BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. AVISTA CORPORATION d/b/a AVISTA UTILITIES, Respondent.	DOCKET UE-240006 and UG-240007 *(Consolidated)*

RESPONSE TESTIMONY OF

ROGER D. COLTON

ON BEHALF OF THE ENERGY PROJECT

EXHIBIT RDC-1T

July 3, 2024

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I. Introduction and Summary

Q. PLEASE STATE YOUR NAME, PRONOUNS, AND ADDRESS.

A. My name is Roger Colton and I use the pronouns he, him, and his. My address is 34 Warwick Road, Belmont, Massachusetts.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am owner of the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations and public utilities on rate and customer service issues involving water/sewer, natural gas and electric utilities.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of The Energy Project (TEP), an intervenor in this proceeding that represents the interests of low-income customers and vulnerable populations. TEP works with Community Action Agencies that provide low-income weatherization and bill payment assistance for customers in Avista's service territory.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A. I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of New Hampshire, Massachusetts, Connecticut, Maryland, Pennsylvania, Ohio, Michigan, Wisconsin, Missouri, Oregon and Washington, as well as in the Canadian provinces of Nova Scotia and British Columbia. My clients include state agencies (e.g., Pennsylvania Office of Consumer Advocate, Maryland Office of People's Counsel, Connecticut Office of Consumers Counsel), federal agencies (e.g., the U.S. Department of Health and Human Services), community-based organizations (e.g., Cleveland Legal Aid Society,

Legal Action of Chicago, Sierra Club), and public and private utilities (e.g., Toledo Water, BC Hydro). Examples of my work include my current projects to assist the Connecticut Office of Consumers Counsel (OCC) in the annual generic review of the low-income affordability initiatives of that state's utilities by the Public Utilities Regulatory Authority. I am also assisting the Massachusetts Attorney General's Office (AGO) in the generic investigation by the Department of Public Utilities (DPU) into the design of low-income affordability programs. I am currently under contract to develop a universal service plan for Nova Scotia. In addition to state-specific and utility-specific work, I engage in national work throughout the United States. For example, I have recently completed a project with the Natural Resources Defense Council to develop a tool by which to assess the financial impact of differing types of low-income bill assistance. A brief description of my professional background is provided in Exhibit RDC-2.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. After receiving my undergraduate degree in 1975 (Iowa State University), I obtained further training in both law and economics. I received my law degree in 1981 (University of Florida). I received my Master's Degree (Regulatory Economics) from the MacGregor School in 1993.

Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY ISSUES?

A. Yes. I have published three books and more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications and

other associated low-income utility issues. A summary of my publications is included in Exhibit RDC-2.

Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR OTHER UTILITY COMMISSIONS?

A. Yes. Most recently, I testified before the Washington Utilities and Transportation Commission ("Commission") in the 2022 proceeding reviewing the Puget Sound Electric Clean Energy Implementation Plan (CEIP) (Docket No. UE-210795). In addition, I testified on behalf of The Energy Project in a 2010 Avista rate proceeding (Docket No. UE-100467). In 2000, I testified on behalf of The Energy Project in a PacfiCorp rate case (Docket No. UE-991832), and on behalf of the Spokane Neighborhood Action Program (SNAP) in an Avista rate proceeding (Docket No. UE-991606). Overall, over the past 40 years, I have testified in more than 340 judicial and regulatory proceedings in 43 states (and various Canadian provinces) regarding utility issues affecting low-income customers and customer service. My testimony has specifically included testimony in various proceedings involving low-income affordability, and low-income program design and operation, along with various rate design issues as they affect low-income customers. A list of the jurisdictions in which I have testified is listed in Exhibit RDC-2.

Q. PLEASE EXPLAIN THE PURPOSE OF YOUR REBUTTAL TESTIMONY.

A. The purpose of my Direct Testimony is to address the following topics:

1. The affordability of electric rates to Avista's low-income customers;
2. The usage levels of low-income customers;
3. The lessons that can be derived from the Avista reporting to date on metrics relating to low-income affordability, low-income payment patterns, and low-income collection patterns; and

4. The importance of maintaining ongoing reporting requirements regarding low-income affordability, low-income payment patterns, and low-income collection patterns.

Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS CONCERNING ENERGY BURDEN AND AFFORDABILITY.

A. My testimony presents data and analysis supporting the following findings and recommendations:

1. A consideration of affordability is a critical task to undertake within the structure of any utility rate case. As bills become increasingly unaffordable, the payment difficulties of those customers who face unaffordability become increasingly substantial as well. Numerous rate case decisions are fundamentally predicated on balancing customer and investor interests. It is necessary for the Commission to understand the customer interests in order to appropriately balance them against the competing investor interests.

2. The current extent of unaffordable natural gas and electric bills does not fully identify the impacts of unaffordable home energy bills in times of high inflation. As demonstrated by a recent Federal Reserve Bank study, inflation today disproportionately affects lower-income households. Lower income families expend a greater share of their income on necessities (which tend to have higher inflation rates); have smaller financial cushions to mitigate the impact of inflation; and may have less of an ability to switch to lower-priced alternatives.

3. Setting utility rates inherently involves a balancing of investor and ratepayer interests. The concerns identified with respect to the unaffordability of Avista rates should be considered in this rate case even outside the consideration of the specific proposals advanced with respect to specific low-income initiatives and data reporting.

4. Using median household income to calculate Avista's energy burden results in an appearance of bill affordability that masks the hardships and unaffordability that exists at lower incomes. Historic critiques, which are also applicable to Avista's service territory, found that the use of median household income bears little relationship to poverty or other measures of economic need, does not accurately reflect the impact on the most vulnerable households, and obscures the effects of rate-setting on low-income customers.

5. To measure home energy affordability, Avista's should perform an Energy Burden Assessment (EBA) annually. The EBA should, on a geographically disaggregated basis, differ from existing reporting in the following aspects.

- The assessment of energy burdens should, on a geographically disaggregated basis, include two sets of data: excess energy burdens, the dollar amount by which energy burdens in a particular geographic area exceed an affordable burden, and the resources available to meet that excess.

- To address the concerns with using median household income I identified, the assessment of energy burdens within each geographic area studied (including zip codes and Census Tracts), should also be based on one or more indicators of low-income status. I recommend use of First Quintile Income.

- The assessment of energy burdens should extend beyond a simple yes/no toggle (i.e., they are either energy burdened or ***not*** energy burdened). A more refined analysis should be presented with a stratification of energy burdens. My recommended stratification is: (1) Affordable (= or <6%); (2) High Burdens (>6% - 10%); (3) Very High burdens (10% to 15%); and (4) Extreme Burdens (>15%).

- The stratification should extend to single fuel burdens as well. A natural gas stratification would include the following: (1) Affordable (= < 2%); (2) High Burdens (2% - 6%); (3) Very High (6% - 10%); and (4) Extreme Burdens (>10%). The stratification of electric non-heating would be: (1) Affordable (= <4%); (2) High (4% - 8%); (3) Very High (8% - 12%); and (4) Extreme Burdens (>12%).

- The assessment of excess energy burdens should include an assessment of the extent to which different types of energy assistance fill the affordability gap revealed by those excess burdens. The gap may be completely filled (e.g., reducing a total energy burden from 15% to 6%), or may be partially filled (e.g., reducing a total energy burden from 25% to 10%).

- The EBA should evaluate the relationship between tiered energy burdens and both the dollar level and age of arrears. This analysis should include arrears in terms of both dollars of arrears and number of accounts in arrears. The assessment should further assess the relationship between tiered energy burdens and the disconnections of service for nonpayment.

- After publishing its EBA, I recommend that Avista use the stratified energy burdens described above in PBR data that measures energy burden, *i.e.,* Metrics 12, 13, 14, and 15.

Q. PLEASE SUMMARIZE YOUR FINDINGS CONCERNING ARREARAGES AND DISCONNECTION FOR NONPAYMENT.

A. My testimony presents data and analysis supporting the following findings:

1. Census Tracts with higher energy burdens correspondingly have disproportionately higher levels of arrears, while, at the same time, those Census Tracts with lower energy burdens have disproportionately lower levels of arrears. Not only do the lowest income Census Tracts have disproportionately more *total* arrears, but the arrears which they have are disproportionately *older* (i.e., long-term) arrears as well. Further, the lowest income Census Tracts have a disproportionately higher percentage of customers that are disconnected for nonpayment disconnections.

2. Census Tracts with a higher percentage of disconnections for nonpayment are often associated with lower incomes, however the correspondingly lower bills in these Census Tracts do not protect customers against the higher rate of disconnections.

3. In comparing the 50 Census Tracts with the highest percentage of disconnections and the 50 Census Tracts with the lowest percentage, I found that Disconnections disproportionately occur in Census Tracts with:

   - the highest energy burdens,
   - higher energy bills, and
   - the lowest incomes.

4. There is a relationship between high energy burdens and nonpayment disconnections. As the average energy burden in a Census Tract increases, so too does the rate of disconnections in that Census Tract increase. There is also a clear association between lower incomes and the rates of disconnections.

5. 27 of the 50 Avista Census Tracts with the highest bill burdens were also listed as Highly Impacted Communities (HICs). The 27 HICs were noticeably more payment troubled, carrying higher long-term arrears and experiencing a disproportionate share of nonpayment disconnections when compared to the non-HIC census tracts with the highest bill burdens. This evidence from Avista's service territory reinforces the evidence presented by TEP in other Commission proceedings that disconnections disproportionately impact Named Communities.

6. There is a need for ongoing data collection. Taking a snapshot in time in time will not only *possibly* provide an incomplete picture of affordability, it is *likely* to present an incomplete picture. The picture changes over time. It is also advisable to collect data on a geographic basis that is as disaggregated as possible. Collecting Zip Code data is better than collecting County data. Collecting Census Tract data is better than collecting Zip Code data.

7. Avista witness Bonfield errs when he asserts that the COVID arrearage reports and disconnection reduction reports involve duplicative reporting of data provided through other processes. My testimony shows that each provides unique data.

Elimination of the data reported through the PBR metric, the COVID report, or the disconnection reduction report would result in a substantial impediment to the ability of the Commission and the public to develop insights into payment patterns and nonpayment disconnections.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS CONCERNING AVISTA'S REPORTING OF ARREARAGES AND DISCONNECTION DATA.

A. My testimony presents data and analysis supporting the following recommendations:

1. Avista should continue providing reports on arrearages and disconnections that include all the data is available in those reports today.

2. It is important to continue to publish data on a Census Tract and on a Zip Code basis to allow the geographic disaggregation of analysis and presentation. Should the Commission decide to retain only the Census Tract reporting, the Commission should require Avista to develop, keep up-to-date, and regularly publish crosswalk files indicating the allocation of Census Tract data over zip codes.

3. It is important for the Company to retain the reporting of monthly arrearage data, though it would be reasonable for the Commission to allow less frequent reporting so long as those arrearage reports include monthly data.

4. I recommend three relatively minor changes to Avista's arrearage reports:

   - Avista currently reports arrearage data only in terms of dollars; that arrearage data should be expanded to include a reporting by numbers of accounts (both total arrears and by age) as well. This recommendation applies to both the COVID arrearage reports and Avista's PBR Metric 4.

   - Avista's reports focus on the dollars in arrears, but does not provide any context for those dollars levels. The substantiality of arrears is established by the relationship of those arrears to the accounts (and dollars) that were paid in-full. Accordingly, I recommend adding the accounts and dollars that were paid on-time.

   - It is time for the Commission to change the name of the arrearage data reports so that it is no longer viewed as a function of the economic crisis associated with the novel Coronavirus health pandemic. Unaffordability, disconnections, and arrearages (both the breadth and depth) are an ongoing situation, not a situation that was caused by (or continued by) the COVID-19 economic emergency. If Avista wishes to file fewer reports, it could be reasonable to combine the arrearage and disconnection data into one report. Thus, the report should be called the "Arrearage Report" or the "Arrearage and Disconnection Report."

5. I recommend that Avista add to its disconnection report the number of disconnections for nonpayment, the number of accounts in arrears, and the dollars of arrears, stratified by energy burden. My recommended levels of stratification (Affordable, High Burdens, Very High Burdens, Extreme Burdens) are discussed the section IV below.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATION AND FINDINGS CONCERNING LOW-INCOME CUSTOMER USE AND AVISTA'S PROPOSAL TO INCREASE THE CUSTOMER CHARGE.

A. My testimony counters Avista's assertion that low-income customers use less energy than other customers. To support this, I present data and analysis showing:

1. While not *all* low-income customers are also low use customers, low-income customers tend to be, and are also *disproportionately*, low-use customers. Income and electricity usage are directly related. As low use customers, low-income customers will be disproportionately harmed by the proposed increase in the fixed customer charge. In addition, increases in the fixed customer charge impedes the ability of low-income customers to respond to higher bills through a reduction in their consumption.

2. Census data from the Avista service territory unambiguously demonstrates that Avista households exhibit the same characteristics that EIA/DOE found support the conclusion that electricity usage declines as income declines. Each of the characteristics EIA/DOE found to be associated with lower usage are associated with low-income households in the Avista service territory as well.

3. Each federal data set standing alone is significant unto itself in documenting the relationship between income and electricity usage. There is significance, also, in the fact, that *every* federal data set examining the relationship finds that low-income status is associated with lower usage. The Avista assertions represent the outlier.

4. Avista's analysis is flawed because it identifies its low-income customers through their receipt of energy assistance programs, however those customers are not representative of low-income households in general when examining usage levels. While low-income households have lower usage than do non-low-income households, energy assistance recipients have higher consumption than do low-income households generally.

5. The types of barriers to low-income investments in energy efficiency are precisely the types of barriers that are made even more problematic by an increase in the fixed monthly customer charge. Higher customer charges impede the ability of low-income households to invest in energy efficiency given their lack of

discretionary income to invest rather than use for household necessities, their frequent mobility, and the high shelter burdens placing demands on their limited incomes.

6. The Company's proposed increase in its residential fixed monthly customer charge will disproportionately harm low-income customers.

7. Avista proposes to increase the customer charge from $6.00 to $15.00 in December 2024. In 2025, Avisa proposes to increase the customer charge by an additional $5.00 per month, to $20,00, a total increase of more than 330% over two years. These proposals should be denied.

II. The Affordability of Avista Bills.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my testimony, I consider the affordability of Avista electric bills to the Company's low-income customers. The presentation of this analysis is not an effort to supplant the Company's reporting of energy burden metrics or Low-Income Needs Assessment (LINA).

Q. PLEASE EXPLAIN YOUR ANALYSIS.

A. In this section, I first consider the impact of an increase in Avista's electric bills by $12.94 per month, for a revised bill of $110.20. I also consider the impact of Avista's further proposed 2025 bill increase of $6.87, for a total revised bill of $117.07. The annual bills I consider are thus:

1. $1,322.40 ($110.20/month x 12 months) (2024), an increase of $155.28 ($12.94/month x 12 months); and

2. $1,404.84 ($117.07/month x 12 months) (2025), an increase (from current rates) of $237.72 ([$12.94 + $6.87]/month x 12 months).

Moreover, in this section I consider the affordability of natural gas bills. At the 2024 rates proposed by Avista, natural gas bills would reach $1,214.63 ($101.22/month x 12

months). At 2025 rates as proposed by Avista, natural gas bills would reach $1,249.12 ($103.25/month x 12 months).

