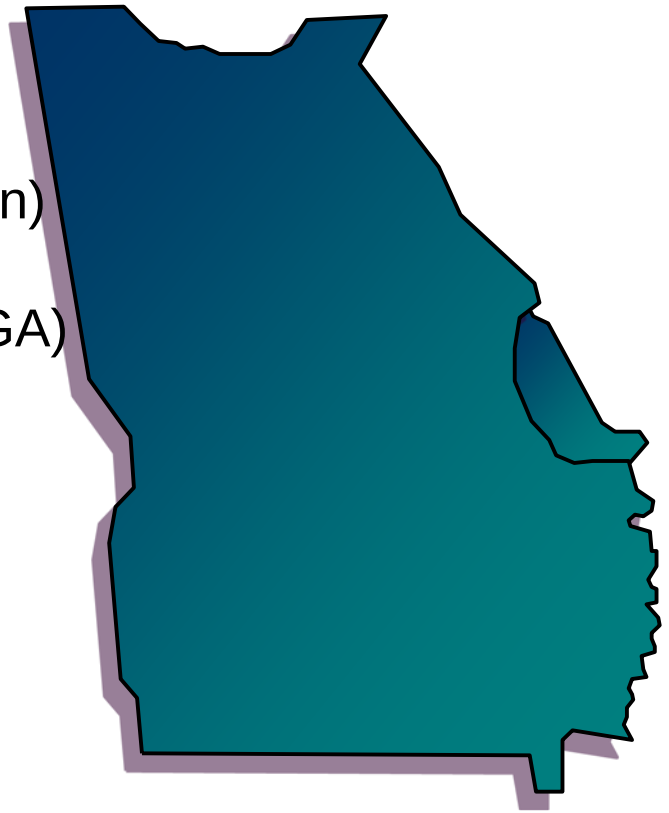
Southeastern Region Transmission Planning

East

- **Dalton Utilities**
- **GTC** (Georgia Transmission Corporation)
- **MEAG** (Municipal Electric Authority of GA)
- **Southern Company Transmission**



Southeastern Region Transmission Planning

Expansion Item E-1

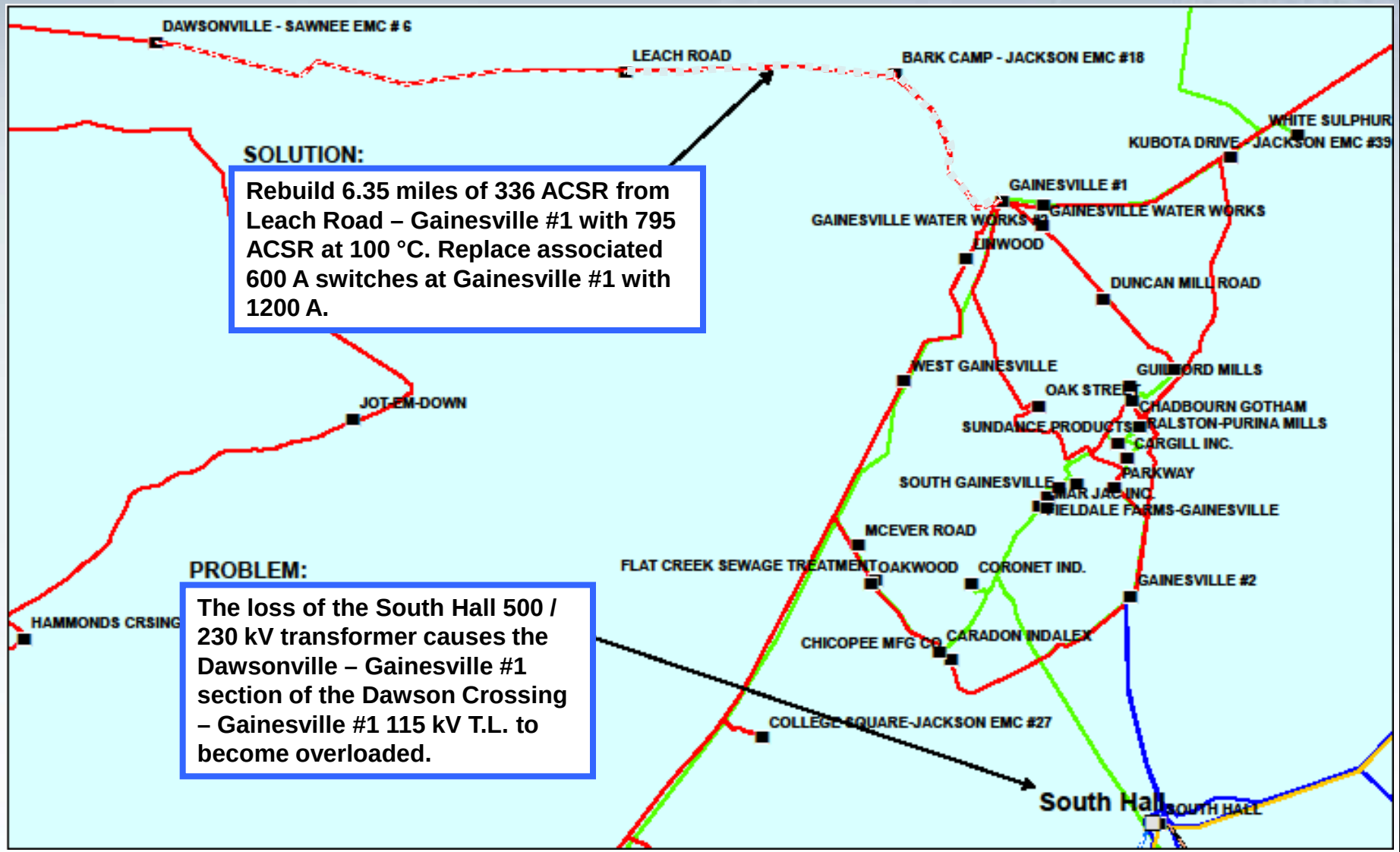
2014

Dawson Crossing – Gainesville #1 115 kV T.L.

- Rebuild approximately 6.35 miles from Leach Road to Gainesville #1 of the Dawson Crossing - Gainesville #1 115 kV T.L. with 795 ACSR

- The loss of the South Hall 500 / 230 kV transformer causes the Dawson Crossing – Gainesville #1 115 kV T.L. to become overloaded.

Dawson Crossing – Gainesville #1 115 kV T.L.



SOLUTION:

Rebuild 6.35 miles of 336 ACSR from Leach Road – Gainesville #1 with 795 ACSR at 100 °C. Replace associated 600 A switches at Gainesville #1 with 1200 A.

PROBLEM:

The loss of the South Hall 500 / 230 kV transformer causes the Dawsonville – Gainesville #1 section of the Dawson Crossing – Gainesville #1 115 kV T.L. to become overloaded.

Southeastern Region Transmission Planning

Expansion Item E-2

2014

McIntosh – Blandford – Meldrim 230 kV T.L.s

- Reconductor 18.2 miles along the McIntosh – Blandford – Meldrim Black and White 230 kV T.L.s.

- The loss of either McIntosh – Meldrim 230 kV T.L. will overload the parallel 230 kV T.L.

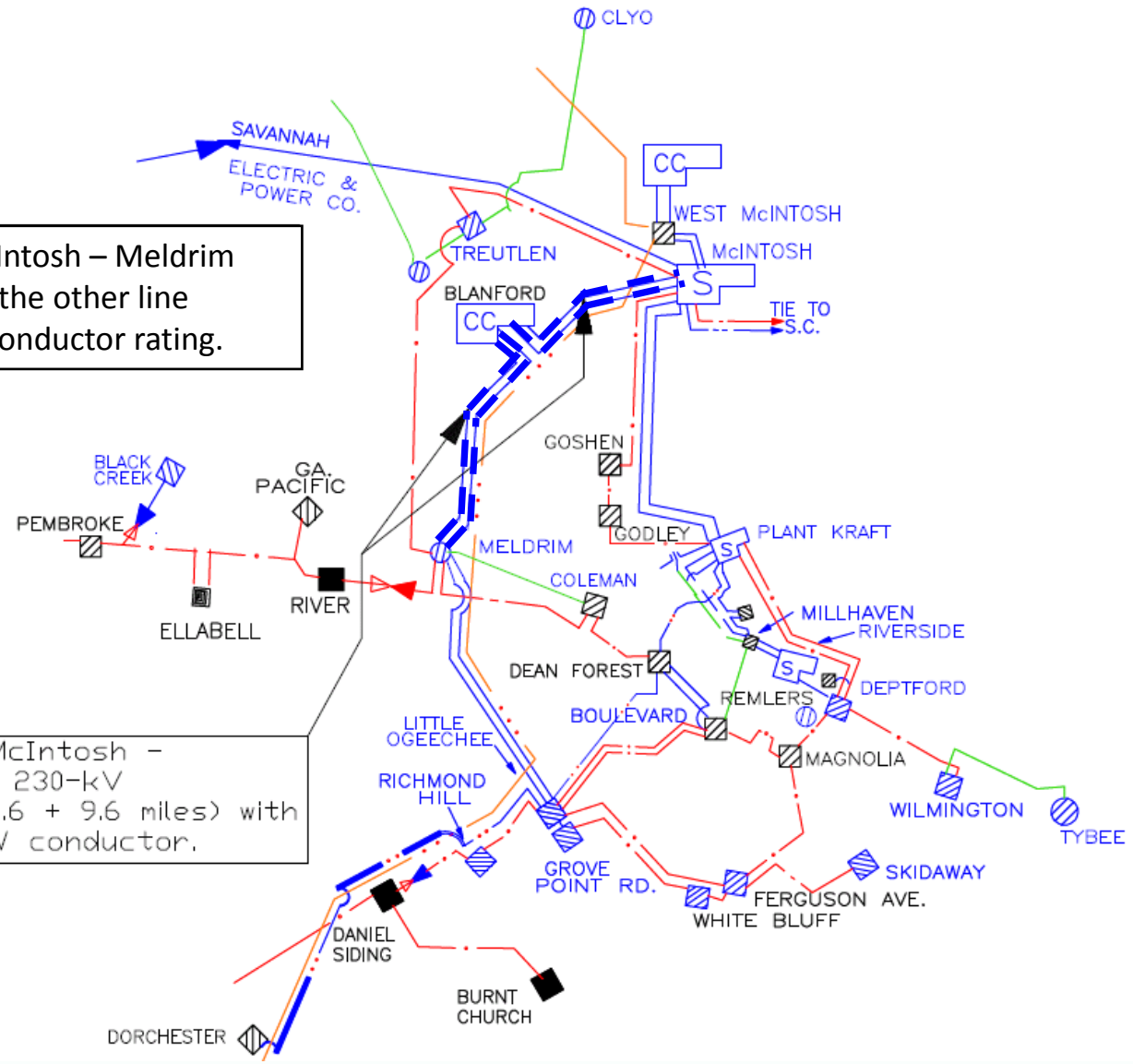
McIntosh – Blandford – Meldrim 230 kV T.L.s

PROBLEM

Loss of one of the McIntosh – Meldrim 230-kV lines will load the other line beyond its 509 MVA conductor rating.

SOLUTION

Re-conductor the McIntosh – Blandford – Meldrim 230-kV Black/White lines (8.6 + 9.6 miles) with 210C 1-1622 ACCR/TW conductor.



