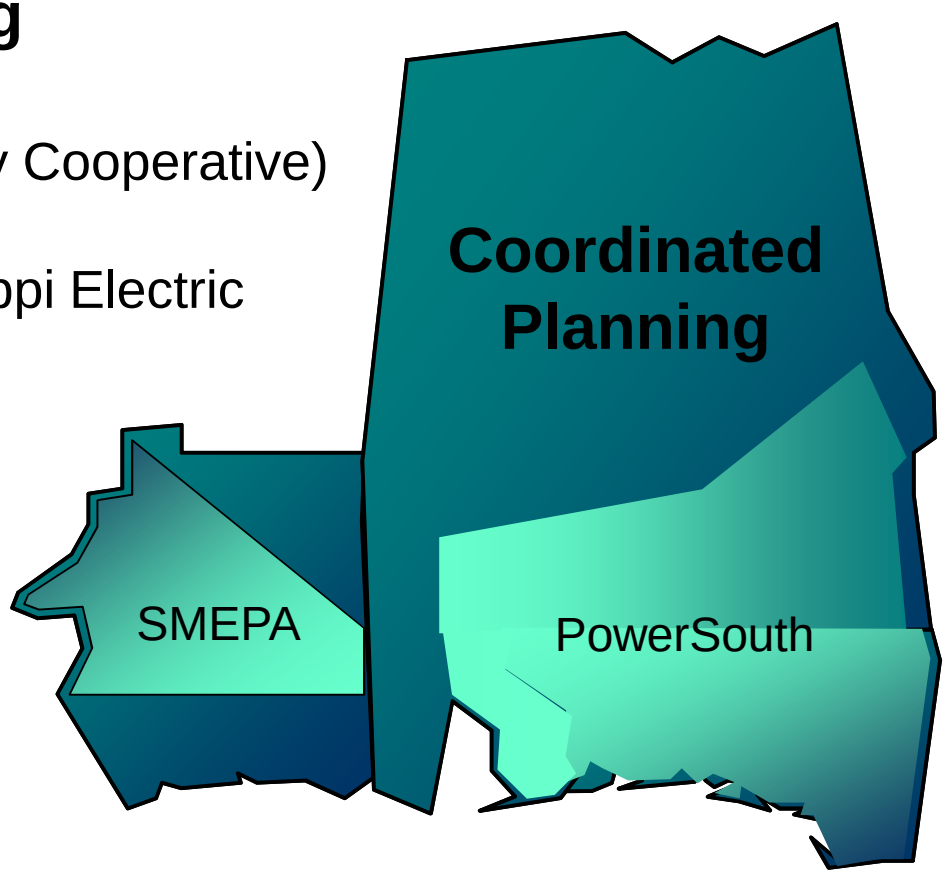
Southeastern Region Transmission Planning

West

Coordinated Planning

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



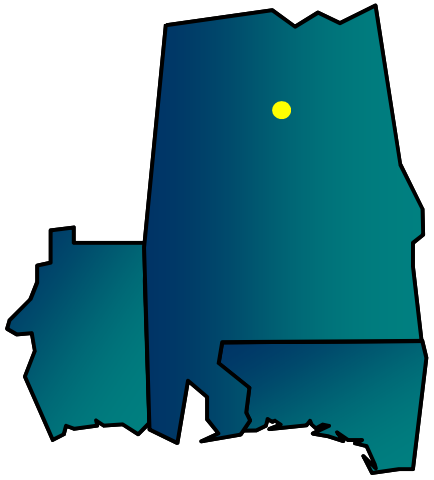
Southeastern Region Transmission Planning

Expansion Item W-1

2012 W-1

Gaston – Yellow Dirt 230 kV T.L.

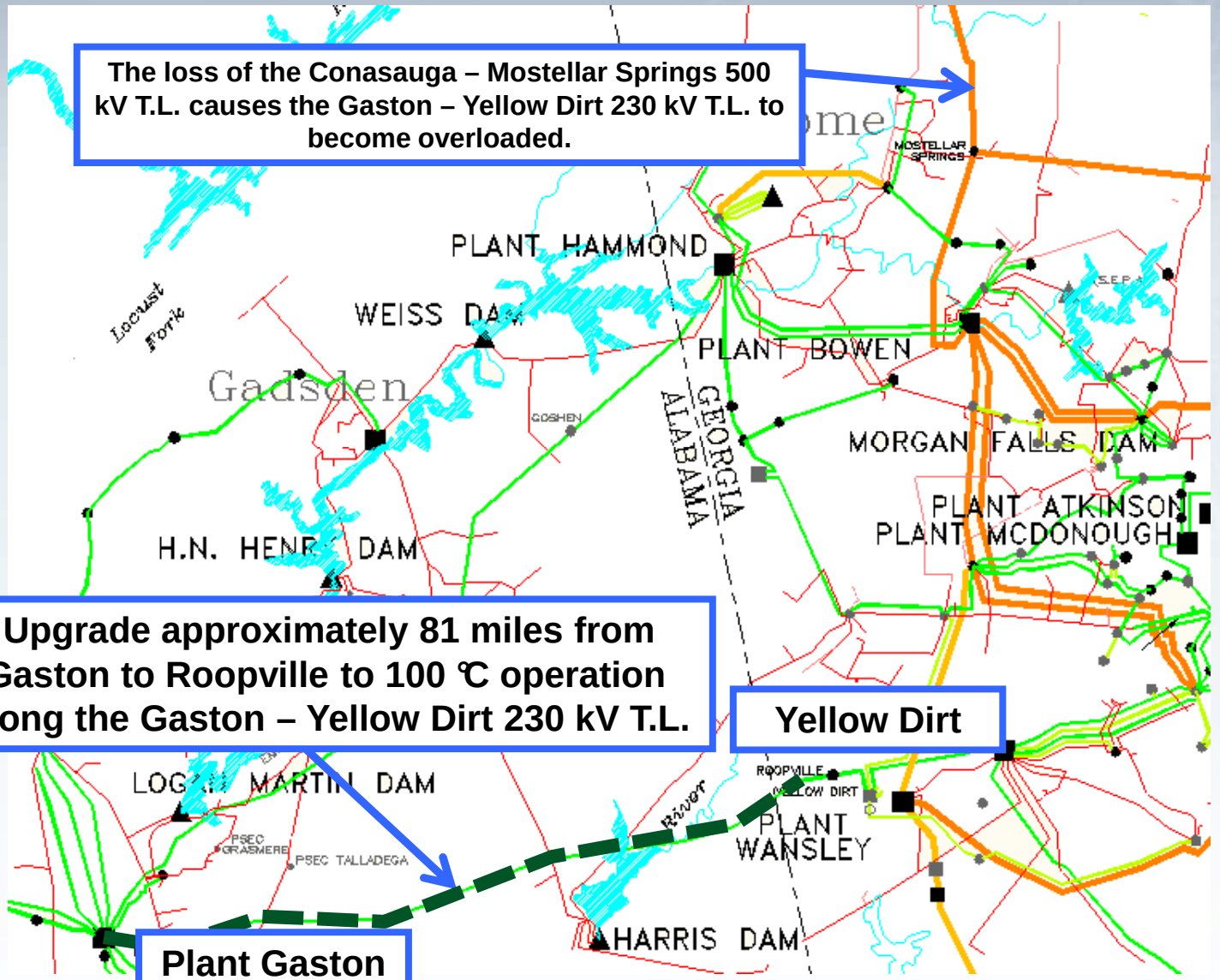
- Upgrade approximately 81 miles along the Gaston – Roopville section of the Gaston – Yellow Dirt 230 kV T.L. to 100 ℃ operation.



- The loss of the Conasauga – Mostellar Springs 500 kV T.L. causes the Gaston – Yellow Dirt 230 kV T.L. to become overloaded.

2012 W-1

Gaston – Yellow Dirt 230 kV T.L.

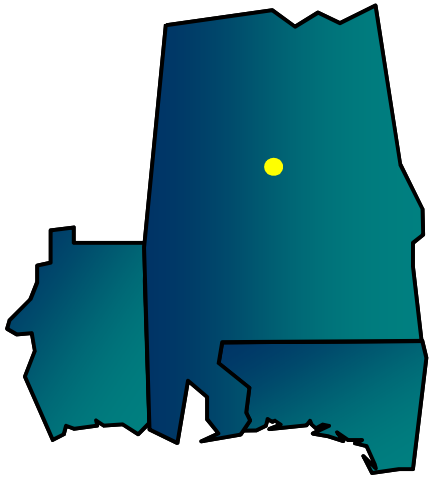


Southeastern Region Transmission Planning

Expansion Item W-2

2012 W-2

Montgomery – South Montgomery 230 kV T.L.



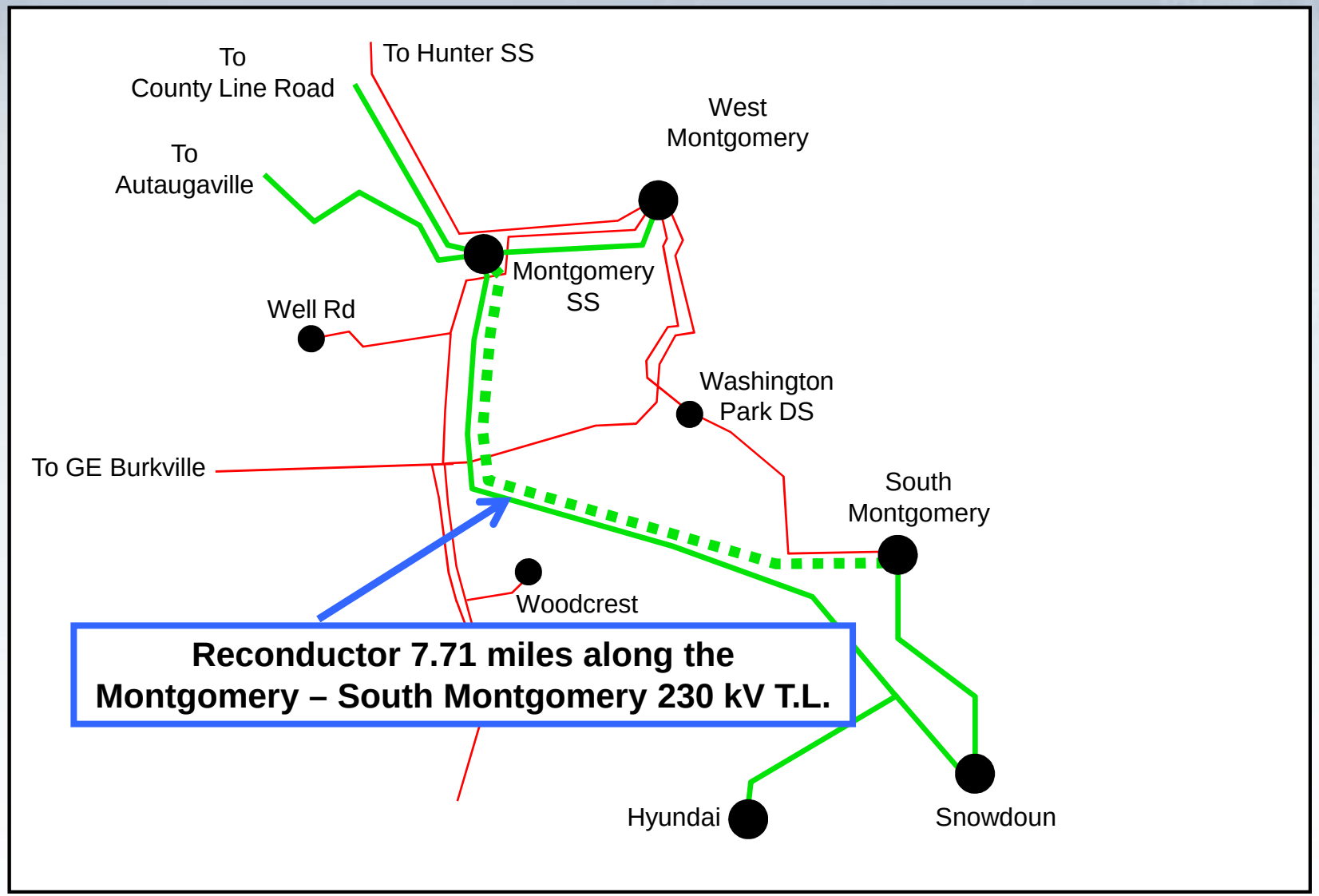
- Reconductor 7.71 miles with 1351 ACSS at 160 ℃ along the Montgomery – South Montgomery 230 kV T.L.

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

- *Project need date is 06/01/2013 (due to the installation of Autaugaville 500/230 kV transformer), but is scheduled for 06/01/2012 completion.*

2012 W-2

Montgomery – South Montgomery 230 kV T.L.



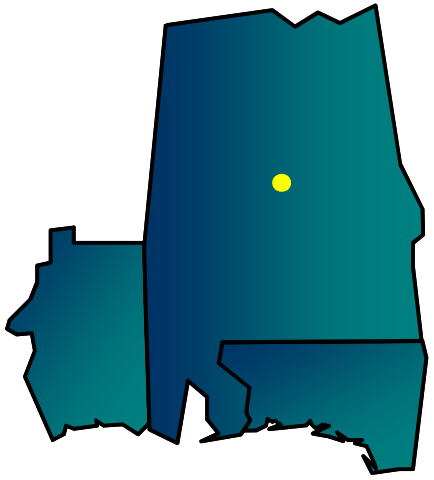
Southeastern Region Transmission Planning

Expansion Item W-3

Autaugaville 500 kV Substation

- Install a new 500 / 230 kV transformer at Autaugaville (2016 MVA)

