Groundwater	Lake, Pond, River or Impoundment	Bay Estuary or other Salt Water Feature
Noticed Alternative Route	Non-Community Non-Transient Public Water Supply	Public Surface Water Supply Protection Area (Zone A)	Public Water Supply Watershed
Preferred Route Half Mile Radius	Non-Community Transient Public Water Supply	Inland Wetlands	
Noticed Alternative Half Mile Radius	Inland Wetlands	Coastal Wetlands	
Existing Mystic River Crossing	Coastal Wetlands	DEP Approved Wellhead Protection Area (Zone II)	
Municipal Boundary	NHPSP Certified Vernal Pools		

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.



**Mystic to Woburn
Transmission Project**

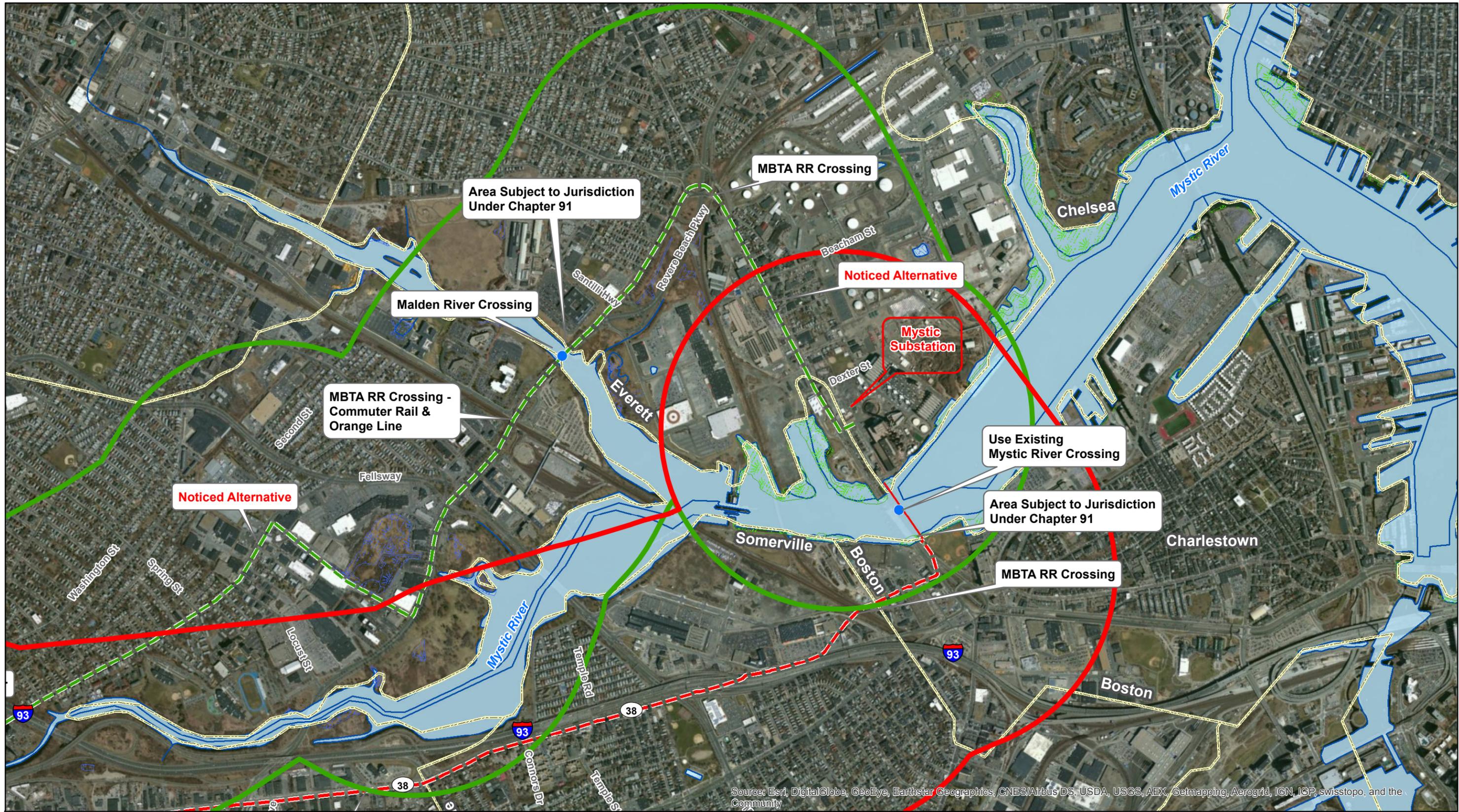
**Figure 5
Water Resources**

Mapsheet 03 of 04

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the Community



Legend

Waterbody Crossing	Community Public Water Supply - Surface Water	DEP Interim Wellhead Protection Area (IWPA)
Preferred Route	Community Public Water Supply - Groundwater	Public Surface Water Supply (PSWS)
Noticed Alternative Route	Non-Community Non-Transient Public Water Supply	Lake, Pond, River or Impoundment
Preferred Route Half Mile Radius	Non-Community Transient Public Water Supply	Bay Estuary or other Salt Water Feature
Noticed Alternative Half Mile Radius	Public Surface Water Supply Protection Area (Zone A)	Outstanding Resource Waters
Existing Mystic River Crossing	Inland Wetlands	Public Water Supply Watershed
Municipal Boundary	Coastal Wetlands	
NHESP Certified Vernal Pools	DEP Approved Wellhead Protection Area (Zone II)	

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.

