

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-200900

DOCKET NO. UG-200901

DOCKET NO. UE-200894

REBUTTAL TESTIMONY OF

DAVID R. HOWELL

REPRESENTING AVISTA CORPORATION

I. INTRODUCTION

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

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

Q. Have you filed direct testimony in this proceeding?

A. Yes. My testimony and exhibits detailed the Company's response to the increasing threat of wildfires within Avista's service territories by proactively implementing its Wildfire Resiliency Plan. Avista's Wildfire Resiliency Plan ("Plan") reflects the Company's 130-year operating history combined with recent efforts to quantify and respond to the financial, safety-related, and service reliability risks associated with wildfires. I sponsored exhibits Exh. DRH-2 through Exh. DRH-7, as follows:

- Exh. DRH-2 - Wildfire Resiliency Plan
- Exh. DRH-3 - Wildfire Risk Analysis Summary, Proposed Actions (September 2019)
- Exh. DRH-4 - Wildfire Resiliency Cost Forecast (January 2020)
- Exh. DRH-5 - Wildland Urban Interface (WUI) Map
- Exh. DRH-6 - Wildfire Resiliency Communications Plan
- Exh. DRH-7 - Wildfire Resiliency Plan Capital Business Case

Q. Will you be addressing in this testimony the Company's response to the proposed Wildfire Mitigation Deferral, Wildfire O&M Balancing Account or the Pro Forma Adjustments related to Wildfire capital and expense?

A. No, I will not. Company witness Ms. Andrews will provide the Company's rebuttal to the testimonies filed that were not supportive of the Company's requests in this case. My testimony will respond more generally to the technical testimony provided, in particular, by Public Counsel.

1 **Q. Would you briefly describe the position of the parties with respect to**
2 **testimony on Wildfire Plan cost recovery?**

3 A. Yes. Although Staff does not take issue with the Wildfire Plan itself, Staff does
4 take issue with costs included in this case with respect to capital and expenses beyond incurred
5 in 2020, and takes issue with Avista’s Wildfire O&M Balancing Account, proposed to track
6 O&M expenses over the life of the 10-year plan. Staff also does not support Avista’s deferred
7 accounting request to defer, for later recovery, costs incurred from January 1, 2021 to
8 September 30, 2021. Staff would remove \$11.6 million of capital and \$2.8 million of
9 expenses, thereby reducing Avista’s revenue requirement by \$4.0 million. (See Exh. AIW-
10 1T¹)

11 Public Counsel would also reject portions of Wildfire Plan cost recovery in this case
12 for reasons described below, removing \$11.5 million amount of capital. However, since they
13 are supportive of Avista’s pro formed wildfire expenses, they only remove \$234,000 of
14 expense associated with depreciation expense on removed capital. Public Counsel’s proposed
15 treatment reduces Avista’s revenue requirement by \$1.3 million.² Public Counsel also
16 supports Avista’s Wildfire O&M Balancing Account and its deferred accounting request to
17 defer expenses incurred from January 1, 2021 to September 30, 2021.³

18 Finally, for its part, AWEC entirely removes Avista’s Wildfire capital additions of
19 \$13.1 million, instead using the overall 2020 additions incorporated elsewhere by Mr.
20 Mullins⁴. Mr. Mullins removes all pro forma wildfire expenses, beyond actual 2020 expenses

¹ White Exh. AIW-1T, pg 24, ll. 10 – pg. 25, ll. 14.

² Crane Exh. Acc-1T, p. 37, ll. 10-16.

³ Alvarez, Exh. PADS-1T, p. 22, ll. 9-13.

⁴ Ms. Schultz discusses Mr. Mullins’ inclusion of all 2020 capital additions on an average-monthly-average basis at Exh. KJS-3T.

1 incurred, in the amount of \$2.5 million, and does not support Avista’s Wildfire O&M
2 Balancing Account, or its request for deferred accounting of the 2021 wildfire expenses
3 incurred before new rates are in effect. AWEC thereby reduces Avista’s revenue requirement
4 by \$3.8 million.⁵

5 Ms. Andrews addresses each of these responsive testimonies of Staff, Public Counsel
6 and AWEC further in her rebuttal testimony.

7 **Q. To lay the groundwork for your rebuttal testimony, can you briefly**
8 **describe Avista’s Wildfire Resiliency Plan (Plan) and how it was developed?**

9 A. Yes. The Plan, appended as Exh. DRH-2, was published in May of 2020, the
10 culmination of 18 months of development starting with project chartering and goal setting,
11 risk tabletop analysis, risk assessment, cost forecasting, various stages of internal review and
12 approval, combined with feedback from various sources, including fire protection agencies,
13 peer utilities, industry manufacturers, community leaders, and regulators. Since that time, we
14 have been working to implement elements of the Plan. The Plan is comprised of four major
15 categories. The first element is “grid hardening” to reduce spark ignition events and make the
16 system more resilient. Second is enhanced vegetation management practices. The third
17 involves situational awareness, primarily grid control and monitoring technology and use of
18 dry land mode. And fourth is emergency operations and planning, which includes partnerships
19 and operational tactics.

20 The Plan was developed as a ‘risk-based’ approach to mitigating wildfires. It was
21 developed in collaboration with internal subject matter experts and Northwest industry peers
22 to ensure the Plan included current industry best practices, was aligned where appropriate with

⁵ Mullins Exh. BGM-1T, p. 38 ll. 17-20, p. 39, ll. 3-5, and p. 42, ll. 6-9.

1 peer plans, and was specifically designed to address the unique geographic risks and operating
2 conditions of Avista's service territory.

3 In May and June of 2019, a series of Avista risk workshops were held to provide
4 baseline information and risk matrices for several potential strategies. Avista drew from
5 subject matter experts across the Company, including asset management, enterprise risk,
6 engineering, line operations, system operations, regulatory compliance, and other groups.

7 External input to Avista's plan was provided through the Pacific Northwest Wildfire
8 Working Group,⁶ a peer group of utilities from the Northwest that came together to
9 specifically address the evolving threat of wildfire, to better understand the risk, share best
10 practices, and ensure that the administration of wildfire plans are consistent where appropriate
11 and aligned with the each company's unique geographic and operating conditions.

12 Avista leveraged subject matter experts from both within and outside of the Company
13 to quantify the 10-year inherent risk of fire versus the 10-year managed risk of deploying
14 competing strategies, considering factors including safety, impacts to customers, and
15 competing costs. Solutions to address wildfire risks, when possible, included re-tasking or
16 retooling of existing programs to pivot from strictly reliability-based measures towards
17 mitigating the risk of wildfire.

18 Avista's wildfire effort was spurred by the potential consequences of not taking
19 meaningful action to mitigate wildfire risk. The results of inaction can be seen and inferred
20 in a number of recent events in California.

21 **Q. Messrs. Alvarez and Stephens, on behalf of Public Counsel, argue that**

⁶ The Pacific Northwest Wildfire Working Group included a group of peer utilities brought together by Avista Utilities. Participants included Puget Sound Energy, Portland General Electric, PacifiCorp, Rocky Mountain Power, Berkshire Hathaway Energy, Chelan PUD, NorthWestern and Idaho Power.

