

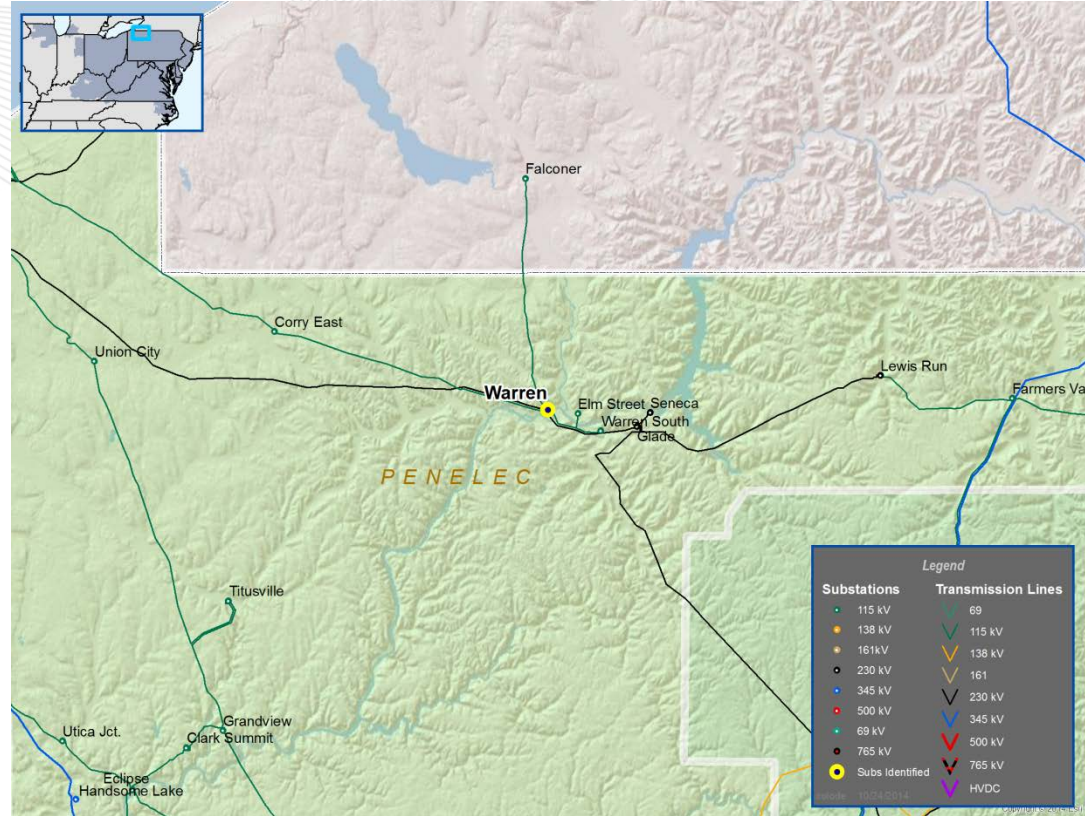


Sub Regional RTEP Committee Mid-Atlantic

December 8, 2014

Short Circuit

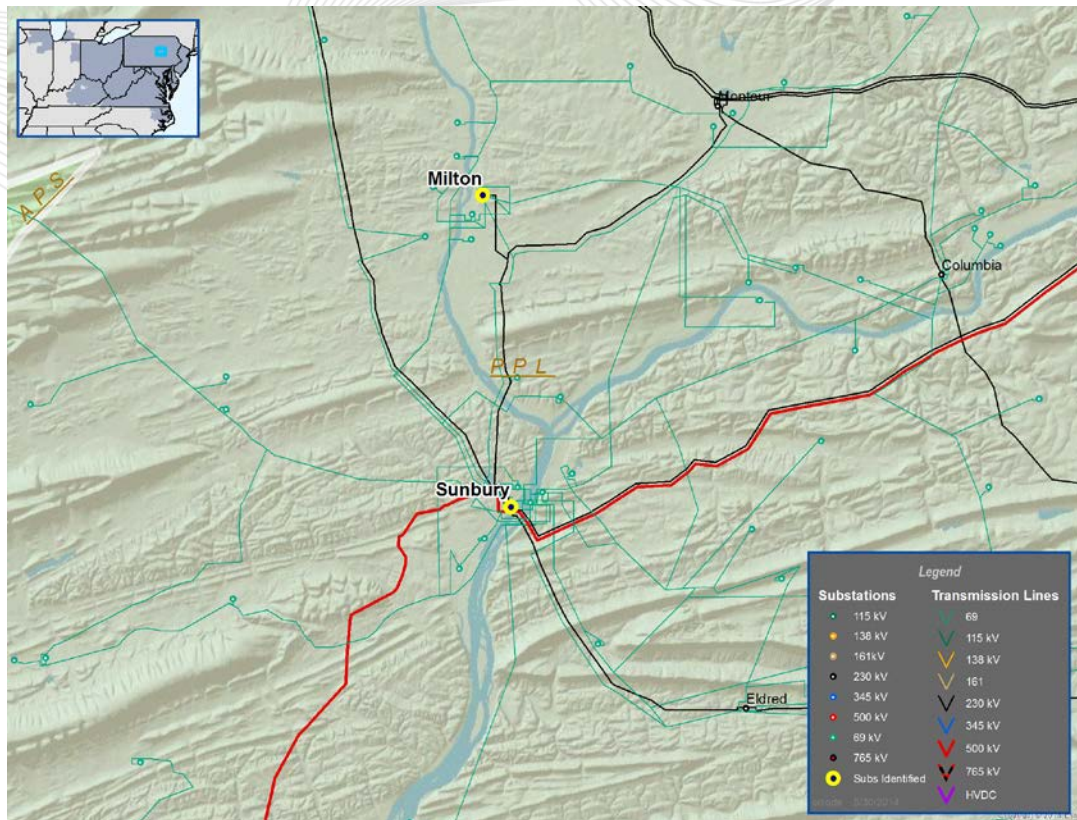
- The Warren 115kV breaker 'B12' is overstressed
- Proposed Solution: Replace the Warren 115kV breaker 'B12' with a 40kA breaker (B2573)
- Estimated Project Cost: \$250K
- Required IS Date: 6/1/2016



