STATE OF MAINE PUBLIC UTILITIES COMMISSION

VERSANT POWER

Proposed Increase in Distribution Rates

Docket No. 2022-00255

Testimony and Exhibits of Paul Miller, Kyle Ravin, and Stephen Sloan

Distribution Operations and Reliability

October 3, 2022

Versant Power

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Table of Contents

Exhibits

I. INTRODUCTION

Q. Please state your names, employment positions, professional qualifications, and prior testimony.

A. My name is Paul Miller, and I am Chief Operating Officer for Versant Power ("Versant" or "the Company"), a position that I have held since June 2022. Previously, I was Versant's Vice President of Engineer and Operations, and I have been at Versant since May 2018. My professional qualifications are summarized in my resume, which is attached as **Exhibit PM-1** to this Testimony. I previously filed testimony in the Company's 2020 Distribution Rate Case, Docket No. 2020-00316.

A. My name is Kyle Ravin. I am the Manager of Asset Management & Planning at Versant. My professional qualifications are summarized in my resume, which is included with my testimony as **Exhibit KR-1**. I previously filed testimony in the Company's 2017 and 2020 Distribution Rate Cases, Docket No. 2017-00198 and 2020-00316.

A. My name is Steve Sloan and I am Manager of Transmission Development at Versant. My professional qualifications are summarized in my resume, which is attached as **Exhibit SS-1** to this testimony. I filed testimony describing the Company's vegetation management expenses in the Company's 2020 Distribution Rate Case, Docket No. 2020-00316, as well as in Docket No. 2018-0027. I also filed testimony regarding the Company's investment in the Acadia Substation in Docket No. 2017-00018.

Q. What is the purpose of your testimony?

A. This testimony discusses the reliability-related expenses in the proposed revenue requirement, including both operation and maintenance ("O&M") costs and capital investment costs. The testimony will explain the Company's recent reliability performance and summarize

our plans to sustain and continue to improve reliability for customers over the next several years. This testimony will address Versant's vegetation management program and its new hires to support Versant's operations and reliability programs.

As part of the Commission-initiated investigation of the Design and Operation of Maine's Electric Distribution System, Docket No. 2021-00039 (March 15, 2022), Electric Power Engineers (EPE) laid out specific recommendations for Versant to consider in a report entitled "Distribution System Roadmap for Versant Power." This document stressed the importance of continuing reliability improvements; in particular, EPE noted, among other things:

> Reliability improvement is a cornerstone investment target for most electric utilities, especially as the criticality of electric infrastructure and customer expectations continue to increase. Versant's service reliability is one key area which should continue to receive focus.

(EPE Roadmap, at 9.)

Accordingly, this testimony demonstrates why Versant must make reliability and operational investments to adapt to our dynamically changing energy environment. Maine is at a transitional time from a clean energy perspective, as societal pressures, climate change, and new ways of living and working place new demands upon the electrical distribution system. Maintaining the status quo is therefore insufficient and will hinder important progress towards Maine's energy policy goals. We will discuss technological requirements to meet the needs of the future and the critical timing associated with these investments to enable Versant and the State to be successful.

Q. What are the Company's reliability goals at a high level?

A. Versant is continuously striving to improve the reliability of its power system for customers by reducing the frequency of outages and reducing the impact to customers during those outages that do occur. We also place a high importance on restoring power safely and quickly following

an outage and providing accurate and timely restoration information to those reaching out to us for this information. These objectives require that Versant continues to prudently replace and improve its electrical network infrastructure, achieve and maintain appropriate vegetation clearances from energized wires, and modernize the Company's distribution system to meet customer and stakeholder needs and expectations.

Improving Versant's reliability is becoming more important to customers as they increasingly rely on electricity for their heating, transportation, and remote and hybrid-work arrangements. Simultaneously, these changes are occurring amidst an electrical system in need of modernization and redesign to accommodate an increasing level of interconnected distributed generation resources. Later in this testimony, we discuss the asset-related investments that Versant plans to implement to improve the overall reliability and resiliency of its distribution power network. To provide context for such improvements, this testimony first explores Versant's recent reliability performance and how it informs Versant's overall reliability strategy and investments.

II. VERSANT'S RELIABILITY PERFORMANCE

Q. How does Versant measure and track the reliability of its power system?

A. The Company uses three reliability Service Quality Indices ("SQIs") that the Institute of Electrical and Electronics Engineers' (IEEE) Power & Energy Society's Transmission & Distribution Committee has developed to gauge the reliability of a transmission and distribution power systems. These SQIs are: (1) System Average Interruption Frequency Index (SAIFI), (2) Customer Average Interruption Duration Index (CAIDI), and (3) System Average Interruption Duration Index (SAIDI).

Q. Can you explain how these reliability indices are calculated?

A. A summary of how these three reliability indicators are calculated is contained within **Exhibit RO-1**. In general terms, SAIFI represents the quantity of service interruptions on a per-customer basis and is derived by dividing aggregate service interruptions by the total number of customers served (calculated as the average number of customers served over a selected time period). CAIDI measures the average duration of service interruptions and is derived by dividing aggregate service interruption-hours by total service interruptions. SAIDI measures the average duration of service interruptions experienced on a per-customer basis and is calculated by dividing aggregate service interruption-hours by total customers served for a selected time period. All three reliability indices are typically calculated over a 12-month time period but can also be calculated on a monthly basis.

Q. Is the Company allowed to exclude any outages from its calculations for any of these reliability SQIs?

A. Yes, both "momentary" interruptions and service interruptions associated with a "major event day" ("MED") can be excluded from reliability indicators pursuant to Chapter 320 of the Commission's rules. SQIs reported with these exclusions are referred to as "post-exclusion" metrics throughout the testimony.

Q. What is the definition of a momentary interruption?

A. IEEE Standard 1366-2012 defines a momentary outage as any interruption in electrical service that lasts for less than five minutes in duration.

Q. What criteria is used by the Company to determine which qualifies as a "major event day"?

A. The Company uses the "2.5 Beta Method" contained in the IEEE 1366-2012 standard to identify MEDs. A summary of the IEEE 2.5 Beta Method is included in **Exhibit RO-2**. In simple terms, this method compares daily SAIDI values against a pre-calculated MED threshold value (also known as the "Tmed value"), which is derived using five years of historical outage data per the 2.5 Beta Method. A calendar day with a daily SAIDI that exceeds the calculated MED threshold for the current calendar year qualifies as a MED and all associated outage data is excluded from the Company's calculation of post-exclusion SAIFI, CAIDI, and SAIDI reliability indicators.

Q. Why does the Company need to differentiate between pre- and post-exclusion storm results?

A. It is common industry practice to identify and remove the impacts of large and unusual outage events (such as high impact storms) from a utility's outage history dataset, thereby deriving steady-state, baseline reliability performance indicator levels (SAIFI, CAIDI and SAIDI) that can be used for continuous process monitoring and improvement purposes. This is why the Institute of Electrical and Electronic Engineers Power and Energy Society developed the IEEE 2.5 Beta Method, which removes from reliability indicators the variability resulting from large storms (such as the ice storms of 1998 and 2013, windstorms, and blizzards or heavy wet snow events), all of which can interrupt electric service to hundreds of thousands of customers and result in millions of service interruption hours. Including such events would grossly skew year-ending reliability indicators, making the measurement and tracking of overall system quality extremely difficult.

Q. Does the Company currently have annual performance targets for its reliability indicators?

A. Yes, pursuant to the Stipulation in Docket No. 2019-00097, Versant is required to meet or exceed the annual post-exclusion SAIFI and CAIDI benchmark levels in Table RO-1, below, for calendar years 2020-22. These figures represent a 3% incremental improvement of SAIFI and a 2% improvement in CAIDI year-over-year. If the Company fails to achieve either its SAIFI or CAIDI performance level target for a given year, it is required to pay a financial penalty. A formula to be used to derive this sanction is specified in the Stipulation in Docket No. 2019-00097.

Table RO-1

Minimum Annual Post Exclusion Benchmark Levels		
Year	**SAIFI**	**CAIDI**
2020	2.64	2.43
2021	2.56	2.38
2022	2.48	2.34

Q. Is the Company currently required to report SQI performance to the Commission?

A. Yes, pursuant to the Stipulation in Docket No. 2019-00097, the Company must measure and report to the Commission its pre-exclusion and post-exclusion power system SQIs, including SAIFI and CAIDI, in the Company's Annual Report within 90 days after the close of each calendar year.

Q. Is the Company currently required to report any other reliability information?

A. The Stipulation for Docket No. 2019-00097 also requires that the Company calculate post-exclusion SAIFI by circuit, which is also referred to as a circuit's Feeder Average Interruption Frequency Index or FAIFI. The Company is required to include in its Annual Reliability Report a list of all circuits with a post-exclusion FAIFI level greater than the stipulated benchmark level

of 6.3 service interruptions per year. For any of these circuits, Versant must analyze the cause of outages and implement individual remediation plans (as deemed necessary). Per the Stipulation, the FAIFI circuit improvement plans for these worst-performing circuits need to be reported to the Commission in the Company's Annual Report within 90 days after the close of each calendar year.

