

Multi-Dimensional Analysis of the Proposed Northeast Expansion Pipeline

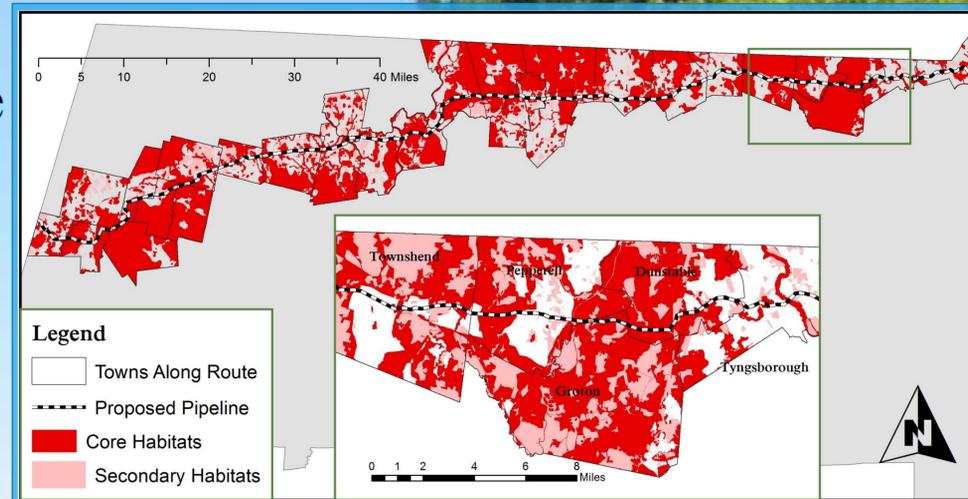
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Sustainable Community Development



Abstract

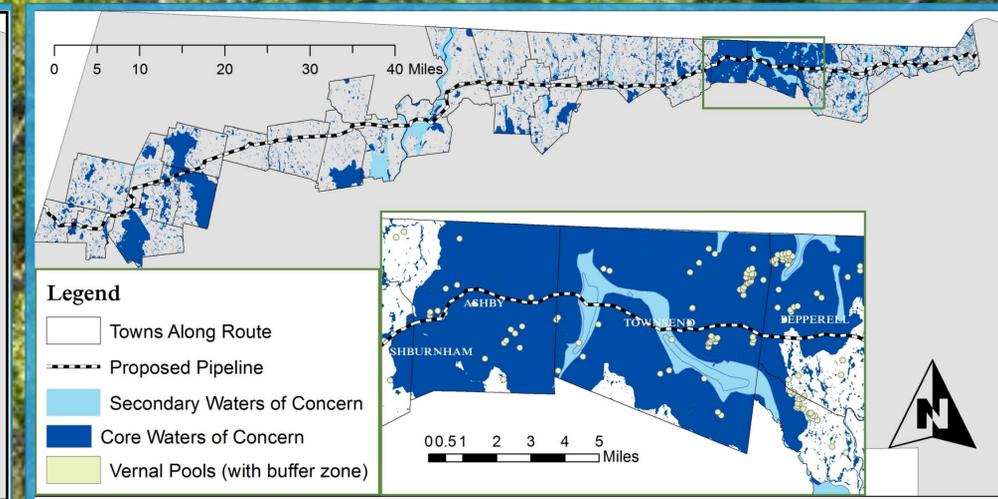
The purpose of my project is to analyze the route of the proposed Northeast Expansion Pipeline, a natural gas pipeline that would connect existing pipelines in New York State to the north shore of Massachusetts. The application for the approximately 126 mile pipeline was submitted by Tennessee Gas Pipeline Company, a subsidiary of Kinder-Morgan, the largest pipeline infrastructure company in the United States. The expansion would run from Richmond in Berkshire County, through Franklin County by way of Ashfield, through to Worcester county in Athol and ending in Dracut in Middlesex County.

