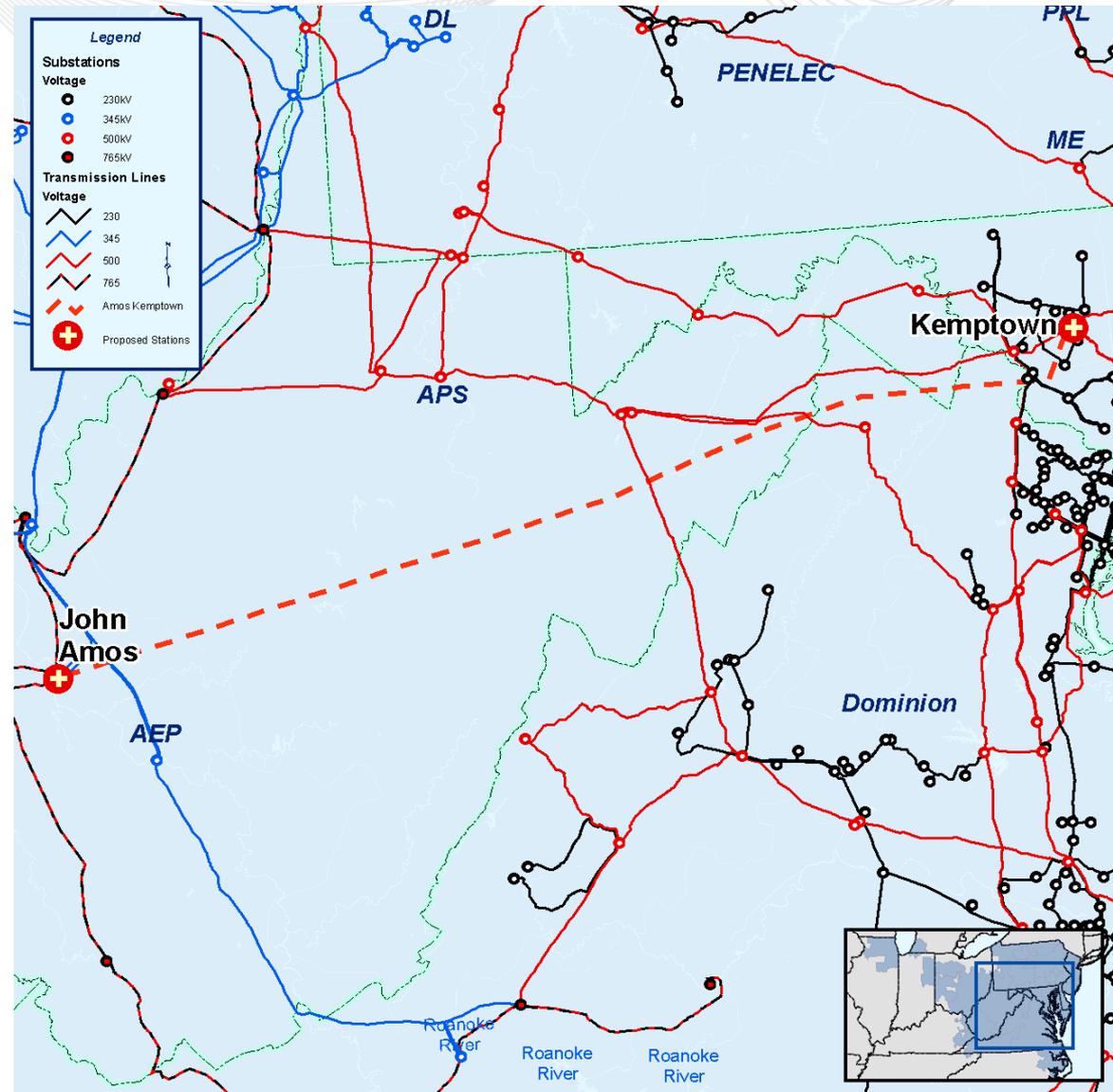


# Transmission Expansion Advisory Committee

April 14, 2009

# Backbone Project Update

- Previous analysis identified several overloads on 500 kV facilities across the central Pennsylvania / Allegheny Mountain corridor
- Results of the March 2009 retool of 2013 show that without the Amos to Kemptown project there are no thermal overloads in 2013 through the same area
- This assumed the TRAIL line is placed in-service as retool analysis continues to demonstrate the need for the line by June 2011
- Based on the PJM analysis of 2014, the Amos – Kemptown project is required to resolve numerous thermal and reactive problems starting June 1, 2014
