

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET UE-240006

DIRECT TESTIMONY OF

DAVID R. HOWELL

REPRESENTING AVISTA CORPORATION

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I. INTRODUCTION

Q. Please state your name, employer and business address.

A. My name is David R. Howell and I am currently employed as the Director of Generation Production and Substation Support, previously Director of Electric Operations and Asset Maintenance for Avista Corporation (Avista or Company) leading the Wildfire Program. My business address is 1411 East Mission Avenue, Spokane, Washington.

Q. Would you briefly describe your educational background and professional experience?

A. Yes. I graduated from Washington State University in 1992 with a B.S. in Mechanical Engineering and earned my EMBA from the University of Washington in 2012. I am a registered professional engineer in the State of Washington for both electrical and mechanical engineering. I joined the Company in 2005 after spending five years with TransCanada-GTN. Between 2005 and 2015, I held various positions at Avista supporting both natural gas and electric operations, including Gas Design Engineer, Gas Design Manager, Gas Compliance Manager, Operations Manager, and Director of Gas Delivery. In 2015, I transitioned to support the electric business as the Director of Electrical Engineering. I became the Director of Electric Operations in 2016, where my primary responsibilities included the management and oversight of Avista’s 13 operating districts, responsibility for construction services and design, as well as the Asset Maintenance and Wildfire teams. In 2023 I was moved to Director of Generation Production and Substation Support.

Q. What is the scope of your testimony in this proceeding?

A. My testimony and exhibits discuss the status of the Company’s Wildfire Resiliency Plan (“Wildfire Plan” or “Plan”), reiterate its goals and objectives, and summarize

1 the technical and operational aspects of the Plan. As discussed in Avista’s last general rate case,
 2 Avista’s Wildfire Plan reflects the Company’s over 130-year operating history combined with
 3 recent efforts to quantify and respond to the financial, safety-related, and service reliability risks
 4 associated with wildfires. While I discuss this plan in detail within my testimony and exhibits,
 5 Company witness Ms. Andrews discusses the level of O&M expenses associated with the
 6 Company’s Wildfire Plan and reflected in the Wildfire Expense Balancing Account and wildfire
 7 expense baseline within her direct testimony (Exh. EMA-1T). Company witness Ms. Schultz
 8 incorporates these pro formed Wildfire O&M expenses and any capital additions that transfer
 9 to plant prior to or during the Two-Year Rate, as proposed by the Company, within her electric
 10 Pro Forma Study (Exh. KJS-2).

11 A table of contents for my testimony is as follows:

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24 **Q. Are you sponsoring exhibits in this proceeding?**

25 A. Yes. I am sponsoring exhibits Exh. DRH-2 through Exh. DRH-5, as follows:

- 26 • Exh. DRH-2 – Wildfire Resiliency Plan 2023
- 27 • Exh. DRH-3 – Wildfire Resiliency 2023 Year End Report
- 28 • Exh. DRH-4 – Avista 2023 Wildfire Resiliency Communications Plan
- 29 • Exh. DRH-5 – Wildfire Resiliency Business Case

30

31 **Q. Would you please provide the key highlights of your testimony**

1 **below?**

2 A. Yes. Provided below are several of the key highlights of my testimony, with
3 more details included within the body of this testimony:

- 4 • Avista is responding to increasing wildfire risk, especially in the Western U.S.,
5 with a thoughtful comprehensive plan that includes programs and strategies we
6 believe will help reduce wildfire risk for our customers, infrastructure, and the
7 communities we serve, and that are in line with industry standards and practices.
8
- 9 • The overall cost of the Company's Wildfire Plan reflects \$310.9 million in capital
10 investment and \$122.6 million in O&M expense on an electric system basis. The
11 Plan capital and O&M costs are focused in the following areas: Grid Hardening,
12 Enhanced Vegetation Management, and Situational Awareness.
13
- 14 • Through the Wildfire Plan, Avista has enhanced existing vegetation management
15 measures to address 100% risk tree inspection of non-urban areas of our
16 distribution system and incorporated the use of new technologies including LiDAR
17 and satellite imaging across the entire grid to provide additional detailed data on
18 vegetation issues and encroachments and to help us focus mitigation efforts where
19 they will provide the most risk reduction value.
20
- 21 • The Wildfire Plan has enhanced current programs at Avista such as the existing
22 Right Tree Right Place with Wildfire's Safe Tree Program and the existing
23 elevated protection settings methodology with Fire Safety Mode (formerly Dry
24 Land Mode) operations. The Plan added new programs and technologies including
25 the Fire Weather Dashboard and Wildland Urban Interface map.
26
- 27 • The Plan includes the use of metrics to help us determine the impacts of Plan
28 programs and strategies over time.
29
- 30 • A key component of our success lies in communication and outreach for internal
31 and external interested parties, specifically customers, and this is a focus of the
32 Plan that we continue to hone and refine.
33
- 34 • We have faced challenges since the Plan's inception in 2020. In this testimony we
35 review some of the issues faced this year, what we learned, and how we are
36 adapting and improving the Plan.
37

38
39 **II. AVISTA'S WILDFIRE PLAN OVERVIEW**

40 **Q. What are the stated goals of the Wildfire Plan?**

41 A. Avista responded to the increasing threat of wildfires within our service

1 territory with a robust and well-rounded Wildfire Plan focused on reducing the likelihood of
2 a wildfire caused by Avista's electric operations, protecting the safety of our employees and
3 customers, safeguarding our infrastructure from the impacts of wildfire, and preparing
4 ourselves, our system, and external partners for a wildfire event. The goals of the Wildfire
5 Resiliency Plan are to:

- 6 • Support safe and reliable operations by protecting physical assets, safeguarding
7 property, and protecting human lives against the threat of wildland fires through
8 the implementation of Plan programs and Company operations.
- 9
- 10 • Prepare and train for episodic wildfire events, ensure emergency preparedness, and
11 align operating practices with fire threat conditions.
- 12
- 13 • Protect Avista's energy delivery infrastructure and mitigate the probability and
14 consequence of direct financial and liability costs associated with large-scale fire
15 events.
- 16
- 17 • Reduce the risk of wildfire from the interaction of Avista's energy delivery system
18 and the environment, as well as the impacts of wildfire to Avista's system.
- 19

20 These recommendations represent Avista's ongoing Wildfire Plan, reflect cost prudence, and
21 were adopted based on their ability to leverage existing asset programs and practices, adopt
22 industry best practices, promote public safety, and mitigate financial risks.

23 **Q. Would you please provide a short history of the development of the Plan**
24 **and how it has evolved over time?**

25 A. Yes. Avista's first Wildfire Resiliency Plan was first published in May of 2020,
26 the culmination of 18 months of development starting with project chartering and goal setting,
27 risk tabletop analysis, risk assessment, cost forecasting, and various stages of internal review
28 and approval. This was combined with feedback from various sources, including fire
29 protection agencies, peer utilities, industry manufacturers, community leaders, and regulators.
30 Since that time, we have been working to implement elements of the Plan, with initial

1 implementation beginning in mid-2020. The Plan is comprised of four major categories. The
2 first is grid hardening to reduce the potential for spark ignition events and make the system
3 more resilient. Second is enhanced vegetation management practices to reduce the potential
4 for vegetation-related outages and spark events. Third involves situational awareness, which
5 includes monitoring technology and the sophisticated modeling of risk offered by our Fire
6 Weather Dashboard. Fourth is emergency operations and response, which includes operational
7 tactics such as the use of Fire Safety Mode settings and working through partnerships to
8 support response to wildfires. All of these elements are discussed in more detail in Exh. DRH-
9 2 (Wildfire Resiliency Plan 2023).

10 The Plan was developed as a risk-based approach to mitigating wildfires. It was
11 developed in collaboration with internal subject matter experts and industry peers to ensure
12 that it includes current industry best practices, is aligned where appropriate with Northwest
13 peer plans, and yet is specifically designed to address the geographic risks and operating
14 conditions unique to Avista's service territory.

15 The Plan has also been improved and updated through engagement with our
16 Commissions and related intervenors. For example, Public Counsel suggested that we add a
17 glossary of terms to clarify terminology and ensure its use is consistent. A glossary was added
18 to the 2023 Plan and will be a permanent part of every Plan going forward. Benefits to this
19 suggestion include helping shape the dialogue around the Plan, especially internally. Utilizing
20 a glossary helps with broad based understanding and consistent communications. We note that
21 though Avista cannot enforce standardization of terminologies with other utilities, we are open
22 to updating, improving, and refining its own definitions and descriptions in light of
23 interactions with others in the industry, so this glossary should continue to be improved and

1 refined over time.

2 Public Counsel recommended several changes to Avista’s Wildfire Resiliency Plan to
3 improve participant “collaboration with a clear communications and outreach plan.” We
4 believe that our expanded communications efforts, described in more detail below, indicate
5 our commitment to honor this request.

6 We note that Avista’s Wildfire effort focuses on the “Plan-Do-Check-Adjust”
7 methodology, thus we are continually monitoring the impacts of our programs and the work
8 happening in the industry, as well as seeking the guidance of our peers and partners. We are
9 always searching for areas of improvement and refinement, which is evidenced by the fact
10 that our Fire Weather Dashboard risk model has been upgraded to new levels of sophistication,
11 we have developed strong and invaluable partnerships with first responders and fire
12 professionals, and we are establishing data-driven means of determining the most cost-
13 effective grid hardening and vegetation management strategies. These are examples and more
14 will be described in detail throughout this testimony.

15 **Q. Please describe the impact of wildfires and wildfire planning specific to**
16 **Avista’s electric transmission operations.**

17 A. Avista operates and manages 2,270 miles of transmission in portions of
18 western Montana, northern Idaho, and eastern Washington. In 2006, Avista adopted tubular
19 steel poles as the standard for 115 kV and 230 kV powerlines. Since that time, Avista has
20 worked to replace its aging wooden structures with steel, and new construction is almost
21 exclusively steel. The combination of system hardening and well-maintained rights-of-way
22 have increased the fire resiliency of our transmission system. In fact, transmission fire ignition
23 events are now relatively rare. From 2009 to 2023 there were 4 individual transmission

1 incidents classified as spark ignition events in our Outage Management System (about 0.3%
2 of the total sustained transmission outages).¹

3 Conversely, the impact of fire on transmission structures can be significant when it
4 does happen. Aside from the potential for extended outages, the replacement cost of a single
5 transmission structure can be \$50,000 or more, and damages to conductor can escalate into
6 the millions of dollars.²

7 **Q. Please describe the impact of wildfires and wildfire planning specific to**
8 **Avista's electric distribution operations.**

9 A. The vast majority of electric outages occur on the distribution system, but the
10 impact to customers is typically restricted by line-fuse action (limiting outages to an average
11 of 51 customers typically).³ To contrast this situation, transmission outages are infrequent
12 (low probability) but can impact many more customers (the average number of customers
13 affected by a transmission outage is 615).⁴ However, from a fire prevention standpoint, the
14 distribution system is the ignition source for most utility-related fires. Data from our Outage
15 Management System (OMS) from 2009 to 2023 indicates that annually about 105 spark
16 ignition events are associated with overhead distribution lines, less than 1% of all distribution
17 outages. Many of these do not result in fire and if they do, in almost all cases these fires are
18 naturally extinguished or are extinguished by first responders, including Avista line
19 servicemen. However, given the current risk environment, the distribution system warrants
20 enhanced focus with respect to fire ignition, and this risk is especially acute in the wildland-

¹ This data was pulled from the Outage Management System for 2009 to 2023.

² As an example, fire damage to the Company's Chelan-Stratford transmission line as a result of the Cold Springs Canyon/Pearl Hill fire in September 2020 resulted in capital replacement costs of over \$8.5 million. This fire was caused by a campfire on private property that had not been properly extinguished. <https://wildfirepartners.org/cold-springs-fire/>

³ Based on Outage Management System data for 2009 to 2023.

⁴ Ibid.

1 urban interface (WUI) areas.

2 Fire ignition sources include tree contacts with powerlines, but also include animal
3 contacts, equipment failure, and electrical pole fires. In the past fifteen years there were 134
4 tree-related outages related to spark ignition events on the distribution system, with about 46
5 occurring during fire season (July through September). During that same time frame, there
6 were 536 reported pole fires during fire season.⁵ We believe that our Wildfire Resiliency
7 programs will reduce these numbers over time.

8

9 **III. WILDFIRE PLAN COSTS**

10 **Q. What specific Wildfire Plan costs has Avista pro formed in this general**
11 **rate case for recovery?**

12 A. Included in the testimony that follows is a summary of the Company's
13 recommendations and expected costs, annually, for the ten-year period 2020 through 2029.
14 Specific costs proposed by Avista in this general rate case, however, as discussed by Ms.
15 Andrews, include the level of Wildfire Plan transmission and distribution expenses to be
16 recovered annually over the Two-Year Rate Plan, at \$8.3 million (Washington share)⁶, as well
17 as Washington's share of Wildfire Plan capital additions transferring to plant between July
18 2023 and December 2026. Specifically, as discussed by Ms. Schultz at Exh. KJS-1T, and

⁵ Ibid.

