Transmission Expansion Advisory Committee

- **A PJM stakeholder committee that advises on the development of the PJM regional transmission plan. It is a public forum where PJM staff, stakeholders, and members can discuss and review proposed transmission expansion projects, study assumptions, and project results.**

TEAC
EKPC Supplemental Projects

May 6, 2025

Solution

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

EKPC Transmission Zone M-3 Process
Maysville, KY/Mason County, KY/Spurlock, KY/Maysville, KY

Need Number: EKPC-2025-001

Process Stage: Solution Meeting TEAC - 05/06/2025

Previously Presented: Need Meeting 03/04/2025

Project Driver: Customer Service

Specific Assumption References:

EKPC Local Planning Assumptions - slide 15

Problem Statement:

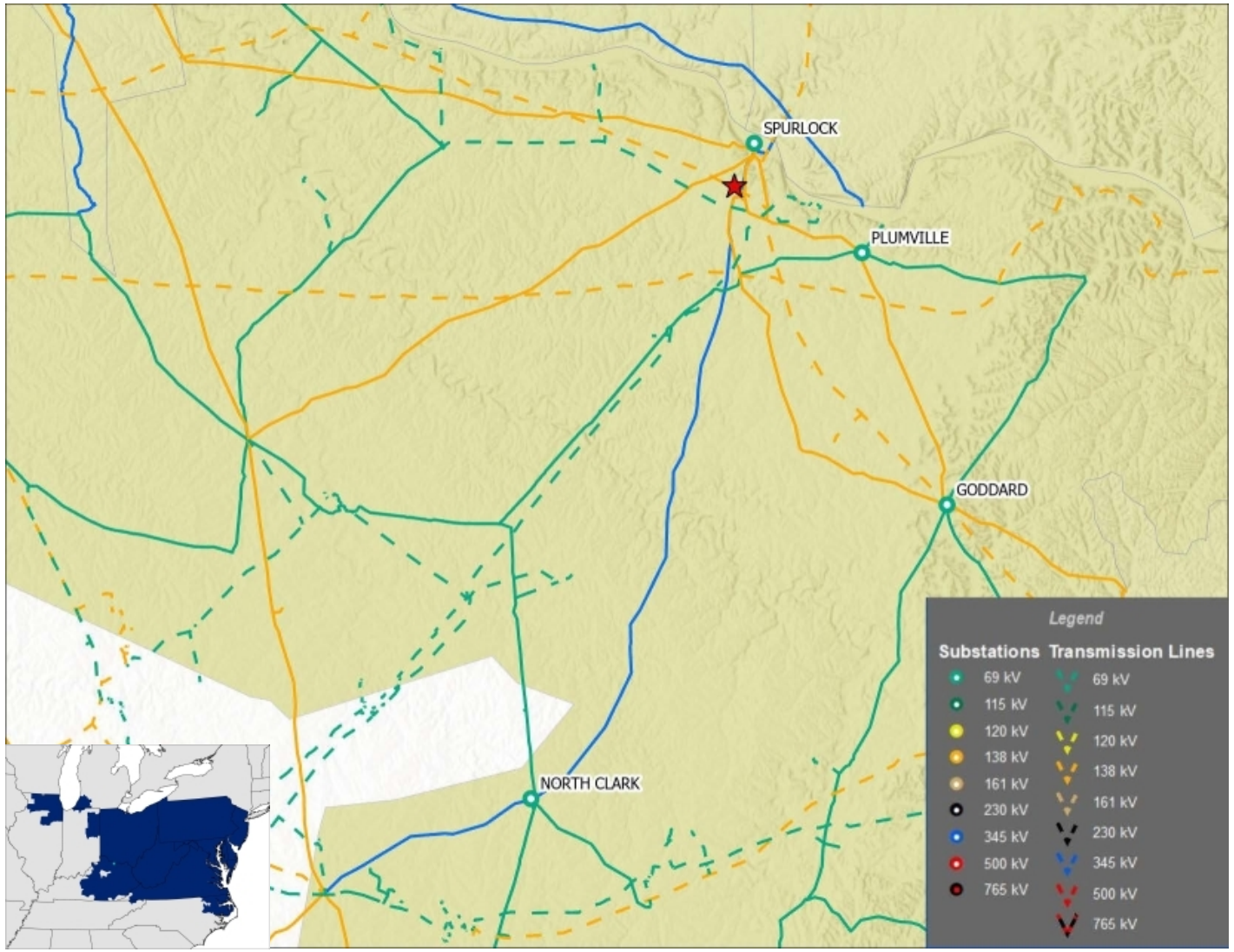
A new customer has requested transmission service in Mason County, KY.

