




## Environmental Sensitivity Inventory of Hazardous Liquid Pipelines

House Appropriations Subcommittee on Natural Resources & Environmental Quality  
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*April 11, 2019*






1




## Defining Hazardous Liquid Pipelines




- Crude Oil
- Refined Petroleum Products
  - Gasoline, diesel, jet fuel, home heating oil
- Highly Volatile Liquids
  - Natural gas, propane, butane, ethylene, condensates
- Carbon Dioxide
- Biofuels
- Anhydrous Ammonia



2




## Assessing Hazardous Liquid Pipelines

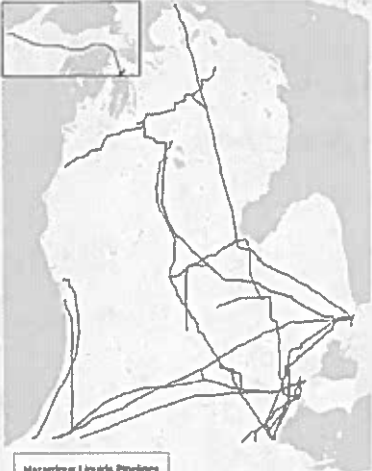
- **Standard approach**
  - **GeoHazards:** How could the environment affect a pipeline
    - Steep slope failures, flooding, scour, etc.
- **Different approach in State's assessment**
  - **GeoEnvironmental:** How sensitive are the natural resources at each water crossing
    - Distance to Great Lakes, downstream threatened and endangered species, etc.

3

3



## Hazardous Liquid Pipelines in Michigan



**Hazardous Liquids Pipelines**

— Interstate Pipeline


— Interstate Pipeline

Source: Enbridge, 2016. PipeStable Plus information provided by Michigan Agency for Energy. All other trade names.




Crude Oil	1,552 miles
Refined Petroleum Products	1,386 miles
Highly Volatile Liquids	<u>579 miles</u>
<b>Total</b>	<b>3,517 miles</b>

4

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## FY 2020 Proposed Investment: Protect Michigan's Water Resources

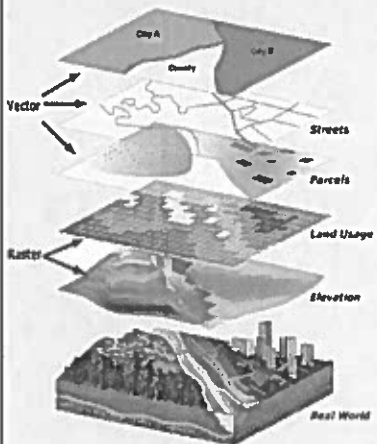
- **Objectives:**
  - Complete an inventory of where hazardous liquid pipelines cross Michigan waterways
  - Prioritize water crossings based upon natural resources criteria
  - Evaluate risks to the public and environment
- **Investment:**
  - \$1.35 million one-time General Fund and 3.0 FTEs
  - Work to be accomplished over three years

5

5




## Implementation Plan




- Map hazardous liquid pipelines using publicly-available geospatial data
- Map water crossings using data from U.S. Geological Survey (USGS) National Hydrography Dataset (NHD)
- Prepare inventory of pipeline water crossings
- Complete site reviews of select locations
- Determine priority pipeline water crossings

6

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 **Mapping Hazardous Liquid Pipelines**

