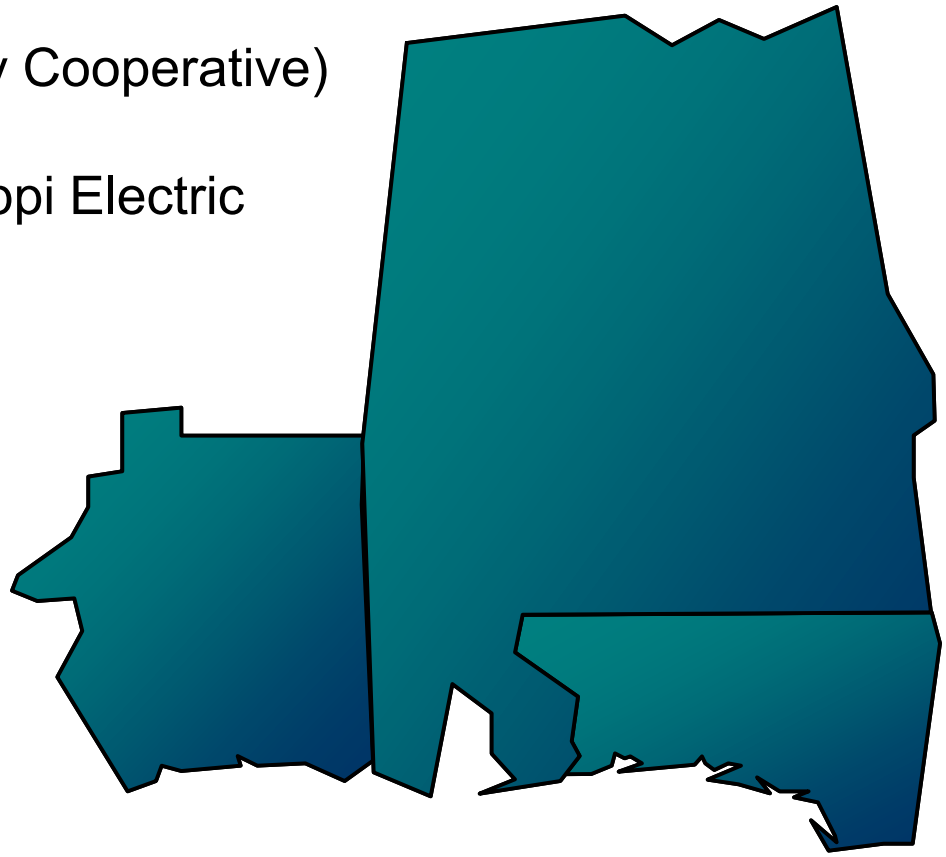
Southeastern Region Transmission Planning

West

- PS (PowerSouth Energy Cooperative)
- SMEPA (South Mississippi Electric Power Association)
- Southern Company Transmission



Southeastern Region Transmission Planning

Expansion Item W-1

2013 W-1

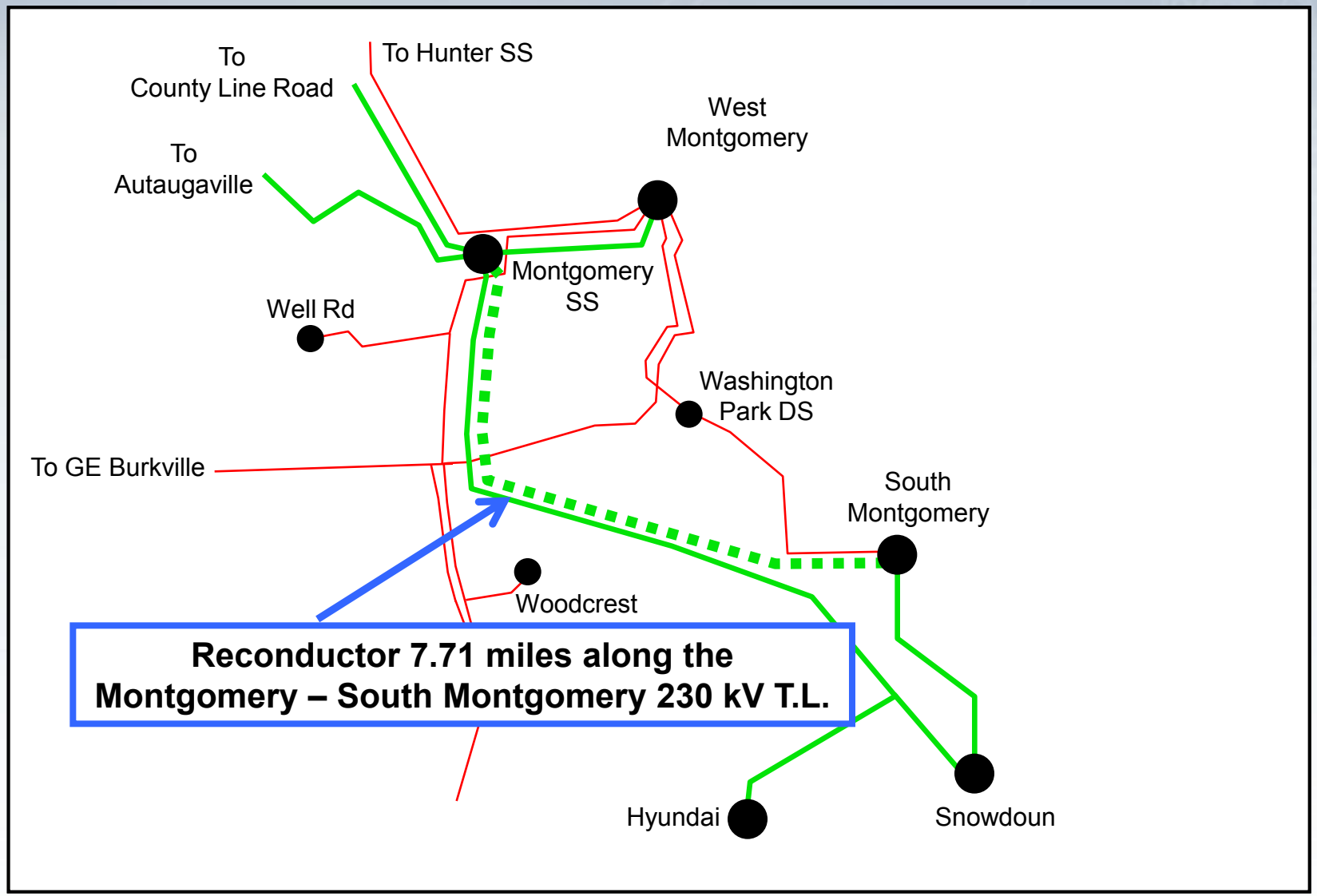
Montgomery – South Montgomery 230 kV T.L.

- Reconductor 7.71 miles with 2-795 ACSS at 200 °C along the Montgomery – South Montgomery 230 kV T.L.

- The loss of the Snowdoun – Autaugaville 500 kV T.L. causes the Montgomery SS – South Montgomery 230 kV T.L. to become overloaded.

2013 W-1

Montgomery – South Montgomery 230 kV T.L.



Southeastern Region Transmission Planning

Expansion Item W-2

2013 W-2

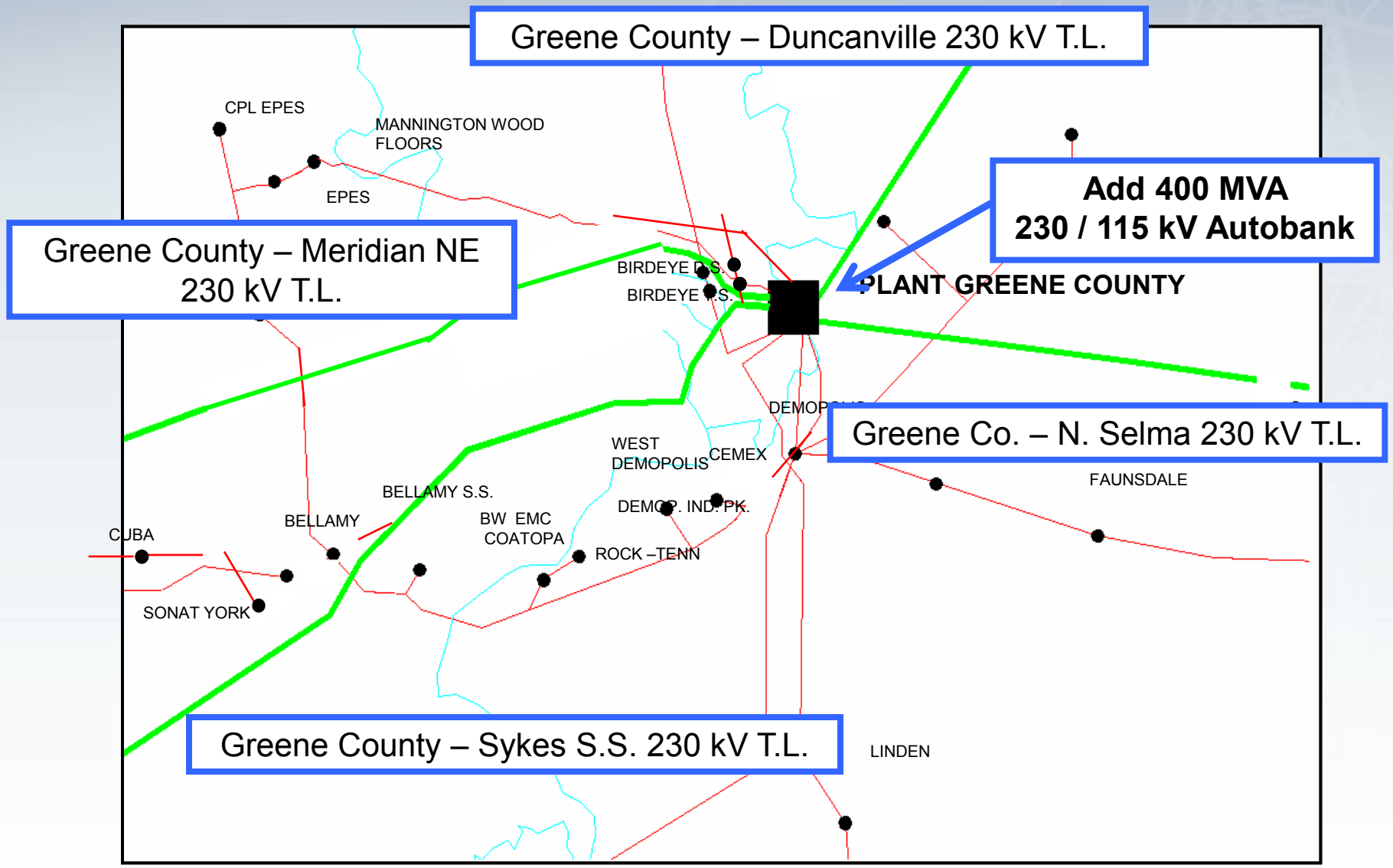
Greene County Substation

- Install a second 230 / 115 kV transformer at Greene County substation.

- The loss of the existing 230 / 115 kV transformer at Greene County SP causes the South Tuscaloosa – Eutaw 115 kV T.L. to become overloaded.

Greene County Substation

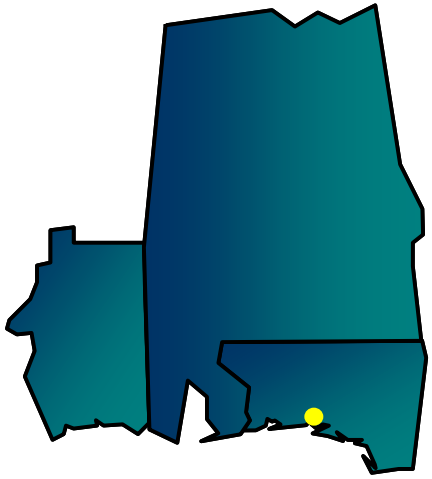
2013 W-2



Southeastern Region Transmission Planning

Expansion Item W-3

2013 W-3



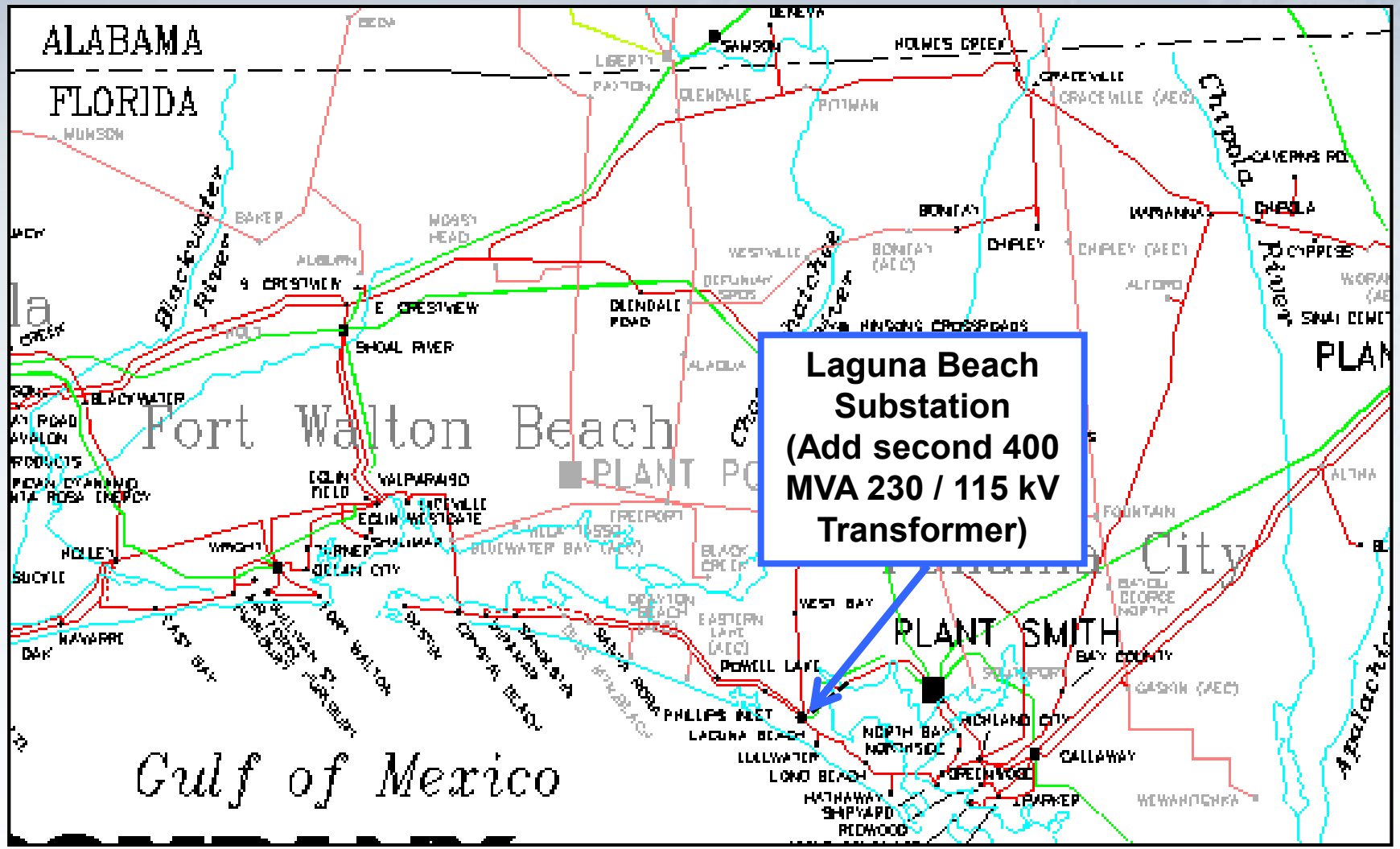
Laguna Beach 230 / 115 kV Substation

- Install a second 230 / 115 kV transformer at Laguna beach substation.

- The loss of the Smith 230 / 115 kV transformer, with Smith Unit #1 offline, causes the Laguna Beach 230 / 115 kV transformer to become overloaded.

2013 W-3

Laguna Beach 230 / 115 kV Substation



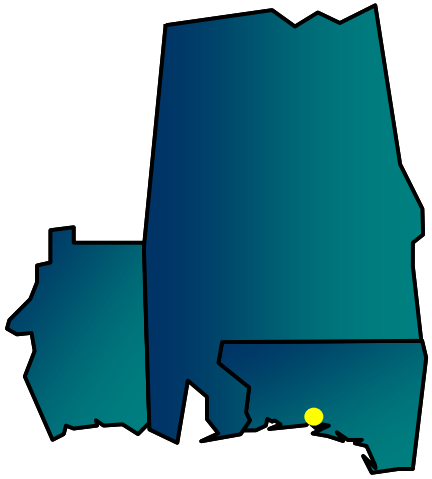
Southeastern Region Transmission Planning

Expansion Item W-4

Smith – Laguna Beach 230 kV T.L.

- Convert the Smith – Laguna Beach 115 kV T.L. to 230 kV operation.

