STATE OF CONNECTICUT

PUBLIC UTILITIES REGULATORY AUTHORITY
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DOCKET NO. 22-12-01 **PURA 2023 BIENNIAL REPORT TO THE GENERAL ASSEMBLY CONCERNING ITS REVIEW OF EACH ELECTRIC DISTRIBUTION COMPANY'S VEGETATION MANAGEMENT PRACTICES**

February 15, 2024

LEGISLATIVE REPORT

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LEGISLATIVE REPORT

I. INTRODUCTION

A. SUMMARY

In accordance with Conn. Gen. Stat. §§ 16-32k and 11-4a, the Public Utilities Regulatory Authority (Authority or PURA) submits its 2023 Report to the Connecticut General Assembly regarding the Authority's review of the vegetation management practices of The United Illuminating Company (UI) and The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource; collectively, with UI, the electric distribution companies or EDCs).

B. BACKGROUND OF THE PROCEEDING

Every two years on or before November 1, the Authority is required to submit a report to the Energy and Technology Committee of the General Assembly regarding the vegetation management practices[1] of the EDCs. Conn. Gen. Stat. § 16-32k. Each year, the EDCs submit to the Authority any updates to their respective maintenance plans for transmission and distribution overhead lines (Maintenance Plans), which must include a vegetation management (VM) plan for trimming branches and limbs located in close proximity to overhead electric wires where such branches and limbs may damage the wires. Conn. Gen. Stat. § 16-32g; Conn. Agencies. Regs. § 16-32g-1. The Authority further requires the EDCs to submit certain VM plan metrics on a yearly basis. Decision, June 17, 2015, Docket No. 14-07-18, PURA Report to the General Assembly Concerning its Review of Each Electric Distribution Company's Vegetation Management Practices, p. 15.

The Authority initiated this docket on December 8, 2022, to review the EDCs' 2023 Maintenance Plans, including their VM plans and associated metrics, and to issue this biennial report to the General Assembly. Notice of Proceeding, Feb. 16, 2023, p. 1. The Authority issued a Draft Report on February 2, 2024, and provided an opportunity for Participants to file written comments on the Draft Report.

II. REVIEW OF VEGETATION MANAGEMENT PRACTICES

A. 2014 TREE TRIMMING DECISION AND VEGETATION MANAGEMENT STANDARDS

In 2014, the Authority examined the EDCs' tree trimming and vegetation removal programs and identified the practices and procedures required for public utility companies' vegetation management practices to comply with legislative mandates. Decision, June 25, 2014, Docket No. 12-01-10, PURA's Investigation into the Tree Trimming Practices of Connecticut Utility Companies (Tree Trimming Decision), pp. 12-23.

[1] "Vegetation management" is defined as "the retention of trees and shrubs that are compatible with the utility infrastructure and the pruning or removal of trees, shrubs, or other vegetation that pose a risk to the reliability of the utility infrastructure." Conn. Gen. Stat. § 16-234(a)(4).

Since the issuance of the Tree Trimming Decision, the General Assembly has instituted incremental changes to the statutory VM requirements contained in Conn. Gen. Stat. § 16-234. Specifically, Public Act 16-86 amended Conn. Gen. Stat. § 16-234 to add subsection (h), requiring the EDCs to provide for removal or disposition of debris generated from vegetation management in utility protection zones. Public Act 16-86 also added subsection (i), which requires the EDCs to provide a vegetation management plan to the tree warden or chief elected official of the town or borough in which the vegetation management will occur and further requires the town or borough to make such plans publicly available. Further, Public Act 17-117 added subsection (c)(2), which implemented notice requirements for tree pruning and removal, and subsection (j), which addressed vegetation management in the utility protection zone.

An appendix to this report provides definitions of common and relevant vegetation management and electric distribution terms used throughout this Report.

B. EVERSOURCE VEGETATION MANAGEMENT PROGRAM

1. Overview

Eversource filed its Maintenance Plan (Eversource Maintenance Plan) on January 3, 2023, which includes its VM Plan for 2023 in Appendix 3 (Eversource 2023 VM Plan), as well as its VM Plan Metrics (Eversource 2022 VM Plan Metrics), which provides updates specific to 2022. The Eversource 2023 VM Plan discusses the EDC's vegetation management practices, which include a set of programs aimed at minimizing electric system outages through regular maintenance efforts.

Eversource's vegetation management program involves various tree trimming efforts, including Standard Maintenance Trimming (SMT), Enhanced Tree Trimming (ETT), and Enhanced Tree Removal (ETR). Eversource Maintenance Plan, p. 3. The ETT Program includes a number of subprograms, including Maintenance Enhanced Tree Trimming (METT) on Backbones or Laterals. Id.

