

MAIN STREET GAS PIPELINE REPLACEMENT
REQUEST FOR DETERMINATION
OF APPLICABILITY

TOWN OF ACTON
CONSERVATION COMMISSION
JULY 2007

Prepared for:
KeySpan Energy Delivery
52 Second Avenue
Waltham, MA 02451
Attn: David Gedaminski

BSC Project No. 12971.49

Prepared by:



15 Elkins Street
Boston, MA 02127

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WPA Form 1- Request for Determination of Applicability

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

A. General Information

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



1. Applicant:

KeySpan Energy Delivery dgedaminski@keyspanenergy.com
Name E-Mail Address

Attn: David Gedaminski, 52 Second Avenue
Mailing Address

Waltham MA 02451
City/Town State Zip Code

781-466-5214 781-890-6091
Phone Number Fax Number (if applicable)

2. Representative (if any):

BSC Group, Inc.
Firm

Kenneth Fields kfields@bscgroup.com
Contact Name E-Mail Address

15 Elkins Street
Mailing Address

Boston MA 02127
City/Town State Zip Code

617-896-4342 617-896-4301
Phone Number Fax Number (if applicable)

B. Determinations

1. I request the Acton Conservation Commission make the following determination(s). Check any that apply:

- a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.
- b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.
- c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.
- d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Name of Municipality

- e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).
- _____
- _____
- _____



WPA Form 1- Request for Determination of Applicability

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C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- Single family house on a lot recorded on or before 8/1/96
- Single family house on a lot recorded after 8/1/96
- Expansion of an existing structure on a lot recorded after 8/1/96
- Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- New agriculture or aquaculture project
- Public project where funds were appropriated prior to 8/7/96
- Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- Residential subdivision; institutional, industrial, or commercial project
- Municipal project
- District, county, state, or federal government project
- Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)



WPA Form 1- Request for Determination of Applicability

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

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Name

Mailing Address

City/Town

State

Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

Signature of Applicant

Date

Signature of Representative (if any)

Date

ATTACHMENT A

MAIN STREET GAS PIPELINE REPLACEMENT REQUEST FOR DETERMINATION OF APPLICABILITY

FIGURES

ATTACHMENT B

MAIN STREET GAS PIPELINE REPLACEMENT
REQUEST FOR DETERMINATION OF APPLICABILITY

PROJECT DESCRIPTION

1.0 PROJECT SUMMARY

Keyspan Energy Delivery is seeking a Negative Determination of Applicability for the replacement of an existing natural gas main on Main Street (Route 27) in Acton, Massachusetts. Approximately 1,100 feet of the existing 2-inch diameter natural gas main will be replaced with an 8-inch plastic natural gas main. The project extends approximately from the off ramp of Route 2 eastbound to the off ramp of Route 2 westbound and includes the Main Street Bridge over Route 2. The work includes trenching within the roadway and will partly take place within the 100-foot buffer zone to wetland resource areas. This Notice of Intent (NOI) is being submitted pursuant to the Massachusetts Wetlands Protection Act (MGL Ch. 131, § 40) and implementing regulations (310 CMR 10.00) as well as the Town of Acton Wetland Protection Bylaw (Chapter F).

A portion of the proposed work qualifies as a limited project under 310 CMR 10.53 (3)(d) in that the work will involve the construction of an underground utility. However, the proposed project will have no temporary or permanent impacts to the adjacent wetlands and has been designed to conform to the requirements for work in the buffer zone under the Massachusetts Wetlands Protection Act and its implementing Regulations.

2.0 SITE DESCRIPTION

The proposed work will take place in Main Street/Route 27 near the interchange with Route 2. The work extends 1,100 feet approximately from the off ramp of Route 2 eastbound to the off ramp of Route 2 westbound and includes the Main Street Bridge over Route 2. The work will take place within the currently developed roadway.

BSC Group, Inc. (BSC) delineated wetland resource areas along the project route in May 2007. Wetland resource areas were identified as per the Federal Clean Water Act and the Massachusetts Wetlands Protection Act (MWPA) and Regulations (310 CMR 10.00) and were delineated using the methodologies set forth in the U.S. Army Corps of Engineers 1987 Manual and the Massachusetts Wetland Delineation Methodology (DEP Policy 95-1). Wetland resource areas along the project route were flagged using pink and black (BVW) or blue (bank) flagging and located by GPS (Trimble ProXH with sub-meter accuracy) for inclusion in the Project Plans.

