



Sunoco Logistics



Sunoco Logistics Mariner East project

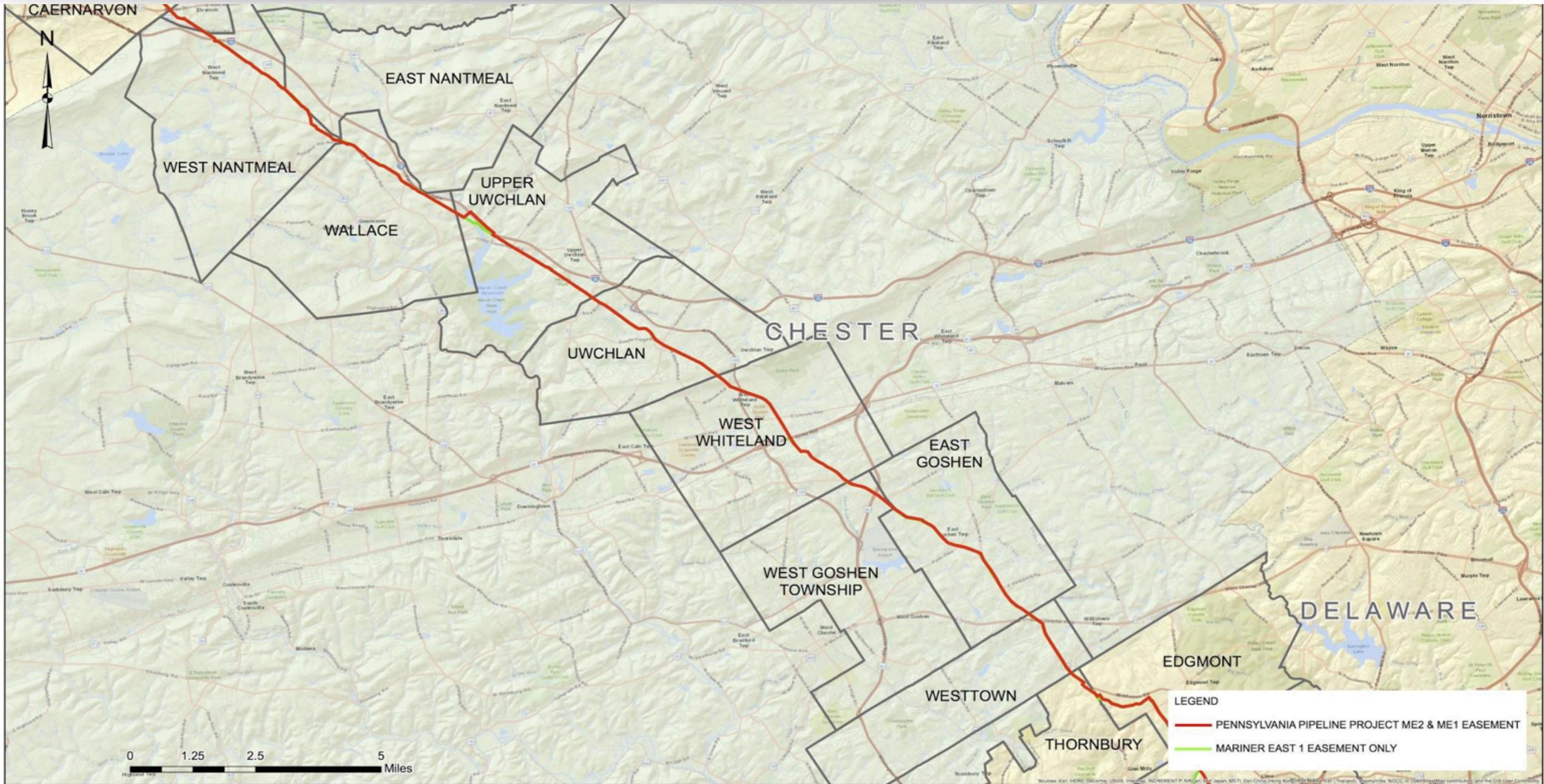
Westtown Township Update – March 28, 2017

