Attachment A

Avista Utilities

Report on the Line Extension Allowance Program (LEAP) Pilot

November 9, 2018

Attachment A – Avista LEAP Report

Avista LEAP Report Table of Contents

I. Background

On February 25, 2016, the Washington Utilities and Transportation Commission ("UTC" or "Commission") issued Order 01 in Docket UG-152394 approving Avista Corporation's, dba Avista Utilities ("Avista" or "Company"), modifications to tariff Schedule 151 related to its Natural Gas Line Extension rules. As part of the modifications to Schedule 151, the Commission approved for a three-year period both a change in methodology for calculating the amount of the natural gas line extension allowance provided to customers, as well as allowing the Company to provide any unused or excess portion of the allowance amount as an equipment rebate back to customers who are converting to natural gas service.

The approval of the Line Extension Allowance Program ("LEAP") Pilot included a requirement that the Company file semi-annual reports with the Commission showing the impact of the increased allowance and excess allowance equipment rebates during the three-year pilot period from March 1, 2016, to February 28, 2019. These reports, containing information agreed upon by the Company and Commission Staff prior to the first filing, were filed on September 30, 2016; March 29, 2017; September 29, 2017; March 30, 2018; and September 28, 2018, with the fifth semi-annual report covering the time period from March 1, 2016, through August 31, 2018.

The approved LEAP Pilot was then addressed in Avista's 2017 general rate case, Docket Nos. UE-170485 and UG-170486 (*consolidated*), in which the Commission issued Final Order No. 07 stating that:[1]

> *With regard to the LEAP pilot, we agree with Avista that it is premature to impose Staff's proposed conditions, as the pilot is only in its second year of a three-year trial. We are satisfied with the Company's agreement to notify Staff and the Commission by November 30, 2018, whether it intends to modify, extend, or discontinue the LEAP program. We find that the public interest is not served by premature termination of the three-year LEAP program.*

Avista believes that LEAP has met its initial intention to "help expand natural gas distribution infrastructure to address environmental concerns associated with emissions, and further promote the efficient end-use of natural gas".[2] It has also proven an invaluable program

[1] UE-170485 and UG-170486 (consolidated), Order 07, ¶283.
[2] Petition of Avista Corporation For an Order Authorizing Approval of Changes to the Company's Natural Gas Line Extension Tariff, Limited Waiver of WAC 480-90-223(1), and Accounting and Ratemaking Treatment, UG-152394, Para. 11

for the customers it has served and, perhaps most importantly, has provided an unforeseen opportunity to provide benefits to Avista's low-income population, helping to reduce their overall energy burden.

II. Results to Date

Through its semi-annual reporting, the Company has provided data to the Commission surrounding the number of conversions per year, average costs for natural gas line extensions, number of customers that received equipment rebates, average rebate amounts, customer survey results, evaluation of heating-season kWh usage of Avista conversion customers, CO_2 and kWh savings associated with conversions, as well as an estimated impact of LEAP on Washington residential growth rates. Table No. 1 below, excerpted from the most recent Semi-annual report (submitted September 28, 2018 and covering the timeframe from March 1, 2016 to August 31, 2018) provides historical Washington Schedule 101 hook-ups per year. This table helps to illustrate the impact of the change in methodology for calculating the line extension amount and the implementation of LEAP rebates by showing that new residential Schedule 101 hookups exceeded expectations for 2016 and 2017, and are on track to again exceed in 2018, primarily due to these updated line extension benefits.

Table No. 1 – Historical Residential Schedule 101 Hook-ups per Year

Calendar Year	Residential
2005	3,521
2006	3,489
2007	2,866
2008	2,644
2009	1,723
2010	1,562
2011	1,482
2012	1,705
2013	2,030
2014	2,499[3]
2015	2,174
2016	3,075
2017	4,116
2018 – YTD August	2,698

Comparatively, Table No. 2 below presents data from when the construction to install natural gas piping was completed, and when a meter was installed, which will differ from the data in Table No. 1 as there may be a lag in time from when construction is completed to when a customer is first billed.

Table No. 2 – New Residential Schedule 101 Hook-Ups, March 1, 2016 to August 31, 2018

Year	2016	2017	2018	Total
New Developments Hook-ups	770	920	586	2,276
New Construction (i.e., infill of existing developments or single lots)	529	646	467	1,642
Conversions	1,070	1,975	1,170	4,215
Total New Residential Customer Hook-ups	2,369	3,541	2,223	8,133

Overall, electric to natural gas conversions make up nearly 52% of the total new residential customer hook-ups between March 1, 2016 and August 31, 2018. These 4,215 conversions have

[3] The Company experienced an increase in conversions in 2014 due, in part, to the privatization of housing at Fairchild Air Force Base ("FAFB"). As a part of the privatization effort, each residential unit, approximately 425, was required by FAFB to be individually metered. Prior to 2014, FAFB housing was master-metered (i.e., a few natural gas meters served hundreds of homes).

been further separated into Avista and non-Avista customer conversions in Table No. 3, to show the reach that the program has had in providing a fuel choice opportunity to those that were not even Avista customers prior to taking advantage of the line extension allowance option.

Table No. 3 – Conversions Per Year, Avista and Non-Avista Customers

Year	2016	2017	2018	Total
Conversions From Avista-Electric Customers	937	1,706	947	3,590
Conversions From Non-Avista Customers	133	269	223	625
Total Conversions	1,070	1,975	1,170	4,215

As seen in Table No. 4 below, there have been 3,297 LEAP rebates issued among the 4,215 total conversions from electric to natural gas since the Pilot's introduction in 2016. The number of customers that received an excess allowance equipment rebate is lower than the number of conversions for many reasons, including:

- Cost of construction was higher than the line extension allowance;
- Timing delay of customer applying for rebate after completion of construction;
- Customer was unaware or did not apply for rebate;
- Customer did not install high efficiency appliances; or,
- Customer did not install qualifying equipment (e.g., gas fireplace).

Table No. 4 – Number of Customers that Received Equipment Rebate and Average Rebate Amount

Year	# of LEAP Rebates	Total Amount of Rebates	Average Rebate Amount
2016	531	$1,444,044.25	$2,719.48
2017	1,761	$5,144,979.90	$2,921.62
2018 – YTD August	1,005	$2,549,505.61	$2,536.82
Total	3,297	$9,138,529.76	$2,771.77

More notably, construction costs rose over 46% throughout the course of the Pilot, from an average of $1,666.30 in 2016 to $2,435.14 in 2018, resulting in a three-year average of $1,908.49. Concurrently, the average amount of LEAP rebates decreased from $2,719.48 in the first program year to $2,536.82 in 2018. As construction costs continue to rise, it is imperative that Avista continue to provide affordability to customers through programs like the LEAP Pilot.