For purposes of this proceeding, I measure the breadth and depth of unaffordability Avista's proposed residential rate increases by reference to the following metrics: (1) the First Quintile of Income (Q1);[1] (2) absolute dollars of income (for households with annual income at or below $35,000); and (3) the "mean renter wage" for each of the counties served by Avista.[2]

Q. PLEASE EXPLAIN THE HOUSEHOLD INCOME WHICH AVISTA USES IN CALCULATING HOME ENERGY BURDENS.

A. In calculating average annual bill as a percentage of income, by Census Tract, Avista states that "this metric is reported on an annual basis and is calculated using average billing information for residential customers compared to average income by census tract."[3] In my discussion below, I address the use of this use of "average income by census tract."[4] The Avista calculations results in typical Bill-to-Income Ratios (also known as bill burdens or energy burdens)[5] of roughly 2% of income. Of the 138 Census

[1] The Census Bureau rank orders incomes from the highest to the lowest in each geographic area. It then divides that rank ordering into five equal parts, each part of which is referred to as a "quintile." The "First Quintile," also frequently known as the "Bottom Quintile" or "Lowest Quintile," is thus that one-fifth of the population with the lowest income. It should be noted, however, that a Q1 income is not necessarily a "low" income. If the geographic area is relatively small, such as the Census Tracts which I use, and the income within the geographic area is relatively high, the Q1 income can actually be reasonably high.

[2] The counties I examine include Adams, Asotin, Ferry, Franklin, Lincoln, Spokane, and Whitman.

[3] Avista Utilities, Performance Based Ratemaking Metrics, Affordability.

[4] Avista does not indicate whether, in referring to "average" income, it intends to refer to the "average" as defined by the mean or the median. While my discussion assumes the use of a median income, the analysis would not vary based on whether the "average" is a mean or a median.

[5] In referring to affordable bill burdens, I use a number of terms and phrases interchangeably. The terms "bill burden," "energy burden," "bill as a percentage of income," and "Bill-to-Income Ratio" are intended to be synonymous.

Tracts for which Avista reports data, 60 have bill burdens of less than 2% of income, while an additional 69 have bill burdens of between 2% and 3% of income. In examining the depth of unaffordability on the Avista system, however, I find that it is necessary to use an indicator of "low-income" status in addition to using the "average" income.

Q. PLEASE EXPLAIN WHY YOU RECOMMEND THAT AVISTA USE SOME MEASURE OF "LOW-INCOME" STATUS IN ADDITION TO USING MEDIAN HOUSEHOLD INCOME.

A. The use of Median Household Income as the sole measure of income for affordability assessments been discussed extensively in the water industry. Each of these arguments, however, is equally applicable to natural gas and electricity. The use of Median Household Income has been almost universally criticized as the basis for an affordability analysis.[6] Consider the following:

- Environmental Finance Center (University of North Carolina):[7] "By definition, half of the households in a community will have an income less than MHI. Because these households have smaller incomes than the median household, they potentially face much greater affordability challenges. Thus, using percent MHI on its own can obscure the affordability issues that low-income households face within a service area. If the goal of the affordability analysis is to understand whether a utility or community should focus on mitigating affordability, then using the percent MHI provides little insight compared to other more precise metrics. The American Water Works Association suggests highlighting the percent of income a household on the lower end of the spectrum would pay (twentieth percentile of income) as an alternative measure. ... Focusing on the percentage that the median household pays can leave the impression that the customer base pays relatively little for water. Shifting the analysis to the impoverished threshold highlights a more realistic percentage for the families likely to have the most

[6] I describe this as "near" universal criticism only because it is usually imprudent to use the categorical term "always."

[7] "Founded in 1998, the University of North Carolina at Chapel Hill Environmental Finance Center (UNC EFC) reaches local communities and state and federal programs by delivering applied training programs and technical assistance, resource and interactive tool development, and in-depth applied research on best and emerging practices." https://efc.sog.unc.edu/

affordability challenges. ... using percent MHI alone can obscure the problem—leading utility managers or regulators to believe that they do not have any affordability concerns. Relying on percent MHI can mask the hardships faced by families that are most at risk of facing affordability issues.[8]

- American Waterworks Association (AWWA):[9] "MHI can be a highly misleading indicator of a community's ability to pay for several reasons. MHI is a poor indicator of economic distress and bears little relationship to poverty or other measures of economic need within a community. ... Given the relatively large percentage of households in the lower portions of the income distribution in many cities, it is important to examine the effect of rising water bills across the entire income distribution—and especially at the lower end—rather than simply at the median."[10]

- AWWA/U.S. Conference of Mayors/Water Environment Federation:[11] "A central issue in assessing affordability of federal water mandates is the reasonableness of community-wide MHI as a primary yardstick. MHI can be a highly misleading indicator of a community's ability to pay for several reasons. ... MHI is a poor indicator of economic distress and bears little relationship to poverty or other measures of economic need within a community."[12]

- National Academy of Public Administration:[13] "Not focused on the poor or most economically vulnerable users – Using MHI did not accurately reflect the impact on the most vulnerable households, the low-income users least able to absorb

[8] Irvin (2017). Is Percent MHI the Best Way to Measure Affordability? Environmental Finance Center, University of North Carolina.

[9] "The American Water Works Association is an international, nonprofit, scientific and educational society dedicated to providing total water solutions assuring the effective management of water. Founded in 1881, the Association is the largest organization of water supply professionals in the world. Our membership includes over 4,300 utilities that supply roughly 80 percent of the nation's drinking water and treat almost half of the nation's wastewater." https://www.awwa.org/About-Us

[10] Stratus Consulting (2013). Assessing the Affordability of Federal Water Mandates, AWWA, U.S. Conference of Mayors and Water Environment Federation

[11] "The Water Environment Federation (WEF) is a not-for-profit technical and educational organization of more than 30,000 individual members and 75 affiliated Member Associations (MAs) representing water quality professionals around the world." https://www.wef.org/about/Governance/about/

[12] AWWA/USCM/WEF (2013). Affordability Assessment Tool for Federal Water Mandates.

[13] "Established in 1967, the Academy responds to requests for assistance from Congress, federal agencies; and state, local and international government entities on issues of importance." The Academy is a Congressionally-chartered non-partisan 501(c)(3) nonprofit. ("The Senate Appropriations Committee, in a committee report on FY 2016 legislative language, directed the Environmental Protection Agency (EPA) to contract with the National Academy of Public Administration (the Academy) to conduct an independent study to create a definition of, and framework for, community affordability of clean water.")

> higher water bills. ... Clearly, MHI is too broad an income measure to reflect the impact of water rate increases on low-income users"[14]

Conclusions like those above—that the use of an MHI in an affordability analysis "can obscure the affordability issues," "provides little insight," "obscures the problem", "can be [] highly misleading", "bears little relationship to poverty or other measures of economic need", does "not accurately reflect the impact on the most vulnerable households", "obscures the effects of rate-setting on low-income customers" and "is too broad to reflect the impact of rate increases"—are all equally applicable to Avista's assessment of affordability. And, when applied to Avista, as they should be, lead to the conclusion that Avista's EBA and LINA should not rely exclusively on median household income for its needs assessment.

A. Depth of unaffordability.

Q. PLEASE EXPLAIN WHAT YOU FOUND WITH RESPECT TO Q1 INCOMES.

A. In assessing the impacts of Avista's requested rate increase on households in the First Quintile of income, I calculated a Bill-to-Income Ratio (also known as Energy Burden) for each Avista Census Tract given electric bills at Avista's proposed 2025 rates. By calculating a Bill-to-Income Ratio, I could assess whether Avista bills would exceed an affordable level, and by what degree. By focusing on the Q1 population in this inquiry, I do not determine the impact of Avista rates on the median (or average) household, but rather on the more vulnerable households. The Table below sets forth the data. In making this calculation, I use the average electric bills for the various Avista Census Tracts provided by the Company. When I say "average" bill by Census Tract, I am

[14] National Academy of Public Administration (2017). Developing a New Framework for Community Affordability of Clean Water Services, prepared for the U.S. Environmental Protection Agency.

simply acknowledging that individual customers within each Census Tract may have bills somewhat higher or somewhat lower than the average.

Table 1 demonstrates that the unaffordability of Avista bills is not only deep (i.e., bills that are unaffordable are unaffordable to a great degree), but the unaffordability is broad as well (i.e., unaffordable bills are widespread throughout Avista's service territory). Given Avista's proposed rates, there would be no Census Tract in the Avista service territory which experiences an average electric bill at Q1 incomes of less than 2%, and only four Census Tracts which would have an Avista bill at Q1 incomes of between 2% and 4% of income. In contrast, 37 Census Tracts evidence electric Bill-to-Income Ratios at Q1 incomes of greater than 10%, while an additional 37 Census Tracts would experience electric Bill-to-Income Ratios of between 6% and 10% of income (i.e., between 1.5 times and 2,5 times higher than an affordable burden).[15]

With natural gas burdens, no Census Tract has a burden of less than 2%, and only eight (8) have natural gas burdens of between 2% and 4%. While 56 Census Tracts have natural gas burdens of between 4% and 8% (from two to four times the affordable level), 28 have burdens of between 8% and 12% of income. While it appears that natural gas bills impose somewhat lower burdens on Avista's Q1 customers, those bills are, nonetheless, routinely unaffordable at the Census Tract level.

[15] This is not to say that every customer in each of these Census Tracts would experience an unaffordable bill. It concludes that households with annual income falling in the bottom 20% of households would experience an unaffordable bills given Avista's proposed rates at average usage.

Table 1. Number of Census Tracts by Bill-to-Income Ratio
(given electric and natural gas bills at Avista's proposed 2025 rates)

Range of Bill to Income Ratio	Electricity	Natural Gas	Range of Bill to Income Ratio	Electricity	Natural Gas
Blank[16]	5	5	12% to 14%	7	8
Less than 2%	0	0	14% to 16%	6	1
2% to 4%	4	8	16% to 20%[17]	2	1
4% to 6%	28	32	24% to 30%	1	2
6% to 8%	20	24	30% to 32%	1	1
8% to 10%	17	18	38% to 40%	1	0
10% to 12%	18	10	62% to 72%	1	1

Q. PLEASE EXPLAIN WHAT YOU FOUND WITH RESPECT TO ABSOLUTE DOLLARS OF INCOME.

A. Avista bills are unaffordable, on average, for households with an annual income at or below $35,000.[18] The depth of unaffordability, however, is stunning. For households with income at or below $15,000, Avista electric burdens exceed 10% of income. At each of the five income ranges considered, Avista burdens exceed 4% of income.[19] The burdens at the proposed 2024 Avista bills and at the 2025 proposed Avista bills are set forth in the Table below.

[16] The Census did not report a Q1 income for five Avista Census Tracts. Accordingly, the BTI Ratio calculation was blank.

[17] When there is a gap in the BTI Ratios report, that indicates no Census track fell into that range. For example, no Census Tract had a BTI Ratio of 16% to 18%.

[18] I use $35,000 to capture the lower ranges of income while being able to use data as reported by the Census Bureau. The purpose is not to capture ***all*** low-income households, but to examine the distribution of households within a population at the lowest income ranges.

[19] The 4% Bill-to-Income ratio deemed to be affordable begins with an affordable burden of 6% for total home energy. It then divides that 6% into an electric non-heating component of 4% and a non-electric heating component (whether that non-electric heating is with natural gas or a deliverable fuel) of 2%.

The Table shows that households with income below $5,000 will face an electric Bill-to-Income Ratio of more than 56% given Avista's proposed 2025 rates. The BTI Ratio declines to 11.2% for households with income between $10,000 and $14,999, and declines to 5.1% for households with annual income between $20,000 and $34,999.

Table 2. Electric Bill-to-Income Ratios (Bill Burdens) at Different Income Ranges Below $35,000

Income Below $35,000	Mid-point of Income	2024 Burden	2025 Burden
Below $5,000	$2,500	52.9%	56.2%
$5,000 - $9,999	$7,500	17.6%	18.7%
$10,000 - $14,999	$12,500	10.6%	11.2%
$15,000 - $19,999	$17,500	7.6%	8.0%
$20,000 - $34,999	$27,500	4.8%	5.1%

As with my discussion above, I have examined the Bill-to-Income Ratios for Avista's natural gas bills as well. The data setting forth natural gas burdens by income range is set forth in the Table below. As I explained above, I use a 2024 natural gas bill of $1,214.63 ($101.22/month) and a 2025 natural gas bill of $1,239.1 ($103.26/month).[20]

Table 3. Natural Gas Bill-to-Income Ratios (Bill Burdens) at Different Income Ranges Below $35,000

Income Below $35,000	Mid-point of Income	2024 Burden	2025 Burden
Below $5,000	$2,500	48.6%	49.6%
$5,000 - $9,999	$7,500	16.2%	16.5%
$10,000 - $14,999	$12,500	9.7%	9.9%
$15,000 - $19,999	$17,500	6.9%	7.1%
$20,000 - $34,999	$27,500	4.4%	4.5%

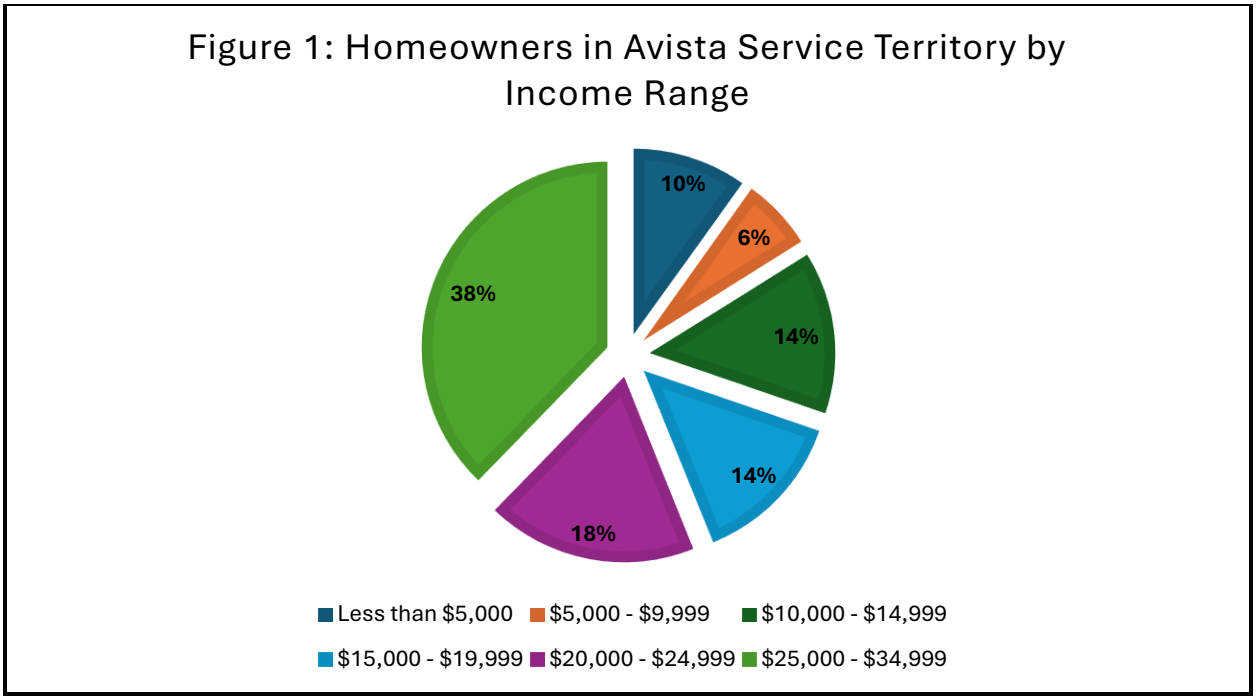
[20] Exhibit JDM-1T-29.