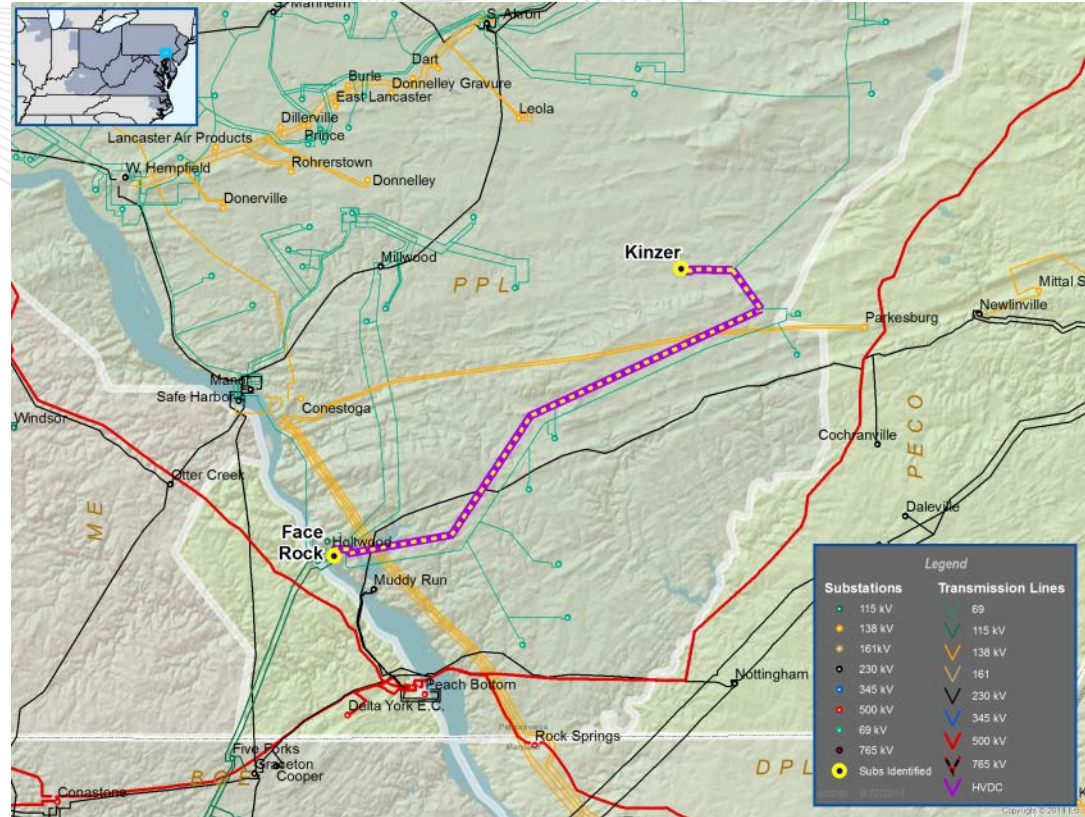


Supplemental Project Update

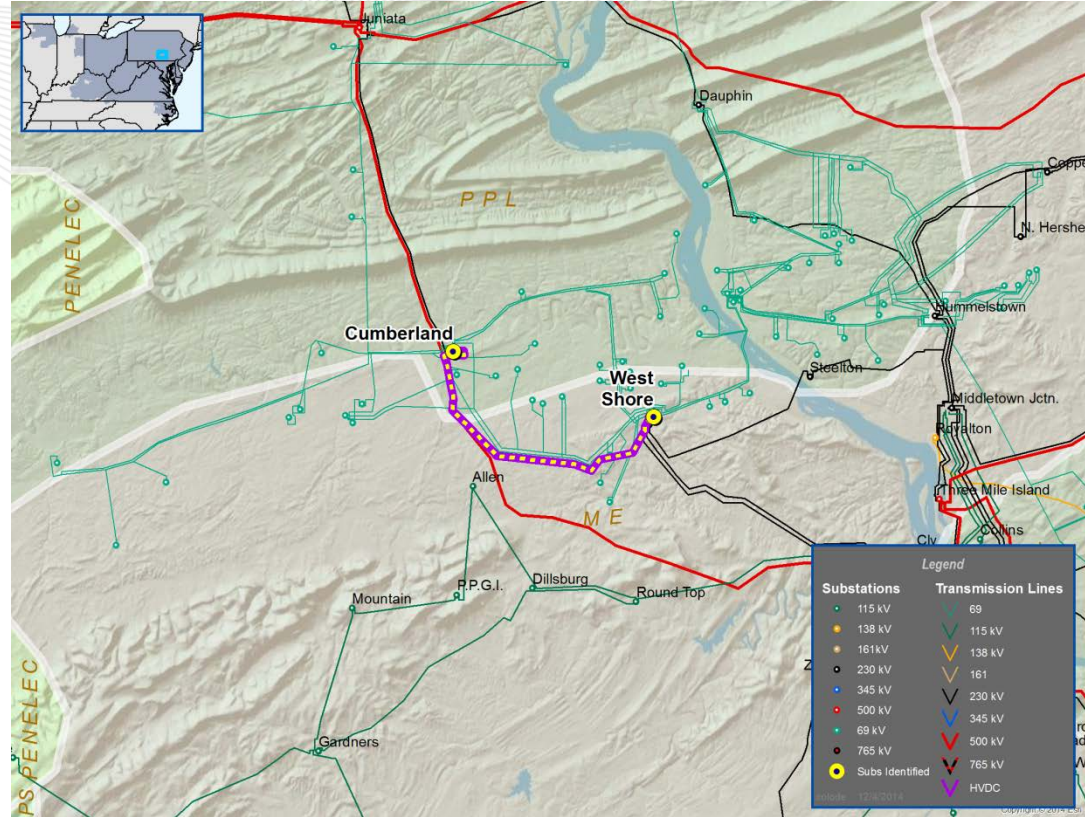
- PPL EU Reliability Principles and Practices :
- Voltage magnitude violation in the Milton vicinity for tower line outage loss of the Montour-Sunbury 230 kV and Sunbury-Milton 69 kV lines. SPS is currently in place to mitigate the voltage violation.
- Proposed Solution:
 - Rebuild Milton 230/69 kV substation. (S0857)
- Estimated Project Cost: \$ 11 M
- Projected IS Date: 12/31/2017



