



# ***Carolinas Transmission Planning Collaborative***

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## **TAG Meeting November 21, 2024**

### **Webinar**



# Carolinas Transmission Planning Collaborative

## DUKE ENERGY PROGRESS – E190092

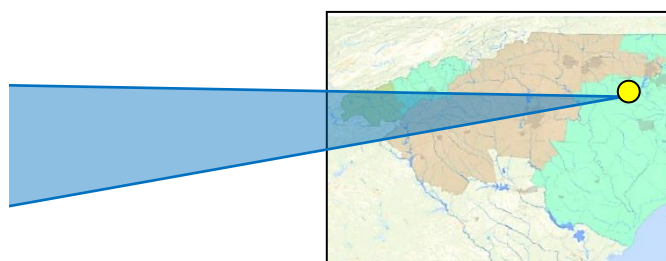
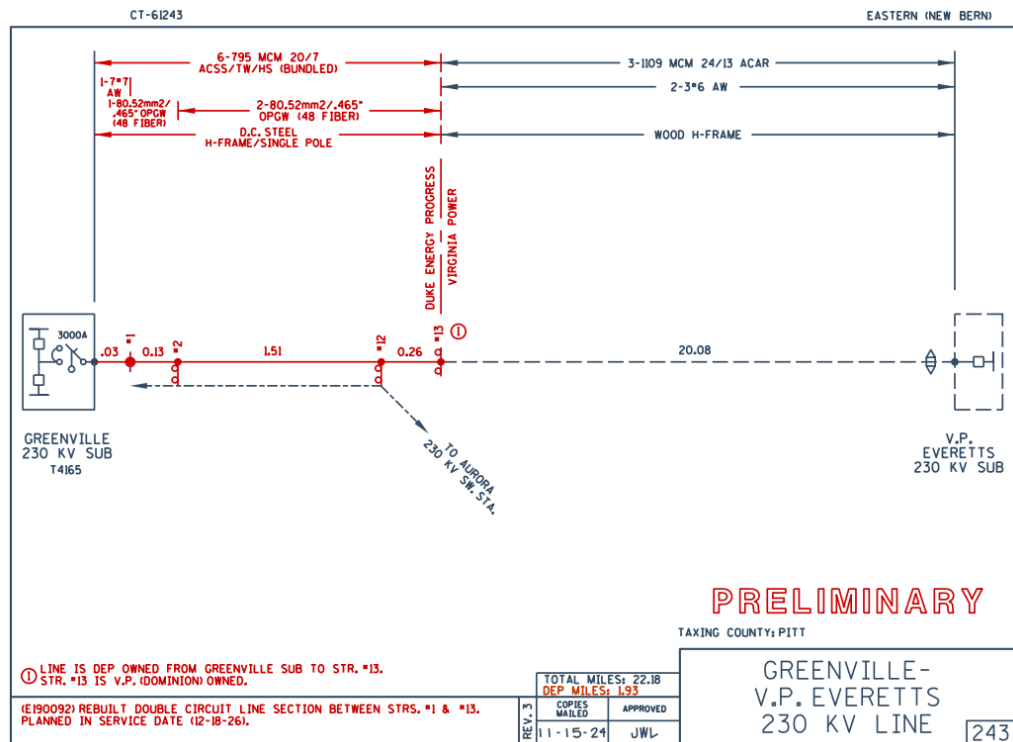
• 2026

### GREENVILLE – VP EVERETTS 230 KV LINE UPGRADE

- DESCRIPTION:
  - Reconductor 1.93 miles of existing transmission to 6-795 ACSS/TW

#### SUPPORTING STATEMENT:

- With generation in the PJM queue, various NERC P1, P2, P3, & P6 contingencies overload the Greenville – VP Everetts 230 kV Line
- GETS application



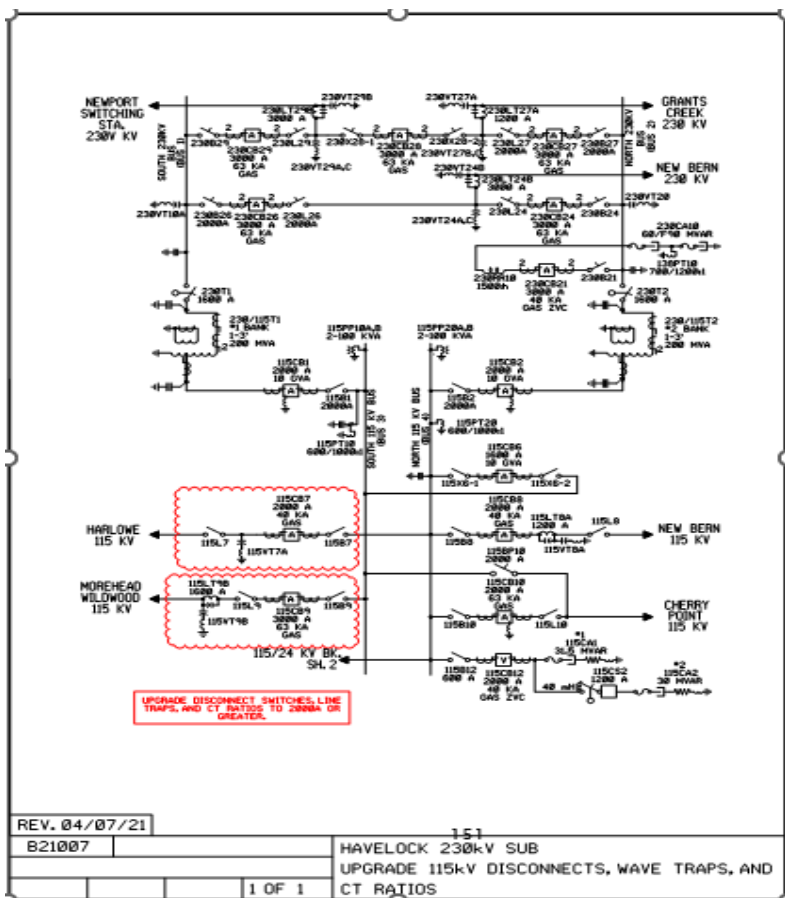


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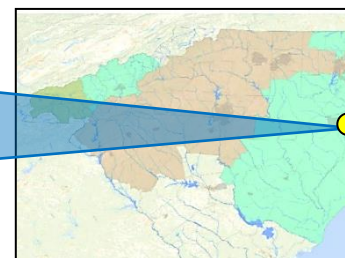
## DUKE ENERGY PROGRESS – E210150

• 2025

### HAVELOCK 230 KV SUBSTATION UPGRADE



- **DESCRIPTION:**
  - Upgrade 115kV disconnect switches, wave traps, and CT ratios to at least 2000A on the Harlowe and Morehead Wildwood 115kV lines. Upgrade lines switches at Cherry Pt #2 115kV to at least 2000A
- **SUPPORTING STATEMENT:**
  - NERC P6 outage of the Havelock-Newport 230kV line and either the Havelock-Morehead Wildwood 115kV line or the Harlowe-Havelock 115kV line can overload the other 115kV line. Upgrading this equipment will reduce the potential for load shedding





# Carolinas Transmission Planning Collaborative DUKE ENERGY PROGRESS – E230122

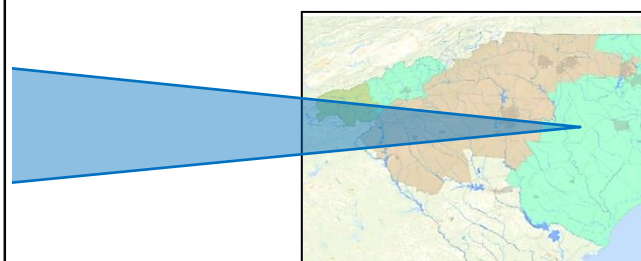
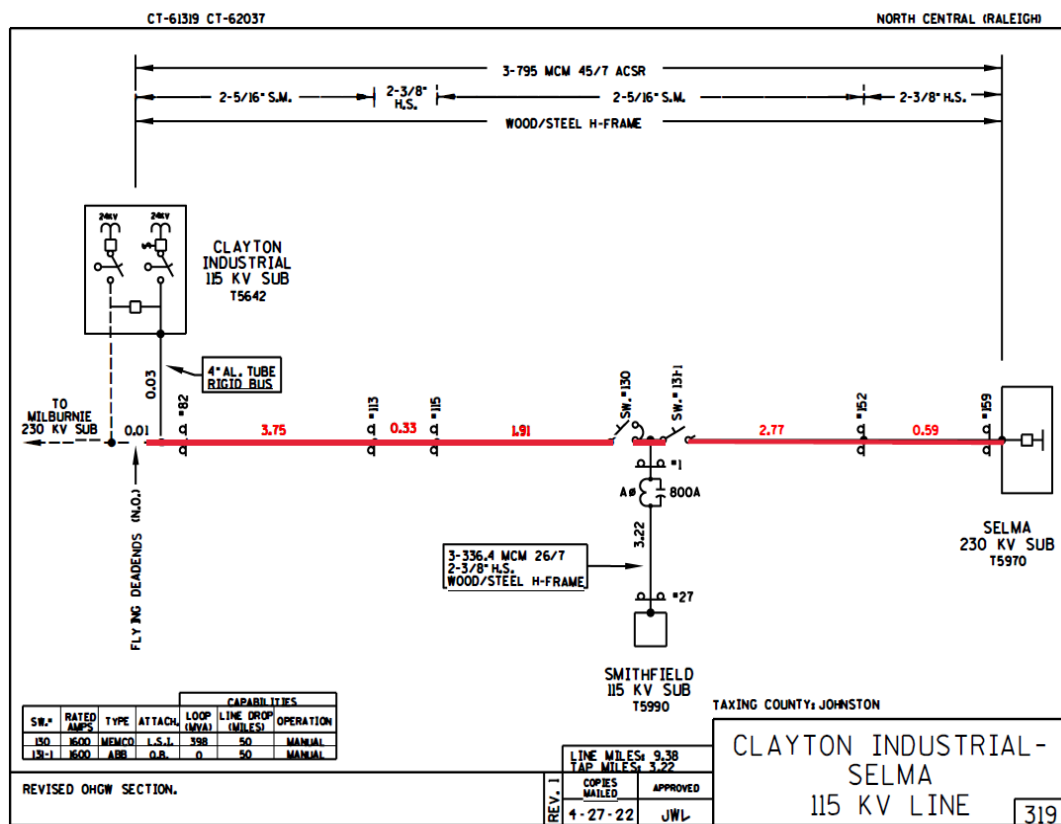
• 2027

