Public Service Company of New Hampshire
d/b/a Eversource Energy
2023 Vegetation Management Plan and Performance Report
March 1, 2024

As required by Section 9.3 of the Settlement Agreement approved by the New Hampshire Public Utilities Commission (the "Commission") in Docket DE 19-057, Order No. 26,433 (December 15, 2020) (the "Settlement"), Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource" or the "Company") provides the following vegetation management report for calendar year 2023.

The Company has included the relevant planned and actual vegetation management work by circuits and miles for 2023 in the supporting tables below.

Scheduled Maintenance Trimming ("SMT") Program: The Company's SMT cycle is based on an approximately 12,000-mile distribution overhead system and is performed, in part, by third-party contractors. The Company awards the work through a competitive bid process with a 4-year contract as the main component of the program. As part of the 4-year contract, the Company receives fixed pricing for the first two years of the contract. The Company Procurement team then negotiates year three with the contractors. Year two of the current 4-year contract was 2022, and negotiations for year three (2023) occurred during late 2022. The pricing for year three (2023) was substantially higher than year two (2022). There were protracted negotiations during December 2022, which resulted in additional contractors being awarded work in 2023. Cost increases were caused by the pandemic, inflation, supply chain, rising fuel, health and risk insurance, equipment, and labor costs. Overall, we saw a 20% increase in costs for year three (2023), when compared to year two (2022).

One of the contributing factors to the cost increase is crew availability. This topic has been discussed with the Commission and the Department of Energy Staff for the last few years. Costs associated with police details were also included in the bids received in response to the RFP. Every year, the number of roads that require traffic control increases. It can be difficult for contractors to project which towns and "new" roads will require police details. Contractors are diligent in controlling risk, and as a result, the competitive bid pricing reflects that through increased costs.

The Company awarded work to a new contractor in 2022 for SMT (Nelson Tree), along with the historic contractors Asplundh, Lewis, Lucas, and Northern. The Company's plan for 2023 was to have tree contractors perform SMT on 2,158 miles and the budgets were developed around that plan. The table below provides the 2023 planned SMT trimming miles per region, as compared to the 2023 actual miles trimmed. The Plan Miles were derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, "2023 Vegetation Management Plan Proposal," at Page 2 (Bates Page 73), as filed on March 1, 2023.

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Eversource 2023 SMT		
Region	**Plan Miles**	**Actual Miles**
Southern	351.71	341.78
Central	314.41	323.88
Western	630.29	608.46
Eastern	334.40	313.83
Northern	527.40	639.28
Total Annual Miles	2,158.21	2,227.23

Maintenance Enhanced Tree Trimming ("METT") Program: METT is maintenance trimming performed on miles that were previously subject to ETT. The amount of METT changes each year based on the circuit schedule. The Plan Miles were derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, at Page 3 (Bates Page 74), as filed on March 1, 2023. The total METT plan for 2023 was 240.88 miles.

Eversource 2023 METT		
Region	**Plan Miles**	**Actual Miles**
Southern	28.67	28.67
Central	23.35	24.50
Western	89.38	89.38
Eastern	44.30	31.69
Northern	55.18	73.96
Total Annual Miles	240.88	248.20

Mid-cycle work is additional work completed on a circuit in between the standard cycle under the SMT. This can include vine removal, tree trimming, and tree removal. This program is an emergent one and the budget is minimal as the Company is prioritizing the SMT cycle work with the funding available. If the need arises to address circuit miles with this application, the Company will utilize funds from the allocated budget. The Plan Miles were derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, at Page 3 (Bates Page 74), as filed on March 1, 2023.

Eversource 2023 Mid Cycle		
Region	**Plan Miles**	**Actual Miles**
Southern	0.00	0.00
Central	0.00	0.00
Western	0.00	0.00
Eastern	0.00	0.00
Northern	0.00	1.00
Total Annual Miles	0.00	1.00

Customer Request work is work that is generated or initiated to address an issue identified by a customer rather than as part of the scheduled or planned circuit miles. Most often, these are service

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from customers. The work needed to mitigate the issues posed by these trees is often performed by Company contractors. The Plan Spend was derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, at Page 4 (Bates Page 75), as filed on March 1, 2023. The Plan Spend is not available by region as the work is emergent and dependent on developments in the field.

Eversource 2023 Customer Request Work		
Region	**Plan Spend**	**Actual Spend**
Southern	0.00	$85,429
Central	0.00	$117,379
Western	0.00	$142,689
Eastern	0.00	$115,894
Northern	0.00	$23,776
Total Annual Spend	0.00	$485,167

The Hot Spot Program addresses tree growth in between cycles. If there is a reliability concern that is caused by a tree prior to its next scheduled trim, we will assess and mitigate if needed. The Plan Miles were derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, at Page 4 (Bates Page 75), as filed on March 1, 2023.

Eversource 2023 Hot Spot		
Region	**Plan Miles**	**Actual Miles**
Southern	0.00	1.74
Central	0.00	0.31
Western	0.00	0.00
Eastern	0.00	0.09
Northern	0.00	0.26
Total Annual Miles	0.00	2.40

The rights of way ("ROW") maintenance program includes mowing and side trimming. The acres listed were mowed, and during the quality control inspection of the mowing, any tree limbs that were within 20 feet of the line were noted and a crew was sent to trim the limbs. The Plan Acres were derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, at Page 5 (Bates Page 76), as filed on March 1, 2023.

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Eversource 2023 ROW Maintenance				
Region	**Plan Side Trim Miles**	**Actual Side Trim Miles**	**Plan Acres (Mowing)**	**Actual Acres (Mowing)**
Southern	3.30	0.00	13.33	0.00
Central	5.20	9.77	118.29	118.29
Western	12.10	0.00	0.00	0.00
Eastern	8.60	14.60	258.39	176.95
Northern	20.16	21.60	680.04	261.79
Total Annual Miles/Acres	49.36	45.97	1,070.05	557.03

The Full Width Clearing of ROW identifies ROWs where enhanced clearing will benefit customers and workers. This work is competitively bid. The tree contractor clears brush and trees to the full easement width. At the edge of the easement, the bordering trees are trimmed from ground to sky. The Company's arborists work closely with abutting property owners to communicate the work needed and the final product. The Plan Miles were derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, at Page 5 (Bates Page 76), as filed on March 1, 2023.

Eversource 2023 Full Width Clearing		
Region	**Plan Miles**	**Actual Miles**
Southern	0.00	0.00
Central	4.40	1.00
Western	0.00	2.40
Eastern	0.00	0.00
Northern	2.80	2.20
Total Annual Miles	7.20	5.60

For the ETT Program, the Company identified 43.91 miles of planned three phase circuits in 2023. These miles were competitively bid. Actual miles completed totaled 25.75 miles. The Plan Miles were derived from Docket No. DE 23-021, Attachment RDA/EN/RDJ-2, at Page 6 (Bates Page 77), as filed on March 1, 2023.

Eversource 2023 ETT		
Region	**Plan Miles**	**Actual Miles**
Southern	9.07	9.07
Central	10.14	5.32
Western	6.85	2.72
Eastern	10.12	4.72
Northern	7.73	3.92
Total Annual Miles	43.91	25.75

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The Company profiles the SMT circuits for hazard trees. Hazard trees are trees that are diseased or damaged and should be removed rather than trimmed due to their potential to impact the electric system. It is best practice to remove the troublesome trees while trimming the circuit. The customers on whose property the hazard trees grow, and who, therefore, own the hazard trees, are engaged in one conversation for both programs. The total number of trees removed are compiled monthly. The Company's 2023 plan included SMT and METT of 2,158.21 and 240.88 miles, respectively, as compared to the 2023 actuals for SMT and METT of 2,227.23 and 248.2 miles, respectively.

Eversource 2023 Total Number of Hazard Trees		
Region	**Plan Trees**	**Actual Trees**
Southern	0	1,702
Central	0	3,999
Western	0	5,696
Eastern	0	2,591
Northern	0	3,408
Total Trees Removed	0	17,396

While Eversource has experienced professionals managing its Vegetation Management Program, there are longer-term concerns with the work force. There are very few programs in high school or college to attract students to Arboriculture/Forestry. It is a difficult job performed in all types of weather, usually aloft. This has had a direct impact on the work the Company does and the availability of trained individuals to do it, and, as has been seen in recent bids, has had a material impact on costs. However, the roster of contractors working on our system increased in 2023. Enviro Arbor Solutions (EAS) from Florida was awarded a circuit through competitive bid in the Tilton AWC, and they also were awarded work in Massachusetts. Subsequently, they have established an office in NH and hope to be involved in our work annually. Wright Tree from Iowa has worked on our system for the past 2 years and have been awarded work in the Bedford and Epping AWC's for 2024. Wright Tree Supervision has made a commitment to our work as they built a house in NH and recently moved in.

These two anecdotes are noteworthy as an indicator of more crew resources becoming available to our industry in NH.

Additionally, we continue to participate in new or innovative equipment being utilized on our system. In 2023, we brought in a contractor with a knuckle boom crane. Among the perceived benefits for this type of crane; a smaller, narrower, "footprint" when setting up the work zone, a grapple which locks on to the tree trunk and controls it through the cut, and the ability to be more versatile in accessing locations.

Table 1. Summary of Eversource's 2023 Planned vs. Actual Vegetation Management Program Costs

Line	(a) VMP Activity	(b) 2023 Plan Gross Cost	(c) 2023 Plan Reimbursements	(d) (b) + (c) 2023 Plan Net Cost	(e) 2023 Actual Gross Cost	(f) 2023 Actual Reimbursements	(g) (e) + (f) 2023 Actual Net Cost	(h) (b) - (e) Variance Gross Cost	(i) (c) - (f) Variance Reimbursements	(j) (h) + (i) Variance Net Cost	Reference
1	Scheduled Maintenance Trim (SMT)	$ 20,874,282	$ (1,391,619)	$ 19,482,663	$ 20,014,088	$ (2,032,935)	$ 17,981,153	$ 860,194	$ 641,316	$ 1,501,510	Tables 2-6 (part)
2	METT	2,250,977	(150,065)	2,100,912	1,520,077	-	1,520,077	730,900	(150,065)	580,834	Tables 2-6 (part)
3	Mid Cycle Review	200,000	-	200,000	7,692	-	7,692	192,308	-	192,308	Table 7
4	Customer Work	200,000	-	200,000	485,167	-	485,167	(285,167)	-	(285,167)	Table 9
5	Hot Spot Work	400,000	-	400,000	24,828	-	24,828	375,172	-	375,172	Table 8
6	Make Safe	-	-	-	10,377	-	10,377	(10,377)	-	(10,377)	
7	Sub Transmission (Mowing/Side Trim)	1,000,000	-	1,000,000	1,806,318	-	1,806,318	(806,318)	-	(806,318)	Table 10
8	Distribution SMT Total	$ 24,925,259	$ (1,541,684)	$ 23,383,575	$ 23,868,547	$ (2,032,935)	$ 21,835,612	$ 1,056,712	$ 491,251	$ 1,547,963	Sum of Line 1 to Line 7
9	Full Width Clearing	$ 600,000	$ -	$ 600,000	$ 346,237		$ 346,237	$ 253,763	$ -	$ 253,763	Table 11
10	Hazard Tree Removal (HTR)	11,000,000	(1,833,333)	9,166,667	8,809,752	(1,197,136)	7,612,616	2,190,248	(636,197)	1,554,051	Table 13 (part)
11	Enhanced Tree Trimming	900,000	(20,827)	879,173	632,789		632,789	267,211	(20,827)	246,384	Table 12
12	NH Reliability	-	-	-	579,538		579,538	(579,538)	-	(579,538)	
13	Distribution Reliability Total	$ 12,500,000	$ (1,854,160)	$ 10,645,840	$ 10,368,316	$ (1,197,136)	$ 9,171,181	$ 2,131,684	$ (657,024)	$ 1,474,659	Sum of Line 9 to Line 12
14	RRA VMP Cost - Total	$ -	$ -	$ -	$ 34,236,864	$ (3,230,071)	$ 31,006,793	$ 3,188,395	$ (165,773)	$ 3,022,622	Line 8 + Line 13
15	RRA Carryover - 2022 VMP Over Recovery	-	-	-	(2,126,381)	-	(2,126,381)	2,126,381	-	2,126,381	DE 23-021
16	RRA VMP Cost - Net	$ -	$ -	$ -	$ 32,110,483	$ (3,230,071)	$ 28,880,412	$ 5,314,776	$ (165,773)	$ 5,149,003	Line 14 + Line 15
17	PPAM VMP Cost - SMT	$ -	$ -	$ -	$ 4,155,540	$ 1,347,165	$ 5,502,705	$ (4,155,540)	$ (1,347,165)	$ (5,502,705)	Tables 2-6 (part)
18	PPAM VMP Cost - HTR	-	-	-	5,041,854	779,397	5,821,251	(5,041,854)	(779,397)	(5,821,251)	Table 13 (part)
19	PPAM VMP Cost - Total	$ -	$ -	$ -	$ 9,197,394	$ 2,126,562	$ 11,323,956	$ (9,197,394)	$ (2,126,562)	$ (11,323,956)	Line 17 + Line 18
20	**Vegetation Management Program Total**	**$ 37,425,259**	**$ (3,395,844)**	**$ 34,029,415**	**$ 41,307,877**	**$ (1,103,509)**	**$ 40,204,367**	**$ (3,882,618)**	**$ (2,292,335)**	**$ (6,174,952)**	**Line 16 + Line 19**
21	2023 Miles (SMT/METT)	2,399			2,475			(76)			
22	2023 Total VMP Cost	$ 37,425,259	$ (3,395,844)	$ 34,029,415	$ 41,307,877	$ (1,103,509)	$ 40,204,367	$ (3,882,618)	$ (2,292,335)	$ (6,174,952)	Line 20

Table 2. 2023 Vegetation Management Program Actual vs. Plan - Scheduled Maintenance Trimming (SMT) and Maintenance Enhanced Tree Trimming (METT)
Eastern Region (Epping, Portsmouth and Rochester Area Work Centers)

Trim Year	Circuit	SMT Plan	SMT Actual	METT Plan	METT Actual	Primary Town	AWC	Plan Total Circuit Miles	Actual Total Circuit Miles
2023	3103X	18.57	18.57	5.3	5.3	Brentwood	Epping	23.87	23.87
2023	3103X1	38.3	38.3	5.41	5.41	Fremont	Epping	43.71	43.71
2023	63w1	60.55	60.55	0.74	0.74	Strafford	Epping	61.29	61.29
2023	3102X8	0.04	0.04	0	0	Portsmouth	Portsmouth	0.04	0.04
2023	3102x6	1.18	1.18	0	0	Portsmouth	Portsmouth	1.18	1.18
2023	3148x4	3.5	3.5	0	0	Dover	Rochester	3.5	3.5
2023	32X3	9.73	9.73	5.75	5.75	Dover	Rochester	15.48	15.48
2023	3174X3	1.41	1.41	0	0	Farmington	Rochester	1.41	1.41
2023	362	8.09	8.09	10.82	10.82	Farmington	Rochester	18.91	18.91
2023	362x2	44.13	44.13	0	0	New Durham	Rochster	44.13	44.13
2023	3157X2	0.76	0.76	0	0	Milton	Rochester	0.76	0.76
2023	28H1	0	0	1.63	1.63	Rochester	Rochester	1.63	1.63
2023	28H2	2.77	2.77	0	0	Rochester	Rochester	2.77	2.77
2023	32X6	2.71	2.71	1.16	1.16	Rochester	Rochester	3.87	3.87
2023	340X2	0.29	0.29	0	0	Rochester	Rochester	0.29	0.29
2023	34w4	14.66	14.66	0	0	Rochester	Rochester	14.66	14.66
2023	392x3	0.43	0.43	0	0	Rochester	Rochester	0.43	0.43
2023	392x9	0.14	0.14	0	0	Rochester	Rochester	0.14	0.14
2023	53W2	7.58	7.58	0	0	Rochester	Rochester	7.58	7.58
2023	39w2	31.5	31.5	0.88	0.88	Rochester	Rochester	32.38	32.38
2023	53w1	3.04	3.04	0	0	Rochester	Rochester	3.04	3.04
2023	39w1	10.29	10.29	0	0	Rochester	Rochester	10.29	10.29
2023	392x2	8.96	8.96	0	0	Rochester	Rochester	8.96	8.96
2023	34w2	12.29	12.29	0	0	Rochester	Rochester	12.29	12.29
2023	32X98	0.22	0.22	0	0	Somersworth	Rochester	0.22	0.22
2023	371X1	29.27	29.27	0	0	Somersworth	Rochester	29.27	29.27
2023	371X22	3.13	3.13	0	0	Somersworth	Rochester	3.13	3.13
2023	371X3	0.29	0.29	0	0	Somersworth	Rochester	0.29	0.29
Total		**313.83**	**313.83**	**31.69**	**31.69**			**345.52**	**345.52**

Table 3. 2023 Vegetation Management Program Actual vs. Plan - Scheduled Maintenance Trimming (SMT) and Maintenance Enhanced Tree Trimming (METT)
Southern Region (Nashua and Derry Area Work Centers)

Trim Year	Circuit	SMT Plan	SMT Actual	METT Plan	METT Actual	Primary Town	AWC	Plan Total Circuit Miles	Actual Total Circuit Miles
2023	32W1	20.1	20.1	0	0	Derry	Derry	20.1	20.1
2023	32W3	4.21	4.21	0	0	Derry	Derry	4.21	4.21
2023	32W4	15.1	15.1	0	0	Derry	Derry	15.1	15.1
2023	32W5	26.53	26.53	0	0	Derry	Derry	26.53	26.53
2023	365X	16.18	16.18	0	0	Derry	Derry	16.18	16.18
2023	3818	67.75	67.75	0	0	Hampstead	Derry	69.4	69.4
2023	3128X	66.14	66.14	0	0	Londonderry	Derry	66.14	66.14
2023	3184X	24.95	24.95	0	0	Londonderry	Derry	24.95	24.95
2023	24W1	20.98	20.98	7.03	7.03	Hollis	Nashua	28.01	28.01
2023	389X3	2.12	2.12	0	0	Hudson	Nashua	4.87	4.87
2023	72W1	10.8	10.8	0.03	0.03	Hudson	Nashua	10.99	10.99
2023	314X54	6	6	4.4	4.4	Milford	Nashua	10.71	10.71
2023	3143X	3.45	3.45	0	0	Milford	Nashua	4.7	4.7
2023	23W7	5.46	5.46	2.02	2.02	Milford	Nashua	7.5	7.5
2023	23H3	1.96	1.96	1.09	1.09	Milford	Nashua	3.06	3.06
2023	3144X1	12.53	12.53	4.3	4.3	Nashua	Nashua	16.84	16.84
2023	3177XA	18.04	18.04	1.78	1.78	Nashua	Nashua	19.82	19.82
2023	3177X	10.37	10.37	8.02	8.02	Nashua	Nashua	18.39	18.39
2023	3144	7.3	7.3	0	0	Nashua	Nashua	8.38	8.38
2023	3223	1.81	1.81	0	0	Nashua	Nashua	2.63	2.63
Total		**341.78**	**341.78**	**28.67**	**28.67**			**378.51**	**378.51**

Table 4. 2023 Vegetation Management Program Actual vs. Plan - Scheduled Maintenance Trimming (SMT) and Maintenance Enhanced Tree Trimming (METT)
Central Region (Bedford and Hooksett Area Work Centers)

Trim Year	Circuit	SMT Plan	SMT Actual	METT Plan	METT Actual	Primary Town	AWC	Plan Total Circuit Miles	Actual Total Circuit Miles
2023	3W2	18.73	18.73	3.76	3.76	Bedford	Bedford	22.49	22.49
2023	324X2	0.2	0.2	0	0	Bedford	Bedford	0.2	0.2
2023	3W1	19.61	19.61	1.7	1.7	Bedford	Bedford	21.31	21.31
2023	3173X1	66.9	66.9	1.39	1.39	Deering	Bedford	68.29	68.29
2023	3271X5	10.44	10.44	0	0	Goffstown	Bedford	10.44	10.44
2023	328	0.25	0.25	0	0	Goffstown	Bedford	0.25	0.25
2023	328X11	0.33	0.33	0	0	Goffstown	Bedford	0.33	0.33
2023	328X2	2.55	2.55	0	0	Goffstown	Bedford	2.55	2.55
2023	328X6	0.22	0.22	0	0	Goffstown	Bedford	0.22	0.22
2023	328X7	0.67	0.67	0	0	Goffstown	Bedford	0.67	0.67
2023	360X6	0.13	0.13	0	0	Goffstown	Bedford	0.13	0.13
2023	360X8	0.23	0.23	0	0	Goffstown	Bedford	0.23	0.23
2023	360X9	3.72	3.72	0	0	Goffstown	Bedford	3.72	3.72
2023	27W2	12.23	12.23	0	0	Goffstown	Bedford	12.23	12.23
2023	335X3	1.69	1.69	2.62	2.62	Hooksett	Bedford	4.31	4.31
2023	335X56	0.62	0.62	0	0	Hooksett	Bedford	0.62	0.62
2023	335X2_12	15.29	15.42	1.15	1.15	Hooksett	Bedford	16.57	16.57
2023	3138X	10.16	10.16	0	0	Manchester	Bedford	10.16	10.16
2023	12W2	3.63	3.63	0.67	0.67	Manchester	Bedford	4.3	4.3
2023	12W3	4.24	4.24	0.53	0.53	Manchester	Bedford	4.77	4.77
2023	387X4_12	0.1	0.1			Manchester	Bedford	0.1	0.1
2023	323X5	34.08	34.08	1.44	1.44	Merrimack	Bedford	35.52	35.52
2023	3164	0.1	0.1	0	0	Merrimack	Bedford	0.1	0.1
2023	3197X	13.68	13.68	0.95	0.95	Merrimack	Bedford	14.63	14.63
2023	5W1	0.2	0.2	0	0	Merrimack	Bedford	0.2	0.2
2023	5W2	11.96	11.96	4.5	4.5	Merrimack	Bedford	16.46	16.46
2023	33H1	46.52	46.52	0.85	0.85	Warner	Bedford	47.37	47.37
2023	3271	1.85	1.85	0	0	Weare	Bedford	1.85	1.85
2023	3673	8.01	8.01	0	0	Manchester	Hooksett	8.01	8.01
2023	14W1	6.73	6.73	0	0	Manchester	Hooksett	6.73	6.73
2023	23W1	0.82	0.82	0	0	Manchester	Hooksett	0.82	0.82
2023	23W3	6.8	6.8	0	0	Manchester	Hooksett	6.8	6.8
2023	23W4	4.84	4.84	0	0	Manchester	Hooksett	4.84	4.84
2023	24H1	1.29	1.53	0	0	Manchester	Hooksett	1.53	1.53
2023	24H2	0.76	0.76	0	0	Manchester	Hooksett	0.76	0.76
2023	321X11	3.31	3.31	1.85	1.85	Manchester	Hooksett	5.16	5.16
2023	393X1	1.08	1.08	0	0	Manchester	Hooksett	1.08	1.08
2023	393X2	2.48	2.48	0.88	0.88	Manchester	Hooksett	3.36	3.36
2023	7W1	7.06	7.06	2.21	2.21	Manchester	Hooksett	9.27	9.27
Total		**323.51**	**323.88**	**24.50**	**24.50**			**348.38**	**348.38**

