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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)	CASE NO. AVU-E-21-01
OF AVISTA CORPORATION FOR THE)	
AUTHORITY TO INCREASE ITS RATES)	
AND CHARGES FOR ELECTRIC AND)	DIRECT TESTIMONY
NATURAL GAS SERVICE TO ELECTRIC)	OF
AND NATURAL GAS CUSTOMERS IN THE)	DAVID R. HOWELL
STATE OF IDAHO)	
)	

FOR AVISTA CORPORATION

(ELECTRIC ONLY)

1 **I. INTRODUCTION**

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

3 A. My name is David R. Howell and I am employed as the Director of Electric
4 Operations and Asset Maintenance for Avista Corporation (Avista or Company). My business
5 address is 1411 East Mission Avenue, Spokane, Washington.

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

8 A. Yes. I graduated from Washington State University in 1992 with a B.S. in
9 Mechanical Engineering and earned my EMBA from the University of Washington in 2012.
10 I joined the Company in 2005 after spending 5 years with TransCanada-GTN. I have held
11 various positions at Avista supporting both natural gas and electric operations. Between 2005
12 and 2015 I held various natural gas engineering and operations positions including Gas Design
13 Engineer, Gas Design Manager, Gas Compliance Manager, Operations Manager, and Director
14 of Gas Delivery. In 2015 I transitioned to support the electric business as the Director of
15 Electrical Engineering. I became the Director of Electric Operations in 2016, where my
16 primary responsibilities include the management and oversight of Avista's 13 operating
17 districts, responsibility for construction services and design, as well as the Asset Maintenance
18 team.

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

20 A. My testimony and exhibits detail the Company's response to the increasing
21 threat of wildfires within Avista's service territories by proactively implementing its Wildfire
22 Resiliency Plan. Avista's Wildfire Resiliency Plan ("Wildfire Plan") reflects the Company's
23 130-year operating history combined with recent efforts to quantify and respond to the financial,

1 safety-related, and service reliability risks associated with wildfires. While I discuss this plan
2 in detail within my testimony and exhibits, Company witness Ms. Andrews incorporates the
3 incremental costs associated with the Company's Wildfire Plan included in the Company's
4 request for rate relief over the Two-Year Rate Plan effective September 1, 2021 and ending
5 August 31, 2023. Ms. Andrews also discusses the Company's proposed Wildfire balancing
6 account to track these expenditures over the life of this ten-year program.

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

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19
20 **Q. Are you sponsoring exhibits in this proceeding?**

21 A. Yes. I am sponsoring Exhibit No. 12 with the following Schedules:

- 22 • Schedule 1 - Wildfire Resiliency Plan (May 2020)
- 23 • Schedule 2 - Wildfire Risk Analysis Summary, Proposed Actions (September
24 2019)
- 25 • Schedule 3 - Wildfire Resiliency Cost Forecast (January 2020)
- 26 • Schedule 4 - Wildland Urban Interface (WUI) Map
- 27 • Schedule 5 - Wildfire Resiliency Communications Plan
- 28 • Schedule 6 – Wildfire Resiliency Plan Capital Business Case
- 29

1 transmission and distribution systems in its Idaho and Washington service territories. The
2 results of the workshops, together with input from the Company’s Wildfire Steering
3 Committee and the broader wildfire Subject-Matter-Experts (“SME”), served to inform
4 Avista’s electric Idaho and Washington (combined) Wildfire Plan.

5 Avista also developed its Wildfire Plan based on experience and information from its
6 peers in the energy and forestry industries that focus on reducing wildfire risk in the
7 Company’s electric service territories in Idaho and Washington. For example, to help inform
8 Avista’s Wildfire Resiliency Plan, Avista hosted a Pacific Northwest working group,
9 including Idaho Power, Puget Sound Energy, Portland General, Northwestern Energy, and
10 PacifiCorp. Specific to Idaho, Avista continues to work closely with Idaho Power managers
11 and engineers to ensure consistency. Avista also consulted with Kootenai Electric and
12 Northern Lights in the State of Idaho; Idaho’s lead fire protection agency, the Idaho
13 Department of Lands; the Idaho community fire protection agency “Smart Growth Alliance”;
14 and the University of Idaho. Avista is also a member organization to the Western Energy
15 Institute, participating in their Wildfire Taskforce meetings.²

16 The Wildfire Plan described in detail below and included as Exhibit No. 12, Schedule
17 1, details the development and implementation of a comprehensive multi-year effort, that
18 includes enhanced system hardening and vegetation management efforts reflecting a focus on
19 reducing fire ignition events, as well as other situational awareness and operational efforts.

20 As provided in the Wildfire Plan, Avista is proposing a proactive, strategic, continuous
21 improvement and risk informed approach to respond to the wildfire risks on our system,

² In addition to the discussions with parties as noted above, Avista also met with IPUC Commissioners and Commission Staff in February 2020 to provide a preliminary overview of the Company’s Wildfire Resiliency planning.

1 encompassing immediate steps, as well as long-term efforts to reduce wildfire risk. Specific
2 Wildfire Plan objectives include a focus in the following areas:

- 3 • Protect lives and property;
 - 4 • Ensure emergency preparedness and align operating practices with fire threat
5 conditions; and
 - 6 • Protect Avista’s energy delivery infrastructure.
- 7

8 Avista provides electrical service to approximately 400,000 customers in Idaho and
9 Washington, with over 120,000 of those customers living in elevated fire risk areas. A key
10 factor in Avista’s plan development is how best to reduce the likelihood of a wildfire related
11 to the Company’s electric operations. The recommendations made in this plan are based on
12 the ability to reduce the risks associated with public and worker safety, the risks to property
13 and infrastructure, and to lessen the impact of electric system outages to customers and the
14 community.