⁶As discussed by Ms. Andrews, test period levels for the twelve-month period ending June 30, 2023, reflect wildfire expenses for Washington at \$10.7 million. The company has included a pro forma adjustment reducing wildfire expenses by \$2.4 million, to reflect non-labor wildfire expense levels of approximately \$8.3 million annually (\$14.4 million on a system basis), between 2025 and 2026. Therefore, the Company is proposing a new Wildfire Balancing Account baseline expense of \$8.3 million annually in Rate Year 1 (2025) and Rate Year 2 (2026). Current wildfire expense (and current Wildfire Balancing Account baseline) included in base rates per Docket UE-220053, et. al., totals \$5.1 million. The new proposed level results in an incremental increase in expense and Wildfire baseline of \$3.2 million.

1 excerpted from Table No. 2 of her testimony (provided as Table No. 1, below), the following
 2 transfers to plant for the Wildfire Plan are included:

3 **Table No. 1 - Excerpt from Exh. KJS-1T, Table No. 2 – Wildfire Washington Additions**

Capital Projects - Washington Electric								
Gross Transfers To Plant ¹								
\$ in 000's								
Witness	Pro Forma Jul-Dec 2023	Pro Forma 12 ME 2024	Pro Forma Total	Provisional 12 ME 2025	Rate Year 1 Total	Provisional 12 ME 2026	Incremental Rate Year 2	2-Yr Rate Plan Total
Mr. Howell	\$ 8,705	\$ 21,307	\$ 30,012	\$ 10,025	\$ 40,037	\$ 27,237	\$ 27,237	\$ 67,274

¹Excludes impact of retirements, which would lower the overall net plant prior to A/D and ADFIT.

9 As can be seen in the table above, Ms. Schultz has included in her electric Pro Forma
 10 Study, Washington's share of pro forma capital additions for July – December 2023 of \$8.7
 11 million and \$21.3 million for 2024, and “provisional” capital additions for 2025 of \$10.0
 12 million, for a Rate Year 1 total of \$40.0 million. For Rate Year 2, incremental “provisional”
 13 capital additions for 2026 have been included of \$27.2 million.⁷ As further summarized by
 14 Ms. Andrews, the overall incremental electric revenue requirement pro formed in this case
 15 above that included in existing base rates, associated with these costs (wildfire expense and
 16 capital investment), is approximately \$6.1 million in Rate Year 1, with an incremental amount
 17 in Rate Year 2 of \$3.0 million, above Rate Year 1 levels.⁸ Approval of these proposed
 18 incremental costs is an important element of the Company's Wildfire Plan and helps support
 19 the level of wildfire mitigation efforts proposed in the Company's Wildfire Plan.

⁷ Capital additions included for 2025 in Rate Year 1 and 2026 in Rate Year 2, are reflected on an AMA basis.

⁸ Per Ms. Andrews, pro formed revenue requirement amounts for wildfire expense and wildfire net plant investment totals \$8.9 million in Rate Year 1 above 12ME 06.30.2023 test period levels, and \$3.0 million incremental in Rate Year 2, above Rate Year 1 levels.

1 **Q. As noted above, Ms. Schultz discusses Washington allocated portions**
 2 **included in her electric Pro Forma Study. What level of capital additions do you discuss**
 3 **within your testimony?**

4 A. While Ms. Schultz speaks to that pro formed by the Company on a Washington
 5 allocated AMA basis for each Rate Year, similar to other capital witnesses, I will refer to total
 6 system transfers to plant planned per the Wildfire Plan Business Case, on an annual basis for
 7 the period July 2023 through 2026.

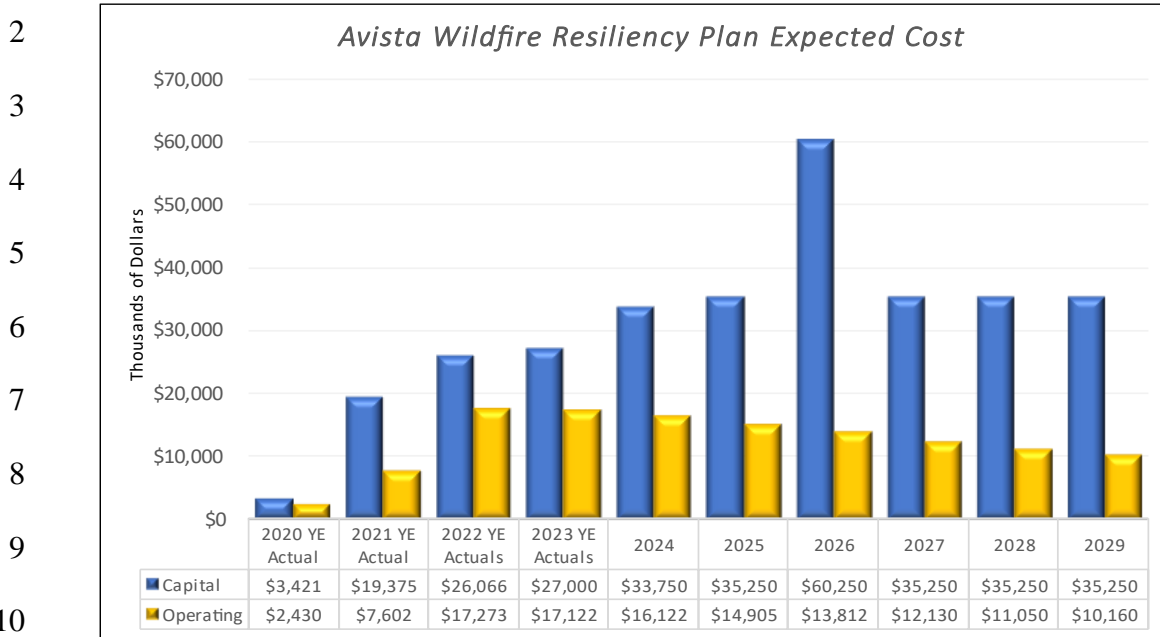
8 **Table No. 2 – Capital Additions for Wildfire Resiliency (07.2023 – 2026)**

WA GRC Plant Category	Project #	Business Case	07.2023-				Exh.
			12.2023 TTP (System)	2024 TTP (System)	2025 TTP (System)	2026 TTP (System)	DRH-5 Page #
Large or Distinct Projects	1	Wildfire Resiliency Plan	\$ 13,977,203	\$ 33,749,996	\$ 35,249,997	\$ 60,249,995	2
Total Wildfire			\$ 13,977,203	\$ 33,749,996	\$ 35,249,997	\$ 60,249,995	

12 **Q. What are the current capital and expense cost estimates for the next ten**
 13 **years for the Wildfire plan?**

14 A. The updated system-wide Wildfire Resiliency Plan program costs include
 15 capital investment of approximately \$310.9 million from 2020 to 2029 with corollary
 16 operating expenses of \$122.6 million (all electric system numbers). Included in Illustration
 17 No. 1 below are the system (Idaho and Washington electric) annual capital additions and
 18 operating expenses (actual and expected) for the 10-Year period 2020 – 2029.

1 **Illustration No. 1 – Avista Annual Wildfire Resiliency Plan Cost Expected (System)⁹**



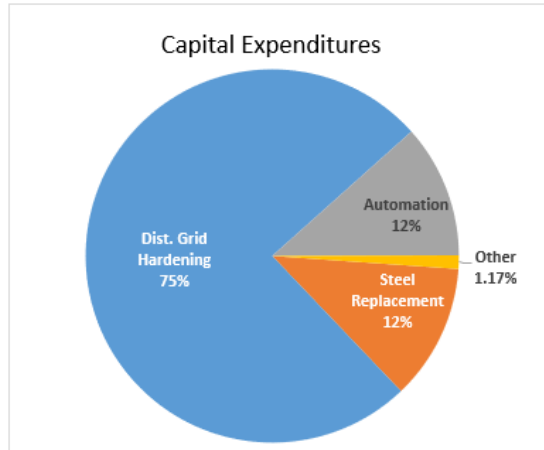
11 Most capital levels are expected to levelize by 2025 as all major programs reach their
 12 expected level of operations and remain so through 2029. However, \$25 million was added to
 13 Grid Hardening in 2026 (split 60/40 for Washington and Idaho) as we begin to implement
 14 Enhanced Grid Hardening (undergrounding in high fire risk areas, described in more detail
 15 later in my testimony). This will increase our capital budgets from 2026 forward by an amount
 16 that will be determined after our first year of experience with this new program. Operating
 17 expenses, however, are expected to peak in 2023 and then gradually decline as subsequent
 18 year vegetation inspections hopefully reveal fewer risk/hazard trees due to our vigorous efforts
 19 to mitigate them.

20 The individual plan recommendations that result in these costs estimates are provided
 21 in the Wildfire Plan (Exh. DRH-2) and the Wildfire Business Case (Exh. DRH-5). By far the

⁹ Capital additions in 2026 reflect \$25 million of enhanced Grid Hardening. Incremental capital additions for enhanced Grid Hardening beyond 2026 is yet to be determined, and therefore not shown in Illustration No. 1 above.

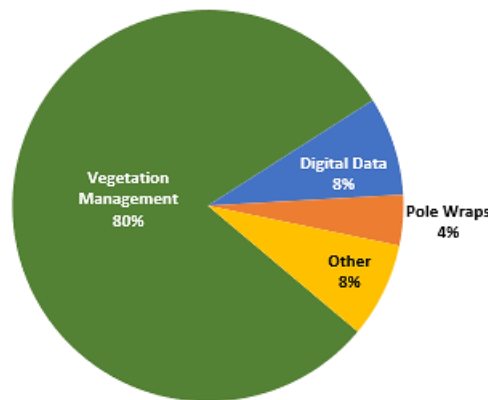
1 single largest capital investment is associated with electric grid hardening which accounts for
 2 about 88% of total capital spend over the ten-year period.

3 **Illustration No. 2 – Avista Wildfire Resiliency Capital Expenditures**



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 10 As shown in Illustration No. 2, capital expenditures are, as mentioned above, primarily
 11 comprised of distribution and transmission grid hardening activities. The other major category
 12 relates to recloser and substation automation on the distribution system.

13 **Illustration No. 3 – Avista Wildfire Resiliency Operations Expenses**



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 20 As shown in Illustration No. 3 above, for operating and maintenance expenses there are three
 21 primary cost drivers: expanding the distribution risk tree program to 100% annual risk tree
 22 inspections, LiDAR data collection and processing for the transmission system, and satellite
 23 imagery and data analysis for the distribution system (together shown as “Digital Data” in the

1 pie chart above). This budget also includes fuel reduction partnerships, transmission fire-
2 resistant pole wraps, the Fire Weather Dashboard, and the public Safe Tree customer initiative.

3 Note that while most expenses are projected to decline significantly after 2029, the
4 majority of operating expense items are on-going and are generally related to the risk-based
5 Enhanced Vegetation Management Program, which will continue well into the future. In 2020
6 when the Plan was instituted and the original budgets were developed, we lacked a full
7 inventory of the number of dead, dying, and diseased trees within strike distance of power
8 lines. The inventory of risk trees is significantly higher than anticipated due to drought, forest
9 health issues, and insect infestations. In fact, the USDA anticipates “substantial tree mortality
10 from insects and diseases through 2027.”¹⁰ Avista believes that the risk-based inspections
11 provided by LiDAR and satellite imagery as well as expansion of our existing tree inspection
12 program to viewing 100% of the system each year will aid in identifying and mitigating risk
13 tree issues going forward, though there will likely be some time catching up on current risk
14 tree inventory as the backlog of risk trees are removed, leading to higher costs in the first few
15 years of the Wildfire program, as indicated by the projected budget in Illustration No. 1.

16 As evidence of this “catching up” issue, the 100% system inspections in 2022 revealed
17 more than twice the number of risk trees anticipated and resulted in nearly 19,000 tree
18 removals that year alone, a new record for Avista. In 2023, we even exceeded this record-
19 setting work, mitigating over 22,000 trees, removing more trees in the first three quarters of
20 2023 than we had in the entirety of 2022, and this figure does not include the over 5,000 trees
21 removed as a result of the Gray Fire. Note that a risk tree is defined as one that is dead, dying,

¹⁰ “Forest Health Summary for the Pacific Northwest Region 2022: USDA Forest Service: Forest Health Protection, Oregon Department of Forestry, and Washington Department of Natural Resources, July 11, 2022,” <https://storymaps.arcgis.com/stories/026a39f860b041eb84d8582bce094fad>

1 diseased or exhibits obvious structural defects such as a co-dominate stem which pose an
 2 increased fall-in risk with conductor during more severe weather. It is a tree with the potential
 3 of imminent fall-in hazard to energized facilities.

