

# **Reliability Analysis Update**

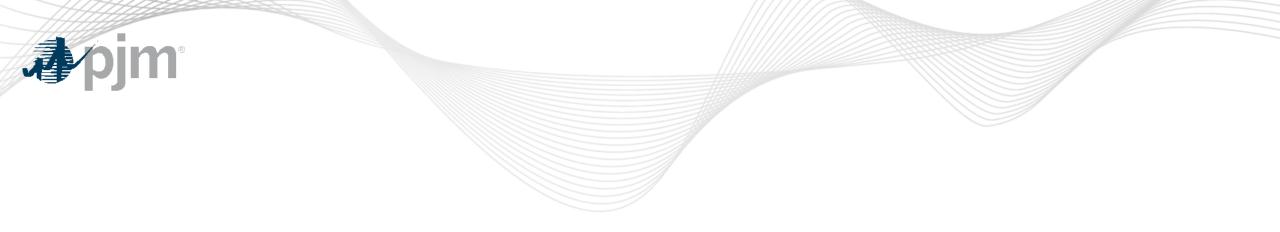
Sami Abdulsalam, Senior Manager PJM Transmission Planning

Transmission Expansion Advisory Committee January 9, 2024





- 2023 RTEP Window 2
- Capacity Import Limit (CIL) Study 2023
- 2023 Window 1 Recommended Solutions (Second Read)
- 2023 Window 1 Recommended Solutions (First Read / Change)
- Adjustments to Earlier Approved Projects
- Updates to 2022 RTEP Window 3 Projects
- Baseline Upgrade Cancellations



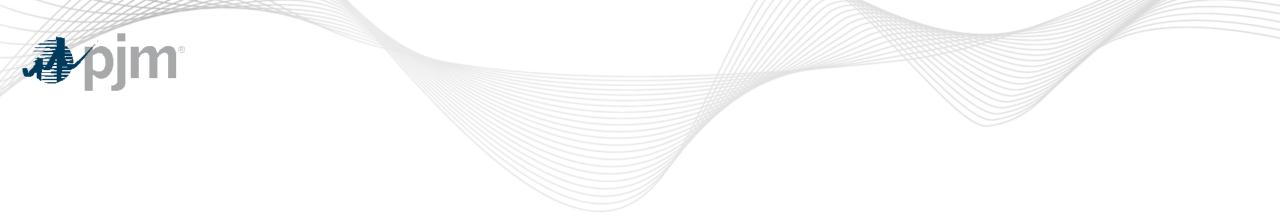
# 2023 Window 2

### **Baseline Reliability Projects**



### 2023 RTEP Window 2

- PJM proposing to pursue 30 day window, 2023 window 2, which would open in February 2024
  - AEP significant load increase due to new datacenter loads
  - Thermal issues in PSEG around Hinchmans area require urgent action
  - 500kV line #588 EOL in Dominion
  - Additional urgent reliability issues.
- Shortened window Immediate Need for project
- 2022 Window 3 selected solutions are included in the base cases
- Stakeholders are requested to ensure they are properly registered for the RTEP window which will allow them to participate in this additional 30 day window



# PJM CIL (Capacity Import Limit) Study 2023





- Compliance:
  - NERC Standard MOD-004-1, Requirement 6:
    - Requires the Transmission Planner to establish a CBM value for each Available Transfer Capability (ATC) Path
      or Flowgate to be used in planning during each of the full calendar years two through ten following the current
      year.
- Purpose:
  - The purpose of this study is to confirm that the PJM and surrounding transmission systems will be robust enough to enable PJM to import the amount of emergency assistance (CBM) assumed available in the 2023 PJM Reserve Requirement Study (RRS) and PJM RAA (R6.1).
    - The amount of CBM used in the PJM Reserve Requirement Study (RRS) is **<u>3,500 MW</u>**.
    - Attachment C.7 of Manual M-14B requires that CBM be preserved in generator deliverability studies
- Methodology:
  - Attachment G.11 "PJM Capacity Import Limit (CIL) Calculation Procedure"

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- Definition: PJM Capacity Benefit Margin (CBM)
  - Attachment C.3.1 Generator Deliverability Procedure "CBM is the amount of imports that PJM assumes will be available from neighboring regions during a RTO-wide capacity deficiency."





<u>Supply</u>	2023 RTEP CBM	2024 RTEP CBM
<u>Zone</u>	Allocation (MW)	Allocation (MW)
North	93	490
West 1	1,447	1,259
West 2	605	1,162
South 1	0	328
South 2	1,356	261
TOTAL	3,500	3,500



- The 2023 PJM CIL Study verifies that PJM meets its requirement for CBM in accordance with all NERC standard MOD-004-1 Transmission Planner Requirements.
- The primary drivers for the CBM allocation changes from the previous study are
  - North The previously binding Westover-Laurel Lakes 115kV tie line is not defined in the 2023 PJM CIL study case. The NYISO Westover 115kV yard is retired. The NYISO Oakdale Sub which previously fed Westover is expanded with two additional 345/115/34.5kV transformers. The Oakdale-Laurel Lakes 115kV tie line is now the binding facility. This caused an increase in import capability from the North Zone.
  - South 1, South 2, West 1, West 2
    - The 2022 Window 3 Selected Proposal was applied to the study case.
    - 1<sup>st</sup> time identified binding facility Belmont 765/500kV #5 transformer impacted all 4 Zones.