15 **Q. What specific Wildfire Plan costs has Avista included in this general rate**
16 **case for recovery?**

17 A. Included in the testimony that follows is a summary of the Company’s
18 recommendations and forecasted costs, annually, for the ten-year period 2020 through 2029.
19 Specific costs proposed by Avista in this general rate case however, as discussed by Ms.
20 Andrews, include the level of Wildfire Plan transmission and distribution expenses expected
21 during the Two-Year Rate Period (September 1, 2021 through August 31, 2023) of \$2.2
22 million (Idaho-share) for Rate Year 1 and \$2.6 million (Idaho-share) for Rate Year 2, or
23 \$363,000 incremental above Rate Year 1. Ms. Andrews also addresses Wildfire Plan
24 transmission and distribution capital projects transferring to plant between 2020 and August
25 31, 2023 included in the Company’s filing totaling \$19.0 million (Idaho-share). This reflects

1 an increase in Idaho electric net plant of \$9.2 million for Rate Year 1 and \$9.8 million for
2 Rate Year 2. The overall Idaho electric revenue requirement included in this case associated
3 with these costs, therefore, is approximately \$2.3 million, or \$1.1 million and \$1.2 million in
4 Rate Year 1 and Rate Year 2, respectively. Approval of these proposed incremental costs is
5 an important element of the Company’s plan and helps support the level of wildfire mitigation
6 efforts proposed in the Company’s Wildfire Plan.

7 In addition to the Wildfire Plan expenditures included in Ms. Andrews’ Electric Pro
8 Forma Study for the Two Year Rate Plan, Ms. Andrews also discusses the Company’s
9 proposal to create a Wildfire balancing account to track expenses over the 10-year life of the
10 Wildfire Plan.³

11

12 **III. OVERVIEW OF AVISTA’S WILDFIRE RESILIENCY PLAN**

13 **Q. Would you please describe in more detail the Company’s Wildfire**
14 **Resiliency Plan.**

15 A. Yes. As noted above, in June 2019 Avista convened a series of subject matter
16 expert wildfire workshops to evaluate opportunities to reduce the risk of wildfire associated
17 with its electric transmission and distribution systems in its Idaho and Washington service
18 territories. The primary goal of these workshops was to: 1) Identify actions to reduce the
19 probability of electric ignition; and 2) Quantify the consequence or impact of potential actions.
20 Over the course of the six workshops held, over one hundred and sixty (160) potential action

³ In addition to the Wildfire Plan capital and expense pro formed in this case to reflect the Company’s 10-Year Wildfire Plan costs, as discussed by Ms. Andrews, although not specific to the Wildfire Plan, the Company also pro formed insurance expense above 2019 test year levels, a majority of which is related to the cost and impact of wildfires across the Country.

1 items were identified and considered. (See Exhibit No. 12, Schedule 2, pages 19-20 for more
2 workshop information.) The workshops, together with input from the Wildfire Steering
3 Committee and the wildfire SMEs, served to inform Avista’s electric system Wildfire Plan
4 (Exhibit No. 12, Schedule 1). A summary of that effort and preliminary recommendations for
5 systems and practices, along with modifications to existing maintenance and construction
6 programs is provided in the Company’s “Wildfire Risk Analysis Summary, Proposed
7 Actions” report, included as Exhibit No. 12, Schedule 2.

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

9 A. As noted in the Wildfire Plan (Exhibit No. 12, Schedule 1), and summarized
10 below, the stated goals of the Wildfire Resiliency Plan are to:

- 11 • Enhance Emergency Operation Preparedness (EOP): to recognize wildfire as a
12 recurring threat to utility infrastructure, the communities we serve, and our
13 customers.
- 14 • Promote Safety: to protect physical assets, property, and human lives. To manage
15 the risk of wildfire through design-based, system operations, asset maintenance,
16 and outreach activities.
- 17 • Safeguard Company Assets: to mitigate the impact of direct financial costs and
18 liability exposure associated with large-scale wildfire events.

19 **Q. In addition to these objectives, was a “model-framework” identified to**
20 **promote a comprehensive approach to wildfire risk?**
21

22 A. Yes. In addition to the objectives listed above, a model-framework was
23 identified to promote a comprehensive approach to wildfire risk. The elements of this model
24 approach include:
25

- 26 1. Planning, such as EOP response, insurance review, communications planning and
27 outreach;
- 28 2. Enhanced System Operations and Maintenance, such as system hardening,
29
30

1 vegetation management, and fire resiliency “Ops Toolkit”;

- 2
- 3 3. Weather and Fire Risk Monitoring, such as situational awareness and performance
- 4 metrics; and
- 5
- 6 4. Regulatory and Industry efforts, such as utility industry engagement, partnering
- 7 with fire protection agencies, legislative opportunities and Commission
- 8 engagement.
- 9

10 **Q. How did Avista analyze or evaluate the risk of wildfires and what was the**

11 **result of those findings?**

12 A. As a part of the Company’s wildfire resiliency analysis, the Company focused

13 on understanding the risk exposure of wildfires in general, but also the opportunity to reduce

14 risk through specific actions taken associated with the Company’s transmission and

15 distribution areas. Specifically, “Risk” was quantified as the probability of an event occurring,

16 times the financial impact of the event (Risk = Probability X Impact), where impact is

17 characterized as the sum of: 1) Direct Financial Cost (replacement costs, fire suppression, 1st

18 party damages) + 2) Customer (interruption cost estimate (ICE), 3rd party claims) + 3) Safety

19 (public and employee injuries).

