

Commerce - East Maysville Area Study

October 2024

TPWG

REDACTED

REDACTED

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Background

In October 2021, Georgia Power was awarded a new customer choice load in the Commerce-East Maysville area. The REDACTED REDACTED REDACTED is an existing customer with load currently served by the East Maysville substation. The customer is expanding and projected to reach a maximum of REDACTED of additional load by end of 2030. The projected load growth profile for the REDACTED load is shown below in Table 1. An N-1 analysis was performed to evaluate the impact of this load addition to the area transmission system.

Table 1 - Projected Growth Profile for NGDC Load (Load projections as of October 2024)

Year	2026	2027	2028	2029	2030	2031	2032	2033	2034
Load (MW)	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED

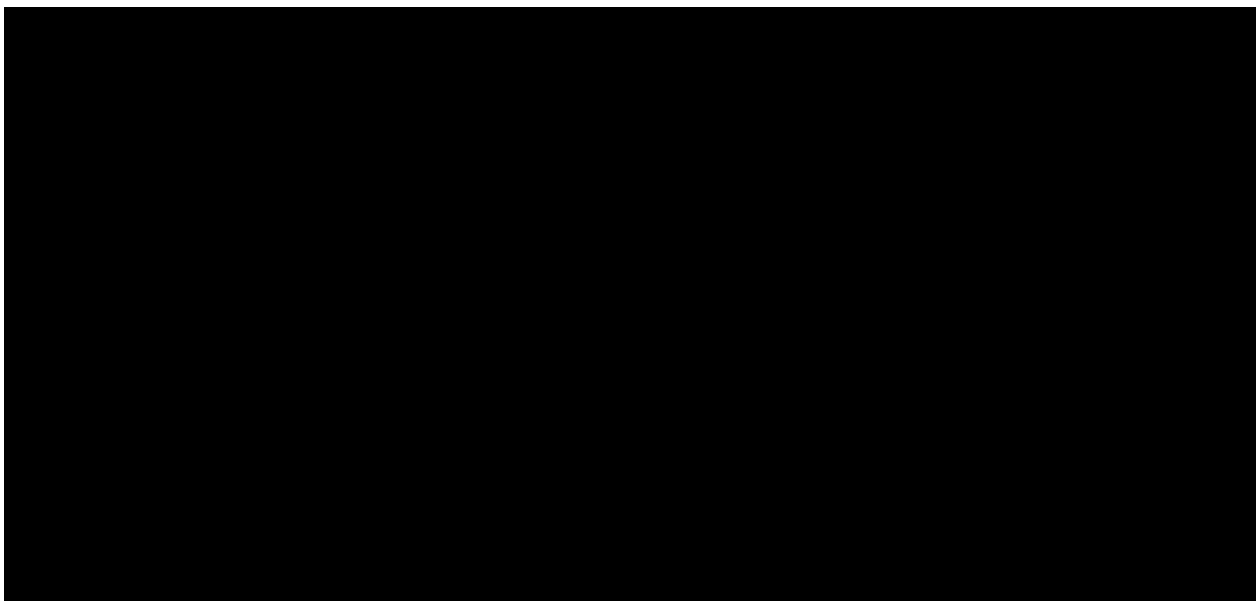
Method of Service

Initially, Midway substation will be radially served from the Banks Crossing substation until the completion of the GTC sponsored project to construct a 115 kV transmission line from the McClure Industrial substation to the East Maysville tap point by summer 2025. This will create the Banks Crossing – Pond Fork 115 kV network line. Beginning in 2026, Midway will be served from the new Gravelly Creek 115 kV switching station via a new 115kV transmission line to East Maysville. See **Table 2** for a summary of the method of service and **Figure 2** for the arial diagram.