## CLAYTON INDUSTRIAL - SELMA 115 KV LINE UPGRADE

- DESCRIPTION:
  - Reconductor 9.4 miles of entire Clayton Industrial – Selma 115kV Line to 795 ACSS/TW
  - Proposed RZEP 2.0 Project

### SUPPORTING STATEMENT:

- This upgrade is needed to enable generation in DEP consistent with the approved IRP



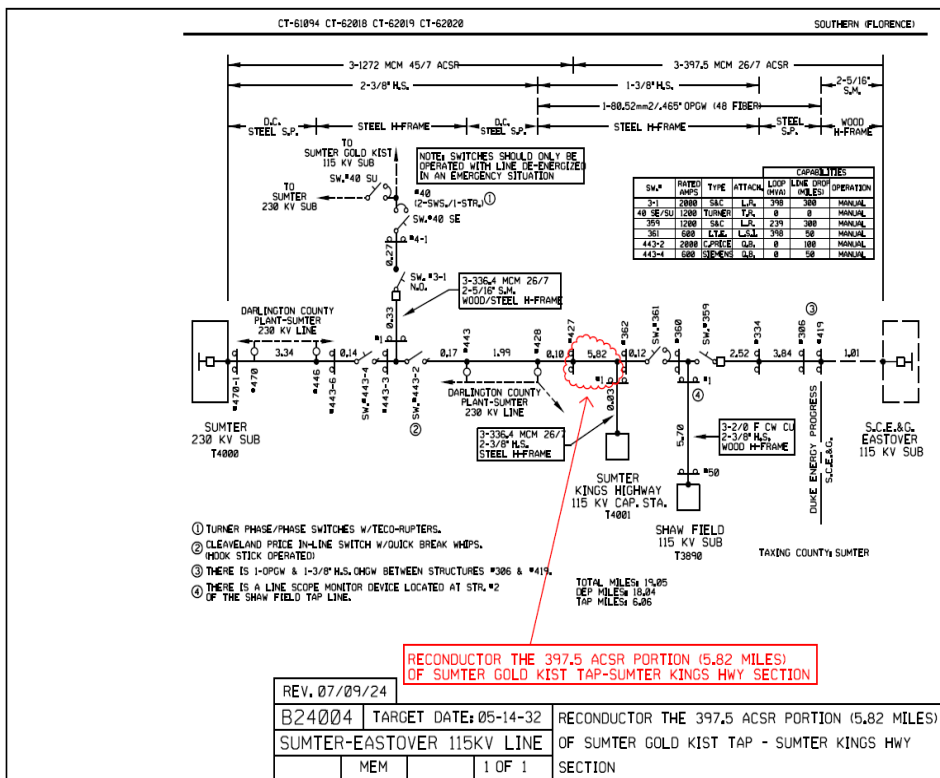


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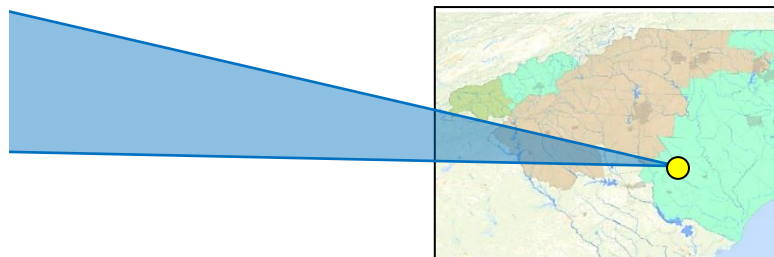
## DUKE ENERGY PROGRESS – E210150

• 2027

### SUMTER – EASTOVER 115 KV LINE (SUMTER GOLD KIST TAP – SUMTER KINGS HIGHWAY SECTION) UPGRADE



- **DESCRIPTION:**
  - Reconductor the 397.5 ACSR portion (5.82 miles) of Sumter Gold Kist Tap - Sumter Kings Hwy section to 1272 ACSR.
- **SUPPORTING STATEMENT:**
  - NERC P7 double circuit outage of sections of the Sumter – SCEG St. George 230 kV line and the Sumter – SCEG Wateree 230 kV line with Robinson 2 down cause the Sumter Gold Kist Tap – Sumter Kings Hwy section of Sumter Eastover 115kV line to overload.



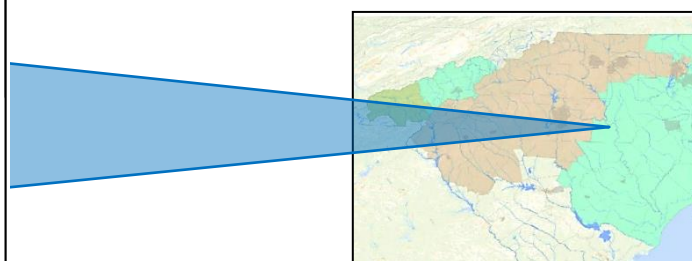
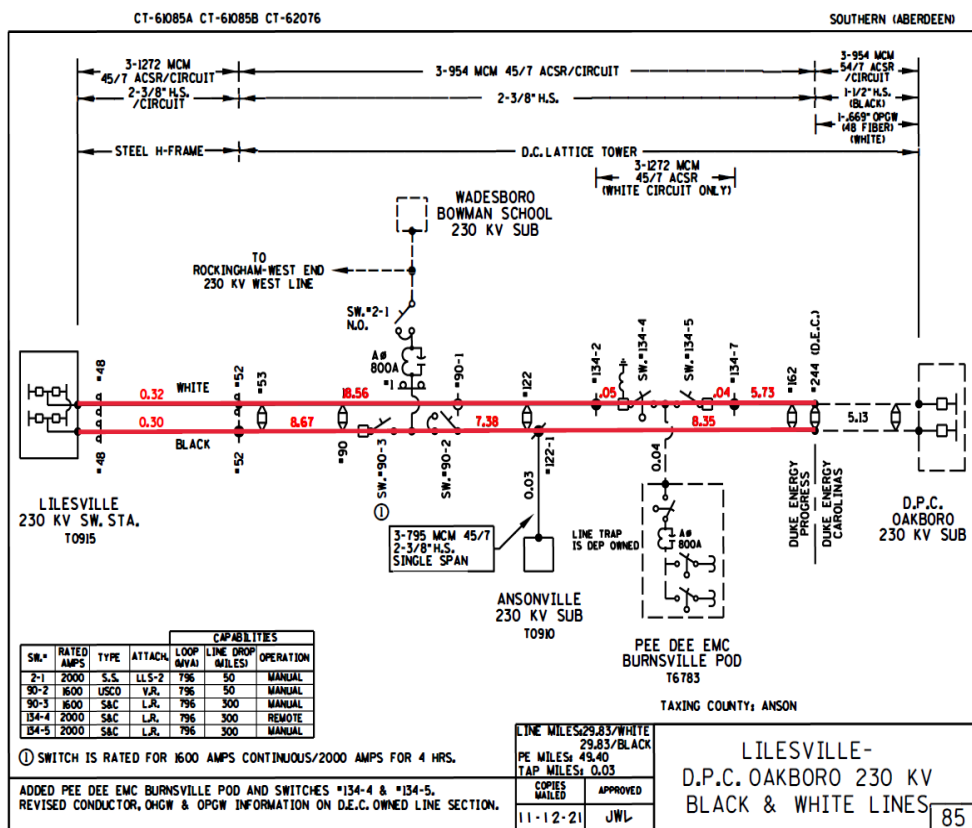


# Carolinas Transmission Planning Collaborative DUKE ENERGY PROGRESS – E230124

• 2028

## LILESVILLE – OAKBORO 230 KV BLACK & WHITE LINES UPGRADE

- **DESCRIPTION:**
  - Reconductor entire lines to 6-1272 ACSR. This project cost is for the DEP Portion which is a total of 49.4 miles (DEP owns 24.7 of 29.83 total miles per line). There is a separate project to reconductor the DEC portion of the lines
  - Proposed RZEP 2.0 Project
- **SUPPORTING STATEMENT:**
  - This upgrade is needed to enable generation in DEP consistent with the approved IRP



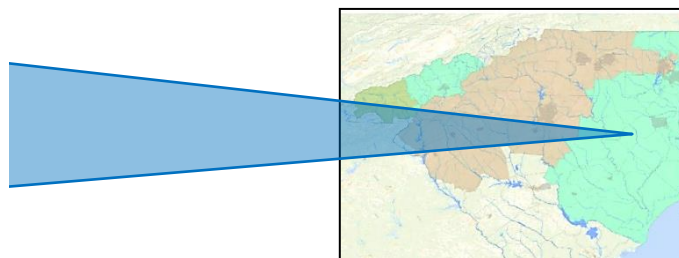
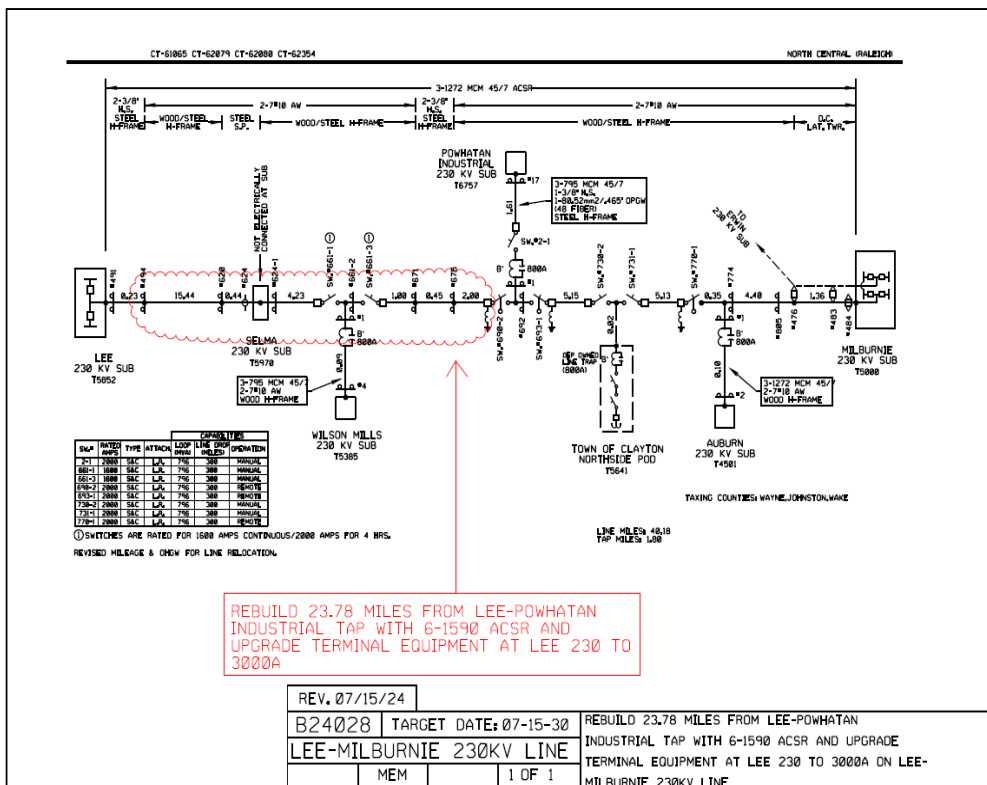