The initial load is expected to be 110 MW by 12/2026. With a load ramp schedule as follows:

530 MW by 2/2028

850 MW by 8/2028

2200 MW by 1/2031



EKPC Transmission Zone M-3 Process
Maysville, KY/Mason County, KY/Spurlock, KY/Maysville, KY

Need number(s): EKPC-2025-001 (continued)

Process Stage: Solution Meeting TEAC - 05/06/2025

Proposed Solution:

The customer will initially take distribution service for construction power. The potential transmission solution requires work to be performed by two utilities, East Kentucky Power Cooperative (EKPC) and Dayton Power & Light (DP&L) to meet the customers time line and load ramp schedule. The potential solution will consist of four phases the first (Phase 0) being temporary enables EKPC to meet the requested load ramp schedule and provide service to the customer quickly. The overall plan for the potential solution involves looping in the existing Spurlock – North Clark 345 kV line, constructing two new 345 kV lines from EKPC's Spurlock Station and two new 345 kV lines from DP&L's Stuart substation to the site.

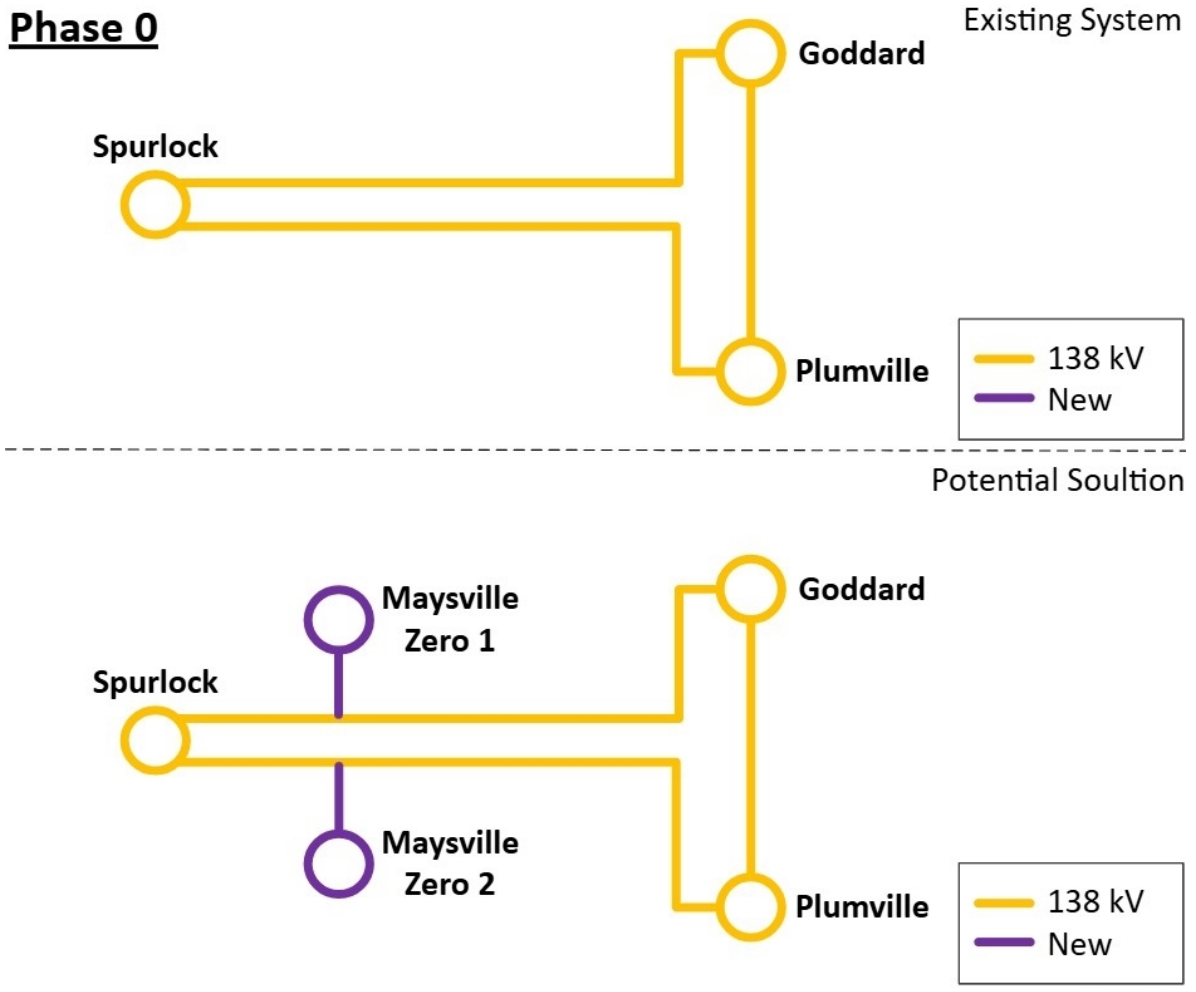
Within the site, a campus of three 345/138 kV switching stations will provide the customer service at 138 kV. These three substations within the campus will be configured in a "ring" configuration to provide ties within the campus in the event of loss of sources into each of the substations.