Southeastern Region Transmission Planning

Expansion Item E-3

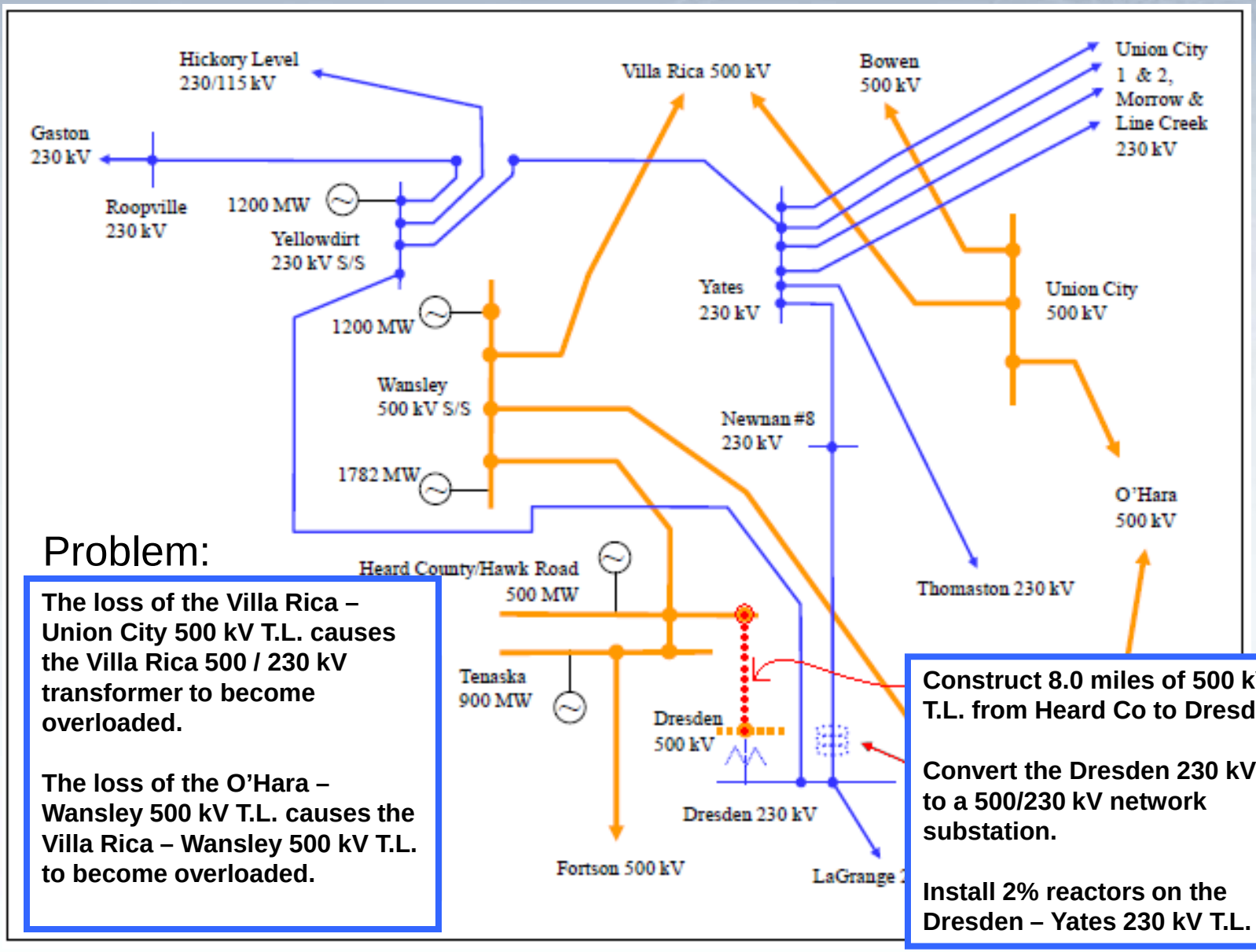
2014

Dresden – Heard County 500 kV T.L.

- Construct 8.0 miles of new 500 kV T.L. from Heard County to Dresden.
- Install a new 500 / 230 kV transformer at Dresden.

- The loss of the Villa Rica – Union City 500 kV T.L. causes the Villa Rica 500 / 230 kV transformer to exceed its thermal rating.
- The loss of the O'Hara – Wansley 500 kV T.L. causes the Villa Rica – Wansley 500 kV T.L. to become overloaded.

Dresden – Heard Co. 500kV T.L.



Problem:

The loss of the Villa Rica – Union City 500 kV T.L. causes the Villa Rica 500 / 230 kV transformer to become overloaded.

The loss of the O'Hara – Wansley 500 kV T.L. causes the Villa Rica – Wansley 500 kV T.L. to become overloaded.

Construct 8.0 miles of 500 kV T.L. from Heard Co to Dresden.

Convert the Dresden 230 kV SS to a 500/230 kV network substation.

Install 2% reactors on the Dresden – Yates 230 kV T.L.

Southeastern Region Transmission Planning

Expansion Item E-4

2014

Dyer Road Substation

- Construct a new 230/115 kV substation at Dyer Road with a 400 MVA transformer.
- Loop in the Thomaston – Yates 230 kV T.L.
- Loop in the Thomaston – Yates and Lagrange Primary – Yates 115 kV T.L.s
- Terminate the East Roanoke – Yates, South Coweta – Yates, and Yates – Newnan Primary 115 kV T.L.s at Dyer Road

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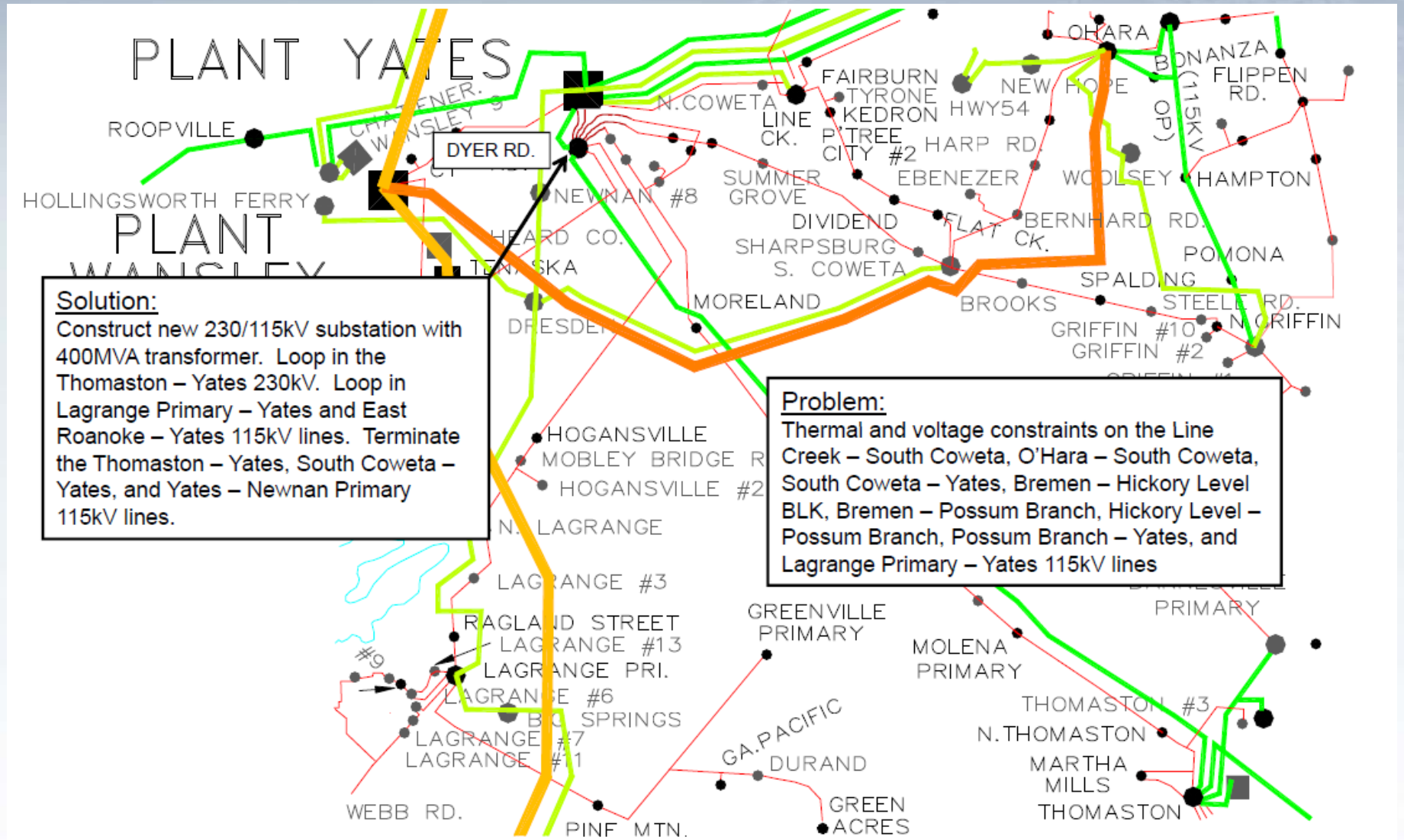
- Alleviates loadings on South Coweta – Yates, O'Hara – South Coweta, Lagrange – Yates, and Yates – Bremen 115 kV T.L.s
- Voltage support.

Dyer Road Substation



Solution:
Construct new 230/115kV substation with 400MVA transformer. Loop in the Thomaston – Yates 230kV. Loop in Lagrange Primary – Yates and East Roanoke – Yates 115kV lines. Terminate the Thomaston – Yates, South Coweta – Yates, and Yates – Newnan Primary 115kV lines.

Problem:
Thermal and voltage constraints on the Line Creek – South Coweta, O'Hara – South Coweta, South Coweta – Yates, Bremen – Hickory Level BLK, Bremen – Possum Branch, Hickory Level – Possum Branch, Possum Branch – Yates, and Lagrange Primary – Yates 115kV lines

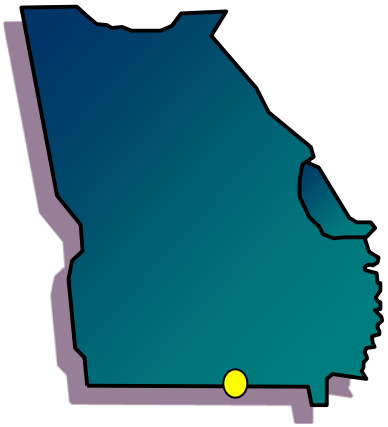
Southeastern Region Transmission Planning

Expansion Item E-5

2014

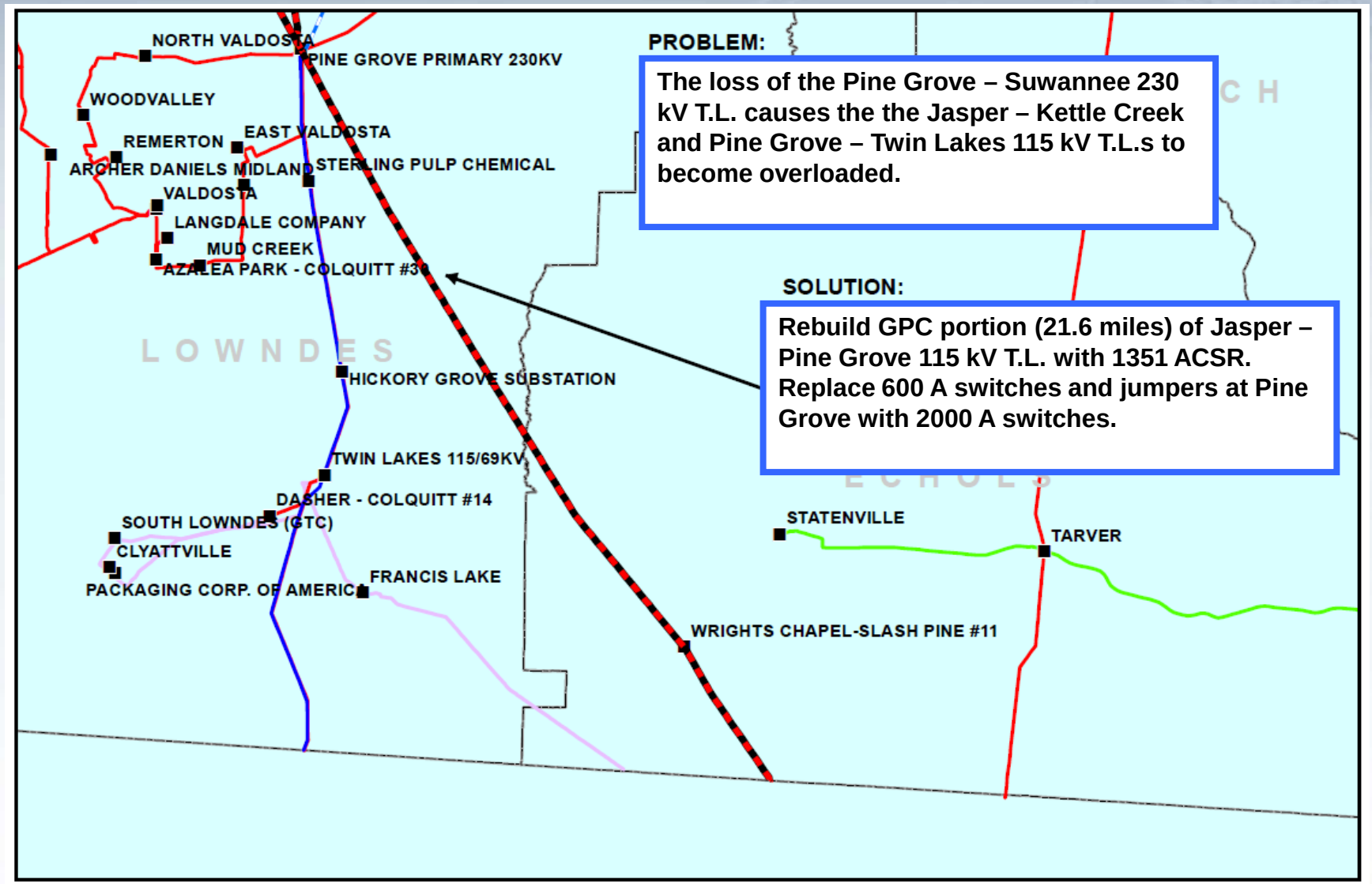
Jasper – Pine Grove 115 kV T.L.