# Carolinas Transmission Planning Collaborative DUKE ENERGY PROGRESS – E230124

• 2031

## LEE – MILBURNIE 230 KV LINE UPGRADE

- **DESCRIPTION:**
  - Reconductor 23.78 miles from Lee – Powhatan Industrial Tap with 954 MCM Southwire HS285 ACSS/TW and upgrade terminal equipment at Lee 230 to 3000A.
  - Proposed RZEP 2.0 Project
- **SUPPORTING STATEMENT:**
  - This upgrade is needed to enable generation in DEP consistent with the approved IRP
  - GETS application







# Carolinas Transmission Planning Collaborative

## DUKE ENERGY PROGRESS

Item Num	Duke Energy Progress Transmission Projects less than \$5 M Summary	In-Service	Estimated Cost
1	Fayetteville 230/115kV bank #1, increase CT ratios and relay settings to allow 336 MVA rating	6/13/2024	3,000,000
2	Richmond 500, upgrade 230kV wave trap, disconnect switches, and CT ratio to 3000A for the Laurinburg-Richmond 230kV line	9/24/2024	1,100,000
3	Sutton – Wilmington Ninth & Orange section of the Sutton – Castle Hayne 230kV line, Upgrade line switch	12/13/2024	1,000,000
4	Sutton-Wallace 230kV line, Raise Crooked Run Solar-Wallace section to 212F and increase CT ratios and relay settings at Wallace 230	4/11/2025	800,000
5	Richmond 500, Change the CT ratios on Richmond 500/230kV banks 1 & 2	5/8/2025	3,700,000
6	Sumter - SCE&G Eastover 115kV line, Upgrade 600 A switches #361 and #443-4 and CT ratios and relay settings at Sumter 230	5/27/2025	3,400,000
7	Jacksonville - Jacksonville City 115kV East Line, Uprate CT Ratio at Jacksonville	10/17/2025	200,000
8	Henderson 230/115kV banks #1 & #2, increase CT ratios and relay settings to allow 336 MVA rating	11/20/2025	2,900,000
9	Vanderbilt- West Asheville 115kV, Upgrade 115kV CB and Switches to 2000 A	12/8/2025	2,000,000
10	Brunswick 1 - Delco 230kV East line, Upgrade switch #1-1 to 2000 A, Reconductor 0.09-mi Brunswick 1 - Southport Tap section with 6-1590 MCM ACSR	5/8/2028	3,600,000
11	Goldsboro 115kV Switching Station, Increase CT Ratio and Relay Settings on the Goldsboro-Wommack 115kV line	6/7/2028	200,000
11	Brunswick 2 - Delco 230kV West line, Raise 2.3-mile Brunswick 2 - BEMC Southport section to 212F	6/27/2029	1,900,000
12	Rocky Mount - Wilson 115kV line, Upgrade 1200A equipment at both ends of line	TBD	CONCEPTUAL



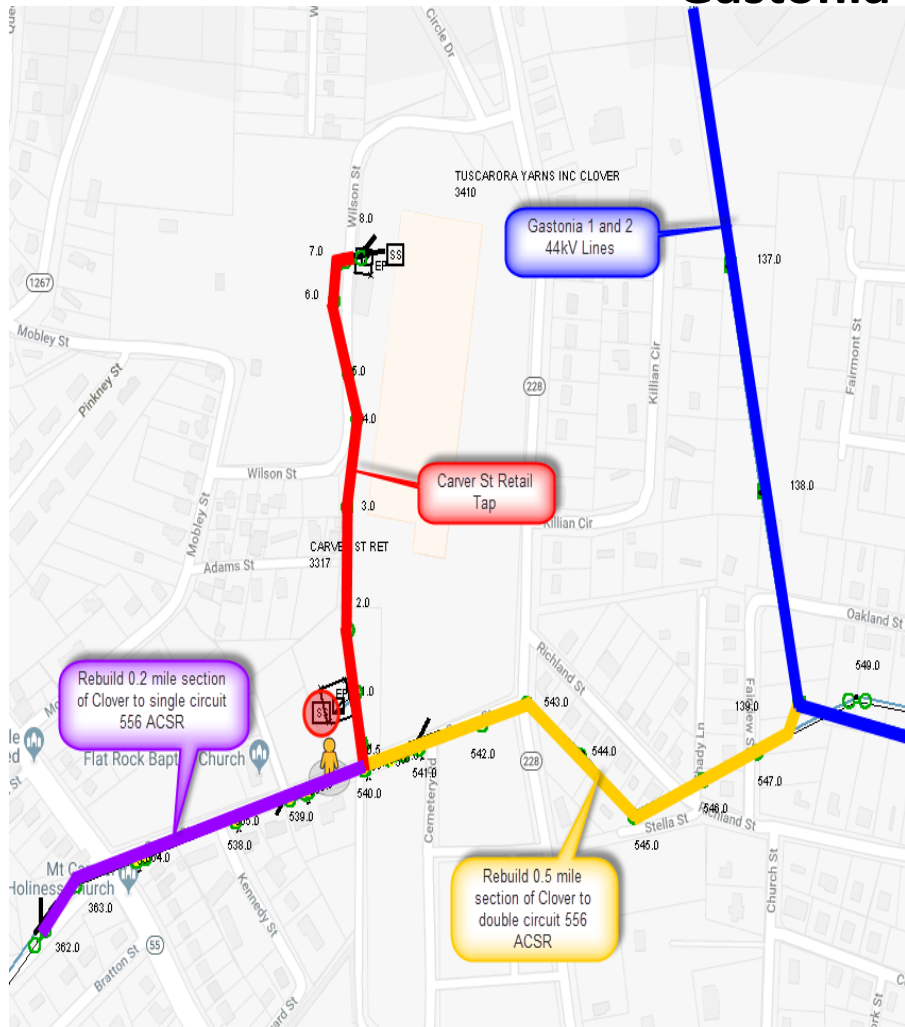


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## DUKE ENERGY CAROLINAS – W190390

• 2029

### Gastonia #2 44 KV LINE UPGRADE

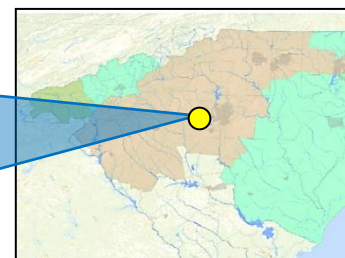


#### DESCRIPTION:

- Extending radial tap by rebuilding part of the Clover 44 kV line. Rebuild to double circuit 100 kV but operate at 44 kV

#### SUPPORTING STATEMENT:

- Relieve 44 kV Loading
- Improve power quality
- Provide capacity for future growth



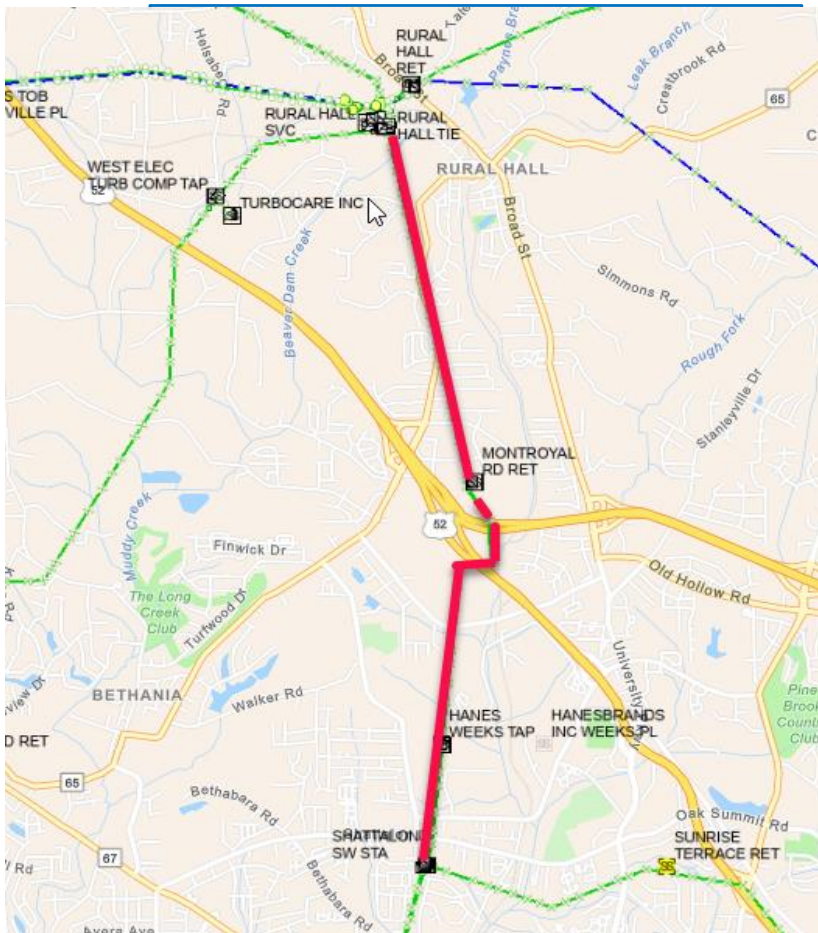


# Carolinas Transmission Planning Collaborative

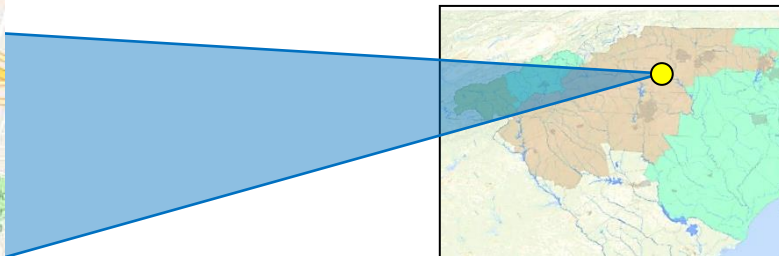
## DUKE ENERGY CAROLINAS – W200582

• 2034

### RURAL HALL - SHATTALON 100 KV LINE UPGRADE



- **DESCRIPTION:**
  - Upgrade 5.6 miles of existing transmission to 795 ACSS/TW. Includes upgrade of both double circuit lines between the two stations
- **SUPPORTING STATEMENT:**
  - Bus and breaker faults at Rural Hall tie overloads the lines
  - GETS application