20 Prior to the SME workshops held in June 2019, Avista contracted with the Core Logic

21 Consulting Group to conduct a risk analysis to ascertain the risk impact of a single large

22 wildfire event. Core Logic’s analysis was based on historic observation and was limited to

23 the impact to property. It did not include the potential for loss of life, injury, fire suppression,

24 timber loss, and other economic loss factors. This exercise was conducted to provide a

25 baseline for the subsequent SME risk workshops and to determine if Avista’s liability

26 insurance levels were adequate to protect against a single large event.

27 The Wildfire Risk Analysis Summary report (Exhibit No. 12, Schedule 2) reflects the

1 findings of the SME workshop participants together with direct feedback from the Avista
2 Wildfire Steering Committee, Operations & Technical Staff, and Executive Management. It
3 forms the basis of Avista’s 2020 Wildfire Resiliency Plan. Avista’s risk analysis indicates
4 that the accumulated 10-year risk of wildfires is at least \$8 billion dollars and is the driving
5 force behind adding wildfire specific defense strategies.

6 The Wildfire Risk Analysis Summary report provides a detailed description of all
7 electric transmission and distribution inherent and managed risk costs together with the
8 treatment implementation costs over the planned ten-year period. Further, proposed treatment
9 actions in these areas are identified and grouped as follows:

- 10 • Base Level – efforts that support or enable other actions; or standalone actions that
11 can be readily incorporated by the organization.
- 12 • Primary – actions that represent significant value (risk reduction) and are
13 recognized as industry best-practices.
- 14 • Secondary – actions that represent the highest risk value but require significant
15 human and or financial commitments.
- 16 • Future – identified as providing value but of lower priority and therefore, not
17 considered in the initial phase of the Wildfire Resiliency Plan.
- 18
- 19
- 20
- 21

22 **Electric Transmission**

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

25 A. Avista operates 2,270 miles of transmission in portions of western Montana,
26 northern Idaho and eastern Washington. In 2006, Avista adopted tubular steel poles as the
27 ‘standard installation’ for 115kV and 230 kV powerlines. Since that time, Avista has worked
28 to replace its aging wooden structures with steel, and all new construction is exclusively steel.

1 In 2009, NERC published the “Transmission Vegetation Management” standard FAC-003-2
2 which fundamentally reshaped the industry’s approach to transmission line clearance
3 activities. For Avista, the combination of system hardening, and well-maintained rights-of-
4 way, have increased the fire resiliency of its transmission system.

5 Transmission fire ignition events are relatively rare. From 2014 to 2018, there were
6 611 sustained outages, but only 252 between May and September (fire season). However,
7 there were over 3,000 momentary outages and nearly half of those (1,500) occurred during
8 fire season. Eighty percent (80%) of transmission line faults are momentary (less than five
9 minutes) and are generally the result of lightning, wind, and planned switching operations.
10 Conversely, the impact of fire to transmission structures can be significant. For example, the
11 replacement cost of a single wood transmission structure ranges from \$7,500 to over \$25,000,
12 and damages to conductor can escalate into the millions of dollars. For treatment actions
13 identified on the transmission system (base, primary, secondary and future), see Exhibit No.
14 12, Schedule 2, pages 6 – 11.

15

16 **Electric Distribution**

17 **Q. Please describe the impact of wildfires and wildfire planning specific to**
18 **Avista’s electric distribution operations.**

19 A. The vast majority of electric outages occur on the distribution system, but the
20 impact to customers is typically restricted by line fuse action (limiting outages to between 1-
21 100 customers typically). To contrast this situation, transmission outages are infrequent (low
22 probability) but often impact thousands of customers. However, from a fire prevention
23 standpoint, the distribution system is the ignition source for most utility-related fires. Data

1 from the Outage Management System (OMT) indicates that annually, one hundred (100) fire
2 ignition events are associated with overhead distribution lines. In almost all cases, these fires
3 naturally extinguished or were extinguished by 1st responders, including Avista line
4 servicemen. In the current risk environment, the distribution system warrants enhanced focus
5 with respect to fire ignition, and this risk is especially acute in the wildland-urban interface
6 (WUI) areas (discussed further below).

7 Fire ignition sources include tree contacts with powerlines, but also include animal
8 contacts, equipment failure, and electrical pole fires. Between 2014 and 2018, there were
9 1,933 tree related outages with 1,011 occurring during fire season. Over that time period there
10 were 462 reported pole fires. Although the Company's distribution vegetation management
11 spend is approximately \$8 million annually, as the number of danger trees increases and
12 overall forest health declines, it is necessary to expand the amount spent on distribution
13 vegetation management. For treatment actions identified on the distribution system (base,
14 primary, secondary and future), see Exhibit No. 12, Schedule 2, pages 12 - 17.

15

16 **Wildland Urban Interface (WUI)**

17 **Q. Please explain the importance and use of the Wildfire Urban Interface.**

18 A. Because the Company's Wildfire Plan was developed using a risk-based
19 approach, the Company has identified higher risk areas that can benefit the most from
20 prudently applied expenditures, rather than blanket solutions applied to our entire service
21 territory. The recommendations provided in the Company's Wildfire Plan are based on each
22 recommendations' ability to reduce the operating and financial risk associated with wildfires.
23 Therefore, understanding risk and how risk is monetized is an important component of

1 understanding the content of the Wildfire Plan.