Belmont 765/500kV #5 is identified in the 2023 Window 1

Binding facilities from the 2022 year study are also binding in the current 2023 study

- PJM overall import capability (FCITC\*) reduced slightly from the 2022 Study to the 2023 Study
  - From **13,987 MW** in 2022 to **13,720 MW** in 2023
  - NYISO Oakdale Substation expansion increased the import capability from the North Zone
  - Binding facility Belmont 765/500kV #5 decreased the import capability collectively from Zones South 1, South 2, West 1, West 2

\*First Contingency Incremental Transfer Capability



# Recommended Solutions – 2023 Window 1 Second Read Baseline Reliability Projects



Process Stage: Recommended Solution – Second Read Criteria: Summer Generator Deliverability Assumption Reference: 2023 RTEP assumptions Model Used for Analysis: 2028 RTEP cases Proposal Window Exclusion: None Problem Statement:

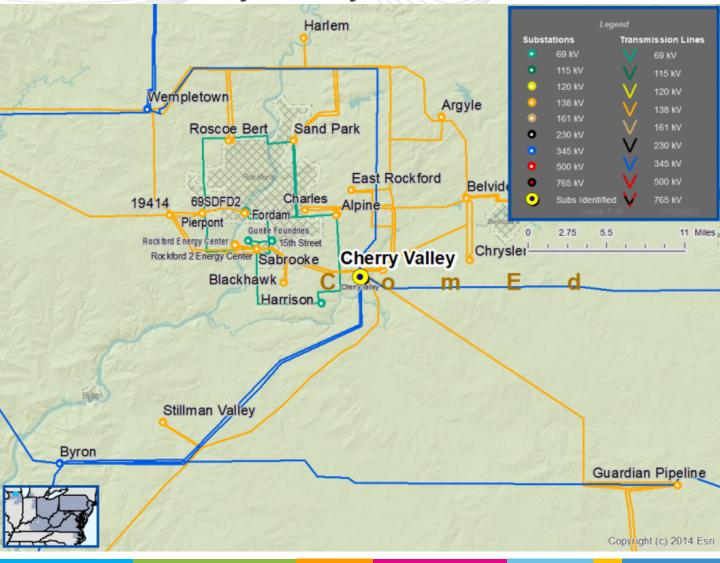
2023W1-GD-S641, 2023W1-GD-S642, 2023W1-GD-S662, 2023W1-GD-S663, 2023W1-GD-S1262, 2023W1-GD-S1263

In 2028 RTEP Summer case, the Cherry Valley R 345/138 kV transformer is overloaded for N-2 outages.

#### **Existing Facility Rating:**

Branch	SN/SE/SSTE/SLD WN/WE/WSTE/WLD (MVA)
Chery Valley R 345/138 kV Transformer	420/480/520/530 420/480/520/530

### ComEd Transmission Zone: Baseline Cherry Valley Circuit Breakers





#### **Proposed Solution:** Proposal No. 2023-W1-771 Add three 345 kV circuit breakers to Cherry Valley substation. **(b3810)**

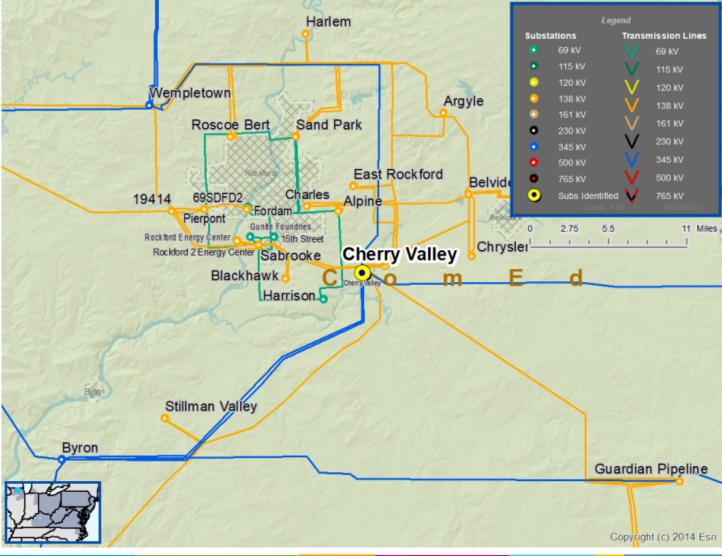
Estimated Cost: \$7.75 M

**Preliminary Facility Rating:** No change to transformer rating, 63 kA circuit breakers

Alternatives: None

Required IS Date: 6/1/2028 Projected IS Date: 6/1/2028 Previously Presented: 12/5/2023