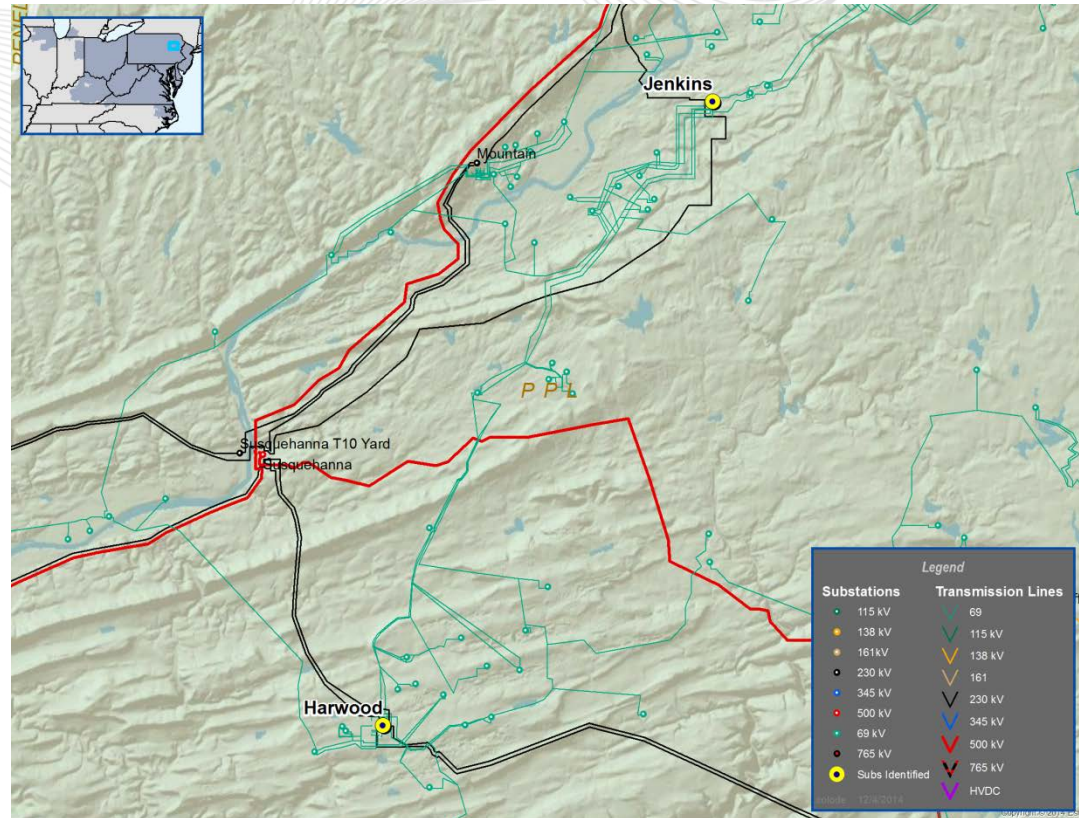
- Supplemental Upgrade:
- To address a load growth in the Quarryville area.
- Proposed Solution:
 - Build new 500/138/69 kV substation near Quarryville and terminate Face Rock – Kinzer 13 & 14 138/69 kV lines. (S0856)
- Estimated Project Cost: \$ 56.45 M
- Projected IS Date: 12/31/2019



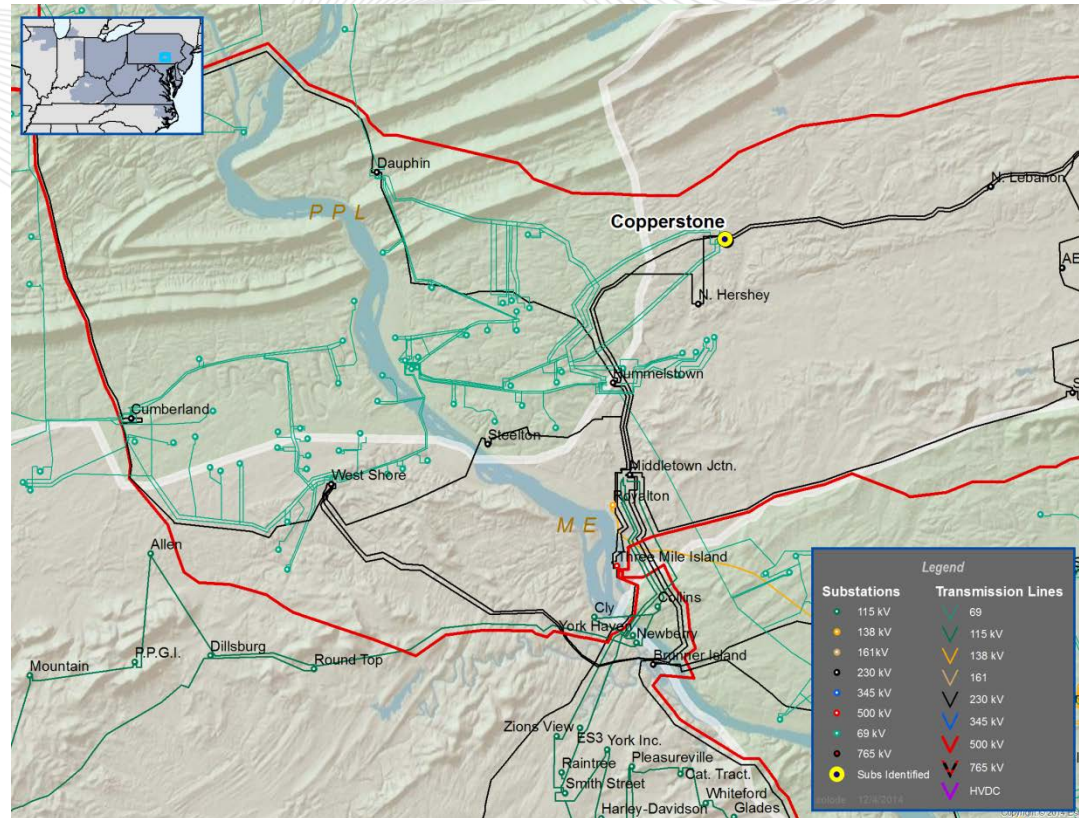
- Supplemental Upgrade:
- To address a load growth in the Cumberland and West Shore areas.
- Proposed Solution:
 - Build new 230-69 kV Substation between Cumberland and West Shore Substations and terminate Cumberland-West Shore 69 kV lines at the new station. (S0859)
- Estimated Project Cost: \$ 38.5 M
- Projected IS Date: 12/31/2018



