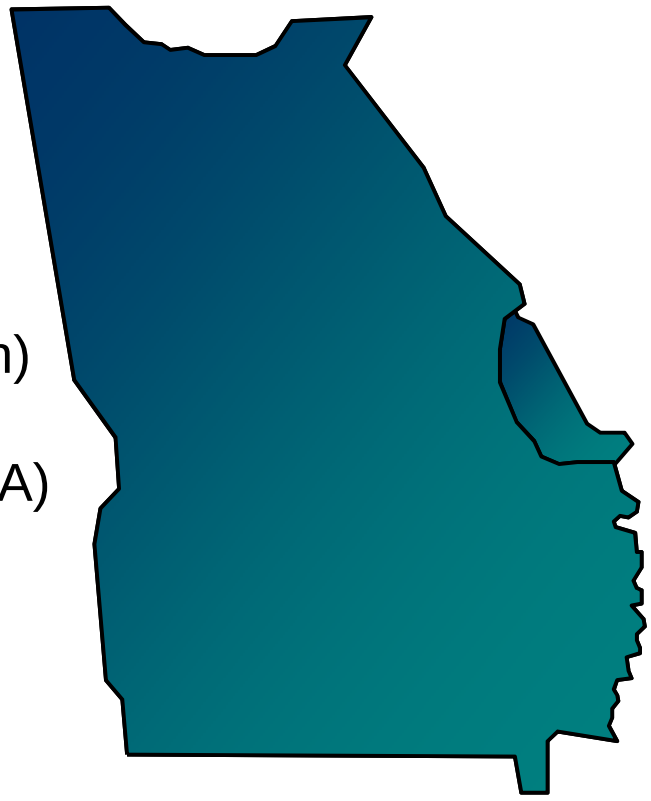
Southeastern Region Transmission Planning

East

Georgia Integrated Transmission System (ITS)

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

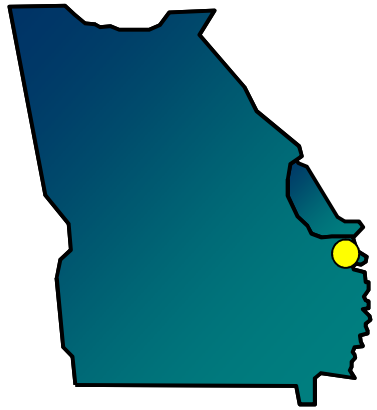


Southeastern Region Transmission Planning

Expansion Item E-1

2013 E-1

Daniel Siding – Riceboro 115 kV T.L.

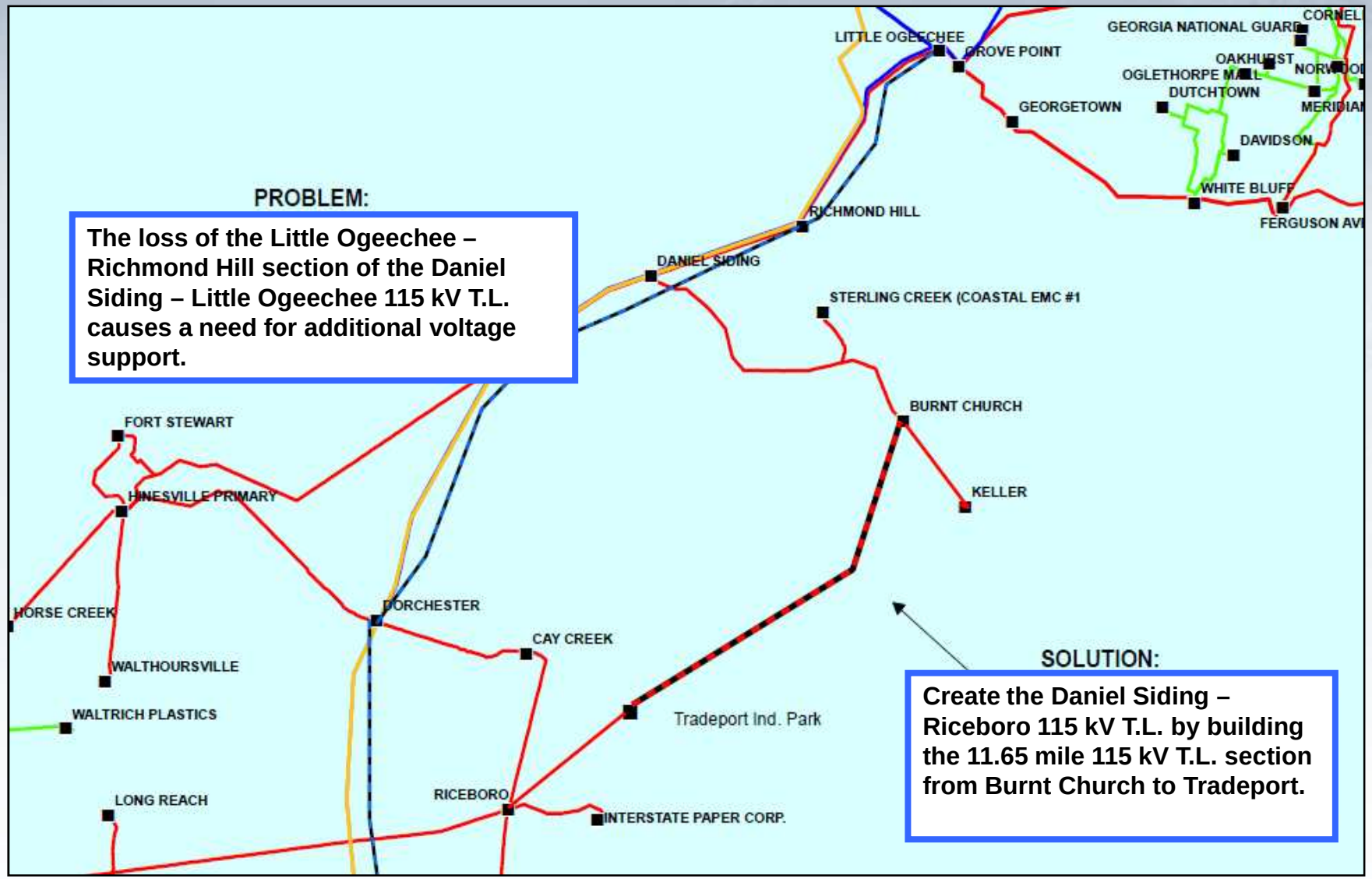


- Create the Daniel Siding – Riceboro 115 kV T.L. by constructing 12 miles from Burnt Church to Tradeport.

- The loss of the Little Ogeechee – Richmond Hill section of the Daniel Siding – Little Ogeechee 115 kV T.L. causes a need for additional area voltage support.

Daniel Siding – Riceboro 115kV T.L.

2013 E-1

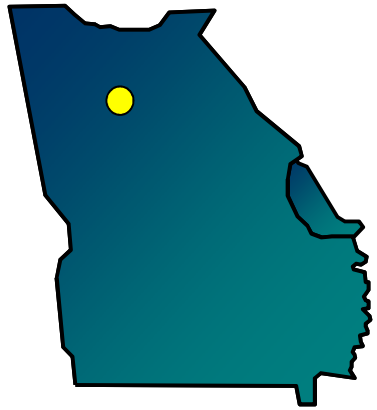


Southeastern Region Transmission Planning

Expansion Item E-2

2013 E-2

Peachtree 230 kV Substation

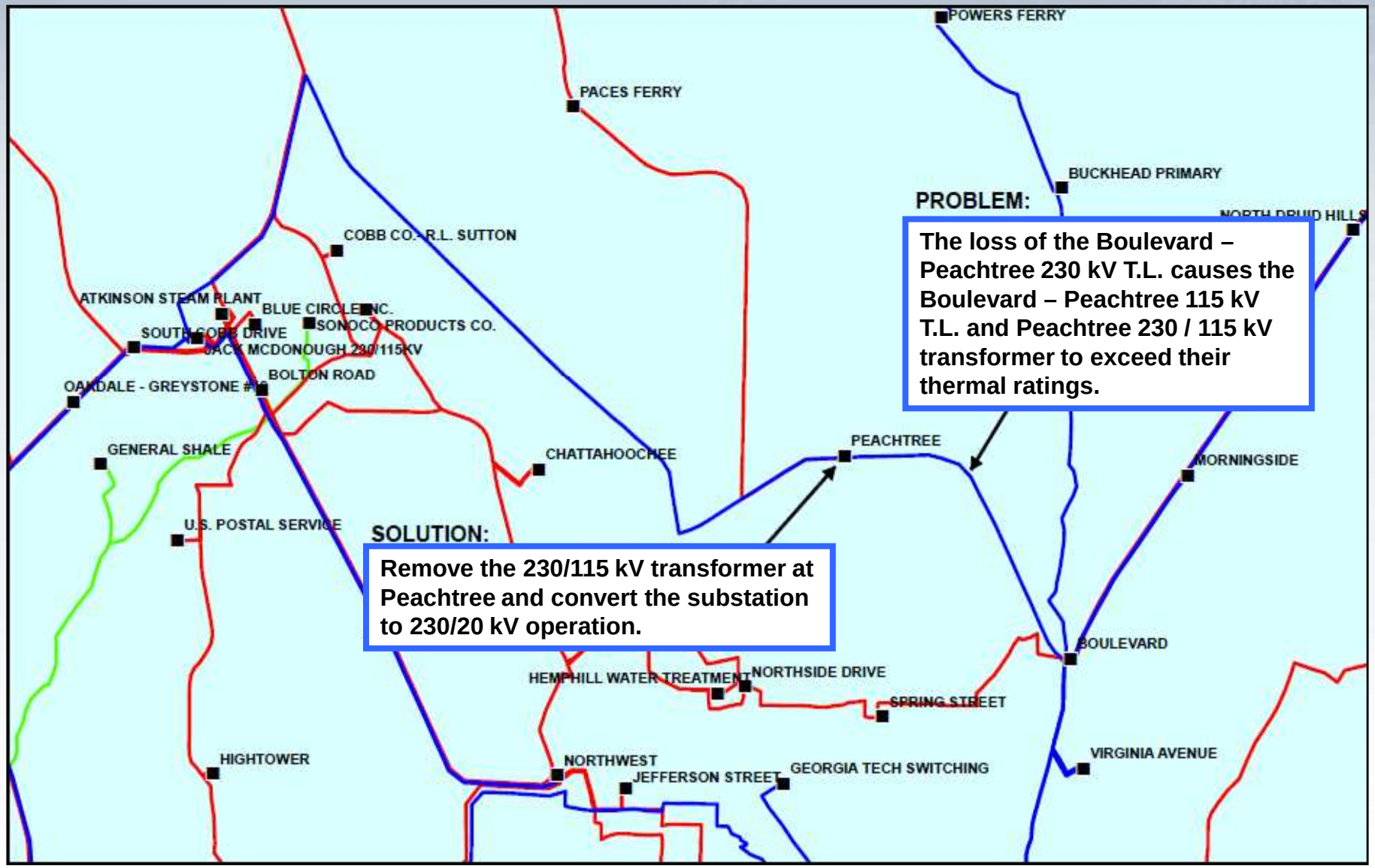


- At Peachtree substation, convert the high-side of all load transformers to 230 kV and remove the 230 / 115 kV transformer (Bank A).
- Tie the Boulevard and Rottenwood Creek 115 kV T.L.s together, outside of the substation.

- The loss of the Boulevard – Peachtree 230 kV T.L. causes the Boulevard – Peachtree 115 kV T.L. and Peachtree 230 / 115 kV transformer to become overloaded.

