BOSTON GAS COMPANY

Lake Street Gas Main Installation Project
Haverhill, MA
Notice of Intent

Town of Haverhill
Conservation Commission
May 2025

Prepared for:
Boston Gas Company
170 Data Drive
Waltham, MA 02451

BSC Project No. 101714.00

BSC GROUP
BUILD | SUPPORT | CONNECT

BSC GROUP
BUILD | SUPPORT | CONNECT

Engineers
Environmental Scientists
Software Developers
Landscape Architects
Planners
Surveyors

www.bscgroup.com

MAY 14, 2025

Attn: Harmony Wilson, Chair
Haverhill Conservation Commission
4 Summer Street
Haverhill, MA 01830

RE: Notice of Intent
Lake Street Gas Main Installation Project
Haverhill, Massachusetts
Boston Gas Company

Dear Harmony Wilson and Members of the Haverhill Conservation Commission:

BSC Group, Inc. (BSC) is filing this Notice of Intent (NOI) on behalf of the Boston Gas Company (BGC) for the installation of a gas main within the roadway along Lake Street and beneath Creek Brook in Haverhill, MA ("The Project"). BGC proposes to install approximately 3,000 linear feet of gas main along Lake Street, of which approximately 827.5 feet of gas main will be installed via Horizontal Directional Drill (HDD) methodologies under Creek Brook. This NOI is being submitted in accordance with the Massachusetts Wetlands Protection Act (*M.G.L. Ch.131, S.40*) (WPA) and implementing regulations (*310 CMR 10.00*), and the Haverhill Wetland Protection Ordinance Chapter 253, as well as to satisfy the requirements of Section 401 in accordance with *314 CMR 9.03(3)*. The location of the proposed activities is shown on the USGS Site Locus Map in **Attachment B**.

Specifically, activities which are the subject of this NOI include the installation of new gas main within 100-ft Buffer Zone to Bordering Vegetated Wetlands (BVW), 200-ft Riverfront Area (RFA), and/or the FEMA 100-yr Flood Zone (BLSF). This work qualifies as a Limited Project under 310 CMR 10.53(3)(d). However, no loss of or permanent alterations to resource area are anticipated as a result of the work as all work is within the existing paved roadway and the gas main will be below ground level. Components of the gas main installation within the roadway in 100-foot Buffer Zone and RFA are exempt minor buffer zone activities; however, all work in resource areas is jurisdictional under the Haverhill Ordinance. Please also refer to the enclosed USGS Site Locus Map and Environmental Resources Map in **Attachment B**, and Site Photographs in **Attachment C**.

The proposed work is necessary to provide gas service to the residents along Lake Street. This NOI serves as a request for an Order of Conditions for the proposed underground gas main installation activities within resource areas which are jurisdictional under the WPA.

Throughout the Project, BGC crews will implement Best Management Practices (BMPs), including sediment and erosion controls, to ensure adjacent resource areas are adequately protected and that impacts to the surrounding areas are avoided or minimized. Upon completion of Project activities, temporarily disturbed areas will be restored to pre-construction conditions to the maximum extent practicable.

We respectfully request that this matter be heard at the next scheduled Conservation Commission hearing. A copy of this application has been sent concurrently to the Northeast Regional Office of the Department of Environmental Protection (NERO), via eDEP. Hard copies will be provided to the Conservation Commission. If you have any questions regarding the enclosed information, please contact me at (617-896-4492) or Patrick Hutchinson of BGC at (774) 291-9348. Thank you for your consideration in this matter.

Sincerely,
BSC Group, Inc.

Honora Tisell
Ecological Project Manager

cc: Patrick Hutchinson, BGC
MassDEP Northeast Regional Office

Table of Contents

Lake Street Gas Main Installation Project
Haverhill, MA
Notice of Intent

City of Haverhill Conservation Commission

HCC Local Application Form 3
Notice of Intent

A. STATUTE APPLICABILITY

This application is being filed with the Commission in accordance with the following (check all that apply):

- ☑ Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40
- ☑ Haverhill Municipal Ordinance Chapter 253

B. GENERAL INFORMATION

Applicant Boston Gas Company
Property Owner Public Roadway
Representative BSC Group, Inc.
Location (Street Address) 409-609 Lake Street
Assessor's Parcel Identification

C. APPLICATION CHECKLIST

The Commission requires the submittal of this original, completed Form; one (1) paper copy of site plans; and one (1) paper copy of all other materials. Additionally, the Commission requires the submittal of individual PDFs of this Form and all listed application materials. If practical, related items may be combined into a single PDF. PDFs should not mix larger format sheets (e.g. site plans) with smaller sheets (e.g. letters). These submittal requirements also apply to supplemental information provided during the public hearing. The following materials shall be submitted with this form:

- ☑ Completed, current WPA Form 3, 3A, or 4 and NOI Wetland Fee Transmittal Form
- ☑ Project Narrative with description of resource areas & delineation methodology and demonstration of compliance with pertinent Performance Standards
- ☐ Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan
- ☑ Site Plans clearly describing the location and nature of the work, including such information as site boundaries, wetlands, topography, existing and proposed conditions, vegetation cover, soils, erosion & sedimentation controls, Title 5 compliance, flood storage calculations…(24" x 36" max. sheet size)
- ☐ MassDEP Bordering Vegetated Wetland Delineation Field Data Forms, as appropriate
- ☐ Wetland Resource Area Impact Mitigation Plan prepared in accordance with MA Inland Wetland Replication Guidelines, if applicable
- ☐ Demonstration of compliance with MA River & Stream Crossing Standards, if applicable (The HCC applies the General Standards to all resource area crossings for wildlife passage.)
- ☐ Simplified or Detailed Wildlife Habitat Evaluation (Appendix A or B), if applicable (See "MA Wildlife Habitat Protection Guidance for Inland Wetlands")
- ☐ Demonstration of compliance with MA Stormwater Management Standards, including but not limited to
  - ☐ Stormwater Report with pertinent calculations based on NOAA Atlas 14 rainfall data
  - ☐ Checklist for Stormwater Report
  - ☐ Long-Term Pollution Prevention Plan
  - ☐ Operation and Maintenance Plan
  - ☐ Illicit Discharge Compliance Statement

- ☑ 8½" x 11" sections of the following maps with project location clearly identified
  - ☑ USGS Quadrangle
  - ☑ MassGIS Orthophoto
  - ☐ City of Haverhill Parcel ID Map, also identifying properties within 300' of subject property
  - ☑ NRCS Soils Map and Resource Report
  - ☑ FEMA Flood Insurance Rate Map, if applicable
  - ☐ MA NHESP Estimated Habitats of Rare Wildlife and Priority Habitats of Rare Species, if applicable
  - ☐ MassDEP/UMass-Amherst Habitat of Potential Regional or Statewide Importance, if applicable
- ☐ Proof of NOI filing with the MA Natural Heritage & Endangered Species Program, if applicable
- ☑ Appropriate Filing Fees, payable to the City of Haverhill, under the Act and Ordinance
- ☐ Other: _____

D. LOCAL PERMIT DOCUMENTATION

In accordance with 310 CMR 10.05(4)(e), list all obtainable permits, variances, and approvals required by local ordinance with respect to the proposed activity and status of same: _____

_____

E. APPLICATION CERTIFICATION

I have read the Department of Environmental Protection's "Instructions for Completing Application" and the City's Municipal Ordinance under Chapter 253, with all applicable regulations and policies, for the filing of this application with the Haverhill Conservation Commission and agree to its terms and conditions, as amended. I understand the submitted NOI, its plans, and all its supporting materials are public records and may be uploaded to the City's website for public review. As required by the Commission, the wetland resource area(s) are flagged, the corners of proposed structures are staked, and the centerline of proposed roadway(s) and/or driveway(s) are marked, as appropriate, to facilitate site inspections by Commissioners and Conservation Staff.

Signed: _____ 5/14/2025
(APPLICANT) (DATE)

F. SITE ACCESS ACKNOWLEDGEMENT

I hereby grant the Haverhill Conservation Commission and its officials permission to enter upon my property at _____ to review the filed Notice of Intent and
(STREET ADDRESS AND ASSESSOR'S PARCEL ID)
future site conditions for compliance with the issued Order of Conditions. The sole purpose of this acknowledgement is to allow the Commission and its officials to perform their duties under the Massachusetts Wetlands Protection Act and the City's wetlands protection ordinance.

Signed: _____ _____
(PROPERTY OWNER) (DATE)

City of Haverhill Conservation Commission

HCC Local Application Form 3
Notice of Intent

I. LOCAL ORDINANCE FEE CALCULATION FORM

ACTIVITY	LOCAL ORDINANCE FEE	# of Activities or Measurement	Subtotal
***Abbrev. Notice of Resource Area Delineation (ANRAD)**			
Single Family House Project	$1/linear foot, first 100'; $0.50/lf, second 100'; $0.10/lf, each additional foot		
All Other Projects	***$1/linear foot, first 1000'; $0.50/lf, second 1000'; $0.10/lf, each additional foot		
%*Notices of Intent (NOI)			
Category 1 Activity	$100		
Category 2 Activity	$250	1 (x1.5)	$375.00
Category 3 Activity	$525		
Category 4 Activity	$725		
Category 5 Activity	$2/foot		
Category 6 Activity - If no ANRAD was filed for the project site, then a local Cat. 6 fee must be paid in accordance with the ANRAD fee schedule	See ANRAD fee schedule		
Resource Area Alterations			
Buffer Zone, 75'-100' from resource area boundary	$0.05 / square foot		
Buffer Zone, 35'-75' from resource area boundary	$0.10 / square foot		
Buffer Zone, 0'-35' from resource area boundary	$0.25 / square foot		
Bordering Vegetated Wetland	$0.50 / square foot		
Bank	$5 / linear foot		
Land Under Water	$0.50 / square foot		
Land Subject to Flooding	$0.05 / square foot	341 sq. ft.	$17.05
Riverfront Area	$0.05 / square foot		
Riverfront Area with the watershed of a potable water supply	$0.50 / square foot		
Land within 100' of a Certified Vernal Pool	$0.25 / square foot		
Local-only Jurisdictional Resource Area	$0.25 / square foot		
Land within 200' of a potable water supply	$0.50 / square foot		
		ADVERTISING FEE*	$45
		LOCAL ORDINANCE FEE TOTAL	$437.05
		For filings resulting from enforcement action, double the Local Ordinance Fee Total	

NOTES:

*****Application is subject to an additional $45 Local Advertising Fee payable to the City of Haverhill prior to **EACH** advertising

***Local Ordinance Fee maximum of $100 for applications exceeding 1000'. Commission requires review by outside consultant under M.G.L. Ch. 44, sec. 53G for projects exceeding 1000'. Applicant shall post escrow in accordance with HCC Rules for Hiring Outside Consultants. Cap passed by a 5-0 vote of the Commission on March 7, 2019.