4 **Q. Are there potential operating and maintenance expense offsets (i.e., direct**
 5 **benefits) expected as a result of the Company's Wildfire Plan?**

6 A. The goal of wildfire resiliency is to reduce the overall risk associated with
 7 wildfires. In short, the benefits of this plan are largely measured in terms of risk reduction for
 8 all parties involved as well as cost avoidance. The Company, however, recognizes a potential
 9 for costs savings and cost shifts from operating and maintenance expense towards capital
 10 investment. The overall impact of cost savings and cost shifts will not be well understood until
 11 longer-term performance data can be obtained and analyzed. However, one of the objectives
 12 of this plan is to reduce the number of equipment failures and tree-related outages and by
 13 doing so, avoid emergency response and customer outage costs.

14 The following Table No. 3 below lists a number of potential cost savings opportunities
 15 associated with the Wildfire Resiliency Plan.

16 **Table No. 3 – Potential Cost Savings Opportunities**

Plan Element	Benefit	Cost Savings/Shift
<i>Annual Risk Tree and Customer Driven Right Tree Right Place</i>	Improved system performance (fewer outages)	Reduced spending on emergency response and unplanned repairs
<i>Digital Data Collection</i>	Automates data gathering process for vegetation and structure condition inspection	Reduces field inspection activities. Enables computerized quality analysis & control
<i>Grid Hardening</i>	Improved system performance (fewer outages)	Reduced spending on emergency response and unplanned repairs
<i>Situational Awareness (Communications & Control Systems)</i>	Enables remotely monitoring and controlling equipment	Reduced service-related truck rolls
<i>Operations & Emergency Response</i>	Better prepared & equipped first responders	Reduces risk of injury or accident

1 **Q. How will any offsetting benefits be captured in the form of O&M savings?**

2 A. As discussed by Ms. Andrews, the operation of the balancing account for O&M
3 costs will be net of cost savings, thereby capturing over time any embedded cost savings.

4 **Q. Please provide more information about the DOE grants for which the**
5 **Company applied.**

6 A. The Infrastructure Investment and Jobs Act (IIJA), aka Bipartisan
7 Infrastructure Law (BIL), was signed into law by President Biden on November 15, 2021. The
8 law authorizes \$1.2 trillion for transportation and infrastructure spending, with \$550 billion
9 of that going toward new investments and programs. Funding from the IIJA addresses energy
10 and power infrastructure, access to broadband internet, water infrastructure, and more,
11 focusing on infrastructure needs at the local level.

12 In early 2023, as part of this Act, the U.S. Dept. of Energy (DOE) offered \$918 million
13 in grants to utilities across America to inspire grid resilience efforts. The DOE stated that the
14 purpose of these grants was to reduce the likelihood and consequences to the electric grid of
15 extreme weather and natural disasters, including wildfire. This grant is called “DOE Grid
16 Resiliency and Innovation Project (GRIP).” They expected to award about 10 grants of about
17 \$100 million each, with recipients required to provide a cost share of 50% of the grant
18 awarded.

19 Avista submitted a concept grant proposal as part of this DOE GRIP. Avista had
20 already committed to a multi-year program to upgrade powerlines located in high fire threat
21 areas through our Wildfire Resiliency Plan, but current capital resource levels are not
22 sufficient to complete upgrades to all 2,746 miles of our distribution lines located in elevated
23 WUI tiers within the original ten-year scope of the Wildfire Resiliency Plan (through 2029).

1 In fact, current budget projections indicate that nearly 700 miles will remain untreated at the
2 end of 2029. This grant funding was meant to effectively fill this gap. Avista's planned scope
3 of work to be accomplished under this grant had the objective of grid hardening 652 miles of
4 Avista's overhead electric distribution infrastructure, converting 192 miles of overhead
5 powerlines to underground systems, and reinforcing 460 miles of existing overhead lines.
6 Avista, however, was unsuccessful in securing this grant as further explained by Company
7 witness Ms. Scarlett at Exh. AS-1T.

8 In addition to this grant application, Avista joined with a group of utilities and the
9 UMS Consulting Group in applying for another federal grant under the DOE Grid Resiliency
10 and Innovation Project (GRIP). This application is related specifically to increasing situational
11 awareness through using surveillance cameras to identify fire ignitions. Avista has worked
12 with UMS in the past on Asset Management programs, so UMS reached out to us. Other
13 utilities they contacted include Inland Power & Light, Portland General Electric, and BPA, as
14 well as vendors including AiDash (Avista's satellite vendor) and Pano AI. Pano AI uses
15 camera surveillance and computer machine learning to identify fire starts with 24x7 computer
16 monitoring. This group filed a joint application for funds from the GRIP grant and were
17 partially successful in securing funding for remote cameras, as further explained by Ms.
18 Scarlett.

19

20

IV. RISK MITIGATION

21

Q. What is the risk exposure to the Company without the long-term Wildfire

22

Plan proposed by the Company?

1 A. The risk of large wildfire events is increasing across the western United States.
2 Congressional reports indicate that wildfires are costing the U.S. economy between \$394 and
3 \$893 billion annually.¹¹ Across the nation, Idaho ranks fifth, Washington ranks sixth, and
4 Oregon ranks 8th in wildfire risk.¹² Recent fire events in Avista’s service territories in Idaho,
5 Washington, and Oregon, as well as major wildfire activities in other states such as California,
6 illustrate that utility operating risk is increasing related to wildfires. Reducing the risk of
7 wildfires is critical for customers, communities, investors, and the regional economy. Avista
8 has taken a proactive approach for many years to manage wildfire risks and impacts, and
9 through its Wildfire Plan, the Company has identified additional wildfire defenses for
10 implementation. The goals, strategies, and tactics set forth in this plan reflect a quantitative
11 view of risk. Additional research, conversation, and analysis with Avista’s operating staff and
12 the Wildfire Steering Group provided critical qualitative and contextual information that also
13 shaped the recommendations. This combination of quantitative and qualitative analysis
14 ensures the recommendations included in the Company’s Wildfire Plan are robust, well-
15 rounded, and thoughtful, that they align with the plan goals, and are appropriate.

16 Although not a precise financial estimate, the 2022 wildfire risk analysis indicates that
17 a 10-year inherent electric system financial risk exposure of utility involved wildfires related
18 to Avista range from \$490 million (optimistic) to \$4.7 billion (pessimistic) of accumulated
19 risks.

20 **Q. Please briefly describe the efforts undertaken by Avista to manage the risk**

¹¹ Joint Economic Committee report, October 16, 2023,
<https://www.jec.senate.gov/public/index.cfm/democrats/reports?id=E31AF93E-34C7-4C35-A416-533FF796369B>

¹² PolicyGenius, “Wildfire Statistics: Which U.S. States Have the Most Wildfires?”
<https://www.policygenius.com/homeowners-insurance/wildfires-by-state/> California, Texas, Colorado, and Arizona rank 1-4.

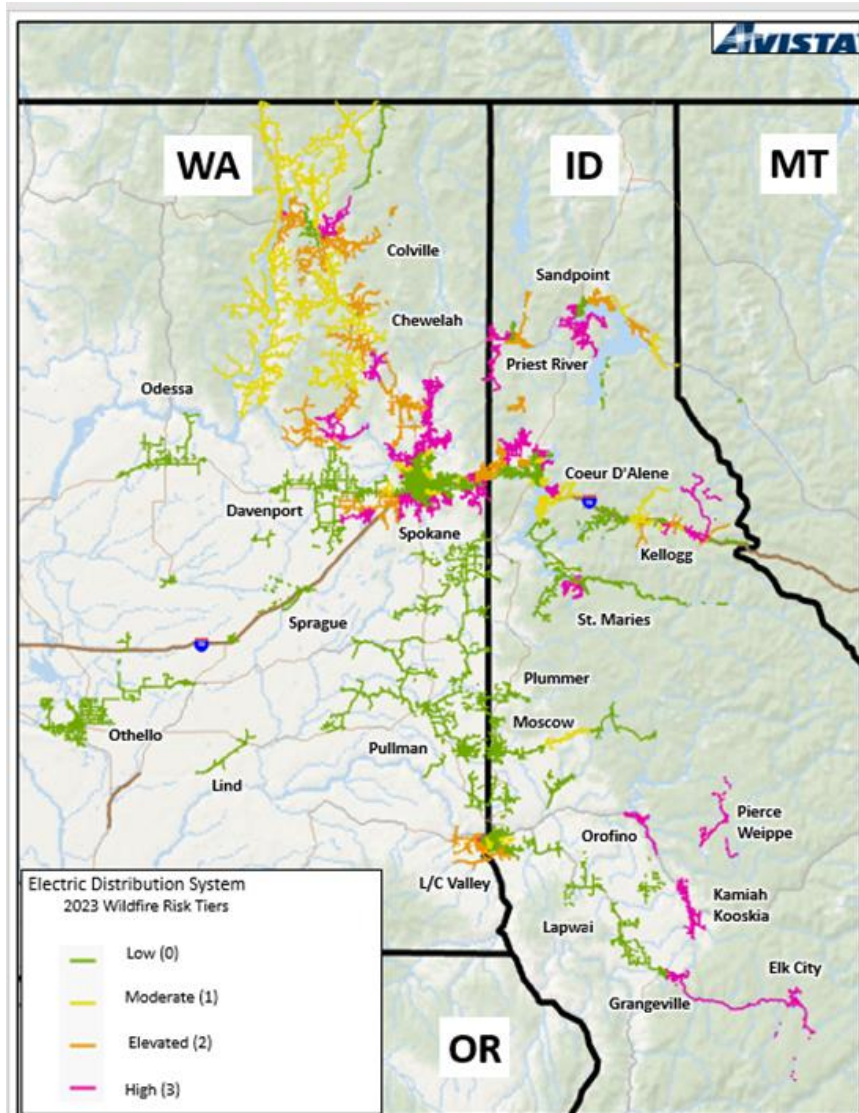
1 **around wildfires in its service territories.**

2 A. Avista has chosen a comprehensive approach to wildfire threats, which is
3 designed to protect our customers and employees, adequately prepare for wildfire events, and
4 protect our physical assets, while considering impacts to customer reliability and cost. We
5 believe it is critical to act in protecting our customers as well as the infrastructure that serves
6 those customers. Analysis indicates that 126,200 Avista customer meters¹³ are located in
7 elevated risk fire zones, commonly known as Wildland Urban Interfaces or “WUI Zones”
8 which are the transition zones between wilderness and populated areas - basically where the
9 built environment meets the natural environment. These areas are at greater risk of
10 catastrophic wildfires. Thus, our primary risk reduction efforts are focused in these elevated
11 threat areas.

12 The WUI map helps to identify and prioritize areas of greatest risk and serves to inform
13 the recommendations and operational decisions related to wildfire resiliency. Using this map,
14 we can target our programs where they have the potential to reduce the most risk and have the
15 greatest positive impact in the safety and protection of our customers and our infrastructure.

¹³ As of 2023 based on customer meter count and the current Avista WUI map.

1 **Illustration No. 4 - Avista's WUI Map Sample**



17 In order to manage wildfire risk, we created a plan with efforts grouped into four major

18 program areas: (1) Grid Hardening, (2) Enhanced Vegetation Management, (3) Situational

19 Awareness, and (4) Emergency Operations and Response. The elements within each of these

20 program areas are specifically designed to address safety for human beings and infrastructure.

21 Programs to reduce the risk of spark ignition events include distribution grid hardening

22 measures, as well as identifying and mitigating risk-trees (trees with the potential of imminent

23 fall-in hazard to energized facilities). The Plan increases the resiliency of our system with

1 measures including replacing wood transmission poles with steel or wrapping wood poles
 2 with fire resistant mesh in high fire threat locations. The Plan also has a strong focus on
 3 preparation as a means of reducing risk, including the development of our Fire Weather
 4 Dashboard, which models fire risk on a feeder-by-feeder basis and helps us react to fire
 5 danger, use of the Fire Safety Mode operating practices, installation of additional monitoring
 6 and control equipment in high fire threat areas, and “people” preparation, including
 7 formalizing procedures inside and outside of the Company to address wildfire situations and
 8 working with external partners on training, coordination, and response.

9 **Q. What are the forecasted wildfire resiliency risks and costs of the main**
 10 **focus areas?**

11 A. Summarized risks along with costs are shown in Table No. 4 below,
 12 representing a 10-year electric system (Washington and Idaho) planning horizon for both
 13 incremental operating expense as well as capital improvements to infrastructure. In simple
 14 terms, risk is the product of the probability of an event and its consequence. The values shown
 15 in the table are percentage-based and reflect a range for each category of mitigation effort.