### ComEd Transmission Zone: Baseline Cherry Valley Circuit Breakers





#### Process Stage: First Read

**Criteria:** Summer Generator Deliverability

**Assumption Reference**: 2028 RTEP assumptions

Model Used for Analysis: 2028 RTEP Summer case

Proposal Window Exclusion: None

#### **Problem Statement:**

2023W1-GD-S499, 2023W1-GD-S500, 2023W1-GD-S501, 2023W1-GD-S87, 2023W1-GD-S80 & 2023W1-GD-S89

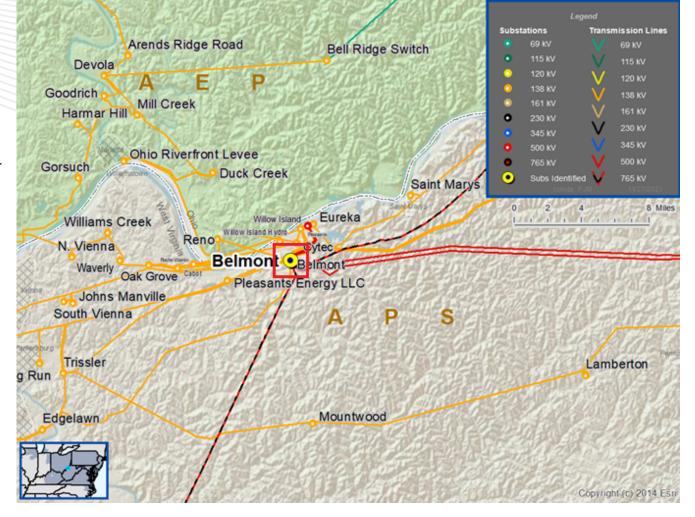
In the 2028 RTEP Summer case, Belmont 765/345 kV Transformer # 5 is overloaded for three common mode and single contingencies.

#### **Existing Facility Rating:**

Branch	SN/SE/WN/WE (MVA)
Belmont Transformer # 5	1986/2492/2611/2991
Preliminary Facility Rating:	

Branch	SN/SE/WN/WE (MVA)
Belmont Transformer # 5	3125/4000/3500/4250

### APS Transmission Zone: Baseline 2023 RTEP Window 1 Cluster 1





### APS Transmission Zone: Baseline 2023 RTEP Window 1 Cluster 1

As part of the 2023 RTEP Window #1, project 2023-W1-903 listed in the table below is proposed to address the following violations: 2023W1-GD-S499, 2023W1-GD-S500, 2023W1-GD-S501, 2023W1-GD-S87, 2023W1-GD-S89 & 2023W1-GD-S80

Proposal ID	Proposing Entity	Upgrade Description	Upgrade Cost (\$M)
2023-W1-903	FE (Selected)	Replace the Belmont 765/500 kV Transformer #5 with a new transformer bank consisting of three single-phase transformers and an additional single phase spare transformer.	42.05
2023-W1-851	TRANSOURCE (Not-Selected)	New Greenfield Cork 765kV substation will be roughly 0.55 miles from existing Belmont substation. The new substation will be a ring bus design with existing Kammer to Belmont and Mountaineer to Belmont line 765 kV lines terminating at the new Cork substation.	60.05
2023-W1-850	FE (Not-Selected)	Install second 765/500 kV transformer (#6) consisting of three single-phase transformers and a single phase spare unit, in parallel with the existing Transformer #5. Install 765 kV four-breaker ring bus and two 500 kV breakers. Replace 500 kV disconnect switches.	123.40
2023-W1-831	In the second		145.70
2023-W1-605	TRANSOURCE (Not-Selected)	This project enhances 2023-W1-905 by using 954 KCMIL Rail ACSR which increases the throughPut of power by increasing the line conductor ampacity by 8%.Install reactor at New London and Oppossum Creek substation. Upgrade (3) wavetraps and (2) Circuit Breakers to 5000A equipment at Jacksons Ferry 765kV and Upgrade (2) Circuit Breakers to 5000A equipment at Cloverdale 765kV. Upgrade (1) Circuit Breaker to 5000A equipment at Broadford 765kV.	857.33

### APS Transmission Zone: Baseline 2023 RTEP Window 1 Cluster 1

Proposal ID	Proposing Entity	Upgrade Description	Upgrade Cost (\$M)
2023-W1-905	TRANSOURCE (Not-Selected)	<ul> <li>New roughly 114 mi 765 kV line between Joshua Falls to new Transource Substation Yeat.</li> <li>Add (2) 765kV breakers at Joshua Falls to create a 2-breaker ring with the transformer still connected off the bus.</li> <li>New Yeat 765/500/230kV will be near existing Bristers 500/230kV substation. This substation will have (10) 500kV breakers, (2) 765/500kV transformers, (2) 500/230kV transformers, (2) 230kV CB's and (1) 765kV CB.</li> <li>Cut in Bristers–Ox 500kV and Meadowbrook–Vint Hill 500kV lines into Yeat's 500kV yard. AEP installs a new 12-mile dbl ckt BOLD (Breakthrough Overhead Line Design) 230kV line from Yeat–Clover Hill.</li> <li>Dominion installs a new 7.5-mile dbl ckt BOLD (Breakthrough Overhead Line Design) 230kV line from Yeat–Clover Hill.</li> <li>Dominion installs new 0.1% reactor at Vint Hill on Vint Hill–Morrisville.</li> <li>Dominion Install new 0.1% reactor at Vint Hill on Vinthill–Loudoun 1.</li> <li>Dominion Rebuilds 1.7 miles 230kV line from Marsh Run–Remington CT as double circuit.</li> <li>Dominion replaces remote end equipment to bring rating up on 230kV line from Wheeler–Linton Tap–Atlantic. Dominion rebuilds the 0.23-mile line between Bristers 500kV and Yeat 500kV.</li> </ul>	1,300.86