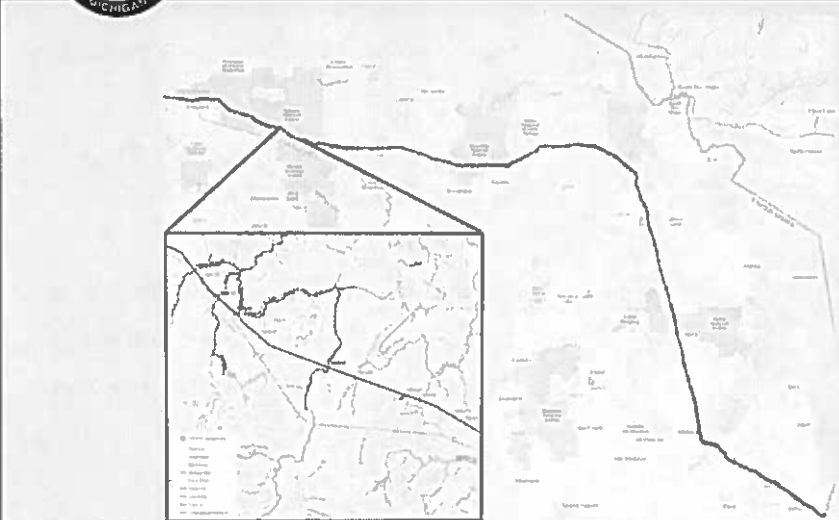


- Review publicly-available resources
- Complete imagery review of each pipeline

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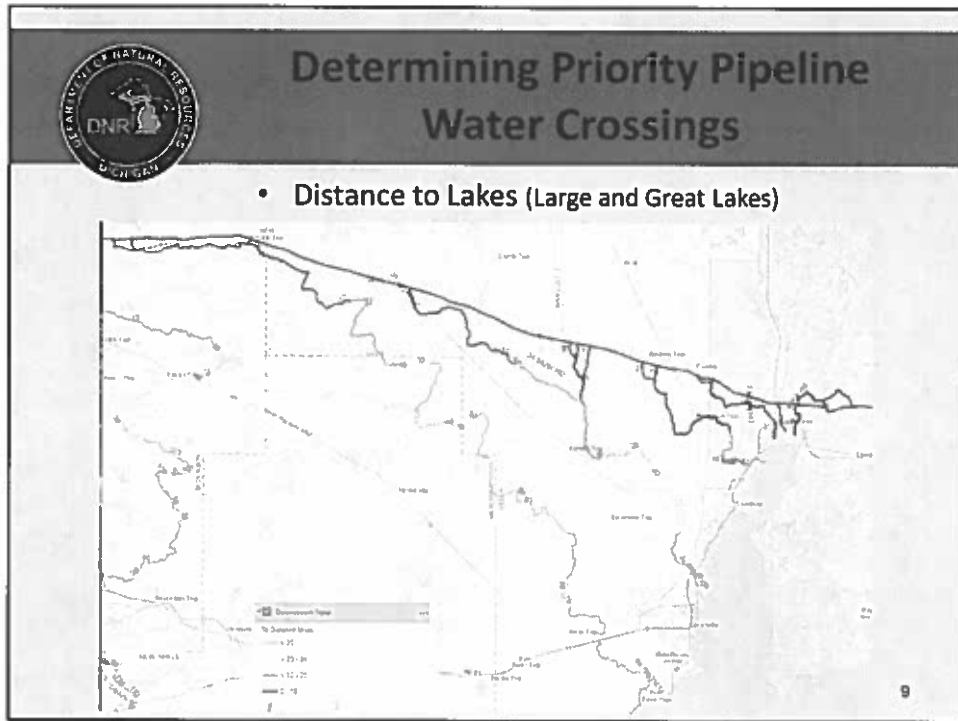
 **Mapping Water Crossings**



