

**Commonwealth of Massachusetts**

Executive Office of Environmental Affairs ■ MEPA Office

**ENF**

**Environmental Notification Form**

*For Office Use Only*  
Executive Office of Environmental Affairs

EOEA No.: **14083**  
MEPA Analyst: **Bill GAGE**  
Phone: 617-626-**1025**

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: <b>Birch Street Elevated Water Storage Tank and Mayflower Street Water Main</b>		
Street: <b>Birch Street, Walker Rd, Elm Street, and Mayflower St</b>		
Municipality: <b>Duxbury</b>	Watershed: <b>South Coastal Drainage Area</b>	
Universal Transverse Mercator Coordinates:	Latitude: <b>42.04</b> Longitude: <b>-70.75</b>	
Estimated commencement date: <b>April 2008</b>	Estimated completion date: <b>June 2009</b>	
Approximate cost: <b>3,150,000</b>	Status of project design: <b>90%</b> complete	
Proponent: <b>Duxbury Department of Public Works</b>		
Street: <b>878 Tremont Street</b>		
Municipality: <b>Duxbury</b>	State: <b>MA</b>	Zip Code: <b>02332</b>
Name of Contact Person From Whom Copies of this ENF May Be Obtained: <b>Nicole Sanford, Environmental Scientist</b>		
Firm/Agency: <b>Stantec Consulting Services</b>	Street: <b>136 West Street, Suite 203</b>	
Municipality: <b>Northampton</b>	State: <b>MA</b>	Zip Code: <b>01060</b>
Phone: <b>413-584-4776</b>	Fax: <b>413-584-3157</b>	E-mail: <b>nicole.sanford@stantec.com</b>

- Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?  
 Yes  No
- Has this project been filed with MEPA before?  
 Yes (EOEA No. \_\_\_\_\_)  No
- Has any project on this site been filed with MEPA before?  
 Yes (EOEA No. \_\_\_\_\_)  No
- Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:
- a Single EIR? (see 301 CMR 11.06(8))  Yes  No
  - a Special Review Procedure? (see 301 CMR 11.09)  Yes  No
  - a Waiver of mandatory EIR? (see 301 CMR 11.11)  Yes  No
  - a Phase I Waiver? (see 301 CMR 11.11)  Yes  No

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): **DWSRF -3007 – 2,575,000 for Birch Street Tank & 575,000 for Water Main**

Are you requesting coordinated review with any other federal, state, regional, or local agency?  
 Yes (Specify: **MA DEP and local conservation commission**)  No

List Local or Federal Permits and Approvals: **DEP Technical, DEP SRF, and Conservation Commission** Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- |  |                                       |  |
|--|---------------------------------------|--|
| <input checked="" type="checkbox"/> Land | <input type="checkbox"/> Rare Species | <input type="checkbox"/> Wetlands, Waterways, & Tidelands      |
| <input type="checkbox"/> Water           | <input type="checkbox"/> Wastewater   | <input type="checkbox"/> Transportation                        |
| <input type="checkbox"/> Energy          | <input type="checkbox"/> Air          | <input type="checkbox"/> Solid & Hazardous Waste               |
| <input type="checkbox"/> ACEC            | <input type="checkbox"/> Regulations  | <input type="checkbox"/> Historical & Archaeological Resources |

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals
<b>LAND</b>				<input checked="" type="checkbox"/> Order of Conditions <input type="checkbox"/> Superseding Order of Conditions <input type="checkbox"/> Chapter 91 License <input type="checkbox"/> 401 Water Quality Certification <input type="checkbox"/> MHD or MDC Access Permit <input type="checkbox"/> Water Management Act Permit <input type="checkbox"/> New Source Approval <input type="checkbox"/> DEP or MWRA Sewer Connection/Extension Permit <input type="checkbox"/> Other Permits <i>(including Legislative Approvals) – Specify:</i>
Total site acreage	3.85			
New acres of land altered		0.85		
Acres of impervious area	1.68	0.23	1.91	
Square feet of new bordering vegetated wetlands alteration		4,980 = previously disturbed riverfront area		
Square feet of new other wetland alteration		N/A		
Acres of new non-water dependent use of tidelands or waterways		N/A		
<b>STRUCTURES</b>				
Gross square footage	Existing tank = 1,257 SF	Proposed tank = 1,134	1134 (Existing tank to be removed)	
Number of housing units	N/A	N/A	N/A	
Maximum height (in feet)	Existing tank = 80 feet	Proposed tank = 139.5	139.5 (Existing tank to be removed)	
<b>TRANSPORTATION</b>				
Vehicle trips per day	1	0	1	
Parking spaces	1	0	1	
<b>WATER/WASTEWATER</b>				
Gallons/day (GPD) of water use	Five wells total 4.7 MGD	0	4.7 MGD	
GPD water withdrawal	Five wells total 4.7 MGD	0	4.7 MGD	
GPD wastewater generation/treatment	0	0	0	
Length of water/sewer mains (in miles)	0.82	0.25	1.07	

**CONSERVATION LAND:** Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

Yes (Specify: **16,017.2 +/- SF of Conservation Commission land will be transferred to the Duxbury DPW. In return, 1.65 acres of Water Department property will be given to the Duxbury Conservation Commission**)  No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

Yes (Specify: A response is pending from the Duxbury Conservation Commission agent regarding whether any conservation restrictions exist.)  No

**RARE SPECIES:** Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

Yes (Specify: **Mayflower Street water main route and culvert replacement will take place within Priority and Estimated Habitat. A copy of this ENF will be sent to NHESP for their review.**)  No

**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 (Specify \_\_\_\_\_)  No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

Yes (Specify \_\_\_\_\_)  No

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN:** Is the project in or adjacent to an Area of Critical Environmental Concern?