Peachtree 230 kV Substation

2013 E-2



Southeastern Region Transmission Planning

Expansion Item E-3

2013 E-3

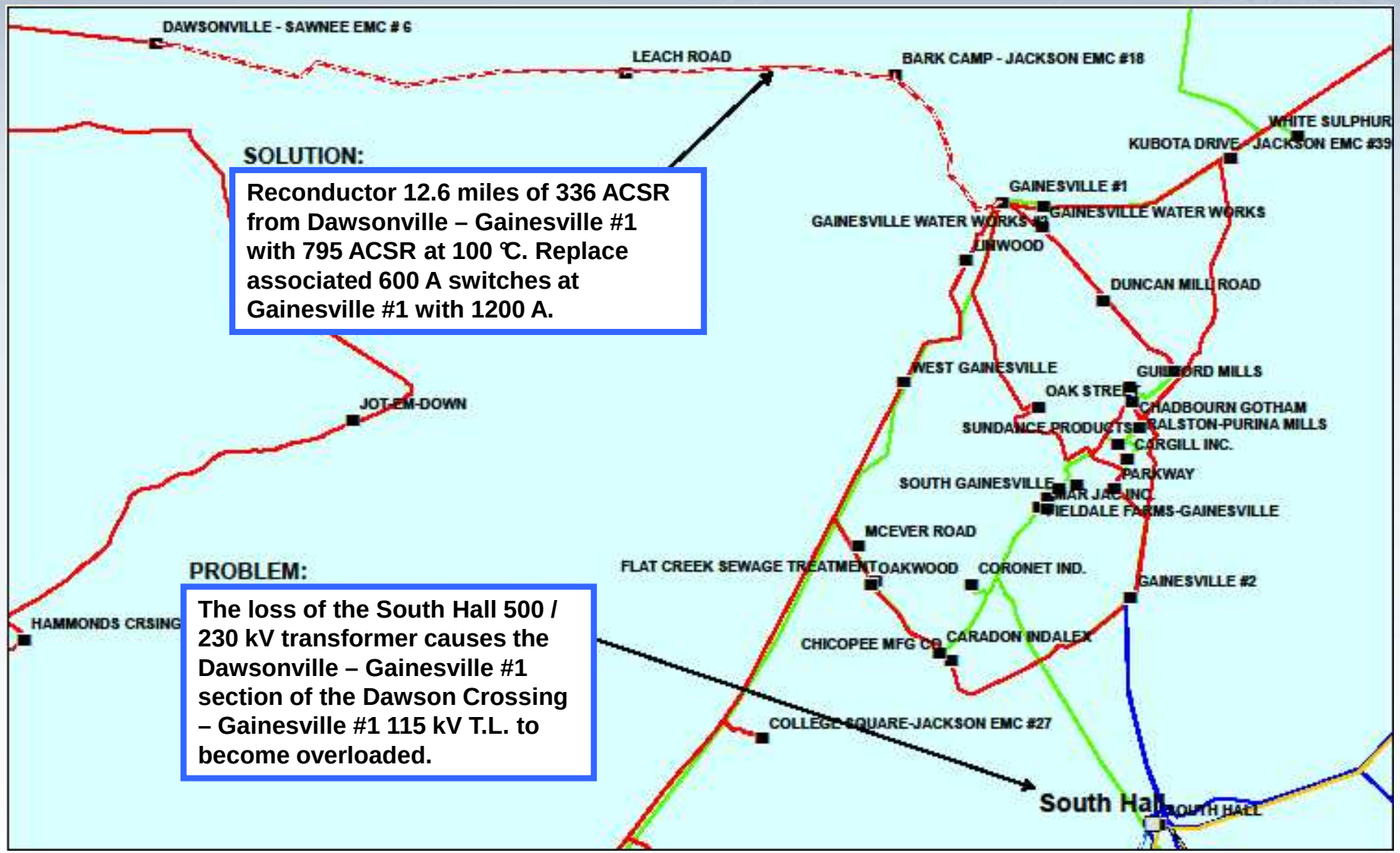
Dawson Crossing – Gainesville 115 kV T.L.

- Reconductor approximately 12.8 miles from Dawsonville 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 115 kV T.L.

2013 E-3



SOLUTION:

Reconductor 12.6 miles of 336 ACSR from Dawsonville – Gainesville #1 with 795 ACSR at 100 ℃. Replace associated 600 A switches at Gainesville #1 with 1200 A.

PROBLEM:

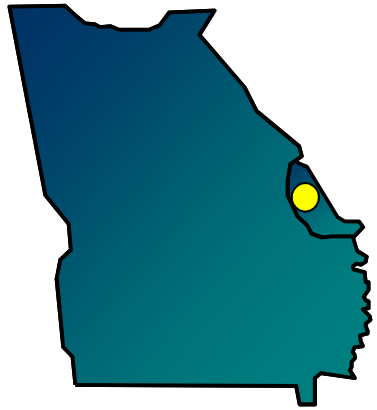
The loss of the South Hall 500 / 230 kV transformer causes the Dawsonville – Gainesville #1 section of the Dawson Crossing – Gainesville #1 115 kV T.L. to become overloaded.

Southeastern Region Transmission Planning

Expansion Item E-4

2014 E-4

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

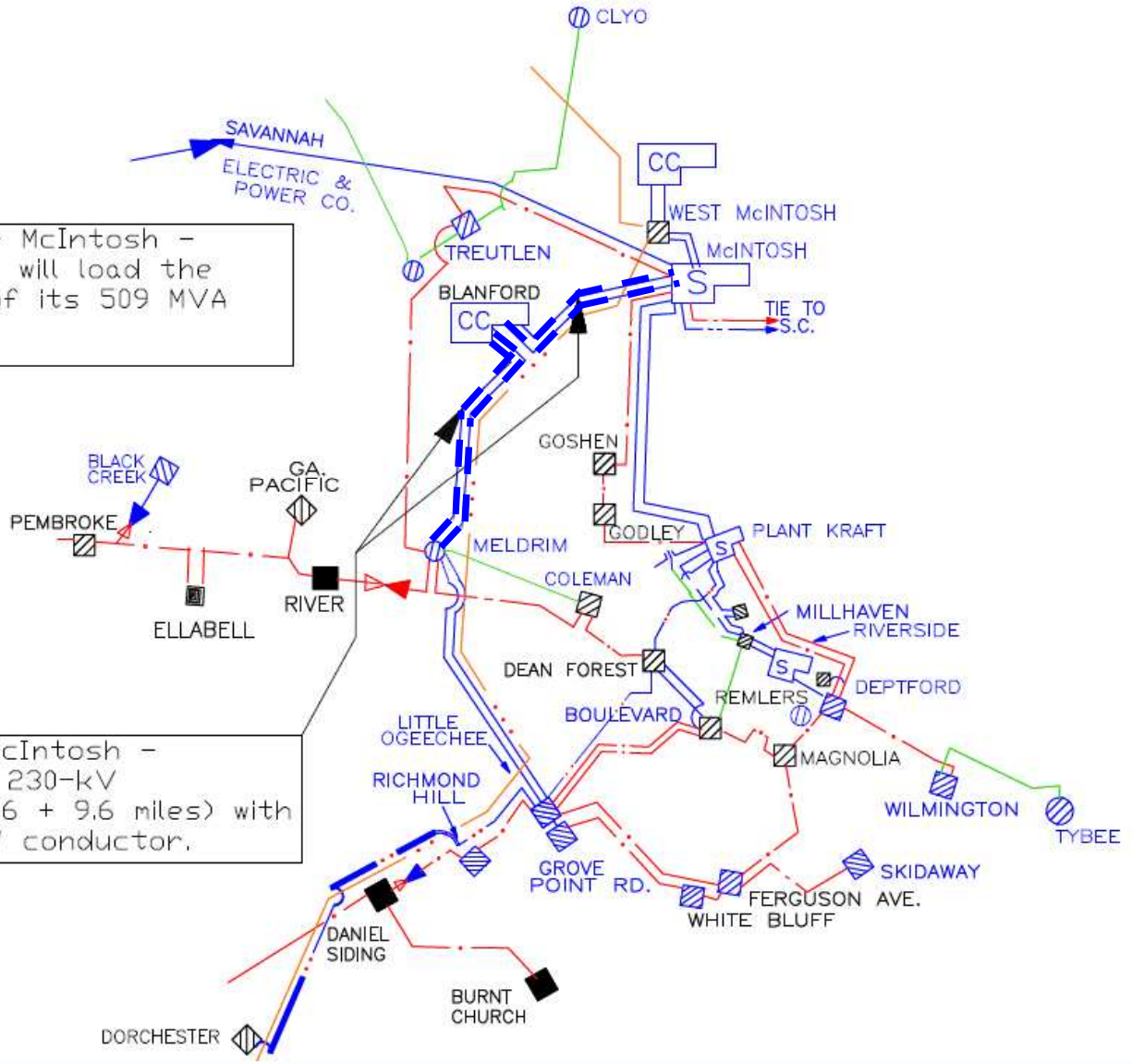
2014 E-4

PROBLEM

Loss of one of the McIntosh – Meldrim 230-kV lines will load the other line to 101% of 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.

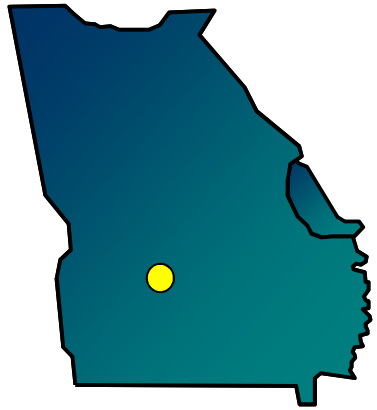


Southeastern Region Transmission Planning

Expansion Item E-5

2014 E-5

Crisp County Area Improvements

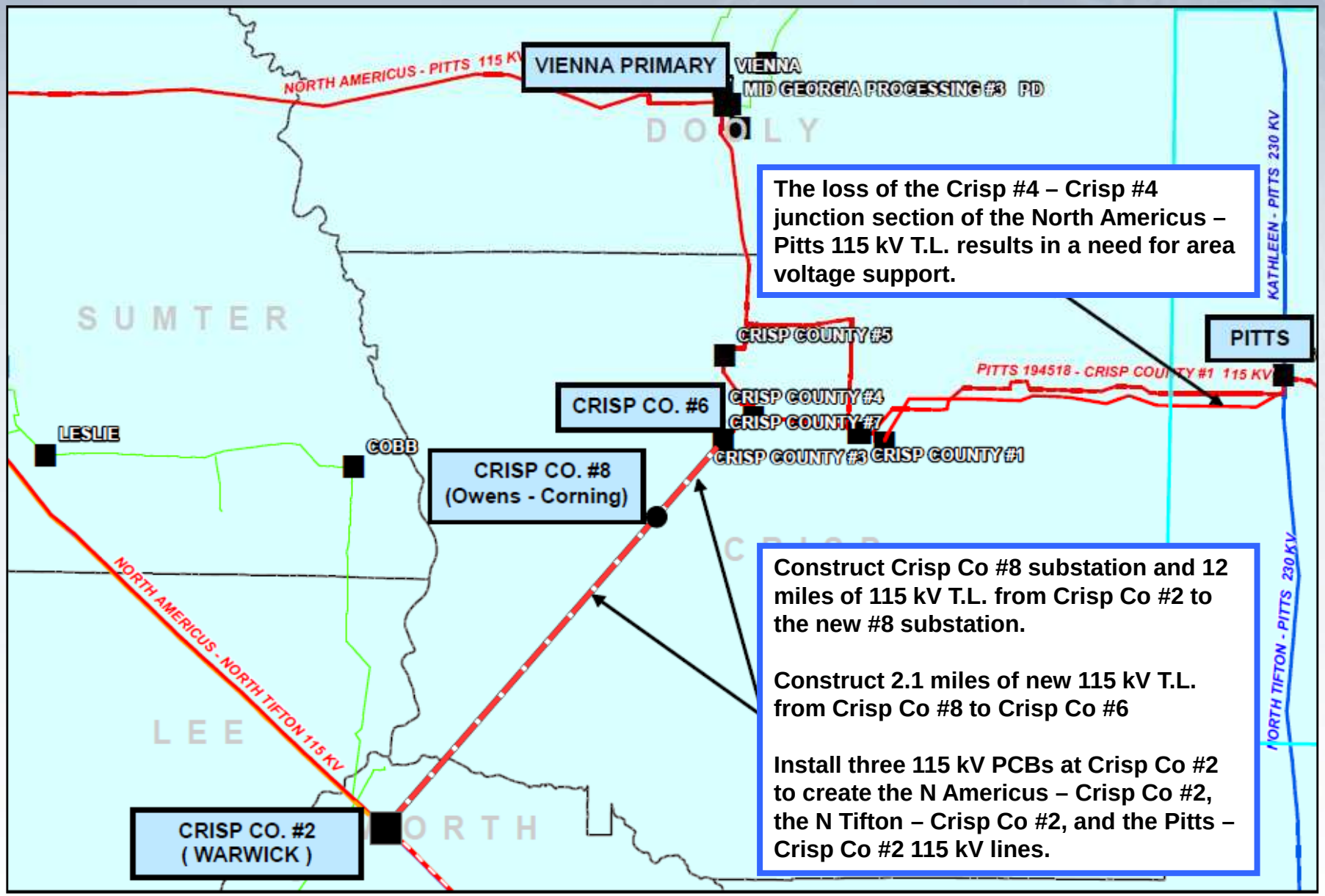


- Construct 12 miles of new 636 ACSR 115 kV T.L. from Crisp Co #2 – Crisp Co #8, creating the North Americus – Crisp Co #2 and North Tifton – Crisp Co #2 115 kV T.L.s.
- Construct 2.1 miles of new 636 ACSR 115 kV T.L. from Crisp Co #8 – Crisp Co #6, creating the Pitts – Crisp Co #2 115 kV T.L.

- The loss of the Crisp #4 – Crisp #4 junction section of the North Americus – Pitts 115 kV T.L. results in a need for area voltage support.

Crisp Co. Area Improvements Phase II

2014 E-5

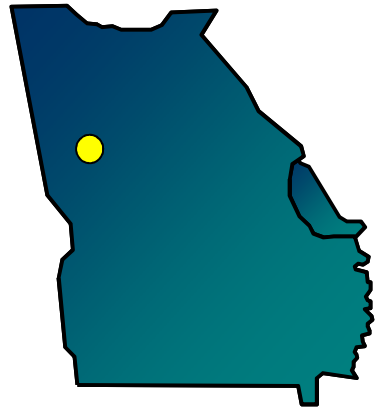


Southeastern Region Transmission Planning

Expansion Item E-6

2014 E-6

Dresden – Heard County 500 kV T.L.