Table No. 5 – Average Amount of Estimates Line Extension (excluding new developments)

	2016	2017	2018	Average 2016-2018
Average Amount of Estimated Construction Costs for New Construction and Conversions[4]	$1,666.30	$1,624.03	$2,435.14	$1,908.49

The Company also included the following charts in its semi-annual report, which were presented at the Avista's 2018 Natural Gas Integrated Resource Plan (IRP) Technical Advisory Committee meeting held on January 25, 2018, depicting the estimated impact the LEAP program has had on its customer growth rates in Washington. Chart No. 1 below shows the forecast of residential customer growth through 2037 with and without the LEAP program, with the black line representing the forecast from the Company's 2016 IRP. The dashed red line represents the forecast if the LEAP program were to end on the Pilot's anticipated February 28, 2019 end date, and the solid red line shows the forecast if the LEAP program were to continue through the planning horizon. The chart also illustrates that the LEAP Pilot would help contribute an estimated 9,100 customers if the program were to continue through the planning horizon.

[4] New development hookups are not included.

Chart No. 1

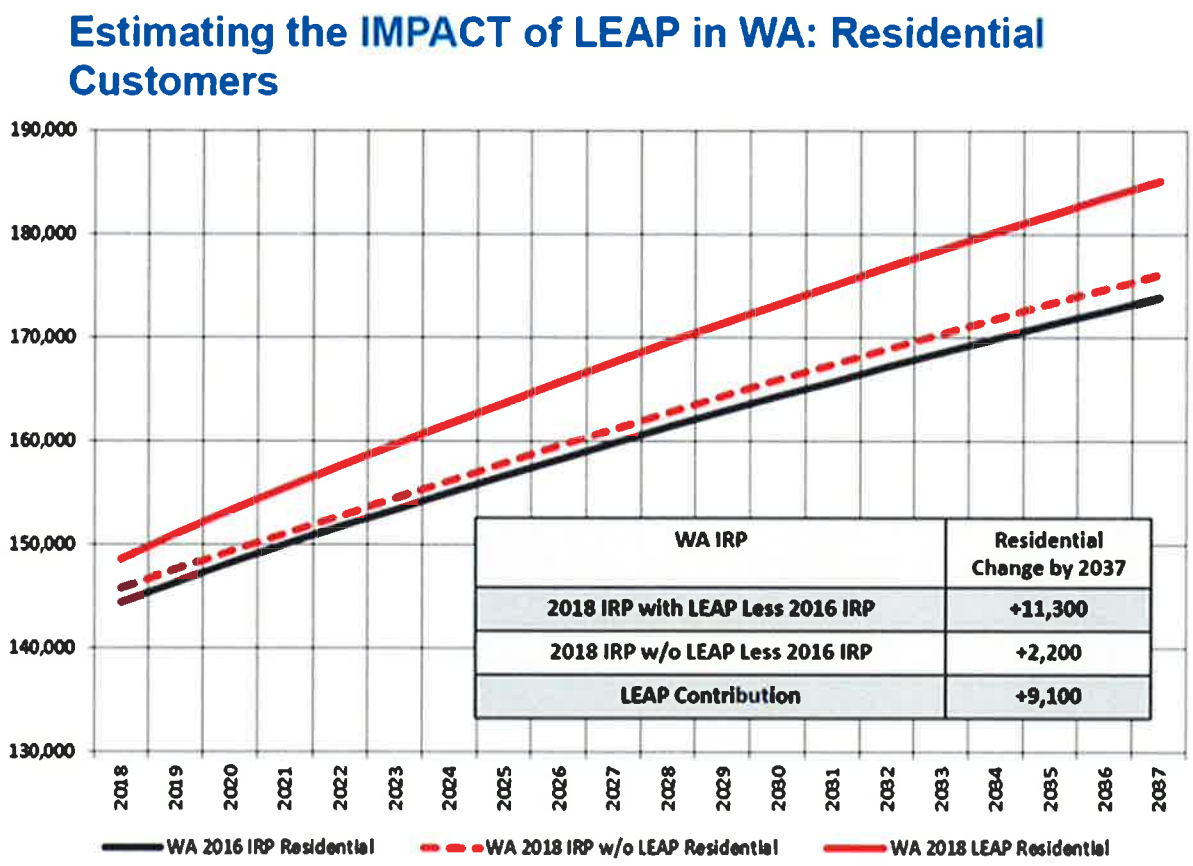
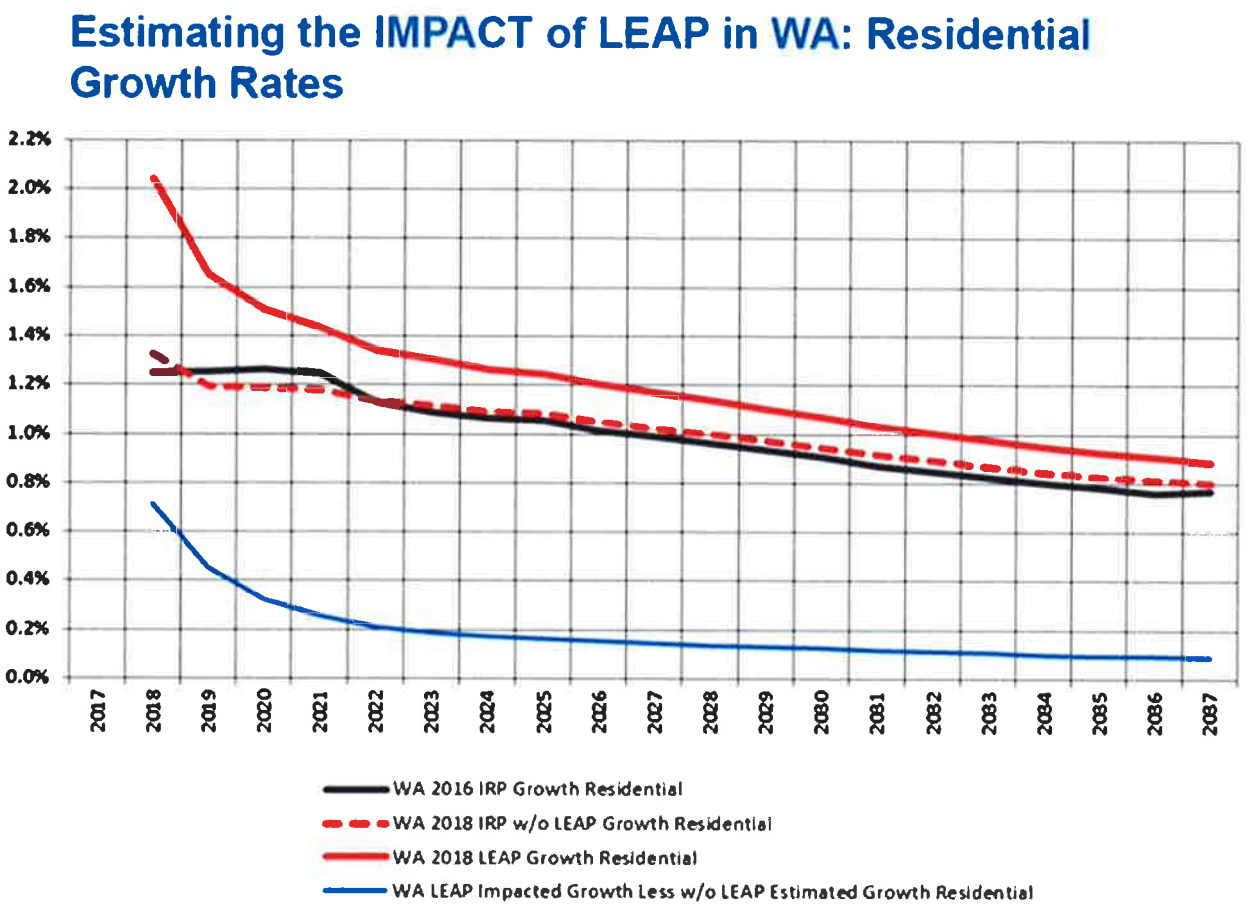


Chart No. 2 also depicts the impact on customer growth rates both with and without the LEAP program, with the highlight from this chart being the blue line, which indicates the impact that the LEAP program would have on customer growth rates through the IRP planning horizon. If the LEAP were to continue beyond the three-year pilot period, the impact of the LEAP on the growth rate would naturally decline overtime, as there are only so many existing homes available to convert to natural gas.