%Local Ordinance Fees for RDA, NOI, & RMOC increase 50% when project is also proposed within a Riverfront Area

Local Ordinance Fees passed by a 7 – 0 vote of the Commission on October 28, 2010, effective January 1, 2011

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

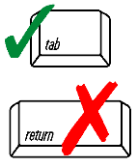
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Haverhill
City/Town

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Lake Street (a. Street Address) | Haverhill (b. City/Town) | 01830 (c. Zip Code)

Latitude and Longitude: 42.792881 (d. Latitude) | -71.137391 (e. Longitude)

N/A - Public Road (f. Assessors Map/Plat Number) | (g. Parcel /Lot Number)

2. Applicant:

Patrick (a. First Name) | Hutchinson (b. Last Name)

Boston Gas Company (BGC) (c. Organization)

170 Data Drive (d. Street Address)

Waltham (e. City/Town) | MA (f. State) | 02451 (g. Zip Code)

(774) 291-9348 (h. Phone Number) | (i. Fax Number) | patrick.hutchinson@nationalgrid.com (j. Email Address)

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Public Roadway (a. First Name) | (b. Last Name)

(c. Organization)

(d. Street Address)

(e. City/Town) | (f. State) | (g. Zip Code)

(h. Phone Number) | (i. Fax Number) | (j. Email address)

4. Representative (if any):

Honora (a. First Name) | Lovelace Tisell (b. Last Name)

BSC Group, Inc. (c. Company)

One Mercantile Street, Suite 610 (d. Street Address)

Worcester (e. City/Town) | MA (f. State) | 01608 (g. Zip Code)

(617) 896-4492 (h. Phone Number) | (i. Fax Number) | htisell@bscgroup.com (j. Email address)

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$750.00 (a. Total Fee Paid) | $362.50 (b. State Fee Paid) | $387.50 (c. City/Town Fee Paid)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Haverhill
City/Town

A. General Information (continued)

6. General Project Description:

Boston Gas Company (BGC) proposes to install ~3,000 feet of new gas main within the roadway along Lake Street and beneath Creek Brook via a Horizontal Direction Drilling (HDD) crossing.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☒ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☒ Yes ☐ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

310 CMR 10.53(3)(d) - the construction, reconstruction, operation and maintenance of underground and overhead public utilities

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
N/A - Public Roadway	
c. Book	**d. Page Number**
N/A	N/A

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Haverhill
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☒ Bordering Land Subject to Flooding	341 1. square feet 0 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☒ Riverfront Area	Creek Brook 1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☒ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 33,547 square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
673	226	447

5. Has an alternatives analysis been done and is it attached to this NOI? ☒ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☒ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Haverhill
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Haverhill
City/Town

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☒ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   August 2021
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Haverhill
City/Town

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

c. ☐ Is this an aquaculture project? d. ☐ Yes ☐ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Haverhill
City/Town

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Haverhill
City/Town

D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

USGS Locus Map
a. Plan Title

BSC Group
b. Prepared By

c. Signed and Stamped by

04/11/2025
d. Final Revision Date

e. Scale

Environmental Resources Map
f. Additional Plan or Document Title

05/13/2025
g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

TBD
2. Municipal Check Number

3. Check date

eDEP Payment
4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Haverhill
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date: 5/15/2025
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

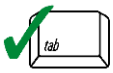
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

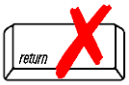
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





A. Applicant Information

1. Location of Project:

Lake Street - Public Way	Haverhill
a. Street Address	b. City/Town
eDEP payment	XXX
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Patrick	Hutchinson	
a. First Name	b. Last Name	
Boston Gas Company (BGC)		
c. Organization		
170 Data Drive		
d. Mailing Address		
Waltham	MA	02451
e. City/Town	f. State	g. Zip Code
774-291-9348		Patrick.hutchinson@nationalgrid.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

Public Roadway		
a. First Name	b. Last Name	
c. Organization		
d. Mailing Address		
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2e	1 (x 1.5)	$750.00	$750.00

Step 5/Total Project Fee: $750.00

Step 6/Fee Payments:

Total Project Fee:	$750.00 (a. Total Fee from Step 5)
State share of filing Fee:	$362.50 (b. 1/2 Total Fee **less $**12.50)
City/Town share of filling Fee:	$387.50 (c. 1/2 Total Fee **plus** $12.50)

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

4064

BSC COMPANIES, INC.
803 SUMMER STREET
BOSTON, MASSACHUSETTS 02127

53-179/113

DATE 5/15/25

PAY TO THE ORDER OF City of Haverhill $ 437.05

Four hundred thirty-Seven dollars 05/100 DOLLARS

Eastern Bank Boston, MA 02110 easternbank.com 1-800-EASTERN

TWO SIGNATURES REQUIRED OVER $2,500
NOT VALID AFTER 180 DAYS

FOR 101714.00

⑈004064⑈ ⑆011301798⑆ 060065930⑈

4065

BSC COMPANIES, INC.
803 SUMMER STREET
BOSTON, MASSACHUSETTS 02127

53-179/113

DATE 5/15/25

PAY TO THE ORDER OF City of Haverhill $ 387.50

Three hundred eighty Seven dollars 50/100 DOLLARS

Eastern Bank Boston, MA 02110 easternbank.com 1-800-EASTERN

TWO SIGNATURES REQUIRED OVER $2,500
NOT VALID AFTER 180 DAYS

FOR 10714.00

⑈004065⑈ ⑆011301798⑆ 060065930⑈

Attachment A

Lake Street Gas Main Installation Project
Haverhill, MA
Notice of Intent

PROJECT NARRATIVE

1 INTRODUCTION

BSC Group, Inc. (BSC) is filing this Notice of Intent (NOI) on behalf of the Boston Gas Company (BGC) for work associated with the installation of a gas main within the roadway along Lake Street and at the crossing of Creek Brook in Haverhill, MA ("the Project"). BGC proposes to install approximately 3,000 linear feet of gas main along Lake Street, of which approximately 827.5 feet of gas main will be installed via Horizontal Directional Drill (HDD) methodologies under Creek Brook. This NOI is being submitted in accordance with the Massachusetts Wetlands Protection Act (*M.G.L. Ch.131, S.40*) (WPA) and implementing regulations (*310 CMR 10.00*) and the City of Haverhill Wetlands Protection Ordinance (Chapter 253).

The work requires an Order of Conditions (OOC) under the WPA to satisfy Section 401 certification requirements under the state Clean Water Act (CWA). This Project can proceed under an OOC per *314 CMR 9.03(3)*[1]. The location of the proposed activities is shown on the USGS Site Locus Map in **Attachment B**

1.1 Jurisdictional Activities

Activities which are the subject of this NOI include the installation of new gas main within the 100-ft Buffer to Inland Bank/Bordering Vegetated Wetland (BVW), 200-ft Riverfront Area (RFA), and/or the FEMA 100-yr Flood Zone (BLSF). This work qualifies as a Limited Project under 310 CMR 10.53(3) (d). However, no loss of or permanent alterations to resource areas are anticipated as a result of the work as all work is within the existing paved roadway and the gas main will be below ground level within or underneath the existing paved roadway footprint. Please refer to the enclosed Environmental Resources Map in **Attachment B**, and Site Photographs in **Attachment C** for depictions of the work site.

1.2 Exempt Activities

Components of the gas main installation within the roadway in 100-foot Buffer Zone and RFA are exempt minor buffer zone activities under the WPA; however, all work in resource areas is jurisdictional under the Haverhill Ordinance. Activities exempt under the WPA include the installation of approximately 2,660-ft of gas main within the 100-ft Buffer to Inland Bank/Bordering Vegetated Wetland (BVW), and 200-ft Riverfront Area (RFA), as these activities are considered an exempt minor buffer zone activity under WPA regulations 310 CMR 10.02 (2)(b)(2)(i).

2 EXISTING CONDITIONS

The Project is located within the existing paved roadway of Lake Street from the intersection with Pamela Lane to the roadway in front of 609 Lake Street. The roadway crosses Creek Brook, which

[1] MassDEP typically asserts discretional authority under the 401 Water Quality Certification Program over HDD projects crossing waterbodies based on the "dredge" of Land Under Water and potential for inadvertent release into the waterbody.

flows under the roadway through an existing culvert. Creek Brook is a perennial stream. Land use immediately adjacent to the Project area is comprised of low-density residential use, with areas of mixed forest.

2.1 Resource Area Summary

BSC conducted both a desktop analysis using MassGIS data layers and publicly available data and field investigations of the proposed Project area to identify wetland resource areas and assess permitting requirements pursuant to the WPA and local Ordinance. BSC Wetland Scientists delineated the Banks of Creek Brook and associated wetlands on 04/30/2025, in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, ed. J.S. Wakely, R.W. Lichvar, and C. C. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center (Version 2.0) and methodology described in the Massachusetts Department of Environmental Protection's (MassDEP) *Handbook on Delineating Bordering Vegetated Wetlands* (Published in March 1995).

Existing conditions, wetland resource areas, and buffer zones in relation to the proposed activities are shown on the Environmental Resources Map in **Attachment B**. Representative photographs of site conditions are provided in **Attachment C.** Portions of the proposed activities are within 100-ft Buffer Zone to Inland Bank /BVW, RFA, and BLSF, all associated with Creek Brook.

At the gas line crossing location of Creek Brook, the banks are well-defined rip-rap with minimal vegetation. The Brook is approximately six to eight-ft wide and between four inches near the crossing, with a cobble and silt bed. Vegetation surrounding Creek Brook consisted of Multiflora rose (*Rosa multiflora*), Honeysuckle (*Lonicera spp*.) and Japanese Knotweed (*Reynoutria japonica*). Please see photos in **Attachment C.**

3 PROJECT ACTIVITIES & ASSOCIATED IMPACTS

3.1 Project Need

The purpose of the Project is to provide reliable gas service to customers in Haverhill. BGC is proposing to install a new, underground gas line which crosses over Creek Brook. Installation of new gas main under Creek Brook will be accomplished via HDD. In total, BGC is proposing to install approximately 3,000-ft of gas main in Haverhill.

The Project has been designed to avoid adverse impacts to the greatest possible extent. Project impacts to the ground surface and topography are temporary in nature and will be restored upon completion of the Project. While no impacts to resource areas are anticipated from the HDD activities, this NOI is being filed as a contingency in the event of an inadvertent return (IR) of drilling fluid to the surface, and to fulfill the Section 401 requirements for work underneath LUWW. Details on the proposed activities are discussed further in the following sections. The work can begin as soon as the project is permitted.

3.2 Open Trench Gas Main Installation

BGC will install gas main from the existing main to the HDD entry/exit pits via direct trench installation within the roadway. This process involves cutting the roadway surface and removing the existing asphalt, using a backhoe or excavator to excavate to the required depth, sidecasting the trench spoils directly adjacent to the trench, and installing the replacement pipe in the prepared trench. BGC will complete the work in sections and backfill the trench with the excavated soils. Following the installation of the main, the disturbed area will be restored to pre-existing conditions and grades, which will involve repaving or patching the roadway surface. Excess soils and the removed asphalt will be removed from the site and disposed of in accordance with applicable regulations.

3.3 HDD Installation

HDD involves a specialized drill rig that creates or "bores" a tunnel along a pre-determined path under waterways or other impediments. This specialized rig then "pulls" the new pipeline through the drilled tunnel. This process results in no alteration of the overlying resource areas and only temporary disturbance at each end of the "tunnel." During construction, BGC will stage HDD equipment on temporary work areas within the roadway and roadway shoulder on each side of the river.

BGC has incorporated a number of avoidance and minimization measures to protect resource areas adjacent to the work areas. All equipment will be located within the roadway or adjacent shoulder, crews will place erosion control devices and other Best Management Practices (BMPs) prior to and during the ground-disturbing work, and crew will restore disturbed or altered soil surfaces to pre-construction conditions to the extent practicable following completion of construction.

BGC will establish two HDD staging areas at the exit and entry locations of the new section of pipeline and mobilize equipment into these areas. Entry and Exit pits will help start the bore, receive the guided bore on the other side, and contain the drilling fluid returns. The entry and exit pit will require a work area of ~25-ft by 50-ft. To complete the HDD bore, a pilot hole is drilled using a small-diameter (3 to 5-inch) drill string and a drill bit entering the ground through the "entry pit." Bentonite drilling fluid, composed of bentonite clay and water, is delivered to the cutting head through the drill string to cool the drill bit, provide hydraulic cutting action, and remove cutting spoils as the drilling fluid returns to the entry point of the pilot hole. A completed pilot hole and subsequent drilling will end with the drill head resurfacing at the "exit pit." The pilot hole is then enlarged with one or more reaming passes, until the desired hole diameter is obtained based on the proposed pipeline diameter. Once the bore hole is appropriately sized, machinery will pull the replacement pipeline through the bore hole, test the pipe for integrity (to ensure there was no damage to the pipe during the pull), and tie the replacement pipeline into the existing lines.

HDD is done with the help of a viscous fluid known as drilling fluid, comprised of a non-toxic colloidal clay called bentonite. Bentonite absorbs water which causes it to swell, creating a viscous fluid. This fluid is used to remove cut borings, stabilize the bore hole, and cool the drill head. Fresh drilling fluid is expelled through a nozzle at the tip of the drill head. Throughout the process, the fluid is cycled through a reclaimer, a machine which removes the drill cuttings and allows the fluid to be recycled for continuous use within the project. The entry and exit pits will also ensure that the drilling fluid is collected and contained.

At the end of the installation, the drilling fluid remaining in the drill pits or on-site will be collected and transported to an appropriate location offsite for disposal.