As with Avista's electric bills, natural gas burdens are unaffordable in each income range below $35,000. As incomes decline to levels below $10,000, burdens are from 16.5% to 50% of income.

B. Breadth of unaffordability.

Q. HAVE YOU EXAMINED THE BREADTH OF UNAFFORDABILITY AS WELL?

A. Yes. It is not merely the high BTI Ratios (i.e., bill burden) that are of concern. Looking at the most recent Census data, it is possible to consider not only the ***depth*** of unaffordability presented in the Tables above, but to consider the ***breadth*** of unaffordability as well. The breadth of unaffordability considers how widespread unaffordability is. The first Chart below shows the percentage of homeowners in various income ranges. As the Chart shows, of the 18,695 homeowners in the Avista service territory with income less than $35,000, 10% in fact have income less than $5,000. An additional 6% have income between $5,000 and $10,000. An additional 14.2% have income between $10,000 and $15,000.

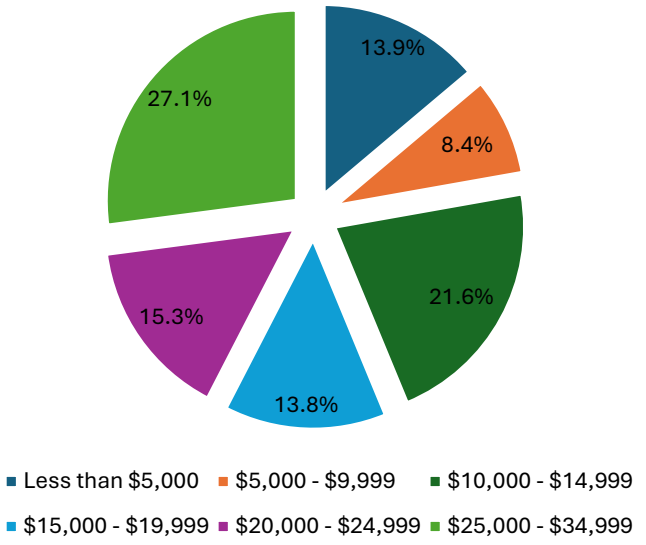


Overall, not merely a few, but more than 30% of homeowners with income less than $35,000 in the Avista service territory have income less than $15,000.

Q. DOES THIS SAME PATTERN HOLD TRUE FOR RENTERS IN THE AVISTA SERVICE TERRITORY?

A. Yes. The Chart below shows that renters in the Avista service territory have corresponding levels of income. As would be expected, there is an even greater percentage of renters at the lowest levels of income. Of the 24,335 renters in the Avista service territory with income less than $35,000, 13.9% in fact have income less than $5,000. An additional 8.4% have income between $5,000 and $10,000, while an additional 21.6% have an annual income between $10,000 and $14,999.

Figure 2: Renters in Avista Service Territory by Income Range



I find that 44% of the examined tenants living with incomes less than $35,000 in fact have incomes less than $15,000. These households have Avista electric burdens ranging from 11% ($10,000 - $14,999) to 56% ($5,000 or less) of income. They have Avista natural gas burdens of 9.9% ($10,000 - $14,999) to 49.6% ($5,000 or less).

Q. PLEASE EXPLAIN WHAT YOU FOUND WITH RESPECT TO MEAN RENTER WAGES.

A. My examination of the impact of Avista bills on renters within the Avista service territory begins with the "mean renter wage" reported each year by the National Low-Income Housing Coalition (NLIHC) for each county.[21] I examined the Bill-to-Income Ratios using the Avista bills at the Company's proposed rates and the 2023 mean renter wage. The resulting electric bill burdens (Bill-to-Income Ratios) exceeded the 4% burden

[21] In Washington, a mean renter wage was not available for Whitman County.

(which I explained above to be an appropriate measure of affordability) in four of the six Avista counties (and were nearly 4% in the other two).

Electric bill burdens at the mean renter wage in the Avista service territory reached as high as 5.4% (Ferry County) and 4.8% (Franklin County), and did not fall below 3.6% (Adams and Spokane Counties).

Table 4. Electric Bill to Income Ratios at Mean Renter Income by County
(Avista Service Territory)

	2023 Mean Renter Wage[22]	Income	Bill	BTI Ratio
Adams	$18.86	$39,229	$1,404.84	3.6%
Asotin	$15.29	$31,803	$1,404.84	4.4%
Ferry	$12.50	$26,000	$1,404.84	5.4%
Franklin	$14.04	$29,203	$1,404.84	4.8%
Lincoln	$14.96	$31,117	$1,404.84	4.5%
Spokane	$18.68	$38,854	$1,404.84	3.6%

As can be seen, at the mean renter wage throughout the Company's service territory, Avista electric bills at the rates proposed by the Company impose unaffordable bill burdens. Similar results were obtained when I used natural gas bills rather than electricity bills.

C. Inflation disproportionately impacts lower-income households.

Q. IS THERE A PARTICULAR CONCERN ABOUT THE IMPACTS OF HIGHER AVISTA BILLS IN TODAY'S ECONOMIC ENVIRONMENT?

A. Yes. The current extent of unaffordable natural gas and electric bills that I identify above does not fully identify the impacts of unaffordable home energy bills. In addition,

[22] National Low-Income Housing Coalition, "Out of Reach: The High Cost of Housing" (Washington state data), available at https://nlihc.org/oor/state/wa

inflation in today's economic environment is disproportionately affecting lower-income households. Given the Commission's obligation to balance the interests of investors and ratepayers in setting a reasonable rates, the Commission should consider the greater adverse impacts that inflation has imposed on low-income ratepayers.

Q. DOES INFLATION HAVE A PARTICULARLY ADVERSE IMPACT ON LOWER INCOME HOUSEHOLDS?

A. The impact of inflation is felt most severely by low-income households. Research by the U.S. Department of Labor's Bureau of Labor Statistics, the agency that calculates and reports the "rate of inflation" (i.e., the Consumer Price Index [CPI]) each month, reports that "consumers with different incomes experience inflation quite differently."[23] According to this research, households earning the lower incomes spend a higher share of their household budget on household necessities such as rent, food and medical care.

Table 5. Household budget shares of expenditure items for lowest and highest income quartiles, 2017–2018[24]

Expenditure	Lowest Income Quartile	Highest Income Quartile
Rent (including owner's equivalent rent)	34.93%	27.93%
Food at home	9.44%	6.58%
Medical care	8.36%	8.09%
Household utilities	4.36%	2.73%
Motor fuels	3.46%	3.42%
Motor vehicle operation	3.44%	3.40%
Telephone service	2.32%	2.00%

[23] Klick and Stockburger (December 2022). Spotlight on Statistics: Inflation Experiences for Lower and Higher Income Households, U.S. Department of Labor, Bureau of Labor Statistics, available at https://www.bls.gov/spotlight/2022/inflation-experiences-for-lower-and-higher-income-households/home.htm

[24] Id.

While low income households pay more of their budgeted income for this basket of essential goods, it is also important to note that the BLS researchers found that "prices for motor fuel, medical care, fuel and utilities, and shelter rose faster than the overall average. . ."[25] Thus, "[b]ecause the lowest income households dedicate more of their spending on these categories," the BLS researchers found, "their overall inflation rates grew faster than highest income households."

Table 6. Average year-over-year price change by item, 2005–2020
(items with asterisks are defined by BLS to be household necessities)

Item	2005–2020 average 12-month change (%)
Tuition, other school fees, and childcare	4.03
Motor Fuel*	3.45
Medical Care*	3.28
Rent*	3.06
Food away from home	2.86
Fuel and utilities*	2.71
All items	2.00
Food at home*	1.89
Lodging away from home	1.16
Recreation	0.74
New and used motor vehicles	0.43
Apparel	-0.10
Telephone services*	-0.20

[25] Id.

The Federal Reserve Bank of Dallas similarly found that:

1. Families have grappled with surging prices over the past 18 months, as the cost of meeting basic needs rose. Consumer prices were 7.1 percent higher in November 2022 than one year earlier.

2. Although inflation may have peaked, prices remain elevated, with food costs up 10.6 percent, gasoline rising 10.1 percent, rent increasing 7.9 percent and medical care services up 4.4 percent.

Drawing upon recent household survey data, we show that high inflation is disproportionately hurting low-income households, including Black and Hispanic households and renters.[26]

Q. DO LOW-INCOME HOUSEHOLDS HAVE THE SAME TOOLS TO ADAPT TO HIGHER PRICES, RESULTING FROM INFLATION, AS NON-LOW-INCOME HOUSEHOLDS?

A. No. The Federal Reserve researchers found that the "stress" being placed on households by high inflation is much greater for low-income households. They explained:

> Prior research suggests that inflation hits low-income households hardest for several reasons. They spend more of their income on necessities such as food, gas and rent—categories with greater-than-average inflation rates—leaving few ways to reduce spending. When prices rise, middle-income households may react by consuming cheaper goods and buying more generic brands. Low-income households do not have the same flexibility; in many cases, they are already consuming the cheapest products.
> Additionally, many low-income households lack the ability of higher-income households to stock up when prices are discounted, buy in bulk and save, delay purchases if there is an opportunity to save in the future or buy more cheaply online. Low-income households are also likely to have smaller cash buffers to tide them over a period of high inflation.
> The recent Household Pulse Survey data confirm these tendencies. Households with incomes ranging from $25,000 to $35,000 in 2021 were

[26] Jayashankar and Murphy (January 2023). High inflation disproportionately hurts low-income households, Federal Reserve Bank of Dallas, available at https://www.dallasfed.org/research/economics/2023/0110#:~:text=Low%2Dincome%20households%20most%20stressed,few%20ways%20to%20reduce%20spending%20.

about 19.3 percentage points more likely to be very stressed by inflation than households with incomes in the $75,000 to $100,000 range.

The data is clear and consistent. Lower income families expend a greater share of their income on necessities (which tend to have higher inflation rates); have smaller financial cushions to mitigate the impact of inflation; and may have less of an ability to switch to lower-priced alternatives. As Lael Brainard, a member of the Board of Governors of the Federal Reserve System, concluded, "All Americans are confronting higher prices, but the burden is particularly great for households with more limited resources."[27]

Q. WHAT DO YOU CONCLUDE?

A. A consideration of affordability is a critical task to undertake within the structure of any utility rate case. As bills become increasingly unaffordable, the payment difficulties of those customers who face unaffordability become increasingly substantial as well. As I demonstrate later in this testimony, this conclusion can be well-documented for Avista. One impact of the unaffordability I identify is its impact on the operating costs (e.g., collection costs, working capital, uncollectible expenses) that are then normalized and passed on to other ratepayers. Also, Avista's proposals, such as increasing the residential customer charge, have disproportionate adverse effects on low-income customers who already are facing substantial unaffordability.

Moreover, establishing a Return on Equity (ROE) is fundamentally predicated on balancing customer and investor interests. It is necessary for the Commission to understand the customer interests in order to appropriately balance them against the competing investor

[27] Brainard (April 2022). Variations in the inflation experiences of households, available at https://www.federalreserve.gov/newsevents/speech/brainard20220405a.htm

interests. The obligation of the Commission in deciding on the appropriate ROE and the reasonable mix of debt and equity securities should balance consumer and investor interests. (*FPC v. Natural Gas Pipeline Co.*, 315 U.S. 575, 606-607 - 608). Indeed, of the consumer issues that are important drivers of the just and reasonable ROE determination, one of the most significant is the concern about affordability. If a sizable portion of customers cannot afford to pay the rates imposed by the Commission, the Commission can hardly be said to have approved just and reasonable rates. Such concerns should bear directly on the determination of the fair ROE. In addition, as Avista adds more and more expensive plant, this increases rates, which may in turn put downward pressure on the just and reasonable ROE not for financial reasons, but because of affordability concerns.

In sum, the concerns I identify with respect to the unaffordability of Avista rates can (and should) be considered in this rate case even outside the consideration of the specific proposals I advance with respect to specific low-income initiatives and data reporting.

III. Lessons Learned from Avista's Reporting of Affordability Metrics.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony I examine the Affordability Metrics which Avista has reported to the Commission in 2024 (based on 2023 data) to determine some of the major lessons which interested persons should derive from this data. The discussion below leads me to conclude that it is important: (1) to continue to publish data on a Census Tract and on a Zip Code basis to allow the geographic disaggregation which I present below; and (2) it is important to continue to prepare and submit these data elements so that the Commission and the public may track the impacts of Avista actions over time. I have reviewed a series of the metrics which Avista has reported by Census Tracts to illustrate

the lessons to be learned from the data reported to date. While I primarily focus on the electric data in the discussion below, the discussion is equally applicable to Avista's natural gas data.

Q. WHY IS IT IMPORTANT FOR THE DATA REPORTING REQUIRED OF AVISTA TO BE MADE EASILY ACCESSIBLE AND AVAILABLE TO THE PUBLIC?

A. To the extent that the data required by the PBR metrics, the disconnection reduction reports, the arrearage reports, and the annual energy burden analysis, is produced but not made easily accessible, it fails to accomplish one of the primary purposes of the data reporting in the first instance. One of the purposes of routine periodic data reporting is to increase the transparency of utility operations to the public. In this respect, "the public" is not only those interested parties who routinely appear before the Commission and participate in Commission proceedings, but includes organizations and entities that address affordable energy issues in other forums as well. Parties that focus on the affordability of housing would find such data useful. For example, I have used utility affordability data to help parties prepare Consolidated Plans for submission to the U.S. Department of Housing and Urban Development (HUD) in guiding the distribution of housing dollars. Parties that are working to distribute other federal funds regarding solar installations, electrification, and energy efficiency would also find this information helpful. For many years, I worked with states such as Iowa, Wisconsin and Illinois to consider the affordability of energy in helping them to structure their "Standard Utility Allowance" for their Food Stamp (now SNAP) programs. Researchers, both at academic

institutions[28] and at nonprofit organizations[29] use data such as this in their work. The availability of this data can further be used not simply in rate proceedings before the Commission, but can also be used to help inform Commission investigations in other proceedings (e.g., proceedings to consider disconnection protections). In sum, it is important not simply for Avista to track the data and file reports in a particular docket, but also that the data be published and made easily accessible on Avista's website. I recommend that such publication on the Avista website be required for each of the data sets: (1) the PBR metrics; (2) the disconnection reduction reports; (3) the arrearage reporting; and (4) the annual Energy Burden Analysis.

A. Metrics Examining Affordable Service.

Q. DID YOU ANALYZE ANNUAL ELECTRIC BILLS BY CENSUS TRACT?

A. Yes, the first metric I examine involves the annual electric bills reported by Avista. I compare the annual electric bills in each Census Tract to the average annual electric bill for the Avista system as whole for 2023, the most recent year for which data is available. Avista reports that its average 2023 electric bill was $945.89. That data shows that bills and income amongst the Census Tracts are associated. As incomes increase, so too, do bills increase. Moreover, the presence of high bills and low-incomes can help Avista identify Census Tracts that might be geo-targeted for energy efficiency investments.

[28] Consider, for example, the work of Diana Hernández, who is associate professor of sociomedical sciences in the Mailman School of Public Health and managing director of the Energy Opportunity Lab's Domestic Program at the Center for Global Energy Policy in the School of International and Policy Affairs at Columbia University in New York, New York.

[29] *See* Boston Medical Center Child Health Impact Working Group, Unhealthy Consequences: Energy Costs and Child Health (April 2007), https://www.pewtrusts.org/-/media/assets/2018/07/childhiaofenergycostsandchildhealth.pdf?la=en&hash=A78716D84BFA327E8C14C6D01AB4E4F7963D2D66.

