**STATE OF NEW HAMPSHIRE**

**BEFORE THE**

**NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION**

**DOCKET NO. DE 24-070**

**REQUEST FOR CHANGE IN RATES**

# DIRECT TESTIMONY OF

**Robert D. Allen**

***Vegetation Management***

**On behalf of Public Service Company of New Hampshire**

**d/b/a Eversource Energy**

**June 11, 2024**

## Table of Contents

**I. INTRODUCTION ..... 1**

**II. PSNH VEGETATION MANAGEMENT ..... 6**

**A. Current Vegetation Management Program ..... 6**

**B. Costs of the Vegetation Management Program ..... 17**

**C. Benefits of the Vegetation Management Program ..... 22**

**III. PROPOSED CHANGES TO THE VEGETATION MANAGEMENT PROGRAM ... 26**

**IV. CONCLUSION ..... 38**

**STATE OF NEW HAMPSHIRE**

**BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION**

**DIRECT TESTIMONY OF ROBERT D. ALLEN**

**PETITION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE d/b/a EVERSOURCE ENERGY**

**REQUEST FOR CHANGE IN RATES**

**June 11, 2024**

**Docket No. DE 24-070**

---

## I. INTRODUCTION

**Q. Mr. Allen, please state your full name, position and business address.**

A. My name is Robert D. Allen. I am employed by Eversource Energy Service Company as Manager of Vegetation Management Coordination, Strategy and Innovation. My business address is 780 N. Commercial Street Manchester, NH 03101.

**Q. Please summarize your educational background.**

A. I have an Associate of Science in Arboriculture from Stockbridge School of Agriculture University of Massachusetts Amherst, MA.

**Q. Please summarize your professional experience.**

A. I was appointed to my previous position at Eversource Energy ("Eversource") in August 2013 and was responsible for Vegetation Management on the distribution system for Public Service Company of New Hampshire d/b/a Eversource Energy ("PSNH" or the "Company"). From 2009 to 2013, I held the position of Supervisor of Vegetation

Management for the Company. From 1992 to 2009, I was an Arborist for The Connecticut Light and Power Company d/b/a Eversource Energy. Overall, I have approximately 45 years of experience in Arboriculture.

**Q. What are your current responsibilities as Manager of Vegetation Management Coordination, Strategy and Innovation?**

A. This is a new position created within ESC to provide efficiencies across Eversource's vegetation management programs. The essential functions of this role include collaborating with vegetation management counterparts to drive consistency, coordinating with operations leaderships, supporting the Director of Vegetation Management in developing comprehensive strategies, and providing input into the budgeting process to align with strategic vegetation management objectives. My position also includes various responsibilities to drive stakeholder relationships and coordination, manage benchmarking efforts to identify best practices and opportunities for improvement, and develop vegetation strategies and team coordination. All of these efforts help drive a more coordinated, efficient vegetation management team for ESC, which benefits all Eversource affiliates, including the Company.

**Q. Have you previously testified before the Commission?**

A. Yes, I have testified before the New Hampshire Public Utilities Commission (the "Commission") in past proceedings, including the Company's last base distribution rate proceeding, Docket No. DE 19-057.

**Q. Mr. Allen, what is the purpose of your testimony?**

A. The purpose of my testimony is to:

(1) outline the Company's current vegetation management program ("VMP") as implemented through the approved Settlement Agreement on Permanent Distribution Rates, Docket No. DE 19-057 ("Settlement Agreement");

(2) provide an overview of the vegetation management activities and benefits realized through the Company's VMP since the Settlement Agreement; and

(3) propose changes to the VMP as well as an increase in the Company's funding to expand and increase the reliability and resiliency benefits across the Company's service territory in light of increasing storms and other environmental factors causing tree-related outages.

**Q. Please explain the importance of the Company's VMP and why it is a priority to meet the Company's reliability and resiliency objectives.**

A. The Company has a strong institutional commitment to providing a high level of service reliability to customers, including avoiding or mitigating outages and restoring power after large-scale weather events in a safe and efficient manner when these outages do occur. The Company has long taken proactive steps to enhance and protect its distribution system, and PSNH's system infrastructure is unavoidably exposed to many different weather events. This leaves the Company's distribution system vulnerable in the types of harsh conditions that occur with ice storms, heavy wet snow, and high winds, such as those experienced during Nor'easters, causing substantial damage and prolonged power interruptions.

Despite continued efforts to combat these power outages, the Company is experiencing these types of weather events more and more frequent and with more severity due to climate change impacts, causing significant disruption in the distribution system.

Despite the increasing weather events, the Company continues to maintain a longstanding track record of providing a high level of reliability in relation to daily operations and strives to implement measures to maintain and improve its ability to meet these objectives. The Company is repeatedly observing trees and tree limbs to be the leading cause of outages experienced during weather events. As shown in Table 1 below, the last five major storms in New Hampshire all resulted in over 60 percent of the outages being tree-related, with some of the largest storms resulting in over 80 percent of the outages caused by trees.

Table 1: Major Storms and Tree-Related Outages

| OUA Events Dashboard | | | | |
|---|---|---|---|---|
| Storm Event Date | Major Storm # | Total Outage Events ALL | Total Outage Events TREE | Percent TREE |
| 4/3/24 - 4/4/24 | MS24G006 | 7,768 | 6,587 | 84.80% |
| 3/29/24 - 3/31/24 | MS24F006 | 3,894 | 3,159 | 81.12% |
| 3/10/24 - 3/12/24 | MS24E006 | 836 | 538 | 64.35% |
| 2/28/24 - 2/29/24 | MS24D006 | 1,700 | 1,259 | 74.06% |
| 1/28/24 - 1/29/24 | MS24C006 | 989 | 610 | 61.68% |

Comprehensive vegetation management strategies can help combat these tree-related outages and achieve an increased level of reliability during major events affecting the distribution system. Additionally, maintaining expanded clearances and undertaking proactive hazard tree removal facilitates system resiliency during these severe storm events. Therefore, the Company's investment in vegetation management has been both beneficial and vital to increasing the reliability and resiliency of the electric distribution

system. This continued investment in vegetation management activities directly benefits New Hampshire customers by decreasing the duration and frequency of outages on the system during and after major storm events.

**Q. What is your perspective on the future of the Company's VMP over the next five to ten years?**

A. As outlined above, the Company is experiencing more frequent and severe weather events each year and expects that trend to continue over the next five to ten years. When these severe weather events impact the Company's distribution system, not every line is created equal. The backbone and three-phase lines feed the most customers and include critical facilities like hospitals, police stations, and fire stations. When these lines are impacted, they affect hundreds of customers, including critical customers, and can interrupt necessary emergency response during a severe weather event. Other lines, like lateral feeds, serve minimal customers in remote areas and do not include critical facilities.

Additionally, some areas within the Company's service territory are impacted more frequently by severe weather events than others, causing multiple downed branches from wind and heavy snow. In districts that experience frequent strong coastal winds or larger amounts of heavy snow, trees are more susceptible to broken branches during harsh weather events, which can interfere with the distribution system and cause multiple outages.