Yes (Specify \_\_\_\_\_)  No

**PROJECT DESCRIPTION:** The project description should include (a) a description of the project site, (b) a description of both on-site and off-site alternatives and the impacts associated with each alternative, and (c) potential on-site and off-site mitigation measures for each alternative (You may attach one additional page, if necessary.)

The western areas of Duxbury are currently experiencing low system pressures, which is a problem during high demands and for fire protection. After a system analysis was completed, it was determined that the best solution was to split the system into a high service area (West Duxbury) and a low service area (East Duxbury). In order to establish a high service area, the overflow of the Birch Street tank, which is located in West Duxbury, would need to be raised 45 feet. By raising the overflow elevation in the high service area system pressures will increase and fire protection will greatly improve. Once the system is split, pressures in the low service area will remain the same, and be set by the existing Captain Hill tank. Pressures in the high service area will be set by the new Birch Street tank overflow elevation.

A division between the high and low service areas will be accomplished by means of two pressure reducing valves (PRV). One will be installed on Elm Street west of the Route 3 overpass, and one will be installed on Walker Road at the intersection of West Street. If needed, the PRVs will allow water to flow from the high service area to the low service area, without increasing system pressures in the low service area. The supply of water from the high to the low service area through the PRVs will be set by a pressure differential, which can be adjusted. However, water will not be able to flow from the low to the high at these locations.

With the system split, the high service area would currently only have three wells as sources of water supply (Mayflower 1, Mayflower 2 and Lake Shore Drive). If there were problems with any of these sources, the high service area may not have sufficient supply to meet the demands. As a result the Mayflower Street water main will be installed along Mayflower Street between the Evergreen WTP and the high service area. The Mayflower Street water main will connect two additional sources of supply to the high service area, which will provide the necessary redundancy needed to operate the two separate service areas. The low service

area will no longer be supplied directly by the Evergreen wells, but can be supplied through the two proposed PRVs in the event that the low service area experiences a large demand.

In order to obtain the appropriate elevation for the new water storage tank and provide continuous water service, a new tank will be constructed 30 feet north of the existing tank. This is currently Conservation Land and will be part of a land swap that will take place between the Town of Duxbury's Conservation Commission and the Department of Public works. No funds will be exchanged. Approximately, 16,017.2 +/- SF of Conservation Commission land will be transferred to the Duxbury DPW. In return, 1.65 acres of Water Department property will be given to the Duxbury Conservation Commission. The Town of Duxbury has already begun the process of the land transfer and is currently working with Jennifer Soper of the Executive Office of Energy and Environmental Affairs (EOEEA). Please refer to Appendix 2 for correspondence between the Town and EOEEA.

### Project Alternatives

Project alternatives were investigated for both the Mayflower Street Water Main and the Birch Street Tank Contracts. The Birch Street Tank, Contract 1, position is such that the tank utilizes the highest elevation on the existing parcel. Additional land is needed from the conservation commission in order to construct the new tank while keeping the existing tank online. An analysis was conducted to determine the effects of demolishing the existing tank first and then constructing the proposed tank in the same location. The pressure losses and loss of fire protection in many areas surrounding the existing tank made it too high of a risk to take the existing tank out of service long enough to construct a new tank. The Water Department does not own any other land in this portion of town at the elevation required for the new tank. Thus, there are no feasible and substantially equivalent alternatives.

Mayflower Street Water Main, Contract 2, was originally supposed to be a new booster pump station located at Elm Street to act as an additional source to the high service area. However, after additional analysis it was determined that the Mayflower Street water main could perform the same function by connecting the Evergreen wells to the high service area. The water main alternative was chosen because it cost less to construct versus the booster pump station. Further, the installation of new water main has no long-term operation and maintenance costs compared to booster pump station.

### Summary

In summary, the new elevated water storage tank at Birch Street will disturb 0.71 acres. The Duxbury Conservation Commission will give 16,017.2 SF of conservation land for the construction of the new tank. In exchange the Duxbury DPW will give 1.65 acres of DPW land to the Conservation Commission. Approximately, 0.25 miles of new water main will be installed to connect the two Evergreen wells to the high service area. The majority of the water main installation will occur within paved and gravel roads and only a small portion, 245 LF, of water main will be installed cross country. Portions of the water main installation will occur within previously disturbed riverfront area and PRV installation near Walker Street will occur within buffer zone. The culvert replacement will impact bank and this will need an Order of Conditions from the Duxbury Conservation Commission. Finally, the project will not result in an increase in permitted water withdrawal and will only improve the reliability of water service for fire protection and drinking water for the Town of Duxbury.

## LAND SECTION – all proponents must fill out this 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: **Land transfer from the Duxbury Conservation Commission to the Duxbury DPW. The Duxbury Conservation Commission will give 16,017.2 SF of conservation land for the construction of the new tank. In exchange the Duxbury DPW will give 1.65 acres of DPW land to the Conservation Commission.**

### 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	0.03	-0.002	0.03