III. RECENT POWER SYSTEM RELIABILITY PERFORMANCE

Q. What level of SAIFI, CAIDI and SAIDI reliability performance did the Company achieve for the most recent reporting year, calendar year 2021?

A. Versant's pre- and post-exclusion power system reliability performance statistics for calendar year 2021 are included in Table RO-2, below.

Table RO-2

Year 2021 Power System SQI			
	Pre Exclusion Performance	Post Exclusion	
Metric		MPUC Target	Performance
SAIFI	2.35	2.56	1.97
CAIDI	2.17	2.38	1.84
SAIDI	5.10	N/a	3.63

Q. How has post-exclusion SAIFI, CAIDI, and SAIDI performance trended over the past five years (2017 through 2021)? Does the Company have a year-ending performance forecast for 2022?

A. Charts RO-3a, RO-3b, and RO-3c below provide a summary of post-exclusion SAIFI, CAIDI, and SAIDI during the five-year period 2017 through 2021, as well as a forecasted year-ending post-exclusion performance level for 2022 (based upon actual performance through August and forecasting the remainder of 2022 using 5-year average post-exclusion performance for years

2017 through 2021). These charts show that, on a post-exclusion basis, all three power system reliability indices have generally trended down over this extended time period, though performance for all indicators is forecasted to end 2022 at slightly higher levels than achieved over the past two to three years. This is very important to Versant because it demonstrates a long-term trend of improving customer reliability associated with all three metrics, and such improvement is a result of the types of investments and programs described in this testimony.

Chart RO-3a

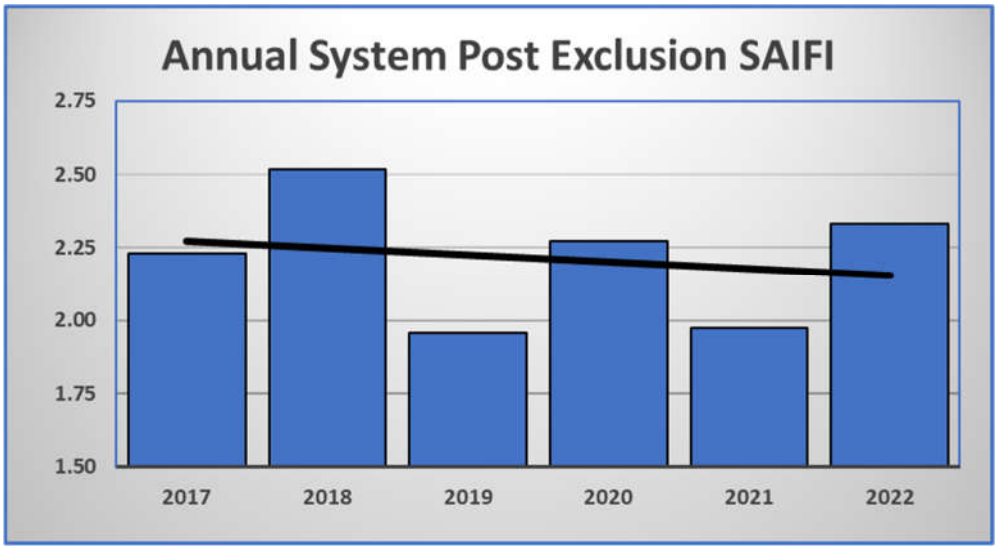


Chart RO-3b

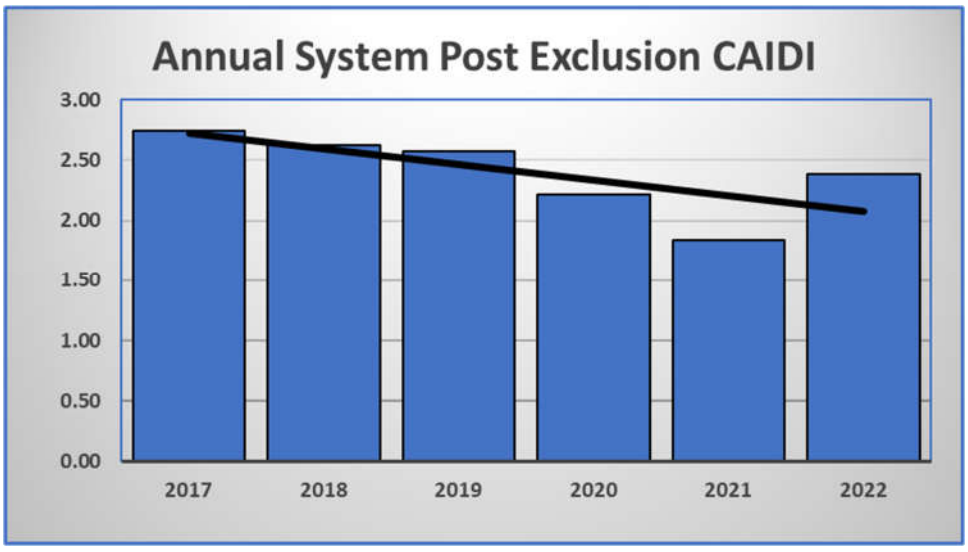
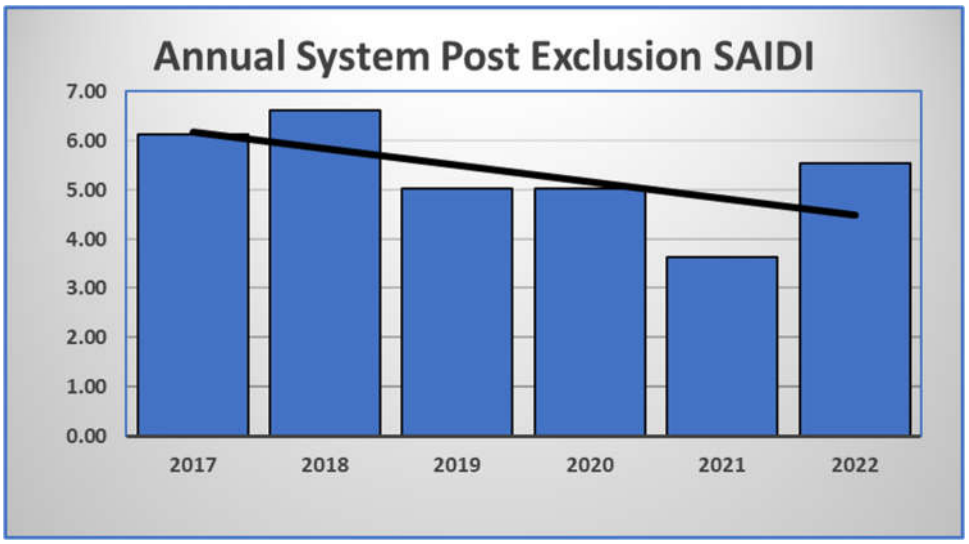


Chart RO-3c



The improvement in post-exclusion CAIDI performance shown on Table RO-3b for years 2018-2021 is primarily the result of fewer service interruptions and hours caused by weather. Similarly, the improvement in post-exclusion SAIDI performance seen in Table RO-3c for years 2018-2021 is largely the result of lower service interruptions hours caused by weather.

For 2022, post-exclusion CAIDI and SAIDI are projected to end this year higher than desired, which would result in a year above the trendline, which is primarily due to higher quantities of service interruptions and service interruption hours resulting from weather. Such results can happen in any given year due to the natural variability of weather and this variability demonstrates the need to continue to make investments to sustain reliability improvements.

Specifically, for calendar year 2022, post-exclusion weather-caused service interruptions and service interruptions hours through August are equal to or greater than total quantity of such interruptions and hours for all of calendar year 2021, and there have been no IEEE 2.5 Beta MEDs to-date. Therefore, all weather-caused outage data has remained in the dataset used to calculate post-exclusion CAIDI and SAIDI, driving up these indices.