The Avista data clearly shows that there is a wide range of bills across the utility's 138 Census Tracts for which data is reported. Even setting aside the lowest and highest bill ranges as outliers (with a combined number of fewer than 700 households), the average electric bills on a Census Tract basis range from a low of $400 (17,981 households) to a high of $2,200 (994 households). More than 13,000 households live in Census Tracts with average electricity bills of $1,400 to $1,600.

These bills appear to have some relationship with the income in Census Tracts. The average income for all Census Tracts for which data is reported is $51,863. Again setting aside the lowest and highest Census Tracts as outliers (in terms of number of households) each of the Census Tracts with bills lower than $1,000 have income less than the systemwide average ($25,770, $38,424, $48,911), while five of the six Census Tracts with bills greater than $1,000 have income higher than the systemwide average. This data is both consistent with, and supportive of, my discussion below regarding the Company's proposed changes in its basic customer charge, which discussion documents that income and usage are directly related. Outside the Census Tract with the highest income (containing only 14 households), the Census Tracts with the highest average bill burden (4.5%) have a noticeably higher bill ($1,800 - $2,000) and noticeably lower average income ($43,043). The Census Tracts falling in the five bill ranges at or below $1,200 (representing 102 of the 138 Census Tracts) all have bill burdens of 2.0% of income or less. Census Tracts reporting somewhat higher bills are also reporting somewhat higher incomes (yielding somewhat lower bill burdens).

Table 7. Avista Census Tract Characteristics by Annual Electric Bills

Bill Range	Sum of # of Households	Pct of Households	Average of Avg Annual Income	Average of Avg Bill % of Income	Sum of Pct CT Arrs of total	Count of Census Tract ID
$200 - $400	664	0.2%	$39,868	1.2%	0.0%	2
$400 - $600	17,981	6.3%	$25,770	2.0%	3.6%	5
$600 - $800	45,979	16.2%	$38,424	1.9%	15.2%	12
$800 - $1000	126,291	44.4%	$48,911	2.0%	47.7%	54
$1000 - $1200	51,917	18.3%	$58,587	2.0%	17.7%	29
$1200 - $1400	20,365	7.2%	$62,650	2.2%	7.4%	14
$1400 -$1600	13,214	4.6%	$56,316	2.8%	6.3%	10
$1600 -1800	5,687	2.0%	$56,661	3.1%	2.7%	8
$1800 - $2000	1,350	0.5%	$43,043	4.5%	0.7%	1
$2000 - $2200	994	0.3%	$83,576	2.5%	0.5%	2
$2600 - $2800	14	0.0%	$43,471	6.2%	0.0%	1
Grand Total	284,456	100.0%	$51,863	2.2%	101.7%	138

Note that the Avista data affirms that, as is generally considered to be the case, energy usage (and thus energy bills) are not normally distributed. There is, instead, a long-right tail, meaning that there are many households who have higher energy bills, even if the percentage of households falling into those higher brackets become smaller and smaller.

Q. DID YOU ANALYZE CUSTOMER INCOME BY CENSUS TRACT?

A. Yes, the second metric I examined begins with the income of Avista customers by Census Tract as its primary focus. Table 8 also demonstrates that income and bills may well be related. In particular, this Table reports that each of the income ranges at or below $41,000 have lower average electricity bills. The 36 Census Tracts with income less than $41,000 also have bills less than $1,000. Note, however, that notwithstanding the lower consumption, the average bill burdens are not necessarily correspondingly lower. Despite

the lower bills, bill burdens in 35 of these 36 Census Tracts exceed 2% of income. In contrast, at the other end of the spectrum, eight of the nine income ranges with bill burdens less than 2% of income (representing 35 Census Tracts) have average income of $61,000 or more. These lower burdens arise despite the fact that these higher income households also have higher bills, with none of the income ranges having average bills lower than $1,000.

Table 8. Census Tract Characteristics by Census Tract Average Income

Average Income	Sum of # of Households	Pct of Households	Average of Avg Annual Bill	Average of Avg Bill % of Income	Sum of Pct CT Arrs of total	Count of Census Tract ID
$16000 - $21000	12,340	4.34%	$435	2.3%	1.9%	3
$21000 - $26000	1,966	0.69%	$449	1.7%	0.3%	1
$26000 - $31000	22,542	7.92%	$802	2.7%	10.7%	8
$31000 - $36000	25,587	9.00%	$904	2.7%	12.0%	12
$36000 - $41000	25,791	9.07%	$917	2.4%	10.3%	12
$41000 - $46000	32,030	11.26%	$1,118	2.6%	12.9%	20
$46000 - $51000	48,627	17.09%	$1,040	2.1%	17.3%	21
$51000 - $56000	23,809	8.37%	$1,182	2.2%	8.0%	14
$56000 - $61000	19,796	6.96%	$1,173	2.0%	6.7%	12
$61000 - $66000	23,782	8.36%	$1,058	1.7%	7.1%	11
$66000 - $71000	6,076	2.14%	$1,164	1.7%	4.2%	5
$71000 - $76000	13,470	4.74%	$1,267	1.7%	3.5%	6
$76000 - $81000	12,083	4.25%	$1,050	1.4%	2.7%	3
$81000 – $86000	2,213	0.78%	$1,189	1.4%	0.5%	2
$86000 - $91000	9,424	3.31%	$1,181	1.3%	2.0%	4
$91000 - $96000	2,180	0.77%	$1,715	1.9%	0.7%	2
$96000 - $101000	2,740	0.96%	$1,263	1.3%	0.8%	2
Grand Total	284,456	100.00%	$1,059	2.2%	101.7%	138

Q. DID YOU ANALYZE ENERGY BURDEN BY CENSUS TRACT?

A. Yes, the third metric I examine involves beginning with the Bill-to-Income Ratio (i.e., bill burden) experienced in each Census Tract. I find that using Median Household Income in calculating bill burdens results in an appearance of bill affordability that masks the hardships and unaffordability that exists at lower incomes.

Q. PLEASE EXPLAIN YOUR ANALYSIS.

A. I begin with an examination of all Avista Census Tracts before narrowing my inquiry as explained below. Avista calculated the Bill-to-Income Ratio by dividing the average bill in each Census Tract by the median income of households in that Census Tract. Two observations readily flow from Table 9. First, the vast majority of Census Tracts (129 of 138), representing the vast majority of households (278,282 of 284,456), have Bill-to-Income Ratios of less than 3%. These lower bill burdens are accompanied by lower average bills (i.e., an average bill of $1,017) combined with higher income (i.e., an average income of $52,583).

Table 9. Census Tract Characteristics by Bill-to-Income Ratios

BTI Ratio	Sum of # of Households	Pct of Households	Average of Avg Annual Bill	Average of Avg Annual Income	Sum of Pct CT Arrs of total	Count of Census Tract ID
<3%	278,282	97.8%	$1,017	$52,583	98.0%	129
3% - 4%	3,912	1.4%	$1,421	$44,421	1.6%	5
4% - 5%	2,246	0.8%	$1,687	$36,656	1.9%	2
5% - 6%	2	0.0%	$1,777	$35,000	0.1%	1
6% - 7%	14	0.0%	$2,675	$43,471	0.0%	1
Grand Total	284,456	100.0%	$1,059	$51,863	101.7%	138

The high number and percentage of households with lower electricity burdens should not be surprising. The income used in the Avista data reporting is the Median Household

Income (MHI) for each Census Tract.[30] Earlier in my testimony, I addressed why an exclusive reliance on Median Household Incomes is inappropriate.

B. Metrics Examining Arrears and Disconnection for Nonpayment.

Q. DID YOU ANALYZE THE RELATIONSHIP BETWEEN ENERGY BURDEN AND ARREARS BY CENSUS TRACT?

A. Yes, in the fourth metric, I began to examine the relationship between Bill-to-Income Ratios and the level and age of arrears. I find that the Census Tracts with higher energy burdens correspondingly have disproportionately higher levels of arrears, while, at the same time, those Census Tracts with lower energy burdens have corresponding disproportionately lower levels of arrears.

Q. PLEASE EXPLAIN YOUR ANALYSIS.

A. In pursuing this inquiry, I divided the Avista Census Tracts into the 50 Census Tracts with the highest Bill-to-Income Ratio and the 50 Census Tracts with the lowest Bill-to-Income Ratios to compare the level of experienced arrears. The data is set forth in Table 10 (50 highest BTI Ratios and 50 lowest BTI Ratios and total arrears) below. The Census Tracts are disaggregated by the average BTI Ratios.

This Table documents the relationship between Bill-to-Income Ratios and arrears. The 50 Census Tracts with the highest bill burdens have a disproportionate percentage of Avista's arrears. The 50 Census Tracts with the highest bill burdens comprise 28.9% of households, but 35.9% of Avista's arrears. In contrast, 44.9% of all households live in the 50 Avista Census Tracts with the lowest bill burdens, but only 37.1% of the total arrears

[30] Previous references in my testimony to "average" incomes are references to the average of the MHIs amongst the Census Tracts for which data is reported, *not* to "average incomes" within each Census Tracts.

arise in these geographic areas. Additionally, the Table again demonstrates that Census Tracts with higher bill burdens have higher bills and lower incomes.

Table 10: 50 Highest BTI Ratios and Total Arrears by Census Tract (CT)

Bill-to-Income Ratios	Average of Avg Annual Bill	Average of Avg Annual Income	Sum of # of Households	Count of Census Tract ID	Sum of Pct CT Arrs of total
<3%	$1,146	$43,950	26.7%	41	32.3%
3% - 4%	$1,421	$44,421	1.4%	5	1.6%
4% - 5%	$1,687	$36,656	0.8%	2	1.9%
5% - 6%	$1,777	$35,000	0.00%	1	0.1%
6% - 7%	$2,675	$43,471	0.00%	1	0.0%
Total Top 50	$1,238	$43,517	28.9%	50	35.9%

Bottom 50 BTI Ratios and Total Arrears

Bill to Income Ratios	Average of Avg Annual Bill	Average of Avg Annual Income	Sum of # of Households	Count of Census Tract ID	Sum of Pct CT Arrs of total
<0.03	$955	$64,793	44.9%	50	37.1%

Q. IS THERE A DIFFERENCE BETWEEN TOTAL ARREARS AND LONG-TERM ARREARS?

A. No. While the numbers obviously differ between total arrears ang long-term arrears, the patterns and relationships are the same. An examination of long-term arrears, rather than simply total arrears, documents that not only do more lower-income households carry arrears at all (i.e., total arrears), but they are also carrying long-term arrears, representing a greater inability-to-pay.

Q. PLEASE EXPLAIN YOUR ANALYSIS.

A. I define long-term arrears as those arrears that are 90 days old or older. The discrepancy between the percentage of households in the two groupings of Census Tracts, and the percentage of arrears arising in those Census Tracts, is even greater for long-term arrears than it is for total arrears. While the percentage of households in the 50 Census Tracts

with the highest BTI Ratios of course remains at 28.9% (they are the same 50 Census Tracts), the percentage of long-term arrears arising in these Census Tracts increases to 38.1%. The discrepancy, in other words, rises from 7% for total arrears to nearly 10% for long-term arrears.

Likewise, the data shows that not only do lowest income Census Tracts have disproportionately more *total* arrears, but the arrears which they have are disproportionately *older* (i.e., long-term) arrears as well, representing greater payment difficulties. The discrepancy between the percentage of households in the 50 Census Tracts with the lowest bill burdens (44.9%) and the percentage of long-term arrears arising from those Census Tracts (32.2%) is an increase over the discrepancy I found for total arrears (7.8%).

Table 11. Top 50 BTIs and 90+ day arrears

Bill to Income Ratio	Average of Avg Annual Bill	Average of Avg Annual Income	Sum of # of Households	Count of Census Tract ID	Sum of Pct CT Arrs of total
<3%	$1,146	$43,950	26.7%	41	33.1%
3% - 4%	$1,421	$44,421	1.4%	5	1.7%
4% - 5%	$1,687	$36,656	0.8%	2	3.0%
5% - 6%	$1,777	$35,000	0.0%	1	0.2%
6% - 7%	$2,675	$43,471	0.0%	1	0.0%
Total Top 50	$1,238	$43,517	28.9%	50	38.1%

Bottom 50 BTIs and 90+ Day Arrears

Row Labels	Average of Avg Annual Bill	Average of Avg Annual Income	Sum of # of Households	Count of Census Tract ID	Sum of Pct CT Arrs of total
<3%	$955	$64,793	44.9%	50	32.2%

Q. DID YOU ANALYZE DISCONNECTION FOR NONPAYMENT BY CENSUS TRACT?

A. Yes. One of the affordability metrics Avista reports is the percentage of disconnections that are located in each individual Census Tract. I find that while Census Tracts with a higher percentage of disconnections for nonpayment are often associated with lower incomes, the correspondingly lower bills in these Census Tracts do not protect against the higher rate of disconnections.

Q. PLEASE EXPLAIN YOUR ANALYSIS.

A. After examining basic data reported by Avista on all 138 Census Tracts by the percentage of total nonpayment disconnections occurring in all Avista Census Tracts (Table 12), I separately compare two sub-sets of those total Census Tracts to each other (Table 13): (1) the 50 Census Tracts with the highest percentage of non-payment disconnections; and (2) the 50 Census Tracts with the lowest percentage of nonpayment disconnections. The "percentages" presented in Table 12 below are the percentage of total disconnections that occur in a particular Census Tract. For example, if Avista pursues 1,000 total disconnections, and 57 of them occur in Census Tract "ABCD," Census Tract ABCD would represent 5.7% of the total disconnections. Likewise, if a Census Tract falls into the range of 0 to 0.5%, the number of disconnections occurring in that Census Tract is between zero and five (5) out of the 1,000 total disconnections.

Table 12. Census Tracts by Percentage of Nonpayment Disconnections (DNP) Occurring in Tract

Pct of DNPs in Tract	Count of Census Tract ID	Sum of Total DNP %	Sum of # of Households	Avg Bill % of Income	Avg Annual Income	Avg Annual Bill
0% - .5%	61	16.2%	25.0%	2.2%	$59,238	$1,221
0.5% - 1%	41	27.7%	28.2%	2.2%	$50,013	$1,020
1% - 1.5%	20	23.4%	22.6%	2.0%	$46,905	$879
1.5% - 2%	8	13.9%	9.0%	2.3%	$36,694	$816
2% - 2.5%	6	13.5%	10.4%	2.4%	$30,249	$714
2.5% - 3%	2	5.3%	4.9%	1.9%	$39,940	$714
Grand Total	138	100.0%	100.0%	2.2%	$51,863	$1,059

I find that the majority of Census Tracks experience a low threshold of disconnections, however there are census tracks that experience three to five times more disconnections than others; these geographic areas have a significantly lower average income and lower average bills. These areas should bear close scrutiny as equity implications of disconnections are explored further.

The data in Table 12 examines all Census Tracts (n=138). Notably, Table 12 does not reveal average bill burdens amongst the Census Tracts that vary by the percentage of disconnections that occur in those Census Tracts. The range of bill burdens, when disaggregated by the percentage of disconnections in a Census Tract, varies only between a low of 1.9% and a high of 2.4%. The average for all Census Tracts is 2.2%. In looking at these bill burdens, however, it is important to remember that the bill burdens are based on MHI in each individual Census Tract, not on low-incomes in those Census Tracts.

Q. DID YOU CROSS-REFERENCE BILL BURDENS, ARREARS, AND DISCONNECTIONS WITH THE WASHINGTON DEPARTMENT OF HEALTH'S LIST OF "HIGHLY IMPACTED COMMUNITIES"?