The gas main will be installed at an appropriate depth to avoid any impacts to the existing bridge/culvert structure. As the activities are well below the ground surface, no alteration of resource areas including LUWW, Bank, BVW, or BLSF is anticipated, and no impacts to flood storage capacity are proposed. The alignment of the drill path will pass underneath approximately 10 linear feet of LUWW. Because the pipeline is installed underneath the bed of the creek, no alteration to LUWW is anticipated.

3.4 HDD Contingency Plan

Since HDD gas line installation methods involves the use of drilling fluid that is slightly pressurized during the drilling process in order to function properly, there is potential with any HDD that some drilling fluid may migrate out of the drill hole through existing cracks or fissures in the ground and escape to the surface as an "inadvertent return." However, the design of the HDD, including length and depth of the drill path, takes into consideration the nature of the underlying soil and bedrock geology to be drilled through, as well as the presence of natural resources, to minimize the potential for an inadvertent return. General guidance for "Inadvertent Return" (IR) Contingency Plans is provided in **Attachment E**, however, the contractor will be responsible for providing a site-specific IR Contingency Plan prior to construction.

BGC's drilling contractor will prepare an IR Contingency Plan prior to the commencement of construction. This plan will set forth the methodologies, monitoring activities, and procedures to be followed to prevent an inadvertent release of drilling fluid and will establish the process and procedures to be followed if an inadvertent release of drilling fluid occurs. Response and restoration actions will include:

- Continuous resource area monitoring during installation and stop work procedures if an IR is observed
- Detailed descriptions and locations of containment devices such as booms, curtains, or sediment and erosion controls
- Materials removal and disposal procedures both in resource areas and in uplands
- Reporting procedures and timelines

4 ALTERNATIVES ANALYSIS

BGC identified the need for new gas service along Lake Street to provide service to residents. The no-build option is not a feasible alternative, as the purpose of the Project is to provide reliable utility services to the residents along Lake Street in Haverhill. The other alternative would be to install the gas main with open trenching, however that would leave a section of the gas main exposed over Creek Brook where it is vulnerable to damage during extreme weather and flooding events.

4.1 HDD Alternative

The HDD Alternative will not involve any permanent impacts to jurisdictional resource areas, will not include reconstruction of exposed sections of gas main, and will eliminate the risk of failure should the bridge washout or otherwise suffer structural damage during extreme weather events and flooding. Furthermore, by eliminating the current and future risks of climatic and environmental conditions damaging the infrastructure, this option will also reduce the risk of negative impacts to the resource areas in the event of bridge failure or washout. For these reasons the HDD Alternative is the preferred alternative.

5 PROPOSED AVOIDANCE AND MINIMIZATION MEASURES

BGC has established procedures that are to be followed by all employees and its contractors for accessing sites and performing construction and maintenance activities on natural gas transmission ROWs. These procedures, discussed in National Grid's Environmental Guidance Document (EG-303NE) Access, Maintenance and Construction Best Management Practices, ensure that BGC's projects are completed in accordance with all applicable environmental laws and regulations as well as company policies and compliance objectives.

5.1 Sediment and Erosion Controls

Erosion and sediment control measures will be installed prior to the commencement of work based on site conditions. These controls will function to mitigate work-related erosion and sedimentation, and to serve as a physical boundary to delineate work areas to contain construction activities within approved locations. Proposed erosion and sediment control measures may include a turbidity curtain, straw wattles, weed-free bale barriers, fiber rolls, or similar treatment.

Erosion and sediment controls will be inspected on a regular basis and maintained in working order until all disturbed areas are stabilized. Please refer to **Attachment E** for erosion and sediment control details.

5.2 Construction Access

Construction access will be from the existing paved roadway or roadway shoulder of Lake Street. The last crew to leave the site each day will be responsible for regularly sweeping the roadways, if and when sediment and/or rock have been tracked onto the street. No off-road vehicle or equipment access is anticipated for the Project.

5.3 Dewatering

Dewatering may be necessary during construction of the entry/exit pits or pipeline trench within the roadway. If there is adequate vegetation in upland areas to function as a filter medium, the water generally will be discharged to the vegetated land surface. Where vegetation is absent or where slope prohibits, water will be pumped into a filter bag, or a dewatering basin consisting of a filter bag with straw bale or silt fence perimeter controls which will be located in approved areas outside wetland resource areas. The pump intake hose will not be allowed to set on the bottom of the

excavation throughout dewatering. The basin and all accumulated sediment will be removed following dewatering operations and the area will be seeded and mulched with straw. The bag will be surrounded with additional sediment filtration such as fiber rolls, straw bales, or other appropriate containment.

5.4 Stormwater Management

There will be no change in grade or increase in impervious area as a result of this Project. Therefore, additional stormwater management appurtenances will not be required.

5.5 Inadvertent Return Contingency Plan

In the unlikely event of an inadvertent return of drilling fluid during HDD operations, BGC will implement their IR Contingency Plan, a copy of which is provided in **Attachment E**.

5.6 Restoration

Following the completion of construction, crews will stabilize disturbed areas and restore the construction site to pre-construction conditions to the maximum extent practicable. As most work will be performed within the roadway, BGC anticipated restoration to primarily include re-paving/patching along the roadway surface. Where work is within the roadway shoulders, BGC will rake or re-grade to match surrounding contours. Where applicable, BGC will apply seed and straw or mulch to encourage revegetation. All construction materials, vehicles, and non-biodegradable sediment controls will be removed from the site upon completion of work.

6 CONFORMANCE WITH THE PERFORMANCE STANDARDS OF THE WPA AND LOCAL ORDINANCE

The Project has been designed to meet all applicable performance standards for each affected resource area under the WPA. In accordance with general condition *310 CMR 10.56(4)*, *310 CMR 10.57(4)*, and *310 CMR 10.58(4);* BGC will implement BMPs to ensure the adjacent resource areas are adequately protected, and impacts to the surrounding area are minimized and restored to the maximum extent practicable.

6.1 Land under Water Bodies and Waterways [310 CMR 10.56(4)]

a) Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within Land under Water Bodies and Waterways shall not impair the following:

1. The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;

No impacts to water carrying capacity are anticipates as part of the Project – Project activities will be located underground, well below the stream bed within LUWW. There will be no alteration of the Banks or stream channel resulting from the Project.

2. Ground and surface water quality.

No impacts to water quality are anticipates as part of the Project – Project activities will be located underground, well below the stream bed within LUWW. In the event of an inadvertent release to LUWW, BGC will immediately take corrective actions to contain and remove drilling fluid and restore the stream bed per the IR Contingency Plan.

3. The capacity of said land to provide breeding habitat, escape cover and food for fisheries; and

No impacts to aquatic habitat functions are anticipates as part of the Project – Project activities will be located underground, well below the stream bed within LUWW. There will be no alteration of the stream channel resulting from the Project that would reduce the current ability of LUWW to provide fisheries habitat.

4. The capacity of said land to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures established under 310 CMR 10.60.

No impacts to wildlife habitat functions are anticipates as part of the Project - Project activities will be located underground, well below the stream bed within LUWW. There will be no alteration of the stream channel resulting from the Project that would reduce the current ability of LUWW to provide wildlife habitat.

5. Work on a stream crossing shall be presumed to meet the performance standard set forth in 310 CMR 10.56(4)(a) provided the work is performed in compliance with the Massachusetts Stream Crossing Standards by consisting of a span or embedded culvert in which, at a minimum, the bottom of a span structure or the upper surface of an embedded culvert is above the elevation of the top of the bank, and the structure spans the channel width by a minimum of 1.2 times the bankfull width. This presumption is rebuttable and may be overcome by the submittal of credible evidence from a competent source. Notwithstanding the requirements of 310 CMR 10.56(4)(a)4., the impact on Land under Water Bodies and Waterways caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures established under 310 CMR 10.60.

This standard is not applicable to the project – Project activities will be located underground, well below the stream bed and Banks. There is no potential to alter the carrying capacity of the stream or alter the stream bed.

6.2 BLSF [310 CMR 10.57(4)(a)]:

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows. Compensatory storage shall mean a volume not previously used for flood storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the river, stream or creek.*

No loss of flood storage volume is proposed as part of the Project – all activities within BLSF will be located below ground.

2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

No restriction of flows is proposed as part of the Project – all activities within BLSF will be located below ground and below the channel of the stream.

3. *Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions.*

No impacts to wildlife habitat are proposed as part of the Project – all activities within BLSF will be located below ground, and below the river channel of Creek Brook.

6.3 Riverfront Area [310 CMR 10.58(4)]

(a) Protection of Other Resource Areas. The work shall meet the performance standards for all other resource areas within the riverfront area, as identified in 310 CMR 10.30 (Coastal Bank), 10.32 (Salt Marsh), 10.55 (Bordering Vegetated Wetland), and 10.57 (Land Subject to Flooding). When work in the riverfront area is also within the buffer zone to another resource area, the performance standards for the riverfront area shall contribute to the protection of the interests of M.G.L. c. 131, § 40 in lieu of any additional requirements that might otherwise be imposed on work in the buffer zone within the riverfront area.

No impacts to any resource area are proposed as part of the Project – all activities within other resource areas within Riverfront Area will be located below ground and/or within the footprint of the roadway layout.

> *(b) Protection of Rare Species. No project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.59 or 10.37, or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent.*

There are no Rare Species Habitat or Priority Habitat mapped within proximity to the project area.

> *(c) Practicable and Substantially Equivalent Economic Alternatives. There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40.*

See the alternatives analysis above (Section 4).

> *(d) No Significant Adverse Impact. The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.*

No permanent impacts to any resource area are proposed as part of the Project – all activities within Riverfront Area will be located below ground and/or within the roadway footprint. Where BGC will establish temporary entry and exit pits, these work areas will be restored to pre-construction conditions to the extent practicable.

7 CONCLUSION

Although portions of the Project will occur within jurisdictional wetland resource areas, the proposed Project will:

- Result in no impacts to BLSF or LUWW, as all activities will be underground or involve the removal of existing infrastructure.
- Utilize appropriate BMPs to protect wetland resource areas from sedimentation and soil disturbance during Project activities; and,
- Implement an IR Contingency Plan in the event of an inadvertent return.

