



# Sub Regional RTEP Committee PJM West

September 25, 2019

- The following definitions explain the basis for excluding flowgates and/or projects from the competitive planning process and designating projects to the incumbent Transmission Owner.
- Flowgates/projects excluded from competition will include the underlined language on the corresponding slide.
  - Immediate Need Exclusion: Due to the immediate need of the violation (3 years or less), the timing required for an RTEP proposal window is infeasible. As a result, the local Transmission Owner will be the Designated Entity. - Operating Agreement, Schedule 6 § 1.5.8(m)
  - Below 200kV Exclusion: Due to the lower voltage level of the identified violation(s), the driver(s) for this project are excluded from the competitive proposal window process. As a result, the local Transmission Owner will be the Designated Entity - Operating Agreement, Schedule 6 § 1.5.8(n)
  - Substation Equipment Exclusion: Due to identification of the limiting element(s) as substation equipment, the driver(s) for this project are excluded from the competitive proposal window process. As a result, the local Transmission Owner will be the Designated Entity - Operating Agreement, Schedule 6 § 1.5.8(p)

# First Review

## Baseline Reliability Projects



# AEP Transmission Zone: Baseline East Lima and Haviland 138 kV Station Upgrade

**Process Stage:** First Review

**Criteria:** Winter Generator Deliverability and Basecase Analysis

**Assumption Reference:** PJM RTEP Study

**Model Used for Analysis:** 2024 RTEP Winter Peak Model

**Proposal Window Exclusion:** Substation Equipment and Below 200kV

**Problem Statement:**

The Haviland – East Lima 138kV line is overloaded for multiple contingencies in winter generator deliverability test and basecase analysis test. (N1-WT18, N1-WT19, N1-WT20, N1-WT21, N1-WT22, N1-WT23, N1-WT24, N1-WT25, GD-W244, GD-W3, GD-W4, GD-W5, GD-W7, GD-W8, GD-W19)

The Haviland 1 – Haviland 2 is overloaded for the loss of East Lima – Maddox 345kV line with the stuck break at East Lima. (GD-W272)

**Existing Facility Ratings:**

East Lima –Haviland: 143/143/143/143 SN/SE/WN/WE

Haviland 1–Haviland 2: 187/240/247/285 SN/SE/WN/WE





# AEP Transmission Zone: Baseline East Lima and Haviland 138 kV Station Upgrade

## Proposed Solution:

At East Lima and Haviland 138 kV stations, replace line relays and wavetrap on the East Lima-Haviland 138 kV facility. In addition, at Haviland 138 kV station replace and upgrade bus differential protection on the Haviland 1-Haviland 2 138 kV facility.

**Estimated Cost:** \$1.5 Million

## Alternatives:

No alternate solutions were considered due to low cost and feasibility of the proposed solution.

**Required In-Service:** 12/1/2024





## Blue Jacket Tap-Huntsville 69kV Line & Botkins 69kV Voltage Drop

**Process Stage:** First Review

**Criteria:** TO Criteria Violation

**Assumption Reference:** FERC 715

**Model Used for Analysis:** 2024 RTEP Summer & Winter

**Proposal Window Exclusion:** Below 200kV

**Problem Statement:**

The Botkins 69kV bus voltage drops 10.6% for the loss of the Sidney-Botkins 69kV transmission line under N-1 analysis in the 2024 RTEP summer case, and the voltage drops 10.4% for the same contingency in the 2024 RTEP winter case. The Sidney-Botkins contingency also causes the Blue Jacket Tap-Huntsville 69kV line to overload to 101% of its summer emergency rating in the 2024 RTEP summer case.