Bordering Vegetated Wetlands

Bordering Vegetated Wetlands (BVW) on the site consist of freshwater wetlands bordering on an intermittent stream. The limit of wetland was located based upon the line “within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist” (310 CMR 10.55(2)(c)). Consistent with the Massachusetts Department of Environmental Protection Handbook on “Delineating Bordering Vegetated Wetlands” (Handbook), onsite wetlands were delineated using a three-parameter approach that included the evaluation of vegetation, hydrology, and soils.

Wetlands A and B as shown on the plan, *Natural Gas Main Replacement Project – Main Street (Route 27) and Route 2*, are located south of Main Street and west of Route 2 and consisted of a broad-leaved deciduous forested BVW bordering on an intermittent stream. Wetland C, located inside of the Route 2 west on ramp, consisted of an emergent wetland. Broad-leaved deciduous forested BVW occurs along the stream, south of Main Street and east of Route 2 (Wetland D), north of Main Street and east of Route 2 (Wetland E), and north of Main Street and west of Route 2 (Wetland F). Data sheets providing documentation of the BVW delineation are included in Attachment D.

Bank

Bank, as defined at 310 CMR 10.54(2), occurs above the mean annual low flow level of a waterbody and below either the first observable break in slope or the mean annual flood level of a waterbody, whichever is lower. Regulated Bank occurs along the intermittent stream channel and is identified by blue flagging in the field.

Land Subject to Flooding

Based on review of the most recent Federal Emergency Management Act Flood Insurance Rate Map (Community Panel 250211 0001 B), the area of the proposed work is located within Zone C, area of minimal flooding.

Riverfront Area

BSC reviewed the status of the unnamed tributary to Coles Brook as it pertains to the regulations associated with Riverfront Area (310 CMR 10.58). See Attachment E for the StreamStats analysis and discussion. Based on the results of the analysis, the watershed area and stream flow are below the regulatory requirements for a “river.” The stream is therefore considered intermittent and no Riverfront Area exists on the site.

3.0 PROPOSED ACTIVITIES

The work will involve the replacement of an existing 2-inch diameter natural gas main across the bridge with an 8-inch diameter plastic natural gas main inside a 12-inch diameter coated steel casing pipe. The existing 2-inch diameter natural gas main is supported on the bridge in the utility bay under the east side of the bridge. The new natural gas main will be assembled within a trench within Main Street (see trenching method below). Once the gas main is assembled, it will be installed in the utility bay under the bridge via pipe rollers installed on the utility supports.

Within the roadway, approximately 450 feet of 2-inch buried natural gas main will be replaced with an 8-inch plastic natural gas main within the roadway on either side of the bridge. The new gas main will connect to an existing 8-inch plastic natural gas main. The pipeline will be installed using a trenching method as described below and will be limited to the length that can be installed and backfilled each day (approximately 250 feet per day). All disturbed areas will be returned to their original elevation and condition following the installation of the new natural gas main.

Trenching Method

Existing pavement shall be removed before any excavation or trenching is performed. The pavement will be removed by a pneumatic hammer or saw cut and will be disposed of in accordance with applicable laws. Trenching is then conducted with backhoes and all material is sidecast along the trenchline and examined to determine if it is suitable for use as backfill. Suitable backfill material consists of gravels, sand, and gravel-sand mixtures that are free of large stones, construction debris, trash, frozen soil, and other foreign material. All unsuitable material will be removed from the site via covered dump truck and disposed of in accordance with applicable laws. All suitable backfill placed along the trenchline will be placed back in the trench on a daily basis. Any extra excavate will be removed from the area daily. Any additional fill material needed will be trucked in on a covered dump truck and will be placed in the trench directly from the truck. No long-term stockpiling of material will be required.

The trench will be approximately 30 inches wide and approximately 4 feet deep. Daily construction activities include mobilization, trenching, removal of existing 2-inch pipeline, laying out of new pipe, joining pipe, backfilling, compacting, and restoration of the road surface.

The work will likely consist of 4-5 workers including a dump truck, crew truck, and excavator. Prior to leaving the work each day, the trench will be backfilled and compacted except for a small work zone (6-8 feet in length) at the end of the pipe. This portion is left unfilled so the end of the pipe can be located without re-excavating the area and possibly damaging the new pipe. The unfilled portion is covered with a steel road plate.