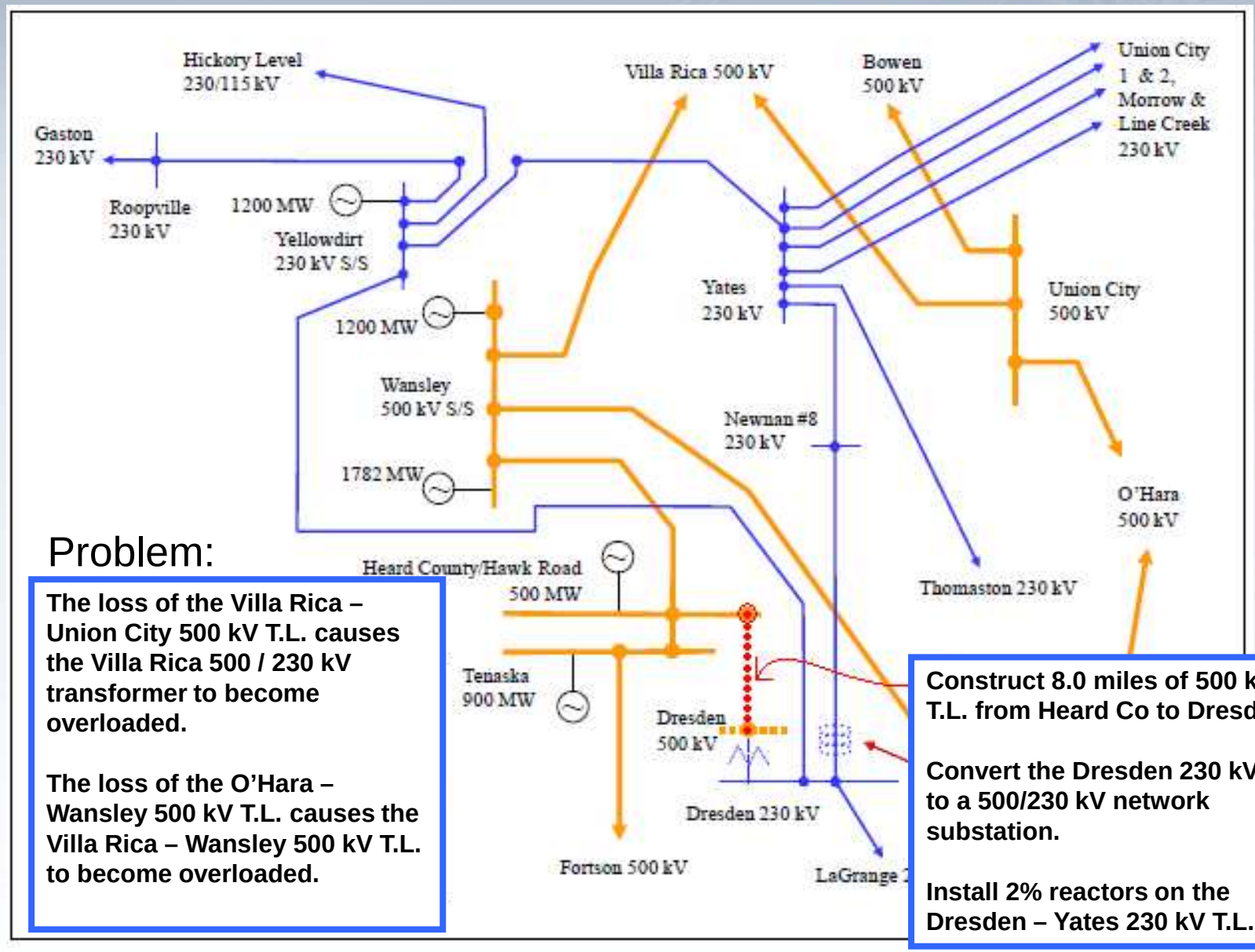


- Construct 8 miles of new 500 kV T.L. from Heard County to Dresden.
- Install a new 500 / 230 kV transformer at Dresden.

- 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.

2014 E-6



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-7

2014 E-7

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 East Roanoke – Yates 115 kV T.L.s
- Terminate the Lagrange Primary – Yates 115 kV T.L. at Dyer Road

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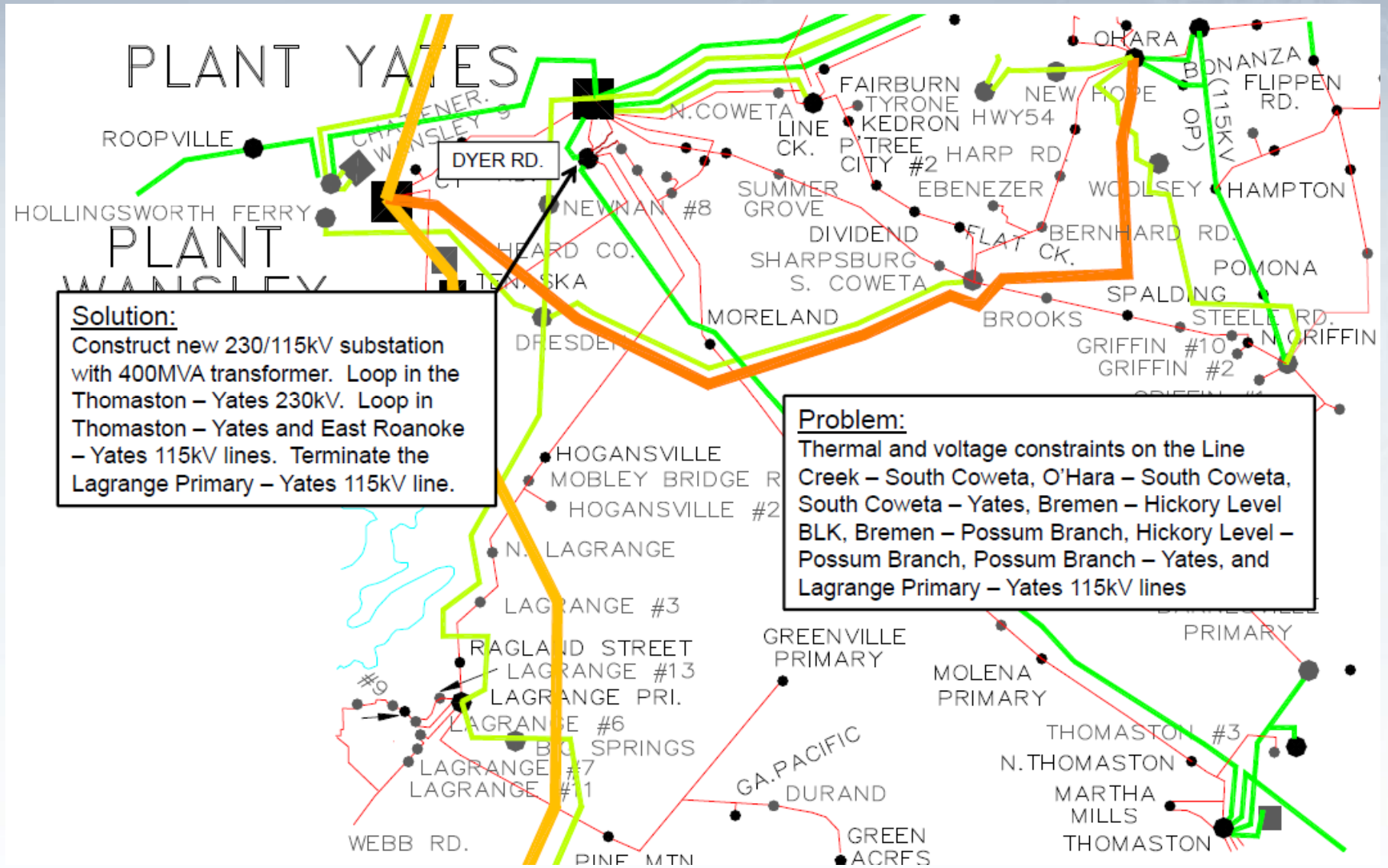
- Alleviates loadings on South Coweta – Yates, O'Hara – South Coweta, Lagrange – Yates, and Yates – Bremen 115 kV T.L.s
- Voltage support.

Dyer Road Substation

2014 E-7



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

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

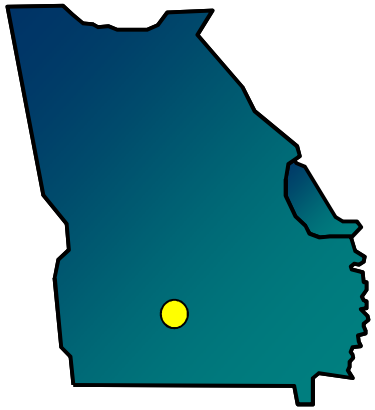
Southeastern Region Transmission Planning

Expansion Item E-8

2014 E-8

North Tifton Substation

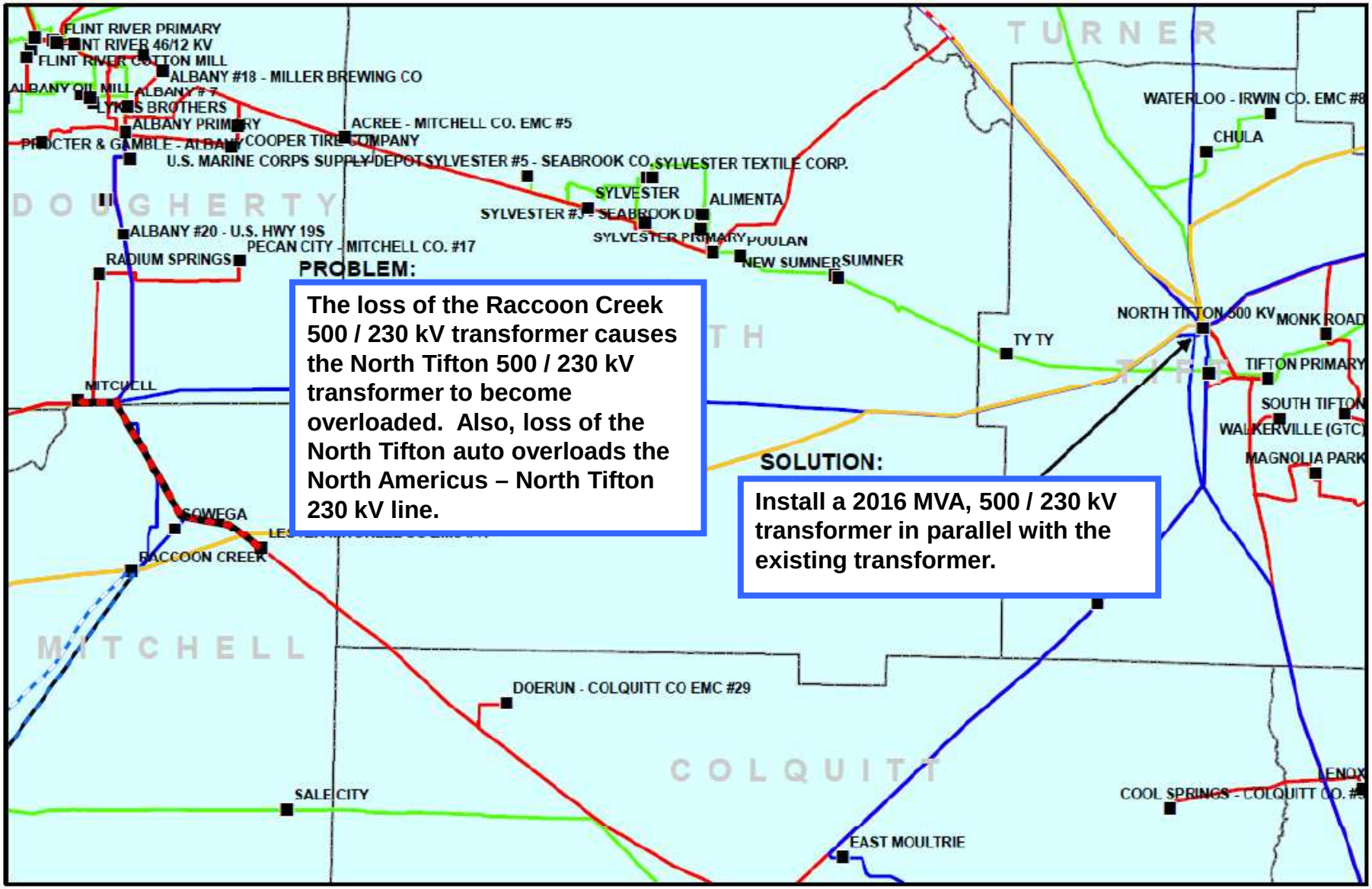
- Install a parallel, 2016 MVA, 500 / 230 kV transformer at North Tifton substation.



- The loss of the Raccoon Creek 500 / 230 kV transformer causes the North Tifton 500 / 230 kV transformer to become overloaded.
- Loss of the North Tifton 500/230 kV auto causes the North Americus – North Tifton 230 kV line to become overloaded.