Table 5. 2023 Vegetation Management Program Actual vs. Plan - Scheduled Maintenance Trimming (SMT) and Maintenance Enhanced Tree Trimming (METT)
Western Region (Keene and Newport Area Work Centers)

Trim Year	Circuit	SMT Plan	SMT Actual	METT Plan	METT Actual	Primary Town	AWC	Plan Total Circuit Miles	Actual Total Circuit Miles
2023	3178	43.38	43.38	1.55	1.55	Hinsdale	Keene	44.93	44.93
2023	3178x3	20.75	20.75	0.00	0.00	Hinsdale	Keene	20.75	20.75
2023	w110	35.11	35.6	2.39	2.39	Keene	Keene	37.5	37.5
2023	76w5	20.8	20.8	10.30	10.30	Keene	Keene	31.1	31.1
2023	w175	26.23	26.23	0.00	0.00	Keene	Keene	26.23	26.23
2023	w9	10.41	10.41	0.00	0.00	Keene	Keene	10.41	10.41
2023	76w1	19.3	19.88	1.79	1.79	Keene	Keene	21.09	21.09
2023	w2	12.28	12.45	0.00	0.00	Keene	Keene	12.28	12.28
2023	w1	1.8	1.8	0.50	0.50	Keene	Keene	2.3	2.3
2023	313x1	87.83	87.83	12.09	12.09	Peterborough	Keene	99.92	99.92
2023	3120	48.96	48.96	14.82	14.82	Troy	Keene	63.78	63.78
2023	3120x1	17.83	17.83	1.50	1.50	Troy	Keene	19.33	19.33
2023	55w2	21.1	21.1	3.94	3.94	Claremont	Newport	25.04	25.04
2023	75w2	41.69	41.69	9.97	9.97	Claremont	Newport	51.66	51.66
2023	60w1	28.36	28.82	3.00	3.00	Claremont	Newport	31.36	31.36
2023	74w1	18.45	18.45	0.00	0.00	Claremont	Newport	18.45	18.45
2023	54w1	6.88	6.88	3.09	3.09	Claremont	Newport	9.97	9.97
2023	316x1	117.07	117.07	13.44	13.44	Grantham	Newport	130.51	130.51
2023	44H1	28.53	28.53	11.00	11.00	Newport	Newport	39.53	39.53
Total		**606.76**	**608.46**	**89.38**	**89.38**			**696.14**	**696.14**

Table 6. 2023 Vegetation Management Program Actual vs. Plan - Scheduled Maintenance Trimming (SMT) and Maintenance Enhanced Tree Trimming (METT)
Northern Region (Berlin, Lancaster, Chocorua and Tilton Area Work Centers)

Trim Year	Circuit	SMT Plan	SMT Actual	METT Plan	METT Actual	Primary Town	AWC	Plan Total Circuit Miles	Actual Total Circuit Miles
2023	21H1	6.03	6.03	0	0	Lancaster	Berlin	6.03	6.03
2023	21H2	5.74	5.74	0	0	Lancaster	Berlin	5.74	5.74
2023	21H4	6.08	6.08	0	0	Colebrook	Berlin	6.08	6.08
2023	21H5	10.21	20.21	0	0	Colebrook	Berlin	10.21	20.21
2023	351X9	2.63	2.63	0	0	Haverhill	Berlin	2.63	2.63
2023	333X	29.49	29.49	7.11	7.11	Conway	Chocorua	36.6	36.6
2023	3218	38.81	38.81	3.04	3.04	Madison	Chocorua	41.85	41.85
2023	5H1	14.68	14.68	5.4	5.4	Colebrook	Lancaster	20.08	20.08
2023	5H2	12.59	12.59	3.59	3.59	Colebrook	Lancaster	16.18	16.18
2023	12w1	67.32	67.32	4.28	4.28	Haverhill	Lancaster	71.6	71.6
2023	59W1	32.17	32.17	3.37	3.37	Lancaster	Lancaster	35.54	35.54
2023	59W2	36.55	36.55	3.11	3.11	Lancaster	Lancaster	39.66	39.66
2023	319X1	100.85	100.85	9.31	9.31	Barnstead	Tilton	100.22	100.22
2023	398X3	26.98	26.98	8.62	8.62	Belmont	Tilton	38.94	38.94
2023	3114	0	3.38	0	0	Danbury	Tilton	0	3.38
2023	337x21	0.03	0.03	0	0	Franklin	Tilton	0.03	0.03
2023	337X3	0.03	0.03	0	0	Franklin	Tilton	0.03	0.03
2023	337X5	0.03	0.03	0	0	Franklin	Tilton	0.03	0.03
2023	1X4	27.59	27.59	3.81	3.81	Franklin	Tilton	26.11	26.11
2023	337x4	0.13	0.13	0	0	Franklin	Tilton	0.13	0.13
2023	3222X	42.02	42.02	10.03	10.03	Guilford	Tilton	52.05	52.05
2023	29X1	11.99	11.99	2.38	2.38	Laconia	Tilton	15.27	15.27
2023	398X1	0.08	0.08	0	0	Laconia	Tilton	0.08	0.08
2023	310X2	0.71	0.71	0	0	Laconia	Tilton	0.71	0.71
2023	310X6	0.12	0.12	0	0	Laconia	Tilton	0.12	0.12
2023	31W2	37.12	37.12	1.28	1.28	Loudon	Tilton	38.4	38.4
2023	30W2	33.45	33.45	2.57	2.57	Loudon	Tilton	36.02	47.52
2023	31W1	57.46	57.46	6.06	6.06	Loudon	Tilton	63.52	63.52
2023	345	0	13.8	0	0	New Hampton	Tilton	0	13.8
2023	3798X1	0.62	0.62	0	0	Northfield	Tilton	0.62	0.62
2023	3137X2	8.69	8.69	0	0	Pittsfield	Tilton	8.65	8.65
2023	390	0	1.9	0	0	Tuftonboro	Tilton	0	1.9
Total		**610.20**	**639.28**	**73.96**	**73.96**			**673.13**	**713.71**

Table 7. 2023 Vegetation Program Actual vs. Plan - Mid Cycle

Region	Plan Miles	Actual Miles
Southern	-	-
Central	-	-
Western	-	-
Eastern	-	-
Northern	-	1.00
Total Annual Miles	-	1.00

Table 8. 2023 Vegetation Program Actual vs. Plan - Hot Spot

Region	Plan Miles	Actual Miles
Southern	-	1.74
Central	-	0.31
Western	-	-
Eastern	-	0.09
Northern	-	0.26
Total Annual Miles	-	2.40

Table 9. 2023 Vegetation Program Actual vs. Plan - Customer Request Work

Region	Plan Spend	Actual Spend
Southern	$ -	$ 85,429
Central	-	117,379
Western	-	142,689
Eastern	-	115,894
Northern	-	23,776
Total Annual Spend	$ -	$ 485,167

Table 10. 2023 Vegetation Management Program Actual vs. Plan - Right of Way (ROW) Maintenance

Division	AWC	Town(s)	ROW Number	ROW Name/Circuit	Planned Acerage	Actual Acerage	Plan Side Trimming (miles)	Actual Side Trimming (miles)	Voltage (kV)	ROW Width (Feet)	Maint. In Transmission (%)
Central	Bedford	Goffstown Bedford	328	328	53.57	53.57	4.43	4.43	34.5KV	100	0%
Central	Hooksett	Bow Concord Pembroke Allenstown	334G	334G	64.72	64.72	5.34	5.34	34.5KV	100	0%
Central	Subtotal				118.29	118.29	9.77	9.77			
Eastern	Epping	Chichester Pittsfield Epsom Northwood	3137	3137	176.95	176.95	14.60	14.60	34.5KV	100	0%
Eastern	Portsmouth	Greenland	3105	3105	38.05	-	3.14	-	34.5KV	100	0%
Eastern	Portsmouth	North Hampton	3106	3106	11.88	-	0.98	-	34.5KV	100	0%
Eastern	Portsmouth	Portsmouth	3111	3111	31.51	-	2.60	-	34.5KV	100	0%
Eastern	Subtotal				258.39	176.95	21.32	14.60			
Northern	Lancaster	North Umberland	384 Lost Nation S/S - Groveton Paper	384 Lost Nation S/S - Groveton Paper	9.81	-	0.81	-	34.5KV	100	0%
Northern	Lancaster	Stewartwtown, Colebrook, Columbia, Stratford, North Umberland	355 Canaan VT S/S - Lost Nation S/S	355 Canaan VT S/S - Lost Nation S/S	408.44	-	33.70	-	34.5KV	100	0%
Northern	Tilton	Ashland, New Hampton, Center Harbor, Meredith, Moultonborough	338 Ashland S/S - pole 338/424	338 Ashland S/S - pole 338/424	261.79	261.79	21.60	21.60	34.5KV	100	0%
Northern	Subtotal				680.04	261.79	56.11	21.60			
Southern	Nashua	Milford	314X12	314X12	13.33	-	1.10	-	34.5KV	100	0%
Southern	Subtotal				13.33	-	1.10	-			
Total					1,070.05	557.03	88.30	45.97			

Table 11. 2023 Vegetation Management Program Actual vs. Plan - Right of Way (ROW) Full Width Clearing									
Division	AWC	Feeder/Circuit	Scheduled Miles	Actual Miles	Total ROW Miles	ROW Width (Feet)	Primary Town	VOLTAGE (KV)	Percent Distribution
Central	Bedford	323	1.10	1.00	5.28	100'	Merrimack	34.5KV	100%
Central/Western	Bedford/ Keene	317	3.30	2.40	23.46	100'	Warner	34.5KV	100%
Northern	Tilton	319	2.80	2.20	11.37	100'	Pittsfield	34.5KV	100%
Total FWC			7.20	5.60	40.11				

Table 12. 2023 Vegetation Management Program Plan - Enhanced Tree Trimming (ETT)							
Division	**AWC**	**Circuit**	**Planned Miles**	**Actual Miles**	**Town**	**Total Circuit Miles**	**Circuit Rank**
Central	Bedford	3138X_12	1.18	-	Bedford	11.34	384
Central	Bedford	323X10_12	0.02	-	Bedford	0.02	NA
Central	Bedford	3271X5_12	1.47	-	Goffstown	11.91	372
Central	Bedford	3271_12	0.19	-	Goffstown Weare	10.29	350
Central	Bedford	311X1_12	-	2.75	Henniker	35.8	74
Central	Bedford	335X56_12	0.66	-	Hooksett	2.98	NA
Central	Bedford	3164X1_12	0.16	-	Merrimack	0.16	NA
Central	Bedford	3164X4_12	0.04	0.04	Merrimack	0.04	NA
Central	Bedford	3164X6_12	0.03	-	Merrimack	0.03	NA
Central	Bedford	323X6_12	0.24	-	Merrimack	0.24	NA
Central	Bedford	323X9_12	0.04	-	Merrimack	0.04	NA
Central	Bedford	5W1_12	0.17	-	Merrimack	0.37	NA
Central	Bedford	360X9_12	0.21	-	New Boston	5.4	327
Central	Hooksett	3673_11	1.39	-	Manchester	9.4	428
Central	Hooksett	14W1_11	0.65	0.65	Manchester	7.38	136
Central	Hooksett	23W1_11	0.77	-	Manchester	1.59	NA
Central	Hooksett	23W3_11	0.44	-	Manchester	7.24	441
Central	Hooksett	23W4_11	0.30	0.30	Manchester	5.14	NA
Central	Hooksett	24H1_11	0.60	-	Manchester	1.89	NA
Central	Hooksett	24H2_11	0.66	0.66	Manchester	1.42	NA
Central	Hooksett	3119_11	0.14	0.14	Manchester	0.14	NA
Central	Hooksett	393X1_11	0.78	0.78	Manchester	1.86	435
Central	Subtotal			5.32			
Eastern	Portsmouth	3102X6_63	1.41	-	Portsmouth	2.59	NA
Eastern	Rochester	3148X4_61	0.77	0.77	Dover	4.27	159
Eastern	Rochester	3157X4_61	0.40	0.40	Milton	0.4	NA
Eastern	Rochester	28H1_61	0.66	-	Rochester	1.98	NA
Eastern	Rochester	32X5_61	0.04	-	Rochester	0.04	NA
Eastern	Rochester	34W4_61	1.16	-	Rochester	15.82	158
Eastern	Rochester	392X3_61	0.39	-	Rochester	0.82	NA
Eastern	Rochester	392X9_61	1.07	1.07	Rochester	1.21	NA
Eastern	Rochester	53W1_61	1.74	-	Rochester	4.78	NA
Eastern	Rochester	371X1 _61	2.48	2.48	Rochester Somersworth	31.75	71
Eastern	Subtotal			4.72			
Northern	Berlin	21H1	0.91	0.91	Berlin	6.94	NA
Northern	Berlin	21H2	0.66	0.66	Berlin	6.4	NA
Northern	Berlin	21H4	0.80	0.80	Berlin	6.32	NA
Northern	Berlin	21H5	0.70	0.70	Berlin	10.91	NA
Northern	Berlin	351X9	0.73	0.73	Gorham	2.71	NA
Northern	Chocorua	3218_45	3.13	-	Silver Lake	48.67	237
Northern	Tilton	337X4_22	0.13	-	Franklin	0.13	NA
Northern	Tilton	310x6	0.12	0.12	Guilford	0.12	NA
Northern	Tilton	398X1_41	0.08	-	Laconia	0.08	NA
Northern	Tilton	310X2_41	0.02	-	Laconia	0.71	NA
Northern	Tilton	3798X1_41	0.45	-	Tilton	0.62	NA
Northern	Subtotal			3.92			
Southern	Derry	3818_23	1.65	1.65	Danville	69.4	50
Southern	Derry	3128X_23	1.14	1.14	Londonderry	68.62	109
Southern	Nashua	3143X_22	1.25	1.25	Amherst	4.7	315
Southern	Nashua	389X3_21	2.75	2.75	Hudson	4.87	NA
Southern	Nashua	3144_21	1.08	1.08	Hudson Nashua	8.38	242
Southern	Nashua	9H1_21	0.38	0.38	Nashua	0.4	NA
Southern	Nashua	3223_21	0.82	0.82	Nashua	2.63	NA
Southern	Subtotal			9.07			
Western	Keene	3178X3_31	4.13	-	Hinsdale	20.75	316
Western	Keene	3178	0.64	0.64	Hinsdale	12.28	62
Western	Keene	W2	0.44	0.44	Keene	44.93	307
Western	Keene	W9	0.75	0.75	Keene	26.23	178

Table 12. 2023 Vegetation Management Program Plan - Enhanced Tree Trimming (ETT)							
Division	**AWC**	**Circuit**	**Planned Miles**	**Actual Miles**	**Town**	**Total Circuit Miles**	**Circuit Rank**
Western	Keene	W175	0.15	0.15	Keene	10.41	155
Western	Newport	74W1	0.74	0.74	Claremont	18.45	264
Western	Subtotal			2.72			
	Total		**43.91**	**25.75**			

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Central	Bedford	23X2	0	4	Amherst
Central	Bedford	322X10	0	44	Bedford
Central	Bedford	3W2	0	81	Bedford
Central	Bedford	3138X	0	11	Bedford
Central	Bedford	3W1	0	12	Bedford
Central	Bedford	3197X2	0	4	Bedford
Central	Bedford	3197X	0	4	Bedford
Central	Bedford	3151X9	0	2	Bedford
Central	Bedford	322X12	0	6	Bedford
Central	Bedford	3151	0	24	Bedford
Central	Bedford	3138	0	4	Bedford
Central	Bedford	324	0	3	Bedford
Central	Bedford	3173X1	0	532	Deering
Central	Bedford	328X9	0	9	Deering
Central	Bedford	3271X1	0	454	Dunbarton
Central	Bedford	27W2	0	59	Goffstown
Central	Bedford	360X2	0	14	Goffstown
Central	Bedford	3271X1	0	14	Goffstown
Central	Bedford	3151X2	0	5	Goffstown
Central	Bedford	335X2	0	6	Goffstown
Central	Bedford	328X1	0	12	Goffstown
Central	Bedford	328X9	0	3	Goffstown
Central	Bedford	27W2	0	5	Goffstown
Central	Bedford	328X2	0	5	Goofstown
Central	Bedford	311X1	0	143	Henniker
Central	Bedford	311X5	0	217	Henniker
Central	Bedford	311X2	0	126	Henniker
Central	Bedford	311X3	0	13	Henniker
Central	Bedford	3173X1	0	59	Hillsboro
Central	Bedford	37W1	0	210	Hopkinton
Central	Bedford	37W2	0	51	Hopkinton
Central	Bedford	317X2	0	25	Hopkinton
Central	Bedford	5W2	0	6	Litchfield
Central	Bedford	334X2	0	1	Manchester
Central	Bedford	387	0	2	Manchester
Central	Bedford	3142	0	7	Manchester
Central	Bedford	23X5	0	29	Merrimack
Central	Bedford	3197X	0	11	Merrimack
Central	Bedford	323X5	0	14	Merrimack
Central	Bedford	323	0	28	Merrimack
Central	Bedford	23X6	0	10	Milford
Central	Bedford	23X6	0	44	Mont Vernon
Central	Bedford	85W1	0	93	New Boston
Central	Bedford	360X7	0	36	New Boston

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Central	Bedford	3108X1	0	17	New Boston
Central	Bedford	334	0	153	Pembroke
Central	Bedford	317X1	0	1	Warner
Central	Bedford	33H1	0	70	Warner
Central	Bedford	317X3	0	30	Warner
Central	Bedford	311X5	0	37	Warner
Central	Bedford	3108X1	0	16	Weare
Central	Bedford	3271X2	0	79	Weare
Central	Bedford	3108-	0	11	Weare
Central	Bedford	311X1	0	243	Weare
Central	Bedford	3173X1	0	1	Weare
Central	Hooksett	44W2	0	17	Allenstown
Central	Hooksett	34W18	0	20	Allenstown
Central	Hooksett	44W2	0	11	Auburn
Central	Hooksett	14W7	0	20	Auburn
Central	Hooksett	44W7	0	23	Auburn
Central	Hooksett	16W3	0	8	Auburn
Central	Hooksett	14W7	0	16	Auburn/Hooksett
Central	Hooksett	3615X1	0	667	Candia
Central	Hooksett	34W18	0	1	EPSOM
Central	Hooksett	3615X3	0	21	Hooksett
Central	Hooksett	3613	0	3	Hooksett
Central	Hooksett	324X8	0	12	Londonderry
Central	Hooksett	16W1	0	1	Manchester
Central	Hooksett	372	0	1	Manchester
Central	Hooksett	393	0	22	Manchester
Central	Hooksett	370	0	9	Manchester
Central	Hooksett	34W18	0	20	Pembroke
Central	Hooksett	44W2	0	5	Pembroke
Central	Hooksett	334X17	0	22	Pembroke
Central	Subtotal			3,999	Subtotal
Eastern	Epping	3137x1	0	30	Barrington
Eastern	Epping	3103x1	0	29	Brentwood
Eastern	Epping	377x7	0	26	Brentwood
Eastern	Epping	3103	0	66	Brentwood
Eastern	Epping	3115x	0	14	Chester
Eastern	Epping	3115x12	0	197	Deerfield
Eastern	Epping	3137X1	0	167	Deering
Eastern	Epping	3115x	0	1	Derry
Eastern	Epping	3152x	0	62	Durham
Eastern	Epping	3162x	0	5	Durham
Eastern	Epping	380	0	5	Durham
Eastern	Epping	377x11	0	2	Epping
Eastern	Epping	377x10	0	12	Epping

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Eastern	Epping	377x7	0	4	Epping
Eastern	Epping	3103x1	0	192	Fremont
Eastern	Epping	3103	0	82	Fremont
Eastern	Epping	377x11	0	13	Fremont
Eastern	Epping	377x29	0	7	Fremont
Eastern	Epping	3103x	0	1	Fremont
Eastern	Epping	3137x1	0	11	Lee
Eastern	Epping	3137x10	0	76	Madbury
Eastern	Epping	377x2	0	6	Newmarket
Eastern	Epping	3137x8	0	1	Northwood
Eastern	Epping	3137x80	0	6	Northwood
Eastern	Epping	3137	0	91	Northwood
Eastern	Epping	63w1	0	47	Nottingham
Eastern	Epping	3137x1	0	9	Nottingham
Eastern	Epping	49W1	0	208	Pittsfield
Eastern	Epping	3115	0	9	Raymond
Eastern	Epping	3115x12	0	12	Raymond
Eastern	Epping	63w1	0	20	Strafford
Eastern	Epping	3137x5	0	1	Stratford
Eastern	Portsmouth	38w1	0	8	Dover
Eastern	Portsmouth	399x15	0	1	Dover
Eastern	Portsmouth	54h1	0	1	Dover
Eastern	Portsmouth	3172x2	0	1	Greenland
Eastern	Portsmouth	3172x1	0	2	Hampton
Eastern	Portsmouth	2w5	0	2	New Castle
Eastern	Portsmouth	3191x3	0	26	Newington
Eastern	Portsmouth	3153x	0	16	Newington
Eastern	Portsmouth	367x2	0	5	Newington
Eastern	Portsmouth	3850x1	0	11	Newington
Eastern	Portsmouth	3850	0	23	Newington
Eastern	Portsmouth	3153	0	5	Newington
Eastern	Portsmouth	3172x1	0	5	North Hampton
Eastern	Portsmouth	3172x2	0	1	North Hampton
Eastern	Portsmouth	3850x7	0	3	Portsmouth
Eastern	Portsmouth	3102x6	0	8	Portsmouth
Eastern	Portsmouth	3105x1	0	2	Portsmouth
Eastern	Portsmouth	3191x9	0	5	Portsmouth
Eastern	Portsmouth	3191x3	0	7	Portsmouth
Eastern	Portsmouth	2w5	0	1	Portsmouth
Eastern	Portsmouth	71w1	0	1	Portsmouth
Eastern	Portsmouth	367x2	0	1	Portsmouth
Eastern	Portsmouth	48h2	0	1	Rye
Eastern	Portsmouth	48h1	0	1	Rye
Eastern	Rochester	392x7	0	8	Barrington