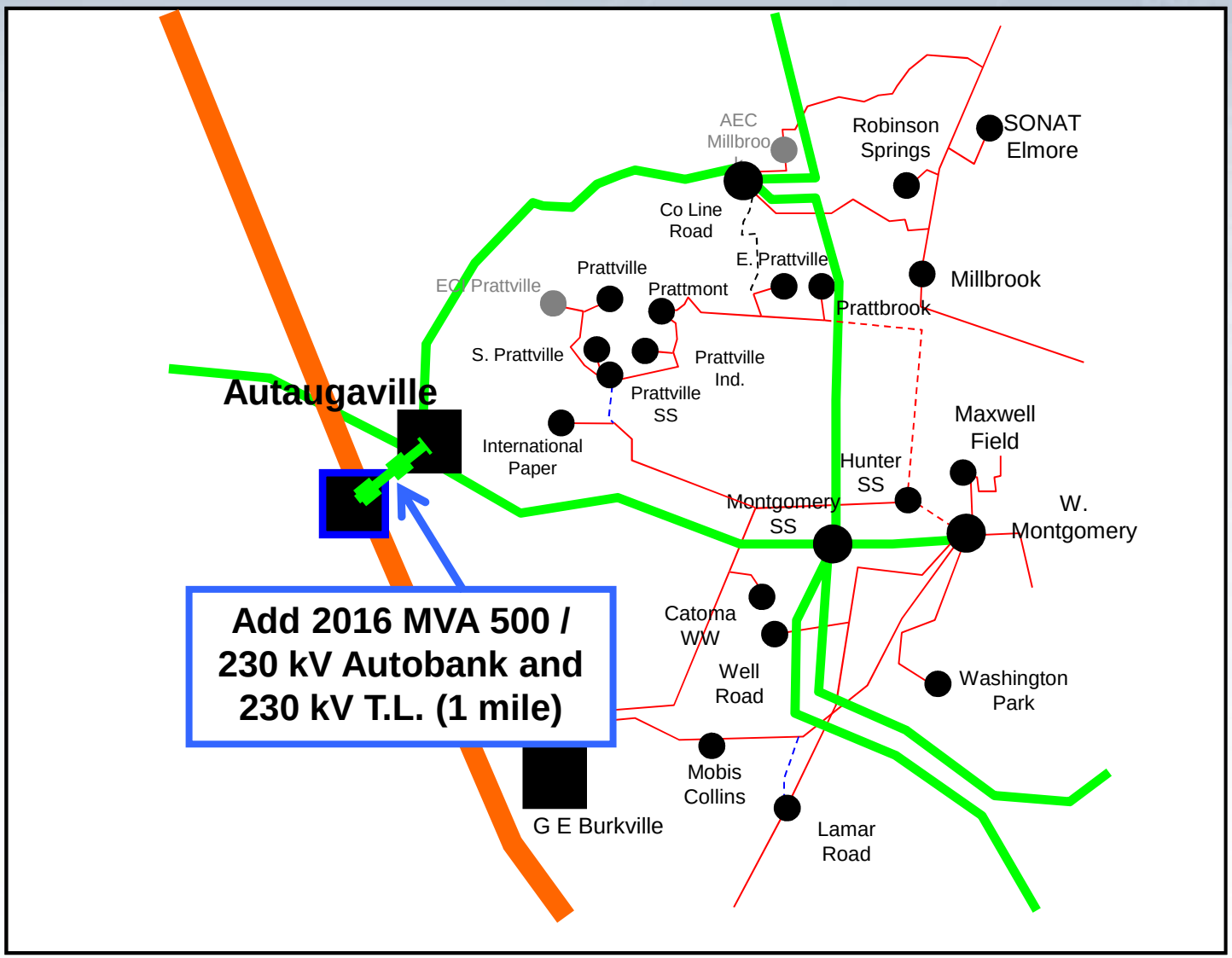
2013 W-3



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

2013 W-3

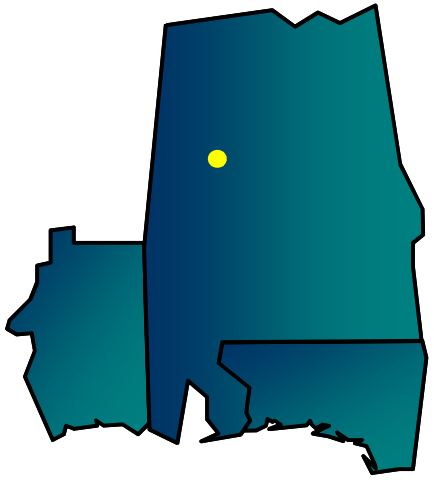
Autaugaville 500 / 230 kV Transformer



Southeastern Region Transmission Planning

Expansion Item W-4

2013 W-4



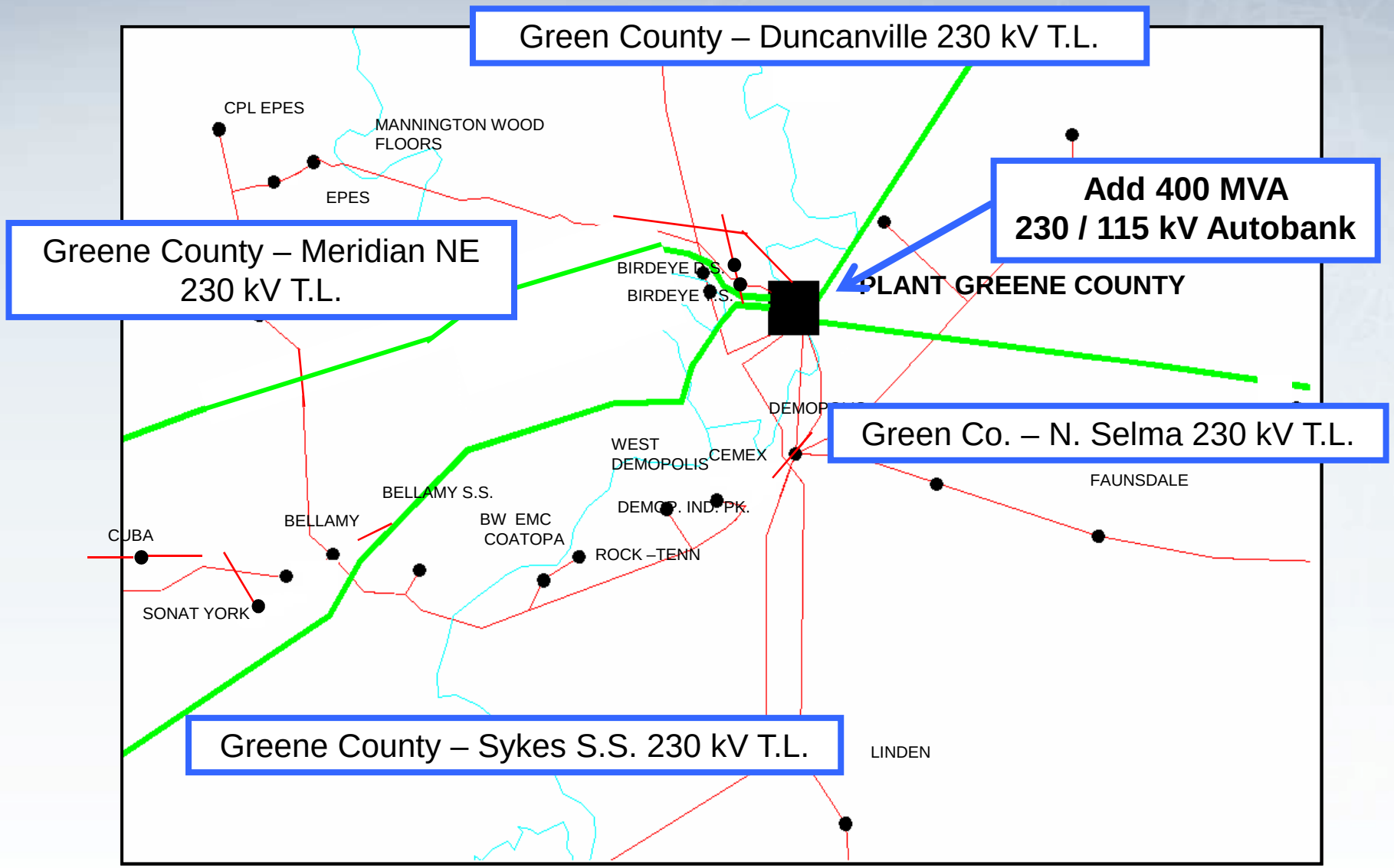
Greene County Substation

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

- The loss of the existing 230 / 115kV Transformer at Greene County SP causes the South Tuscaloosa – Eutaw 115kV Transmission Line to become overloaded.

Greene County Substation

2013 W-4



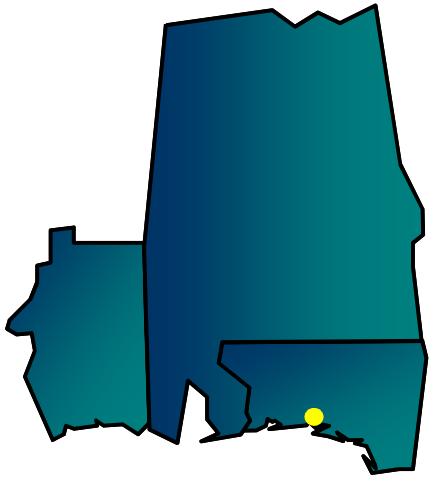
Southeastern Region Transmission Planning

Expansion Item W-5

2013 W-5

Laguna Beach 230 / 115 kV Substation

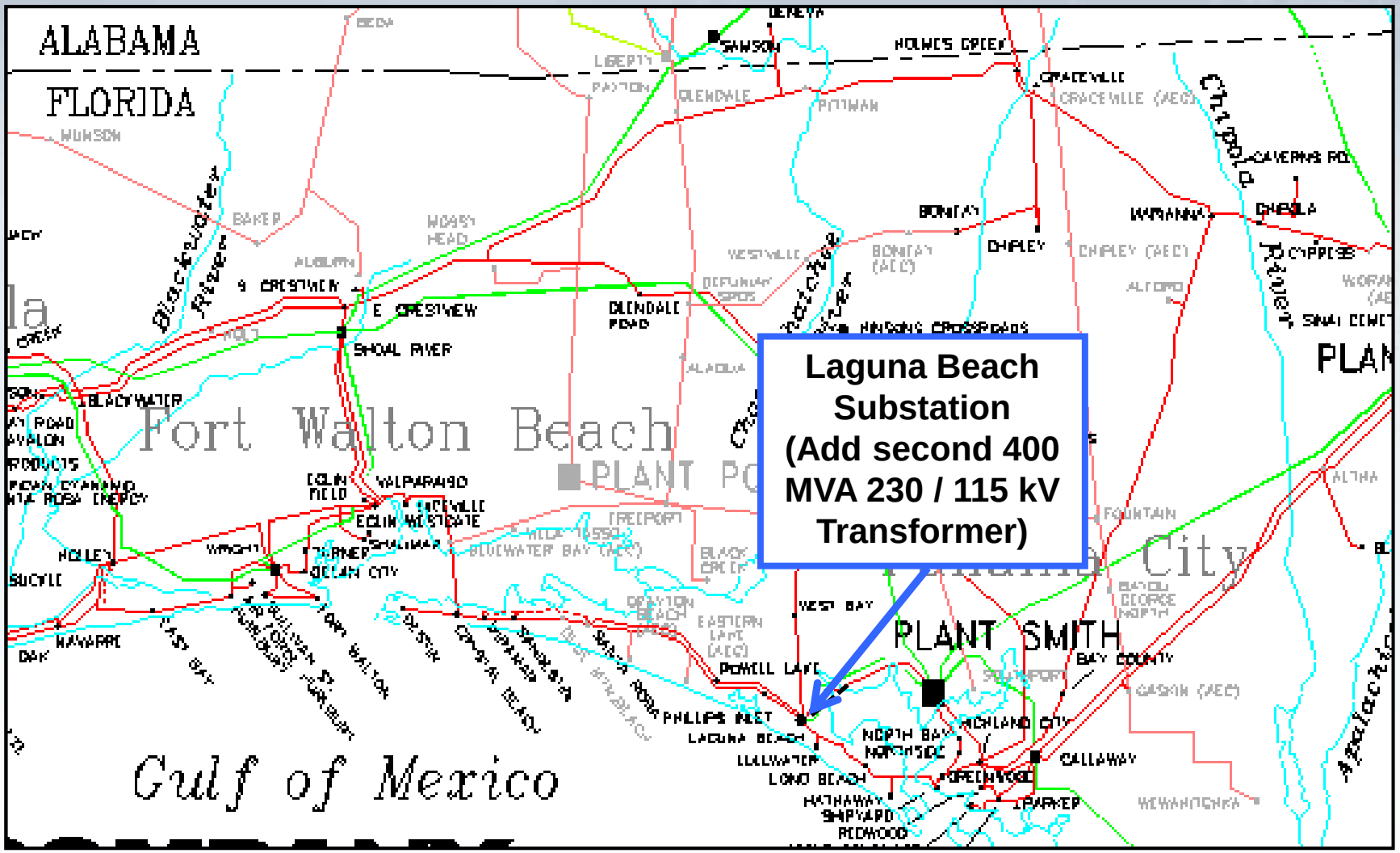
- Install a second 230 / 115 kV transformer at Laguna beach substation.



- The loss of the Smith 230 / 115 kV transformer, with Smith unit #1 offline, overloads the Laguna Beach 230 / 115 kV transformer.

2013 W-5

Laguna Beach 230 / 115 kV Substation



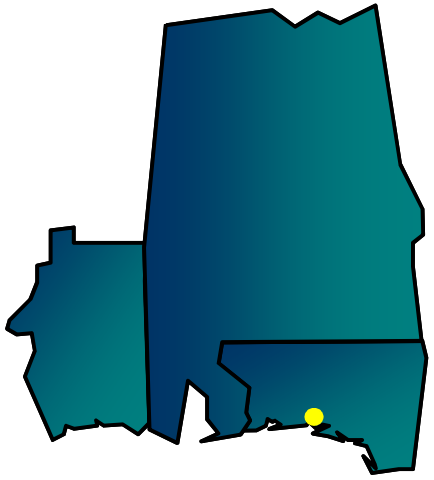
Southeastern Region Transmission Planning

Expansion Item W-6

Smith – Laguna Beach 230 kV T.L.

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

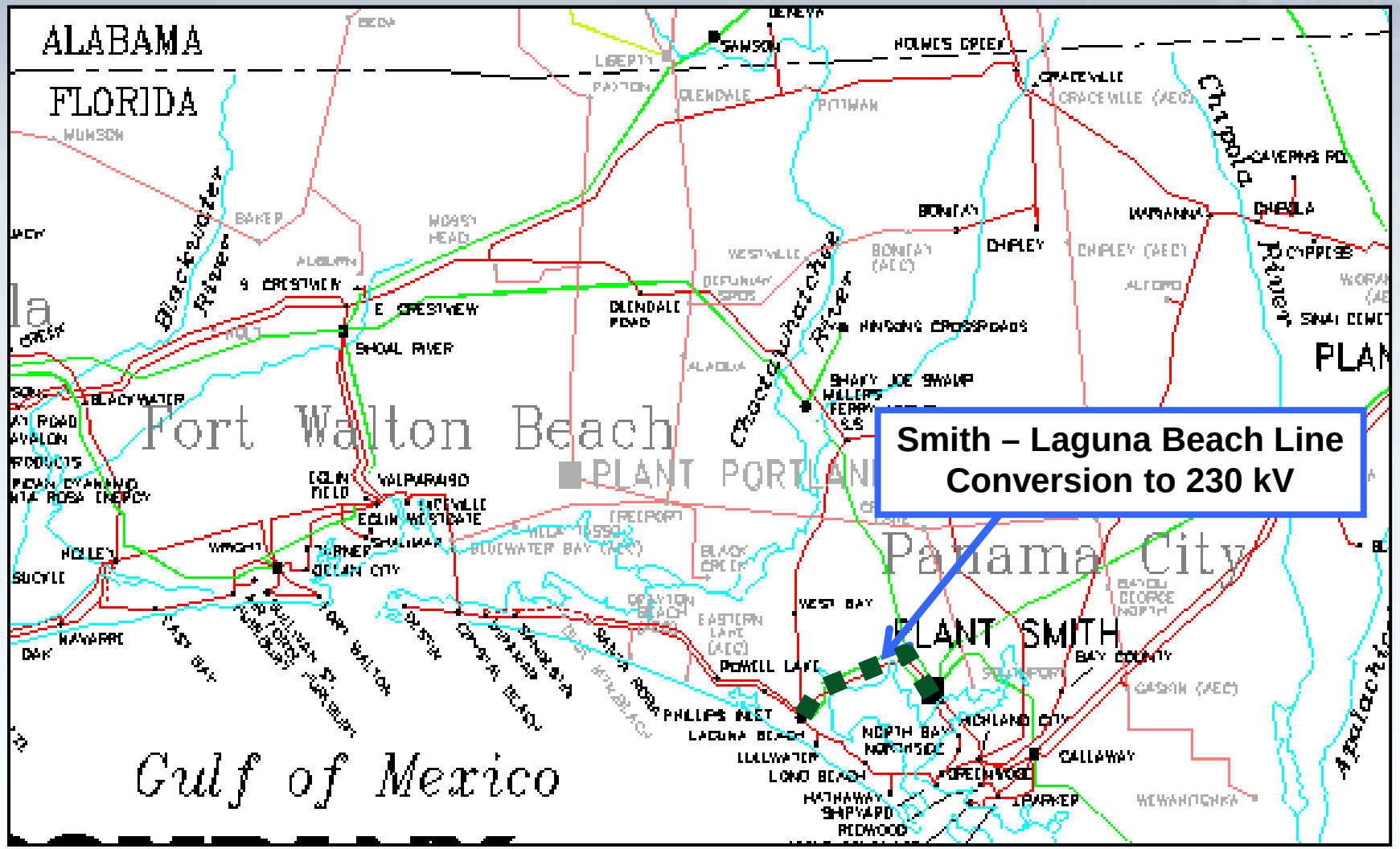
2013 W-6



- 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 exceed its thermal limit.

Smith – Laguna Beach 230 kV T.L.

2013 W-6



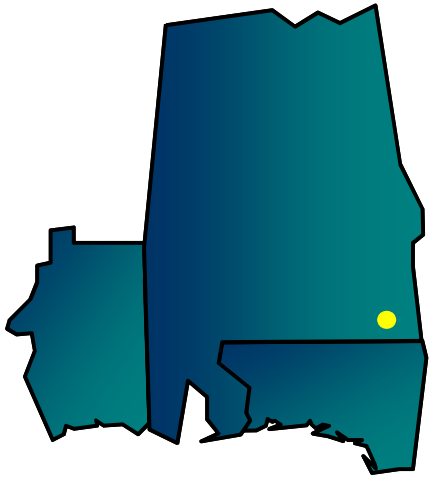
Southeastern Region Transmission Planning

Expansion Item W-7

2013 W-7

Pinckard – Slocomb 115 kV T.L.

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

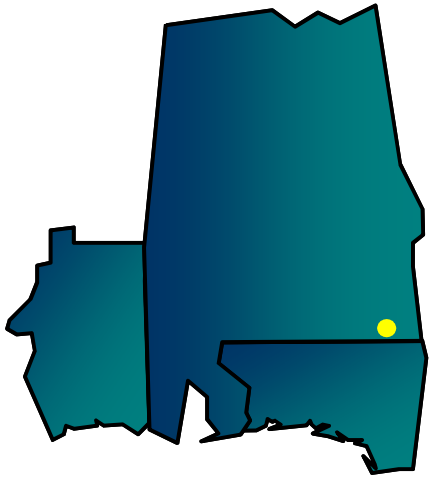


- The loss of Farley – Sinai Cemetery 230 kV T.L., with Smith unit #3 offline, causes the Pinckard – Slocomb 115 kV T.L. to overload.

Southeastern Region Transmission Planning

Expansion Item W-8

2014 W-8



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.