Q. What were the primary causes of pre- and post-exclusion service interruptions for the years 2017 through 2021?

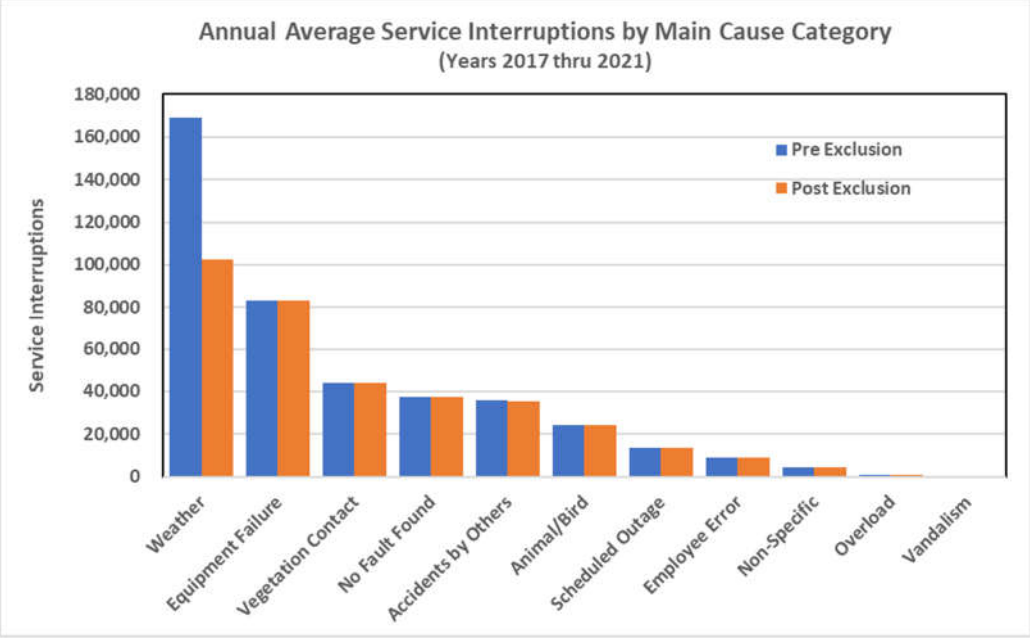
A. Charts RO-4a and RO-4b provide a graphical summary of the primary and secondary drivers of service interruptions and service interruption hours the Company uses to calculate pre- and post-exclusion SAIFI, CAIDI, and SAIDI for years 2017 through 2021. It is clear from Charts RO-4a and RO-4b that the dominant contributors to Versant's pre- and post-exclusion reliability performance are, in order of magnitude:

1) Weather-related outages (which are generally caused by broken trees and limbs);

2) Equipment failures; and

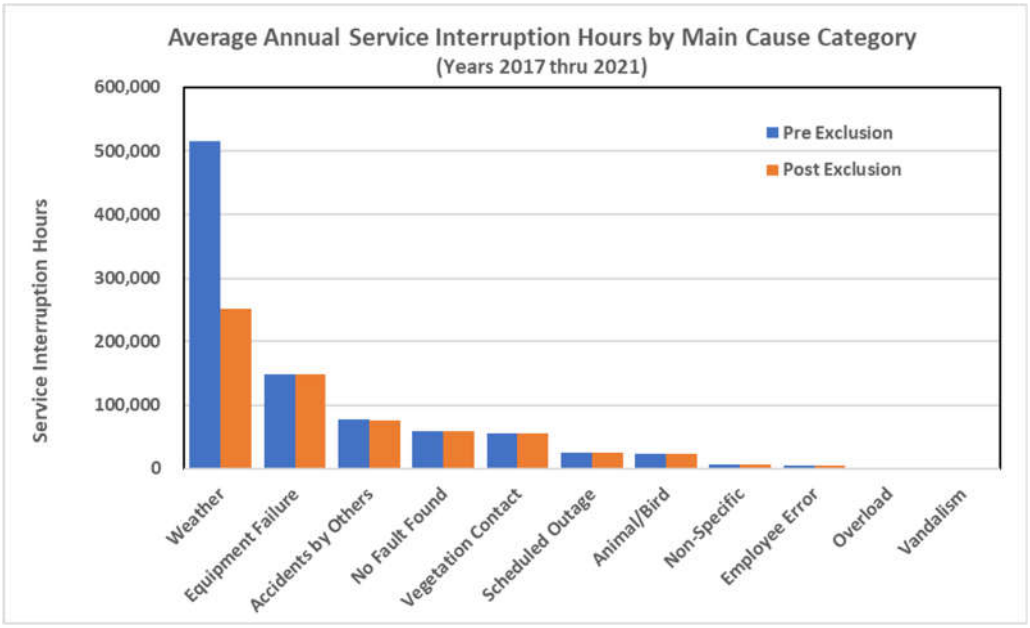
3) Non-storm vegetation contacts.

Chart RO-4a[1]



[1] The Vegetation Contact category refers to service interruptions caused by tree and limb contact during non-weather events. Any outage event that cannot be assigned to one of the other Main Cause Category Codes is assigned the cause code of "Non-Specific." For instance, ice falling off a customer's roof that damages a service cable or meter resulting in a service interruption would be considered a "Non-Specific" outage.

Chart RO-4b



Q. What conclusions do you draw from this pre- and post-exclusion outage causation data?

A. Vegetation contact, whether during storm events or on blue-sky days, is by far the biggest contributor to service interruptions and interruption hours on Versant's system. In the aggregate, weather-related outages and non-storm vegetation accounted for over 50% of all service interruptions for the period from 2017-2021, and over 63% of all interruption hours. A secondary contributor is equipment failure.

Q. Which reliability indicator does the Company feel is the most critical to improve?

A. The Company as achieved and exceeded the post-exclusion SAIFI and CAIDI target threshold levels for calendar years 2020 and 2021. The Company considers SAIFI to be the most crucial reliability target to achieve because it is at the core of the customer's experience and because reducing SAIFI means that customers experience fewer outages in the first instance.

That said, SAIDI is also a focus and can be equally difficult to improve. SAIDI (and CAIDI) become a concern after an outage event occurs because they measure the cumulative

duration of such outages. To improve SAIDI and CAIDI, our teams and their technological tools identify and restore power as quickly as possible, which in turn requires that Versant have the technology and systems deployed that are necessary to assist our employees with restoration. In other words, Versant's primary goal is preventing outages from occurring, which is particularly difficult because of Versant's vast rural network being located in the most heavily forested state in the country with significant coastal exposure to Nor'easters and hurricanes. Ironically, because of the way CAIDI is calculated (CAIDI = SAIDI / SAIFI), as Versant proactively improves SAIFI (i.e., lowers it), CAIDI may increase unless Versant achieves an equivalent % reduction in SAIDI.

As seen in Charts RO-3a and RO-3b above, the past five years' post-exclusion SAIFI and CAIDI results have trended downward indicating improving reliability for customers, which is the result of Versant's proactive reliability investments and vegetation program. Versant is proud that the year-over-year trend shows customer reliability results are improving. here is still significant work to be done, however, particularly in transforming the traditional uni-directional distribution system to one of bi-directional power flows, and real time monitoring and control with significant amounts of distributed energy resource ("DER") interconnection and system electrification.

Q. How are 2022 power system reliability indicators trending year-to-date?

A. As noted above, post-exclusion SAIFI and CAIDI reliability indicators have trended higher through August compared to recent years, leading to above-normal outage impacts that are not excluded by the IEEE 2.5 Beta methodology. Assuming monthly reliability performance for the remainder of this year is consistent with the 5-year average, the Company has forecasted post-exclusion SAIFI to end the year at 2.33 and CAIDI to end the year at 2.38; those values are 6% below and 1.8% above the stipulated targets, respectively. The most notable driver of this slightly higher forecast for 2022 is storm impacts.

While 2022 is on track to have an average number of storms (some of which had significant impacts), none have created interruptions or interruption hours reaching the level of exclusion. As a result, 2022 has the highest level of post-exclusion service interruptions and service hours of interruption through August due to storms of any year in the past five years. The long-term trendlines shown in Charts RO-3a, 3b and 3c above show sustained reliability improvement for customers despite challenging weather conditions in 2022.

Table RO-5 provides a summary of target, year-ending forecast and the primary and secondary drivers of calendar year 2022 post-exclusion power system reliability indicators.

Table RO-5

2022 Post Exclusion Power System Reliability Highlights			
Performance Attribute	SAIFI	CAIDI	SAIDI
Year-Ending Forecast (YEF)	2.331	2.381	5.549
MPUC Target	2.480	2.340	N/a
Difference, YEF vs MPUC Target	-6.0%	1.8%	N/a
Primary Driver (thru August 2022)	Weather	Weather	Weather
Secondary Driver (thru August 2022)	Vegetation Contact	Customer Caused	Vegetation Contact

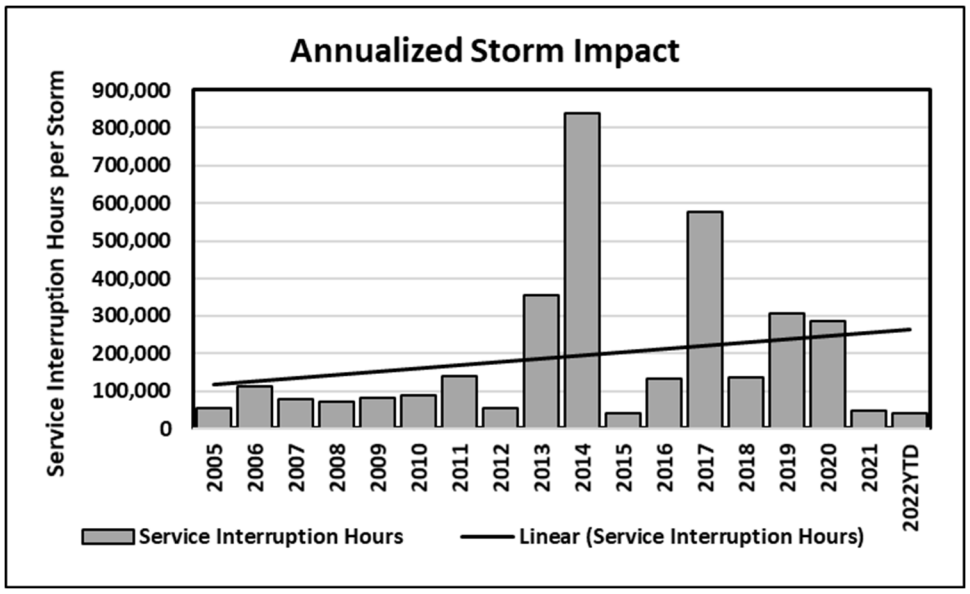
These results demonstrate that Versant's short-term reliability indicators are trending higher, and more investment is needed to sustain the trend toward increasing reliability and overall resiliency against outages, particularly in the fact of increasing storm impacts.