16 **Table No. 4 - Resiliency Risk and Cost Summary (System)**

2020-2029 Operating Horizon	Existing Risk (\$ Millions)	Managed Risk (\$ Millions)	Capital Investment (\$)	Operating Expense (\$)
Grid Hardening	\$1,383 - \$3,372	\$23 - \$91	\$246,174,759	\$6,862,372
Enhanced Vegetation Management	\$6,244-\$12,923	\$412 - \$1,872	\$0	\$59,069,317
Situational Awareness & Dry Land Mode Operations	\$151 - \$585	\$5 - \$7	\$35,703,680	\$675,000
Operations & Emergency Response	\$269 - \$1,363	\$73 - \$319	\$2,510	\$0
Totals	\$8,048 - \$18,242	\$512 - \$2,289	\$281,880,949	\$66,606,689

24 ***Risk = (The likelihood of occurrence, or probability) X (The financial impact of an event)***

1 • Existing Risk - describes the current-state risk level and reflects defense strategies
2 already in place.

3
4 • Managed Risk - describes the future-state risk level with the addition of Wildfire
5 Resiliency elements.

6
7 Risk scores indicate a bounded range because the probability of occurrence is based
8 on the frequency of forced outages. Although the probability of electrical outages is well
9 understood, the impact of an event can vary widely based on many factors, including weather,
10 fire risk levels, emergency response, and location. “Managed risk” scores represent future-
11 state levels with implementation of Wildfire Plan elements, and lower levels of event
12 probability and event outcome as compared with the “existing risk” levels.

13 14 V. GRID HARDENING

15 **Q. Please describe your Grid Hardening programs in more detail.**

16 A. Grid Hardening is the single largest capital investment in the Wildfire Plan,
17 comprising about 88% of the total wildfire capital expenditures through 2029. It includes
18 elements designed to reduce the number of spark ignition events and to make our system more
19 resilient to the impacts of wildfire. Avista believes that grid hardening programs are key to
20 protecting both our customers and our electric transmission and distribution systems from
21 wildfire risk. Distribution lines experience outages at a rate of nearly 57 to 1 versus
22 transmission lines, so reducing equipment failures at the distribution level is a key focus of
23 mitigation. Distribution grid hardening work includes replacing wood crossarms with
24 fiberglass (wood crossarms against wood poles create electrical tracking that can cause pole
25 fires), replacing small and outdated conductor, installing wildlife guards (animals cause about
26 7% of Avista’s outages), placing steel distribution poles at critical points (sharp corners, river

1 crossings, etc.), replacing obsolete equipment and devices, and underground conversion when
2 financially viable. Transmission grid hardening includes wrapping wood poles in low
3 vegetation areas with fire resistant mesh and replacing wood poles with steel in high canopy,
4 high fire threat areas.

5 Wildfire Grid Hardening upgrades are focused in the highest fire risk areas (WUI
6 zones), where fuels combine with housing/population to increase the risk level of fires.
7 Associated programs are described below.

8 **Enhancing Transmission Inspections**

9 Transmission Design Engineering has conducted annual aerial and ground inspections
10 for many years as required by NERC regulations. Current inspection programs (ground and
11 aerial) are geared towards identifying reliability risks (e.g., osprey nests, gunshot insulators,
12 cracked crossarms, woodpecker damage, etc.). The Wildfire budget provides funding to both
13 focus on and mitigate issues that are more related to potentially causing a spark such as
14 corroded attachment hardware, unauthorized attachments, and logging, slash piles, or other
15 construction activities near powerlines. The Wildfire Plan further adds LiDAR inspections to
16 the existing transmission inspection methods, which can specifically identify vegetation-
17 related risk and additional issues such as ground profile changes, excessive sag, and thermal
18 issues that may be difficult to see using traditional inspection methods.

19 **Transmission Wood Pole Fire Resistant Wrap**

20 The Company is installing fire resistant mesh wrap around the base of transmission
21 wood poles in high fire threat, low-level vegetation areas (such as desert and farmland) to
22 mitigate the impact of wildfire to the transmission system. The Company has installed fire-
23 resistant paint on wood poles in low-level vegetation areas for many years and has found it to

1 be effective in protecting our structures in fire events. This paint typically lasts for about 5
2 years, sometimes longer under the right weather conditions, but must be inspected and
3 replaced regularly, as it cracks, chips, and literally falls off the poles over time. Fire resistant
4 mesh wrap is a new product. Avista learned about this product from Southern California
5 Edison and tested it in March of 2020 with positive results. The mesh has been proven to be
6 more effective than the paint for approximately the same installation cost and installation time
7 per pole. The mesh requires no maintenance, is much more durable than paint, and is projected
8 to last for the life of the pole.

9 **Distribution Undergrounding**

10 Undergrounding of overhead lines affords the maximum fire risk mitigation related to
11 utility operations but converting existing lines to underground is more expensive in many
12 situations. While Avista has conducted some small-scale undergrounding as part of the
13 existing grid hardening program, the current percentage of undergrounding grid hardening
14 work is less than 1%. Avista is in the process of further evaluating the costs of undergrounding
15 as part of our grid hardening program and evaluating its value to customers and communities.
16 Avista will be working towards a robust undergrounding program over the coming years as
17 part of our Enhanced Grid Hardening efforts. The reduction in risk alongside the offsets in
18 programmatic work required for overhead have shown that undergrounding select, high risk
19 areas is the best way to increase community safety and reduce wildfire risk from power lines.

20 **Q. Please describe the Wildfire Enhanced Grid Hardening Program.**

21 A. Avista has had a robust grid hardening program in place for many years that
22 has focused on improvements made to overhead distribution to mitigate wildfire risk and
23 increase reliability. These efforts reduce the risk of outages and equipment failures leading to

1 wildfire during fire risk periods. Avista sees the necessity to further our reduction in select
2 areas. Avista is working to identify specific areas where large fire growth is coupled with
3 proximity to communities which are excessively vulnerable to total loss in the event of a
4 wildfire. These areas will be risk-ranked and prioritized for sectional undergrounding of
5 existing overhead conductor. This strategy will reduce wildfire risk and increase safety to the
6 communities facing the highest risk from Avista's distribution electric facilities. This
7 approach will allow Avista to mitigate the most risk for the least cost related to conversion to
8 underground, allowing resources to efficiently eliminate risk at a surgical rather than a system-
9 wide level.

10 **Q. Please describe the criteria for the Enhanced Grid Hardening Program.**

11 A. Avista has used a multitude of factors to determine the specific locations of
12 highest wildfire risk surrounding the overhead distribution facilities. The risk can be separated
13 into three parts: Outage Potential, Ignition Potential and Community Impact from Wildfire.
14 For Outage Potential, Avista is consolidating historic outage data and percent treed areas in
15 strike zones to estimate risk of an outage occurring during a wind event on the overhead
16 distribution system. In the Ignition Potential category, Avista is utilizing the Wildfire Hazard
17 Potential data,¹⁴ which is a summary of fuel type, slope, and exposure used to assess the
18 burnability and ignitability of a location. Lastly, Avista is using the Housing Unit Impact data
19 from the U.S. Forest Service¹⁵ to estimate the impacts of fires moving from Avista's
20 distribution lines to nearby communities, showing potential impacts and losses if a fire were

¹⁴ A geospatial dataset produced by the USDA Forest Service to help evaluate wildfire hazard.
<https://www.firelab.org/project/wildfire-hazard-potential>

¹⁵ A dataset from the USDA Forest Service that describes the potential impact of fire to homes and communities.
<https://data-usfs.hub.arcgis.com/datasets/ce8f901f10274eb5baea0314fa3c3e18/explore>

1 to occur. These datasets are combined into one risk score that allows for a 250 meter resolution
2 risk heat map, showcasing the areas of highest risk.

3 **Q. Please describe the risk reduction expected from Enhanced Grid**
4 **Hardening.**

5 A. Overhead distribution lines have the narrowest rights-of-way and lowest
6 ground proximity of Avista's above-ground conductor. This creates potential conflicts with a
7 multitude of foreign objects entering the space of impact around our facilities. A large portion
8 of these objects are trees/branches and are propagated into the lines from weather events with
9 strong sustained winds. By undergrounding sections of conductor, we essentially eliminate
10 the possibility of trees/branches impacting the conductor during these weather events. This
11 ultimately reduces outages, reduces risk, and increases reliability.

12 The second portion of risk reduction involves the precise local approach used to
13 identify areas for Enhanced Grid Hardening work. There are many cases where sections of
14 distribution conductors do not pose highly probable threats to nearby communities, including
15 urban areas that are largely unburnable or with available firefighting resources, or long
16 sections of line with many miles between one customer and the next. Both these cases show
17 lower wildfire risk than would be necessary to invest in Enhanced Grid Hardening. By
18 focusing on areas where the wildfire growth modeling suggests large scale loss to
19 communities and high impacts to homes, people, and communities, we are able to have a
20 direct risk reduction without using a blanket undergrounding policy.

21 **Q. Please describe any offsets Enhanced Grid Hardening will create.**

22 A. Avista has many programs that address and improve the equipment on the
23 overhead distribution system. Most of the programs that address the overhead distribution

1 lines will be offset by the Enhanced Grid Hardening program for the specific areas where this
2 strategy will be applied. These offsets are programs like Wood Pole Management, Vegetation
3 Management, Risk Tree, and normal Grid Hardening to name a few. These programs all have
4 different levels of impact due to their specific relationship with the conversion to underground
5 but all will see an effective amount of offset due to this effort. The impacts, benefits, and costs
6 of the Enhanced Grid Hardening Program are currently being evaluated.

7

8 **VI. ENHANCED VEGETATION MANAGEMENT**

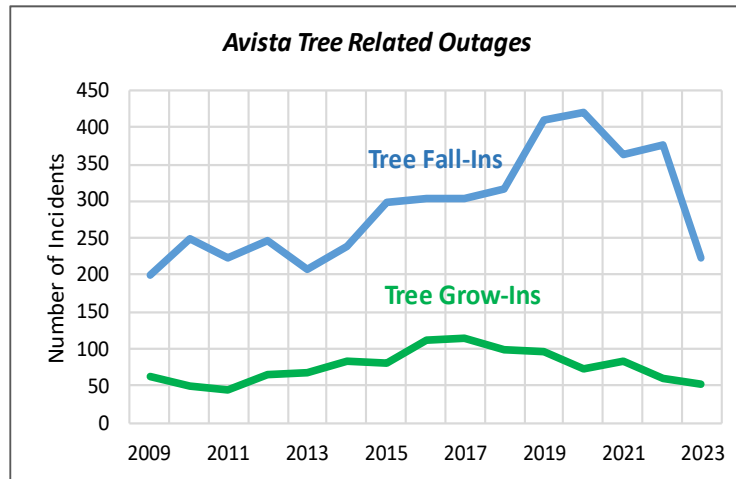
9 **Q. Please describe the Wildfire Enhanced Vegetation Management Program.**

10 A. Avista has had a robust vegetation management program in place for many
11 years. The Routine Vegetation Management program budget includes cyclical program
12 maintenance, customer service requests, local office area requested work, a tree replacement
13 program (Right Tree Right Place), and risk tree inspection and mitigation. Prior to 2020,
14 Avista's approach to distribution vegetation management was cadence-based with a goal of
15 addressing the entire system over a five to seven-year period, or about 20% of the distribution
16 system annually.

17 The Company's vegetation management efforts target risk trees on both the
18 transmission and distribution systems. Avista collects data related to outages caused by tree
19 "grow-ins" and tree "falls-ins." Analysis of this data shows that trees falling into our lines
20 account for many more outages than tree grow-ins (see Illustration No. 5 below). All risk trees
21 with the potential of imminent fall-in or contact hazard to the energized facilities are trimmed
22 or removed to eliminate potential for fire ignitions and outages. A risk tree is a visibly dead,
23 diseased, or dying tree, or one which possesses obvious structural defects that could fall into

1 the conductor or over the high-pressure gas pipeline route. This is in part regulated by ANSI
 2 A300 (Part 9)-2017 Tree Risk Assessment - a. Tree Failure.¹⁶ Assessments conform to level
 3 1 standards as performed from the center of the corridor using ground-based patrols (or from
 4 a vehicle) and/or by analyzing high-resolution images captured via satellite.

5 **Illustration No. 5 - Tree Related Outages**¹⁷



13 As part of the development of Avista’s Wildfire Resiliency Plan, distribution
 14 vegetation management was identified as an area of risk that could be addressed through an
 15 enhancement of the existing distribution vegetation management program. The identified
 16 areas of enhancement included an annual risk tree inspection program, increased emphasis of
 17 “Right Tree Right Place” in high fire risk areas, and use of sophisticated inspection techniques
 18 including LiDAR and satellite imaging.

19 To complement and supplement manual inspections, we’re using annual LiDAR
 20 surveys on the transmission system and annual satellite images of the distribution system in
 21 order to identify risk-trees and existing or potential vegetation issues. The work plan includes

¹⁶ ANSI A300 Standards, <https://treecareindustryassociation.org/business-support/ansi-a300-standards/>

¹⁷ From 2009 to 2023 our outage data indicates 1,125 incidents of tree grow-ins (average of 75 per year) compared to 4,341 tree fall-ins (average of 289 per year), thus tree fall-ins account for 79% of tree incidents.