1 **“The question of how much more Avista should do above and beyond industry standard**
 2 **practices to reduce wildfire risk should be informed by the amount of actual risk**
 3 **reduction Avista customers will receive for the amount of money customers will pay.”**
 4 **(emphasis added) (Exh. PADS-1T, p. 8, ll. 13-15). Has the Company made an effort to**
 5 **compare the costs of its Wildfire Program with other companies that have a published**
 6 **plan?**

7 A. Yes. In fact, it could be argued that Avista’s plan is conservative by
 8 comparison. The Company examined the Wildfire Resiliency Plans filed by San Diego Gas
 9 & Electric,⁷ Pacific Gas & Electric,⁸ Southern California Edison,⁹ and PacifiCorp (California
 10 only)¹⁰ who are required to report expenditures on a uniform basis to the California Public
 11 Utilities Commission every year. Avista also reviewed plans filed by NV Energy¹¹ and Rocky
 12 Mountain Power.¹² Finally, we examined Idaho Power as well, though they do not account for
 13 wildfire programs and expenditures in the same manner as the other utilities and so are not a
 14 direct comparison to Avista.¹³ We looked at a number of wildfire spending comparisons,
 15 including average cost-per-customer, average cost-per-line-mile of transmission and
 16 distribution, type of grid “hardening“ activities engaged in by each, and the overall percent

⁷ <https://www.sdge.com/sites/default/files/regulatory/SDG%26E%202021%20WMP%20Update%2002-05-2021.pdf> page 7-8

⁸ https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/2021-Wildfire-Safety-Plan.pdf pg. 36-37

⁹ <https://www.sce.com/sites/default/files/AEM/Wildfire%20Mitigation%20Plan/2021/SCE%202021%20WMP%20Update.pdf> pg. 30-31

¹⁰ https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/wildfire-mitigation/R.18-10-007_PacifiCorp_2021_Wildfire_Mitigation_Plan_Update_3-5-21.pdf pg. 23-24

¹¹ <https://www.nvenergy.com/safety/ndpp> - Download PUC Plan via this webpage. (Note that this was scanned in so is not searchable), pages 35-92, 109, 113, 124. Summary chart on pg. 129-131

¹² https://www.rockymountainpower.net/content/dam/pcorp/documents/en/rockymountainpower/rates-regulation/utah/filings/docket-20-035-04/10-05-20-phase-i-revenue-requirement-rebuttal-testimony/07_Mansfield_Testimony_and_Exhibits.pdf pg. 2

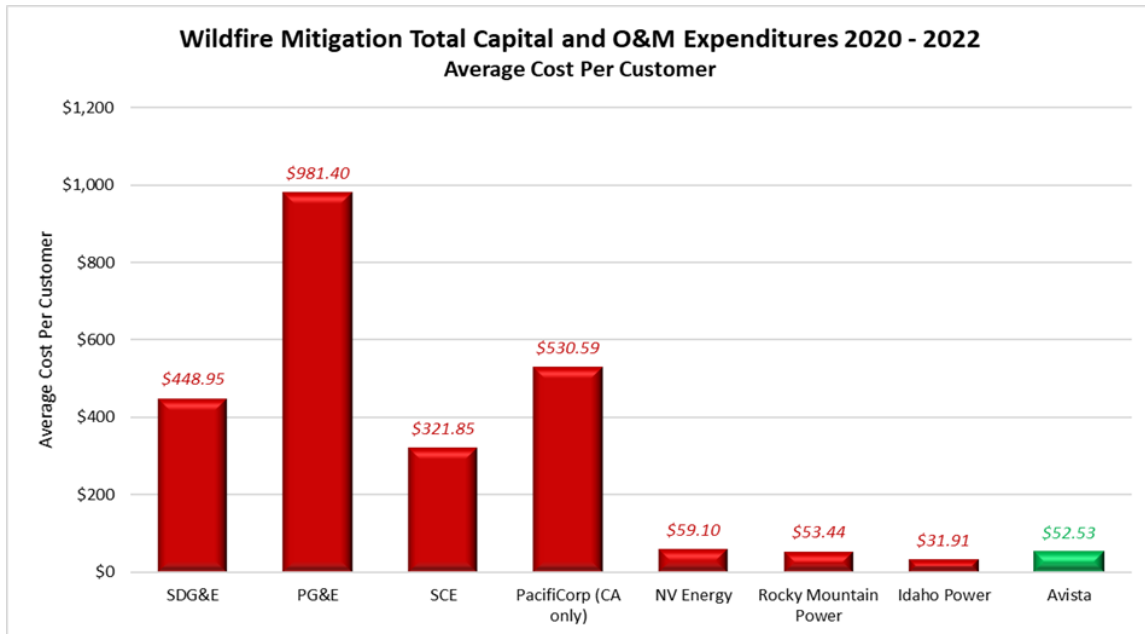
¹³ <https://puc.idaho.gov/Fileroom/PublicFiles/ELEC/IPC/IPCE2102/Staff/20210408Comments.pdf> pg. 7-8

1 of expenditures on capital versus O & M by each, all for comparison purposes. We used the
 2 average of three years of actual or budgeted spending for each company (2020-2022), as that
 3 is what is filed with their Commissions. This research indicates that Avista is closely aligned
 4 with utilities across the nation with the elements of its Plan and is, in fact, conservative in its
 5 spending, as shown in the illustrations below. As can be seen, Avista’s approach is in no way
 6 “above and beyond industry standard practices”,¹⁴ as suggested by Public Counsel.

7 **Q. Beginning with the first comparison of average cost-per-customer, what**
 8 **did you find?**

9 A. Avista’s average cost per-customer-per year (including operations and capital)
 10 for the period 2020-2022 is \$52.53, which is among the very lowest of the group, as shown in
 11 Illustration No. 1 below:¹⁵

12 **Illustration No. 1 - Wildfire Program Element Comparison**¹⁶



¹⁴ Exh. PADS-1T, p. 8, ll. 13-15.

¹⁵ See Notes 7-13 appearing on the previous page. Note Idaho Power does not account for wildfire expenditures in the same way as the other utilities so does not provide a direct comparison.

¹⁶ (See, footnotes 9-14, at pp. 5-6)

1 **Q. Regarding the “average wildfire mitigation cost-per-line mile”, how does**
 2 **Avista compare?**

3 A. Please now refer to Table No. 1 below which compares the “average cost-per-
 4 line mile” with other companies identified above who have established programs. For Avista,
 5 that number is \$973 per-line-mile, while the California companies range anywhere from
 6 \$7,299 to \$39,994 per mile.

7 **Table No. 1 - Wildfire Mitigation Cost Per Circuit Mile**¹⁷

	Miles of Distribution	Miles of Transmission	Total Line Miles (Approximate)	Average Total Wildfire Mitigation Cost 2020-2022	Wildfire Mitigation Cost Per Mile
<i>SDG&E</i>	22,360	1,920	24,280	\$628,524,000	\$25,886
<i>PG&E</i>	106,681	18,466	125,147	\$5,005,145,333	\$39,994
<i>SCE</i>	91,375	12,635	104,010	\$1,609,232,333	\$15,472
<i>PacifiCorp (CA only)</i>	2,522	729	3,252	\$23,734,333	\$7,299
<i>NV Energy</i>	14,000	1,900	15,900	\$78,912,233	\$4,963
<i>Rocky Mountain Power</i>	n/a	n/a	18,000	\$50,769,020	\$2,821
<i>Idaho Power</i>	27,968	4,830	32,798	\$15,952,500	\$486
<i>Avista</i>	19,000	2,770	21,370	\$20,799,944	\$973

14 Electric distribution grid hardening is by far the most cost intensive element of
 15 Avista’s strategy. Grid Hardening is a capital-intensive issue by its very nature. Outage data
 16 collected between 2014 and 2018 demonstrates that, on average, Avista experiences
 17 approximately 600 non-storm related equipment failures annually. These failures include
 18 direct pole fires and primary wire and connector failures. The former produces direct ignition
 19 of wood poles and the latter can lead to conductor on the ground. Downed conductor is a
 20 significant driver of spark-ignition sources. Avista’s approach to grid hardening is very direct.