My research analyzes the communities and habitats that the pipeline would pass as a way to assess potential impact.



Habitat & Wildlife Analysis

Core Habitats was created by performing a union of the Mass GIS data layers: BM2 (Biomap2) Core Habitat, Forest Stewardship Areas, BM2 Critical Natural Landscapes, Areas of Critical Environmental Concern, and Priority Habitats. Secondary Habitats was created by performing a union of the Mass GIS data layers: Open Spaces and Interior Forests



Water Analysis

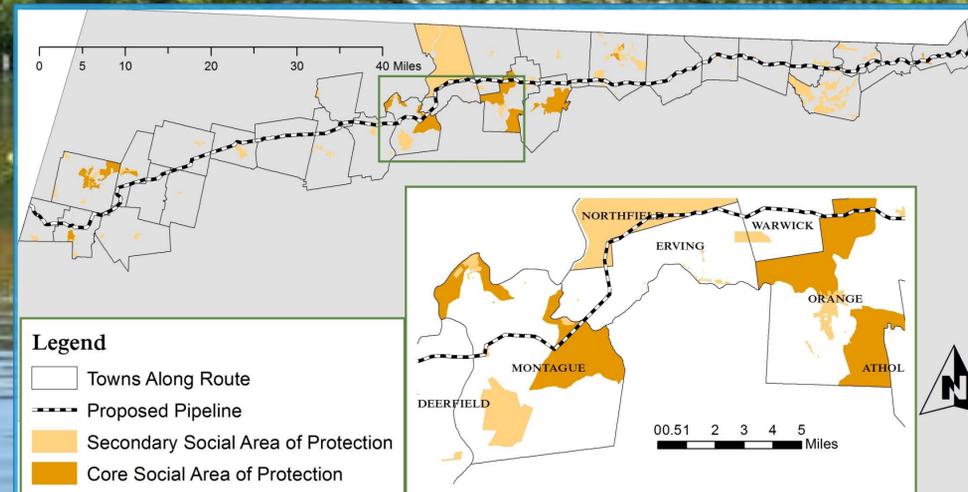
Core Waters was created by performing a union of the Mass GIS data layers: WetlandsDEP, Outstanding Resource Waters, and Wellhead Protection Areas. Secondary Waters was created by performing a union of the Mass GIS data layers: Aquifers, and Vernal Pools (buffer - 450 ft . standard for forestry operations)

Methodology

To perform my assessment I retrieved a GIS shapefile of the proposed route from the group *No Fracked Gas in Mass*. I then acquired a variety of data from the Massachusetts GIS website relating to 3 categories of analysis that I wanted to focus upon: Habitat & Wildlife, Water, and Social Protection.

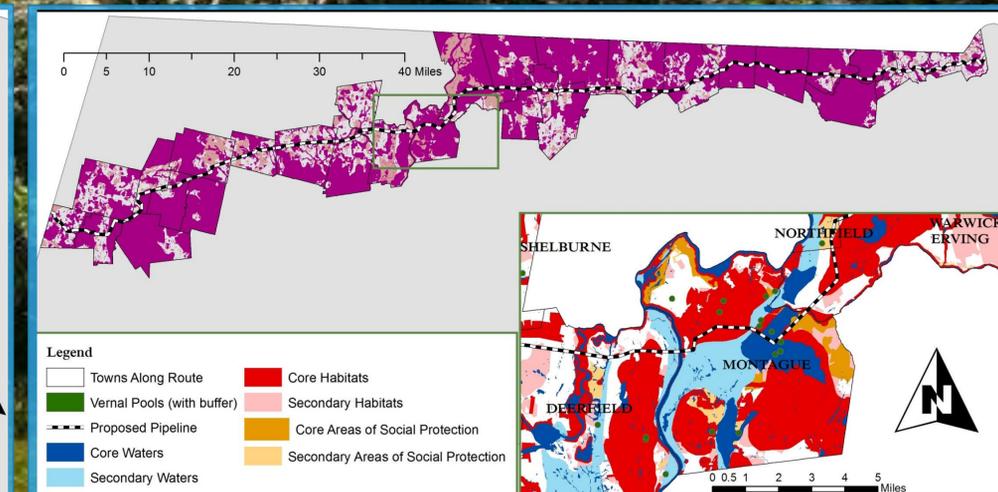
Next it was necessary to create criteria by which to evaluate the path of the proposed pipeline. I further classified the 3 categories into areas of *core* and *secondary* concern. Beneath each of the four maps is a summary of the data sources that compose the criteria for the distinction.

