



## **NCTPC 2023 Collaborative Transmission Plan Update**

### **July 2024**

Following is the mid-year update to the NCTPC 2023 Collaborative Transmission Plan. The status and timing of all projects presented in the Plan have been reviewed and the update reflects all changes (shown in red) that have been identified. All in-service dates were adjusted to either June 1 or December 1 to reflect the peak season by which the project will be in service, and to avoid the need for minor in-service date adjustments in the future. In addition, all cost projections have been reviewed and updated to reflect current estimates.

The total cost estimate of the 2023 Plan Reliability Projects changed from \$1.937 billion to \$2.076 billion. The total cost estimate of the 2023 Plan Public Policy Projects changed from \$503 million to \$505 million. All costs are rounded to the nearest \$1 million. The key differences between the original plan and this updated plan are summarized below:



# North Carolina Transmission Planning Collaborative

## Changes in Reliability Upgrades

Project	Cost Change (\$M)	ISD Change (Months)	Reason For Change
<b>DEC</b>			
Wilkes 230/100 kV Tie Station, Construct	- 2	Delayed 12 months	Updates to projections
Cokesbury 100 kV Line (Coronaca–Hodges), Upgrade		Accelerated 6 months	Updates to projections
South Point 100 kV Switching Station, Construct	+ 1	Accelerated 6 months	Updates to projections
Coronaca 100 kV Line (Coronaca-Creto), Upgrade and Construct		Accelerated 6 months	Updates to projections
Monroe 100 kV Line (Lancaster-Monroe), Upgrade	- 4	Accelerated 6 months	Updates to projections
Westport 230 kV Line (McGuire-Marshall), Upgrade	+ 9		Updates to projections
Wateree 100 kV Line (Great Falls-Wateree), Upgrade		Delayed 6 months	Updates to projections
North Greenville 230 kV Tie Station, Upgrade	+ 5	Delayed 18 months	Updates to projections
Wylie 100 kV Line (Wylie-Arrowood Retail), Upgrade	- 1	Accelerated 6 months	Updates to projections
Morning Star 230 kV Tie Station, Upgrade	- 1		Updates to projections
Davidson River 100 kV Line (North Greenville-Marietta), Upgrade	+ 2		Updates to projections
Sandy Ridge 230 kV Line (Newport-Morning Star), Upgrade	+ 2	Delayed 30 months	Updates to projections
Parkwood Tie 500/230 kV Bank 5, Replace	+ 1		Updates to projections
McDowell Tie 230/100 kV Bank 2, Replace	- 4		Updates to projections
Boyd Switching Station, Construct	+ 47	Delayed 6 months	Costs revised due to more detailed engineering and development
Haas Creek Switching Station, Construct	+ 45	Delayed 6 months	Costs revised due to more detailed engineering and development
Lyle Creek Switching Station, Construct	+ 35	Delayed 12 months	Costs revised due to more detailed engineering and development
Page and Guilford 100 kV Lines (Greensboro-North Greensboro), Upgrade	+ 13	Delayed 18 months	Updates to projections
Sevier 100 kV Line (East Greenville-Verda Retail Tap), Upgrade	+ 1		Updates to projections



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Project	Cost Change (\$M)	ISD Change (Months)	Reason For Change
Hands Mill Switching Station, Construct	+ 8		Updates to projections
Buckhorn 44 kV Line, Conversion		Accelerated 6 months	Updates to projections
Messer 230 kV Line (Dixon School Rd-Customer), Construct	+ 9	Delayed 24 months	Updates to projections
Troutman 44 kV Line, Conversion	+ 26	Delayed 12 months	Costs revised due to more detailed engineering and development
<b>DEP</b>			
Wateree Hydro Plant 115/100kV Banks 1 & 2, Replace	- 1		Updates to projections
Havelock 230/115 kV Banks 1 & 2, Replace	- 2		Updates to projections
Castle Hayne-Folkstone 230 kV Line – Porters Neck 230 kV Tap Line, Construct		Delayed 12 months	Updates to projections
Rocky Mount – Battleboro 115 kV Line, Reconductor	- 15		Costs revised due to more detailed engineering and development
Castle Hayne–Folkstone 115 kV Line, Rebuild	- 2		Updates to projections
Weatherspoon – LOF 115 kV Line (Maxton-Pembroke), Reconductor	- 8	Delayed 6 months	Updates to projections
Sumter – SCEG Eastover 115 kV Line (Kings Hwy – Shaw Field – Eastover), Reconductor	+ 8	Accelerated 6 months	Updates to projections
Asheboro – Siler City 115 kV Line (Asheboro-Ramseur, Ramseur-Siler City 115kV T/D), Reconductor	- 32	Accelerated 24 months	Recent reduction to economic development loads resulted in reduced scope
Carthage (Hill Crest) 230/115 kV Substation, Construct		Delayed 12 months	Updates to projections
Holly Ridge North 115 kV Switching Station, Construct		Delayed 6 months	Updates to projections
Weatherspoon – LOF 115 kV Line (Weatherspoon-LREMC West Lumberton), Reconductor		Project status was changed from Underway to Conceptual (TBD ISD)	Reduced load forecast in the area
Durham–RTP 230 kV Line (Durham-Brier Creek), Reconductor		Project status was changed from Underway to Conceptual (TBD ISD)	Recent reduction to economic development loads resulted in reduced scope
Brush Creek, Construct STATCOM		Project status was changed from Underway to Conceptual (TBD ISD)	Recent reduction to economic development loads resulted in reduced scope