Q. How has the impact of storms trended over the past 10 or more years? Have storms become more impactful?

A. Chart RO-6 provides an annualized, historic summary of the pre-exclusion service interruption hours on a per-storm basis for storms that caused service interruptions to greater than 5% of customers served by either of the Company's service regions (BHD or MPD). The chart

shows that recent storms have generally required more restoration time due to more extensive system damage. Notable storms occurring since 2013 and contributing to higher quantities of pre-exclusion service interruption hours are: the 2013 Ice Storm, 2014 Tropical Storm Arthur, and two November Nor'easters (2017 Bombnado, 2018 November Windstorm), 2019 Halloween Windstorm, and 2020 April Heavy Wet Snow/Windstorms.

Chart RO-6



Q. What does the Company foresee as the impact of more powerful storms on its future distribution system investment?

A. The worsening storm impact trend shown above in RO-6 supports Versant's planned investments to both improve system reliability and protect infrastructure against increasing storm impacts. Severe weather events (strong winds, ice and snow storms, extreme heat and cold, drought, etc.) have progressively increased; what were once 100-year events are now becoming more frequent and more impactful. These events also test the resilience of our T&D electrical grid and communications infrastructure which are the two types of infrastructure frequently affected the most; thereby, requiring the most resources and longest periods of time to rebuild. We must

make our best attempts to flatten the trendline shown in RO-6 and ideally, achieve a long-term downward trend which represents a lesser impact from storm damage to our system. Accordingly, sections IV and V, below, describe the areas of investment aimed at preserving and improving our system reliability and resilience.

Q. Does Versant foresee any particular concerns or issues with storm response efforts and resources in the near future?

A. Yes. Planning and execution of System Emergency Operations Plans ("SEOPs") are becoming much more difficult to execute in terms of mobilizing external resources. The primary philosophy of major event restoration planning is pre-planning, predictive damage modeling, communication and pre-staging of crews/logistics prior to the arrival of the storm in a particular utility's area. Due to evolving customer and regulatory expectations with respect to acceptable time periods for service restoration, many utilities are now changing the way they prepare and execute for a pending storm event. This places increased focus on the utility to deliver and meet these expectations through upfront planning, modeling and securing of external resources; ultimately the same utilities are vying for the same limited resources and as more resources are needed to get the power back on faster, resources from further away, at higher cost margins have to be mobilized. Our SEOP model has also resulted in a shift of how the Mutual Assistance Agreements ("NAMAG") play out and the natural markets that have been created across the nation to work around the NAMAG process. This involves a complex arrangement of labor and equipment brokers, located throughout USA and Canada, who secure resources (tree, line, station and support) for utilities at pre-arranged contract prices and terms. These brokers have effectively created their own market and control the flow, timing, and cost of resources being utilized to perform storm restoration.

Q. What does this mean in terms of Versant's storm response plan?

A. Pre-planning and pre-staging for storms is common practice for Versant, but being able to secure external contract resources is becoming more difficult, unpredictable, inefficient, and costly, as noted above. More specifically, utilities are required to stage resources to the south, often 5-7 days before the arrival of a storm in Maine, and this staging creates a significant drain on all resources left available to work for Versant. Therefore, if Versant believes it is probable that its territory will be impacted by a significant weather event, to secure resources, it must place contractors on standby well ahead of the storm arriving or risk losing crews to the south of Maine with unknown return times. Waiting until a storm hits Versant is rolling the dice on the probability of the storm missing our territory entirely. Waiting could potentially subject customers to very long restoration times if a storm does hit because external resources are likely to be scarce and expensive. Being unable to secure resources would not be considered prudent management by Versant, particularly where pre-staging is becoming the norm for storm management.

Q. Will such demand on resources affect Versant's storm response costs?

A. Versant will continue to follow its SEOP and assess, on a storm-by-storm basis, the need to proactively pre-stage resources to ensure acceptable customer restoration times (ETR) can be achieved, based on predictive storm modeling. The Company anticipates that it will incur additional pre-staging costs to guarantee that appropriate external resources will be available to support the storm response. Such incremental costs would become part of Versant's future storm costs. To be clear, Versant has not adjusted the revenue requirement in anticipation of such higher storm costs but has instead utilized the same methodology as approved in Versant's last distribution rate case (Docket No. 2020-00316), as shown on Exhibit RR-305 to the Revenue Requirement testimony.

Q. How will Versant's new advanced metering infrastructure ("AMI") project affect Versant's reliability metrics?

A. Based on information from the industry, Versant anticipates that its SQI metrics—particularly SAIDI and CAIDI—could be adversely affected by the implementation of its new AMI system. This is primarily because the AMI system will automatically report the exact time of an outage beginning and ending, by customer. Note that this does not represent a worsening of Versant's actual reliability *performance*, but only in its reliability *metrics* compared to historical periods due to the new automated reporting. The new AMI system will result in greater accuracy and precision in our reliability statistics. Versant expects that its SQIs will need to take this issue into account compared to historical periods, such as through applying a normalization factor or period. Versant looks forward to discussing this issue with the Commission in Docket No. 2022-00279.

IV. INVESTMENTS AND PROGRAMS TO IMPROVE RELIABILITY

Q. Can Versant provide specific examples of how its reliability improvement investments have been successful in improving system performance for its customers?

A. Yes. Versant has focused its reliability improvement investment in recent years in its Covered Conductor program, Protection and Coordination (P&C) projects, and Alternative Load Transfer (ALT) schemes, all of which are described in further detail below.

Table RO-7 demonstrates the reliability improvement potential of Versant's covered conductor program. The table shows impacts of weather- and vegetation-related outages on the 13 line sections rebuilt with covered conductor in 2021. The top section of the table shows the average annual quantity of outages, service interruptions, and interruption hours for the 5 years prior to the installation of covered conductor. The bottom section shows the totals in the period since

completion. Together, these line sections experienced an average of approximately 19 outages per year post-exclusion (25 outages pre-exclusion). After the covered conductor projects were completed, none of the line sections have recorded a weather- or vegetation-related outage:

Table RO-7

Covered Conductor Weather and Vegetation Outage Data (For Covered Conductor line sections completed in 2021)		
For 5 Yr Period Prior to Completion	Pre exclusion	Post exclusion
Avg Qty of Outages per Yr	25	19
Avg Service Interruptions per Yr	4,405	3,340
Avg Service Hours of Interruption per Yr	41,146	18,211
For Period Since Completion: ~1 Yr on Avg	Pre exclusion	Post exclusion
Total Quantity of Outages	0	0
Total Service Interruptions	0	0
Total Service Hours of Interruption	0	0

Similarly, Table RO-8 summarizes reliability benefits for P&C and ALT scheme projects completed over the period from 2019 to 2022. The table summarizes the total quantity of outages, service interruptions, and interruption hours saved due to these installations during this time period:

Table RO-8

Outage Savings - Protection & Coordination Projects (For P&C Projects Completed 2019 - 2022)		
For the Period 2019 through July 2022	Pre exclusion	Post exclusion
Qty of Outages Saved	133	95
Service Interruptions Saved	47,388	33,377
Service Hours of Interruption Saved	344,870	84,318
Outage Savings - Alternative Load Transfer Projects (For ALT Projects Completed 2019 - 2022)		
For the Period 2019 through July 2022	Pre exclusion	Post exclusion
Qty of Outages Saved	19	19
Service Interruptions Saved	26,503	26,503
Service Hours of Interruption Saved	44,560	44,560

Once again, this table shows significant reliability benefits from the projects completed.

Q. What capital investments does Versant plan to make to improve reliability?

A. Versant's planned primary capital investments will be in covered conductor projects, P&C projects, and ALT schemes. Versant's planned investments in these areas are listed in Exhibit CF-1 to the Capital Forecast testimony, and a summary of each these efforts is provided below.

Covered Conductor projects

As discussed above and shown on Chart RO-4a, vegetation contact, whether during storm events or on blue-sky days, is by far the biggest contributor to service interruptions and interruption hours on Versant's system. The purpose of the covered conductor projects is to alleviate and remediate contact outage issues by replacing bare conductor with covered conductor on line sections where reliability due to vegetation contact is an issue. Covered conductor consists of standard primary wire with an insulating coating that acts to prevent faults and subsequent outages from contact events such as those from vegetation. The Company plans to continue this program because it has proven successful at improving reliability.