Chart No. 2



III. Customer Satisfaction

Customer Survey results have remained consistent throughout the LEAP Pilot, continuously showing that the availability of the excess allowance equipment rebate is impacting customers' decision to convert to natural gas. At the time of preparing the September 2018 semi-annual report, the Company had received 453 completed surveys from customers that had received LEAP rebates. Of those that responded to each question, over 67% of customers said that they had previously considered converting to natural gas, but chose not to, with 95% of respondents stating that the amount of Avista's line extension allowance impacted their decision to convert to natural gas. Time and time again, financial constraints were noted as a barriers to fuel choice, as 79% of the survey respondents noted that the cost of equipment had been a deterrent in converting to natural gas before learning about the program. The cost of construction was a concern for 55% of

respondents, while 45% of customers stated a combination of both equipment and construction costs were to blame. When asked why they were interested in converting to natural gas overall, 95% of customers included cost savings as a main reason for conversion, and 72% of respondents stated that prior to learning of the LEAP Pilot they had not planned on installing high efficiency natural gas space heating equipment. This means that without the availability of the excess allowance equipment rebate, these customers may have continued without natural gas services and missed out on the opportunity to lower their energy burden and take advantage of the associated therm savings from the installation of their high efficiency equipment. Additionally, a compelling 100% of all customer surveys stated they had recommended, or would recommend, that others participate in LEAP.

IV. Summary of New or Modified Tracking Metrics

On August 2, 2018, the Company held a conference call open to all Parties in Docket Nos. UE-170485 and UG-170486 (*consolidated*), to address Order 07 in which the Commission encouraged "the Company, Staff, Public Counsel and the other stakeholders to discuss whether any additional metrics or reporting are appropriate as the Company evaluates the success of the pilot and as the Company considers the continuation of the LEAP pilot." Commission Staff, Public Council, and The Energy Project provided valuable feedback through this forum, discussing potential modifications to be made in the Company's future semi-annual reporting, as well as recommending additional metrics or reporting necessary to improve the program should it continue beyond its February 28, 2019 pilot end date.

In addition to the current data provided through semi-annual reporting found in Sections II and III in this Report, Avista has proposed to include additional information regarding LEAP's impact on the low-income communities it serves, as the Company has found the outreach to low-income participants to be one of the most prominent values of the Pilot, though initially an unintended consequence of the LEAP. The Company also proposes additional data collection regarding the economic benefit to the surrounding communities, in the form of vendor surveying and enhanced questions on its existing Customer Survey for LEAP participants. Avista has already begun vendor surveying with the trade allies predominantly responsible for providing line extensions throughout its service territory, with the intention that enough pertinent data will be available for the Company's March 2019 semi-annual report.

If LEAP Pilot is approved on a non-pilot basis, Avista intends to seek input from the Parties as to what additional survey information from both vendors and customers would be beneficial for future reporting. The Company will also continue to work with the Parties further to integrate their suggestions for cross-references between LEAP participation and other weatherization measures or participation in Avista's Low Income Rate Assistance Program ("LIRAP"). Initial data compiled resulted in a correlation of about 13% of LEAP participants that also participated in the LIRAP and less than 1% participating in additional Low-Income Energy Efficiency Programs such as shell measures or other weatherization processes. The link between LEAP and actual LIRAP recipients, though relatively low at 13%, can be explained in that not all customers that need assistance actually apply for it, and as seen in Section VI of this Report, populations still struggling to afford basic monthly essentials may not necessarily meet the qualifications for low-income rate assistance. Continuing to provide options such as the LEAP rebate, however, will help to mitigate some expenses encountered by these low-income populations and potentially alleviate not only the customer's energy burden but also financial constraints encountered when pursuing efficiency efforts.

V. Emissions and Consumption Comparison

In response to Public Counsel's request for comparative data from pre- and post-conversion customers[5], Avista pursued an additional analysis of customer usage and included the information in its September 2018 semi-annual report. The Company looked at a sample population of 109 Avista electric customers that participated in the LEAP program and converted to natural gas between March 2017 and August 2017. After an initial review, it was determined that only 68 of the customer accounts (62% of the initial population) had sufficient baseline and/or post conversion data points available to perform a regression analysis. Based on customer rebate claim dates, the heating load baseline data timeframe was selected to be October 2016 through March 2017 (or April 2017 depending on available data), and heating load post data was October 2017 through March 2018 (or April 2018 depending on available data). Out of the 68 accounts, 40 showed a strong correlation (> 0.80 R square regression value) between the baseline Heating Degree Days (HDD) and the electric heating load BTUs and the post HDD and natural gas heating

[5] Per discussion at the August 2, 2018 conference call regarding potential program reporting modifications.

load BTUs. The remaining accounts did not show a clear correlation between HDD and the baseline/post heating load BTUs with the limited data points available during the regression (i.e., regression analysis was limited to six data points before and after conversion). Several contributing factors attributed to the correlation, including, but not limited to: estimated consumption reads; low usage during winter months (vacations, unoccupied properties, etc.); irregular building occupancy; poor heating controls; or, in some cases, high usage during one month that was significantly above the trend line. Overall, the 68 accounts showed an average of 942,327 BTU savings in their heating usage. Excluding the 28 accounts that did not show great correlation between HDD and heat load BTUs, the results show an average of 6,327,205 BTUs savings in their heating usage. On a kWh equivalent basis, this represents a 1,854 kWh savings.[6]

What this evaluation shows from the pre- and post-conversion heating usage, based on a limited number of data points, is that the average heating usage profile of an Avista electric customer that converts to natural gas is lower or more efficient than an electric heating customer.

During the course of the LEAP Pilot, the Company also responded to Commission Staff's request for additional emissions data by providing comparative customer emissions profiles and information regarding the annual reduction in CO_2 of homes that convert from electric to natural gas in its 2017 and 2018 reports, as seen in Table Nos. 6 and 7 below.

Table No. 6 – Emissions Profile for Average Customer Using Electric Space Heat and Hot Water

Average Electric (Resistance) Customer			
End Use	**Electric Use (kWh)**	**AVA Mix CO_2 lbs. /yr.[7]**	**AVA Mix CO2 Metric Tons/Year**
Furnace	7,485	5,809	2.636
Water Heat	3,790	2,941	1.335
Combined	**11,275**	**8,750**	**3.970**

[6] 6,327,205 / 3413

[7] The AVA $C0_2$ lbs. /yr. is calculated using Avista's 2015 fuel mix supply and the 2015 regional emissions data from the Fuel Mix Disclosure information provided by the Washington State Department of Commerce.