SXL
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Mariner East Timeline

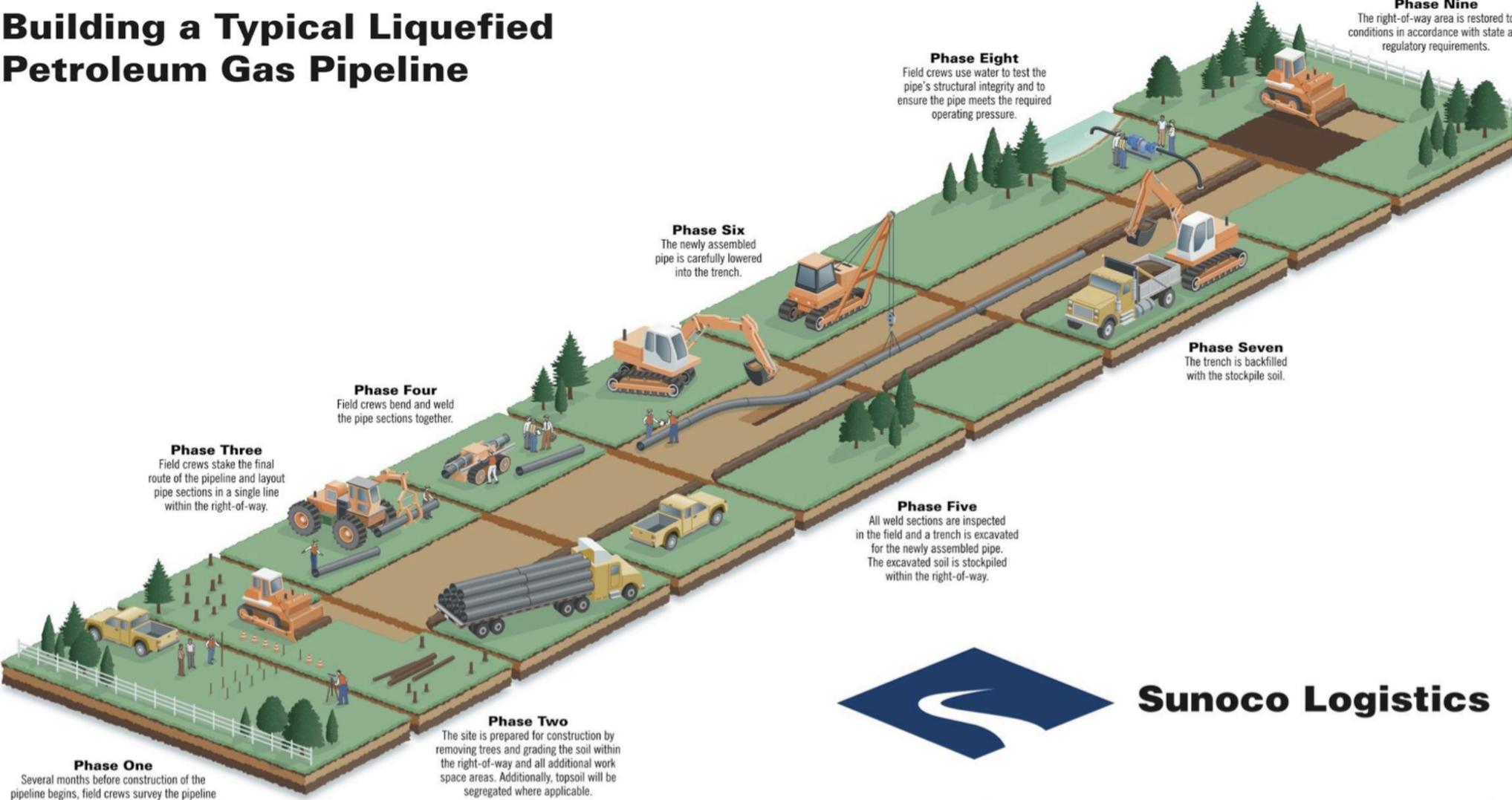
- **PA DEP Chapters 102 & 105 permits received - February 2017**
- **ME2 construction commenced - mid-February 2017**
- **Westtown construction timing - March/ April 2017**
- **ME2 20-inch pipe construction complete Q3 2017**
- **ME2 16-inch pipe sequential construction into 2018**

Mariner East: Chester County Overview



Construction Method: Open Cut

Building a Typical Liquefied Petroleum Gas Pipeline



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NOTE: These illustrations are conceptual and general in nature; specific construction and restoration techniques could vary depending on circumstances.