1 the goal of using LiDAR to inspect all 2,270 miles of the transmission system, with satellite
2 inspection on all 7,675 miles of distribution. These new technologies are providing a high
3 level of detail regarding the health of vegetation across the system as well as encroachment
4 issues, with a goal of reducing tree contacts with powerlines, one of the most common causes
5 of outages and spark ignition events.

6 In addition, we have added two new programs, Fuel Reduction Partnerships, and the
7 Safe Tree Program as described further in this testimony.

8 **Q. What kinds of partnerships has Avista developed related to vegetation**
9 **management?**

10 A. Partnerships with non-Company parties is critical, and Avista is doing so with
11 a variety of agencies who share a vested interest in wildfire fuels mitigation, including
12 providing funding to local agencies to help reduce fuels on their properties near our facilities.
13 With this program, called Fuel Reduction Partnerships, Avista is actively working with the
14 Washington Dept. of Natural Resources, Idaho Dept. of Lands, the U.S. Forest Service, the
15 Nez Perce Tribe, and local and regional fire agencies including the Bonner County
16 Department of Emergency Management. Each year we provide funding to these external
17 agencies to reduce the amount of vegetation on land they manage that is within our service
18 territory and near our facilities, areas considered at high risk for fire activity.

19 At the customer level, we have implemented the “Safe Tree” Program to cooperatively
20 remove risk trees on customer property that are located near our powerlines.

21 **Q. Can you please provide more information about your fuel reduction**
22 **efforts with external agencies?**

23 A. Yes. We are actively engaged with several land management agencies to

1 financially assist them with fuel reduction near our facilities. In 2022, Avista partnered with
2 the Washington State Dept. of Natural Resources (DNR) to assist our customers in completing
3 hazardous fuel reduction treatments on their property. The DNR has a well-established
4 program that involves forestry consultation, treatment prescription and cost sharing assistance
5 to remove small diameter trees and brush from around homes and other structures that could
6 be impacted by wildfire. This work has been proven to decrease the intensity of wildfire fires
7 by augmenting vertical and horizontal fuel arrangements on the landscape. When DNR does
8 a site consultation, the landowner is asked if they are an Avista customer. If they answer yes,
9 and provide a utility bill, the money that Avista grants to DNR is used to pay for the treatment.

10 As mentioned above, in 2023 the Company expanded this effort to include engagement
11 with the Idaho Dept. of Lands, the U.S. Forest Service, the Nez Perce Tribe, and local and
12 regional fire agencies across our service territory. Avista grants \$100,000 annually to this
13 program.

14 **Q. Can you provide more information about your Safe Tree Program?**

15 A. In 2022 Avista tried a new program specifically related to wildfire mitigation
16 we initially called “Customer Driven Right Tree Right Place,” recently renamed the “Safe
17 Tree Program.” This program is designed to work proactively with customers in elevated fire
18 threat areas who have tall-growing trees under or adjacent to our powerlines. The Safe Tree
19 Program removes this non-compatible vegetation (i.e., likely to grow into powerlines), cleans
20 up the debris, and replaces the previous tree with a low-growing species of the customer’s
21 choice if the customer wishes to do so, all at no direct cost to the customer. Replacement trees
22 will be low growing species that mature to a height that will not interfere with overhead

1 powerlines and should not require ongoing trimming or maintenance to keep them from
2 becoming hazards to powerlines.

3

4 **VII. SITUATIONAL AWARENESS**

5 **Q. What are your Situational Awareness Strategies?**

6 A. Avista's Situational Awareness strategies are designed to enable remote
7 monitoring and control of equipment and provide operating horizon risk analytics.
8 Automation equipment provides "eyes" on some of our most critical infrastructure in high fire
9 risk areas. Many of Avista's circuit breakers do not support monitoring or control, which
10 means they cannot be remotely operated, requiring manual intervention to make changes to
11 settings or to identify an issue. This may take several hours depending on location and crew
12 availability. Part of the Wildfire Resiliency Plan is installing modern circuit reclosers on
13 circuits deemed potentially at risk. These new reclosers are capable of remote monitoring and
14 operation. In addition, Avista has developed the Wildfire Fire Weather Dashboard, a
15 computer-based risk analysis system that combines elements of the 7-day weather forecast
16 (National Weather Service) with metrics associated with infrastructure performance and
17 underlying fire risk, helping decision makers see potential fire-related conditions days in
18 advance and providing more time to prepare.

19 **Q. Do you employ Substation SCADA installations as part of your situational**
20 **awareness strategies?**

21 A. Yes. We are updating substations located in high fire threat areas - substations
22 currently lacking automation equipment – by extending Supervisory Control and Data
23 Acquisition (SCADA) systems in these areas to allow them to be monitored and controlled

1 remotely. Using SCADA to monitor and control powerlines is a fundamental tenant of utility
2 wildfire plans across the western U.S. and Canada, as it allows responding quickly to
3 situations such as increased fire risk. Though substations are designed to operate
4 autonomously, the inability to adjust protection systems based on weather conditions or to de-
5 energize electrical circuits in an emergency elevates the safety risk for emergency first
6 responders and related potential spark situations. Automation allows the Company to react
7 and adjust quickly to fire threat situations.

8 **Q. How does use of the Fire-Weather Dashboard impact operational**
9 **decision-making?**

10 A. Avista created the Fire Weather Dashboard to indicate the moments where
11 utility-sourced fire potential is at its highest on an individual circuit basis. It also indicates
12 when fire spread rates pose significant risk to neighboring communities. This has and will
13 continue to allow Avista to make better operational decisions as to when electric facilities
14 should be placed in any kind of elevated fire mode. This tool also accurately assesses the
15 minimum timeframe needed to help mitigate the fire risk of a weather event, allowing Avista
16 to move out of the elevated operational mode as quickly as possible after the event has passed
17 to a more reliability-focused operation, helping moderate the tradeoff in reliability for
18 customer safety.

19 **Q. Please explain the importance and use of Avista's Wildfire Urban**
20 **Interface (WUI) Risk Model.**

21 A. Avista's risk mapping is oriented towards potential utility-caused fires
22 combined with significant impact to communities. Because the Company's Wildfire Plan was
23 developed using a risk-based approach, the Company has identified higher risk areas that can

1 benefit the most from prudently applied mitigative actions rather than blanket solutions
2 applied to our entire service territory. The recommendations provided in the Company's
3 Wildfire Plan are based on each recommendations' ability to reduce the operating and
4 financial risk associated with wildfires. Therefore, understanding risk and how risk is
5 monetized is an important component of understanding the content of the Wildfire Plan.

6 Having a WUI map customized to Avista's service territory helps us identify and
7 prioritize areas of greatest wildfire risk, informing our recommendations and operational
8 decisions related to wildfire resiliency. With this mapping and in conjunction with the Fire
9 Weather Dashboard, we are able to isolate the probability of an Avista facility causing a fire
10 at any location on our system.

11 Avista's WUI "Risk Levels" are:

- 12 • WUI Tier 0 - None to low levels of fuel, low expected outage potential and low to
13 moderate housing impact.
- 14
- 15 • WUI Tier 1 (Low) – Low to moderate levels of fuel, low to moderate expected outage
16 potential, and low to moderate housing impact (low).
- 17
- 18 • WUI Tier 2 (Elevated) – Moderate to high levels of fuel, moderate to high outage
19 potential, and moderate housing impact (medium).
- 20
- 21 • WUI Tier 3 (Extreme) – High levels of fuel, high outage potential, and high housing
22 impact.
- 23

24 The combination of WUI 2 and 3 represents those areas of Avista's distribution system
25 where fire risk exceeds the overall system average (high). Using the information and the
26 additional details provided by it, Avista's current WUI map indicates that these areas comprise
27 approximately 36% of our service territory.

28 **Q. How is the WUI map combined with other external elements to determine**
29 **risk?**

1 A. Presently during fire season, Avista combines the WUI model data with the
2 National Weather Service forecast and the Fire Weather Dashboard to predict the fire risk
3 potential and the community impact potential for over 375 distribution circuits spanning 7,650
4 miles of our distribution system. Information from groups such as state and federal fire
5 authorities and other sources also help shape Avista's 7-day fire risk forecast, which is
6 reflected in the Fire Weather Dashboard. The WUI map and the Dashboard combine to help
7 us pinpoint and determine risk.

8 Avista continues to enhance its fire risk models as we gain experience and incorporate
9 feedback from peers including fire agencies and weather forecasting professionals. Avista is
10 also working with other utilities to create a fire risk map for all western states, perhaps
11 incorporating the static fire risk data we develop as a layer in Esri's Living Atlas of the World.

12 **Q. How are at-risk customers in elevated WUI areas protected in Avista's**
13 **Wildfire Plan?**

14 A. We believe that the Avista's Fire Safety Mode operations will help protect
15 customers who are most impacted by outages, such as those dependent upon medical devices,
16 those working from home, customers without access to reliable transportation, those who
17 cannot afford to replace food that might perish, or who need water for themselves or their
18 animals or to help them fight a fire. Under Fire Safety Mode operations, these customers will
19 only experience an outage when an actual fault occurs on the line serving them. We believe
20 that this methodology offers enhanced safety and protection while still attempting to maintain
21 a focus on customer reliability.

22 Our goal with this Plan is always to balance reliability with risk and safety for all
23 customers, and to deliver risk mitigation to customers based upon where our analysis

1 determines the risk to them is highest. Thus, it is important to note that the delivery of risk
2 mitigation is irrespective of socioeconomic status. However, we believe that our focus on high
3 fire threat areas will help protect the customers most at risk for wildfire. These are often low-
4 income rural areas that lack robust firefighting capability. To further enhance this effort, we
5 are updating our existing risk maps to include the USDA's Wildfire Risk to Communities
6 map, which combines both likelihood of fire with exposure and susceptibility of property
7 damage. This should help us further understand the impact of wildfire to people and property.
8 We are also adapting our wildfire outreach communications as we learn more about our most
9 vulnerable customers and the most effective ways of reaching and supporting them.

11 **VIII. OPERATIONS AND EMERGENCY RESPONSE**

12 **Q. Please describe your Operations and Emergency Response strategies.**

13 A. The primary objective of Wildfire Resiliency is to reduce the number of utility-
14 involved ignition events and to minimize the damage to infrastructure due to wildfires. The
15 bulk of that effort is rooted in long-term planning and implementation of methods such as
16 clearing vegetation away from powerlines and protecting infrastructure from fire damage.
17 However, wildfires will continue to occur, so Wildfire Resiliency includes the additional
18 facets of modifying operations in response to fire threat through implementation of Fire Safety
19 Mode operations, as well as emergency response elements including first responder training
20 and developing relationships with key internal and external parties to develop response
21 strategies aligned with their expertise and guidance. This category also includes tracking the
22 progress and benefits of the Wildfire Plan programs over time with appropriate metrics.

23 Historically, Avista's response to wildfire has been similar to other large scale weather

1 events, with a focus towards outage service restoration. Though major storms present
2 employee and public safety challenges, wildfire is particularly acute with respect to safety.

3 Thus, in wildfire situations Avista plans to:

- 4 1. Prioritize public and worker safety over customer restoration.
 - 5 2. Recognize wildfire response as a shared responsibility with other emergency
6 first responders.
 - 7 3. Use performance metrics to adjust and align planned future actions.
- 8

9 The Operations and Emergency Response part of the Plan encompasses both internal
10 and external resources with a goal of reacting to wildfire threat in a proactive and coordinated
11 manner, along with the ability to rapidly respond as needed. Strategies include:

12 **Weekly Fire Threat Assessment Meetings**

13 Since 2020, during fire seasons, the Wildfire Team has held weekly fire risk meetings
14 to provide updates and information sharing as well as gather feedback from operations
15 managers and other interested parties. Approximately 75 people are invited to these calls
16 including district managers and line crew leaders as well as employees working in
17 Communications, System and Distribution Operations, Legal, and more. These meetings often
18 include personnel from the Washington Department of Natural Resources and the Idaho
19 Department of Lands. These meetings are highly interactive and include a forum for Avista
20 district managers and state fire officials to report on fires in our operating districts as well as
21 impacts or potential impacts to our infrastructure. These meetings also provide a platform for
22 discussion around elevating system protection settings (Fire Safety Mode) in response to fire
23 threat situations.

24 **Formalized Emergency Operating Plan**

25 The Emergency Operating Plan or EOP is an incident command structure that defines

1 workflow processes and unified leadership structures deployed during emergency events. It
2 includes defining key roles and responsibilities, identifying communications channels, and
3 emergency operating procedures to be used during emergency events such as storms or
4 wildfire. In accordance with the Wildfire Resiliency Plan, a specific EOP and associated
5 procedures were developed for wildfire situations. These events differ from “traditional”
6 weather events such as high winds and ice storms in that those situations are caused by
7 situations outside of the Company’s control. A wildfire event may, on the other hand, be a
8 result of Company operations, so has an additional level of focus and action.