- The following slides detail the violations



- PJM completed deliverability analysis of 2014 for the areas that had identified violations driving the need for Amos – Kemptown in previous assessments
  - Generation Deliverability
  - Mid-Atlantic, Eastern Mid-Atlantic, Southwest Mid-Atlantic and Dominion load deliverability
- Results of this analysis showed widespread thermal and reactive problems beginning in 2014

- 2014 Thermal Violations
  - 33 different overloads for single contingencies throughout the planning horizon
  - Lines with multiple overloads:
    - Mt Storm – Doubs
    - Pruntytown – Mt Storm
    - Lexington – Dooms
    - Keystone – Jacks Mountain
    - Ronco - Hatfield

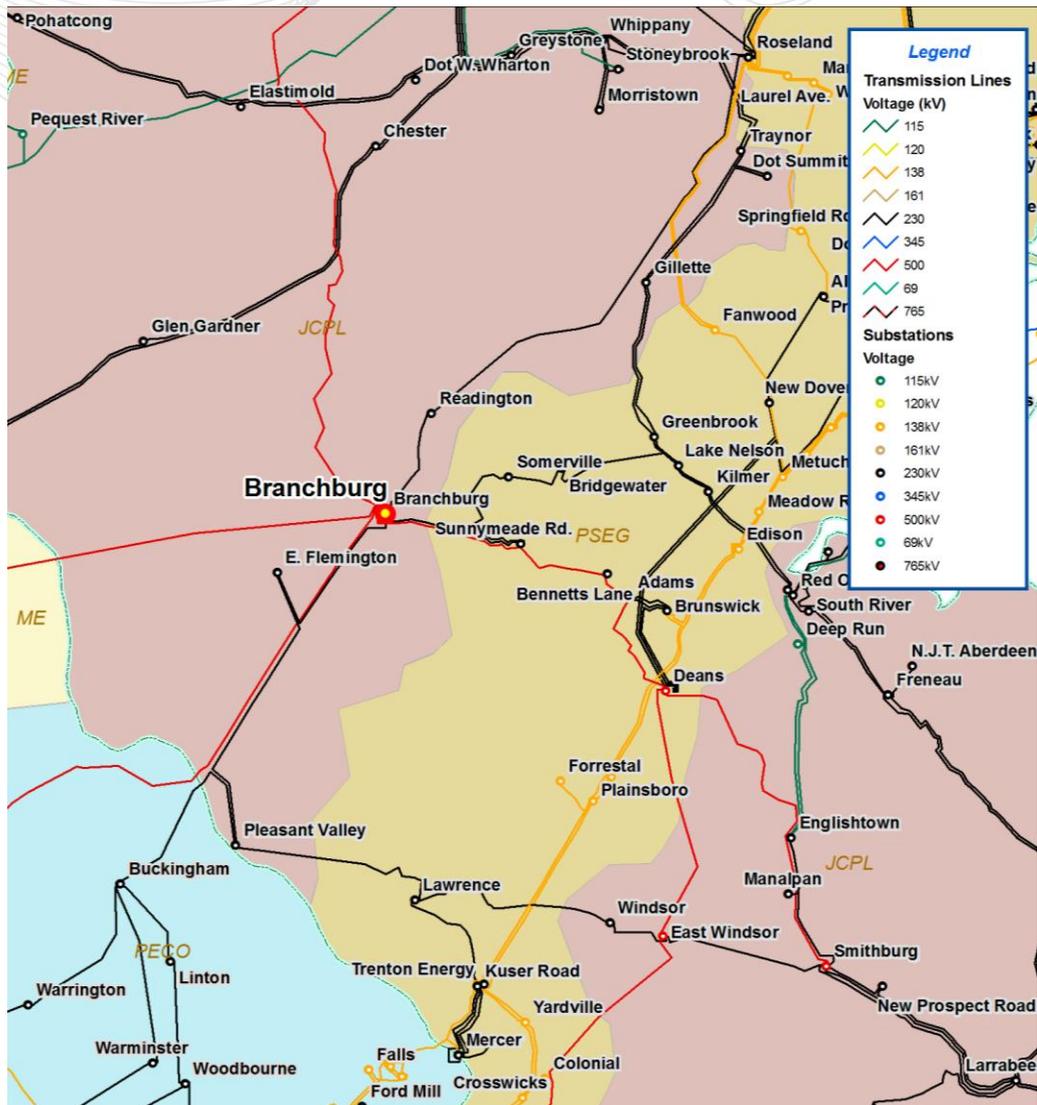
		<b>100% Year</b>		
<b>Fr Name</b>	<b>To Name</b>	<b>KV</b>	<b>Without PATH</b>	<b>With PATH</b>
Burches Hill		500/230	2014	>2024
Dickerson	Pleasant View	230	2014	>2024
Kammer	West Bellaire	345	2014	>2024
Pleasant View		500/230	2014	2019
Sandy Spring	High Ridge #14	230	2014	2016
Sandy Spring	High Ridge #34	230	2014	2016
Lexington	Dooms	500	2015	>2024
Mt. Storm	Doubs	500	2015	2024
Jacks Mtn. #1	Juniata	500	2016	>2024
Jacks Mtn. #2	Juniata	500	2016	>2024
Keystone	Jacks Mtn.	500	2016	>2024
Keystone	Conemaugh	500	2017	>2024
Pruntytown	Mt. Storm	500	2017	2022
Harrison	Pruntytown	500	2019	>2024
Bath County	Valley	500	2022	>2024
Ronco	Hatfield	500	2023	>2024
Conastone	Graceton	230	>2024	2014