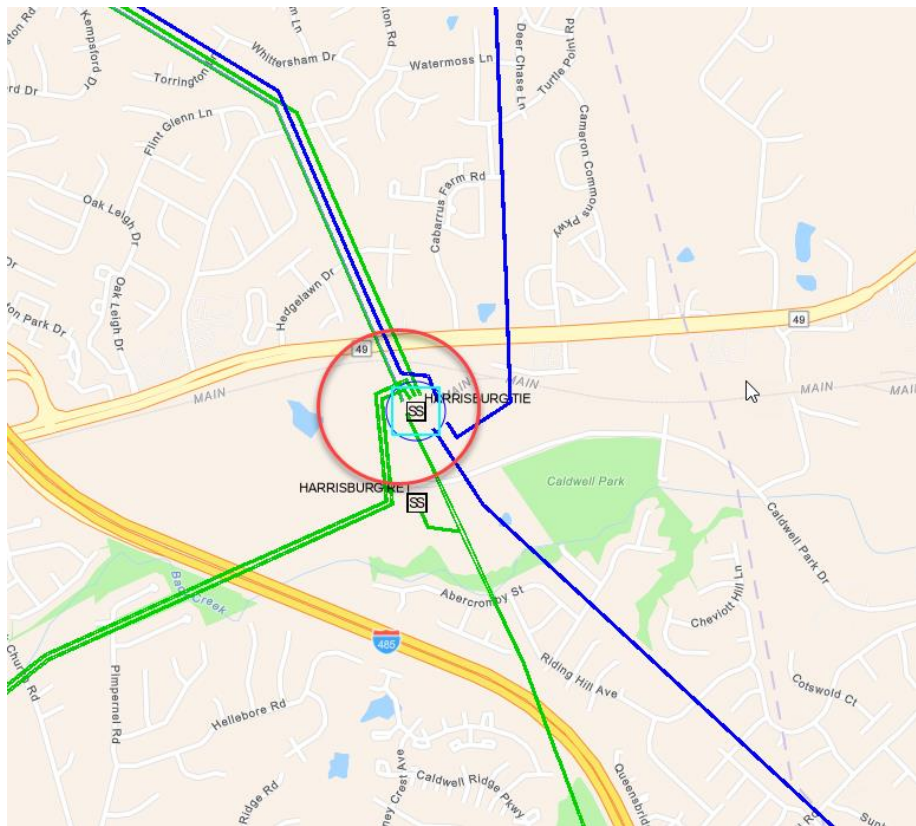


# Carolinas Transmission Planning Collaborative

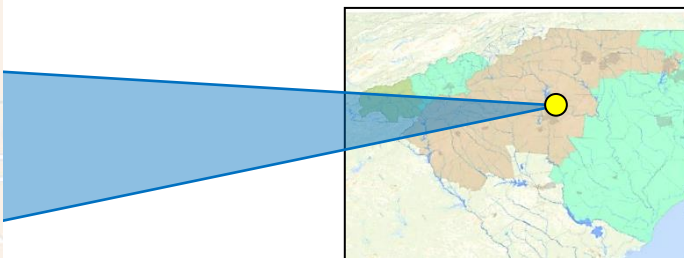
## DUKE ENERGY CAROLINAS – W200187

• 2029

### HARRISBURG 230/100/44 KV TIE STATION UPGRADE



- **DESCRIPTION:**
  - Replace bank 3 with 448 MVA bank
- **SUPPORTING STATEMENT:**
  - Additional capacity needed to avoid overloading under loss of a parallel bank







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## DUKE ENERGY CAROLINAS – W200120

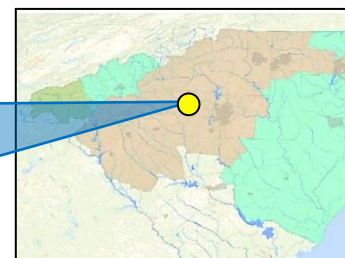
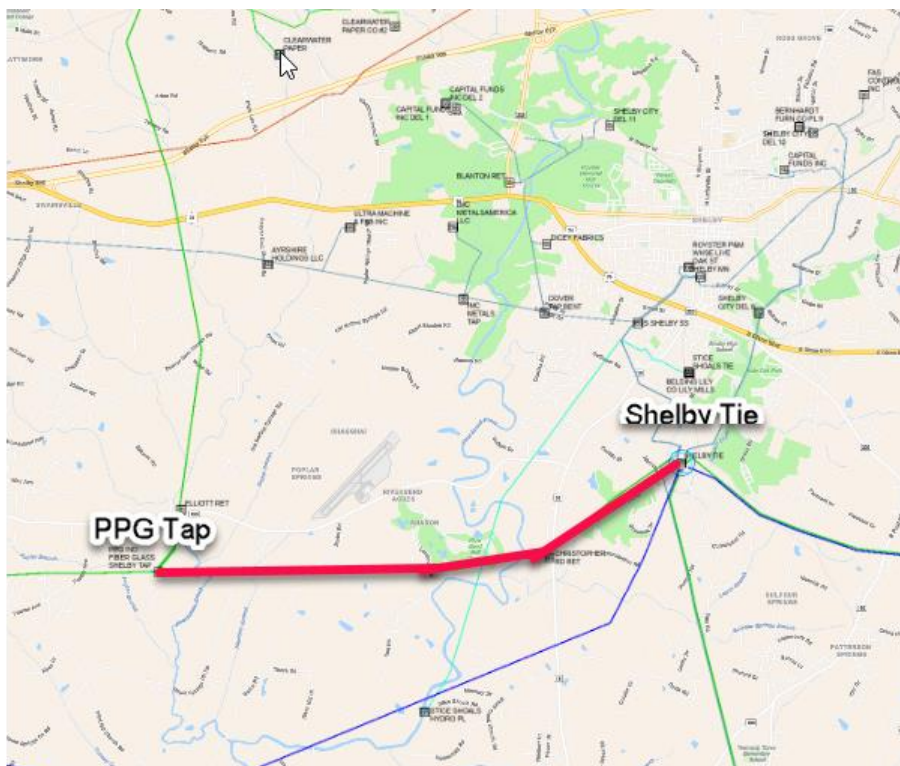
• 2032

### SHELBY – PPG TAP 100 KV LINE UPGRADE

- **DESCRIPTION:**
  - Upgrade 5.4 miles of existing transmission to 1272 ACSR

- **SUPPORTING STATEMENT:**

- Breaker failure of middle breaker at Cliffside
- Loss of both Cliffside Autobanks





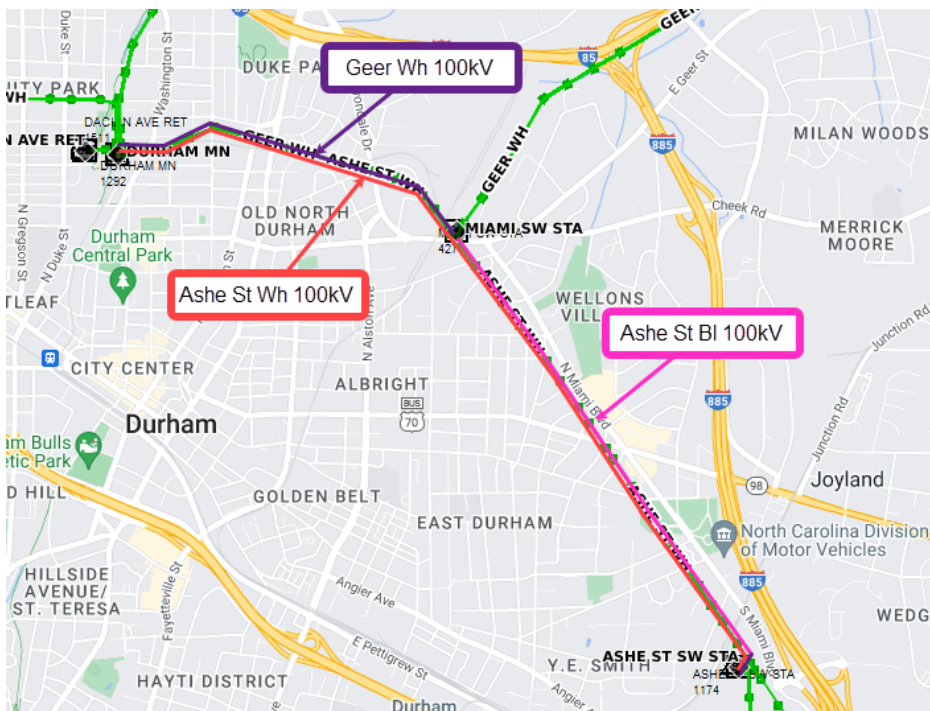
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## DUKE ENERGY CAROLINAS – W230402

• TBD

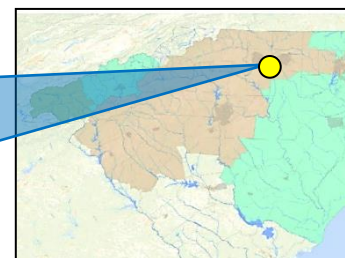
### DURHAM – ASHE STREET 100 KV LINE UPGRADE

- DESCRIPTION:
  - Upgrade 3.3 miles of existing transmission to 795 ACSS/TW



#### SUPPORTING STATEMENT:

- Several P6 contingencies, involving the outage of the Parkwood 500 kV line and an additional local 100 kV line (either the Ashe St Bl, Atwater Bl, or Atwater Wh) overload the Ashe St Wh line
- GETS application