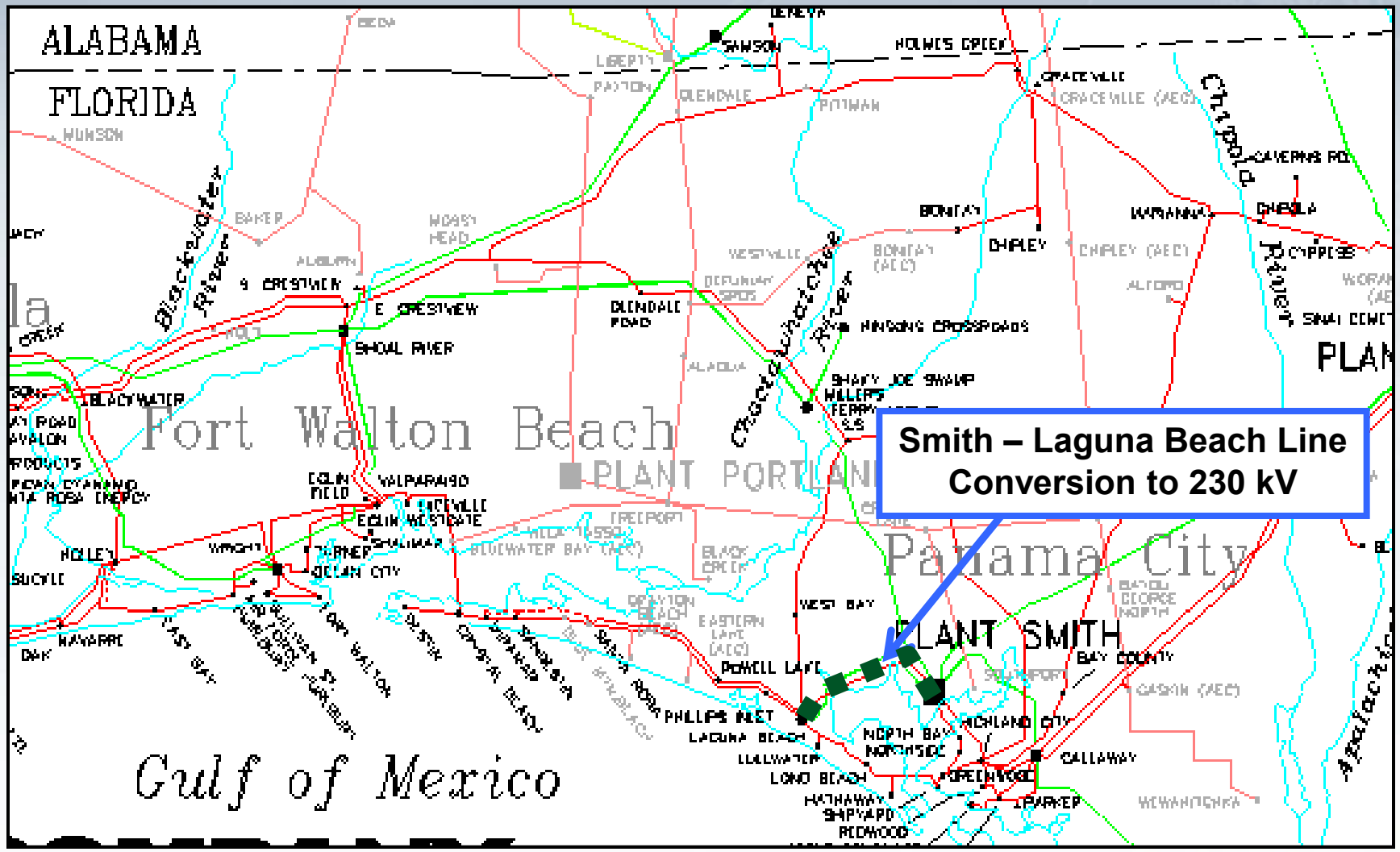
2013 W-4



- The loss of one of the Laguna Beach 230 / 115 kV transformers, with Crist Unit #7 offline, causes the Smith – Laguna Beach 115 kV to become overloaded.

Smith – Laguna Beach 230 kV T.L.

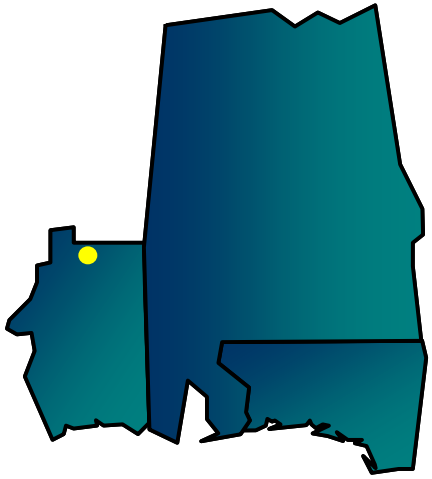
2013 W-4



Southeastern Region Transmission Planning

Expansion Item W-5

2013 W-5



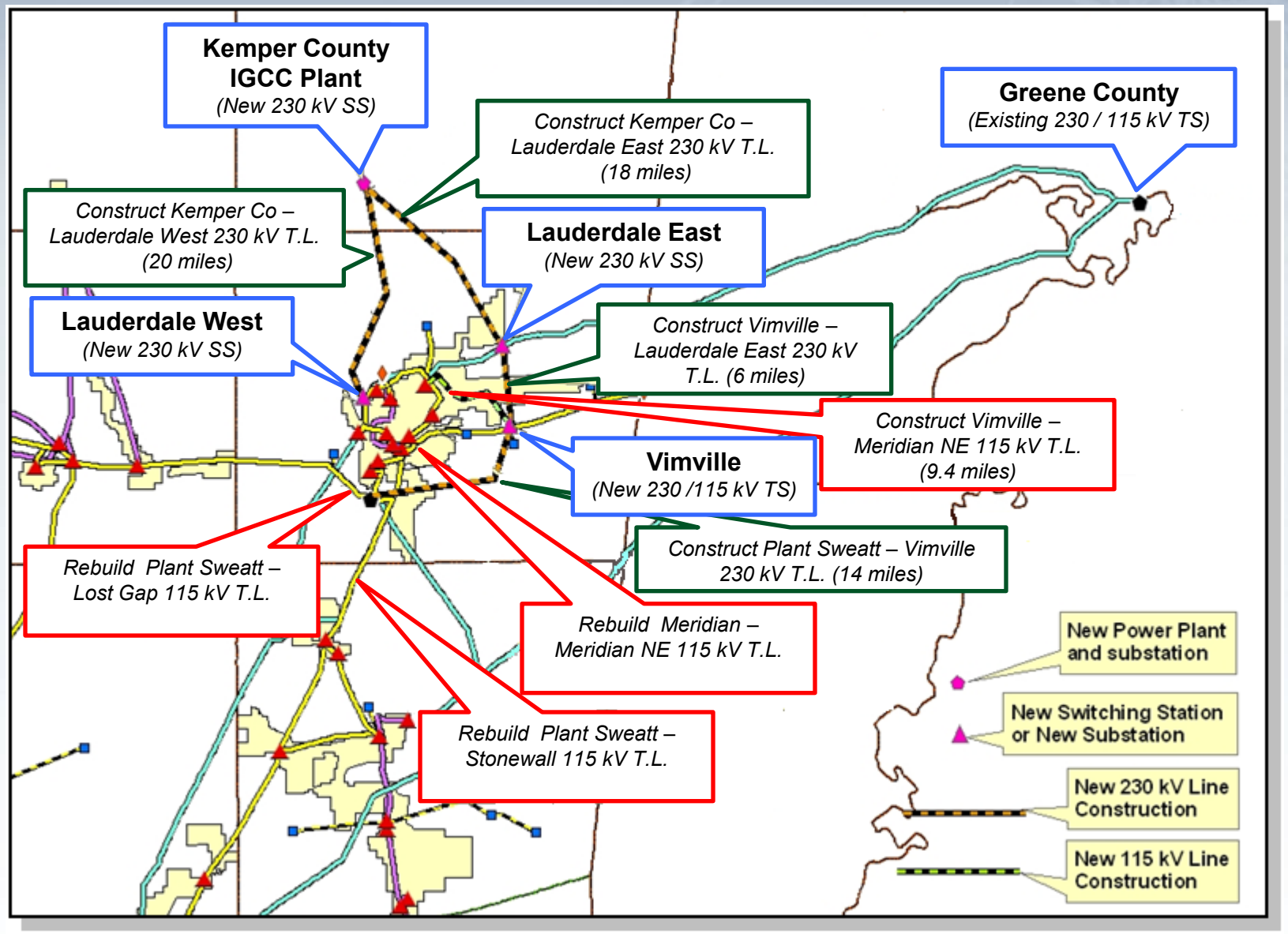
Kemper County Area Project

- IGCC plant addition in Kemper County, Mississippi and construct all transmission facilities required for firm service from the plant.

- These projects are to support the addition of Kemper County IGCC.

Kemper County Area Project

2013 W-5



Southeastern Region Transmission Planning

Expansion Item W-6

Lauderdale East – Greene County 230 kV T.L.

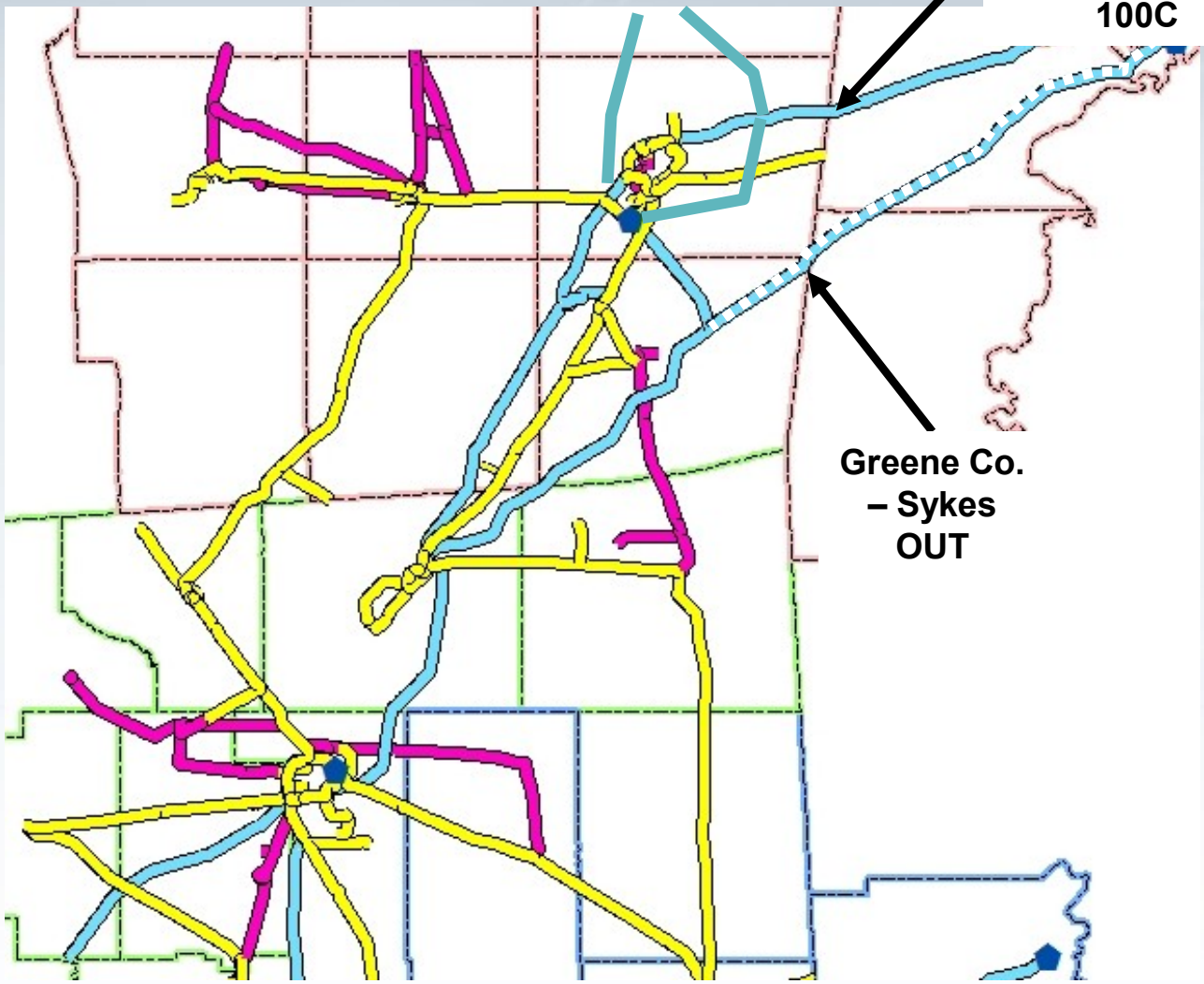
- Upgrade 49.8 miles along the Lauderdale East – Greene County 230 kV T.L. to 100 °C

2013 W-6

- The loss of the Greene County – Sykes 230 kV T.L. causes the Lauderdale East – Greene County 230 kV T.L. to become overloaded.

Lauderdale East – Greene County 230 kV T.L.

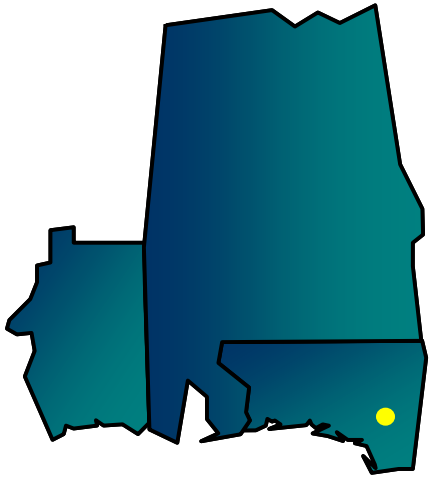
2013 W-6



Southeastern Region Transmission Planning

Expansion Item W-7

2013 W-7



Highland City – Callaway 230 kV T.L.

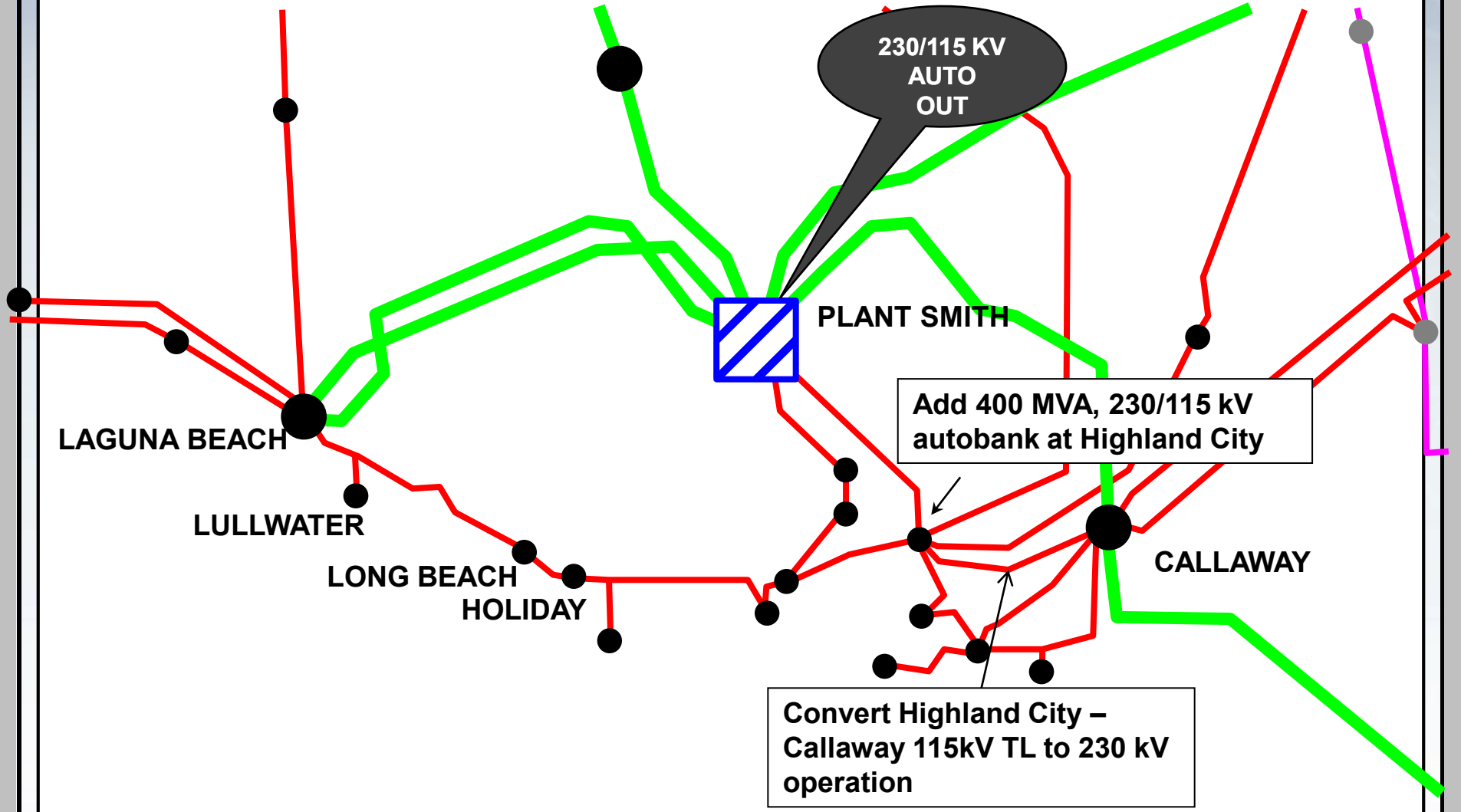
- Convert the Highland City – Callaway 115 kV T.L. to 230 kV operation.
- Install a 400 MVA, 230 / 115 kV transformer at Highland City

---

- The loss of the Smith 230 / 115 kV transformer, with Smith Unit #1 offline, causes the Laguna Beach – Lullwater Tap 115 kV T.L. to become overloaded.

Highland City – Callaway 230 kV T.L.

2013 W-7



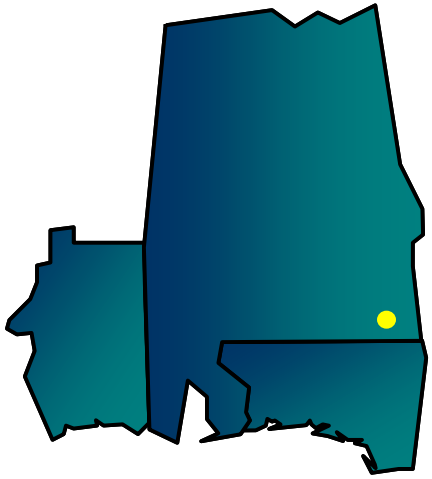
Southeastern Region Transmission Planning

Expansion Item W-8

2013 W-8

Pinckard – Slocomb 115 kV T.L.

- Reconductor 12.5 miles of 115 kV T.L. with 1033 ACSS at 160º C (constructed at 230kV specifications). Upgrade the Holmes Creek terminals at Pinckard T.S. to 2000 A.

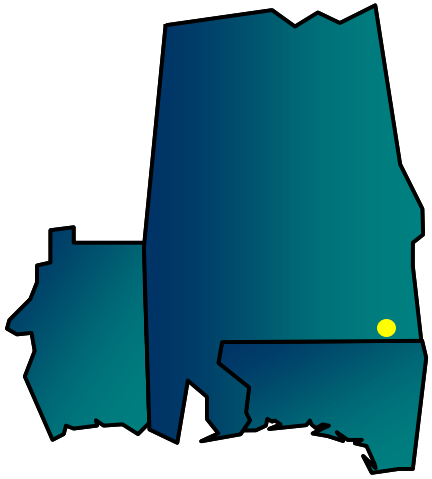


- The loss of Farley – Sinai Cemetery 230 kV T.L., with Smith Unit #3 offline, causes the Pinckard – Slocomb 115 kV T.L. to become overloaded.

Southeastern Region Transmission Planning

Expansion Item W-9

2014 W-9



Slocomb – Holmes Creek 115 kV T.L.

- Reconductor 10.4 miles of 115 kV T.L. from Slocomb to Holmes Creek with 1033 ACSS at 160º C (constructed at 230kV specifications).