0 500 1,000 2,000 Feet

Mystic to Woburn Transmission Project

Figure 5

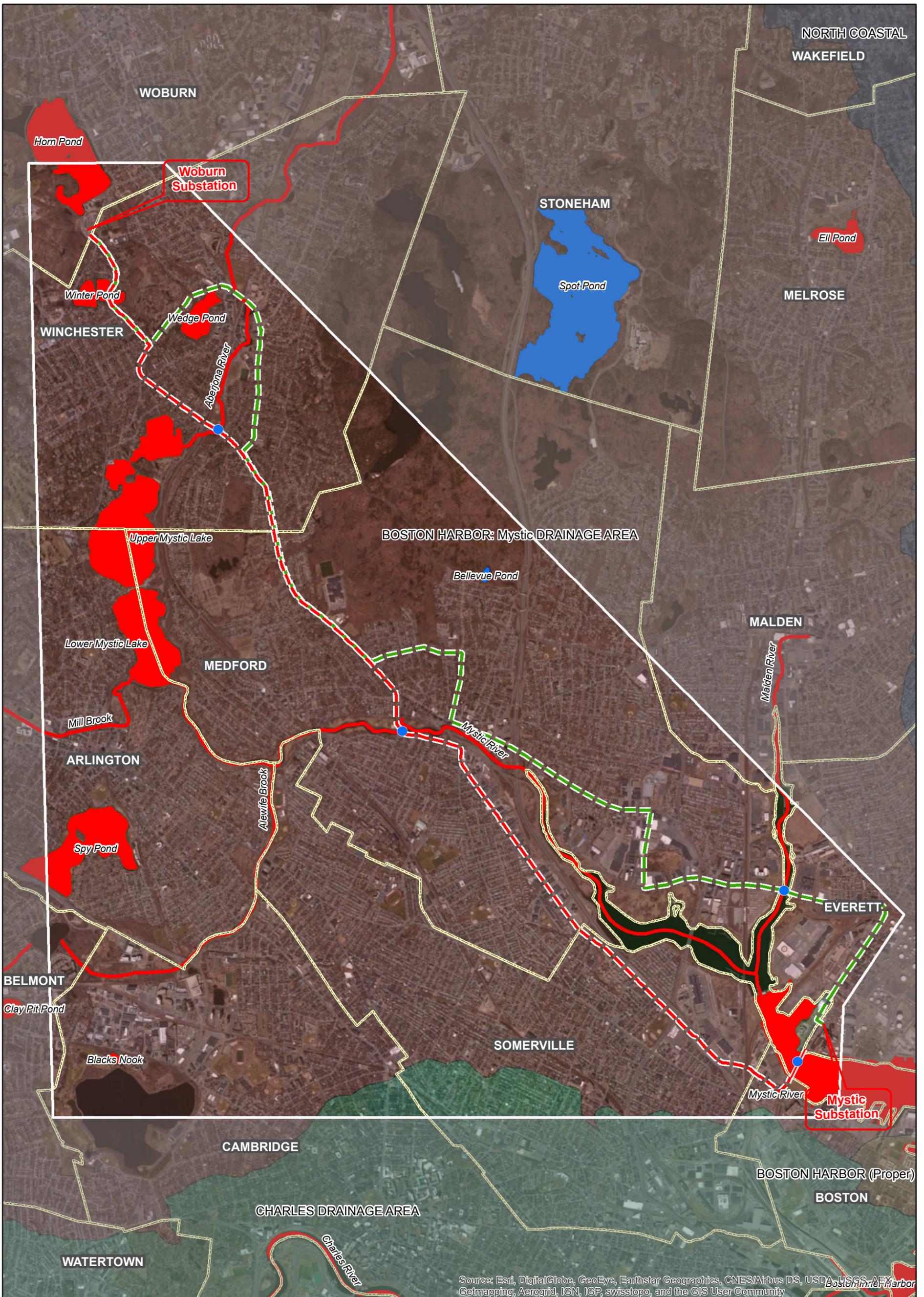
Water Resources

Mapsheet 04 of 04

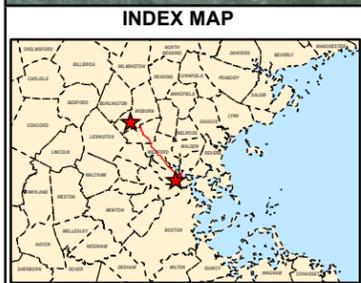
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 Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA/USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community



Map Notes:
Basemap: USGS Quadrangle Basemap, MassGIS

Legend	
	Waterbody Crossing
	Preferred Route
	Noticed Alternative Route
	Existing Mystic River Crossing
	Municipal Boundary
Water Body Segments - Rivers	
	5 - Impaired - TMDL required
	3 - No uses assessed
	5 - Impaired - TMDL required
Water Body Segments - Lakes, Estuaries	
	5 - Impaired - TMDL required
River Basin and Coastal Drainage Area	
	BOSTON HARBOR: Mystic
	CHARLES
	BOSTON HARBOR (Proper)
	NORTH COASTAL