A. Yes. I obtained the Department of Health's list of Highly Impacted Communities (HICs) and reviewed those which are identified as being in the Avista service territory. I then compared that list of Avista HICs to the 50 Avista Census Tracts that I had identified as having the highest Bill-to-Income ratios (i.e., bill burdens). A "Highly Impacted Community" is defined to be any census tract with a nine (9) or ten (10) overall rank on the Department of Health's Environmental Health Disparities (EHD) map, or any census tract with tribal lands.

Q. WHAT DID YOU FIND?

A. I found that 27 of the 50 Avista Census Tracts with the highest bill burdens were also listed as Highly Impacted Communities. Even though the 50 Census Tracts were those with the highest energy burdens with which to begin, the 27 HICs were noticeably more payment troubled. They carried higher long-term arrears and experienced a disproportionate share of nonpayment disconnections.

While the 27 HICs represent 57% of the total households amongst the 50 Census Tracts with the highest bill burdens, they represent 64% of the total long-term (i.e., 90+ day) arrears. The 27 HICs represent 65.4% of the total nonpayment disconnections within these 50 Census Tracts. While the 27 HICs experienced 4.6 nonpayment disconnections per 100 households, the remaining 23 high burden Census Tracts experienced only 3.2 nonpayment disconnections per 100 households. The average median household income in the 27 HICs within the 50 highest burden Census Tracts was, on average, 10% lower than the remaining 23 high burden Census Tracts ($41,344 vs. $46,068).

Q. HAVE YOU ENGAGED IN ANY FURTHER ANALYSIS OF DISCONNECTIONS?

A. Yes. The inquiry I pursued here has the same fundamental foundation as did the inquiry I pursued for arrears. I segregated out two different groups of Census Tracts for examination: (1) the 50 Census Tracts with the highest percentage of disconnections; and (2) the 50 Census Tracts with the lowest percentage of disconnections. The data presented in Table 13 below shows that not only do the low-income Census Tracts have higher and older arrears than the higher-income Census Tracts do, but also that a disproportionately higher percentage of customers in these Census Tracts are losing service due to nonpayment disconnections because of those arrears. A comparison of the 50 Census Tracts with the highest disconnection rates to the 50 Census Tracts with the lowest disconnection rates shows that while there may not be substantial variation *within* those two groups of Census Tracts, there is a strong difference:

In the average bill burdens for Census Tracts with the highest percentage of disconnections and those with the lowest percentage of disconnections. Those Census Tracts with the highest percentage of disconnections have average bill burdens ranging from 2.5% to 3.2%, while the bill burdens for those with the lowest percentage of disconnections have burdens ranging from 1.2% to 1.7%.

1. In the average bills for Census Tracts with the highest percentage of disconnections and those with the lowest percentage. Of the 50 Census Tracts with the highest percentage of disconnections, 39 have bills greater than $1,000. Of the 50 Census Tracts with the lowest percentage of disconnections, only 12 have bills higher than $1,000.

2. In the average incomes for Census Tracts with the highest percentage of disconnections and those with the lowest percentage. Of the 50 Census Tracts with the highest percentage of disconnections, 18 have average incomes of less than $40,000 and 30 have average incomes of less than $45,000. In contrast, of the 50 Census Tracts with the lowest percentage of disconnections, only two (2) have annual average income of less than $40,000 ($36,027) and only one more has an average income of less than $50,000 ($49,757). In contrast, of those 50 Census Tracts with the lowest percentage of disconnections, 16 have average

incomes higher than $70,000, and 39 of those 50 Census Tracts have income higher than $60,000.

Table 13. 50 Census Tracts with the Highest Percentage of Disconnections

Row Labels	Count of Census Tract ID	Sum of Total DNP %	Sum of # of Households	Sum of # of Households	Average of Avg Bill % of Income	Average of Avg Annual Bill	Average of Avg Annual Income
<0.2%	13	1.5%	7,160	7160	3.1%	$1,596	$52,859
.2% - 0.4	7	2.1%	8,362	8362	2.9%	$1,500	$52,465
0.4% - 0.06%	9	4.6%	13,544	13544	2.6%	$1,156	$44,496
0.6% - 0.8%	3	2.1%	4,028	4028	3.1%	$1,108	$37,072
0.8% - 1.0%	4	3.4%	5,756	5756	3.2%	$1,204	$36,176
1.0% - 1.2%	4	4.4%	8,490	8490	2.6%	$751	$28,732
1.2% – 1.4%	3	3.9%	9,283	9283	2.6%	$1,115	$43,226
1.% - 1.6%	1	1.6%	2,292	2292	2.6%	$872	$33,158
1.6% - 1.8%	1	1.8%	2,519	2519	2.5%	$849	$33,321
1.8% - 2.0%	2	3.8%	5,029	5029	2.7%	$933	$34,331
2.0% - 2.2%	1	2.0%	3,076	3076	2.7%	$833	$30,345
2.2% - 2.%	2	4.7%	12,567	12567	2.5%	$682	$27,474
Grand Total	50	35.9%	82,106	82106	2.9%	$1,238	$43,517

50 Census Tracts with the Lowest Percentage of Disconnections

Row Labels	Count of Census Tracts	Sum of Total DNP %	Sum of # of Households	Pct of Households	Average of Avg Bill % of Income	Average of Avg Annual Bill	Average of Avg Annual Income
<0.2%	4	0.4%	1,424	1.1%	1.2%	$968	$78,618
0.2% - 0.4%	12	3.9%	20,839	16.3%	1.5%	$1,077	$73,557
0.4% - 0.6%	14	6.8%	27,620	21.6%	1.6%	$964	$62,997
0.6% - 0.8%	6	4.2%	15,742	12.3%	1.5%	$895	$62,086
0.8% - 1.0%	2	1.6%	5,353	4.2%	1.6%	$899	$56,055
1.0% - 1.2%	7	7.8%	29,539	23.1%	1.6%	$920	$60,937
1.2% - 1.4%	2	2.6%	8,651	6.8%	1.4%	$917	$63,777
1.6% - 1.8%	2	3.5%	8,655	6.8%	1.7%	$626	$36,027
>2.4%	1	2.7%	9,990	7.8%	1.5%	$767	$49,757
Grand Total	50	33.4%	127,813	100.0%	1.5%	$955	$64,793

Q. HAVE YOU EXAMINED DATA REGARDING BILL-TO-INCOME RATIOS AND THE PERCENTAGE OF DISCONNECTIONS IN EACH CENSUS TRACT?

A. Yes. I find that there is a relationship between high energy burdens and nonpayment disconnections. As the average energy burden in a Census Tract increases, so, too, does the rate of disconnections in that Census Tract increase. There is also a clear association between lower incomes and the rates of disconnections.

Q. PLEASE EXPLAIN YOUR ANALYSIS.

A. Table 14 presents data on the percentage of disconnections by Census Tract and the bill burdens in those Census Tracts. The Table rank orders bill burdens from lowest to highest. The data shows that Census Tracts with lower average bill burdens also have a lower proportion of the total disconnections. While the 84 Census Tracts with bills burdens of between 1.3% and 2.3% have 65% of the households, they have only 61.5% of the total disconnections. In contrast, while the 40 Census Tracts with bills burdens of between 2.3% and 3.3% have 26% of the households, they have 32.2% of the total number of disconnections.

Table 14. Nonpayment Disconnections by Bill-to-Income Ratio in Census Tract

BTI Ratio	Count of Census Tract ID	Sum of # of Households	Sum of Total DNP %
0.3% - 1.3%	8	7.7%	4.1%
1.3% – 2.3%	84	65.0%	61.5%
2.3% – 3.3%	40	26.0%	32.2%
3.3% – 4.3%	2	0.6%	0.5%
4.3%– 5.3%	3	0.8%	1.6%
5.3% – 6.3%	1	0.0%	0.0%
Grand Total	138	100.0%	100.0%

Q. DID YOU ANALYZE THE RELATIONSHIP BETWEEN DISCONNECTIONS AND INCOME?

A. Yes, and it is clear that customers in Census Tracts with average incomes below $45,000 and above $25,000 experience a disproportionate number of disconnections. The data is set forth in Table 15 below. It is easy to note the break-point in the disproportionality of disconnections in this Table; I show it with a wavy line.

Table 15. Disconnections by Income by Census Tracts (2023)

Income Range	Number of Census Tracts	Sum of # of Households	Sum of Total DNP %
Less than $25,000	3	4.4%	3.6%
$25,000 - $30,000	5	3.9%	5.8%
$30,000 - $35,000	13	11.7%	20.1%
$35,000 - $40,000	14	10.4%	14.0%
$40,000 - $45,000	19	10.9%	13.5%
$45,000 - $50,000	15	14.1%	11.1%
$50,000 - $55,000	19	11.3%	10.0%
$55,000 - $60,000	14	7.6%	5.6%
$60,000 - $65,000	10	7.7%	5.9%
$65,000 - $70,000	7	3.3%	2.1%
$70,000 - $75,000	4	3.5%	2.4%
$75,000 - $80,000	5	5.5%	3.1%
$80,000 - $85,000	1	0.6%	0.3%
$85,000 - $90,000	4	2.7%	1.5%
$90,000 - $95,000	3	1.6%	0.7%
$95,000 - $100,000	2	1.0%	0.5%
Grand Total	138	100.0%	100.0%

With the exception of the three Census Tracts with average incomes of less than $25,000, the Census Tracts with average income of less than $45,000 are over-represented in the

proportion of disconnections occurring. Of Avista's 138 Census Tracts with data reported, 51 have average incomes of $45,000 or less (above the wavy line). While these 51 Census Tracts represent 36.2% of the total population, they represent 53.3% of the total number of disconnections. In contrast, there are 26 Census Tracts with average income of $65,000 or more. These 26 Census Tracts represent 18.1% of the total households, but only 10.6% of the total disconnections. In sum, the data highlights a bright-line division in Avista disconnections: With the unexplained anomaly in the three lowest income Census Tracts,[31] Census Tracts with an average income of less than $45,000 have disproportionately more numbers of disconnections, while Census Tracts with average income of more than $65,000 have disproportionately fewer numbers of disconnections.

C. Use of Metric Data and its Limitations.

Q. ARE THERE LIMITATIONS TO THE DATA THAT YOU DISCUSS ABOVE.

A. Yes. There are multiple limitations to the data which I discuss above. Many of these limitations are resolvable through modest modifications to the data which is being reported. I will discuss those modifications in more detail in the section of my testimony below that considers data reporting.

One of the primary data limitations in the discussion above, however, is the fact that while the data I present provides a point-in-time it does not yet provide a time series analysis. The question of affordability should be viewed as a journey rather than as a

[31] While the three lowest Census Tracts do not "fit" the overall pattern, I have not engaged in any additional research to assess why not. The lower rate of disconnections, for example, may indicate that those Census Tracts are more remote. It may indicate that those Census Tracts have a lower density. In my work, I find that such data anomalies often appear. These anomalies do not detract from the larger pattern nor do they counter my overall conclusion. It could also be an anomaly that exists for this particular time period, but which the periodic reporting of data shows is not typical. It is for this reason that a continuing, periodic, reporting of data is important.

destination. Affordability will vary based on changes in income. Increasingly targeting energy assistance, be it cash assistance or energy efficiency investments, should allow the Commission and other stakeholders to track the effectiveness of those action-steps on addressing the differentials which I have identified for a variety of the factors which I have discussed above (e.g., total arrears, long-term arrears, nonpayment disconnections). Recognizing the "journey," however, also recognizes that progress toward achieving affordable bills will not necessarily be a straight line. Consider, for example, the Chart below, which sets forth the Q1 incomes (which I explain above) for the Washington counties served by Avista for the years 2012 through 2022.[32] Several observations march forward from a review of the Chart below.

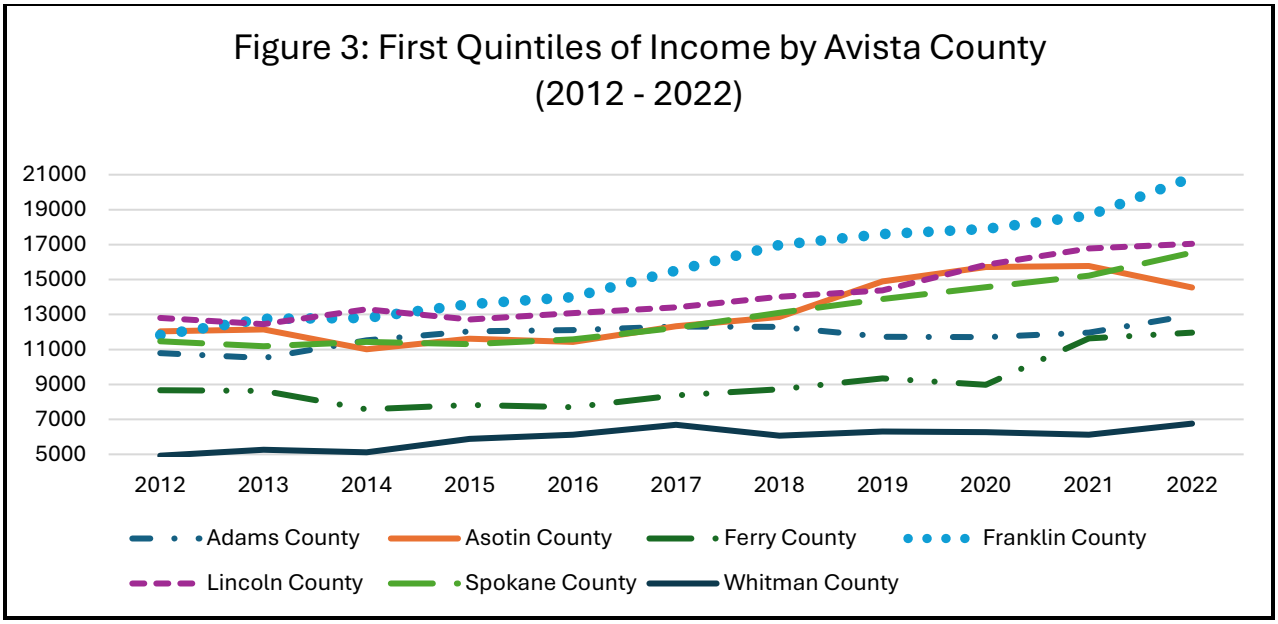
1. Not all geographic areas move forward at the same rate. In the Chart below, for example, there is a distinct difference between Whitman County (relative stable Q1 income over 12 years) and Franklin County (a noticeable upward trend in Q1 incomes). Spokane County seems to have experienced a steady upward trend, albeit an upward trend that is lower than Franklin County.

2. Income over time does not necessarily represent a constant upward trajectory. Asotin County and Adams County in the Chart below both show periods of time where the Q1 income began to decline rather than to continue to increase.

3. There is a growing discrepancy between the geographic areas with the highest income and the ones with the lowest income. The difference in 2012, for example, was roughly $8,000 (low of $5,000 to a high of $13,000), while the difference in 2022 was $14,000 (low of $7,000 to a high of $21,000).

The same patterns that can be seen in the Chart below for Avista counties would be evident for Avista's Census Tracts as well.

[32] In this respect, I use counties simply because presenting 11 years of data for 138 Census Tracts is impractical for purposes of this testimony.



The Chart above demonstrates the basis for several conclusions and recommendations. Two, in particular, stand out. First, there is a need for ongoing data collection. Taking a snapshot in time in time will not only *possibly* provide an incomplete picture of affordability, it is *likely* to present an incomplete picture. The picture changes over time. Second, it is advisable to collect data on a geographic basis that is as disaggregated as possible. Collecting Zip Code data is better than collecting County data. Collecting Census Tract data is better than collecting Zip Code data.