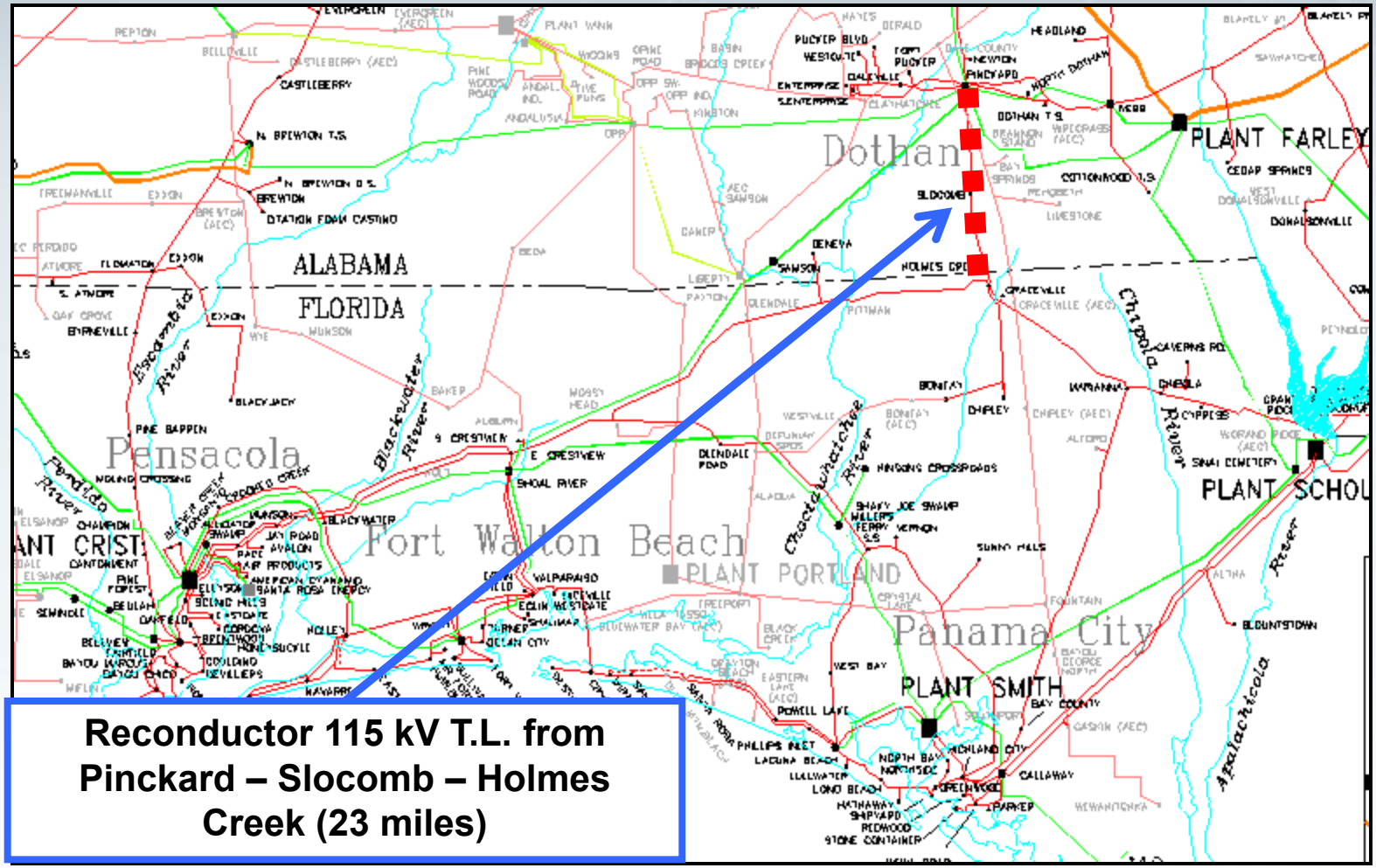
- The loss of Farley – Sinai Cemetery 230 kV T.L., with Smith unit #3 offline, causes this line to become overloaded.

Pinckard – Slocomb 115 kV T.L.

Slocomb – Holmes Creek 115 kV T.L.

2013 W-8

2014 W-9



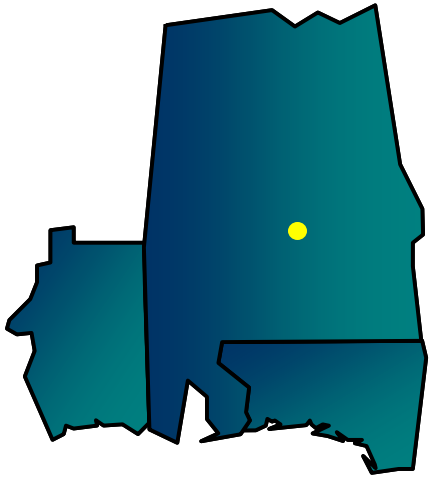
Southeastern Region Transmission Planning

Expansion Item W-10

Snowdoun – Pike County 230 kV T.L.

- Reconductor 32.4 miles of 230 kV T.L. between Snowdoun and Pike County with 3M 1033 ACCR.

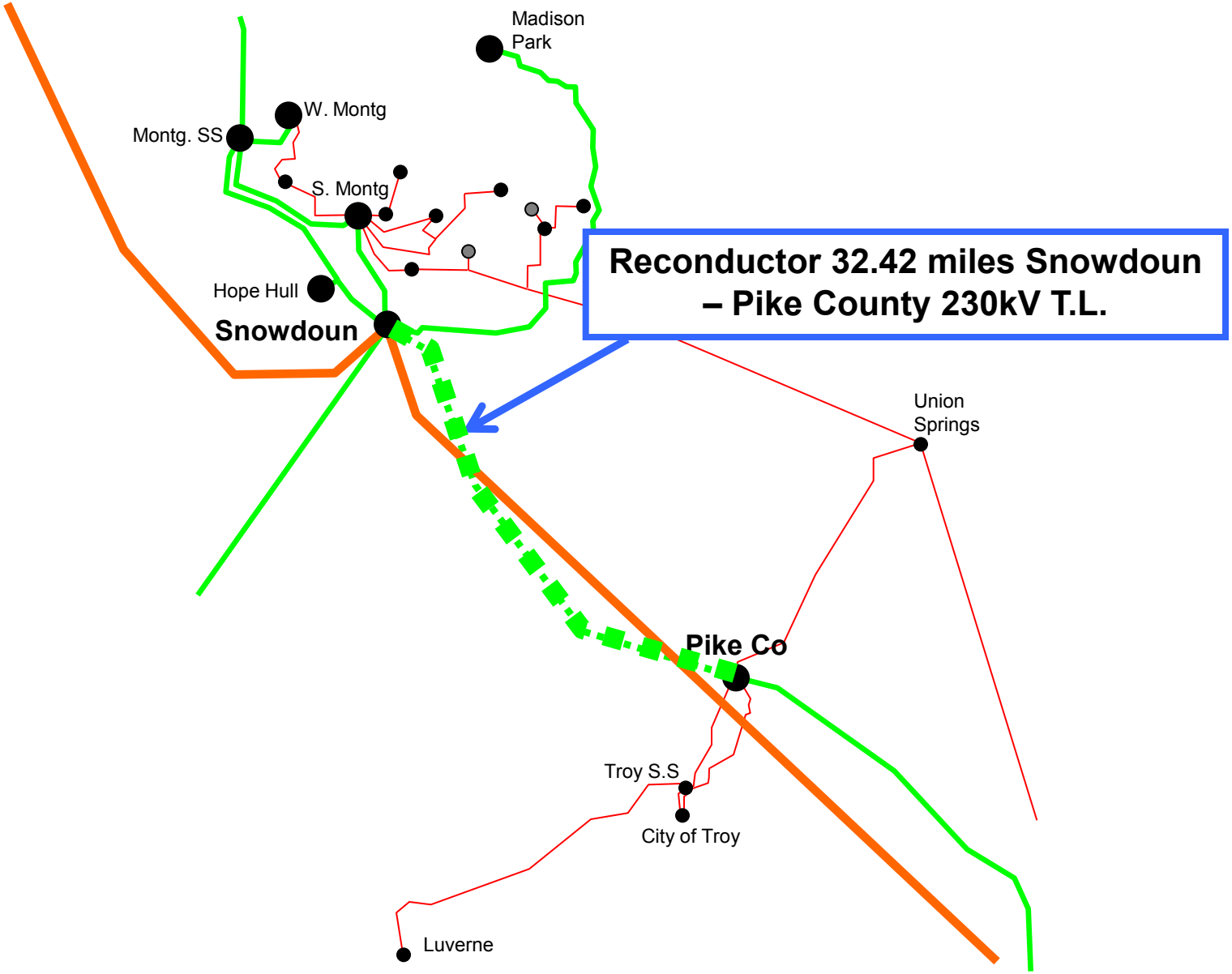
2014 W-10



- The loss of Snowdoun – Farley 500 kV T.L., with Farley Unit #1 offline, causes the Snowdoun – Pike County 230 kV T.L. to become overloaded.

Snowdoun – Pike Co. 230 kV T.L.

2014 W-10



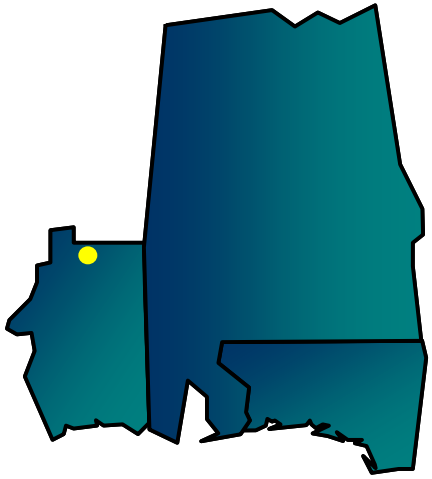
Southeastern Region Transmission Planning

Expansion Item W-11

Anniston Area Improvement

- Reconductor 1.5 miles with 795 ACSR along the Anniston – Oxanna 115 kV T.L.
- Create a new 115 kV T.L. from Anniston to Crooked Creek.

2014 W-11

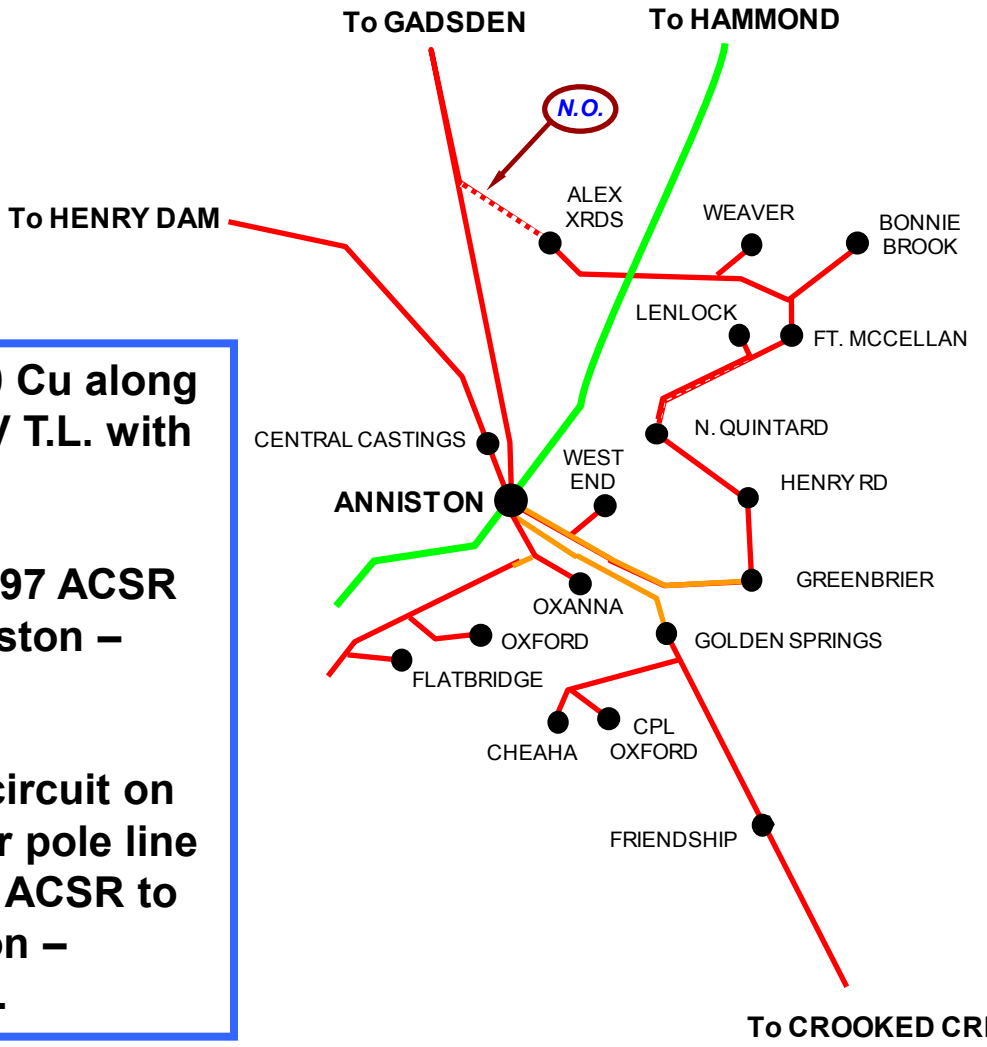


- The loss of the West End DS – Oxanna Tap 115 kV line section, causes the southern end of the Anniston – Crooked Creek 115 kV T.L. to become overloaded.
- Voltage Support.

Anniston Area Improvement

2014 W-11

- Reconductor 1.6 miles 2/0 Cu along Anniston – Oxanna 115 kV T.L. with 795 ACSR
- Reconnect 0.67 miles of 397 ACSR tap to Oxanna to the Anniston – Bynum 115 kV T.L.
- Add a second 795 ACSR circuit on the West End – Greenbrier pole line and reconductor with 795 ACSR to complete the new Anniston – Crooked Creek 115 kV T.L.



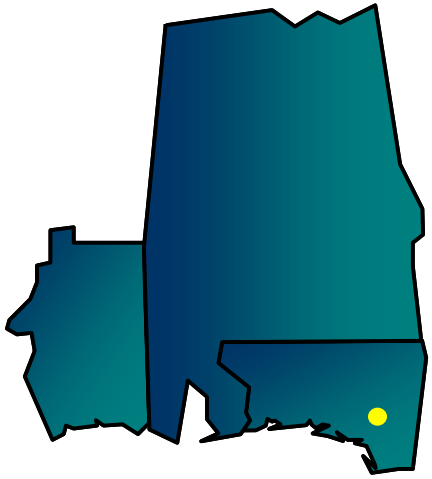
Southeastern Region Transmission Planning

Expansion Item W-12

Marianna – Highland City 115 kV T.L.

- Reconductor 47.8 miles of 115 kV T.L. from Marianna to Highland City with 1033 ACSR at 100° C.

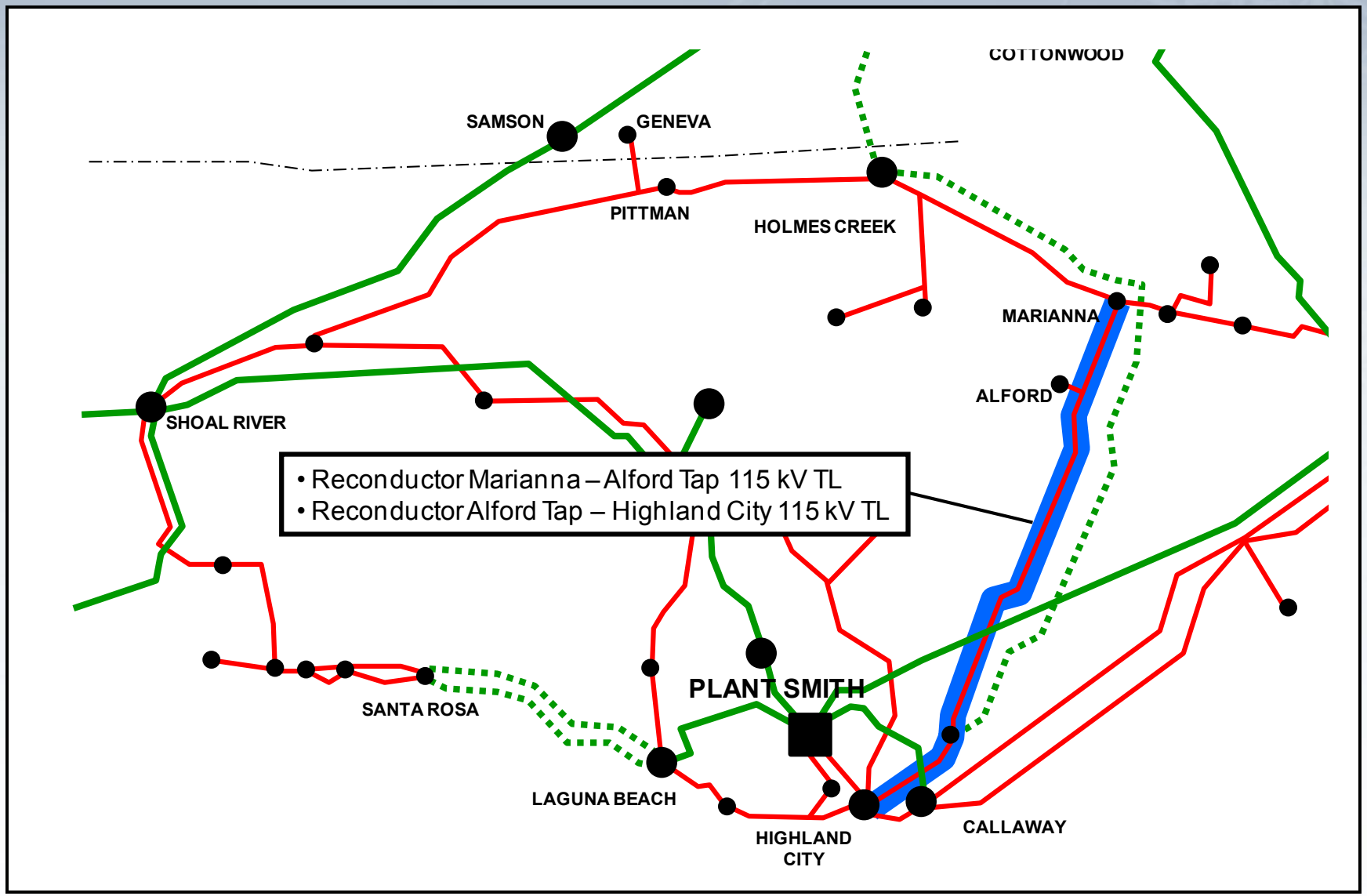
2014 W-12



- The loss of Holmes Creek – Highland City 230 kV T.L., with Smith Unit #3 offline, causes the Marianna – Highland City 115 kV T.L. to become overloaded.