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Eastern	Rochester	38w2	0	3	Barrington
Eastern	Rochester	392x1	0	53	Barrington
Eastern	Rochester	73w1	0	89	Brookfield
Eastern	Rochester	36x2	0	6	Brookfield
Eastern	Rochester	56h1_61	0	1	Dover
Eastern	Rochester	54h2	0	1	Dover
Eastern	Rochester	3148x4	0	15	Dover
Eastern	Rochester	399	0	1	Dover
Eastern	Rochester	3425	0	5	Dover
Eastern	Rochester	380x2	0	19	Durham
Eastern	Rochester	392x1	0	55	Farmington
Eastern	Rochester	362x2	0	86	Farmington
Eastern	Rochester	3174x4	0	32	Farmington
Eastern	Rochester	362x2	0	50	Middleton
Eastern	Rochester	57w1	0	36	Milton
Eastern	Rochester	362x2	0	28	Milton
Eastern	Rochester	3157x1	0	3	Milton
Eastern	Rochester	39w2	0	95	Milton
Eastern	Rochester	3157x4	0	25	Milton
Eastern	Rochester	3157	0	76	Milton
Eastern	Rochester	362x2	0	18	New Durham
Eastern	Rochester	3174x4	0	12	New Durham
Eastern	Rochester	371x1	0	26	Rochester
Eastern	Rochester	392x1	0	35	Rochester
Eastern	Rochester	34w4	0	22	Rochester
Eastern	Rochester	392x5	0	1	Rochester
Eastern	Rochester	392x2	0	6	Rochester
Eastern	Rochester	3148X3	0	6	Rollinsford
Eastern	Rochester	51H1_61	0	1	Rollinsford
Eastern	Rochester	371/345	0	15	Somersworth
Eastern	Rochester	392x1	0	139	Strafford
Eastern	Rochester	3157x	0	6	Wakefield
Eastern	Rochester	73w1	0	55	Wakefield
Eastern	Rochester	57w1	0	7	Wakefield
Eastern	Rochester	3157x1	0	3	Wakefield
Eastern	Rochester	73w2	0	3	Wakefield
Eastern	Subtotal			2,591	
Northern	Berlin	3525X5	0	27	Errol
Northern	Berlin	352	0	12	Gorham
Northern	Berlin	25W1	0	9	Milan
Northern	Berlin	3525X2	0	12	Milan
Northern	Berlin	25W1	0	12	Stark
Northern	Chocorua	336X1	0	17	Albany
Northern	Chocorua	347X1	0	29	Albany

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Northern	Chocorua	347-	0	17	Albany
Northern	Chocorua	336X1	0	15	Chatham
Northern	Chocorua	347X1	0	59	Conway
Northern	Chocorua	19W2	0	89	Effingham
Northern	Chocorua	19W1	0	6	Effingham
Northern	Chocorua	3116X1	0	87	Sandwich
Northern	Chocorua	347	0	12	Silverlake
Northern	Lancaster	355X10	0	28	Clarksville
Northern	Lancaster	59W2	0	19	Lancaster
Northern	Lancaster	348X19	0	10	Lisbon
Northern	Lancaster	355X5	0	9	N.Stratford
Northern	Lancaster	355X10	0	103	Pittsburg
Northern	Lancaster	355X10	0	3	Stewartstown
Northern	Tilton	319X1	0	404	Barnstead
Northern	Tilton	49w1	0	15	Barnstead
Northern	Tilton	398X3	0	57	Belmont
Northern	Tilton	398X2	0	18	Belmont
Northern	Tilton	30W2	0	7	Belmont
Northern	Tilton	2W2	0	19	Belmont
Northern	Tilton	31W1	0	330	Canterbury
Northern	Tilton	30W2	0	27	Chichester
Northern	Tilton	3025	0	10	Concord
Northern	Tilton	334g	0	25	Concord
Northern	Tilton	317	0	5	Concord
Northern	Tilton	1X4	0	48	Franklin
Northern	Tilton	337X8	0	3	Franklin
Northern	Tilton	39H2	0	1	Franklin
Northern	Tilton	37H1	0	5	Franklin
Northern	Tilton	3222X	0	270	Gilford
Northern	Tilton	310	0	6	Guilford
Northern	Tilton	20W2	0	1	Hebron
Northern	Tilton	29X1	0	11	Laconia
Northern	Tilton	345	0	21	Laconia
Northern	Tilton	30W2	0	156	Loudon
Northern	Tilton	31W2	0	77	Loudon
Northern	Tilton	319X1	0	4	Loudon
Northern	Tilton	31W1	0	763	Loudon
Northern	Tilton	345	0	10	Meredith
Northern	Tilton	338	0	1	Meredith
Northern	Tilton	346	0	15	Moultonboro
Northern	Tilton	345	0	66	New Hampton
Northern	Tilton	3798X2	0	7	Northfield
Northern	Tilton	3798X4	0	18	Northfield
Northern	Tilton	39H2	0	2	Northfield

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Northern	Tilton	319X1	0	204	Pittsfield
Northern	Tilton	319	0	105	Pittsfield
Northern	Tilton	3196	0	15	Plymouth
Northern	Tilton	3798X4	0	10	Sanbornton
Northern	Tilton	319X1	0	60	Strafford
Northern	Tilton	390	0	37	Tuftonboro
Northern	Subtotal			3,408	
Southern	Derry	3818	0	5	Atkinson
Southern	Derry	3141	0	11	Danville
Southern	Derry	3141x	0	153	Derry
Southern	Derry	32w1	0	28	Derry
Southern	Derry	32w	0	12	Derry
Southern	Derry	26w1	0	2	Derry
Southern	Derry	32w3	0	9	Derry
Southern	Derry	3128x	0	1	Derry
Southern	Derry	32w5	0	98	Derry
Southern	Derry	32w4	0	38	Derry
Southern	Derry	3818	0	247	Hampstead
Southern	Derry	3141x	0	1	Hampstead
Southern	Derry	3750	0	29	Litchfield
Southern	Derry	3184X	0	3	Londonderry
Southern	Derry	3128x	0	128	Londonderry
Southern	Derry	365x	0	31	Londonderry
Southern	Derry	3141x	0	1	Sandown
Southern	Derry	3818	0	61	Sandown
Southern	Derry	3141	0	9	Sandown
Southern	Derry	3128x	0	17	Windham
Southern	Derry	32w5	0	11	Windham
Southern	Derry	3133x	0	3	Windham
Southern	Nashua	3159x	0	12	Amherst
Southern	Nashua	3155x2	0	92	Brookline
Southern	Nashua	314x23	0	17	Derry
Southern	Nashua	3217x	0	19	Hollis
Southern	Nashua	329	0	28	Hollis
Southern	Nashua	314x4	0	117	Lyndeborough
Southern	Nashua	314x22	0	14	Lyndeborough
Southern	Nashua	3155x2	0	154	Mason
Southern	Nashua	314x15	0	2	Mason
Southern	Nashua	3155x7	0	1	Mason
Southern	Nashua	3159x	0	40	Merrimack
Southern	Nashua	3155x2	0	34	Milford
Southern	Nashua	314x12	0	2	Milford
Southern	Nashua	23w7	0	1	Milford
Southern	Nashua	3177	0	9	Nashua

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Southern	Nashua	3891	0	12	Nashua
Southern	Nashua	3020	0	95	Nashua
Southern	Nashua	3217x	0	56	Nashua
Southern	Nashua	3h1	0	1	Nashua
Southern	Nashua	3445x21	0	8	Nashua
Southern	Nashua	3020x	0	2	Nashua
Southern	Nashua	314x23	0	9	Temple
Southern	Nashua	314x46	0	15	Wilton
Southern	Nashua	314x	0	30	Wilton
Southern	Nashua	314x23	0	31	Wilton
Southern	Nashua	314x4	0	2	Wilton
Southern	Pembroke	3615X1	0	1	Pembroke
Southern	Subtotal			1,702	
Western	Keene	3140-	0	18	Antrim
Western	Keene	313	0	15	Antrim
Western	Keene	313X7	0	9	Bennington
Western	Keene	24X1	0	113	Bennington
Western	Keene	3140X2	0	16	Bradford
Western	Keene	W110	0	10	Chesterfield
Western	Keene	3139X	0	65	Chesterfield
Western	Keene	53H2	0	10	Dublin
Western	Keene	313x4	0	14	Dublin
Western	Keene	3120-	0	3	Fitzwilliam
Western	Keene	24X1	0	224	Francestown
Western	Keene	24X1	0	17	Greenfield
Western	Keene	313X1	0	33	Greenfield
Western	Keene	33W1	0	179	Hancock
Western	Keene	313	0	5	Hancock
Western	Keene	W15	0	3	Harrisville
Western	Keene	53H1	0	20	Harrisville
Western	Keene	3140X2	0	41	Hillsboro
Western	Keene	313	0	12	Hillsborough
Western	Keene	3178-	0	7	Hinsdale
Western	Keene	382X3	0	33	Jaffrey
Western	Keene	3235	0	1	Jaffrey
Western	Keene	W175	0	10	Keene
Western	Keene	4W1	0	7	Keene
Western	Keene	W110	0	16	Keene
Western	Keene	4W2	0	7	Keene
Western	Keene	W2	0	9	Keene
Western	Keene	76W5	0	9	Keene
Western	Keene	76w7	0	129	Keene
Western	Keene	76W4	0	182	Keene
Western	Keene	W185	0	10	Keene

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Western	Keene	76w1	0	21	Keene
Western	Keene	76W7	0	1	Marlow
Western	Keene	3155X4	0	6	New Ipswich
Western	Keene	313X1	0	45	Peterboro
Western	Keene	4W1	0	4	Richmond
Western	Keene	3120	0	14	Rindge
Western	Keene	3120-	0	8	Rindge
Western	Keene	382X2	0	6	Rindge
Western	Keene	76W7	0	11	Sullivan
Western	Keene	316	0	35	Sunapee
Western	Keene	4W1	0	22	Swanzey
Western	Keene	W185	0	22	Swanzey
Western	Keene	4W1	0	131	Swanzey
Western	Keene	317	0	427	Warner
Western	Keene	3140X2	0	32	Washington
Western	Newport	316-	0	1	Bradford
Western	Newport	316	0	548	Bradford
Western	Newport	3410	0	24	Bradford
Western	Newport	75W2	0	39	Claremont
Western	Newport	55W2	0	123	Claremont
Western	Newport	74W1	0	21	Claremont
Western	Newport	54W1	0	2	Claremont
Western	Newport	60W1	0	28	Claremont
Western	Newport	47W1	0	81	Cornish
Western	Newport	75W2	0	128	Cornish
Western	Newport	44H1	0	1	Croydon
Western	Newport	42X4	0	1	Goshen
Western	Newport	316X1	0	403	Grantham
Western	Newport	17W1	0	6	Lyme
Western	Newport	316	0	4	New London
Western	Newport	316X2	0	443	New London
Western	Newport	48W1	0	217	New London
Western	Newport	3410	0	62	Newbury
Western	Newport	316X2	0	162	Newbury
Western	Newport	315x2	0	140	Newport
Western	Newport	3410	0	10	Newport
Western	Newport	42x3	0	111	Newport
Western	Newport	42x1	0	18	Newport
Western	Newport	44H1	0	9	Newport
Western	Newport	315	0	45	Newport
Western	Newport	316X1	0	256	Springfield
Western	Newport	3410-	0	82	Sunapee
Western	Newport	316	0	22	Sunapee
Western	Newport	316X1	0	29	Sunapee

Table 13. 2023 Vegetation Management Program Actual vs. Plan - Hazard Tree Removal

Division	AWC	Circuit	Plan Number of Trees	Actual Number of Trees	Town
Western	Newport	3410	0	211	Sunapee
Western	Newport	316	0	136	Sunapee
Western	Newport	316	0	12	Sutton
Western	Newport	316	0	106	Sutton
Western	Newport	316X2	0	163	Sutton
Western	Newport	3410	0	21	Sutton
Western	Newport	60W1	0	3	Unity
Western	Newport	316	0	1	Warner
Western	Newport	3410	0	15	Warner
Western	Subtotal			5,696	
	Total			**17,396**	

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Senior Counsel

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November 15, 2023

Via Electronic Mail Only
Daniel C. Goldner, Chairman
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301-2429

RE: Docket No. DE 19-057, Public Service Company of New Hampshire
d/b/a Eversource Energy 2024 Vegetation Management Annual Filing

Dear Chairman Goldner:

Pursuant to Section 6.2 of the Settlement Agreement approved in the above-referenced proceeding, Public Service Company of New Hampshire d/b/a Eversource Energy (the "Company") is required to file a proposed vegetation management plan in November of each year setting out the proposed vegetation management work for the subsequent calendar year. Accordingly, enclosed please find information regarding the Company's 2024 vegetation management program plan.

Consistent with current Commission policy this filing is being made electronically only, and paper copies will not follow. If you should have any questions, please contact me.

Sincerely,

/s/ David Wiesner

David K. Wiesner
Senior Counsel

Attachment
cc: DE 19-057 Service List

Public Service Company of New Hampshire d/b/a Eversource Energy
2024 Vegetation Management Plan for review by the Department of Energy

November 15, 2023

Consistent with the terms of the Settlement Agreement in Docket No. DE 19-057, Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource" or the "Company") Is providing the vegetation management plan for calendar year 2024 for review by and discussion with the Department of Energy (DOE) staff.[1]

As required by Section 6.2 of the Settlement Agreement, in November of each year Eversource is to file a proposed vegetation management plan setting out the proposed vegetation management work for the coming calendar year. That plan filing shall include the following:

A. A summary of budgeted costs by program (i.e. ETT/Hazard Tree Removal, SMT and Full-Width ROW Clearing).

B. Detailed information on each program as follows:
   i. ETT/Hazard Tree Removal: Town; Circuit Number; Total Circuit Miles; Scheduled Circuit Miles; and Circuit Ranking by SAIDI and SAIFI (Tree Related only).
   ii. SMT (Scheduled Maintenance Trimming, Mid-Cycle Trimming, Side Trimming and Customer Request , Hot Spot , and Maintenance ETT):Town; Circuit Number; Total Circuit Miles; and Scheduled Circuit Miles.
   iii. SMT (ROW Maintenance Mowing and Side Trimming): ROW Number; ROW Name; Voltage; and Total Acreage; and the percentage of the clearing attributable to distribution if transmission ROW.
   iv. ROW Clearing: ROW Number; ROW Name; Voltage; and Total Miles; ROW Width; and the percentage of the clearing attributable to distribution if transmission ROW.

Included in the narrative below is a presentation of the proposed plan and estimated budgets using information known at this time. The detailed information on each program is provided at the end of the narrative and reflects the scheduled miles for the Company to maintain a 5-year maintenance cycle, in line with the 5-year cycle pruning requirements of the Commission's rule Puc 307.10. This plan is based on the negotiated 2024 pricing with Eversource's vendors.

Additionally, in the detailed plan at the end of this report the Company has included the relevant circuits and miles planned for 2024. The Company looks forward to discussing this plan with the Department of Energy.

2024 Projected Budget:

The table below provides a summary of the 2024 planned vegetation management program. The $39.9 million budget is a gross budget and does not include any reimbursements received from telephone company providers related to scheduled maintenance trim and hazard tree removal activities.

[1] In light of the transfer of the much of the Commission's personnel and responsibilities to the DOE as of July 1, 2021, Eversource is providing to this plan to the DOE Staff instead of the Commission's staff.

Eversource 2024 Planned Vegetation Management Activities	
VM Activity	**Cost**
Scheduled Maintenance Trim	$19,292,598
METT	$2,689,703
Mid Cycle	$300,000
Customer Request	$200,000
Hot Spot	$200,000
Sub Transmission (Mowing/Side Trim)	$2,000,000
Distribution SMT Total	**$24,682,301**
Full Width Clearing	$1,200,000
Hazard Tree Removal	$12,000,000
Enhanced Tree Trimming	$2,000,000
Vegetation Management Program Total	**$39,882,301**

Scheduled Maintenance Trimming ("SMT") Program

The Company's SMT cycle is based on a 12,000-mile distribution overhead system. The Company's plan for 2024 is to have tree contractors perform maintenance (SMT and METT) on 2,344 miles. The budgets were constructed around that plan. The table immediately below shows the proposed SMT trimming dollars and miles. The other programs will also each have a respective table.

Eversource SMT Miles		
Total Miles = 2,047.84	**Region**	**2024 Miles**
Budget $19,292,598	**SOUTHERN**	152.08
	CENTRAL	348.77
	WESTERN	451.03
	EASTERN	453.43
	NORTHERN	642.53
	Total Annual Miles	**2,047.84**

Maintenance Enhanced Tree Trimming ("METT") Program

METT is maintenance trimming performed on miles that were previously subject to Enhanced Tree Trimming ("ETT"). The amount of METT changes each year based on the circuit schedule. As with the SMT, this work was also part of the 4-year contract that was put out to bid in 2020 and the budget and miles reflect the current pricing.

Eversource METT Miles		
Total Miles = 295.76	**Region**	**2024 Miles**
Budget $2,689,703	**SOUTHERN**	33.77
	CENTRAL	61.84
	WESTERN	41.93
	EASTERN	60.72
	NORTHERN	97.50
	Total Annual Miles	**295.76**

Mid-Cycle

Mid-cycle refers to additional trimming that may be completed on a circuit in between the standard cycle under the SMT. This can include vine removal and hazard trees. This program is an emergent one. If the need arises to address circuit miles with this application, the Company will work within the allocated budget to redistribute these funds. In 2024, the Company plans on utilizing analytics such a s Power BI to assist with this program. Circuit patrols will be performed by company Arborists to determine vegetative growth since last trim, along with a windshield survey of tree health.

Eversource Mid-cycle Miles		
Total Miles = TBD	**Region**	**2024 Miles**
Budget $300,000	**SOUTHERN**	
	CENTRAL	
	WESTERN	
	EASTERN	
	NORTHERN	
	Total Annual Miles	**TBD**

Customer Requests

Customer Requests are generated or instigated to address an issue identified by a customer rather than as part of the scheduled or planned circuit miles. Most often, these are service trimming requests. The amount of Customer Request work changes every year. Eversource has encouraged customers through social media and the Company's website to consider hiring professionals to handle their tree concerns. However, due to the prevalence of invasive insects and diseases in New Hampshire, the Company sometimes learns about problematic trees, or groups of trees from customers. The work needed to mitigate the issues posed by these trees is often performed by Eversource's contractors. Eversource has estimated $200,000 of expense related to customer work for 2024.

Eversource Customer Request		
Total Miles = TBD	Region	2024 Miles
Budget $200,000	SOUTHERN	
	CENTRAL	
	WESTERN	
	EASTERN	
	NORTHERN	
	Total Annual Miles	TBD

Hot Spot Program

The Hot Spot program addresses tree growth in between cycles. The Company has not allocated funds for this program, and any proposed circuit miles have not yet been identified. This type of program can also be called "just in time" trimming. The Company will utilize Power BI, as well as the ESRI platform applications that are used to track tree related outages. These two programs will help us to strategize and plan hot spot trimming when needed on impacted circuits.

Eversource Hot Spot		
Total Miles = TBD	Region	2024 Miles
Budget $200,000	SOUTHERN	
	CENTRAL	
	WESTERN	
	EASTERN	
	NORTHERN	
	Total Annual Miles	TBD

ROW Maintenance

The ROW maintenance program includes mowing and side trimming. The acres listed will be mowed. During the Quality Control inspection of the mowing, any tree limbs that are within 20 feet of the line will be noted and a crew will be sent to remove the limb(s).

Eversource ROW Maintenance		
Total Acres = 1,723	**Region**	**2024 Acres**
Budget $2,000,000	**SOUTHERN**	24
	CENTRAL	15
	WESTERN	413
	EASTERN	240
	NORTHERN	1,031
	Total Annual Acres	**1,723**

Full Width Clearing of ROW

This program identifies ROWs where enhanced clearing will benefit customer reliability and increase safety for our workers. This work is competitively bid annually. The tree contractor clears brush and trees to the full easement width. At the edge of the easement, the bordering trees are trimmed from ground to sky. The Company's arborists work closely with abutting property owners to communicate the work needed.

Eversource Full Width ROW	Region	2024 Miles
Total Miles = 2.19	SOUTHERN	
Budget $1,200,000	CENTRAL	1.55
	WESTERN	0.64
	EASTERN	
	NORTHERN	
	Total Annual Miles	2.19

ETT Program

The Company has identified miles of three phase circuits for ETT in 2024. These miles will be competitively bid annually. If the pricing allows for additional miles to be done, the Company will review the circuit list and identify more miles.

Eversource ETT Miles		
Total Miles = 23.87	Region	2024 Miles
Budget $2,000,000	SOUTHERN	0
	CENTRAL	6.8
	WESTERN	7.86
	EASTERN	5.4
	NORTHERN	3.81
	Total Annual Miles	23.87

Hazard Tree Program

The Company profiles the SMT circuits for hazard trees. Hazard trees are trees that should be removed rather than trimmed due to their potential to impact the electric system. It is a best practice to remove the dead, diseased and dying trees while trimming the circuit. The customers on whose property the hazard trees grow, and who, therefore, own the hazard trees, are engaged in a conversation for both programs. The total number of trees removed will be compiled monthly.

Additionally, the trees of New Hampshire have been impacted by many biotic factors over the last several years. These issues include repeated drought years, Emerald Ash Borer (EAB), Spongy Moth, Hemlock Wooly Adelgid, Hemlock Looper, Elongate Hemlock Scale, White Pine Needle Disease (WPND), Beech Bark Disease, and Beech Leaf Disease the residual effect of the listed factors, plus other, at this time; lesser impact issues, will mean more trees that are standing dead or in declining health along the roadside forest. The company believes that adherence to a maintenance cycle, along with an aggressive hazard tree removal program are the key components to a successful and reliable Vegetation Management program. In 2022 the company collaborated with the state of New Hampshire Forests and Lands to share mapping data. Forest health personnel shared aerial photography of Spongy Moth, and EAB infestations. The maps that included the data were overlayed on our circuit maps which we then used to target the affected trees that would impact our lines. This is an innovation that Eversource vetted last year and is now included into our maintenance program. We expect to have similar 2023 data from the New Hampshire Division of Forest and Lands in December.

Eversource Hazard Tree Miles		
Total Miles = 2,343.6	**Region**	**2024 Miles**
Budget $12,000,000	**SOUTHERN**	185.85
	CENTRAL	410.61
	WESTERN	492.96
	EASTERN	514.15
	NORTHERN	740.03
	Total Annual Miles	**2,343.6**

2024 plan overview

There are several topics that we will address in this update. They are the contracted workforce, the 4 year contract (which expires on 12/31/24), the cost drivers, technology, and strategy

Eversource has experienced professionals managing its Vegetation Management programs. However, there are some longer-term concerns with the work force. There are very few programs in high school or college to attract students to Arboriculture/Forestry. This has had a direct impact on the work the Company does and the availability of trained individuals to do it, as has been seen in recent bids, has had a material impact on costs.

It is a difficult job performed in all types of weather, usually aloft. The salary for tree trimmers is

not commensurate with many other professions. The tree worker contingent in both New Hampshire and New England has shrunk, which oftentimes requires the larger contractors to bring in outside workers to complete their assigned work. There are additional costs associated with "travel crews". Another issue, which is hard to quantify monetarily is the speed in which the travel crews get acclimated to New Hampshire trees, terrain, and weather. The workplan for 2024 includes eight tree contractors which should provide a workforce large enough to complete the work.

As noted above, the Company commenced a 4-year contract for SMT in NH and the pricing was dramatically higher than expected. Eversource's procurement agents worked diligently with the tree contractors to refine their bid prices. However, the final pricing in this competitive process required the Company to adjust the budget for SMT and METT. The first two years of that contract (2021, 2022) the prices were "locked in."

The contract was designed to include negotiated prices in 2023 and 2024. The tree contractors requested increases for contracted tree work have been again much higher this year than anticipated. We have seen such exorbitant increases by incumbent contractors that in one case, we have reduced their market share of the maintenance work due to the cost. One of the benefits of a multi year contract is thought to be workforce stability. Whether it has been the pandemic, inflation, or other pressures that have caused the contractors to struggle with obtaining a loyal roster of crews, the fact remains it is more expensive to contract vegetation management than ever before.