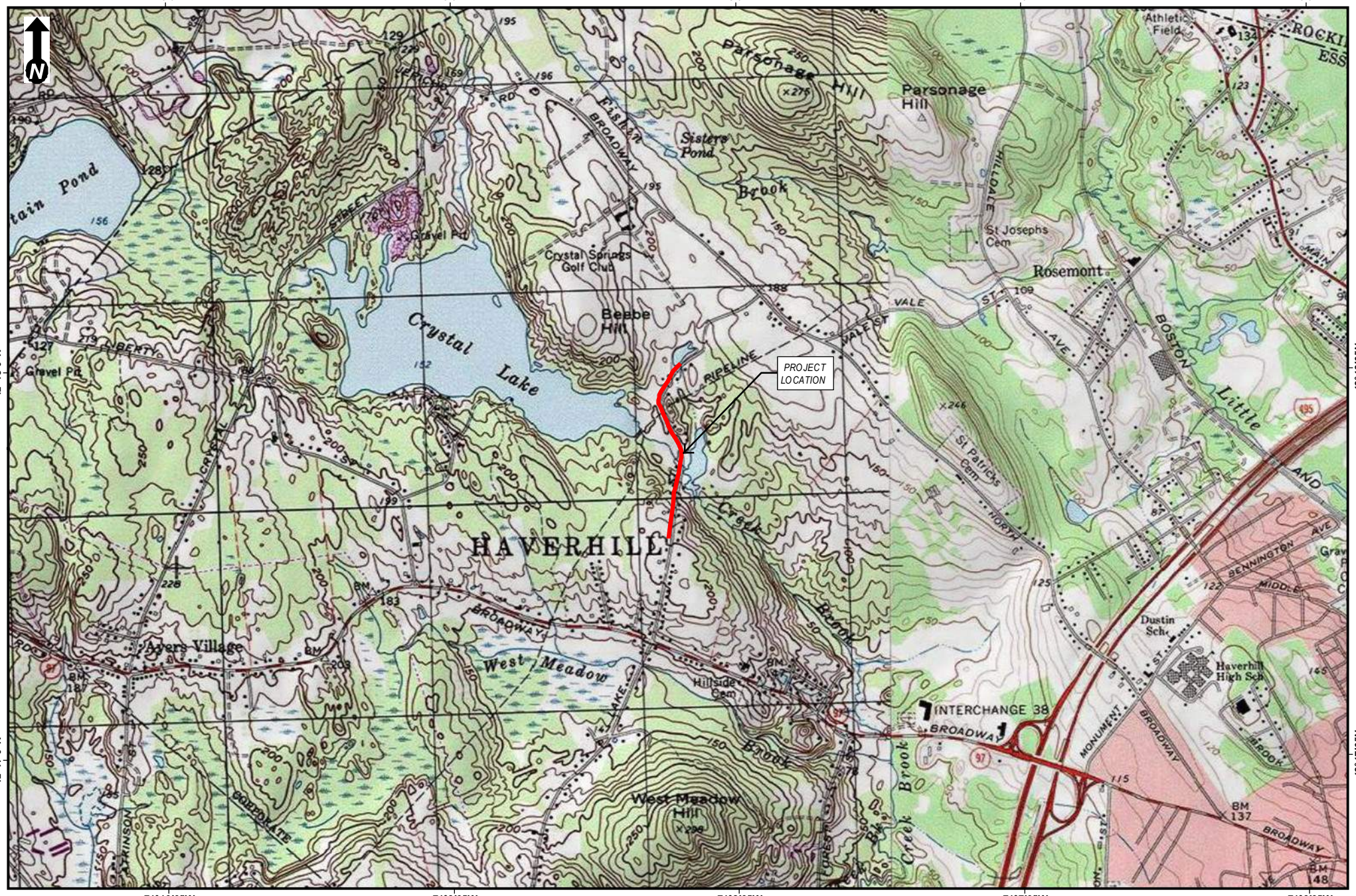
Therefore, BGC respectfully requests the Haverhill Conservation Commission find this proposal adequately protective of the public interests identified in the WPA and issue an Order of Conditions for the proposed Project as currently designed. This OOC will also serve to satisfy Section 401 requirements, as allowed by *314 CMR 9.03(3).*

Attachment B

Lake Street Gas Main Installation Project
Haverhill, MA
Notice of Intent

USGS SITE LOCUS MAP
ENVIRONMENTAL RESOURCE MAP
FEMA FIRMETTE
NRCS SOIL MAP

File Location: G:\GISPrj\10171400\Output\Maps\MXD\ReportMaps\LakeStGasMain_USGSLocus_20250411.mxd
Date Saved: 4/11/2025 10:24:00 AM



Scale: 1:24,000
1 inch = 2,000 feet
0 1,000 2,000
Feet
(Page Size 8.5 x 11)

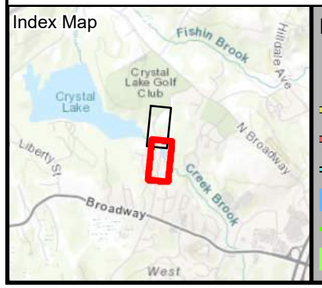
GAS MAIN INSTALLATION
USGS Site Location Map
Haverhill, MA

nationalgrid
BSC GROUP

File Location: G:\GISPrj\10171400\Output\Maps\MXD\ReportMaps\LakeStGasMain_ER_20250411.mxd
Date Saved: 5/13/2025 11:46:51 AM

Resource Areas Reviewed:
Areas of Critical Environmental Concern; Census 2000 Streams; Ch. 91 Tidelands Jurisdiction; Environment Justice Populations & Language Overlay; FEMA 100yr Floodplain; Hiking Trails; Interim Wellhead Protection Area; Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed); MADEP Hydrologic Connections; MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations; MADEP Tier Classified Oil and/or Hazardous Material Sites (21E); MADEP Wetlands; MADFW Coldwater Fisheries Resources; MHC Inventory; NHD Hydrography; NHESP Certified & Potential Vernal Pools; NHESP Priority & Estimated Habitats; NRCS Hydric Soils; Open Space Article 97 Land; Outstanding Resource Water; Public Water Supply; Surface Water Protection Zone; USGS Wild & Scenic Rivers; Watershed Protection Act Zones; WsPA Affected Parcels; Zone II Wellhead Protection Area; MassGIS
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Index Map



Legend

- Approximate Entry/Exit Pit
- Proposed Gas Valve
- Proposed Gas Line
- Existing Gas Line
- Field Delineated Stream Bank
- Field Delineated Stream Area
- Field Delineated Wetland Boundary
- Field Delineated Wetland
- Estimated Open Water
- MADEP Hydrologic Connections
- MADEP Wetlands*
- MADEP Open Water*
- 100ft Buffer to Wetlands & Streams
- 200ft Riverfront Area
- FEMA 100yr Floodplain*
- Surface Water Protection Zone
- Approximate Pipeline
- Catch Basin
- Culvert

Indicates Layers Set to Transparency

GAS MAIN INSTALLATION

Environmental Resources Map

Lake St
Haverhill, MA
Page 1 of 2

Created for: nationalgrid

Created by: BSC GROUP

N

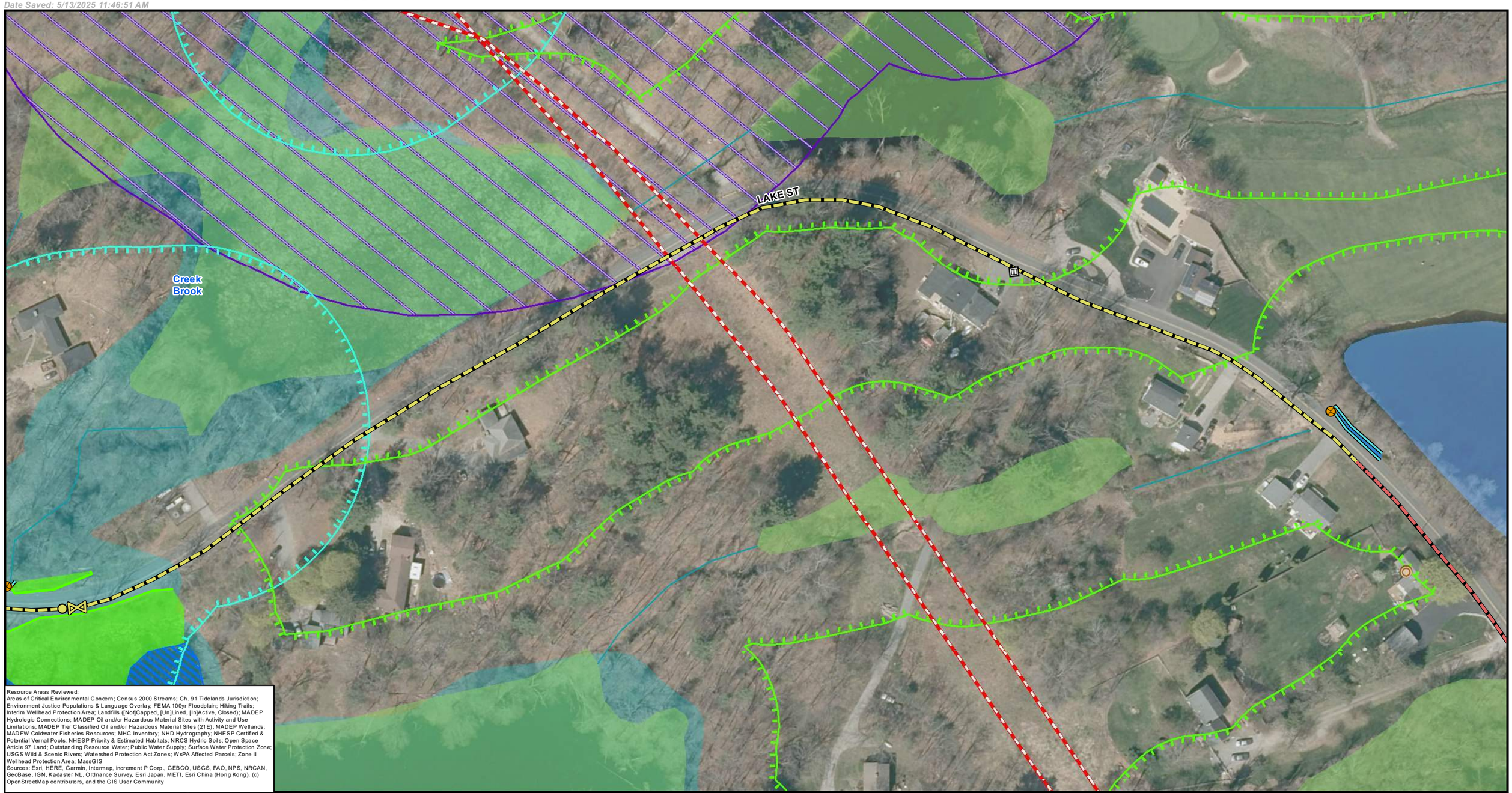
1 inch = 100 feet

0 50 100

Feet

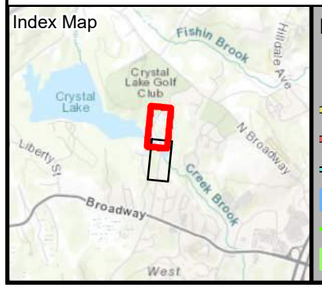
(Page Size 11 x 17)

File Location: G:\GISPrj\10171400\Output\Maps\MXD\ReportMaps\LakeStGasMain_ER_20250411.mxd
Date Saved: 5/13/2025 11:46:51 AM



Resource Areas Reviewed:
Areas of Critical Environmental Concern; Census 2000 Streams; Ch. 91 Tidelands Jurisdiction; Environment Justice Populations & Language Overlay; FEMA 100yr Floodplain; Hiking Trails; Interim Wellhead Protection Area; Landfills ([Not]Capped, [Un]Lined, [In]Active, Closed); MADEP Hydrologic Connections; MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations; MADEP Tier Classified Oil and/or Hazardous Material Sites (21E); MADEP Wetlands; MADFW Coldwater Fisheries Resources; MHC Inventory; NHD Hydrography; NHESP Certified & Potential Vernal Pools; NHESP Priority & Estimated Habitats; NRCS Hydric Soils; Open Space Article 97 Land; Outstanding Resource Water; Public Water Supply; Surface Water Protection Zone; USGS Wild & Scenic Rivers; Watershed Protection Act Zones; WsPA Affected Parcels; Zone II Wellhead Protection Area; MassGIS
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Index Map



Legend

- Approximate Entry/Exit Pit
- Proposed Gas Valve
- Proposed Gas Line
- Existing Gas Line
- Field Delineated Stream Bank
- Field Delineated Stream Area
- Field Delineated Wetland Boundary
- Field Delineated Wetland
- Estimated Open Water
- MADEP Hydrologic Connections
- MADEP Wetlands*
- MADEP Open Water*
- 100ft Buffer to Wetlands & Streams
- 200ft Riverfront Area
- FEMA 100yr Floodplain*
- Surface Water Protection Zone
- Approximate Pipeline
- Catch Basin
- Culvert

Indicates Layers Set to Transparency

GAS MAIN INSTALLATION

Environmental Resources Map

Lake St
Haverhill, MA
Page 2 of 2

Created for: nationalgrid

Created by: BSC GROUP

N

1 inch = 100 feet

0 50 100

Feet

(Page Size 11 x 17)

NOTES TO USERS

...is for use in administering the National Flood Insurance Program. It does ...sarily identify all areas subject to flooding, particularly from local drainage ...of small size. The **community map repository** should be consulted for ...pdated or additional flood hazard information.

...more detailed information in areas where **Base Flood Elevations** (BFEs) ...**odways** have been determined, users are encouraged to consult the Flood ...nd Floodway Data and/or Summary of Stillwater Elevations tables contained ... Flood Insurance Study (FIS) Report that accompanies this FIRM. Users ...e aware that BFEs shown on the FIRM represent rounded whole-foot ... These BFEs are intended for flood insurance rating purposes only and ...t be used as the sole source of flood elevation information. Accordingly, ...ation data presented in the FIS Report should be utilized in conjunction with ...for purposes of construction and/or floodplain management.