2 One element of risk reduction includes the prioritized application of solutions.
3 Recommendations within the Wildfire Plan consider geographic location and apply risk
4 reduction measures in areas with higher fire threat potential. The boundaries of forest lands
5 and homes and businesses are referred to as the Wildland Urban Interface (WUI). Homes and
6 businesses located near the WUI are determined to be most at-risk from the impact of wildfires
7 and are often located in rural areas that lack fire suppression resources. In 2019, Avista’s GIS
8 Technical Group created a combined WUI map for Avista’s electric Idaho and Washington
9 service territories that is based on the following principles:

- 10 • Fuel Concentration – areas identified as having moderate to very high fuel
11 concentrations (areas with a high volume of trees) were considered in the analysis.
12 Fuels data was derived from the U.S. Department of Agriculture’s Wildfire
13 Hazard Potential map (2018 USDA WHP).
14
- 15 • Housing Density – parcels smaller than 20 acres were included in the analysis but
16 highly-developed urban areas were excluded. Urban areas do not meet the
17 definition of Wildland Urban Interface.
18

19 Using this information, Avista “WUI Risk Levels” were established, similar to the
20 work done in California, identifying three wildfire risk levels:

- 21 • Tier 1 – Moderate levels of fuel and low to moderate housing densities (low)
22
- 23 • Tier 2 – Moderate to high levels of fuel and moderate housing densities (medium);
24 and
25
- 26 • Tier 3 – High fuel levels and moderate to high housing densities (high)
27

28 **Q. How does Avista use the WUI map areas within its Wildfire Plan?**

29 A. The WUI map helps the Company identify and prioritize areas of greatest risk
30 and serves to inform our recommendations and operational decisions related to wildfire

1 resiliency. The Wildfire Plan denotes the combination of WUI Tiers 2 & 3 as “elevated fire
2 threat areas”. These areas comprise 40% of Avista’s electric distribution and 20% of the
3 Company’s transmission systems. As shown on Exhibit No. 12, Schedule 4 (Avista’s
4 Proposed Wildland Urban Interface Map), elevated fire threat levels are depicted in orange
5 (Tier 2) and red (Tier 3) highlighted areas. Portions of the map not highlighted are classified
6 as Non-WUI and represent areas with low fuel concentrations, very low housing densities, or
7 large urban areas (> 10,000 population).

8

9 **Plan Recommendation Summary**

10 **Q. Please summarize the Wildfire Plan recommendations.**

11 A. As provided in Exhibit No. 12, Schedule 1, the Wildfire Plan includes detailed
12 information on the 28 individual “Plan Recommendations,” grouped into four categories.
13 Similar to other utility wildfire plans (including those from Pacific Gas and Electric, San
14 Diego Gas and Electric, Southern California Edison, and PacifiCorp) these categories include:

- 15 • Grid Hardening – Replacing infrastructure in fire prone areas. The likelihood of a
16 spark-ignition source is mitigated and critical infrastructure is protected from the
17 impacts of fire. (See Exhibit No. 12, Schedule 1, pages 25, 28-37)
- 18
- 19 • Enhanced Vegetation Management – Identifying potential conflicts on an annual
20 basis and prioritizing those risks from highest to lowest. Wildfire Resiliency aligns
21 resources with risk. (See Exhibit No. 12, Schedule 1, pages 26, 38-49)
- 22
- 23 • Situational Awareness – Adding line and monitoring equipment, system operators
24 can respond quickly to variable weather and fire threat conditions. (See Exhibit
25 No. 12, Schedule 1, pages 26, 50-56)
- 26
- 27 • Operations and Emergency Response – Through training and simulation, Avista
28 personnel will be better prepared to work with fire professionals during an event.
29 (See Exhibit No. 12, Schedule 1, pages 26, 57-65)

1 Plan recommendations also reflect cost prudence and were adopted on their basis to:

- 2 • Leverage existing asset programs and operating practices;
- 3 • Promote public safety; and
- 4 • Mitigate financial risks.

5
6 Within the Wildfire Plan each recommendation is described, and the “Current” and
7 “Future State” of each distribution and transmission operation recommendation, as well as
8 expected benefits, are provided. (See summary tables on pages 9-11 of Exhibit No. 12,
9 Schedule 1.) Further detail of the costs associated with these recommendations is described
10 further in Avista’s Wildfire Plan (pages 25 – 65) and summarized below.

11
12 **Wildfire Resiliency Communications Plan**

13 **Q. With the importance of the Wildfire Plan, does the Company have a**
14 **specific communications plan to inform its stakeholders?**

15 A. Yes, it does. A key element of the Company’s Wildfire Resiliency Plan is
16 ensuring that Avista stakeholders 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 stakeholders, including customers,
21 employees, state and local government officials and regulators, law enforcement and fire
22 departments, local media, and shareholders. The Company’s Wildfire Resiliency
23 Communication Plan objectives, include the following:

- 24 • Ensure awareness among all key stakeholders of the significant actions and
25 investment Avista is taking to prevent or mitigate the risk of wildfires.