Marianna – Highland City 115 kV T.L.

2014 W-12



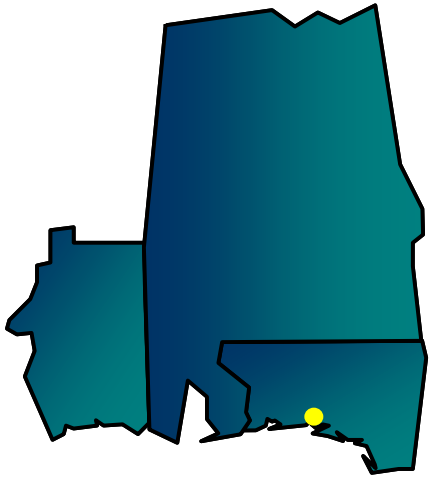
Southeastern Region Transmission Planning

Expansion Item W-13

Santa Rosa – Laguna Beach 230 kV T.L.

- Construct a new Santa Rosa 230 kV substation with one 230 / 115 kV transformer.
- Replace Laguna Beach – Santa Rosa #1 115 kV T.L. with a new 230 kV T.L (1351 ACSR).

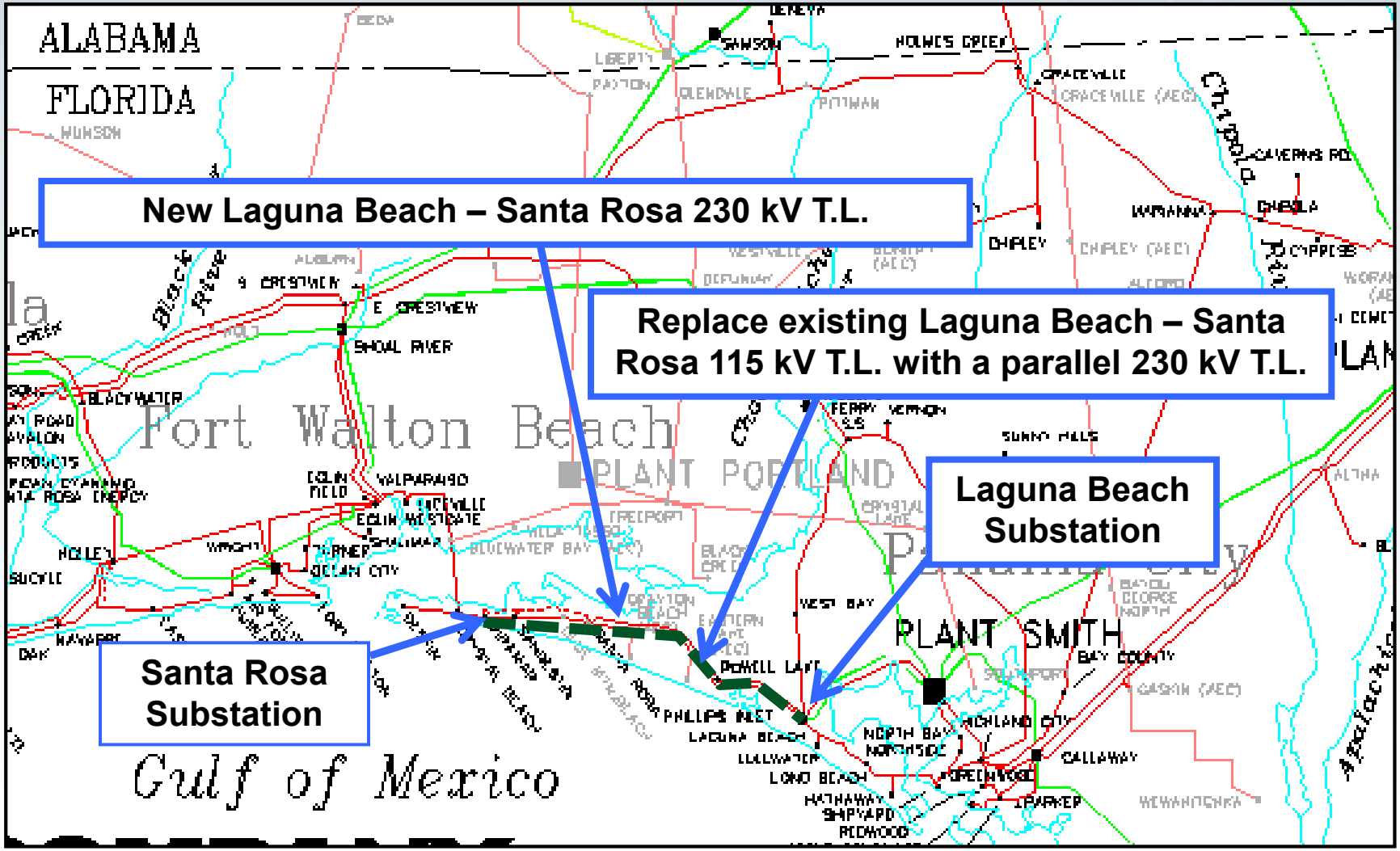
2015 W-13



- Several transmission lines in the Fort Walton Beach area exceed their thermal ratings under contingency conditions.

Santa Rosa – Laguna Beach 230 kV T.L.

2015 W-13



Southeastern Region Transmission Planning

Expansion Item W-14

Greene County – Bassett Creek 230 kV T.L.

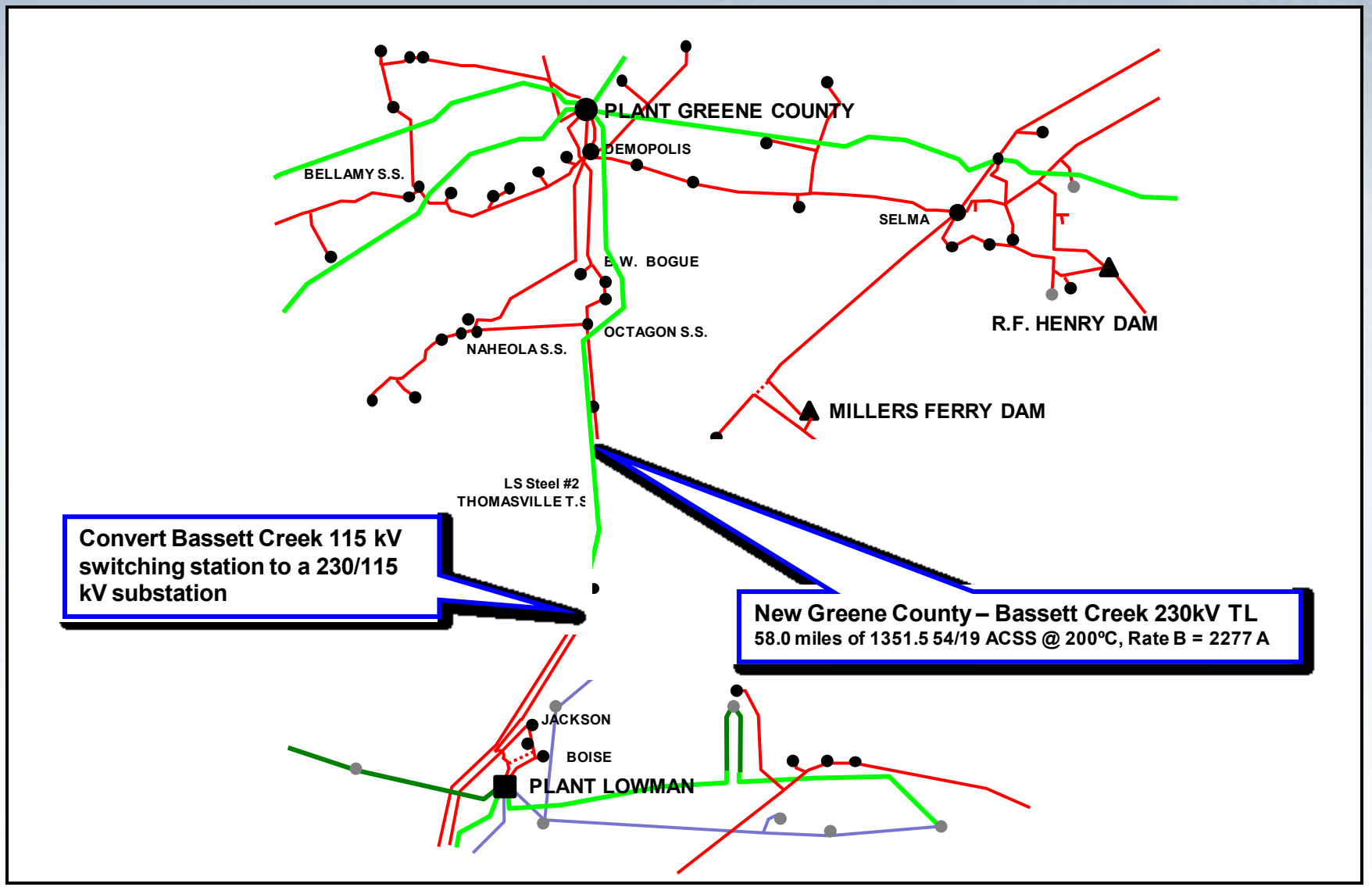
- Construct 58.0 miles of new 230 kV T.L. from Greene County to Bassett Creek with 1351 ACSS at 200° C.
- Convert Bassett Creek 115 kV switching station to a 230 / 115 kV substation.

2015 W-14

- The loss of Millers Ferry – Camden Tap 115 kV T.L., with Crist offline, causes the Octagon – Thomasville 115 kV T.L. to become overloaded.

Greene County – Bassett Creek 230 kV T.L.

2015 W-14



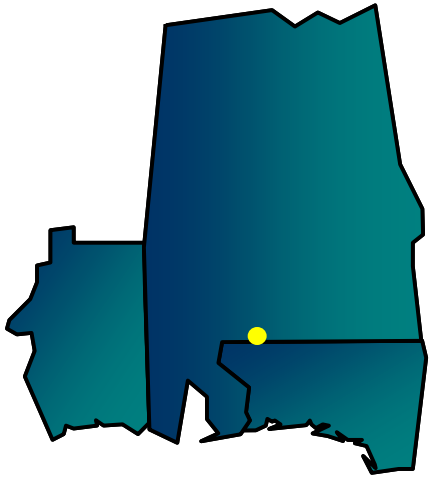
Southeastern Region Transmission Planning

Expansion Item W-15

North Brewton – Alligator Swamp 230 kV T.L.

- Construct approximately 56 miles of new 230 kV transmission line from North Brewton – Alligator Swamp with 1351 ACSS at 200° C.

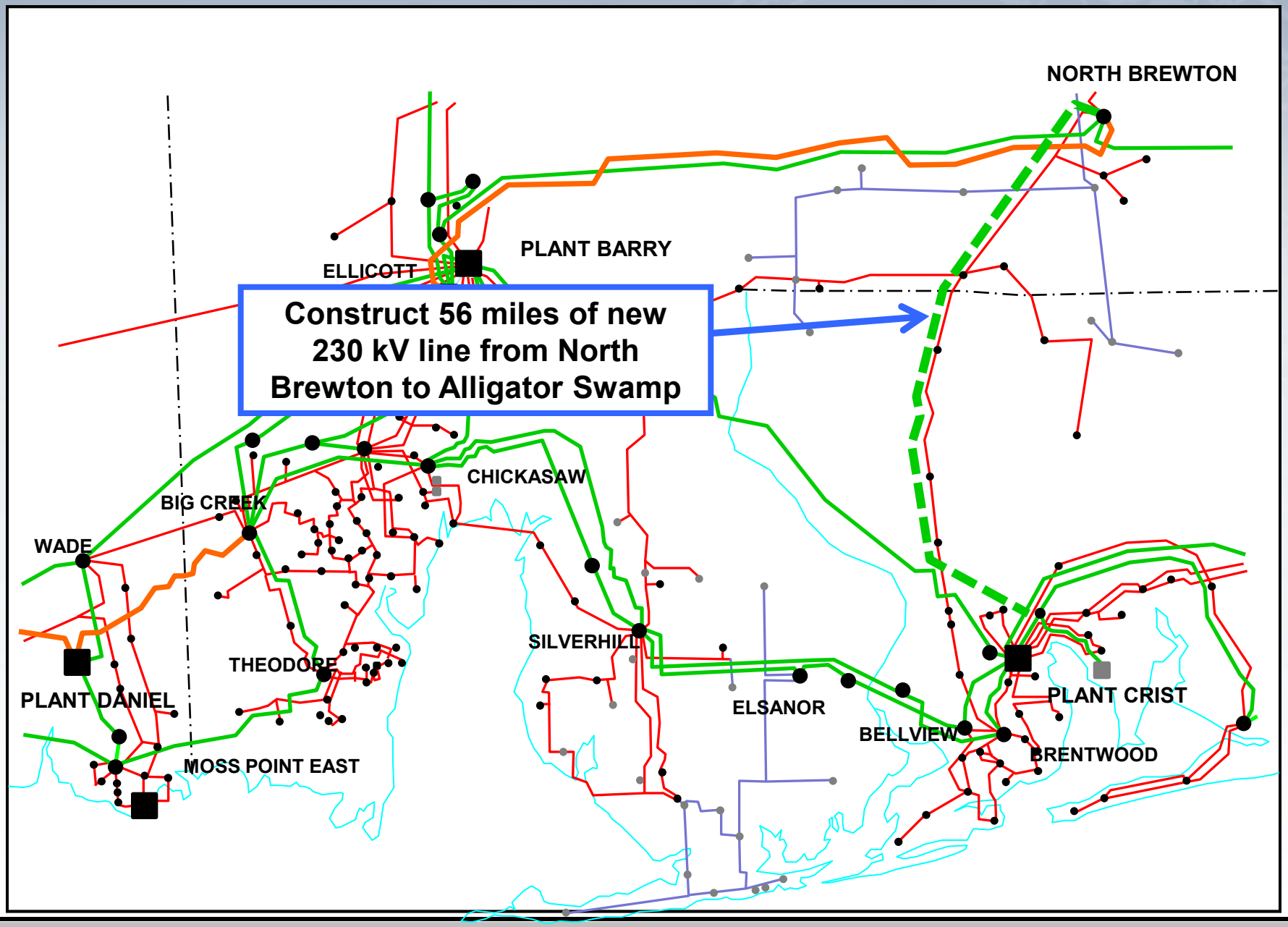
2015 W-15



- The loss of one Chickasaw – Silverhill 230 kV T.L., with Crist offline, causes the parallel Chickasaw – Silverhill 230 kV T.L. and Barry – Crist 230 kV T.L. to become overloaded.

North Brewton – Alligator Swamp 230 kV T.L.

2015 W-15



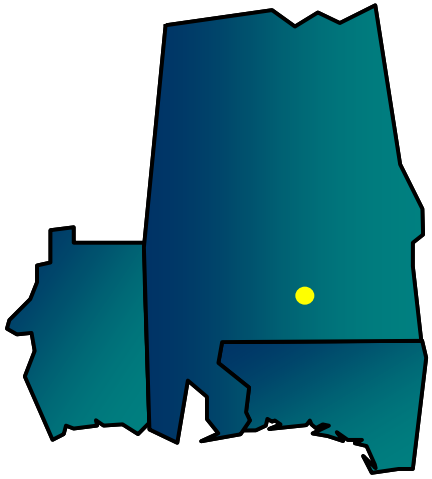
Southeastern Region Transmission Planning

Expansion Item W-16

Enterprise Area Project

- Construct a new 230 / 115 kV substation, South Enterprise TS that taps the Pinckard – Opp 230 kV T.L.
- Construct 6.0 miles of 115 kV transmission line from South Enterprise – Enterprise with 795 ACSS at 160 °C.

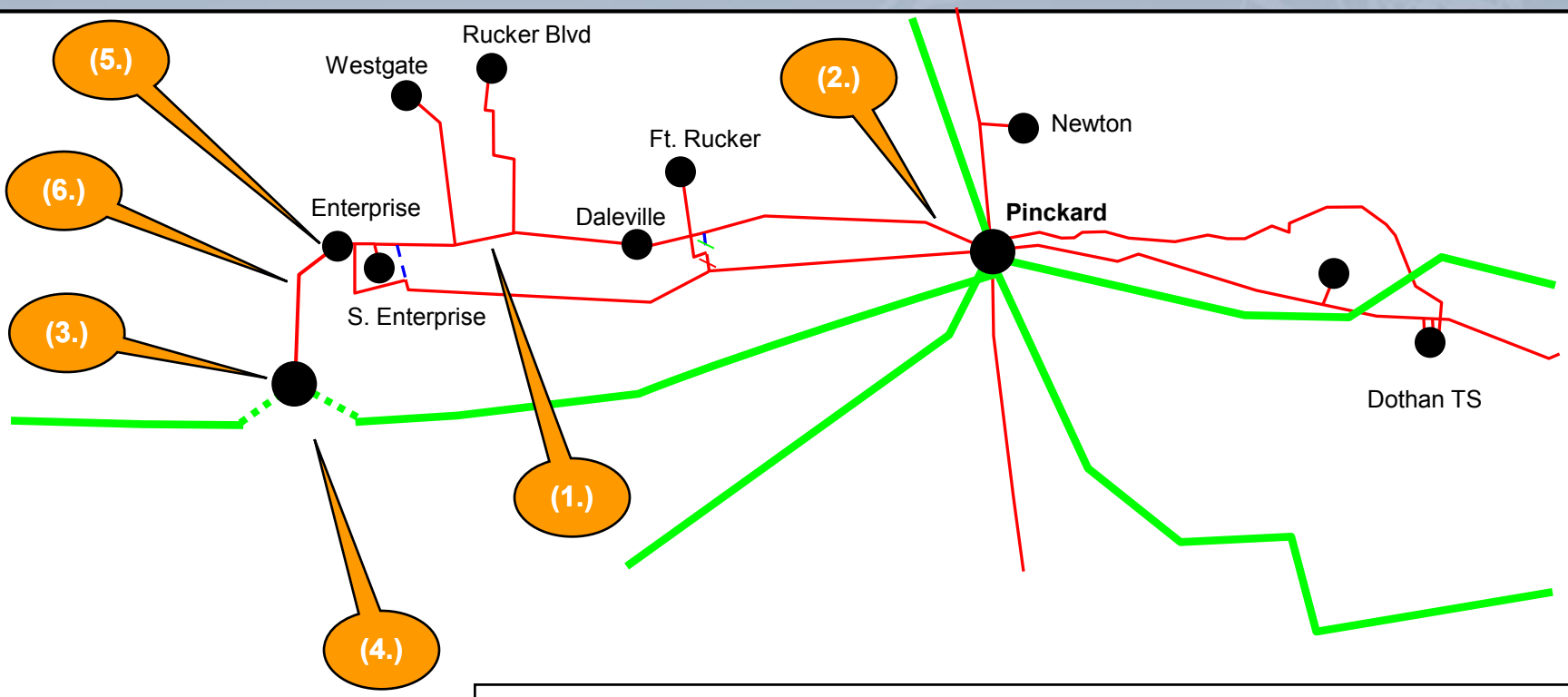
2015 W-16



- The loss of the Pinckard – Enterprise #1 115 kV T.L., with Smith Unit #3 offline, causes sections of the Pinckard – Enterprise #2 115 kV T.L. to overload and vice versa.