North Tifton Substation

2014 E-8



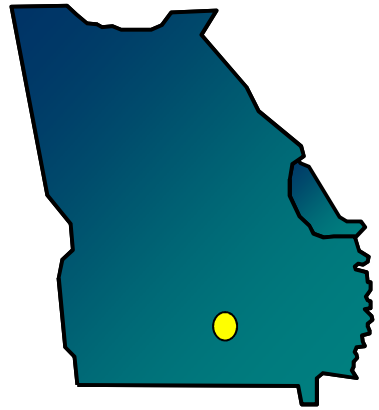
Southeastern Region Transmission Planning

Expansion Item E-9

2015 E-9

Douglas – Pine Grove 230 kV T.L.

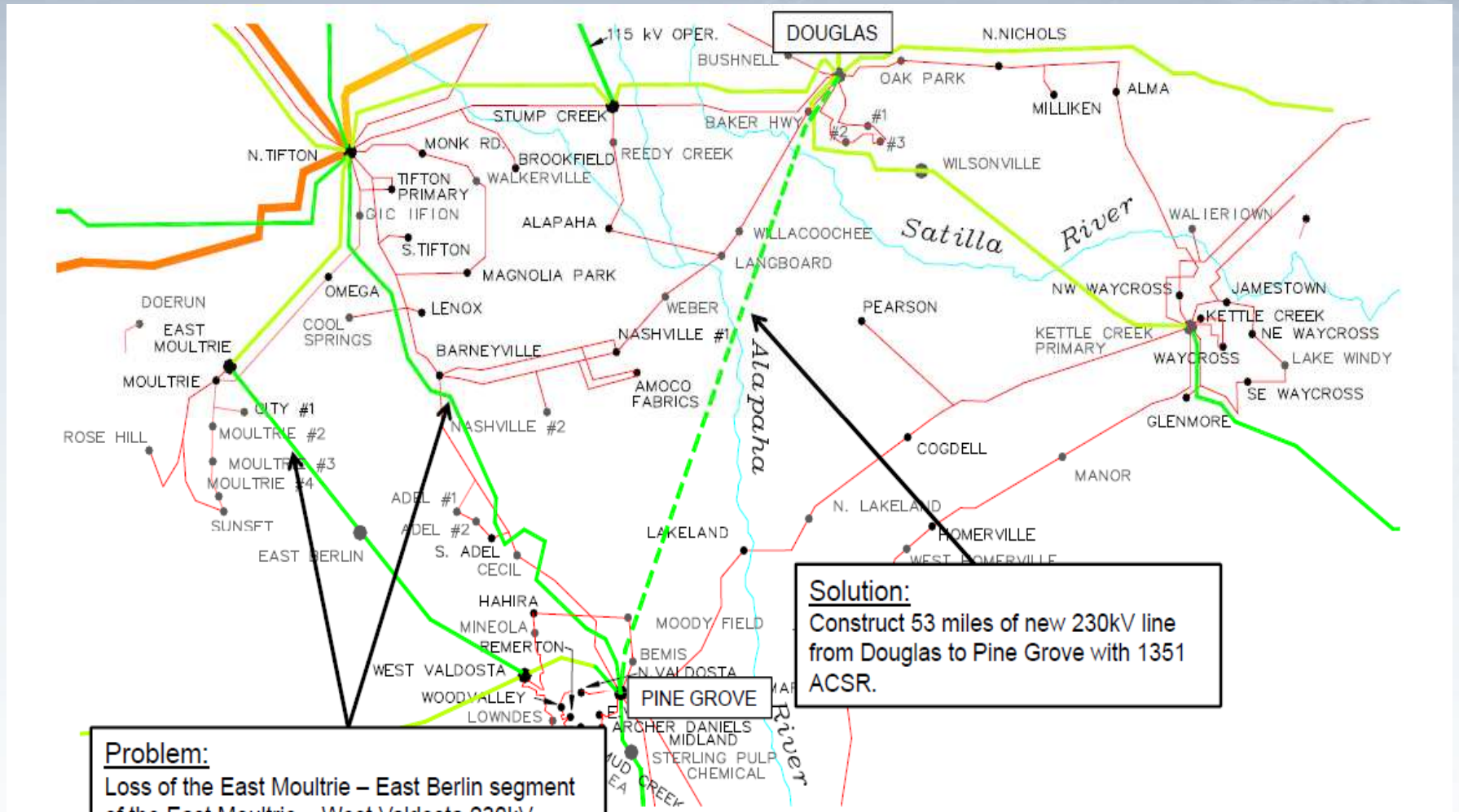
- Construct 53 miles of new 230 kV T.L. from Douglas to Pine Grove with 1351 ACSR.



- The loss of the East Moultrie – East Berlin segment causes the North Tifton – Pine Grove 230 kV T.L. to become overloaded.

Douglas – Pine Grove 230 kV T.L.

2015 E-9



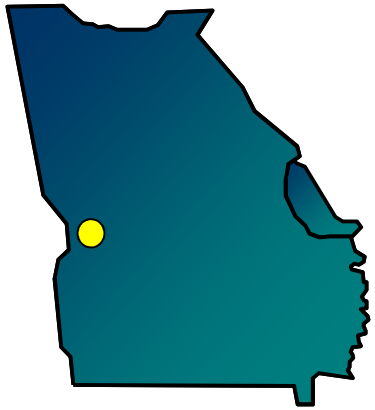
Southeastern Region Transmission Planning

Expansion Item E-10

2015 E-10

Fortson – Talbot County 230 kV T.L.

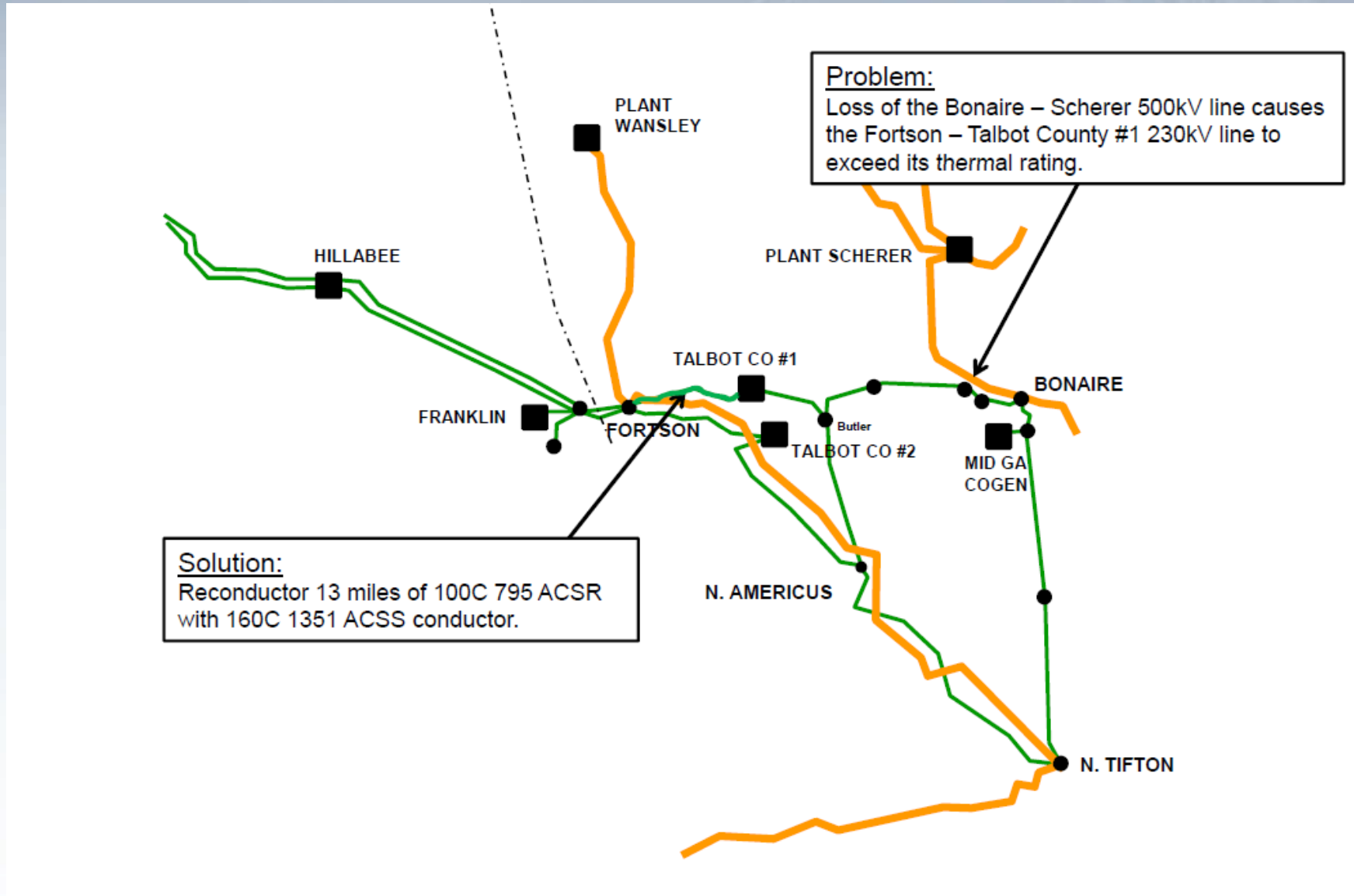
- Reconductor 13 miles along the Fortson – Talbot County #1 230 kV T.L. with 1351 ACSS at 160 ℃



- 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 230 kV T.L.

2015 E-10

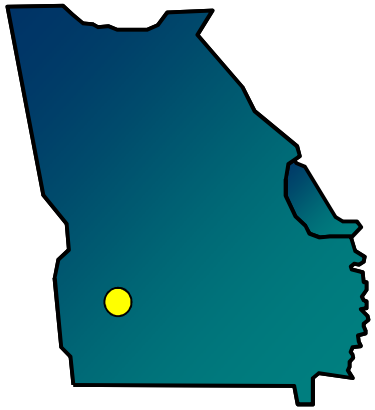


Southeastern Region Transmission Planning

Expansion Item E-11

2015 E-11

Raccoon Creek – Thomasville 230 kV T.L.

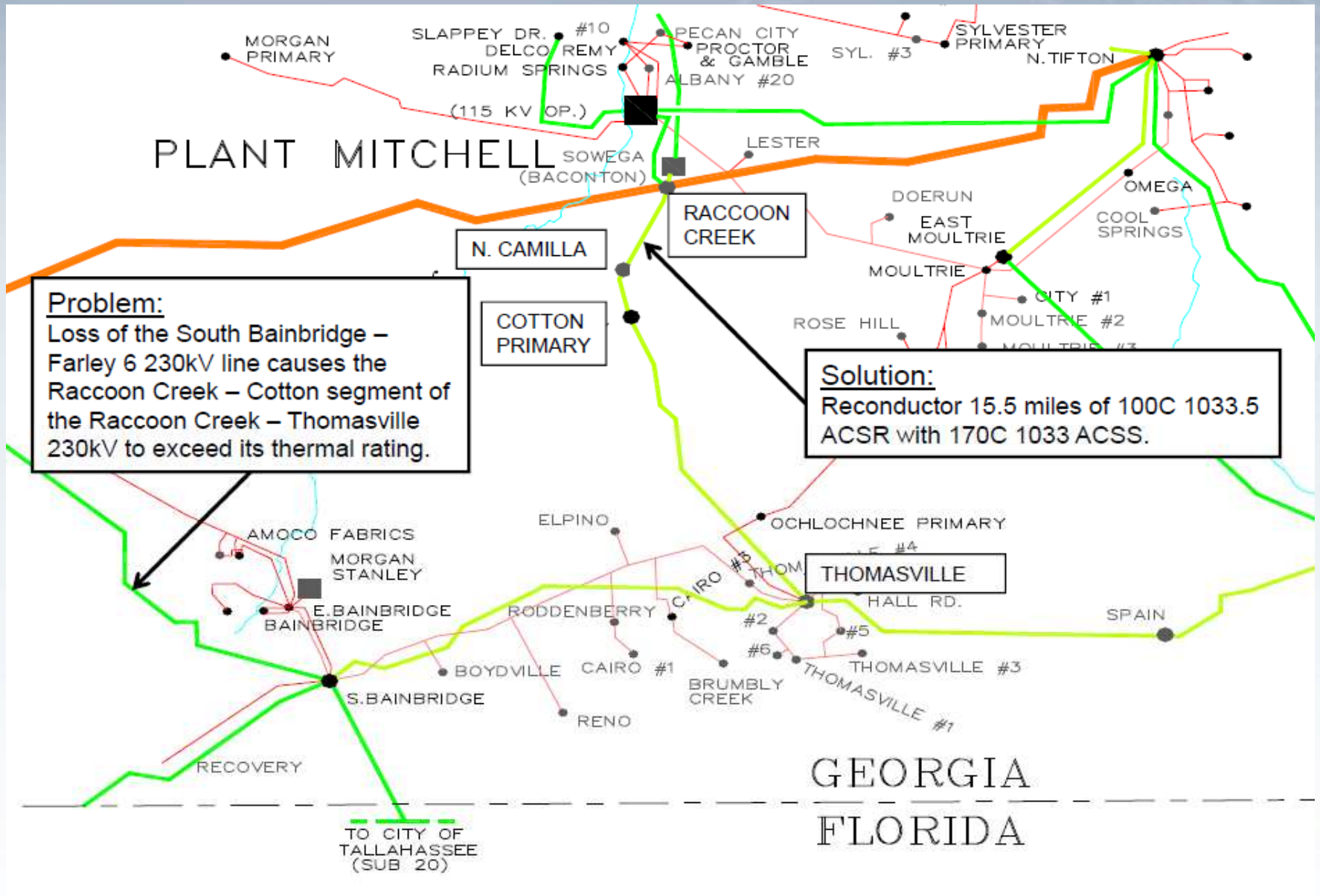


- Reconductor 15.5 miles of 230 kV T.L. from Raccoon Creek – Cotton along the Raccoon Creek – Thomasville 230 kV T.L. with 1033 ACSS at 170 ℃

- 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.