Our Procurement team along with the Eversource Vegetation Management leadership across Connecticut, Massachusetts, and New Hampshire met with each tree contractor individually to discuss pricing. Inflation is currently a fact of life in our region, which means the cost of most goods and services have risen.

Each contractor listed the same items for cost increase justification: labor, fuel, equipment, supply chain, and the biggest driver; police traffic control. The "police detail" work is the largest risk for the contractor when bidding- every town is different. Factors include how many officers on each road, for what duration, do they require a cruiser, the hourly rate increases annually, and in some communities can approach $125/hour per officer. One of our contractors suggested that they estimate over $3000/mile for police details in some towns.

These cost increases will result in significant budget pressure. The cost of performing traditional tree maintenance on 20% of the miles in 2024 will impact the funding of other important Vegetation Management programs. Our team is brainstorming solutions to this by reviewing analytics, technology, equipment, and processes.

The New Hampshire team has utilized the ESRI platform to create mobile applications which streamline our work. ESRI tools are easy to use and modify. We are confident that our Arborists and contractor personnel will adapt to this technology quickly.

Power BI is a program that our Arborist team uses every week. The data about circuit performance is available both historically and real time. The tree reliability issues for each circuit are analyzed prior to sending crews out to trim and/or remove trees.

Both of the above programs will be part of the redefining of workloads and crew resources for our team is necessary to achieve cost containment where possible. Included in this adjustment, will be a

strategy to implement circuit patrols to identify areas of immediate need for maintenance. These patrols will focus on the backbones of the circuits first, as a tree related outage on backbone would impact more customers. Arborists will also patrol the laterals of each circuit starting with devices that have a high customer count. Maintenance will be performed on the proper miles to comply with the 5-year cycle mandate, however, due to these unprecedented cost/mile increase requests from the contractor; we will utilize our internal field personnel, our vendor Arborists, and technology in concert to maintain the system.

Eversource continued to look for solutions with different types of equipment in 2023. Three separate contractors brought mechanical trimmers (aka Jaraff, or SkyTrim) onto the system which were utilized for selected miles of SMT. These units consist of a hydraulic boom mounted on a large tractor. At the end of the boom is an articulating circular saw. This tool works well in the right application, but it will probably not replace human occupied bucket trucks. Another new tool was a Rotor Blade helicopter unit. The helicopter has 10 saws attached to the helicopter and the unit can be used to “hedge/side trim” difficult- to- access ROW lines. We also contracted with tree companies for “grapple saw boom trucks” and “knuckle boom cranes” All of these units have a future in New Hampshire as “work force multipliers” and the Company will continue to explore other tools/innovations as they become available to improve vegetation management in New Hampshire.

Eversource 2024 Planned Vegetation Management Activities Detail

Eversource 2024 Vegetation Management Activities Budget Summary	
VM Activity	**Cost**
Scheduled Maintenance Trim	$19,292,598
METT	$2,689,703
Mid Cycle	$300,000
Customer Work	$200,000
Hot Spot Work	$200,000
Sub Transmission (Mowing/Side Trim)	$2,000,000
Distribution SMT Total	**$24,682,301**
Full Width Clearing	$1,200,000
Hazard Tree Removal	$12,000,000
Enhanced Tree Trimming	$2,000,000
Vegetation Management Program Total	**$39,882,301**

EVERSOURCE

Annual Reliability Report

2023 Report to the NH Public Utilities Commission

March 1, 2024

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Eversource

2023 Reliability Report

Executive Summary

Executive Summary

This report has been prepared in accordance with the terms of the October 9, 2020 Settlement Agreement approved by the New Hampshire Public Utilities Commission ("Commission" or "PUC") in Docket No. DE 19-057 (the "Settlement Agreement") including Appendix 4 of the Settlement Agreement. It provides information on Public Service Company of New Hampshire d/b/a Eversource Energy's ("Eversource", ES, or the "Company") distribution system reliability and activities undertaken by the Company in calendar year 2023 focused on reliability.

Section 1 provides graphs of various reliability indices as specified in Appendix 4 of the Settlement Agreement. All graphs are based on ES IEEE reporting criteria.

Section 2 provides a summary of specific operations and maintenance ("O&M") activities undertaken in 2023 which are generally targeted at maintaining or improving reliability. These activities include patrols of overhead distribution lines, inspections of underground developments and pad mounted equipment, inspections of wood distribution poles for decay, and repairs of non-capital items on distribution lines related to the National Electrical Safety Code.

Section 3 provides information on capital projects targeting reliability, with information on the replacement of wooden distribution poles found to be defective through inspection, and other capital reliability projects with spending greater than $100,000 in the calendar year. This last category is further broken down into new projects initiated in 2023, and projects with spending in 2023 over the threshold but which were established in prior years. Projects established in 2023 also have project descriptions included. Projects included in Section 3 include any locations where reliability was listed as an objective of the project, even if the project had other justifications such as replacing obsolete assets or safety concerns. Spending in 2023 on defective pole replacements totaled $2,345K. Spending on new reliability projects totaled $68,318K, and on continued projects from prior years amounted to $31,443K.

The various capital and O&M programs aim at preventing outages from occurring and reducing the number of customers impacted by those outages. These include the Company's work in areas such as tree trimming, the installation of covered wire, pole top distribution automation and TripSavers, CAIDI was 113 which was four minutes lower than 2022.

Section 4 contains the Company's annual report on the 50 worst performing circuits for the previous year.

The Company's reliability has improved over time, with reductions in the overall frequency of outages (SAIFI), the duration of outages (SAIDI), and the number of customers impacted when outages do occur (CIIIC). While in an overall declining trend in the recent past, 2023 SAIDI and SAIFI show a slight increase compared to 2022 values, primarily due to the impact of minor storms (storms that do not qualify as Major Event Days). Summary charts are provided in Section 1.1 followed by breakdowns by cause type (tree, equipment failure, substation etc.).

Section 1

Distribution System Reliability

The following is a brief description of the reliability graphs contained in this section. All graphs represent data for the time frame 2019 through 2023 and reflect ES IEEE criteria.

Section 1.1 shows Eversource NH SAIFI, CAIDI, SAIDI, and CIII. All graphs are based on ES IEEE criteria. The Company SAIFI and SAIDI have shown overall stable improvement since 2019. 2023 SAIDI ended slightly higher than 2022 SAIDI, at 84 minutes, in part due to minor storm activity outlined in the next paragraph.

Blue-sky reliability metrics like SAIDI, SAIFI and CAIDI are exclusive of MEDs (Major Exclusion Days). Minor storms, which do not qualify as MEDs, are still stochastic and a critical driver of the year-to-year values of the reliability metrics. Eversource NH tracks metrics on minor storm days that do not qualify as an MED. The reliability metrics provided are calculated using ES Reportable criteria, which is ES IEEE criteria but excluding planned interruptions and select events. The impact of minor storms is included in all presented ES IEEE criteria reliability metrics. In 2023, Eversource experienced a total of 38 minor storm days, the same as in 2022, 47 in 2021, 37 in 2020, and 23 in 2019. These storms contributed 40 minutes to Eversource's SAIDI performance in 2023, compared to 39 minutes in 2022, 51 minutes in 2021, 46 minutes in 2020, and 27 minutes in 2019. Trees during minor storms contributed 12.6 minutes to YE CAIDI compared to 12.5 in 2022 and an average of 12.9 minutes between 2019-2022.

Section 1.2 depicts CAIFI and CTAIDI over the 2019 through 2023 timeframe. These new indices have only been reported on since 2020. CAIFI is designed to show trends in customers interrupted and shows the number of customers affected out of the whole customer base. It is calculated by dividing the total number of customer interruptions by the number of distinct customers interrupted. CTAIDI is the average total duration of interruption for customers who had at least one interruption during the period of analysis and is calculated by dividing the total number of customer minutes of interruptions in the period by the number of distinct customers interrupted. Therefore, both CAIFI and CTAIDI indices refer only to customers who have experienced a service interruption in the period. For 2019 through 2023, CAIFI was in the range of 1.68 to 1.90 and CTAIDI has been in the range of 3.13 to 3.61 with 2023 reflecting roughly the average for the 5-year period.

Section 1.3 depicts Eversource tree related statistics (trees, limbs and vines), which is the largest cause group for outages. Roughly half of all tree-related outages included in the reporting metrics occur during minor storm events and, therefore, tend to be longer duration outages. In 2023 NH experienced 224 more tree related parent events than in 2022 and 384 more than the average between 2019-2023, causing a slight uptick in SAIDI & SAIFI. CIII remained stable and CAIDI was reduced by 3 minutes. We notice that the slight uptick in SAIDI and SAIFI is at a large part due to higher contributions of tree-related events to outages. Weather, as exhibited by minor (and major) storms, is often appearing in outage data as tree-related events, since vegetation is highly susceptible to weather phenomena.

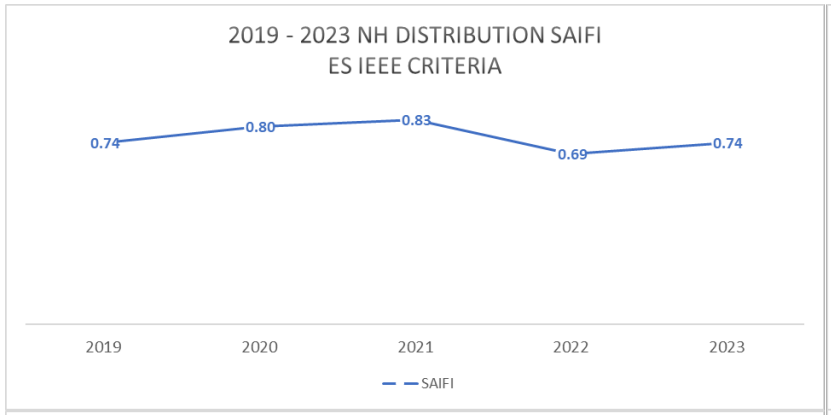
Section 1.4 shows Eversource equipment related statistics on the distribution system. These statistics exclude substation equipment, which are presented separately in Section 1.5. Equipment failures were between the second and fourth leading cause contributors for SAIDI and SAIFI over the presented time frame. SAIDI showed an uptick in 2023 but ended a minute less than the average SAIDI between 2019-2022. CAIDI ended 6 minutes less than the average CAIDI between 2019-2022.

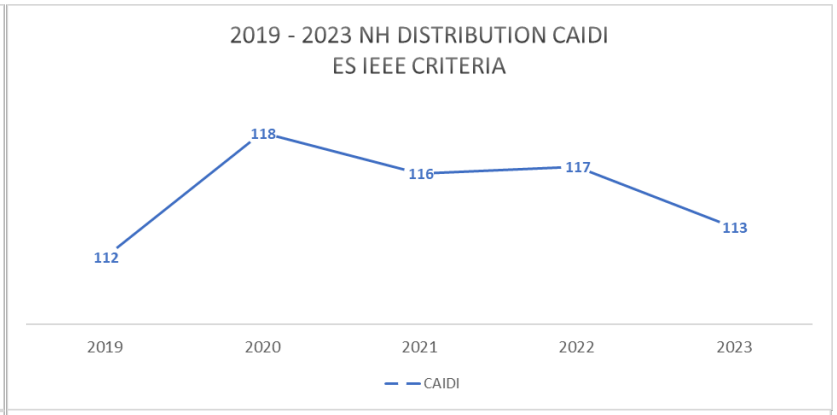
Section 1.5 shows results for distribution substation equipment failures. Power outages caused by equipment failures inside substations typically affect many customers and can be long in duration. That said, the reliability impact from substation outages has been minimal over the presented time frame. There were no distribution substation equipment failure events in 2022, so the two failure events that occurred in 2023 show an uptick in all indices. However, the SAIDI impact of these type of events have greatly reduced since the 2017-2019 timeframe, in which the average yearly SAIDI was 0.66 minutes.

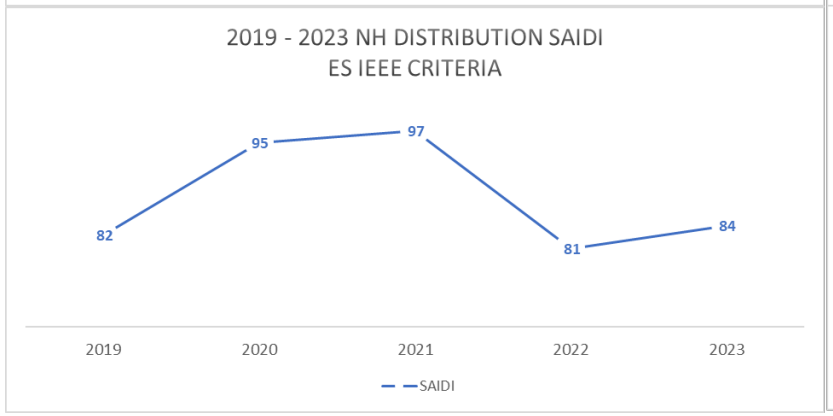
Section 1.6 shows total SAIDI and Equipment Failure SAIDI that occurred during IEEE MEDs. The reliability impact of these major storms is not included in Eversource statistics presented elsewhere.

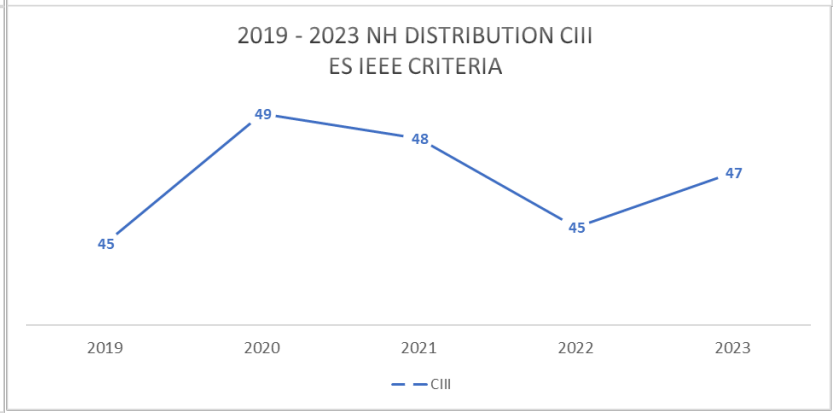
Section 1.7 shows SAIDI and SAIFI broken down by cause for each year 2019 through 2023. Tree related outages is the top driver of both metrics for the entire period, averaging 53.4 SAIDI minutes per year over the reporting period with 2023 ending at 53.5 SAIDI minutes and the second lowest over the reporting period. Second, third and fourth places include Equipment Related, Action By Others and Other related outages. Outages due to equipment related causes averaged 8.7 SAIDI minutes per year, with 2023 being the lowest at 7.4 SAIDI minutes. Action by Others, which includes causes such as motor vehicle accidents, customers and contractors digging into underground cables or falling trees on lines or vandalism, etc., averaged 8.8 SAIDI minutes per year with 2023 ending at 7.7 SAIDI minutes and second lowest SAIDI over the reporting period. The “Other” category includes Public Safety Intentional Outages, Load Shedding, Planned Interruptions and Miscellaneous and averaged 11.2 SAIDI minutes per year over the reporting period with 2023 ending at 9.5 SAIDI minutes, also the second lowest SAIDI over the reporting period.

Section 1.1 SAIFI (frequency), SAIDI (minutes), CAIDI (minutes), CIII (# of customers) – Distribution System Only

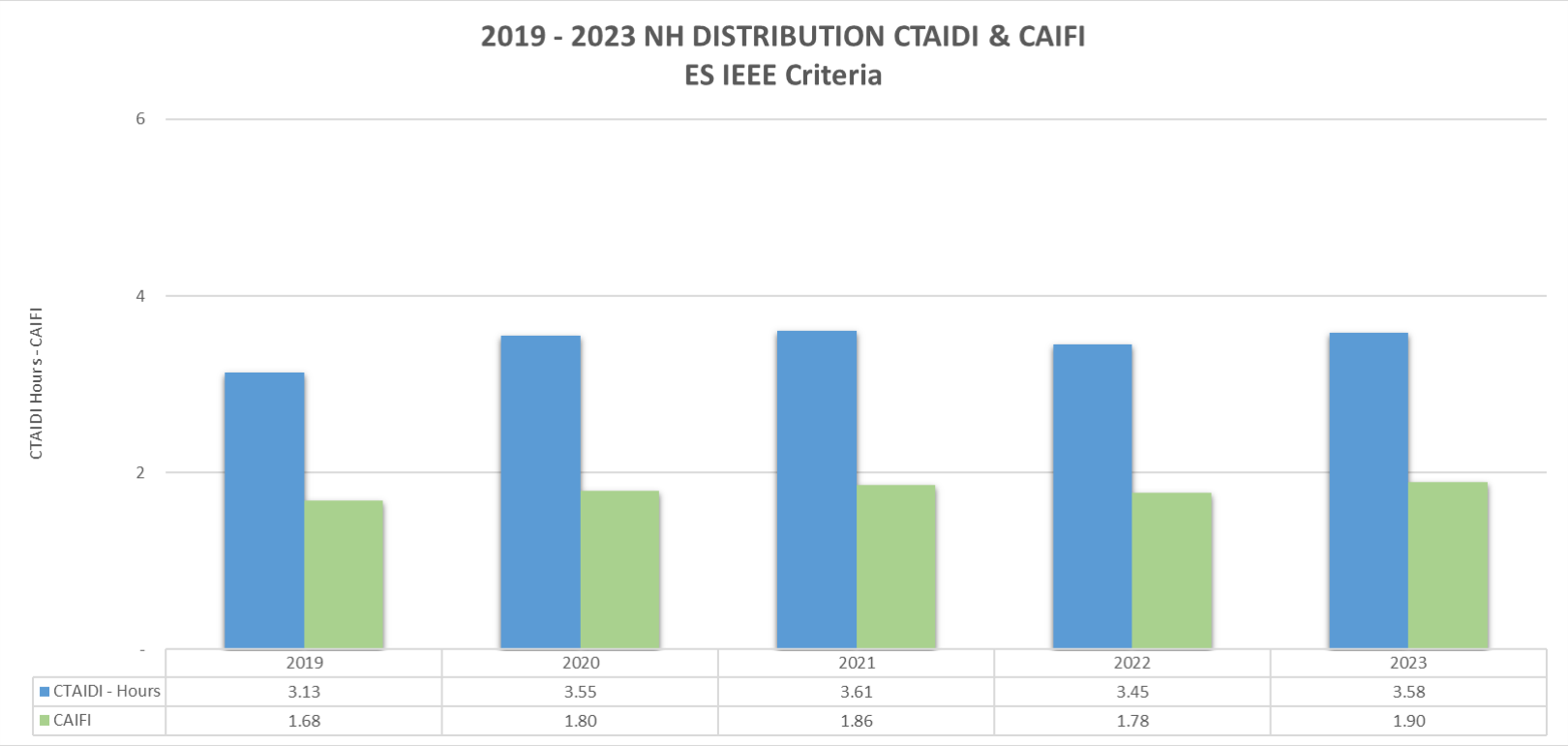






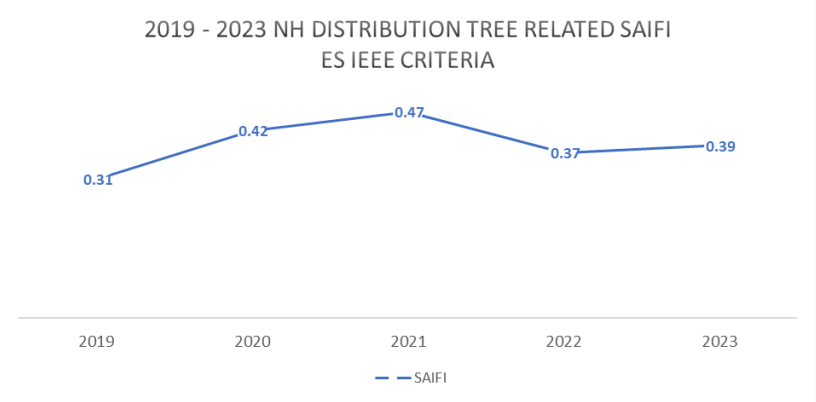


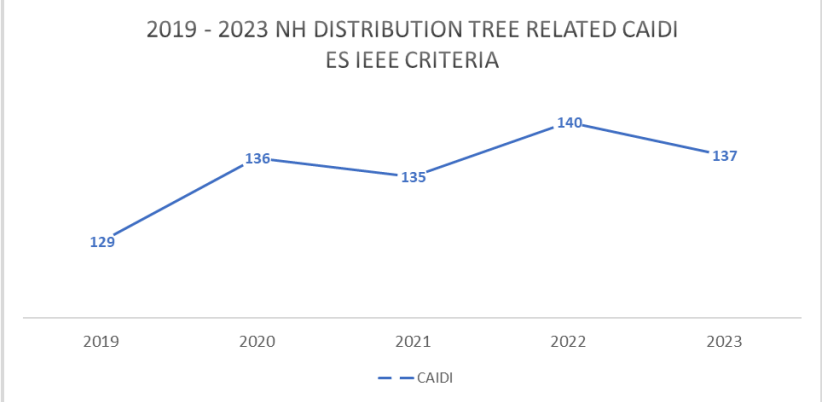
Section 1.2 CAIFI (frequency), CTAIDI (hours) – Distribution System Only

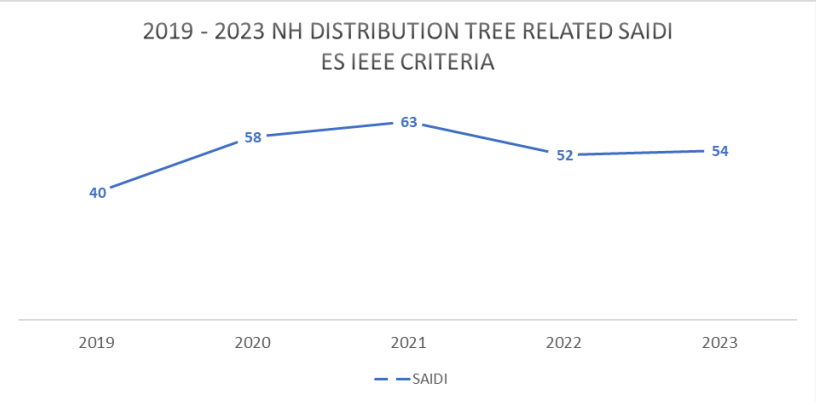


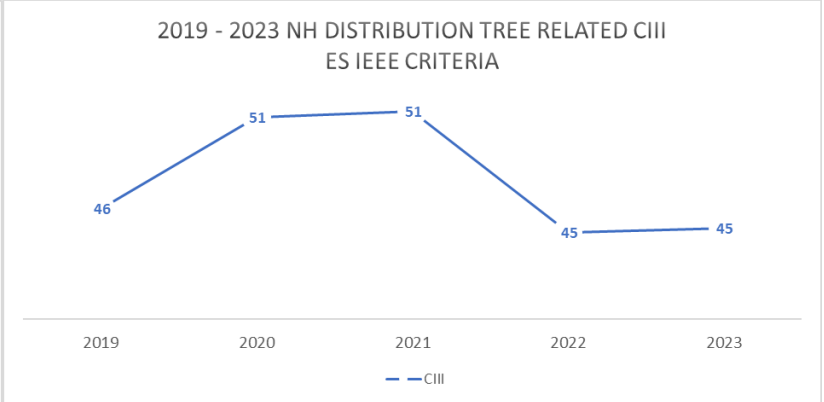
	2019	2020	2021	2022	2023
CTAIDI - Hours	3.13	3.55	3.61	3.45	3.58
CAIFI	1.68	1.80	1.86	1.78	1.90