Phase 0: Construct two ~1.5 miles 138 kV temporary tap lines to extend from the Spurlock - Goddard 138 kV and Spurlock - Plumville 138 kV lines. Customer to take 138 kV service.

Estimated Transmission Cost: $0 M

Projected In-Service: 12/19/2026

NOTE: All associated costs is borne by the customer.



EKPC Transmission Zone M-3 Process
Maysville, KY/Mason County, KY/Spurlock, KY/Maysville, KY

Need number(s): EKPC-2025-001 (continued)

Process Stage: Solution Meeting TEAC - 05/06/2025

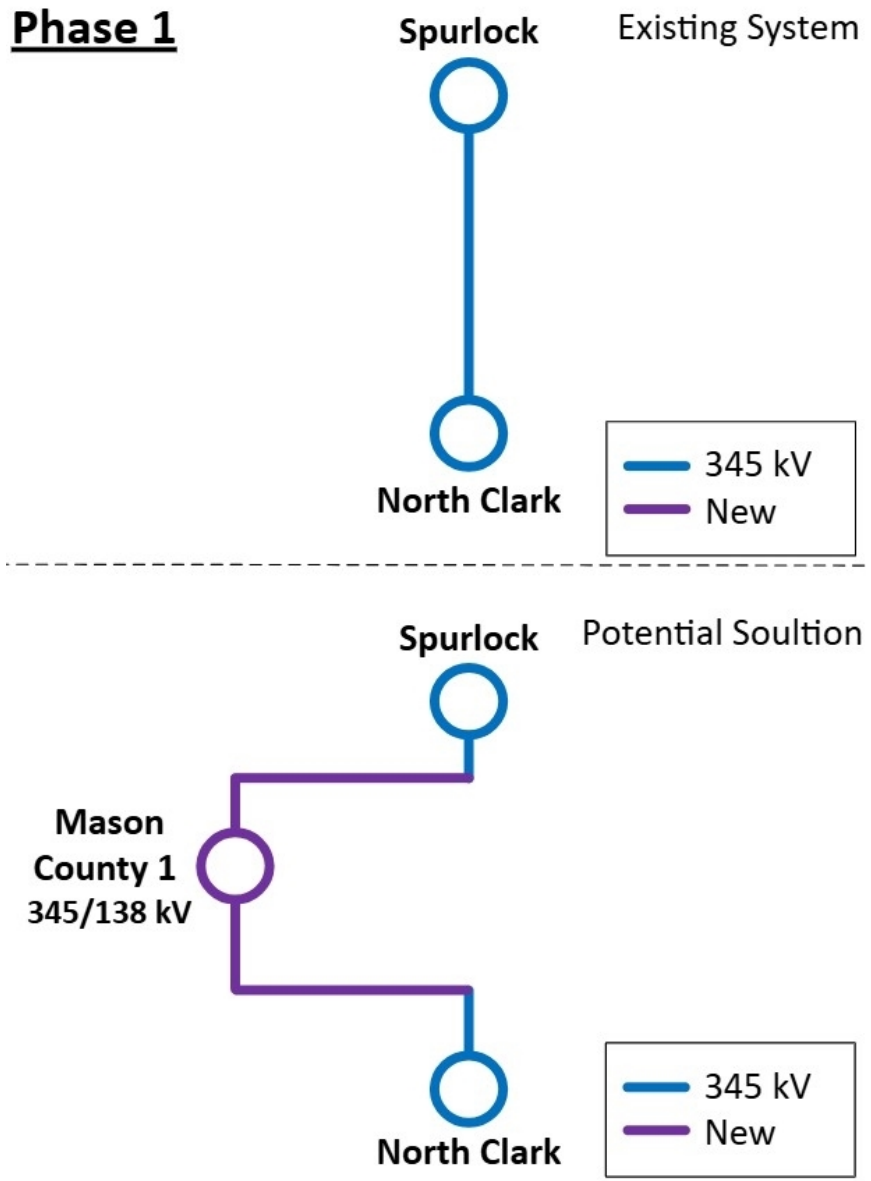
Proposed Solution:

Phase 1: Construct a new 345/138 kV switching station (Mason County 1) with six 3000 A, 63 kA, 345 kV circuit breakers and fifteen 3000 A, 63 kA, 138 kV breakers and two 345/138 kV transformers. EKPC will intercept the Spurlock - North Clark 345 kV line and extend it approximately 1.5 miles into the new substation Mason County 1.

Estimated Transmission Cost: $122 M

Projected In-Service: 5/28/2027

NOTE: All associated costs is borne by the customer.



EKPC Transmission Zone M-3 Process
Maysville, KY/Mason County, KY/Spurlock, KY/Maysville, KY

Need number(s): EKPC-2025-001 (continued)

Process Stage: Solution Meeting TEAC - 05/06/2025

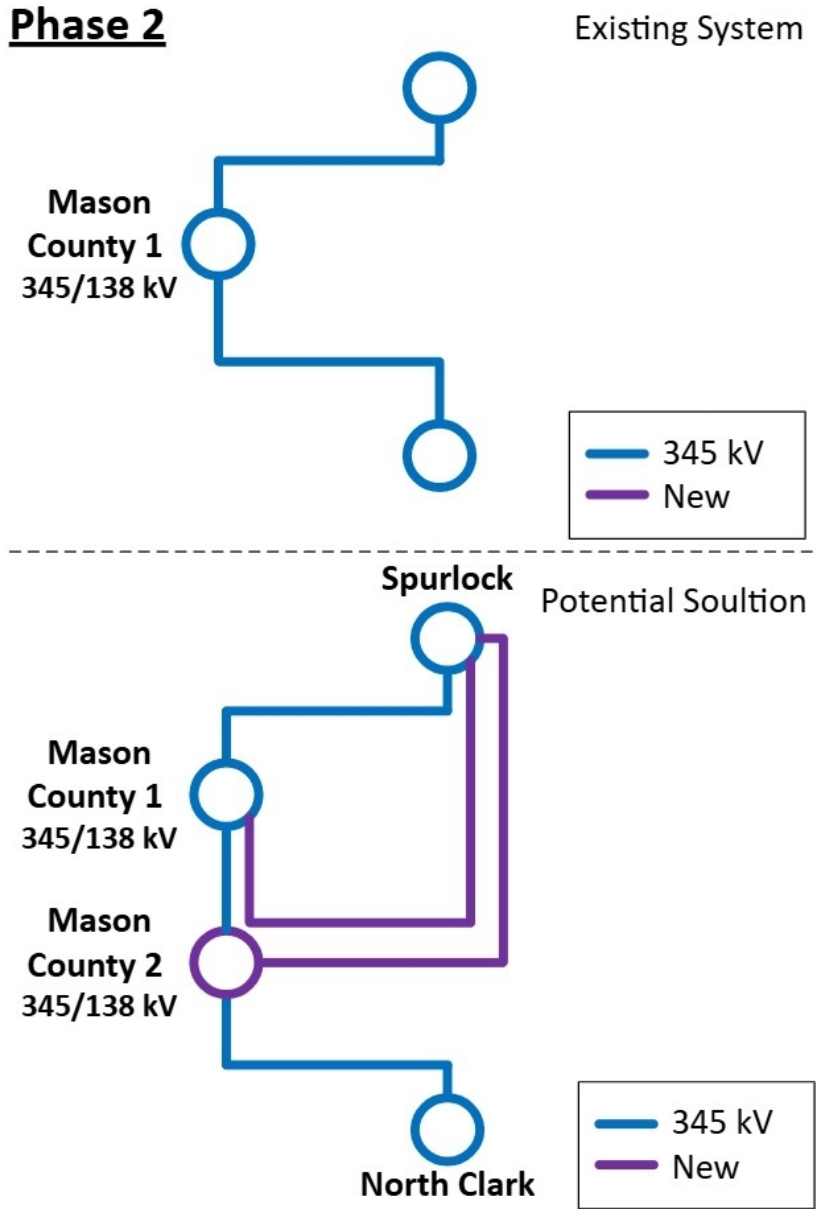
Proposed Solution:

Phase 2: Expand the Mason County 1 345/138 kV station and install three addition 3000 A, 63 kA, 345 kV circuit breakers and eleven additional 3000 A, 63 kA, 138 kV breakers and one additional 345/138 kV transformer. Construct a new 345/138 kV switching station (Mason County 2) with eight 3000 A, 63 kA, 345 kV circuit breakers and six 3000 A, 63 kA, 138 kV breakers and two 345/138 kV transformers. Construct a new approximately 4.0-mile 345 kV double circuit from EKPC's Spurlock. Terminating on side at Mason County 1 and the other at Mason County 2. Break the existing Mason County 1 - North Clark 345 kV line and re-terminate the North Clark side at Mason County 2. Repurpose the remaining portion of the line as a tie between Mason County 1 and Mason County 2.

Estimated Transmission Cost: $182.35 M

Projected In-Service: 3/11/2028

NOTE: All associated costs is borne by the customer.



EKPC Transmission Zone M-3 Process
Maysville, KY/Mason County, KY/Spurlock, KY/Maysville, KY

Need number(s): EKPC-2025-001 (continued)

Process Stage: Solution Meeting TEAC - 05/06/2025

Proposed Solution:

Phase 3: Expand the Mason County 2 345/138 kV station and install three addition 3000 A, 63 kA, 345kV circuit breakers and fourteen additional 3000 A, 63 kA, 138kV breakers and one additional 345/138 kV transformer. Construct a new 345/138 kV switching station (Mason County 3) with eight 3000 A, 63 kA, 345kV circuit breakers and seventeen 3000 A, 63 kA, 138kV breakers and two 345/138 kV transformers. Construct a new approximately 11.0-mile 345 kV double circuit from DP&L's Stuart station. Terminating on side at Mason County 2 and the other at Mason County 3. Remove temporary Phase 0 construction. Total load to be served from the 345/138 kV stations.