- 1 • Instill confidence in Avista as a proactive and responsible corporate citizen.
- 2
- 3 • Get “buy-in” support and recognition from key stakeholders that Avista is taking
- 4 wildfire safety seriously and has a Wildfire Resiliency Plan in place.
- 5
- 6 • Help generate support and recognition for Avista as a leader that it is doing all it
- 7 can to help avoid wildfires and has in place a strong wildfire prevention and safety
- 8 program.
- 9
- 10 • Demonstrate Avista’s focus on prioritizing the safety and well-being of its
- 11 customers and the communities it serves.
- 12

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

18 The second phase of the Wildfire Resiliency Communication Plan supports specific
19 strategies included within the Wildfire Plan, such as enhanced vegetation management. Each
20 initiative that requires customer or external stakeholder behavior changes, has its own
21 communications plan with objectives, tactics and timelines associated.

22 Included as Exhibit No. 12, Schedule 5 is a summary of Avista’s Wildfire Resiliency
23 Communication Plan.

24

25 **IV. FORECASTED RISK AND COST SUMMARY**

26 **Q. Please describe Avista’s forecasted risk and 10-year cost analysis of its**
27 **Wildfire Plan.**

28 A. Precise identification of the risk and cost for any given year is not possible nor

1 realistic, and for wildfires in particular, there are a significant difference between small fire
2 events, which can occur many times each season, versus a large event, which occur
3 infrequently. Therefore, in order to represent a more realistic picture of relative risks and costs,
4 a 10-year planning horizon was adopted.

5 As noted above, Avista developed its Wildfire Plan based on our own experience as
6 well as information from peers in the energy and forestry industries. As a part of this
7 development, Avista prepared its “Wildfire Resiliency Cost Forecast,” dated January 2020,
8 which provides detailed information of the 10-year cost forecast for the period 2020 through
9 2029 (see Exhibit No. 12, Schedule 3). This cost information, along with the detailed risk
10 analysis of the selected plan recommendations, helped inform Avista’s Wildfire Plan
11 recommendations (Exhibit No. 12, Schedule 1) and is consistent with the “Wildfire Risk
12 Analysis Summary – Proposed Actions” (Exhibit No. 12, Schedule 2).

13 The Wildfire Resiliency Cost Forecast report (Exhibit No. 12, Schedule 3) focuses on
14 forecasted capital investments and operating expenses based on the recommendations from
15 the Risk Analysis Summary (Exhibit No. 12, Schedule 2).⁴ Several estimates are based on
16 results of Avista’s Subject-Matter-Expert Fire Workshops (June 2019), while others reflect
17 parametric estimates based on subsequent efforts to develop the WUI map (Exhibit No. 12,
18 Schedule 4). Feasibility estimates generally reflect accuracy levels between 30 and 50%.
19 Definitive cost estimates require final engineering design and contractual commitments for
20 materials and labor.

21 **Q. Please describe the four main areas wildfire activities were grouped into**

⁴ The cost forecast reflects a refinement in scope versus that of Exhibit No. 12, Schedule 2 and includes preliminary cost estimates.

1 **to create Avista’s specific cost forecast for its Wildfire Plan.**

2 A. Consistent with what is discussed above, in developing the cost forecast for the
3 10-year planning horizon from 2020 to 2029, activities were grouped into the following four
4 main areas:

5 **Enhanced Vegetation Management** – This includes actions in excess of Avista’s
6 current Vegetation Management program and reflects a focus on reducing fire ignition
7 events. Plan elements include collecting vegetation data via digital hi-resolution
8 photography and Light Imaging, Detection, and Ranging (LIDAR), increasing the
9 frequency of the Risk Tree treatments in fire prone areas, and conducting a public
10 outreach campaign associated with ‘right tree-right place’ concepts.

11
12 **Situational Awareness** – This category includes extending Supervisory Control and
13 Data Acquisition (SCADA) systems to a portion of Avista’s thirty-three non-
14 communication substations (dark stations). Using SCADA to monitor and control
15 powerlines is a fundamental tenant of utility wildfire plans across the western U.S. and
16 Canada. Avista also plans to develop a web-based ‘fire-weather dashboard’;
17 combining publicly available weather and fire threat information to inform operational
18 readiness and enable enhancements to the Dry Land Mode (DLM) distribution
19 protection scheme, which is the current operating mode for higher risk feeders during
20 fire season.

21
22 **Operations “Toolkit” & Metrics** – Avista has a number of existing work processes
23 and programs aimed at reducing the impact of wildfire. Enhancements to existing
24 programs and the addition of other ‘operating’ elements are included in this group.

25
26 **Grid Hardening & Dry Land Mode** – Avista developed a non-reclosing distribution
27 protection scheme back in the early 2000’s to mitigate fire ignitions. The protection
28 scheme known internally as Dry Land Mode (DLM) will be updated to ensure
29 alignment with program objectives. Additionally, infrastructure replacements or *grid*
30 *hardening* will be implemented to reduce fire ignitions.