- Rebuild 21.7 miles of the Jasper – Pine Grove 115 kV T.L. with 1351 ACSR at 230 kV specifications.



- The loss of the Pine Grove – Suwannee 230 kV T.L. causes the the Jasper – Kettle Creek and Pine Grove – Twin Lakes 115 kV T.L.s to become overloaded.

Jasper – Pine Grove 115 kV T.L.



Southeastern Region Transmission Planning

Expansion Item E-6

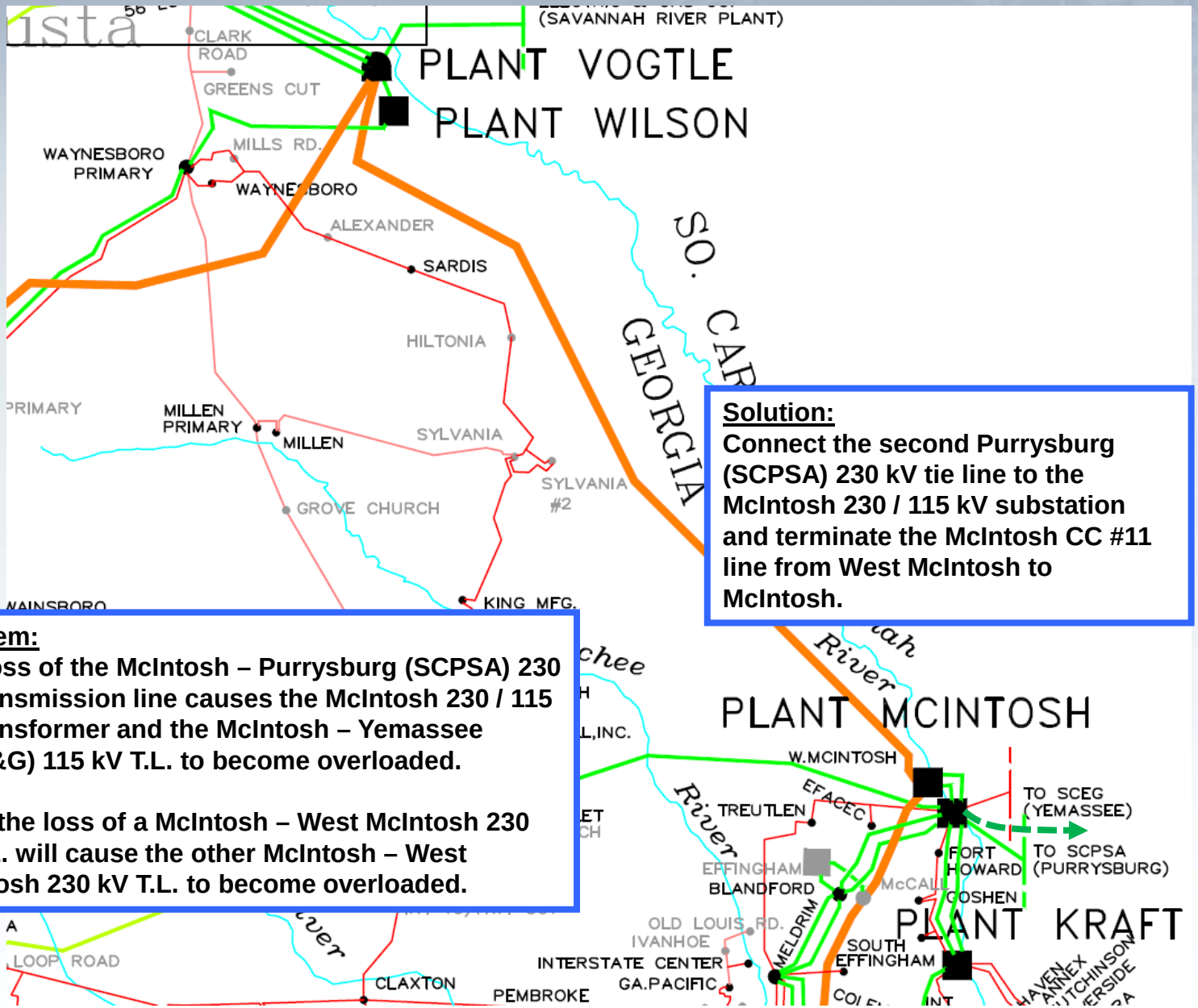
2015

McIntosh – Purrysburg #2 230 kV T.L.

- Connect the second Purrysburg (SCPSA) 230 kV tie line to the McIntosh 230 / 115 kV substation and terminate the McIntosh CC #11 line from West McIntosh to McIntosh. Terminate the McIntosh CC#10 from West McIntosh to McIntosh in 2018.

- The loss of the McIntosh – Purrysburg (SCPSA) 230 kV transmission line causes the McIntosh 230 / 115 kV transformer and the McIntosh – Yemassee (SCE&G) 115 kV T.L. to become overloaded.
- Also, the loss of a McIntosh – West McIntosh 230 kV T.L. will cause the other McIntosh – West McIntosh 230 kV T.L. to become overloaded.

McIntosh – Purrysburg #2 230 kV T.L.



Problem:
The loss of the McIntosh – Purrysburg (SCPSA) 230 kV transmission line causes the McIntosh 230 / 115 kV transformer and the McIntosh – Yemassee (SCE&G) 115 kV T.L. to become overloaded.

Also, the loss of a McIntosh – West McIntosh 230 kV T.L. will cause the other McIntosh – West McIntosh 230 kV T.L. to become overloaded.

Solution:
Connect the second Purrysburg (SCPSA) 230 kV tie line to the McIntosh 230 / 115 kV substation and terminate the McIntosh CC #11 line from West McIntosh to McIntosh.

Southeastern Region Transmission Planning

Expansion Item E-7

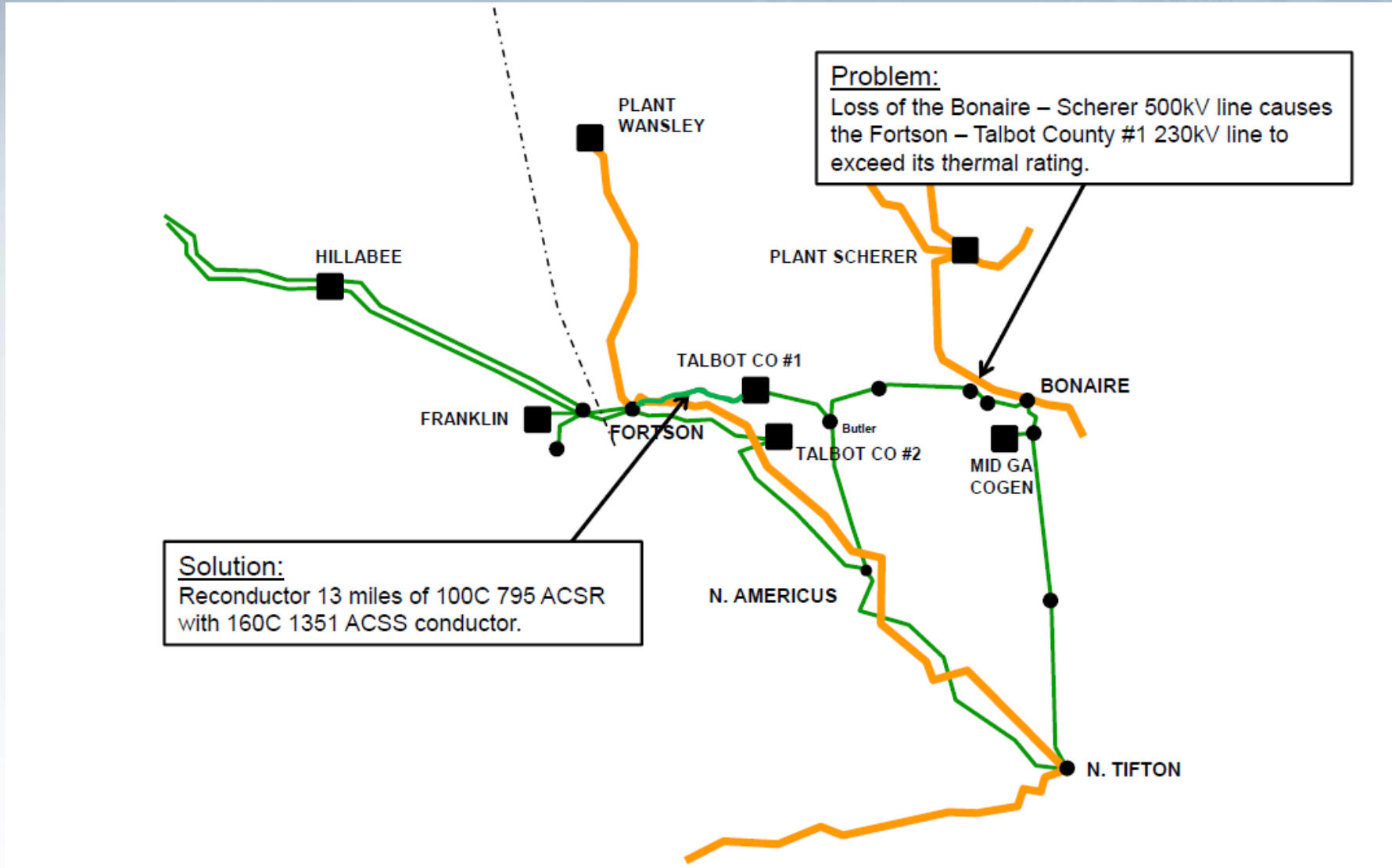
2015

Fortson – Talbot County #1 230 kV T.L.

- Reconductor 13 miles of the Fortson – Talbot County #1 230 kV T.L. with 1351 ACSS at 160 °C

- The loss of the Bonaire – Scherer 500 kV T.L. causes the Fortson – Talbot County #1 230 kV T.L. to become overloaded.

Fortson – Talbot County #1 230 kV T.L.



Southeastern Region Transmission Planning

Expansion Item E-8

2015

Boulevard 230 / 115 kV Project

- Expand the Boulevard 115 kV substation to include a 230 / 115 kV 400 MVA transformer and increase the 115 kV capacitor bank to 60 MVAR.
- Rebuild the Dean Forest – Boulevard 115 kV T.L.s with 1351 ACSS at 170 °C and convert one to 230 kV operation.
- Construct a new 230 kV substation, Crossgate, and loop in the Kraft – McIntosh White 230 kV TL.
- Construct approximately 5.5 miles of new 230 kV T.L. from Crossgate to Dean Forest with 1351 ACSS at 170 °C.
- At Dean Forest substation, expand the 230 kV ring bus and terminate the Boulevard and Crossgate 230 kV T.L.s.

- Loss of one Kraft 230/115 kV autotransformer causes the other to overload beginning in 2015.
- Loss of one Deptford – Kraft 115 kV line causes the other to overload beginning in 2018.