Table No. 7 – Emissions Profile for Average Customer Using Natural Gas Space Heat and Hot Water

Average Natural Gas Customer			
End Use	**Therms @ 90% Efficient Furnace and 67% Water Heat**	**CO_2 lbs./yr.**	**Direct Use Metric Tons/Year**
Furnace	284	3,321	1.507
Water Heat	193	2,259	1.025
Combined	**477**	**5,580**	**2.532**

Based on the analysis completed, the savings range of CO_2 for a customer that converts their space heat and/or hot water heat through the LEAP program was found to be 0.31 – 1.44 metric tons per year, or an annual reduction of up to 37% of CO_2[8].

Though further evaluation regarding long term carbon emissions has been suggested, Avista has found that the spectrum of information available, as well as the amount of variables involved in fuel mix changes from 2016 to 2018 does not provide substantial nor definitive data attributing the implementation of LEAP Pilot as a factor in altering the Company's fuel mix. The Company is still open, however, to guidance for future tracking of this information, as well as system benefits, which also has innumerable variables hindering the Company from differentiating the LEAP's contribution to lowering the load on Avista's grid and shaving peak demands from the system.

VI. Fuel Conversion

In Order 07 in Avista's 2017 general rate case[9], the Commission ordered Avista to work with its Energy Efficiency Advisory Group ("Advisory Group") to transition the funding of its Fuel Efficiency Program (Fuel Conversions) from its electric tariff rider (Schedule 91) to its natural gas tariff rider (Schedule 191) by December 31, 2019, and to submit a plan for a transition by October 26, 2018. In a filing made on October 26, 2018 in Docket Nos. UE-170485 and UG-

[8] Docket No. UG-152394 – Avista Natural Gas Line Extension Allowance Program Semi-Annual Report No. 5
[9] UE-170485 and UG-170486 (consolidated)

170486, Avista proposed to discontinue its Fuel Conversion Program effective January 1 2020, and provided that:

> *Elimination of the natural gas Fuel Conversion Program is predicated upon the Company's belief that its Line Extension Allowance (LEAP) program will continue into the foreseeable future... In the event LEAP is substantively discontinued, the Company may seek to reinstate a fuel conversion program as Avista believes the loss of both programs would be a disservice and detriment to the customers it serves.*

Parties from the Advisory Group, including Public Counsel and The Energy Project, have expressed interest in providing an exception to this discontinuation, available to only Avista's low-income sector. The Company is open to explore a potential low income fuel conversion program under a new funding structure, however also believes that extension of LEAP may help bridge the gap in providing low-income customers the opportunity to control their energy costs by using a lower cost, higher efficiency fuel for their needs. As described in this Report, it is Avista's limited income customers that often live in older homes with a greater need for more efficiency, yet these same populations are far from able to afford the conversion from electric heating to natural gas, nor the energy efficient appliances or equipment desired after conversion.

VII. Avista's Low Income and Asset Limited, Income Constrained, Employed (ALICE) Population

Of the 39 counties in Washington state, Avista Utilities provides electric and/or natural gas services across 13 counties, all of which have higher than the current 11 percent state average for households in poverty. In fact, the two highest rates of poverty found in the entire state are within Avista's service territory, according to the 2017 American Community Survey ("ACS") estimates of the United States Census Bureau. Whitman County has the highest rate of poverty at 25.9%, with Ferry County following a close second at 21.3%.[10] Based on poverty rates alone, it is evident that the communities served by Avista could very well benefit from all available opportunities in increased affordability of basic services—a fact that is further compounded when considering the ALICE population of the state as well.

[10] United States Census Bureau, Interactive map, https://www.census.gov/quickfacts/fact/map/wa,US/IPE120217

The *ALICE Project*, introduced in 2015 in an effort to identify individuals that have incomes above the Federal Poverty Level ("FPL")[11] yet struggle to afford basic household necessities, is a result of collaboration between the United Way organizations in Connecticut, Florida, Hawaii, Idaho, Indiana, Iowa, Louisiana, Maryland, Michigan, New Jersey, New York, Ohio, Oregon, Texas, Virginia, Washington, and Wisconsin. ALICE, with criteria for the population based on an ALICE Threshold[12] ("Threshold") that encompasses the average income that a household needs to afford the basic necessities defined by the Household Survival Budget[13] ("HSB") for each county in a given state. Table No. 8 below, from the most recent ALICE report[14], illustrates the HSB in Washington overall, with Table No. 9 showing the HSB in Spokane County alone, Avista's largest community served.

[11] 100% FPL for 2018 is $12,140 for a single adult household, and $25,100 for a family of four

[12] An ALICE household is comprised of all the people who occupy a housing unit that meet the ALICE Threshold, but does not include those living in group quarters such as a dorm, nursing home, or prison. Households earning below the ALICE Threshold include both ALICE and poverty-level households.

[13] The Household Survival Budget calculates the actual costs of basic necessities (housing, child care, food, transportation, health care, a smartphone, and taxes) in Washington, adjusted for different counties and household types.

[14] *ALICE: A Study of Financial Hardship in Washington,* Stephanie Hoopes, Ph.D. and Research Advisory Committee, United Way, May 2018, Rev. September 2018.

Table No. 8 – Household Survival Budget, Washington Average, 2016[15]

Washington Average – 2016			Percent Change from 2010-2016	
	SINGLE ADULT	2 ADULTS, 1 INFANT, 1 PRESCHOOLER	SINGLE ADULT	2 ADULTS, 1 INFANT, 1 PRESCHOOLER
Monthly Costs				
Housing	$592	$871	13%	16%
Child Care	$-	$1,278	N/A	11%
Food	$177	$586	1%	10%
Transportation	$361	$689	15%	15%
Health Care	$203	$755	93%	79%
Technology*	$55	$75	N/A	N/A
Miscellaneous	$159	$469	25%	27%
Taxes	$217	$437	34%	91%
Monthly Total	$1,748	$5,160	25%	27%
ANNUAL TOTAL	$20,976	$61,920	25%	27%
Hourly Wage*	*$10.49*	*$30.96*	*25%*	*27%*

Table No. 9 – Household Survival Budget, Spokane County, 2016

Household Survival Budget, Spokane County		
	SINGLE ADULT	2 ADULTS, 1 INFANT, 1 PRESCHOOLER
Monthly Costs		
Housing	$488	$789
Child Care	$–	$1,213
Food	$177	$586
Transportation	$346	$692
Health Care	$196	$728
Technology	$55	$75
Miscellaneous	$145	$447
Taxes	$187	$384
Monthly Total	$1,594	$4,914
ANNUAL TOTAL	$19,128	$58,968
Hourly Wage	*$9.56*	*$29.48*

[15] Footnotes to Table No. 8
*New to budget in 2016
**Wage working full-time required to support this budget
Source: U.S. Department of Housing and Urban Development, 2016; U.S. Department of Agriculture, 2016; Bureau of Labor Statistics, 2016; Internal Revenue Service; Tax Foundation; and Washington Childcare Aware, 2016.