2015 E-11

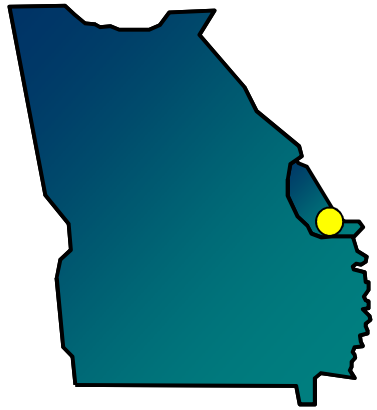


Southeastern Region Transmission Planning

Expansion Item E-12

2015 E-12

Boulevard 230 / 115 kV Project



- Expand the Dean Forest 230/115 kV substation.
- Construct the Garrard Avenue 230/115kV substation, the Cemetery Hill 230 kV switching station, and the Cemetery Hill – Dean Forest 230 kV line.
- Rebuild the Dean Forest – Garrard Avenue 115 kV lines and convert one to 230 kV operation.

- 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

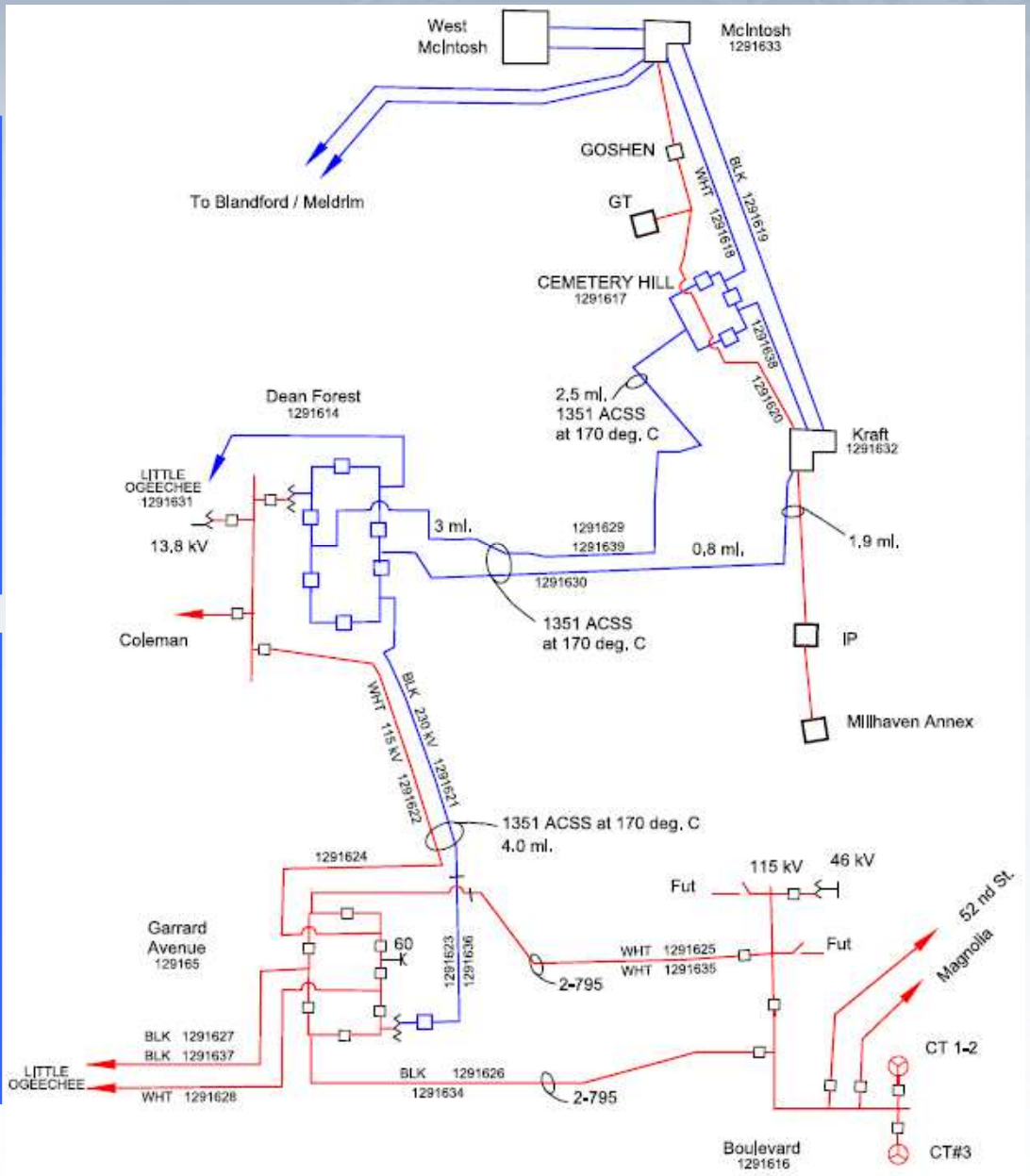
2015 E-12

Problem:

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

Solution:

Expand the Dean Forest 230 / 115 kV substation. Construct the Garrard Avenue 230 / 115 kV substation, the Cemetery Hill 230 kV switching station, and the Cemetery Hill – Dean Forest 230 kV line. Rebuild the Dean Forest – Garrard Avenue 115 kV lines and convert one to 230 kV operation.



Southeastern Region Transmission Planning

Expansion Item E-13

2016 E-13

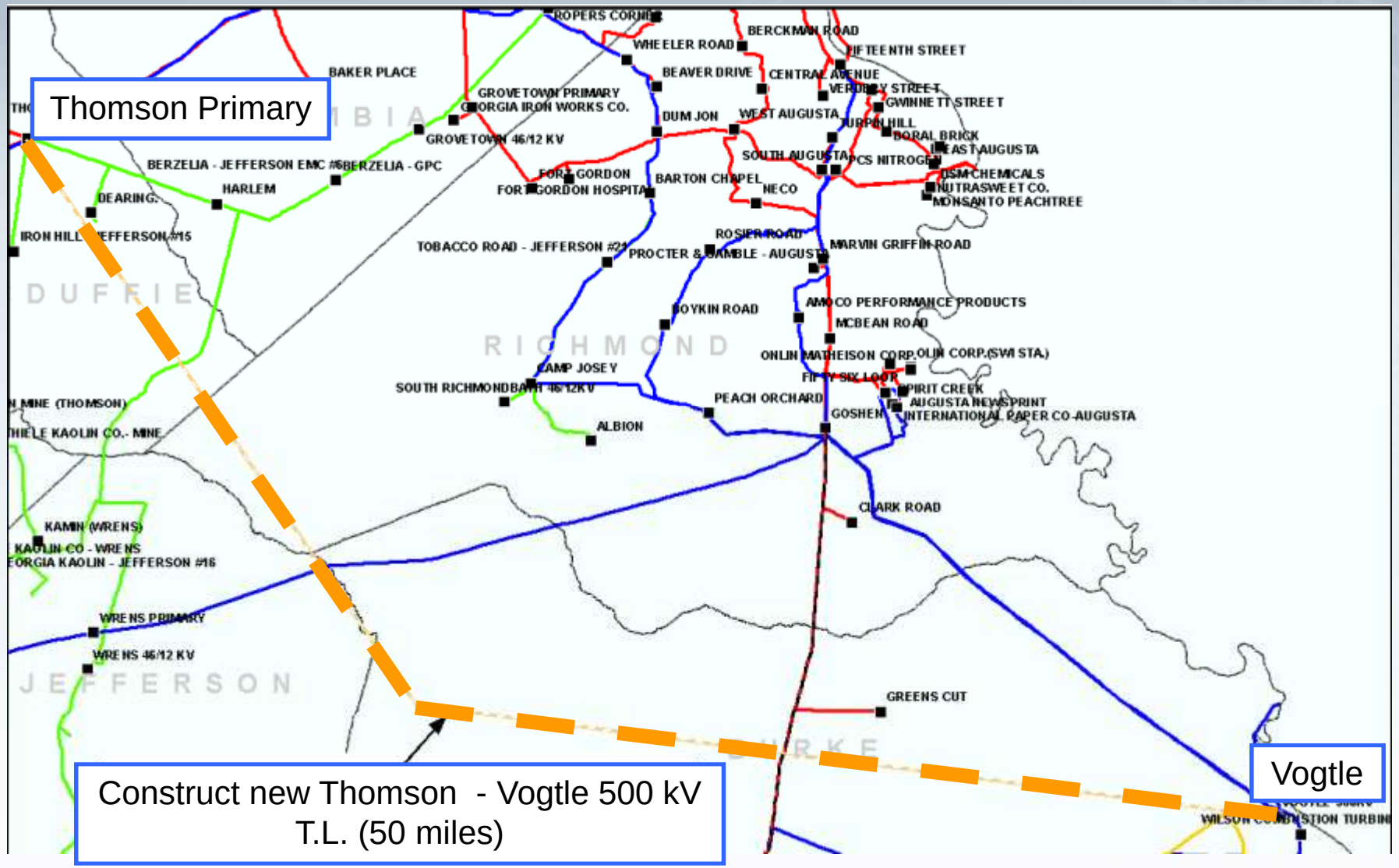
Thomson Primary – Vogtle 500 kV T.L.

- 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.

2016 E-13

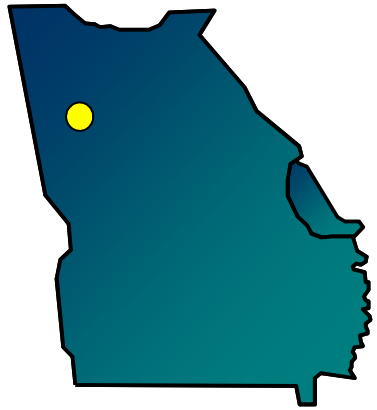


Southeastern Region Transmission Planning

Expansion Item E-14

2017 E-14

Corn Crib 230 / 115 kV Substation

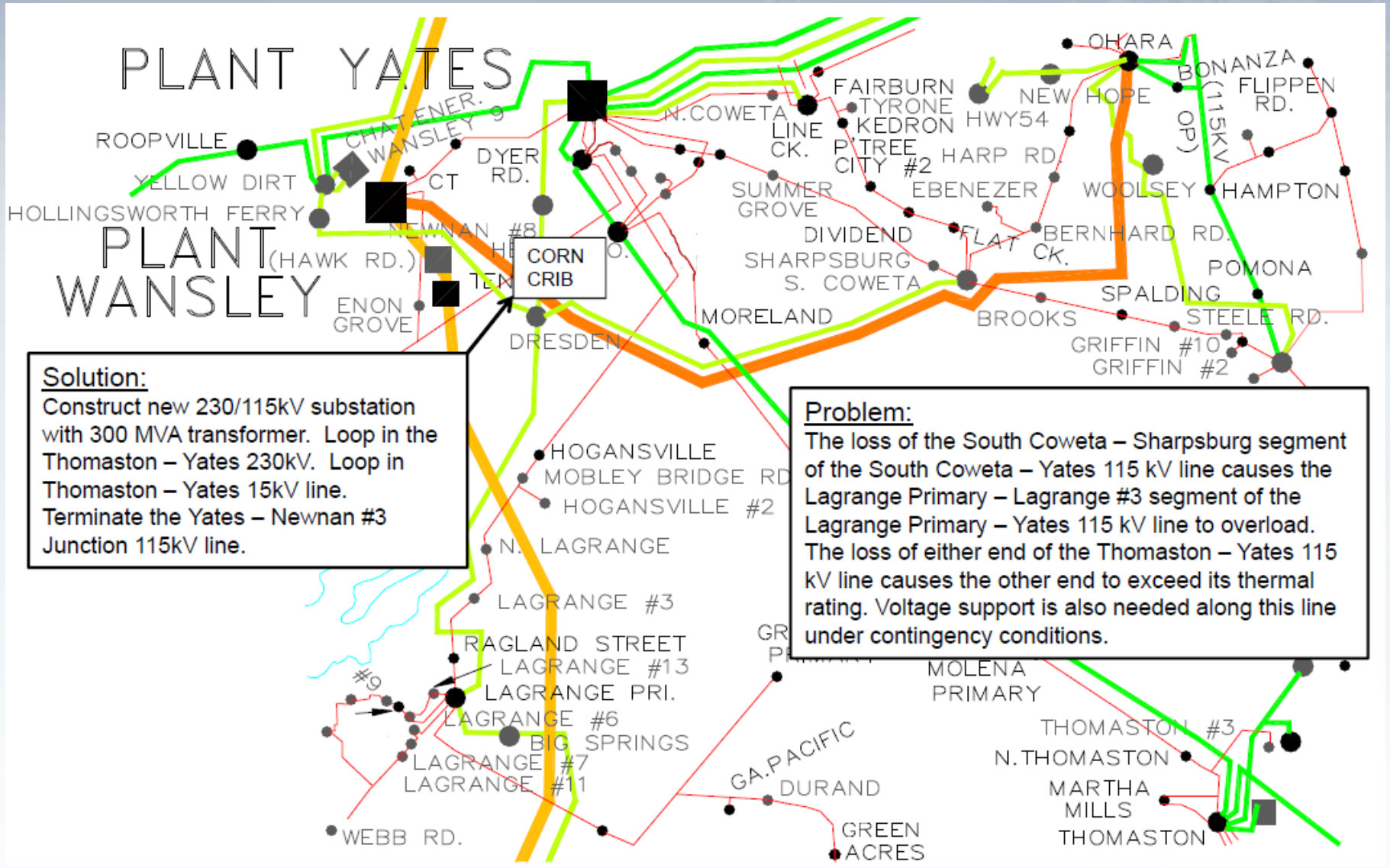


- Construct the Corn Crib 230 / 115 kV substation, looping the Thomaston – Yates 230 kV T.L. and the Thomaston – Yates 115 kV T.L.. Terminate the Yates – Newnan #3 Junction Transmission Line at Corn Crib.