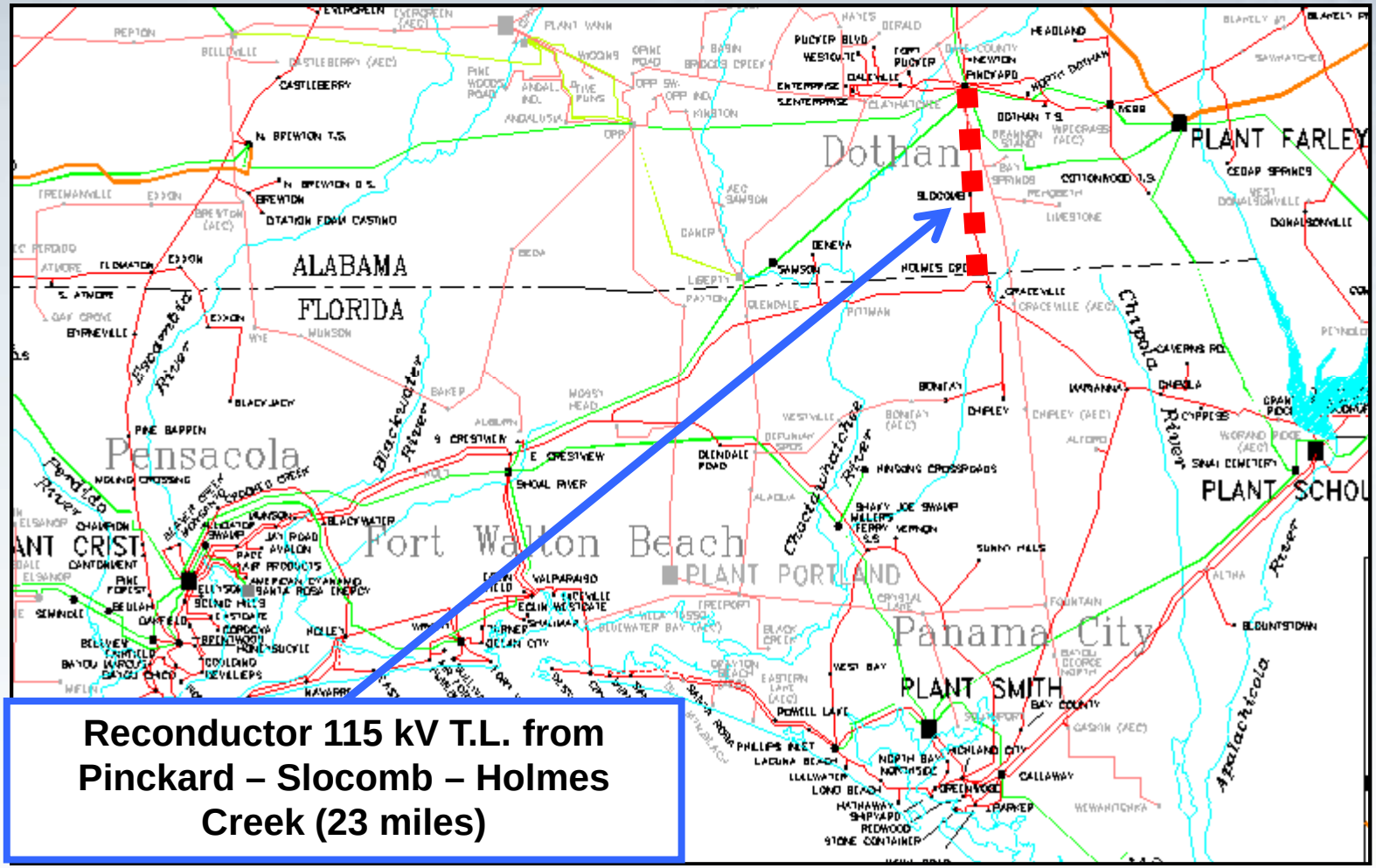
- The loss of Farley – Sinai Cemetery 230 kV T.L., with Smith unit #3 offline, causes this line to become overloaded.

Pinckard – Slocomb 115 kV T.L.

Slocomb – Holmes Creek 115 kV T.L.

2013 W-7

2014 W-8

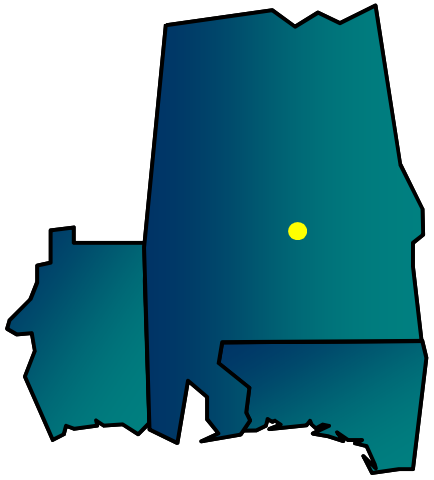


Reconductor 115 kV T.L. from Pinckard – Slocomb – Holmes Creek (23 miles)

Southeastern Region Transmission Planning

Expansion Item W-9

2014 W-9



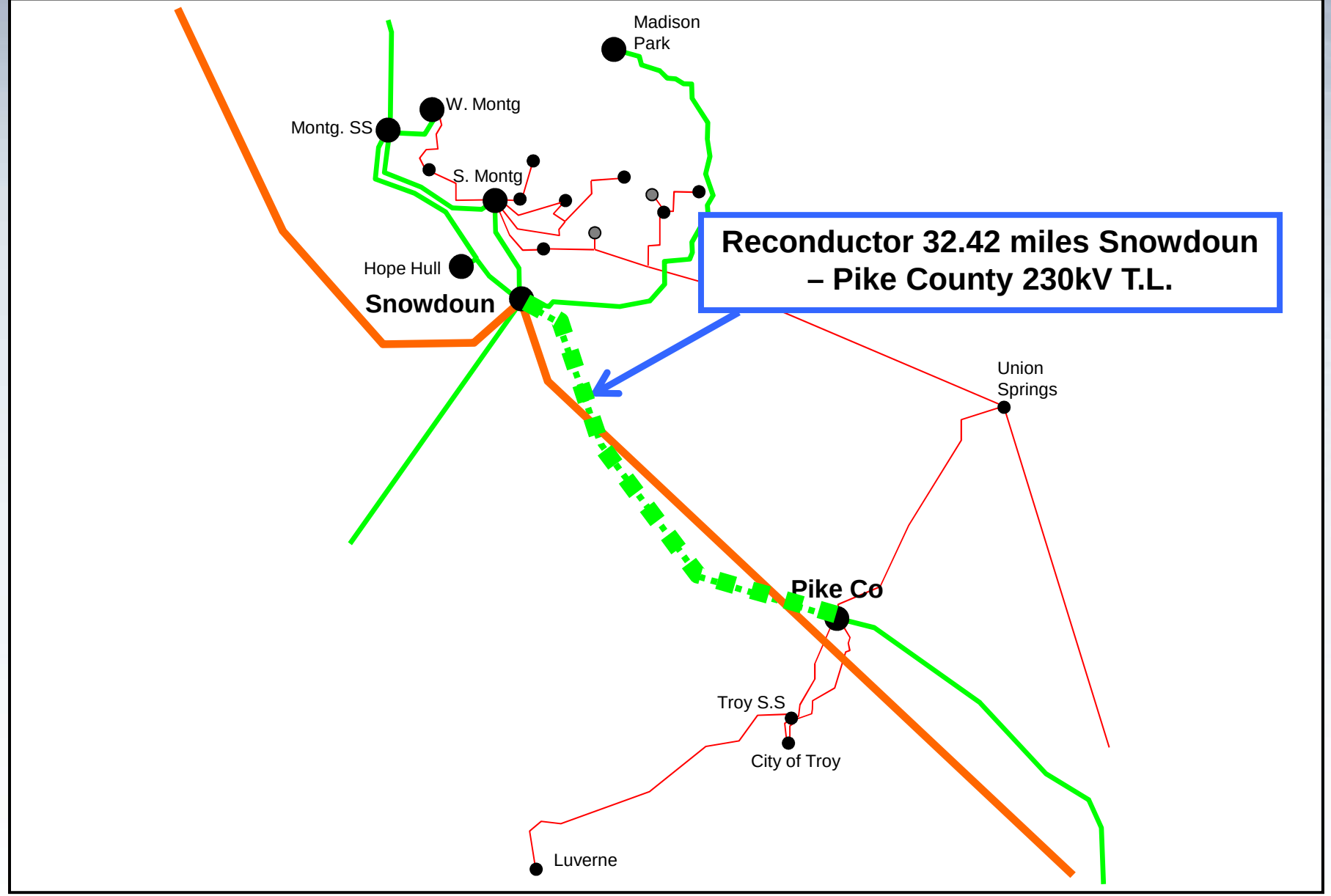
Snowdoun – Pike County 230 kV T.L.

- Reconductor 32.4 miles of 230 kV T.L. between Snowdoun and Pike County with 1033 ACSS at 160º C.

- 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-9



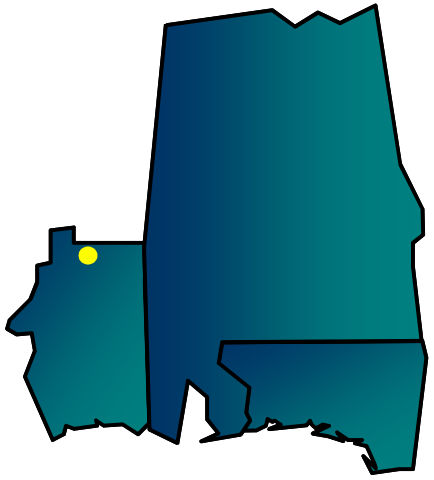
Southeastern Region Transmission Planning

Expansion Item W-10

2014 W-10

Kemper County Generation

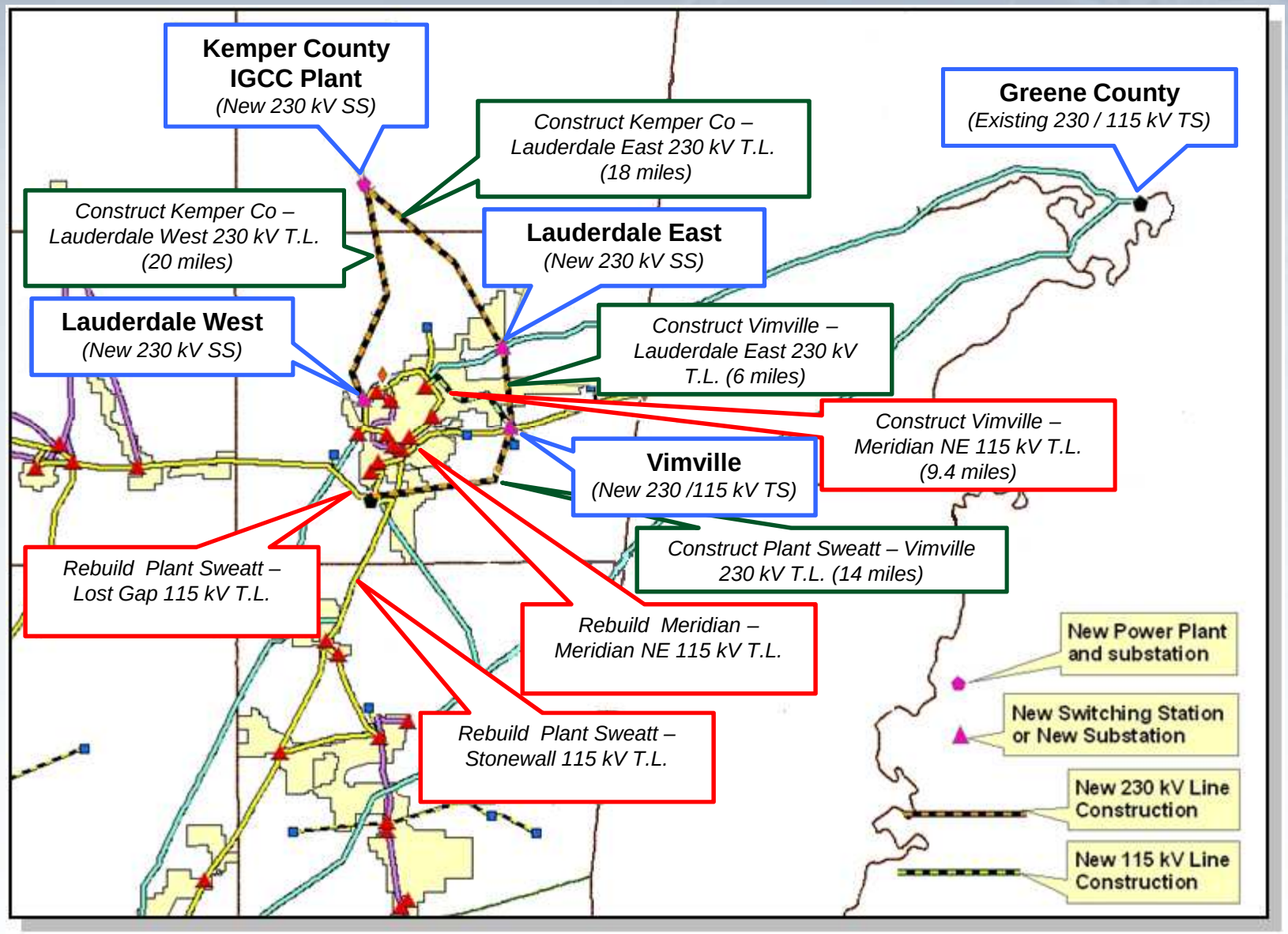
- IGCC plant addition in Kemper County, Mississippi and construct all transmission facilities required for firm service from the plant.



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

Kemper County Generation

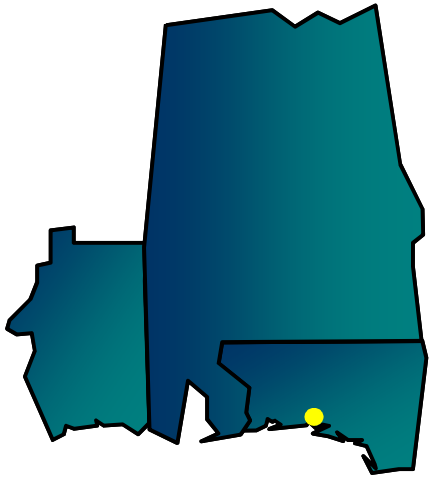
2014 W-10



Southeastern Region Transmission Planning

Expansion Item W-11

2015 W-11



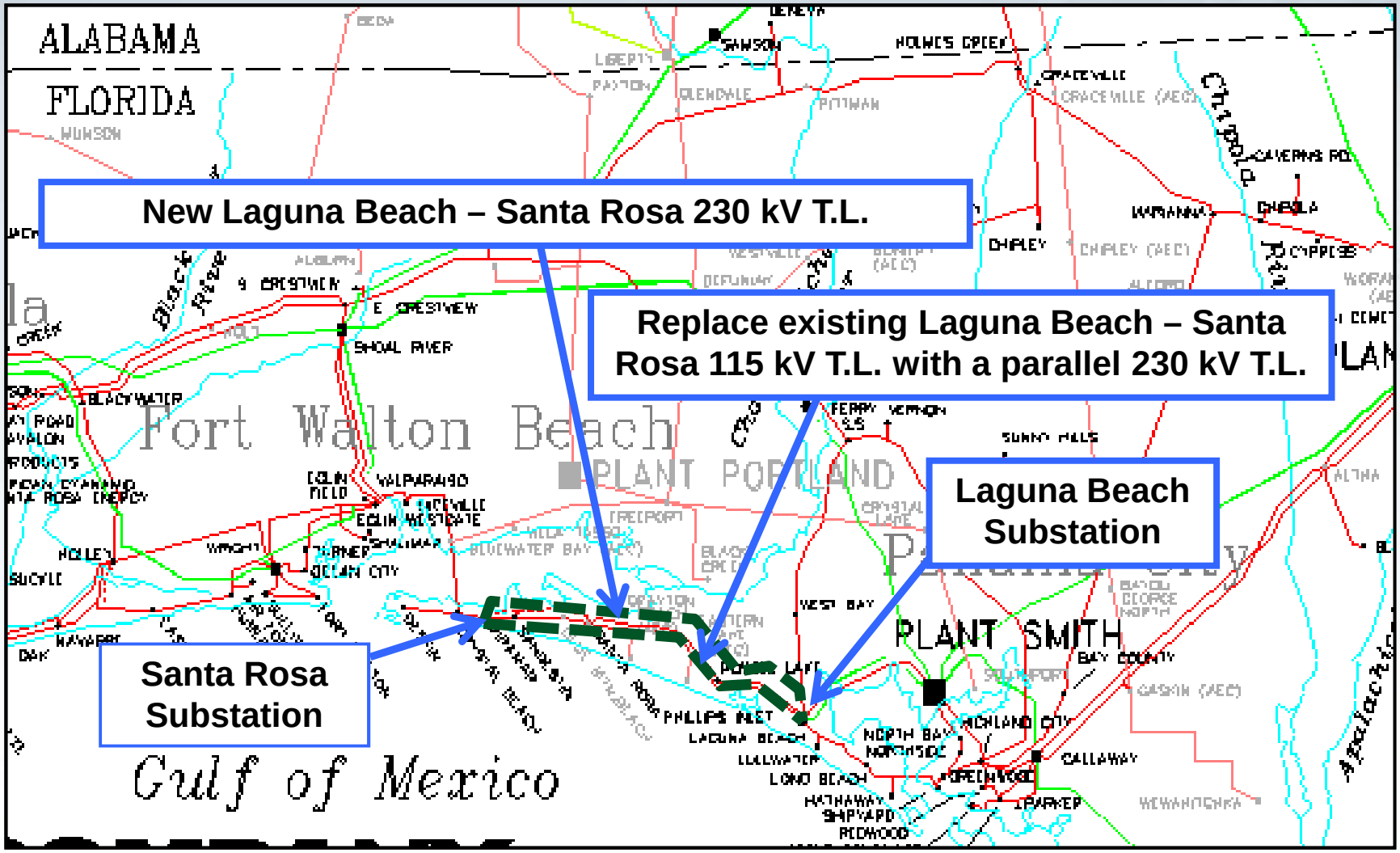
Santa Rosa – Laguna Beach 230 kV T.L.

- Construct a new Santa Rosa 230 KV substation with two 230 / 115 kV transformers.
- Build a new 230 kV T.L. from Laguna Beach to Santa Rosa.
- Replace Laguna Beach – Santa Rosa #1 115 kV T.L. with a new 230 kV T.L.