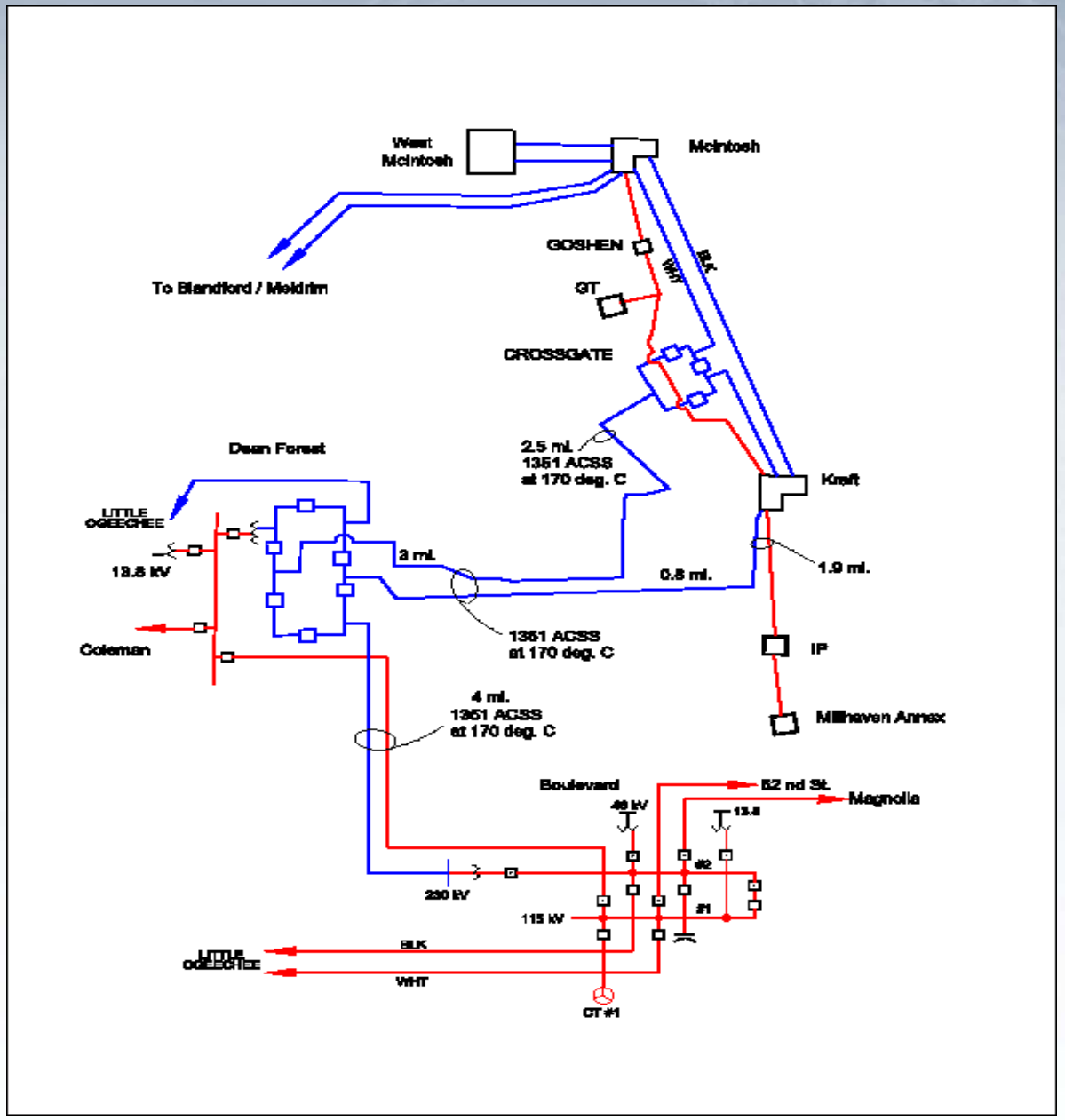
Boulevard 230/115 kV Project

Problem:

The loss of one Deptford – Kraft 115 kV line causes the other to become overloaded. The loss of one Kraft 230 / 115 kV transformer causes the other to become overloaded.

Solution:

Expand the Boulevard 115 kV substation to include a 230 / 115 kV 400 MVA transformer. Rebuild the Dean Forest – Boulevard 115 kV T.L.s and convert one to 230 kV operation. Construct a new 230 kV substation, Crossgate, and loop in the Kraft – McIntosh White 230 kV TL. Construct 5.5 miles of new 230 kV T.L. from Crossgate to Dean Forest. At Dean Forest expand the 230 kV ring bus and terminate the Boulevard 230 kV T.L. and Crossgate 230 kV T.L.



Southeastern Region Transmission Planning

Expansion Item E-9

2015

Dean Forest – Millhaven Annex 115 kV T.L.

- Construct approximately 5.3 miles of 795 ACSR 115 kV transmission line from Dean Forest to Millhaven Annex.

- The loss of the Kraft – Garden City section of the Kraft – Millhaven Annex 115 kV transmission line results in the need for additional voltage support.

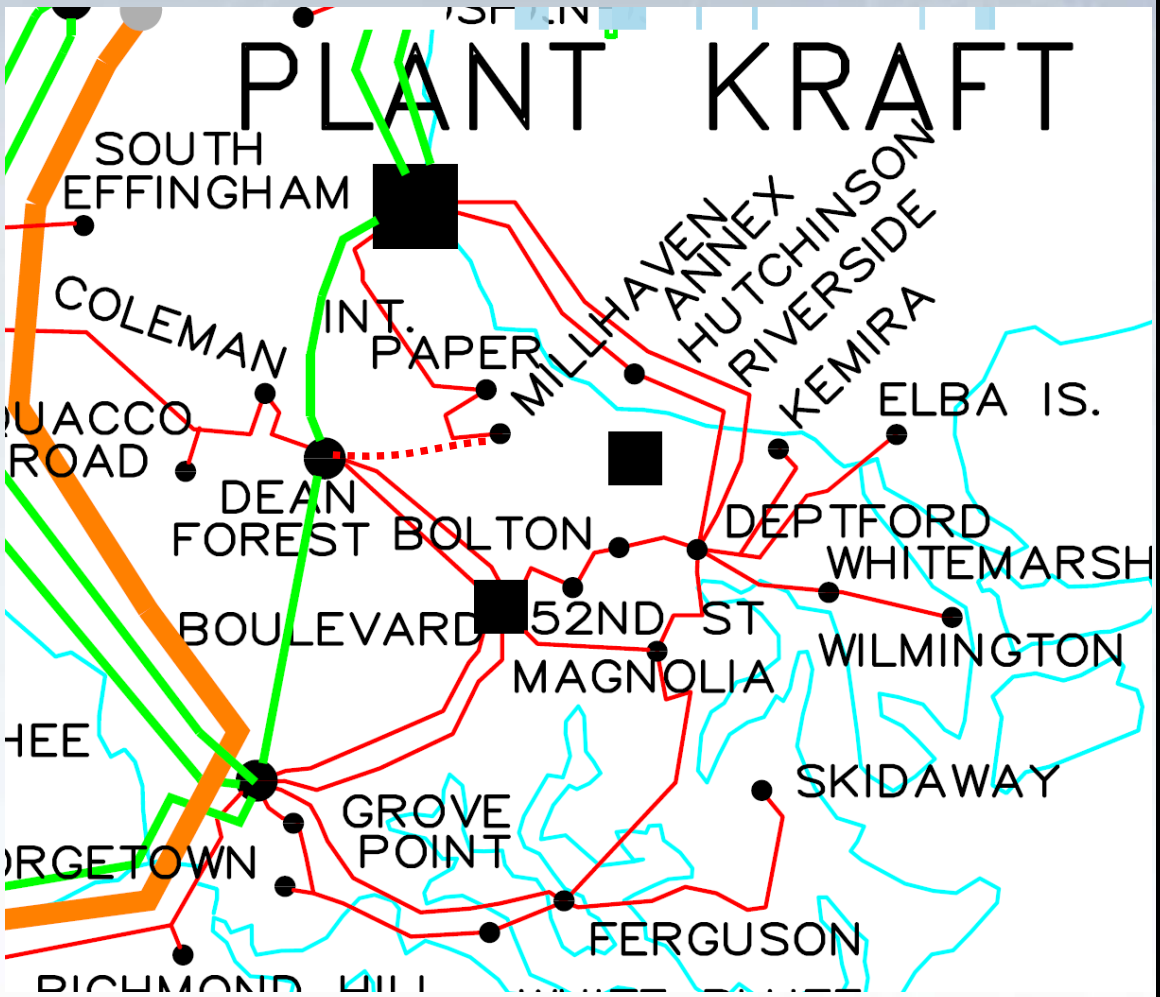
Dean Forest – Millhaven 115 kV T.L.

Problem:

The loss of the Kraft – Garden City section of the Kraft – Millhaven Annex 115 kV transmission line results in the need for additional voltage support.

Solution:

Construct approximately 5.3 miles of 795 ACSR 115 kV transmission line from Dean Forest to Millhaven Annex.



Southeastern Region Transmission Planning

Expansion Item E-10

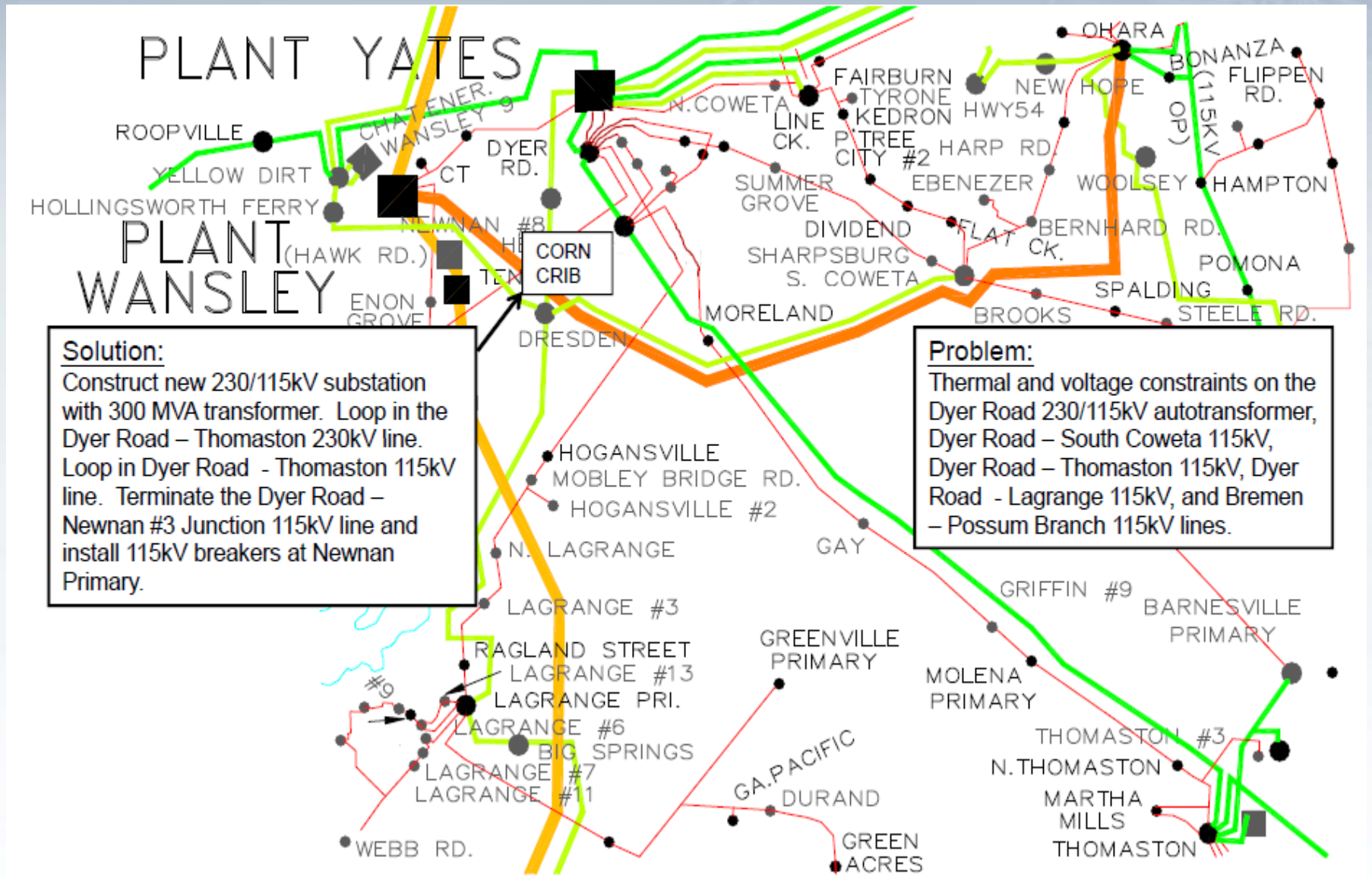
2016

Corn Crib 230 / 115 kV Substation

- Construct the Corn Crib 230 / 115 kV substation, looping the Dyer Road – Thomaston 230 kV T.L. and the Dyer Road – Thomaston 115 kV T.L.. Terminate the Dyer Road – Newnan #3 Junction Transmission Line at Corn Crib.