- The loss of either end of the Thomaston – Yates 115 kV T.L. will overload the opposite end. This project also provides voltage support along the Thomaston – Yates 115 kV T.L.

Corn Crib 230 / 115 kV Substation

2017 E-14



Solution:
Construct new 230/115kV substation with 300 MVA transformer. Loop in the Thomaston – Yates 230kV. Loop in Thomaston – Yates 15kV line. Terminate the Yates – Newnan #3 Junction 115kV line.

Problem:
The loss of the South Coweta – Sharpsburg segment of the South Coweta – Yates 115 kV line causes the Lagrange Primary – Lagrange #3 segment of the Lagrange Primary – Yates 115 kV line to overload. The loss of either end of the Thomaston – Yates 115 kV line causes the other end to exceed its thermal rating. Voltage support is also needed along this line under contingency conditions.

Southeastern Region Transmission Planning

Expansion Item E-15

2017 E-15

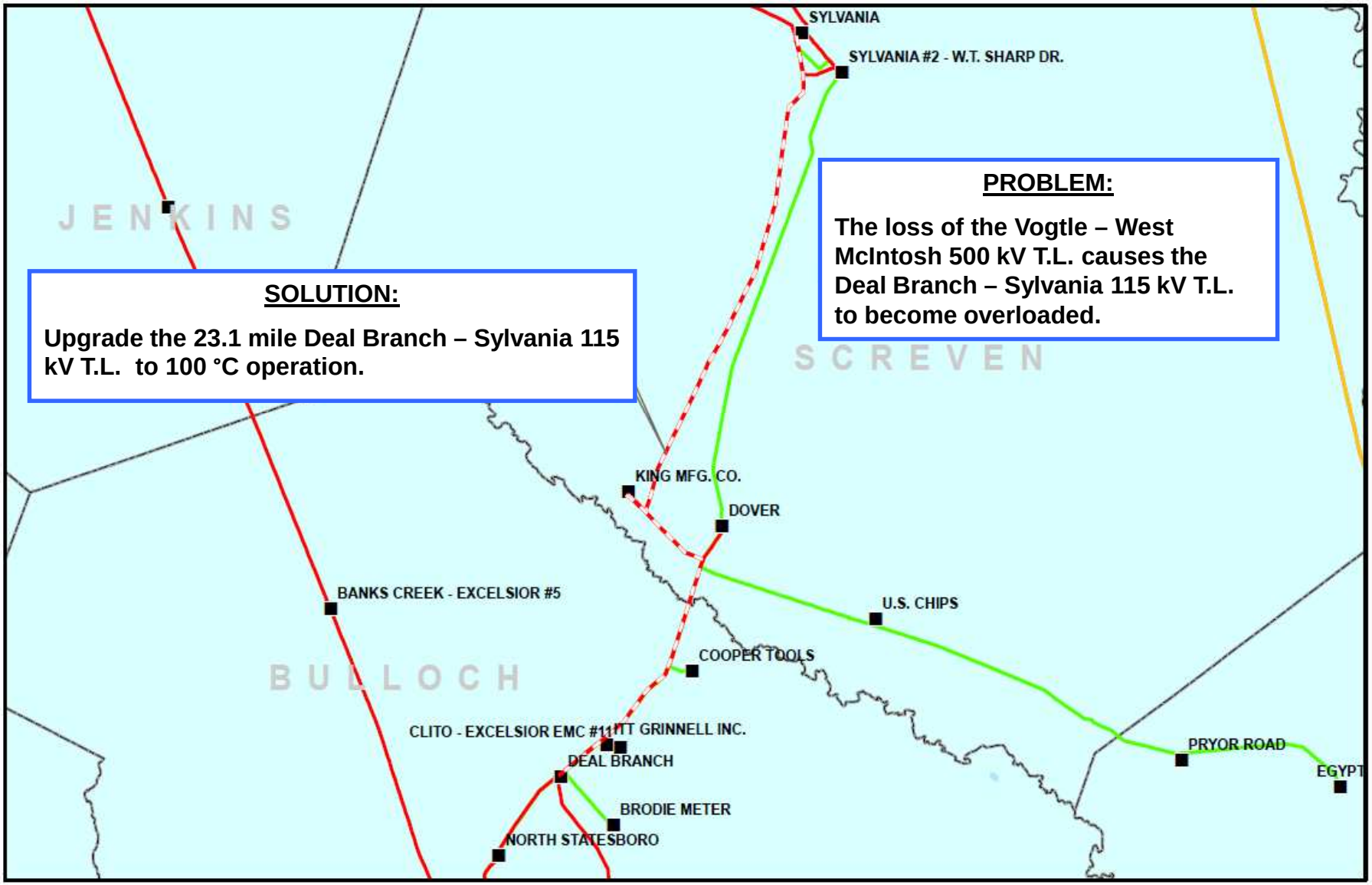
Deal Branch – Sylvania 115 kV T.L.

- 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.

2017 E-15



PROBLEM:

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

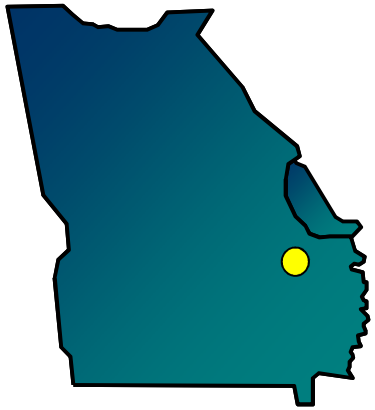
SOLUTION:

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

Southeastern Region Transmission Planning

Expansion Item E-16

2018 E-16



South Georgia 115 kV T.L.s

- Reconductor 9.6 miles from Daniel Siding to Little Ogeechee along the Hinesville – Little Ogeechee 115 kV T.L. with bundled (2) 336 ACSS at 200°C.
- Reconductor 15.6 miles along the Hinesville – Ludowici and Ludowici – Jesup 115 kV T.L.s with 795 ACSR.

- The loss of the Little Ogeechee – Dorchester 230 kV T.L. causes the Little Ogeechee – Hinesville 115 kV T.L. to become overloaded.
- The loss of the McCall Road – Thalmann 500 kV T.L. causes the Hinesville – Ludowici and Ludowici – Jesup 115 kV T.L.s to become overloaded.

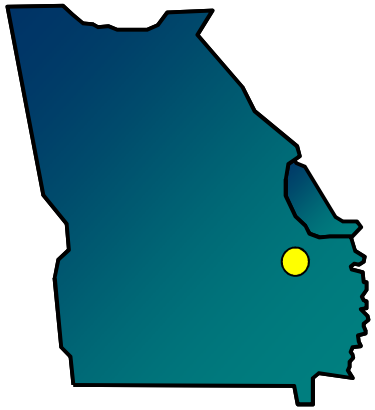
Southeastern Region Transmission Planning

Expansion Item E-17

2018 E-17

South Georgia 115 kV T.L.s

- Reconductor 36 miles from Ludowici – West Brunswick 115 kV T.L. with 795 ACSR.

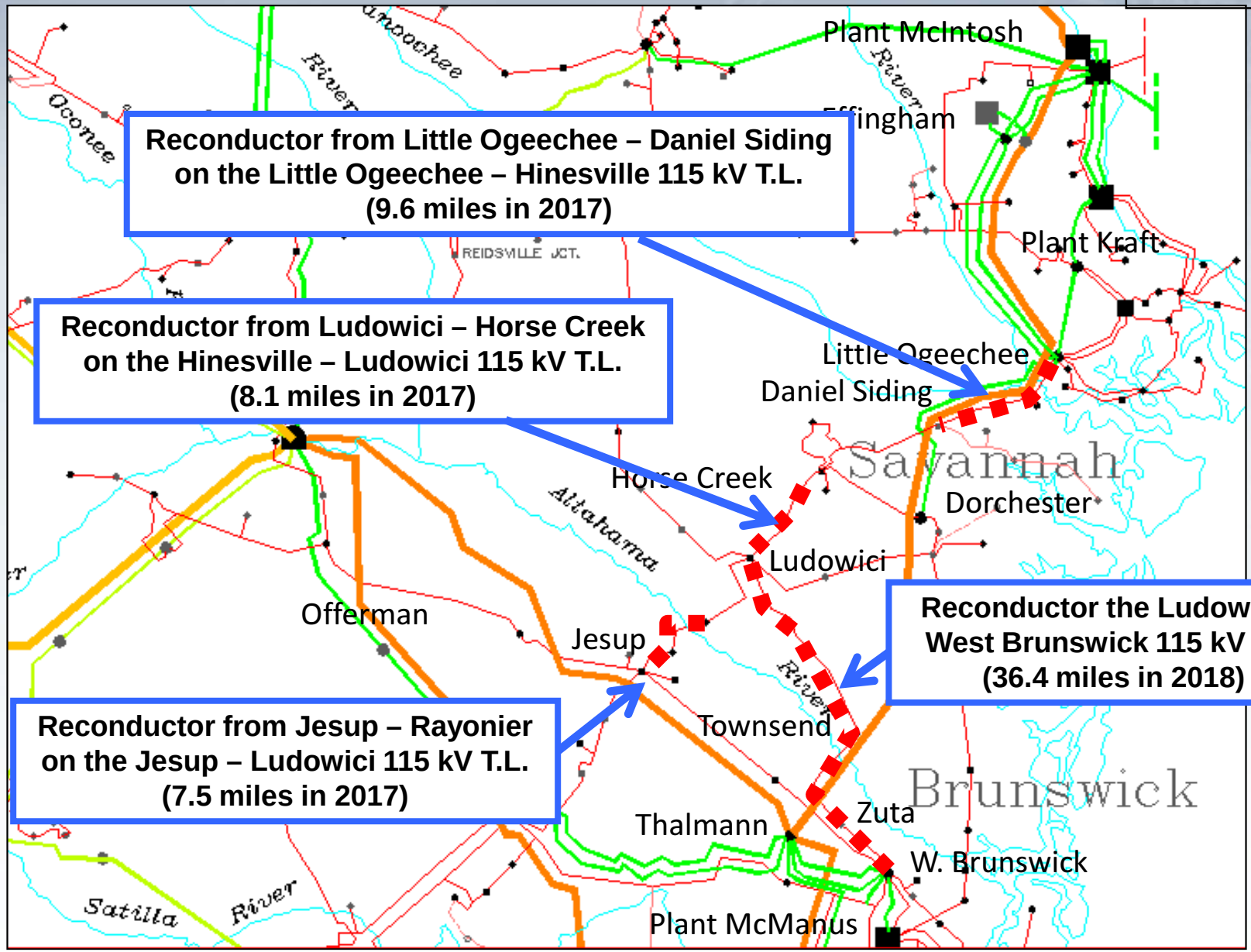


- The loss of the McCall Road – Thalmann 500 kV T.L. causes the Ludowici – West Brunswick 115 kV T.L. to become overloaded.