Therefore, as the Company enters the next several years, it will be crucial to keep these differences on the distribution system in mind and prioritize vegetation management

accordingly. This will assist the Company in addressing the increasing frequency of weather events by enhancing reliability on the system based on frequency of impact, severity, and customers served.

**Q. How is your testimony organized?**

A. My testimony is organized into the following sections:

- Section I includes the introduction;
- Section II provides a summary of the current VMP, including its key initiatives and objectives as well as issues encountered, outlines the benefits realized from the program since 2019, and describes the costs associated with the program;
- Section III describes the Company's proposed changes to the VMP to enhance the program and increase system resiliency and reliability; and
- Section IV is the conclusion.

## II. PSNH VEGETATION MANAGEMENT

### A. Current Vegetation Management Program

**Q. What is the overall design of the vegetation management work performed under the VMP?**

A. The VMP is structured as a comprehensive effort involving multiple departments incorporating significant amounts of data analysis to effectively direct and implement vegetation management activities. The plan is coordinated on an individual circuit basis with the distribution engineering group and targets specific areas to improve reliability and resiliency. The execution of the actual tree work is managed by Eversource's Vegetation Management department utilizing a staff of Company arborists, contract arborists and tree

trimming and removal contractors. The program covers all primary wires, with scheduling developed on the basis of a combination of performance and circuit-specific cycle-based trimming.

The Company's current VMP includes the following programs: Scheduled Maintenance Trimming ("SMT"), Enhanced Tree Trimming ("ETT"), Mid-cycle Work, Customer Request Work, Hot Spot, Right of Way ("ROW") Maintenance, Full Width Clearing, Maintenance Enhanced Tree Trimming ("METT"), and Hazard Tree Removals.

In addition to undertaking actual vegetation management work, education is important in helping to minimize the impact of trees and other vegetation on the Company's distribution system. Without proper planning, trees planted near electric facilities can grow into the wires and cause interruptions. The Company does outreach and education to emphasize "Right Tree, Right Place" for property owners and municipal officials. Consistent with these efforts, the Company created Utility Arboreta in Portsmouth at the New Hampshire Division of Forests and Lands ("NHDFL") Urban Forestry Center grounds and at the Eversource facility on Legends Drive in Hooksett, New Hampshire. The primary objective of the Utility Arboreta is to demonstrate the appropriate species of trees and shrubs to plant in the proximity of the electric facilities, with the ultimate goal of reducing long-term maintenance costs, e.g., pruning and removal, associated with this vegetation.

**Q. Can you please summarize the activities under the VMP?**

A. Scheduled Maintenance Trimming

The Company's SMT cycle is based on a 12,000-mile distribution overhead system. This follows an established trim cycle to ensure that all circuits, regardless of current performance, are trimmed at least once in every five years, subject to circuit-specific considerations. The clearance specifications for the SMT program are 8 feet to the side, and 15 feet above and 10 feet below. This work is competitively bid to ensure it is performed in a cost-effective manner. The Company enters into longer term contracts for SMT work to ensure that contractor crew resources are available to do the work. The current contract began in 2021 and continues through 2024. The SMT is the core of the VMP and there are approximately ninety crews on the Company's distribution system every day performing this critical baseline clearance work. The next contract will be put out for competitive bid in June 2024. It will include a request for fixed pricing on SMT for 2025 and 2026. The following years (2027 and 2028) will be negotiated through a review of monthly performance scorecards which will include Safety, Customer Care, and Schedule adherence among other metrics.

Enhanced Tree Trimming

The Company performs ETT to manage vegetation along the main backbone of the circuit. In contrast to standard trimming, ETT expands the zones of tree pruning activity to create additional clearances between tree growth and electrical facilities. ETT is focused on circuit backbones and the specification are 10 feet to the side from "ground-to-sky". This

aggressive clearance program targets overhanging branches that could break and fall onto the Company's power lines.

With respect to ETT, the Company employs reliability-based prioritization methods to schedule vegetation management activity on specific circuits. The Company targets up to 150 miles per year on circuits with the worst tree-related reliability experienced in the previous year (i.e., the top 50 list). If the Company determines that a poorly performing circuit is scheduled to be included in the SMT cycle for that year, the Company will instead include the circuit backbone under ETT. As explained in more detail in Section III below, the Company is proposing to sunset the ETT program as it has served its purpose of increasing reliability on the distribution system.

Mid-cycle Work

Mid-cycle work is additional work completed on a circuit in between the standard cycle under the SMT. This can include vine removal and preventing the aggressive growth of some tree species. 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 work within the allocated budget to redistribute these funds.

Customer Request Work

Customer Request work is 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 outbreaks and 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.

Hot Spot Program

The Hot Spot program addresses tree and vine growth in between cycles. This program is similar to the Mid-cycle program but addresses intermittent vine growth, along with the aggressive growth of some tree species.

ROW Maintenance

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

Full Width Clearing of ROW

For full-width ROW clearing, the Company researches its easements to confirm the easement boundaries and then works to clear the rights-of way to the full extent allowed under the easement. More specifically, full-width ROW clearing involves the reclamation of existing rights-of-way by the enhanced clearing of trees and brush to extend the clearances between vegetation and the Company's electrical facilities located in rights-of-

way. This program identifies ROWs where enhanced clearing will benefit customers and workers. The tree contractor clears brush and trees to the full easement width and, at the edge of the easement, trims the bordering trees from ground to sky. The Company's arborists work closely with abutting property owners to communicate the work needed.

Maintenance Enhanced Tree Trimming 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.

Hazard Tree Removal

Hazard tree removal involves the identification, and complete removal, of trees determined to be in ill-health, or which otherwise pose a threat to electrical facilities or public safety, both within and outside standard trimming zones. Hazard trees are trees that should be removed rather than trimmed due to their potential to impact the electric system. The Company seeks to remove trees that are identified by trained arborists as a hazard to primary conductors. The Company profiles the SMT circuits for hazard trees as it is a best practice to remove the dead, diseased and dying trees while trimming the circuit. During the SMT cycle, the Company identifies trees that may fail and, because the Company won't revisit that circuit for another five years, includes the identified trees in the hazard tree removal program. For hazard trees that grow on customer property and own the hazard trees, the Company engages in a conversation to obtain permission to remove these trees.

**Q. Does the Company monitor the performance of its vegetation management contractors to ensure compliance with the Company's specifications?**

A. Yes. The Vegetation Management staff audits 100 percent of vegetation management work performed on its system and reviews contractor work for adherence to the standards for vegetation management. Arborists conduct field reviews of all work areas and document any areas of non-compliance by location, correlating the locations onto circuit maps. This information is sent to the contractors performing the work and they are required to complete any necessary re-work in accordance with the standards. In the event proper clearances have not been achieved, the contractor is responsible for re-trimming at no additional cost for a period of 12 months. The contractor is responsible for beginning any re-trimming within seven days of written notification and all work must be completed within 30 days. If the contractor does not start the work as required, the Company may hire an alternate contractor to complete the work and back charge the original contractor for the cost of performing the re-work.