**Recommended Solution:** 2023-W1-903 - Replace the Belmont 765/500 kV Transformer #5 with a new transformer bank with nameplate rating of 1500/2000/2500 MVA (ONAN/ONAF/ONAF), consisting of three single-phase transformers and a spare transformer. The loadability ratings of the new transformer are 3125/4000/4750 SN/SE/SLD and 3500/4250/4750 WN/WE/WLD. Replace 500 kV disconnect switches (b3796)

Total Estimated Cost: \$42.05M

Required IS Date: 06/01/2028 Projected IS Date: 06/01/2028



# 2023 Window 1 First Read Baseline Reliability Projects

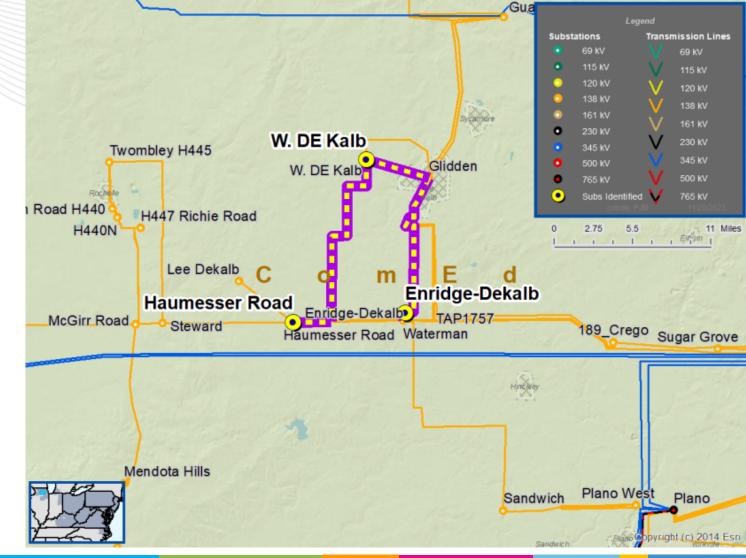


### Process Stage: First Read Criteria: Winter Generator Deliverability Assumption Reference: 2023 RTEP assumptions Model Used for Analysis: 2028 RTEP cases Proposal Window Exclusion: None Problem Statement:

2023W1-GD-W229, 2023W1-GD-W955, 2023W1-GD-W988, 2023W1-GD-W945, 2023W1-GD-W993, 2023W1-GD-W268, 2023W1-GD-W972, 2023W1-GD-W1397, 2023W1-GD-W1387, 2023W1-GD-W946

In 2028 RTEP Winter case, the Haumesser Road-West DeKalb Tap-ESS H452 (Enridge-DeKalb) Tap 138 kV line is overloaded for N-1 and N-2 outages.

### ComEd Transmission Zone: Baseline 2023 RTEP Window 1 Cluster 3





### ComEd Transmission Zone: Baseline 2023 RTEP Window 1 Cluster 3

- As part of the 2023 RTEP Window #1, projects listed in the table below were proposed to address the violations in cluster 3
- 1 Greenfield and 2 upgrades from incumbent TO

Proposal ID	Proposing Entity	Project Type	Upgrade Description	
500	ComEd	Greenfield	Expand Haumesser Road substation. Extend the line 11323 West Dekalb tap 1.6 miles nto Haumesser Road to create new line 9411 from Haumesser to West Dekalb. Expand West Dekalb to tie line 9411 from Haumesser Road to the existing line 8315 from Glidden. Reconductor/rebuild 10 miles of line 9411 and 6 miles of line 8315.	
712	ComEd	Upgrade	Rebuild/reconductor 138 kV line 11323 from Haumesser Road to the H-452 tap.	
972	ComEd	Upgrade	de Rebuild 138 kV line 11323 as double circuit from Haumesser Road to the H-452 tap and string a second circuit. Expand Haumesser Road to a 4 circuit breaker ring bus. Add a circuit breaker at H-452 to create a second path between Haumesser Road and Waterman.	



### ComEd Transmission Zone: Baseline 2023 RTEP Window 1 Cluster 3

- PJM originally presented proposal 712 listed in the table below for first read at the Dec. 2023 TEAC
- PJM has further considered the additional benefits and new congestion study results in the area, and is recommending the more robust alternative proposal 972, which is an incremental upgrade to the originally considered proposal 712.
  - Proposal 712 rebuilds the 138 kV circuit as a double circuit to accommodate a future circuit, but only a single circuit would be installed.
  - Proposal 972 strings the 2nd circuit, and includes both Haumesser Road and H-452 substation expansion/upgrades.
    - This proposal offers more efficient capacity expansion upgrade in one step and also addresses the congestionidentified. The upgraded solution also provides additional outlet capacity to accommodate increased flows in the area west of Haumesser Road. The ring bus at Haumesser Road and H-452 increases reliability and resilience.

