

**Final Report**  
**Award No. DTPH5615GPPT03**  
**Broome County High Hazard Pipeline Inventory**

The goal of the High Hazard Pipeline Inventory was to facilitate an understanding of the risk of pipeline exposure due to natural force damage (flooding and stream channel erosion) within the County's stream corridors. Risk is defined as the product of probability of a pipeline becoming exposed from a flood and the consequence of a pipeline rupture.

The objectives of the Inventory were as follows:

- Determine the probability of existing and potential exposure during a flood at pipeline crossings
- Characterize the negative consequences of a pipeline rupture
- Develop a "living document" which is updated by Broome County as part of the County's All-Hazard Mitigation Plan every five years
- Identify essential pipeline owner personnel who mitigate pipeline hazards.

The Inventory established a methodology to identify and prioritize pipeline crossings under the Federal Pipeline Hazard and Material Safety Administration (PHMSA) or New York State Department of Public Service (NYS DPS) jurisdiction which intersect with a NYS Department of Environmental Conservation (NYS DEC) stream/river. In Broome County, a total of three hundred and twenty-eight (328) right of way crossings (ROW) were identified using data provided by PHMSA, NYSDPS and the NYSDC. Often there is more than one pipeline within a ROW crossing. Within the 328 ROW crossings, there are a total of 357 pipelines under PHMSA or NYSDPS jurisdiction. Of the 357 pipeline crossings, 319 carried combustible gas, 12 carried combustible liquid and the remaining carried a non-hazardous liquid.

Using potential public safety and potential environmental consequences as criteria, all pipeline crossings were then prioritized. The methodology to establish and reach consensus for the preliminary prioritization of the crossings were discussed and vetted with the Technical Working Group (TWG). Members of the TWG included staff from Broome County Planning Department, Broome County Soil and Water Conservation Service and Broome County Emergency Management.

Part of the preliminary prioritization of crossings included defining A Point of Analysis (POA). A POA is a location containing a critical facility or where large groups of people may congregate. WEC used the ESRI ArcGIS program to measure the proximity of pipeline crossings with POAs. Over a third of the combustible gas intersections (140) were within the Federal DOT recommended minimum evacuation distance (2,600') of a POA. A large percentage (135) of these crossings are under NYSDPS jurisdiction. Two combustible liquid crossings were within the recommended minimum evacuation distance (1,000 feet) of a POA.

WEC visited three (3) crossings which had the highest scores from the preliminary prioritization ranking during the summer of 2017. One crossing contained a pipeline under Federal jurisdiction where field data was collected. WEC also visited two crossings under State jurisdiction. At these two crossings, WEC did not observe evidence that a pipeline existed under State jurisdiction. Coincidentally, a New York Dig Safe had been called in for both sites before WEC's inspections of the crossings and all underground utilities were flagged in the general area. No pipeline had been flagged which confirmed WEC's observations that a pipeline under State jurisdiction at the crossing was not present. WEC then

reached out to the NYSDPS to confirm their provided data but the grant timeline expired before additional work tasks could be completed.

If funding is identified to move forward in the future, the next step is to confirm the location of the pipelines under State jurisdiction and visit the highest priority sites to collect field data. The collected field data and subsequent analysis will show the likelihood of the pipeline's protective cover being removed. Conceptual mitigation solutions and construction estimates would then be developed for sites where there is a high probability of the pipeline's protective cover being removed.

As a result of the work completed thus far, we have a number of deliverables that will assist Broome County in assessing, managing and mitigating our risk as it relates to pipeline exposure into the future. These include the following:

- Maps identifying all stream crossings, as well as priority stream crossings based on the analysis completed.
- A priority ranking list identifying those crossings that have the highest potential for exposure.

We will utilize these resources as tools to:

- Assess impacts of municipal infrastructure projects near identified crossings.
- Monitor priority crossings for exposure as part of post-disaster response.
- Integrate the data into our hazard mitigation plan (currently going through the update process).
- Integrate into future flood mitigation planning and analysis.