...Base Flood Elevations shown on this map apply only landward of 0.0' ...erican Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be ...t coastal flood elevations are also provided in the Summary of Stillwater ...a table in the Flood Insurance Study Report for this jurisdiction. Elevations ...the Summary of Stillwater Elevations table should be used for construction ...odplain management purposes when they are higher than the elevations ...this FIRM.

...es of the **floodways** were computed at cross sections and interpolated ...cross sections. The floodways were based on hydraulic considerations with ...requirements of the National Flood Insurance Program. Floodway widths ... pertinent floodway data are provided in the Flood Insurance Study Report ...isdiction.

...eas not in Special Flood Hazard Areas may be protected by **flood control** ...**s**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance ...ort for information on flood control structures for this jurisdiction.

...**ection** used in the preparation of this map was Massachusetts State Plane ...Zone (FIPS zone 2001). The **horizontal datum** was NAD 83, GRS 1980 ... Differences in datum, spheroid, projection or UTM zones used in the ...n of FIRMs for adjacent jurisdictions may result in slight positional ...s in map features across jurisdiction boundaries. These differences do not ...accuracy of this FIRM.

...vations on this map are referenced to the North American Vertical Datum of ...ese flood elevations must be compared to structure and ground elevations ...d to the same **vertical datum**. For information regarding conversion ... the National Geodetic Vertical Datum of 1929 and the North American ...Datum of 1988, visit the National Geodetic Survey website at ...v.ngs.noaa.gov or contact the National Geodetic Survey at the following

...rmation Services
...NGS12
...Geodetic Survey
...#9202
...-West Highway
...ng, Maryland 20910-3282
...-3242

...current elevation, description, and/or location information for **bench marks** ... this map, please contact the Information Services Branch of the National ...Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

...p information shown on this FIRM was derived from digital orthophotography ...by the Massachusetts Geographic Information System. This information was ...om photography dated 2005.

...**e baselines** depicted on this map represent the hydraulic modeling baselines ... the flood profiles in the FIS report. As a result of improved topographic data, ...**e baseline**, in some cases, may deviate significantly from the channel ... or appear outside the SFHA.

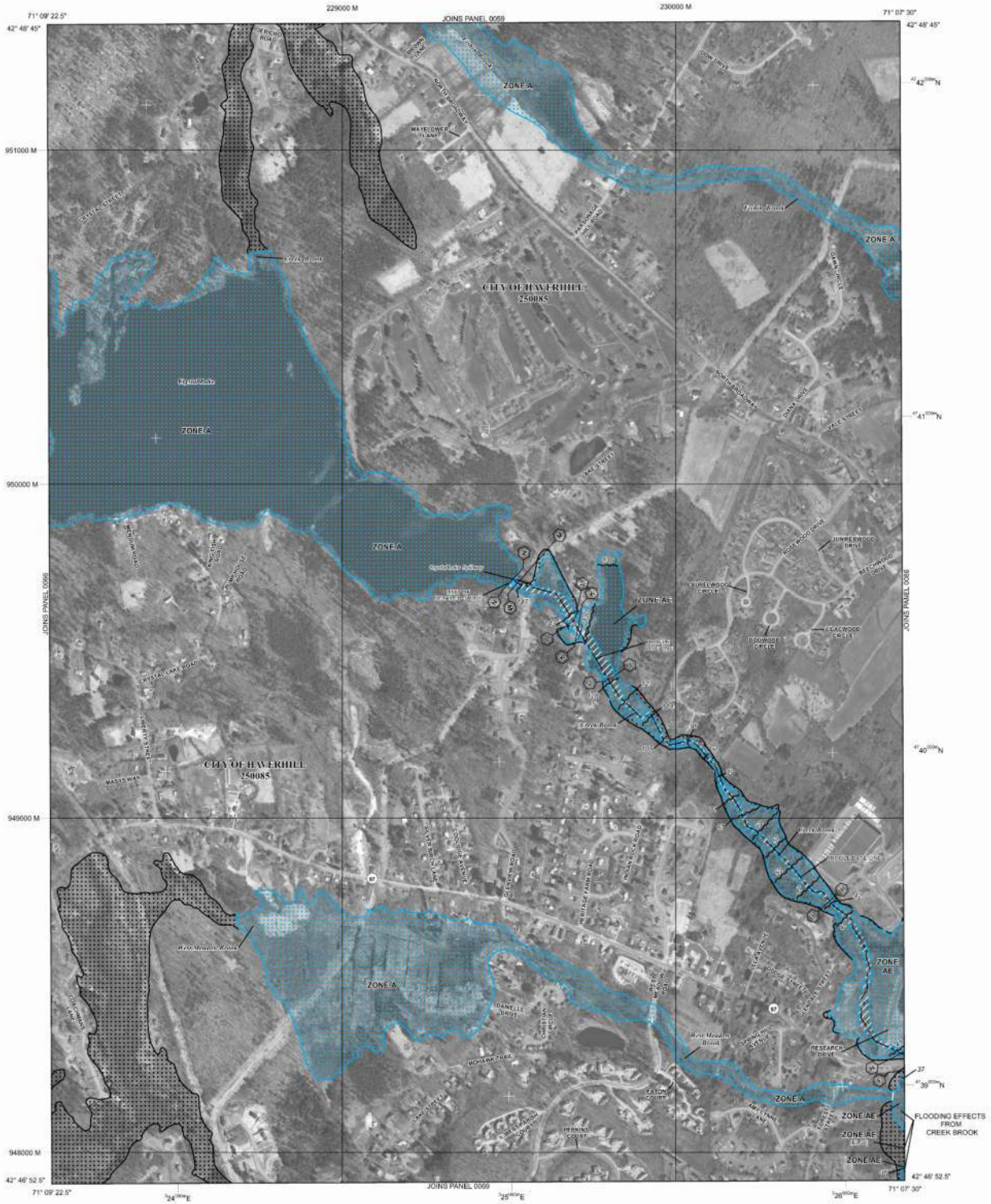
...n updated topographic information, this map reflects more detailed and ...**e stream channel configurations and floodplain delineations** than ...own on the previous FIRM for this jurisdiction. As a result, the Flood ...and Floodway Data tables for multiple streams in the Flood ... Study Report (which contains authoritative hydraulic data) may reflect ...annel distances that differ from what is shown on the map. Also, the ...floodplain relationships for unrevised streams may differ from what is ...previous maps.

...**e limits** shown on this map are based on the best data available at the time ...tion. Because changes due to annexations or de-annexations may have ...after this map was published, map users should contact appropriate ...y officials to verify current corporate limit locations.

...fer to the separately printed **Map Index** for an overview map of the ...lowing the layout of map panels; community map repository addresses; ...sting of Communities table containing National Flood Insurance Program ...each community as well as a listing of the panels on which each community ...

...nation on available products associated with this FIRM visit the **Map ...Center (MSC)** website at http://msc.fema.gov. Available products may ...reviously issued Letters of Map Change, a Flood Insurance Study Report, ...gital versions of this map. Many of these products can be ordered or ...directly from the MSC website.

...ve **questions about this map,** how to order products, or the National ...urance Program in general, please call the **FEMA Map Information ...e (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA ... http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood ... a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard ... the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazar... include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-s... elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood El... determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); av... depths determined. For areas of alluvial fan flooding, velocities also d...

ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual ch... flood by a flood control system that was subsequently decertified. Zo... AR indicates that the former flood control system is being restored to ... protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood ... protection system under construction; no Base Flood Elevations deter...

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood ... determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood El... determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be k... encroachment so that the 1% annual chance flood can be carried without substantial incr... flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood wit... average depths of less than 1 foot or with drainage areas less than 1 squa... mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Are...

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and bo... dividing Special Flood Hazard Areas of different Base Flood ... flood depths, or flood velocities.

513 Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where uniform within zone; ele... feet*

*Referenced to the North American Vertical Datum of 1988

Cross section line

Transect line

Culvert

Bridge

45° 02' 08", 93° 02' 12" Geographic coordinates referenced to the North American ... 1983 (NAD 83) Western Hemisphere

4988000 M 1000-meter ticks: Massachusetts State Plane Mainland Zon... (FIPS Zone 2001), Lambert Conformal Conic projection

5000 000 mN 1000-meter Universal Transverse Mercator grid values, zon...

DX5510 X Bench mark (see explanation in Notes to Users section of ... panel)

M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
July 3, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Communi... Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance a... or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0067F

FIRM

FLOOD INSURANCE RATE M...

ESSEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)

PANEL 67 OF 600

(SEE MAP INDEX FOR FIRM PANEL LA...

CONTAINS:

COMMUNITY	NUMBER	PANEL
HAVERHILL, CITY OF	250085	0067

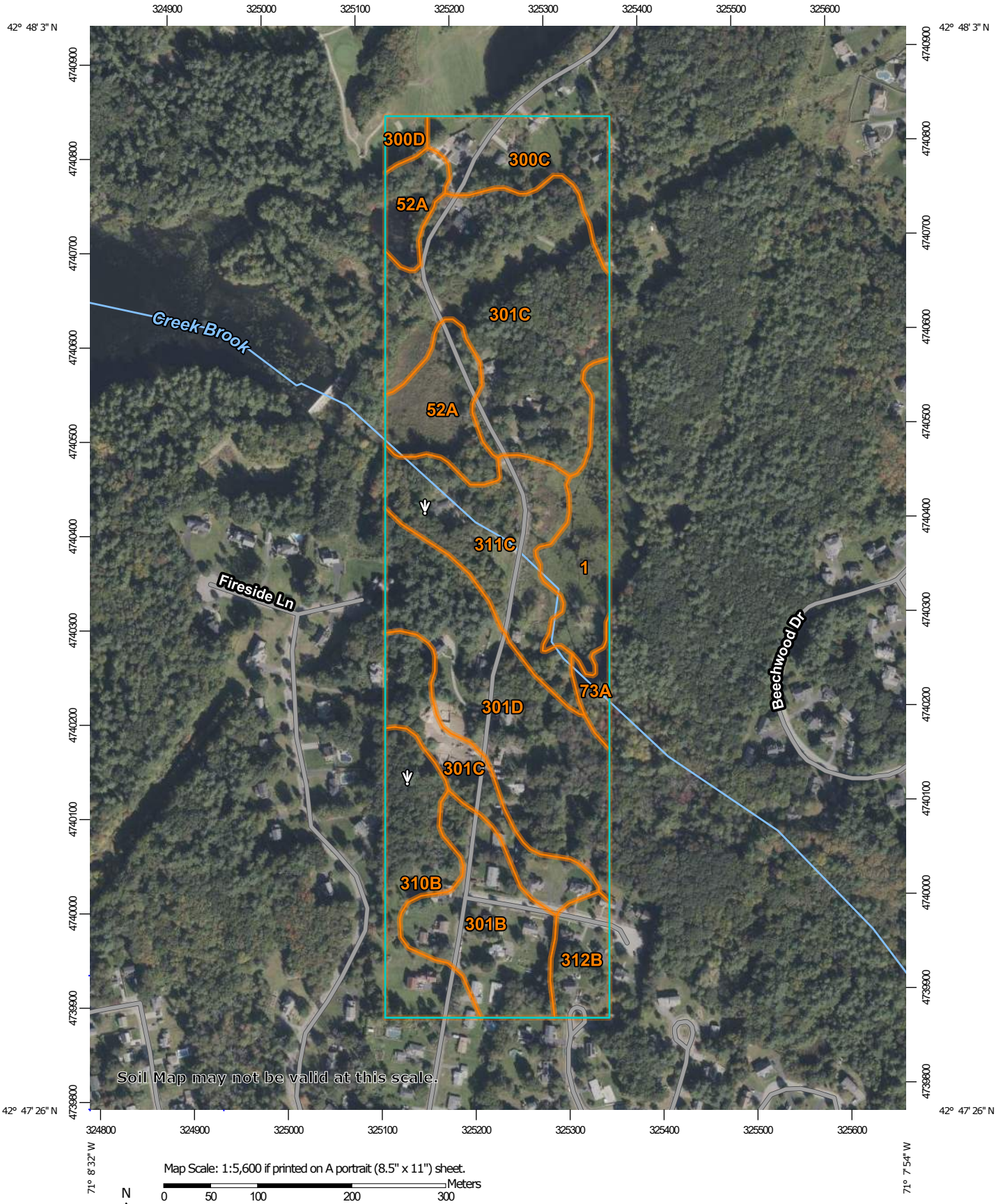
Notice to User: The **Map Number** sho... should be used when placing map or... **Community Number** shown above s... used on insurance applications for the... community.