4.0 ANTICIPATED IMPACTS AND PROPOSED MITIGATION

Part of the work, approximately 500 linear feet, as shown on the plan, *Natural Gas Main Replacement Project – Main Street (Route 27) and Route 2*, will take place within the 100-foot buffer zone to Bank or BVW. The work conforms to the general provisions established for work in the buffer zone (310 CMR 10.03 (1)(a) 3), as erosion and sedimentation controls are provided to ensure that potential impacts to resource areas are minimized.

The work will partially take place within the Town of Acton 100-foot setback for the underground storage of fuels and partially within the 50-foot setback of undisturbed natural vegetation. However, the work involves the transportation, rather than storage, of natural gas. The proposed work is associated with a pre-existing natural gas main and will not be located closer to the adjacent wetlands than the existing main. In addition, the work is occurring within the previously altered roadway layout. Natural gas is a vapor; therefore, it poses no risk of ecological impact to adjacent wetlands. The proposed project will not affect the interests provided for in the Town of Acton Wetland Protection Bylaw more adversely than the existing natural gas main.

To ensure that there are no indirect impacts to any wetland as a result of the proposed work, the following Best Management Practices will be implemented:

- Existing curbing along the roadway will direct runoff to existing catch basins. Catch basins therefore will be protected with filter fabric to ensure sediments do not enter the drainage system. Catch basins to be protected are shown on the plan, *Natural Gas Main Replacement Project – Main Street (Route 27) and Route 2*.
- Areas where there is no curbing will be lined with staked or weighted haybales, as indicated on the plan, *Natural Gas Main Replacement Project – Main Street (Route 27) and Route 2*.
- The amount of trench that will be opened up each day will be limited to that which can be completed, backfilled, and restored in one day. As such, no long-term stockpiling of any materials, either excavate or clean fill, will be required as these materials can be trucked in and out each day via dump truck.
- KeySpan contractors will typically not work on days of predicted rain.
- No equipment will be refueled, nor will fuel be stored, within 100 feet of a resource area.

5.0 CONSTRUCTION SEQUENCING

Install erosion controls in catch basins prior to any construction activity.

Pipeline Installation Under Main Street Bridge

- All construction performed over Route 2 shall utilize single-lane closures and be done in phases.
- Remove existing 2-inch pipe.
- Install pipe rollers on existing bridge utility supports.
- Install temporary wood planking (shields) on existing bridge utility supports in preparation for installation of new natural gas main.
- Sawcut and remove portions of the approach slab as required and excavate behind backwall.
- Core 16-inch diameter opening through both abutment backwalls.
- Slide the proposed gas pipe through the abutment backwalls and along the rollers.
- Remove temporary shielding.
- Backfill and reconstruct approach slabs.

Roadway Trenching

- Install additional erosion controls in work areas with no curbing.
- Saw cut all asphalt in trench pathway
- Backhoe removal of asphalt only in active work area—removed asphalt will be hauled away
- Backhoe excavation of a 30-inch wide by 50-inch deep trench. Excavated material is temporarily placed on roadway pavement.
- Remove existing 2-inch diameter pipeline.

Pipeline Installation Within Roadway

- Backfill 6 inches of sand into bottom of trench.
- Assemble pipe in trench.
- Backfill 6 inches of sand above pipe.
- Backfill with suitable excavated material and/or additional fill material up to 12 inches from surface.
- Install warning tape.
- Backfill with excavated material to the surface. Any tailings excavated material not used will be hauled away on a daily basis.
- Mechanical trench compaction.
- 6-8 feet of trench will remain open at the end of the pipe each day. The open area will be covered with a steel plate.
- Upon complete installation of the pipeline, permanently pave previously trenched area to model pre-existing conditions.

ATTACHMENT C

MAIN STREET GAS PIPELINE REPLACEMENT
REQUEST FOR DETERMINATION OF APPLICABILITY

ABUTTER INFORMATION

AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

(to be submitted to the Massachusetts Department of Environmental Protection and the Conservation Commission when filing a Notice of Intent)

I, Kenneth Fields, hereby certify under the pains and penalties of perjury that on July 19, 2007 I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, in connection with the following matter:

A Notice of Intent filed under the Massachusetts Wetlands Protection Act by KeySpan Energy Delivery with the Acton Conservation Commission on July 19, 2007 for property located at Main Street/Route 27, Acton.

The form of the notification, and a list of the abutters to whom it was given and their addresses, are attached to this Affidavit of Service.