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

Santa Rosa – Laguna Beach 230 kV T.L.

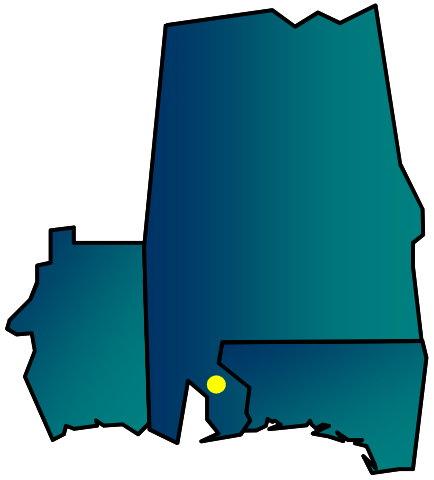
2015 W-11



Southeastern Region Transmission Planning

Expansion Item W-12

2015 W-12



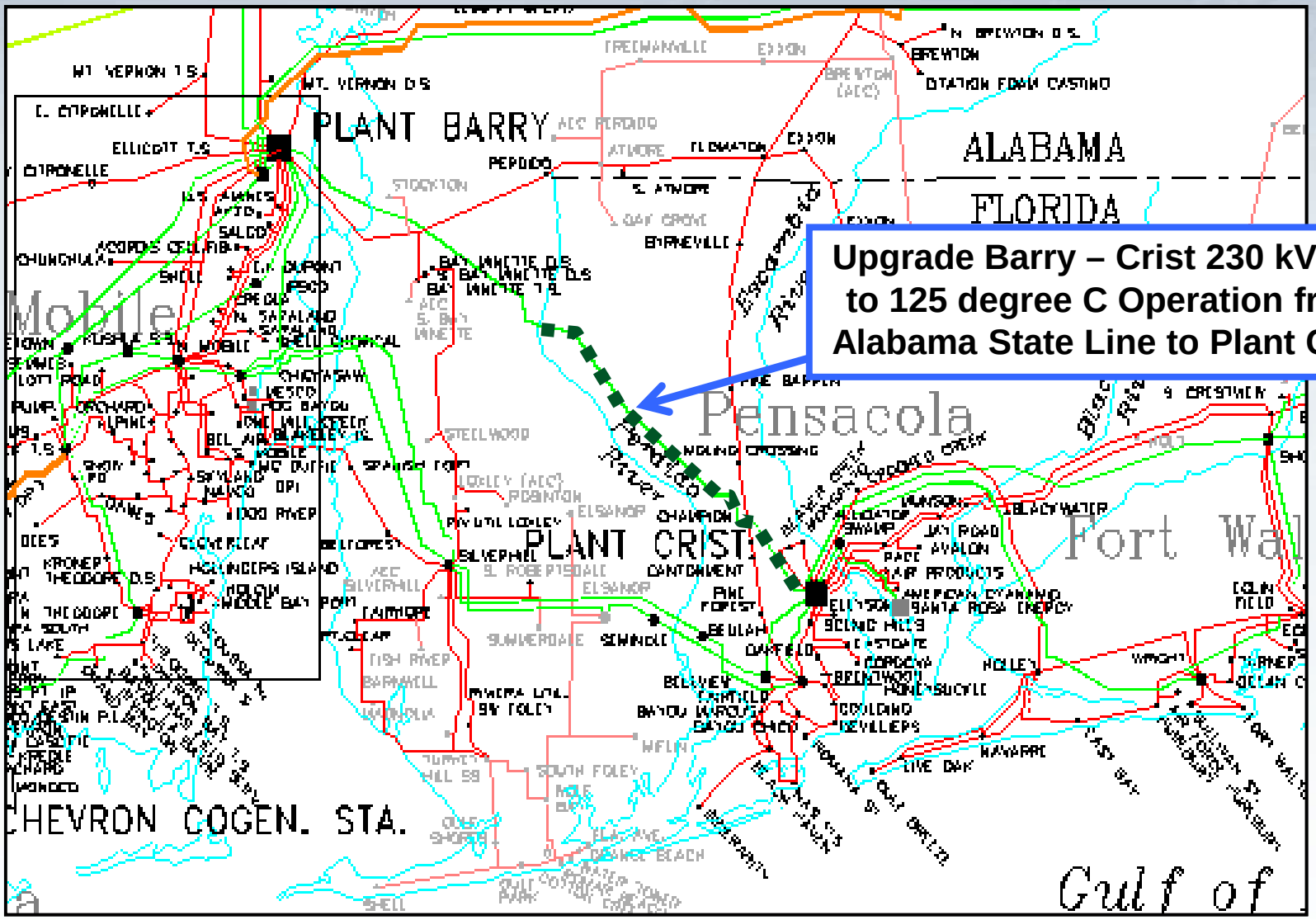
Barry – Crist 230 kV T.L.

- Upgrade 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.

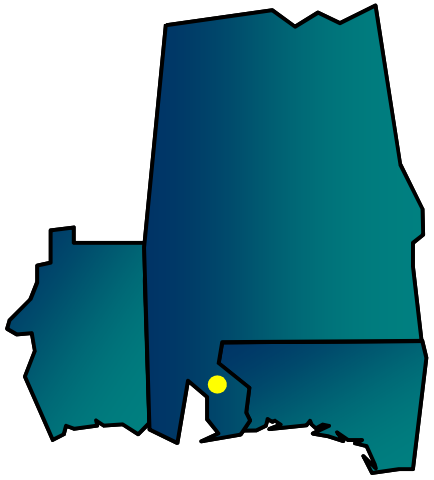
2015 W-12



Southeastern Region Transmission Planning

Expansion Item W-13

2015 W-13



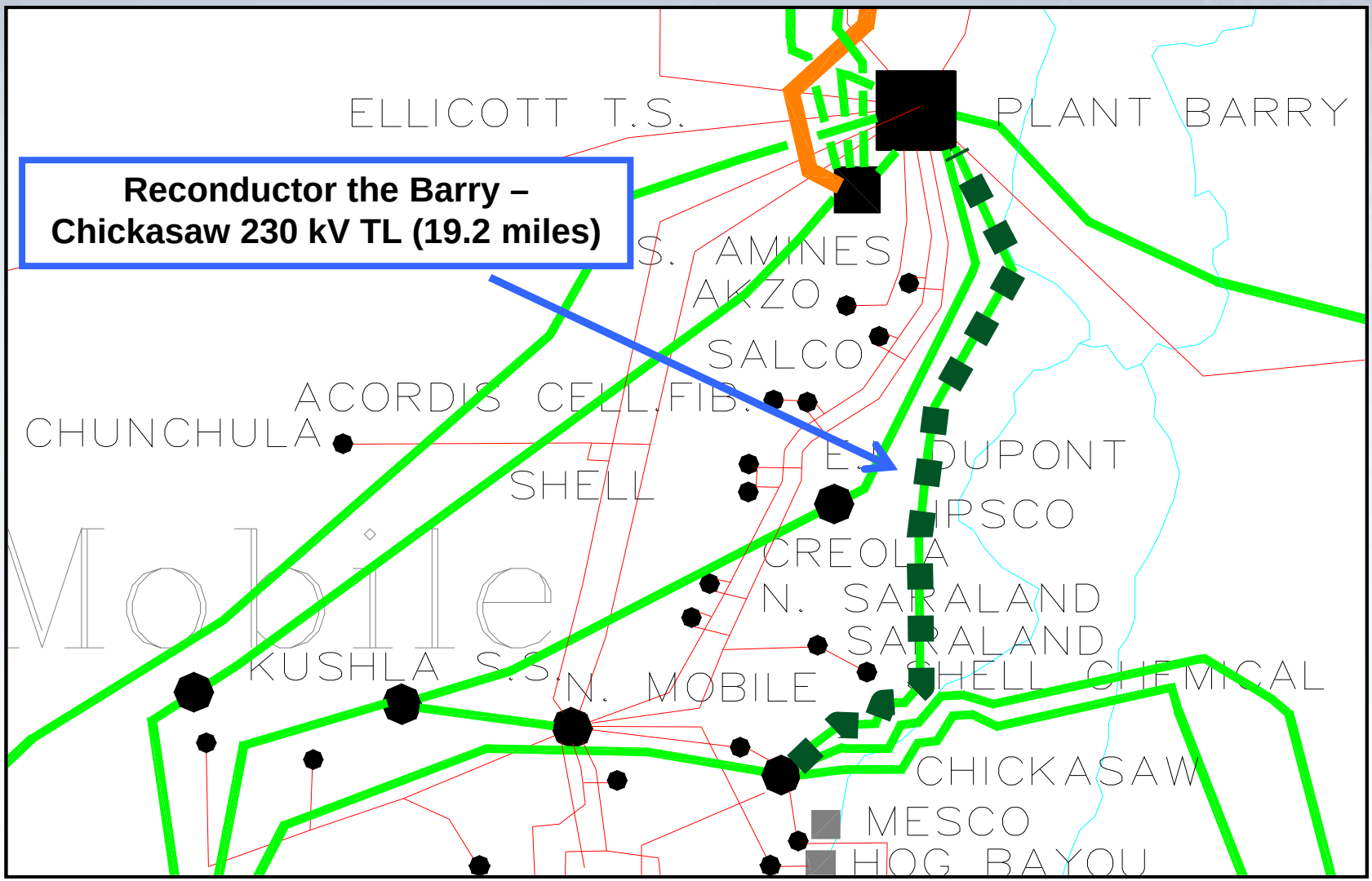
Barry – Chickasaw 230 kV T.L.

- Reconductor 19.18 miles of 230 kV T.L. from Barry Steam Plant – Chickasaw T.S.

- 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.

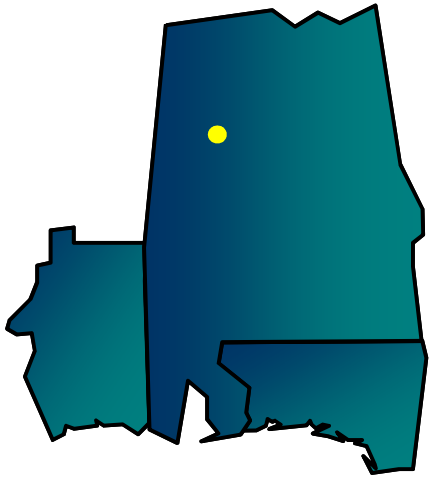
2015 W-13



Southeastern Region Transmission Planning

Expansion Item W-14

2015 W-14



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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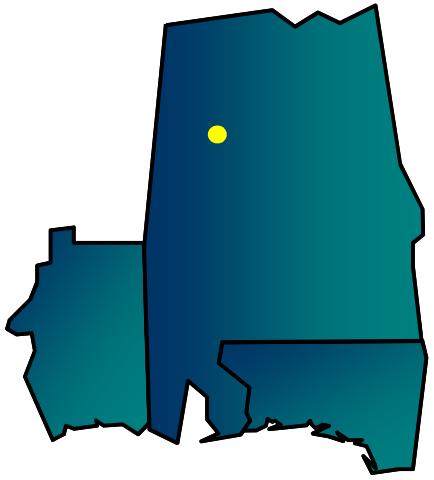
- Overloads caused by multiple contingencies.
- Voltage Support.

Southeastern Region Transmission Planning

Expansion Item W-15

2016 W-15



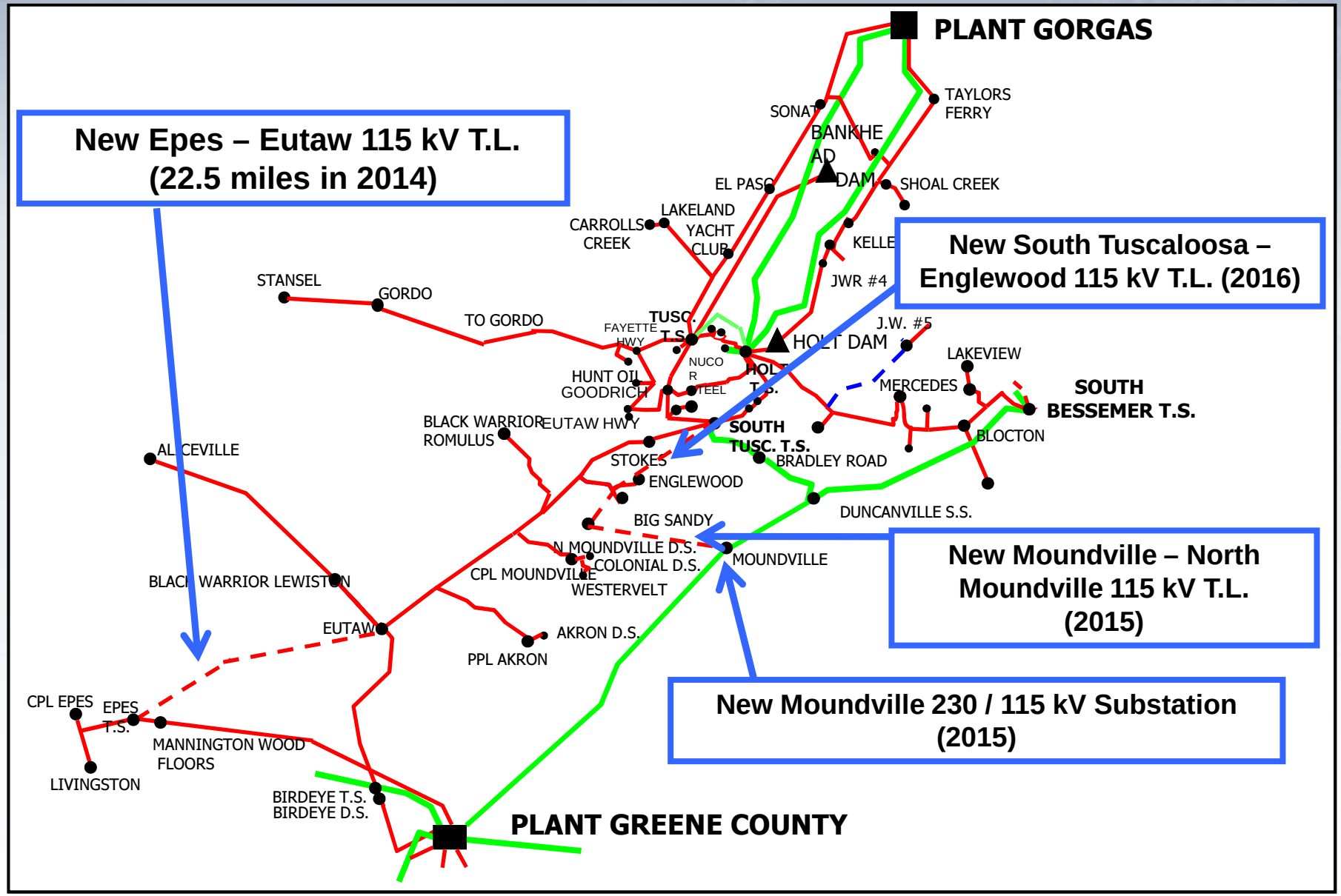
Tuscaloosa Area Improvement

- 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

- 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-14	2016 W-15



Southeastern Region Transmission Planning

Expansion Item W-16

2017 W-16

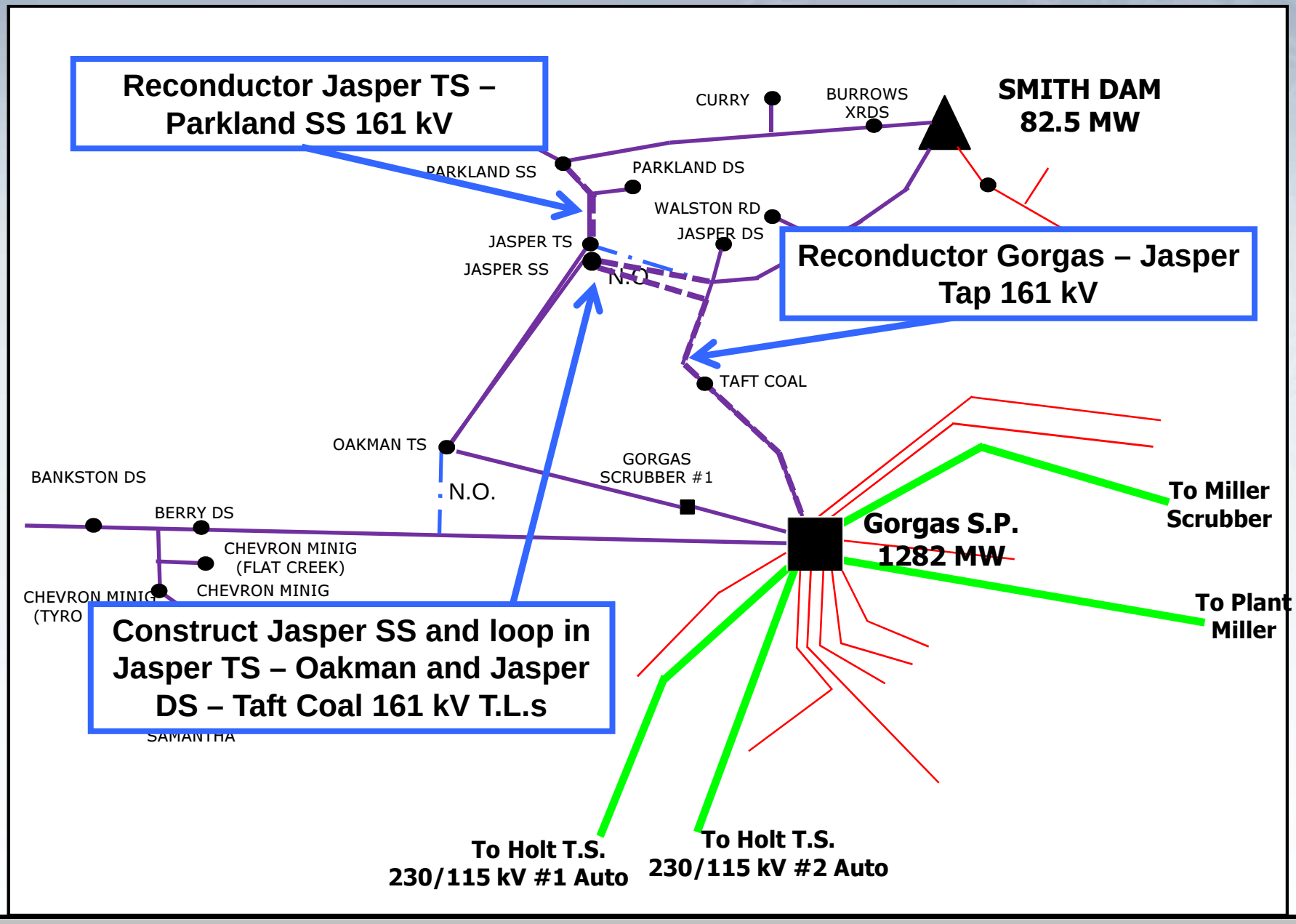
Jasper Area Improvements

- 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.