Proposal ID	Proposing Entity	Project Type	Upgrade Description	
712 (Originally selected)	ComEd	Upgrade	ebuild/reconductor 138 kV line 11323 from Haumesser Road to the H-452 tap.	
972 (Alternative being considered for a more robust solution)	ComEd	Upgrade	Rebuild 138 kV line 11323 as double circuit from Haumesser Road to the H-452 tap and string a second circuit. Expand Haumesser Road to a 4 circuit breaker ring bus. Add a circuit breaker at H-452 to create a second path between Haumesser Road and Waterman.	



### **ComEd Transmission Zone: Baseline** 2023 RTEP Window 1 Cluster 3

#### Proposed Solution: Proposal No. 2023-W1-972

Rebuild 138 kV line 11323 as double circuit from Haumesser Road to the H-452 tap and string a second circuit. Expand Haumesser Road to a 4 circuit breaker ring bus. Add a circuit breaker at H-452 to create a second path between Haumesser Road and Waterman.

#### Estimated Cost: \$28.11 M

Additional Benefits: Provides more efficient and cost effective capacity for the longer term and addresses congestion in the area. This solution also provides an additional outlet to accommodate increased flows in the area west of Haumesser Road. Ring busses at Haumesser Road and H-452 increase reliability and resilience.

452/452/472/472

376/452/452/472

N/A

N/A

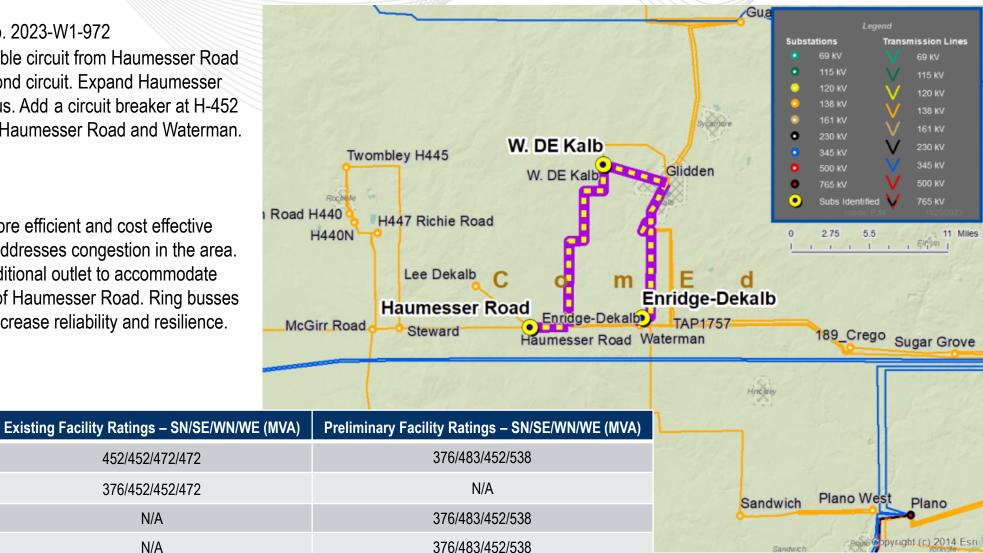
#### **Required IS Date:** 12/1/2028 Projected IS Date: 12/1/2028

HAUMESSER; B-W DEKALB ;3T 138 kV

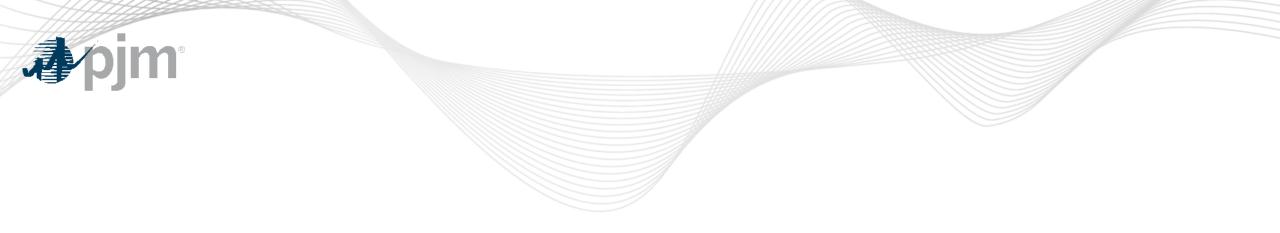
W DEKALB ;3T-ESS H452 ;RT 138 kV

W DEKALB ;3T-WATERMAN ;3B 138 kV

HAUMESSER; B-ESS H452 ; B 138 kV



Branch



### Adjustments to Earlier Approved Projects

**Baseline Reliability Projects** 

### PJM recommended adjustments to Earlier Approved Brandon Shores De-Activation Scope

B3780 - Substation Projects: (Approved components under Brandon Shores Deactivation Immediate Need)