- Alleviates loadings on the Dyer Road 230/115kV autotransformer, Dyer Road – South Coweta, Dyer Road – Thomaston, Dyer Road – Lagrange, and Bremen – Possum Branch 115kV T.L.s
- Voltage support.

Corn Crib 230 / 115 kV Substation



Solution:
Construct new 230/115kV substation with 300 MVA transformer. Loop in the Dyer Road – Thomaston 230kV line. Loop in Dyer Road - Thomaston 115kV line. Terminate the Dyer Road – Newnan #3 Junction 115kV line and install 115kV breakers at Newnan Primary.

Problem:
Thermal and voltage constraints on the Dyer Road 230/115kV autotransformer, Dyer Road – South Coweta 115kV, Dyer Road – Thomaston 115kV, Dyer Road - Lagrange 115kV, and Bremen – Possum Branch 115kV lines.

Southeastern Region Transmission Planning

Expansion Item E-11

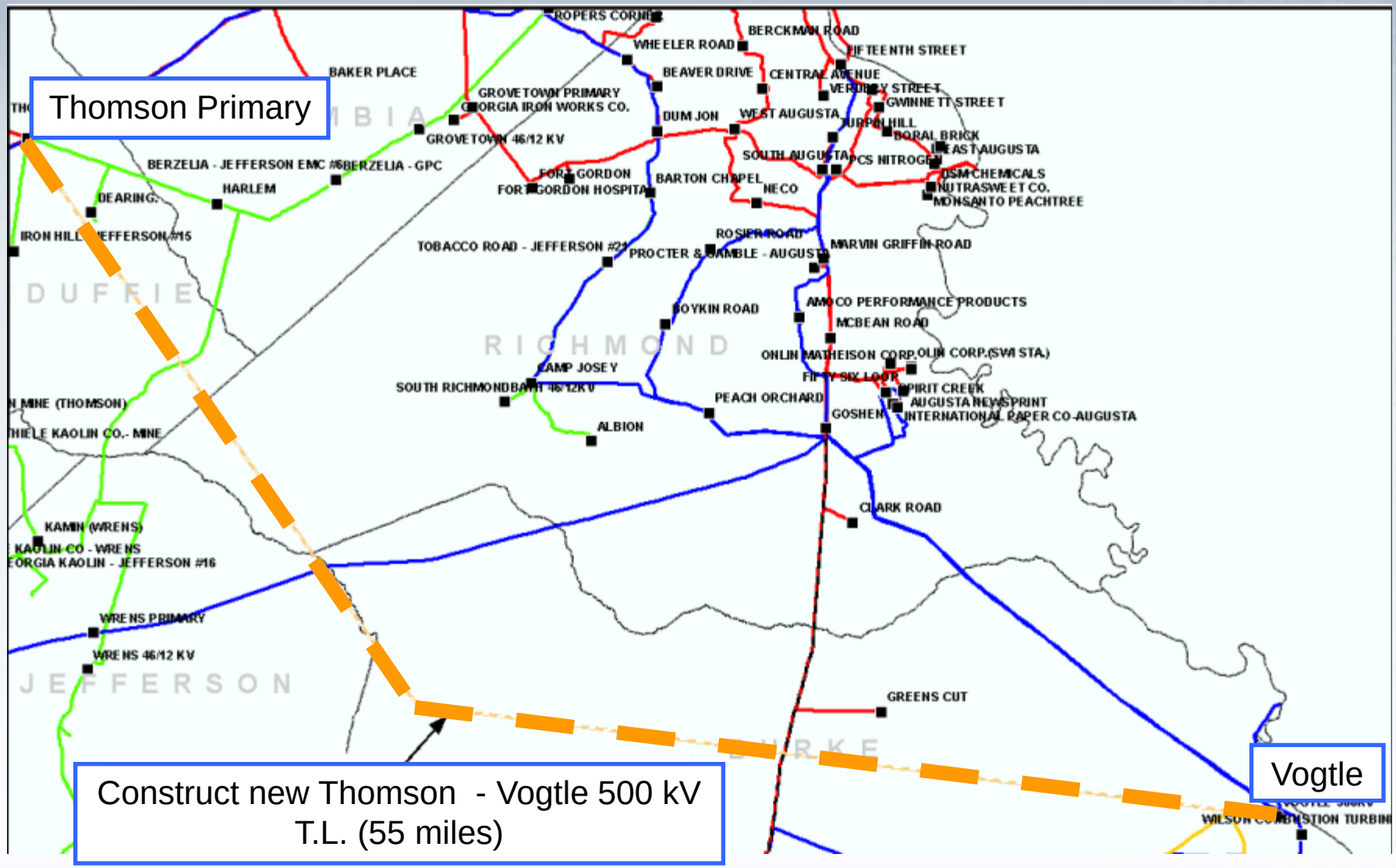
2017

Thomson Primary – Vogtle 500 kV T.L.

- Construct a 500 kV line from Plant Vogtle to the new Thomson Primary 500 / 230 kV substation.

- This project is to support the expansion of Plant Vogtle.

Thomson Primary – Vogtle 500 kV T.L.



Southeastern Region Transmission Planning

Expansion Item E-12

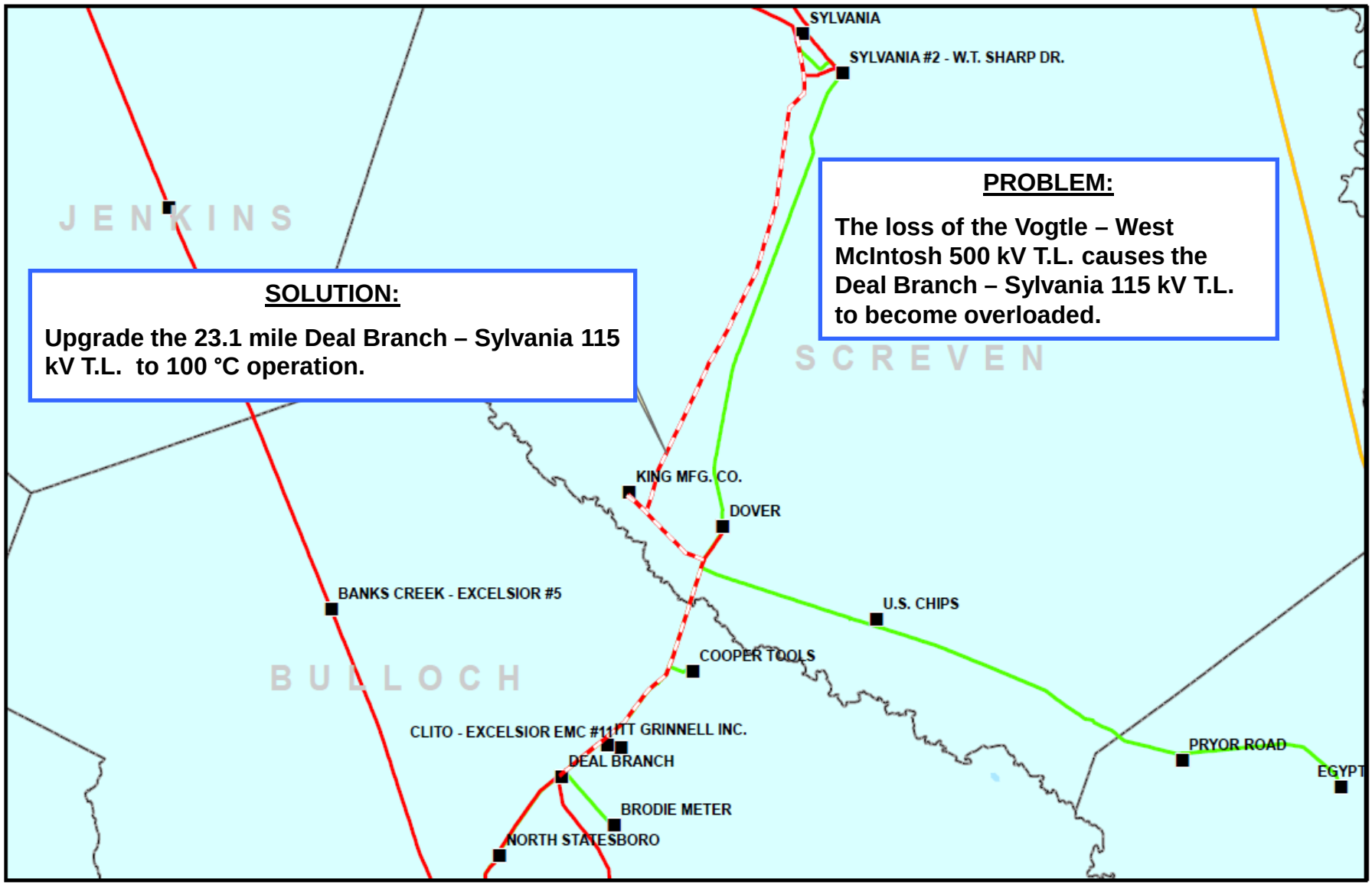
2018

Deal Branch – Sylvania 115 kV T.L.

- Upgrade 23.1 miles along the Sylvania – Deal Branch 115 kV T.L. to 100 °C operation.

- The loss of the Vogtle – West McIntosh 500 kV T.L. causes the Sylvania – Deal Branch 115 kV T.L. to become overloaded.

Deal Branch – Sylvania 115 kV T.L.



PROBLEM:

The loss of the Vogtle – West McIntosh 500 kV T.L. causes the Deal Branch – Sylvania 115 kV T.L. to become overloaded.

SOLUTION:

Upgrade the 23.1 mile Deal Branch – Sylvania 115 kV T.L. to 100 °C operation.

Southeastern Region Transmission Planning

Expansion Item E-13

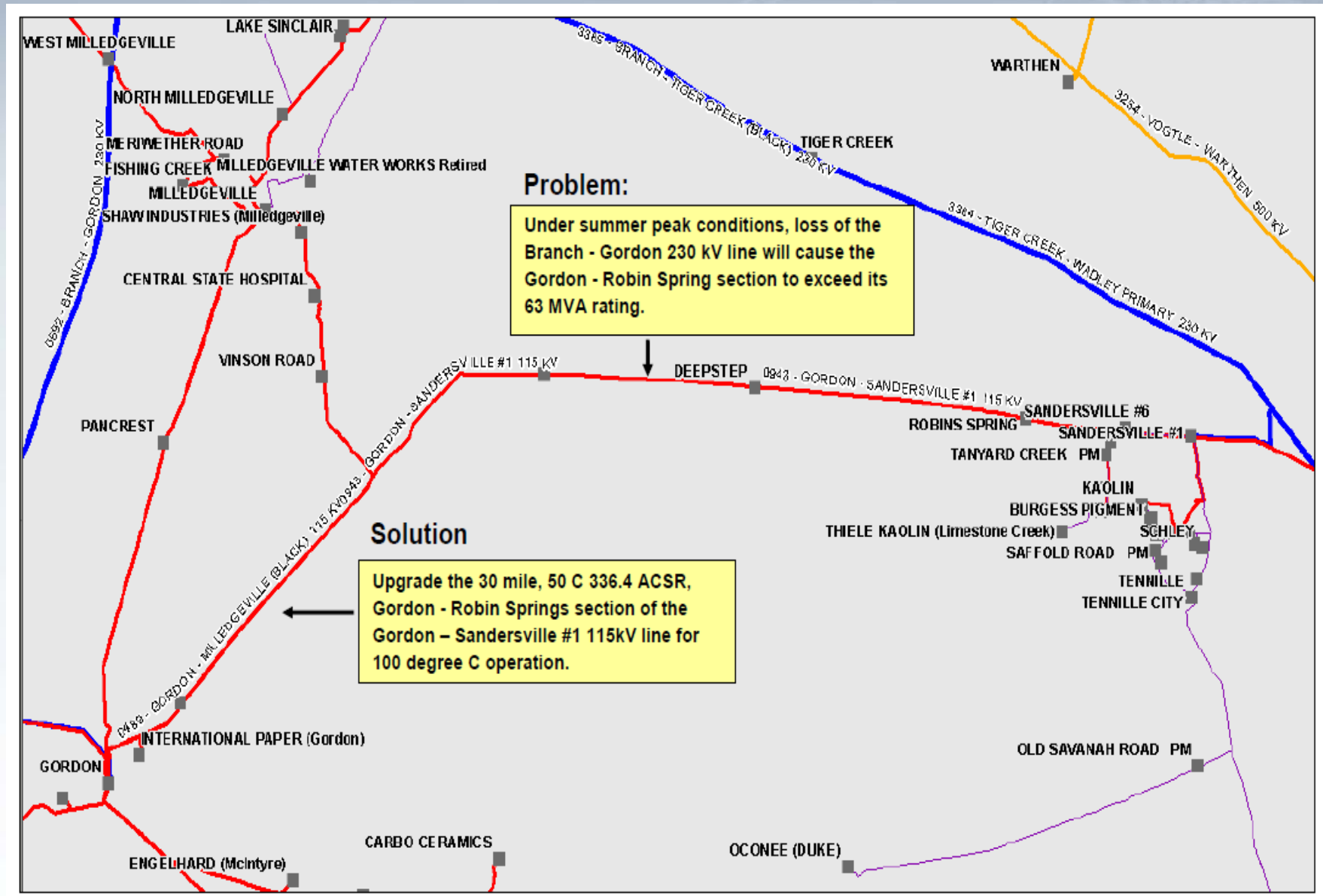
2018

Gordon – Sandersville 115 kV T.L.