MAP NU... 25009C...

EFFECTIVE ... JULY 3,...

Federal Emergency Management ...

Soil Map—Essex County, Massachusetts, Northern Part



Map Scale: 1:5,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Essex County, Massachusetts, Northern Part
Survey Area Data: Version 20, Aug 27, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	3.4	6.0%
52A	Freetown muck, 0 to 1 percent slopes	4.4	7.8%
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	0.7	1.2%
300C	Montauk fine sandy loam, 8 to 15 percent slopes	3.9	6.9%
300D	Montauk fine sandy loam, 15 to 25 percent slopes	0.5	0.9%
301B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	5.3	9.4%
301C	Montauk fine sandy loam, 8 to 15 percent slopes, very stony	16.0	28.3%
301D	Montauk fine sandy loam, 15 to 35 percent slopes, very stony	9.6	17.0%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	4.4	7.8%
311C	Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	6.4	11.3%
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony	1.8	3.3%
Totals for Area of Interest		**56.6**	**100.0%**

Attachment C

Lake Street Gas Main Installation Project
Haverhill, MA
Notice of Intent

SITE PHOTOGRAPHS

Photo #1: View of Lake Street where Creek Brook goes under the road via culvert. *Facing south.*

Photo #2: View of Wetland HA-W2. No impacts to wetlands are anticipated as part of this project. *Facing southwest.*

Photo #3: View of Wetland HA-W3. No impacts to wetlands are anticipated as part of this project. *Facing northeast.*

Photo #4: View of Wetland HA-W4. No impacts to wetlands are anticipated as part of this project. *Facing southwest.*

Photo #5: View of northern end of the Project, where new gas main will begin. *Facing southwest.*

Photo #6: View of area where new gas main on Lake Street will terminate and connect to gas main under Pamela Lane. *Facing north.*

Attachment D

Lake Street Gas Main Installation Project
Haverhill, MA
Notice of Intent

CERTIFIED LIST OF ABUTTERS
ABUTTERS NOTIFICATION LETTER

571-1-10
NANGLE BERNARD V JR
406 LAKE ST
HAVERHILL, MA 01832contract.

571-1-13
DIAMOND PROPERTIES TRUST
668 MAIN ST, SUITE 7
WILMINGTON, MA 01887

571-1-13-1
BRESNAHAN THOMAS P-ETUX-LF EST
462 LAKE ST
HAVERHILL, MA 01832

571-1-13-A
DIAMOND PROPERTIES TRUST
668 MAIN ST, SUITE 7
WILMINGTON, MA 01887

571-1-14
BARCHARD MARSHALL-ETAL
466 LAKE ST
HAVERHILL, MA 01832

571-1-15
CITY OF HAVERHILL
4 SUMMER ST
HAVERHILL, MA 01830

571-1-16
STANSFIELD FRANCES L
490 LAKE STREET
HAVERHILL, MA 01830

571-1-17
CITY OF HAVERHILL
4 SUMMER ST
HAVERHILL, MA 01830

571-2-14A
BOTELHO MATTHEW J-ETUX
409 LAKE ST
HAVERHILL, MA 01832

571-2-14B
BOWERBANK REALTY TRUST
415 LAKE ST
HAVERHILL, MA 01832

571-2-15
COLBURN ROGER E
445 LAKE ST
HAVERHILL, MA 01832

571-2-16
EISEN VANESSA-ETALI
447 LAKE ST
HAVERHILL, MA 01832

571-2-17
DEBRA L. KELLEHER & NEIL M KELLEHER TRUST
457 LAKE ST
HAVERHILL, MA 01832

571-2-17A
KELLEHER EVAN
457A LAKE ST
HAVERHILL, MA 01832

571-2-23
COLLINS MICHELLE-ETAL
461 LAKE ST
HAVERHILL, MA 01832

571-2-25
BECKER JONATHAN D ETUX
473 LAKE ST
HAVERHILL, MA 01832

571-2-27
RICHARDSON STEPHEN M
509 LAKE ST
HAVERHILL, MA 01832

571-2-29
WILSON PAUL A ETUX
511 LAKE ST
HAVERHILL, MA 01832

571-2-30
PRINCE DAVID W
14 FOUNTAIN ST
BILLERICA, MA 01821

571-2-33
GALLANT JAY-ETUX
559 LAKE ST
HAVERHILL, MA 01832

571-2-34
DELANEY MARK
595 LAKE ST
HAVERHILL, MA 01832

571-2-35
PORTNOY KEVIN
609 LAKE ST
HAVERHILL, MA 01832

571-2-37
NOYES CHARLES E
569 LAKE ST
HAVERHILL, MA 01832

575-2-5
MORRIS JESSICA
596 LAKE ST
HAVERHILL, MA 01832

575-2-8
STERLING GOLF CRYSTAL LAKE LLC
212 KENRICK ST
NEWTON, MA 02458

H. ABUTTER NOTIFICATION FORM

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40 (the Wetlands Protection Act) and Haverhill Municipal Ordinance Chapter 253, Section 5, you are hereby notified of the following:

1. The name of the applicant is Boston Gas Company (BGC)
2. Brief Project Description: Boston Gas Company (BGC) proposes to install ~3,000 feet of new gas main within the roadway along Lake Street and beneath Creek Brook via a Horizontal Direction Drilling (HDD) crossing.
3. The applicant has filed a Notice of Intent ("NOI") with the Haverhill Conservation Commission seeking permission to remove, fill, dredge or alter an Area Subject to Protection Under the Wetlands Protection Act and/or Haverhill Municipal Ordinance Chapter 253 and/or to perform work within the buffer zone of such an Area.
4. The address of the lot where the activity is proposed is _____ (INCLUDE ASSESSOR'S MAP/BLOCK/LOT)
5. Copies of the NOI may be examined at *the Haverhill Conservation Department Office* between the hours of *8am and 4pm* from *Monday through Friday*. Contact information is below. You may also find helpful application materials on the "Projects Under Review" section of the Commission's website.
6. Copies of the NOI may be obtained from either (check one) the applicant _____, or the applicant's representative X, by calling this telephone number (617) 896 - 4492 between the hours of 9:00AM and 5:00PM on the following days of the week Monday-Friday
7. Information regarding the *date, time, and place* of the public hearing may be obtained from the *Haverhill Conservation Department Office* between the hours of *8am and 4pm* from *Monday through Friday*. Contact information is below. You may also consult the "Agenda" section of the Commission's website.

NOTE: Notice of the public hearing, including its date, time and place, will be published at least five (5) days in advance in the *Haverhill Gazette newspaper*.

NOTE: Notice of the public hearing, including its date, time, and place, will be posted in Haverhill City Hall not less than forty-eight (48) hours in advance.

NOTE: You may contact the Haverhill Conservation Department for more information about this application, the Wetlands Protection Act, and Haverhill Municipal Ordinance Chapter 253. Please note the Department has only one staff person; every effort will be made to assist you in a timely manner.

Website: http://www.cityofhaverhill.org/departments/conservation_commission/index.php.
Email: conservation@cityofhaverhill.com
Phone: 978.374.2334

NOTE: For additional information about this application and the Act, you may contact the MA Department of Environmental Protection Northeast Regional Office Service Center.

Website: http://www.mass.gov/eea/agencies/massdep/about/contacts/northeast-region.html
Phone: 978.694.3200

Attachment E

Lake Street Gas Main Installation Project
Haverhill, MA
Notice of Intent

NATIONAL GRID'S BEST MANAGEMENT PRACTICES
IR CONTINGENCY PLAN

BMP PICTURE

STRAW WATTLE – SHALLOW SLOPE (≤4:1)
(ALTERNATE STAKING)

ALTERNATE STAKING INSTALLATION NOTES:

1. ON SHALLOW SLOPES (≤4:1), STRAW WATTLE MAY BE SECURED WITH 18–24" HARDWOOD STAKES DRIVEN AGAINST THE SIDES OF THE WATTLE INSTEAD OF THROUGH. STAKES SHALL ALTERNATE SIDES, AND BE SPACED 3–4' MAX.
2. TWINE SHALL BE TIED FROM STAKE TO STAKE, CRISS–CROSSING THE STRAW WATTLE. TIE TWINE TO STAKES BELOW THE HEIGHT OF THE WATTLE.

BMP

Definition

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface.

Purpose

The primary purpose is to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch is also used alone for temporary stabilization in non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/ acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

NOTE:

1. PICTURE DEPICTS STRAW MULCH APPLICATION (FROM MULCH SPREADER) ON STEEP SLOPE WITH AN IMPROVED DRAINAGE SWALE.
2. COORDINATE MULCH MATERIALS AND RATES WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

* BMP INFORMATION FROM "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (AUGUST, 2005)." INFORMATION OBTAINED VIA WEBSITE: http://www.dec.ny.gov/chemical/29066.html

UPLAND ROW RESTORATION MIX – GENERAL

Species Composition Options:

- Andropogon gerardii; Niagra Big Bluestem
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Elymus virginicus; Virginia Wildrye
- Lolium multiflorum; Annual Ryegrass
- Sorghastrum nutans; Indiangrass
- Chamaecrista fasciculate; Partridge Pea
- Desmodium canadense; Showy Tick Trefoil
- Helioposis helianthoides; Ox–Eye Sunflower
- Panicum virgatum; Switchgrass
- Rudbeckia hirta; Black Eyed Susan
- Poa palustris; Fowl Bluegrass
- Agrostis perennans; Upland Bentgrass
- Agrostis alba; Redtop
- Festuca rubra; Red Fescue
- Lotus corniculatus; Birds–Foot Trefoil
- Chrysanthemum leucanthem; Ox–Eye Daisy
- Aster novae–angliae; New England Aster

Example Seed Mixes:

1. Native Upland wildlife forage and Cover Meadow Mix – Ernst Conservation Seeds (ERNMX–123)
2. Eastern Ecotype Native Grass Mix– Ernst Conservation Seeds (ERNMX–177)
3. New England Native Warm Season Grass Mix – New England Wetland Plants, Inc.
4. New England Logging Road Mix – New England Wetland Plants, Inc.
5. Northeast Upland Wildflower/Restoration Erosion Mix – Southern Tier Consulting (STCMX–2)

UPLAND ROW RESTORATION MIX – DRY/ROCKY SITES

Species Composition Options:

- Festuca rubra; Red Fescue
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Bouteloua gracillis; Blue Grama
- Lolium multiflorum; Annual Ryegrass
- Lolium perenne; Perennial Ryegrass
- Agrostics scabra; Rough Bentgrass
- Agrostis perennans; Upland Bentgrass
- Sorghastrum nutans; Indiangrass

Example Seed Mixes:

1. New England Erosion Control/ Restoration Mix for Dry Sites – New England Wetland Plants, Inc.
2. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

WETLAND ROW RESTORATION MIX

Species Composition Options:

- Agrostis stolonifera; Creeping Bentgrass
- Poa trivialis; Rough Bluegrass
- Alopecurus arundinaceus; Creeping Meadow Foxtail
- Lolium multiflorum; Annual Ryegrass
- Festuca rubra; Creeping Red Fescue
- Elymus virginicus; Virginia Wildrye
- Schizachyrium scoparium; Little Bluestem
- Andropogon gerardii; Niagra Big Bluestem
- Carex vulpinoidea; Fox sedge
- Panicum virgatum; Switchgrass
- Agrostis scabra; Rough Bentgrass
- Aster novae–angliae; New England Aster
- Eupatorium perfoliatum; Boneset
- Euthamia graminifolia; Grass Leaved Goldenrod
- Scirpus atrovirens; Green Bulrush
- Verbene hastate; Blue Vervain
- Juncus effusus; Soft Rush
- Scirpus cyperinus; Wool Grass
- Panicum clandestinum; Deertongue