31
32 **Q. What are the forecasted wildfire resiliency risk and cost values of these**
33 **four main areas?**

34 A. Summarized risk values, along with cost values, for these four main categories
35 are shown in Table No. 1 below, representing the 10-year electric system (Idaho and
36 Washington) planning horizon for both incremental operating expense as well as capital

1 improvements to infrastructure. In simple terms, risk is the product of the probability of an
 2 event and its consequence:

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

- 4 • Inherent Risk - describes the current state risk level and reflects defense strategies
 5 already in place.
- 6
- 7 • Managed Risk - describes the future state risk level with the addition of Wildfire
 8 Resiliency elements
- 9

10 The values shown for risk in Table No. 1 are percentage based and reflect a range for each
 11 category.

12 **Table No. 1 - Resiliency Risk and Cost Summary (system)**

Resiliency Risk and Cost Summary					
2020-2029 Operating Horizon	Inherent Risk (range %)	Managed Risk (range %)	Risk Mitigation (avg %)	10-yr Capital Investment (\$)	10-yr Operating Expense (\$)
Enhanced Vegetation Management	48.3-100	3.2-14.5	88%	\$5,100,000	\$51,175,000
Situational Awareness	25.9-100	0.8-1.1	98%	\$17,965,000	\$1,019,000
Operations & Emergency Response	19.7-100	5.3-23.4	76%	\$300,000	\$2,378,000
Grid Hardening & Dry Land Mode	41-100	0.7-2.7	98%	\$245,600,000	\$5,014,000
Plan Total	44.1-100	2.8-12.5	89%	\$268,965,000	\$59,586,000

19

20 “Enhanced Vegetation Management” and “Grid Hardening & Dry Land Mode” risk
 21 scores indicate a “bounded range” because the probability of occurrence is based on the
 22 frequency of forced outages. Although the probability of electrical outages is well understood,
 23 an event’s impact can vary widely based on many factors, including weather, fire risk levels,
 24 emergency response, and location. Managed risk scores represent future state levels, and
 25 lower levels of event probability and event outcome. In Table No. 1, the column labeled “Risk
 26 Mitigation (avg %)” indicates the average percentage difference between current state and

1 future state risk levels.

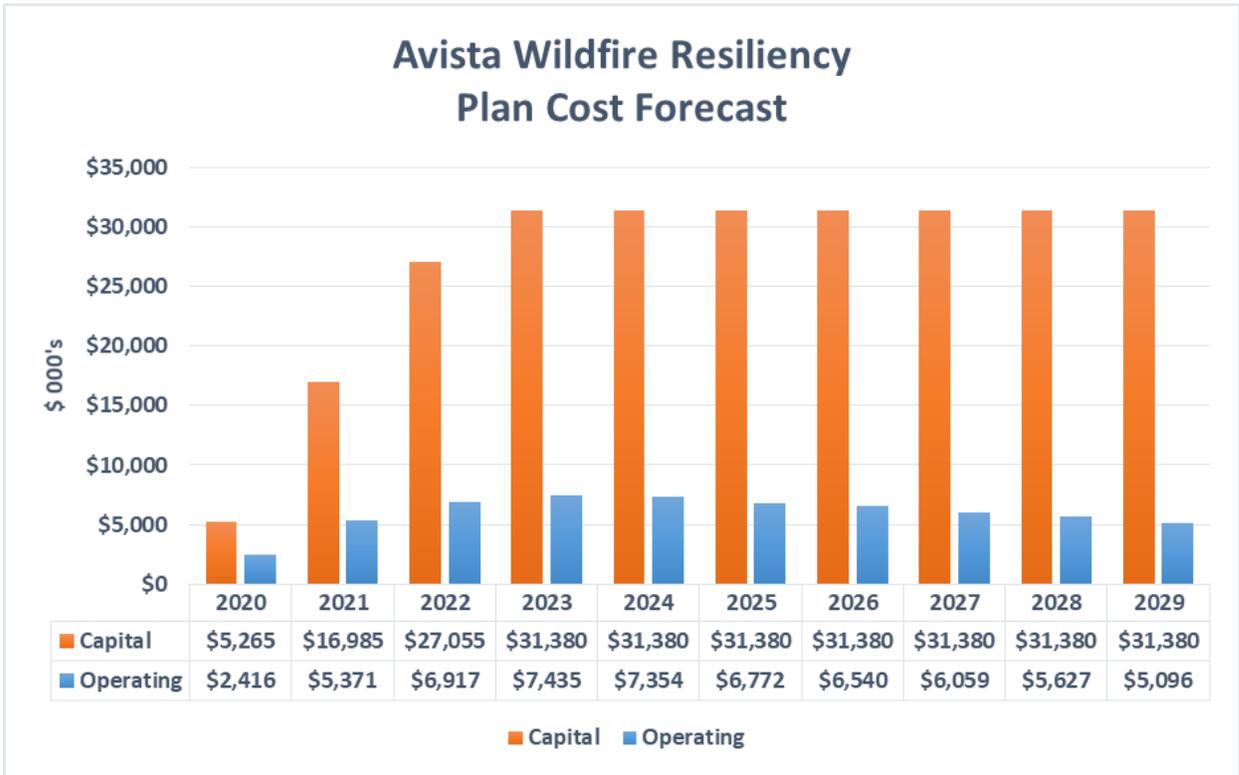
2 As noted in Table No. 1, the wildfire resiliency program includes a capital investment
3 of \$268,965,000 over a 10-year period with corollary operating expenses of \$59,586,000 (all
4 electric system numbers).⁵ Comprehensive risk analysis indicates a 10-year inherent potential
5 risk exposure of at least \$8 billion dollars. This value includes the accumulated risks
6 associated with all 28 Wildfire Plan recommendations and should not be interpreted as a
7 precise financial estimate. A better metric is the percentage of risk mitigation which reflects
8 an 89% reduction for the overall plan.

9 **Q. What is the estimated capital and operating expense on an annual basis**
10 **over the 10-year plan horizon of 2020 - 2029?**

11 A. Graph No. 1 illustrates the total estimated capital and operating expense, on a
12 per year basis (Idaho and Washington electric) from 2020 to 2029.

⁵ All operating expenses provided reflect incremental amounts above existing expense levels and are specific to the Wildfire Resiliency Plan.

