

ENF Environmental Notification Form

For Office Use Only
 Executive Office of Environmental Affairs

EOEA No.: **12953**
 MEPA Analyst: **Deirdre Buckley**
 Phone: 617-626-**1044**

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

Project Name: Proposed Natural Gas Pipeline Project		
Street: Reiss Avenue to Doane Street		
Municipality: Lowell	Watershed: Merrimack	
Universal Tranverse Mercator Coordinates: Start: 3047071N, 704096E End: 3051758N, 704420E	Latitude: Start: 42 36 33 End: 42 37 19 Longitude: Start: 71 19 19 End: 71 19 15	
Estimated commencement date: Summer 2003	Estimated completion date: Winter 2003	
Approximate cost: \$1.5 Million	Status of project design: 80% complete	
Proponent: KeySpan Energy Delivery		
Street: 201 Rivermoor Street		
Municipality: Boston	State: MA	Zip Code: 02132
Name of Contact Person From Whom Copies of this ENF May Be Obtained: John Zimmer		
Firm/Agency: Coler & Colantonio, Inc.	Street: 101 Accord Park Drive	
Municipality: Norwell	State: MA	Zip Code: 02061
Phone: (781) 982-5473	Fax: (781) 982-5490	E-mail: jzimmer@col-col.com

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

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): None

Are you requesting coordinated review with any other federal, state, regional, or local agency?
 Yes (Specify) No

List Local or Federal Permits and Approvals: Order of Conditions, 401 Water Quality Certification – MA DEP, PGPII – US. ACOE, NPDES Permit – US EPA.

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- Land
- Water
- Energy
- ACEC

- Rare Species
- Wastewater
- Air
- Regulations

- Wetlands, Waterways, & Tidelands
- Transportation
- Solid & Hazardous Waste
- Historical & Archaeological Resources

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals
LAND				<input checked="" type="checkbox"/> Order of Conditions <input type="checkbox"/> Superceding Order of Conditions <input type="checkbox"/> Chapter 91 License <input checked="" type="checkbox"/> 401 Water Quality Certification <input type="checkbox"/> MHD or MDC Access Permit <input type="checkbox"/> Water Management Act Permit <input type="checkbox"/> New Source Approval <input type="checkbox"/> DEP or MWRA Sewer Connection/ Extension Permit <input checked="" type="checkbox"/> Other Permits <i>(including Legislative Approvals) – Specify:</i> <u>U.S. ACOE – PGP II Permit</u> <u>U.S. EPA – NPDES Permit</u>
Total site acreage	5.0			
New acres of land altered		0.5 Temporary		
Acres of impervious area	0	0	0	
Square feet of new bordering vegetated wetlands alteration		22,710 Temporary		
Square feet of new other wetland alteration		0		
Acres of new non-water dependent use of tidelands or waterways		0		
STRUCTURES				
Gross square footage	N/A	N/A	N/A	
Number of housing units	N/A	N/A	N/A	
Maximum height (in feet)	N/A	N/A	N/A	
TRANSPORTATION				
Vehicle trips per day	N/A	N/A	N/A	
Parking spaces	N/A	N/A	N/A	
WATER/WASTEWATER				
Gallons/day (GPD) of water use	N/A	N/A	N/A	
GPD water withdrawal	N/A	N/A	N/A	
GPD wastewater generation/ treatment	N/A	N/A	N/A	
Length of water/sewer mains (in miles)	N/A	N/A	N/A	

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

Yes (Specify _____) No

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

Yes (Specify _____) No

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

Yes (Specify) No

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

Yes (Specify) No

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

Yes (Specify _____) No

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

Yes (Specify) No

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

KeySpan Energy Delivery (KeySpan) is proposing to loop approximately 1.1 miles of 8-inch pipeline with a new 12-inch pipeline located in the vicinity of the Lowell Connector and Route 495 in Lowell, Massachusetts (See Section III, Figure 1). The 12-inch pipeline is being installed by KeySpan to meet increased residential and commercial demand for natural gas within the local area. The proposed project will begin at an existing Keyspan valve adjacent to the Showcase Cinema parking lot in Lowell and proceed in a northerly direction to a terminus at an existing KeySpan gate station located south of Doane Street. The new 12-inch pipeline will be installed within an existing permanent right of way (ROW) using conventional "open-cut" construction and will be offset from the existing 8-inch pipeline by approximately five feet. The ROW crosses through areas of commercial and industrial development, roadways, roadside shoulders, bordering vegetated wetlands, Meadow Brook and Conrail Railroad tracks.

ALTERNATIVES ANALYSIS

No Action Alternative

The "no action" alternative will result in an unmet demand for natural gas by present and future KeySpan customers. The current demand for natural gas from the Town of Lowell exceeds the capabilities of the existing 8-inch diameter line, and without the proposed additional delivery capacity, the existing pipeline will be unable to accommodate the increasing demand while maintaining existing natural gas deliveries.

Route Alternatives

KeySpan has developed the proposed route in consideration of existing environmental resources, safety concerns and socio-economic issues and does not anticipate significant route variations or deviations. The proposed work will occur primarily within an existing, disturbed ROW, excepting expanded work areas at road and stream crossings and for pipe and will not require an increase in permanent easement width.