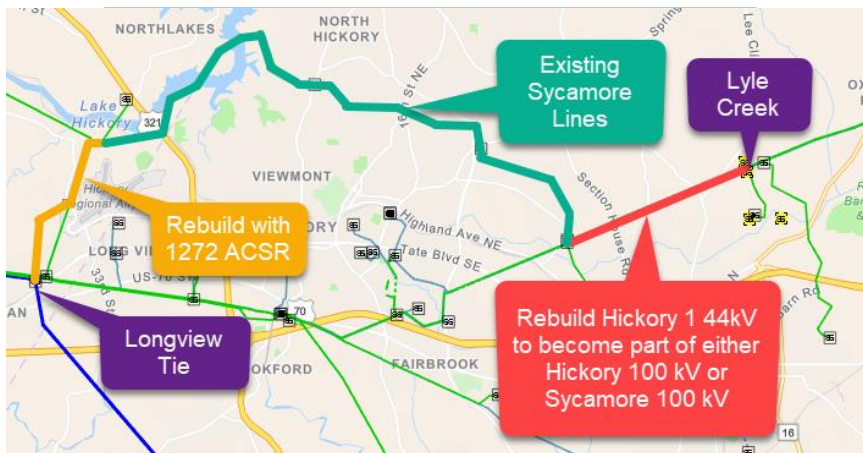
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## DUKE ENERGY CAROLINAS – W230389

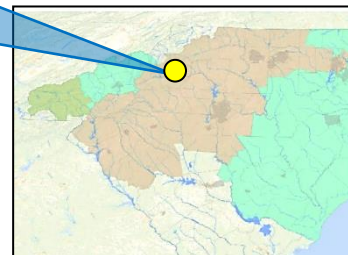
• 2029

### LONGVIEW – LYLE CREEK 100 KV LINE UPGRADE & NETWORK

- **DESCRIPTION:**
  - Rebuild of Sycamore (Longview to Northlakes), Hickory 1 44 kV rebuild (becomes part of Sycamore Line), Hickory Line clearance correction (between Lookout and Claremont)



- **SUPPORTING STATEMENT:**
  - NERC TPL Requirements and needed for local voltage support
    - P2 – LOBOE on Lookout or Beulah 100 kV Lines
    - P3 – Loss of Lookout, Beulah, or Hickory 100 kV Lines and generator outage



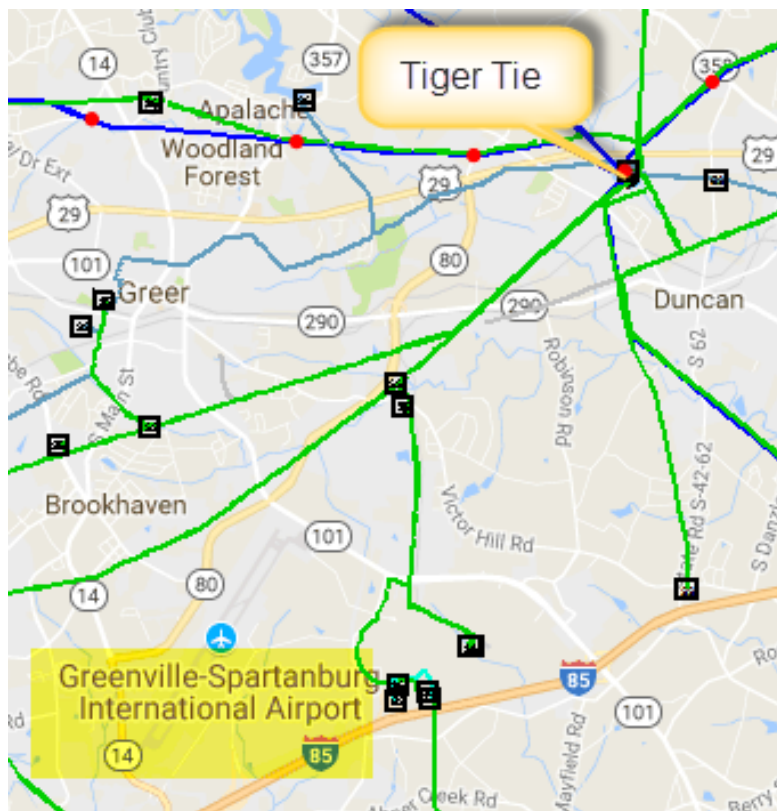


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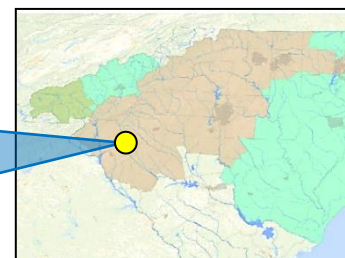
## DUKE ENERGY CAROLINAS – W200413

• 2028

### TIGER 230/100/44 KV TIE STATION UPGRADE



- **DESCRIPTION:**
  - Replace bank 5 with 448 MVA bank in position 5 or vacant position 4
- **SUPPORTING STATEMENT:**
  - Additional capacity needed to avoid overloading under loss of a parallel bank





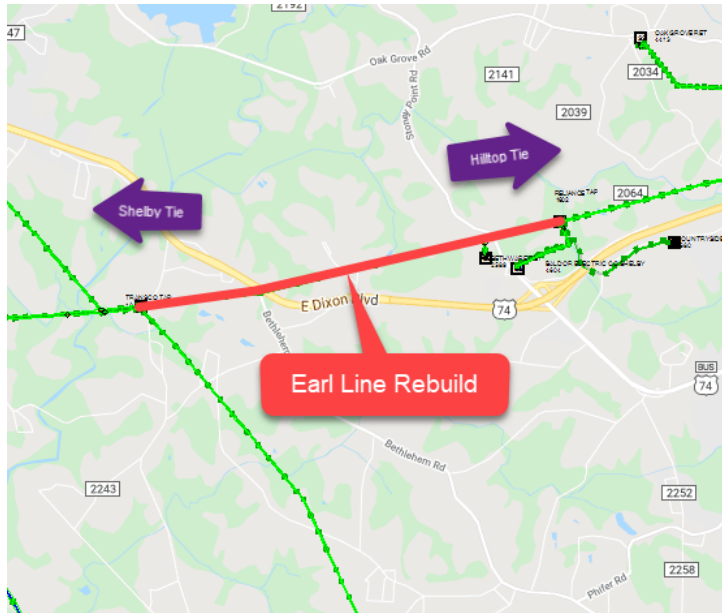


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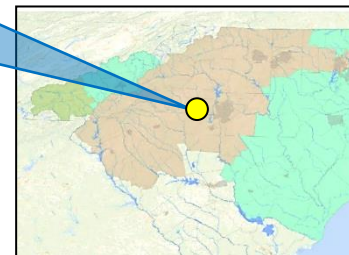
## DUKE ENERGY CAROLINAS – W210192

• 2026

### SHELBY TIE – HILLTOP TIE 100 KV LINE UPGRADE & NETWORK



- **DESCRIPTION:**
  - Upgrade 3.2 miles of existing transmission to bundled 336 ACSR between customer taps
- **SUPPORTING STATEMENT:**
  - NERC TPL Requirements
    - P2 – Loss of Breaker at Hilltop Tie
    - P3 – Loss of parallel circuit and generator outage



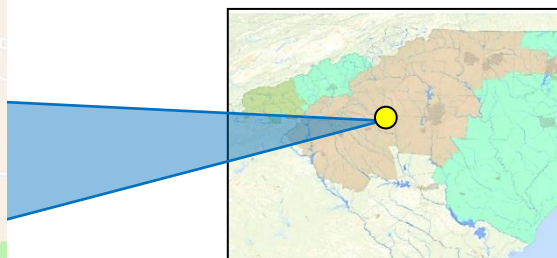
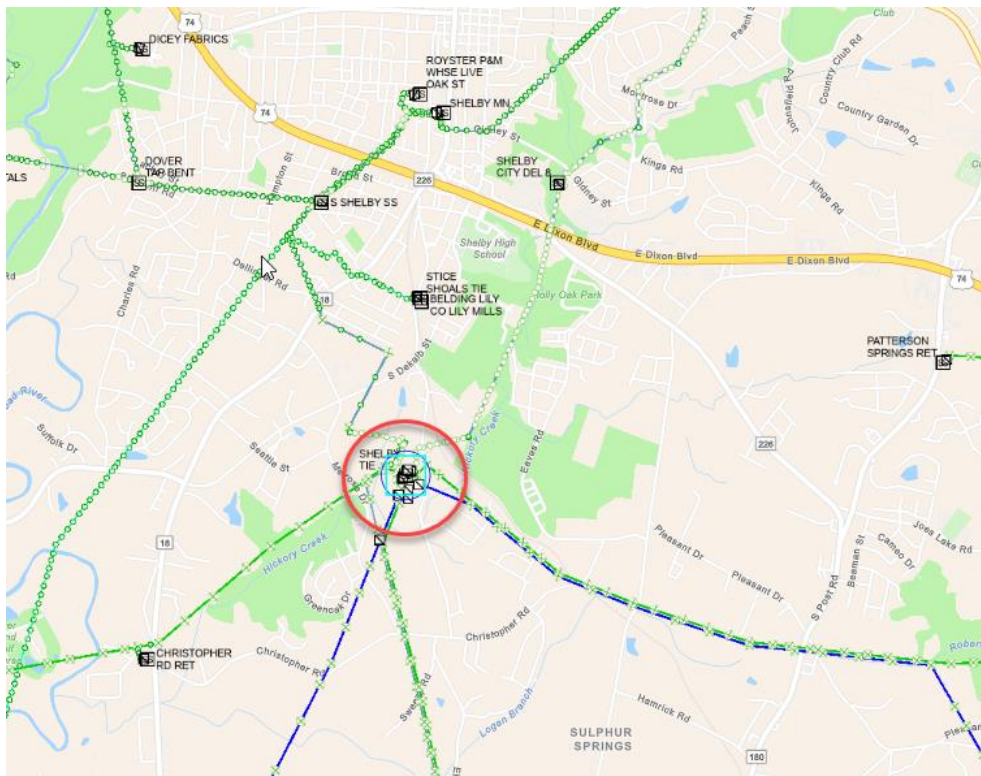