Graph No. 1 – Avista Annual Wildfire Resiliency Plan Cost Forecast (system)



While capital plan elements are projected to sunset in 10 years, the majority of operating expense items are on-going and are generally related to enhanced vegetation management.⁶

As discussed above, the 28 specific individual plan recommendations that result in these costs estimates are provided in the Wildfire Plan. By far the single largest capital investment is associated with electric distribution grid hardening. This accounts for \$193,200,000 invested in distribution systems located in elevated fire risk areas, with another

⁶ As noted above, the majority of the incremental operating expenses are generally related to enhanced vegetation management. Current vegetation management expenses included in Idaho base rates are based on 2018 electric system levels totaling approximately \$7.9 million for distribution and \$1.3 million for transmission operations. Idaho’s share of these amounts included in base rates today is approximately \$2.1 million for distribution and \$450,000 for transmission.

1 \$44,000,000 invested to convert wood poles to steel on the transmission system. These two
2 plan elements account for 88% of total capital spend, over the ten-year period.

3 For operating expense, three elements: transmission and distribution digital data
4 collection; annual risk tree; and the public safety initiative ‘right tree right place,’ account for
5 \$42,700,000 (72%) over the same 10-year period. Though the Wildfire Plan includes 28
6 recommendations to mitigate the risk of wildfire, five of the elements accounts for 85% of the
7 total program costs. The overall Wildfire Plan capital business case is included as Exhibit
8 No. 12, Schedule 6.

9

10 **Potential Operating & Maintenance Expense Offsets**

11 **Q. Are there potential operating and maintenance expense offsets expected**
12 **as a result of the Company’s Wildfire Plan?**

13 A. The goal of wildfire resiliency is to reduce the overall risk associated with
14 wildfires. In short, the benefits of this plan are largely measured in terms of risk reduction for
15 all parties involved. The Company, however, recognizes a potential for costs savings and cost
16 shifts from operating and maintenance expense towards capital investment. The overall impact
17 of cost savings and cost shifts will not be well understood until the plan is operational and
18 performance data can be obtained and analyzed. However, one of the objectives of this plan
19 is to reduce the number of equipment failures and tree-related outages and by doing so, avoid
20 emergency response.

21 The following Table No. 2 lists a number of potential cost savings opportunities
22 associated with the Wildfire Resiliency Plan.

Table No. 2 – Potential Cost Savings Opportunities

Plan Element	Benefit	Cost Savings/Shift
Annual Risk Tree and Right Tree Right Place Programs	Improved System Performance (fewer outages)	Reduced spend on emergency response and unplanned repairs
Digital Data Collection	Automates data gathering process for vegetation and structure condition inspection	Reduces field inspection activities. Enables computerized QA/QC functions
Grid Hardening	Improves System Performance (fewer outages)	Reduced spend on emergency response and unplanned repairs
Situational Awareness (communication & control systems)	Enables remote monitor and control or equipment	Reduced service related truck rolls
Operations & Emergency Response	Better prepared and equipped first responders	Reduces the risk of injury and accidents

It should also be noted that this plan indicates program level spend estimates and does not differentiate between incremental and embedded cost elements. Though many plan elements represent incremental costs, some activities will simply be absorbed by the workforce. For example, annual fire safety training will occur at monthly safety meetings which are already in place. This is an embedded cost estimated at \$1,300,000 over 10-years. However, the bulk of plan elements including enhanced vegetation management and grid hardening represent additional activities and incremental costs. As previously indicated, these categories account for 85% of overall program costs.

V. WILDFIRE RESILIENCY PLAN RECOVERY

Q. Please summarize the Company’s Wildfire Resiliency Plan and its request of this Commission to recover planned wildfire costs.

A. As discussed above, the risk of large wildfire events is increasing across the western United States. Recent fire events in Avista’s own service territories of Idaho,

1 Washington and Oregon, as well as major wildfire activities in other states such as California,
2 illustrate that utility operating risk is increasing related to wildfires. Reducing the risk of
3 wildfires is critical for customers, communities, investors, and the regional economy. Avista
4 has taken a proactive approach for many years to manage wildfire risks and impacts, and
5 through its Wildfire Plan, the Company has identified additional wildfire defenses for
6 implementation. The goals, strategies, and tactics set forth in this plan reflect a quantitative
7 view of risk. Additional research, conversation and analysis with Avista's operating staff and
8 steering group provided critical qualitative and contextual information that also shaped the
9 recommendations. This combination of quantitative and qualitative analysis ensures the
10 recommendations are robust, well-rounded, and thoughtful, and that they align with the plan
11 goals and are appropriate.

12 As noted above, the comprehensive risk analysis indicates a 10-year inherent electric
13 system risk exposure of at least \$8 billion dollars of accumulated risks associated with all 28
14 plan recommendations included in the Wildfire Plan. Although this not a precise financial
15 estimate, the Wildfire Plan recommendations reflect an estimated 89% risk mitigation of this
16 risk exposure.