9 **Emergency First Responder Training**

10 Partnerships with non-Company parties is critical, and Avista is doing so with a variety
11 of agencies who share a vested interest in wildfire mitigation, including working with
12 professional firefighting agencies at a variety of levels (primarily state and local) in training
13 and response as well as incorporating their input and feedback into our Plan, strategies, and
14 actions. This includes partnering directly with fire protection agencies and cross-training
15 personnel. Avista conducts annual fire safety and electrical hazard training with fire agency
16 partners across the service territory, including joint training sessions with fire protection
17 personnel. Fire professionals provide fire safety training to Avista first responders and, in turn,
18 Avista conducts electrical hazard training for fire personnel. It is important that Avista
19 personnel understand the safety precautions taken during an active fire situation and that
20 Avista first-responders understand fire incident command structures and their role during an
21 active event. Likewise, it is essential that fire personnel understand the hazards associated
22 with electric operations and firefighting operations in the vicinity of utility infrastructure. This
23 program is designed to promote the safety of everyone involved in a wildfire situation.

1 **Expedited Fire Response**

2 Avista has always had good relationships with firefighting agencies having
3 jurisdiction on the lands that our facilities occupy. These partnerships have been created in
4 part due to Avista’s willingness to quickly respond to fires at the request of fire officials. This
5 may entail de-energizing transmission or distribution lines while firefighters respond to an
6 incident in order to protect their safety, as well as participating with Fire Incident Command
7 in wildfire situations and in briefings with them during fire season.

8 In alignment with these existing partnerships, we developed the Expedited Fire
9 Response concept to get a quick response to the site of a fault on the transmission system
10 during fire season. Then, if the fault causes a spark event and a fire results, trained firefighters
11 and apparatus respond and are able to engage the fire quickly. A quick response is key to
12 keeping fires smaller.¹⁸ These agreements are in place with first responder agencies across our
13 service territory.

14 **Fire Ignition Data Tracking**

15 Avista’s Outage Management System (OMS) is used to track electric outages
16 including causation information such as: tree fall-ins, car-hit-pole, wind, animal, underground
17 cable failure, overhead equipment, pole fires, etc. Fire is listed as an outage category, but
18 generally relates to structure fires and is not typically associated with Avista equipment.¹⁹ In
19 late 2022 the sub-reason “Wildfire” was added but has been used primarily to capture the
20 impact of fire events on our facilities and does not indicate the cause of these fires. At present

¹⁸ Great evidence of this is the DNR’s ability to keep 95% of the 2023 fire starts in Washington State to 10 acres or less through stationing firefighting resources at key locations across the state. <https://kimatv.com/news/local/despite-high-fire-count-washington-state-keeps-95-of-fires-under-10-acres-a-closer-look-at-the-2023-fire-season>. Their effort was supported in part using Avista’s Fire Weather Dashboard.

¹⁹ Many structure fires require Avista to turn off the power onsite to protect firefighters. Thus “fire” may be noted in the logs as the reason Avista personnel were dispatched.

1 we scan dispatcher comments to ascertain fire-related events, a methodology which will likely
2 be used until we replace our current outage management system within the next few years.

3 **Fire Safety Mode Operations**

4 An important defensive strategy against wildfire ignition is Avista's Fire Safety Mode
5 (FSM – previously known as Dry Land Mode) operations. Avista already makes a great effort
6 to reduce the number of faulted circuits with programs such as Wood Pole Management,
7 Vegetation Management, and adding sectionalizing devices such as reclosers. Equipment
8 failures, vegetation contacts, wind, snow, and lightning are significant contributors to line
9 faults, and each line fault represents interruptions to electric service as well as the potential
10 for a spark to occur. When line faults occur, distribution system protection is called upon to
11 isolate the fault location. Fire Safety Mode operation can significantly reduce spark ignition
12 potential by adjusting the sensitivity of the protection system when there are forecasted
13 significant weather events during wildfire season.

14 **Q. What are you learning from your relationships with external partners?**

15 A. The benefits of these relationships are too numerous to list. Our external
16 partners have helped design, create, and shape our Wildfire Resiliency Plan since the
17 beginning. They have worked with us in actual fire situations, advised and guided policy and
18 strategies, shared ideas and best practices to help us make the best possible choices, and
19 participated with us in Emergency Operations Response simulations and actual situations.
20 Synergy is a very powerful force when bringing diverse groups of people together to address
21 an issue that is of concern to us all.

22 **Q. When does Avista typically initiate Fire Safety Mode operations?**

23 A. Historically, the FSM system was used in a binary fashion, turned on in July

1 when fire season traditionally begins (this is heavily dependent upon weather conditions and
2 drought status) and then back off in October when fire season typically ends. In 2022 Avista
3 tested the use of Fire Safety Mode (FSM) operations, which is a multi-faceted operation versus
4 simply on or off. FSM provides the ability to use two additional fire modes (Elevated and
5 Extreme) which significantly reduce fire risk potential but also put customers at greater risk
6 for service disruptions due to the potential for extended duration of the outage due to the
7 requirement to manually inspect tripped circuits before they are returned to service.
8 Approximately half of Avista's distribution system is currently impacted by FSM.

9 In 2019, 2020 and 2022 we implemented FSM in the usual mid-July time period, but
10 this year we entered FSM on July 5 due to the aforementioned dry conditions. In 2021 we
11 entered FSM even earlier, in June, as that year was abnormally dry.

12 **Q. How is the decision made to implement Fire Safety Mode Operations?**

13 A. The decision to elevate to an FSM protection level is informed by several
14 factors including but not limited to the Fire Weather Dashboard, anticipated accuracy of the
15 weather forecast, available resources to respond to an incident, anticipated incident duration,
16 potential impact to customers and/or communities, estimated time to perform line patrol(s)
17 should a circuit breaker trip, required time frame to implement a Go, No-Go decision, and
18 situational risk factors at the time of the decision.

19 The decision for moving in and out of non-fire season and Fire Safety Mode is
20 completed seasonally and is made with the System Operator and Wildfire Manager, usually
21 in consultation with Distribution Operations. Typically, the operating change to move from
22 non-fire season to Base Level Fire Safety Mode is made when approximately 30% of Avista's
23 service territory is designated as "High Fire Threat."

1 **Q. Has the Company utilized Fire Safety Mode?**

2 A. In 2022 Avista elevated protection levels for the first time, testing this new
3 methodology. We elevated from Base FSM to Elevated FSM on two separate occasions
4 involving 8 distribution circuits that serve approximately 8,500 Washington customers. As
5 previously noted, elevating system protection does increase the number of potentially
6 impacted customers and will likely increase outage duration due to the follow-up inspections
7 required to make sure things are safe before re-energizing the line. However, in the 2022
8 operation, none of the circuits experienced contingency outages while operating in Elevated
9 FSM, as none of them experienced an event that would trip them off. Therefore, no customers
10 were impacted.

11 We elevated protection settings four times during the 2023 fire season. On July 24, the
12 National Weather Service and Avista's Fire Risk Dashboard indicated elevated fire risk due
13 to a forecasted front coming through which included dry fuels, windy conditions, low relative
14 humidity, and heightened fire danger. In response, the Company elevated protection settings
15 on five feeders in Grangeville, Colville, and Spokane. Potentially impacted customers were
16 notified in advance. No outages were experienced with these safety measures in place.

17 On August 17, the National Weather Service issued Red Flag Warnings including low
18 humidity conditions and gusty winds that corresponded with the fire risk indicated by Avista's
19 Fire Weather Dashboard. The Company placed fourteen feeders in Colville, Coeur d'Alene,
20 Sandpoint, and Spokane into elevated status. All customers were notified in advance.

21 On August 18, three additional feeders were elevated in the Grangeville and Sandpoint
22 areas. Again, all customers on these impacted feeders were notified of this in advance. Over
23 these two days, two of the elevated feeders locked out due to a sustained fault, together

1 impacting less than 1,000 customers.

2 On September 18 one feeder in Spokane was placed in elevated status. It did not
3 experience a fault or associated customer outages.

4 **Q. Were the elevated settings used in Fire Safety Mode effective and did they**
5 **work as intended?**

6 A. We have learned through utilizing elevated Fire Safety Mode settings during
7 the past two fire seasons that these additional safety measures do not cause a large number of
8 outages to our customers without good cause (meaning an actual event leading to a fault). As
9 mentioned above, during the fire weather events in 2023 we elevated multiple circuits. Only
10 one circuit in Washington experienced a fault, impacting 592 customers, and one circuit in
11 Idaho, impacting 369 customers, meaning all other circuits maintained customer service. None
12 of the elevated circuits was involved in a fire start. We believe that this experience helps prove
13 that this strategy is successful and that it operates as predicted. Further, the insights gained
14 from actual experience are allowing us to reduce our thresholds for action going forward,
15 knowing that outages that may occur would be the result of actual impact to the system rather
16 than strictly an estimate of risk. Thus, Avista is able to be more conservative in risk mitigation
17 through using these elevated protection settings.²⁰ Analysis around the thresholds for the 2024
18 fire season is underway at present.

19 In 2023 Avista did not have a formal public safety power shutoff plan (PSPS) in place
20 but plans to implement a formal plan for the fire season of 2024. Along with the PSPS plan
21 we will continue to operate our Elevated and Extreme Fire Safe Modes at lower thresholds
22 than would be used for a PSPS to mitigate more moderate fire weather conditions.

²⁰ This methodology has been adopted by the utilities in California as a means of reducing the use and impact of Public Safety Power Shutoff events. <https://www.cpuc.ca.gov/industries-and-topics/wildfires>

1 **Q. Can you describe the difference between enhanced protection settings**
2 **(FSM) and Public Safety Power Shutoff?**

3 A. Yes. When administering protection using a public safety power shutoff
4 (PSPS), circuits are preemptively removed from service based on a calculated level of fire
5 risk. Circuits can be out of service for several hours to several days depending upon
6 conditions, as they must be manually inspected before reenergizing. The major difference
7 between Fire Safety Mode Operations and PSPS is that Fire Safety Mode circuits are only
8 removed from service when an actual fault is experienced on the line, while PSPS circuits are
9 proactively disconnected. Avista currently selectively de-energizes circuits based on a
10 spectrum of criteria, primarily based upon first responder requests, or impacts to customer
11 service and safety, and only as a measure of last resort.

12 **Q. Has Avista considered adding Public Safety Power Shutoff?**

13 A. Yes. The PSPS concept is not currently a formal level of our protection plan
14 but the Company is in the process of developing a PSPS strategy. The Company believes that
15 the trade-off between a perceived and a real threat must be carefully considered, as a PSPS
16 event can have a significant impact on our customers in the number of outages they may
17 experience and related general customer satisfaction, in the length of those outages, and the
18 risks and costs involved.

19 Avista is making progress on creating a Public Safety Power Shutoff (PSPS) Plan for
20 the 2024 wildfire season. In addition to extensive outreach during the 2023 wildfire season
21 that focused on educating public safety partners and customers about PSPS, Avista hired a
22 Wildfire Community Safety Manager in June of 2023 to develop and manage the
23 implementation of the PSPS program. Due to the work both internally and externally Avista

1 has conducted over the past few years regarding PSPS, solid groundwork has been laid for
2 getting a plan implemented.

3 **Q. Has the Company had the opportunity to test its Emergency Operating**
4 **Plan for Wildfire?**

5 A. Yes, we had the opportunity to test our Wildfire EOP in an exercise that
6 included external partners such as the Washington Dept. of Natural Resources, Idaho Dept. of
7 Lands, and the Red Cross. Avista's adoption of the Incident Command Structure (ICS)
8 principles and incident management framework, in part based on this joint exercise, enabled
9 us to integrate seamlessly into the fire Incident Command Structure (ICS) during the Gray
10 Fire in 2023 in Medical Lake. First responders coordinated efforts with Avista in developing
11 their response strategies and taking necessary actions to protect the community. As part of
12 this, Avista was able to work with the fire and emergency management agencies as they
13 prepared to lift evacuation orders. With the support of the ICS, Avista was able to restore
14 power prior to the county lifting the evacuation orders, enabling residents to return to their
15 homes with their power restored, and crews to be safely out of the way as residents began to
16 return.

17 Lessons learned and areas of improvement identified from the EOP tabletop exercise
18 included the need to continue to train and work with external agencies on Avista procedures
19 and operations, encouragement for more cross-training between internal departments so they
20 have a clearer idea of each other's roles during these types of events, and potentially the need
21 for some succession planning as the experts who have responded to many EOPs over the years
22 begin to retire.