**Existing Facility Rating:** Blue Jacket Tap-Huntsville SN/SE 80/98

**Proposed Solution:**

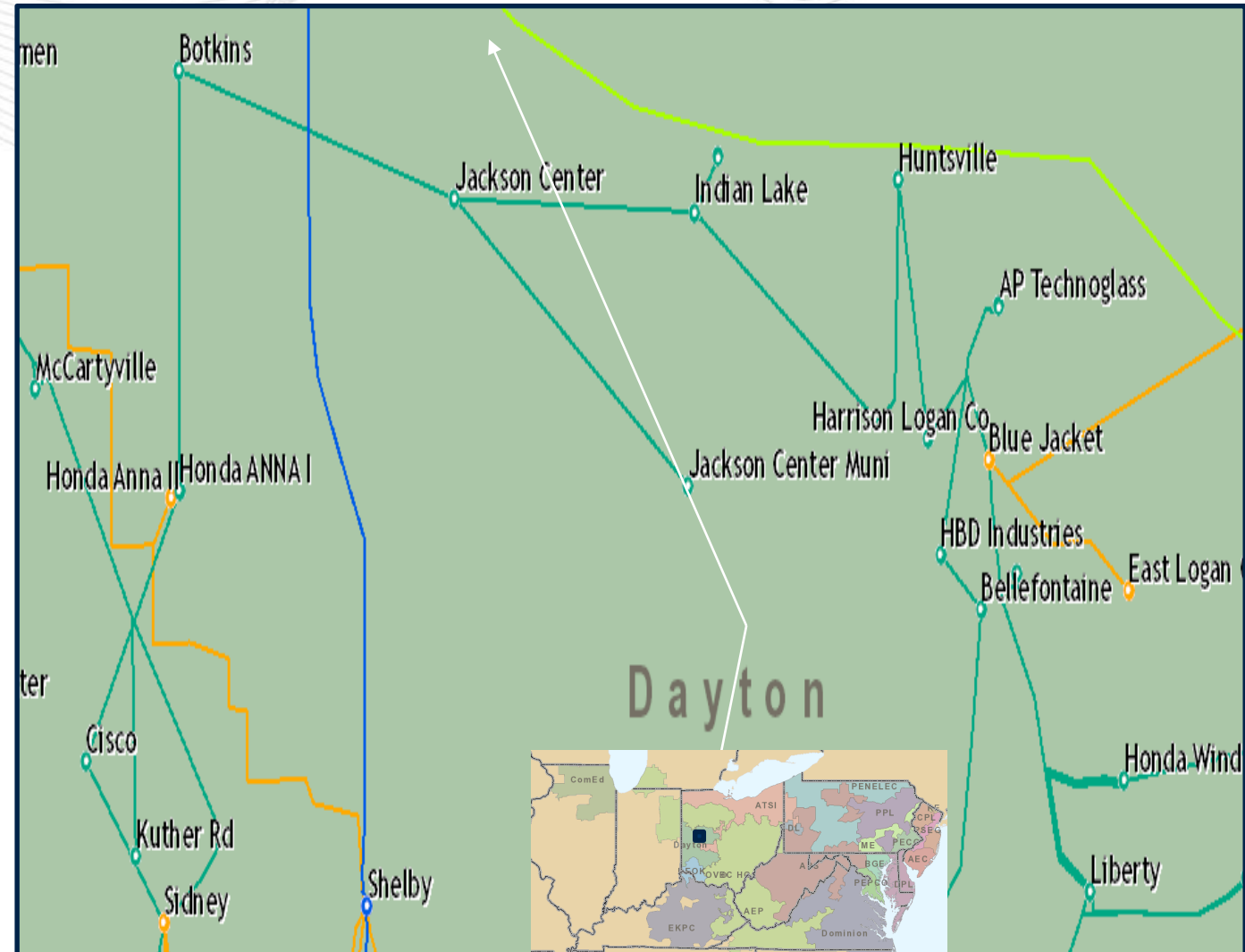
Move the existing Botkins 69kV capacitor from the Sidney-Botkins side of the existing breaker at Botkins to the Botkins-Jackson Center side. This will keep the capacitor in-service for the loss of Sidney-Botkins. This reduces the voltage drop to less than 3% and also resolves the overload on the Blue Jacket Tap-Huntsville 69kV line.

- **Estimated Cost:** \$200K

**Alternatives:**

1. Add a new capacitor at Botkins Substation on the Botkins-Jackson Center side of the existing breaker at Botkins.
  - **Estimated Cost:** \$600K
2. Reconductor ~4 miles of the existing Blue Jacket Tap-Huntsville 69kV line with 1351 AAC (SN/SE 151/187 ).
  - **Estimated Cost:** \$3.5M

**Required In-Service:** 6/1/2024



# Second Review

## Baseline Reliability Projects

# APS Transmission Zone: Baseline Glen Falls 138kV Substation Breakers Upgrade

**Process Stage:** Second Review

**Previously Presented:** 6/17/2019

**Criteria:** Short Circuit

**Assumption Reference:** PJM Criteria

**Model Used for Analysis:** Short Circuit 2020/2023 Base cases

**Proposal Window Exclusion:** Immediate Need, Below 200 kV

**Problem Statement:**

The “Rider 50” and “No. 1 & No. 4 transf.” 138 kV breakers at Glen Falls 138 kV substation are overdutied due to generation retirement driven system upgrade b2996.