Example Seed Mixes

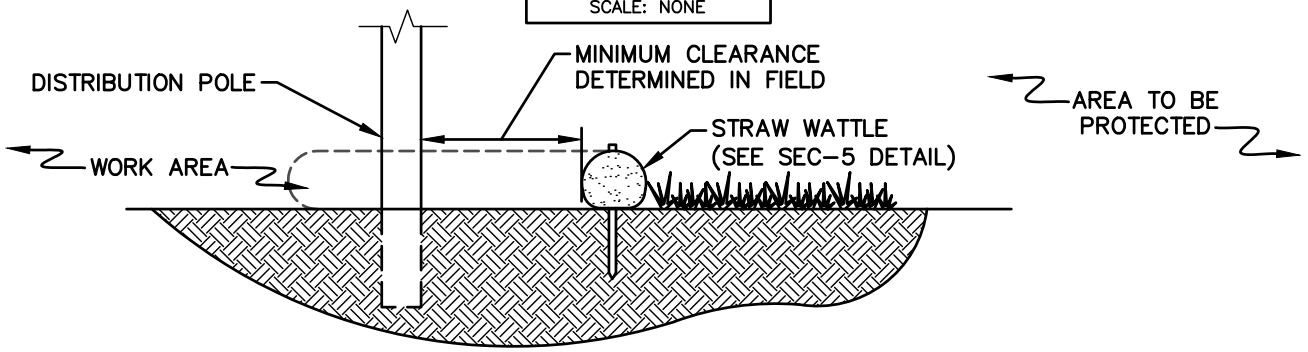
1. New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites – New England Wetland Plants, Inc.
2. Northeast Wetland Grass Seed Mix – Southern Tier Consulting (STCMX–7)
3. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

GERNERAL NOTES:

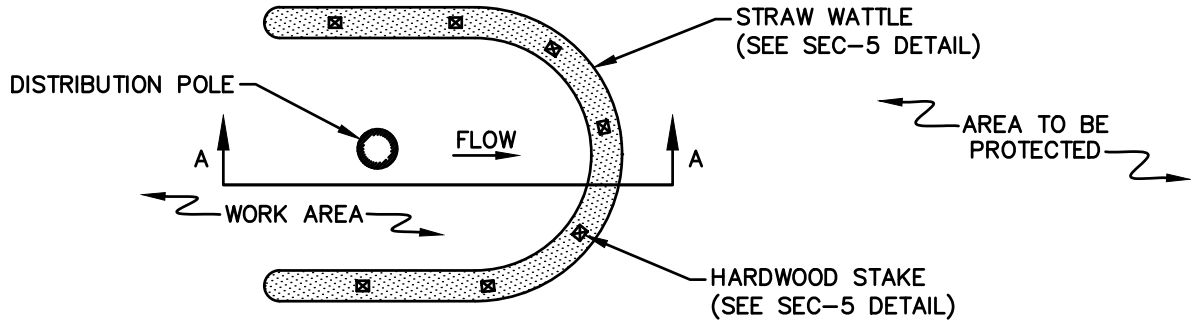
1. Seed mixes described herein are intended to cover a variety of typical new england landscapes. However, site specific seed mixes will need to be evaluated in coastal or mountainous regions.
2. Seed mixes described herein are intended for general ROW restoration. Site specific wetland seed mixes may be required by local, state and/or federal regulators for certain impacts to wetlands.
3. All seed mixes are to be approved by National Grid Environmental Scientist prior to construction and must conform with all project permits.
4. Seedbed preparation and maintenance as well as temporary erosion and sediment controls are crucial to the establishment of newly seeded areas. Coordinate with National Grid Environmental Scientist on seed bed preparation and maintenance as well as temporary erosion and sediment controls prior to construction.

BMP DETAIL

SCALE: NONE



SECTION A–A



PLAN

NOTES

1. PRODUCT TO BE STRAW WATTLE OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST (SEE SEC–5 BMP DETAIL).
2. STRAW BALE BARRIER PER SEC–1 BMP DETAIL TO BE AN AVAILABLE ALTERNATE DEPENDING ON SITE CONDITIONS AT THE DIRECTION OF NATIONAL GRID ENVIRONMENTAL SCIENTIST (SEE FIGURE 2).
3. MINIMUM CLEARANCE BETWEEN POLE AND EROSION CONTROL TO BE DETERMINED BY CONDITIONS OF POLE INSTALLATION/REPLACEMENT WORK AND ASSOCIATED DISTURBANCE.

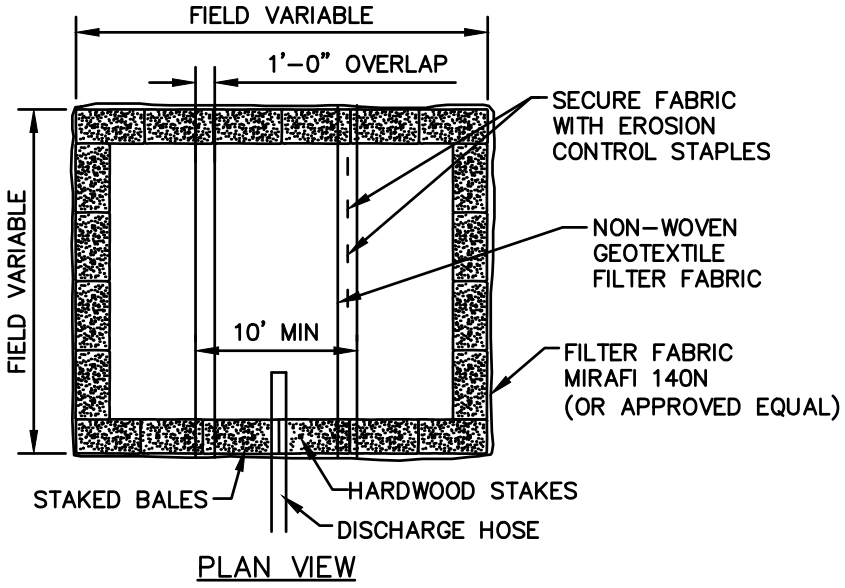
BMP PICTURE

FIGURE 1: TYP. STRAW WATTLE APPLICATION

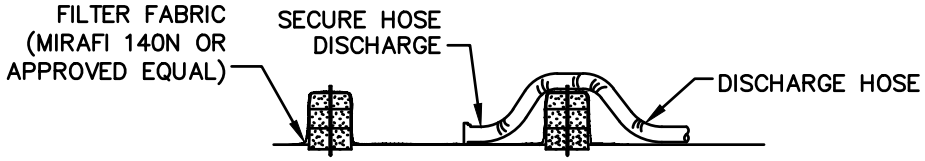
FIGURE 2: ALT. STRAW BALE APPLICATION

BMP DETAIL

SCALE: NONE



PLAN VIEW



CROSS–SECTION

NOTES:

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS,
2. THE BASIN TO BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN.
3. KEEP AS FAR FROM WETLANDS AS PRACTICAL.
4. CLEAN AND REMOVE AS SOON AS DEWATERING IS COMPLETE.

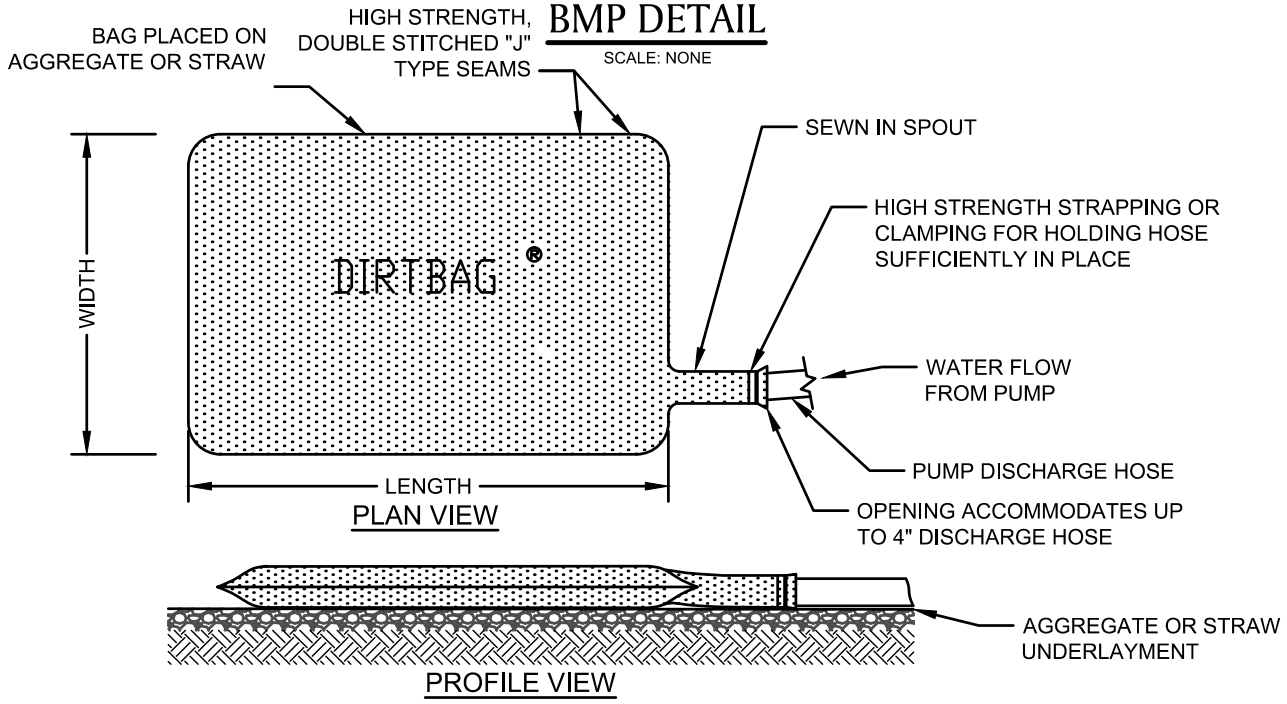
BMP PICTURE

AA-10
DEWATERING BASIN
(SMALL SCALE)

File: Dewat_Bas_Small.dwg

BMP DETAIL

SCALE: NONE



NOTE:
ONCE PUMPING COMMENCES, THE DIRT BAG SHALL BE MONITORED FREQUENTLY TO ASSURE THAT THE CONNECTIONS ARE SECURELY FASTENED AND THE RATE OF WATER DELIVERY TO THE STRUCTURE IS LOW ENOUGH TO PREVENT UNFILTERED WATER FROM FLOWING FROM THE HOSE CONNECTIONS OR BAG.

BMP PICTURE

* PICTURE AND DETAIL PROVIDED BY ACF ENVIRONMENTAL

AA-12
DIRTBAG *

File: Dirtbag.dwg

HDD Overview and Contingency Plan Purpose

HDD is a method of creating a crossing path beneath a surface without intruding directly on that surface area, compared to conventional open-cut trenching methods where the surface feature(s) would otherwise sustain direct disturbance. HDD uses specific drilling equipment capable of boring a drill path at a shallow inclined angle into the subsurface, and steering the borehole at depth beneath a surface feature(s), such as a stream, roadway, railroad, or combination of these features, and re-emerging within an excavation pit on the other side of the designated surface area. Once the borehole is created, it is successively reamed by larger bits until the borehole is wide enough for pre-assembled pipeline to be pulled through the borehole. Pipeline segments are connected to the two ends of the HDD segment once it has been successfully pulled back through the HDD borehole.

HDD drilling requires specialized drilling equipment to allow shallow-angled entry of a drill bit, steering and remote telemetry tracking of the drill head and advancing the drill string by addition of successive segments of drill pipe until a pre-determined exit point is reached. HDD requires drill "mud" to be pumped down the drill string through the head of the drill bit. Drill mud is required for several critical functions:

- It cools the drill head and string as it grinds through soil and/or rock;
- It helps to lubricate and support the borehole side-walls while the bit and drill string pass through;
- It provides a fluid to carry rock and soil cuttings in suspension from the drill path face back to the point of entry so the cuttings can be cleared from the HDD borehole path; and
- It assists in stabilizing an open bore hole, by exerting positive pressure on the borehole wall and through the buildup of a wall cake, also produces a bridging mechanism to hold soil particles in place.