23

1 **IX. WILDFIRE METRICS**

2 **Q. What metrics are you currently collecting related to Wildfire?**

3 A. Our Wildfire programs are tracking a variety of data, statistics, and
4 achievements related to our programs. For example, a decreasing number of tree-related
5 outages should indicate the benefits of our Enhanced Vegetation Management program.
6 Tracking a reduction in the number of overhead equipment outages and pole fires should
7 indicate the value of grid hardening investments. However, most of the benefits of the Wildfire
8 programs will not show up immediately. Wildfire metrics are intended to reflect long-term
9 trends on our system. Only long-term trends are truly meaningful here; it is not practical or
10 reasonable to look merely to end-of-year results due to the variability of a variety of factors,
11 many of which are beyond our control, most specifically weather conditions. In addition, a
12 marked change in these statistics will take the time it requires to replace thousands of
13 crossarms across the system, change out aged equipment, and mitigate vegetation issues
14 system wide, for example. None of these programs will be completed within a year time frame
15 but will be ongoing and offering continual improvement.

16 Avista reports on a number of metrics related to our wildfire programs specific to
17 vegetation management and grid hardening objectives and achievements. These metrics are
18 reported in the Wildfire 2023 End of Year Report (Exh. DRH-3).

19 The Company proposes three additional metrics related to wildfire cause and risk as
20 recommended by the Washington Commission:

21 1) Utility-Caused Wildfires – Avista will track the number of wildfires attributed to
22 our facilities as determined by fire professionals from the Washington Department
23 of Natural Resources, the Idaho Department of Lands, or other official sources
24 who have the ability to determine and verify fire cause.
25

26 2) Ignition Events – Avista will track the number of ignition events on our

1 distribution and transmission systems that create the potential for ignition or fire
2 or have led to an identified spark or fire event as identified by our Outage
3 Management System.

- 4
5 3) Risk Events – Avista will track Fire Safety Mode activities including any enhanced
6 protection action and response to a known fault. Provided information will
7 incorporate the number of faults without subsequent ignition events.
8

9 These proposed metrics will be reported in Company witness Mr. Bonfield’s testimony (Exh.
10 SJB-1T).

11
12 **X. WILDFIRE COMMUNICATIONS PLAN**

13 **Q. With the importance of the Wildfire Plan, does the Company have a**
14 **specific communications plan to inform internal and external parties?**

15 A. Yes, it does. A key element of the Company’s Wildfire Resiliency Plan is
16 ensuring that all interested persons know the plan is in place and that the Company is taking
17 the right precautionary steps to reduce the potential for and impact of a wildfire. A strong and
18 effective strategic communications campaign is critical to the Company to ensure broad
19 awareness and demonstrate Avista’s commitment to reducing the impact of wildfires. This
20 plan must be in place and directed at all of Avista’s key participants, including customers,
21 employees, state and local government officials and regulators, law enforcement and fire
22 departments, local media, and shareholders. Our wildfire communications goals are to create
23 awareness of Avista’s plan to prevent or mitigate the risk of wildfires, promote the safety and
24 well-being of all customers, and to engage customers in programs that impact them.

25 **Q. What are the Company’s Wildfire Resiliency Communication Plan goals?**

26 A. The Company’s Wildfire Resiliency Communication Plan (provided as Exh.
27 DRH-4), objectives include the following:

- 1 • Build awareness among all key participants of the significant actions and
- 2 investments Avista is making to prevent or mitigate the risk of wildfires.
- 3 • Instill confidence in Avista as a proactive and responsible corporate citizen.
- 4 • Demonstrate Avista's focus on prioritizing the safety and well-being of its
- 5 customers and the communities it serves.
- 6 • Provide examples of the Wildfire Resiliency Plan in action and show progress as
- 7 it is implemented.
- 8 • Engage customers in programs that impact them and their communities.
- 9 • Promote preparedness for potential outages.

10
11 The first phase of the Wildfire Resiliency Communication Plan was focused on the
12 Plan's initial launch and the communications objectives noted above. The timing and
13 implementation of the tactics was aligned with the finalized plan and made publicly available.
14 No communications began until the organization was ready from an operational and
15 regulatory standpoint.

16 The subsequent phases of the Wildfire Resiliency Communication Plan support
17 specific strategies included within the Wildfire Plan, such as enhanced vegetation
18 management, grid hardening, and operational changes. Each initiative that requires customer
19 or external parties' behavior changes has its own communications plan with objectives, tactics
20 and timelines associated.

21 **Q. What plans does the utility have in place to communicate with customers**
22 **about wildfire risk for fire season overall, as well as specific wildfire work, risks, or**
23 **events?**

24 A. We have a variety of ways we communicate with customers. We utilize our
25 newsletters, customer emails, phone calls, social media, paid advertisements, Avista's website
26 and earned media with our local media outlets. When projects directly impact customers, they
27 are directly notified of work happening in their area and its purpose. For example,
28 informational postcards are sent to customers who live near grid hardening projects. We also

1 reach out directly to customers who are eligible for vegetation management work through
2 mail, email, and phone. For work that involves outages, we communicate multiple times. For
3 example, for a transmission project that replaces wood with steel, we send letters to customers
4 in the area and follow up with phone calls (through outbound interactive voice response calls)
5 and a series of ads in the local newspaper. There is not a one-size-fits all approach, and we
6 work to reach customers through many different channels. In 2023, some tactics included:

- 7 • Avista Connections: Articles in Avista’s mailed and emailed customer newsletter in
8 advance of fire season in June to help educate all customers about Avista’s Wildfire
9 Resiliency Plan and invite them to our telephone town halls. We also include updates
10 in July, August, and September newsletters.
11
- 12 • Fire Safety Mode Specific Communications: We send an email and a press release at
13 the start of Fire Safety Mode for all customers. When there is a need for an elevated
14 Fire Safety Mode, we send emails and Interactive Voice Response (IVR) callouts
15 (recorded phone messages) to all customers on the impacted circuits, including times
16 we plan to go into the elevated mode.
17
- 18 • Telephone Town Halls: Avista uses this platform to communicate broadly with
19 customers in highly impacted communities, including vulnerable populations and
20 medically vulnerable customers, about overall wildfire risk and preparations for fire
21 season. In addition to answering customer questions, this platform also yields helpful
22 information about how our customers are preparing and what is most concerning to
23 them. In these meetings we share updates on our wildfire plan progress and plans for
24 the future. We invite emergency management professionals from that region for each
25 town hall. We held four telephone town halls this summer and included an option for
26 live Spanish translation.
27
- 28 • Print ads: We run a series of print ads in more rural communities about our wildfire
29 resiliency efforts, including changes to Fire Safety Mode. We ask customers to make
30 sure their contact information is up to date with Avista so we can reach them as needed
31 about changes to operations in their area. More than 130 ads ran in 33 different
32 publications, including several in Spanish, and reached a circulation of 250,000 in July
33 and August.
34
- 35 • Community Meetings: Led by our regional business manager team, Avista hosts
36 meetings with emergency management organizations and community leaders in
37 counties that have the highest wildfire risk in our service territory.

1 **Q. What strategies does the utility use to enhance situational awareness for**
2 **its customers?**

3 A. Our wildfire communications goals are to create awareness of Avista’s plan to
4 prevent or mitigate the risk of wildfires, promote the safety and well-being of all customers,
5 and to engage customers in programs that impact them and their communities. The Company
6 greatly expanded our community outreach for the 2023 wildfire season. In 2022, we engaged
7 with 225 public safety partners and key community leaders in eight of the highest fire threat
8 counties in our service territory. And, via our telephone town hall platform, we reached out to
9 nearly 36,000 residential customers in those eight counties with information about our
10 Wildfire Resiliency Plan. In 2023 our customer engagement extended to all 16 counties that
11 have WUI Tier 2 and Tier 3 fire risk, including invitations to over 90,000 residential customers
12 and 640 public safety partners and key community leaders. Much of this engagement was in
13 coordination with associated emergency response agencies.

14 Additionally, this year we implemented proactive outreach to medically vulnerable
15 customers, developed a process to quickly pull customer notification lists for impacted Fire
16 Safety Mode feeders (including life support customers), provided translated collateral
17 materials and Spanish translation during the four telephone town hall meetings, and completed
18 identification of critical commercial/industrial customers for notification during elevated Fire
19 Safety Mode protection settings. Avista also launched an employee team of volunteer
20 Community Response Ambassadors who trained with the Red Cross to help our most
21 vulnerable customers.

22 **Q. What are the utility’s plans for communicating with medical and life**
23 **support customers, vulnerable and low-income customers, and customers with limited**

1 **English proficiency or other language or accessibility needs?**

2 A. We have communications protocols in place to notify customers of specific
3 energy-related events. We contact customers via email, phone, notices on our website and
4 potentially with news releases to local media. Customers who are likely to be impacted are
5 notified directly. To identify requirements associated with communicating with vulnerable
6 customers, in August of 2021 the Company began working with Spokane County
7 organizations including emergency services, social service agencies, and community-based
8 organizations to gain a better understanding of how to identify and support vulnerable
9 populations during emergency events.

10 Also, in 2021 Avista began working with community partners to distribute
11 preparedness kits to vulnerable customers (as identified by external service providers) across
12 the service territory. These kits contain battery back-up powered LED lights, preparedness
13 information, and other items to help customers in case of outage. The Company also put
14 together a group of emergency response organizations in the Spokane area to provide support
15 to customers during energy-related events.

16 In 2022 we hired a Wildfire Community Safety Manager to help us develop an
17 approach to implementation of a PSPS strategy and the related customer outreach. This work
18 includes developing a coordinated response with external providers. The knowledge and
19 experience gained from this collaboration will be part of what is used to develop an approach
20 to assisting and supporting vulnerable customers across the service territory.

21 Also in 2022 we began an effort to better support our medically vulnerable customers
22 by developing an outreach framework to proactively notify life support customers on elevated
23 FSM feeders. Adding a life support customer flag to all the feeder lists allows Avista to

1 quickly identify these customers and proactively call them to make sure they are aware of
2 potential outages due to the weather and potential wildfire threat.

3 Additionally, we have translated the “Outage Preparation for Home Medical
4 Equipment” one pager into six languages (most spoken in our service territory). All four
5 Telephone Town Hall Meetings were offered in both English and Spanish.

6 Our community outreach efforts with the tribes included a number of discussion topics
7 including concern for tribal elders and medically vulnerable tribal customers. The tribes would
8 like to partner with Avista to identify these vulnerable populations (some tribes already have
9 partial lists) and see what can be done to help support them in the case of an extended power
10 outage.

11 Avista is also working closely with its Equity Advisory Group to fully develop and
12 identify Highly Impacted Communities and Vulnerable Populations (Named Communities)
13 unique to the Company’s service territory. The identification of customer barriers,
14 development of workable solutions, and implementation of an effective multilingual
15 communication strategy is an ongoing process, but one that Avista believes to be integral to
16 the success of the Wildfire Plan as well as PSPS planning and implementation. Avista has
17 engaged a firm to identify barriers to participation and accessibility for these customers and
18 communities and is steadfast in ensuring that all customers have access to programs and
19 utility-related information by reducing barriers to participation. These efforts will be reflected
20 in our wildfire outreach efforts going forward, especially in the areas of public safety and
21 notification, but also in relation to providing information about our Wildfire Plan and its
22 associated programs.

1 **XI. WILDFIRE PLAN UPDATES AND LESSONS LEARNED**

2 **Q. What was the intensity of the 2023 fire season?**

3 A. According to the Washington State Department of Natural Resources, 1,884
4 fires were counted in Washington in 2023 with 165,365 acres burned. Of those fires, 41 were
5 considered “large” (over 100 acres of forest land or 300 acres of grassland). The state further
6 estimates that over 400 homes were destroyed in these fires.²¹ The number of fires was about
7 200% of normal with the acres burned at about 88%.²² This reduction in fire size has been
8 attributed to the DNR stationing air resources in every corner of the state, which helped keep
9 95% of those fires to less than 10 acres.²³

10 **Q. How did wildfires impact Avista infrastructure in the 2023 fire season?**

11 A. The largest wildfire event in our service territory in 2023 was the Gray Fire
12 (Medical Lake and Silver Lake, Washington) where we lost 255 poles. The Gray Fire started
13 in the early afternoon of Aug. 18 in a field of wheat and spread rapidly due to hot, dry
14 conditions and sustained southwesterly winds that gusted to 35 mph. The blaze burned over
15 10,000 acres, destroyed numerous homes and structures, prompted the mass evacuation of
16 residents, and was linked to the death of a local man. Investigators have determined that this
17 fire was human caused but have not released any further information. The Company
18 commenced an investigation and found no indication that its facilities were involved in the
19 ignition of the Gray Fire. Avista had 13 crews helping with restoration work from Spokane,

²¹ Lauren Gallup, “Washington state endures ‘catastrophic’ 2023 wildfire season with high ignitions, property loss,” OPB, October 18, 2023, <https://www.opb.org/article/2023/10/04/pacific-northwest-wildfires-impacts-2023/>

²² Washington Dept. of Natural Resources, <https://experience.arcgis.com/experience/6cdda73cf6154949a1fae76ccb2900a0/page/Main-Page/?views=Statistics>

²³ Hunter Phillips, “Despite high fire count, Washington state keeps 95% of fires under 10 acres: A closer look at the 2023 fire season,” KIMA News, October 2, 2023, <https://kimatv.com/news/local/despite-high-fire-count-washington-state-keeps-95-of-fires-under-10-acres-a-closer-look-at-the-2023-fire-season>

1 Coeur d’Alene, Colville, Pullman, and Davenport. Electric service was restored within 3 days
2 for the people returning to their homes, with gas service restored in 4-5 days. This fire was
3 considered 100% contained by September 1.