			<b>100% Year</b>	
<b>Fr Name</b>	<b>To Name</b>	<b>KV</b>	<b>Without PATH</b>	<b>With PATH</b>
Oak Grove	Bowie #42	230	2014	2017
Bowie #42	Burtonsville	230	2014	2016
Possum Point	Woodbridge	230	2014	2017

- 2014 Reactive Violations
  - Case did not converge for numerous contingencies
  - Many of the contingencies involved the loss a 500 kV facility
- Amos – Kempton resolves all of these violation with the exception of the voltage problems for the loss of Rock Springs to Keeney 500 kV

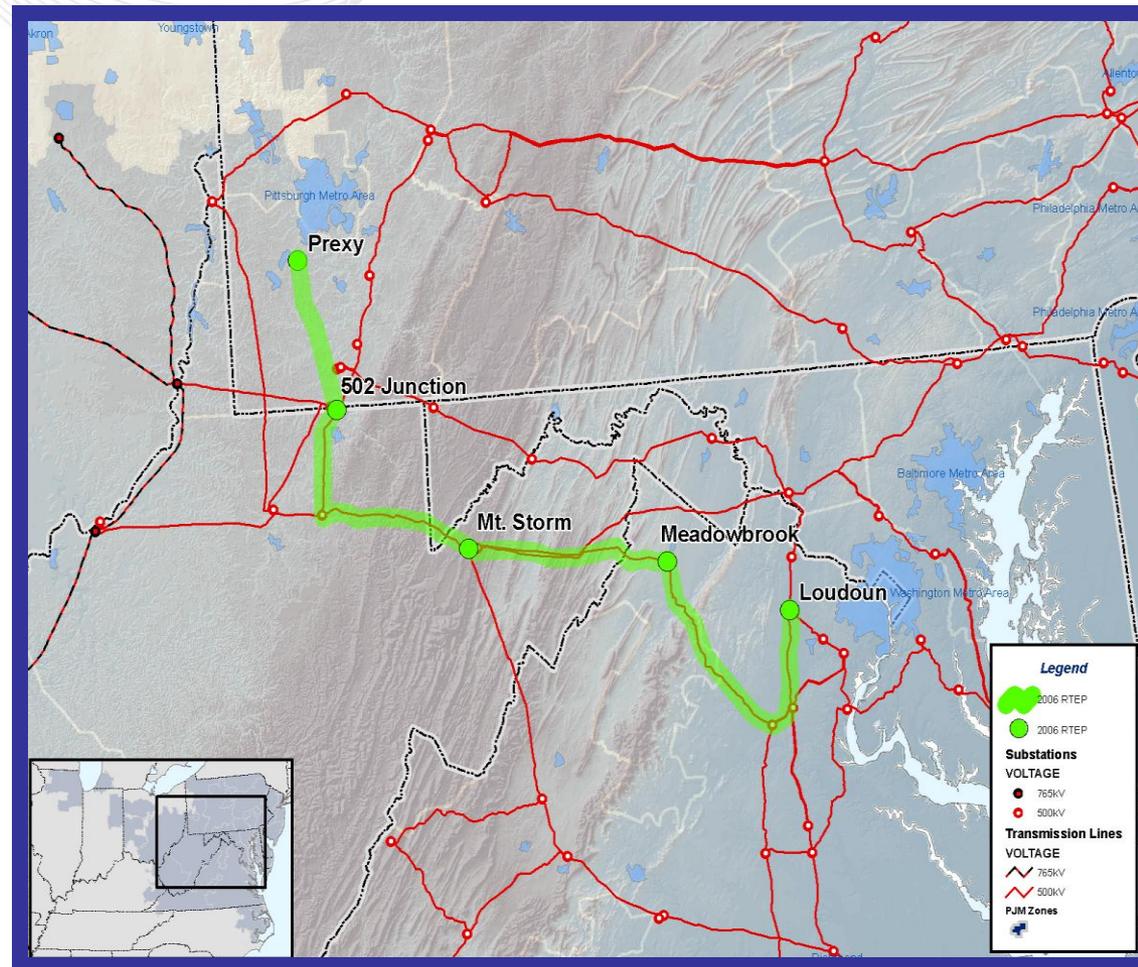
# Other Retool Work

- The 2006 RTEP identified widespread voltage problems for EMAAC load deliverability in 2010
- Approved solution is to install a 400 MVAR capacitor at Branchburg 500 kV
- Updated analysis of 2010 using this years RTEP assumptions indicates that upgrade can be deferred to 2011