South Georgia 115 kV T.L.s

2018 E-16

2018 E-17

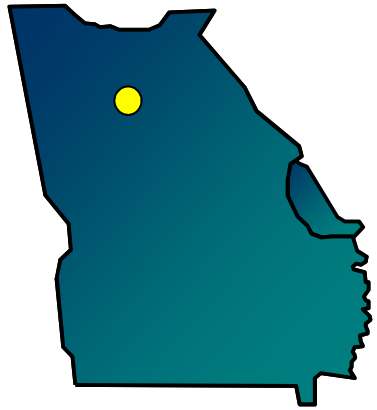


Southeastern Region Transmission Planning

Expansion Item E-18

2018 E-18

Sharon Springs 230 / 115 kV Substation

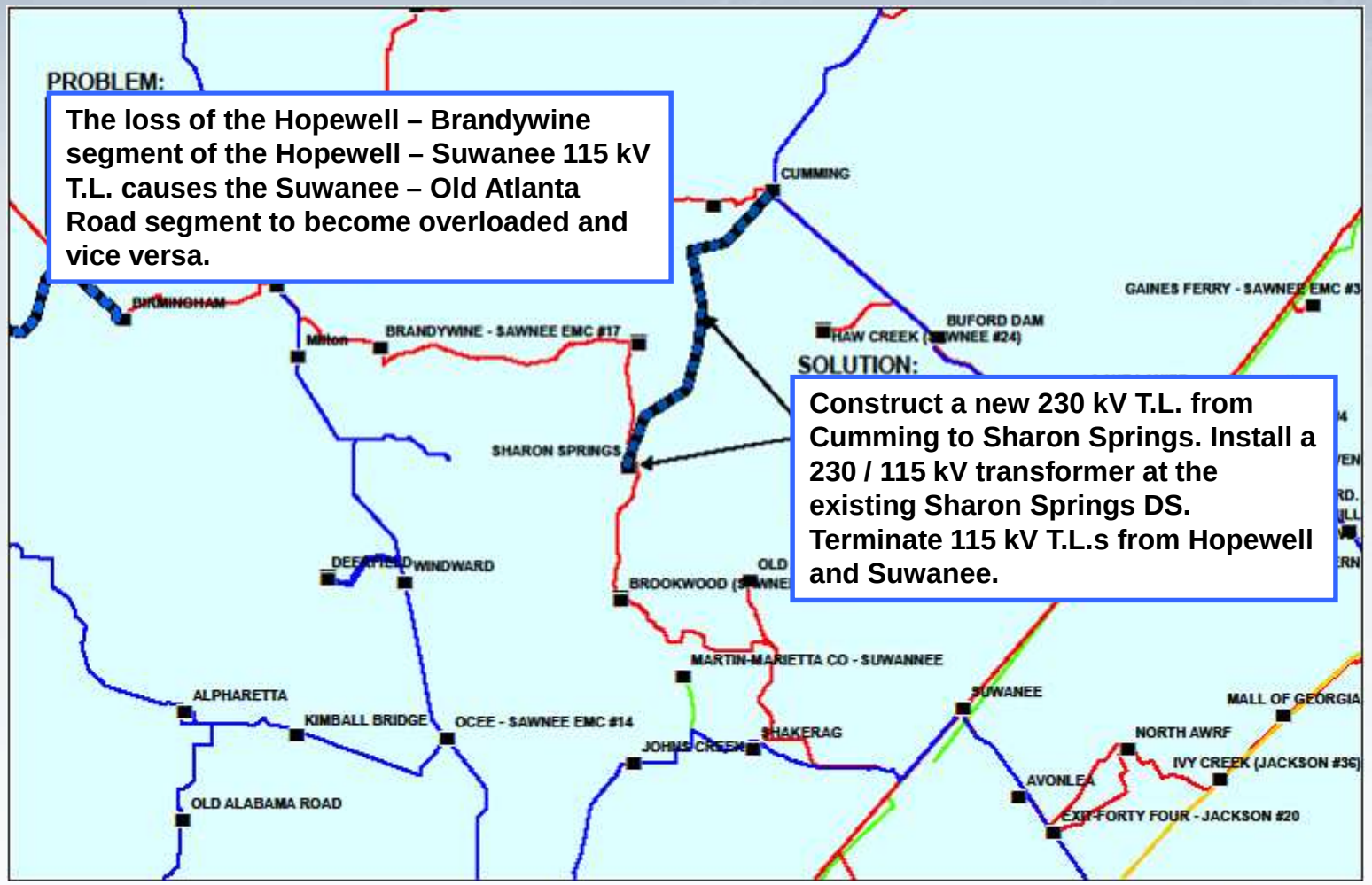


- Install a 230 / 115 kV transformer at the existing Sharon Springs 115 kV distribution substation.
- Construct a new 6.6 mile, 230 kV transmission line from Cumming to Sharon Springs (1351 ACSR at 100 ºC).

- 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

2018 E-18



Southeastern Region Transmission Planning

Expansion Item E-19

2018 E-19

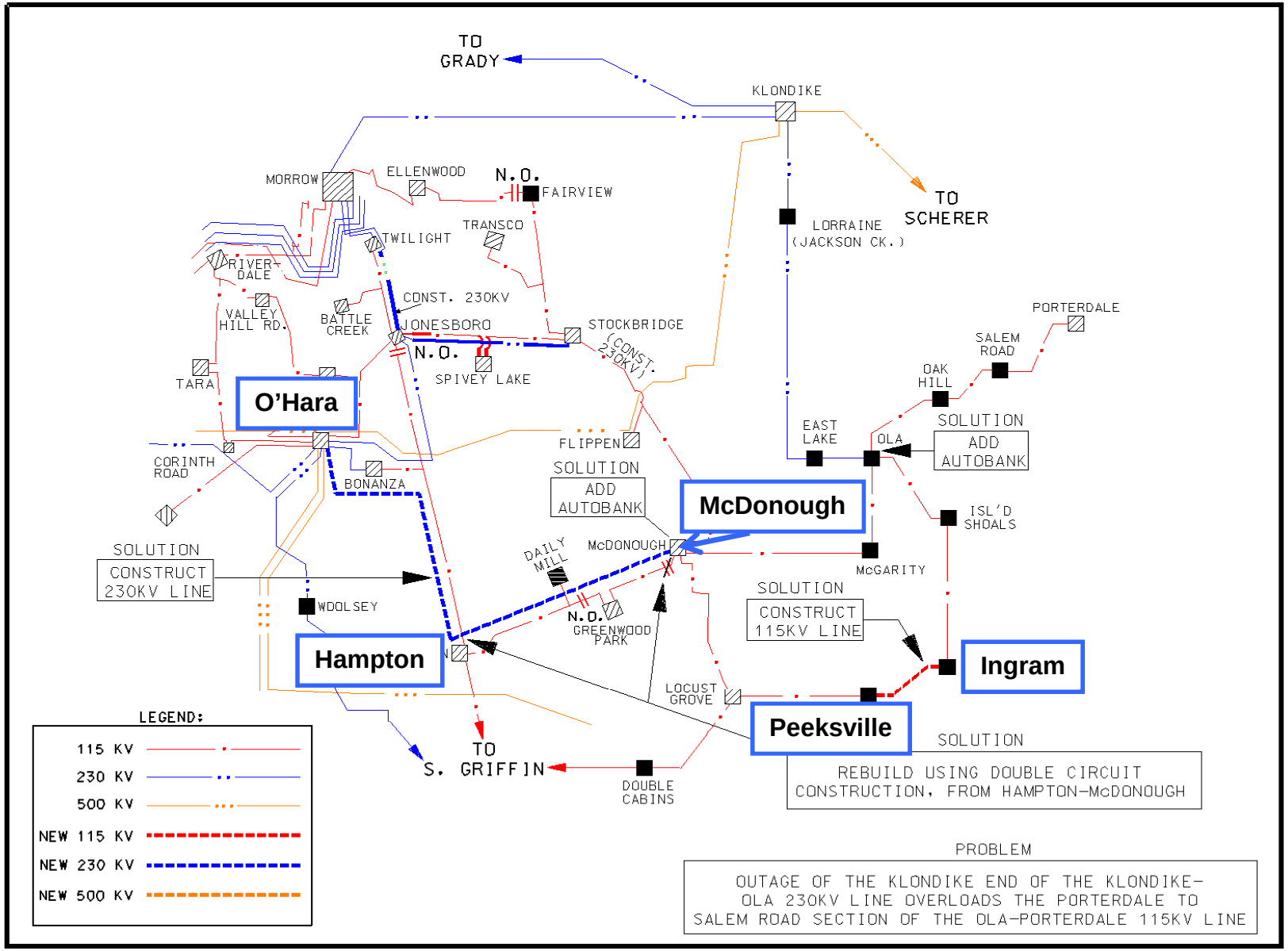
South Metro Phase-III Project

- Rebuild the existing O'Hara – Bonanza – Hampton – McDonough 115 kV T.L. with double circuit with ACSR 1351 at 230 kV specifications.
- Create a new 230 kV circuit from O'Hara to McDonough and add a 230 / 115 kV, 400 MVA transformer at McDonough
- Construct a 115 kV T.L. between the Peeksville and Ingram substations.

- Project alleviates multiple thermal overloads in the metro Atlanta area.

South Metro Phase III Project

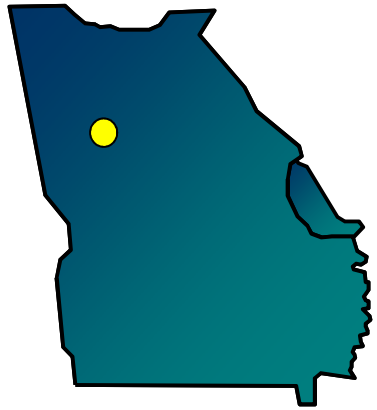
2018 E-19



Southeastern Region Transmission Planning

Expansion Item E-20

2019 E-20



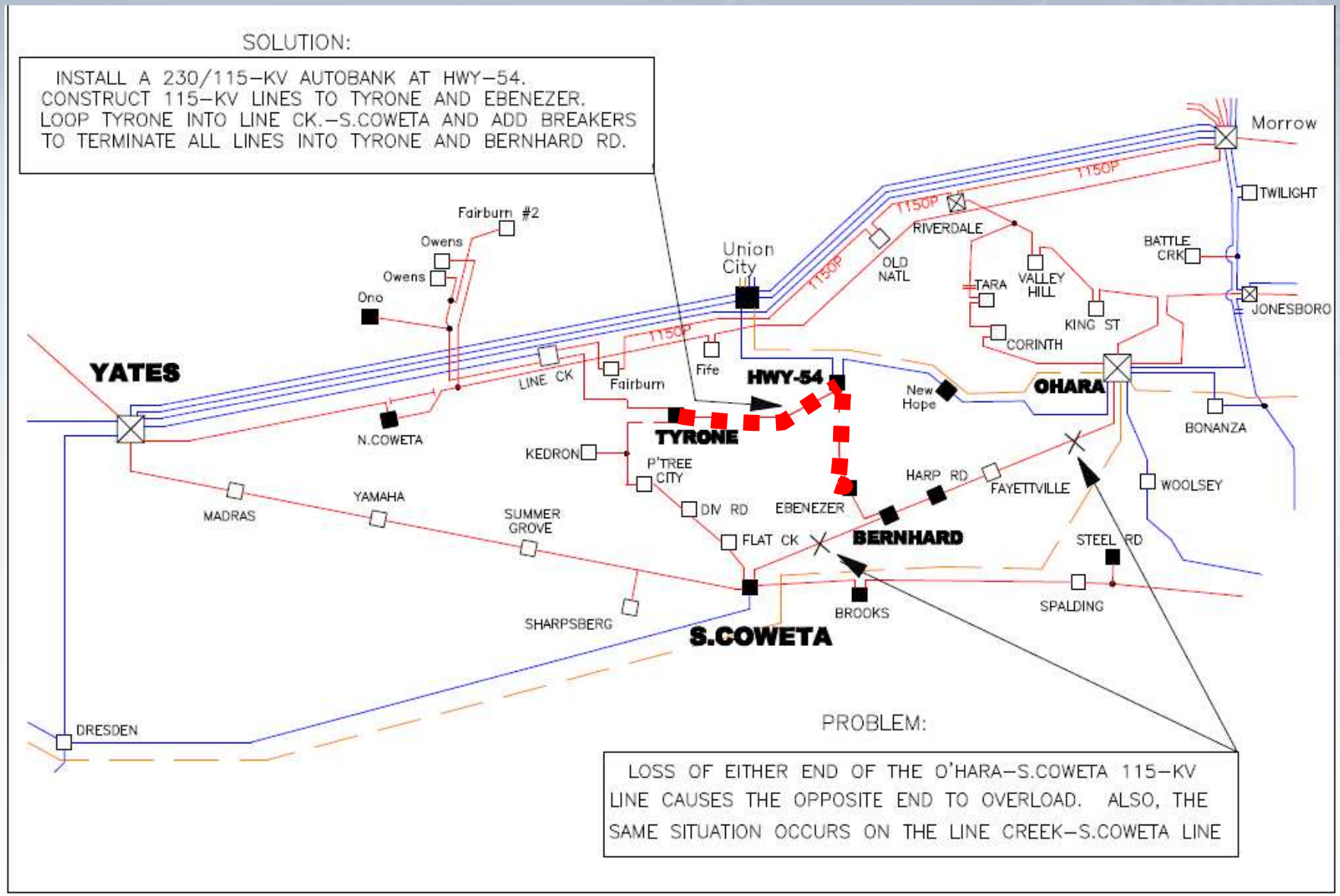
Highway 54 230 / 115 kV Substation

- Construct a 230 / 115 kV transformer at the Highway 54 substation.
- Construct 4.0 miles of new 115 kV T.L. from Tyrone to Highway 54 and 4.5 miles of new 115 kV T.L. from Bernhard Road to Highway 54.
- Loop in the Line Creek – South Coweta 115 kV T.L. into the Tyrone substation.