Estimated Transmission Cost: $262 M

Projected In-Service: 9/01/2028

Total Transmission Cost Estimate: $566.35 M

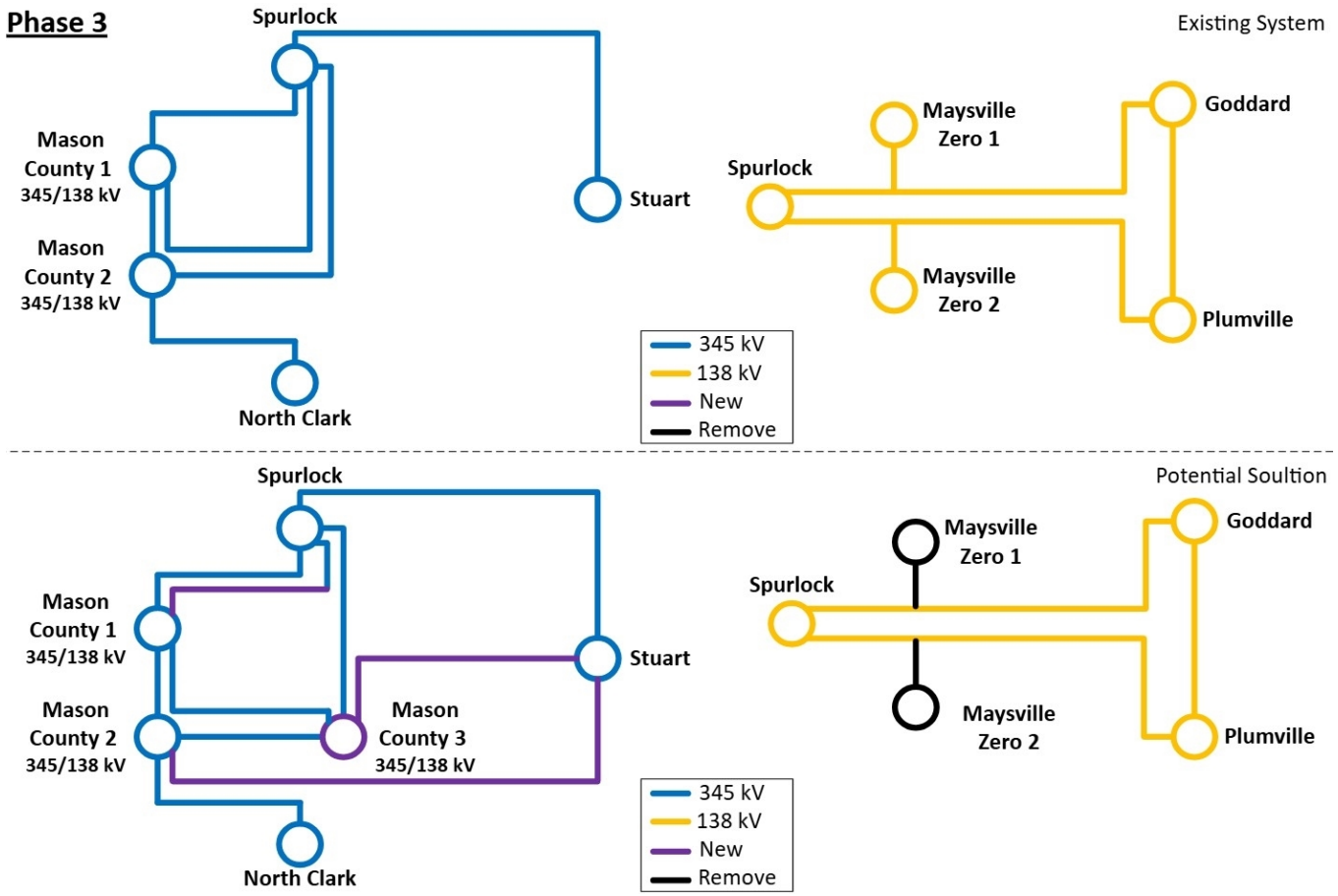
Alternatives Considered:

No reasonable alternatives to provide request load in the timeline provided by the customer.

Project Status: Engineering

Model: N/A

NOTE: All associated costs is borne by the customer.



Appendix

High Level M-3 Meeting Schedule

Assumptions

Activity	Timing
Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
Stakeholder comments	10 days after Assumptions Meeting

Needs

Activity	Timing
TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
Stakeholder comments	10 days after Needs Meeting

Solutions

Activity	Timing
TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
Stakeholder comments	10 days after Solutions Meeting

Submission of Supplemental Projects & Local Plan

Activity	Timing
Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
Post selected solution(s)	Following completion of DNH analysis
Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

4/25/2025 – V1 – Original version posted to pjm.com