21 Avista is performing industry standard grid hardening measures to make our grid more

¹⁷ Note: Rocky Mountain Power did not provide its miles of distribution and transmission lines broken out individually in their filings.

1 resilient and help prevent wildfires and at a reasonable cost based on the information we
 2 currently have available, industry best practices, expert guidance from both inside and outside
 3 the Company, and the growing threat of wildfires to our customers and to our infrastructure.
 4 Like any Plan, priorities will change, risk levels will change, cost predictions will change, and
 5 the mission will evolve and adapt. Avista is committed to a concentrated 10-year strategy to
 6 fundamentally reduce the risk of Wildfire to our customers, our employees, and stakeholders.
 7 But we fully recognize and accept the fact that Wildfire Resiliency will evolve over time as
 8 we collect data and deepen our experience.

9 **Q. Does Staff support increased attention by Avista to wildfire mitigation?**

10 A. Yes. Commission Staff sees justification in expenditures related to mitigating
 11 potential wildfires, stating:

12 Staff’s research shows that there is certainly a basis for action to mitigate
 13 wildfires. North America has been enduring a 20-year megadrought. Huge fire
 14 losses have occurred in all three west coast states, often utility caused. The small
 15 eastern Washington town of Malden was burned off the map during last year’s
 16 wildfires. The Legislature is deliberating SSB-1168, a wildfire task force bill.
 17 All these items point to the need for action to mitigate wildfires sooner rather
 18 than later. (Exh. AIW-1T, p. 20, ll. 13-16)¹⁸

19 **Q. Messrs. Stephens and Alvarez argue, “If Avista cannot accurately identify**
 20 **the drivers of equipment-related wildfires, it cannot possibly identify potential solutions**
 21 **to those drivers, nor can it accurately evaluate the risk-reduction levels associated with**
 22 **various potential solutions.” (Exh. PADS-1T, p. 16, ll. 11-14). Have you examined the**
 23 **type of “grid hardening” activities of other utilities to see what they consider to be**
 24 **equipment-related wildfire drivers?**

¹⁸ While Ms. White expresses support for expenditures related to mitigating potential wildfires, Staff does not however, support additional costs in this case beyond 2020 levels, even though rates in this case are being set for the rate effective period is October 1, 2021 through September 30, 2022.

1 A. Yes, we have. The utilities with filed Wildfire Plans have common elements
 2 related to equipment programs they consider critical to their wildfire mitigation efforts. The
 3 most common elements identified in their Wildfire Mitigation Plans are replacing wood poles
 4 with steel in high risk fire areas, replacing wood crossarms with fiberglass crossarms,
 5 strengthening vegetation management efforts, fuse replacement, sectionalizing schemes
 6 (Avista’s Dry Land Mode), covered conductor, and small wire replacement. Table No. 2
 7 below compares the type of grid-hardening activities by utility.

8 **Table No. 2 – Grid Hardening Measures by Utility**

	Wood to Steel	Fiberglass Crossarms	Fire Wrap	Covered Conductor	Fuses / Sectionalizing Devices	Small/Bare Wire Replacement	Enhanced Veg. Inspections	Installing Weather Stations / Cameras	Targeted Undergrounding
<i>San Diego Gas & Electric</i>	Yes	Yes	Unknown	Yes	Yes	Yes	Yes	Yes	Yes
<i>Pacific Gas & Electric</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Southern California Edison</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>PacifiCorp (California only)</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>NV Energy</i>	Yes	Unknown	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Rocky Mountain Power</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
<i>Idaho Power</i>	Yes	Yes	Yes	No	Yes	Unknown	Yes	Yes	No
<i>Avista</i>	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Evaluating

14
 15 The information presented in Avista’s Wildfire Mitigation Plan contains no new or
 16 unverified ideas but are based upon industry standard approaches being developed across the
 17 U.S. as a result of wildfire risks and mitigation efforts. As shown in Table No. 2 above, Avista
 18 actively engages in fewer hardening activities than the others at present, suggesting that we
 19 are, if anything, somewhat conservative in our approach. Even so, we remain closely aligned
 20 with what more experienced utilities have determined to be worthy activities.

21 **Q. Does Staff wish to “second guess” our particular strategies?**

22 A. No, it does not. Avista has made a prudent start in developing a strategy and
 23 plan related to wildfire mitigation. Grid hardening and Dry Land mode are important elements

1 to a comprehensive plan related to reducing wildfire risk. Staff witness Ms. White (Exh. AIW
2 at p. 21, ll. 13-14) says:

3 Staff does believe the plan to be a good-faith effort by the Company and its
4 subject matter experts. Staff's expertise lies elsewhere than in wildfire
5 mitigation and must leave picking and choosing among facets of the Wildfire
6 Plan to the subject matter experts who developed the Plan. As such, Staff does
7 not feel that singling out individual parts of the plan for potential denial, such
8 as crossarm replacement, is within the scope of Staff's expertise. Such an errand
9 would be, in Staff's estimation, analogous to the managed care plan accountant
10 who dictates what care a patient can and cannot receive, overriding what a
11 patient and their physician have decided on the best course of treatment for that
12 patient.

13
14 In fact, Staff, commends Avista for being the first investor-owned utility in
15 Washington to file such a plan. (Exh. AIW-1T, pg. 22, ll. 1-21)

16 **Q. Are the "grid hardening" programs something unique to wildfire**
17 **mitigation efforts?**

18 A. No. It is also important to reiterate that neither Transmission nor Distribution
19 Grid Hardening programs are new programs. Instead they are existing programs that are being
20 "fast tracked" to effect a significant change in a compressed time scale (10 years), focused
21 specifically on high risk fire zones versus a system-wide approach. Since 2006, Avista
22 transmission lines have been constructed, reconstructed, and maintained by replacing wood
23 poles with steel poles. Avista's Fire Mesh pole wrapping program, also identified in Wildfire
24 Resiliency, refreshes a fire-retardant pole painting program that began in the early 2000's
25 following a series of fires that threatened critical infrastructure, including transmission
26 interconnections with BPA, Idaho Power, and the Mid-Columbia trading hub. Again, not a
27 new program, simply retooled and drawn under the umbrella of Wildfire Resiliency.
28 Fiberglass crossarms were adopted into Avista construction and material standards in the late

1 1990's to reduce pole fires. In Avista's service territory, approximately 1,000 miles of small
2 copper wire remains, with the majority of that conductor being installed between 1920 and
3 1940. As part of Grid Hardening, obsolete wire types (aka small copper wires) have been
4 systematically replaced over time. All of these programs have been previously accepted by
5 the Commission and are continuing under the Wildfire umbrella as we consciously focus these
6 past efforts into high fire risk areas.