Enterprise Area Project

2015 W-16



Enterprise Area Solution

(1.) Upgrade approximately 2.33 mi of 266.8 26/7 ACSR 115 kV TL to 100°C (2013)

(2.) Reconductor 0.31 mi of 397.5 ACSR with 795 26/7 ACSR (2014)

(3.) Construct a new 230 / 115 kV substation (2015)

(4.) Loop in the Opp (PS) – Pinckard 230 kV TL into the new substation (2015)

(5.) Construct a new 115 kV line terminal at Enterprise TS (2015)

(6.) Construct approximately 5 mi of 795 ACSR 115 kV TL (2015)

Southeastern Region Transmission Planning

Expansion Item W-17

Tuscaloosa Area Improvement

- Install a 230 / 115 kV transformer at a new substation, Moundville TS.
- Convert Moundville (to be called North Moundville DS) and Akron 44 kV substations to 115 kV
- Construct a new 115 kV T.L. from North Moundville to Moundville.
- Construct a new 115 kV T.L. from North Moundville to Big Sandy/Englewood Tap

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- Overloads caused by multiple contingencies.
- Voltage Support.

2015 W-17

Southeastern Region Transmission Planning

Expansion Item W-18

Tuscaloosa Area Improvement

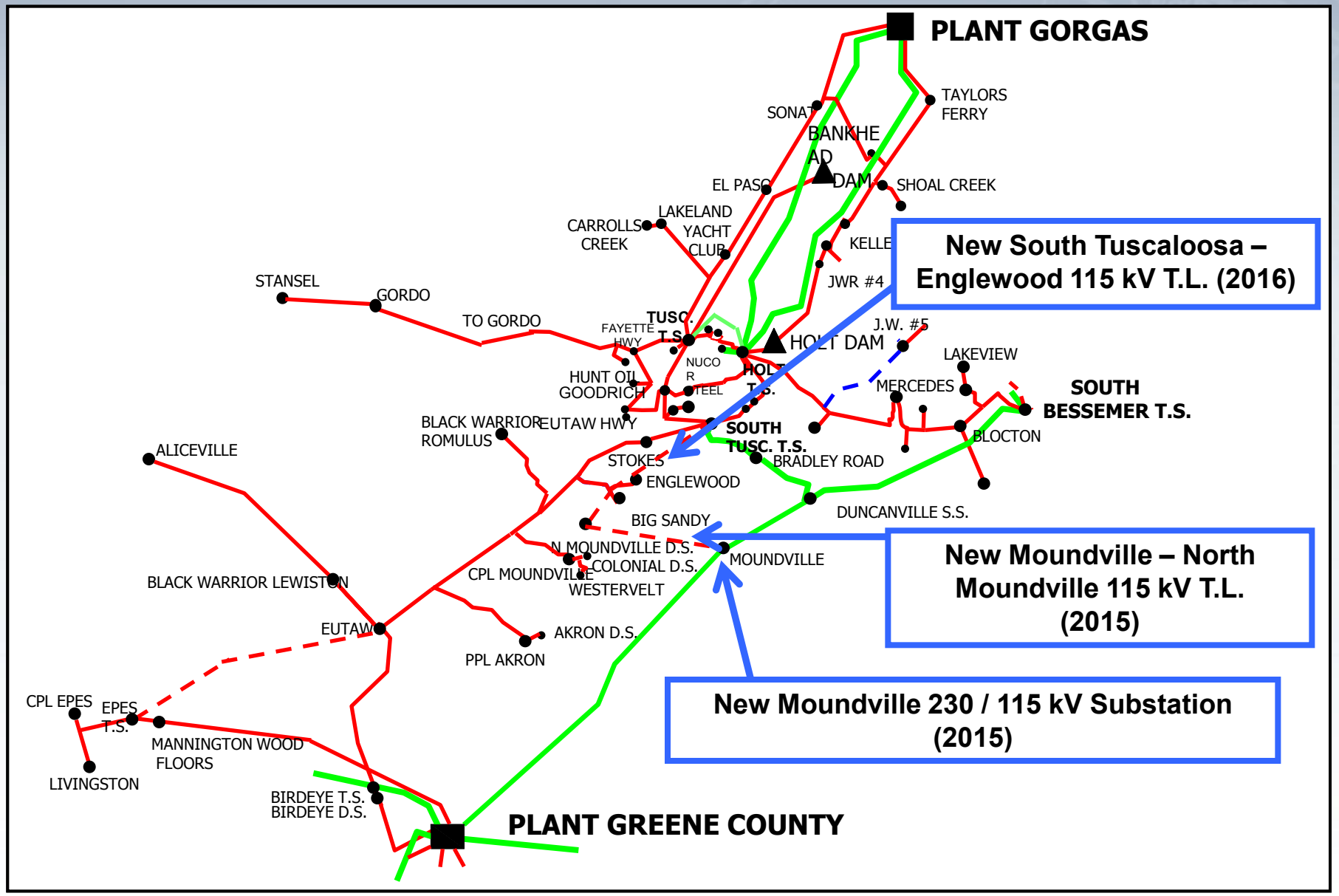
- Install a new 115 kV T.L. from Englewood to South Tuscaloosa
- Reconductor 3.6 miles of existing 115 kV T.L. from Big Sandy to Big Sandy Tap with 397 ACSR

2016 W-18

- The loss of the Duncanville – Bradley Rd 230 kV T.L., with Gorgas unit #10 offline, causes the Eutaw – Moundville Tap 115 kV T.L. to become overloaded

Tuscaloosa Area Improvement

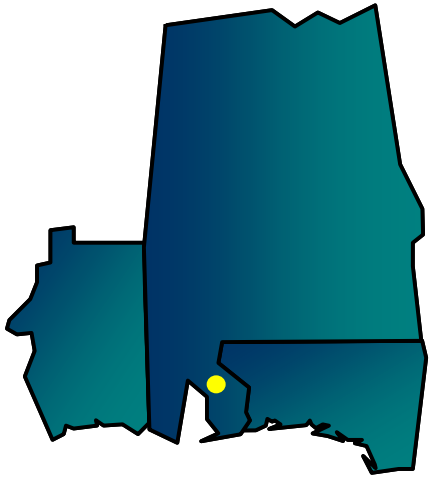
2015 W-17	2016 W-18



Southeastern Region Transmission Planning

Expansion Item W-19

2017 W-19



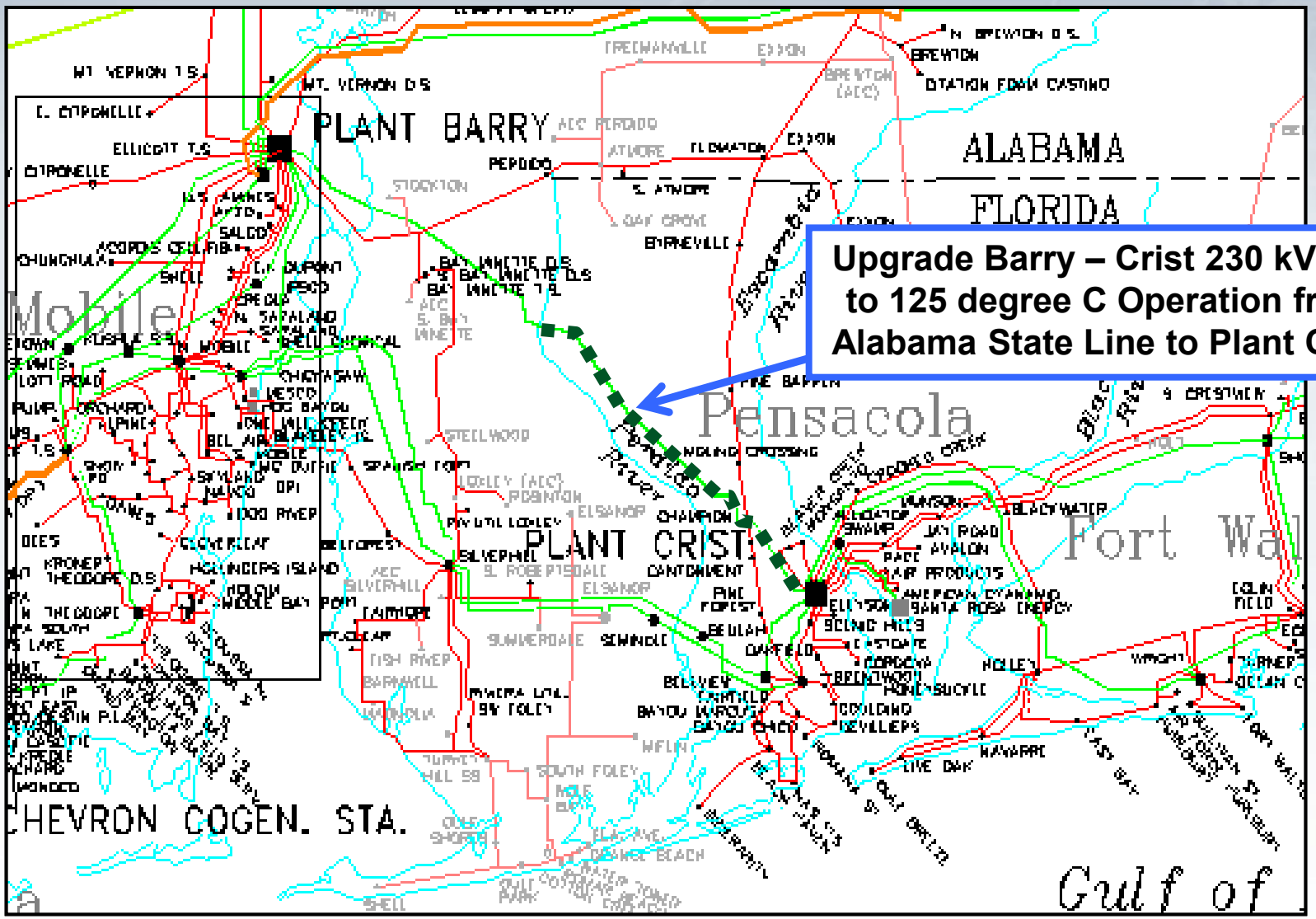
Barry – Crist 230 kV T.L.

- Upgrade 31.6 miles along the Barry SP – Crist SP 230 kV T.L. to 125° C operation.

- The loss of Barry S.P. – Chickasaw 230 kV T.L., with Crist unit #7 offline, causes the Barry S.P. – Crist S.P. 230 kV T.L. to exceed its thermal rating.

Barry – Crist 230 kV T.L.

2017 W-19



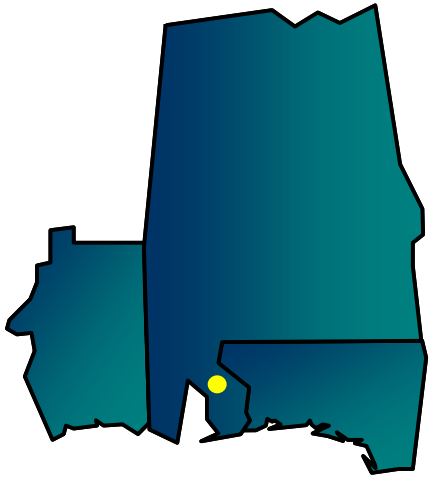
Southeastern Region Transmission Planning

Expansion Item W-20

Barry – Chickasaw 230 kV T.L.

- Reconductor 19.2 miles of 230 kV T.L. from Barry Steam Plant – Chickasaw T.S. with 2-795 ACSS at 200 °C.

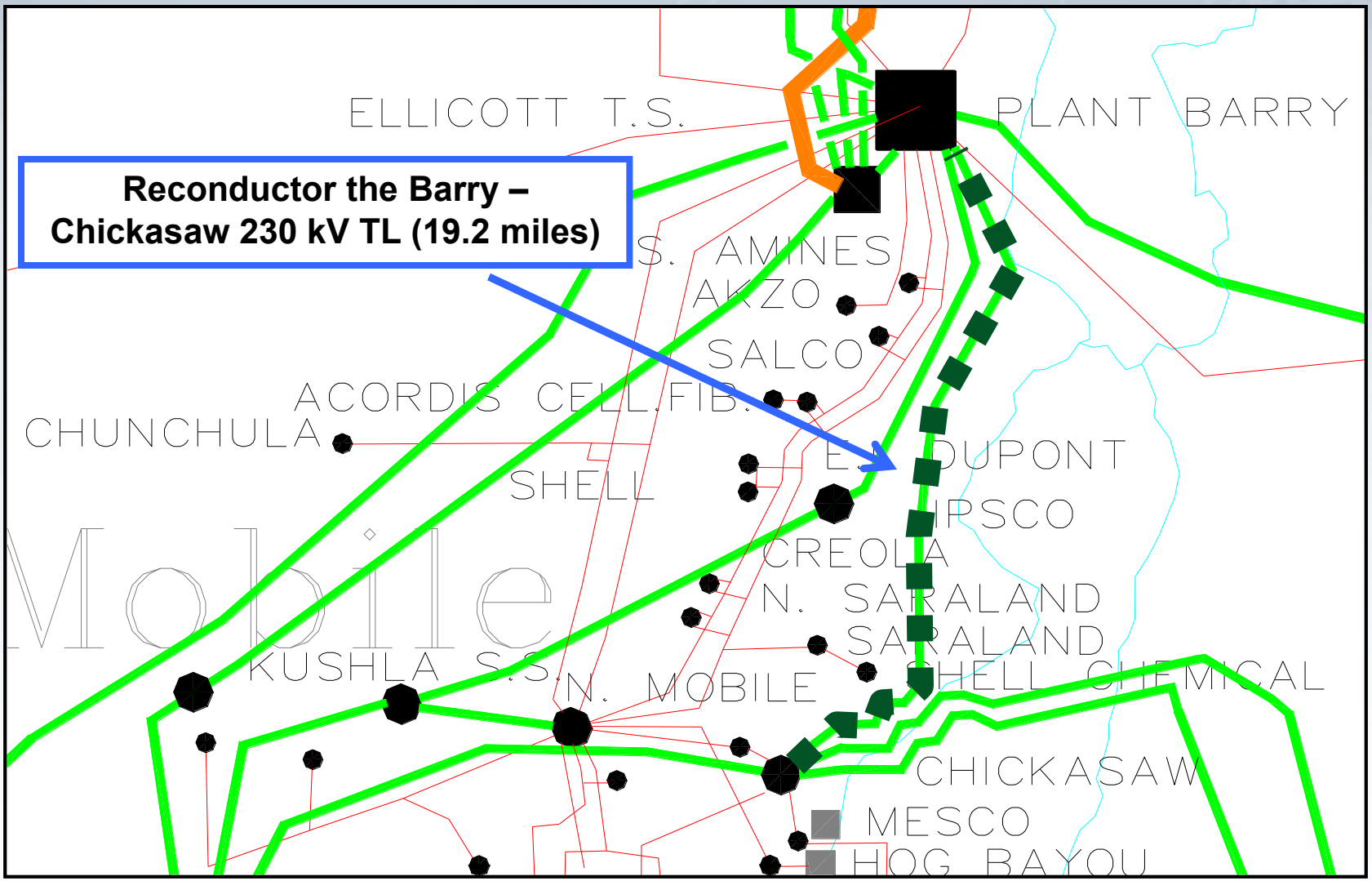
2017 W-20



- The loss of the Barry – Crist 230 kV T.L., with Crist unit #7 offline, causes the Barry – Chickasaw 230 kV T.L. to become overloaded.

Barry – Chickasaw 230 kV T.L.

2017 W-20



Southeastern Region Transmission Planning

Expansion Item W-21

Jasper Area Improvements

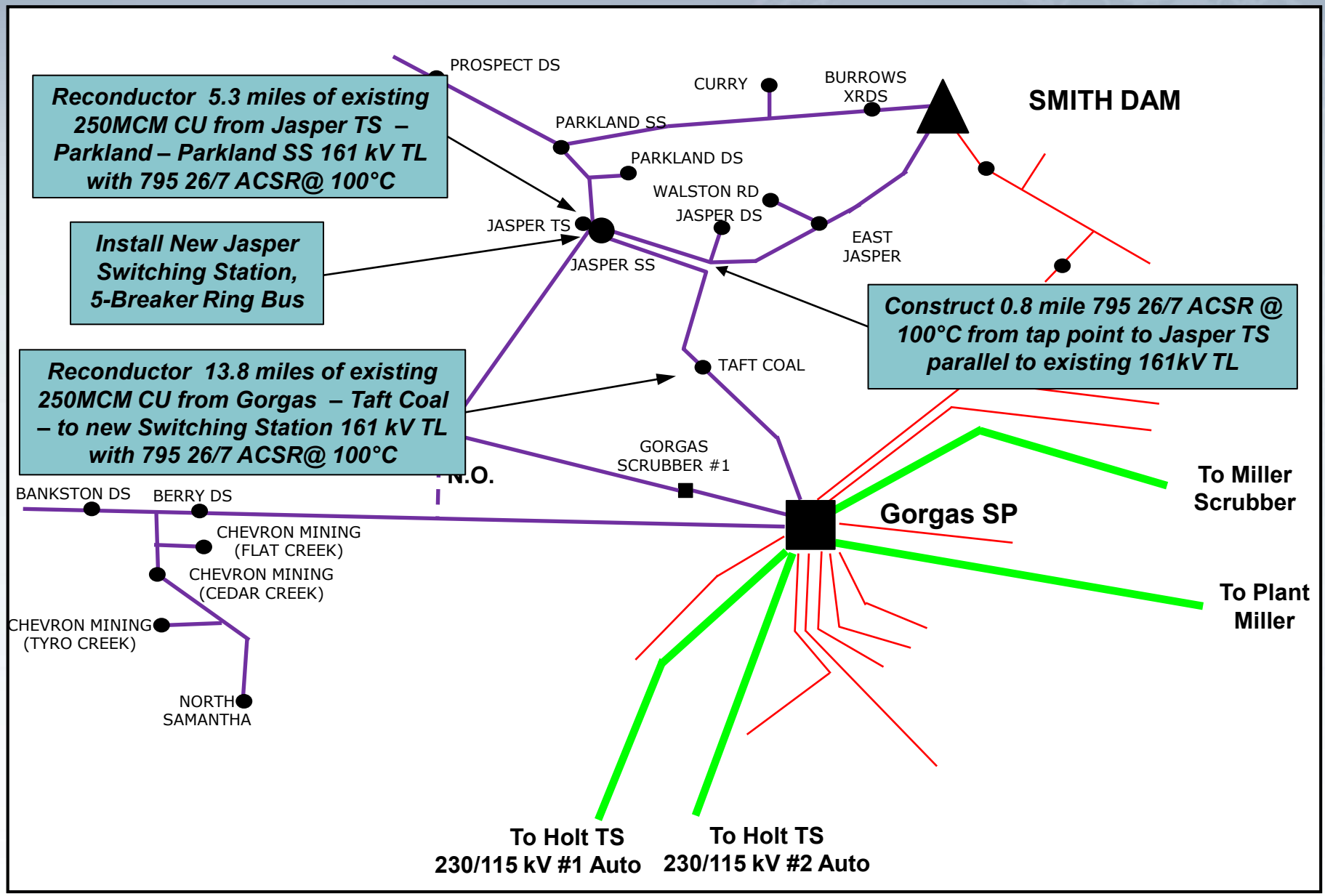
- Construct a new switching station, Jasper SS, near Jasper TS tap
- Loop in the Jasper TS – Oakman and Jasper DS – Taft Coal 161 kV transmission lines
- Reconductor 13.8 miles from Gorgas – Jasper Tap 161 kV transmission line with 795 ACSR
- Reconductor 5.3 miles along the Jasper TS – Parkland SS 161 kV with 795 ACSR.