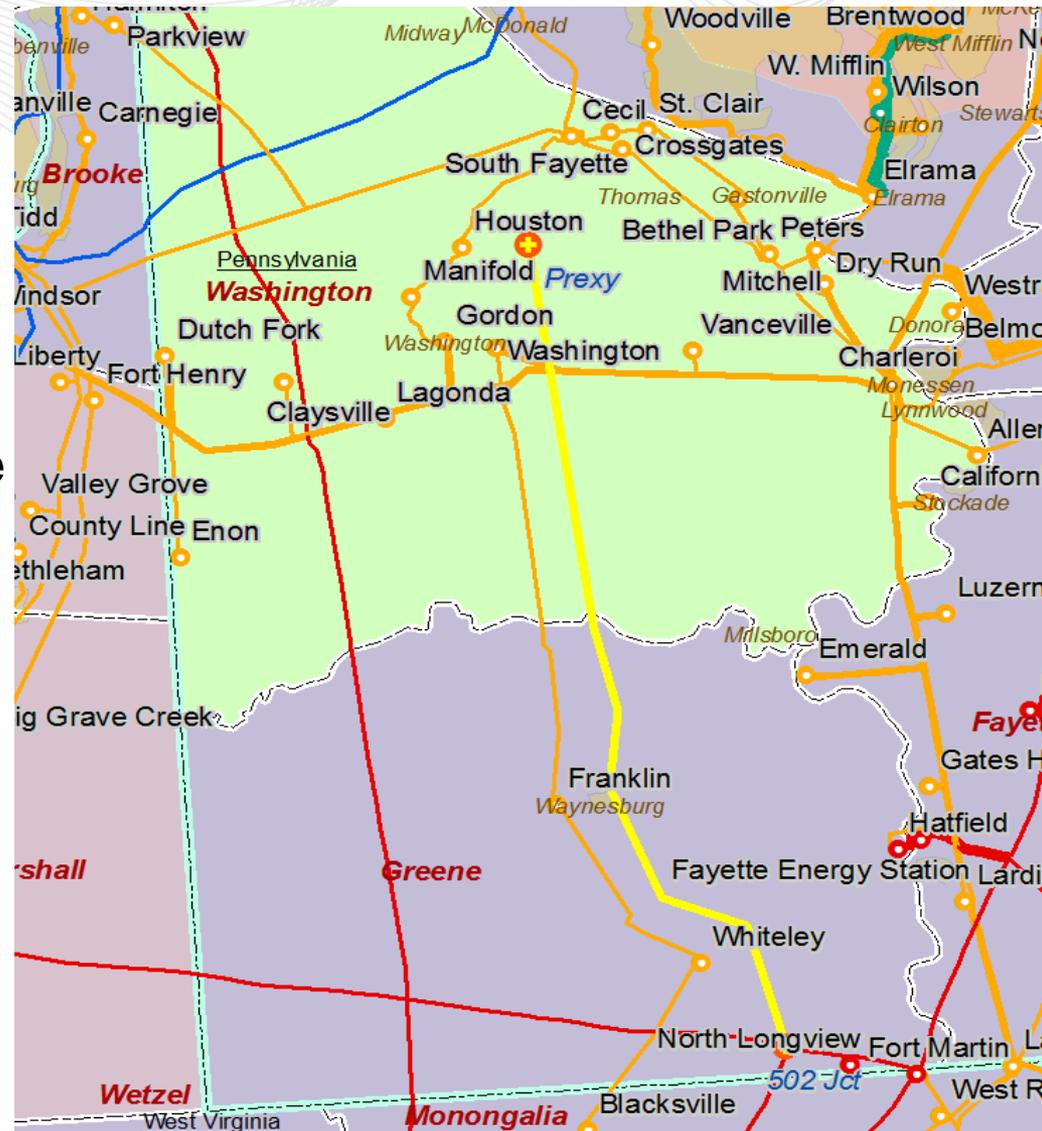
# 502 Junction – Prexy Replacement Study

- 502 Junction to Prexy line was put in the 2006 RTEP to address N-1-1 violations on 138 kV facilities in southwestern Pennsylvania
- Settlement with Greene County Pennsylvania
- As part of the settlement, it was agreed that an alternative solution to the 502 Junction to Prexy line would be developed



## 502 Junction – Prexy Replacement Study

- Washington County Collaborative (WCC) formed to develop the alternative solution
- Collaborative is using an independent consultant to confirm the reliability issues originally identified as part of the RTEP
- N-1-1 thermal and reactive issues validated
- Magnitude of the violations reduced due to lower load forecasts
- Upgrades are being developed to address the issues



- Retool of 2010, 2012, and 2013
  - 2011 retool will start once case development is complete
- 2014 Analysis

# Questions or Issues?