Q. POTENTIAL USES TO WHICH DATA IS PUT.

A. The data collection I discuss above is an important tool that can and should inform a host of decisions that should be addressed at the regulatory level. The data provides a sound basis for requiring the collection of each data element that is currently required, at the geographic levels that they are reported. The data also demonstrates the multiple ways in which interested parties might seek to utilize the information to inform Commission actions in dockets outside a rate case proceeding.

My discussion of the uses to which this data can be devoted is not intended to be comprehensive, but rather is intended to be illustrative.

1. First and foremost, the data above documents different ways in which outreach can be targeted for promoting energy assistance. One aspect of that targeting, for example, might involve targeting based on energy burdens. A second targeting strategy, however, might involve targeting customers, or geographic areas (or even customers in geographic areas) as defined by large and/or long-term arrears. Areas with high levels of disconnections might merit particular attention. In identifying these areas as potential target areas, I do not suggest that payment difficulties be set as an eligibility criterion. Rather, to the extent that payment difficulties are pronounced, Avista would be merited in increasing the intensity of its outreach.

2. The data above can be used by the utility to draw the connection between the control of unaffordability and the control of the costs of non-collection. Those costs of non-collection include not merely the out-of-pocket expenditures on collection activities, but also the loss of revenue through disconnections of service for accounts that are never reconnected.

3. The data as discussed above can help the utility to identify areas of increased danger due to climate change. To the extent that customers cannot afford their home electric bills, for example, they are in danger of extreme heat events from which they cannot gain protections due to the unaffordability of the use of air conditioning.

4. The data above could also inform the mix of energy assistance that is directed toward particular customers or particular geographic areas. Some areas (or some groups of customers) could be high burdened customers (i.e., bill burdens exceeding 6% of income), but could represent customers who, due to differences in income or bills, be sufficiently "close" to an affordable burden, that it is reasonable to assume the "excess burden" could be reduced by reduced usage. Other areas (or groups of customers) could be so highly energy burdened that reducing their usage to the most efficient level possible would continue to leave those customers in an energy burdened status. Some customers will have high energy burdens that can be attributed to higher usage, which can be addressed through energy efficiency. Other customers will have high burdens because of low incomes, which can only be completely addressed through bill assistance.

5. Decisions regarding whether assistance is available that would help address certain levels of energy affordability that does not involve providing bill assistance. Geographic areas with somewhat higher incomes, for example, that nonetheless have high levels of arrears or high proportions of disconnections might be targeted with outreach not for energy assistance, but for assistance such as that which is available to the working poor (e.g., the Earned Income Tax Credit).

One important lesson from the data discussion above is that the importance of generating and reporting required affordability metrics can result in situation-specific applications. There is no limited set of lessons that should be drawn from the affordability metrics. Rather, the metrics can, and should, routinely be accessed and considered in a wide range of Commission inquiries.

The data that is reported above is also important in that it can be matched with corresponding Census data. Census data on the existence of renter status, or on the prevalence of multi-family housing, for example, can help focus the types of assistance, as well as the type of outreach, which is undertaken in any given geographic area.

IV. Avista should annually produce an Energy Burden Assessment.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I recommend that Avista be required to publish an Annual Energy Burden Assessment (EBA) and recommend modifications to future Low-Income Needs Assessments.

Q. PLEASE EXPLAIN THE 2021 LOW-INCOME NEEDS ASSESSMENT THAT YOU HAVE REVIEWED.

A. The 2021 "Energy Burden Assessment, Energy Burden Reduction Strategy" which I reference below is the September 2021 report prepared for Avista by Empower Dataworks.[33] According to that report, "This report presents a suggested strategy for Avista to meet its energy burden reduction goals. It begins with an overview of Avista's

[33] The 2021 report was provided in response to TEP-DR-007.

current customer energy burden, followed by a list of potential actions for reducing customer energy burden." The report stated that "Three types of metrics were calculated:

1. Metrics related to energy burden based on demographic and geographic characteristics;
2. Participation and funding in Avista's Energy Assistance Programs; and
3. Customer energy use characteristics.[34]

The report indicated that "[t]he final dataset and results will be packaged in a web dashboard for Avista staff and the final underlying dataset will also be provided in a later deliverable."[35] Along with the final report, the data set was provided to TEP in response to discovery.

Q. PLEASE EXPLAIN THE STATUS OF AVISTA'S CURRENT LOW-INCOME NEEDS ASSESSMENT (LINA).

A. According to multiple responses from Avista to discovery from The Energy Project regarding the assessment of low-income energy needs, Avista commented that:

> the Company no longer utilizes the 2021 Energy Burden Assessment as its current benchmark for energy assistance need and other associated metrics. While a good foundational assessment, Avista has updated its affordability tracking methodology to in-house data tracking to fulfill the obligations of reporting on its Customer Benefit Indicators (CBIs) from its 2021 Clean Energy Implementation Plan (CEIP) and Performance Based Ratemaking (PBR) metrics adopted in its 2022 General Rate Case.[36]

Avista appears to state that its reporting of metrics based on the Customer Benefit Indicators (CBIs) from its 2021 Clean Energy Implementation Plan and Performance Based Ratemaking (PBR) metrics adopted in its 2022 General Rate Case are intended to

[34] Id., at 5.

[35] Id., at 5.

[36] See e.g., Avista response to TEP-015 (internal citations omitted).

supplant the information that had been developed and presented in its 2021 Energy Burden Assessment.

Because Avista is now using in-house resources to track energy burdens, it is reasonable for the Commission to ask Avista to take a thoughtful and discerning approach to reporting energy burden. I understand that Puget Sound Energy similarly uses in-house resources to track energy burdens and prepare an annual EBA with insightful analysis.[37]

Q. PLEASE EXPLAIN THE FIRST RECOMMENDATION YOU MAKE WITH RESPECT TO AN ANNUAL ENERGY BURDEN ASSESSMENT.

A. I recommend that Avista should work with its Energy Assistance Advisory Group to develop a methodology for preparing an Energy Burden Assessment and to prepare such an assessment annually. The Energy Burden Assessment should, on a geographically disaggregated basis, differ from existing reporting in the following aspects.

1. There should be an assessment of energy burdens on a geographically disaggregated basis. The need for geographically disaggregated data has been evidenced throughout my testimony above.

2. The assessment of energy burdens should, on a geographically disaggregated basis, include an aggregation of two sets of data. On the one hand, the assessment should include a quantification of "excess energy burdens," the dollar amount by which energy burdens in a particular geographic area exceed an affordable burden. On the other hand, the assessment should include a quantification of the resources available to meet that excess.[38]

3. The assessment of energy burdens should be based not only on the median household income within each geographic area studied (including zip codes and

[37] Dkts. 240004-05, *Washington Utils. and Transp. Comm. v. Puget Sound Energy*, Exh. BDJ-3, 2022 Energy Burden Analysis Results (Feb. 15, 2024).

[38] To define concepts, programs such as LIHEAP and Bill Discounts do not reduce the excess energy burden. They are rather resources that help meet that excess burden. The difference in terminology is important. A household's excess burden may change based on changes in income or bills. Such changes, as documented throughout my testimony, can be expected to occur over time. The excess burdens are met to a greater or lesser degree based on the amount of the resource and the effectiveness with which they are targeted.

Census Tracts), but should also be based on one or more indicators of low-income status. I recommend use of First Quintile Income.

4. The assessment of energy burdens should extend beyond a simple yes/no toggle (i.e., they are either energy burdened or not energy burdened). A more refined analysis should be presented with a stratification of energy burdens. My recommended stratification is: (1) Affordable (= or <6%); (2) High Burdens (>6% - 10%); (3) Very High burdens (10% to 15%); and (4) Extreme Burdens (>15%).

5. The stratification should extend to single fuel burdens as well. A natural gas stratification would include the following: (1) Affordable (= < 2%); (2) High Burdens (2% - 6%); (3) Very High (6% - 10%); and (4) Extreme Burdens (>10%). The stratification of electric non-heating would be: (1) Affordable (= <4%); (2) High (4% - 8%); (3) Very High (8% - 12%); and (4) Extreme Burdens (>12%).

6. The assessment of excess energy burdens should include an assessment of the extent to which different types of energy assistance fill the affordability gap revealed by those excess burdens. The gap may be completely filled (e.g., reducing a total energy burden from 15% to 6%), or may be partially filled (e.g., reducing a total energy burden from 25% to 10%).

7. The assessment of energy burdens should assess the relationship between tiered energy burdens and both the dollar level and age of arrears, reporting arrears in terms of both dollars of arrears and accounts in arrears. The assessment should further assess the relationship between tiered energy burdens and the disconnections of service for nonpayment.

These refinements in data reporting are also applicable to, and after Avista publishes a Energy Burden Assessment, should be incorporated into PBR Affordability Metrics #12 (Average bill as a percentage of low-income customers' average income), #13 (Number of households with a high-energy burden (>6%), separately identifying known low income and Named Communities), #14 (Percentage of households with a high-energy burden (>6%), separately identifying known low income and Named Communities), and #15 (Average excess burden per household).

Q. ARE THERE CONVERSATIONS WHICH YOU RECOMMEND AVISTA HAVE WITH ITS ADVISORY GROUP BEFORE BEGINNING TO FILE AN ANNUAL ENERGY BURDEN ASSESSMENTS?

A. Yes. Avista should engage with its Energy Assistance Advisory Group to agree upon details of the delivery of an Energy Burden Assessment. These conversations should address the geographic areas for which data is reported, including not only the specific geographic areas to be used (I recommend a continued use of Census Tracts), but also the extent to which Named Communities (i.e., Highly Impacted Communities, Vulnerable Populations) are incorporated into the Assessment. The advisory group can also determine the appropriate timing for Avista to file its first EBA.

Q. IS THERE A FUNDAMENTAL QUESTION THAT AVISTA SHOULD PRESENT TO ITS ENERGY ASSISTANCE ADVISORY GROUP FOR DECISIONMAKING?

A. Yes. Throughout my testimony above, I have adopted Avista's (and the Commission's-to-date) decision to focus exclusively on an affordable burden for *total* home energy service. There is, however, a need to disaggregate energy bills and thus energy burdens further to take into account single fuel burdens. I have examined the penetration of heating fuels in the Avista service territory both for the total service territory (by summing the data for each Census Tract reporting data) and for each individual Census Tract. For the Avista service territory as a whole, the 2022 Census data[39] Table 16 shows that the percentage of households using natural gas for home heating is almost, but not quite, identical to the percentage of households using electricity. The combination of gas and electricity, however, equals only 90% of the total households reporting heating fuels.

Table 16. Home Heating Fuels: Avista (2022)

Pct utility gas	Pct Propane	Pct Electricity	Pct Oil, Kerosene	Pct Wood	Pct Other	Pct No fuel
46.6%	1.8%	43.3%	1.8%	4.9%	1.1%	0.5%

[39] American Community Survey (5-year data), Table B25040.

Avista reports somewhat different data. According to its 2023 report, the Company had 175,440 natural gas customers, and 284,456 electricity customers. The Company, however, does not distinguish in its reporting between electricity customers who heat with electricity and those who do not. Nor does the Company distinguish between customers who heat with natural gas but use a non-Avista source of electricity and those who are combination customers. As a result, Avista's exclusive use of 6% as the measure of affordability does not provide the information that would allow for a complete assessment of the need for utility-provided bill affordability assistance.

V. The Commission should retain Avista's affordability metrics, arrearage reports, and disconnection reduction reports.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I address the Company's proposals to reduce the data it provides the public through its COVID-19 arrearage reports (pursuant to Docket U-200281), disconnection reduction reports (pursuant to Dockets 190334-35), and through its Performance Based Ratemaking reporting (pursuant to Dockets 2200053-54). I based my conclusions below upon my review of Exhibit SJB-2, Exhibit SJB-3, and Exhibit SJB-4 submitted by and on behalf of Avista witness Shawn Bonfield, on a review of witness Bonfield's Direct Testimony, and on my own review of the data that has been filed with the UTC through the Company's COVID-19 arrearage reports, disconnection reduction reports, and the Company's MYRP data.

Q. DO YOU HAVE A GENERAL RESPONSE TO THE COMPANY'S RECOMMENDATION TO ELIMINATE MUCH OF THE COMPANY'S REQUIRED PERIODIC REPORTING OF DATA?

A. Yes, I have two over-arching responses. First, as a general rule, I agree with witness Bonfield that if and to the extent there is duplicative reporting, so long as one of those reporting requirements is retained, there should be no need to file duplicate data. However, it would be inappropriate to eliminate any particular set of data reporting requirements grounded on one regulatory foundation if the remaining regulatory requirement is due to expire or be revoked. If that were to happen, the Company would be entirely excused from filing critical information.

Second, it would be inappropriate to eliminate periodic data reporting on a geographically disaggregated basis. As is evident from my discussion above, important lessons can be learned from assessing data at the level of Census Tracts and Zip Codes. Not only is the geographic disaggregation important unto itself, requiring the Company to submit Census Tract and Zip Code data allows analysts for the UTC and/or other interested persons to match the Company data with data published by the Census Bureau for the corresponding geographic areas. Avista Census Tract data can be matched with corresponding Census Tract data from the American Community Survey (data which is updated annually). Zip Code data from the Company can be matched with the Census Bureau's Zip Code Tabulation Areas (ZCTAs), again which is updated annually through the American Community Survey. It is critical for the UTC to retain the requirements for geographically disaggregated data to be reported by the Company.

Q. DO YOU HAVE A RECOMMENDATION ON THE GRANULARITY OF REPORTING?

A. Yes. It is important for the Company to retain the reporting of monthly data. Limiting an examination to the average annual arrears by Census Tract, for example, would present a

very different result than looking at arrears by month. To assume that the monthly arrears in December tells the same story as the monthly arrears for July, for example, would be in error. To assume that the percentage of nonpayment disconnections during the warm weather (or shoulder) months would not expand an understanding of the relationship between income, bills, bill burdens and nonpayment disconnections in the cold weather months would be in error.

Having noted the need for monthly data, it need not be the case that the monthly data is filed monthly should those monthly filings become administratively burdensome. It would be reasonable for the Commission to allow for quarterly, semi-annual, or even annual filing of metrics so long as those metrics include monthly data. A semi-annual filing, for example, would need to include monthly data for the six months included in the filing.

Q. WHAT SPECIFIC REPORTS AND METRICS DO YOU ADDRESS?

A. My discussion below is limited to the COVID-19 arrearage reports, disconnection reduction reports, and affordability metrics (Lines 43, 44, 45 and 46 of Exhibit SJB-4). I will address individual metrics in my discussion below. My failure to address other metrics addressed by witness Bonfield should not be construed as an agreement with his recommendations. Those metrics which I do not address are simply beyond the purview of my testimony in this proceeding. The COVID monthly report I reviewed was filed on April 30, 2023. The COVID quarterly report I reviewed was filed by Avista on January 17, 2024. The disconnection reduction report I revied was filed by Avista on March 25, 2024. The PBR metrics I reviewed were filed on May 15, 2024.