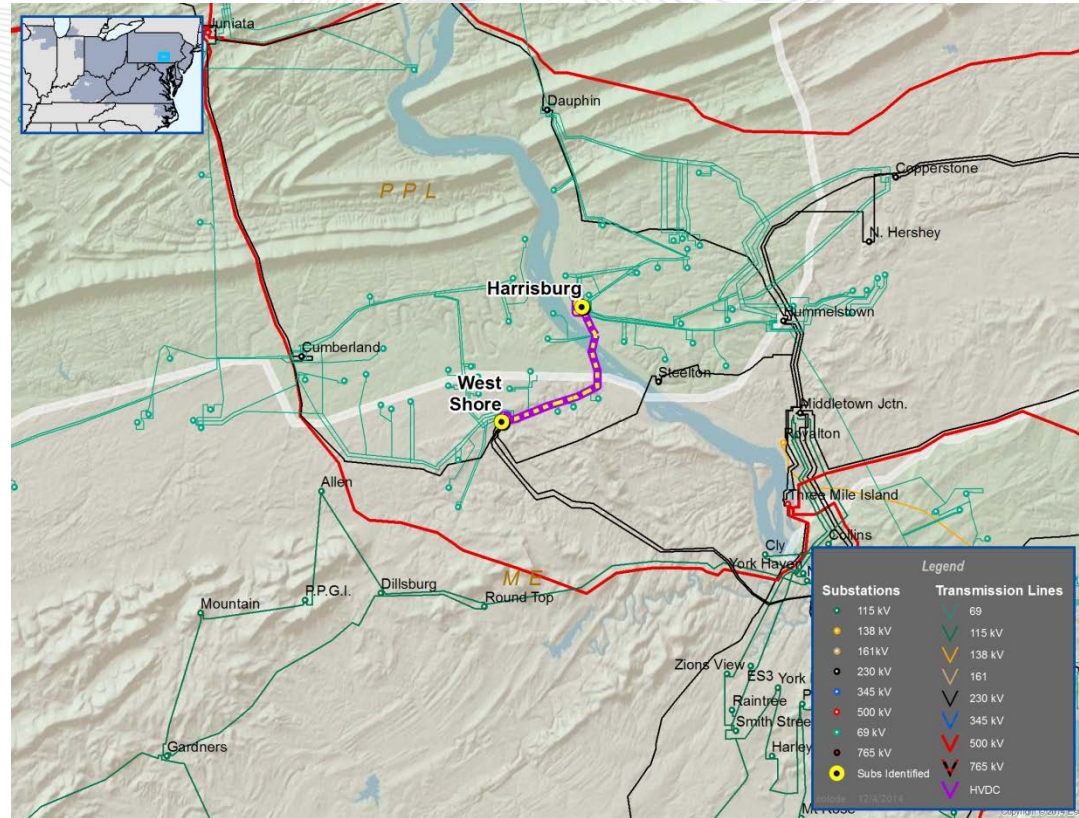
- Supplemental Upgrade:
- To address a load growth along the Harwood-Jenkins 69 kV lines.
- Proposed Solution:
 - Build new 230-69 kV Substation near Mountain Top by tapping the Jenkins – Harwood 230 kV circuit and terminate Harwood-Jenkins 69 kV lines at the new station. (S0860)
- Estimated Project Cost: \$ 33.4 M
- Projected IS Date: 5/31/2018



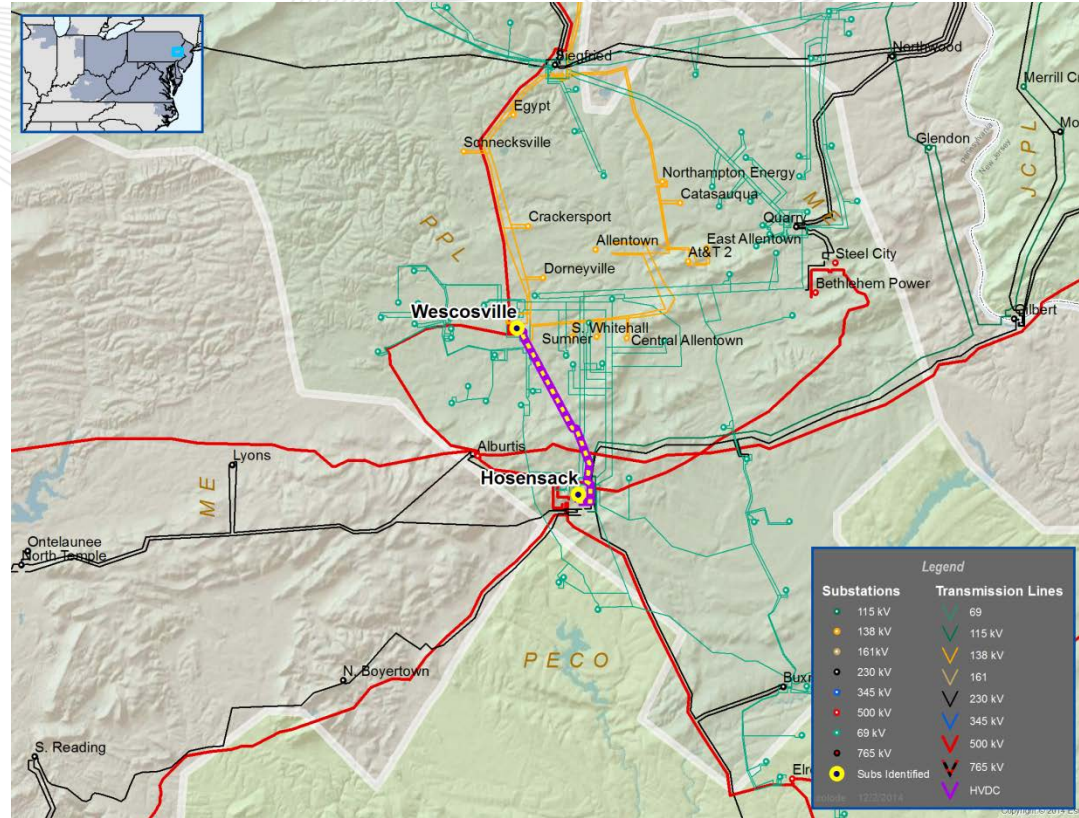
- Supplemental Upgrade:
- To address operational performance issues on 69 kV network lines out of Copperstone Substation during maintenance conditions.
- Proposed Solution:
 - Terminate the Dauphin - Hummelstown 230 kV line into the Copperstone 230-69 kV Substation. (S0861)
- Estimated Project Cost: \$ 4.2 M
- Projected IS Date: 12/31/2017