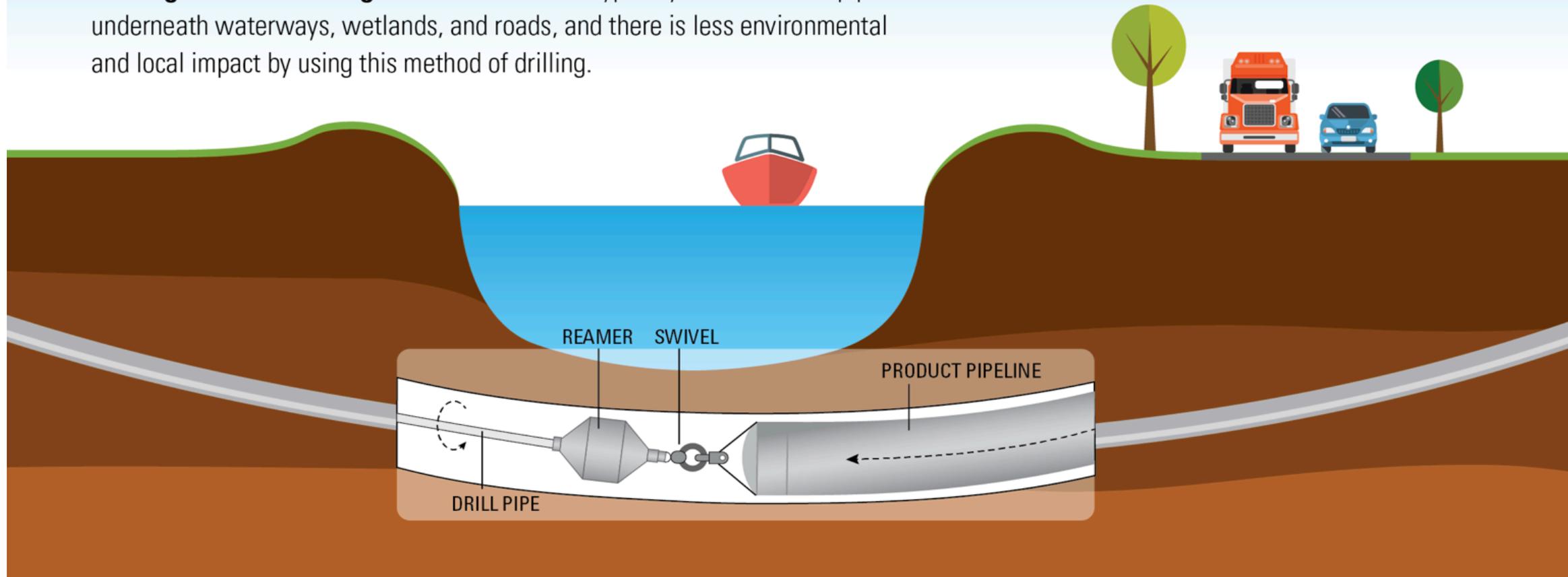
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Construction Method: Horizontal Directional Drill (HDD)

Horizontal Directional Drilling



Horizontal Directional Drilling (HDD) is used to install pipe underground over long distances. HDD is typically used to install pipe underneath waterways, wetlands, and roads, and there is less environmental and local impact by using this method of drilling.