Jasper Area Improvements

2017 W-16

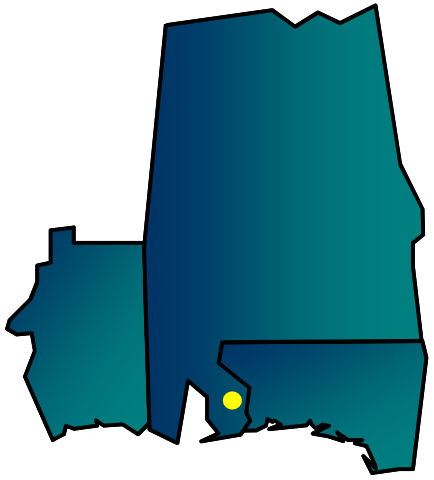


Southeastern Region Transmission Planning

Expansion Item W-17

2018 W-17

Silverhill – Turkey Hill 115 kV T.L.

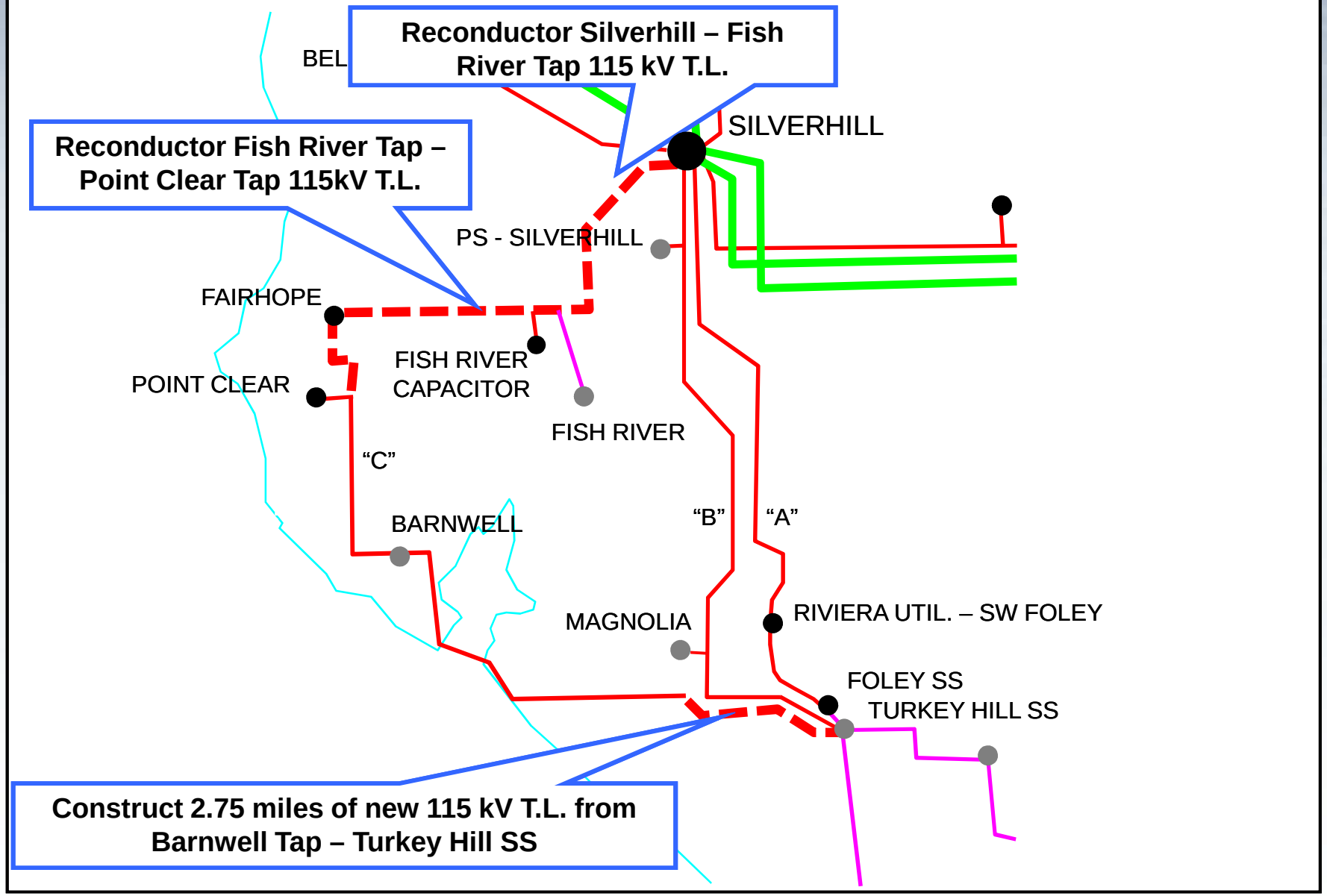


- Reconductor approximately 11.0 miles of 115 kV T.L. from Silverhill to Turkey Hill with 795 ACSR.
- Construct approximately 2.75 miles of new 115 kV T.L. from Barnwell Tap – Turkey Hill to complete the new Silverhill – Turkey Hill 115 kV T.L.

- 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.

2018 W-17

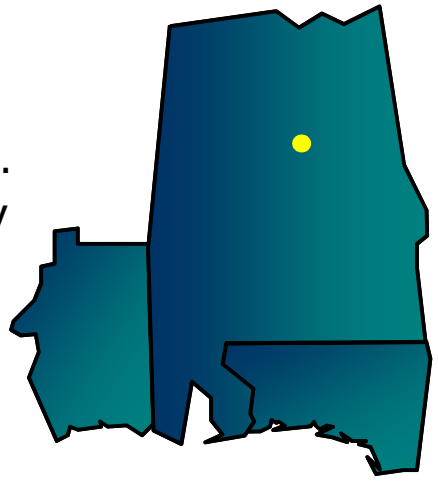


Southeastern Region Transmission Planning

Expansion Item W-18

2019 W-18

Gaston – County Line Road 230 kV T.L.

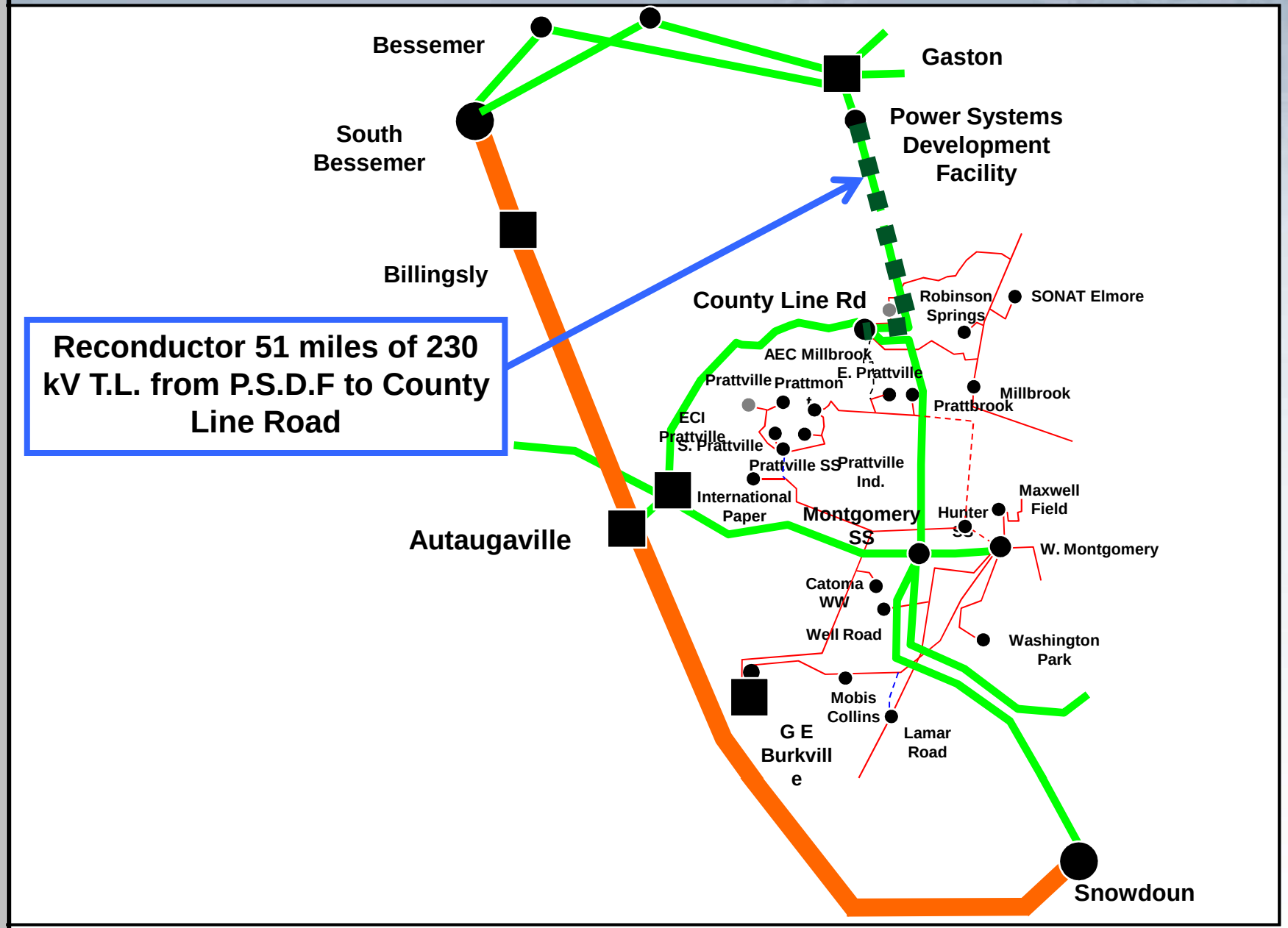


- Reconductor approximately 51.0 miles of 230 kV T.L. from Power Systems Development Facility to County Line Road with 1351 ACSS at 200º C along the Gaston - County Line Road 230 kV T.L.

- 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-18



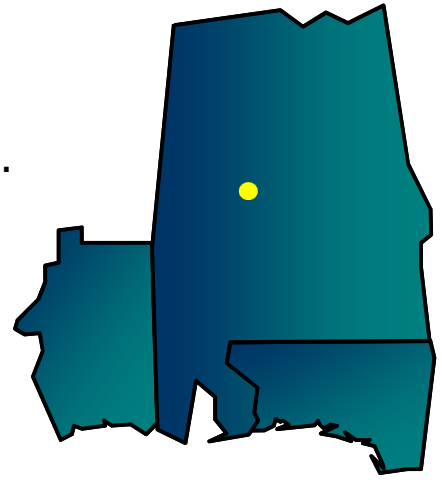
Southeastern Region Transmission Planning

Expansion Item W-19

Demopolis – Selma 115 kV T.L.

- Reconductor approximately 43.0 miles of 115 kV T.L. from Demopolis to Selma with 795 ACSR at 100º C.

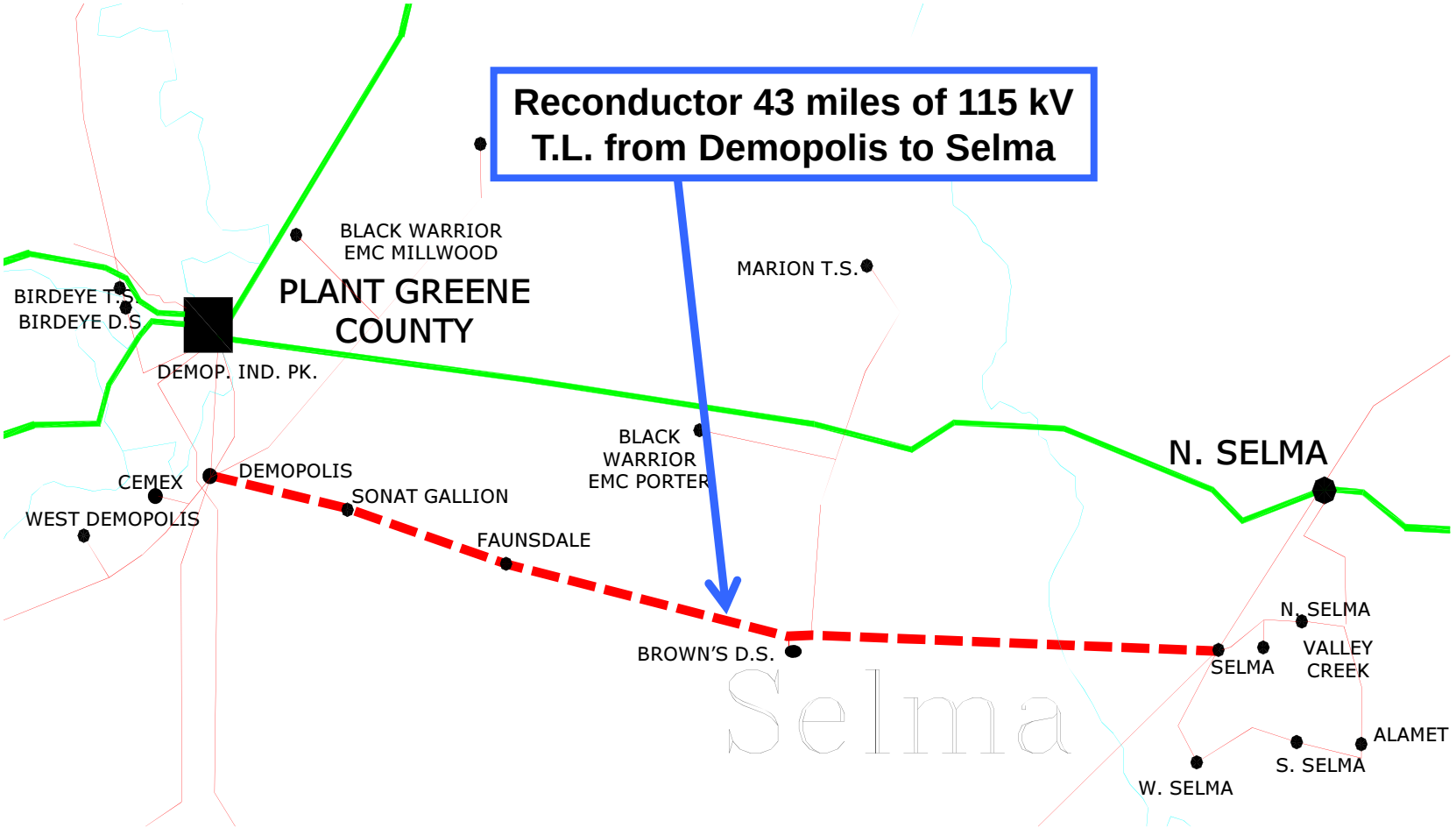
2019 W-19



- The loss of the Greene County – North Selma 230 kV T.L. causes the Demopolis – Selma 115 kV T.L. to become overloaded.

Demopolis – Selma 115 kV T.L.

2019 W-19

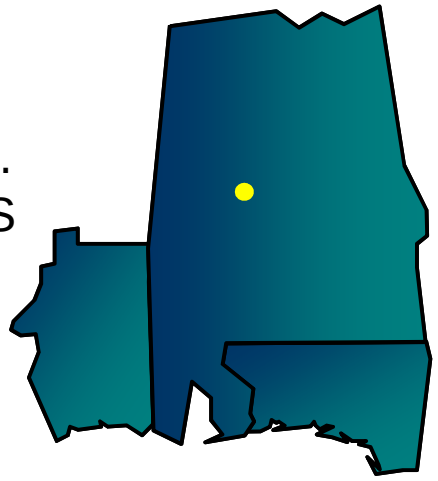


Southeastern Region Transmission Planning

Expansion Item W-20

2020 W-20

Greene County – North Selma 230 kV T.L.