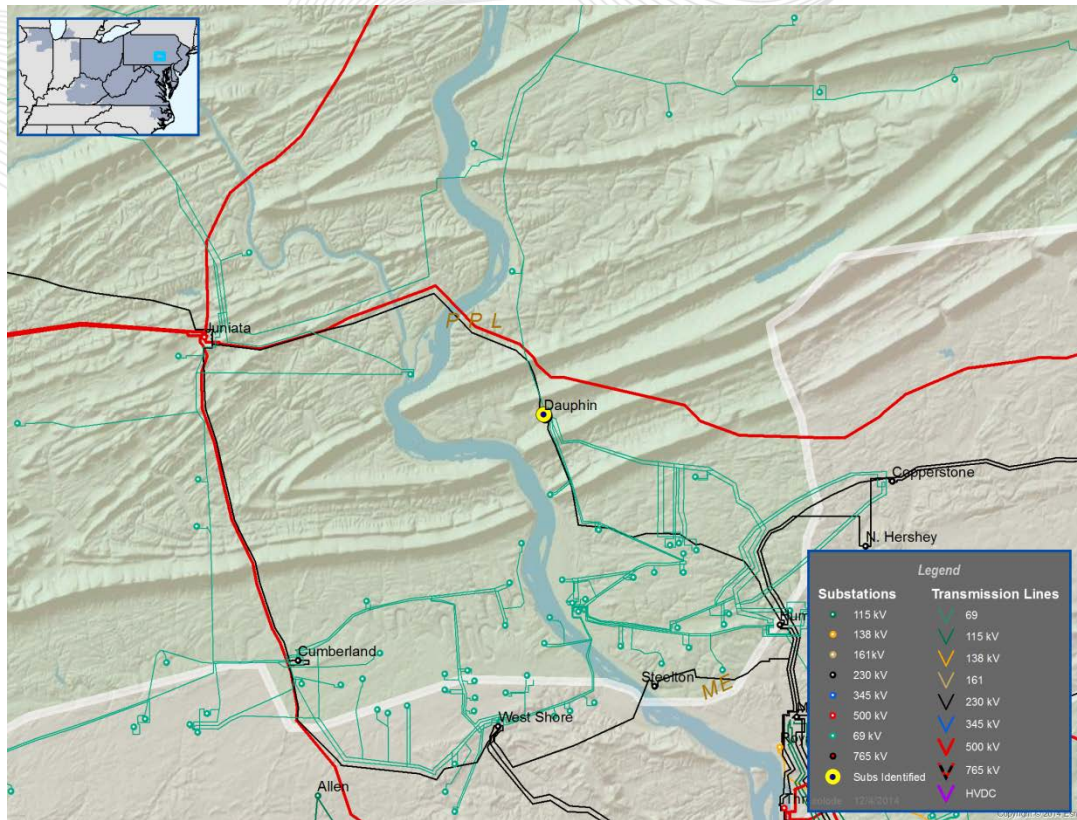
- Supplemental Upgrade:
- To replace aging infrastructure, eliminate cello poles and improve operational flexibility along the Harrisburg-West Shore 69 kV lines.
- Proposed Solution:
 - Rebuild approximately 6 miles of the Harrisburg-West Shore 1 & 2 69 kV lines. (S0863)
- Estimated Project Cost: \$ 22.8 M
- Projected IS Date: 5/31/2018



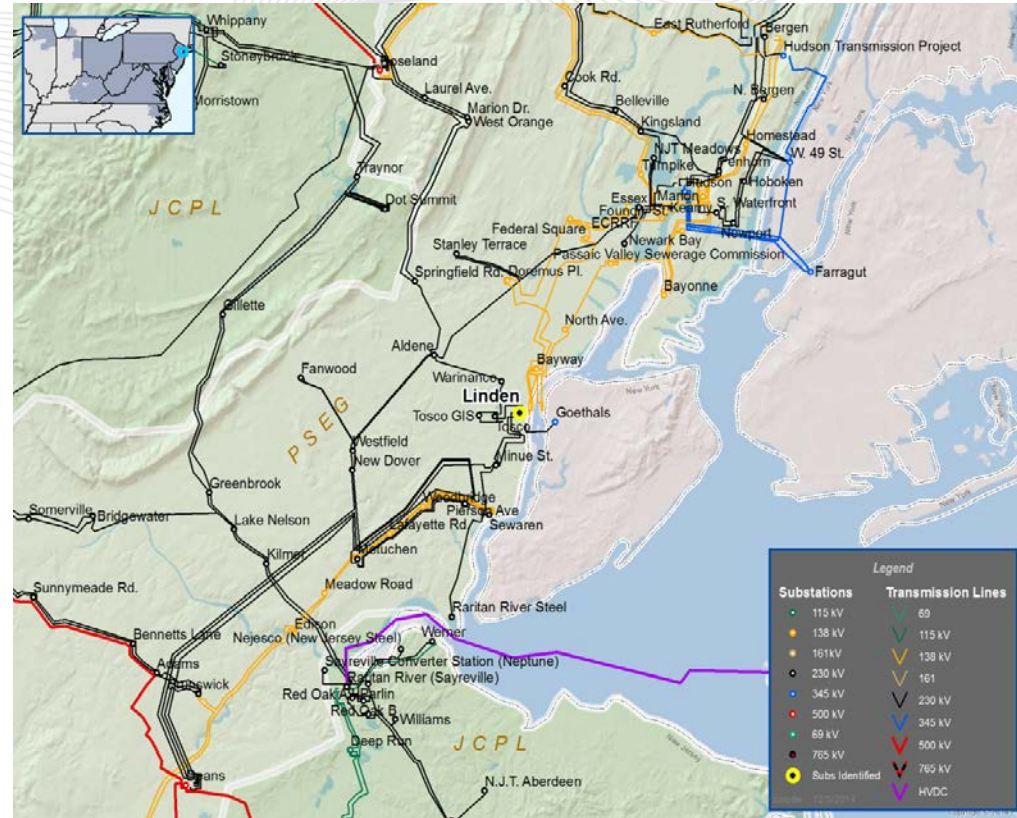
- Supplemental Upgrade:
- To improve operational flexibility and transfer capability along the Hosensack-Wescosville 69 kV lines.
- Proposed Solution:
 - Rebuild approximately 8 miles of the Hosensack-Wescosville 1 & 2 69 kV lines to higher capacity conductor. (S0865)
- Estimated Project Cost: \$ 9.85 M
- Projected IS Date: 5/31/2019