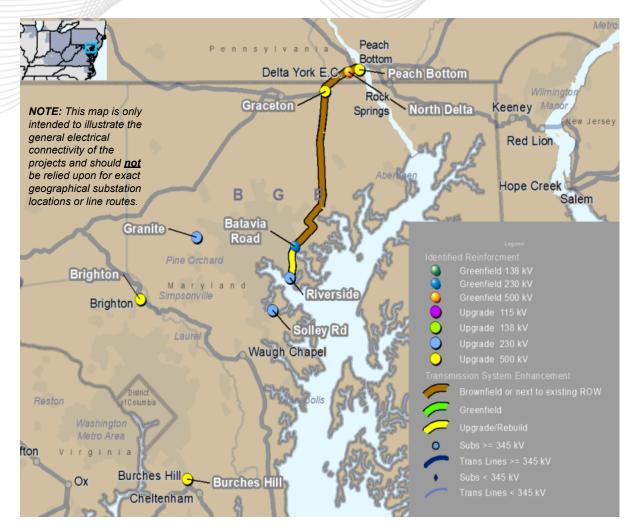
Cost Shifts as a result of B3780.3 cancelation

#### B3780 – (assigned by PJM to Transource) Substation Projects

- Modify the planned North Delta 500/230 kV substation
  - ➤ Termination for New 230kV Line from Cooper to North Delta (B3780.16 → Additional Cost: \$0.47M)
  - ➤ Terminations for Peach Bottom Conastone 500 kV (5012) line (B3780.17 → Additional Cost: \$1.10M)
  - Four bay breaker and half configuration, and install one 500/230 kV transformer
  - > This scope will amend the approved B3737.47 (NJOSW-SAA 1.0)

#### B3780 – Exelon Scope -Substation Projects

- New 230kV Line from Cooper to North Delta (B3780.14 → Additional Cost: \$4.8M)
- Loop Peach Bottom Conastone 500 kV (5012) line into North Delta (B3780.15
   → Additional Cost: \$7.86M)
- Expand Peach Bottom North yard to accommodate additional 500kV circuits to BGE (Graceton).
- Build Graceton 500 kV substation adjacent to the Graceton 230kV yard
  - Three bay breaker and half configuration
  - > Two 500/230 kV transformers
- Build new Batavia Rd. 230 kV switching station (cut in to the existing Northeast
   Riverside 230 kV circuits
  - Four bay 8-position GIS BAAH switching station
- Cancel B3780.3 (Build 500/230 kV West Cooper substation) (Cost Estimate: \$60M)





### PJM recommended adjustments to Earlier Approved Brandon Shores De-Activation Scope

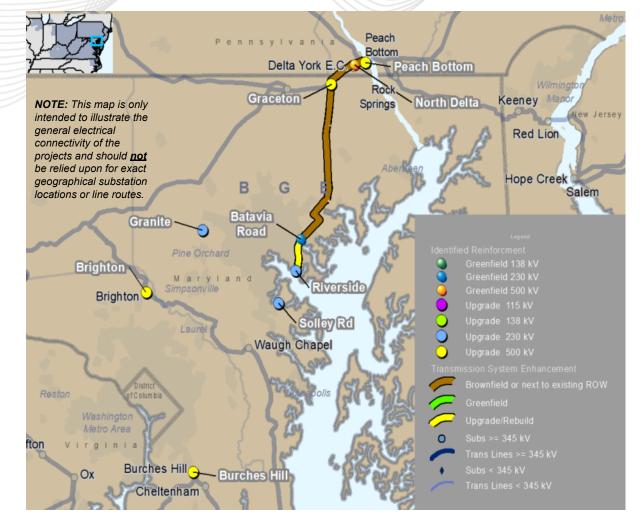
B3780 - Transmission Projects: (Approved components under Brandon Shores Deactivation Immediate Need)

#### (No Changes to the scope below)

- Build new Peach Bottom North Graceton 500kV Line (~10 miles)
  - > New Rating 4503SN/5022SE/5206WN/5802WE MVA
- Build new 230 kV double circuit from Graceton to Batavia Road with 2 x 1590kcm 54/19 ACSR (~29 miles)
  - New Rating 1331SN/1594SE/1534WN/1795WE MVA
- Reconductor 230 kV double circuit from Batavia Road to Riverside with bundled 1622kcm 38/19 ACCR/TW (~6 miles)
  - New Rating 1941SN/2181SE/WN2065/WE2302 MVA
- Install Statcom at Granite 230 kV (+/- 350MVAR) and Solley 230kV (+/- 350 MVAR), and 250 MVAR capacitor at Graceton 230 kV
- Install Statcom at Brighton 500 kV (+/- 350MVAR), Capacitors 350 MVAR at Brighton 500 kV, 250 MVAR at Burchess Hill 500 kV, and 350 MVAR at Conastone 500 kV

Required In-Service Date : June 2025

Projected In-Service Date: 2026-2028 (staged energizations)

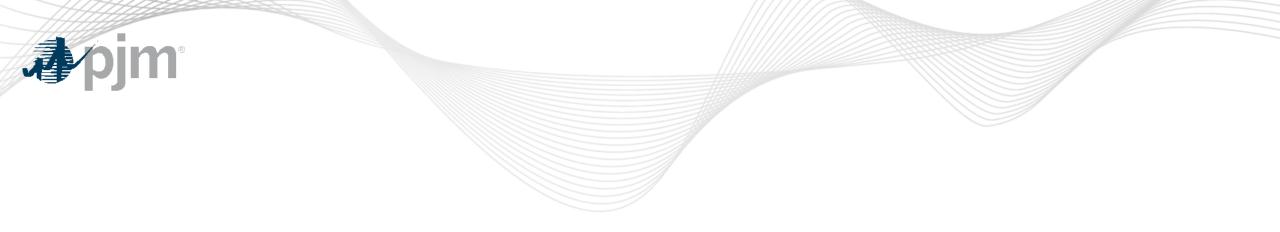




### PJM recommended adjustments to Earlier Approved Brandon Shores De-Activation Scope

NJSAA 1.0 Baseline upgrades canceled due to scope changes associated with NJOSW adjustments and Brandon Shores deactivation