The HSB is reflective of the bare minimum cost to live and work in the modern economy. As seen in Table No. 8 above, the average HSB in Washington was $61,920 for a four-person family and $20,976 for a single adult in 2016, with the hourly wage necessary to support a family budget being $30.96 for one parent working 40 hours per week, 50 weeks per year (or $15.48 per hour each, if two parents work). Year after year, these costs continue to increase faster than the rate of inflation and despite the improvements made in Washington with regard to employment and median incomes, the economic recovery of the state remains uneven.

Having outlined the parameters that qualify an ALICE household in Washington, Table No. 10 below contains information regarding the prevalence of households in all counties served by Avista that meet this ALICE Threshold criteria. LEAP participation occurred in nine of the ten counties in which Avista offers natural gas services, and have been highlighted for reference.

Table No. 10 – Total Households in Avista Counties at or Below ALICE and Poverty

Washington Counties, 2016		
COUNTY	TOTAL HOUSEHOLDS	% ALICE & POVERTY
Adams	**5,733**	**55%**
Asotin	**9,297**	**43%**
Franklin	**25,903**	**48%**
Grant	28,351	52%
Klickitat	**8,069**	**47%**
Lincoln	**4,337**	**36%**
Skamania	**4,577**	**44%**
Spokane	**195,807**	**38%**
Stevens	**17,442**	**44%**
Whitman	**17,185**	**52%**

Of the nine counties with LEAP participants, an average of over 45% of the population meets the ALICE Threshold. Additionally, as described in Section VII of this Report, it is often times this same low-income population, struggling to afford only basic necessities, that most desperately needs the option of choosing the lowest cost, most efficient fuel for their home. As previously noted, respondents to Avista's Customer Surveys for the LEAP Pilot continuously note

that the cost of equipment had initially kept them from converting to natural gas before learning about LEAP (79% of respondents), and that 95% of respondents said that Avista's line extension allowance impacted their decision to convert to natural gas. In short, removing the financial barriers present for these customers, opens an opportunity that would not otherwise have been available to them, and one that may hold further financial benefits for the customer in terms of utility affordability, reducing their energy burden into the future.

VIII. Other Low Income Evaluations

On October 1, 2018, Avista submitted a third-party evaluation of its Decoupling Mechanisms entitled Avista's Decoupling Evaluation Final Report ("Decoupling Report" or "Evaluation") in Docket No. UE-140188. Though not related to the LEAP Pilot, Section 3 of the Decoupling Report focuses on low-income customers within Avista's Washington service territory, as well as a general contrast between low-income and residential customers. For the purposes of the Evaluation, the term low-income was defined as "known low-income population and includes customers who have received bill payment assistance through Avista's Low-Income Rate Assistance Program ("LIRAP"), energy efficiency services funded by Avista's electric and/or natural gas energy efficiency programs, or the Federal LIHEAP program", with the understanding "that the low-income population is much larger than the participants in the referenced programs."[16] Even with the limited scope presented, this evaluation provided analysis relevant, as a whole, to the challenges that Avista's low-income customers endure. The Evaluation found that, from 2012 to 2017:

> *...the number of low-income customers on the [Washington] electric system has varied narrowly between 31 and 33 thousand customers. This amounts to 15 percent to 16 percent of the total residential customer class. Avista's natural gas system has served over 14 thousand customers annually since 2012, about 9 percent of the residential customer class."*[17]

Additionally, the Evaluation found that the electric usage for a low-income customer is distinctly higher (approximately 10 percent, on average) than for the average residential customer, with the difference appearing to have narrowed over time, as shown in the Chart No. 3 below.[18]

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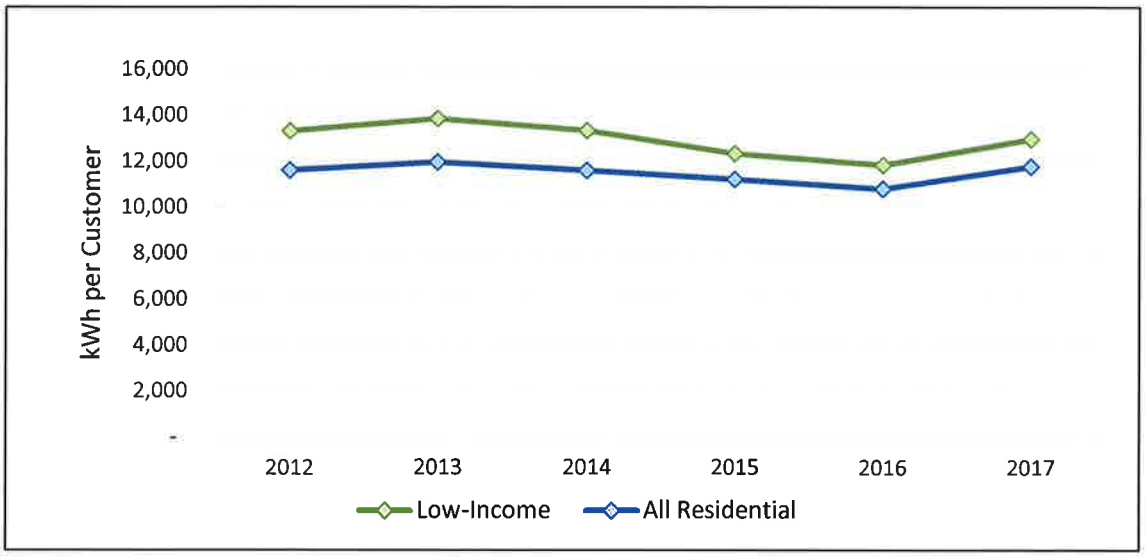
[16] *Avista Decoupling Evaluation Final Report,* H. Gil Peach & Associates, LLC, October 2018. P 3-2.
[17] Id. at 3-3
[18] Id. at 3-3, Figure 3-2

Chart No. 3 – Annual Electric Use per Customer, Low-Income and All Residential



The Evaluation also attributes the narrowing in usage between low-income customers and residential customers to conservation programs, including conversions to natural gas heat, stating:

> *...Energy conservation programs are most likely the driver behind the narrowing gap between use per low-income customers and all residential customers shown...The low-income conservation effort is also using conversions from electric space and water heating to natural gas at higher levels than all residential. In 2017 low-income conversions accounted for 73 percent of first year savings compared to 31 percent for all residential.*

Again, though the analysis relates to fuel conversions as a whole, energy usage data among even a narrow scope of low-income customers is helpful in forming a complete picture of the obstacles these customers may be facing when trying to control the affordability of their monthly expenses.

By merging data from the Spokane County Assessor office with customer information data from Avista, the Decoupling Report also provided a database of nearly 130,000 Avista customers in Spokane County for comparative analysis with regard to housing size, type, vintage, and energy intensity between low-income and other residential customers. Below is an excerpt of the findings found in the Evaluation[19]:

[19] Id. at 3-33

...[with regard to the merged data population], 15 percent are classified as low-income. Nearly three-fourths of the premises receive their electric and natural gas service from Avista...Annual kWh usage for low-income premises was about 6 percent higher than residential premises in 2017. For natural gas the opposite is true with low-income premises using about 16 percent less therms over the year than residential.