To select line sections on which to install covered conductor, the program analyzes all distribution line sections on a system-wide basis and uses historic outage data to determine those that are the worst performing based on weather and vegetation contact outages. From that data set, the Company developed a series of covered conductor projects in our capital program. The projects are prioritized based on least cost per reliability benefit in terms of SAIDI and quantities of customers impacted.

We also recognized that we could combine one of our efforts to sustain reliability and improve safety—replacement of #6 copper conductor—with our covered conductor effort to help maximize reliability improvement. Several projects are also being put forward in our capital plan to replace bare #6 copper with covered conductor on the poorest performing line sections. These projects provide not only the sustainability benefit of replacing some of our most aged plant, but also the reliability benefit of being prioritized based on their poor performance. This facet of the program looks at the subset of line sections that contain #6 Copper conductor, and otherwise utilizes similar methods as applied on a system-wide basis to determine the worst performing line sections to select as covered conductor projects.

A listing of Versant's covered conductor projects for 2023 and 2024, with associated cost, is included in Exhibit CF-1 to the Capital Forecast testimony.

Protection & Coordination (P&C) projects

The Company has increased its reliability investment in the installation and upgrade of system protection equipment, including reclosing devices, sectionalizers, and fused cutouts. Versant reviews poor performing circuits each year. These circuits are then studied in-depth to determine potential P&C improvement projects, looking at each circuit on a holistic basis. The study determines the appropriate project scope based on historic outage data, predicted customer

and hours impacts, including circuit topology. Projects may include adding new electronic equipment and reviewing the circuit's existing equipment for either upgrade or location changes to maximize the protection benefit. The resulting benefits include: enhanced, smarter devices in the field to improve our system knowledge and response times; better sectionalizing of long, radial circuits to minimize the number of customers impacted by a fault; improved response times by reducing the area to patrol; and improved system response to temporary faults by allowing for momentary recloser operations rather than extended outages.

A listing of Versant's P&C projects for 2023 and 2024, with associated cost, is included in Exhibit CF-1 to the Capital Forecast testimony.

Alternative Load Transfer (ALT) schemes

Similar to the P&C effort, the Company also reviews circuit reliability performance to determine the cost-effectiveness of installing sectionalizing and communications equipment, which would allow customers on the whole circuit or part of it to be supplied from an alternative source in the event of outage. The objective of these projects is to utilize automation to isolate outages so that they impact smaller numbers of customers and provide backup capability to allow service restoration to our customers more rapidly. The automation includes more sophisticated smart devices on the system which provide advantages of increased speed in outage response beyond capabilities using only human intervention, as well as increased data available to our control center as our grid becomes smarter over time. Specifically, these schemes are designed to detect faults instantly and automatically open protective devices to minimize and sectionalize the fault, while closing others in order to feed as many customers as possible via an alternate source.

A listing of Versant's ALT scheme projects for 2023 and 2024, with associated cost, is included in Exhibit CF-1 to the Capital Forecast testimony.

Q. What other initiatives does Versant plan to employ to improve reliability performance?

A. As part of its vegetation management plan, Versant is continuing its enhanced danger tree program. The program proactively removes danger trees on a cycle basis from line sections that serve 200 customers or more. These line sections are patrolled twice every 5 years and any identified danger trees are removed. Versant also analyzes its outage data annually to develop a list of worst performing line sections due to vegetation contact outages. Those line sections are also provided to Versant's vegetation management team each year for patrol and mitigation.

Additionally, as part of its distribution inspection program, Versant incorporates technology-based infrared inspection along with radio frequency (RF) and ultrasonic inspection to proactively look for system anomalies prior to a fault and outage. The infrared inspection program patrols all line sections serving 500 customers or more each year, which equates to over 220 line sections and 750 miles annually. The RF/ultrasonic program patrols all line sections serving 1,500 customers or more each year, which equals over 40 line sections and 120 miles each year. Over the past 4 years, these two programs together have proactively identified 117 total issues on the primary distribution system.

V. INVESTMENTS AND PROGRAMS TO SUSTAIN RELIABILITY

Q. What is the difference between Versant's reliability *improvement* programs and its investments and programs to *preserve* or *sustain* power system performance?

A. Versant's reliability improvement programs typically target poorly performing areas of the system and make impacts that substantially improve reliability in areas or components of the system based on actual or predicted performance. On the other hand, Versant's preservation efforts focus on maintaining the system and preventing degradation, such as projects that are focused on

replacing end-of-life equipment or other condition-based replacement. Versant recognizes that improving the reliability of its system is particularly important to its customers but also recognizes that sustaining reliability and safety of the system on a holistic basis is critical to develop prudent and balanced capital and maintenance programs in both the short and long term.

Q. What are some of the primary tools the Company uses to develop its plans to sustain the reliability and safety of the system?

A. One overarching effort has been the development of the company's Strategic Asset Management Plan ("SAMP") and associated Asset Management Plans ("AMPs") for core asset classes. In March 2021, Versant finalized and submitted to the Commission in Docket No. 2019-00097 its initial Strategic Asset Management Plan ("SAMP"). The SAMP set in place a structured, objective, and transparent decision-making framework to guide the Company's overall asset program over the 2021 – 2025 SAMP Cycle. The SAMP is also the guide to ensure that Versant's AMPs are aligned with the Company's reliability and cost objectives and deliver optimal value to its customers and stakeholders. The SAMP took concepts, planning, and maintenance practices, and managerial frameworks already in place in the Company. It then further refined and deepened those practices and applied additional best practices where applicable to create a formalized framework for the Asset Management function in the Company.

More specifically, each individual AMP explores decision-making aspects for a core subset of the Company's transmission, distribution, and communications asset classes, and provides the framework for investment and risk strategies for this group of assets. The AMPs describe the current state of health, performance, and lifecycle management practices in each of Versant's core asset classes, and utilize a robust and sophisticated model to forecast high-level possible investment scenarios for long-term planning and risk management purposes. The AMPs further

incorporate asset health indices to guide specific asset management decisions and provide an initial 10-year approximation of the levels of necessary asset renewal, along with an associated projection of the condition of each class of assets over the same 10-year timeframe.

When evaluating condition, age is not the only determinant of an asset's remaining useful life (i.e., the asset's risk). It is not uncommon for older equipment to have lower risk than newer equipment due to design, utilization, or other operating conditions; this is determined on an asset-by-asset basis by our engineers. When evaluating a given asset for capital replacement or upgrade, in addition to age-driven identification and justification, Versant considers (as appropriate) observed or calculated health condition, risk, reliability impact, and other factors.

Subject to further analysis and prioritization, by way of the more detailed annual planning processes, this asset condition projection is used to assist in the derivation of our forward-looking capital planning requirements.

The SAMP and AMPs were filed in Docket No. 2019-00097 on March 24, 2021 and September 24, 2021, respectively.

Q. Which asset classes were included in the initial Asset Management Plans (AMPs)?

A: The asset classes are as follows:

- Distribution Circuit Breakers
- Distribution Overhead Conductor
- Distribution Overhead Transformers
- Distribution Polemount Reclosers
- Distribution Polemount Regulators
- Distribution Poles
- Distribution Protection Relays
- Distribution Reclosers
- Distribution Regulators
- Distribution Underground Transformers
- Distribution Subsurface Cables
- Transmission Circuit Breakers
- Transmission Power Transformers
- Transmission Protection Relays

- Transmission Reclosers
- Transmission Structures
- Distribution Power Transformers
- Communication Towers

Q. What are some of the programs and projects that are most integral to Versant's Asset Management Plans and capital planning process?

A. Versant's distribution maintenance and inspection programs are a cornerstone of our condition-based, asset management planning and decision-making over a range of assets. We utilize an array of proactive programs that include detailed line and substation inspections along with substation and large equipment maintenance. From these activities, the Company developed key elements of our capital investment plan, including our Distribution Rebuilds Per Inspection (DRPI) projects, power transformer replacement plans and substation equipment replacement projects.

Q. Please describe your Distribution Rebuilds per Inspection (DRPI) program?

A. Versant's inspection programs are a key input to inform decision-making on investments for the Company's distribution assets. The Company has a multi-faceted overhead line inspection program that includes the core elements of visual patrol inspection and ground line pole inspection. Visual patrol inspection (typically performed on foot) is on a 6-year cycle and includes a review of assets utilized in the construction of the overhead primary and secondary distribution system. Ground line pole inspection additionally inspects the condition at and below the ground line for all Versant maintained distribution wood poles greater than 20 years old. These inspections identify system issues based on condition, reliability and/or safety concerns, and the results are utilized to develop a series of projects to address those concerns. These projects make up the DRPI program as shown on Exhibit CF-1 to the Capital Forecast testimony.