# Carolinas Transmission Planning Collaborative DUKE ENERGY CAROLINAS – W230276

• 2031

## SHELBY 230/100/44 KV TIE STATION UPGRADE

- **DESCRIPTION:**
  - Replace bank 3 with 448 MVA bank
- **SUPPORTING STATEMENT:**
  - NERC TPL Standards
    - P2/P4 – 230 kV red bus fault or breaker failure on 230 kV red bus
    - P6 – loss of autobanks 2 and 4





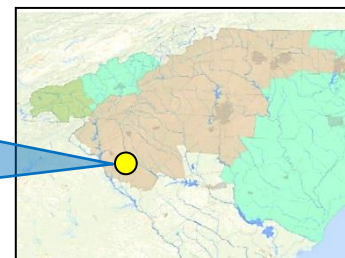
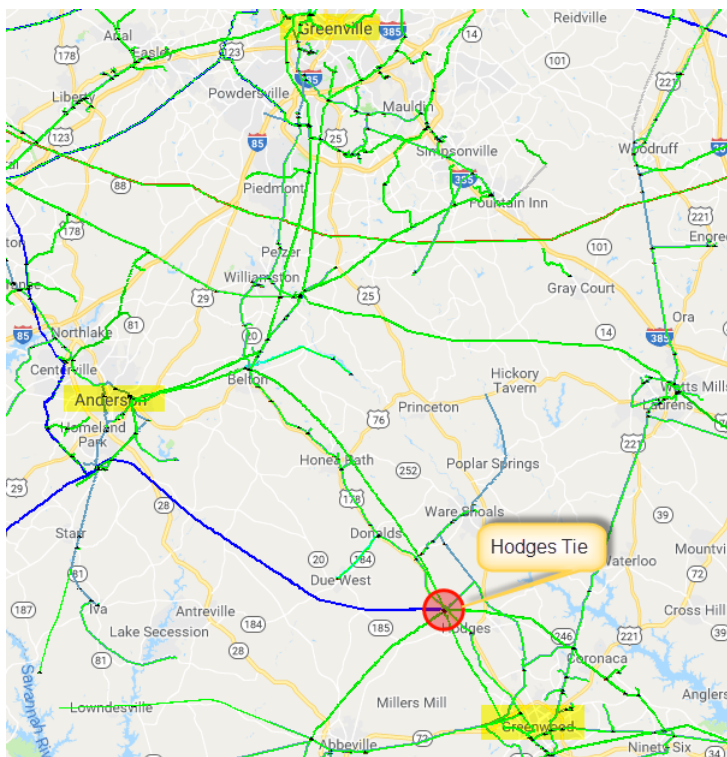
# Carolinas Transmission Planning Collaborative

## DUKE ENERGY CAROLINAS – W200116

• 2029

### HODGES 230/100/44 KV TIE STATION UPGRADE

- **DESCRIPTION:**
  - Add 3rd transformer and add 230 kV breakers to complete breaker and a half scheme
- **SUPPORTING STATEMENT:**
  - Additional capacity needed to avoid overloading under P6 loss of two banks





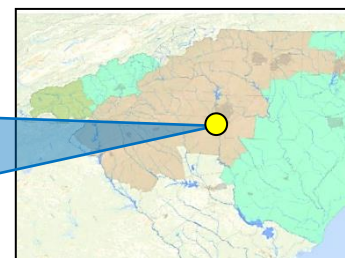
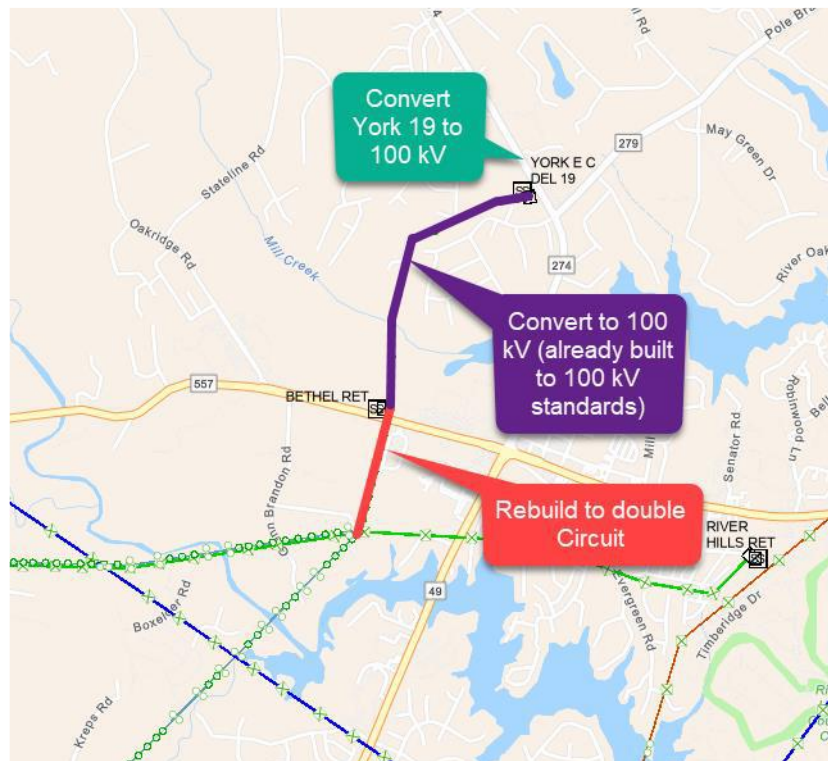
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## DUKE ENERGY CAROLINAS – W230158

• 2026

### Nanny Mountain #1 44 KV LINE UPGRADE

- **DESCRIPTION:**
  - Rebuild ½ mile of Nanny Mountain 1 to double circuit with 100 kV on one side 44 kV on the other
  - Convert the rest of the tap to York 19 to 100 kV (Already built to 100 kV standards)
- **SUPPORTING STATEMENT:**
  - Relieve 44 kV Loading
  - Improve Voltage for the area
  - Provide capacity for future growth







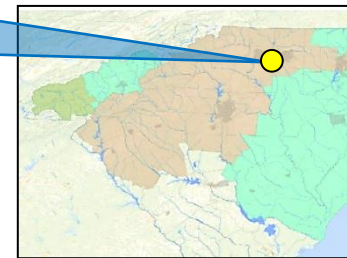
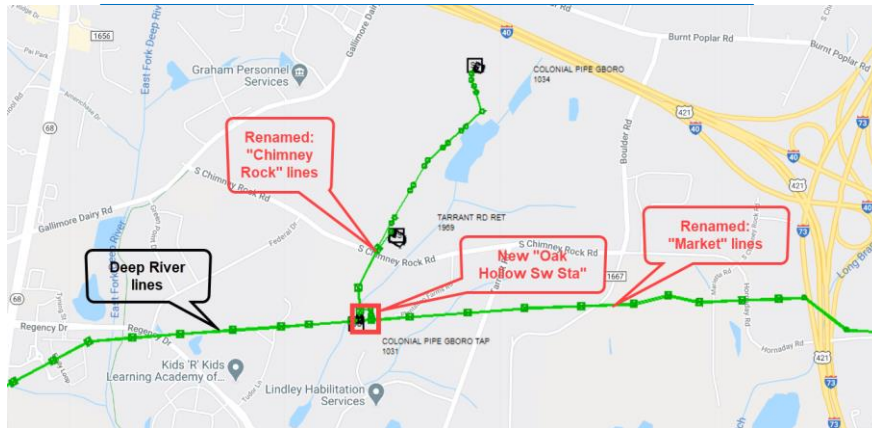
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## DUKE ENERGY CAROLINAS – W200144

• TBD

### OAK HOLLOW SWITCHING STATION - NEW

- **DESCRIPTION:**
  - Build new switching station on the Deep River lines at Colonial Pipeline Greensboro Tap station (convert the existing tap station into a switching station)
- **SUPPORTING STATEMENT:**
  - NERC TPL Standards
    - P3 – Loss of parallel circuit and generator outage



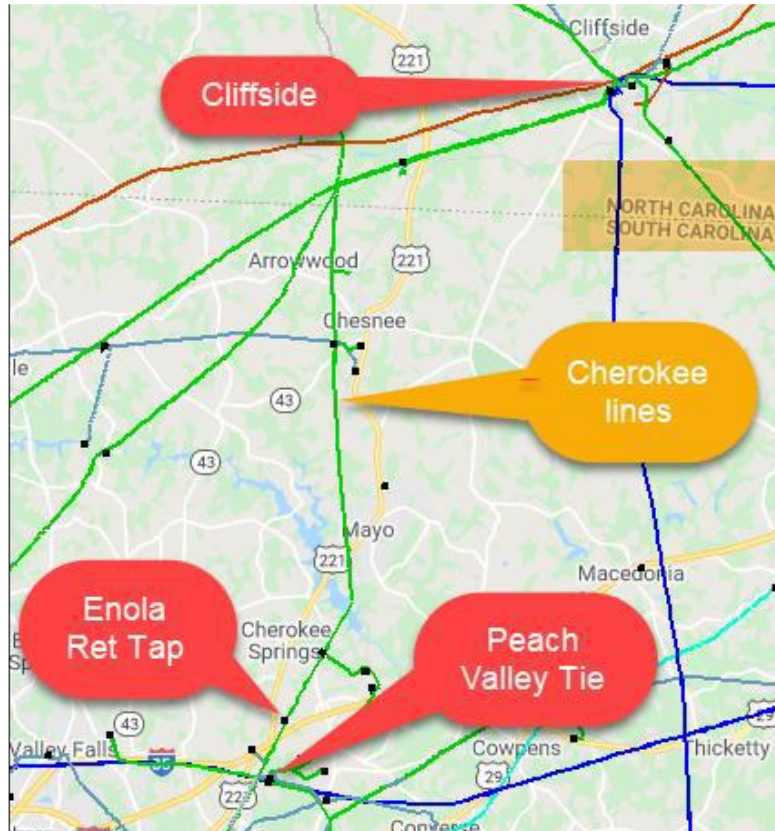


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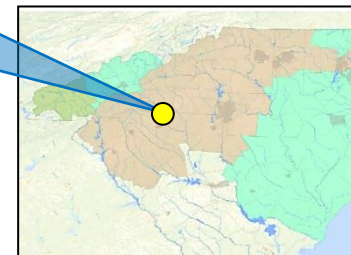
## DUKE ENERGY CAROLINAS – W200010