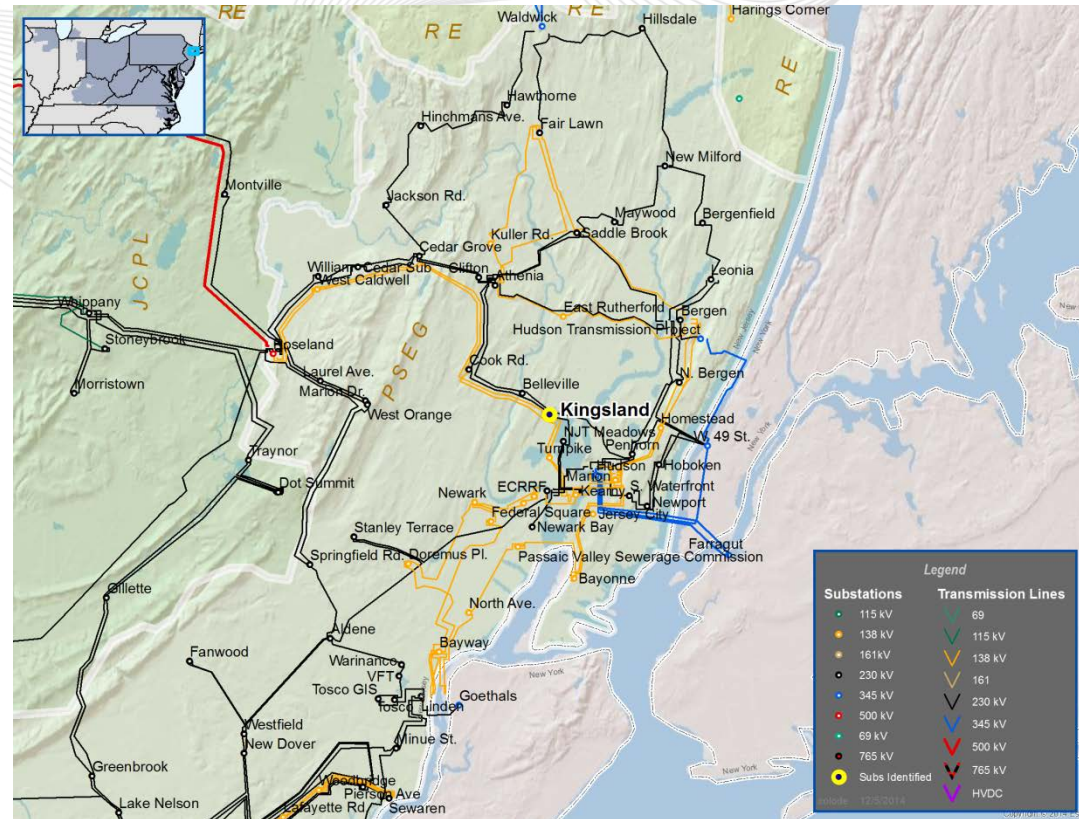
- Supplemental Upgrade:
- To eliminate line tapped transformers at Dauphin Substation.
- Proposed Solution:
 - Rebuild existing Dauphin 230-69 kV to new design standard. (S0867)
- Estimated Project Cost: \$ 33 M
- Projected IS Date: 12/31/2019



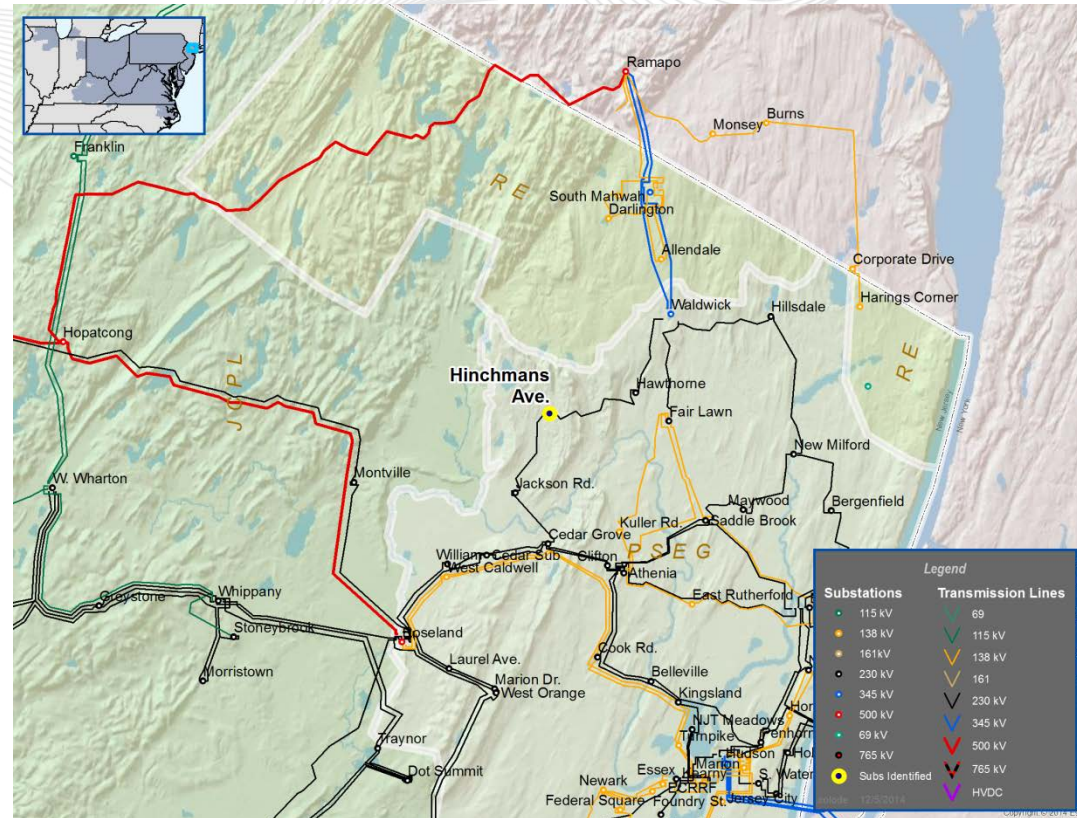
- Supplemental Project:
- Improve reliability due to age and condition of the transformer.
- Proposed Solution:
 - Replace Linden 230x138/26 kV transformer 220-3. (S0870)
- Estimated Project Cost: \$ 15 M
- Projected IS Date: 12/31/2017