Within the scope of work for local distribution line clearance tree work and brush control, Eversource's ETR program targets risk trees in the fall zone along backbones. Eversource Maintenance Plan, p. 3.

Enhanced Tree Trimming programs follow the EDC's recommended Enhanced Clearance standard, which describes a clearance zone spanning ten feet on all sides of conductors from the ground to the sky. Eversource 2023 VM Plan, pp. 2-5. Eversource provides notice and secures consent from abutting property owners and private property owners consistent with Conn. Gen. Stat. § 16-234(c). Eversource Comments, Feb. 9, 2024, p. 2. In the past, Eversource used herbicide to distribution lines in rights of way (ROW) in year one and followed-up with another application in year two. Id. The current strategy now involves mechanical cutting in ROW in year one followed by an herbicide application in year two or three. Id.

Connecticut continues to face emerald ash borer and gypsy moth infestations, which have led to an unprecedented number of weakened, dying, and dead trees.

Eversource Interrog. Resp. RSR-6. Eversource's Enhanced Tree Removal program largely targets trees affected by these infestations, focusing on areas that would impact large numbers of customers or cause the most damage to company facilities. Id. Eversource expects that the infestations and associated impact to trees will continue for the next few years, and it plans to continue prioritizing and removing these hazard trees. Id.

2. 2018-2022 VM Program Updates and Expenditures

The below table summarizes Eversource's reported vegetation management expenditures from 2018-2022.

Table 1: Eversource Vegetation Management Expenditures by Program

	2018	2019	2020	2021	2022
Expense Programs[2]					
Roadside Maintenance	$26,568,691	$26,380,564	$24,133,176	$29,492,752	$29,460,948
ROW Brush Control	$390,451	$452,966	$598,978	$546,822	$478,046
ROW Side Pruning	$434,306	$896,960	$8,241	$36,308	$65,272
Vine Control	$224,536	$233,497	$262,436	$264,832	$259,236
Customer Requests	$832,419	$1,177,713	$705,234	$894,752	$966,343
Mid-Cycle	$0	$0	$0	$0	$3,626
Emergency Restoration	$1,725,740	$1,401,673	$1,453,194	$2,190,651	$2,249,669
Transformer Enclosure	$6,668	$5,219	$5,230	$5,923	$6,110
Other	$30,759	$57,000	$0	$546,941	$390,839
Expense Programs Totals	**$30,213,570**	**$30,605,592**	**$27,166,489**	**$33,978,982**	**$33,880,090**
Capital Programs					
Customer Focus ETT	$6,130,897	$3,576,788	$2,884,856	$5,188,535	$3,237,622
Tree Removals	$20,092,913	$32,659,750	$32,347,289	$34,994,195	$35,831,058
Enhanced Tree Work	$183,377	$0	$0	$0	$0
DOT	$0	$0	$0	$0	$2,391,307
Capital Programs Totals	**$26,407,187**	**$36,236,538**	**$35,232,145**	**$40,182,730**	**$41,459,986**
Capital Tracker Programs					
SMT	$0	$1,987,351	$1,926,734	$0	$0
ETT	$23,793,062	$11,316,336	$12,316,911	$0	$0
ETT Row	$2,670,856	$1,735,373	$584,331	$0	$0
Capital Tracker Summary	**$26,463,918**	**$15,039,060**	**$14,827,976**	**$0**	**$0**

Eversource Interrog. Resp. RSR-4, Att. 1.

[2] The "Roadside Maintenance" expense category includes SMT on laterals, backbone maintenance trimming on backbones previously trimmed under ETT program, lateral maintenance trimming on laterals previously trimmed under ETT program, and state and municipal traffic control costs. Eversource Interrog. Resp. RSR-4, Att. 1.

Table 2: Eversource Miles Cleared and Trees Removed

Miles Cleared & Trees Removed	2018	2019	2020	2021	2022
Roadside Maintenance Backbone	987	1,117	1,122	958	929
Roadside Maintenance Lateral	2,654	2,648	2,436	2,954	2,883
Reclaim Backbone	0	0	0	0	0
ROW Brush Control	196	176	210	216	198
Customer Focus ETT	54	62	76	61	14
Enhanced Tree Work	464	246	236	0	58
ROW ETT	32	36	3	0	0
Total Miles Cleared	**4,387**	**4,285**	**4,083**	**4,189**	**4,082**
Tree Removals Hazard	16,021	21,717	18,127	15,383	23,703
Tree Removals Non-Hazard	6,756	2,725	2,402	1,241	588
Total Trees Removed	**22,777**	**24,442**	**20,529**	**16,624**	**24,291**

Eversource Interrog. Resp. RSR-4, Att. 1.