**Q. Please outline how the Company procures and employs contractors for its VMP.**

A. The Company competitively solicits contracts for the activities under the VMP. Eversource's procurement agents work diligently with the tree contractors to refine the bid prices and come to a fair and agreeable final pricing for the contracted work. The Company is currently under a 4-year contract for SMT and METT from 2021 through 2024. The first two years of that contract (2021 and 2022) the prices were fixed prices or "locked in", and the contract was designed to include negotiated prices in 2023 and 2024. As stated

previously, the next contract will be released to competitive bid in June 2024. ROW maintenance (mowing) is contracted through a multiyear contract as well.

**Q. Does the Company have any future concerns with hiring contractors for its VMP?**

A. Yes. Eversource currently has experienced professionals managing its VMP, however there are some longer-term concerns with the work force in the field. There are very few programs in high school or college to attract students to Arboriculture/Forestry and it is a difficult, and oftentimes hazardous job performed in all types of weather, usually aloft. The salary for tree trimmers is also not commensurate with many other professions. As such, there is not as many individuals working in this field as the previous work force reaches retirement. The lack of skilled workers joining the trade has a direct impact on the work the Company can complete year over year and the availability of trained individuals. This has also had a material impact on costs, which the Company has seen through recent bids.

Because the tree worker contingent in both New Hampshire and New England has declined, oftentimes the larger contractors need to bring in workers based outside of New England to complete their assigned work. There are additional costs associated with these "travel crews". Another issue, which is hard to quantify monetarily, is the speed in which the travel crews can get acclimated to New Hampshire trees, terrain, and weather.

In 2021, the Company contracted with tree companies that have not previously worked for Eversource in New Hampshire. This was necessary due to the lack of tree crew resources available in the Northeast. The additional companies are Nelson Tree Service in Dayton,

OH, Stanley Tree Service in Smithfield, RI and Wright Tree Service in West Des Moines, IA. The Company also brought in a specialized tree removal team from Distinctive Tree Care in South Windsor, CT to assist in removing hazardous Emerald Ash Borer infected trees. As this issue becomes more prevalent, the Company has needed to prioritize its work and budget accordingly in order to address gaps in contractor availability.

**Q. How has the availability of skilled workers in this industry affected contract prices?**

A. When the Company competitively procured the SMT and METT 4-year contract outlined above, the pricing was dramatically higher than expected. The final pricing in this competitive process requires the Company to adjust its budget for SMT and METT in 2022. Additionally, when renegotiating the prices for 2023 and 2024, the contractors requested further increases for the contracted tree work that were much higher than anticipated. There has been such exorbitant increases by incumbent contractors that in one case, the Company needed to reduce their market share of the maintenance work due to the cost. The cause of these increases is the lack of new workers joining the work force as outlined above, alongside inflation, which has been affecting all industries across the board.

Each contractor has 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 because every town is different. Factors include how many officers on each road, for what duration, whether they require a cruiser, and hourly rate increases annually. In some communities, the cost for police detail

can approach $125/hour per officer and one of the Company's contractors suggested that they estimate over $3,000/mile for police details in some towns.

**Q. Has this had an impact on the Company's ability to complete its VMP within its approved budgets?**

A. Yes. These cost increases have resulted in significant budget pressure. For the Company's 2024 program, the cost of performing traditional tree maintenance on 20 percent of the miles will impact the funding of other important VMP activities. Additionally, the hiring issues that have plagued the work force have directly affected the Company's ability to perform its VMP work. For example, one of the contractors was unable to complete its awarded miles in 2022 due to limited crew resources. This required the Company to put the Nashua Area Work Center ("AWC") SMT and METT miles back out to bid.

**Q. What has the Company done to achieve cost containment and promote efficiencies?**

A. The New Hampshire team has utilized the Environmental Systems Research Institute ("ESRI") platform to create mobile applications which streamline the work. ESRI tools are easy to use and modify and the Company is confident that the Arborists and contractor personnel adapt to this technology quickly. ESRI has several applications available to facilitate work which contractors use on their mobile devices, including Field Maps and Survey 123. Field Maps allows the Company to track Hazard trees by showing a GIS point on the map that includes: tree species, tree size, permission status. The Company can then request hazard tree info by circuit, species, size, and town. The Company also audits its contracted trimming work and catalogs any Go-Backs through this application. Survey 123 tasks the arborists with completing two crew reviews per week, which are searchable

by trend, town, and circuit. The Company also uses this application to investigate any tree caused outage that affects over 200 customers, which is also searchable by town, tree species, and circuit.

Additionally, Power BI is a program that the Company's Arborist team uses every week. Circuit performance data 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 these programs will be part of redefining the workloads and crew resources, which will be necessary to achieve cost containment where possible. However, even with these cost efficiencies, the Company has had issues completing its VMP each year due to budget constraints, crew availability, and overall resources.

**Q. How is the Company combating the lack of qualified contractor resources and the increasing prices in the industry?**

A. The Company is continually looking for equipment solutions to complete its VMP activities more efficiently, with fewer crew resources needed. In 2023, three separate contractors brought mechanical trimmers, either 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 and at the end of the boom is an articulating circular saw. This tool works well in the right application, but it does not entirely replace human occupied bucket trucks. Another new tool explored 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. Lastly, the Company also contracted with tree companies for "grapple saw

boom trucks" and "knuckle boom cranes". This equipment greatly increases efficiency in select tree removals. The boom extends and grabs onto the tree piece with its grapple, and there is a saw blade attached to the grapple which then cuts the tree branch that is under control of the grapple. Once the cut is complete, the boom lowers the tree branch to the ground and releases it. Then the process is completed until the tree crown is completely dismantled. This machinery reduces tree worker exposure at heights, therefore making the tree removal process inherently safer.

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. The Company does not foresee these technologies being a replacement for contractor crews in the field anytime in the near future, but views these as important tools to help complete the VMP activities in a given year even amongst issues with crew availability and resources.

### B. Costs of the Vegetation Management Program

**Q. What are the Company's current approved costs for the VMP?**

A. Per the Settlement Agreement, the Company is allowed to include $27.1 million annually in rates for vegetation management. Of this amount, $11.6 million annually is associated with ETT and hazard tree removal; $14.0 million annually is associated with SMT; and $1.5 million annually is associated with full-width ROW clearing.

**Q. Please describe the annual reconciliation process for the Company's vegetation management program costs as approved in the Settlement Agreement?**

A. The Company requests recovery of its actual annual vegetation management expenses up to 10 percent over, or any amount under, the total amount allowed in base rates ($27.1 million), credited to or recovered through the annual Regulatory Reconciliation Adjustment ("RRA") Mechanism. The Company submits a detailed vegetation management plan on or before November 15th each year for the following calendar year's vegetation work. In this plan, the Company provides a summary of the budgeted costs by program. The previous calendar year's actual vegetation activity is reconciled to the budget each year in an annual report submitted to the Commission by March 1st.