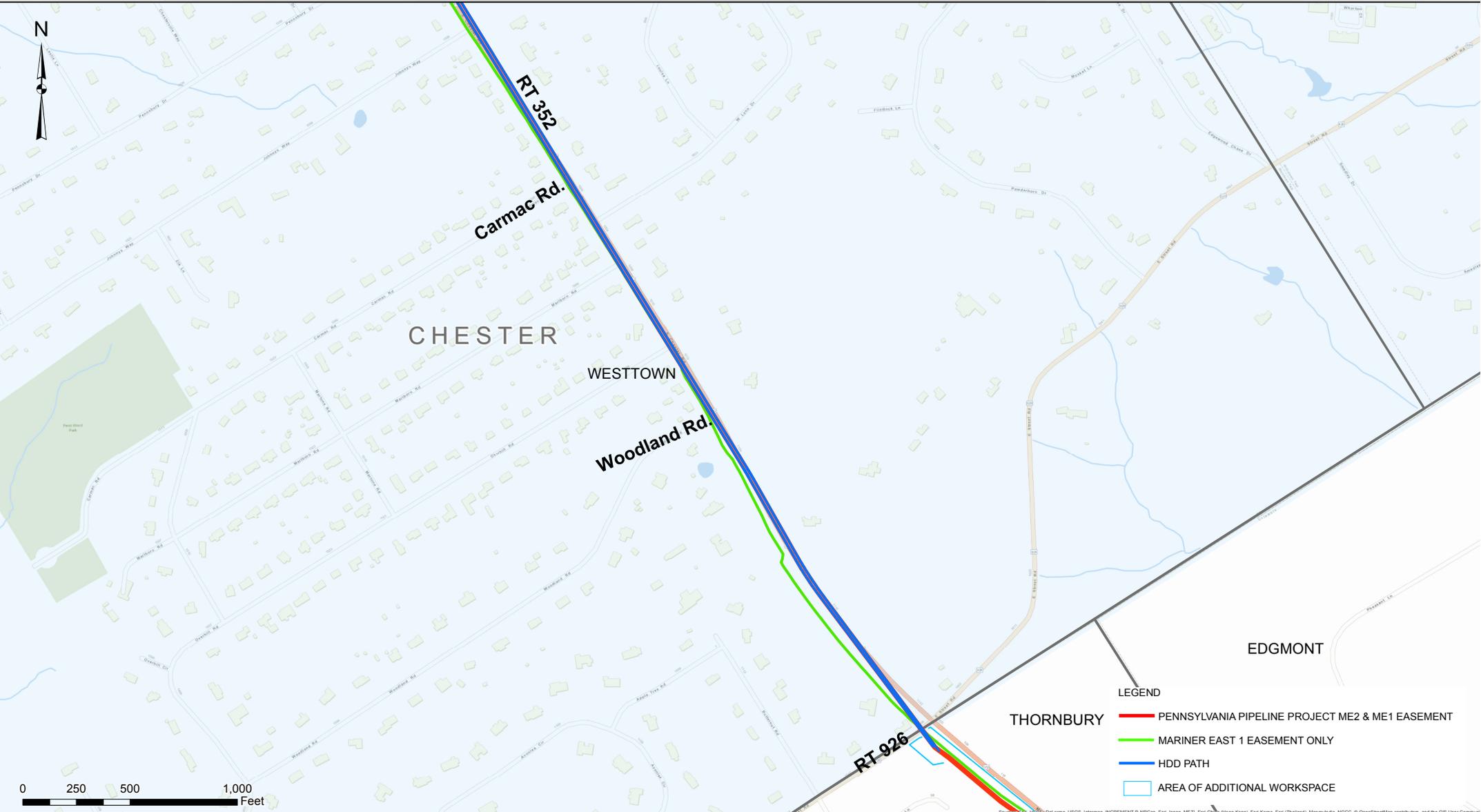


Mariner East: Westtown Overview



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, OpenStreetMap contributors, and the GIS User Community

Mariner East: Westtown Overview



Three Phases of Construction

- **Preparation**

- Surveying
- Tree clearing
- Grading /
Leveling / Matting

- **Mobilization & Activation**

- Equipment preparation and set-up
- Construction
- Environmental inspection
- Pipeline installation

- **Restoration**

- Landscape renovation
- Road restoration
- Right of Way marker placement

HDD - Drill Rig Sample



- Pipe loader transports with the rig
- Micro-processor, touch screen controls
- Variable cooling fan for superior noise reduction
- Cummins QSX15 T4 final engine *(or Tier 3 depending on country of purchase)*



660,000 lbs. (300 Tonnes) Thrust//Pullback

Pipeline Pullback Area For HDD



Protecting Ground Water Systems

■ PADEP Permit

- Contains Plans that detail how we protect both surface and groundwater during construction of Mariner East 2.
- Plans Include:
 - Water Supply Plan
 - Inadvertent Return Plan
 - Void Mitigation Plan
 - Prevention, Preparedness and Contingency Plan

Protecting Ground Water Systems

- **Survey of Mariner 2 Corridor**

- Hydrogeologic Review completed by Professional Registered Geologist and Geologic Specialist.
- Comprehensive Hydrogeological Review and Aquifer Assessment Completed.
- Identification of geology (i.e., underlying formation) at each Horizontal Directional Drill (HDD) location.
 - Soil Types / Thickness
 - Bedrock Type / Thickness
 - Structural Features
 - Groundwater Depth / Yield
 - Topography
- Identification of Surface Water Features and Classification
 - Streams
 - Wetlands

- **Identification of Water Supplies**

- Private Water Supply Wells & Springs
- Public Water Supply Well Source Water Protection Areas

Protecting Ground Water Systems

▪ **Preconstruction (Baseline) Potable Well Sampling & Well Yield Testing**

- Well Testing offered to property owners along corridor prior to start of construction to establish a baseline at Expense of Sunoco Logistics.
- Permission from Well Owner necessary to commence testing, and or desire for third party to complete testing.

▪ **Baseline Testing Includes:**

- Testing to determine the Well Yield or Specific Capacity (requires well head to be opened).
- Made available to Land Owners 150 feet from Centerline of Construction.
- Post Construction Sampling being made available to Land Owners after the completion of Construction.

▪ **Parameters:**

- INORGANICS: pH ▪ Specific Conductance ▪ Turbidity ▪ Total Dissolved Solids (TDS) ▪ Total Suspended Solids (TSS) ▪ Hardness ▪ Anions: Bromide, Chloride, Sulfate ▪ Total Alkalinity
- TRACE METALS: Metals Analysis (Ba, Ca, Fe, K, Mg, Mn, Na)
- ORGANICS: BTEX ▪ Light Gas Analysis [Methane, Ethane, Propane]

For More Information

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