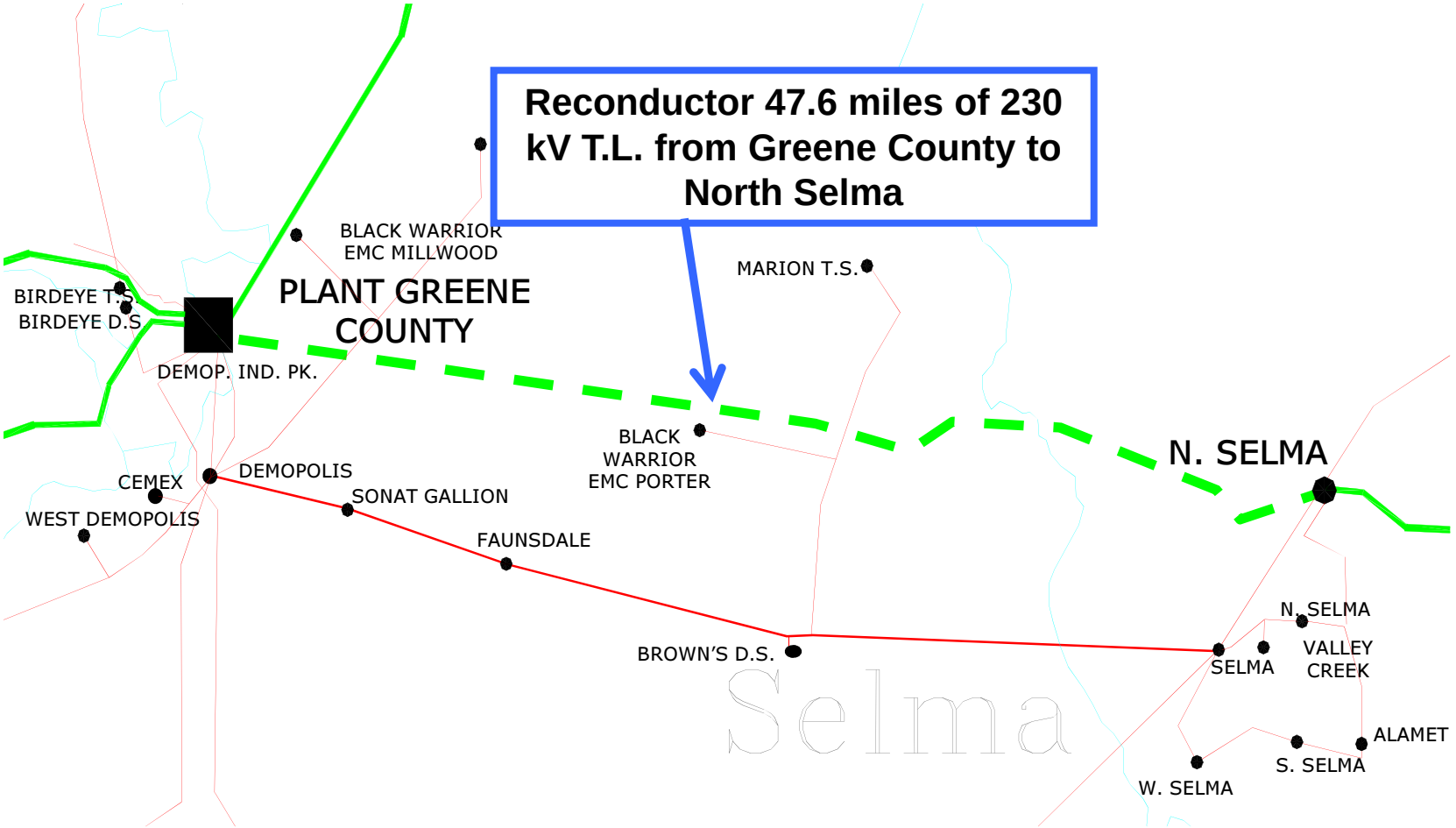


- Reconductor approximately 47.6 miles of 230 kV T.L. from Greene County to North Selma with 1351 ACSS at 200º C.

- The loss of the Billingsly – Autaugaville 500 kV T.L., with Harris Unit #1 offline, causes the Greene – North Selma 230 kV T.L. to become overloaded.

Greene County – North Selma 230 kV T.L.

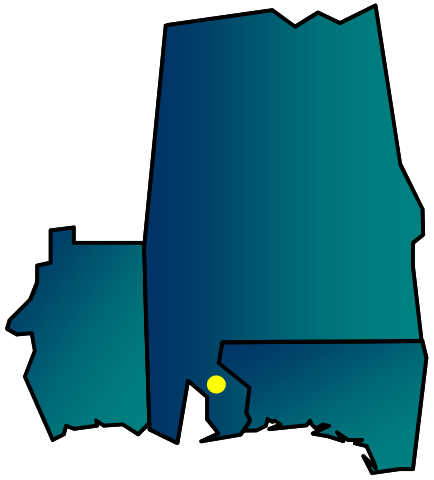
2020 W-20



Southeastern Region Transmission Planning

Expansion Item W-21

2021 W-21



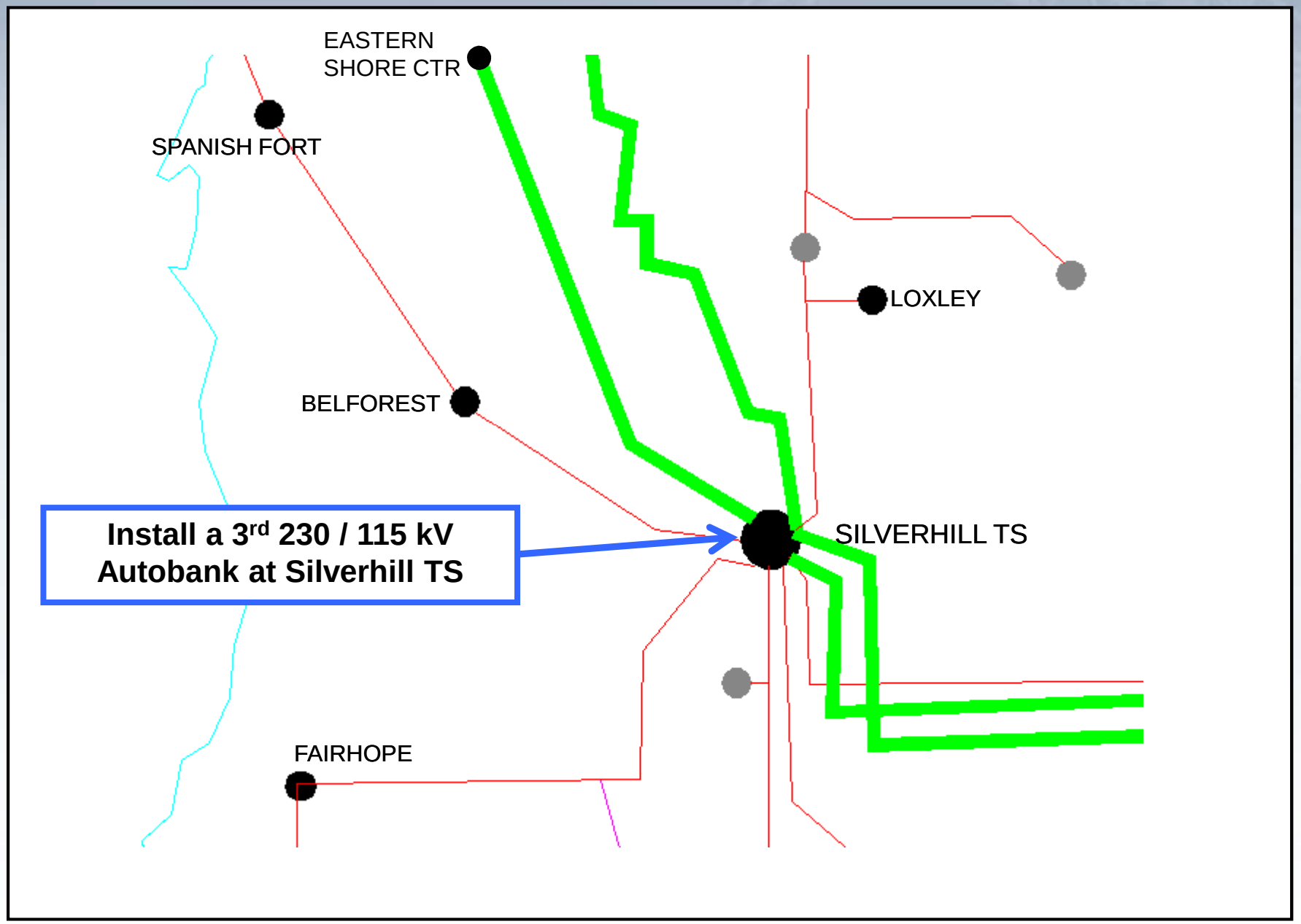
Silverhill 230 / 115 kV Substation

- Install a 3rd 230 / 115 kV Autobank (400 MVA) at Silverhill T.S.

- The loss of the Silverhill 230 / 115 kV Autobank #1, with Daniel unit #1 offline, overloads the Silverhill 230 / 115 kV Autobank #2

Silverhill 230 / 115 kV Substation

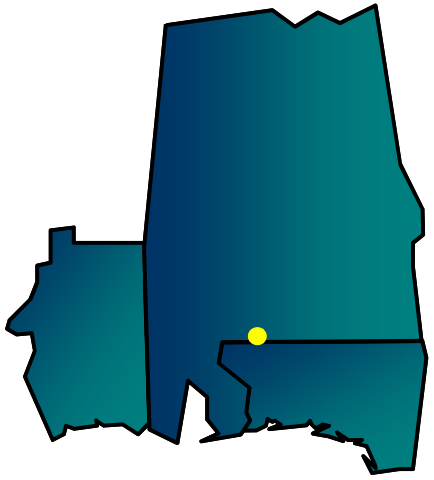
2021 W-21



Southeastern Region Transmission Planning

Expansion Item W-22

2021 W-22



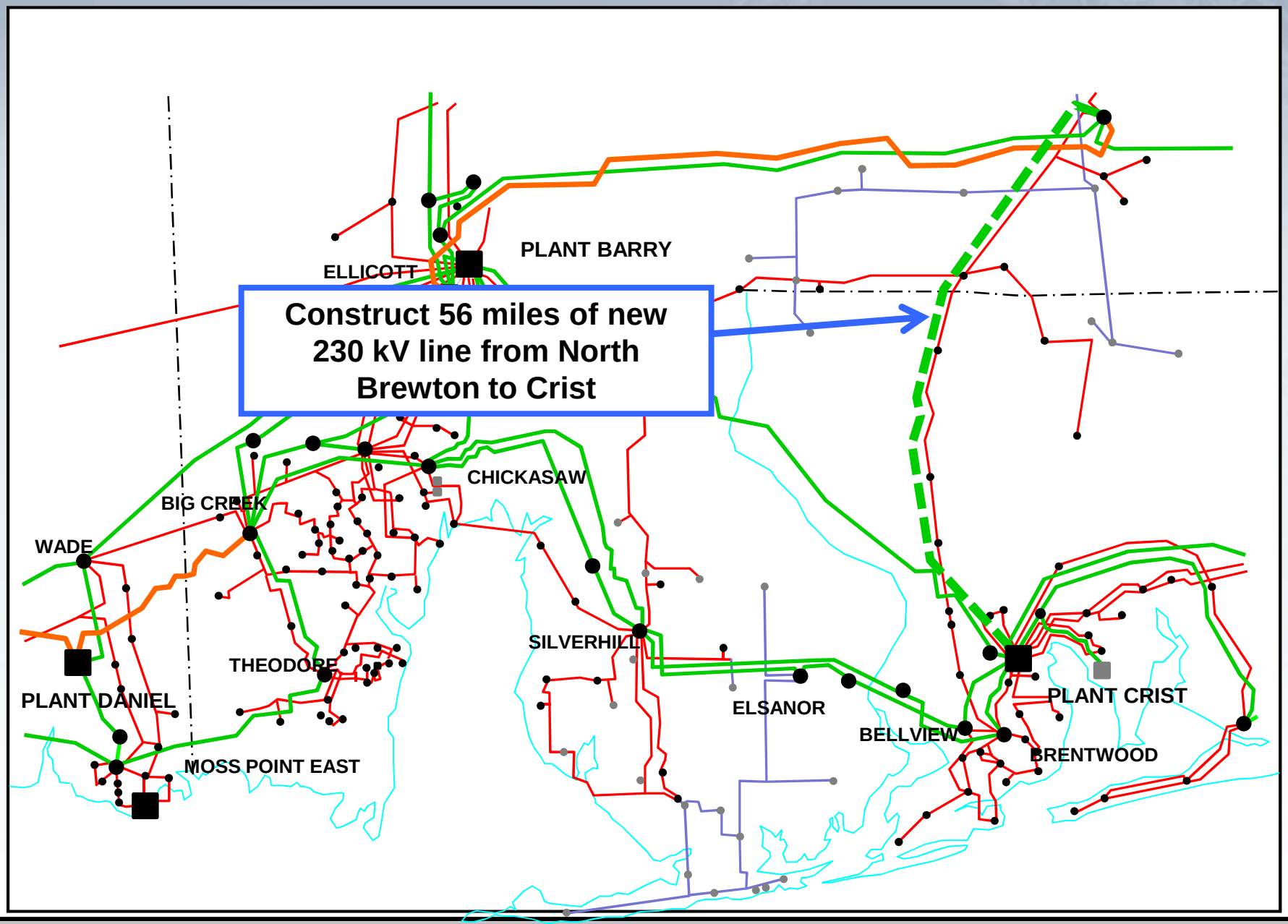
North Brewton – Crist 230 kV T.L.

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

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

North Brewton – Crist 230 kV T.L.

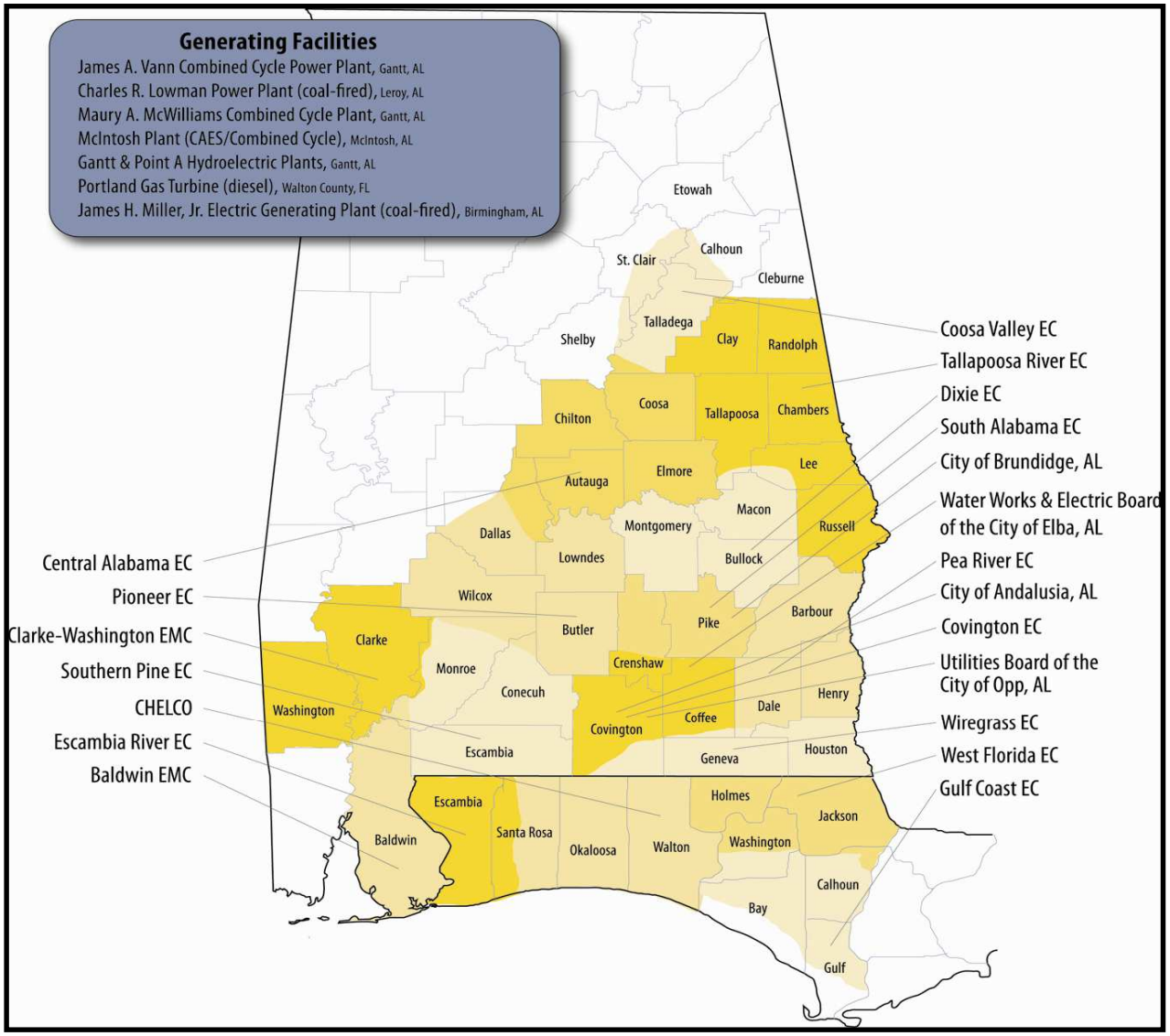
2021 W-22



Southeastern Region Transmission Planning

PowerSouth

Southeastern Region Transmission Planning



Southeastern Region Transmission Planning

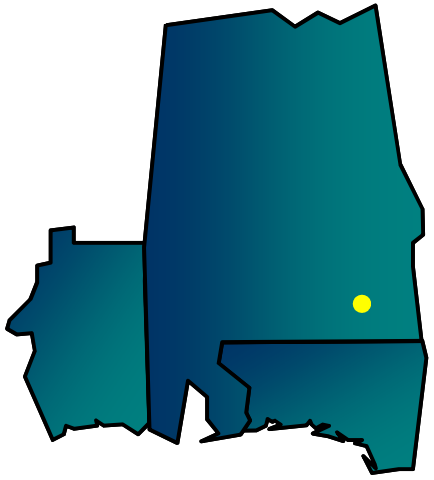
Expansion Item PS-1

Clio Area Project

- Construct new 14 miles Texasville Junction – Judson with 795 ACSR.