Upgrade Id	Description	Transmission Owner	Projected In Service Date	Cost Estimate (\$M)
b3737.48	Build a new North Delta-Graceton 230 kV line by rebuilding 6.26 miles of the existing Cooper-Graceton 230 kV line to double circuit. Cooper-Graceton is jointly owned by PECO & BGE. This subproject is for PECO's portion of the line rebuild which is 4.1 miles.	PECO	12/31/2027	18.82
b3737.56	Build a new North Delta-Graceton 230 kV line by rebuilding 6.26 miles of the existing Cooper-Graceton 230 kV line to double circuit. Cooper-Graceton is jointly owned by PECO & BGE. This subproject is for BGE's portion of the line rebuild, which is 2.16 miles.	BGE	12/31/2027	9.92
b3737.49	Bring the Cooper-Graceton 230 kV line "in and out" of North Delta by constructing a new double-circuit North Delta-Graceton 230 kV (0.3 miles) and a new North Delta-Cooper 230 kV (0.4 miles) cut-in lines.	PECO	12/31/2028	1.56
b3737.46	Install a new breaker at Graceton 230 kV substation to terminate a new 230 kV line from the new greenfield North Delta station	BGE	12/31/2028	1.55



# Updates to – 2022 Window 3

**Baseline Reliability Projects** 



### **Recommended Solutions to Address Clusters - East**

#### **Estimated Cost Update:**

Upgrade Id	Description	Designated Entity	Previous Cost Estimate (\$M)	New Cost Estimate (\$M)
	Break the existing TMI-Peach Bottom 500 kV line and reterminate into adjacent Otter Creek			
b3800.2	500 kV Switchyard.	ME	7.03	18.3
	North Delta 500 kV termination for the Rock Springs 500 kV line (5034/5014 line) (PECO			
b3800.45	work).	PECO	10.2	0.8



### **Recommended Solutions to Address Clusters - East**

#### Exelon:2022-W3-344/660

Additional Upgrade Identified through detailed review with Exelon

#### **Recommended Solution:**

 Reconfigure Peach Bottom North and South yards to allow for termination of 500kV lines from Peach Bottom to North Delta.North Delta 500 kV termination for the new Peach Bottom - North Delta 500 kV line

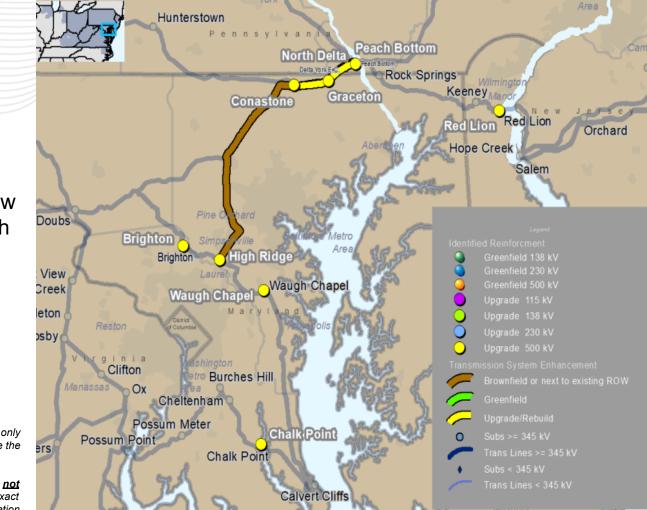
Baseline # B3800.52

Proposed Cost Estimate: \$7.86 M

**Required In-Service Date : 6/1/2027** 

**Projected In-Service Date : 2028-2030** 

**NOTE:** This map is only intended to illustrate the general electrical connectivity of the projects and should <u>not</u> be relied upon for exact geographical substation locations or line routes.





# **Baseline Upgrade Cancellations**



### **Baseline Upgrade Cancellation**

 The upgrades listed below initially were identified during the Beaver Valley 1 & 2 retirement study. As the Beaver Valley 1 & 2 withdrawn the deactivation request, those upgrades were no longer needed to address reliability issue. However, the basecase used to perform interconnection queue studies included those upgrades, as a result the status of the upgrades were put on hold. Per the latest study, those upgrades are no longer needed for Interconnect queue and will be canceled.

Upgrade Id	Description
IR30171	Rebuild Glade to Warren 230 kV line with hi-temp conductor and substation terminal upgrades. 11.53 miles. New conductor will be 1033 ACSS. Existing conductor is 1033 ACSR.
B3017.2	Glade substation terminal upgrades. Replace bus conductor, wave traps, and relaying.
B3017.3	Warren substation terminal upgrades. Replace bus conductor, wave traps, and relaying.