Section 1.3 SAIFI, SAIDI, CAIDI, CIII – Distribution System – Tree Related









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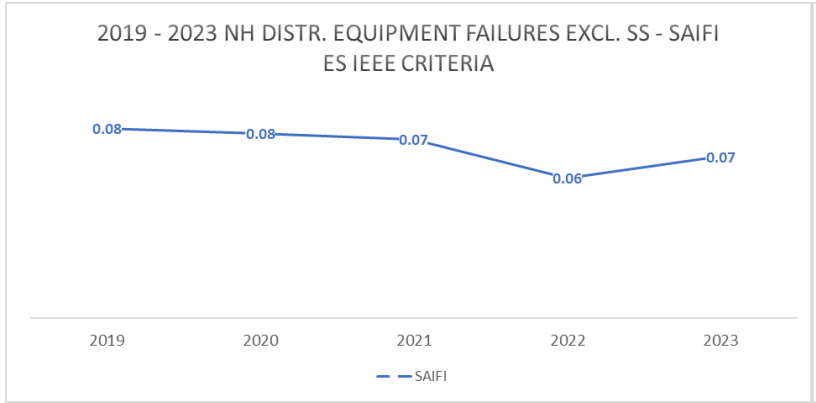
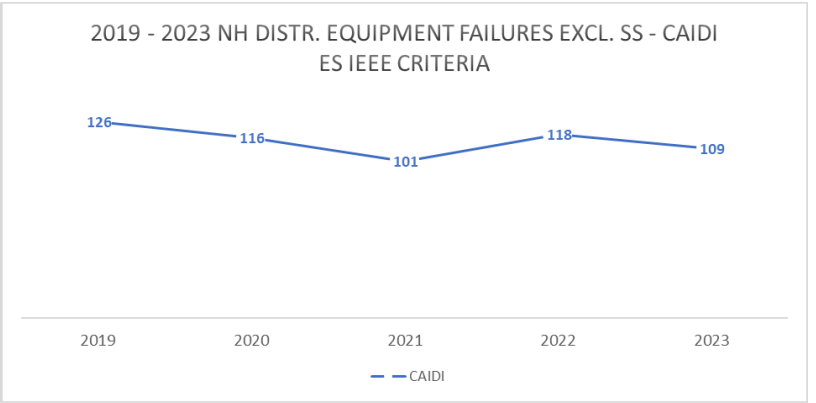
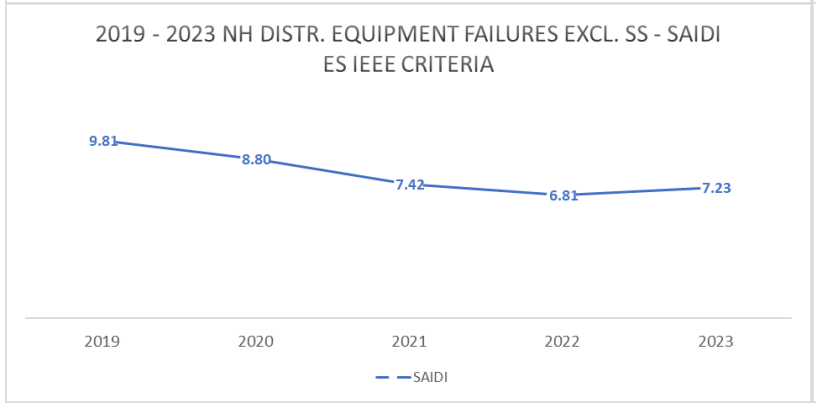
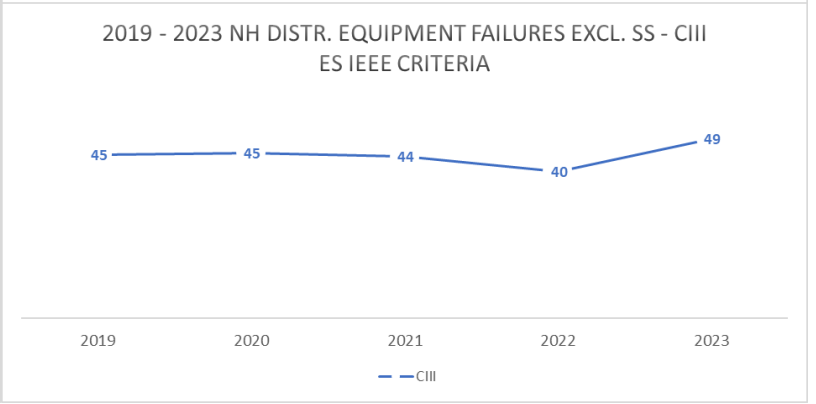
Section 1.4 SAIFI, SAIDI, CAIDI, CIII – Distribution (excluding Substation) Equipment Failures









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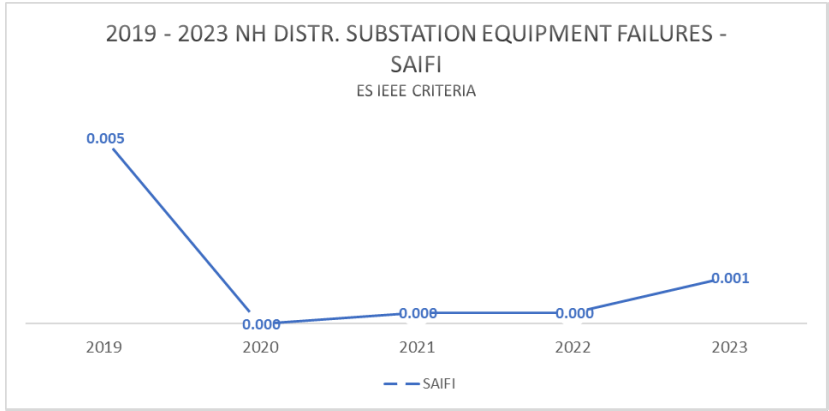
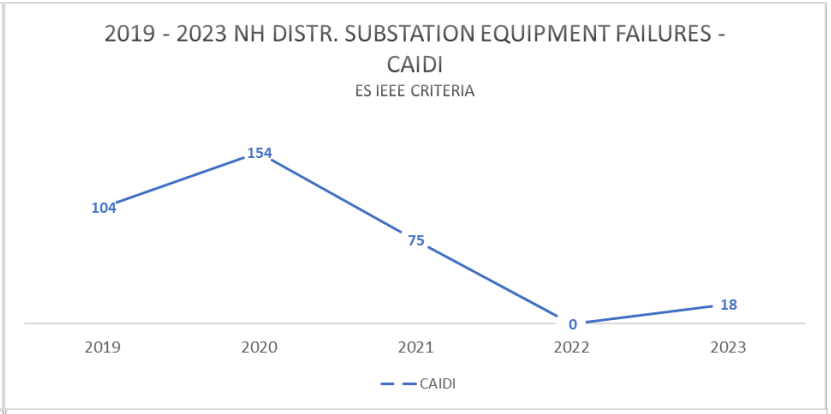
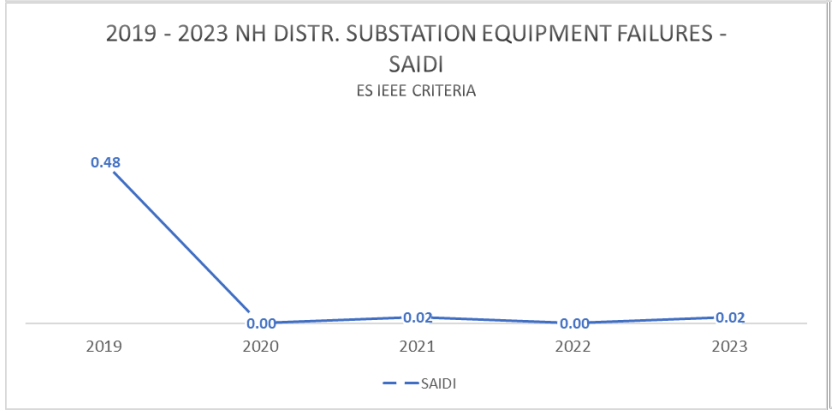
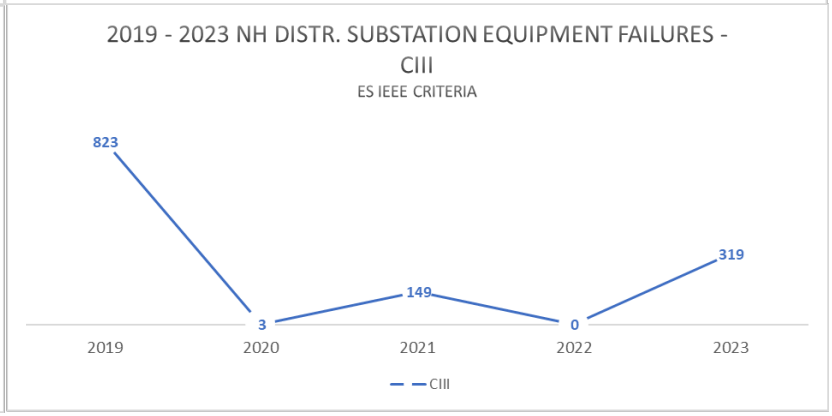
Section 1.5 SAIFI, SAIDI, CAIDI, CIII – Distribution Substation Equipment Failures

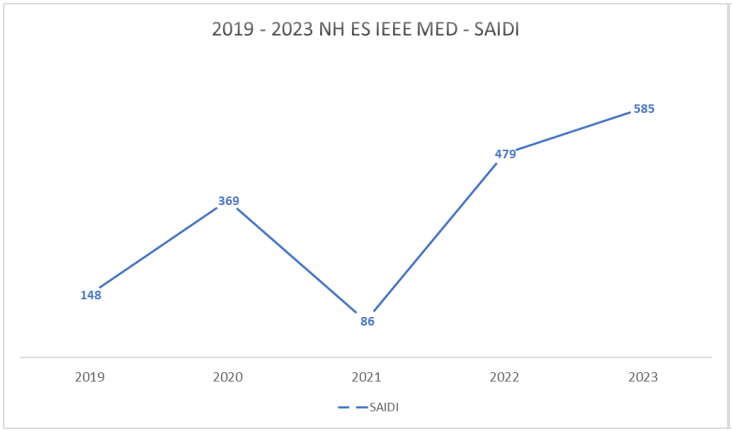


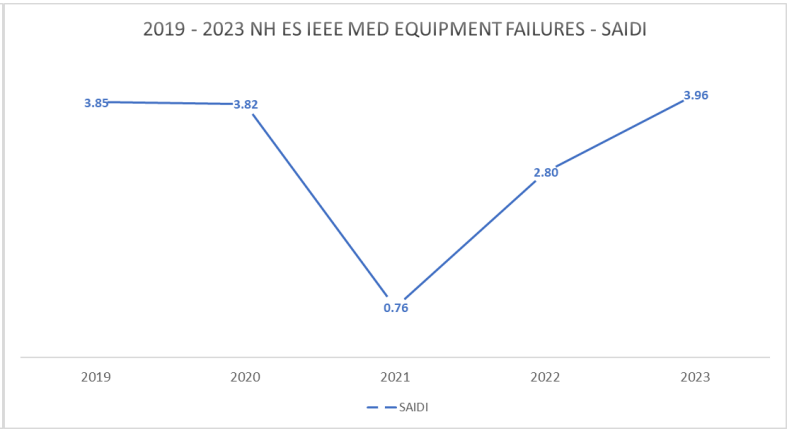


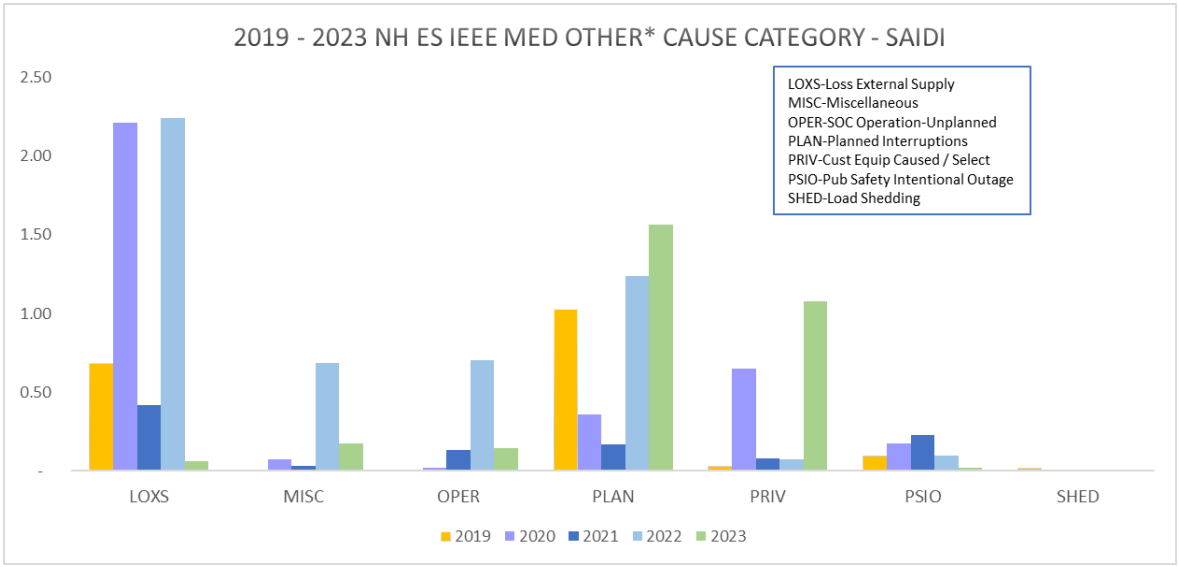




Section 1.6 SAIDI (ES IEEE MED) – Storm MED; Equipment Failure MED- Total System







Section 1.7 SAIDI and SAIFI by Cause – Total System

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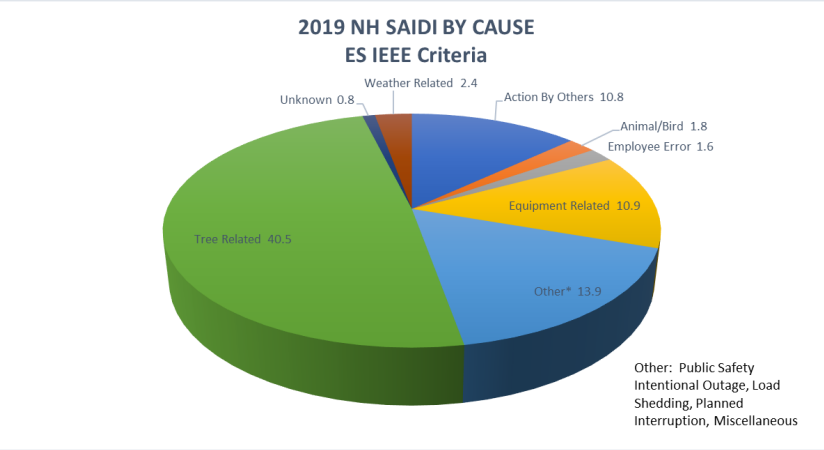
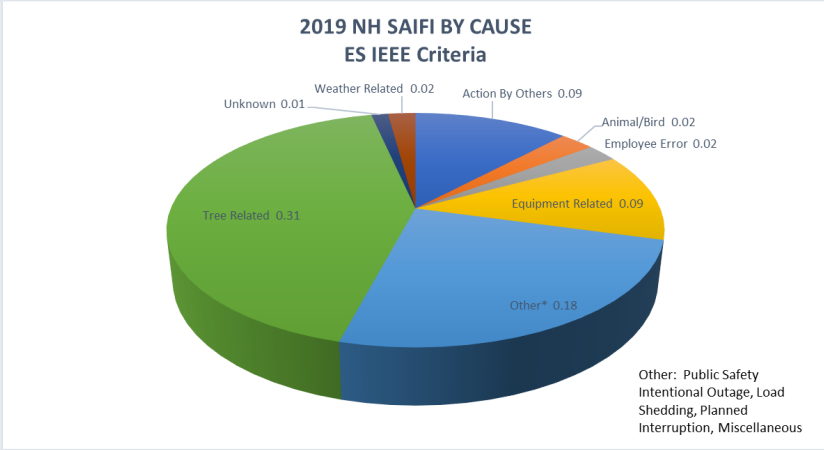


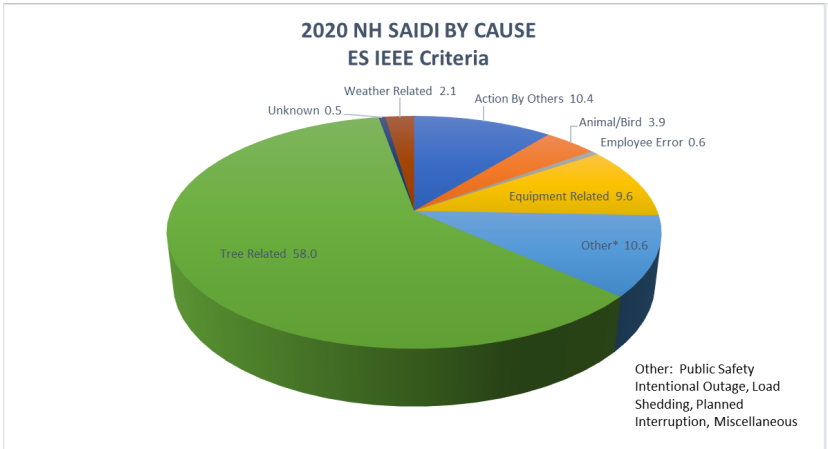


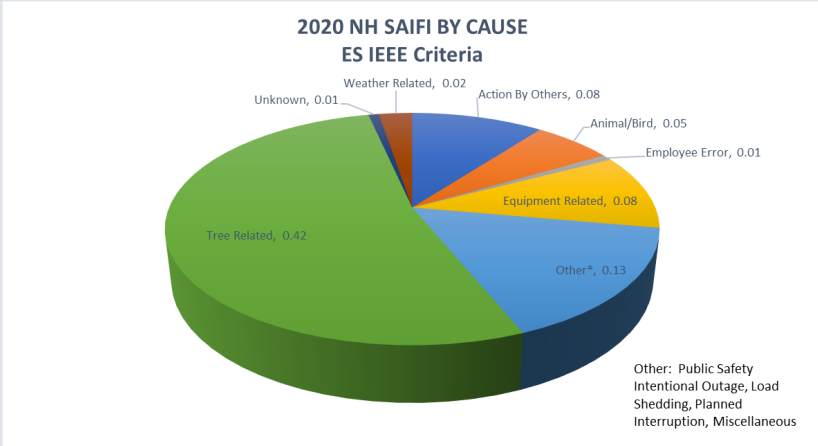
Cause	SAIDI
Tree Related	40.5
Other	13.9
Equipment Related	10.9
Action By Others	10.8
Weather Related	2.4
Animal/Bird	1.8
Employee Error	1.6
Unknown	0.8

Cause	SAIFI
Tree Related	0.31
Other	0.18
Action By Others	0.09
Equipment Related	0.09
Animal/Bird	0.02
Employee Error	0.02
Weather Related	0.02
Unknown	0.01

Section 1.7 cont'd SAIDI and SAIFI by Cause – Total System

2020:



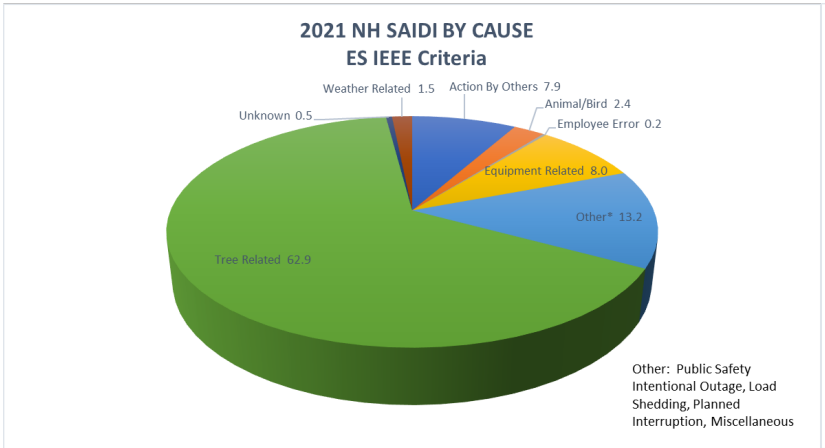


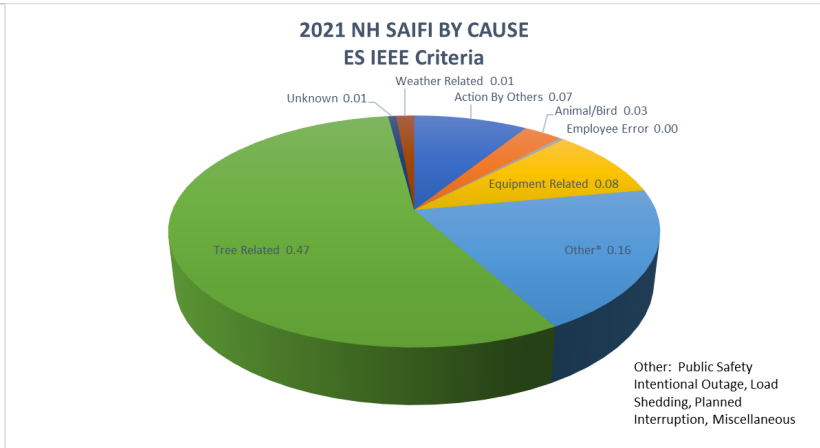
Cause	SAIDI
Tree Related	58.0
Other	10.6
Action By Others	10.4
Equipment Related	9.6
Animal/Bird	3.9
Weather Related	2.1
Employee Error	0.6
Unknown	0.5

Cause	SAIFI
Tree Related	0.42
Other	0.13
Action By Others	0.08
Equipment Related	0.08
Animal/Bird	0.05
Weather Related	0.02
Employee Error	0.01
Unknown	0.01

Section 1.7 cont'd SAIDI and SAIFI by Cause – Total System

2021:





Cause	SAIDI
Tree Related	62.9
Other	13.2
Equipment Related	8.0
Action By Others	7.9
Animal/Bird	2.4
Weather Related	1.5
Unknown	0.5
Employee Error	0.2

Cause	SAIFI
Tree Related	0.47
Other	0.16
Equipment Related	0.08
Action By Others	0.07
Animal/Bird	0.03
Weather Related	0.01
Unknown	0.01
Employee Error	0.00