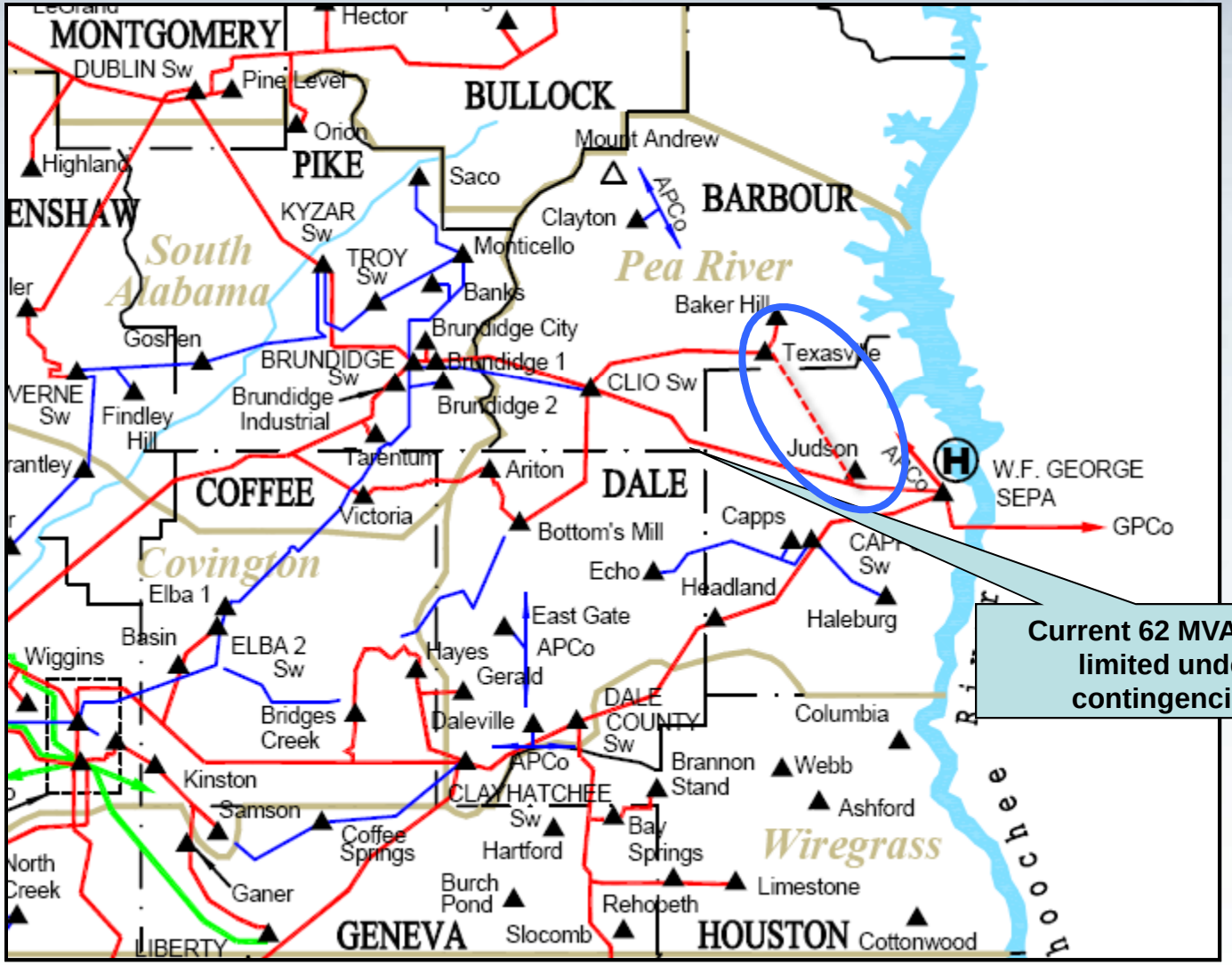
- This is a project to provide an additional source for a radial load and increase the capacity of an East to West path.

2012 PS-1



Clio Area Upgrades

2012 PS-1



Southeastern Region Transmission Planning

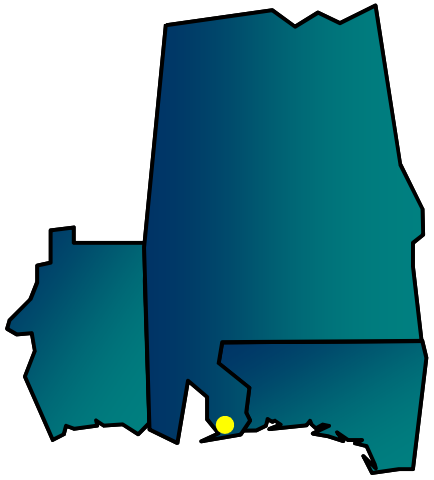
Expansion Item PS-2

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.

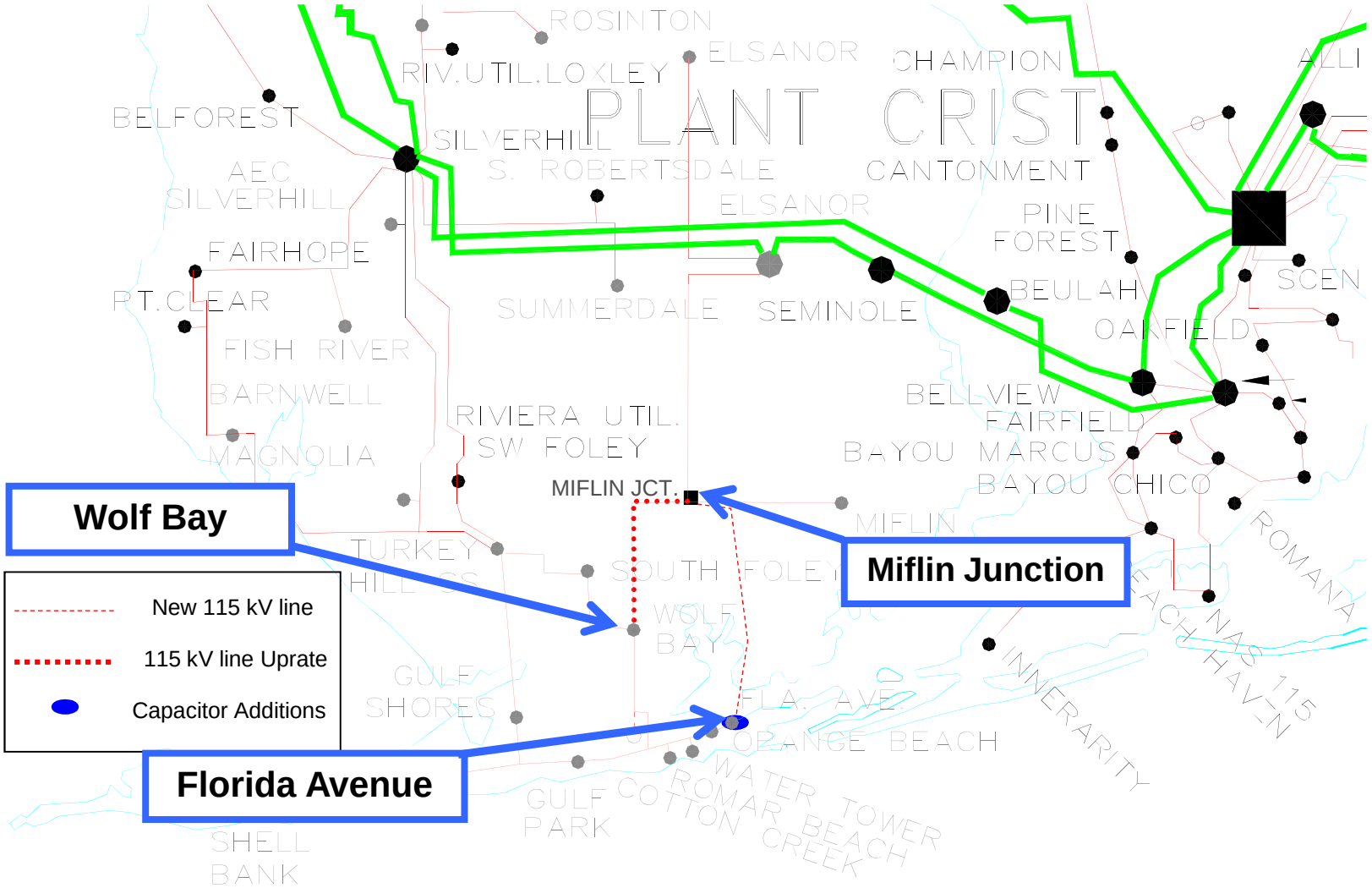
- This is a project to strengthen the system of the high load growth area, Orange Beach being served radially, to respond to single contingency conditions.

2012 PS-2



Baldwin County Alabama

2012 PS-2



Southeastern Region Transmission Planning

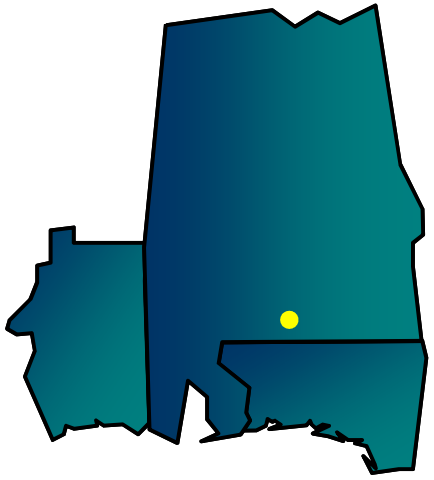
Expansion Item PS-3

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.

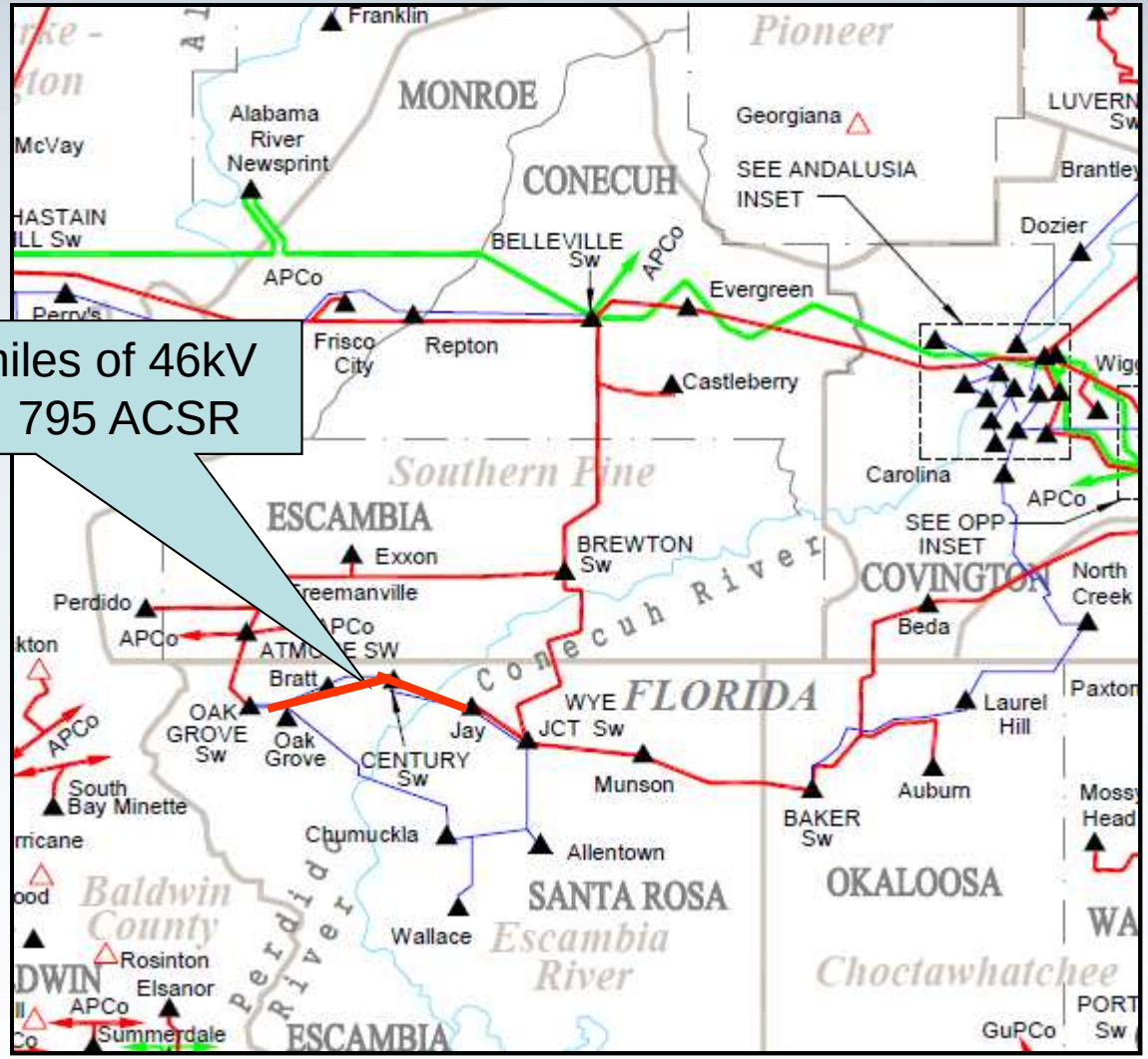
2013 PS-3



Brewton / Atmore Area

2013 PS-3

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



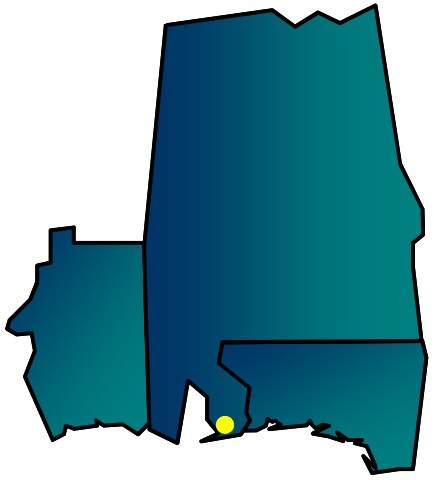
Southeastern Region Transmission Planning

Expansion Item PS-4

Baldwin County Alabama

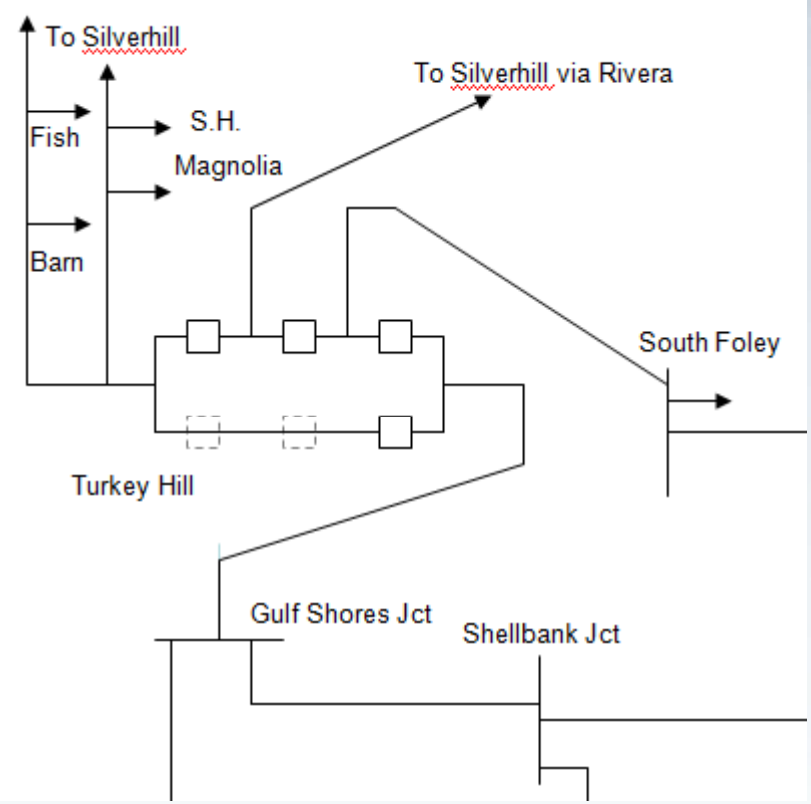
- Turkey Hill 115kV Sw. Station Conversion to 6 terminal Ring bus
- Design will allow for the addition of a 3rd line from APCO as well as a future PowerSouth line to be installed without taking a bus outage.
- APCO will terminate both of their existing lines from Silverhill into the new ring bus. This will greatly increase the reliability of this source and eliminate the overload of the Elsanor – Miflin 115 kV line for any single contingency.