Q. What role does the DRPI program play in Versant's strategy to sustain its system assets?

A. Versant sees the DRPI program as critical in developing an effective, but balanced, capital program that not only addresses customer's reliability concerns but is also strategically focused on prudently maintaining the system on an ongoing, long-term basis. The program utilizes condition-based assessment data for all assets used in construction of the distribution system, the most significant of these assets being pole plant. Versant's distribution pole plant consists of approximately 190,000 poles, with approximately 32,000 of those being inspected each year. An average of approximately 800 poles have failed inspection annually over each of the past three years. Versant has increased its forecast for DRPIs in the rate effective period to keep pace with these consistent failure rates that have been identified as our inspection program has matured.

It is important to note that this increase in pole replacements aligns with the outputs from our recent AMP development. Within our AMPs, we assessed the current condition and performance of our pole assets. Using a condition and life-cycle projection, we identified a 10-year forecast of the anticipated necessary levels of asset renewal. The forecasted AMP projections align with the increased quantities of pole replacements needed within the DRPI program during the Rate Effective period and going forward.

Q. Can you explain how Asset Management Planning is used in development of projects and plans to sustain the Company's substation equipment and power transformers?

A. The Company's power transformer fleet represents some of its most significant and vital assets, both in terms of value and importance. The Company has a robust maintenance and inspection program for its substation power transformers but recognizes that regular inspection and maintenance alone cannot overcome risks of aging equipment. As part of its preservation

efforts, the Company has developed a series of projects in its capital plan to proactively replace the oldest and most at-risk transformers in the fleet. The larger projects in this area are as follows:

New Machias Substation

This project scope is to replace an old substation in Machias with a new substation at a different location. There are three primary drivers for this project. The first is the condition of the substation transformers. There are three single-phase transformers at this location, two of which are 75 years old and have test results showing poor fluid quality with contaminates and moisture in the oil. The second driver for this project is environmental. The current substation situation poses a higher than usual environmental risk. Along with age of the transformers, the substation sits directly adjacent to the Machias river. The oil contains 38-40 ppm of PCBs and a spill would be considered a serious environmental concern. The third driver is contingency. This old substation was at a 4,160v voltage level, which is not our distribution standard voltage (12,500v). Installing a new Transformer at 12,500 volts therefore creates contingency options for maintenance and for large outage restoration, as the neighboring circuit to the north is also at 12,500 volts.

This project, and associated cost, is shown on Exhibit CF-1 to the Capital Forecast testimony on the 2023 Project Listing (Distribution).

University of Maine Transformer Upgrade

Our transformer feeding the east side of the University of Maine is 68 years-old and is operating at max capacity. This transformer also has a contingency tie to our feed on the west side of campus. However, due to the large load we are unable to provide adequate backup from one transformer to the other and that limits our abilities to perform adequate maintenance of the current transformer. We are replacing the 68-year-old transformer with adequate size to handle the increasing load at the University and to provide contingency backup to the west side of campus.

This project, and associated cost, is shown on Exhibit CF-1 to the Capital Forecast testimony on the 2023 Project Listing (Distribution).

New Mobile Substation

In 2021, Versant suffered a transformer failure at our Milford substation. We installed our last spare >10MVA transformer in this location. Versant has a single 20MVA Mobile Substation that can be used for emergencies to temporarily replace transformers between 10MVA and 20MVA. However, we primarily use the mobile substation to allow us to take transformers out of service to perform maintenance along with using it for new transformer upgrades. In 2021, our mobile substation was in service for 175 days, which means it was unavailable as an emergency spare for almost half of the year. In conjunction with a limited spare power transformer inventory, this places the Company in a position of significant vulnerability that can best be mitigated by purchasing a second mobile substation. Such a purchase would significantly reduce risk and increase system reliability by providing a contingency plan for the large distribution transformers, and would decrease outage time by doubling mobile substation availability for quicker responses to substation failures. It also would give Versant added capacity for capital work, substation maintenance, and flexible system operations.

This project, and associated cost, is shown on Exhibit CF-1 to the Capital Forecast testimony on the 2023 Project Listing (Distribution).

Q. Does Versant have information that indicates system reliability needs to improve for customers?

A. Yes, Versant and the industry have multiple sources of information that reinforce the criticality of improved system reliability, as beneficial electrification increases. Reference material that supports this need is published in many papers and reference documents.

- The EPE Distribution System Roadmap, produced by the Commission's consultant in Docket No. 2021-00039.
- US Energy Information Assessments (EIA) reports: Versant is in the 4th Quartile of utility reliability performance, when compared across the nation, which is largely due to Versant's low-density, forested and coastal service territory.
- Direct customer feedback about the impacts that outages have on our customers and their desire to ensure we are maintaining our assets proactively to ensure the power remains on.

Q. Does Versant include the customers' cost impact, resulting from an outage, into its internal project justification?

A. At this time, Versant does not use a quantitative evaluation of the economic impact of a customer outage in planning specific projects. Versant currently takes a conservative approach and generally prioritizes reliability projects that are likely to provide the greatest reliability benefit per dollar invested. Nevertheless, the information noted above demonstrates that reliability needs to improve and the transformation of the grid will require such enhancements. As noted before in our testimony, the status quo is not acceptable if the challenges before us are to be overcome. Anecdotally, the costs to customers of an outage can be very significant, depending on the time and location of an outage. Incorporating the economic impact of an outage into our planning criteria could expand the range of viable reliability projects.

Future modeling and analytics work that Versant is considering for reliability projects may incorporate the Customer Interruption Costs (CIC) aspect into the benefit-cost analysis. The use of CICs will help to identify and prioritize strategies for which the cost of improving reliability (resilience) is less than or equal to the benefit that customers may receive from the improvement. This approach may help the Company improve upon our current method of prioritizing reliability investments.

Q. Who has researched this matter of Customer Interruption Costs (CIC) and for how long?

A. The U.S. Department of Energy (DOE), Lawrence Berkeley National Laboratory (LBNL), and Nexant have been working together for over fifteen years. Their work led to the creation of an online tool, referred to as Interruption Cost Estimate (ICE) Calculator.

Q. How reliable is the ICE Calculator and can it be incorporated into utility project justifications?

A. The model was designed to help utilities determine CICs for reliability planning purposes; the data set and model is over 10 years old and is currently being refreshed. Of note for Versant, the Northeast U.S. is not well represented in the underlying model database because no utilities in that region have undertaken recent outage cost studies. Therefore, Versant intends to explore the use of the calculator, monitor the current modeling updates taking place, and consider its incorporation into our analysis.

Q. How will incorporating the ICE Calculator analysis improve what Versant currently does for analysis?

A. Because Versant's current approach for reliability-based investments is based on an internal metric of "dollars per avoided customer interruption and hours of interruption - $/ACI and $/ACHI" analysis, adding the CIC layer will begin to enable Versant to incorporate a customer impact perspective into our analysis. Based on ICE case studies and documented evidence, we strongly feel that this will further emphasize the need and justification for various sustaining and improvement investments, beyond what is used in our internal assessments.

VI. RELIABILITY AND OPERATIONS O&M EXPENSES

A. VEGETATION MANAGEMENT

Q. Please summarize Versant's vegetation management program.

A. Versant's vegetation management program includes the following components:

- Roadside Cycle Trim: this program provides vegetation clearance for all distribution and transmission lines which are primarily located adjacent to public roadways. These lines are trimmed on a 5-year cycle with an average annual production of approximately 1,250 miles per year.
- Danger Tree: this program provides removal of whole trees which pose a risk of falling into the lines due to health and condition. Line sections to be treated in a given year are selected based on customer count and reliability performance.
- Service and Capital Work: requests for tree cutting and trimming come from many sources including customers, municipalities, projects and internal Versant crews. Trimming for customer line extensions, and for various capital projects is a major need. Designated vegetation crews are assigned to this work in order to maintain productivity of the maintenance programs.
- Transmission Line Maintenance: this program provides control of vegetation located in transmission right-of-way corridors. This includes vegetation growing under the lines, ingrowth of branching from the edges, and encroachment on the width of the corridor. It also includes management of danger and hazard trees from the edge of the right-of-way. Manual cutting, application of herbicides, and species control are used under the principles of integrated vegetation management.

Q. Please describe Versant's approach to vegetation contract management.

As discussed in the last rate case (Docket No. 2020-00316), an RFP process was conducted in 2020 for the 2021 and 2022 contracts. The RFP, and the resulting contracts, represented a change to the way the program was structured. In particular, Versant changed the contract from a time and equipment (T&E) to a lumpsum (by circuit) basis to enhance contractor accountability and protect customers.

Through the RFP, the two-year contract for cycle-trim work associated with 2021 and 2022 was awarded to one contractor. Service work and transmission work was awarded to another contractor. The danger tree program was awarded to a third contractor through single-year contracts for 2020 and 2021. Another RFP was conducted in 2021 for the 2022 danger tree

program. Competitive pricing was received, and a contract was awarded to a new danger tree contractor for 2022.

A refined quality verification process was instituted in 2021 to check all work and provide a report back to the contractor. The contractor was held accountable for quality compliance and was required to conduct rework, at their cost, if the results did not meet specifications.

Versant currently has five contractors on the system: one conducting transmission, service work, and capital; one conducting the danger tree program; and four covering the cycle trim (one of those is also the contractor covering the transmission program). As discussed below, new contracts are being awarded for 2023 and 2024.