Section 1.7 cont'd SAIDI and SAIFI by Cause – Total System

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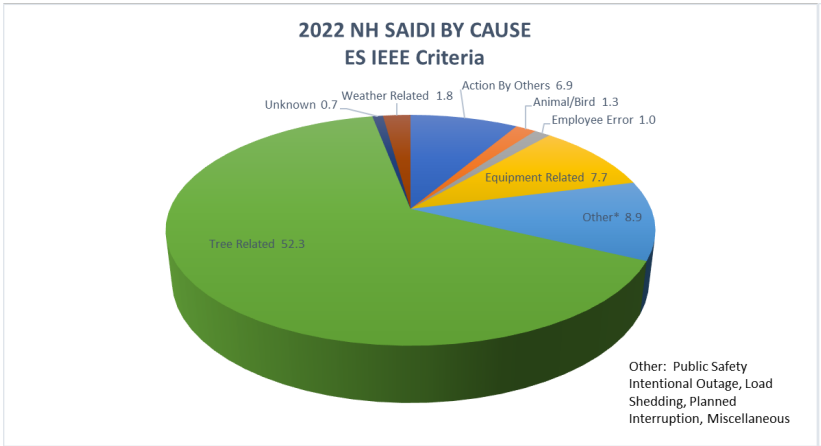
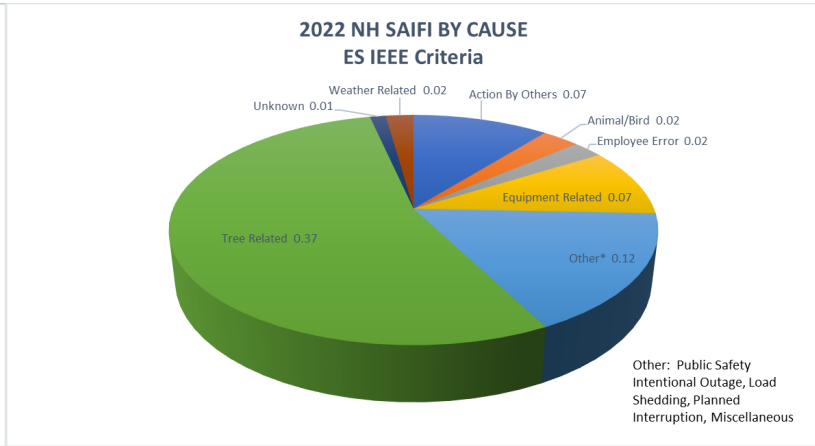


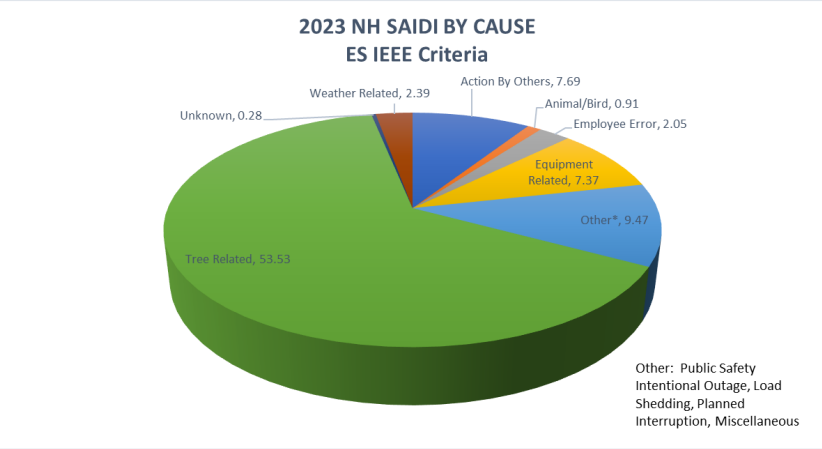


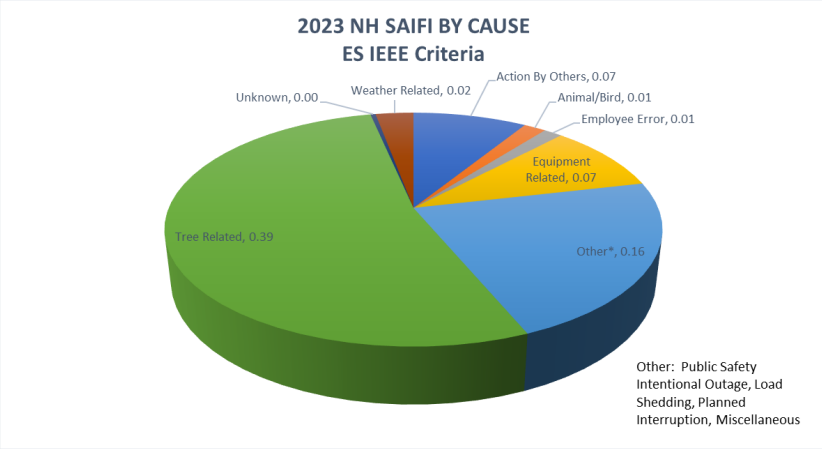
Cause	SAIDI
Tree Related	52.0
Equipment Related	7.4
Other	7.2
Action By Others	6.9
Weather Related	1.8
Animal/Bird	1.3
Employee Error	1.1
Unknown	1.0

Cause	SAIFI
Tree Related	0.37
Other	0.12
Action By Others	0.07
Equipment Related	0.07
Animal/Bird	0.02
Employee Error	0.02
Weather Related	0.02
Unknown	0.01

Section 1.7 cont'd SAIDI and SAIFI by Cause – Total System

2023:





Cause	SAIDI
Tree Related	53.5
Other	9.5
Action By Others	7.7
Equipment Related	7.4
Weather Related	2.4
Employee Error	2.1
Animal/Bird	0.9
Unknown	0.3

Cause	SAIFI
Tree Related	0.39
Other	0.16
Equipment Related	0.07
Action By Others	0.07
Weather Related	0.02
Animal/Bird	0.01
Employee Error	0.01
Unknown	0.00

Section 2

O&M Activity Summary
January 1, 2023 – December 31, 2023

Section 2.1 Pole Inspections

Program Description: Inspect for decayed or damaged poles to ensure reliable and safe use of this asset.

Total Unit Population: Eversource is responsible for ground line inspection of approximately 250,000 poles. Eversource performs ground line inspection of poles in Eversource set areas only. A visual overhead inspection is performed on all poles to which the Company is attached.

Maintenance Cycle: Wood poles are inspected on a 10-year cycle in accordance with Eversource Maintenance Plan Chapter 5.61 and Intracompany Operating Procedures in place with joint owners in the State of NH.

Reliability Benefit: Replacement of decayed poles results in a more reliable and resilient distribution system.

Results: Pole inspection plans are developed based on the total number of poles in the towns to be inspected. Copper, Chrome, Arsenic ("CCA") treated poles less than 20 years old, and those treated with other preservatives and less than 10 years old, are not checked for ground line decay. In 2023, 23,713 poles were ground line inspected.

$ Plan	$ Actual	$ Variance
$689,000	$488,649.30	($200,350)

Expenses were lower than anticipated due to the number of newer poles which did not require inspection, based on age, in the towns inspected in 2023.

Section 2.2 National Electrical Safety Code (NESC) Repairs

Program Description: Repair non-capital items documented as part of circuit inspections or other NESC compliance surveys such as during surveys for third party attachments.

Total Unit Population: Eversource has approximately 12,200 miles of overhead distribution line and approximately 2,000 miles of underground distribution line.

Results: In 2023, 12 NESC repair maintenance orders were completed and 0 corrective maintenance orders are outstanding. Extensive repairs were completed as part of make-ready work for CATV expansion into the Lakes Region area as well as other areas of concentrated third-party activity.

$ Plan	$ Actual	$ Variance
n/a*	n/a*	n/a*

*Budgets are not developed or tracked at this level or for this activity. Work is completed under a variety of Field Work Orders ("FWOs")

Section 2.3 Underground Circuit Inspections

Program Description: Inspect Direct Buried facilities including cable in conduit installations. Periodic inspections of Direct Buried and associated equipment at the specified interval allows preventative and corrective actions to be performed prior to situations becoming hazardous to the public or resulting in equipment failure.

Total Unit Population: Eversource is responsible for approximately 28,800 assets which are located in underground developments or are underground facilities providing service from the company's overhead system totaling approximately 2,000 miles of underground line.

Maintenance Cycle: Direct buried (including cable in conduit) facilities are inspected on a 10-year cycle, in accordance with Eversource Maintenance Plan chapter 5.11. As needed, replace fault indicators on a scheduled basis at the time of inspection.

Reliability Benefit: Proactively inspect underground developments, padmounted transformers, and associated equipment to identify potential issues and to ensure they function when needed.

Results: In 2023, 2,701 assets were inspected.

$ Plan	$ Actual	$ Variance
n/a*	n/a*	n/a*

*Budgets are not developed or tracked at this level or for this activity. Inspection work is completed under a variety of Field Work Orders (FWOs).

Section 2.4 Overhead Circuit Patrols

Program Description: Patrol overhead distribution lines. Patrols may be done for a variety of reasons including infrared patrols, post-storm patrols, or other reasons. Each reason for patrolling has different criteria regarding how far into the circuit the patrol is performed. For example, infrared patrols cover only the backbone while post-storm patrols may include all circuitry out to a certain size protective device.

Total Unit Population: Eversource has approximately 12,200 miles of overhead distribution line.

Maintenance Cycle: Overhead roadside distribution line backbones are inspected with infrared imaging equipment at least once annually in accordance with Eversource Maintenance Plan chapter 5.22. Aerial patrols of lines in rights-of-way (ROW) are completed at least once per year in accordance with the Eversource Maintenance Plan chapter 5.45

Reliability Benefit: Infrared patrols are intended to identify overheated equipment which may cause an outage or damage other equipment. Post-storm patrols are intended to find leftover damage not repaired during the storm or imminent dangers, either of which may cause an outage in the future. Aerial ROW patrols are intended to identify items needing repair which may cause an outage in the future.

Results: Patrols completed in 2023:

ROW aerial patrols: All ROW lines or line segments were patrolled in February, and August of 2023, with additional patrols of certain lines over the course of the year associated with project work, in response to momentary events, or following storm events. A list of lines patrolled is included in Section 2.4(a) below.

Patrols of poor performing roadside circuits were conducted in 2023 to identify unfused transformers and laterals. A project was approved to add fusing to these locations to improve the reliability for these customers by preventing isolated events from affecting larger numbers of customers.

In addition, focused post storm circuit sweeps were conducted following multiple weather events throughout the year. Circuits with moderate or higher impacts were patrolled. Three phase backbone and large single and three phase laterals were patrolled. These patrols were conducted to identify anything which might cause an imminent outage, a danger to public safety, Eversource debris left beside the road, limbs on or over the primary, and broken or uprooted trees leaning on or over the primary conductors. All items were addressed immediately by entry and tracking in the Outage Management System.

The vegetation management ("VM") organization performs post event assessments following all tree related events that result in a permanent outage affecting 100 or more customers as well as when "three or more" outages occur in a circuit segment within 90 days to ensure no additional VM follow up is required. Additionally, VM performs a "reliability" assessment of the system during the 100% quality control inspection of the trimming that is completed annually. Arborists record locations where they observe electrical hardware issues and report them into the System Operations Center.

Infrared ("IR") patrols were reinstated in 2023 (they were paused in 2020 and 2021 due to COVID-19 precautions). The surveys are performed on substation equipment and circuit three phase backbones to identify situations which could lead to equipment failure due to heating from poor connections or failing equipment.

The roadside circuits patrolled are listed below in Section 2.4(b).

$ Plan	$ Actual	$ Variance
n/a*	n/a*	n/a*

*Budgets are not developed or tracked at this level or for this activity.

Section 2.4(a) ROW Patrols

Area Work Center	Circuit
Bedford	312
Bedford	314
Bedford	322
Bedford	323
Bedford	324
Bedford	328
Bedford	354
Bedford	358
Bedford	359
Bedford	378
Bedford	3108
Bedford	3138
Bedford	3143
Bedford	3151
Bedford	3155
Bedford	3164
Bedford	3194
Bedford	3212
Bedford	3392
Bedford	3467
Bedford	314X12
Bedford	3194X1
Bedford	3194X2
Bedford	3271
Bedford/Hooksett	325
Bedford/Hooksett	334
Bedford/Hooksett	357
Bedford/Hooksett	3142
Bedford/Hooksett	334R
Bedford/Hooksett	335X56
Bedford/Hooksett	387
Bedford/Nashua	329
Bedford/Nashua	3217
Berlin	352
Berlin	3521
Berlin	350X
Berlin	350X2
Berlin	350X2
Berlin	3525X
Chocorua	346
Chocorua	347
Chocorua	390
Chocorua	395
Chocorua	3218
Chocorua	3218
Chocorua	336X
Chocorua	346X2
Derry	3184X
Derry	3184X10
Derry	32W1
Derry	32W4
Derry	32W5
Derry	365X
Epping	377
Epping	380
Epping	3103
Epping	3162
Epping	3229
Epping	3152X
EppIng	49W1
Hooksett	318
Hooksett	321
Hooksett	335
Hooksett	356
Hooksett	370
Hooksett	393
Hooksett	3182
Hooksett	3613
Hooksett	3614
Hooksett	334G
Hooksett	372 A&B
Keene	382
Keene	3178
Keene	3235
Keene	313X4
Keene	3140X1
Keene	382X2
Keene	4W1
Keene	76W1
Keene	76W3
Keene	76W4
Keene	76W7
Keene	W110
Keene	W15
Keene	W15
Keene	W15
Keene	W185
Keene	W2
Keene	W9
Keene	313
Keene/Newport	311
Lancaster	348
Lancaster	355X10
Lancaster	355
Lancaster	384
Lancaster	348X3
Lancaster	376L
Lancaster	376W
Lancaster	384X1
Lancaster/Berlin	351
Lancaster/Tilton	348X2
Nashua	353
Nashua	383
Nashua	389
Nashua	3110
Nashua	3136
Nashua	3144
Nashua	3146
Nashua	3147
Nashua	3154
Nashua	3159
Nashua	3175
Nashua	3177
Nashua	3445
Nashua	3445
Nashua	3750
Nashua	3020X
Nashua	3110X
Nashua	3168X

Nashua	3891X
Newport	315
Newport	316
Newport	3410
Newport	311 Tap
Newport	317 Tap
Newport	4181
Newport	4435
Newport	55W2
Newport	61W2
Portsmouth	3191
Portsmouth	339
Portsmouth	367
Portsmouth	3101
Portsmouth	3102
Portsmouth	3105
Portsmouth	3106
Portsmouth	3111
Portsmouth	3112
Portsmouth	3165
Portsmouth	3171

Portsmouth	3172
Portsmouth	3214
Portsmouth	3850
Portsmouth	3153X
Rochester	32
Rochester	340
Rochester	362
Rochester	371
Rochester	386
Rochester	392
Rochester	399
Rochester	3157
Rochester	3157
Rochester	3174
Rochester	3228
Rochester	3425
Rochester	3601
Rochester	3148X
Rochester	386A
Rochester	399X1
Rochester	W122

Tilton	310
Tilton	319
Tilton	337
Tilton	338
Tilton	343
Tilton	345
Tilton	368
Tilton	398
Tilton	3025
Tilton	3122
Tilton	3149
Tilton	3196
Tilton	3548
Tilton	3625
Tilton	3798
Tilton	3222X
Tilton	342A
Tilton	342B
Tilton/Epping	3137X
Tilton/Newport	317

Section 2.4(b) Roadside Circuit Patrols

Bedford
3108
3138
12W2
12W3
18W1_12
23X2_12
23X4_12
23X5_22
23X6_22
3108_12
3108X1_12
311X1_12
311X3_12
311X5_12
311X6_12
311X8
312X_12

3151X10_12
3151X9_12
3164X3_12
3164X8_12
3173X1_12
317X1_12
317X2
317X3_12
317X7
3194X1_12
322X10_12
322X12_12
323X5_12
3271X1_12
3271X2_12
3271X3_12
3271X45_12
3271X5_12
327X10_12

327X8_12
328X1_12
328X9_12
334G_12
334X14_12
335X1_12
335X15_12
335X2_12
335X3_12
33H1_12
35H1_12
360X1_12
360X11_12
360X14_12
360X2_12
360X5_12
360X7_12
37W1_12
3W1_12

3W2
5W1
5W2
79W4_12
85W1_12
JACKMAN
Berlin
21H1_77
21H2
21H4
21H5
25W1_77
350X_77
350X1_77
350X2_77
351X4_77
3525X1_77
3525X2_77
3525X3_77
3525X4_77
3525X5_77
Chocorua
19W1
19W2
3116X1_45
3218_45
336X_45
336X1_45
346X1_45
347_45
395_45
Derry
31280
31840
26W1_23
3115X_23
3128X_23
3133X_23
3141X_23
3156X
3184X_23
32W1

32W3
32W4
32W5
365X_23
8W1_23
Epping
13H1
13H2
3103_65
3103X1_65
3115X11_65
3115X12_65
3115X7_65
3115X9_65
3137X1_65
3137X10_65
3137X3_65
3137X5_65
3137X6_65
3137X7_65
3137X8_65
3137X80_65
3152X_65
3152X1_65
3162X1_65
3229X1_65
3229X2_65
3229X3_65
3229X5_65
3229X6_65
377X1_65
377X11_65
377X15_65
377X16_65
377X19_65
377X2_65
377X20_65
377X29_65
377X3_65
377X5_65
377X6_65
377X7_65

380X1_65
380X2_65
380X3_65
49W1_65
63W1
Hooksett
13W1
14H4
14H7
14H8
14W1
14W2
14W7_11
14X126A_11
14X188_11
18W1_12
18W3
21W1
22W1
22W2
23W1
23W2
23W3
23W4
24H2
27W2
29H2_11
318X2_11
321X11_11
324X10_11
324X8_11
325X7_11
334X18_11
34W18_11
3614X3_11
3615X1_11
3615X2_11
3615X3_11
370X_11
393X11_11
393X20_11
393X8_11

44W2
7W1_11
Keene
3140
24X1_36
26H1_36
26H2_36
28W1_36
3120X1_31
3120X2_31
3120X3_36
3120X4_36
3139X_31
313X1_36
313X2_36
313X4_36
313X7_36
3140_36
3140X1_36
3140X2_36
3140X3_36
3155X4_36
3173_36
3178_31
3178X3_31
3178X4_31
3178X5_31
3179X
33W1
35W1
382X2_36
382X3_36
4W1
4W2
51W1_36
53H1_31
53H2_36
55H1_36
76W1
76W3
76W4
76W5_31

76W7_31
CHESTNUT
TB95L
W1
W110
W15
W175_31
W185
W2
W9_31
Lancaster
12W1_43
17W1_43
1W1
1W2
348X1_76
348X19_43
348X2_76
348X20_43
348X3
348X4_76
348X5_76
348X7_76
348X8_76
348X9_76
351X1_76
351X16_76
351X17_76
351X2_76
355X_76
355X1_76
355X10_76
355X14_76
355X15_76
355X16_76
355X2_76
355X3_76
355X4_76
355X5_76
355X6_76
355X7_76
36W1_76

376X1_76
376X2_76
376X3_76
376X4_76
376X5_76
376X6_76
384_76
41W1_43
43W1_43
45W1_43
59W1
59W2
5H1
5H2
Nashua
32170
03168X
15H2
15H3
15H4
15H5
15H6
15W1
16H1
16H2
16H3
17H1
17H2
17H3
18H1_21
18H2
18H3
23H3
23W7
24W1_21
27H1_22
27H2_22
27H3_22
2H1
2H2
3010X_21
3020X

3110X_21
3136X_21
3143X_22
3144_21
3144X1_21
3144X3_21
314X12_22
314X14_22
314X15_22
314X23_22
314X26_22
314X3_22
314X4_22
314X46_22
314X54_22
3154X1_21
3154X2_21
3155X_22
3155X2_22
3155X3_22
3155X7_22
3155X8_22
3155X9_22
3168X_21
3175X_21
3175X1_21
3175X3_21
3177X1_21
3177XA_21
3212X_22
3217X_22
3445X_21
3750_21
383X1_21
383X2_21
383X3_21
3H1_21
3H2_21
40W1
6W1_21
72W1_21
9H1

9H2
9H2_21
HUDSON
Newport
16W1
16W3
315X2_32
316_32
316X1_32
316X2_32
3410_32
3410X1_32
42X1
42X3_32
42X4
44H1
46W1
47W1_32
48W1_32
54W1
55W2
60W1
61W2
74W1
75W2
NEW_LONDON
TB92L
Portsmouth
15W4
16W4_63
2W4
2W5
3102_63
3105X1_63
3105X4_63
3111X1_63
3112X1_63
3112X3_63
3112X4_63
3153X
3172X1_63
3191X3_63

3191X9_63
339X8_63
367X2_63
3850X1_63
3850X7_63
48H1
48H2
48W2
58W1
64W1
64W2
64W2_63
67W1_63
67W2
6H1_63
6H2_63
71W1
71W2
71W3
71W4
Rochester
115
122
3137
3148X_62
3148X1_62
3148X2_62
3148X3_62
3157X1_61
3157X2_61
3174X1_61
3174X4_61
32X3_62
32X4_62
32X6_61
340X1_61
340X5_61
34W2
34W3
34W4
34W4_61
362X1_61

362X2_61
371X1_61
371X14_62
371X30_62
371X8_62
371X9_62
38W1
38W2
392X
392X1_61
392X2_61
392X4_61
392X5_61
392X7_62
399X1_62
399X11_62
399X13_62
399X15_62
399X18_61
399X5_61
39W2_61
40H1
41H1
41H2
42H1_61
42H2
51H1
53W1
53W2
54H1_61
54H2_61
56H1_61
56H2_61
57W1
73H1
73W1_61
73W2
Tilton
10W1
11W1_41
11W2_41
1X4_42

20W1_42
20W2
27X1_41
29X1_41
2W1_41
2W2_41
30W2_64
310_41
310X3_41
310X5_41
3114W1_42
3114X_42
3137X2_64
319X1_64
31W1
31W2
3216X2_42
337X8_42
338X3_41
342A
343_41
345B
345X1_42
345X5_41
3548_42
3548X2_42
3548X6_42
3548X9_42
3798X4_42
37H1
37H2
37X4
398X2_41
398X3_41
39H1
39H2
39W1
39W2
47H7
47H8
68W6
70W1

70W2
90H1
90H2
90W2
9W1_41
CHICHESTER

EVERSOURCE

Section 3

Capital Activity Summary
January 1, 2023 – December 31, 2023

EVERSOURCE

CAPITAL - 2023

REJECT POLE REPLACEMENT:

Program Description: Replace poles determined to be defective during the annual inspection cycle.

Eversource maintains approximately 250,000 poles on its system. These are inspected every 10 years or an average of 25,000 poles per year.

Pole inspection plans are developed based on the total number of poles in the towns to be inspected. Copper, Chrome, Arsenic ("CCA") treated poles less than 20 years old, and those treated with other preservatives and less than 10 years old, are not checked for ground line decay (sound and bore and/or ground line excavation).

Joint owned poles maintained by others are visually inspected for overhead issues.

Total Unit Population: Depending upon inspection results, Eversource estimates 500 poles to replace each year which corresponds to a 2% failure rate.

Results: : Replacement of decayed poles results in a more reliable and resilient distribution system.

Results In 2023, 23,713 poles were ground line inspected. Nearly, 310 poles were found to be defective requiring replacement. Eversource actively replaces all reject poles in Eversource territory.