Name

Date

**NOTIFICATION TO ABUTTERS
UNDER THE MASSACHUSETTS WETLANDS PROTECTION ACT
AND THE TOWN OF ACTON WETLANDS BYLAW**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40 and the Town of Acton Bylaws, you are hereby notified of the following:

The Applicant: KeySpan Energy Delivery

Address 52 Second Avenue, Waltham, MA 02451 Phone 781-466-5000

has filed both a Request for Determination ("RDA") of Applicability and a Notice of Intent ("NOI") with the Acton Conservation Commission seeking permission to remove, fill, dredge or alter an Area Subject to Protection under the Wetlands Protection Act.

Applicant's Representative: BSC Group, Inc., Attn: Kenneth Fields

Address 15 Elkins Street, Boston, MA 02127 Phone 617-896-4342

The address of the property where the activity is proposed The work will take place on the Main Street/
Route 27 bridge over Route 2. Work will also take place within approximately 450 feet on each side of the bridge on Main St.

Town Atlas Plate/Map F-3 Parcel/Lot N/A

Project Description The proposed work includes the replacement of an existing 2-inch diameter natural gas main and within the roadway 450 feet on either side of and under the Main Street Bridge with an 8-inch diameter natural gas main. Note that if the Commission votes a "Negative Determination" on the RDA, then KeySpan will withdraw the NOI.

Copies of the RDA and NOI may be examined at the Conservation Office, Acton Town Hall, 472 Main Street, Acton between the hours of 9:00 A.M. and 4:30 P.M. Monday through Friday. For more information please call the Conservation Office at 978-264-9631.

A Public Hearing will be held at the Acton Town Hall, 472 Main Street, on Wednesday,
August 1, 2007 at 7:15 P.M.
(date)

The notice of the public hearing will be published at least five (5) days in advance in the Acton edition of the *Beacon* newspaper or *Metrowest Daily News*.

NOTE: You may also contact your local conservation commission or the nearest Department of Environmental Protection Regional Office* for the information about this application or, the Wetlands Protection Act. Acton is in the Central Region. To contact DEP, call:

***DEP Central Region: 508-792-7650
627 Main Street, Worcester MA 01608**

ATTACHMENT D

MAIN STREET GAS PIPELINE REPLACEMENT
REQUEST FOR DETERMINATION OF APPLICABILITY

WETLAND DELINEATION FORMS

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: KeySpan Prepared By: BSC Group, Inc. Project Location: Acton DEP File #: _____

Check all that apply:

- Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

Section I. Vegetation Observation Plot Upland A Transect Number: Near Flag A-8 Date of Delineation: 06/05/2007
 Number: _____

A. Sample Layer and Plant Species		B. Percent Cover (or basal area)	C. Percent Dominance	D. Dominant Plant (Yes or no)	E. Wetland Indicator Category*
Trees	<i>Acer rubrum</i> (Red maple)	20.5	66.1%	Y	FAC*
	<i>Fagus grandifolia</i> (American beech)	10.5	33.9%	Y	FACU
Sapling	<i>Acer rubrum</i> (Red maple)	10.5	50.0%	Y	FAC*
	<i>Fagus grandifolia</i> (American beech)	10.5	50.0%	Y	FACU
Shrub	<i>Tilia americana</i> (American linden)	10.5	50.0%	Y	FACU
	<i>Lindera benzoin</i> (Spicebush)	10.5	50.0%	Y	FACW*
Herb	<i>Osmunda cinnamomea</i> (Cinnamon fern)	64.0	56.9%	Y	FACW*
	<i>Maianthemum canadense</i> (Canada mayflower)	38.0	33.8%	Y	FAC-
	<i>Toxicodendron radicans</i> (Poison ivy)	10.5	9.3%	N	

* Use an asterisk to mark wetland indicator plants; plant species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
 Number of dominant wetland indicator plants: **4** Number of dominant non-wetland indicator plants: **4**
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? YES