- The loss of the Gorgas Scrubber #1 – Gorgas 161 kV transmission line causes the Gorgas – Taft Coal – Jasper Tap 161 kV transmission line to become overloaded.

2017 W-21

Jasper Area Improvements

2017 W-21



Southeastern Region Transmission Planning

Expansion Item W-22

Silverhill – Turkey Hill 115 kV T.L.

- Reconductor approximately 11.5 miles of 115 kV T.L. from Silverhill to Turkey Hill with 795 ACSR.

2017 W-22

- The loss of the Silverhill – SW Foley 115 kV T.L., with Crist unit #7 offline, causes several sections from Silverhill to Turkey Hill to become overloaded.

Southeastern Region Transmission Planning

Expansion Item W-23

Silverhill – Turkey Hill 115 kV T.L.

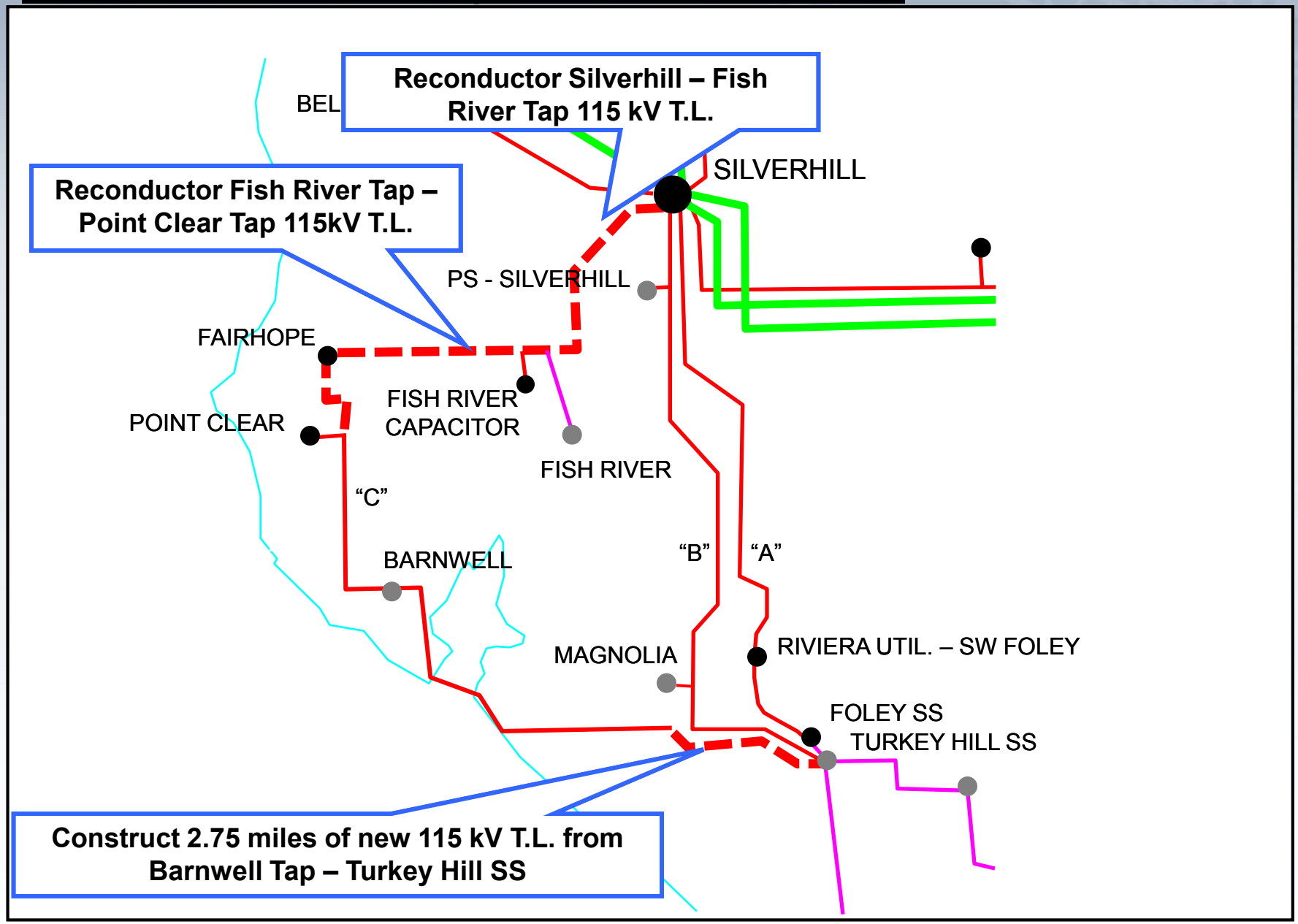
- Construct approximately 2.75 miles of new 115 kV T.L. from Barnwell Tap – Turkey Hill to complete the new Silverhill – Turkey Hill 115 kV T.L.

2018 W-23

- The loss of the Silverhill – SW Foley 115 kV T.L., with Crist unit #7 offline, causes several sections from Silverhill to Turkey Hill to become overloaded.

Silverhill – Turkey Hill 115 kV T.L.

2017 W-22 | 2018 W-23



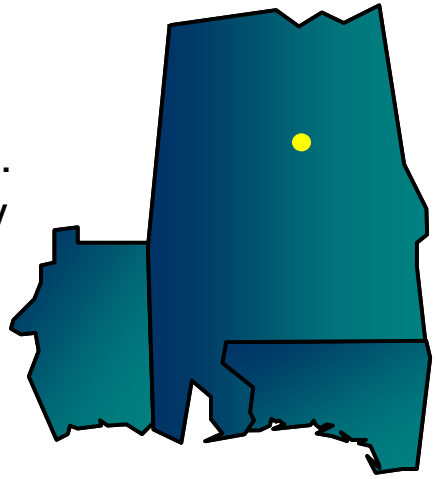
Southeastern Region Transmission Planning

Expansion Item W-24

Gaston – County Line Road 230 kV T.L.

- Reconductor approximately 52.8 miles of 230 kV T.L. from Power Systems Development Facility to County Line Road with 1351 ACSS at 200º C along the Gaston – County Line Road 230 kV T.L.

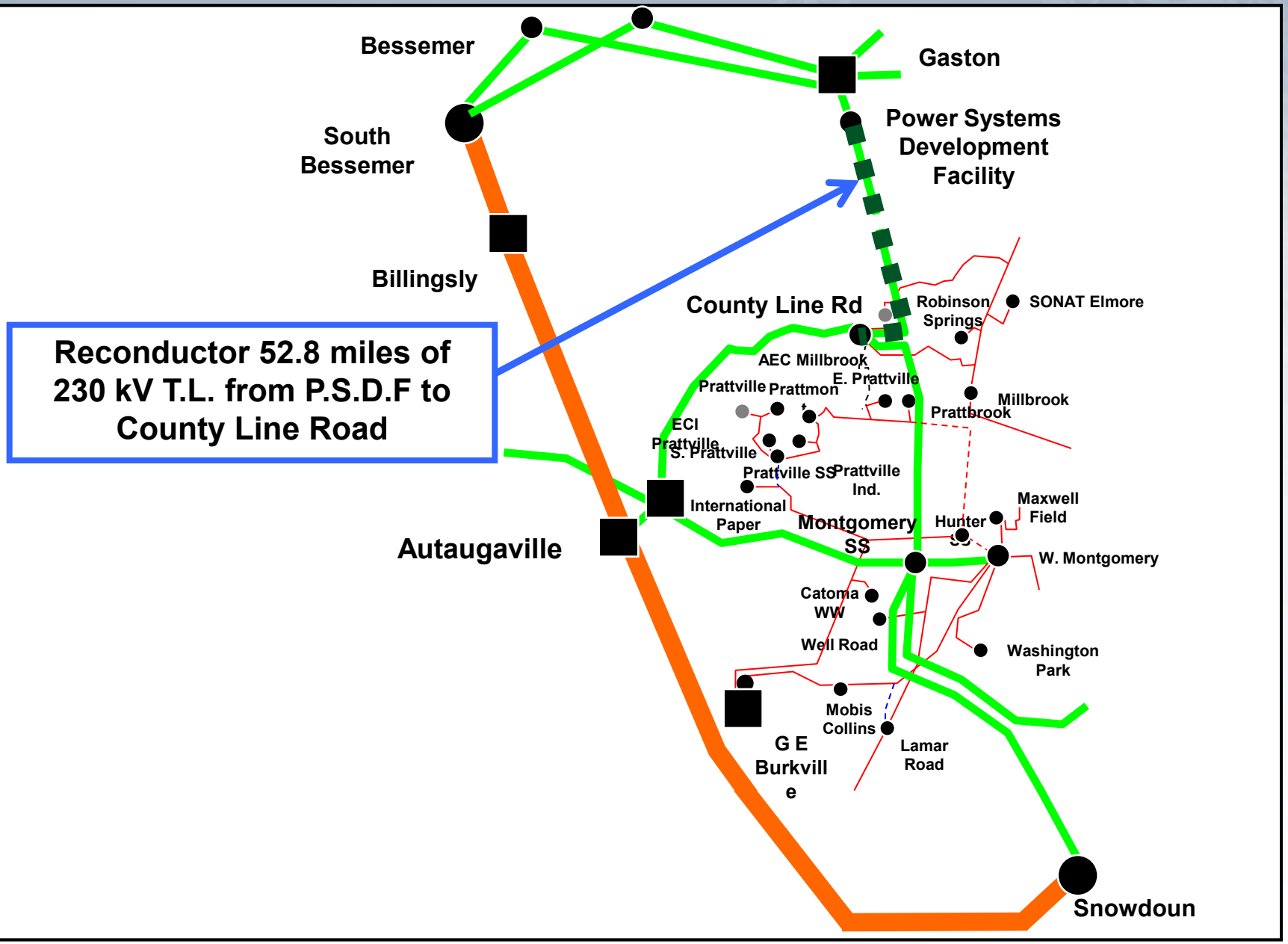
2019 W-24



- The loss of the Autaugaville – Billingsly 500 kV T.L., with Harris Unit #1 offline, causes the Gaston – County Line Road 230 kV T.L. to become overloaded.

Gaston – County Line Road 230 kV T.L.

2019 W-24



Southeastern Region Transmission Planning

Expansion Item W-25

West McIntosh – Calvert #2 230 kV T.L.

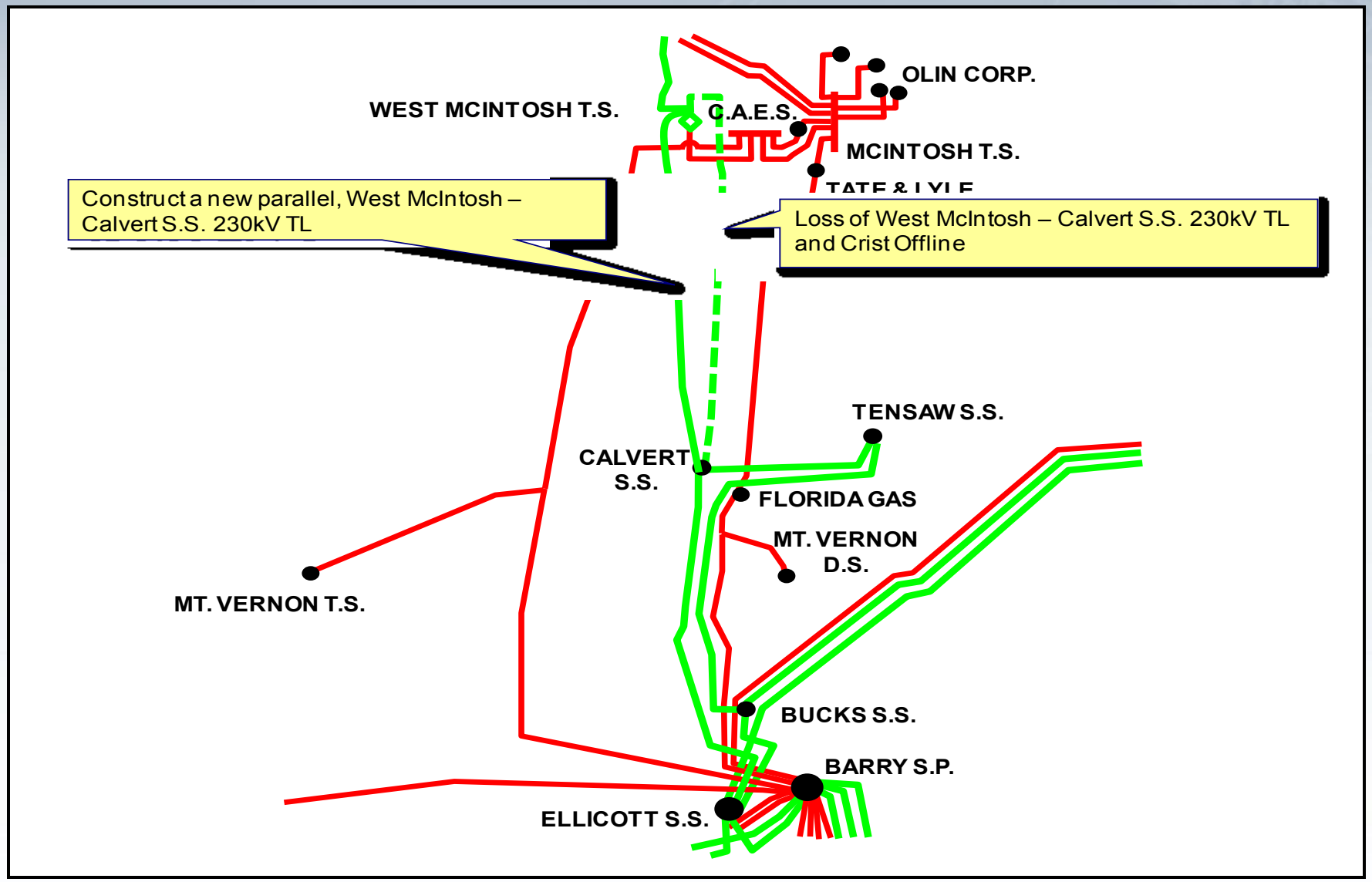
- Construct 11.4 miles of new 230 kV T.L. from West McIntosh to Calvert with 1351 ACSS at 100° C.

2021 W-25

- The loss of West McIntosh – Calvert #1 230 kV T.L., with Crist offline, causes the Barry – McIntosh "A" and Barry – CAES 115 kV T.L.s to become overloaded.

West McIntosh – Calvert #2 230 kV T.L.

2021 W-25



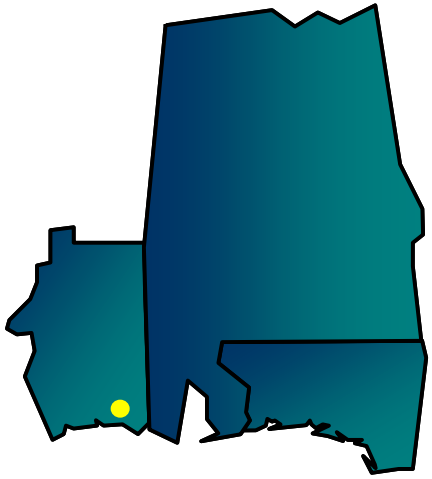
Southeastern Region Transmission Planning

Expansion Item W-26

Orange Grove Substation

- Construct a new 230 / 115 kV substation, Orange Grove, that taps the Moss Point East – North Theodore 230 kV T.L.
- Rebuild the 115 kV T.L. to Bayou Casette
- Construct a new 115 kV T.L. from Orange Grove to Chevron.