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Project	Cost Change (\$M)	ISD Change (Months)	Reason For Change
Method – Milburnie 115 kV North Line (Method-Raleigh Northside & Milburnie-Raleigh Timberlake), Reconductor		Project status was changed from Underway to Conceptual (TBD ISD)	Reduced load forecast in the area



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## Changes in Public Policy Upgrades

Project	Cost Change (\$M)	ISD Change (Months)	Reason For Change
<b>DEC</b>			
Lee 100 kV Line (Lee-Shady Grove), Upgrade	+ 11		Updates to projections
Piedmont 100 kV Line (Lee-Shady Grove), Upgrade	+ 3		Updates to projections
Newberry 115 kV Line (Bush River-DESC), Upgrade	+ 5	Delayed 12 months	Updates to projections
Clinton 100 kV Line (Bush River-Laurens), Upgrade	+ 4		Updates to projections
<b>DEP</b>			
Fayetteville-Fayetteville Dupont 115 kV Line (Hope Mills Church St - Roslin Solar), Rebuild 3.2-mile section	- 1		Updates to projections
Weatherspoon-Marion 115 kV Line (LREMC Hog Swamp - Fairmont Tap), Rebuild	- 6	Accelerated 6 months	Updates to projections
Cape Fear – West End 230 kV Line, Rebuild	- 6		Updates to projections
Erwin – Fayetteville East 230 kV Line, Rebuild	- 7		Updates to projections
Fayetteville-Fayetteville Dupont 115 kV Line (Fayetteville to Hope Mills Church St), Rebuild 4.9-mile section	- 1		Updates to projections

## Cost Change Summary

Type of Upgrade	Cost Change (\$M)	Change Summary
Base Reliability	+ 139	Increased from \$1.937 B to \$2.076 B
Public Policy	+2	Increased from \$503 M to \$505 M
<b>Total</b>	<b>+ 141</b>	Increased from \$2.440 B to \$2.581 B