4 Avista learned some valuable lessons from the experience of the Gray Fire. Unlike
5 most wildfires that have impacted our electric system, this fire impacted gas operations as
6 well as the electric system. This dual-impact event reinforced our need to be prepared by
7 establishing an Avista Unified Command structure in the EOP. In addition, the value of having
8 Avista embedded with Fire Incident Command cannot be overstated. This allowed direct
9 communication and coordination between Avista and the fire agency responders and ensured
10 that fire and utility crews could work safely in the field, allowing us to de-energize lines as
11 needed where firefighters were working, and to coordinate with Fire Incident Commanders to
12 ensure that as evacuation orders were lifted, customers were able to return home to their power
13 being fully restored.

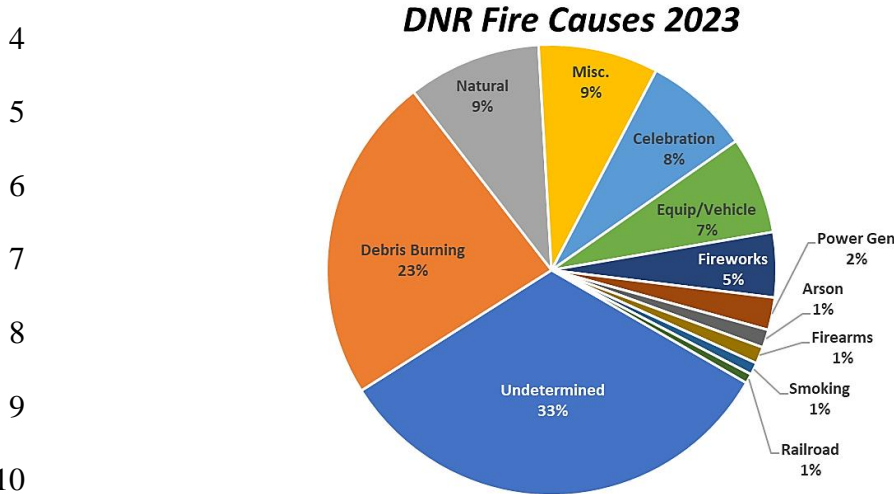
14 The other large fire in Avista’s service territory in 2023 was the Oregon Road Fire, in
15 Elk, Washington (north of Spokane) started on August 18 and tripled in size in one day,
16 growing to over 10,000 acres. 126 houses and 258 outbuildings were lost due to the fire
17 burning through the town of Elk. It took almost three weeks to completely contain this fire.
18 Fire officials have stated that the fire was caused by human activity but have not been more
19 specific. Avista did not suffer any damage from this fire.

20 **Q. Were the wildfires that occurred in Avista’s service territory in areas the**
21 **Company had identified as high-risk areas?**

22 A. Fires ignitions of all sources including natural, human-caused, and utility-
23 caused fires seem to randomly occur within Avista’s service territory. This appears to be

1 confirmed by the Washington Dept. of Natural Resources list of fire causes in Washington
 2 State in 2023, as shown in Illustration No. 6.²⁴

3 **Illustration No. 6 Washington DNR Fire Causes 2023**



11 However, fires of severe consequence and size have regularly occurred in areas that Avista
 12 has modeled as being at high risk. For example, both of the large fires of consequence in 2023
 13 within Avista’s service territory, in Medical Lake and Elk, Washington, occurred in areas that
 14 Avista’s Fire Weather Dashboard modeled as high risk at the time of the fires, and the
 15 Dashboard also predicted fires of 10,000 acres, which is what occurred. These trends indicate
 16 that focusing mitigations in areas we have identified as high fire risk areas should be effective
 17 in decreasing utility-related fires of severe consequence. By directing our actions in high-risk
 18 areas, we are more efficiently dealing with causal factors that could result in severe impacts
 19 to our customers and communities.

20 **Q. How did Avista’s dynamic wildfire risk assessment compare to the actual**
 21 **events that occurred in 2023?**

22 **A.** We are still working on a comprehensive comparison of actual fire events, but

²⁴ As of November 2023, experience.arcgis.com/experience/6cdda73cf6154949a1fae76ccb2900a0/page/Main-Page/?views=Statistics

1 the preliminary findings suggest good correlation between the dynamic forecasted risk and
2 the actual events that took place. We have done some preliminary work to assess the risk
3 forecast versus the outcomes of certain events and see strong correlation with the areas where
4 we took action based on our forecasted risk modeling and actual large impact fires. The data
5 we are seeing is well within the normal forecast error for estimating the average worst case
6 fire sizes. The two large fires in 2023 were started miles from any Avista facility but were
7 helpful data points in ensuring that where we acted (initiated Fire Safety Mode operation) and
8 actual fire size show good correlation with actual outcomes.

9 **Q. What are some of the challenges you faced as you have implemented your**
10 **Wildfire Plan?**

11 A. Implementing our Plan over the past three years that it has been in operation
12 have provided some challenges as described below.

13 **Scaling the Vegetation Program to 100%**

14 Scaling the vegetation management risk tree program to complete 100% risk
15 inspection annually was a much bigger and more expensive proposition than originally
16 anticipated. Avista expanded its risk/hazard tree program from a program concurrent with
17 cycle trimming (20% annually) to include a 100% risk tree inspection and remediation
18 program upon implementation of the Wildfire Resiliency Plan. Vegetation planners had
19 preliminary forecasts of the volume of dead, dying, and diseased trees that could potentially
20 strike powerlines prior to 2022. However, in 2022 and 2023 we found that the actual number
21 of risk trees was nearly double earlier estimates. Forest health was made more dire by the
22 historic drought of 2021 but also reflects increased levels of insect activity combined with

1 human activity, all leading to higher levels of tree mortality than expected.²⁵ Avista removed
2 nearly 19,000 dead, dying, or diseased trees within strike distance of our facilities in 2022 and
3 22,573 trees in 2023. (Note that this value does not include the over 5,000 trees removed as a
4 result of the Gray Fire.) These are a record levels of tree removals for Avista.

5 **Vegetation Contractor Cost and Availability**

6 In addition to finding more risk trees than anticipated, tree-related labor resources have
7 been an issue. Utilities across the western U.S. are all competing for the same labor resources,
8 and Avista's primary inspection contractor has been repeatedly unable to recruit and retain
9 enough inspectors to complete the work. Given the level of competition for resources,
10 contractors – if we are able to secure them - are able to command 60-hour work weeks,
11 lodging, and per diem allowances, unexpectedly increasing costs for this critical program. As
12 an example of the issues around acquiring an adequate level of crews, the Gray Fire led to
13 Avista contract crews removing over 5,000 risk trees related to this fire over the short span of
14 four weeks. They removed trees that had been damaged by the blaze and were at risk of falling
15 during future weather events. This single event led to approximately 37 crew weeks lost to
16 this extensive risk tree response, creating complications in getting planned vegetation work
17 back on schedule.

18 As mentioned previously, impacts from forest health (drought, insects, disease,
19 weather, and fire) continue to create spikes in risk trees on the system and this necessitates the
20 addition of labor accordingly, which will likely continue to elevate costs.

21 **Customer Access for Vegetation Work**

22 Another issue that is cropping up is permitting and acquiring customer permission to

²⁵ For more information about the condition of Washington's forests, please see <https://storymaps.arcgis.com/stories/026a39f860b041eb84d8582bce094fad>

1 access trees for removal. The Vegetation Team is developing strategies to deal with these
2 barriers, focusing on the fact that it is in everyone's best interests to remove danger trees for
3 public safety, protection of customer reliability, and prevention of wildfires, but these types
4 of issues create delays and can also increase costs.

5 **Digital Data Provider Issues**

6 In 2023 we completed 6,466 miles of satellite inspections on the distribution system.
7 However, the transmission LiDAR inspections did not meet the target of 2,270 miles. We
8 were only able to capture 1,679 miles within budget. Our original vendor's delivery and billing
9 was so late that some of the work they performed for us in 2022 was not billed until 2023,
10 throwing off our 2023 inspection budget and causing us to not meet our objectives. In
11 response, we switched to a new vendor for 2024 and hope this change will provide us with
12 more reliability.

13 **Learning and Incorporating Digital Inspection Data**

14 As mentioned earlier, Avista is also beginning to incorporate remotely sensed LiDAR
15 and satellite imagery data into the vegetation management programs. These are new
16 technologies to the Company and will need more experience and refinement before they truly
17 begin replacing boots-on-the-ground labor resources. However, after our initial experience in
18 100% inspection and subsequent mitigation, this should become more of a known quantity,
19 making it easier to right size the labor required to complete this work on an annual basis.

20 **Q. Would you provide an overview of the improvements you have made since**
21 **the Plan began?**

22 A. Yes. Avista's Wildfire Resiliency Plan is built upon the concept of Plan-Do-
23 Check-Adjust. We are continually evaluating the efficacy of our programs and adjusting them

1 as we see opportunities for improvement. We have made some significant improvements since
2 the Plan began. These improvements have been described in more detail in the testimony
3 above, but in summary we have:

- 4 • Increased and enhanced our wildfire-related customer communications,
5 specifically with customer engagement activities such as the town hall meetings
6 and through additional communication materials and strategies (including
7 expanding beyond English alone materials).
8
- 9 • Additional focus on identifying and reaching our most vulnerable customers.
10
- 11 • Evolved our communications with customers around wildfire to reach more
12 people, including outreach to all WUI Tier 2 and 3 risk areas and engagement with
13 local emergency management organizations and community leaders.
14
- 15 • Developed the ability to quickly identify and contact critical and life support
16 customers for outreach.
17
- 18 • Significantly improved the inputs to our WUI map to define risk areas more clearly
19 and to specifically include structural and human impact.
20
- 21 • Added additional modeling inputs, capability, and refinement to our Fire Weather
22 Dashboard to advance our ability to forecast and identify risk.
23
- 24 • Developed a robust Emergency Operating Procedure related to Wildfire response
25 and tested it in a realistic tabletop exercise that included external partners such as
26 the Red Cross, Washington Dept. of Natural Resources, and Idaho Dept. of Lands.
27
- 28 • Expanded our Fuel Reduction Partnership program to include both Washington
29 and Idaho agency partners as well as tribes.
30
- 31 • Further refined and enhanced Fire Safety Mode operations to provide a
32 comprehensive scale of risk reduction based upon actual conditions. We are
33 utilizing actual experience, such as the 2022 and 2023 fire seasons, to refine and
34 improve these efforts.
35
- 36 • Extended our Safe Tree Program, which works with customers directly to remove
37 risk trees on their property, into all WUI 2 and WUI 3 areas across the service
38 territory.
39
- 40 • Added a platform to the Company's website allowing customers to request Safe
41 Tree work, giving them the ability to directly communicate with arborists and
42 schedule this work themselves.
43

- 1 • By engaging with first responders such as the Washington Department of Natural
2 Resources and the Idaho Department of Lands, created Expedited Response
3 Agreements that cover nearly 99% of our service territory. These agreements do
4 not have end dates and have no cost. This professional fire response to
5 transmission-level faults helps ensure that any fires that may result do not spread.
6
- 7 • Continued to work with and learn from our utility peers and join with them to
8 strategize and develop best practices.
9
- 10 • In acquiring digital data for both the transmission and distributions systems for
11 identifying risk trees, we are becoming familiar with the large amount of data these
12 tools provide and how to use all of this information to focus our vegetation efforts
13 in areas that should provide the most positive impact and risk reduction.
14
- 15 • Created a strategy to prioritize steel transmission pole replacements in the highest
16 risk areas based on a spectrum of inputs including actual historic fires and
17 topography, moving beyond utilizing WUI zone alone.
18
- 19 • Differentiated areas where less costly solutions such as fire mesh wraps should
20 provide suitable protection based in part on vegetation data provided by digital
21 data imaging.
22
- 23 • Continued to actively seek out and build valuable partnerships and connections to
24 support our wildfire efforts with both external partners and customers.
25
- 26 • Begun the process to develop a Public Safety Power Shutoff program to enable an
27 appropriate response to potentially catastrophic weather events during wildfire
28 season.
29
- 30 • Continued to evaluate the cost and value of undergrounding distribution systems
31 as the risk and threat of wildfire is better understood.
32

33 **Q. Does this conclude your pre-filed direct testimony?**

34 A. Yes.