If the actual expense incurred in the prior calendar year is less than the amount in base rates ($27.1 million) the Company may request either to carry that amount into the next program year, as an offset to the current year's expenditures or to return the under-spent amount to customers as a credit to the RRA, subject to Commission approval.

If the actual expense incurred in the prior calendar year is greater than the amount in base rates, the Company shall be allowed to recover amounts up to 10 percent of the amount in base rates through the RRA ($2.71 million + $27.1 million = $29.81 million total), subject to Commission approval. Amounts greater than 10 percent over the amount in base rates shall not be recovered through the RRA or any other recovery mechanism.

The Company will continue to reconcile vegetation management expenses through July 31, 2024 through the RRA, prior to new base distribution rates proposed in this proceeding.

Beginning on August 1, 2024, the Company will recover vegetation management expenses through base distribution rates, without further reconciliation through the RRA. The Company's joint direct testimony of Ashley N. Botelho and Yi-An Chen ("Permanent Revenue Revenue-Requirement Analysis Testimony") describe the Company's proposal to eliminate this provision in the RRA upon the implementation of the proposed performance-based ratemaking plan in this proceeding.

**Q. What has the Company invested each year in vegetation management since the Settlement Agreement?**

A. The table below outlines the Company's investment in vegetation management since the Settlement Agreement in 2019.

Table 2: VMP Budget (2020-2023)

($, millions)

| VMP Activity | Plan | Actual | Variance |
|---|---|---|---|
| *2020* | | | |
| Gross Cost | $ 33.3 | $ 31.2 | $ (2.2) |
| Reimbursements | (6.3) | (8.2) | (1.9) |
| Net Cost | $ 27.1 | $ 23.0 | $ (4.1) |
| *2021* | | | |
| Gross Cost | $ 37.3 | $ 34.6 | $ (2.7) |
| Reimbursements | (10.2) | (8.3) | 1.9 |
| Net Cost | $ 27.1 | $ 26.3 | $ (0.8) |
| *2022* | | | |
| Gross Cost | $ 36.0 | $ 33.1 | $ (2.9) |
| Reimbursements | (9.2) | (7.6) | 1.7 |
| Net Cost | $ 26.8 | $ 25.5 | $ (1.2) |
| *2023* | | | |
| Gross Cost | $ 37.4 | $ 41.3 | $ 3.9 |
| Reimbursements | (3.4) | (1.1) | 2.3 |
| Net Cost | $ 34.0 | $ 40.2 | $ 6.2 |

**Q. Please explain why the Company has spent less than its full VMP budget in previous years.**

A. As explained above, there are numerous difficulties finding qualified people in the industry and contractor costs have increased year over year. The Company's vegetation management programs are impacted by crew availability to do the work. The Company enters into longer-term contracts for SMT to secure these resources over the course of the five-year cycle. When the economy is strong, crew resources are at a premium as the Company's contractors are competing for personnel against higher paying jobs that do not involve a work environment characterized by hard physical labor, adverse weather events, numerous insects and electric wires.

Additionally, the Company's service territory has been experiencing an increasing number of storm events each year. Specifically, calendar years 2022 and 2023 had a significant amount of storm events as compared to previous years. During extreme weather events, vegetation management crews are diverted from regularly scheduled vegetation management work to storm duties to assist in the restoration of service to customers. While their efforts during these weather events are a vital component of service restoration, it necessarily impacts the Company's ability to complete scheduled vegetation management work. These efforts further limit completion of the Company's VMP in a given year.

Lastly, the Company's budget has not accounted for the vegetation management of utility pole assets previously owned by Consolidated Communications, Inc. ("CCI"). On November 18, 2022, the Commission issued Order No. 26,729 in Docket No. DE 21-020

authorizing the Company to purchase certain pole assets from CCI (the "Order"). The Order also authorized the Company to recover certain costs related to the transaction through a mechanism created called the Pole Plant Adjustment Mechanism ("PPAM"). Specifically, the Order authorized the Company to recover costs and expenses associated with operation and maintenance ("O&M") of the transferred poles, pole replacement and inspection costs, and vegetation management expenses. The costs and expenses related to vegetation management expense billed to CCI for the period February 10, 2021 through December 31, 2022 would not have been accounted for in the Company's final budgeted numbers for its VMP in these years. Therefore, the Company has actually spent an additional $17 million on vegetation management surrounding the CCI assets from February 10, 2021 in the years 2021 through April 2023. Prior to the Order, the Company had billed CCI approximately $8 million per year associated with vegetation management activities surrounding the pole facilities. This will be included in the VMP budget going forward as the Company will not be reimbursed for these activities.

The Company's Permanent Revenue Revenue-Requirement Analysis Testimony describes the transfer of the CCI assets and the cost recovery of these past vegetation management expenses in more detail.

**Q. How is the Company working to remediate these issues so it will be able to complete its VMP activities year over year?**

A. As explained above, the Company is working to explore new technologies in the industry to limit the crew resources needed in the field to complete the VMP. Additionally, the

Company has contracted with tree companies that have not previously worked for Eversource in New Hampshire. These efforts will streamline the VMP and allow the Company to complete its program year over year into the future. The Company is also proposing changes to its VMP as outlined below that will reprioritize the program to allocate resources more efficiently and effectively.

### C. Benefits of the Vegetation Management Program

**Q. Why is vegetation management important, particularly in the state of New Hampshire?**

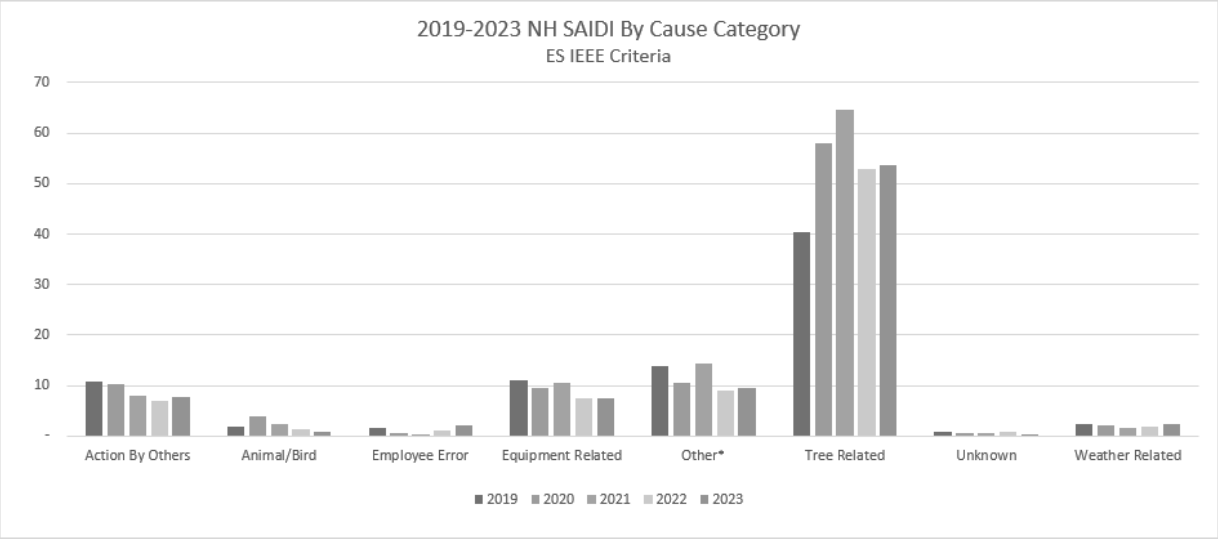
A. New Hampshire is one of the most forested states in the country, with 83 percent of the state being forested.[1] Therefore, most of the outages on the Company's system are caused by trees and tree limbs. To combat this, vegetation management has been and continues to be a top priority for the Company. Vegetation management programs and initiatives have long represented one of the greatest opportunities for electric utilities to improve system reliability and outage management. Indeed, the Commission has recognized that vegetation management is in the public interest because of the "tangible benefits in reduced frequency and duration of outages" that are delivered by vegetation management activities.[2] Vegetation management is also extremely important to increase reliability and resiliency in the wake of storm events. Because the Company has been experiencing