- The loss of one end of the O'Hara – South Coweta 115 kV T.L. causes the other end to become overloaded.
- The loss of one end of the Line Creek – South Coweta 115 kV T.L. causes the other end to become overloaded.

Highway 54 230 / 115 kV Substation

2019 E-20



Southeastern Region Transmission Planning

Expansion Item E-21

2021 E-21

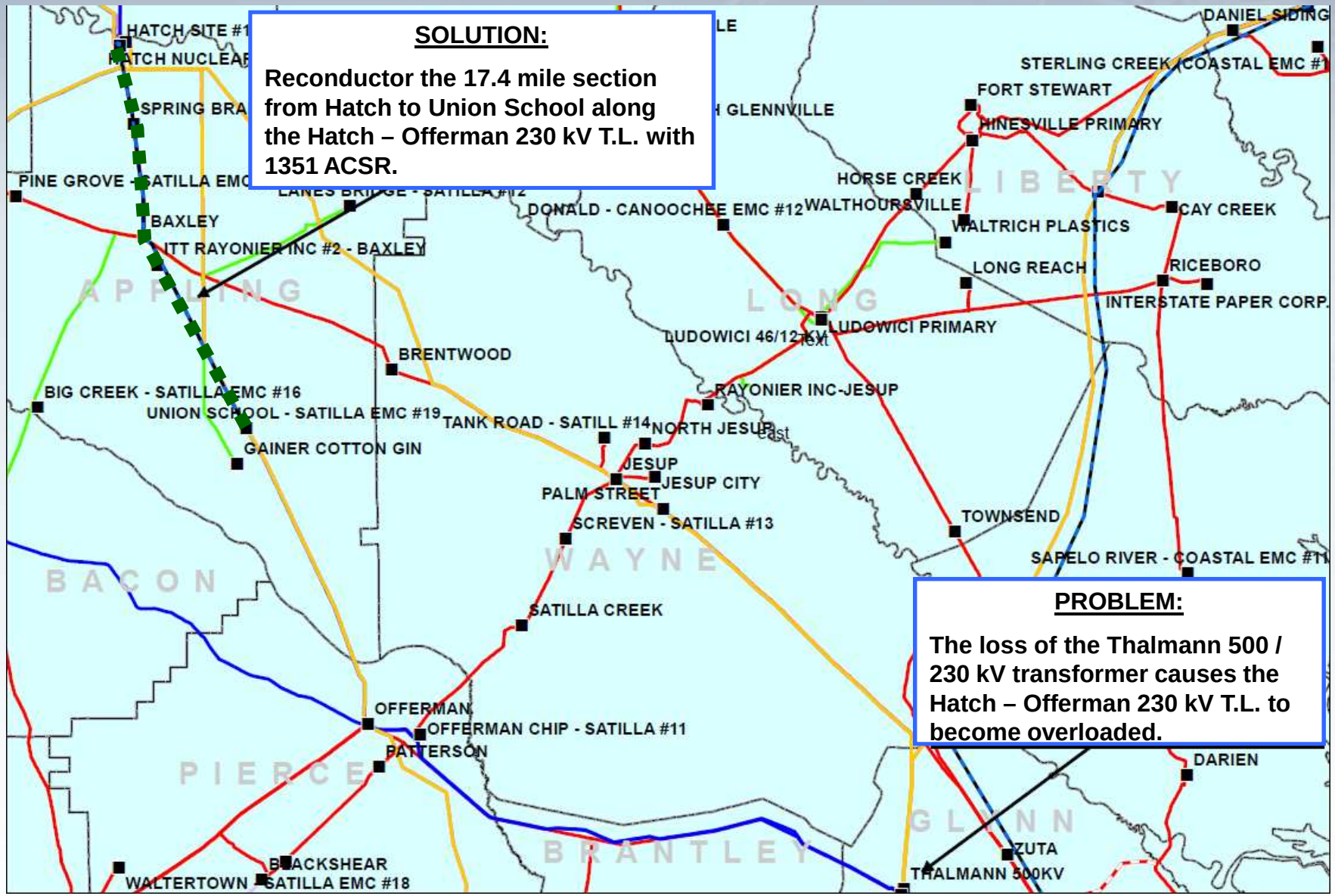
Hatch – Offerman 230 kV T.L.

- Reconductor the 17.4 mile section from Hatch to Union School along the Hatch – Offerman 230 kV T.L. with 1033 ACSS at 170 ºC.

- The loss of the Thalmann 500 / 230 kV transformer causes the Hatch – Offerman 230 kV T.L. to become overloaded.

Hatch – Offerman 230 kV T.L.

2021 E-21



Southeastern Region Transmission Planning

Expansion Item E-22

2021 E-22

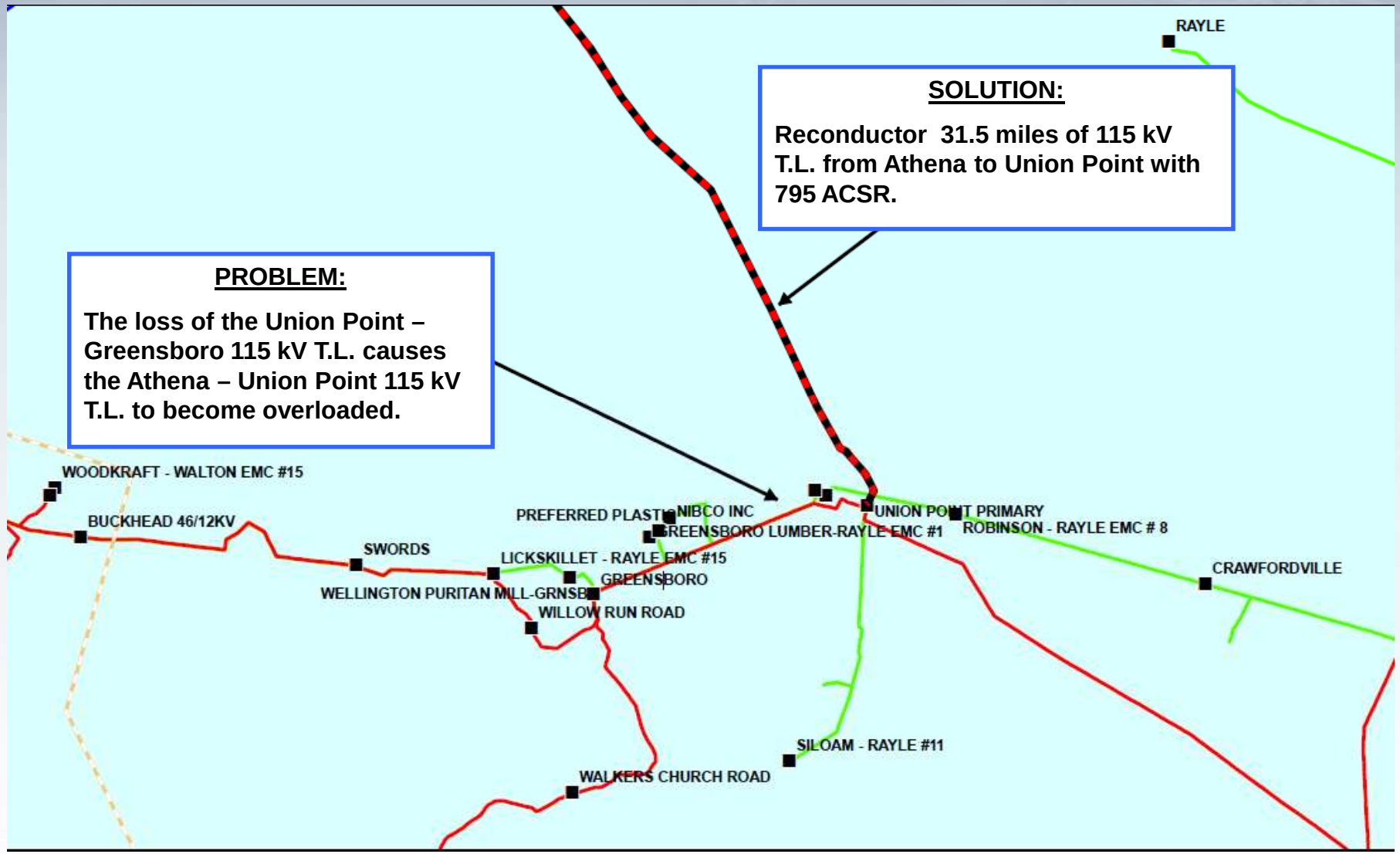
Athena – Union Point 115 kV T.L.

- Reconductor 31.5 miles of 115 kV T.L. from Athena to Union Point with 795 ACSR at 100 ºC.

- The loss of the Union Point – Greensboro 115 kV T.L. causes the Athena – Union Point 115 kV T.L. to become overloaded.

Athena – Union Point 115 kV T.L.

2021 E-22



Southeastern Region Transmission Planning

Expansion Item E-23

2021 E-23

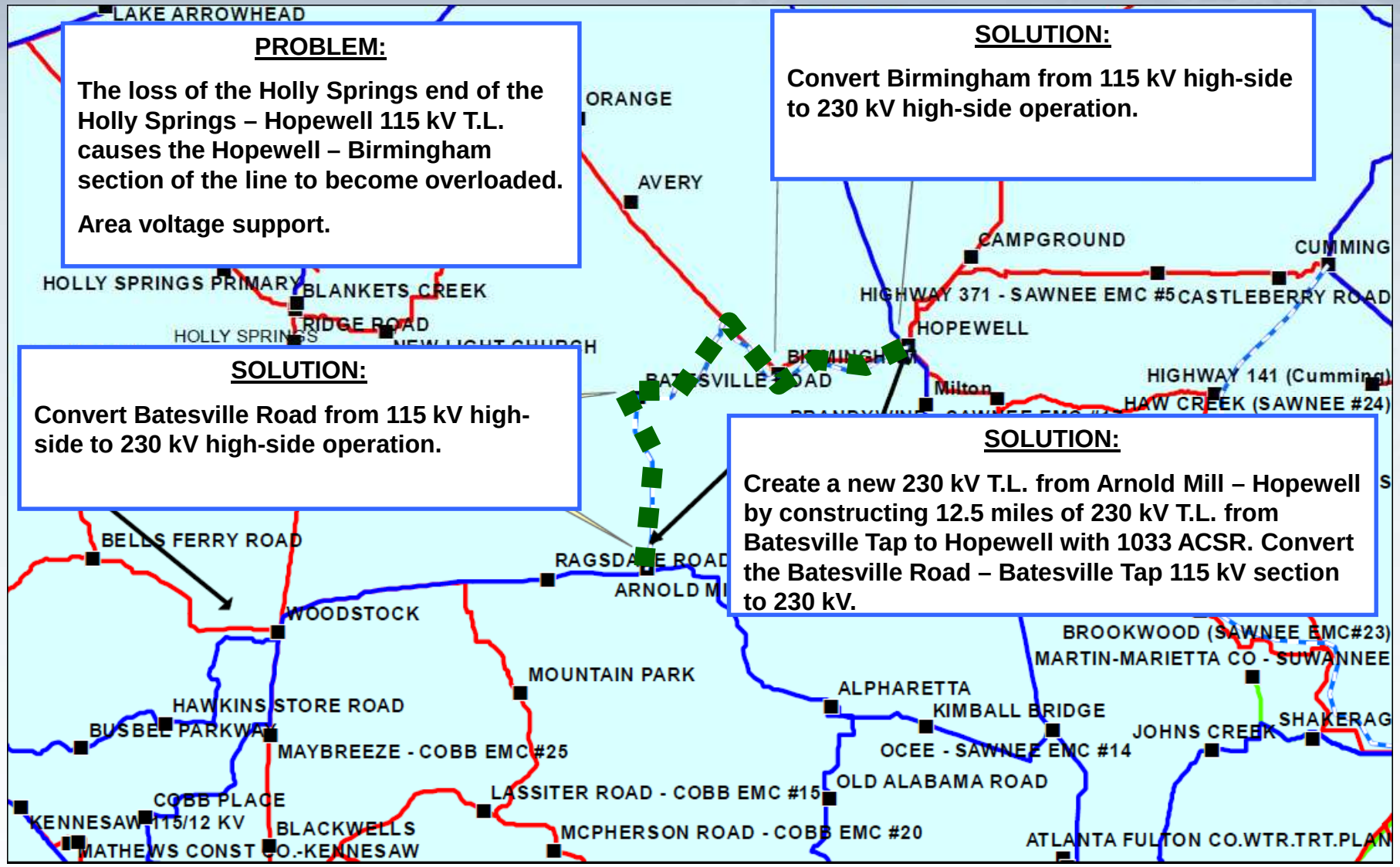
Holly Springs – Hopewell Area Project

- 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

2021 E-23



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?