• 2025

### PEACH VALLEY TIE – ENOLA RETAIL 100 KV LINE UPGRADE



- **DESCRIPTION:**
  - Rebuild 1.2 miles of 2/0 Cu to 954 ACSR between Peach Valley Tie and Enola Ret Tap
- **SUPPORTING STATEMENT:**
  - NERC TPL Requirements
    - P6 – Loss of 230 kV double circuit line





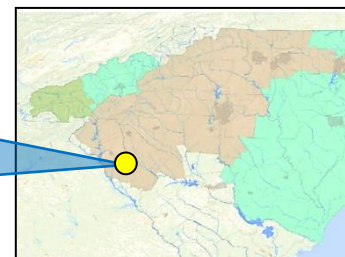
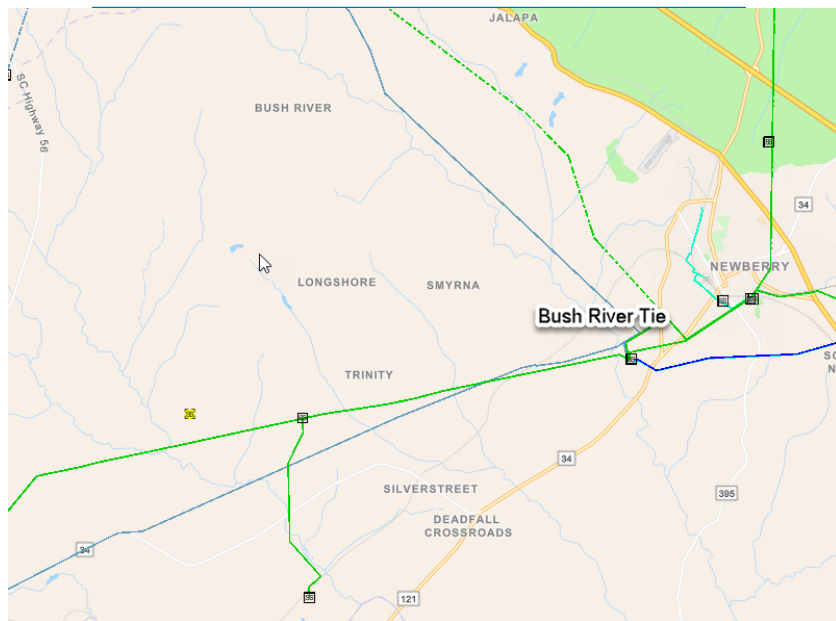
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## DUKE ENERGY CAROLINAS – W230066

• 2027

### BUSH RIVER 115/100 KV TIE STATION UPGRADE

- **DESCRIPTION:**
  - Add 115/100 kv transformer capacity
  - Proposed RZEP 2.0 Project
- **SUPPORTING STATEMENT:**
  - This upgrade is needed to enable generation in DEC consistent with the approved IRP







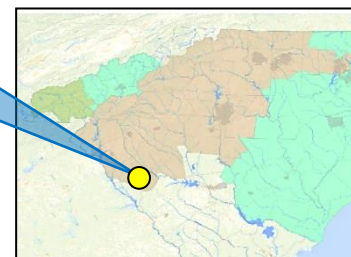
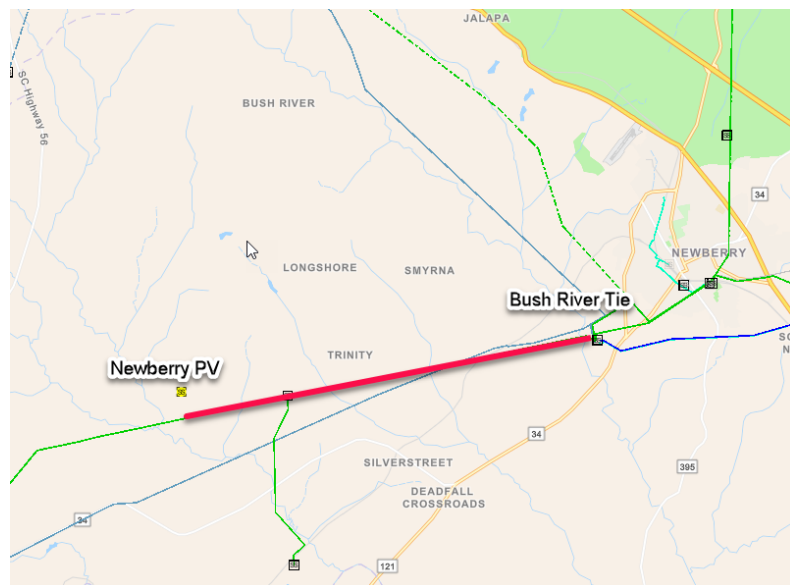
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## DUKE ENERGY CAROLINAS – W230038

• 2028

### BUSH RIVER TIE – NEWBERRY PV 100 KV LINE UPGRADE

- **DESCRIPTION:**
  - Rebuild to 8.3 miles of 556 ACSR to 1158 ACSS/TW between Bush River Tie and Newberry PV
  - Proposed RZEP 2.0 Project
- **SUPPORTING STATEMENT:**
  - This upgrade is needed to enable generation in DEC consistent with the approved IRP
  - GETS application



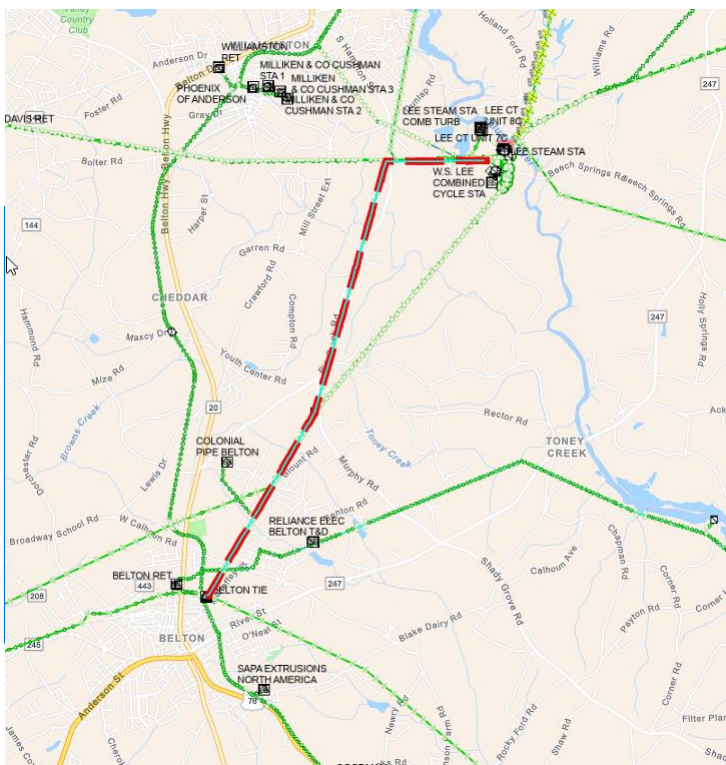


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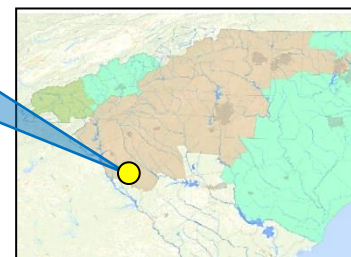
## DUKE ENERGY CAROLINAS – W230029

• 2028

### BELTON TIE – WS LEE CC 100 KV LINE UPGRADE



- **DESCRIPTION:**
  - Rebuild 7 miles of 477 ACSR to 1158 ACSS/TW between Belton Tie and WS Lee CC
  - Proposed RZEP 2.0 Project
- **SUPPORTING STATEMENT:**
  - This upgrade is needed to enable generation in DEC consistent with the approved IRP
  - GETS application



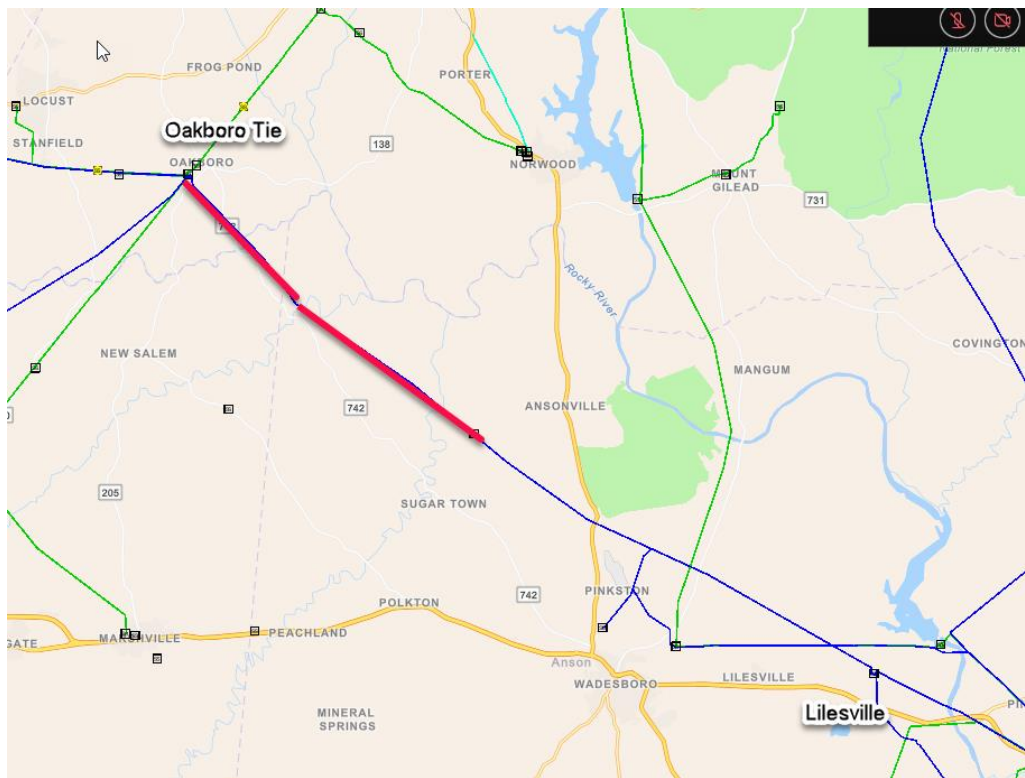


# Carolinas Transmission Planning Collaborative

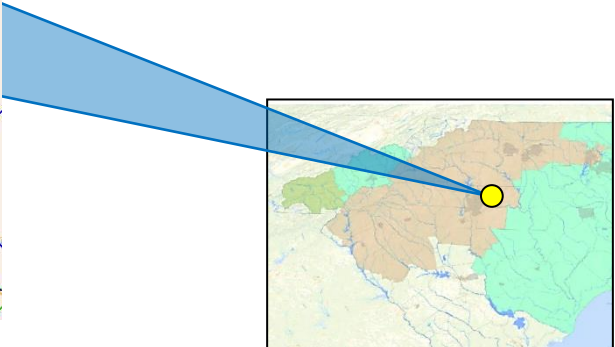
## DUKE ENERGY CAROLINAS – W230323

• 2027

### LILESVILLE – OAKBORO 230 KV BLACK & WHITE LINES UPGRADE



- **DESCRIPTION:**
  - Rebuild 5.1 miles of 954 ACSR to bundled 1272 ACSR between Lilesville (DEP) and Oakboro Tie. There is a separate project to reconductor the DEP portion of the lines
  - Proposed RZEP 2.0 Project
- **SUPPORTING STATEMENT:**
  - This upgrade is needed to enable generation in DEC consistent with the approved IRP