[1] Sharon Lurye, States With the Most Tree Cover, U.S. News (April 29, 2022), https://www.usnews.com/news/best-states/articles/2022-04-29/arbor-day-states-with-the-most-trees.

[2] Order No. 26,206 (December 28, 2018); Order No. 25,793 (June 25, 2015) at 5.

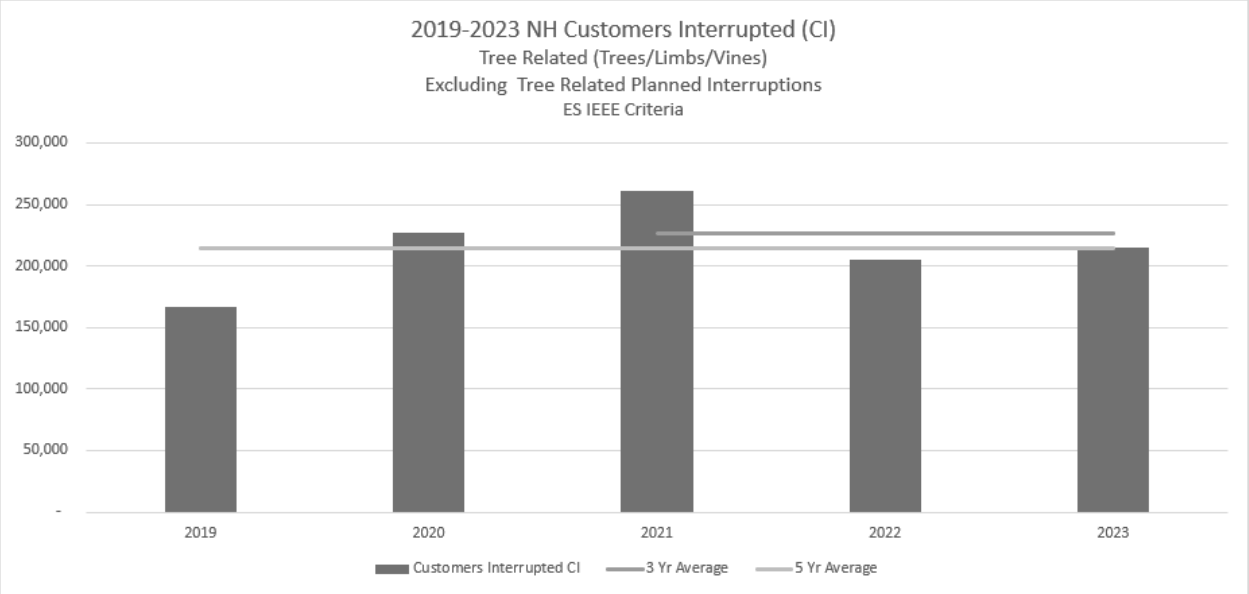
increasing storm events year over year, it is now even more crucial for the Company to invest in vegetation management in order to combat outages during major events.

Figure 1: SAIDI by Cause (2019-2023)[3]




[3] SAIDI, the System Average Interruption Duration Index, is the average duration in minutes per customers served. It is determined by dividing the sum of all customer interruption durations during a year by the number of customers served. SAIDI = sum of customer interruption durations/total number of customers.

Figure 2: Tree-related Outages




**Q. Are there any vegetation issues specific to the New Hampshire region that make vegetation management particularly important in this state?**

A. Yes. 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. EAB infestation is of particular concern given the manner in which it infests ash trees, the fact that there is no "cure" for the infestation and the 100 percent mortality and failure rate of infested ash trees. There have been estimates that while ash trees are only 6 percent of New Hampshire forests, it is approximately 30 percent of the roadside forest where electric infrastructure is located.

The residual effect of the above factors are more trees that are standing dead or in declining health along the roadside forest and within reach of the Company's lines. Therefore, continuing the maintenance cycle, along with an aggressive hazard tree removal program are the key components to a successful VMP in the state of New Hampshire.

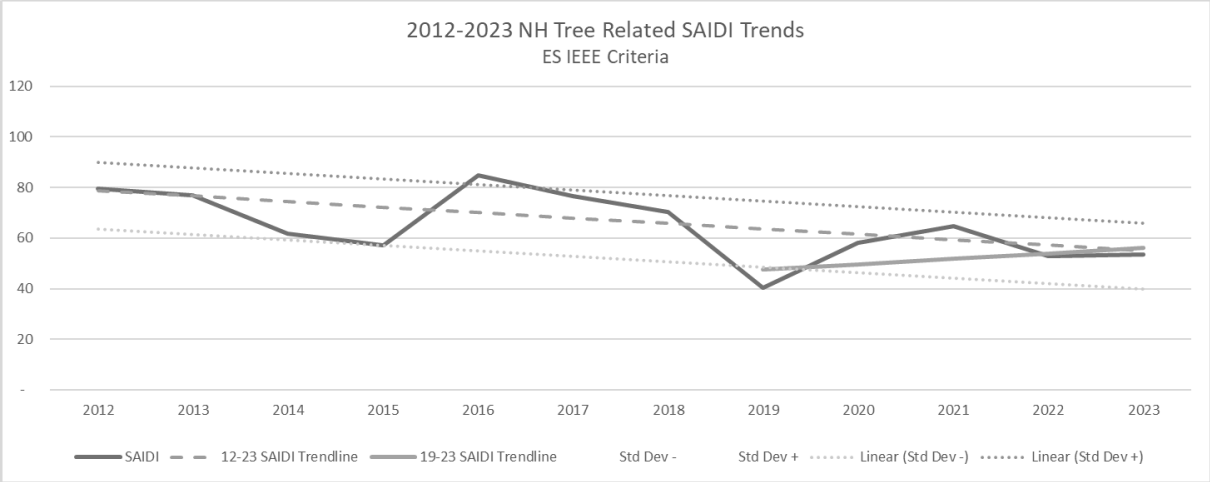
**Q. Has the Company undertaken any additional activities to combat these factors?**

In 2022, the Company collaborated with the NHDFL to share mapping data. Forest health personnel shared aerial photography of Spongy Moth, and EAB infestations. The maps that included the data were overlayed onto the Company's circuit maps, which were then used to target the affected trees that would impact the system. This is an innovation that Eversource vetted last year, which is now incorporated into the VMP.