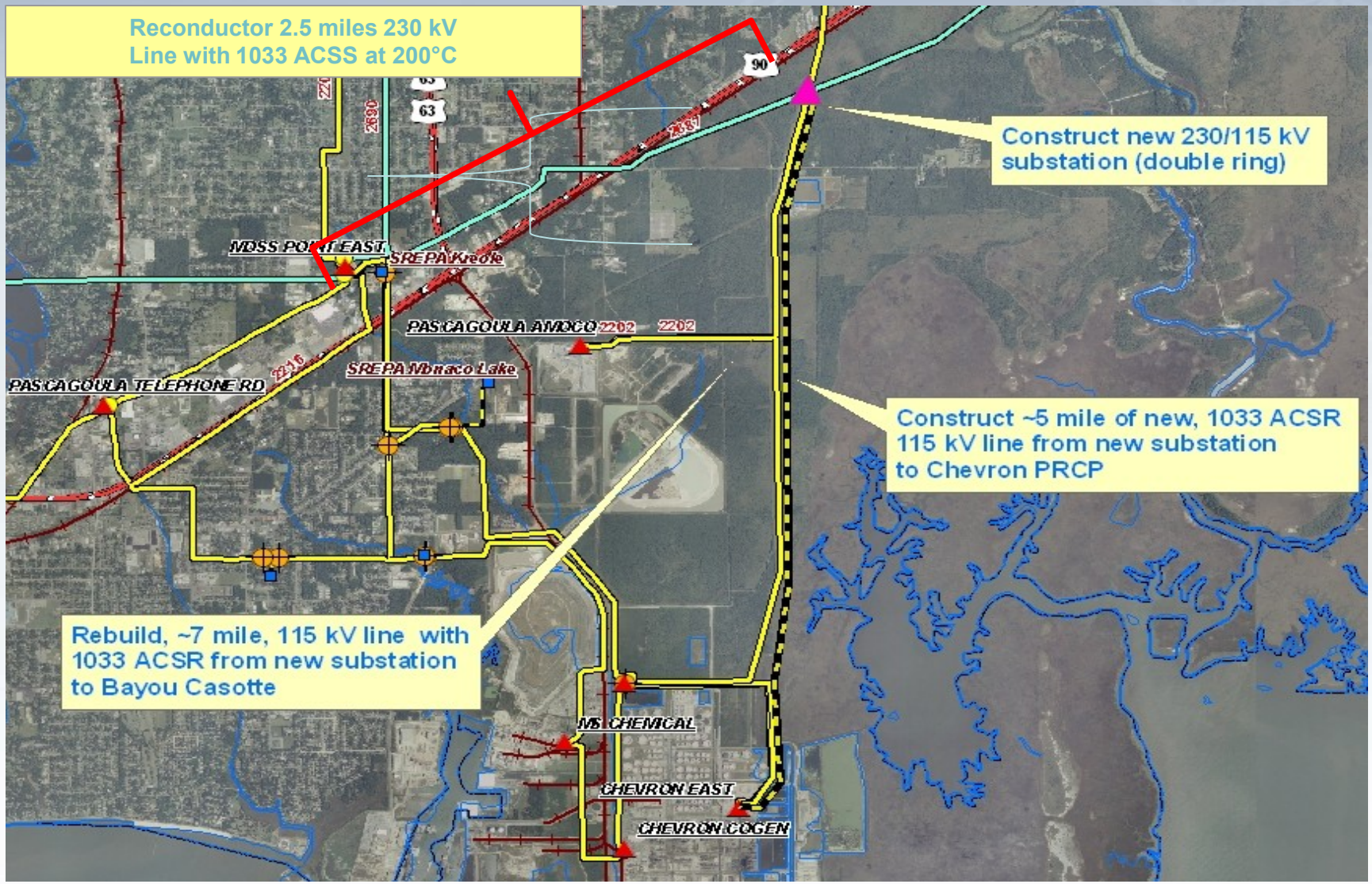
2022 W-26



- The loss of the Moss Point East – Kreole 115 kV T.L. causes the Moss Point East – Chevron 115 kV T.L. to become overloaded and vice versa.

Orange Grove Substation

2022 W-26



Southeastern Region Transmission Planning

South Mississippi Electric Power Association

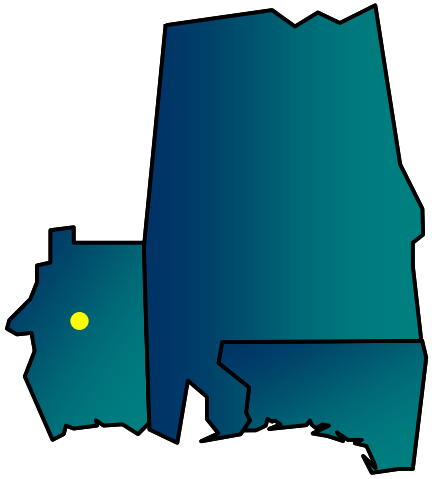
Southeastern Region Transmission Planning

Expansion Item SME-1

2014 SME-1

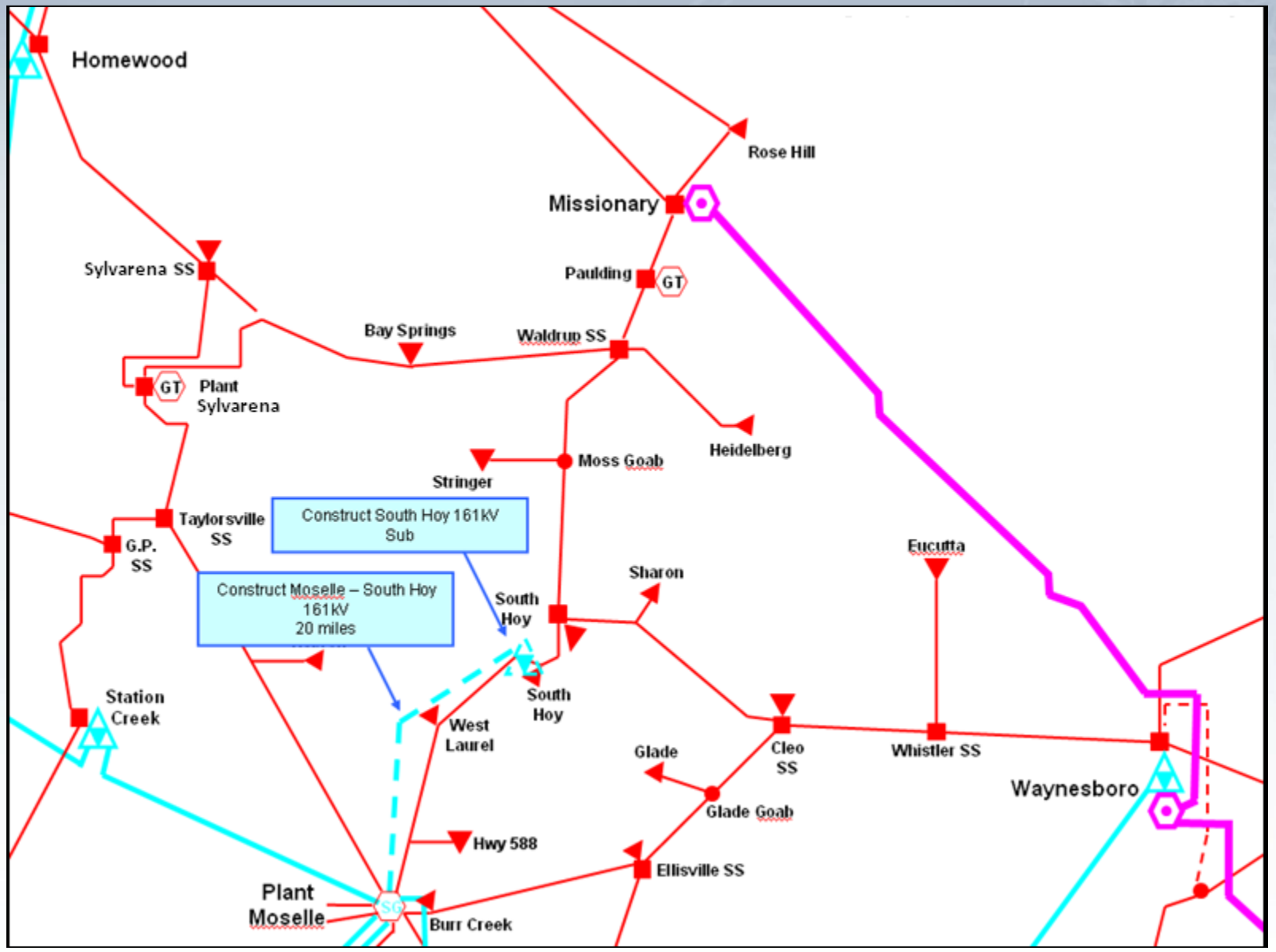
South Hoy 161 KV Source

- Construct a new 161 / 69 KV substation at South Hoy.
- Construct a new 161 KV T.L. from Moselle to South Hoy.
- This project alleviates 69 KV low voltages and multiple line overloads during 69 KV contingencies.



South Hoy 161 KV Source

2014 SME-1



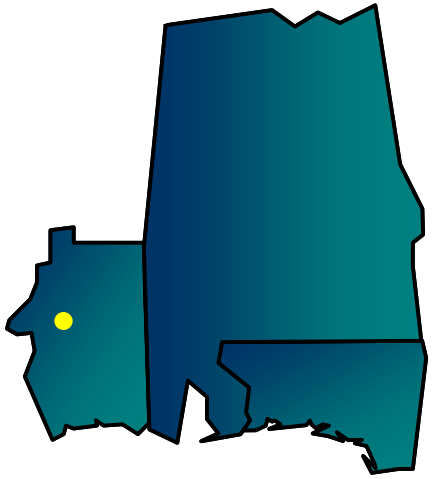
Southeastern Region Transmission Planning

Expansion Item SME-2

2016 SME-2

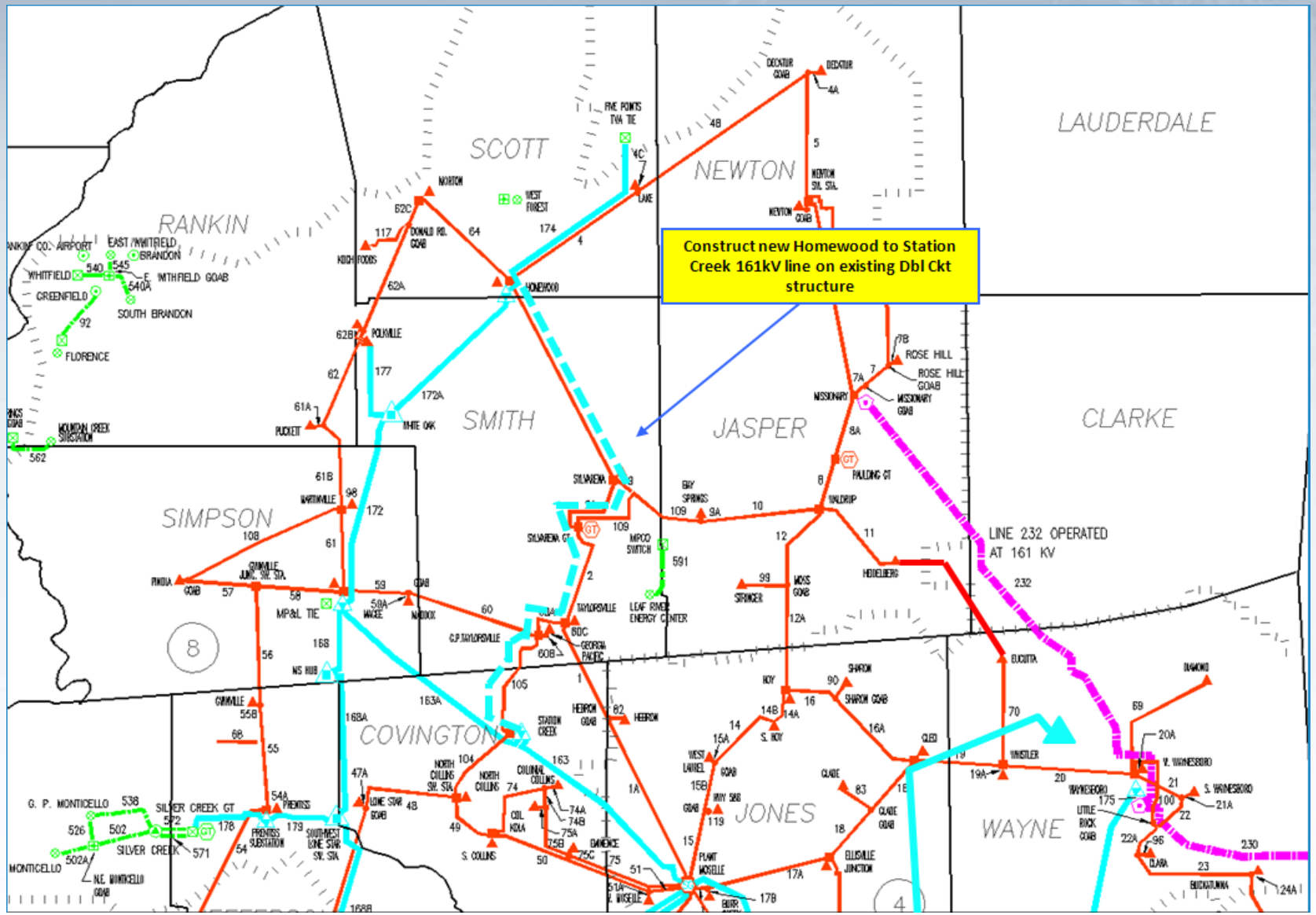
Homewood – Station Creek 161KV Line

- Construct a new 161KV line from Homewood – Station Creek utilizing the existing 69KV lines built w/ double circuit specifications from Homewood – Sylvarena – Sylvarena GT – Taylorsville – Station Creek
- This project alleviates loading on the Homewood 161/69 KV auto transformers and alleviates multiple 69 KV line overloads during system contingencies.



Homewood – Station Creek 161 KV Line

2016 SME-2



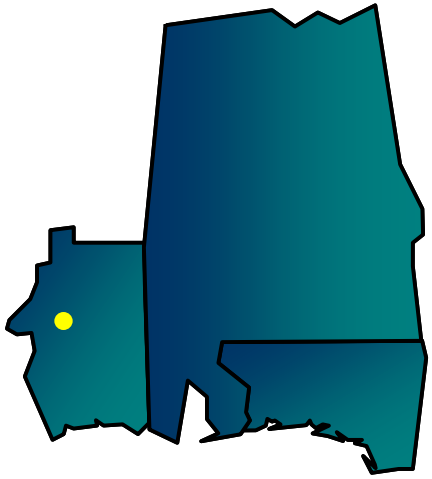
Southeastern Region Transmission Planning

Expansion Item SME-3

2016 SME-3

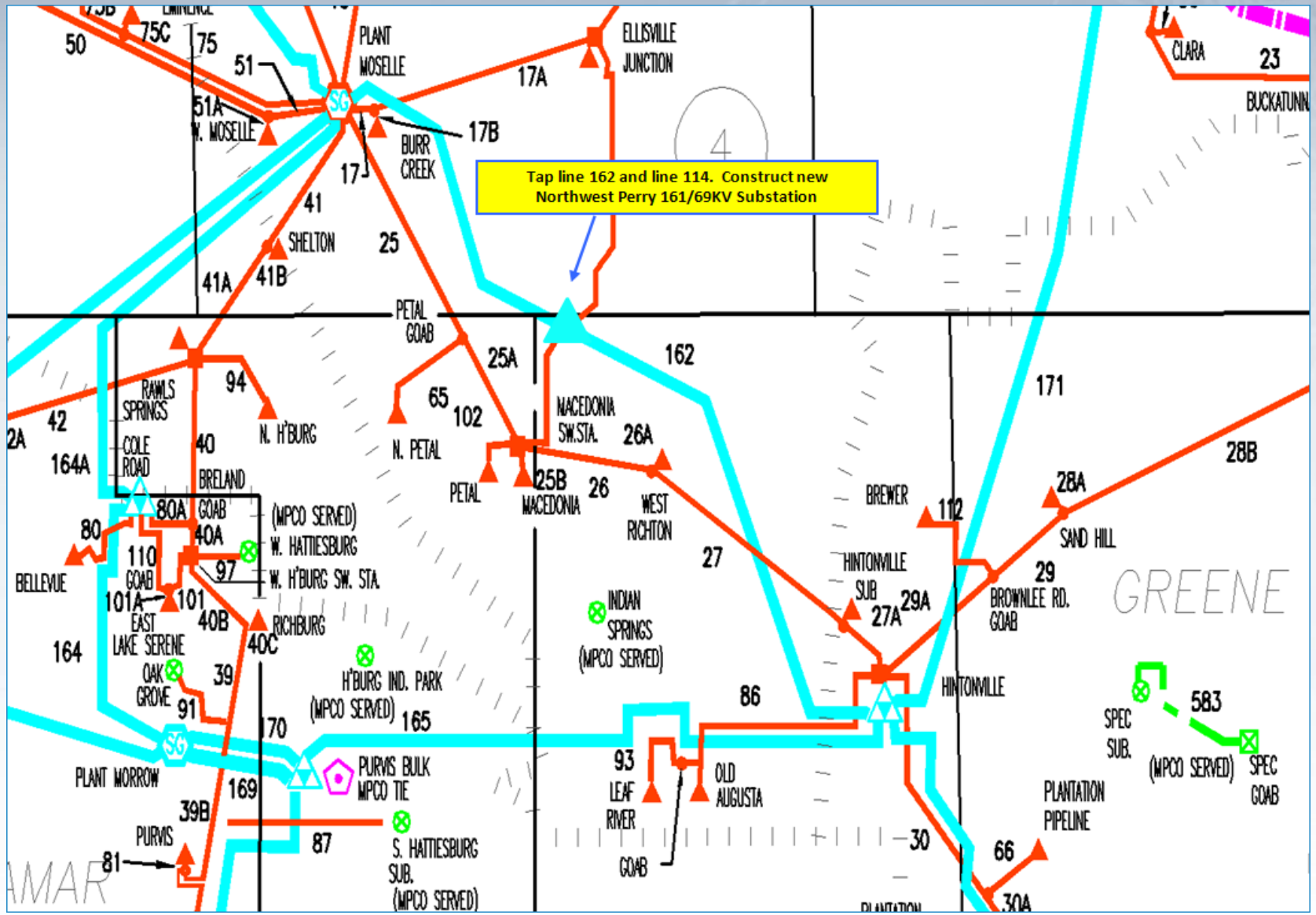
Northwest Perry 161 / 69 KV Substation

- Tap 161 KV Line 162 and 69 KV Line 114
- Construct Northwest Perry 161 / 69 KV Substation
- This project alleviates 69 KV low voltages and multiple line overloads on the Moselle – Hintonville 69 KV loop during certain contingencies and supports the high load growth area near Petal.