**Existing Facility Rating:** 5000 MVA

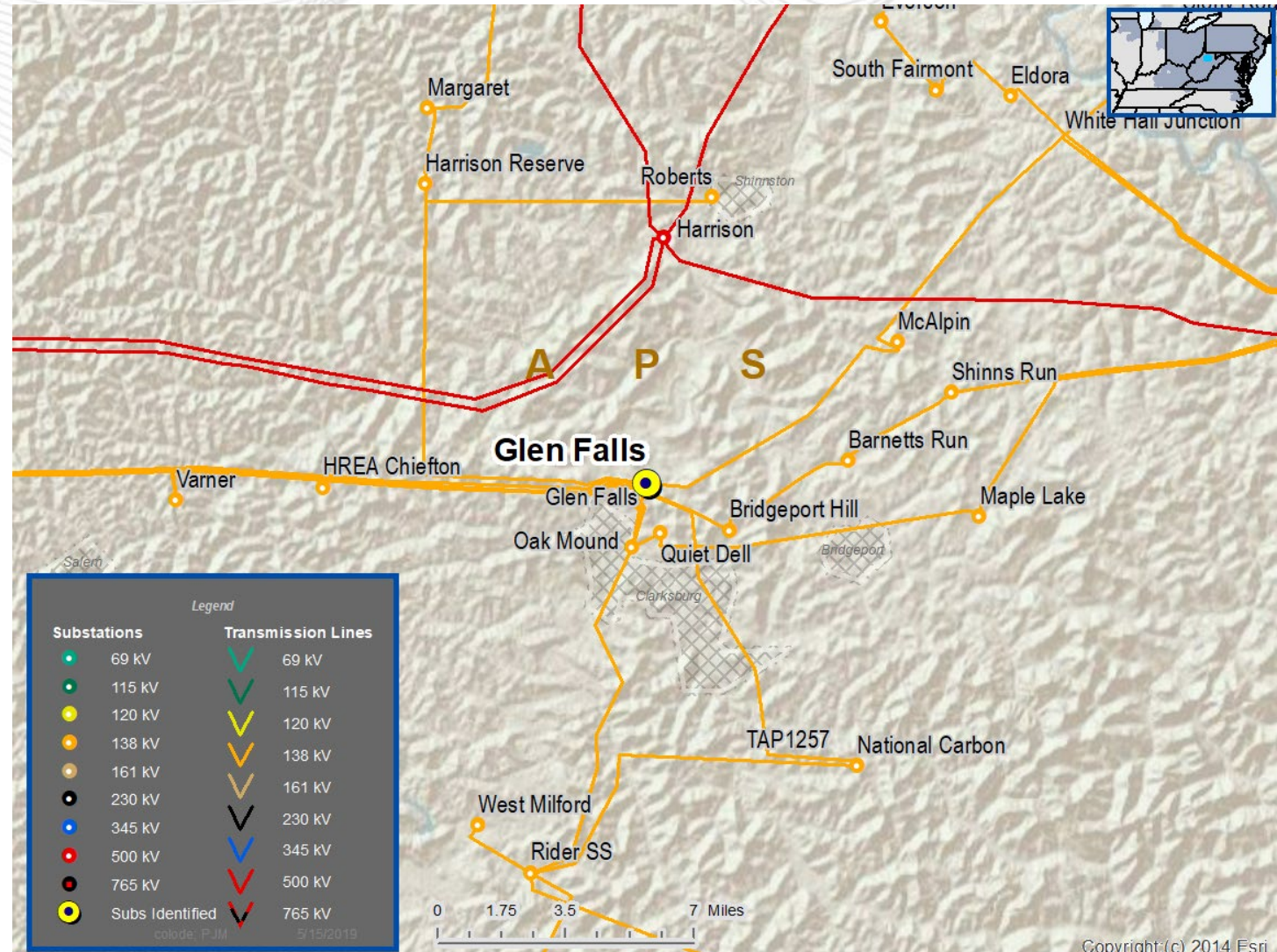
**Proposed Solution (b2996.3):**

Replace two 138 kV breakers (Rider 50 and #1/4 transformer breaker) at Glen Falls 138 kV substation with 63 kA breakers

**Estimated Cost:** \$ 487 k

**Alternatives:** N/A

**Required In-Service:** 5/31/2020





# Next Steps

## Upcoming Western SRRTEP Dates

West	Start	End
10/25/2019	9:00	1:00

Questions?





# Revision History

9/18/2019 – V1 – Original version posted to [pjm.com](http://pjm.com)

9/25/2019 – V2 – Moved “Next Steps” slide to page 9

10/22/2019 – V3 – Slide #5, Corrected Required IS Date to 12/1/2024