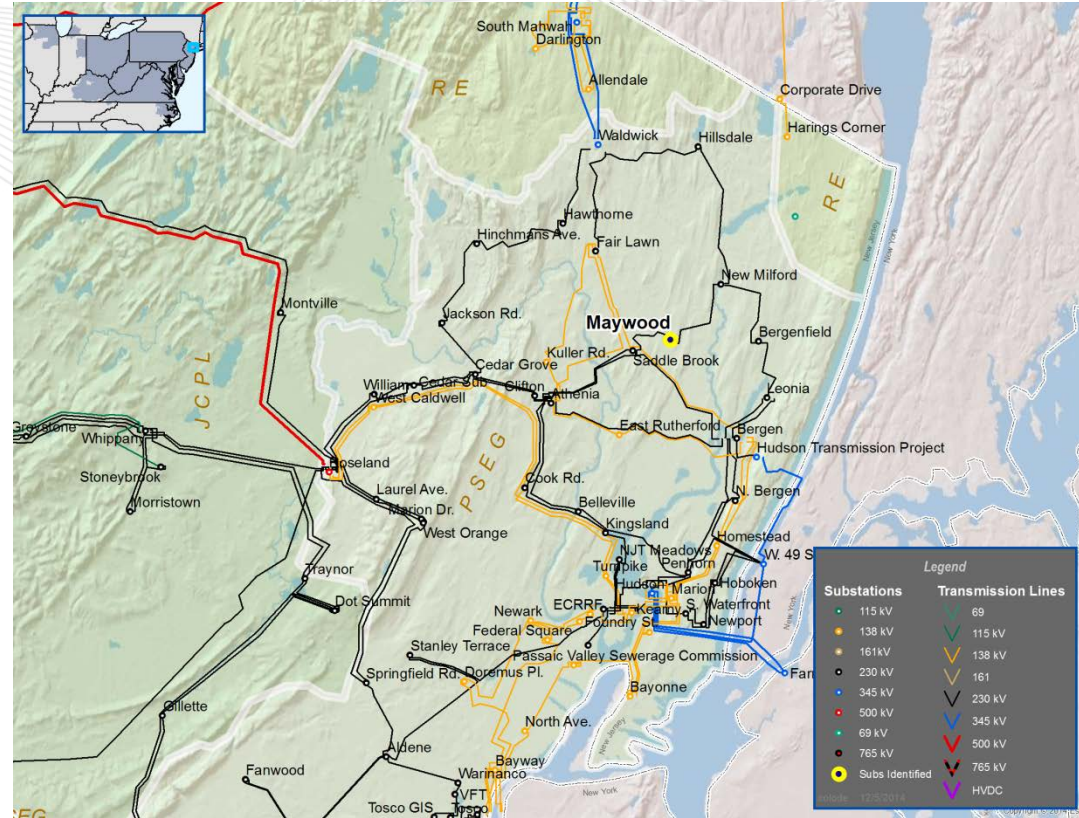
- Supplemental Project:
- Improve reliability due to age and condition of the transformer.
- Proposed Solution:
 - Replace Kingsland 230/13 kV transformer T-1. (S0871)
- Estimated Project Cost: \$ 6.25 M
- Projected IS Date: 12/31/2017



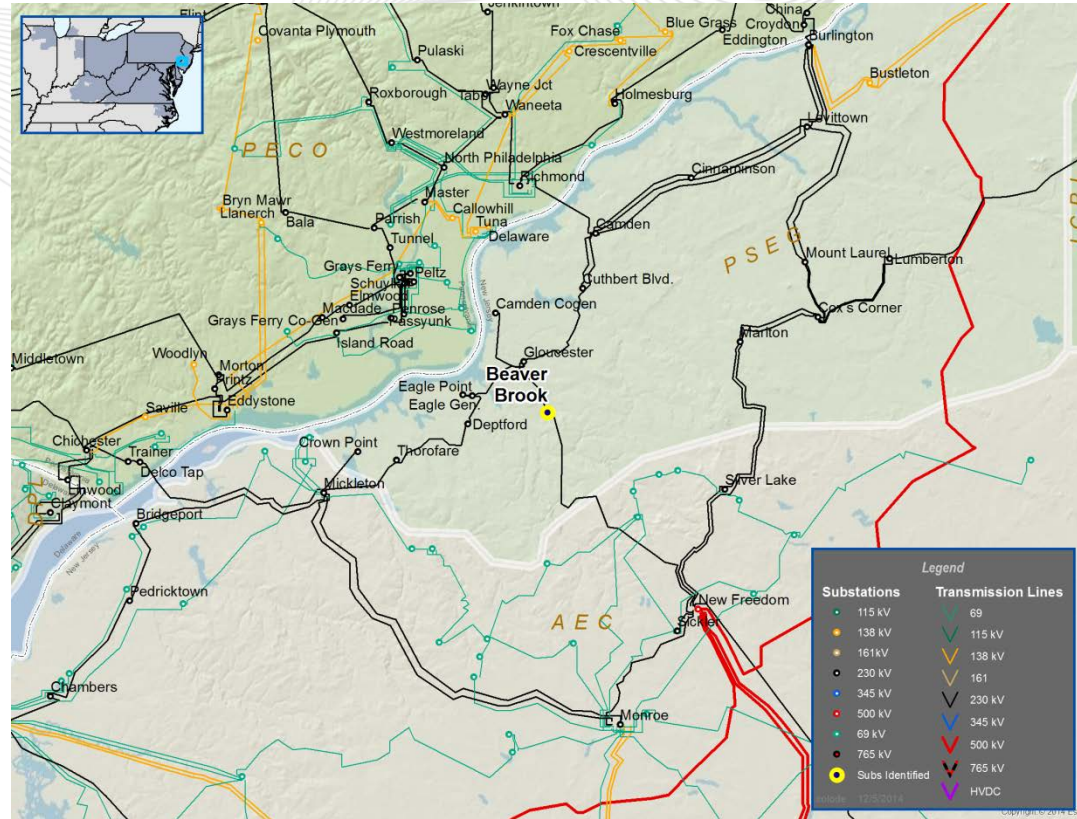
- Supplemental Project:
- Improve reliability due to age and condition of the transformer.
- Proposed Solution:
 - Replace Hinchmans 230/13 kV transformer T-2. (S0872)
- Estimated Project Cost: \$ 6.25 M
- Projected IS Date: 12/31/2017



- Supplemental Project:
- Improve reliability due to age and condition of the transformer.
- Proposed Solution:
 - Replace Maywood 230/13 kV transformer T-2. (S0873)
- Estimated Project Cost: \$ 6.25 M
- Projected IS Date: 12/31/2017



- Supplemental Project:
- Improve reliability due to age and condition of the transformer.
- Proposed Solution:
 - Replace Beaver Brook 230/13 kV transformer T-2. (S0874)
- Estimated Project Cost: \$ 6.25 M
- Projected IS Date: 12/31/2017



- **Supplemental Upgrade (S0644)**
Transmission Hardening Project (THP)