17 As discussed, and presented in Table No. 1 above, the Company's wildfire resiliency
18 program, including all 28 plan recommendations, expects total costs over the ten-year period
19 2020 through 2029 to reflect capital investment of \$268,965,000, and corollary operating
20 expenses of \$59,586,000 (all electric system numbers). Table No. 3 below (see also Graph
21 No. 1 above) provides the program costs on a per year basis over the 10-year Wildfire Plan,
22 with the annual amounts for the period 2020 – 2029 as follows:

Table No. 3 – Wildfire Annual Capital Investment & Operating Expense (System)

(000s)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	10-YR Ttl
Capital	\$5,265	\$16,985	\$27,055	\$31,380	\$31,380	\$31,380	\$31,380	\$31,380	\$31,380	\$31,380	\$268,965
O&M	\$2,416	\$5,371	\$6,917	\$7,435	\$7,354	\$6,772	\$6,540	\$6,059	\$5,627	\$5,096	\$59,586

These total capital investments and expenses of the Wildfire Plan will be directly assigned or allocated to Avista’s Idaho and Washington jurisdictions over time as the costs occur. As discussed by Ms. Andrews, specific costs proposed by Avista in this general rate case reflect the expected costs to be charged to Idaho during the rate effective period of this case (shaded areas in Table No. 3 above reflect system balances considered in this case). Table Nos. 4 and 5 below split the annual system and Idaho expected capital and operating expenses between distribution and transmission for the calendar periods 2020 through 2023 only, for the 10-year plan:

Table No. 4 – Wildfire Plan Capital Investment – Idaho-Share & System

Total Wildfire Plan - Idaho and System (Capital)						
	Idaho			System		
	Distribution	Transmission	Total	Distribution	Transmission	Total
2020	1,298	691	1,988	3,255	2,010	5,265
2021	5,099	1,361	6,459	13,025	3,960	16,985
2022	8,252	2,022	10,274	21,170	5,885	27,055
2023	10,022	1,996	12,018	25,570	5,810	31,380

Table No. 5 – Wildfire Plan O&M Expense – Idaho-Share & System

Total Wildfire Plan - Idaho and System (Expense)						
	Idaho			System		
	Distribution	Transmission	Total	Distribution	Transmission	Total
2020	606	302	909	1,536	880	2,416
2021	1,610	455	2,065	4,047	1,325	5,372
2022	2,117	550	2,667	5,316	1,602	6,918
2023	2,323	550	2,874	5,834	1,602	7,436

1 Using this information, Ms. Andrews incorporates the incremental costs associated
2 with the Company’s Wildfire Plan within her Electric Pro Forma Study Two-Year Rate Plan.
3 First, using a prorated amount for each calendar year of 2021 through 2023 expenses expected
4 during the rate period (September 1, 2021 through August 31, 2023), Ms. Andrews included
5 approximately \$2.195 million (Idaho-share) in Rate Year 1 expenses⁷ and approximately
6 \$2.56 million (Idaho-share) in Rate Year 2 expenses, or approximately \$363,000 (Idaho-
7 share) of incremental expense above Rate Year 1.

8 Next, Ms. Andrews includes Idaho’s share of Wildfire Plan transmission and
9 distribution net capital additions of projects transferring to plant between 2020 and August
10 31, 2023 included in the Company’s filing totaling \$19.0 million (Idaho-share). This reflects
11 an increase in Idaho electric net plant of \$9.2 million for Rate Year 1 and \$9.8 million for
12 Rate Year 2. The overall Idaho electric revenue requirement included in this case associated
13 with these costs, therefore, is approximately \$2.3 million, or \$1.1 million and \$1.2 million in
14 Rate Year 1 and Rate Year 2, respectively. Approval of these proposed incremental costs is
15 an important element of the Company’s wildfire program and helps support the level of
16 wildfire mitigation efforts proposed in the Company’s Wildfire Plan.

17 **Q. What other request of this Commission has Avista included in this**
18 **proceeding, with regards to Wildfire recovery do you wish to discuss?**

19 A. As discussed by Ms. Andrews, in addition to the Wildfire Plan costs pro
20 formed into the Company’s Electric Pro Forma Study, the Company also proposes to create a

⁷Wildfire risk tree and other expenditures are incremental to existing vegetation management expenses included in the 2019 test period, with the exception of approximately \$265,000 (Idaho/Washington). For RY1 the calculation of the operating expense included in this case was calculated based on Idaho’s share of prorated 2021 and 2022 expenses, offset by existing vegetation management expense included in the 2019 test period of \$81,000 (Idaho-share). See Andrews workpapers for analysis.

1 Wildfire balancing account to track expenses over the 10-year life of the Wildfire Plan. As
2 shown in Table No. 3 above, the O&M expenses on a system basis over the 10-year life of the
3 Wildfire Plan increases from \$2.4 million in 2020 and \$5.4 million in 2021 to a maximum
4 increase of \$7.4 million in 2024, before declining over the remaining years to \$5.1 million in
5 2029, producing a “bell-shaped” curve. Given this expected “bell-shaped” curve of expenses,
6 in order to protect customers by ensuring customers pay no-more/no-less of the O&M costs
7 of this Wildfire Plan, the Company believes it prudent for the Commission to establish a two-
8 way balancing account for these costs. By establishing a base level of expense in this case,
9 and each subsequent general rate case following, and allow the Company to track and defer
10 the differences up or down over time, will ensure customers pay no more than the actual
11 wildfire expenditures over the 10-year plan.

12 Approval by this Commission to defer the incremental expenses associated with the
13 Company’s Wildfire Plan prior to new rates going into effect, as well as track the on-going
14 expenses versus an approved base over the life of the 10-year plan, would allow the Company
15 to set these costs aside for an opportunity to recover these costs in future rate proceedings.
16 Any costs deferred and set aside for a future period will provide this Commission and other
17 parties the opportunity to review the costs after-the-fact and make a prudence determination
18 prior to the Company receiving recovery of the prudently incurred costs through retail rates.

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

20 A. Yes.