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## Reliability Upgrades

2023 Collaborative Transmission Plan – Reliability Projects (Estimated Cost > \$10M)							
Items identified in red are changes from the previous report.							
Project ID	Reliability Project	Issue Resolved	Status <sup>1</sup>	Transmission Owner	Projected In-Service Date	Estimated Cost (\$M) <sup>2</sup>	Project Lead Time (Years) <sup>3</sup>
<b>DEC</b>							
0062	Silas 100 kV Line (Mocksville-Idols Tap), Upgrade	Mitigate contingency loading	In-service	DEC	6/13/2023	24	-
0046	Windmere 100 kV Line (Dan River-Sadler), Construct	Mitigate contingency loading	In-service	DEC	6/27/2023	28	-
0107	Buckhorn 44 kV Line, Conversion	Mitigate contingency loading	In-service	DEC	5/18/2024	11	-
0061	Wateree 100 kV Line (Great Falls-Wateree), Upgrade	Mitigate contingency loading	Underway	DEC	12/1/2024	11	0.5
0087	Breaker Station on Motley 100 kV Line for New Customer, Construct	New customer	Underway	DEC	6/1/2025	12	1
0088	Island Creek 44 kV, Conversion	Asset Management Reliability	Underway	DEC	6/1/2025	15	1
0089	McDowell Tie 230/100 kV Bank 2, Replace	Equipment end of life	Underway	DEC	6/1/2025	8	1
0048	Wilkes 230/100 kV Tie Station, Construct	Mitigate contingency loading and voltage issues	Underway	DEC	6/1/2025	64	1
0051	Cokesbury 100 kV Line (Coronaca-Hodges), Upgrade	Mitigate contingency loading	Underway	DEC	6/1/2025	26	1
0052	South Point 100 kV Switching Station, Construct	Mitigate contingency loading with retirement of Allen generation	Underway	DEC	6/1/2025	103	1
0086	Parkwood Tie 500/230 kV Bank 5, Replace	Capital Failure	Underway	DEC	12/1/2024	43	0.5
0058	Coronaca 100 kV Line (Coronaca-Creto), Upgrade and Construct	Mitigate contingency loading	Underway	DEC	6/1/2026	38	2
0064	Wylie 100 kV Line (Wylie-Arrowood Retail), Upgrade	Mitigate contingency loading	Underway	DEC	6/1/2026	14	2
0090	Boyd Switching Station, Construct	New customer	Underway	DEC	12/1/2026	89	3.5
0091	Haas Creek Switching Station, Construct	New customer	Underway	DEC	12/1/2026	89	2.5
0095	Sevier 100 kV Line (East Greenville-Verdae Retail Tap), Upgrade	Mitigate contingency loading	Underway	DEC	12/1/2026	21	3
0092	Lyle Creek Switching Station, Construct	New customer	Underway	DEC	6/1/2027	88	3
0104	Hands Mill Switching Station, Construct	New customer	Underway	DEC	6/1/2027	59	3.5
0059	Monroe 100 kV Line (Lancaster-Monroe), Upgrade	Mitigate contingency loading	Underway	DEC	6/1/2027	69	3
0063	North Greenville 230 kV Tie Station, Upgrade	Mitigate contingency loading. Replace aging infrastructure.	Underway	DEC	6/1/2027	28	3
0093	Page and Guilford 100 kV Lines (Greensboro-North Greensboro), Upgrade	Mitigate contingency loading	Planned	DEC	6/1/2028	30	3



# North Carolina Transmission Planning Collaborative

## 2023 Collaborative Transmission Plan – Reliability Projects (Estimated Cost > \$10M)

Items identified in red are changes from the previous report.

Project ID	Reliability Project	Issue Resolved	Status <sup>1</sup>	Transmission Owner	Projected In-Service Date	Estimated Cost (\$M) <sup>2</sup>	Project Lead Time (Years) <sup>3</sup>
0110	Troutman 44 kV Line, Conversion	Mitigate normal operating loading	Planned	DEC	6/1/2028	56	4
0103	Crab Orchard 100 kV Line (Harrisburg-Amity), Upgrade	Mitigate contingency loading	Planned	DEC	12/1/2028	15	4
0108	Messer 230 kV Line (Dixon School Rd-Customer), Construct	Mitigate contingency loading	Planned	DEC	12/1/2028	23	4.5
0066	Davidson River 100 kV Line (North Greenville-Marietta), Upgrade	Mitigate contingency loading	Planned	DEC	12/1/2030	19	4
0068	Sandy Ridge 230 kV Line (Newport-Morning Star), Upgrade	Mitigate contingency loading	Planned	DEC	6/1/2032	36	8
0065	Morning Star 230 kV Tie Station, Upgrade	Mitigate contingency loading	Planned	DEC	12/1/2032	37	4
0060	Westport 230 kV Line (McGuire-Marshall), Upgrade	Mitigate contingency loading with retirement of Marshall generation	Conceptual	DEC	TBD	52	4.5
0067	Harley 100 kV Line (Tiger-Campobello), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	45	4
0069	Skybrook 100 kV Line (Winecoff-Eastfield Retail), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	15	4
0094	Cabarrus 100 kV Line (Wildcat-Westfork), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	13	3
0096	Panther 100 kV Line (EMC Corp-Stallings Rd Retail), Network	Mitigate contingency loading	Conceptual	DEC	TBD	56	4
0097	Dan River 100 kV Line (Dan River-North Greensboro), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	87	5
0098	Oliver 230 kV Line (Marshall-Boyd), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	60	5
0099	Reidsville and Wolf Creek 100 kV Lines (Dan River-Sadler), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	37	5
0100	Beulah 100 kV Line (Lookout-EnergyUnited Del 18), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	21	3.5
0101	Hinkle 100 kV Line (Stamey-Statesville), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	22	3.5
0102	Concord 100 kV Line (Concord-Concord City Del 3), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	11	3.5
0105	Kennedy 100 kV Line (Orchard-Newton Tap), Upgrade	Mitigate contingency loading	Conceptual	DEC	TBD	11	3.5
0109	Terrell 44 kV Line, Conversion	Mitigate normal operating loading	Conceptual	DEC	TBD	26	4
<b>DEP</b>							
53	Wateree Hydro Plant 115/100kV Banks 1 & 2, Replace	Mitigate contingency loading and voltage issues	In-service	DEP	12/13/2023	15	-
115	Havelock 230/115 kV Banks 1 & 2, Replace	Mitigate contingency loading	Underway	DEP	7/23/2024	8	-
50	Craggy-Enka 230 kV Line, Construct	Mitigate contingency loading	Underway	DEP	12/1/2024	94	0.5
124	Castle Hayne-Folkstone 230 kV Line – Porters Neck 230 kV Tap Line, Construct	Required to serve the new Porters Neck 230 kV T-D Substation	Underway	DEP	6/1/2025	43	1