**Q. Has the Company observed benefits associated with the VMP activities to date?**

A. Although the Company has historically pursued vegetation management activities to bolster system reliability, the Company has experienced improved reliability on a weather normalized basis since the inception of the current VMP in 2019. PSNH's customers continue to see benefits from the VMP activities. For example, as shown in the figure below, VMP activities have reduced outage times (improving SAIDI) since 2019.

Figure 3: PSNH SAIDI – ES IEEE Criteria




Based on these results, the Company's VMP provides numerous benefits to the overall system by minimizing tree-related outages and improving customer experience. Further, the Company has realized additional benefits, such as noticeably fewer customer interruptions, a more stable resource pool in terms of crew availability to respond to storm events, and greater cooperation and collaboration with the towns and communities the Company serves. The Company expects to see further benefits as the VMP is continued and there is more data to work with in developing these analyses.

## III. PROPOSED CHANGES TO THE VEGETATION MANAGEMENT PROGRAM

**Q. Please outline the Company's proposed changes to the VMP through this proceeding.**

A. The Company is proposing the following changes, which are each described in more detail throughout this section:

1. Increase its VMP budget to $43.2 million annually with a +/- 20 percent increase on SMT, to be included in base distribution rates and removed from the RRA;

2. Further define the five-year SMT cycle to increase the requirement to every six years in the northern parts of the state; and

3. Remove ETT and full width clearing of ROW from the VMP.

**Q. Why is the Company requesting a budget increase to continue its VMP?**

A. As outlined above, the Company is experiencing increased costs for contractors and expects this to continue into the future as resources become less widely available in the industry. Further, to combat these issues, the Company is looking to utilize different technologies to minimize the amount of contractor resources needed to complete its VMP. The Company has provided a breakdown of the $43.2 million budget below.

Table 3: Proposed 2025 VMP Budget

| VMP Activity | 2025 Plan Cost |
|---|---|
| | |
| Scheduled Maintenance Trim (SMT) | $24,000,000 |
| METT | 2,000,000 |
| Mid Cycle Review | 100,000 |
| Customer Work | 500,000 |
| Hot Spot Work | 100,000 |
| Make Safe | 10,000 |
| Sub Transmission (Mowing/Side Trim) | 1,500,000 |
| **Distribution SMT Total** | **$28,210,000** |
| | |
| Full Width Clearing | - |
| Hazard Tree Removal (HTR) | 15,000,000 |
| Enhanced Tree Trimming | - |
| **Vegetation Management Program Total** | **$43,210,000** |

These funds are necessary to continue the Company's robust VMP in the next several years. The unique vegetation issues affecting New Hampshire require continued maintenance of the Company's distribution system ROWs and hazard tree management in order to combat outages on blue sky days and most importantly, during storms. If left untreated, these

vegetation issues can create numerous problems on the Company's system, resulting in more tree-related outages across the state. The Company is committed to continuing the reliability benefits for customers through its VMP but requires additional resources to ensure there is no gap in these efforts.

**Q. Please explain why a +/- 20 percent increase on SMT is necessary to complete the VMP annually.**

A. SMT is the most important aspect of the Company's VMP. This activity includes monitoring and trimming the Company's 12,000-mile distribution overhead to ensure that all circuits, regardless of current performance, are trimmed subject to circuit-specific considerations. As outlined above, there are approximately 90 crews on the Company's distribution system every day performing this critical baseline clearing work. Additionally, the SMT work is used to profile the ROWs for hazard trees to remove the dead, diseased and dying trees while trimming the circuit. This identification is particularly important since these trees will inevitably fail and impact the Company's distribution system.

The SMT activities are paramount to the success of the Company's VMP and therefore require a level of flexibility in the budget. The Company needs the ability to continue this program year over year to increase the benefits of the VMP and enhance reliability on the system despite increasing contractor prices and resource availability. As outlined above, the Company is renegotiating the contracts in June 2024. This will include a request for fixed pricing on SMT for 2025 and 2026. The Company is prepared to update its request

in this proceeding to include the contract price for SMT in order to more accurately depict the budget needed for the SMT program.

**Q. The second highest cost for the Company's VMP is hazard tree removals. Please outline the importance of this budget increase.**

A. As outlined above, New Hampshire is particularly affected by biotic factors, including EAB creating a 100 percent mortality and failure rate of infested ash trees which represent approximately 30 percent of the roadside forest. The Company utilizes a GIS system mapping application to identify and track hazard trees, which the arborists have access to while completing their vegetation work on the system. As of Q1 2024, this application currently has listed 12,000 hazard trees that have been identified as at risk of falling on Company assets and need to be removed. The Company requires additional resources to keep up with the continual increase in hazard trees across the state.

Additionally, the Company is the only entity managing these roadside hazard trees as there is no state forestry group or town tree crews that manage this vegetation. The Company's service territory in New Hampshire includes 211 towns and very few tree wardens, so the hazard trees alongside the road become solely the Company's responsibility. It is important that the Company is afforded the resources to continue its hazard tree removal efforts as this significantly increases reliability on the system, especially during major storm events where these hazard trees will inevitably impact the lines.