Mystic to Woburn Transmission Project

Figure 6

Impaired Waterbodies

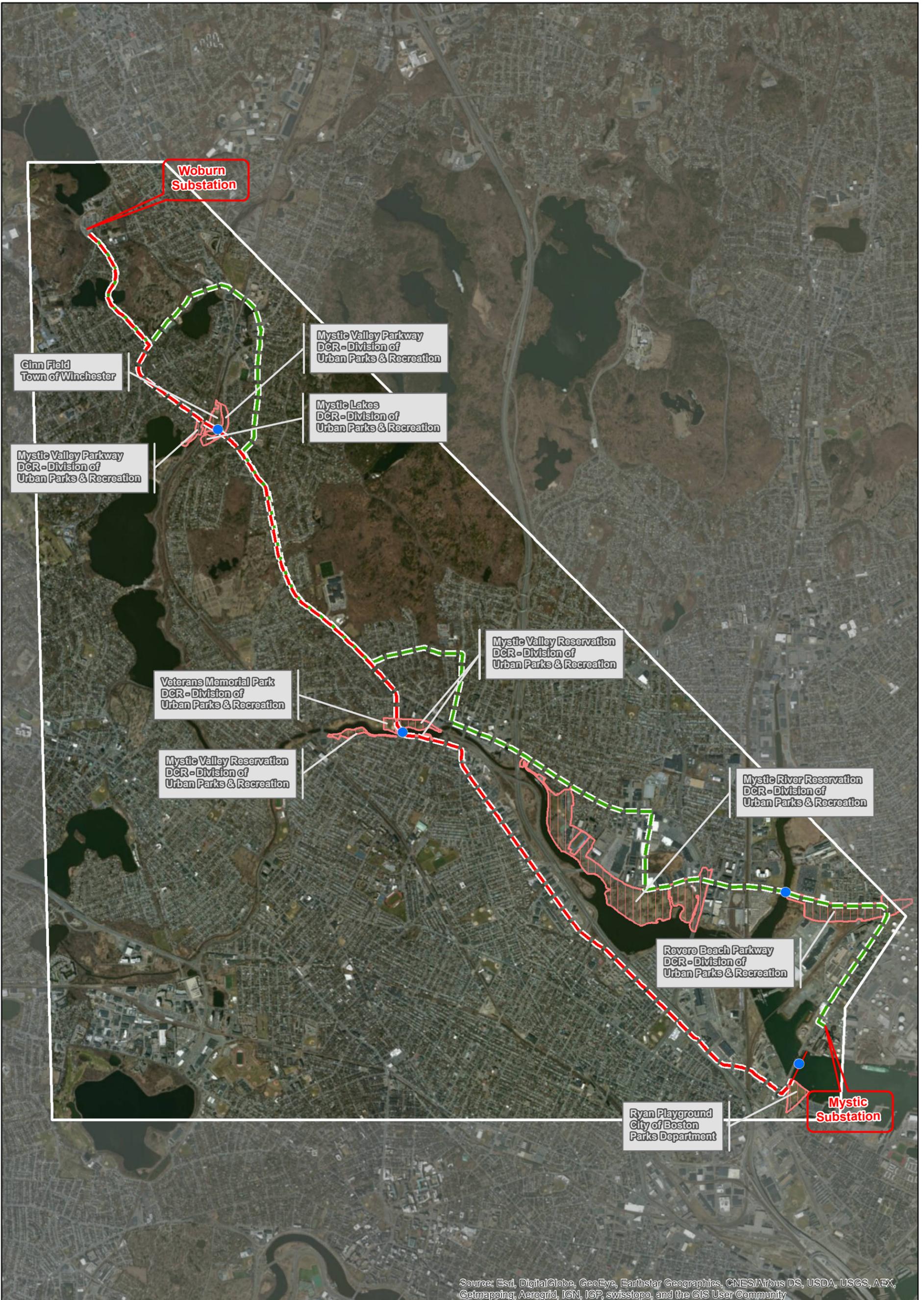


0 1,000 2,000 4,000 Feet

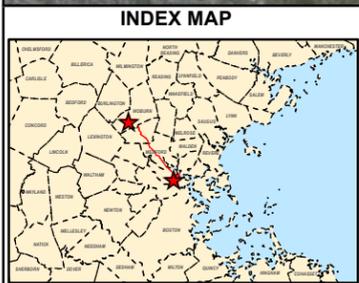
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Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Map Notes:
Basemap: USGS Quadrangle Basemap, MassGIS

- Legend**
- Waterbody Crossing
 - Preferred Route
 - Noticed Alternative Route
 - Existing Mystic River Crossing
 - Article 97 Lands

**Mystic to Woburn
Transmission Project**

Figure 7

Article 97 Lands

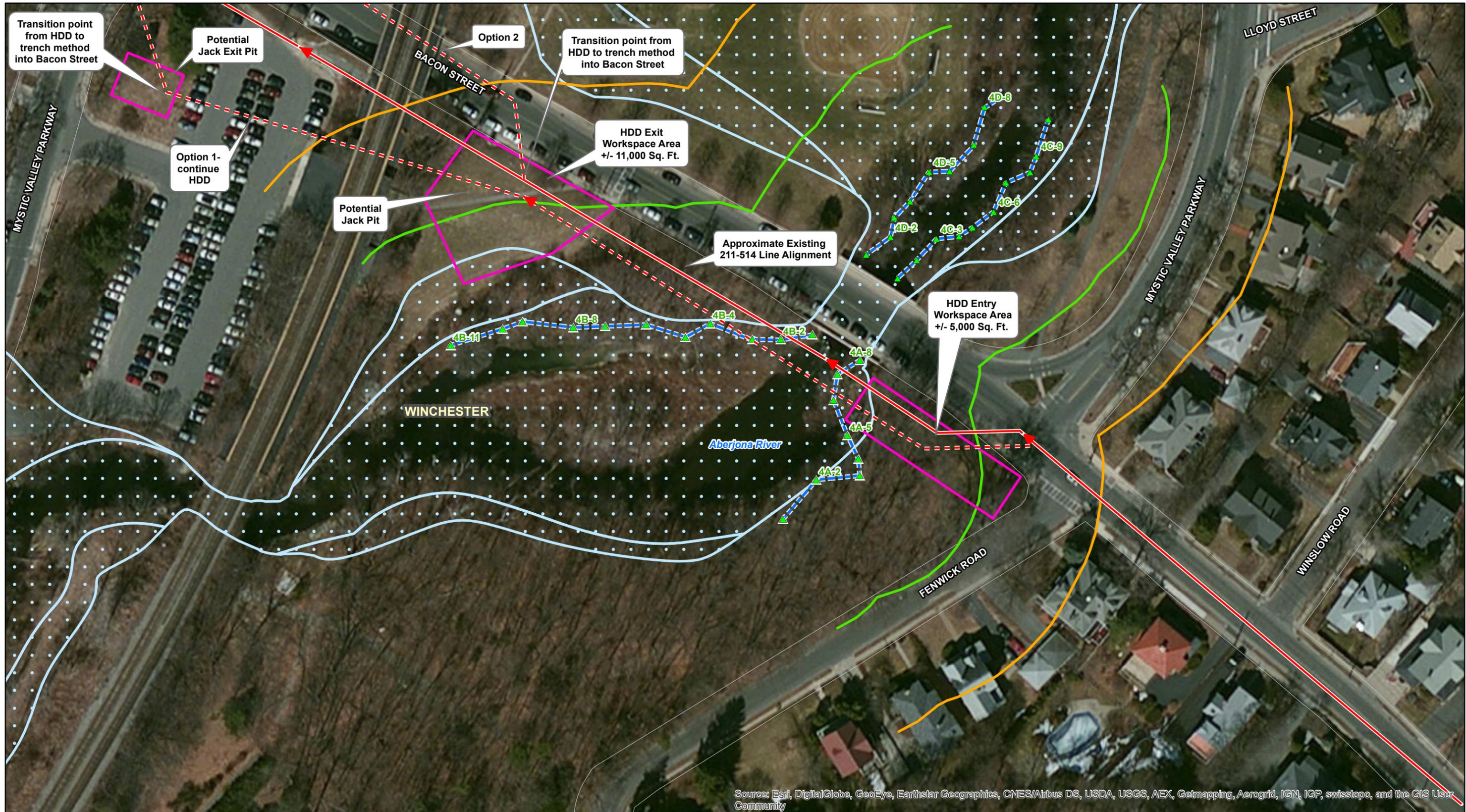


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Feet

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April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend

- ▲ GPS Point
- Top of Bank / Mean Annual High Water Boundary
- 100 ft Riverfront Area
- 200ft Riverfront Area
- NSTAR Approximate Existing Line
- Proposed Line
- HDD Workspace Area
- Municipal Boundary
- FEMA 100 Year Flood Zone
- Bordering Land Subject to Flooding

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information(MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.