7 **Q. Messrs. Stephens and Alvarez also seem to question the overall proportion**
8 **of capital versus expense (e.g. vegetation management) dedicated to its wildfire planning**
9 **efforts, suggesting that Avista's efforts at "grid hardening" provide a lesser risk**
10 **reduction per dollar spent. (Exh. PADS-1T, p. 21) Would you comment?**

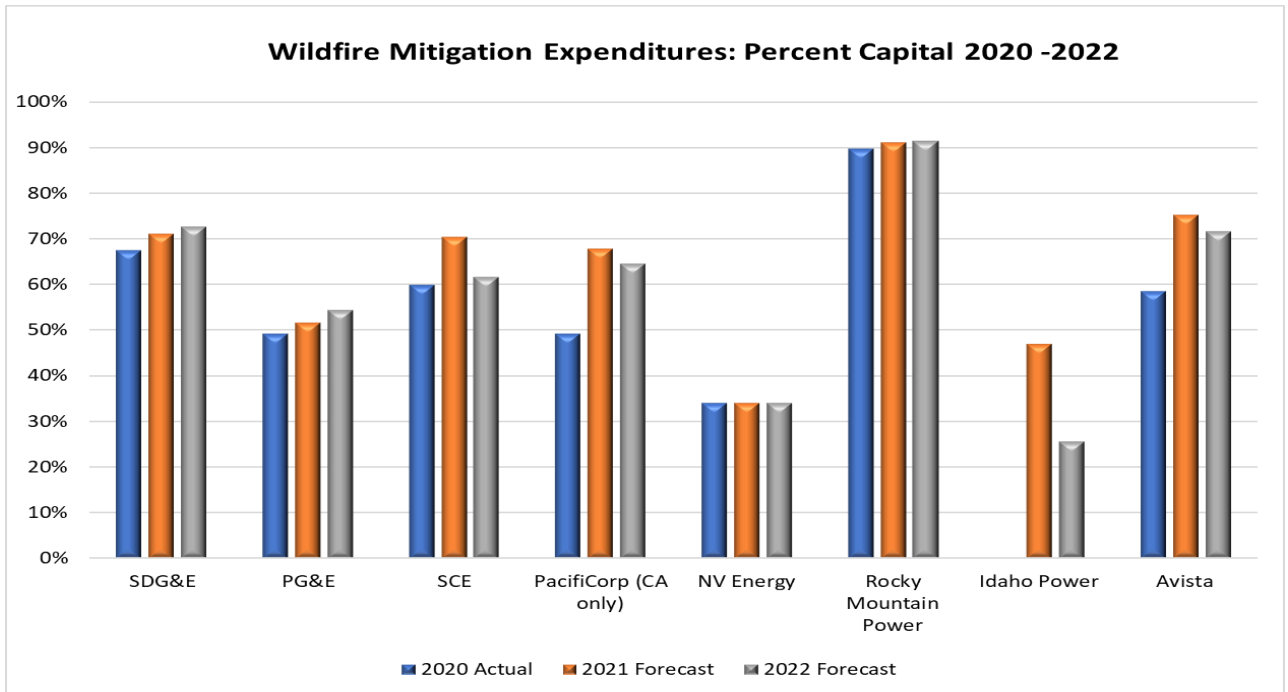
11 A. The overall benefit-cost ratio of capital investments associated with grid
12 hardening activities is lower than expense-related activities such as enhanced vegetation.
13 However, it should be noted that grid hardening costs are contained within the 2020-2029
14 operating horizon while the expense related activities such as annual risk tree inspections and
15 removals will persist well beyond 2029. Also, the confidence level associated with grid
16 hardening is higher than other activities including enhanced vegetation. Similar capital
17 replacement programs such as grid modernization and wood pole management give us insights
18 as to the expected performance after treatments, so although benefit-cost ratios are lower, they
19 are still very favorable and more certain.

20 **Q. Have you also compared the mix of capital and expense associated with**
21 **the wildfire plans of each of the companies discussed previously?**

22 A. Yes, Illustration Nos. 2 and 3 contain bar charts showing this "mix" of
23 expenditure type, demonstrating that Avista does not differ materially from the others with

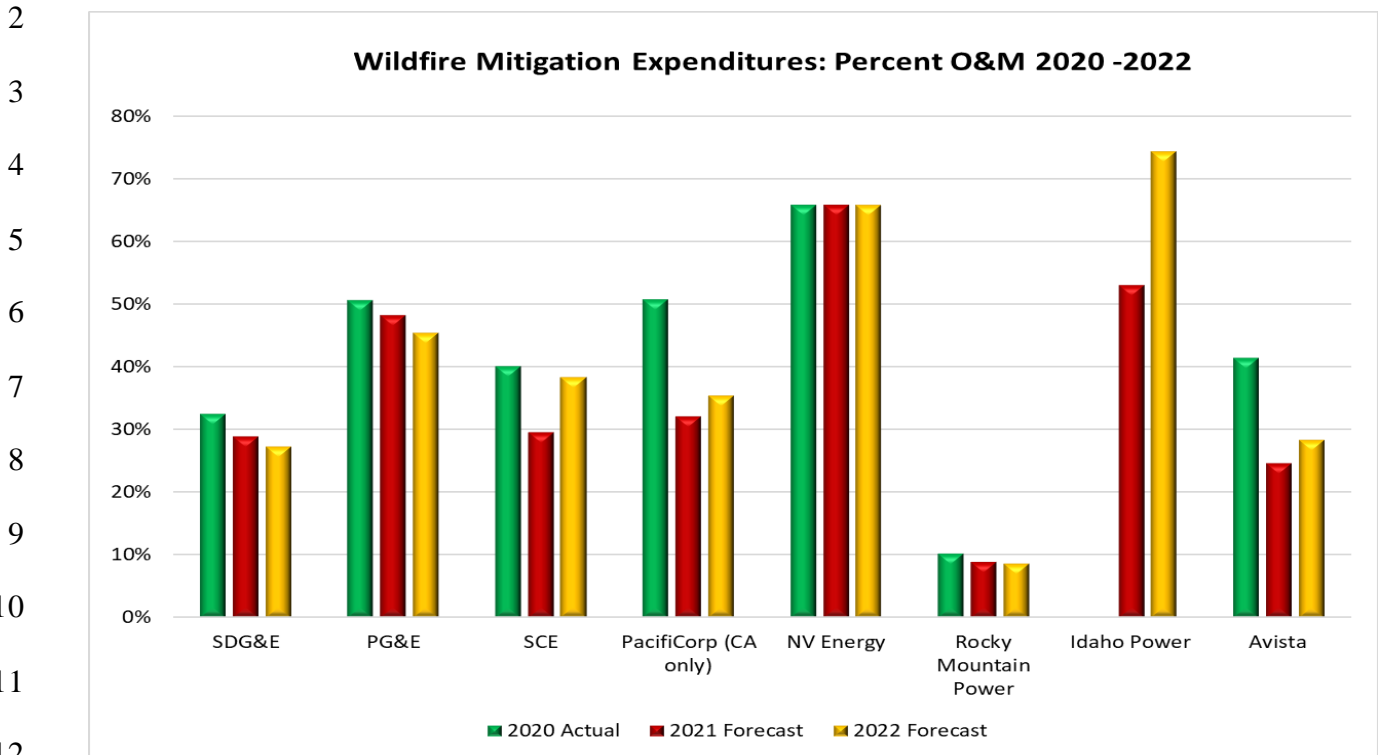
1 respect to the proportional amount of capital and O&M spent on wildfire efforts. Illustration
 2 No. 2 shows the percentage of each utility’s wildfire plan capital expenditures for the next
 3 three years (timeframe as required by the California Public Utility Commission) and
 4 Illustration No. 3 indicates the percentage of O&M expenditures.