$ Plan	$ Actual	$ Variance
$2,052,000	$2,345,621	($293,621)

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OTHER CAPITAL RELIABILITY/CAPACITY PROJECTS:

Category Description: This category includes all projects with spending in 2023 in excess of $100,000 which were at least justified based on reliability or capacity.

There were 28 improvement projects established in 2023 with spending greater than $100,000. These projects are listed below. Project descriptions are included in Section 3.1.

Project Number	Project Description	Authorized Amount (K)	2023 Spend (K)	Status
A23E14	Epping 377X20 Pleasant St Conversion	$ 1,830	$ 1,117	Construction
A23S19	Nashua 2H2 extension	$ 1,160	$ 1,203	Construction
A23S20	Brookline 3155X2 - Quimby Rd Conversion	$ 2,676	$ 2,007	Construction
A23W17	Grantham 42X3 to 316X1 Circuit Tie	$ 3,461	$ 2,734	Construction
A23E15	North Hampton 3112X1 Reconductor Exeter Rd	$ 1,678	$ 1,413	Construction
A23E12	Strafford 392X1 Circuit Tie with 392X2	$ 2,674	$ 533	Construction
A23N07	Barnstead 319X1 Conversion South Barnstead Rd, Barnstead	$ 499	$ 372	In-Service
A23N09	Danbury 3114W1 Conversion of Ragged Mountain Hwy	$ 2,796	$ -	Initiated
A23E44	Porthsmouth Commercial Alley	$ 814	$ 642	In-Service
A23N03	Comcast Non-Billable Belmont	$ 744	$ 773	Construction
A23N04	Comcast Billable Belmont**	$ 1,700	$ 156	Construction
A23N05	Comcast Non-Billable Tilton	$ 510	$ 12	Construction
A23N06	Comcast Billable Tilton**	$ 940	$ -213	Construction
A23E25	North Dover 4kV Conversion	$ 1532	$ 426	Construction
A23C60	Smart Inspect Reliability - Central	$ 820	$ 247	Construction
A23CCI	CCI Reject Pole Replacement	$ 7,348	$ 2,878	Construction
A23N59	Smart Inspect Reliability - Northern	$ 1,533	$ 200	Construction
A23W55	Smart Inspect Reliability - Western	$ 10,830	$ 7,409	In-Service

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A23X28	2023 Wood Pole Treatment	$ 471	$ 296	In-Service
A23X45	2023 Tripsaver Program Phase 1	$ 3,196	$ 2,319	In-Service
A23X51	2023 Tripsaver Program Phase 2	$ 6,794	$ 7,501	In-Service
A23X41	2023 Semi-Annual Circuit Patrol Program	$ 1,600	$ 1,430	In-Service
A23N49	Concord 3025 Line Structure Replacement	$ 1,479	$ 1,287	In-Service
A23N52	Loudon 319 Line Structure Replacement	$ 1,698	$ 1,489	In-Service
A23S21	Hudson 3211X Kimball Hill Rd Conversion	$ 530	$ 406	Construction
A23DA	2023 Pole Top Distribution Automation	$ 7,500	$ 6,254	Construction
A23LS	2023 Distribution Line Sensors	$ 300	$ 189	Construction
Total		$ 68,318	$ 43,341	

*Note: A Supplement Authorization was approved at NHPAC prior to exceeding the authorized amount.
**Note: Reimbursable Jobs working through final construction and True-Up Billing

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In addition, there were 43 reliability projects established in prior years with spending in 2023 in excess of $100,000. The large amount of these projects are carried over due to Supply Chain delays. Project descriptions for these projects are included in Section 3.2.

Project Number	Project Description	2023 Spent (K)	Status
A21C04	Goffstown Substation Conversion	$ 111.46	In Service
A22E41	Resistance Substation Retirement	$ 1,449.08	Initiated
A22E56	32 Line Pole Replacement	$ 2,916.28	In service
A22E57	371 Line Pole Replacements	$ 3,300.37	In service
A22W20	42X3/44H1 Extend 34.5KV	$ 869.52	Construction
A22W26	317/3410 reconstruction Roby Rd to Warner	$ 2,149.07	In Service
A22C03	Goffstown Substation Elim Phase 2 27W2 Conversion	$ 1,364.70	Construction
A22N71	355 Line Pole Replacement	$ 862.00	Construction
A22X48	Substation Station Service Transformer Replacement Program	$ 7.13	Initiated
A21X29	Substation Remote Terminal Unit Upgrade/Replacement Program	$ -	Initiated
A19S40	Amherst Substation – PLC Automation Replacement	$ 142.06	In service
A20W37	River Road Substation Upgrades	$ 1,767.72	In service
A18W06	Monadnock Substation Transformer Replacement TB40	$ 303.12	Initiated
A19W49	Distribution Line Work for Monadnock Substation Replacement	$ 0.35	Construction
A22X38	Substation Battery Replacement Program	$ 61.48	Initiated
A22C01	Manchester Network Cable Replacement Ph 2	$ 168.00	In Service
A22C83	Manchester Network Cable Replacement Ph 3	$ 1,335.00	In Service
A20X26	Spare 345-34.5kV Transformer	$ 3,578.25	In service
A21X15	Replace five ABB TPU-2000R Relays	$ 64.07	Engineering
A18N03	White Lake Substation Rebuild	$ 474.00	Engineering
A21N77	Saco Valley 34.5kV Circuit Breaker Replacement	$ -	Initiated
A21S17	34.5kV Capacitor Bank Replacement Broad St.	$ 781.00	In Service

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A19X36	34.5kV Circuit Breaker Replacement	$	66.00	Initiated
A21C14	Garvin Substation Circuit Breaker Replacement	$	4,066.46	In servvice
A22E76	Tasker Farm Substation Relay Replacement	$	18.85	Initiated
A16C08	Brook St Substation – Transformer Replacement	$	2,011.44	Engineering
A17C10	Brook St. G&W Switchgear Replacement	$	14.43	Engineering
A17S03	Millyard Substation Replacement	$	1,213.00	In Service
A18C07	Eddy Substation Control House	$	46.35	In Service
A20S02	Millyard Substation Distribution Line Work	$	325.92	In Service
A21E16	Replace Rochester Substation Bus Tie Breaker	$	41.17	In service
A21N55	Ashland Reliability Substation Work	$	20.67	Initiated
A21N86	Ashland Substation Line Work	$	73.81	Initiated
A18E04	Dover Substation Rebuild	$	53.17	Approval
A21E70	Portsmouth 12kV Reliability Project	$	28.91	Construction
A21E70L	Portsmouth 12kV Capacity (D Line)	$	59.09	Construction
A21E71L	Salmon Falls Substation Capacity (D-Line)	$	0.43	Construction
A21W69	North Road SS Reliability	$	23.86	Initiated
A20S19	South Milford Substation	$	69.61	Initiated
A21S85	South Milford Substation Distribution Line Work	$	26.31	Initiated
A21N63	Laconia Substation Reliability Project	$	30.60	Initiated
A21W80	Sugar River Substation GMP Auto-Transfer	$	349.68	In service
A21N45	Ashland Substation Protection and Control Upgrade	$	1,262.73	In service
Total		$	31,443.77	

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Section 3.1

2023 Projects

A23E14 Epping Circuit 377X20 Pleasant St Conversion - Under Construction
The 377X20 circuit has three 19.9-4.8kV step transformers that will become overloaded due to an underground residential development (URD) which will add 1,400 kVA of connected load in the spring of 2023. As a result, the 500 kVA C phase step transformer will reach a projected 168% of nameplate rating. After phase balancing, the A phase step will be loaded at 353 kVA (71%), B phase at 470 kVA (94%), and C phase at 840 kVA (168%). In addition, the A phase 500 kVA step on the 377X16 reached 115% of its nameplate rating in 2022. Relocating the 377X20 500 kVA step-down bank beyond the new URD will provide capacity to shift load from the overloaded 377X16 step transformers onto the 377X20 circuit and will create an 8.32kV circuit tie to increase reliability during step transformer contingencies.

A23S19 Nashua Circuit 2H2 Extension- Under Construction
Construct a new 4.16 kV line along Broad Street and Sullivan Street in Nashua for approximately 2,800ft out of which 1600 ft will be double circuit construction on Broad Street. Install three 219 Amps regulators on Sullivan Street.

A23S20 Brookline Circuit 3155X2 Quimby Rd. Conversion - Under Construction
Upgrade 7.2kV to 19.9 kV along Route 13 and Main Street in Brookline for approximately 2000 ft up to new steps locations. Install three 500 kVA Step transformers on Main Street and three 500 kVA Step transformers on Route 13.

A23W17 Grantham Circuit 42X3 to 316X1 Circuit Tie - Under Construction
The 316X1 line is a radial 34.5 kV circuit serving 3,447 customers that taps the 316 Line which originates at North Road Substation. The largest portion of the circuit feeds Grantham via a radial feed along Stoneybrook Road and there are no other 34.5 kV substation sources for this line to tie to.

A23E15 North Hampton Circuit 3112X1 Reconductor Exeter Rd - Under Construction
The 3112X1 feeds numerous large industrial and commercial customers. This project replaces most poles, storm hardening the backbone by installing 477 SPCA, and removes all porcelain pole top hardware. This project also addresses concerns of the existing 1/0 ACSR primary conductor exceeding its ampacity ratings due to load growth in the area.

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A23E12 Strafford Circuit 392X1 Circuit Tie with 392X2 - Under Construction
The 392X1 is fed radially along Walnut St, Rochester. This project includes reconductoring a portion of Washington St as well as reconductoring and converting Estes Rd to create a new circuit tie between the 392X2 and the 392X1 circuits. This tie will improve reliability for 1635 customers on the 392X1 Circuit and 499 customers on the 392X2 Circuit for a total impact to 2134 customers.

A23N07 Barnstead Circuit 319X1 Conversion South Barnstead Rd, Barnstead - Under Construction
Convert approximately 8,920' of the 319X1 circuit along South Barnstead Rd and Bow Lake Rd in Barnstead. Parallel 333kVA step-transformers supply the single-phase section and have been loaded to 108% of the nameplate rating.

A23N09 Danbury Circuit 3114W1 Conversion of Ragged Mountain Hwy - Under Construction
This project is to rebuild and convert approximately 12,500 ft of three phase, and 6,200 ft of single phase. The circuit begins at 34.5 kV and is stepped down to 12.47 kV with three 500 kVA step transformers.

A23E44 Porthsmouth Commercial Alley - Under Construction
Install underground infrastructure (conduits, secondary handholes, and associated secondary conductors/meters) in Commercial Alley, Portsmouth NH. The infrastructure is needed to eliminate existing overhead back-alley construction on or over private property without easements. Currently the overhead pole and secondary conductors are located inside a restaurant patio and the customer has requested it be removed.

A23N03 Comcast Non-Billable Belmont – Under Construction
This work is required in accordance with the NHPUC 1300 Rules and will provide proper National Electrical Safety Code clearances for Comcast to attach to utility poles within their expansion area in the Lakes Region. Comcast has ongoing expansion in the Lakes Region of New Hampshire. This project is part of a recent Comcast submittal of 5,489 poles in four towns (Belmont, Northfield, Sanbornton and Tilton). This project is proposed to cover the cost of work on poles in the Towns of Belmont and Sanbornton which are not in compliance with the NESC and is, therefore, non-reimbursable work.

A23N03 Comcast Billable Belmont – Under Construction
This work is required in accordance with the NHPUC 1300 Rules and will provide proper National Electrical Safety Code clearances for Comcast to attach to utility poles within their expansion area in the Lakes Region. Comcast has ongoing expansion in the Lakes Region of New Hampshire. This project is part of a recent Comcast submittal of 5,489 poles in four towns (Belmont, Northfield,

Sanbornton and Tilton). This project is proposed to cover the cost of work on poles in the Towns of Belmont and Sanbornton which are in compliance with the NESC and is, therefore, reimbursable work.

A23N03 Comcast Non-Billable Tilton – Under Construction

This work is required in accordance with the NHPUC 1300 Rules and will provide proper National Electrical Safety Code clearances for Comcast to attach to utility poles within their expansion area in the Lakes Region. Comcast has ongoing expansion in the Lakes Region of New Hampshire. This project is part of a recent Comcast submittal of 5,489 poles in four towns (Belmont, Northfield, Sanbornton and Tilton). This project is proposed to cover the cost of work on poles in the Towns of Belmont and Sanbornton which are not in compliance with the NESC and is, therefore, non-reimbursable work.

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A23E25 North Dover 4kV Conversion – Under Construction

Create a new circuit tie between the 3148X4 and 32X3 by converting the 41H1 circuit along Glenwood Avenue from 4.16kV to 34.5kV. This project eliminates an off-road shunt through a heavily wooded area and replaces an existing non-Scada oil filled recloser with new automated Nova recloser. The existing off road shunt feeds 287 customers which experiences at least 1 outage per year. In 2023, this off-road section has already experienced 3 outages due to storms. The new circuit tie will also create a backup for 169 radial fed 4kV customers and eliminate the 41H1 circuit out of North Dover Substation.

A23C60 Smart Inspect Reliability - Central – Under Construction

Add cutouts to unfused transformers to improve system reliability. Focus for this project will be to address the unfused transformers identified during the survey, that if a fault should occur, would affect 50 or more customers.

A23CCI CCI Reject Pole Replacement – Under Construction

As a result of the acquisition of the CCI interest in joint owned poles effective May 1, 2023, Eversource will inspect and replace all acquired poles, following the same reject pole replacement guidelines established for our annual reject pole replacement program. This survey and resulting work consists of approximately 182,000 poles acquired from CCI.

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A23N59 Smart Inspect Reliability - Northern – Under Construction
Add cutouts to unfused transformers to improve system reliability. Focus for this project will be to address the unfused transformers identified during the survey, that if a fault should occur, would affect 50 or more customers.

A23W55 Smart Inspect Reliability - Western – In-Service
Add cutouts to unfused transformers to improve system reliability. Focus for this project will be to address the unfused transformers identified during the survey. This initiative is different from the other regions, in that it involves all locations due to Western having the worst overall reliability compared to the other regions.

A23X28 2023 Wood Pole Treatment – In-Service
Wood pole treatment of approximately 1,383 structures located on distribution Right of Way lines in the state of New Hampshire. The treatment is designed to provide a "booster shot" of preservatives to improve the expected performance of the wood poles through the application of a new preservative product that provides additional protection against decay and extends the useful life of the pole.

A23X45 2023 Tripsaver Program Phase 1 – In-Service
Install approximately 345 trip savers across the Eversource NH service territory. This project is intended to replace existing cut outs with TripSavers. The installation of these TripSavers will increase reliability by allowing temporary outages to clear and avoid permanent outages to our customers.

A23X51 2023 Tripsaver Program Phase 2 – In-Service
With Phase 1 (A23X45) being a success, being under budget, on schedule and seeing expected reliability improvements, decision was made to continue this program. Install approximately 1000 trip savers across the Eversource NH service territory. This project is intended to replace existing cut outs with TripSavers. The installation of these TripSavers will increase reliability by allowing temporary outages to clear and avoid permanent outages to our customers.

A23X41 2023 Semi-Annual Circuit Patrol Program – In-Service
The project supports the patrol of the entire distribution system. The patrol is followed by the completion of corrective actions of those findings determined to be prudent. The objective is to maintain the reliable performance of the Eversource distribution system by promptly finding and addressing issues that present a risk to that performance.

A23N49 Concord 3025 Line Structure Replacement – In-Service
The project supports structure replacement on the 3025 Line in the right of way between Shaker Rd and Appleton St. in Concord NH. Twenty-seven (27) aged wooden poles and crossarms will be replaced with new steel structures. Of the twenty-seven (27) locations this

replacement project will address ten (10) poles that are in wetland conditions. This project takes advantage of matting, permitting and access installed for a transmission P145 structure project.

A23N52 Loudon 319 Line Structure Replacement – In-Service

The project supports eight (8) structure replacements on the 319 Line in the right of way between Bee Hole Road and Bear Hill Road in Loudon, NH. The eight (8) wooden structures are located on existing farmland with restricted access by rock walls, pasture fencing, and a swamp wetland of unknown depth. Of the eight structures, four (4) poles are in a swamp and will require matting for access within our authorized construction window provided by the NH Fish & Game Department (NHFG) of April to October 15 due to hibernating endangered turtles.

A23S21 Hudson 3211X Kimball Hill Rd Conversion – Construction

Replace 5500 feet of #6 copper with 1/0 AAC covered wire (CW) and increase voltage to 19.9kV on the 3211X circuit in town of Hudson. The 19.9-2.4kV 250 kVA step transformer on Clement Road is 127% loaded and currently exceeds the summer ampacity rating of #6 copper during peak load. Additionally, there is a 2.4-19.9kV step up transformer on Hawkview Drive serving as a back-feed for the new Eagles Nest underground development. Currently, this back feed to Eagles Nest cannot be utilized due to the limitations of the #6 copper. Converting to 19.9kV also improves aging infrastructure and storm hardening.

A23DA 2023 Pole Top Distribution Automation – Construction

This project supports the installation of approximately 75 pole top SCADA controlled devices in 2023. These devices provide indication of circuit conditions and allow for remote operation to sectionalize the system and restore power remotely. Installation of these devices over the last five years have resulted in significant savings in the impact and duration of outages on the distribution system.

A23LS 2023– Distribution Line Sensors - In-Service

The project is a part of Eversource's NH Distribution Automation strategy. Install Tollgrade® line sensors at various locations on the distribution system throughout the state. The sensors will monitor current at the installation location and communicate via exception notifications as well as the vendor portal. Future efforts will enable these devices to communicate with the Eversource NH SCADA. This increases visibility into the Distribution system resulting in projects to improve reliability on circuits, reveal load balancing or low voltage situations that need to be resolved, or monitor step transformer loading.

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Section 3.2
Prior Years Projects

A22C01 Manchester Network Cable Replacement (Phase 2) - Under Construction
Phase 2 of the Manchester Network Cable Replacement project will reconductor the 13B and 13D cables from just outside Brook Street Substation to Hampshire Plaza on Elm Street in Manchester, NH. The work in 2023 involves 5 of the 33 transformer vaults. Reconductoring the entire network will take place over four years.

A22C03 Goffstown Substation Elim Phase 2 27W2 Conversion - Under Construction
Phase 2 will convert the 27W2 12.47 kV circuit to 34.5 kV. Phase 1 converted the 45H1 circuit to 34.5 kV and was completed in February 2023. Implementing both phases of these projects eliminate a 64-year-old, islanded substation and non-standard 3.74 kV circuit, optimizing Distribution Automation and improving system reliability in Goffstown.

A22C77 Londonderry Mammoth Rd SS TPU Relay Replacement - Under Construction
Replace one (1) TPU2000R ABB relay in service at Mammoth Road Station with one (1) SEL-387E protection relay. The replacement of this obsolete relay is required as ABB has classified the relays as obsolete and replacement parts are no longer available. Failure could result in a transformer outage, a decrease in system reliability, and unnecessary relay replacement work under emergency conditions.

A22E41 Portsmouth Resistance Substation Retirement - Under Construction
Provide partial funding for engineering support and environmental analysis for the Solution Design Committee Review of the Resistance Substation retirement. The Resistance SS has a single 1971 vintage, 44.8MVA transformer, and there are concerns with the aging infrastructure, deteriorating foundations, structures, and broken bushings in the substation. Due to the proximity and recent increased capacity at the Portsmouth SS, it is recommended that Resistance SS be retired.

A22E56 32 Line Pole Replacement - Under Construction
Replace 71 wooden poles on the 32 line identified as requiring replacement during a line inspection completed in March 2023. The wood poles will be replaced with self-weathering steel poles, retaining the existing conductor. The wooden poles have experienced advanced deterioration below groundline that is attributable to the surrounding wet land areas. The objective of the project is to prevent long term unexpected failure of wood structures in wetland areas with difficult access with the least cost solution.

A22E57 Dover 371 Line Pole Replacements - Under Construction
Replace 69 wooden poles on the 371 line identified as requiring replacement during a line inspection completed in March 2023. The wood poles will be replaced with self-weathering steel poles, retaining the existing conductor. The wooden poles have experienced advanced deterioration below groundline that is attributable to the surrounding wet land areas. The objective of the project is to prevent long term unexpected failure of wood structures in wetland areas with difficult access with the least cost solution. The line inspection was completed in conjunction with the 32 line (A22E56), which shares a right of way.

A22N71 Northern NH 355 Line Pole Replacement - Under Construction
Helicopter ROW inspection on all 35 miles of the 355 line identified leaning and or damaged structures. The follow up field investigation of those structures showed pole deterioration for upland poles and those below the groundwater surface, rotted crossarms, broken or missing storm guys and crossarm brace(s). This project authorization approves partial funding to perform a full drone inspection, review alternatives, and finalize the scope, engineering design, and environmental controls.

A16C08 Manchester Brook Street Substation 13TR1 Replacement – Under Construction
The 13TR1 switchgear at Brook St S/S is 65 years old and has experienced multiple equipment failures over the last ten years causing the network system to completely lose power. This project will replace the old 13TR1 switchgear with a new 6 bay 15kV metal clad switchgear to provide a reliable power source to the network system.

A17S03 Nashua Millyard Substation Replacement – Under Construction
This multi-year project rebuilds the Millyard Substation at a new site in Nashua, NH. The existing substation transformers are 68 and 71 years old and the switchgear is of the same vintage. Additionally, over the last few years 3 of the 6 circuit feeders have failed. The substation currently serves 2,700 customers.

A18C07 Manchester Eddy Substation Control House – Completed
This project is to build a control house in the Eddy Substation yard. The existing control house is in the

Public Service Company of New Hampshire Amoskeag Powerhouse adjacent to the Eddy Substation. The Amoskeag generation facilities were sold in 2019 as a result of the generation divestiture in NH. The new control house was needed to house transmission and distribution protection and control systems in a secure building under Eversource access and control.

A18N03 Tamworth White Lake Substation Rebuild – Completed
White Lake Substation in Tamworth, NH became a two (2) transformer 115-34.5 kV substation in the mid-1950s when a 115 kV line (B-112) was constructed as a source to the area. A combustion turbine (CT) generator was added to the substation in 1968 to provide black start capability to the system. The White Lake CT was sold in 2019. This project rebuilt the White Lake SS to address, capacity deficiency, aging equipment, and generation divestiture issues.

A18W06 Troy Monadnock Substation transformer replacement TB40 – Under Construction
Full rebuild of Monadnock Substation to address the asset condition of transformer TB40 and the design deficiencies of the existing substation (there are no transformer breakers nor high-side circuit switchers). The rebuild will prevent an outage to the 12,900 customers served by the substation.

A19S40 Amherst Substation – PLC Automation Replace - Completed
This project engineers and replaces the PLC designed automation scheme at Amherst Substation. The PLC designed automation scheme is outdated and a challenge to update and maintain. There are numerous software, firmware, design, and equipment issues with this legacy system.

A20S02 Nashua Millyard Substation Distribution Line Work – Under Construction
This project is the distribution line work associated with the Millyard Substation rebuild project. The substation project added a pole top SCADA controlled device at Front Street Substation, installed a manhole, and replaced of a section of direct buried cable to a new riser to support the new pole top device.