3. 2023 VM Program Budget and Scope

A total of $34,100,000 was budgeted for Eversource's planned 2023 expense programs. Eversource VNM Plan, p. 1. Eversource's 2023 vegetation management expense program budget for roadside maintenance was $29,426,910 to complete 1,310 backbone miles and 3,001 lateral miles. Id. The budget for 2023 ROW Brush Control was $860,000 to complete 136 Backbone miles. Id. Eversource's 2023 ROW Side Pruning budget was $230,000. Id. The 2023 Vine Control budget was $240,000. Id. Eversource's 2023 Customer Request Work budget was $787,000. Eversource 2023 VM Plan. The 2023 Emergency Restoration budget was $2,200,000. Id. Eversource's 2023 Transformer Enclosure budget was $10,000. Id. Lastly, the budget for 2023 "other" expense programs was $345,590. Id.

A total of $41,300,000 was budgeted for Eversource's planned 2023 capital programs. Eversource VNM Plan, p. 1. Eversource's vegetation management capital program budget for 2023 Customer Focus ETT was $5,500,000. Id. The budget for 2023 DOT Project was $3,000,000. Id. Eversource's 2023 Tree Removals budget is $18,000,000. Id. Lastly, the 2023 budget for the Reliability Removals was $14,800,000. Id.

Eversource has budgeted $75,400,000 across various vegetation management expenses and capital programs in 2023. Id. Eversource planned to complete a total of 1,446 backbone miles and 3,051 lateral miles in 2023. Id.

C. UI VEGETATION MANAGEMENT PROGRAM

1. Overview

UI filed its Utility Line Maintenance Plan (UI Maintenance Plan) on January 3, 2023, which includes its VM Plan for 2023, as well as its VM Plan Metrics (UI 2023 VM Plan Metrics) on January 31, 2023, to provide updates specific to 2022.

UI continues to conduct vegetation management primarily through its Utility Protection Zone (UPZ) Program. UI Maintenance Plan, pp. 7-8. The UPZ program has a goal of establishing a clearance zone that extends eight feet horizontally from ground-to-sky around all primary distribution lines. Id. Until 2023, UI implemented a UPZ maintenance program (UPZ-M) to maintain the UPZ clearance at locations that have already had UPZ conducted.[3] Id., p. 8. Both UPZ and UPZ-M work may involve removing whole trees outside of the clearance zone deemed hazardous to infrastructure. Id. UI retains trees and shrubs within the clearance zone that are compatible with the Right Tree – Right Place program. Id. UI also implements the following additional vegetation management strategies:

1. Maintenance trimming to address issues raised by customers and third parties.
2. Removal of direct tree contacts from utility conductors and energized equipment.
3. Removal of climbing vines from poles and guy wires.
4. Vegetation clearance from off-road distribution rights-of-way lines.

UI service territory has experienced a significant decline in its Ash tree population due to the Emerald Ash Borer. UI Interrog. Resp. 6. UI service territory has not experienced a negative impact on Oak Tree population due to Gypsy Moths. Id. UI's UPZ program helps to address the Emerald Ash Borer's negative effect on Ash trees. Id.

UI also submits a plan to each municipality detailing the planned VM work by circuit, street, and a range of customers impacted by January 31 of each year. UI Interrog. Resps. RSR-18, RSR-19, and RSR-20.

[3] The UPZ-M program ceased following the Authority's Decision in UI's last rate case, which required UI to develop and submit a VM plan to begin transitioning the UPZ program to a four-year cycle maintenance trimming by 2027, while completing UPZ priorities during the transition. Decision, Aug. 25, 2023, Docket No. 22-08-08, Application of the United Illuminating Company to Amend its Rate Schedule, Order No. 21, p. 286. The Authority approved UI's initial plan filed in compliance with Order No. 21 on October 27, 2023. See Motion No. 5 Ruling, October 27, 2023, Docket No. 23-08-09, Annual Electric Distribution Company Reliability and Resilience Framework Review.

2. 2018-2022 VM Program Updates and Expenditures

The below table summarizes UI's vegetation management expenditures from 2018-2022.

Table 3: UI Vegetation Management Expenditures by Program

	2018	2019	2020	2021	2022
UPZ	$13,611,636	$17,764,996	$10,805,915	$13,170,463	$15,433,462
Reliability Maintenance	$1,072,120	$891,690	$839,914	$876,242	$1,176,358
Miles Cleared	185	520	425	252	264
Trees Trimmed	9,343	22,515	10,452	11,717	10,999
Hazard Trees Removed	2,267	6,951	4,076	8,465	7,412
Total Trees Removed	6,789	11,407	5,402	9,405	7,724
Transmission Expenditures	$1,378,859	$1,521,449	$1,520,908	$1,576,076	$1,578,275
Transmission Miles Cleared	27.3	21.4	16.4	14.9	25.0

UI Interrog. Resp. RSR-4.