5 **Illustration No. 2 – Wildfire Resiliency Capital Expenditures by Utility**¹⁹



¹⁹ (See footnotes 9-14 on pp. 5-6)

1 **Illustration No. 3 – Wildfire Resiliency O&M Expenditures by Utility**²⁰



13 As Illustration Nos. 2 and 3 demonstrate, the relative proportion of capital versus
 14 O&M dedicated to wildfire efforts largely mirrors that of other companies.

15 **Q. Elsewhere, Public Counsel witnesses contend: “Yet Avista deems this**
 16 **almost imperceptible risk to be substantial enough to propose a multi-hundred-million-**
 17 **dollar program to reduce (but not eliminate) it, ultimately producing little value or**
 18 **increased security for customers. It makes no sense to me at all.” ((Exh. PADS-1T, p. 20,**
 19 **II. 9-16). How would you respond to this?**

20 **A.** This is a disturbing perspective on so many levels. Recent wildfires in the
 21 Western United States have proven that the risk is very real. It is not just in PG&E’s backyard;
 22 it is in our own as well, as demonstrated by the Malden wildfire last year that literally

²⁰ (Ibid.)

1 obliterated the town of Malden in Eastern Washington, destroying the structures and
2 livelihoods of many of the residents. Witnesses for Public Counsel are quite simply “tone
3 deaf” when it comes to this issue. The current fire situation and last year’s fires galvanized
4 Avista's commitment to public, employee, and infrastructure safety, emergency preparedness,
5 and protection of our regional economy, as it has for utilities across the nation. Wildfires
6 represent a growing threat to homes, businesses, and our way of life. Utilities around the U.S.,
7 and especially in the West, are scrambling to develop comprehensive plans to address utility-
8 caused wildfire risk. Avista is working with community leaders, fire experts, other utilities,
9 first responders and various outside agencies in addition to applying our own knowledge,
10 experience, and expertise to develop a plan to protect lives and property, ensure that we are
11 adequately prepared when emergency situations arise, operate in such a manner as to reduce
12 potential risk, and protect our customers and infrastructure specifically related to fire risk.

13 Indeed, if Avista’s proposed measures provide “little value or increased security for
14 customers” as Public Counsel states, one must ask why utilities across the nation with many
15 more analytical resources (and wildfire experience) available to them are making these same
16 measures accepted practices, and further, why Commissions, such as those in California, are
17 supporting and even demanding these expenditures.

18 **Q. Does Staff, for its part, understand this risk?**

19 A. Yes, it does. In Staff testimony, Ms. White states:

20 Staff in no way wishes to diminish either the urgency of the situation regarding
21 wildfire mitigation for our state nor denigrate the effort on Avista’s part. Part
22 of the complexity of this filing is the fact that Avista is the first investor-owned
23 utility in Washington to file such a Plan. As such, Avista deserves
24 commendation for taking such a proactive step. A coordinated, consolidated
25 wildfire effort, in concert with the managers of Washington’s public lands and
26 the state’s emergency responders, Staff believes, is going to be increasingly

1 vital as climate change intensifies. As well, Staff believes that action on this
2 issue should be more than merely hoping for good results from the Company's
3 transmission and distribution system as it is currently configured. (Exh. AIW-
4 1T, p. 20 ll. 21, p. 21, ll. 1-9)

5 And finally, Staff offers this observation: "Staff views this issue as analogous to
6 pipeline safety or environmental remediation in that the results provide a social good, a
7 lessened probability of wildfire disaster, that is desirable for all customers." (Exh. AIW-1T,
8 p. 23 ll. 2-4)

9 **Q. Messrs. Stephens and Alvarez state that Avista's wildfire efforts will cost**
10 **\$3,000 per household based on \$3.267 billion in wildfire expenditures and 250,000**
11 **households. (Exh. PADS-1T, p. 7, ll. 16-119 and p. 8, ll. 1). Are these calculations correct?**

12 A. No. Not even close. This entire assumption is based upon faulty data. To begin
13 with, the 250,000 households number provided by Public Counsel is inaccurate. The 2020
14 Avista Quick Facts, available online or on Avista's customer website, is readily available and
15 states that Avista has 389,911 electric customers as of the end of 2020. Avista's 10-year
16 Wildfire Resiliency Plan is forecast to cost \$326.7 million not \$3.267 billion dollars (\$326.7
17 million would convert to .3267 billion.) Using the correct numbers of \$326,700,000 divided
18 by Avista's electric customer count as of the end of 2020 of 389,911 customers divided by 10
19 years, computes to approximately \$83.79/customer/year or about \$7 per month.

20 **Q. Will Avista's plan evolve over time?**

21 A. Yes. The forecasted cost of executing Wildfire Resiliency will evolve and
22 adapt over time, which is one of the reasons that Avista is proposing to defer expense costs
23 using a balancing mechanism. Quantifying risk is not an exact science and is based on a
24 number of environmental and human behavior factors. Climate change, demographic shifts,
25 and public policy are at the forefront of the wildfire risk discussion. Climate experts believe

1 that beginning around 1970, the number and size of wildfires began to rise dramatically and
2 point to an overall temperature increase of 1.9F°. ²¹ Avista has no control over these factors,
3 but does have at least some measure of control over equipment failures (grid hardening) and
4 tree line strikes (enhanced vegetation management). By reducing the number of probable
5 spark-ignition events, we effectively reduce the number of powerlines involved in wildfires.
6 Even those efforts, of course, are not fool proof.

7 **Q. Public Counsel seems to take issue at the cost-benefit ratio of the Grid**
8 **Hardening program while generally accepting all other elements of the plan. Is this a**
9 **valid conclusion (See Exh. PADS-1T, pp. 10-12)?**

10 A. I previously discussed how Avista's efforts at "grid hardening" are
11 proportional with what other companies are doing in their plans. (See Illustration No. 2 and
12 No. 3 above.) Current ranges for these cost-benefit ratios of various measures are included in
13 this rebuttal testimony but have not changed since the Plan's publication in May 2020. Avista
14 has been careful to present risk as a range of forecasted values rather than a specific value.
15 Based on current cost forecasting, the cost benefit ratio over the 10-year operating horizon
16 can be seen in Table No. 3 as follows:

²¹ Union of Concerned Scientists, "Infographic: Western Wildfires and Climate Change," July 22, 2013, <https://www.ucsusa.org/resources/western-wildfires-and-climate-change#:~:text=Since%201970%2C%20average%20annual%20temperatures,of%20the%20global%20average%20warming>

1 **Table No. 3 - Avista Wildfire Benefit-Cost Estimates**²²

2

3

Wildfire Plan Category:	Benefit-Cost (Pessimistic)	Benefit-Cost (Optimistic)	Forecast Confidence
Grid Hardening & Dry Land Mode	5.4	13.1	High
Enhanced Vegetation Management	103.6	196.4	Medium
Situational Awareness	7.7	30.5	Medium
Operations & Emergency Response	73.2	398.8	Low