Same-ditch Replacement

Although same-ditch replacement of the existing 8-inch pipeline with a larger diameter pipe would slightly reduce the area of new temporary workspace needed for pipeline installation, it would also require removing the existing pipeline from service. Due to the limited transmission facilities in the area, the existing line can not be taken out of service for the period of time required to replace it. Therefore, same ditch replacement is not a viable option.

New Route Alternatives

The current design for the proposed pipeline installation entails a five-foot offset between the new and existing lines. Re-routing the pipeline to the north and west will directly impact industrial as well as residential areas and include crossing additional roads, underground utilities and Meadow Brook in an undisturbed location. Increased exposure to road traffic and overhead utility lines, as well as the additional crossings of gas and electric utilities could create unanticipated safety hazards and significantly increase the construction period. Re-routing the pipeline to the south and east beneath the Lowell Connector will also create unnecessary impacts to local businesses. Installing the new pipeline within the existing corridor presents the most economic, environmental and safety conscious option.

Meadow Brook Crossing

Boring

Boring or pipe jacking is one option for installing the pipeline beneath Meadow Brook. A bore pit is dug on one side of the channel and a receiving pit dug on the other. The bore pit is excavated to a depth of approximately five feet beneath the bottom of the stream and is angled such that the bore will follow the grade of the pipe. A boring machine is lowered to the bottom of the bore pit and placed on tracks. The machine cuts a horizontal shaft under the artery using a cutting head mounted on an auger. The auger rotates in a casing, both of which are pushed forward as the hole is cut. The pipeline is then pushed through the casing.

The major drawback with this technique is the depth, width and length of the bore and receiving pits as well as the storage of excavated spoil during the crossing. Bore pits are typically 40-60 feet long x 8-10 feet wide to accommodate the bore machine and pipe casing. The depth is variable and dependent on the depth of the resource to be crossed. Due to the incised nature of the channel and minimum clearance requirements below the stream bottom, the depth of the pit would be approximately 19 feet. The pit bottom would be located within the water table and dewatering would be required for the duration of the process. Excavated spoil would be saturated and have a tendency to flow requiring a larger storage area to contain the material.

Cumulatively, these factors would increase disturbance to the riparian corridor as a result of increased workspace and spoil storage as well as the duration of the crossing due to the excavation and boring process. Moreover, the saturated soil conditions would constitute a considerable safety hazard for construction personnel. Stacked trench boxes would be required to prevent the collapse of the sidewalls of the 19-foot pit. Maintaining safe working conditions for the bore machine and dewatering pump operators, pipe welding crews, refueling crews and laborers needed to excavate spoil extracted from the bore tunnel would be difficult under these conditions. Due to the increased environmental impacts and potential safety concerns associated with installation of the pipeline via boring, it is not considered a viable alternative.

Flume

Dam and flume is a second option for installing the pipeline beneath Meadow Brook. This dry-crossing technique involves damming the channel above and below the crossing location prior to ditch excavation. Flumes are installed within the dams to transport water across the workspace. Flumes are sized according to the highest anticipated flow volumes and rates to maintain downstream flows. The banks will be left in place as hard plugs until the pipe is ready to be installed. Excavation equipment will work around the flume pipe during excavation. The pipe will be threaded under the flume pipe, and the ditch will be backfilled while waterbody flows are maintained. If topographic conditions do not permit the pipe to be threaded under the flume, then the flow may be temporarily pumped while the pipe is lowered in the trench. The work associated with dam and flume techniques is temporary in nature and requires less overall excavation and disruption than a bore. Considering that the channel was previously crossed in this area and the banks are currently disturbed, dam and flume is proposed as one of the preferred methods of installing the pipeline beneath Meadow Brook.

Pump-Around

Pump-around is a third option for installing the pipeline beneath Meadow Brook. This dry-crossing technique also involves damming the channel above and below the crossing location prior to ditch excavation. Hydrostatic pumps are employed to pump water around work areas and sized according to the highest anticipated flow volumes/rates to maintain downstream flows and to avoid impoundment. Pumps will not be used for extended periods of time and personnel will be present during operation. All pump intake hoses will be screened, and pump discharges will be directed through energy dissipaters. A spare pump will be available at the site. If a natural sump is not available for the intake hose, an in-stream sump will be created using double bagged sandbags. All pumps will be within secondary containment structures to prevent incidental oil and gas from migrating toward the resource area. If the time between any phase of the work becomes extensive or if it is determined that the pumps cannot handle the flow within the waterbodies, the pumps will be discontinued and flumes will be installed to maintain stream flow. The work associated with the pump-around technique is also temporary in nature and requires less excavation and disruption than a bore. Again, considering that the channel was previously crossed in this area and the banks are currently disturbed, pump-around is proposed as one of the preferred methods of installing the pipeline beneath Meadow Brook. Advantages of using dry crossings methods such as dam & flume and pump-around are the reduction of construction time windows and reduction of spoil and equipment storage areas required when using bore/jacking techniques. Banks and riparian zones can be restored rapidly due to the limited construction period and minimized area disturbance. All temporary and permanent ROW will be restored to pre-construction conditions following pipeline installation and no additional permanent ROW will be acquired in this area. Dry crossings are also preferred over wet-crossing methods because they reduce impacts to water quality by allowing construction equipment to work under dry conditions.