- Upgrade 30 miles along the Gordon – Robins Spring section of the Gordon – Sandersville 115 kV T.L. to 100 °C operation.

- The loss of the Branch – Gordon 230 kV T.L. causes the Gordon – Sandersville 115 kV T.L. to become overloaded.

Gordon – Sandersville 115 kV T.L.



Southeastern Region Transmission Planning

Expansion Item E-14

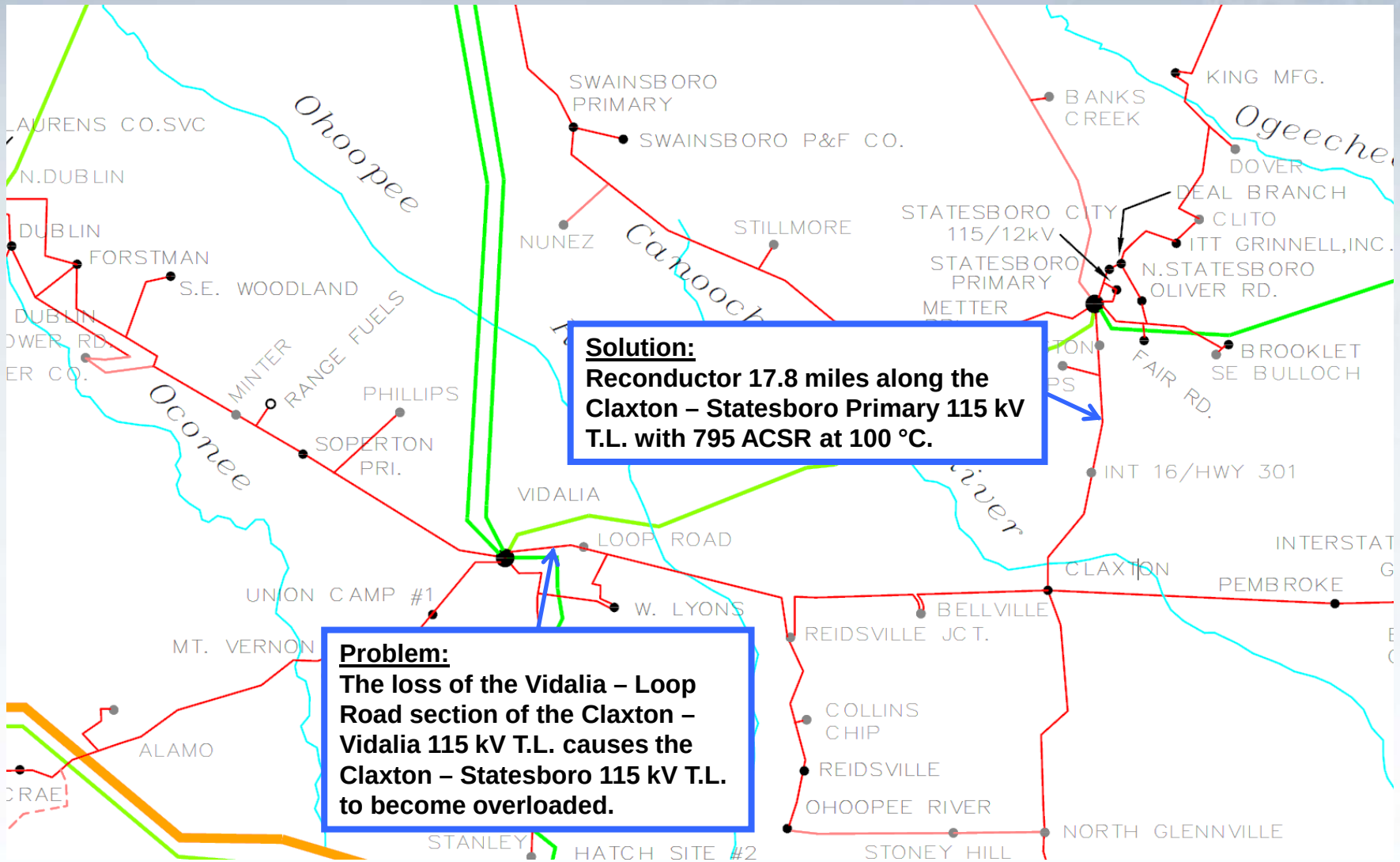
2018

Claxton – Statesboro Primary 115 kV T.L.

- Reconductor 17.8 miles along the Claxton – Statesboro Primary 115 kV T.L. with 795 ACSR at 100 °C.

- The loss of the Vidalia – Loop Road section of the Claxton – Vidalia 115 kV T.L. causes the Claxton – Statesboro 115 kV T.L. to become overloaded.

Claxton – Statesboro Primary 115 kV T.L.



Solution:
Reconductor 17.8 miles along the Claxton – Statesboro Primary 115 kV T.L. with 795 ACSR at 100 °C.

Problem:
The loss of the Vidalia – Loop Road section of the Claxton – Vidalia 115 kV T.L. causes the Claxton – Statesboro 115 kV T.L. to become overloaded.

Southeastern Region Transmission Planning

Expansion Item E-15

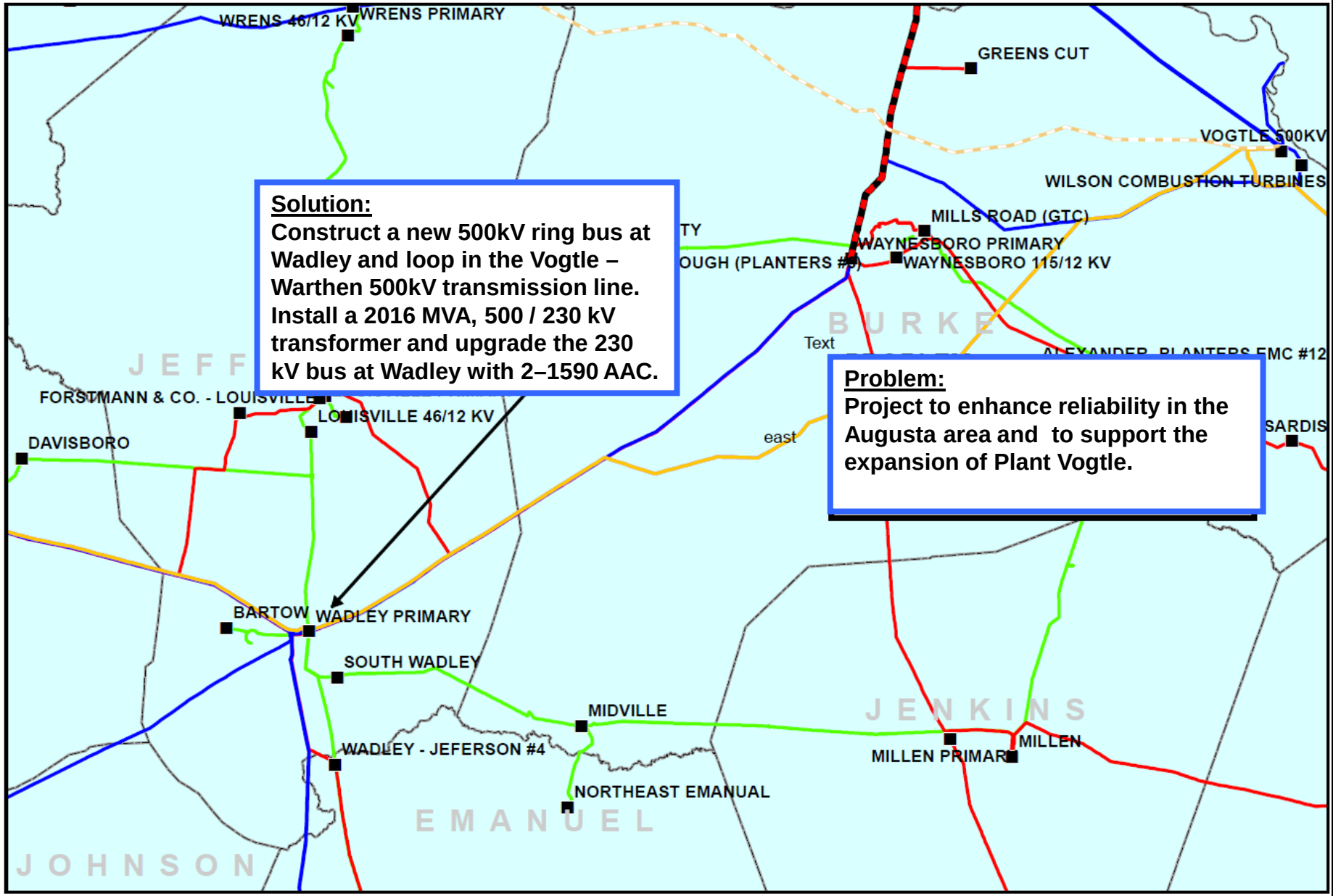
2018

Wadley 500/230kV Substation

- Construct a 500kV ring bus at Wadley and loop in the Vogtle – Warthen 500 kV transmission line.
- Install a 2016MVA, 500/230kV transformer that ties to the Wadley 230kV bus.
- Upgrade the 230kV bus at Wadley with 2–1590 AAC.

- Project to enhance reliability in the Augusta area and to support the expansion of Plant Vogtle.

Wadley 500 / 230 kV Substation



Southeastern Region Transmission Planning

Expansion Item E-16

2019

Daniel Siding – Little Ogeechee 115 kV T.L.

- Reconductor approximately 9.6 miles of the Daniel Siding – Little Ogeechee section of the Hinesville Primary – Little Ogeechee 115 kV transmission line with bundled (2) 336 ACSS conductor.

- The loss of the Dorchester – Little Ogeechee 230 kV transmission line causes the Daniel Siding – Little Ogeechee 115 kV transmission line to become overloaded.

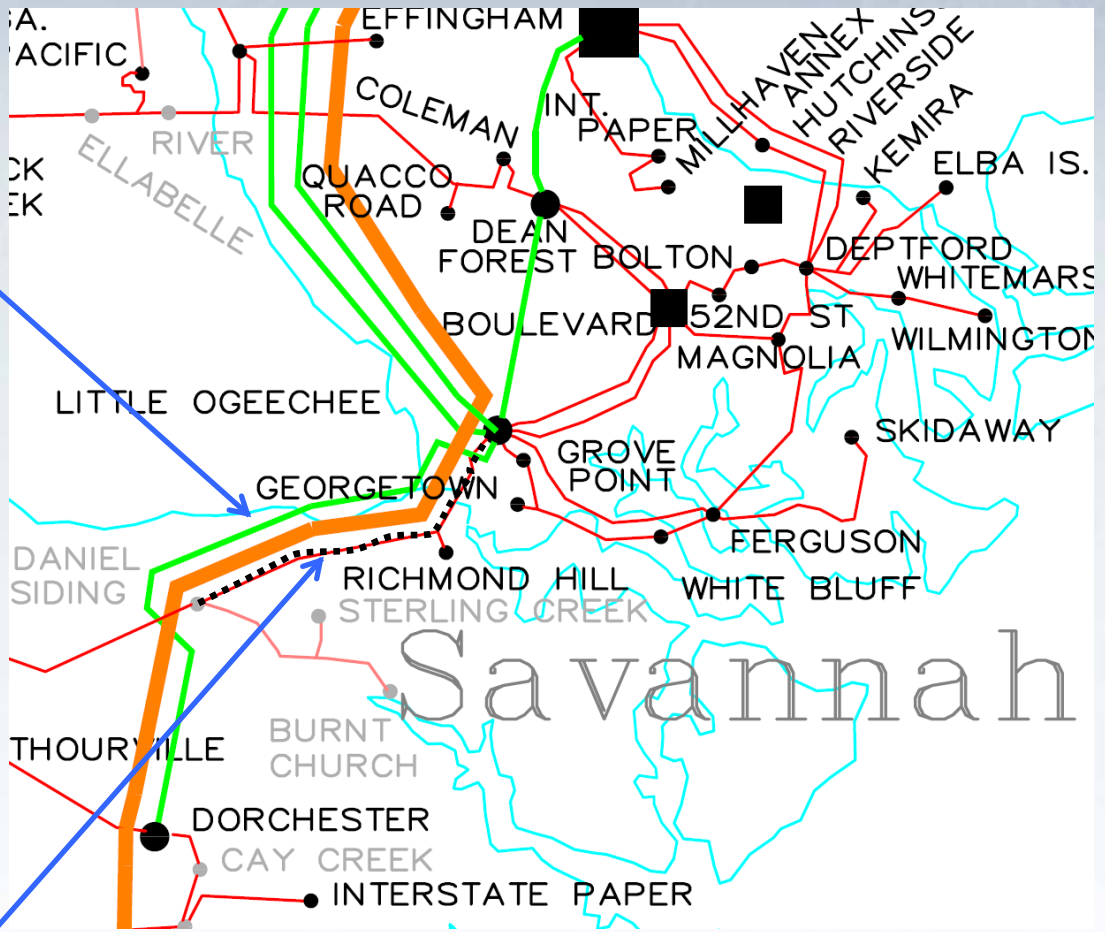
Daniel Siding – Little Ogeechee 115 kV T.L.