Table 2 - Method of Service Summary for North Georgia Data Center Load

Year	Facility	Scope
2023	Midway 115/25 kV Substation	Construct Midway 115/25 kV Substation
2026	Gravelly Creek 115 Switching Station	Construct Gravelly Creek 115 kV Switching Station
2026	East Maysville – Gravelly Creek 115 kV	Construct ~4-mile 115 kV line with 100C 1351 ACSR conductor
2026	East Maysville 115 kV Tap	Add N.O.P: BLD 223

Figure 2 – Method of Service Diagram



Problem Statements

An N-1 analysis was performed with the REDACTED load modeled as depicted in **Table 1**. The following thermal and voltage constraints were identified:

- **Base Violation**
 - East Maysville 115 kV Tap beginning in 2030
- **Loss of REDACTED REDACTED REDACTED REDACTED results in thermal constraints on the following transmission line:**
 - Center Primary – Commerce Primary 115 kV Line beginning in 2026
- **Loss of the REDACTED REDACTED REDACTED REDACTED results in thermal constraints on the following transmission lines:**
 - Pond Fork - Gravelly Creek 115 kV Line beginning in 2030.

Recommendation

2024

Commerce Primary - Center Primary 115 kV Line

- Utilize an operating guide to open the REDACTED REDACTED REDACTED 115 kV line section beginning in 2027.

2026

Gravelly Creek - Midway 115 kV Line (REDACTED)

- GPC – Rebuild the ~.7 -mile East Maysville – Midway 115 kV line section with minimum 100C 1351 ACSR conductor¹

2030

Pond Fork 230/115 kV Substation (REDACTED)

- GTC – Install a second 230/115 kV 400 MVA bank at Pond Fork 230/115 kV substation (REDACTED)
- GTC – Terminate the Midway – Pond Fork 115 kV line.

Midway – Pond Fork 115 kV Line (REDACTED)

- GTC – Construct ~6-miles (North Jackson – Gillsville Tap Junction) of 115 kV line with minimum 170C 1351 ACSS conductor utilizing the existing North Jackson – Lawrence Smith 46 kV ROW. (REDACTED)¹
- GPC – Construct ~7-miles (Gillsville Tap Junction - Midway) of 115 kV line with minimum 170C 1351 ACSS conductor utilizing the existing North Jackson – Lawrence Smith 46 kV ROW. (REDACTED)¹

East Maysville 115 kV Tap (REDACTED)

- GPC – Disconnect the East Maysville 115 kV Tap from Midway substation.

Midway 115/25 kV Substation (REDACTED)

- GPC – Terminate the Midway – Pond Fork 115 kV line.

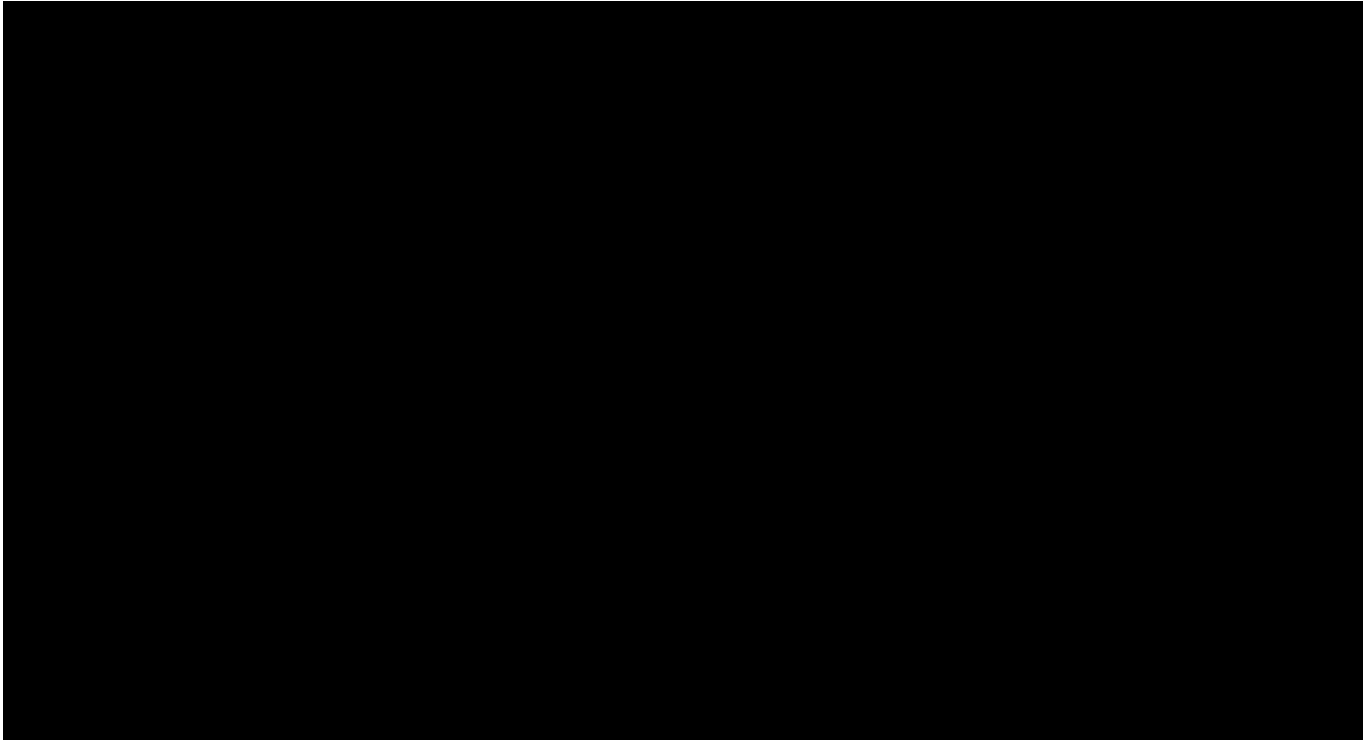
Gillsville 115/25 kV Substation (REDACTED)