4

5

6

7

8

9 This means for every dollar spent in the category of ‘situational awareness’ we would

10 expect between \$7.70 and \$30.50 in return. Medium confidence means that there are average

11 levels of data available to assist in the risk forecasts as compared to a low confidence levels

12 (which could be low confidence due to lack of recorded data and reliance on personal

13 experience.) We understand that ‘enhanced vegetation management’ provides the best return

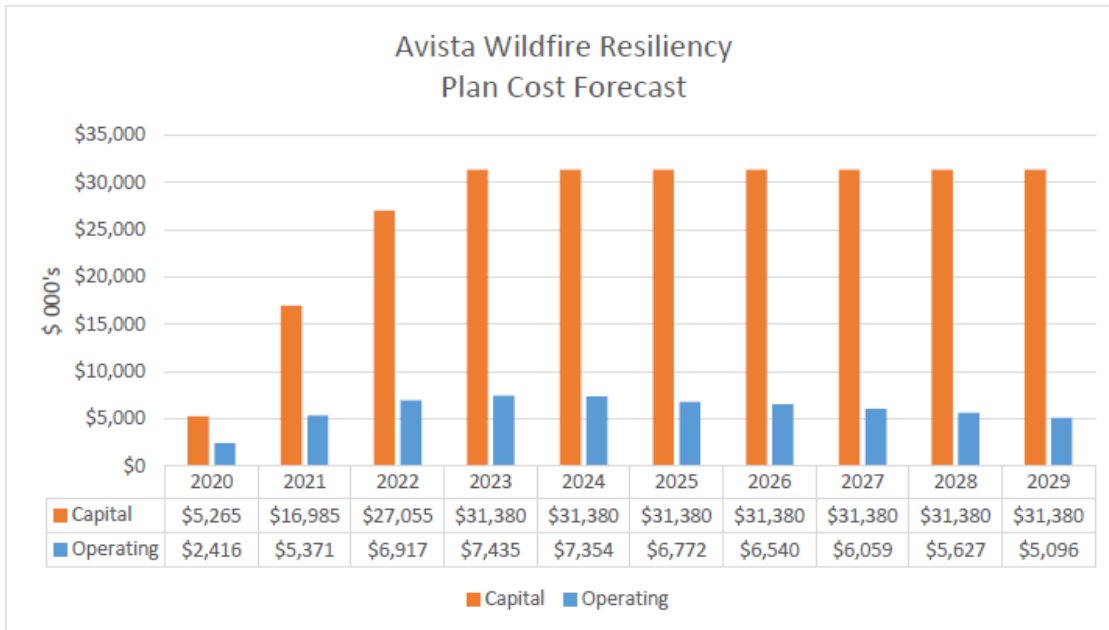
14 on investment, and our efforts are calibrated to expand those efforts over time. But areas need

15 to be addressed. The following chart shows the trend in planned expenditures, demonstrating

16 a further ramping up of vegetation management:

²² Cost-Benefit Values as detailed within Avista’s Wildfire Resiliency Plan.

1 **Table No. 4 – Planned Expenditures over the Life of the Plan**



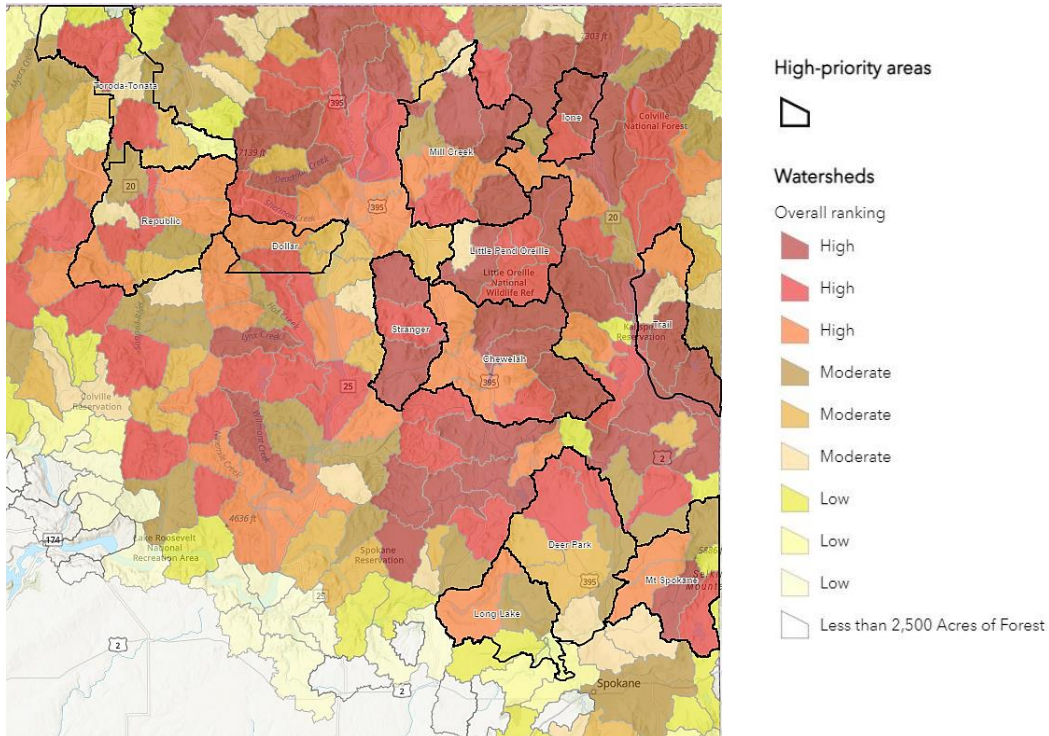
11 **Q. Does Public Counsel testimony sufficiently acknowledge the particularly**
 12 **difficult and risky wildfire environment in which Avista operates?**

13 A. No, it does not. Our service territory is characterized by difficult terrain, vast
 14 stands of vegetation, and a dispersed customer base – all accelerating the wildfire risk. People
 15 continue to develop lands in the Wildland Urban Interface (WUI). Avista is experiencing a
 16 significant influx of customers from the westside of the State, including Seattle and Tacoma,
 17 and also from western Oregon and California. The area of highest concern for Avista is the
 18 Colville District, which contains the bulk of Avista’s high threat fire districts in the
 19 Washington portion of Avista’s service territory. Currently, there are very few barriers to
 20 development and new homes and businesses are proliferating in that area.

21 Forest Health in Northeast Washington is also generally poor. The Washington

1 Department of Natural Resources indicate that 2.7 million acres are rated as unhealthy.²³ The
 2 current DNR map of forest health indicates fuel loading and health problems throughout NE
 3 Washington. In large part, this map mirrors Avista’s Wildland Urban Interface for this zone
 4 (note Spokane is in the lower, right-hand corner).