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2023 Collaborative Transmission Plan – Reliability Projects (Estimated Cost > \$10M)							
Items identified in red are changes from the previous report.							
Project ID	Reliability Project	Issue Resolved	Status <sup>1</sup>	Transmission Owner	Projected In-Service Date	Estimated Cost (\$M) <sup>2</sup>	Project Lead Time (Years) <sup>3</sup>
116	Rocky Mount – Battleboro 115 kV Line, Reconductor	Mitigate contingency loading	Underway	DEP	6/1/2025	15	1
117	Asheville Plant – Oteen 115 kV West Line (Arden Tap Line), Construct	Mitigate low voltage issues	Underway	DEP	6/1/2026	12	2
56	Castle Hayne–Folkstone 115 kV Line, Rebuild	Mitigate contingency loading	Underway	DEP	6/1/2026	95	2
119	Weatherspoon – LOF 115 kV Line (Maxton-Pembroke), Reconductor	Mitigate contingency loading	Underway	DEP	12/1/2026	18	2.5
120	Sumter – SCEG Eastover 115 kV Line (Kings Hwy – Shaw Field – Eastover), Reconductor	Mitigate contingency loading	Underway	DEP	12/1/2026	27	2.5
122	Asheboro – Siler City 115 kV Line (Asheboro-Ramseur, Ramseur-Siler City 115kV T/D, Reconductor	Mitigate contingency loading	Underway	DEP	12/1/2026	43	2.5
54	Carthage (Hill Crest) 230/115 kV Substation, Construct	Mitigate contingency loading and voltage issues	Underway	DEP	6/1/2027	28	3
57	Holly Ridge North 115 kV Switching Station, Construct	Mitigate low voltage issues	Underway	DEP	6/1/2027	12	3
118	Weatherspoon – LOF 115 kV Line (Weatherspoon-LREMC West Lumberton), Reconductor	Mitigate contingency loading	Conceptual	DEP	TBD	26	-
24	Durham–RTP 230 kV Line (Durham-Brier Creek), Reconductor	Mitigate contingency loading	Conceptual	DEP	TBD	20	-
121	Brush Creek, Construct STATCOM	Mitigate low voltage issues	Conceptual	DEP	TBD	40	-
123	Falls – Franklinton (Franklinton – Franklinton Novo 115 kV Feeder), Construct	Mitigate low voltage issues	Conceptual	DEP	TBD	16	-
125	Method – Milburnie 115 kV North Line (Method-Raleigh Northside & Milburnie-Raleigh Timberlake), Reconductor	Mitigate contingency loading	Conceptual	DEP	TBD	25	-
126	Rockingham - West End 230 kV West Line (Rockingham-Wadesboro Tap), Reconductor	Mitigate contingency loading	Conceptual	DEP	TBD	27	-
<b>Total</b>						<b>2076</b>	

<sup>1</sup> Status: *Underway*: Projects with this status range from the Transmission Owner having some money in its current year budget for the project to the Transmission Owner having completed some construction activities for the project.

*Planned*: Projects with this status do not have money in the Transmission Owner’s current year budget, and the project is subject to change.