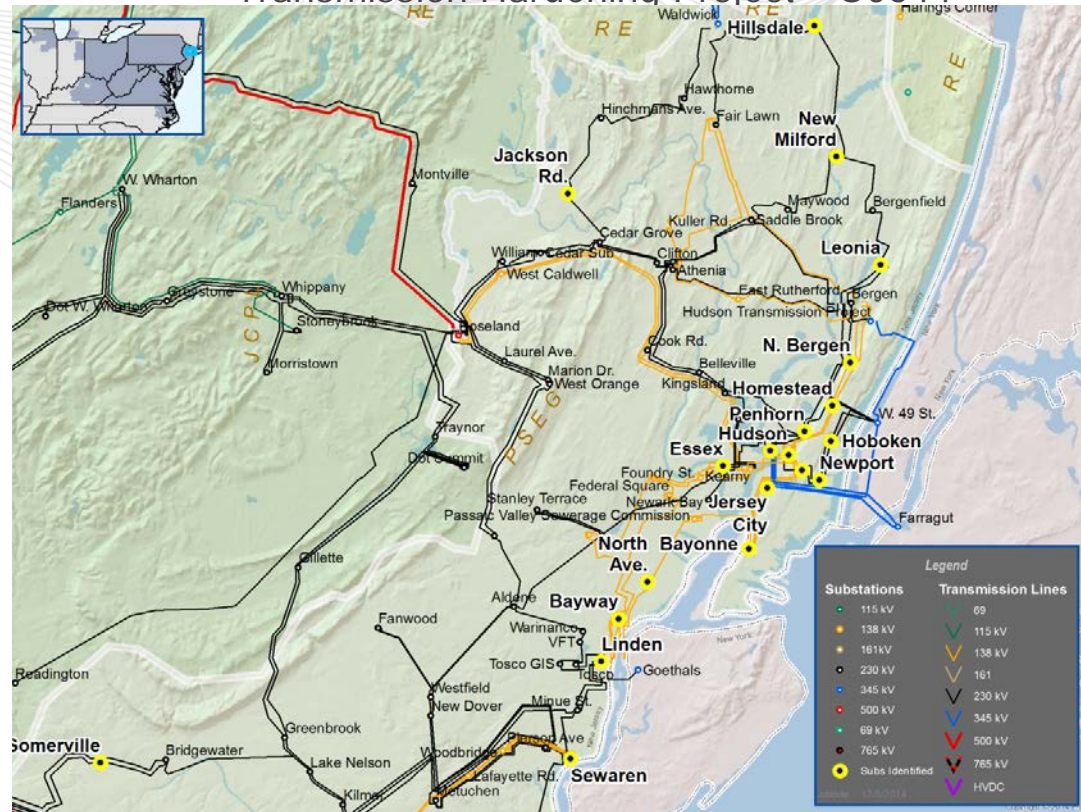
The scope of the PSE&G Transmission Hardening Program (THP) consists of improvements to PSE&G's transmission switching stations and/or associated electrical equipment in substations utilized for transmission purposes. These stations have been cross-referenced with the NJDEP Flood Hazard Limit mapping and are in the FEMA 100-year flood plain base flood elevation levels. Project scope will include raising and relocating existing new construction, installation of pumping plants, installation of a new auxiliary natural gas generators, and also raising and rebuilding existing stations with Gas Insulated Switch (GIS) gear.

- **Estimated Project Cost:**
 - \$ 1275 M
- **Expected IS Date:**
 - 12/31/2018

The following stations are already evaluated and the total estimated cost to complete the projects will be \$984 M.

Substation Names

Bayonne 138kV	Leonia 230kV
Bayway 138kV	Linden 138/230kV
Essex 138/230kV	Marion 138kV
Hillsdale 230kV	New Milford 230kV
Hoboken 230kV	Newport 230kV
Homestead 138/230kV	North Avenue 138/345kV
Hudson 230kV	North Bergen 138/230kV
Jackson Road 69/230kV	Penhorn 230kV
Jersey City 138/230kV	Sewaren 138/230kV
Kingsland 138/230kV	Somerville 230kV
	South Waterfront 230kV



The following stations are under evaluation and the total estimated cost to complete the project will be \$292 M.

Substation Names

Bergen/Ridgefield 69/138/230/345kV

49th St. Pothead Rack 230kV

Foundry 138kV

Cuthbert Blvd 230kV

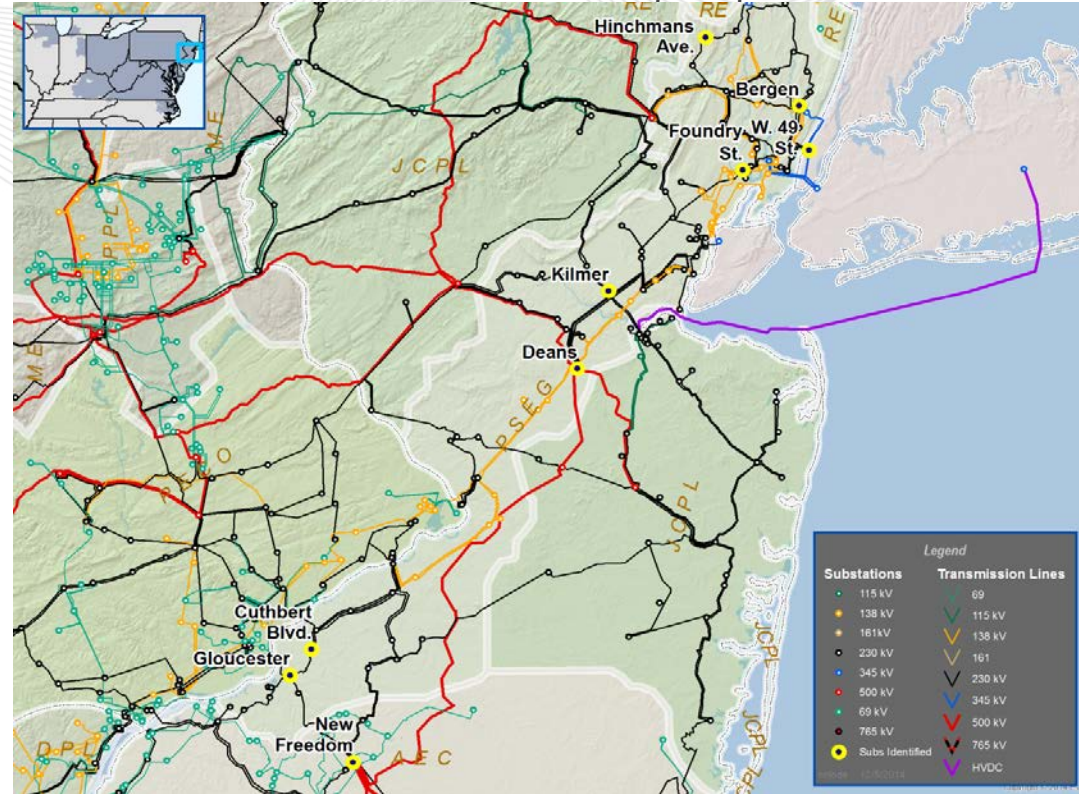
Deans 500/230kV

Gloucester 69/230kV

Hinchman's 230kV

Kilmer 230kV

New Freedom 500/230kV



Questions?

Email: RTEP@pjm.com