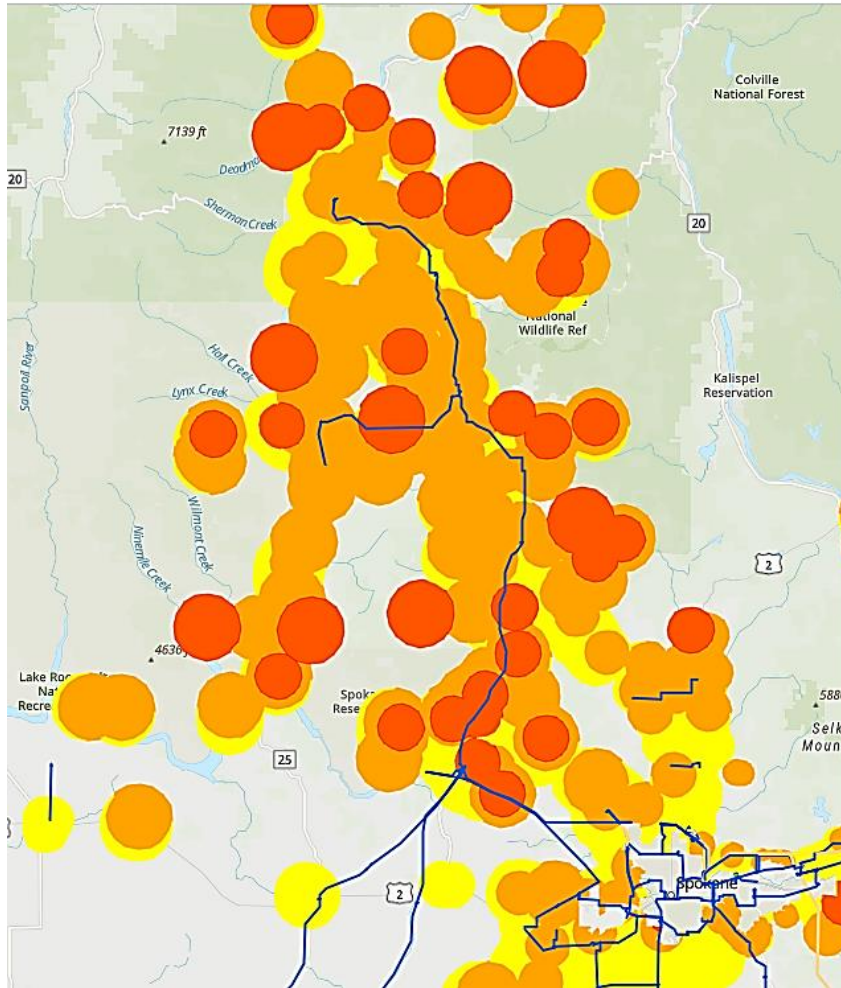
5 **Illustration No. 4 – DNR Map of Forest Health**



16 Below is the Avista Wildland Urban Interface (WUI) as developed, based on data as
 17 of October 2019. It generally indicates that the Colville operating district is dominated by
 18 WUI Tier 2 (orange) and Tier 3 (red) areas. On a system wide basis, approximately 40% of
 19 Avista’s distribution and 20% of transmission assets are in elevated fire risk areas. The
 20 Colville District is the most vulnerable to the outbreak of large fires (fires > 1,000 acres) and
 21 most of Avista’s Wildfire Resiliency Plan is focused in these high fire threat areas.

²³ Washington State Department of Natural Resources, “20-Year Forest Health Strategic Plan: Central and Eastern Washington,” <https://www.dnr.wa.gov/ForestHealthPlan#grants-available-for-forest-organizations>.

1 **Illustration No. 5 – Avista Wildland Urban Interface Map**



16 **Q. Messrs. Stephens and Alvarez argue that it is rare that wood crossarms**
17 **cause fires based on the fact that Avista experiences an average of 92 distribution pole**
18 **fires per year, suggesting that replacing wood crossarms with fiberglass crossarms is**
19 **not a proven strategy for wildfire mitigation and that these fires are rare. (Exh. PADS-**
20 **1T, p. 19, ll. 10-15) Can you address this?**

21 **A. Yes. Avista’s 5-year average for the period 2014-2018 is 92 pole fires per year.**
22 **Though not specifically tracked historically, Avista has determined that the rate of observed**
23 **spark ignition is approximately 100 per year for the same 5-year period. This is based on first**

1 responder observation of spark-ignition activity that ranges from scorch marks up to an active
 2 fire in progress. Avista provided Public Counsel with a chart of historic pole fires on Avista's
 3 system showing a downward trend since the Company began the practice of replacing wood
 4 crossarms with fiberglass crossarms.

5 **Chart No. 1 – Historic Pole Fires**

Number of Distribution Pole Fires		
Year	Count	5 Yr. Ave.
2013	116	
2014	97	
2015	155	
2016	66	
2017	81	103
2018	63	92.4
2019	56	84.2

12 It is known throughout the utility industry that wood crossarms are susceptible to
 13 contamination and deterioration that can lead to pole fires. This is a well-known phenomenon
 14 and is well documented. This information was made available to Public Counsel during
 15 discovery but was apparently ignored.²⁴

²⁴ “Reducing the Risk: Fiberglass Crossarms Used to Combat Utility Pole Fires,” Utility Products Magazine, October 18, 2013, <https://www.utilityproducts.com/safety/article/16002849/reducing-the-risk>
 Michael Lynch, “Methods Utilized for the Prevention of Wood Structure Fires Caused by Leakage Currents,” IEEE, https://ecoelectrical.com/pdf/IEEE_Paper_Templ_v1f.pdf
 Paul M. Ross, “Burning of Wood Structures by Leakage Currents,” IEEE Study published in Transactions of the American Institute of Electrical Engineers, <https://ieeexplore.ieee.org/document/5059441>
<https://patents.google.com/patent/US3344225A/en>
 John Lauletta, “The Industry’s Most Definitive Pole Fire Fact Sheet,” <https://www.exacterinc.com/resources/uploaded/Brochures/Exacter%20Pole%20Fire%20Fact%20Sheet%20Final.pdf>
 Sachin Pathak, “Leakage Current in Wooden Structures Used for Power Distribution,” School of Electrical and Computer Engineering, RMIT University, <https://core.ac.uk/download/pdf/15624502.pdf>
 Steve Torres, “Utility Extinguishes Risk for Pole-Top Fires,” T&D World, <https://www.tdworld.com/electric-utility-operations/tools-and-technologies/article/20963905/utility-extinguishes-risk-for-pole-top-fires>
 Muhammad Tariq Nazir, PhD, “Opinion: How to reduce pole top fires in Australia,” <https://www.theeducatoronline.com/he/news/opinion-how-to-reduce-pole-top-fires-in-australia/271592>

1 **Q. Mr. Stephens alleges that the grid hardening program is “more about**
 2 **resilience to wildfire impacts than it is about wildfire risk reduction, as steel poles do not**
 3 **burn. If this is the case, I would categorize the program as a reliability program, not a**
 4 **wildfire program, and recommend the program be evaluated on its potential to improve**
 5 **reliability.” (Exh. PADS-1T, p. 17, ll. 17-19 and pg. 18 ll. 1-2). Do you agree with this?**

6 **A.** Yes, in part. Public Counsel is correct that replacing wood poles with steel can
 7 improve reliability but also by their nature they create resiliency of our grid infrastructure to
 8 wildfire. The two objectives are not mutually exclusive. Avista has been slowly converting
 9 wood poles to steel through wood pole replacement programs since 2006 after back -to-back
 10 fires burned down portions of the Benton-Othello transmission line. The Wildfire Plan
 11 recommends accelerating that replacement process in the high threat fire districts.