*Conceptual*: Projects with this status are not *Planned* at this time but will continue to be evaluated as a potential project in the future.

<sup>2</sup> The estimated cost is in nominal dollars which reflects the sum of the estimated annual cash flows over the expected development period for the specific project (typically 2 – 5 years), including direct costs, loadings and overheads; but not including AFUDC. Each year’s cash flow is escalated to the year of the expenditures. The sum of the expected cash flows is the estimated cost.

<sup>3</sup> For projects with a status of *Underway*, the project lead time is the time remaining to complete construction and place in-service.





# North Carolina Transmission Planning Collaborative

## Public Policy Upgrades

2023 Collaborative Transmission Plan – Public Policy Projects							
Items identified in red are changes from the previous report.							
Project ID	Public Policy Project	Issue Resolved	Status <sup>1</sup>	Transmission Owner	Projected In-Service Date	Estimated Cost (\$M) <sup>2</sup>	Project Lead Time (Years) <sup>3</sup>
<b>DEC</b>							
0080	Lee 100 kV Line (Lee-Shady Grove), Upgrade	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEC	12/1/2025	43	1.5
0081	Piedmont 100 kV Line (Lee-Shady Grove), Upgrade	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEC	12/1/2026	44	2.5
0082	Newberry 115 kV Line (Bush River-DESC), Upgrade	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEC	6/1/2026	40	2
0083	Clinton 100 kV Line (Bush River-Laurens), Upgrade	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEC	12/1/2026	91	2.5
<b>DEP</b>							
0073	Fayetteville-Fayetteville Dupont 115 kV Line (Hope Mills Church St - Roslin Solar), Rebuild 3.2-mile section	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	12/1/2024	6	0.5
0085	Camden - Camden Dupont 115kV Line, Rebuild	This upgrade is needed for future solar generation and to execute resource plans. This upgrade must be completed prior to starting the outage for the Camden Junction – Wateree 115 upgrade	Underway	DEP	12/1/2024	11	0.5
0072	Erwin – Fayetteville 115 kV Line (Wade-Beard-Slocomb), Rebuild	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2025	21	1
0075	Weatherspoon-Marion 115 kV Line (LREMC Hog Swamp - Fairmont Tap), Rebuild	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2025	15	1
0070	Cape Fear – West End 230 kV Line, Rebuild	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2026	52	2



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2023 Collaborative Transmission Plan – Public Policy Projects							
Items identified in red are changes from the previous report.							
Project ID	Public Policy Project	Issue Resolved	Status <sup>1</sup>	Transmission Owner	Projected In-Service Date	Estimated Cost (\$M) <sup>2</sup>	Project Lead Time (Years) <sup>3</sup>
0071	Erwin – Fayetteville East 230 kV Line, Rebuild	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2026	54	2
0074	Milburnie 230 kV Substation, Upgrade	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2026	5	2
0078	Robinson Plant-Rockingham 230 kV Line (Cheraw Tap - Str #378-1), Rebuild	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2026	50	2
0079	Fayetteville-Fayetteville Dupont 115 kV Line (Fayetteville to Hope Mills Church St), Rebuild 4.9-mile section	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2026	15	2
0076	Camden Junction-Wateree 115 kV Line, Rebuild	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	12/1/2026	16	2.5
0077	Robinson Plant-Rockingham 115 kV Line (Sneedsboro Solar-Cordova-Rockingham), Rebuild	This upgrade is needed for future solar generation and to execute resource plans	Underway	DEP	6/1/2027	42	3
<b>TOTAL</b>						<b>505</b>	

<sup>1</sup> Status: *Underway*: Projects with this status range from the Transmission Owner having some money in its current year budget for the project to the Transmission Owner having completed some construction activities for the project.

*Planned*: Projects with this status do not have money in the Transmission Owner’s current year budget, and the project is subject to change.

*Conceptual*: Projects with this status are not *Planned* at this time but will continue to be evaluated as a potential project in the future.

<sup>2</sup> The estimated cost is in nominal dollars which reflects the sum of the estimated annual cash flows over the expected development period for the specific project (typically 2 – 5 years), including direct costs, loadings and overheads; but not including AFUDC. Each year’s cash flow is escalated to the year of the expenditures. The sum of the expected cash flows is the estimated cost.

<sup>3</sup> For projects with a status of *Underway*, the project lead time is the time remaining to complete construction and place in-service.