The Evaluation also found that though energy usage was typically higher among the low-income population, low-income premises are smaller on average than residential. Chart No. 4 and Chart No. 5 below were provided in the Decoupling Report, as Figures 3-20 and 3-21, respectively, to illustrate the energy usage per premise as well as per square foot of low-income and residential customers.

Chart No. 4 – Annual 2017 Unadjusted Billed Energy Usage per Premise

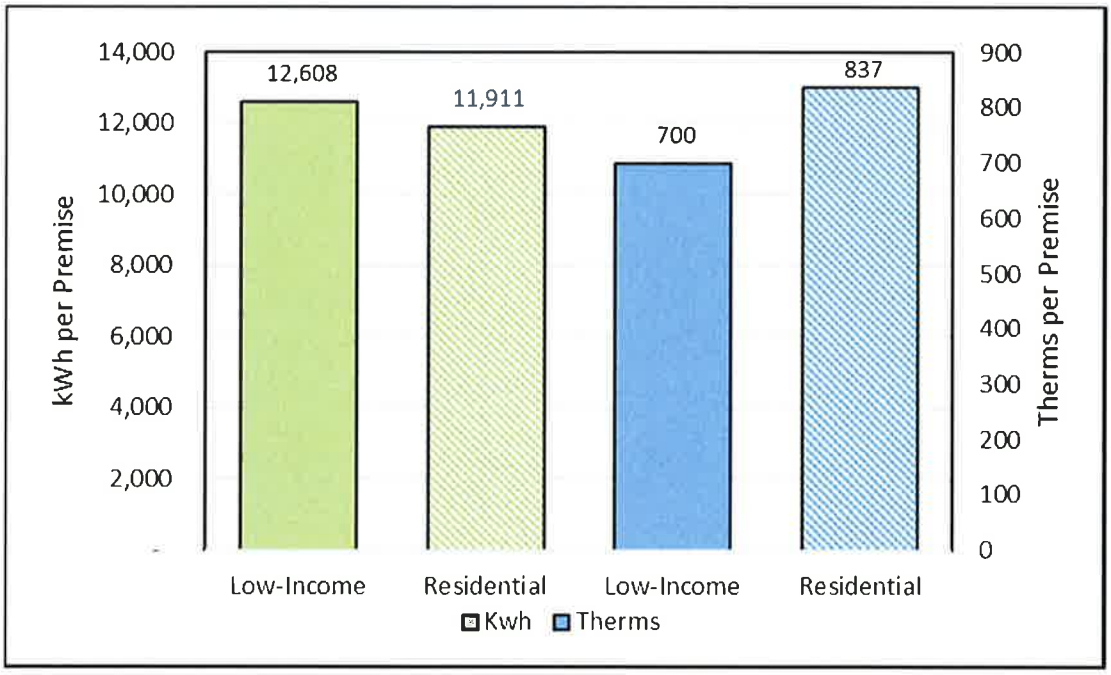
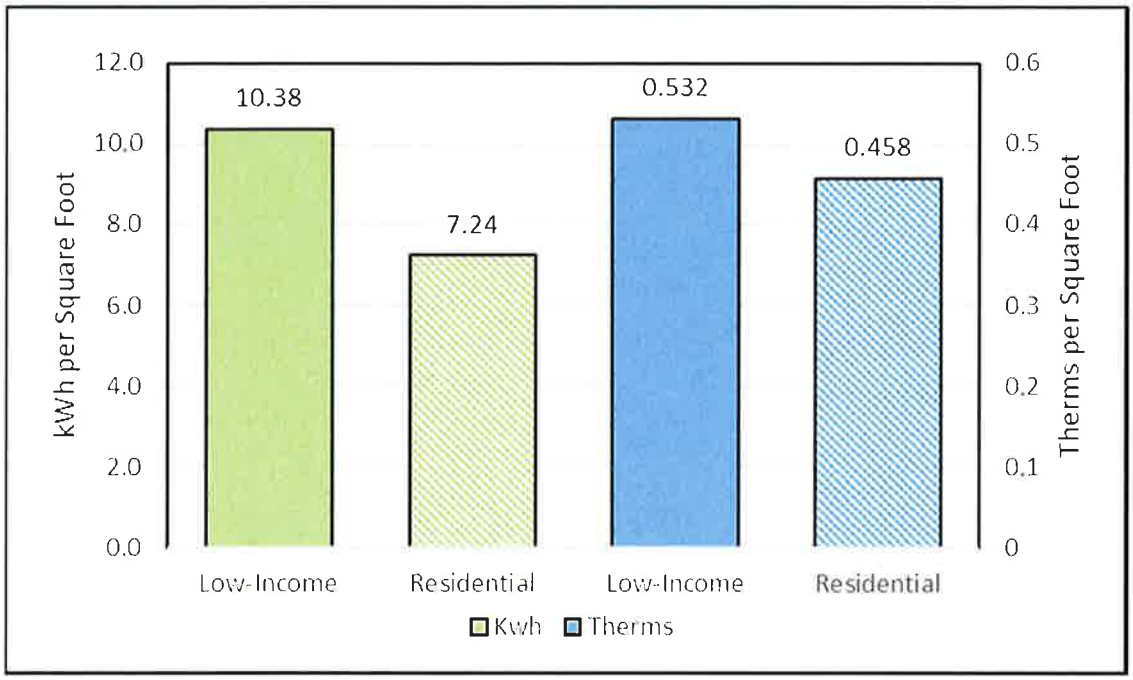


Chart No. 5 - Annual 2017 Unadjusted Billed Energy per Square Foot



As shown, the smaller homes using more electricity resulted in the low-income group's usage for both electric and natural gas being significantly higher, with the kWh per square foot averaging over 40 percent higher than residential premises and therm usage per square foot averaging 16 percent more than residential. The Evaluation provides expanded detail into possible explanations for these differences, with a basic summary of this data being that low-income homes are, on average, 18 years older than residential homes and are less likely to have thermally efficient building shells than newer homes. Low income homes are also about 500 square feet smaller on average compared to other residential homes. Additionally, with all other things equal, market value and market value per square foot are indicators of current quality of construction and building shell efficiency and suggest that low-income homes will use more energy than residential. Notably, this Evaluation also found that owner occupancy is lower in low-income housing than it is in residential, which "says more about the occupant's ability to make energy efficiency improvement decisions than it does about relative energy usage."[20]

> *The percent of the group with natural gas service from Avista is an indication of the predominance of natural gas heating. A lower percentage of low-income homes*

[20] Id. at 3-35

with natural gas service means a greater reliance on electricity and other fuels for space and water heating in low income homes than found in the residential group. This characteristic coupled with the age and quality differences of the building shell are likely to explain a large proportion of the greater electric usage per square foot in low-income homes.

Essentially, low-income customers may not have the means to convert to natural gas heating to obtain the lower fuel costs associated, which in turn maintains the cycle between limited income and higher energy burden.