0 25 50 100 Feet

Mystic to Woburn Transmission Project

Figure 8

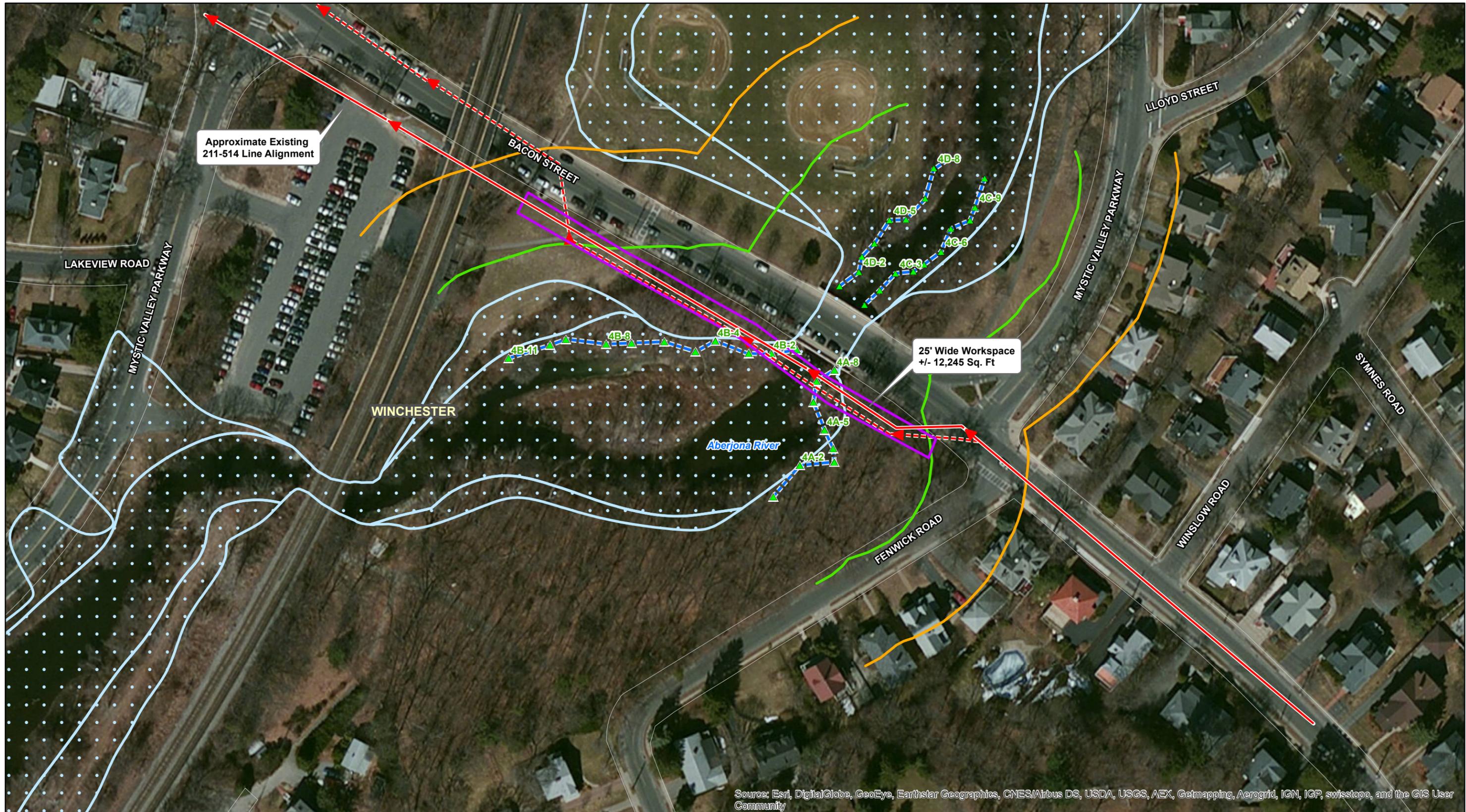
Aberjona River Crossing South of Bridge Trenchless Alternative

Winchester, Massachusetts

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 Environmental Services Div.

April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend

- ▲ GPS Point
- - - Top of Bank / Mean Annual High Water Boundary
- 100 ft Riverfront Area
- 200ft Riverfront Area
- NSTAR Approximate Existing Line
- - - Proposed Line
- 25 ft Wide Workspace
- Municipal Boundary
- FEMA 100 Year Flood Zone**
- Bordering Land Subject to Flooding

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.