Q. Please provide an overview of recent efforts to improve Versant's vegetation management practices.

A. Versant strives to continually improve its distribution reliability programs and performance, and vegetation management is no exception. To that end, Versant has made the following important changes and improvements to its vegetation management program, as discussed in more detail below:

- We have ended "time and equipment" ("T&E") contracts and implemented production-based contracts, to enhance contractor accountability and protect customers.
- We have increased program staffing to five employees, including one supervisor, one coordinator, and three field forester/arborists.
- We have increased the number of contractors on our system to provide better results, more flexibility, and ensure that program goals are met.
- We implemented the enhanced danger tree program in July 2018 and are continuing the program today.
- We have deployed new equipment options for both roadside pruning work and danger tree removal.
- We have refined and formalized our quality verification process which is currently providing 100% measurement of our results.

- We have increased our focus on accountability for contractor productivity.
- We have implemented new technology solutions and improvements (e.g., GIS, Atlas).

As discussed elsewhere in this testimony, overall system reliability is improving. We credit the improvements in our vegetation management practices, including the danger tree program, as one of the many factors in that improvement.

Q. Has Versant issued an RFP for new vegetation management contracts for 2023 and 2024?

A. **[Begin Confidential, PO-1]** [redacted]

[redacted]

[redacted]

[redacted] **[End Confidential, PO-1]**

Q. What program improvement initiatives are being implemented, and what changes are anticipated, for the new 2023 and 2024 contract period?

A. To achieve a sustainable vegetation management program, Versant has implemented the following program changes:

- Addition of the third arborist position for greater field oversight and quality assurance.
- New trim specifications in the RFP, directed at achieving better clearance and improved quality control.
- Adjusted seasonal work schedules to assure better productivity, particularly in the northern part of our territory.
- Separated the annual work into three sections of approximately 400 miles each to broaden the contract base, reduce contract size, and spread the workload over more contractors.
- Added a cycle-based secondary trim program, consistent with the approach used by Central Maine Power.

Q. Are there any incremental payroll costs associated with vegetation management reflected in the revenue requirement?

A. Yes. As shown on RR-304, there is one additional arborist position compared to the test year.

Q. Why is the Company hiring an arborist?

A. The Company currently employs two field arborists, and is hiring a third. Our service territory is very large and naturally breaks down into three key work regions: (1) northern; (2) Millinocket to greater Bangor; and (3) coastal/Downeast. We are dividing the arborist responsibilities geographically by these three regions. Formerly, with two arborists, one arborist was covering the entire southern area. This area from Millinocket, through Bangor and Downeast is far too large for one person to cover. The third arborist will therefore cover the Downeast region.

The responsibilities of the field arborist are: oversight and quality verification of contractors conducting roadside trim work, danger tree identification, oversight of danger tree removals and the transmission program, service order management, customer service response, trim for capital, and storm response.

Q. What is the status of the hiring process?

A. An offer has been accepted and the candidate is expected to start this month (October 2022).

Q. Please provide an update on the danger tree program.

A. The Versant Asset Management Department continues to identify line sections for the enhanced danger tree program each year. Prior to 2019, danger tree removal was being conducted by bucket truck and climbing. In 2020 and 2021, Versant tested new equipment and shifted more of the work to specialized tree removal equipment that is capable of complete tree removal in 3-4 cutting steps. On most trees, this equipment is much more productive and lower cost on a unit basis than traditional equipment configurations. Danger tree selection is conducted by our Versant arborists. We also continue to secure landowner permission for tree removals.

Q. Please provide an update on Versant's cycle trim.

The transition from a six to a five-year cycle began in July 2018. In 2018, 2019 and 2020, the cycle trim contractor fell short on annual production by a combined total of 342 miles. With the start of the new contract in 2021, the cycle trim contractor was given the firm expectation to complete the target annual production. Despite the requirement, the contractor fell short again, partially due to the tight labor market and COVID-related downtime. Accordingly, the contractor was notified that productivity was not meeting expectations, and contract miles were awarded to other contractors. Even with these proactive actions, the contractors are struggling to secure workers in this very tight labor market. However, utilizing a travel crew labor model is proving to be effective.

Versant has excluded the cost of any catch-up work from the revenue requirement, so customers will not pay the cost of any work required to catch up from prior years' production shortfall. Furthermore, the bid pricing that Versant received was not the result of any prior year's shortfall, but rather was a result of the factors discussed above.

Q. What initiatives is Versant considering for ongoing program improvement and cost management?

A. Versant is considering a range of options for ongoing program improvement and cost management, including the following:

1. Due to the bid results of the RFP process, most of the 2023 and 2024 contracts will, by necessity, be negotiated. To manage cost down, we will be strategic in these negotiations by seeking to find various contractors' optimal work scope, and their preferred locations and seasonal timing.
2. Continued trial work with more mechanical equipment options, including mechanical trimmers, mowers, and the Sennebogen, which can reduce cost compared to traditional bucket work.
3. Investigation of the potential use of remote imagery, predictive technology, and analytics to target priority needs and ultimately reduce cost.

4. Shift program focus from simply clearance to the structural causes of outages, and then design the program to address these structural risks. Integrate more whole tree removal into the roadside program, which will result in a mix of fixed and variable pricing.

B. OTHER OPERATIONS AND RELIABILITY-RELATED INCREMENTAL PAYROLL COSTS

Q. Will Versant's engineering and operations group include incremental positions in the rate year compared to the test year?

A. Yes. Versant has and will be making new hires to implement a technical engineering succession and engineer-in-training program and for a new AMI operations group to support Versant's new AMI system. This is in addition to the incremental arborist position discussed above.

Q. Where are the incremental positions shown in the revenue requirement model?

A. These new positions are shown on Exhibit RR-304 of the revenue requirement model.

1. Engineering Succession Plan

Q. Please describe the Company's engineering succession plan.

A. Over the next six years, 14 of Versant's 17 engineers and technologists with over 25 years of industry experience intend to retire, as shown on Table RO-9, below:

Table RO-9

Summary of Internal Succession Plan and Engineer-in-Training Program [1]						
	2022	2023	2024	2025	2026	2027
Anticipated Retirees	2	1	6	2	1	2
EIT Hires Supporting Succession	5	4	2			
EIT Hires Supporting Workload Requirements	3	3	0			
EIT Hires for Compliance, QA and COMMs Requirements	1	0	1			
Net additions/Retirements: +5	7	6	-3	-2	-1	-2

[1] This is a corporate program - the distribution revenue requirement only includes incremental labor, per RR-304, for those engineering resources that are associated with supporting the distribution system.

To continue to meet the business needs of today and tomorrow and preserve its engineering knowledge and expertise, Versant is implementing an engineering succession program to replace

the engineers that are expected to retire and ensure an effective transition. A critical element of this succession plan will be an “engineer-in-training" program, which allows us to deliberately diversify the skills that junior engineers acquire at the onset of their career and assign mentors for proper development early on. This program has required a thorough review of the types of technical work taking place in the business, the anticipated attrition, individuals’ development time and movement throughout the organization to diversify needed skillsets. New resources will include those to offset retirements, as well as those to integrate into new workload requirements such as NERC Compliance and Distributed Generation (though these latter resources are not included in this distribution revenue requirement application because their costs are recovered through transmission rates and from DG developers, respectively).

This time period is a critical phase for Versant and its customers, given the pace of change and heightened expectations for service, performance and regulatory needs. These needs are creating a vast amount of technical work that has not been seen before, not only at Versant but across the entire industry. It is the result of DG interconnections, a distributed grid not designed for its current intent, make-ready rural broadband expansion in Maine, grid resiliency, integrated system planning, NERC/Cyber requirements, and others. Versant must be well prepared for this set of retirements and, given the time it takes to develop technical staff, Versant must proactively ensure that adequate knowledge transfer, skill, and professional development requirements are in place and not left to chance.

2. AMI Operations Group

Q. Please describe Versant’s new AMI Operations Group.

A. In 2023, Versant will have 9 full-time positions working within the new AMI Operations team during the rate effective period, based on our current resource models. These employees have

been hired in 2022 and are currently operating the AMI system in concert with the AMI project team. The AMI Operations team has been created as a result of the need for an entirely new set of roles within the organization to support the new AMI system with its new wireless-mesh technology, which is replacing a system that is beyond end-of-life.

The team provides critical coordination of day-to-day AMI Operations efforts, ensuring management and resolution of issues across the entire AMI network, including smart meters, complex metering, communications networks, and data management systems. The nine-person team is made up of roles that comprise meter, network and operational analysts, data analytics, and data integrity. This combination of roles ensures that the metering system is operating as designed throughout the billing lifecycle and that we are proactively managing the reliability and availability of the meters, network, systems and data being provided by the AMI System.