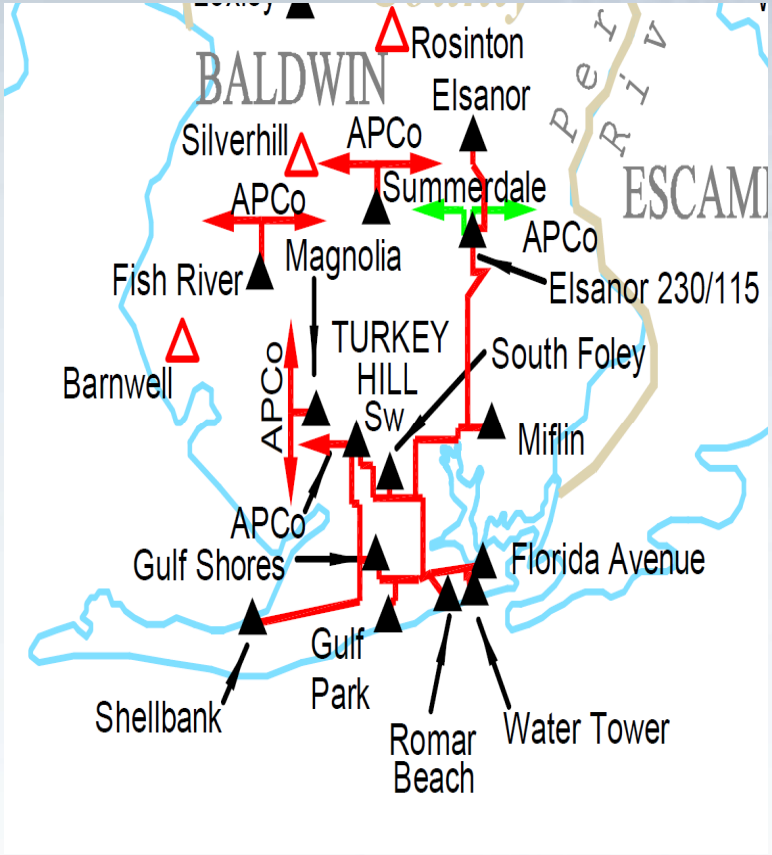
2013 PS-4



Baldwin Co. / Turkey Hill Area

2013 PS-4





Southeastern Region Transmission Planning

South Mississippi Electric Power Association

Southeastern Region Transmission Planning

SMEPA's System Expansion Plan

10 Year Transmission Plan

- Years 2011 – 2014
  - Under Construction
  - Included in Transmission Construction Work Plan (TCWP)

- Years 2015 – 2021
  - Not Included in TCWP

Southeastern Region Transmission Planning

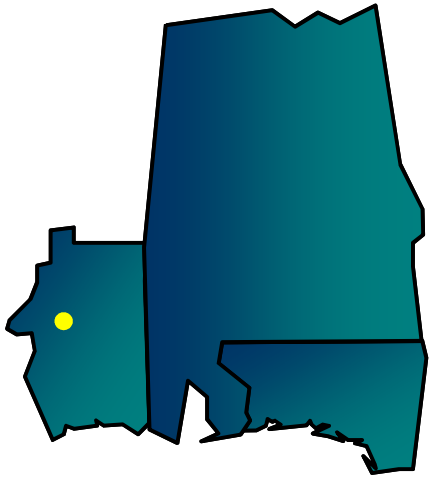
Expansion Item SME-1

Prentiss 161 / 69 kV Substation

- Tap Silver Creek 161 kV Interconnection.
- Construct Prentiss 161 / 69 kV Substation.

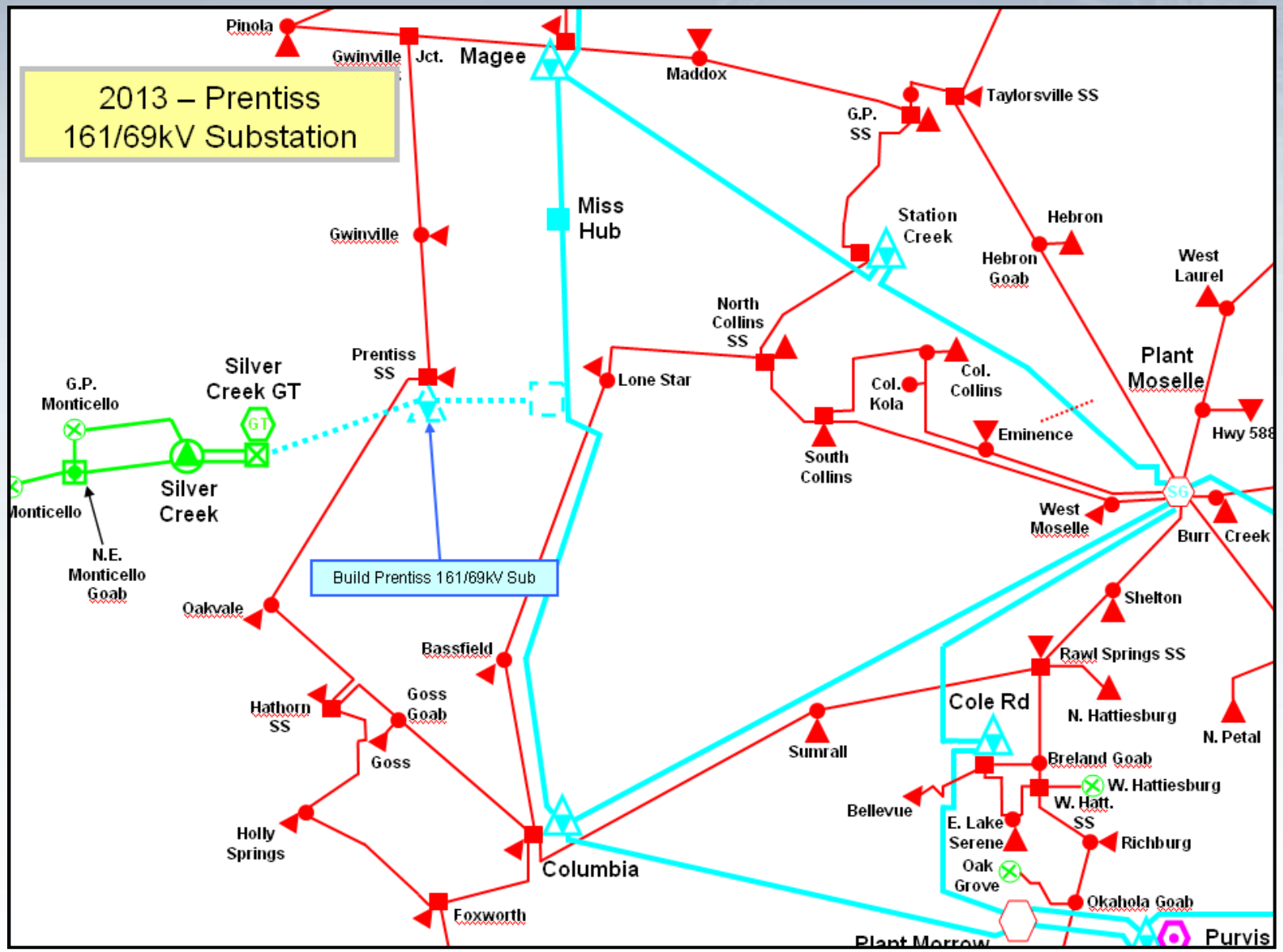
- This project alleviates 69 kV low voltages and multiple line overloads during 69 kV contingencies.

2012 SME-1



Prentiss 161 / 69 kV Substation

2012 SME-1



Southeastern Region Transmission Planning

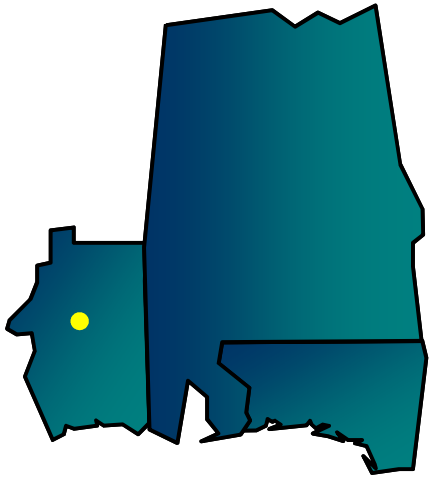
Expansion Item SME-2

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.

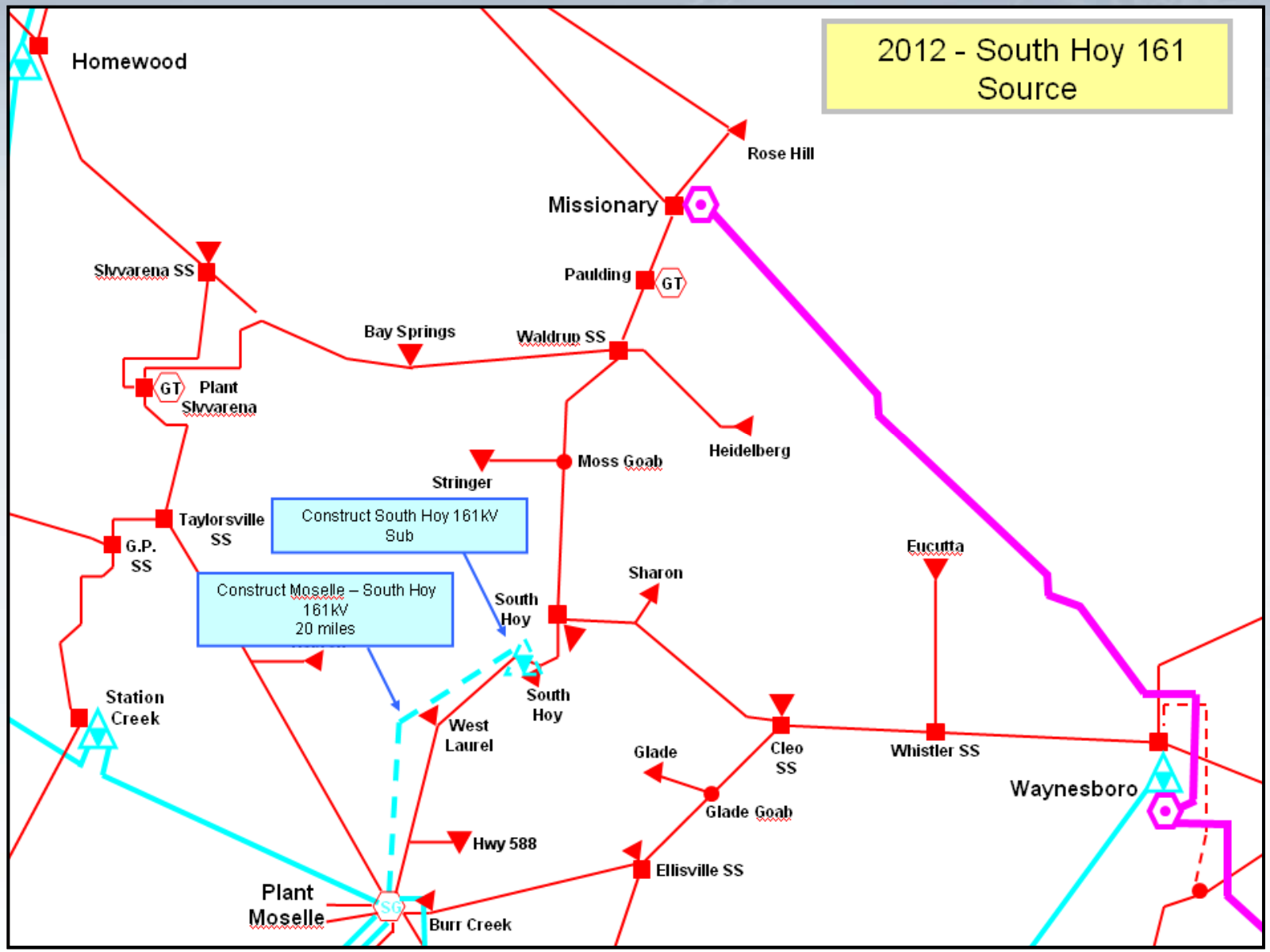
- This project alleviates 69 kV low voltages and multiple line overloads during 69 kV contingencies.

2014 SME-2



South Hoy 161 kV Source

2014 SME-2



Southeastern Region Transmission Planning

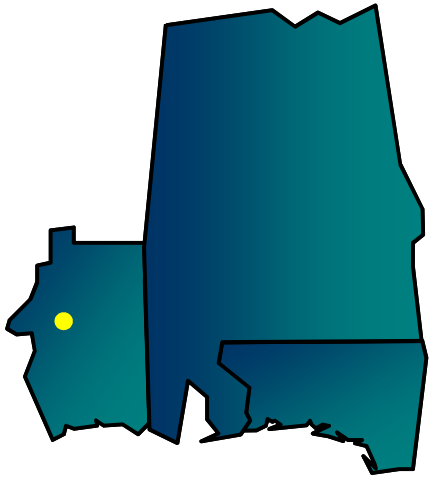
Expansion Item SME-3

East Waynesboro 230 / 69 kV Substation

- Tap 230 kV T.L. '230' (PowerSouth Tie) and 69 kV T.L. '23'.
- Construct East Waynesboro 230 / 69 kV Substation.
- Upgrade supporting 69 kV transmission.

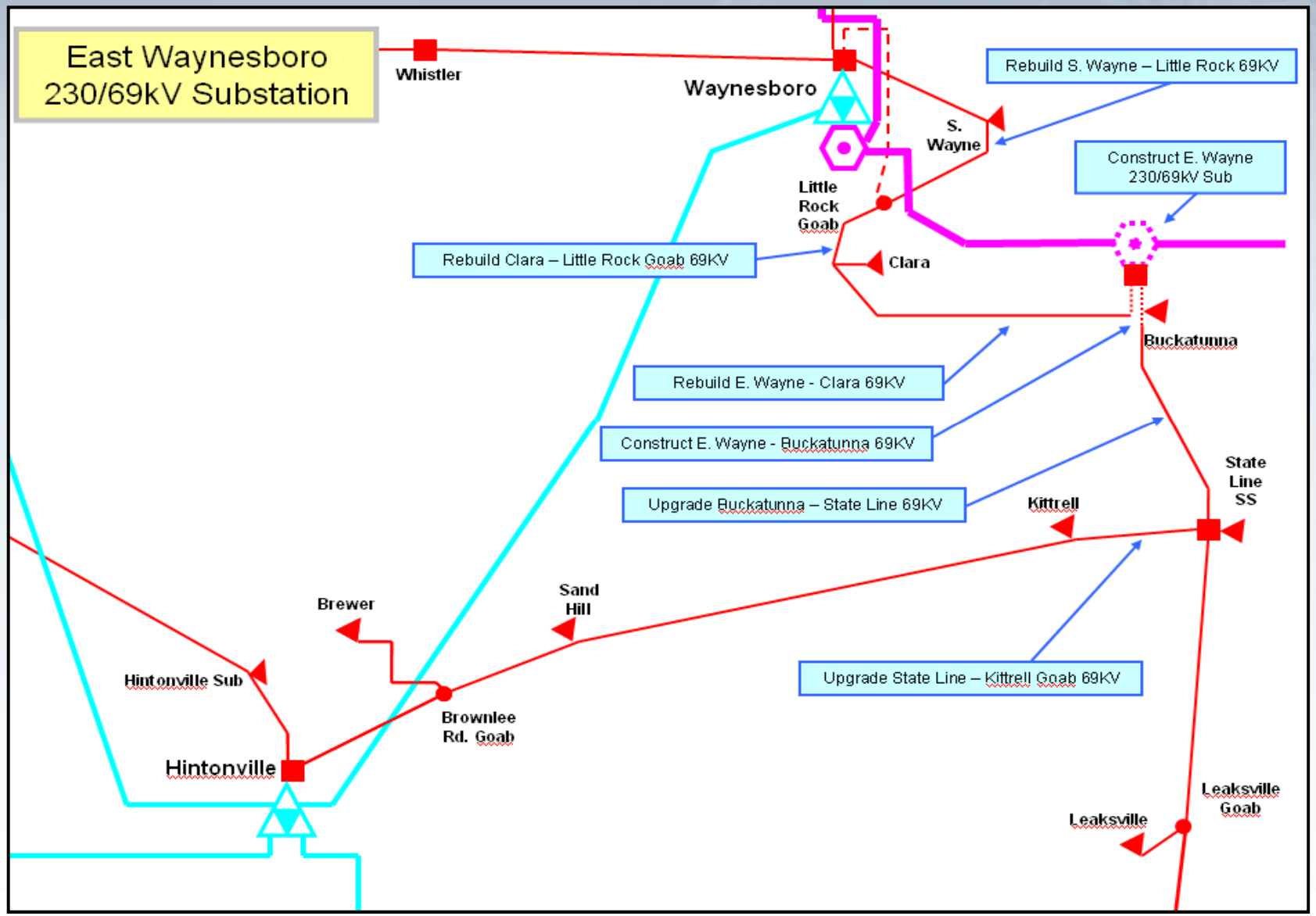
- This project alleviates 69 kV low voltages and multiple line overloads during 69 kV contingencies.
- 69 kV transmission capacity.

2017 SME-3



East Waynesboro 230 / 69 kV Substation

2017 SME-3



Questions?