0 25 50 100 Feet

**Mystic to Woburn
Transmission Project**

Figure 9

**Aberjona River Crossing
Trenched Alternative**

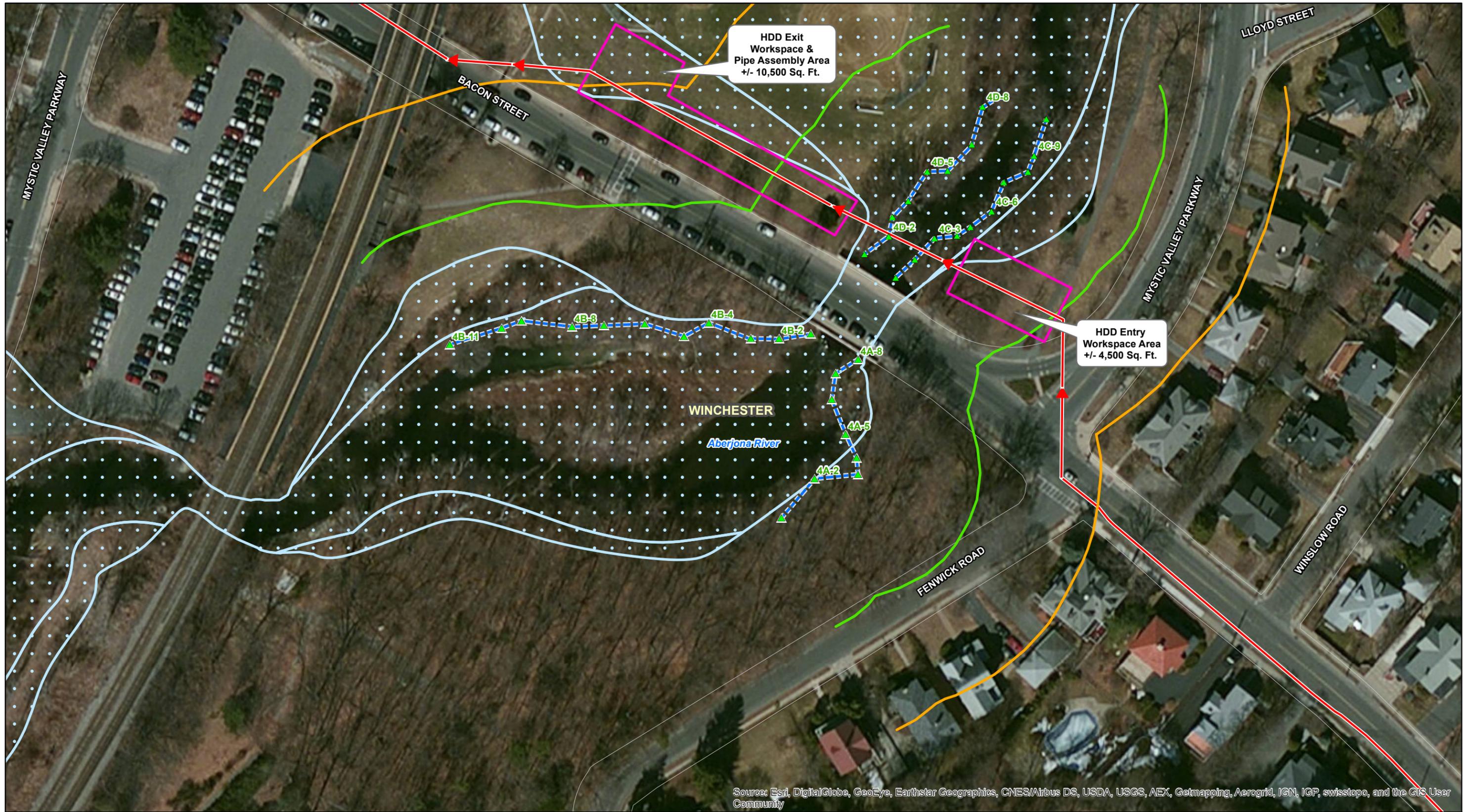
Winchester, Massachusetts

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April 2015



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend

- ▲ GPS Point
- Top of Bank / Mean Annual High Water Boundary
- 100 ft Riverfront Area
- 200ft Riverfront Area
- Proposed Line
- HDD Workspace Area
- Municipal Boundary
- FEMA 100 Year Flood Zone**
- Bordering Land Subject to Flooding

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.

**Mystic to Woburn
Transmission Project**

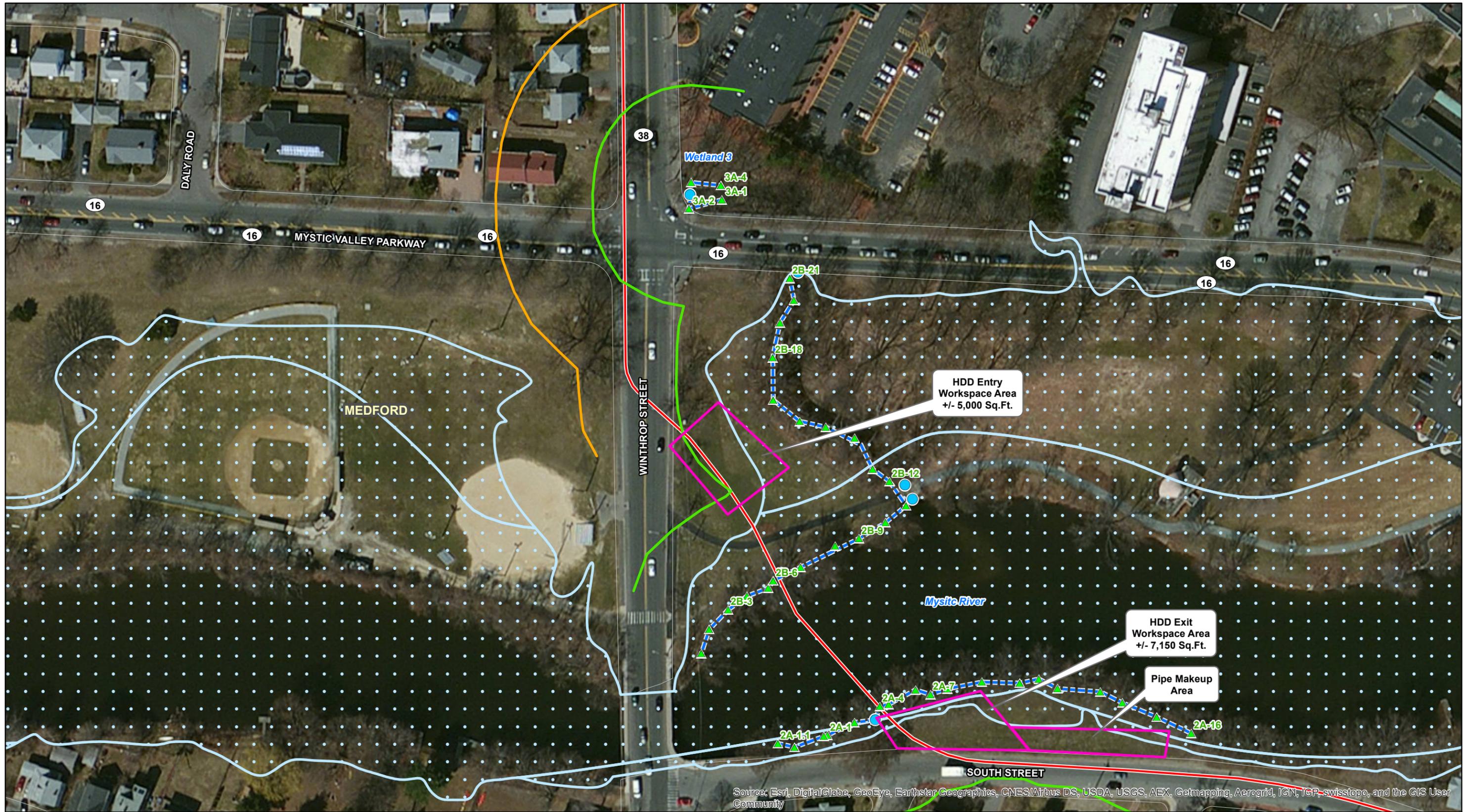
Figure 10

**Aberjona River Crossing North of Bridge
Trenchless Alternative**

Winchester, Massachusetts

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April 2015

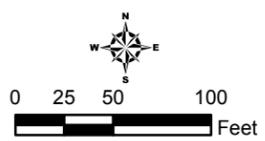


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend**
- ▲ GPS Point
 - Culvert
 - Top of Bank / Mean Annual High Water Boundary
 - 100 ft Riverfront Area
 - 200 ft Riverfront Area
 - Proposed Line
 - HDD Workspace Area
 - Municipal Boundary
 - FEMA 100 Year Flood Zone
 - Bordering Land Subject to Flooding

Map Notes:
 Basemap: 2011-2013 Orthophotographs, MassGIS
 Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
 Data valid as of March 2015.