A. Avista should regularly report all arrearage data it currently provides the public.

Q. IS THERE A FUNDAMENTAL DIFFERENCE IN THE DATA PROVIDED IN THE COVID REPORTS AND THE DATA PROVIDED IN THE PBR REPORTS?

A. Yes. The COVID reporting provides data by zip code. The PBR reporting provides data by Census Tract. Both levels of geographic areas are important to retain. The more disaggregated the data becomes, the better the focus on specific outcomes. Even at the zip code level, examination of an "average" can mirror substantial variation *within* the zip code. Average incomes and average bills within a zip code, for example, might well generate an average bill burden (i.e., Bill-to-Income Ratio) that reflects no-one in particular. By disaggregating to a Census Tract level, the likelihood is higher that the variability in data will be narrowed. In contrast, obtaining data at the zip code level will allow for matching Census data that is frequently not available at the Census Tract level. The Census Bureau will not report data that is based on an insufficiently large sample size (or that would perhaps increase the risk of presenting data for individually-identifiable respondents).[40]

Moreover, zip code data allows the cross-tabulation of data. While the number of households below Federal Poverty Level may be available, the number of Black households with children might not be. While the number of households in poverty with children may be available, the number of households with children under the age of six might not be. Providing both Census Tract and Zip Code utility data allows for a more robust consideration of the extent of affordability issues within the Avista service territory

[40] There are not data elements which the Census Bureau categorically reports for zip codes but not for Census Tracts. I merely make the observation that the smaller the geographic area, the more likely it will be that for a particular individual location, the Census Bureau will withhold data reporting.

and what characteristics might be associated with the presence of those affordability issues.

Q. DO YOU HAVE A FURTHER RECOMMENDATION REGARDING DATA REPORTING AT THE ZIP CODE AND CENSUS TRACT LEVEL?

A. Should the Commission decide to retain only the Census Tract reporting, the Commission should further require Avista to develop, keep up-to-date, and regularly file crosswalk files[41] indicating the allocation of Census Tract data over zip codes.[42]

Q. ARE THERE SPECIFIC DATA ELEMENTS REPORTED IN THE COVID REPORTS THAT ARE *NOT* INCLUDED IN THE PBR METRICS REPORTING?

A. Yes. Even setting aside the difference between Zip Code and Census Tract reporting, the following data elements found in the COVID reports are *not* also included in the PBR metrics reporting:

1. By customer class, the number of accounts whose service was disconnected; length of time accounts were disconnected; the number of disconnection notices; and the number of accounts who, but for the moratorium, would have been disconnected.

2. The number of accounts charged, and the dollars of, various fees associated with nonpayment and collection, including, for example, late fees, disconnection fees, and reconnection fees.43

[41] "Crosswalk" files are files that present a cross-referencing of one geographic area to another geographic area. A crosswalk file, for example, might show the Census Tracts which comprise various zip codes (and the percentage of households or other data elements—e.g., occupied housing units-- that are assigned to each Census Tract). For example, a crosswalk file might show that Zip Code "xxxxx" is comprised of Census Tracts 1, 2, 3 and 4. The crosswalk file would then further show that 40% of the households in "Census Tract 1" are in Zip Code "11111" and the other 60% of its households are in Zip Code "22222."

[42] See generally, HUD USPS Zip Code Crosswalk files, available at https://www.huduser.gov/portal/datasets/usps_crosswalk.html. See also, Wilson, Ron and Din, Alexander, 2018. "Understanding and Enhancing the U.S. Department of Housing and Urban Development's ZIP Code Crosswalk Files," Cityscape: A Journal of Policy Development and Research, Volume 20 Number 2, 277 – 294. https://www.huduser.gov/portal/periodicals/cityscpe/vol20num2/ch16.pdf

[43] The fact that Avista might not impose such fees *at present* does not eliminate the reporting need. If the reporting is eliminated, any future imposition of such a fee would not be covered. If the reporting is continued, it is not difficult or burdensome to indicate, as Avista has done, that no such fees are imposed at present.

3. Information on long-term payment arrangements, whether that information is the number of customers on such an arrangement; the number of customers who have newly entered such an arrangement; or the number of customers completing such an arrangement. Data on payment arrangements is not otherwise available.

4. Information on medical payment arrangements, with the same observation about the lack of information on such arrangements available elsewhere, including in the PBR reporting.

5. Information on customer deposits by customer class. Whether the information is the number of customers who have posted deposits, the number of customers who have newly posted deposits (or expanded deposits), or the number of customers who have received their deposit reduced or returned, this information is not available elsewhere.

6. Information on the number of "premises" receiving bill assistance (or enrolled in any other type of energy assistance). This information is not otherwise reported.

7. Past due balances (total past due, and past due by aging bucket), both by month and by customer class. While this information is available, for residential classes only, on a Census Tract basis, it is not otherwise available by customer class or on a zip code basis.

Q. HAVE YOU EXAMINED DATA REPORTING FROM ANY OTHER PERSPECTIVE?

A. Yes. In my second inquiry, instead of reviewing the COVID arrearage reports to assess whether the information reported there is available elsewhere, I begin with a review of the PBR metrics reporting to determine whether the information contained therein is available elsewhere. Initially, there is aggregate data presented in the PBR metrics reporting that Avista does not assert is duplicative (or that should be eliminated). This includes, for example, the average Energy Assistance participation (in total numbers and as a percentage of estimated low-income customers); the average bill as a percentage of income (along with the input data underlying this reported number); the number (and percentage) of high burden customers (of total customers; known low-income customers; and customers in named communities); and calculations of average excess burdens. This

data reporting should be retained. If anything, the Commission should expand the reporting of high burden customers (by the three categories presented [High, Very High, Extreme]) and average excess burdens to be provided on a Census Tract level.

Q. HAVE YOU LOOKED AT THE DISAGGREGATED CENSUS TRACT DATA THAT IS REPORTED?

A. Yes. I find:

1. Average bills by Census Tract are not reported elsewhere (even though average usage by Zip Code is included in the COVID report). Examining bills and consumption, however, provide different important insights as I discussed in detail above.

2. Bills as a percentage of income by Census Tract are not reported elsewhere, whether as combined fuels or as separate fuels (as is presented in the PBR metrics). This metric, in particular, is of critical importance to reviewing affordability, both at any given point in time and over the course of time.

3. The number (and percentage) of disconnections occurring in each Census Tract is not information provided elsewhere. The extent to which unaffordability leads to the loss of service is an important ongoing policy consideration. Data at any given point in time, as well as over time, should be reported.

4. What this leaves is the data reporting on arrearages by Census Tract. Data is reported both on total arrears and on arrears by aging bucket into which they fall. As discussed elsewhere, while this data is reported by Zip Code, it is not elsewhere reported by Census Tract. However, preparing aging reports on arrearages is one of the most fundamental tools used by public utilities. It is neither unreasonable, nor unduly burdensome, for Avista to provide such aging reports both on a Census Tract basis and on a Zip Code basis.

Q. DO YOU RECOMMEND ANY MODIFICATIONS TO AVISTA'S COVID ARREARAGE REPORTS?

A. Yes, I recommend three modifications. First, while the reporting metrics focus on the dollars in arrears, those metrics do not provide any context for those dollars levels. For example, if in Census Tract ABCD Avista reports $1,000 in arrears, it is not known whether that $1,000 stands in contrast to $1,000 that was paid on-time or $50,000 that

was paid on time. The substantiality of arrears, in other words, is established by the relationship of those arrears to the accounts (and dollars) that were paid in-full. Accordingly, I recommend reporting the corresponding payment element to the reporting of arrears: the accounts and dollars that were paid on-time.[44] This recommendation applies to both the COVID arrearage reports and Avista's PBR Metric 4.

Second, when reporting arrearage data, Avista currently reports that data only in terms of dollars. I recommend continuing the reporting of arrearage data, both total arrears and arrears by age, but I recommend that the arrearage data be expanded to include a reporting by numbers of accounts (both total arrears and by age) as well. Under the current data reporting, for example, if one sees that the arrears (again, whether total or of a particular age) has increased from $50,000 to $75,000, it is not possible to know whether the increase is because more accounts are in arrears or whether it is because those accounts who are in arrears are further in arrears. There obviously is a difference in insights obtained based on which of those observations is true. In sum, I recommend adding the reporting of arrears in terms of number of accounts in arrears as well as in terms of dollars of arrears.

Finally, it is time for the Commission to change the name of the periodic data reporting so that it is no longer viewed as a function of the economic crisis associated with the novel Coronavirus health pandemic. Unaffordability, disconnections, and arrearages (both the breadth and depth) are an ongoing situation, not a situation that was caused by (or continued by) the COVID-19 economic emergency. If Avista wishes to file fewer

[44] This element stands in contrast to total dollars of accounts receivable, as well as in contrast to total accounts (and dollars) *not* in arrears. Accounts receivable (as well as accounts and dollars *not* in arrears) would include accounts (and dollars) that have been billed but not yet become due. The comparison to be made, however, is accounts (and dollars) in arrears versus the accounts (and dollars) paid on-time.

reports, it could be reasonable to combine the arrearage and disconnection data into one report. Thus, the report should be called the "Arrearage Report" or the "Arrearage and Disconnection Report."

B. Avista should retain its Disconnection Reduction Report because the data is not available elsewhere.

Q. DOES THIS SAME ANALYSIS APPERTAIN TO THE DISCONNECTION REDUCTION REPORTS FILED BY AVISTA?

A. The Disconnection Reduction Reports prepared by Avista have a different foundation than do either the PBR metrics reporting or the CEIP data reporting. In Avista's 2019 general rate case, the Commission approved a settlement ("2019 Settlement") requiring Disconnection Reduction Reports.[45] The contents of the Disconnection Reduction Report as required by the 2019 Settlement are included in the Table below.

Table 17. 2019 Settlement Disconnection Reporting Requirements	
1.	Total disconnections for all purposes
2.	Total disconnections for non-payment
3.	Total remote disconnections and remote disconnection of low-income bill assistance recipients
4.	Total disconnections of customers receiving low-income bill assistance
5.	Total disconnections of customers with a medical emergency verified at the service location within the previous two years
6.	Number of payments received during field/premise visits to prevent disconnection
7.	Amount received during premise visits to prevent disconnection and the mode of payment (cash, check, etc.)
8.	Number of free pay stations
9.	Number and nature of customer complaints related to disconnection

[45] Dockets UE-190334, UG-190335, and UE-190222, Final Order 09, at p. 22, ¶ 58 (Mar. 25, 2020).

The Disconnection Reduction Report is highly aggregated. It reports annual data for the utility service territory as a whole.

Q. IS THERE DUPLICATIVE REPORTING THROUGH THE DISCONNECTION REDUCTION REPORT?

A. For purposes of this proceeding, I note that Avista reports the total number of nonpayment disconnections (Number 2 in Table *17*) through both its PBR metrics and its CEIP reporting. The total number of disconnections for reasons other than nonpayment (Number 1 in Table *17*), however, are not disaggregated. Moreover, none of the remaining data (Numbers 3 through 9, Table *17*) are reported elsewhere. These reporting requirements should, therefore, be retained.

Q. WHAT DO YOU CONCLUDE?

A. Based on this review, I conclude that Avista witness Bonfield errs when he asserts that the data I examine above involves duplicative reporting of data provided through other processes.[46] Elimination of the data reported through the PBR metric, the COVID report, or the disconnection reduction report would result in a substantial impediment to the ability of the Commission and the public to develop insights into the affordability of Avista bills and the impacts which the lack of affordability (or, stated in another way, the presence of ***un***affordability) has on payment patterns and nonpayment disconnections. Moreover, it is important to remember that Avista does not argue that the information provided in the COVID arrearage reports and disconnection reduction reports are not substantively important. Instead, the Company argues that the data reporting is

[46] Bonfield, Exh. SJB-1T, at 28.

duplicative. That argument is demonstrably in error. Accordingly, I recommend that witness Bonfield's proposals to eliminate this data reporting be denied.

Q. DO YOU RECOMMEND ANY ADDITIONS TO AVISTA'S DISCONNECTION REDUCTION REPORT?

A. Yes, I recommend that Avista add the number of disconnections for nonpayment (DNPs), the number of accounts in arrears, and the dollars of arrears, stratified by energy burden. My recommended levels of stratification (Affordable, High Burdens, Very High Burdens, Extreme Burdens) were discussed in detail above.

VI. The Impact of Increased Customer Charges on Low-Income Customers.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine the impacts of the Company's proposed increase in its fixed monthly customer charge. Avista proposes to increase the customer charge from $6.00 to $15.00 in December 2024. In 2025, Avisa proposes to increase the customer charge by an additional $5.00 per month, to $20,00, a total increase of more than 330% over two years. I find these proposals should be denied.

In presenting this analysis, I first document the fact that low-income customers tend to have lower usage levels than residential customers generally. While it is *not* my testimony that *all* low-income customers are also low use customers, I do reach the conclusion that low-income customers tend to be, and are also disproportionately, low-use customers. Income and electricity usage are directly related. As low use customers, low-income customers will be disproportionately harmed by the proposed increase in the fixed customer charge. In addition, I consider the ways in which the fixed customer

charge impedes the ability of low-income customers to respond to higher bills through a reduction in their consumption.

Q. IS YOUR CONCLUSION AT ODDS WITH FINDINGS THAT LOW-INCOME HOUSEHOLDS HAVE A HIGHER CONSUMPTION ON A PER SQUARE FOOT BASIS?

A. No. It is often argued that since low-income households tend to have less efficient energy use, as measured by consumption per square foot of housing, [47] they must have higher overall consumption as well. That, however, is not the case. While low-income households may well have less efficient usage per square foot of housing, these households live in sufficiently smaller housing unit that their *total* consumption, even if less efficient, is lower overall. The Energy Information Administration of the U.S. Department of Energy (EIA/DOE) documents this impact. EIA/DOE reports that income and electricity use have a direct relationship with each other; as income increases, so, too, does electricity use increase on a per household basis. The 2020 EIA/DOE data is set forth below. As can be seen, as income increases, so, too, does electricity usage increase.

[47] https://www.eia.gov/consumption/residential/data/2020/index.php?view=consumption#by%20fuel

Table 18. Average Site Energy Consumption by Income in the West			
Income	Electricity per Household[48]	Average Square Footage Per Housing Unit[49]	Avg Square Footage per HH Member
Less than $5,000	6,909	1,044	417
$5,000 - $9,999	6,103	978	397
$10,000 to $19,999	6,295	1,159	564
$20,000 to $39,999	7,525	1,352	573
$40,000 to $59,999	8,185	1,539	632
$60,000 - $99,999	8,937	1,679	646
$100,000 - $149,999	9,711	1,904	674
$150,000 or more	10,786	2,340	771

The 2020 RECS reports electricity usage by housing unit size, both directly by using square footage of the housing unit, and indirectly by using different indicators of housing unit size. The Table below shows that as the square footage of housing increases, so, too, does the electricity use increase.

Finally, the 2020 RECS then reports data providing insights into factors that are related to housing unit size. The two primary factors reported by EIA/DOE include the number of bedrooms and the number of rooms.[50] Not surprisingly, as either the number of rooms, or the number of bedrooms, increases in a housing unit, the square footage of the housing unit increases as well.

[48] EIA/DOE, 2020 Residential Energy Consumption Survey, Table CE2.5.

[49] Id., at Table HC10.13.

[50] The number of rooms excludes bathrooms.

Table 19. Average Site Energy Consumption by Size of Housing Unit in the West

Number of Rooms	Square Footage of Housing Unit	Number of Bedrooms	Square Footage of Housing Unit
1 or 2	595	0	536
3	771	1	738
4	990	3	1,177
5	1,329	3	1,766
6	1,600	4	2,378
7	1,912	5 or more	3,209
8	2,244		
9 or more	2.948		

Q. HOW IS THIS DATA APPLICABLE TO THE AVISTA SERVICE TERRITORY?

A. Census data from the Avista service territory unambiguously demonstrates that Avista households exhibit the same characteristics that EIA/DOE found lead to the conclusion that electricity usage declines as income declines. Each of the characteristics EIA/DOE found to be associated with lower usage are associated with low-income households in the Avista service territory as well.