# Dominion Transmission Zone: Baseline B3162: Switching Station (Stevensburg/Batna)

Process Stage: Cancellation

Previously Presented: SRRTEP 2/11/2020

Criteria: Dominion's FERC 715 Planning Criteria (Post-Contingency Radial - Thermal and Voltage)

Assumption Reference: Dominion Energy's Facility Interconnection Requirements

Model Used for Analysis: 2024 RTEP Summer

Proposal Window Exclusion: Below 200kV, FERC 715 (TO Criteria)

#### **Problem Statement:**

 In the 2024 RTEP Summer case, 115kV Line #153 (Spotsylvania-Oak Green) overloads under an N-1-1 scenario. Voltage at Culpeper also drops below 85% under an N-1-1 scenario.

#### **Existing & Preliminary Facility Rating:**

Spotsylvania-Paytes Tap = 226 MVA (summer – Normal and Emergency)

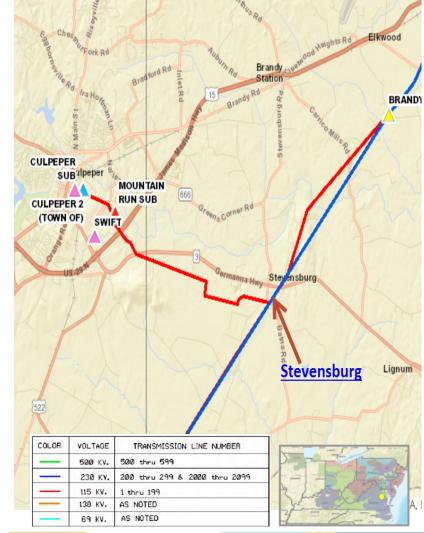
Locust Grove-Unionville = 204 MVA (summer – Normal and Emergency)

#### **Recommended Solution:**

Acquire land and build a new 230kV switching station (Stevensburg/Batna) with a 224MVA, 230-115kV transformer. 230kV Line #2199 (Gordonsville-Remington) will be cut and connected to the new station. 115kV Line #70 (Remington-Mt. Run) and 115kV Line #2 (Mt. Run-Oak Green) will also be cut and connected to the new station. This will provide Culpeper another source to support voltage in the area as well as eliminating the thermal issue. (b3162)

#### Total Estimated Baseline Cost: \$22M

**Reason for Cancellation:** Revised load allocations in the area caused the reliability violations to be resolved in the area within the study timeframe.





# NJ OSW SAA Project Update



# NJ SAA Project Update

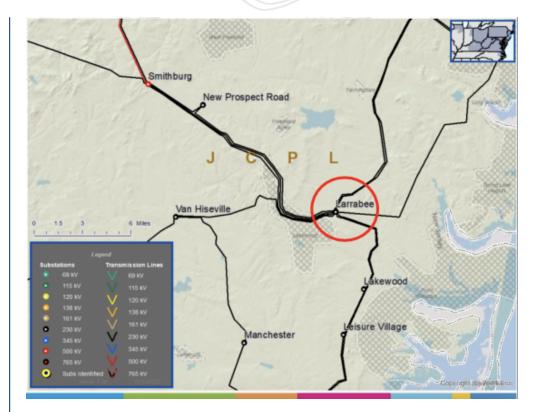
**Designated Entity: MAOD** 

- Existing Scope for b3737.22:
  - Construct the Larrabee Collector Station (LCS) AC switchyard, composed of a 230 kV 3 x breaker and a half substation with a nominal current rating of 4000 A and four single phase 500/230 kV 450 MVA autotransformers to step up the voltage for connection to the Smithburg substation
  - Procure land adjacent to the AC switchyard, and prepare the site for construction of future AC to DC converters for future interconnection of DC circuits from offshore wind generation. Land should be suitable to accommodate installation of 4 individual converters to accommodate circuits with equivalent rating of 1400 MVA at 400 kV
  - Required IS Date: 12/31/2027
  - Estimated Cost: \$193.3M
- Amended Scope for b3737.22:
  - Add Prebuild Extension Work: Civil work (i.e., duct banks) to accommodate four (4) HVDC circuits from the Prebuild "point of demarcation" (near the LCS property line) to each OSW generator's converter station area on the LCS property
  - Add AC Collector Lines: Three (3) sets of AC collector lines (combined, a total of twelve (12) 230 kV AC circuits) that will run from each OSW generator's converter station area to the LCS AC interface

Estimated Cost Increase: Addition of Prebuild Extension Work + AC Collector Lines = \$23m

Required IS Date:

Remains 12/31/2027



#### NJBPU Approvals (Docket No. QO20100630):

 6/28/23 NJBPU Order: Added (1) Prebuild Extension Work and (2) AC Collector Lines to MAOD's approved scope



Facilitator: Paul McGlynn, Paul.Mcglynn@pjm.com

Secretary: Tarik Bensala, Tarik Bensala@pjm.com

SME/Presenter: Sami Abdulsalam, Sami.Abdulsalam@pjm.com

### **Reliability Analysis Update**

Member Hotline (610) 666 – 8980 (866) 400 – 8980 custsvc@pjm.com



### **Revision History**

Version No.	Date	Description
1	Jan 4 <sup>th</sup> , 2023	Original slides posted
2	Jan 5 <sup>th</sup> , 2023	Slide 29 has been removed from the slide deck. Additional information concerning b3702 will be discussed at the February TEAC.