Megan Headley, “Utilities Ready to Invest in FRP Solutions,”

<http://compositesmanufacturingmagazine.com/2020/03/utilities-ready-to-invest-in-frp-solutions/>

John Marks, “Overhead and Underground Distribution Trends,”

<https://electricenergyonline.com/energy/magazine/6/article/Overhead-Underground-Distribution-Trends.htm>

SDG&E standards show all fiberglass crossarms. Page 159, [https://www.sdge.com/mwg-](https://www.sdge.com/mwg-interna/de5fs23hu73ds/progress?id=III6qZViqGCcFxbTJ5QvYML9PWYIfJht_ISCc9lownA)

[interna/de5fs23hu73ds/progress?id=III6qZViqGCcFxbTJ5QvYML9PWYIfJht_ISCc9lownA](https://www.sdge.com/mwg-interna/de5fs23hu73ds/progress?id=III6qZViqGCcFxbTJ5QvYML9PWYIfJht_ISCc9lownA)

Southern Company standard is fiberglass crossarms, [https://uploads-](https://uploads-ssl.webflow.com/594d4ebb90aa3972821b2c55/5b296cd83fdf7e21b799e562_Ultravex_white_paper_April_Draft1.pdf)

[ssl.webflow.com/594d4ebb90aa3972821b2c55/5b296cd83fdf7e21b799e562_Ultravex_white_paper_April_Draft1.pdf](https://uploads-ssl.webflow.com/594d4ebb90aa3972821b2c55/5b296cd83fdf7e21b799e562_Ultravex_white_paper_April_Draft1.pdf)

GeoTech “PUI Technical Information,” Crossarm Technical Information and Testing Methodologies,

<https://emspartnersinc.com/wp-content/uploads/2019/06/PUI%20AE-Technical-Information-PL010.pdf>

"Fiberglass Crossarms Used to Combat Utility Pole Fires"

<https://www.utilityproducts.com/safety/article/16002849/reducing-the-risk>

Steve Torres, “Utility Extinguishes Risk for Pole-Top Fires,” January 27, 2014, T&D World,

<https://www.tdworld.com/electric-utility-operations/tools-and-technologies/article/20963905/utility-extinguishes-risk-for-poletop-fires>

IEEE Power & Energy Society Technical Report “Resilience Framework, Methods, and Metrics for the

Electricity Sector,” October 20, 2020, [https://www.naesco.org/data/industryreports/DOE-](https://www.naesco.org/data/industryreports/DOE-IEEE_Resilience%20Paper_10-30-2020%20for%20publication.pdf)

[IEEE_Resilience%20Paper_10-30-2020%20for%20publication.pdf](https://www.naesco.org/data/industryreports/DOE-IEEE_Resilience%20Paper_10-30-2020%20for%20publication.pdf)

Xcelenergy Integrated Distribution Plan (2020-2029), <https://www.xcelenergy.com/staticfiles/xeresponsive/Company/Rates%20&%20Regulations/IntegratedDistributionPlan.pdf>

[responsive/Company/Rates%20&%20Regulations/IntegratedDistributionPlan.pdf](https://www.xcelenergy.com/staticfiles/xeresponsive/Company/Rates%20&%20Regulations/IntegratedDistributionPlan.pdf)

T&D World, “Fiberglass Crossarms,” August 13, 2013, [https://www.tdworld.com/electric-utility-](https://www.tdworld.com/electric-utility-operations/article/20963314/fiberglass-crossarms#:~:text=They%20are%20lighter%20than%20wood,woodpeckers%2C%20and%20will%20never%20rot)

[operations/article/20963314/fiberglass-](https://www.tdworld.com/electric-utility-operations/article/20963314/fiberglass-crossarms#:~:text=They%20are%20lighter%20than%20wood,woodpeckers%2C%20and%20will%20never%20rot)

[crossarms#:~:text=They%20are%20lighter%20than%20wood,woodpeckers%2C%20and%20will%20never%20rot](https://www.tdworld.com/electric-utility-operations/article/20963314/fiberglass-crossarms#:~:text=They%20are%20lighter%20than%20wood,woodpeckers%2C%20and%20will%20never%20rot)

1 Approximately 20% of Avista transmission lines are located in these high fire threat districts.
2 Though we do expect improved reliability performance of steel versus wood, the objective of
3 steel conversion is fireproofing these infrastructure assets in high fire risk areas, thus the focus
4 on WUI 3 tier areas. While the actions outlined in the Plan will provide reliability benefits,
5 the focus of the Plan, and the intended benefit provided by the Plan, comes in the form of
6 reducing and/or mitigating the substantial financial and public safety risks associated with
7 wildfire by reducing the likelihood of utility equipment being involved in the start of, or
8 contributing to, wildfires.

9 In September of 2020, 11 miles of the Chelan-Stratford 115 kV line were completely
10 destroyed in the Pearl Hill Fire. That same line was earlier involved in a 10,000-acre fire in
11 mid-July that forced the evacuation of Mansfield, WA. The Columbia basin is vulnerable to
12 grass and brush fires and many Avista facilities have been impacted in recent years, including
13 the Walla Walla-Wanapum 230 kV line (May 2019) together with the Benton-Othello 115
14 kV, Lolo-Oxbow, Beacon Hill corridor and several others. Protecting transmission assets from
15 the impact of fire was fully embraced in 2006 when Avista transmission design adopted the
16 use of tubular steel poles to replace existing wood structures. Over time, all of Avista wood
17 pole transmission lines will be converted to steel. The Wildfire Resiliency program offers an
18 opportunity to compress the timing of that goal with a focus on the high threat fire areas.

19 **Q. Avista's initial wildfire plan includes 28 risk reduction treatments. Is it**
20 **necessary to address all recommended treatments?**

21 A. Avista's wildfire plan is a risk-based plan. No one element defines Avista's
22 plan or addresses all wildfire risks and spark ignition sources. As a risk-based plan, the
23 customer value is recognized by the aggregation of wildfire treatments working together.

1 Each treatment implemented provides another risk reduction measure and layer of protection.

2 **Q. Do you have anything to add to this testimony?**

3 A. We actually agree with Public Counsel on some points. Public Counsel
4 recommends Commission approval on the non-grid hardening elements of the Plan, including
5 the use of a deferral mechanism to capture O&M related expenses (e.g. enhanced vegetation
6 management) ensuring that customers are only paying for actual dollars invested and not
7 based on cost projections. However, we object to Public Counsel inferences that risk and cost
8 projections were inadequately generated, vetted, reviewed, and ultimately approved by
9 executive level management. We also do not believe that Grid Hardening is any way
10 imprudent or out of step or character with industry norms and trends. In fact, the opposite is
11 true. Delaying or rescinding efforts to modernize and harden the grid would be a marked
12 departure from what peer utilities are doing for wildfire.

13 Avista's Plan is reasonable and properly addresses a current and evolving risk. Acting
14 now is appropriate in mitigating the threat of wildfire. Avista's initial Plan is appropriate for
15 the geographic and operating conditions of Avista's service territory. Implementing Avista's
16 wildfire resiliency Plan will provide for increased operating and customer safety and reflects
17 prudent expenditures.

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

19 A. Yes, it does.