Q. PLEASE EXPLAIN THE ANALYSIS THAT UNDERLIES YOUR CONCLUSION.

A. I reached this conclusion after considering data from the Census Tracts that comprise Avista's service territory. I undertook a two-step process. First, I examined the extent to which households are homeowners or renters disaggregated by income level. Second, I examined the extent to which homeowners and renters exhibit the characteristics which EIA/DOE report are associated with lower electricity consumption.

Low-income households clearly tend to be renters in the Avista service territory. The Table below sets forth data from the most recent (2022) American Community Survey by

the Census Bureau.[51] As the Table below shows, households with annual incomes less than $20,000 in the Avista service territory overwhelmingly tend to be renters. Households with income of between $20,000 and $50,000 are as likely to be renters as homeowners. By the time households reach an annual income level of 75,000, they are more likely to be homeowners (72% homeowners/28% renters), while when they reach an income level of $100,000 or more, they are from five times (82% homeowners vs.18% rents) to nine times (90% homeowners vs. 11% renters) more likely to be homeowners.

Table 20. Tenure by Income

	Percent Homeowners	Percent Renters
Less than $5,000	35.3%	64.7%
$5,000 - $9,999	36.5%	63.5%
$10,000 - $14,999	33.6%	66.4%
$15,000 - $19,999	43.1%	56.9%
$20,000 - $24,999	47.9%	52.1%
$25,000 - $34,999	51.7%	48.3%
$35,000 - $49,999	59.6%	40.4%
$50,000 - $74,999	62.3%	37.7%
$75,000 - $99,999	71.8%	28.2%
$100,000 - $149,999	82.2%	17.8%
$150,000 or more	89.5%	10.5%

Q. WHY IS THIS DATA SIGNIFICANT?

A. This data is significant in that the Census data then corroborates the fact that renters exhibit the characteristics associated with lower electricity usage. The Table below shows the data. I examined the percentage, disaggregated by tenure, of households by

[51] American Community Survey (2022) (5-year data), Table B25118.

the number of units in a structure, by the number of rooms, and by the number of bedrooms. With each characteristic, homeownership (which the discussion above documents is associated with income) is associated with residence in 1-family detached homes, with residence in housing units with a greater number of rooms, and with housing units with a greater number of bedrooms.

Table 21. Tenure by Selected Characteristics of Housing Units
(Units in Structure, Number of Rooms, Number of Bedrooms)

Units in Structure[52]			Number of Rooms[53]			Number of Bedrooms[54]		
	HO	Renter		HO	Renter		HO	Renter
1-Family attached	87.6%	31.4%	1	0.7%	5.4%	0	0.4%	6.0%
1-family detached	1.6%	5.6%	2	0.7%	9.2%	1	3.1%	24.4%
2	0.5%	6.0%	3	2.3%	18.6%	2	19.2%	39.1%
3 – 4	0.3%	8.0%	4	10.0%	24.7%	3	40.4%	21.7%
5 – 9	0.2%	9.6%	5	14.8%	18.0%	4	26.8%	6.7%
10+	0.9%	33.7%	6	17.2%	10.5%	5+	10.1%	2.0%
Mobile home	8.6%	5.6%	7	15.0%	6.2%	Total	100%	100%
			8	14.9%	3.8%			
			9+	2.4%	3.8%			

Based on this data, specific to the service territory of Avista, it is not only reasonable, but it is necessary, to conclude that lower-income households will tend to have lower consumption.

Q. IS THERE OTHER FEDERAL DATA THAT SUPPORTS THIS SAME CONCLUSION?

[52] American Community Survey (2022) (5-year data), Table B25036.

[53] American Community Survey (2022) (5-year data), Table B25020.

[54] American Community Survey (2022) (5-year data), Table B25042.

A. Yes. The same conclusions can be reached based on the annual Consumer Expenditures Survey (CEX) published by the U.S. Department of Labor.[55] While this CEX presents data on expenditures and not consumption, the data leads to the same conclusions which the EIA/DOE information supports. The data in the Table below presents CEX data on electricity expenditures using two measures of income: (1) absolute dollars of income; and (2) deciles of income. As can be seen, whether measured in absolute terms (dollars of income), or measured in relative terms (deciles of income), as income increases, per-household electricity expenditures increase as well.

Table 22. Electricity Expenditures by Income (2022)
(Consumer Expenditures Survey)

Less than $15,000	$15,000 to $29,999	$30,000 to $39,999	$40,000 to $49,999	$50,000 to $69,999	$70,000 to $99,999	$100,000 to $149,999	$150,000 to $199,999	$200,000 and more
$1,147	$1,301	$1,548	$1,550	$1,636	$1,740	$1,885	$2,062	$2,337

Lowest 10 percent	Second 10 percent	Third 10 percent	Fourth 10 percent	Fifth 10 percent	Sixth 10 percent	Seventh 10 percent	Eighth 10 percent	Ninth 10 percent	Highest 10 percent
$1,141	$1,269	$1,473	$1,581	$1,632	$1,696	$1,770	$1,901	$2,023	$2,349

Q. DO YOU FIND FURTHER SIGNIFICANCE TO THIS FEDERAL DATA REGARDING LOW-INCOME STATUS AND LOW-INCOME USAGE?

A. Yes. Each federal data set standing alone is significant unto itself in documenting the relationship between income and electricity usage. However, there is significance, also, in the fact, that *every* federal data set examining the relationship finds that low-income

[55] https://www.bls.gov/cex/tables/calendar-year/mean-item-share-average-standard-error.htm

status is associated with lower usage. Each data set above, undertaken by different agencies, reaches the same conclusion. The Avista assertions represent the outlier.

Q. PLEASE EXPLAIN THE DATA AVISTA PRESENTED REGARDING THE RELATIONSHIP BETWEEN INCOME AND USAGE.

A. Company witness Miller asserts in relevant part:

> The Company recently conducted an analysis which shows that limited income customers, on average, do use more electricity than other residential customers. For the analysis, the Company looked at those limited income customers who are currently enrolled in the Company's bill discount program and compared their usage during the July 2022 through June 2023 time period to the usage of all other residential customers.[56]

Q. HOW DO YOU RECONCILE THE INFORMATION YOU PRESENT WITH THE INFORMATION DEVELOPED BY AVISTA FINDING THAT LOW-INCOME HOUSEHOLDS USE MORE ELECTRICITY THAN DO RESIDENTIAL CUSTOMERS GENERALLY?

A. The question which presents itself by the Company's assertion that low-income customers use more electricity than do residential customers generally is whether the low-income customers relied upon in the Company's analysis are representative of low-income customers generally. To the extent that the Company identifies its low-income customers through their receipt of federal fuel assistance benefits provided by the Low-Income Home Energy Assistance Program (LIHEAP), those customers are not representative of low-income households in general. The federal LIHEAP office undertook a study of home energy usage and expenditures published in the "Low-Income

[56] Miller, Exh. JDM-1T, at 38–41.

Home Energy Notebook" for 2019.[57] That study for the federal LIHEAP office found that LIHEAP recipients had noticeably higher usage–both total usage and home heating usage—than did low-income households generally. The data is set forth in the Table below. The data supports the same conclusions I reach above based on information specific to the Avista service territory. Low-income households have lower usage than do non-low-income households. Moreover, LIHEAP recipients have higher consumption than do low-income households generally.

Table 23. Usage per Households (electricity) (mmBtu)
(West Census Region)

	Residential Energy	Home Heating
All households	47.4	14.0
Non-low-income households	49.8	14.2
Low-income households	43.7	13.7
LIHEAP recipients	52.2	20.2

To the extent that Avista has not adjusted its inquiry to take into account the higher consumption of LIHEAP recipients, its conclusions regarding the usage of low-income households generally are likely overstated. It is reasonable to conclude that just as customers who seek out LIHEAP are more likely to be high users, customers who seek out Avista's bill discount rate are likely to use more energy than the average low-income customer as well. This is particularly true because all LIHEAP recipients are also enrolled in the bill discount rate.

[57] https://www.acf.hhs.gov/sites/default/files/documents/ocs/RPT_LIHEAP_HEN01HEData_FY2019.pdf

Q. DO YOU HAVE FURTHER CONCERNS ABOUT AN INCREASE IN THE FIXED MONTHLY CUSTOMER CHARGE?

A. Yes. Avista's proposed increase in the part of the total bill that is comprised of fixed charges impedes the ability of low-income customers to control their bills through a reduction in their usage.

Q. WHAT DO YOU MEAN WHEN YOU DISCUSS LOW-INCOME EFFORTS TO "REDUCE CONSUMPTION?

A. "Reducing consumption" is not merely associated with energy efficiency improvements. Low-income households, particularly vulnerable low-income households (e.g., elderly, disabled, families with children), will take actions to try to reduce their bills to more affordable levels, frequently involving substantial household deprivation or the undertaking of substantial risks. Available research documents that low-income households also seek to reduce bills by reducing consumption, through actions such as closing parts of their home; reducing heating temperatures (even if to unsafe or unhealthy levels); or substituting the use of ovens or stoves to heat limited areas of their homes rather than using their heating systems to heat the entire home. The National Energy Assistance Directors Association (NEADA) performs a periodic Congressionally-funded survey of the impacts of unaffordable home energy bills. The most recent survey, known as the National Energy Assistance (NEA) Survey, was performed in 2018 (published in December 2018).[58] Data on three actions which low-income households take to reduce

[58] Apprise, Inc., 2018 National Energy Assistance Survey, Final Report, available at RESOURCE LIBRARY – Selected Reports – Energy Survey Research and Policy Analysis – APPRISE – Applied Public Policy Research Institute for Study and Evaluation

their energy consumption when they do not have sufficient money to pay their utility bills is presented in the Table below.

Two observations are readily apparent from this data. First, taking dramatic actions to reduce home energy consumption is not at all uncommon within the low-income population when those customers do not have sufficient money to pay their home energy bills. From one-in-five (21%: 100 – 150% of Poverty) to one-in-three (34%: 0 – 50% of Poverty) customers close off parts of their home in "almost every" month, or in "some" months, when they cannot afford to heat their homes. One-in-four customers (26%: 0 – 50% of Poverty) reduce the temperature in their homes to unsafe or unhealthy levels in "almost every" month or in "some" months. One-in-ten (or more) low-income customers use their kitchen stove or oven to heat their homes when they have insufficient money to pay their utility bills. Second, the extent to which these actions occur increases as incomes decrease in nearly every instance. Households with incomes less than 50% of the FPL more frequently take these actions in "almost every" month or "some" months than do households with income at 100% to 150% of FPL.

Table 24. Energy Reduction Actions in Response to Inability-to-Pay
by Range of Federal Poverty Level
(each attributed to "not having enough money to pay energy bill")[59]

	Closed Off Part of Home			Kept Temp at Unsafe or Unhealthy Level			Used Kitchen Stove or Oven to Heat		
	0-50%	51-100%	100-150%	0-50%	51-100%	100-150%	0-50%	51-100%	100-150%
Almost every month	10%	14%	7%	8%	3%	3%	1%	1%	1%
Some months	24%	13%	14%	18%	12%	10%	14%	11%	8%
1 – 2 months	12%	10%	11%	7%	8%	9%	22%	19%	14%
Never / No	54%	63%	67%	67%	76%	76%	63%	69%	77%
Don't know/refused	0%	0%	<1%	0%	1%	2%	0%	0%	1%

As this Table exemplifies, in their efforts to reduce bills to more affordable levels, low-income customers frequently take unsafe and unhealthy actions. It is unreasonable for Avista to make it even more difficult for low-income households to reduce their bills when those households are already forced to resort to heating their homes (or only a portion of their homes) using their kitchen stove or oven. It is unreasonable to make it even more difficult for low-income households to reduce their bills when they are already being forced to keep their homes at unsafe or unhealthy temperatures because they cannot afford to pay their bills.

These households who are forced into engaging in these unsafe and unhealthy activities in their struggle to keep their home energy bills affordable are impeded in their efforts by the Company's proposal to increase its fixed monthly customer charge. The Avista

[59] Apprise, Inc., 2018 National Energy Assistance Survey, Final Report, available at RESOURCE LIBRARY – Selected Reports – Energy Survey Research and Policy Analysis – APPRISE – Applied Public Policy Research Institute for Study and Evaluation

proposal makes a higher part of the customer's monthly bill unavoidable through reduced consumption. Those low-income customers taking such actions, in other words, will face a smaller bill reduction as a result of their action should the Avista proposed increase in the fixed monthly customer charge be approved, potentially incentivizing more dangerous usage-reduction measures.

Q. DO INCREASES TO THE FIXED MONTHLY CUSTOMER CHARGE PROPOSED BY AVISTA ALSO IMPEDE USING LOW-INCOME ENERGY EFFICIENCY TO REDUCE OVERALL BILL INCREASES?

A. Yes. The types of barriers to low-income investments in energy efficiency are precisely the types of barriers that are made even more problematic by an increase in the fixed monthly customer charge. In assessing these barriers to low-income energy efficiency investments, I matched the Census Tracts identified by Avista as comprising its service territory to corresponding Census data for those same Census Tracts.[60] This data analysis demonstrates that:

1. The Avista Census Tracts have high penetrations of low-income and very low-income households.61 At these income levels, Avista customers have insufficient discretionary funds to invest in energy efficiency, even if such investments would be cost-effective in the short- or medium-term. The extent of low-income households in the Avista service territory was discussed in detail above. The increase in fixed monthly customer charges makes it more difficult for investments to be cost-effective, making the lack of discretionary investment income an even greater impediment.

2. The Avista Census Tracts reveal high mobility within the low-income population. Mobility is primarily measured by the percentage of households that have changed residences within the past year.62 Frequent mobility makes it more

[60] I included in Exhibit RDC-3 a list of the American Community Survey (i.e., Census Bureau) tables I have matched to the Avista Census Tracts.

[61] The number of households by income are provided in Table B19001 of the American Community Survey (5-year data). The population by Poverty Level is provided in ACS Table C17002 (5-year).

[62] American Community Survey, 5-year, 2022, Table B07010.

difficult for low-income households to invest in energy efficiency. A low-income household will not make an energy efficiency investment that has a three-year payback if that household does not expect to live in its home for three years.

3. Avista Census Tracts have an extremely high prevalence of low-income households with high and extremely high shelter burdens.63 High burdens are shelter burdens that exceed 30% of income. Extremely high burdens are shelter burdens that exceed 50% of income. Data for the Avista service territory demonstrates that as household incomes decrease, the prevalence of high shelter burdens, and extremely high shelter burdens, dramatically increase. High shelter burdens make it difficult for low-income households to invest in energy efficiency. A low-income household that is struggling to pay its underlying housing costs does not have the discretionary income to invest in usage reduction measures, even if that investment might be cost-effective. Since, by definition, fixed monthly customer charges cannot be reduced by reducing consumption, increasing the fixed monthly customer charge as Avista proposes makes it less likely that energy efficiency investments would be cost-effective in a time period that would allow low-income households to recover their investment in a resource-constrained environment.

Q. WHAT DO YOU CONCLUDE?

A. Based on the information and discussion I present above, I find that the Company's proposed increase in its residential fixed monthly customer charge will disproportionately harm low-income customers. I recommend that the proposed increase in the customer charge be denied.

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes, it does.

[63] American Community Survey, 5-year, 2022, Table B25074.