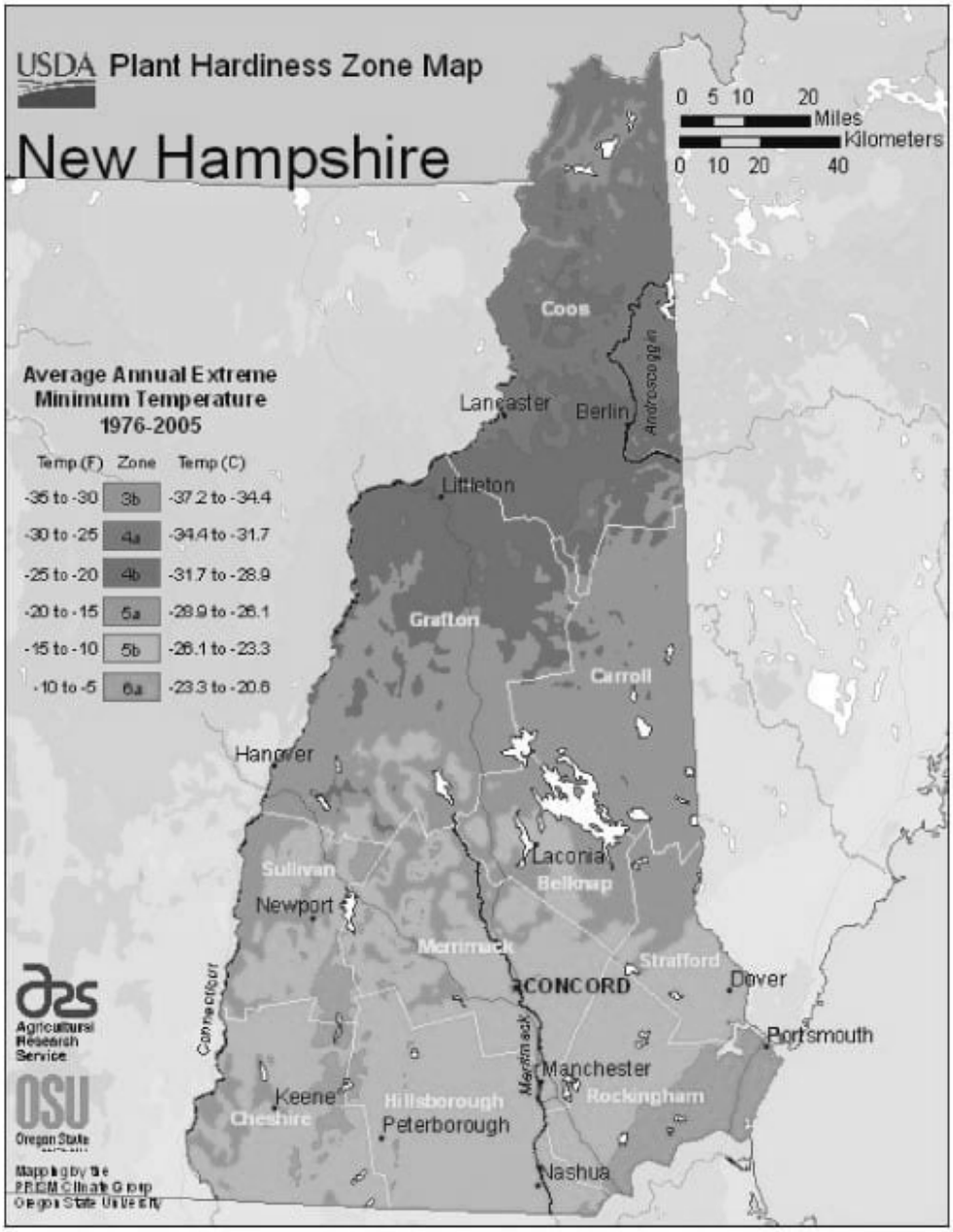
**Q. Why is the Company proposing to remove reconciliation of its VMP costs from the RRA?**

A. The Company is proposing to remove its vegetation management costs from the RRA to promote increased cost control incentives and efficiencies for review and approval of the Company's VMP. The Company will continue to provide the Commission with a yearly VMP plan on November 15th every year, as agreed to within the Settlement Agreement in DE 19-057, to review the expected vegetation management activities and the targeted expenditures for the forthcoming twelve-month period.

**Q. Please explain why the Company is requesting to increase the SMT cycle to every six years for the northern portion of the state.**

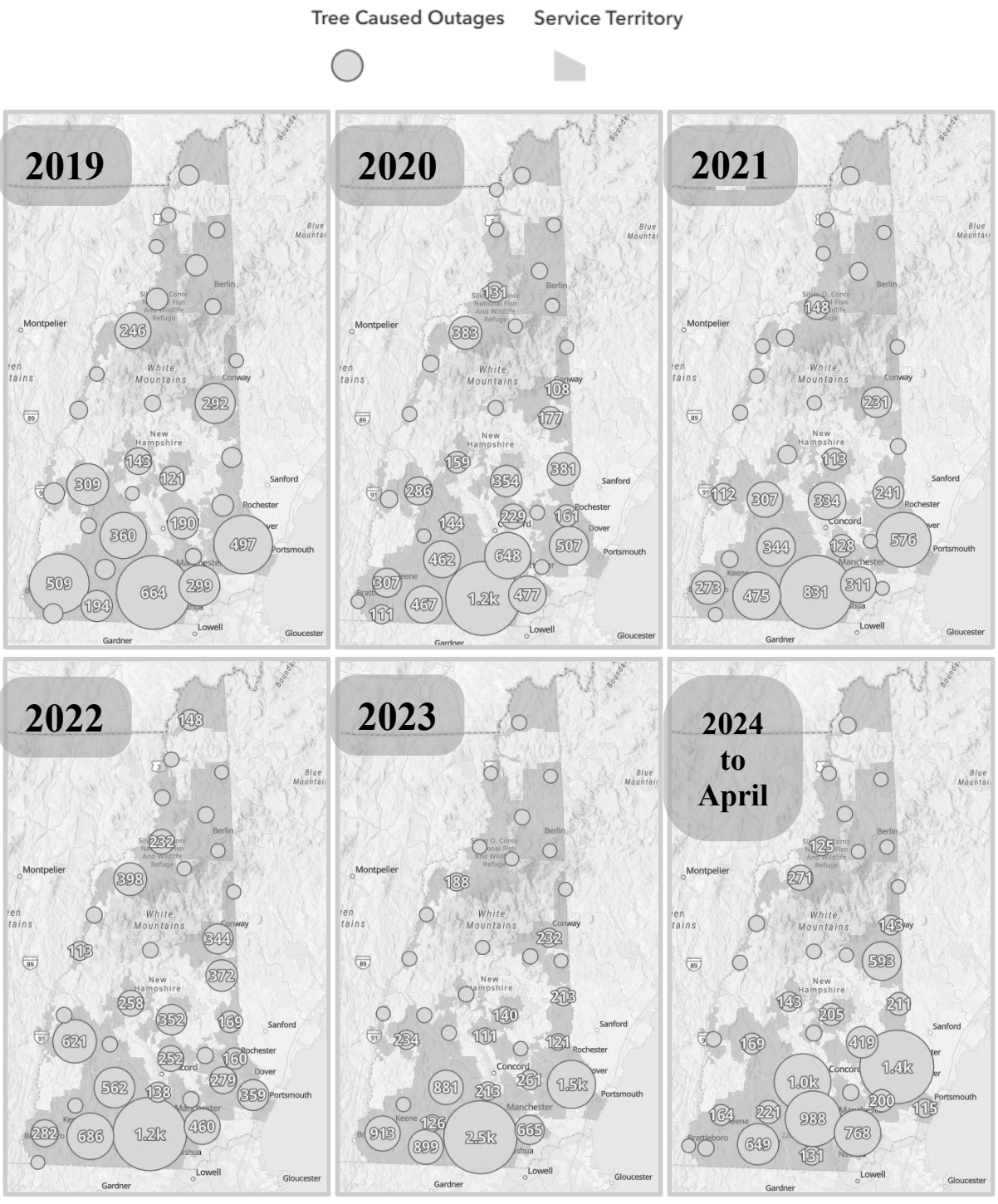
A. The Company proposes to continue the five year cycle in areas south of Franconia Notch, but add an additional year to the cycle for areas above this region located within the Company's service territory in Zones 3b, 4a and 4b, as shown on the map labeled as Figure 4 below.