Problem:

The loss of the Dorchester – Little Ogeechee 230 kV transmission line causes the Daniel Siding – Little Ogeechee 115 kV transmission line to become overloaded.

Solution:

Reconductor approximately 9.6 miles of the Daniel Siding – Little Ogeechee section of the Hinesville Primary – Little Ogeechee 115 kV transmission line with bundled (2) 336 ACSS conductor.



Southeastern Region Transmission Planning

Expansion Item E-17

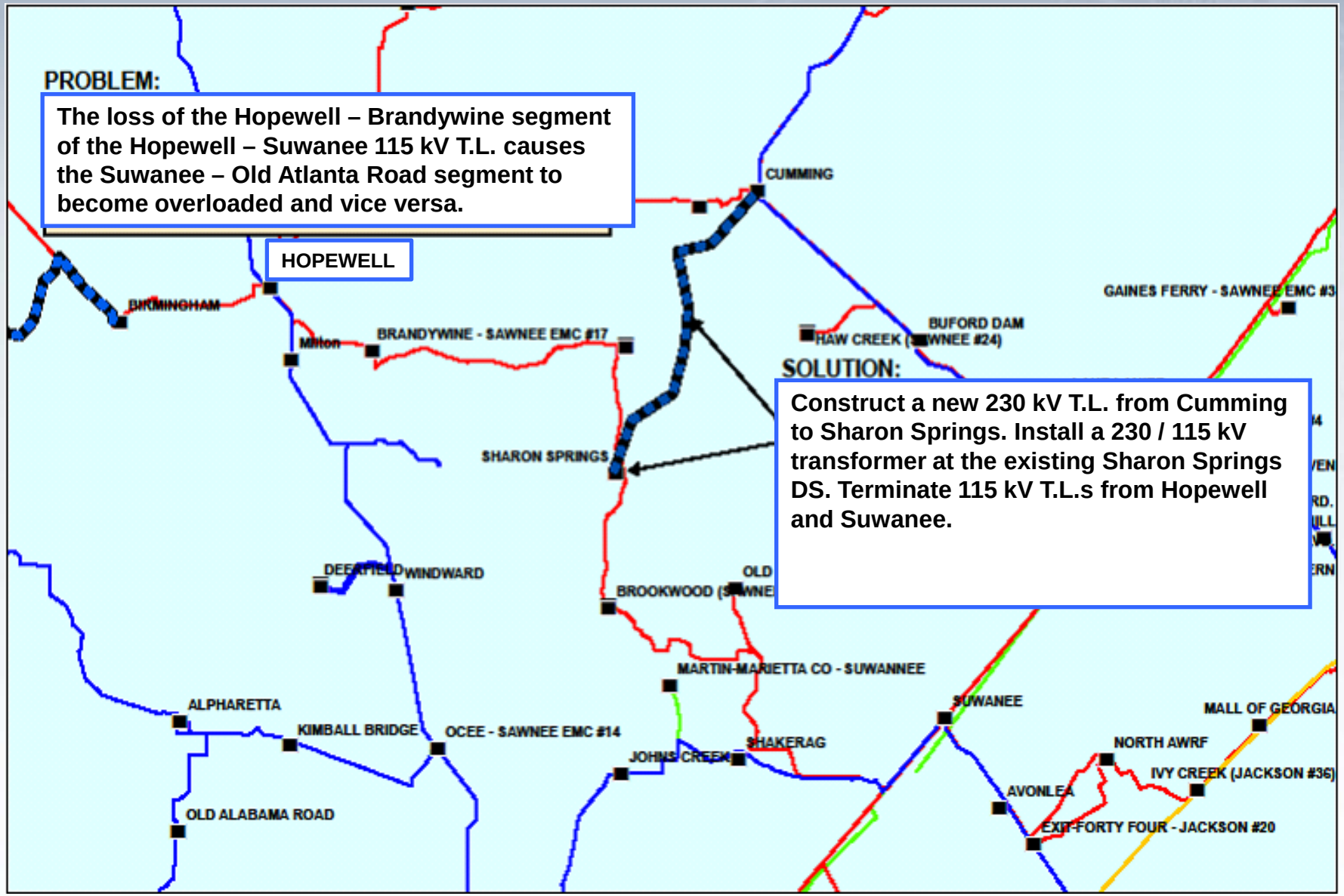
2019

Sharon Springs 230 / 115 kV Substation

- Install a 230/115 kV transformer at the existing Sharon Springs 115 kV distribution substation.
- Construct a new 6.6 mile, 230 kV transmission line from Cumming to Sharon Springs (1351 ACSR at 100 ºC).

- The loss of the Hopewell – Brandywine segment of the Hopewell – Suwanee 115 kV T.L. overloads the Suwanee – Old Atlanta Road segment of the line and vice versa.

Sharon Springs 230 / 115 kV Substation



Southeastern Region Transmission Planning

Expansion Item E-18

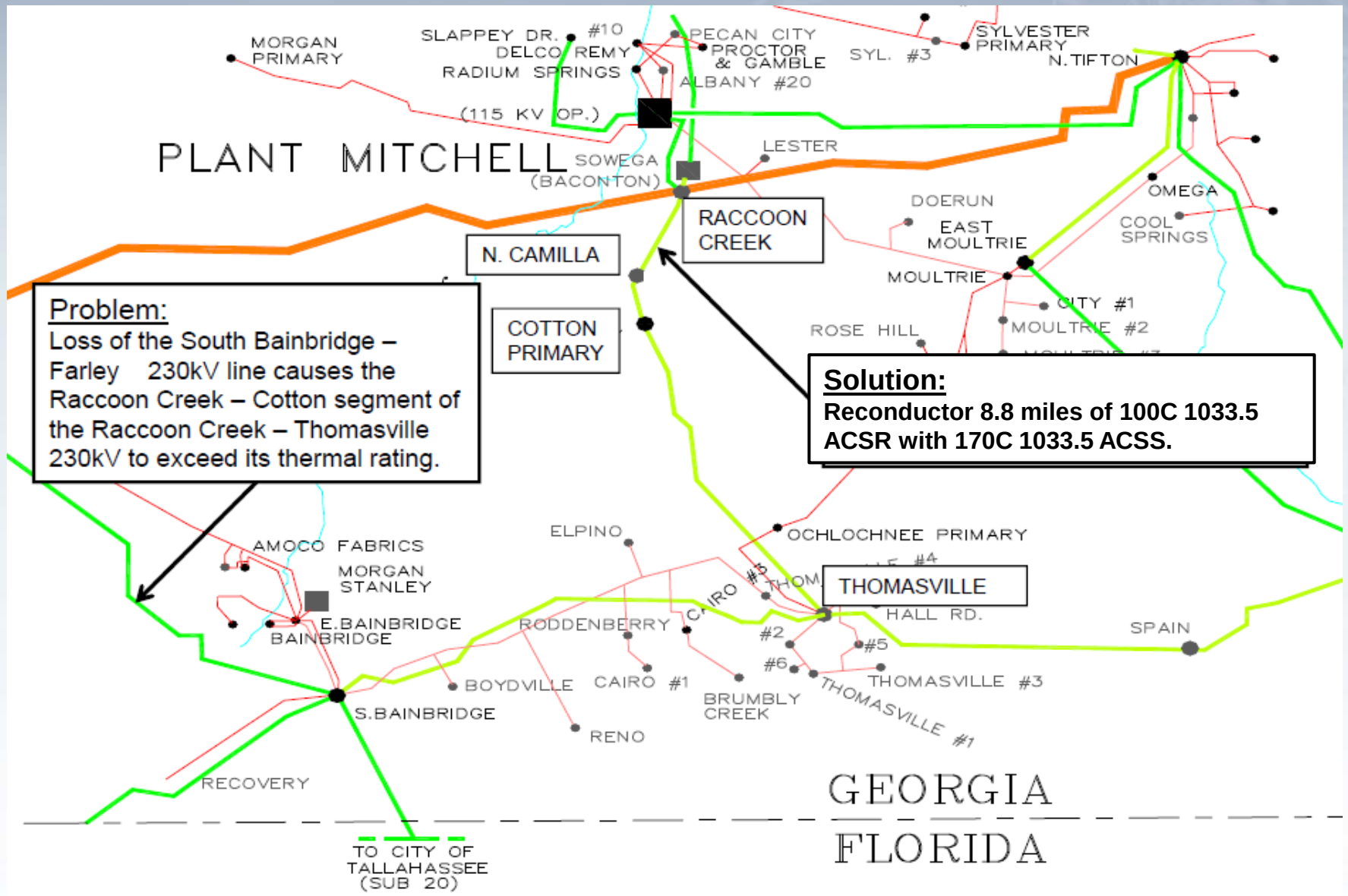
2019

Raccoon Creek – Thomasville 230 kV T.L.

- Reconductor 8.8 miles of 230 kV T.L. from Raccoon Creek to Cotton along the Raccoon Creek – Thomasville 230 kV T.L. with 1033 ACSS at 170 °C

- The loss of the South Bainbridge – Farley 230 kV T.L. causes the Raccoon Creek – Thomasville 230 kV T.L. to become overloaded.

Raccoon Creek – Thomasville 230 kV T.L.