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent. MA DEP; 3/95

Section II. Indicators of Hydrology					Other Indicators of Hydrology: (check all that apply and describe)	
Hydric Soil Interpretation					<input type="checkbox"/> Site Inundated:	
1. Soil Survey					<input type="checkbox"/> Depth to free water in observation hole:	
Is there a published soil survey for this site? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no					<input type="checkbox"/> Depth to soil saturation in observation hole:	
title/date: Soil Survey of Middlesex County, Massachusetts					<input type="checkbox"/> Water marks:	
map number: digital version					<input type="checkbox"/> Drift lines:	
soil type mapped: Narragansett silt loam, 3-8% slopes, very stony					<input type="checkbox"/> Sediment deposits:	
hydric soil inclusions: No					<input type="checkbox"/> Drainage patterns in BVW:	
Are field observations consistent with soil survey? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no					<input type="checkbox"/> Oxidized rhizospheres:	
Remarks:					<input type="checkbox"/> Water-stained leaves:	
					<input type="checkbox"/> Recorded data (stream, lake, or tidal gauge; aerial photo; other):	
2. Soil Description					<input type="checkbox"/> Other:	
Horizon	Depth	Matrix Color	Texture	Mottles Color	Vegetation and Hydrology Conclusion Yes No Number of wetland indicator plants <input checked="" type="checkbox"/> <input type="checkbox"/> ≥ number of non-wetland indicator plants Wetland hydrology present: hydric soil present <input type="checkbox"/> <input checked="" type="checkbox"/> other indicators of hydrology present <input type="checkbox"/> <input checked="" type="checkbox"/> Sample location is in a BVW <input type="checkbox"/> <input checked="" type="checkbox"/>	
A	0-10"	7.5YR 4/4	Silt loam			
B	10-18+"	10YR 5/6	Silt loam			
3. Other:						
Conclusion: Is soil hydric? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no						

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: KeySpan Prepared By: BSC Group, Inc. Project Location: Acton DEP File #: _____

Check all that apply:

- Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

Section I. Vegetation Observation Plot Wetland A Transect Number: Near Flag A-8 Date of Delineation: 06/05/2007
Number: _____

A. Sample Layer and Plant Species		B. Percent Cover (or basal area)	C. Percent Dominance	D. Dominant Plant (Yes or no)	E. Wetland Indicator Category*
Trees	<i>Acer rubrum</i> (Red maple)	38.0	64.4%	Y	FAC*
	<i>Fagus grandifolia</i> (American beech)	10.5	17.8%	N	
	<i>Pinus strobus</i> (White pine)	10.5	17.8%	N	
Sapling	<i>Tilia americana</i> (American linden)	20.5	49.4%	Y	FACU
	<i>Acer rubrum</i> (Red maple)	10.5	25.3%	Y	FAC*
	<i>Quercus bicolor</i> (Swamp white oak)	10.5	25.3%	Y	FACW+*
Shrub	<i>Viburnum recognitum</i> (Northern arrow-wood)	20.5	66.1%	Y	FACW-*
	<i>Lindera benzoin</i> (Spicebush)	10.5	33.9%	Y	FACW-*
Herb	<i>Toxicodendron radicans</i> (Poison ivy)	38.0	64.4%	Y	FAC*
	<i>Viburnum recognitum</i> (Northern arrow-wood)	10.5	17.8%	N	
	<i>Symplocarpus foetidus</i> (Skunk cabbage)	10.5	17.8%	N	

* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
 Number of dominant wetland indicator plants: **6** Number of dominant non-wetland indicator plants: **1**
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? YES

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent. MA DEP; 3/95

Section II. Indicators of Hydrology					Other Indicators of Hydrology: (check all that apply and describe)	
Hydric Soil Interpretation					<input type="checkbox"/> Site Inundated:	
1. Soil Survey					<input checked="" type="checkbox"/> Depth to free water in observation hole: 4"	
Is there a published soil survey for this site? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no					<input checked="" type="checkbox"/> Depth to soil saturation in observation hole: Surface	
title/date: Soil Survey of Middlesex County, Massachusetts					<input type="checkbox"/> Water marks:	
map number: digital version					<input type="checkbox"/> Drift lines:	
soil type mapped: Narragansett silt loam, 3-8% slopes, very stony					<input type="checkbox"/> Sediment deposits:	
hydric soil inclusions: No					<input type="checkbox"/> Drainage patterns in BVW:	
Are field observations consistent with soil survey? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no					<input type="checkbox"/> Oxidized rhizospheres:	
Remarks:					<input checked="" type="checkbox"/> Water-stained leaves:	
					<input type="checkbox"/> Recorded data (stream, lake, or tidal gauge; aerial photo; other):	
2. Soil Description					<input type="checkbox"/> Other:	
Horizon	Depth	Matrix Color	Texture	Mottles Color	Vegetation and Hydrology Conclusion Yes No Number of wetland indicator plants <input checked="" type="checkbox"/> <input type="checkbox"/> ≥ number of non-wetland indicator plants Wetland hydrology present: hydric soil present <input checked="" type="checkbox"/> <input type="checkbox"/> other indicators of hydrology present <input checked="" type="checkbox"/> <input type="checkbox"/> Sample location is in a BVW <input checked="" type="checkbox"/> <input type="checkbox"/>	
A	0-8"	10YR 2/1	Mucky			
B	8-16"	10YR 4/1	Silt loam			
B	16-18+"	10YR 2/2	Silt loam			
3. Other: V. Mineral Histic (Field Indicators for Identifying Hydric Soils in New England)						
Conclusion: Is soil hydric? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no						