3. 2023 VM Program Budget and Scope

UI's planned 2023 outside tree contractor total budget was $14,672,000. UI Vegetation Metrics, pp. 6-7. UI planned to trim 399 miles of roadside distribution lines, and 22.05 miles of transmission ROW in 2023. Id. UI's 2023 budget for vine control was $60,000. Id. UI's 2023 traffic control total budget was $3,838,000. Id. UI's 2023 Emergency Restoration budget was $500,000. Id. UI's 2023 Other capital construction project tree work was $3,000,000. Id.

III. APPENDIX: DEFINITIONS

The definitions below have been standardized in the EDCs' respective vegetation management plans and TDRPs.

CAIDI or Customer Average Interruption Duration Index. A reliability metric that shows the average interruption duration in minutes for those customers who experienced interruptions during a year. It is determined by dividing SAIDI by SAIFI. See definitions for SAIDI and SAIFI below.

Backbone. A section of line starting at a substation and extending to the first fused device or single/double phase reclosing device.

Brush. An undesirable woody plant normally maturing at 20 feet or more in height, with single or multiple stems, and with a small, minimal, or no crown. It shall have a diameter at breast height (DBH, 4.5 feet above ground) of 6 inches or less.

Clearance. The distance from the conductor to the part of the tree that will interfere with or grow into the conductor first.

Diameter Breast Height (DBH). Diameter of tree or brush at a point 4 ½ feet above the ground.

Direct Contact. Any part of a tree that is in direct contact with an energized conductor or has visible signs of burning.

Fall Zone. The area including the roadside clearance zone and extending from the conductors out a distance to where an uprooted tree could strike the conductor and cause an outage.

Hazardous Tree. Any tree or part of a tree that is (A) dead, (B) extensively decayed, or (C) structurally weak, which, if it falls, would endanger utility infrastructure, facilities or equipment. See Conn. Gen. Stat. § 16-234(a)(3).

Lateral. A section of primary voltage line extending from the end of backbone to a secondary or service wire.

Line Clearing. Controlling vegetation to maintain proper clearance from conductors which includes tree trimming, removal, and brush and vine removal.

Modification. When the property owner requests modification to required clearances. Pruning. Also "Trimming." The selective removal of parts to meet specific utility infrastructure reliability goals and objectives, when performed according to current professional tree care standards and in a manner that retains the structural integrity and health of the vegetation. See Conn. Gen. Stat. § 16-234(a)(5).

Refusal. When a property owner does not allow any tree work to be performed.

Removal. Completely removing an entire tree to ground level; required when a tree is described as a hazardous tree or when a tree should be removed for other reasons. Right-of-way (ROW). The land over which a utility line, railroad, or roadway passes. EDC facilities may also be buried in a right-of-way.

Risk Tree. The combination of the likelihood of a tree-wire conflict or tree failure occurring, and the severity of the potential consequences including but not limited to injury, utility infrastructure damage or electric service disruption.

SAIDI or System Average Interruption Duration Index. The average interruption duration in minutes per customer served for a given year. It is determined by dividing the sum of all customer interruption durations during a year by the number of customers served during that year.

SAIFI or System Average Interruption Frequency Index. The average number of times that a customer is interrupted during a year. It is computed by dividing the total number of customers interrupted in a year by the average number of customers served during the year.

Shrub. A woody plant normally maturing less than 20 feet in height and presenting a generally bushy appearance because of its several erect, spreading or prostrate stems.

Tree. A woody plant normally maturing at 20 feet or more in height, usually with a single trunk, unbranched for several feet above ground, with a definite crown. It shall have a diameter at breast height (4.5 feet above ground) of greater than 6 inches.

Trim Cycle. The desired period of time to repeat vegetation management.

Utility Protection Zone (UPZ). Any rectangular area extending horizontally for a distance of eight feet from any outermost electrical conductor or wire installed from pole to pole and vertically from the ground to the sky.

Wires/Lines/Conductors. The overhead wires which carry the electric current at required voltages. Also to be considered for tree clearance and safety are other pole mounted equipment such as transformers, fuses, circuit breakers, etc.

Wire/Line/Conductor – Primary. A wire running from pole to pole operating at a voltage level exceeding 600 volts, and normally located at the top of a pole.

Wire/Line/Conductor – Secondary. A wire running from pole to pole operating at a voltage level of 600 volts or less (normally 120 to 240 volts, and generally located approximately 4 feet below the primary line.