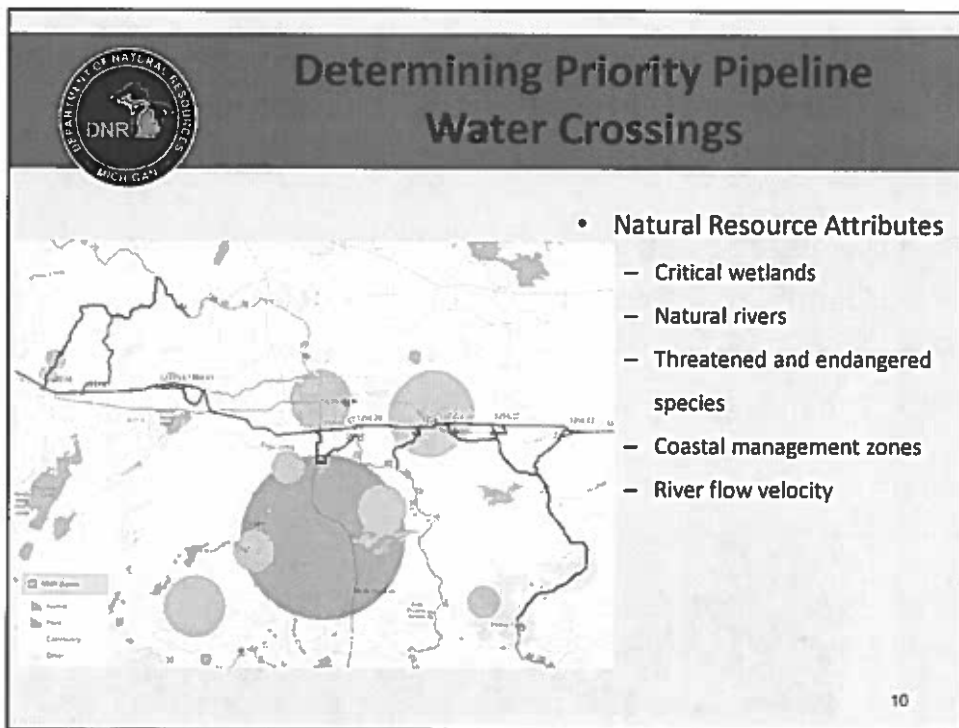
Source: USGS NHD Dataset

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 **Determining Priority Pipeline Water Crossings**




- **Human Impacts**
  - Surface drinking water sources
  - Subsurface drinking water sources
  - Population levels
  - Ignition safety risk

11

11

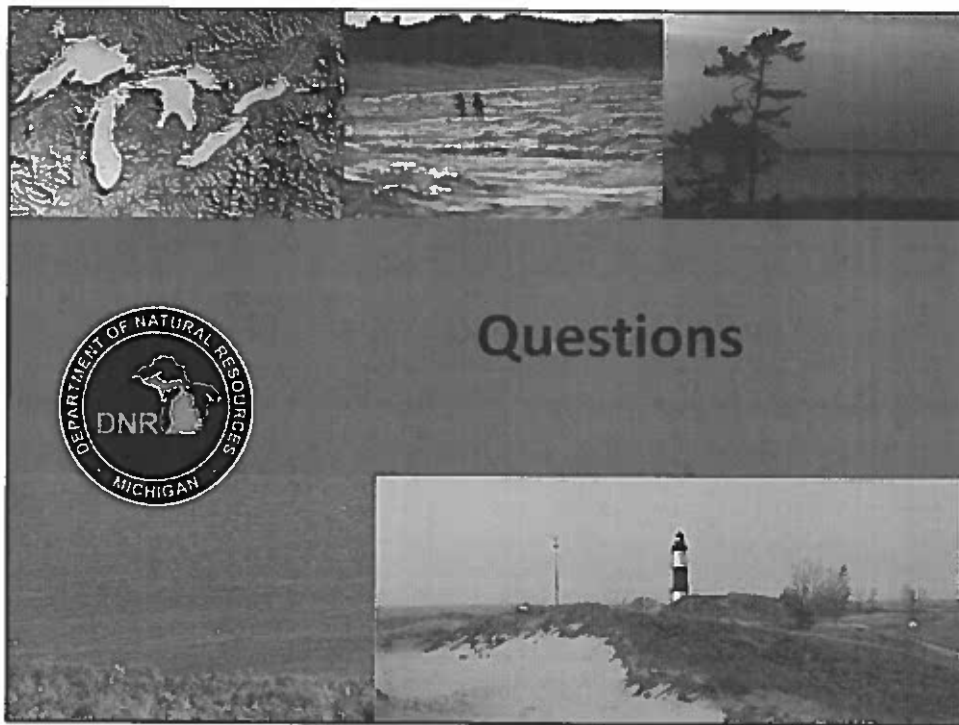
 **Project Outcomes**

- Inventory pipeline crossings of State's water resources
- Identify High Environmental Consequence Areas
- Improve awareness and stewardship
- Enhance safety and reduce potential impacts



12

12



## Questions