The final portion of my method was to extrapolate the length of the portions of the pipelines that travelled through the categories that I had created to determine the potential impact.



Social Protection Analysis

Core Social Protection Areas was created by performing a union of the Mass GIS data layers: Environmental Justice Areas and Primary Schools (buffer – 100ft). Secondary Social Protection Areas was created by performing a union of the Mass GIS data layers: Community Preservation Act (buffer – 100ft) and Mass Historical Commission Inventory



Complete Analysis

Complete Analysis was created by performing a union of all Core Areas of Concern and all Secondary Areas of Concern from the analyses of the previous three maps: Wildlife & Habitat, Water, and Social Protection.

Results

Massachusetts has a wealth of data about habitats and areas of social and environmental protection. For this reason, it can be easily seen that any proposed infrastructure project would confront many issues with potential impacts on the environment and citizenry. Due to its length, this proposed pipeline would conflict with a wide variety of interests both ecological and social.

Judgments can only be made based on the potential benefits and costs between a set of options. Given that this analysis only assesses the potential costs, it would be unfaithful to conclude the merit of this pipeline based solely on the information provided here.

However, fossil fuel infrastructure and the industry that installs it has a proven track record of promoting their economic interests over the communities and habitats that they operate in. All pipelines leak and pollute, no matter how safe and we are all well aware of the disastrous consequences of our reliance on fossil fuels.

The following is a detailed analysis of the pipeline route:

Habitat & Wildlife Analysis: The pipeline intersects with 72.2 miles of Core Habitat and 37.34 miles of Secondary Habitat.

Water Analysis: The pipeline intersects with 30.9 miles of Core Waters (206 Wetlands, 15 Outstanding Resource Waters, 13 public water supplies and 2 scenic/protected rivers, and 4 wellhead protection areas) and 8.63 miles of Secondary Waters (34 Vernal Pools and 12 aquifers).

Social Protection Analysis: The pipeline intersects with 3.29 miles of Core Social Protection Areas and 6.4 miles of Secondary Social Protection Areas

Complete Analysis: The pipeline intersects with 83.3 miles of Conglomerated Core Areas of Concern and 48.02 miles of Secondary Areas of Concern.

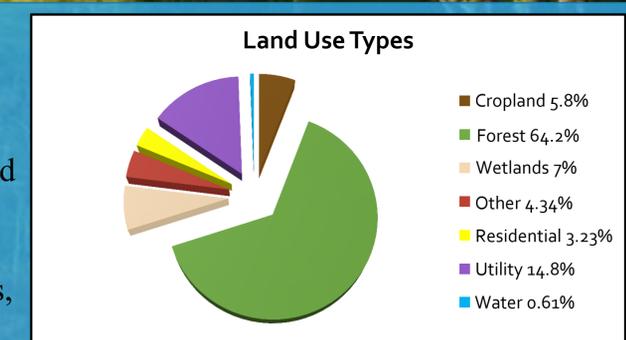


Figure 1. Analysis of Land Classes

Other is Brushland, Golf Course, Pasture, Industrial, Junkyard, Mining, Nursery, Orchard, Participation Recreation, Transitional, Transportation, Urban Public/Institutional, Waste Disposal, Commercial, and Open Land.