**Mystic to Woburn
 Transmission Project**

Figure 11

**Mystic River Crossing
 Trenchless Alternative**

Medford, Massachusetts

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 Environmental Services Div.

April 2015

Attachment C Distribution List

In accordance with Section 11.16 of the MEPA regulations (301 CMR 11.00), this ENF has been distributed to the following federal, state, and local agencies/departments for review.

State Agencies

Secretary Matthew A. Beaton (2 copies submitted herein)
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Department of Environmental Protection
Commissioner's Office
One Winter Street
Boston, MA 02108

DEP/Northeast Regional Office
Attn: MEPA Coordinator
205B Lowell Street
Wilmington, MA 01887

MassDOT Public/Private Development Unit
10 Park Plaza
Boston, MA 02116

MassDOT District #4
Attn: MEPA Coordinator
519 Appleton Street
Arlington, MA 02476

MassDOT District #6
Attn: MEPA Coordinator
185 Kneeland Street
Boston, MA 02111

Massachusetts Historical Commission
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Metropolitan Area Planning Council
60 Temple Place/6th floor
Boston, MA 02111

Coastal Zone Management
Attn: Project Review Coordinator
251 Causeway Street, Suite 800
Boston, MA 02114

Division of Marine Fisheries (North Shore)
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Department of Agricultural Resources
Attn: MEPA Coordinator
16 West Experiment Station
University of Massachusetts
Amherst, MA 01003

Natural Heritage and Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
100 Hartwell St, Suite 230
West Boylston, MA 01581

DCR
Attn: MEPA Coordinator
251 Causeway St. Suite 600
Boston MA 02114

Department of Public Health (DPH)
Director of Environmental Health
250 Washington Street
Boston, MA 02115

Energy Facilities Siting Board
Attn: MEPA Coordinator
One South Station
Boston, MA 02110

Department of Energy Resources
Attn: MEPA Coordinator
100 Cambridge Street, 10th floor
Boston, MA 02114

Massachusetts Water Resource Authority
Attn: MEPA Coordinator
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129

Massachusetts Bay Transit Authority
Attn: MEPA Coordinator
10 Park Plaza, 6th Fl.
Boston, MA 02116-3966

Department of Public Utilities
One South Station
Boston, MA 02110

City of Woburn

Woburn City Council
Office of the City Clerk
City Hall
10 Common Street
Woburn, MA 01801

Woburn Planning Board
City Hall
10 Common Street
Woburn, MA 01801

Woburn Conservation Commission
City Hall
10 Common Street
Woburn, MA 01801

Woburn Board of Health
City Hall
10 Common Street
Woburn, MA 01801

Town of Winchester

Winchester Board of Selectmen
Town Hall
71 Mt. Vernon St.
2nd Floor
Winchester, MA 01890

Winchester Planning Board
Town Hall
71 Mt. Vernon St.
Lower Level
Winchester, MA 01890

Winchester Conservation Commission
Town Hall
71 Mt. Vernon St.
Winchester, MA 01890

Winchester Board of Health
Town Hall
71 Mt. Vernon St.
Lower Level
Winchester, MA 01890

City of Medford

Medford City Council
City Hall
85 George P. Hassett Drive
Room 207
Medford, MA 02155

Medford Community Development
City Hall
85 George Hassett Drive
Room 308
Medford, MA 02155

Medford Conservation Commission
City Hall
85 George P. Hassett Drive
Room 205
Medford, MA 02155

Medford Board of Health
City Hall
85 George P. Hassett Drive
Room 311
Medford, MA 02155

City of Somerville

Somerville Board of Aldermen
City Hall - Aldermanic Chamber
93 Highland Avenue
Somerville, MA 02143

Somerville Planning Board
City Hall
93 Highland Avenue
Somerville, MA 02143

Somerville Conservation Commission
City Hall
93 Highland Avenue
Somerville, MA 02143

Somerville Board of Health
City Hall Annex
50 Evergreen Avenue
Somerville, MA 02145

City of Everett

Everett City Council
City Hall
484 Broadway
Room 38
Everett, MA 02149

Everett Department of Planning and Development
City Hall, Room 25
484 Broadway
Everett, MA 02149

Everett Conservation Commission
City Hall
484 Broadway
Everett, MA 02149

Everett Board of Health
City Hall, Room 20
484 Broadway
Everett, MA 02149

City of Boston

Boston City Council
1 City Hall Square, Suite 550
Boston, MA 02201-2043

Boston Redevelopment Authority
1 City Hall, Ninth Floor
Boston, Massachusetts 02201

Boston Conservation Commission
1 City Hall Square
Room 709
Boston, MA 02201

Boston Public Health Commission
1010 Massachusetts Avenue
Boston, MA 02118

Attachment D

List of Permits and Approvals

The below table outlines the permits and approvals for the proposed Project as required by Federal, State and local agencies.

Agency	Permit/Approval
Federal	
U.S. Environmental Protection Agency	U.S. Clean Water Act - NPDES General Permit for Stormwater Discharge from Construction Activities
U.S. Army Corps of Engineers	Section 404 of the U.S. Clean Water Act/ Section 10 of the Rivers and Harbors Act
Commonwealth of Massachusetts	
Executive Office of Energy and Environmental Affairs ("EEA")	Massachusetts Environmental Policy Act (MEPA) (MGL C. 30, s 61-62H) Review Environmental Notification Form
Massachusetts Department of Environmental Protection ("MassDEP") Wetlands and Waterways	Massachusetts Clean Water Act (MGL C. 21, s 26-53) – Individual 401 Water Quality Certificate Massachusetts Public Water Front Act (MGL C. 91) – Waterways Request for Determination of Applicability Utility Related Abatement Measures (as needed following soil pre-characterization)
Massachusetts Natural Heritage and Endangered Species Program ("NHESP")	Review under the Massachusetts Endangered Species Act (MGL C. 131A) & Project Review Checklist
Massachusetts Department of Public Utilities	MGL C. 164, s. 72 – Petition to Construct MGL C. 40A, s. 3 - Zoning Exemption
Massachusetts Historical Commission	State Register Review
Massachusetts Department of Transportation ("MassDOT")	Highway Access Permit
Department of Conservation and Recreation ("DCR")	Construction and Access Permit Article 97 for Long Term Easement
Massachusetts Bay Transit Authority ("MBTA")	Access Permit
Massachusetts Water Resources Authority ("MWRA")	Section 8(m) Permit of Chapter 372 of the Acts of 1984
Town of Winchester, Massachusetts	
Conservation Commission	Massachusetts Wetlands Protection Act (MGL C 131, s 40)/Local Wetlands Bylaw – Order of Conditions / Certificate of Compliance
Board of Selectmen	Grant of Location
City of Medford, Massachusetts	
Conservation Commission	Massachusetts Wetlands Protection Act (MGL C 131, s 40)/Local Wetlands Ordinance – Order of Conditions / Certificate of Compliance
City Council	Grant of Location
City of Somerville, Massachusetts	
Conservation Commission	Massachusetts Wetlands Protection Act (MGL C 131, s 40)/Local Wetlands Ordinance– Determination of Applicability