ATTACHMENT E

MAIN STREET GAS PIPELINE REPLACEMENT
REQUEST FOR DETERMINATION OF APPLICABILITY

STREAMSTATS ANALYSIS

RIVERFRONT AREA ANALYSIS

BSC reviewed the status of the unnamed tributary to Coles Brook as it pertains to the regulations associated with Riverfront Area (310 CMR 10.58). In accordance with the regulations at 310 CMR 10.58 (2)(a)1., “A river is any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year.” An analysis of the criteria used to establish a “river” in accordance with regulatory requirements is presented below:

310 CMR 10.58 (2)(a)1.a. A river or stream shown as perennial on the current United States Geological Survey (USGS) or more recent map provided by the Department is perennial.

The current USGS map for the particular site is the 1987 Maynard 7.5x15 minute quadrangle map. The linetypes associated with stream types is a thick blue continuous line for perennial streams and a thin blue continuous line for intermittent streams. The unnamed tributary is not shown on the USGS map.

310 CMR 10.58 (2)(a)1.b. A river or stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department, that has a watershed size greater than or equal to one square mile, is perennial.

An analysis of the watershed size was conducted using the USGS StreamStats program. A point was selected on the unnamed stream near the confluence of a tributary stream, downstream from the site. This point is located more than 1,000-feet from the limit of work. At this point, the stream’s watershed is 0.32 square miles, which is less than the one square mile requirement established by the regulation.

310 CMR 10.58 (2)(a)1.c. A stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department, that has a watershed size less than one square mile, is intermittent unless:

- i. The stream has a watershed size of at least one-half (0.50) square mile and has a predicted flow rate greater than or equal to 0.01 cubic feet per second at the 99% flow duration using the USGS Stream Stats method. The issuing authority shall find such streams to be perennial; or*
- ii. When the USGS StreamStats method cannot be used because the stream does not have a mapped and digitized centerline, and the stream has a watershed size of at least one-half (0.50) square mile, and the surficial geology of the contributing drainage area to the stream at the project site contains 75% or more stratified drift, the issuing authority shall find such streams to be perennial. Stratified drift shall mean sand and gravel deposits that have been layered and sorted by glacial meltwater streams. Areal percentages of stratified drift may be determined using USGS surficial geologic maps, USGS Hydrological Atlases, Massachusetts Geographical Information System (MassGIS) surficial geology data layer, or other published or electronic surficial geological information from a credible source.*