Figure 4: New Hampshire Plant Hardiness Zones



Increasing the SMT cycle to every six years in the northern part of the state will allow the Company to focus its resources in areas that are more widely affected by tree-related outages. As shown in Figure 5 below, the number of tree caused outages by year is significantly higher in the southern part of the state as opposed to the northern areas. Further, the tree related outages in the northern part of the state have steadily declined since 2019.

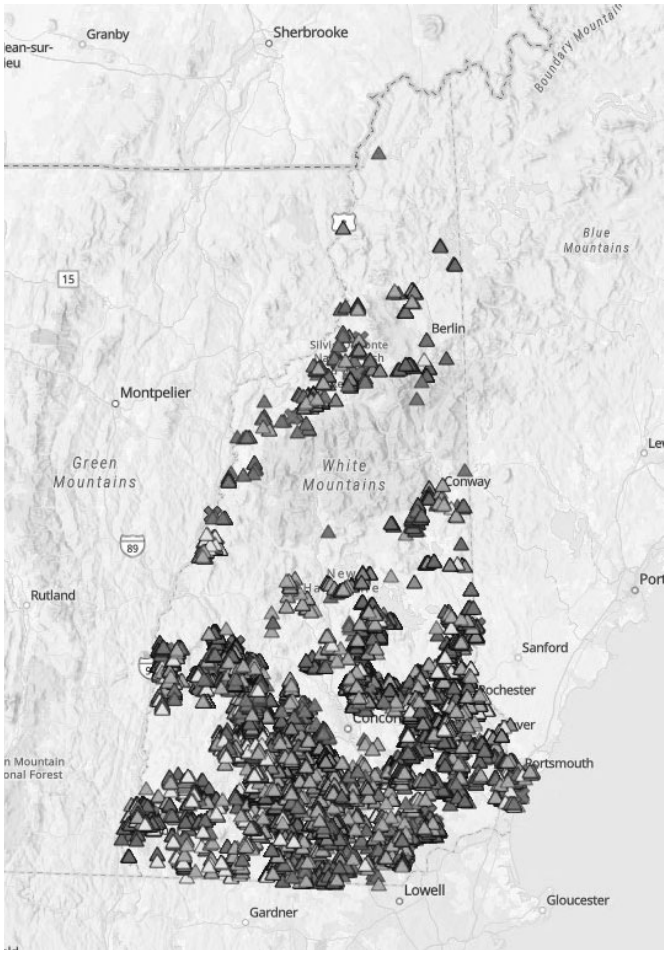
Figure 5: Number of Tree Caused Outages by Year



Additionally, the species of trees and type of vegetation in the northern part of the state are different than those in the southern part of New Hampshire. The dominant species in the northern part of the state are coniferous, including fir, spruce, and larch. In the northern part of the state, these species do not grow as tall as in more southerly portions of the state. Further, the types of fir, spruce, and pine that occur in the north are slower growing. This is due in part to the length of the growing season, the soil conditions, the weather, and the genetic makeup of the tree species. The Company has extensively studied the trees in the state, particularly through its partnership with NHDFL, to map out the vegetation types and identify areas of concern.

Lastly, the dead and dying ash trees due to EAB are more prominent in the southern areas of the state. As shown in Figure 6 below, there is a significantly higher concentration of ash trees in southern New Hampshire.

Figure 6: Ash Trees in New Hampshire




Therefore, the northern areas in Zones 3a, 4a and 4b do not need to be trimmed as often as other areas where the vegetation grows at a more rapid pace and there are more dead and dying ash trees that need to be addressed. The Company views this as an opportunity to maximize benefits for its customers and effectively utilize its resources where vegetation is a more continuous issue.

**Q. How would increasing the SMT cycle to six years in the northern part of the state help the Company more effectively utilize its resources?**

A. The Company maintains 12,000 miles of overhead line on a four to five year cycle (approximately 2,400 miles/year). Every year it is challenging to complete all the work with New Hampshire based crews due to availability of resources. There are about 90 crews per day on the Company's system who are usually performing SMT, METT, ETT, or Hazard Tree work. If the Company was to extend its SMT program to every six years instead of four to five in the Lancaster and Berlin districts, this would extend SMT needs on approximately 879 miles scheduled over the next four years in those districts. If the Company also included Chocorua district in this program change, the extension would total 1,331 miles over the next four years. The crew resources would be positively impacted by this change as these resources would be reprioritized for other programs and areas in the state that require more vegetation management. There would be fewer annual miles to complete (between 200 and 300 less miles), which would free up crew resources to perform miles in the southern part of the state or to assist in the Hazard Tree program. This would improve the backlog of hazard tree removals and significantly increase reliability on the Company's system.

**Q. Will the Company still prioritize these northern circuits if they begin to experience increased tree-related outages as compared to other portions of the state?**

A. Yes. The Company will continue to profile circuits for Hazard Trees on a four to five year cycle in the northern part of the state. Vegetation Management staff and contractors will monitor these areas and perform trimming or tree removals where necessary if circuits

become poor performing or have an increase in tree-related outages within the six year trim cycle.

**Q. Why is the Company proposing to remove ETT and full width clearing of ROW?**

A. The impact of this program has been important to reliability on the Company's distribution system. However, the Company has substantially completed this program. Originally, the Company stated it would complete ETT on 1,600 miles of its distribution system and has thus far completed almost the entire program at 1,350 miles. The 1,350 miles the Company has completed consisted of some of the worst performing circuits in the state that could be remedied through ETT. Over 75 percent of the original miles have been trimmed under the ETT program. When the program commenced, the Company selected the worst performing circuits first, which provided the greatest impact to reliability. This has been successful in providing benefits to customers and as such, the budget and time for this activity should be reallocated to maximize further benefits to the system given crew availability and resources.

Additionally, ETT specifications are larger than SMT and therefore the price per mile is more expensive. The price per mile for ETT has increased to be significantly higher than other activities and has therefore become inefficient compared to some of the other vegetation management efforts the Company is proposing to continue. Because of the higher cost, there could be diminishing returns if the Company was to continue this program going forward. There are benefits to finding cost reductions within the vegetation management programs and the Company has calculated that an investment shift away from

ETT would be prudent and to the benefit of its customers. The ETT activities have been successful in eliminating extensive vegetation on the worst performing circuits and significantly improved reliability in the past several years, but the Company does not need to continue ETT into the future as it has maximized the benefits to be seen from this enhanced trimming when viewed in relation to the costs. The Company will still continue METT on these miles to maintain the clearance provided through the ETT.

The Company is also proposing to remove full width clearing of ROW from its VMP because it is no longer necessary given the resources and the information available to analyze specific issues on the distribution system. The Company has completed 209.64 miles of full width clearing in areas where the Company has deemed it necessary for reliability purposes. However, this activity has not been necessary to achieve benefits on every ROW and has been completed on ROWs where it has been beneficial. It is more valuable for the Company to reprioritize its crew resources to focus on SMT and hazard tree removals, as proposed in the 2025 VMP budget to increase reliability on the system, especially given the amount of hazard trees already identified within the state.

## IV. CONCLUSION

**Q. Does this conclude your testimony?**

A. Yes, it does.