Board of Aldermen	Grant of Location
	City of Everett, Massachusetts
Conservation Commission	Massachusetts Wetlands Protection Act (MGL C 131, s 40)/Local Wetlands Ordinance– Determination of Applicability
City Council	Grant of Location
	City of Boston, Massachusetts
Conservation Commission	Massachusetts Wetlands Protection Act (MGL C 131, s 40)/Local Wetlands Ordinance– Determination of Applicability
Public Improvement Commission	Grant of Location
	Winchester, Medford, Boston, Somerville, and Everett
Public Works	Street Opening Permits and Traffic Management Plans
Police Department	Police Detail / Traffic Management Plans

**Attachment E
Excerpts from Massachusetts 2012
Integrated List of Waters**

Massachusetts Year 2012 Integrated List of Waters

Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act

Featuring new water quality assessments for the Blackstone, Boston Harbor (including Mystic, Neponset and Weymouth/Weir), Merrimack and Parker watersheds and the Cape Cod coastal drainage areas



Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Richard K. Sullivan, Jr., Secretary
Massachusetts Department of Environmental Protection
Kenneth L. Kimmell, Commissioner
Bureau of Resource Protection
Bethany A. Card, Assistant Commissioner

Massachusetts Category 3 Waters "No uses assessed"

NAME	SEGMENT ID	DESCRIPTION	SIZE	UNITS
Sportsmans Pond	MA35082	Athol	92.724	ACRES
Sunset Lake	MA35086	Ashburnham/Winchendon	274.257	ACRES
Tully Lake	MA35111	Royalston/Athol	213.679	ACRES
Tully Pond	MA35089	Orange	70.152	ACRES
Wallace Pond	MA35092	Ashburnham	46.086	ACRES
Ward Pond	MA35093	Athol	5.899	ACRES
Wheelers Pond	MA35097	Warwick	28.286	ACRES
Wickett Pond	MA35102	Wendell	29.931	ACRES
Wrights Reservoir	MA35104	Gardner/Westminster	130.848	ACRES
Mount Hope Bay				
Cook Pond	MA61001	Fall River, MA/Tiverton, RI	157	ACRES
South Watuppa Pond	MA61006	Fall River/Westport	1473	ACRES
Mystic				
Bellevue Pond	MA71004	Medford	2	ACRES
Cummings Brook	MA71-10	Headwaters east of Wright Street, Woburn to confluence with Fowle Brook, Woburn.	2.1	MILES
Sales Creek	MA71-12	Headwaters near Route 145, Revere to tidegate/confluence with Belle Isle Inlet, Boston/Revere.	0.008	SQUARE MILES
Shaker Glen Brook	MA71-11	Headwaters, west of Dix Road Extension, Woburn to confluence with Fowle Brook, Woburn (portion culverted underground).	1.5	MILES
Spot Pond	MA71039	Stoneham/Medford	290	ACRES
Narragansett Bay				
Bad Luck Brook	MA53-11	Headwaters, outlet Warren Upper Reservoir, Rehoboth to confluence with East Branch Palmer River, Rehoboth	1.7	MILES
Beaverdam Brook	MA53-10	Headwaters, southeast of Chestnut Street, Rehoboth to confluence with Palmer River, Rehoboth	2.9	MILES
East Branch Palmer River	MA53-08	Headwaters, near Stevens Corner Cemetery, Rehoboth to confluence with West Branch Palmer River (forming Palmer River), Rehoboth	7.2	MILES
Fullers Brook	MA53-12	Headwaters in wetland north of Jacobs Street, Seekonk to confluence with Palmer River, Rehoboth	1.7	MILES
Oak Swamp Brook	MA53-15	Headwaters in Oak Swamp east of School Street, Rehoboth to confluence with Rocky Run, Rehoboth	3	MILES
Rumney Marsh Brook	MA53-09	Headwaters, east of Locust Avenue, Rehoboth to confluence with Beaverdam Brook, Rehoboth	1.3	MILES
Torrey Creek	MA53-14	Headwaters in wetland east of Benson Avenue, Seekonk to Barney Avenue, Rehoboth (includes culverted section near Seekonk Speedway, Seekonk)	2.1	MILES
West Branch Palmer River	MA53-07	From confluence of Bliss Brook, Rehoboth to confluence with East Branch Palmer River (forming Palmer River), Rehoboth	3.8	MILES
Nashua				
Ashby Reservoir	MA81001	Ashby	36	ACRES
Asnebumskit Pond	MA81002	Paxton	43	ACRES

Massachusetts Category 5 Waters "Waters requiring a TMDL"

NAME	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT CAUSE	EPA TMDL NO.
Lee River	MA61-01	From confluence with Lewin Brook, Swansea to Route 6, Swansea/Somerset	0.02	SQUARE MILES	Fecal Coliform	38905
					Nutrient/Eutrophication Biological Indicators	
Lee River	MA61-02	Route 6, Swansea/Somerset to mouth at Mount Hope Bay, Swansea/Somerset	0.51	SQUARE MILES	(Debris/Floatables/Trash*)	
					Chlorophyll-a	
					Fecal Coliform	38906
					Nitrogen (Total)	
					Oxygen, Dissolved	
Mount Hope Bay	MA61-06	the Massachusetts portion from the Braga Bridge, Fall River/Somerset to the state border Fall River, MA/Tiverton, RI to the line from Braton Point Somerset to MA/RI border approximately 3/4 of a mile due east of Spar Island, RI	2.29	SQUARE MILES	Chlorophyll-a	
					Fecal Coliform	38908
					Fishes Bioassessments	
					Nitrogen (Total)	
					Temperature, water	
Mount Hope Bay	MA61-07	the Massachusetts portion from mouth of Cole River (at old railway grade), Swansea to state border Swansea, MA/Warren, RI to the line from Brayton Point, Somerset to MA/RI border approximately 3/4 of a mile due east of Spar Island, RI to the line between Bay Point, Swansea and Brayton Point, Somerset (the mouth of the Lee River)	1.84	SQUARE MILES	Chlorophyll-a	
					Fecal Coliform	38909
					Fishes Bioassessments	
					Nitrogen (Total)	
					Oxygen, Dissolved	
Mystic						
Aberjona River	MA71-01	Source just south of Birch Meadow Drive, Reading to inlet Upper Mystic Lake at Mystic Valley Parkway, Winchester (portion culverted underground). (through former pond segments Judkins Pond MA71021 and Mill Pond MA71031).	9.1	MILES	(Physical substrate habitat alterations*)	
					Ammonia (Un-ionized)	
					Aquatic Macroinvertebrate Bioassessments	
					Arsenic	
					Escherichia coli	
					Oxygen, Dissolved	
					Phosphorus (Total)	
					Sediment Bioassays -- Chronic Toxicity Freshwater	
Turbidity						