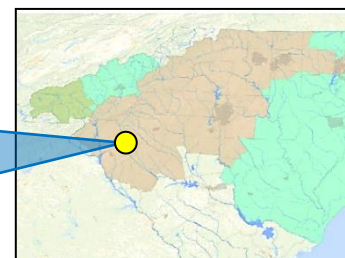
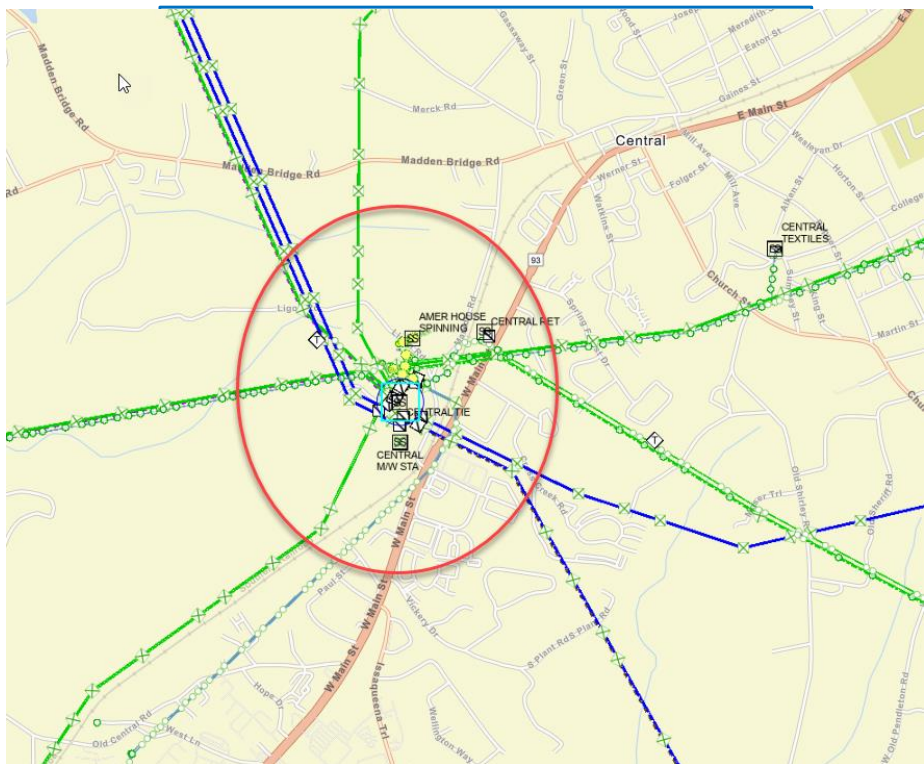
# Carolinas Transmission Planning Collaborative

## DUKE ENERGY CAROLINAS – TBD

• TBD

### Central 230/100/44 KV TIE STATION UPGRADE

- **DESCRIPTION:**
  - Addition transformer capacity
- **SUPPORTING STATEMENT:**
  - Additional capacity needed to avoid overloading under loss of two banks





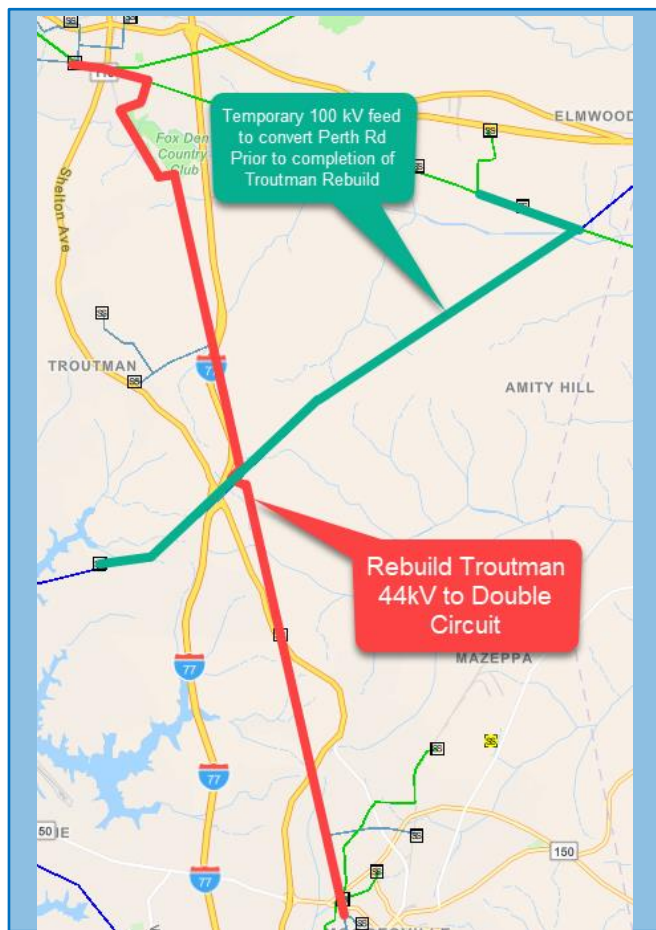


# Carolinas Transmission Planning Collaborative

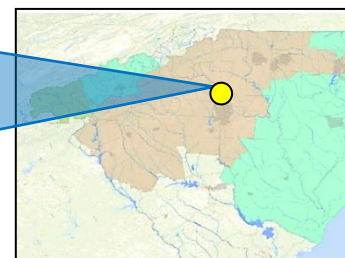
## TROUTMAN 44 KV REBUILD – W200150

• 2031

### Troutman 44 kV Line Rebuild



- **DESCRIPTION:**
  - Rebuild the 14.3 miles of the Troutman 44 kV between Statesville Tie and Mooresville Retail Tap to double circuit with 954 ACSR (44 kV on one side 100 kV on the other).
  - Perth Rd will be converted to 100 kV
  - Previously listed as a Phase 1 and Phase 2 project, combined into a single project (No scope change)
- **SUPPORTING STATEMENT:**
  - Relieve 44 kV Loading
  - Improve power quality
  - Provide capacity for future growth





# Carolinas Transmission Planning Collaborative

## DUKE ENERGY CAROLINAS

Item Num	Duke Energy Carolinas Transmission Projects less than \$5 M Summary	In-Service	Estimated Cost \$
1	Bethania and Shattalon 100 kV Lines. Install RAS	2/6/2025	500,000
2	Davidson River 100 kV Lines. Install RAS	4/7/2025	800,000 *
3	Batte 100 kV Line. Insall RAS	5/29/2025	1,200,000
4	Kennedy 100 kV Line. Install RAS	7/8/2025	400,000
5	Timber 100 kV Line and Sherrill 100 kV Line. Install RAS for overload on Timber or Sherrill Lines	11/1/2025	400000
6	Crest St 100 kV Lines. Raise clearance issues to get full rating [GETS]	4/28/2027	1,900,000
7	Swepsonville 100 kV Line (Mebane-Trollingwood Retail). UpgradeUpgrade 1.8 miles of existing transmission to 1272 ACSR	4/6/2028	3,000,000
8	Lakewood 100 kV Line (Lakewood-Remount Road Retail). Upgrade 2 miles of existing transmission to 795 ACSS/TW [GETS]	4/7/2028	1,700,000
9	Pinewood 100 kV Line (Lawsons Fork-Una Retail). Upgrade 4 miles of existing transmission to 1272 ACSR	6/1/2028	2,100,000 *
10	Delta 100 kV Line. Install RAS.	8/21/2028	800,000
11	Batte 100 kV Line (Concord-Winecoff), Upgrade 1.63 miles of existing transmission to bundled 336 ACSR	3/22/2029	1,600,000
12	Delta 100 kV Line (Research Triangle Retail-Ellis Rd Retail). Upgrade 2.6 miles of existing transmission to 795 ACSS/TW	5/11/2029	2,500,000
13	Beulah 100 kV Line. Install RAS	6/1/2029	500,000
14	States CTCC Bus Line 4. Install 0.25 miles of bundled 1272 ACSR on same structures as States CTCC Bus Line 3	8/6/2030	3100000
15	Marshall 230 kV Line (Marshall-Beckerdite). Raise clearance issues to get full rating	7/8/2033	200,000
16	Ferrell Wh 100 kV Line. Add new 100 kV terminal at Harrisburg Tie for a 44 kV to 100 kV conversion. Convert Forty Niner to Ferrell Wh.	9/5/2033	600,000
17	Steam 100 kV Line (Dan River CC-Dan River Steam). Upgrade 0.5 miles of existing transmission to 1272 ACSR	3/9/2034	1,000,000
18	Madison Tie - Install 3rd 100/44 kV bank	6/20/2034	2,400,000
19	Woodlawn 230/100/44 kV Tie Station. Install bank 4 tertiary	Beyond 2030	1,700,000



# ***Carolinas Transmission Planning Collaborative***

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***Questions?***