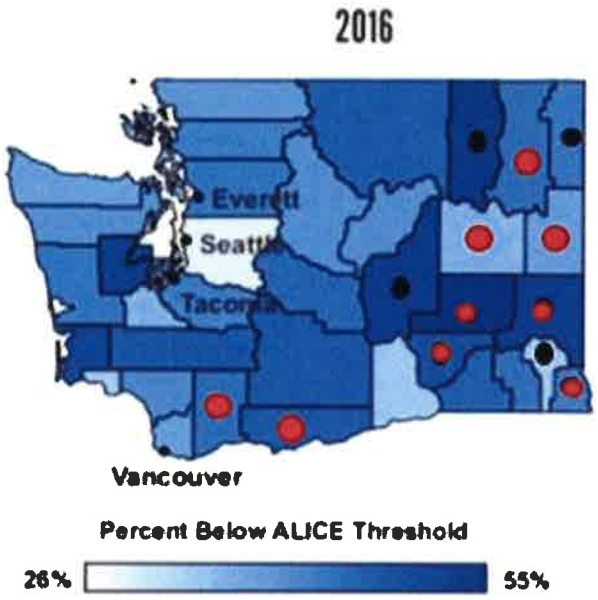
Finally, one additional data set found useful in this Evaluation is the comparison in housing type between the low-income and residential populations. The percentage of low-income customers in single family homes was found to be nearly 10% lower than residential, with the difference being made up by a higher percentage of low-income customers in mobile homes and multiplexes. As seen earlier in this Report, multi-family housing has been an integral part of the LEAP Pilot, with mobile home parks and rental units being a highly concentrated portion of line extensions.

IX. Low Income Impact

With so many of the communities served by Avista struggling to afford basic necessities, as illuminated in Sections VII and VIII of this Report, the Company has sought many programs throughout the years to reduce the energy burden of its customers, and will continue to seek out these opportunities into the future. In evaluating the LEAP Pilot, Avista has found the relationship between LEAP participants and low income and ALICE populations to be widespread. It has also determined that hard-to-reach rental and multi-family dwelling customers have also had great success with LEAP rebates, as the provision of a line extension allowance, coupled with a rebate for energy efficient appliances, has provided incentive for owners or landlords to providing natural gas access to their renters.

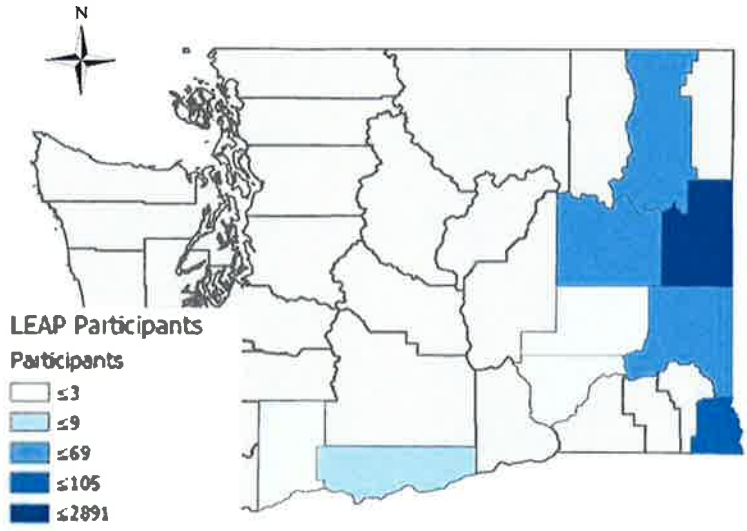
In order to provide a comprehensive view of the role LEAP has played among Avista's ALICE populations, Figure No. 1 below illustrates the ALICE Threshold percentage within Washington counties, with the counties containing LEAP participants marked in red. For comparison, Figure No. 2 below contains a mapping of all LEAP participants with the associated saturation of customers.

Figure No. 1 – Percent of Households Below ALICE Threshold by County, Washington, 2016



Source: American Community Survey, 2010 and 2016 and the ALICE Threshold, 2010 and 2016

Figure No. 2 – LEAP Participants by County



As shown above, the prevalence of LEAP is seen throughout Avista's natural gas service territory. While approximately 91% of the LEAP participants were in Spokane County, with a poverty rate of 13.3% and an ALICE population that reaches 38 percent, Asotin County also contributed approximately 3% of participants. The most impoverished county in the state, Whitman County, with a poverty rate of 25.9% and an ALICE Threshold population of approximately 52%, saw over 40 LEAP participants during the Pilot.

With the bulk of the LEAP rebates occurring in Spokane County, Avista merged 2016 Census Tract data regarding median incomes to provide a mapping of the overall saturation of the LEAP customers in a given area, provided on the following page as Figure 3. Represented in this map are the 2016 median household incomes, with the lightest color on the gradient scale signifying the lowest income bracket of less than or equal to $31,628 per year, and the darkest green color representing the highest tract, at over $200,000 annually. Premises that received a LEAP rebate between March 2016 and August 2018 appear as blue marker on the map, with a heat mapping applied in order to illuminate "hot spots", or geographic areas where a higher concentration of LEAP participants are found. Many of these areas showing higher utilization of the LEAP Pilot have been identified as trailer or mobile home parks, or multi-family dwellings, such as the cluster of mobile home parks illuminated in the Spokane Valley by Figure No. 4.