Q. Where are the AMI Operations Group and Engineering Succession Plan shown in the revenue requirement model?

A. These new positions are shown on Exhibit RR-304 of the revenue requirement model.

C. INCREMENTAL FACILITIES & FLEET COSTS

Q. Is Versant projecting increased facilities and fleet costs during the rate year compared to the test year?

A. Yes. Versant has experienced higher facilities costs, including electricity, heating fuel, and lease expenses, and higher fleet expenses, including fuel costs and materials and services expenses. Versant expects these higher prices to continue into 2023 and 2024. These expenses are discussed below and are reflected at Exhibit RR-315 of the proposed revenue requirement model.

1. Facilities Expenses

Q. Please describe the impact of electricity and heating fuel impacts on facility expenses.

A. With many Versant employees having returned to the offices, and with the increased supply cost for electricity, Versant, like all other customers, experienced a significant increase in its electricity cost for 2022 year-to-date. Versant also is forecasting an incremental increase over 2021 for propane and natural gas costs. Because these trends are expected to continue, the 2022 costs are being carried forward into the rate effective year. This impact is reflected in the revenue requirement model on Exhibit RR-315.

Q. Please explain the impact of higher lease expenses on the revenue requirement.

A. Versant currently leases a space for operations at 56 Telcom Drive in Bangor. Beginning in February 2023, rent for this space will increase as a result of a renewed lease term. Versant has included this additional annual increase in the revenue requirement as shown on Exhibit RR-315.

2. Fleet Expenses

Q. Please describe the revenue requirement impact of higher fleet fuel costs.

A. In 2022, Versant is experiencing significantly higher fuel prices compared to 2021. This increased fuel cost is likely to continue into 2023 and 2024, and Versant is therefore carrying the 2022 cost forward as the anticipated fuel expense for the rate effective period. This increase is reflected in the revenue requirement model on Exhibit RR-315.

3. Fleet Materials and Services

Q. Please explain the impact of materials and services on the revenue requirement.

A. Versant is experiencing higher variable costs for fleet maintenance and vendor costs. Versant has applied a conservative percentage cost increase of 17% for the outsourced work and certain materials associated with the maintenance work. Versant expects these price increases will

continue into the rate year and has carried the costs forward. This increase is reflected in the revenue requirement on Exhibit RR-315.

VII. SPECIAL ITEMS TO BE CONSIDERED OUTSIDE OF THE DISTRIBUTION REVENUE REQUIREMENT

Q. Is Versant seeking to defer, for future recovery, any costs that it will incur during the rate year as a result of legislative mandates and State policy, but that are not presently accounted for in the revenue requirement?

A. Yes, Versant respectfully requests accounting orders permitting it to defer costs (with carrying charges at Versant's weighted average cost of capital) associated with: (1) the integrated system planning process required by LD 1959; and (2) make-ready work associated with Maine's rural broadband expansion efforts pursuant to LD 1484.

A. INTEGRATED SYSTEM PLANNING

Q. Will Versant incur costs during the rate effective period to implement the State's new integrated system planning requirements?

A. Yes. Pursuant to LD 1959, enacted by the Maine Legislature earlier this year, electric utilities must undergo a substantial integrated grid planning process. Beginning November 1, 2022, and then every five years thereafter, the Commission must initiate a proceeding to identify priorities to be addressed in a filing by the utility "regarding a grid plan that will assist in the cost-effective transition to a clean, affordable and reliable electric grid." Within 18 months of the conclusion of that proceeding, utilities must submit a report to the Commission that addresses the priorities identified by the Commission, and that also:

A. Assesses the electric system of the covered utility and its relationship to the regional grid;
B. For elements of the filing related to customer energy consumption and usage characteristics, references and incorporates relevant elements of the Efficiency Maine Trust triennial plan developed under 35 M.R.S. section 10104,

subsection 4, including all of the trust's analysis of cost-effective energy efficiency potential and plans to implement energy efficiency programs, demand management programs, beneficial electrification programs such as heat pump and electric vehicle initiatives, energy storage initiatives and analysis of nonwires alternatives;

C. Includes at least two potential planning scenarios, at a minimum, a baseline scenario and a scenario of high-penetration distributed energy resources and end-use electrification. When applicable, the planning scenarios must incorporate mechanisms for achieving the priorities established by the Commission, including, but not limited to, cost-effective policies, programs, rates, use of software or technology and infrastructure planning, including nonwires alternatives;

D. Includes, at a minimum, the following:

(1) Forecasts of projected load, including forecasts of end-use electrification, energy efficiency and distributed energy resources;

(2) Baseline energy supply data and assessments, including but not limited to planned generation retirements; new generation that is planned or needed, including generation of electricity from renewable sources; and energy storage installations;

(3) Analysis of hosting capacity, including locational benefits of distributed energy resources and areas of existing or potential system congestion;

(4) Analysis of available and emerging technologies necessary to enable load management and flexibility;

(5) An assessment of the environmental, equity and environmental justice impacts of grid plans; and

(6) An identification of cost-effective near-term grid investments and operations needed to achieve the priorities identified in subsection 2; and

E. References and incorporates, as appropriate, all relevant analysis conducted as part of the State's climate action plan under Title 38, section 577 and relevant information from reports and analysis completed by other state agencies and quasi-independent state entities.

Q. What costs will Versant incur to comply with these integrated grid planning requirements?

A. Versant fully appreciates the importance of the integrated grid planning process required by the Act. Versant supports this process and sees it as important tool to help guide Maine's clean energy future.

The new grid planning requirement will require a substantial amount of incremental work over and above the current process. Versant does not have the capacity with existing internal

resources to achieve the beneficial but onerous requirements of the new law. Versant anticipates that the new requirement will be met through a combination of incremental internal and external resources that Versant will hire—some existing resource roles may be repurposed, requiring their current roles and responsibilities to be backfilled.

Versant estimates that the costs for the distribution component of the integrated system plan could be $1.7M in each of 2023 and 2024. This cost covers:

- The technical power system modeling and analysis;
- Load forecasting and gathering of quality data to create such models;
- Execution of statistical modeling to analyze scenarios;
- Stakeholder engagement and facilitation at all levels;
- Subject matter expert(s) to guide our methodology, assumptions, process and engagement;
- Support for grid modernization needs and assessment for potential solutions with supporting benefit cost analysis; and
- Environmental and economic justice analysis unless provided by others.

Q. How does Versant propose to account for these incremental costs of the integrated grid planning process?

A. Through this proceeding, Versant respectfully requests that the Commission approve an accounting order permitting Versant to defer these costs for future recovery. Because the planning process is just beginning, Versant has not included the anticipated costs associated with these planning processes in the proposed revenue requirement. An accounting order is appropriate because such costs are not currently in the revenue requirement but are extraordinary in nature and virtually certain to be incurred. Furthermore, the costs are mandated by the Maine Legislature to serve policy goals. If the Commission declines to approve an accounting order, Versant will include these costs in its rebuttal revenue requirement.

B. MAINE BROADBAND INITIATIVE

Q. Does Versant anticipate it will incur incremental costs associated with Maine's rural broadband initiative?

A. Yes. Beginning in 2023 or earlier, Versant is anticipating a significant increase in pole applications associated with "make-ready" work for Maine's broadband expansion efforts. This increased work is being driven by the Maine Broadband Initiative and L.D. 1484, which aims to significantly expand the state's broadband network to rural communities and achieve universal access to affordable, high-speed broadband. Versant, like other pole owners, is required by law to provide nondiscriminatory access to its distribution poles for communication companies.

Due to the state and federal funding available for broadband expansion, Versant anticipates a significant increase in the volume of make-ready work for broadband-related attachments. Versant estimates that it will need to perform make-ready work on approximately 1500 poles over 2023 and 2024 as part of this broadband program; this compares to approximately 100 poles during the test year. Compared to baseline 2021 volumes, this is a significant increase and will equate to approximately $4 million in incremental costs in 2023 and approximately $7 million in incremental costs in 2024. These estimates are based on the expectation that federal funds to encourage such activity will be steadily distributed over this time period and potentially into 2026.

Q. How does Versant propose to account for these incremental costs of the Maine Broadband Initiative?

A. Where federal and state funding is not able to be secured for make ready work, Versant requests an accounting order to capture the incremental carrying costs and depreciation attributable to the broadband expansion initiative until they can be included in rates in a future distribution rate case. An accounting order is appropriate because these are extraordinary costs mandated by the

Maine Legislature to serve state and federal policy goals. If the Commission declines to approve an accounting order, Versant will incorporate these costs in its rebuttal revenue requirement. To be clear, the requested accounting order would only pertain to distribution-related planning costs. Versant will separately track transmission-related planning costs and would seek to recover them separately through transmission rates.

VI. CONCLUSION

Q. Do you have any concluding remarks?

A. The investments and programs described in this testimony are designed to allow the Company to build on the improvements we have seen in recent years and continue to improve the reliability of our service. Versant has worked hard to identify and make cost-effective investments that provide valuable reliability improvements for customers at reasonable costs. At the same time, Versant recognizes that not all outages are preventable and is making needed investments in technology that will allow us to better pinpoint outages and restore power more efficiently. We look forward to discussing these issues with the Commission, the Commission Staff, the Office of the Public Advocate, and other parties throughout this proceeding.

Q. Does this conclude your testimony?

A. Yes.