The drill mud must be maintained under pressure within the borehole in order to carry out all of these functions.

HDD crossings are specifically designed to follow a pre-determined path to carry the boring at depths below the surface area being crossed so as to avoid disturbance of the surface area and create a borehole of sufficient diameter and configuration to allow the conduit to pass through the completed borehole smoothly from end to end once the HDD is completed.

Despite specific engineering design of an HDD crossing, it is possible to unexpectedly lose circulation of the drill mud. Lost circulation may be signified by unexpected drop of the desired pressure of the drill mud, failure of it to return to the borehole entry point, or change in other monitored conditions during HDD drilling. A "inadvertent return" is the condition where drilling mud is inadvertently

released through the soil stratigraphy or fractured bedrock and travels to the surface. Because drill mud must be maintained under pressure the potential for an inadvertent return tends to be greatest where the HDD drill path is near the entry or exit points of the drill. Other features, such as unexpected geologic fractures or material may also provide pathways for loss of pressure and circulation that could lead to inadvertent returns at other points along an HDD drill path.

Drilling muds consist largely of a bentonite clay-water mixture, sometimes with non-toxic polymer additives to maintain specific viscosity, density or other properties. Bentonite is a naturally occurring type of clay, is non-toxic and commonly used in farming practices.

The purpose of this Contingency Plan is to:

- Minimize the potential for an inadvertent return associated with HDD activities
- Provide for the timely detection of lost drilling mud circulation and the inadvertent return(s) that may result
- Protect areas that are considered environmentally sensitive (streams, wetlands, other ecological resources, cultural resources)
- Ensure and establish organized, timely, and "minimum-impact" response procedures to address loss of circulation and inadvertent return loss and the proposed clean-up of the event.
- Provide for notifications to the applicable parties and regulatory agencies, in the event an inadvertent drilling mud loss occurs.

Measures to be deployed as part of this contingency plan include site inspection, proper training of the contractor and construction personnel, development of response procedures, deployment of containment materials ahead of drilling and at locations to allow timely and minimum impact use of the materials, and implementation of appropriate clean up procedures. These measures are described in detail below.

Site Personnel Responsibilities

National Grid has overall responsibility for implementing this contingency plan. National Grid will be familiar with the aspects of the HDD drilling and plan for the project, the contents of this contingency plan and the conditions of approval under which the activity is permitted to take place. National Grid will provide a copy of this plan to its construction personnel involved with performance of and potential response to the HDD crossing. National Grid will ensure that workers are properly trained and familiar with the necessary procedures for response to an inadvertent return, prior to initiation of drilling operations. National Grid will provide the anticipated schedule of HDD operations around protected streams, rivers, wetlands, cultural resource sites and other features (non- road, structure or railroad bores) to the site inspector responsible for monitoring environmental compliance ("Environmental Inspector" or "EI").

Monitoring of HDD operations by National Grid will include the following parameters in order to evaluate and detect potential loss of circulation or inadvertent return during drilling operations:

- Monitor the direction, progress and telemetry of the drill head and drill string along the designed HDD drill path.
- Monitor the condition and character of soil & rock cuttings emerging from the borehole for consistency with geologic conditions anticipated along the drill path.
- Monitor drill mud pressure for unexpected changes (particularly decreases in pressure) as the borehole is advanced.
- Perform visual monitoring of the ground surface along the drill path for signs of inadvertent return (unexpected expansion cracks or emergence of drill mud)

Field crews will provide timely notifications and responses to observed inadvertent returns in accordance with procedures identified in the contingency plan.

Notifications

Upon indication of a potential loss of circulation, National Grid shall notify the drill foreman & appropriate drilling personnel to temporarily suspend drilling operations until verification can be made that an inadvertent return has not occurred. If it is determined that an inadvertent return has occurred, the drilling procedure will be discontinued until clean-up and repair has been successfully implemented and Owner has authorized drilling to commence.

National Grid shall also notify its response personnel to implement containment and response procedures summarized below.

National Grid and the host utility will have the authority to stop work and commit the resources (personnel and equipment) necessary to implement this plan. National Grid and/or the Construction supervisor are responsible for promptly notifying the host utility of the inadvertent return, and coordinating personnel to oversee proper clean-up and disposal of recovered material. The host utility will be on the ROW, available during drilling operations to consult with HDD personnel and conduct inspections. The host utility will inspect the drilling operation (e.g., monitoring HDD drill path during pilot hole operations) for the purpose of identifying signs of inadvertent return and will coordinate with the Construction supervisor to implement the appropriate measures to address an inadvertent return. Should an inadvertent return occur, the host utility will evaluate the situation and location, and will determine the appropriate level of response to the incident based on the guidelines contained in this contingency plan. To the extent practicable, the host utility will consult with Owner before determining the appropriate level of response to the incident.

Training

Prior to the start of construction, the Construction supervisor and EI will verify that the construction field crew members receive the following site-specific training:

- review provisions of the contingency plan, equipment maintenance and site-specific permit and monitoring requirements;
- review location of sensitive environmental resources at the site and relevant permit conditions, including any cultural resource site locations, avoidance or restriction measures;
- review inspection procedures for inadvertent return prevention and be familiar with containment equipment and materials;
- review contractor/crew obligations to temporarily suspend forward progress of the drilling upon first evidence of the occurrence of lost circulation and potential inadvertent return, and to report any observed inadvertent returns to the EI;
- review operation of inadvertent return control equipment and the location of inadvertent return control materials, as necessary and appropriate; and
- review protocols for reporting observed inadvertent returns and project team communication with appropriate regulatory agencies.

Pre-Construction Considerations:

Prior to construction, environmental and cultural resources will be protected by implementing the following measures:

- Environmental, biological and cultural surveys, clearances and applicable permitting for proposed HDD and associated workspace(s) will have been completed prior to commencing drilling operations in order to minimize potential impacts to resources.
- Where present, sensitive resources within the construction right-of-way (CROW) will be flagged for avoidance, restricted activity locations, and construction limits will be clearly marked.
- Barriers (straw bales or sedimentation fences) will be erected between the bore site and nearby sensitive resources within or bounding the edge of the CROW prior to drilling, as appropriate, to prevent the potential for released material to reach resources nearby.
- On-site briefings will be conducted for the workers to ensure they have received site specific training for the HDD drilling operations and contingencies for drilling fluid inadvertent return procedures and clean-up.
- Ensure that all field personnel understand their responsibility for timely reporting of inadvertent returns.

- Maintaining necessary response equipment on-site or at a readily accessible location(s) and in good working order.

The drilling entry and exit areas will be clearly marked, surrounded by construction fencing and silt fencing to minimize the potential for on-site migration of drilling mud. Access and egress locations will be designated and clearly marked.

The primary areas of concern for inadvertent returns typically occur near the entrance and exit points where the drill bit and leading parts of the drill string is at depths of less than 20 feet deep. The likelihood of inadvertent return decreases as the depth of the pipe increases.

Inadvertent Return Contingency Response Plan

If an inadvertent return is suspected:

- National Grid will temporarily suspend all HDD drilling operations immediately upon a substantive lack of drilling fluid return or a drop in back pressure in the drilling pipe or other indications of potential inadvertent return occurrence.

- Pipeline construction personnel tasked with the observation of the directional drill path shall be dispatched to walk the alignment and visually monitor the area for inadvertent drilling fluid release and report back any findings.

If an inadvertent return is identified:

- All work stops, including the recycling of drilling mud/lubricant. The pressure of water above the pipe will keep excess mud from escaping through the fracture. Drilling operations will be suspended if the release poses a threat to human health and safety or the environment.

- Owner shall be notified of the findings and release location and in return will contact the appropriate concerned parties and regulatory agencies as necessary.

- Determine the location and extent of the inadvertent return. The host utility will document the size, impact and conditions of the release with notes and photographs.

- Immediately contain the inadvertent drilling fluid return to minimize further migration of drilling fluids/slurry mixture across the surrounding area by use of hay bales, sand bags, or silt fencing to surround and contain the drilling mud.

- Direction from the Environmental Inspector shall be followed for clean-up and mitigation requirements.

- Remove the drilling fluids and restore the site to pre-existing conditions. Clean-up work will be performed by hand if a vacuum truck cannot access the release area. The clean-up shall be to

the maximum extent possible. All waste and collected materials will be disposed of at an approved location or recycled to the return pit.

- The host utility shall document the conditions of the cleaned up area with photographs.

- If the release area is not accessible, Owner will consult with the landowner(s) regarding next appropriate action, including leaving the drilling mud in place to avoid potential damage from vehicles entering the area or safety concerns to personnel.

- Once excess drilling mud is removed, the area will be seeded and/or replanted using species similar to those in the adjacent area, or allowed to re-grow from existing vegetation at the direction of National Grid

Containment Materials

At a minimum, the following containment, response, and clean-up equipment will be available in sufficient quantities proximate to the HDD site, during all drilling operations at the time such crossing occurs:

- straw bales/hay bales and 2 stakes per bale (min.);
- weighted sediment logs, sand/gravel bags;
- silt fence;
- erosion control blankets;
- plastic sheeting;
- turbidity barriers;
- shovels, pails, drums;
- push brooms;
- squeegees;
- pumps with sufficient hoses;
- mud storage tanks; and
- vacuum truck on 24-hour call, with 1 hour response time.

Photographs of inadvertent drilling fluid return shall be taken to document the size, location and clean- up procedures of any inadvertent return occurrence.

  - If drilling mud congeals, take no other action that would potentially suspend sediments in the water column. Monitor the inadvertent return for at least 2 hours to determine if the drilling mud congeals. (Bentonite will usually harden, effectively sealing the inadvertent return location).

- If drilling mud does not congeal, erect isolation/containment environment (underwater boom and curtain).

- If the fracture becomes excessively large, a spill response team would be called in to contain and clean up excess drilling mud in the water. Phone numbers of spill response teams in the area will be on site.

- If the spill affects an area that is vegetated, the area will be seeded and/or replanted using species similar to those in the adjacent area or allowed to re-grow from existing vegetation at the direction of National Grid.

- Revegetated areas will be monitored to confirm revegetation is successful.

- After inadvertent return is stabilized and any required removal is completed, the host utility shall document post-cleanup conditions with photographs and prepare inadvertent return incident report describing time, place, actions taken to remediate the inadvertent return and measures implemented to prevent recurrence.

Response Close-Out

- Drilling mud will be cleaned up by hand using hand shovels, buckets and soft bristled brooms as possible without causing damage to existing vegetation. Fresh water washes will be employed if deemed beneficial and feasible.

- The recovered drilling fluid will either be recycled to the return pit or hauled to an approved facility for disposal. No recovered drilling fluids will be discharged into streams, storm drains or any other water source. Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and mitigation requirements. These materials will not be disposed on or buried in agricultural lands without landowner permission. Other construction materials and wastes shall be recycled, or disposed of, as appropriate.

- All inadvertent return excavation and clean-up sites will be returned to pre-project contours using clean fill, as necessary.

- All containment measures (fiber rolls, straw bale, etc.) will be removed, unless otherwise specified by the host utility.

- Containment structures will be pumped out and the ground surface scraped to bare topsoil without causing undue loss of topsoil or ancillary damage to existing and adjacent vegetation. Bare soil will be seeded and stabilized with mulch or erosion blankets as

applicable. Material will be collected in containers for temporary storage prior to removal from the site.

Construction Re-start

For releases not requiring external notification, drilling may continue, if 100 percent containment is achieved through the use of a leak stopping compound or redirection of the bore and the clean-up crew remains at the inadvertent return location until directed by the host utility that the HDD operations have stabilized and release potential has subsided.

If the release poses a threat to human health and safety or the environment, drilling operations will not recommence until conditions have been adequately addressed. For releases requiring external notification to applicable agencies, construction activities will not restart without prior approval from Owner.

Prior to restart, National Grid shall evaluate the current drill profile (e.g., drill pressures, pump volume rates, drilling mud consistency) to identify means to prevent further inadvertent return events.

Crossing Alternatives

During construction of the HDD, should there be an inadvertent return, the measures in this plan will be employed to respond. If necessary, before determining HDD construction infeasible, alternate drill path profiles may be developed to modify approach in response to site specific drilling conditions or to avoid further inadvertent return conditions.