A20W37 Claremont River Road Substation Upgrades – Completed
In 2004, Eversource NH purchased the assets and customers from the Connecticut Valley Electric Company (CVEC) including the Sugar River SS in Claremont, NH. The substation has equipment that has been defined as obsolete and replacement parts are no longer available according to the manufacturer. This substation was targeted for upgrades by installing new equipment to improve reliability and to allow the installation of Distribution Automation equipment.

A20X26 Spare 345-34.5 kV Transformer – Under Construction
This is a full funding request to procure a spare 140 MVA 345-34.5 kV transformer, to be designed and installed at Timber Swamp Substation in Hampton, NH. The design and installation will

include a new foundation, oil containment, AC power, and alarm inputs to the transformer. In order to provide reliable and timely support to the 34.5kV distribution system transformers at Amherst, Lawrence Road, and Timber substations, an installed spare transformer is necessary.

A21E16 Replace Rochester Substation Bus Tie Auto-close – Completed
This project replaced the inoperable GE FANUC 9030 programmable logic controller (PLC) -
based auto close scheme at the Rochester substation 34.5kV bus tie breaker BT32 with an updated scheme using a SEL-2411 programmable automatic controller.

A21N45 Ashland Substation – PLC Replacement & P&C Upgrade – Under Construction
This project replaces the Programmable Logic Controller (PLC) based automation scheme at Ashland Substation in Ashland, NH. The PLC based automation scheme is obsolete (approximately 16 years old) and has been difficult to update and maintain.

A21S17 Manchester 34.5 kV Capacitor Bank Switch Replacement Broad Street – Under Construction
21 vacuum switches were identified as needing replacement in 2008. These switches were prioritized based on age, condition, operating problems, and uniqueness. Seven (7) of these capacitor switches are to be replaced with a vacuum circuit breaker as part of this program.

A22W26 Warner line 317/3410 Reconstruction Phase 2 - Under Construction
The 317/3410 line is in poor condition and in a very difficult area due to rugged topography and extensive wetlands. A roadside solution along Route 103 from Bradford to Exit 9 on Interstate 89 in Warner has been approved to improve access to the line at lower cost than rebuilding in the ROW. Phase 1 of this project was completed under project number A20W18. The scope included reconstructing 2.5 miles of the line, from Bradford to Melvin Mills. Phase 2 of this project is to complete the 4.5 miles of roadside construction from Melvin Mills to Warner Exit 9 and to remove the ROW line from Bradford to Warner. Upon completion of Phase 2, the roadside circuit will be fully operational, and the removal of the ROW line can commence.

Section 4

Worst Performing Circuit Lists

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2023 Circuit Hit List - Ranked By COSAIDI - ES IEEE Criteria - Allocated data

Rank	Circuit	COSAIDI	CAIDI	Circuit MBI	CIII	# Outages	Customers Interrupted (CI)	Customer Minutes (CMI)	Customers Served By Circuit	Circuit Miles	Cust Inter Per Mile	Outages Per Mile	Circuit SAIDI	Circuit SAIFI	# Cust_3 Or Mores	#Cust >4Hr Outage	Customer Weighting	Region	AWC
1	355X10_76	2.52	154	3.3	70	127	8,944	1,376,335	2,423	123.5	72	1.0	568	3.6911	1,356	1,075	631.3	NH NORTHERN	LANCASTER AWC
2	3155X4_36	2.27	127	2.7	174	56	9,740	1,241,075	2,188	91.7	106	0.6	567	4.4514	-	2,223	532.0	NH WESTERN	KEENE AWC
3	347_45	1.83	230	9.3	50	88	4,364	1,002,854	3,387	100.1	44	0.9	296	1.2884	777	1,755	522.3	NH NORTHERN	CHOCORUA AWC
4	3139X_31	1.72	80	2.7	74	157	11,662	938,067	2,662	151.3	77	1.0	352	4.3805	440	220	244.3	NH WESTERN	KEENE AWC
5	3222X_41	1.30	172	9.5	143	29	4,147	712,928	3,291	85.6	48	0.3	217	1.2602	-	32	80.6	NH NORTHERN	TILTON AWC
6	336X1_45	1.27	202	1.2	98	35	3,433	694,796	348	30.3	113	1.2	1,995	9.8562	1,527	568	1,088.8	NH NORTHERN	CHOCORUA AWC
7	3120X4_36	1.26	285	7.6	54	45	2,412	687,546	1,536	68.2	35	0.7	448	1.5705	-	1,806	427.6	NH WESTERN	KEENE AWC
8	2W2_41	1.24	173	6.4	62	63	3,930	678,936	2,094	51.3	77	1.2	324	1.8770	-	592	202.3	NH NORTHERN	TILTON AWC
9	392X1_61	1.16	187	6.9	155	22	3,404	637,133	1,950	69.6	49	0.3	327	1.7454	-	-	114.3	NH EASTERN	ROCHESTER AWC
10	3116X1_45	1.12	185	4.8	34	98	3,295	610,266	1,313	87.1	38	1.1	465	2.5101	1,644	593	580.5	NH NORTHERN	CHOCORUA AWC
11	23X5_22	1.09	72	5.5	81	102	8,237	594,350	3,744	122.3	67	0.8	159	2.1998	39	550	145.9	NH CENTRAL	BEDFORD AWC
12	3178X4_31	1.08	199	7.4	40	74	2,982	592,902	1,842	75.2	40	1.0	322	1.6185	536	593	308.8	NH WESTERN	KEENE AWC
13	3155X9_22	1.07	119	2.6	182	27	4,905	585,458	1,076	61.1	80	0.4	544	4.5576	-	1,078	352.1	NH WESTERN	KEENE AWC
14	3120X2_31	1.06	127	2.9	62	73	4,548	578,140	1,081	56.1	81	1.3	534.59	4.2054	358	439	324.6	NH WESTERN	KEENE AWC
15	316X1_32	1.02	110	8.3	49	104	5,059	556,118	3,478	159.1	32	0.7	160	1.4544	-	342	107.3	NH WESTERN	NEWPORT AWC
16	20W1_42	0.96	101	5.7	80	65	5,230	525,935	2,463	64.5	81	1.0	214	2.1234	1,423	478	431.0	NH NORTHERN	TILTON AWC
17	24X1_36	0.96	85	4.0	77	81	6,197	525,088	2,056	129.5	48	0.6	255	3.0143	-	79	101.2	NH WESTERN	KEENE AWC
18	3103X1_65	0.95	112	6.3	132	35	4,632	520,594	2,433	67.2	69	0.5	214	1.9039	551	566	270.0	NH EASTERN	EPPING AWC
19	76W7_31	0.94	105	8.4	40	123	4,901	513,730	3,449	181.1	27	0.7	149	1.4212	51	222	95.6	NH WESTERN	KEENE AWC
20	3140X2_36	0.93	104	4.2	73	67	4,892	510,731	1,705	98.6	50	0.7	300	2.8695	2,204	269	586.0	NH WESTERN	KEENE AWC
21	20W2_42	0.92	160	6.5	85	37	3,152	503,350	1,720	49.2	64	0.8	293	1.8323	-	1,282	294.7	NH NORTHERN	TILTON AWC
22	3173X1_12	0.88	184	7.1	48	55	2,616	480,213	1,556	72.5	36	0.8	309	1.6807	104	1,036	284.2	NH CENTRAL	BEDFORD AWC
23	73W2_61	0.87	114	7.1	57	73	4,178	475,806	2,462	70.0	60	1.0	193	1.6972	1,180	155	326.9	NH EASTERN	ROCHESTER AWC
24	3128X_23	0.87	126	20.5	42	90	3,765	475,527	6,441	147.9	25	0.6	74	0.5845	-	62	35.1	NH SOUTHERN	DERRY AWC
25	38W1_62	0.76	149	6.1	154	18	2,780	413,106	1,406	18.4	151	1.0	294	1.9773	15	5	106.6	NH EASTERN	ROCHESTER AWC
26	347X3_45	0.75	170	4.7	45	53	2,409	410,432	937	56.9	42	0.9	438	2.5712	1,361	535	505.8	NH NORTHERN	CHOCORUA AWC
27	317X3_12	0.75	158	6.2	60	43	2,595	410,325	1,338	68.1	38	0.6	307	1.9398	110	81	141.5	NH CENTRAL	BEDFORD AWC
28	51W1_36	0.74	232	3.9	65	27	1,755	407,417	576	35.2	50	0.8	707	3.0448	-	590	335.9	NH WESTERN	KEENE AWC
29	19W2_45	0.73	85	6.7	66	71	4,718	399,375	2,618	102.2	46	0.7	153	1.8020	57	2	65.1	NH NORTHERN	CHOCORUA AWC
30	348X2_76	0.72	113	2.5	72	48	3,479	393,904	717	77.4	45	0.6	549	4.8532	202	106	248.6	NH NORTHERN	LANCASTER AWC
31	3525X5_77	0.70	184	4.9	123	17	2,095	384,656	861	62.2	34	0.3	447	2.4341	254	787	325.3	NH NORTHERN	BERLIN AWC
32	53H1_31	0.70	253	4.4	61	25	1,514	382,354	553	35.5	43	0.7	691	2.7355	-	555	325.0	NH WESTERN	KEENE AWC
33	3114W1_42	0.64	176	6.1	43	46	1,992	349,927	1,015	73.5	27	0.6	345	1.9635	60	1,086	295.6	NH NORTHERN	TILTON AWC
34	63W1_65	0.63	145	10.2	40	59	2,383	344,454	2,017	77.1	31	0.8	171	1.1813	-	14	61.9	NH EASTERN	EPPING AWC
35	25W1_77	0.61	100	2.7	82	41	3,366	335,166	754	43.4	78	0.9	444	4.4615	1,177	16	393.3	NH NORTHERN	BERLIN AWC
36	336X_45	0.61	160	3.7	75	28	2,086	334,245	639	19.9	105	1.4	523	3.2660	1,708	634	619.9	NH NORTHERN	CHOCORUA AWC
37	3155X2_22	0.60	121	9.7	28	98	2,718	330,199	2,195	85.2	32	1.1	150	1.2385	133	295	123.5	NH SOUTHERN	NASHUA AWC
38	333X_45	0.58	178	8.4	41	44	1,792	319,504	1,251	44.3	40	1.0	255	1.4322	146	505	194.3	NH NORTHERN	CHOCORUA AWC
39	3114X_42	0.58	174	8.0	37	50	1,829	318,977	1,224	55.9	33	0.9	261	1.4947	61	588	191.6	NH NORTHERN	TILTON AWC
40	3120_31	0.53	200	12.7	23	63	1,438	287,260	1,516	67.6	21	0.9	189.46	0.9484	589	229	218.5	NH WESTERN	KEENE AWC
41	27W2_12	0.48	247	8.7	36	30	1,072	264,419	776	13.0	82	2.3	341	1.3814	-	646	216.2	NH CENTRAL	BEDFORD AWC
42	3181_45	0.48	177	8.8	29	51	1,488	264,064	1,097	50.9	29	1.0	241	1.3561	69	435	163.3	NH NORTHERN	CHOCORUA AWC
43	3133X_23	0.48	113	25.3	44	53	2,330	263,613	4,907	126.7	18	0.4	54	0.4749	-	138	39.5	NH SOUTHERN	DERRY AWC
44	3155X7_22	0.47	108	3.8	73	33	2,397	258,376	759	37.9	63	0.9	341	3.1594	17	85	135.3	NH SOUTHERN	NASHUA AWC
45	3115X12_65	0.47	112	10.3	48	48	2,310	257,592	1,986	71.3	32	0.7	130	1.1631	-	177	71.9	NH EASTERN	EPPING AWC
46	37W1_12	0.47	106	7.3	97	25	2,427	256,321	1,468	62.1	39	0.4	175	1.6528	-	-	61.1	NH CENTRAL	BEDFORD AWC
47	3137X1_65	0.47	81	6.7	53	59	3,146	254,774	1,747	65.5	48	0.9	146	1.8008	591	75	180.5	NH EASTERN	EPPING AWC
48	75W2_32	0.46	135	11.4	75	25	1,879	252,929	1,783	53.1	35	0.5	142	1.0538	300	7	110.7	NH WESTERN	NEWPORT AWC
49	316_32	0.46	131	20.4	21	90	1,931	252,808	3,283	173.1	11	0.5	77.00	0.5881	113	109	65.9	NH WESTERN	NEWPORT AWC
50	348X1_76	0.45	87	6.7	52	55	2,853	247,562	1,602	106.8	27	0.5	154	1.7804	-	83	66.5	NH NORTHERN	LANCASTER AWC

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2023 Circuit Hit List - Ranked By Circuit SAIFI - ES IEEE Criteria

Circuit SAIFI Rank	CoSAIDI Rank	Circuit	COSAIDI	CAIDI	Circuit MBI	CIII	# Outages	Customers Affected	Customer Minutes	Customers Served By Circuit	Total Miles	Customers Affected Per Mile	Outages Per Mile	Circuit SAIDI	Circuit SAIFI	# Cust_3 Or Mores	#Cust_>4Hr Outage	Customer Weighting	Region	AWC
1	6	336X1_45	1.27	202	1.2	98	35	3,433	694,796	348	30.3	113	1.2	1,995	9.8562	1,527	568	1,088.8	NH NORTHERN	CHOCORUA
2	322	27H3_22	0.03	209	2.1	9	8	69	14,426	12	3.8	18	2.1	1,202	5.7500	-	10	422.3	NH SOUTHERN	NASHUA
3	30	348X2_76	0.72	113	2.5	72	48	3,479	393,904	717	77.4	45	0.6	549	4.8532	202	106	248.6	NH NORTHERN	LANCASTER
4	13	3155X9_22	1.07	119	2.6	182	27	4,905	585,458	1,076	61.1	80	0.4	544	4.5576	-	1,078	352.1	NH WESTERN	KEENE AWC
5	35	25W1_77	0.61	100	2.7	82	41	3,366	335,166	754	43.4	78	0.9	444	4.4615	1,177	16	393.3	NH NORTHERN	BERLIN
6	2	3155X4_36	2.27	127	2.7	174	56	9,740	1,241,075	2,188	91.7	106	0.6	567	4.4514	-	2,223	532.0	NH WESTERN	KEENE AWC
7	4	3139X_31	1.72	80	2.7	74	157	11,662	938,067	2,662	151.3	77	1.0	352	4.3805	440	220	244.3	NH WESTERN	KEENE AWC
8	214	79W4_12	0.08	48	2.8	58	15	876	41,983	202	12.4	70	1.2	208	4.3366	-	-	72.7	NH CENTRAL	BEDFORD
9	14	3120X2_31	1.06	127	2.9	62	73	4,548	578,140	1,081	56.1	81	1.3	535	4.2054	358	439	324.6	NH WESTERN	KEENE AWC
10	218	377X29_65	0.07	110	2.9	36	10	361	39,647	86	4.2	86	2.4	461	4.1977	348	1	231.1	NH EASTERN	EPPING
11	340	317X1_12	0.02	71	2.9	52	3	155	11,010	37	0.6	251	4.9	298	4.1892	-	-	104.1	NH CENTRAL	BEDFORD
12	129	377X6_65	0.18	80	3.2	92	13	1,195	95,992	321	10.2	117	1.3	299	3.7281	960	-	296.8	NH EASTERN	EPPING
13	1	355X10_76	2.52	154	3.3	70	127	8,944	1,376,335	2,423	123.5	72	1.0	568	3.6911	1,356	1,075	631.3	NH NORTHERN	LANCASTER
14	144	3155X8_22	0.15	90	3.3	58	16	933	83,732	255	19.3	48	0.8	329	3.6655	-	3	115.6	NH SOUTHERN	NASHUA
15	237	399X11_62	0.06	140	3.3	22	11	238	33,263	65	3.1	77	3.5	512	3.6615	76	65	204.1	NH EASTERN	ROCHESTER
16	217	23X2_12	0.07	43	3.3	102	9	922	39,828	252	16.3	57	0.6	158	3.6587	-	10	56.8	NH CENTRAL	BEDFORD
17	64	43W1_43	0.38	113	3.6	52	35	1,815	205,120	549	31.5	58	1.1	374	3.3069	-	158	154.5	NH NORTHERN	LANCASTER
18	36	336X_45	0.61	160	3.7	75	28	2,086	334,245	639	19.9	105	1.4	523	3.2660	1,708	634	619.9	NH NORTHERN	CHOCORUA
19	44	3155X7_22	0.47	108	3.8	73	33	2,397	258,376	759	37.9	63	0.9	341	3.1594	17	85	135.3	NH SOUTHERN	NASHUA
20	28	51W1_36	0.74	232	3.9	65	27	1,755	407,417	576	35.2	50	0.8	707	3.0448	-	590	335.9	NH WESTERN	KEENE AWC
21	17	24X1_36	0.96	85	4.0	77	81	6,197	525,088	2,056	129.5	48	0.6	255	3.0143	-	79	101.2	NH WESTERN	KEENE AWC
22	55	384X1_76	0.42	161	4.0	47	30	1,407	227,184	471	33.8	42	0.9	483	2.9897	907	269	390.7	NH NORTHERN	LANCASTER
23	229	311X3_12	0.06	183	4.1	15	13	193	35,252	66	9.4	21	1.4	534	2.9242	152	39	223.2	NH CENTRAL	BEDFORD
24	117	3137X5_65	0.21	84	4.1	149	9	1,338	112,937	459	15.9	84	0.6	246	2.9150	-	-	86.1	NH EASTERN	EPPING
25	20	3140X2_36	0.93	104	4.2	73	67	4,892	510,731	1,705	98.6	50	0.7	300	2.8695	2,204	269	586.0	NH WESTERN	KEENE AWC
26	95	314X23_22	0.24	118	4.2	66	17	1,122	132,897	393	24.9	45	0.7	338	2.8544	-	296	162.7	NH SOUTHERN	NASHUA
27	178	3137X80_65	0.11	111	4.3	53	10	525	58,412	188	9.1	58	1.1	310	2.7857	171	-	142.7	NH EASTERN	EPPING
28	32	53H1_31	0.70	253	4.4	61	25	1,514	382,354	553	35.5	43	0.7	691	2.7355	-	555	325.0	NH WESTERN	KEENE AWC
29	52	53H2_36	0.44	251	4.4	37	26	949	238,386	347	29.5	32	0.9	687	2.7343	12	405	303.5	NH WESTERN	KEENE AWC
30	219	360X11_12	0.07	97	4.4	68	6	408	39,499	151	8.4	49	0.7	262	2.7075	-	-	91.7	NH CENTRAL	BEDFORD
31	241	346X17_45	0.06	110	4.5	100	3	299	32,846	113	6.6	45	0.5	291	2.6478	-	-	101.8	NH NORTHERN	CHOCORUA
32	162	3178X5_31	0.13	112	4.6	41	15	620	69,389	238	10.3	60	1.4	292	2.6059	105	17	125.6	NH WESTERN	KEENE AWC
33	26	347X3_45	0.75	170	4.7	45	53	2,409	410,432	937	56.9	42	0.9	438	2.5712	1,361	535	505.8	NH NORTHERN	CHOCORUA
34	65	318X2_11	0.36	105	4.7	86	22	1,898	198,808	738	30.8	62	0.7	269	2.5707	964	3	287.5	NH CENTRAL	HOOKSETT
35	10	3116X1_45	1.12	185	4.8	34	98	3,295	610,266	1,313	87.1	38	1.1	465	2.5101	1,644	593	580.5	NH NORTHERN	CHOCORUA
36	187	348X5_76	0.10	78	4.9	42	17	707	55,498	288	22.2	32	0.8	193	2.4555	-	61	76.6	NH NORTHERN	LANCASTER
37	31	3525X5_77	0.70	184	4.9	123	17	2,095	384,656	861	62.2	34	0.3	447	2.4341	254	787	325.3	NH NORTHERN	BERLIN
38	114	345X1_42	0.21	110	5.1	45	23	1,042	114,774	444	25.0	42	0.9	259	2.3473	44	11	100.9	NH NORTHERN	TILTON
39	135	3108X1_12	0.17	139	5.1	94	7	661	91,550	282	11.6	57	0.6	325	2.3440	-	137	134.2	NH CENTRAL	BEDFORD
40	137	377X15_65	0.17	88	5.2	86	12	1,035	90,738	445	9.3	111	1.3	204	2.3258	-	-	71.4	NH EASTERN	EPPING
41	145	399X19_61	0.15	81	5.3	258	4	1,033	83,650	452	4.1	253	1.0	185	2.2854	-	-	64.8	NH EASTERN	ROCHESTER
42	11	23X5_22	1.09	72	5.5	81	102	8,237	594,350	3,744	122.3	67	0.8	159	2.1998	39	550	145.9	NH CENTRAL	BEDFORD
43	76	335X1_12	0.31	201	5.5	122	7	851	171,174	388	12.9	66	0.5	441	2.1946	-	441	220.7	NH CENTRAL	BEDFORD
44	194	27H2_22	0.09	89	5.6	111	5	555	49,371	261	2.8	201	1.8	189	2.1271	-	-	66.2	NH SOUTHERN	NASHUA
45	16	20W1_42	0.96	101	5.7	80	65	5,230	525,935	2,463	64.5	81	1.0	214	2.1234	1,423	478	431.0	NH NORTHERN	TILTON
46	277	347X6_45	0.04	180	5.7	32	4	127	22,849	61	2.8	45	1.4	377	2.0978	-	4	132.7	NH NORTHERN	CHOCORUA
47	99	51H1_61	0.24	96	5.9	149	9	1,342	129,309	656	9.2	145	1.0	197	2.0465	-	1	69.2	NH EASTERN	ROCHESTER
48	301	27H1_22	0.03	90	6.0	64	3	192	17,304	95	1.5	124	1.9	182	2.0162	-	-	63.6	NH SOUTHERN	NASHUA
49	141	37H2_42	0.16	55	6.0	526	3	1,578	86,089	788	11.0	143	0.3	109	2.0021	-	-	38.2	NH NORTHERN	TILTON
50	343	3229X10_65	0.02	118	6.0	30	3	90	10,620	45	1.6	58	1.9	236	2.0000	-	1	82.8	NH EASTERN	EPPING

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Definition of Reliability Indices and Terms

SAIDI / COSAIDI: System Average Interruption Duration Index

This index measures the average number of minutes the typical customer is without power.

Calculation: **SAIDI** = Customer Minutes Out / Customers Served

CAIDI: Customer Average Interruption Duration Index

This index measures the average time required to restore service to the typical customer.

Calculation: **CAIDI** = Customer Minutes Out / Customer Interruptions

SAIFI: System Average Interruption Frequency Index

This index measures the average number of times the typical customer is without power.

Calculation: **SAIFI** = Customer Interruptions / Customers Served

CIII: Customer Interruption Per Interruption Index

This index measures the average number of customers without power per interruption.

Calculation: **CIII** = Customer Interruptions / Interruptions

CELID-6: Customers Experiencing Long Interruption Duration >6 Hours (Steps)

Total System Indices:

The Total System Reliability Indices include Distribution data described above as well as transmission line and transmission class substation outages.

The company statistics exclude MEDs (Major Event Days), customer, power supplier and select outages.

Customer Interruptions (CI): The number of customers affected by an interruption.
Customer Minutes Out (CMI): The number of customer Interruptions multiplied by the number of minutes they were without power.
Interruptions: An event in which an outage to customers occurs.