Massachusetts Category 5 Waters "Waters requiring a TMDL"

NAME	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT CAUSE	EPA TMDL NO.
Horn Pond	MA71019	Woburn	108	ACRES	(Non-Native Aquatic Plants*)	
					Excess Algal Growth	
					Oxygen, Dissolved	
					Phosphorus (Total)	
Lower Mystic Lake	MA71027	Arlington/Medford	93	ACRES	DDT	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Salinity	
					Sulfide-Hydrogen Sulfide	
Malden River	MA71-05	Headwaters south of Exchange Street, Malden to confluence with Mystic River, Everett/Medford.	2.3	MILES	(Debris/Floatables/Trash*)	
					Chlordane	
					DDT	
					Dissolved oxygen saturation	
					Escherichia coli	
					Fecal Coliform	
					Foam/Flocs/Scum/Oil Slicks	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					pH, High	
					Phosphorus (Total)	
					Secchi disk transparency	
					Sediment Bioassays -- Chronic Toxicity Freshwater	
					Taste and Odor	
					Total Suspended Solids (TSS)	
Mill Brook	MA71-07	Headwaters south of Massachusetts Avenue, Lexington to inlet of Lower Mystic Lake, Arlington (portions culverted underground).	3.9	MILES	(Physical substrate habitat alterations*)	
					Escherichia coli	
Mill Creek	MA71-08	From Route 1, Chelsea/Revere to confluence with Chelsea River, Chelsea/Revere.	0.02	SQUARE MILES	Fecal Coliform	
					Other	
					PCB in Fish Tissue	

Massachusetts Category 5 Waters "Waters requiring a TMDL"

NAME	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT CAUSE	EPA TMDL NO.
Mystic River	MA71-02	Outlet Lower Mystic Lake, Arlington/Medford to Amelia Earhart Dam, Somerville/Everett.	4.9	MILES	(Fish-Passage Barrier*)	
					Arsenic	
					Chlordane	
					Chlorophyll-a	
					DDT	
					Dissolved oxygen saturation	
					Escherichia coli	
					PCB in Fish Tissue	
					Phosphorus (Total)	
					Secchi disk transparency	
					Sediment Bioassays -- Chronic Toxicity Freshwater	
Mystic River	MA71-03	Amelia Earhart Dam, Somerville/Everett to confluence with Boston Inner Harbor, Chelsea/Charlestown (Includes Island End River).	0.49	SQUARE MILES	Sediment Screening Value (Exceedence)	
					Ammonia (Un-ionized)	
					Fecal Coliform	
					Foam/Flocs/Scum/Oil Slicks	
					Other	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Petroleum Hydrocarbons	
					Taste and Odor	
Spy Pond	MA71040	Arlington	98	ACRES	(Eurasian Water Milfoil, Myriophyllum spicatum*)	
					Chlordane	
					DDT	
					Excess Algal Growth	
					Oxygen, Dissolved	
Unnamed Tributary	MA71-13	Unnamed tributary locally known as 'Meetinghouse Brook', from emergence south of Route 16/east of Winthrop Street, Medford to confluence with the Mystic River, Medford. (brook not apparent on 1985 Boston North USGS quad - 2005 orthophotos used to delineate stream)	0.1	MILES	Escherichia coli	

Massachusetts Category 5 Waters "Waters requiring a TMDL"

NAME	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT CAUSE	EPA TMDL NO.
Upper Mystic Lake	MA71043	Winchester/Arlington/Medford	176	ACRES	(Non-Native Aquatic Plants*)	
					Dissolved oxygen saturation	
					Oxygen, Dissolved	
Wedge Pond	MA71045	Winchester	23	ACRES	Oxygen, Dissolved	
					Phosphorus (Total)	
Winn Brook	MA71-09	Headwaters near Juniper Road and the Belmont Hill School, Belmont to confluence with Little Pond, Belmont (portions culverted underground).	1.4	MILES	(Physical substrate habitat alterations*)	
					Escherichia coli	
Winter Pond	MA71047	Winchester	18	ACRES	(Non-Native Aquatic Plants*)	
					Nutrient/Eutrophication Biological Indicators	
Narragansett Bay						
Palmer River	MA53-04	From confluence of East and West Branches of the Palmer River, Rehoboth to the Shad Factory Pond dam, Rehoboth	5.6	MILES	(Low flow alterations*)	
					Fecal Coliform	35086
					Nutrient/Eutrophication Biological Indicators	
Runnins River	MA53-01	Route 44, Seekonk to Mobile Dam, Seekonk, MA/East Providence, RI (through Burrs Pond formerly segment MA53001)	3.7	MILES	(Debris/Floatables/Trash*)	
					Aquatic Macroinvertebrate Bioassessments	
					Fecal Coliform	38903
					Mercury in Fish Tissue	33880
					Nutrient/Eutrophication Biological Indicators	
					Oil and Grease	
					Oxygen, Dissolved	
Nashua						
Asnebumskit Brook	MA81-56	From outlet Eagle Lake, Holden to the confluence with the Quinapoxet River, Holden.	2.9	MILES	Ambient Bioassays -- Chronic Aquatic Toxicity	
Bartlett Pond	MA81008	Lancaster	5	ACRES	Escherichia coli	
Fort Pond	MA81046	Lancaster	76	ACRES	Oxygen, Dissolved	
Gates Brook	MA81-24	Headwaters west of Prospect Street, West Boylston to inlet Wachusett Reservoir (Gates Cove), West Boylston.	3.4	MILES	Fecal Coliform	