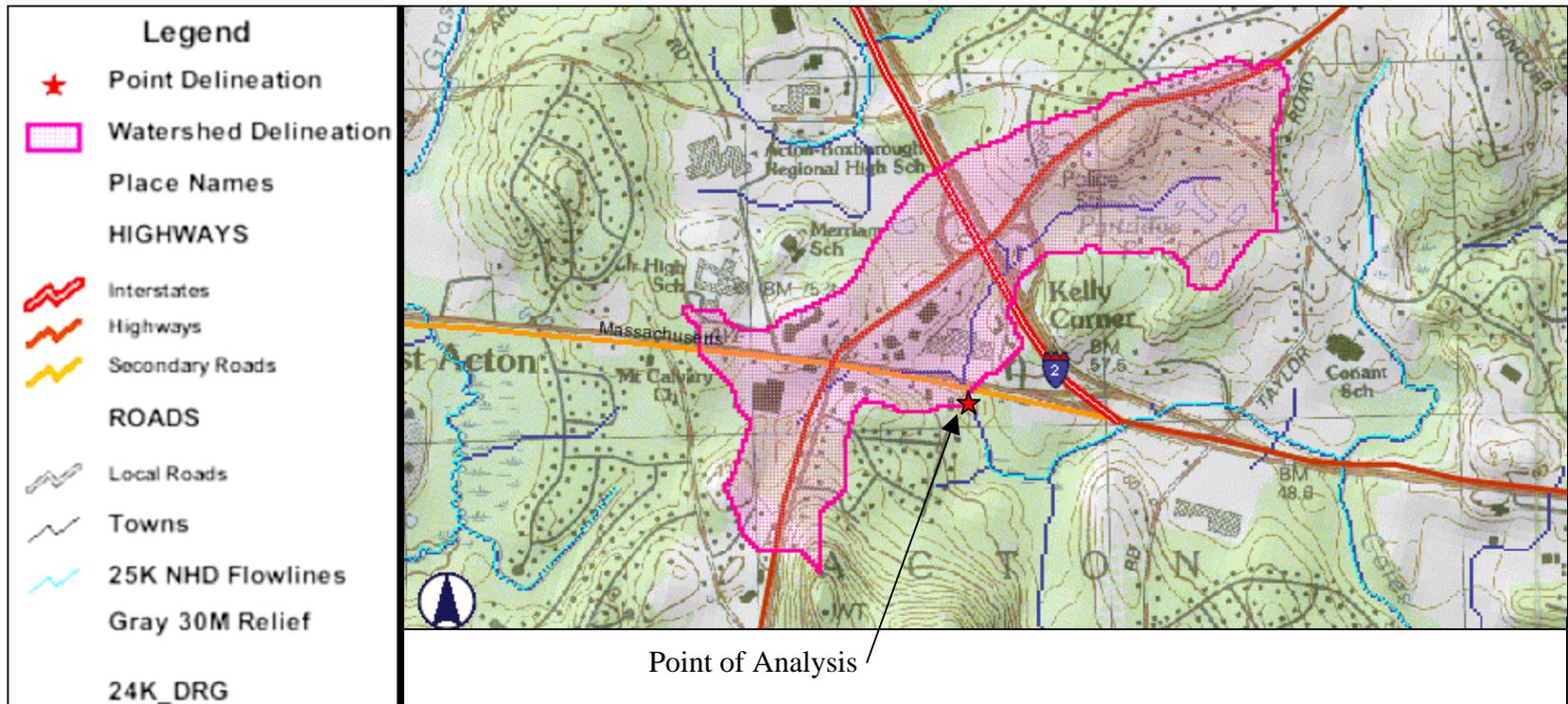
ATTACHMENT E – STREAMSTATS ANALYSIS
NOTICE OF INTENT
MAIN STREET GAS PIPELINE

(i) As mentioned above, the watershed size calculated by the StreamStats program is less than one-half square mile. The predicted flow is 0.00 cubic feet per second (ie. less than 0.01 cubic feet per second) at the 99% flow duration. Therefore the stream fails to meet this regulatory requirement for establishing perennial flow.

(ii) Not applicable – the Concord River watershed has a mapped and digitized centerline for this stream and the StreamStats program can be utilized for this site.

The evidence therefore establishes that unnamed stream does not meet the regulatory requirements to be considered as a “river” at this location. Therefore the site does not contain Riverfront Area.

STREAMSTATS WATERSHED DELINEATION



STREAMSTATS RESULTS

Basin Characteristics Report

Date: Thu Jul 12 2007 13:07:43
Latitude (NAD83): 42.4739 (42 28 26)
Longitude (NAD83): -71.4492 (-71 26 57)

Error when computing parameter DRFTPERSTR for the local watershed: Error when evaluating expression 1.15841945771467E-04/0.

Parameter	Value
Area in square miles	0.32
Average area slope in percent	1.85
square mile area covered by stratified drift	0.000116
Total stream length in miles	0
stratified drift per unit stream lenth	

Streamflow Statistics Report

Date: Thu Jul 12 2007 13:06:24
Site Location: Massachusetts
Drainage Area: 0.32 mi²
Latitude (NAD83): 42.4739 (42 28 26)
Longitude (NAD83): -71.4492 (-71 26 57)

Low Flow Basin Characteristics			
100% Statewide Low Flow (0.32 mi ²)			
Parameter	Value	Min	Max
Drainage Area	0.32		
Mean Basin Slope from 250K DEM	1.849		
Stratified Drift per Stream Length			
Massachusetts Region	0		

Parameter Stratified_Drift_per_Stream_Length could not be computed.