Northwest Perry 161 / 69 KV Substation

2016 SME-3



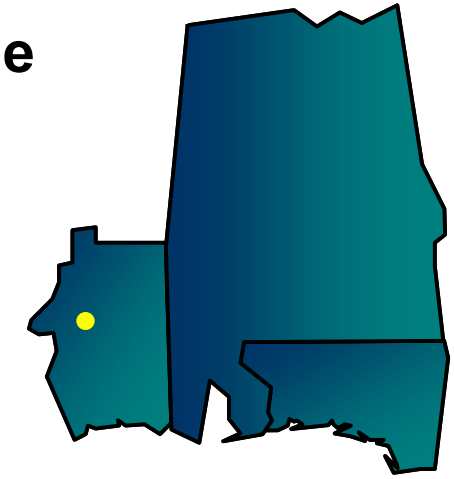
Southeastern Region Transmission Planning

Expansion Item SME-4

2021 SME-4

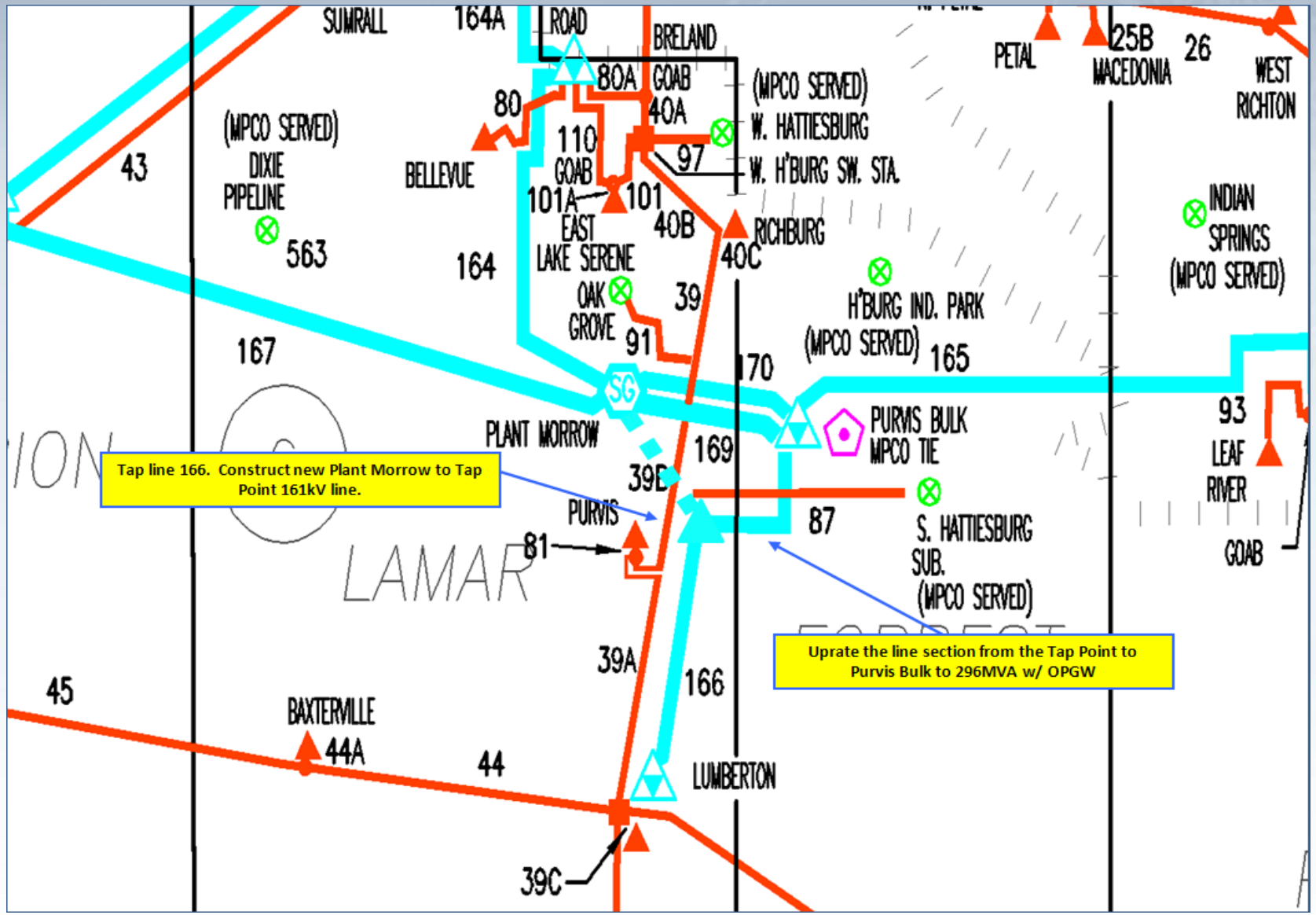
Plant Morrow to Purvis Bulk 161 KV Line

- Tap 161 KV Line 166
- Construct new 161 KV line from Plant Morrow to Tap Point
- Uprate existing line section from Tap Point to Purvis Bulk
- This project alleviates line overloads for the contingency of parallel line's 169 or 170 (Plant Morrow – Purvis Bulk 161kV). The outage of one line overloads the adjacent line.



Plant Morrow – Purvis Bulk 161 KV Line

2021 SME-4



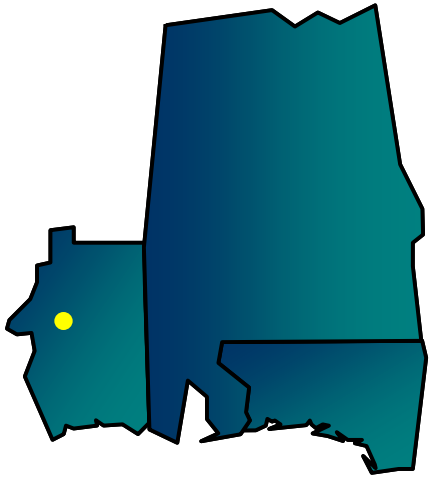
Southeastern Region Transmission Planning

Expansion Item SME-5

Lumberton – Benndale 161 KV Conversion

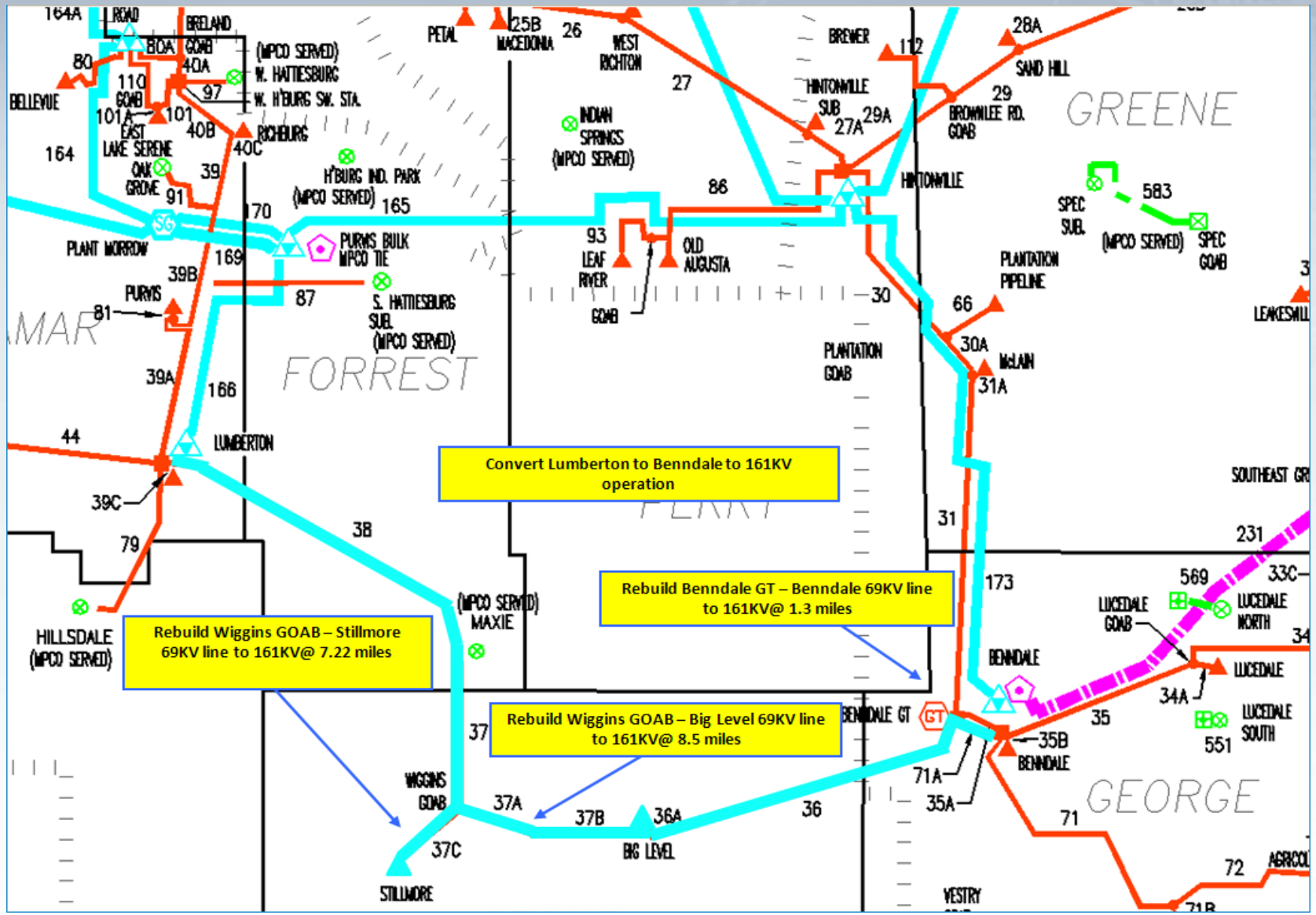
- Rebuild the Wiggins – Stillmore, Wiggins – Big Level and Benndale – Benndale GT line sections to 161 KV specifications
- Convert the Stillmore and Big Level distribution substations to 161 KV
- Convert the Lumberton – Big Level loop to 161 KV operation
- This project alleviates 69 KV low voltages and line overloads in the Lumberton and Benndale areas during certain contingencies

2021 SME-5



Plant Morrow – Purvis Bulk 161 KV Line

2021 SME-5



Southeastern Region Transmission Planning

PowerSouth

Southeastern Region Transmission Planning

Expansion Item PS-1

Baldwin County Alabama

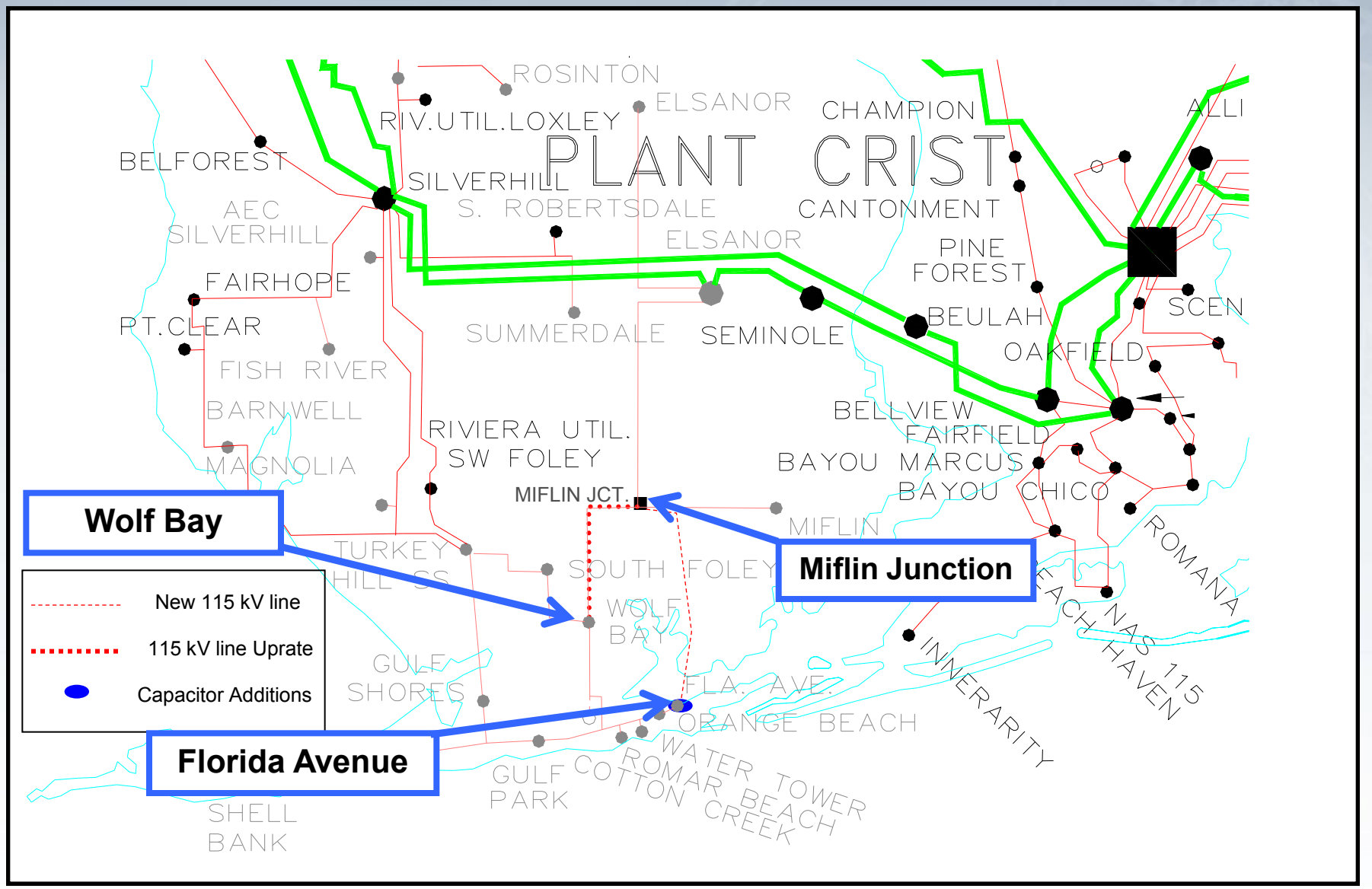
- Construct a new 115 kV T.L. from Miflin Junction – Florida Avenue with one mile water crossing.
- Construct Miflin Switching Station.
- Thermal uprate Miflin Junction – Wolf Bay Junction T.L.
- 15 MVAR Cap Banks at Florida Avenue and Gulf Shores.

- This is a project to strengthen the system of the high load growth area, Orange Beach being served radially, to respond to single contingency conditions.

2013 PS-1

Baldwin County Alabama

2013 PS-1



Southeastern Region Transmission Planning

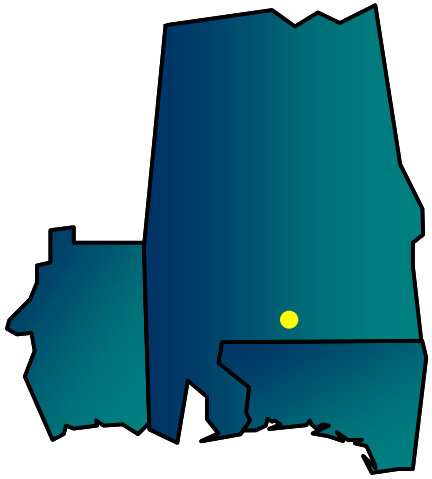
Expansion Item PS-2

Brewton/Atmore Area

- Upgrade 40 miles of 46kV transmission line to 115kV 795 ACSR.

- This area experiences line overloads under single contingencies and unacceptable low voltage under a double contingency scenario.
- Alleviate voltage and overload problems by providing a parallel 115kV path that eliminates the overload and assures that the voltage is supported for the loss of two sources.

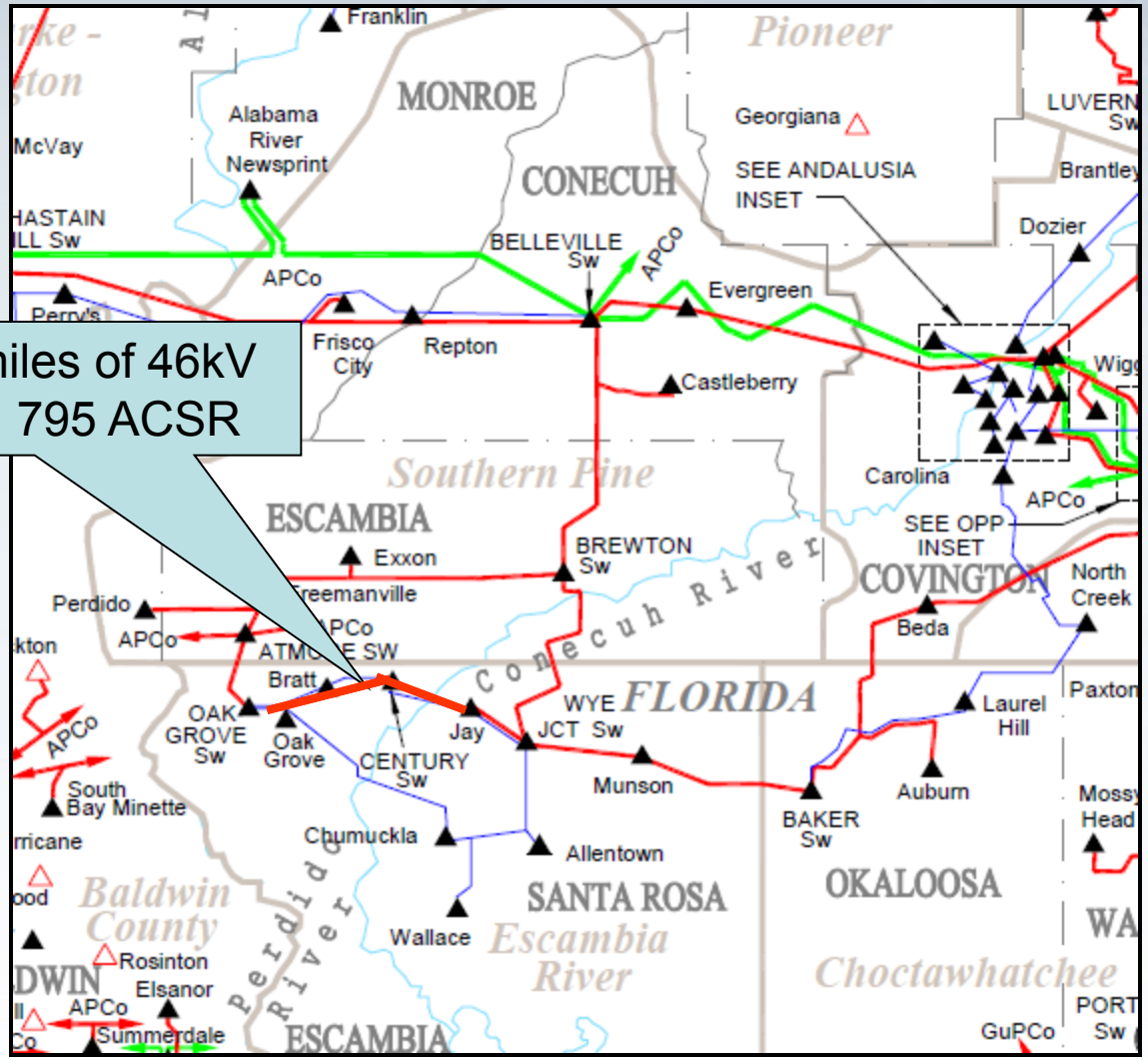
2014 PS-2



Brewton / Atmore Area

2014 PS-2

Upgrade 40 miles of 46kV line to 115kV, 795 ACSR



Questions?