Figure No. 3 – Saturation of LEAP Participants in Spokane County

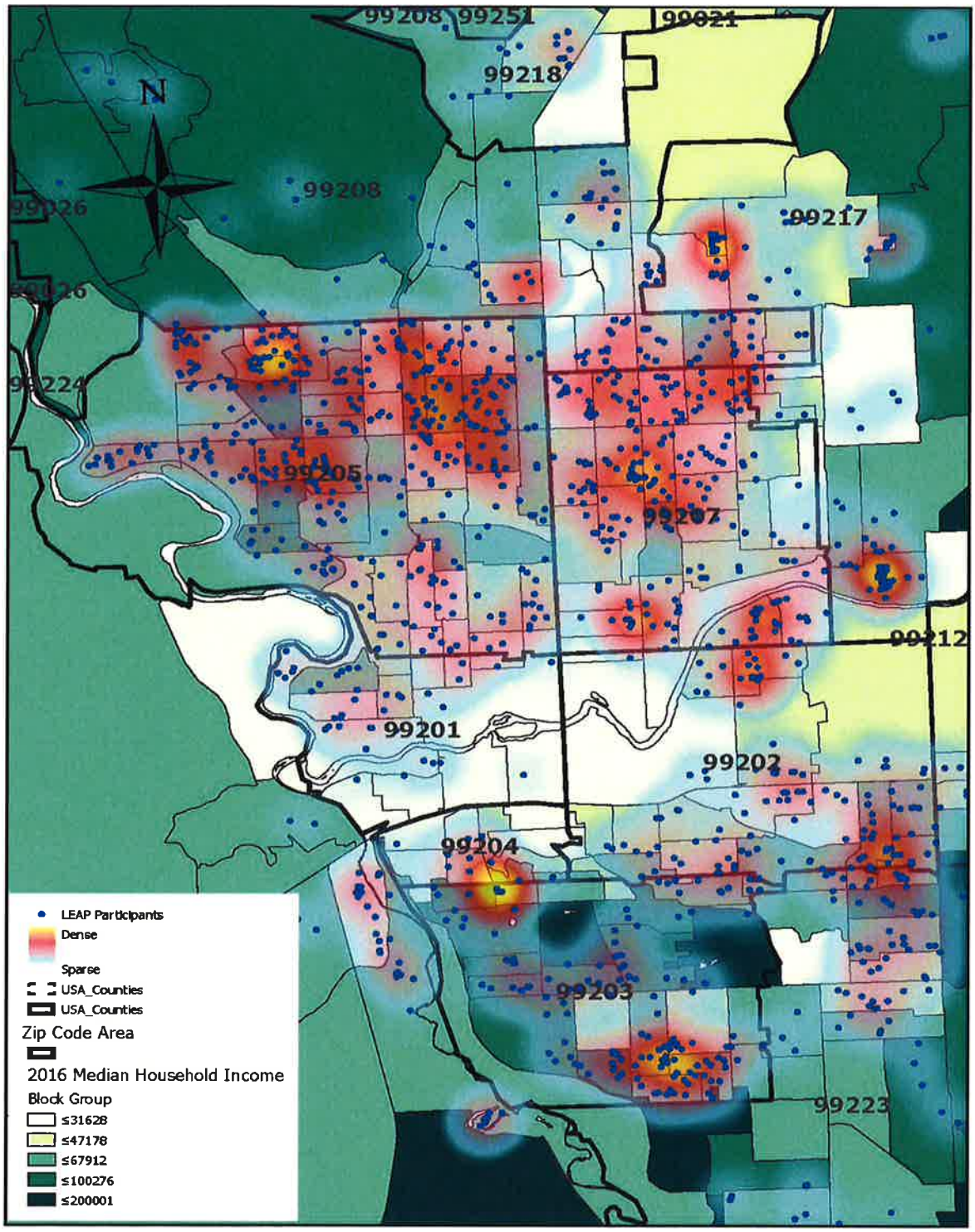
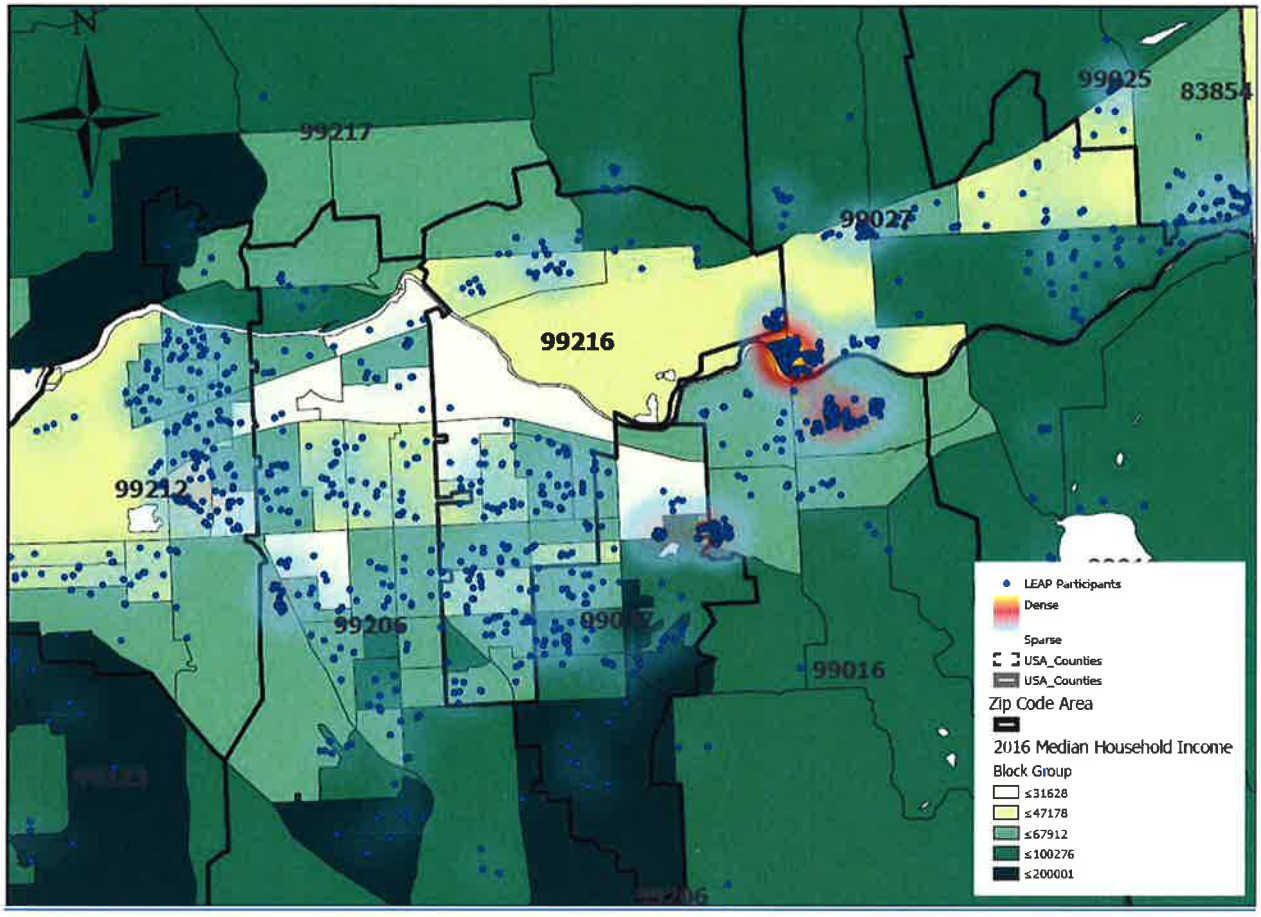


Figure No. 4 – Saturation of LEAP Participants in the Spokane Valley



X. Conclusion

Results of the Company's semi-annual reporting and evaluation of the LEAP program have shown that the availability of the excess allowance equipment rebate not only has a substantial impact on customers' decisions to convert to natural gas, but it provides an opportunity for installation of high efficiency equipment to customers that may not have otherwise had the option. In communities with prominent levels of poverty and ALICE populations, like those found in Avista's service territory, it is important that the Company be aware of the financial constraints that its customers face and remain diligent in seeking out programs that may encourage efficiency, lower the energy burden of its most vulnerable populations, and continuously strive to provide indispensable assistance to its hard-to-reach groups. Geographic mapping of LEAP Pilot participants provides a clear visual that it is not Avista's higher income customers that benefit from this program, but primarily the low or intermediate income households that

receive the value from being given the option to convert to natural gas. Such options are often considered an unattainable investment to those that may be living paycheck to paycheck or are predominantly focused on providing the bare minimum for themselves and their families. Avista believes that LEAP provides an essential service to all customers, and can be of immeasurable value to a low-income customer caught in the cycle of high energy usage due to low equipment or fuel efficiency, with no finances available to facilitate any changes. Additionally, with the directed discontinuation of the Company's Fuel Conversion Program through energy efficiency, it is crucial that Avista continue to provide customers with the ability to control their energy burden by using the lowest cost, highest efficiency fuel for their needs. As such, Avista's proposal to make LEAP permanent would allow customers the benefit of fuel choice and continue to eliminate the financial barriers that often eradicate this choice.