- GTC – Convert the 46 kV Gillsville HS to 115 kV

Total Cost: REDACTED

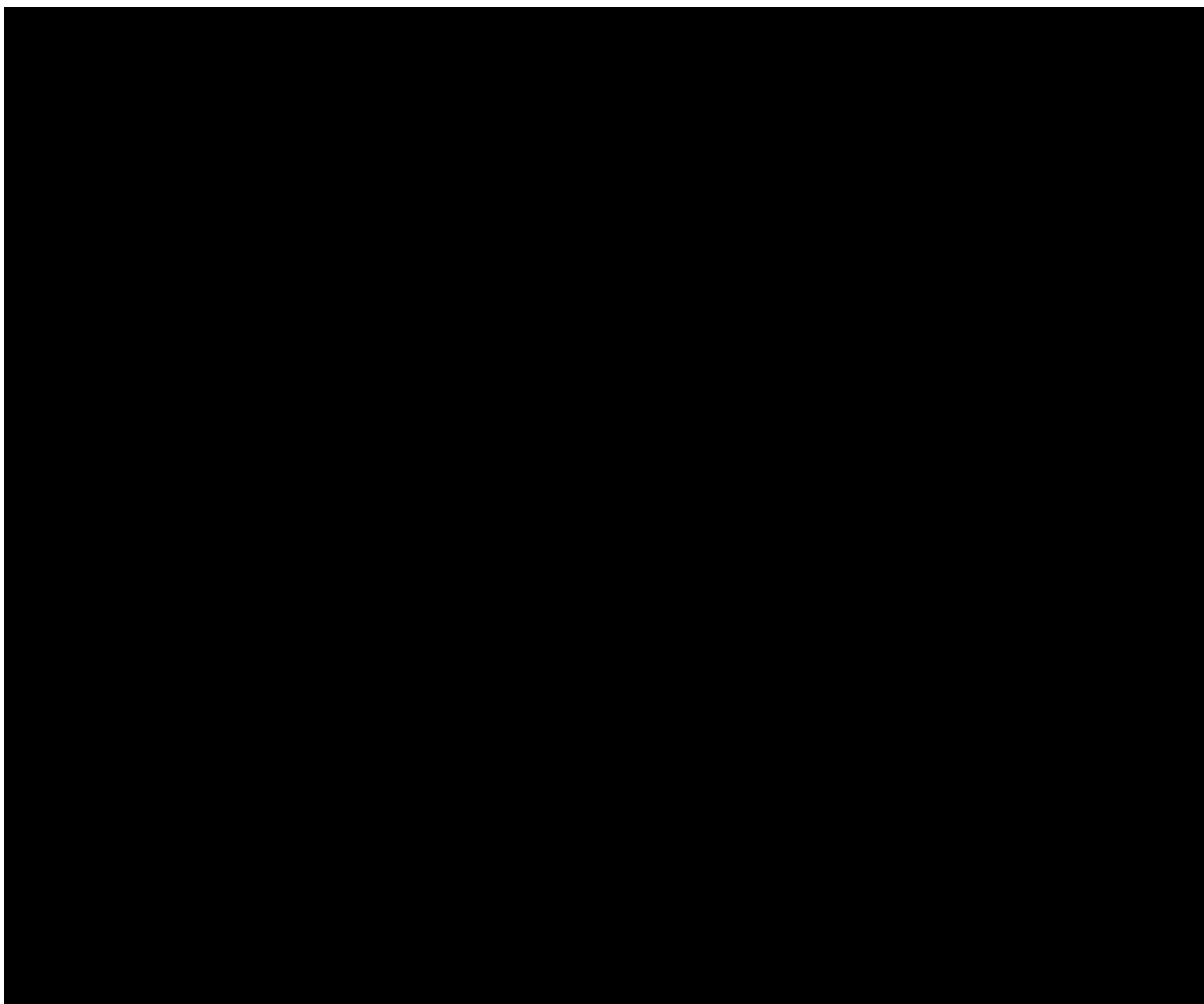
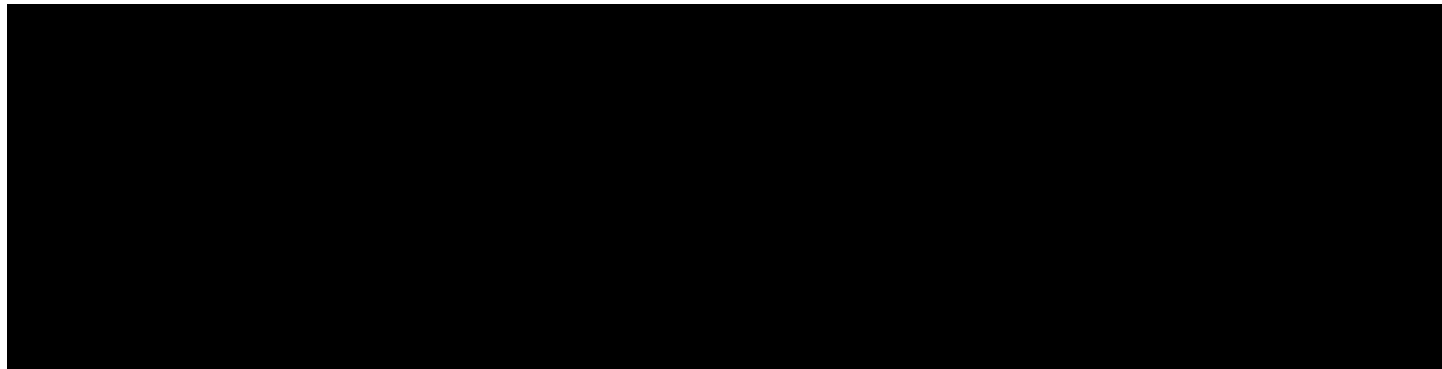
¹ Rebuild costs estimated at REDACTED/mile

The recommended plan of constructing the Midway – Pond Fork 115 kV line alleviates the thermal loading limitations caused by the identified contingencies and does not necessitate brute force rebuilds of existing 115kV lines in the area recently rebuilt with 100C 1351 ACSR conductor. The recommendation additionally utilizes existing right of way of infrastructure designated for retirement and avoids the need for additional right of way acquisition or greenfield construction. The additional source in the area will enhance area reliability by reducing sustained outages to area substations due to transmission line faults. The recommended operating guide for the Commerce Primary – Center Primary 115 kV line will resolve the thermal constraints until there is a permanent resolution.



Appendix A

Base Case N-1 Loading:



Base Case N-1 Loading with preferred Pond Fork – Midway 115kV line:

Loading does not exceed the 75% cutoff for constraints identified in the Base Case N-1 Loading results.