Southeastern Region Transmission Planning

Expansion Item E-19

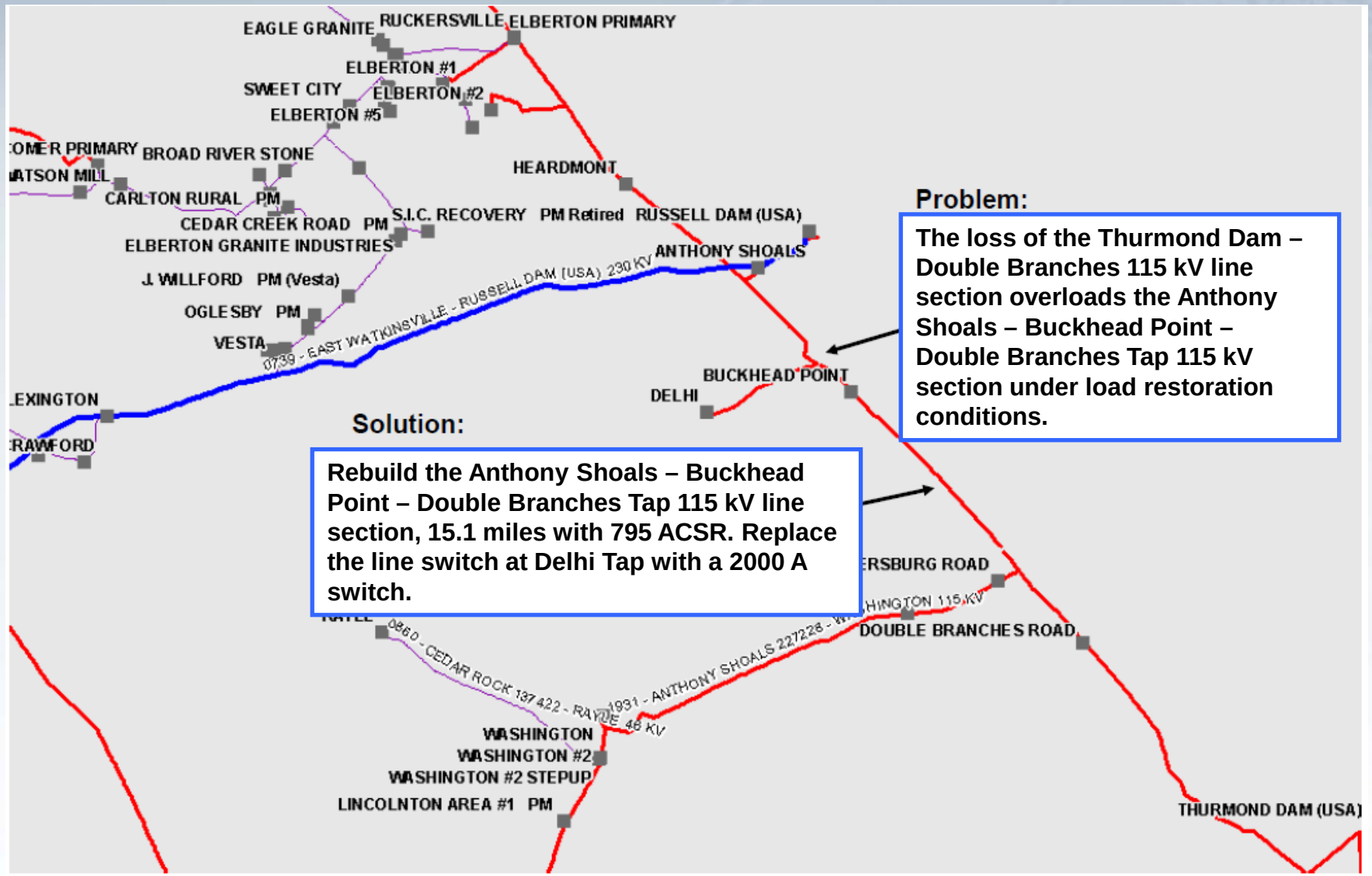
2021

Anthony Shoals – Washington 115 kV T.L.

- Rebuild 15.1 miles from Anthony Shoals – Double Branches tap with 795 ACSR.

- The loss of the Thurmond Dam – Double Branches section causes the Anthony Shoals – Double Branches 115 kV section to become overloaded.

Anthony Shoals – Washington 115 kV T.L.



Problem:

The loss of the Thurmond Dam – Double Branches 115 kV line section overloads the Anthony Shoals – Buckhead Point – Double Branches Tap 115 kV section under load restoration conditions.

Solution:

Rebuild the Anthony Shoals – Buckhead Point – Double Branches Tap 115 kV line section, 15.1 miles with 795 ACSR. Replace the line switch at Delhi Tap with a 2000 A switch.

Southeastern Region Transmission Planning

Expansion Item E-20

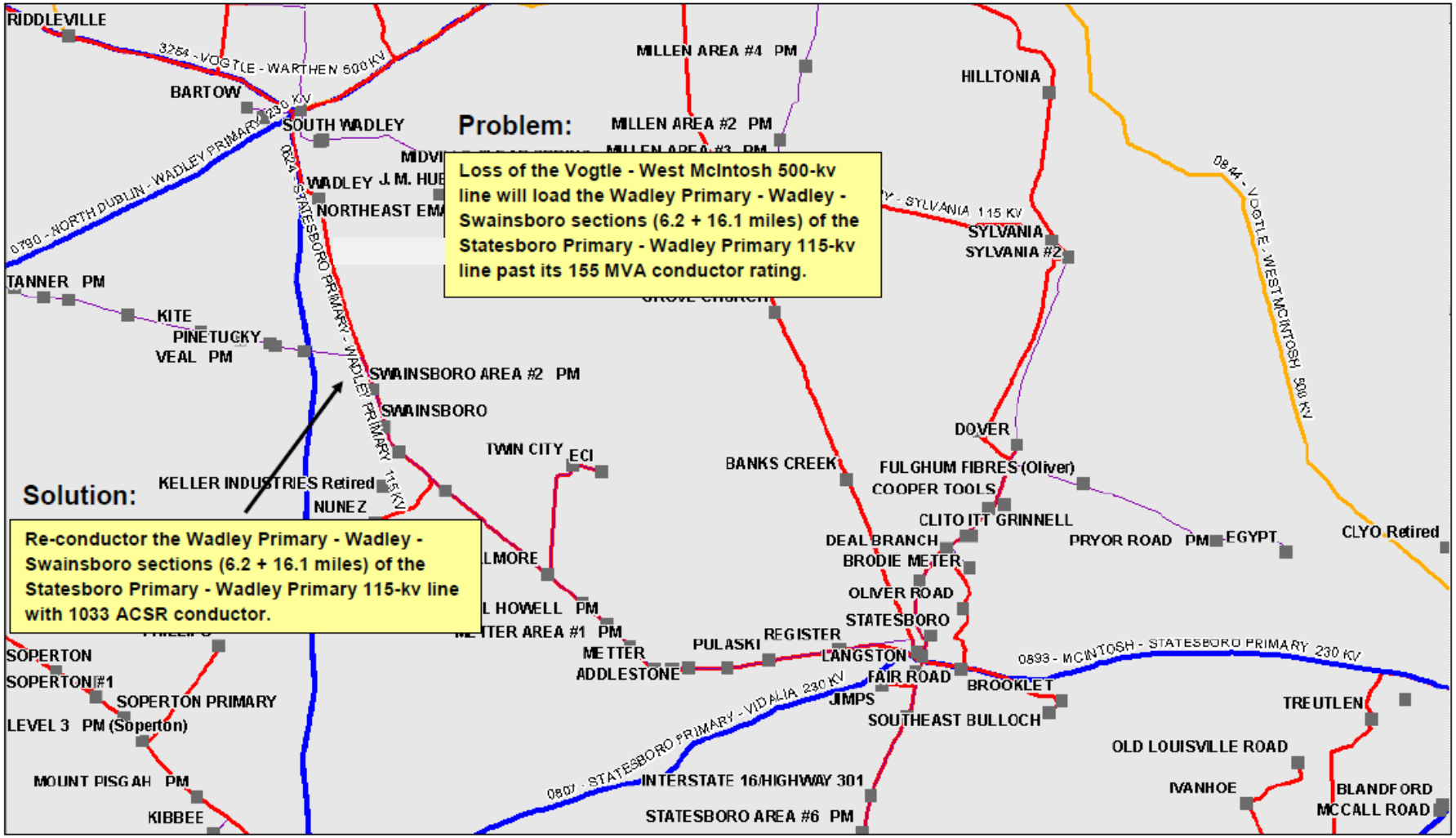
2021

Statesboro Pri. – Wadley Pri.115 kV T.L.

- Reconductor 22.3 miles of the Statesboro Primary – Wadley Primary 115kV T.L. with 1033 ACSR.

- The loss of the Vogtle – West McIntosh 500 kV T.L. causes the Statesboro Primary – Wadley Primary 115 kV T.L. to become overloaded.

Statesboro – Wadley 115 kV T.L.



Southeastern Region Transmission Planning

Expansion Item E-21

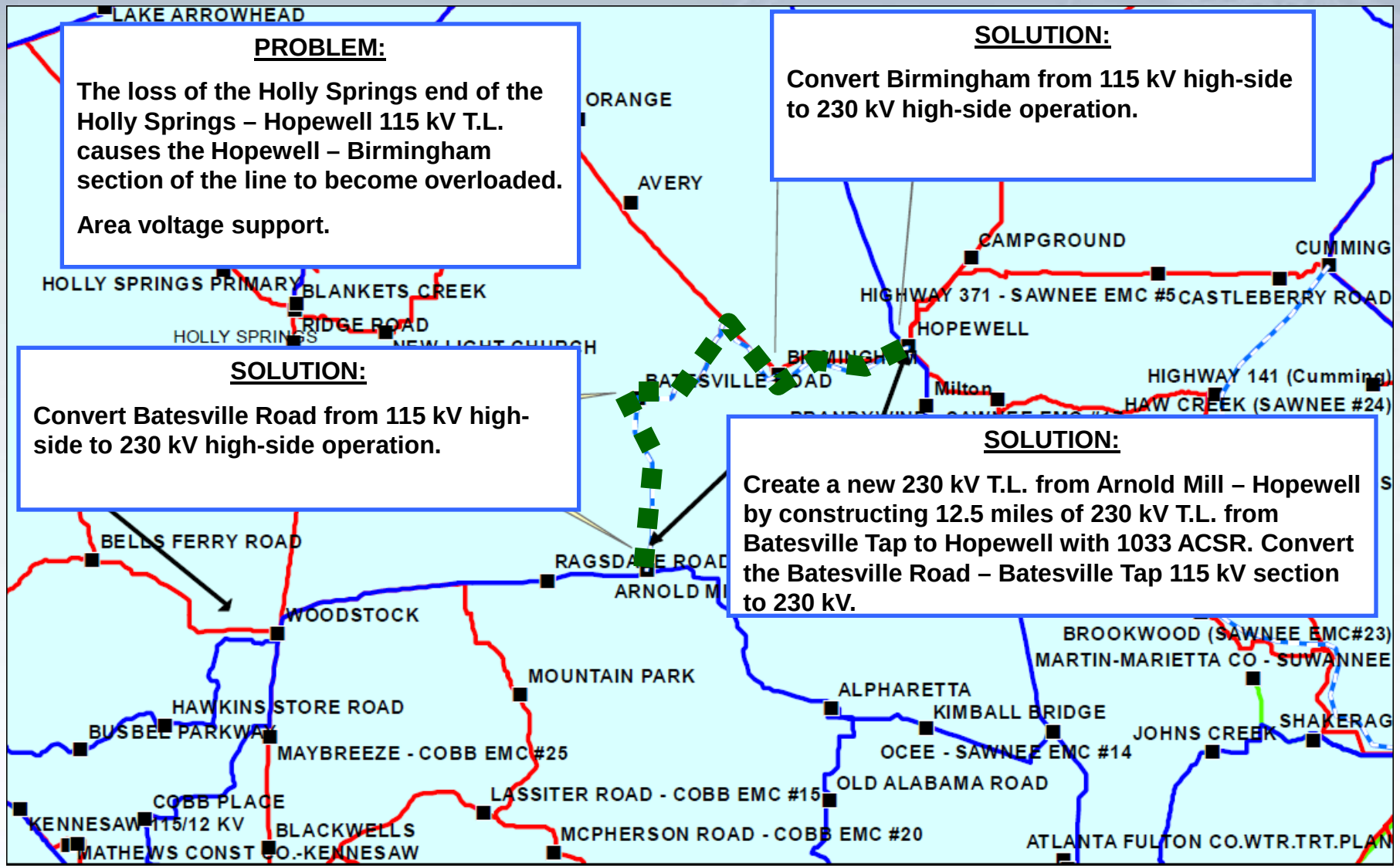
2023

Holly Springs – Hopewell Area Project

- Create a new 230 kV T.L. from Arnold Mill – Hopewell by constructing 12.5 miles of 230 kV T.L. from Batesville Tap to Hopewell with 1033 ACSR. Convert the Batesville Road – Batesville Tap 115 kV section to 230 kV.
- Convert the Batesville Road and Birmingham substations from 115 kV to 230 kV.

- The loss of the Holly Springs end of the Holly Springs – Hopewell 115 kV T.L. causes the Hopewell – Birmingham section of the line to become overloaded.
- Area voltage support.

Holly Springs – Hopewell Area Project



PROBLEM:

The loss of the Holly Springs end of the Holly Springs – Hopewell 115 kV T.L. causes the Hopewell – Birmingham section of the line to become overloaded.

Area voltage support.

SOLUTION:

Convert Birmingham from 115 kV high-side to 230 kV high-side operation.

SOLUTION:

Convert Batesville Road from 115 kV high-side to 230 kV high-side operation.

SOLUTION:

Create a new 230 kV T.L. from Arnold Mill – Hopewell by constructing 12.5 miles of 230 kV T.L. from Batesville Tap to Hopewell with 1033 ACSR. Convert the Batesville Road – Batesville Tap 115 kV section to 230 kV.

Questions?