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IDAHO PUBLIC  
UTILITIES COMMISSION

Attorneys for Applicant

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION  
OF UNITED WATER IDAHO INC. FOR  
AUTHORITY TO INCREASE ITS RATES  
AND CHARGES FOR WATER SERVICE  
IN THE STATE OF IDAHO

Case No. UWI-W-15-01

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

DIRECT TESTIMONY OF PAUL R. HERBERT

BEFORE THE  
IDAHO PUBLIC UTILITY COMMISSION

DIRECT TESTIMONY OF  
PAUL R. HERBERT

ON BEHALF OF UNITED WATER IDAHO INC.

CONCERNING  
REVENUES UNDER PRESENT AND PROPOSED RATES

CASE NO. UWI-W-15-01

MAY, 2015

BEFORE THE IDAHO PUBLIC UTILITY COMMISSION

UNITED WATER IDAHO INC.  
CASE NO. UWI-W-15-01  
DIRECT TESTIMONY OF PAUL R. HERBERT

Line  
No.

1 **Q. Please state your name and address.**

2 A. My name is Paul R. Herbert. My business address is 207 Senate Avenue,  
3 Camp Hill, Pennsylvania.

4 **Q. By whom are you employed?**

5 A. I am employed by Gannett Fleming, Valuation and Rate Consultants, LLC.

6 **Q. Please describe your position with Gannett Fleming Valuation and Rate**  
7 **Consultants, LLC, and briefly state your general duties and**  
8 **responsibilities.**

9 A. I am President. My duties and responsibilities include the preparation of  
10 accounting and financial data for revenue requirement and cash working  
11 capital claims, the allocation of cost of service to customer classifications,  
12 and the design of customer rates in support of public utility rate filings.

13 **Q. Have you presented testimony in rate proceedings before a regulatory**  
14 **agency?**

15 A. Yes. I have testified before the Pennsylvania Public Utility Commission, the  
16 New Jersey Board of Public Utilities, the Public Utilities Commission of Ohio,  
17 the Public Service Commission of West Virginia, the Kentucky Public  
18 Service Commission, the Iowa State Utilities Board, the Virginia State  
19 Corporation Commission, the Missouri Public Service Commission, the New

1 Mexico Public Regulation Commission, the Public Utilities Commission of the  
2 State of California, the Illinois Commerce Commission, the Delaware Public  
3 Service Commission, the Arizona Corporation Commission, the Connecticut  
4 Department of Public Utility Control, the Tennessee Regulatory Authority,  
5 and the Idaho Public Utility Commission concerning revenue requirements,  
6 cost of service allocation, rate design and cash working capital claims. A list  
7 of cases in which I have testified is attached to my testimony.

8 **Q. What is your educational background?**

9 A. I have a Bachelor of Science Degree in Finance from the Pennsylvania State  
10 University, University Park, Pennsylvania.

11 **Q. Would you please describe your professional affiliations?**

12 A. I am a member of the American Water Works Association and served as a  
13 member of the Management Committee for the Pennsylvania Section. I am  
14 also a member of the Pennsylvania Municipal Authorities Association. In  
15 1998, I became a member of the National Association of Water Companies  
16 as a member of its Rates and Revenue Committee.

17 **Q. Briefly describe your work experience.**

18 A. I joined the Valuation Division of Gannett Fleming Corddry and Carpenter,  
19 Inc., predecessor to Gannett Fleming, Inc., in September 1977, as a Junior  
20 Rate Analyst. Since then, I advanced through several positions and was  
21 assigned the position of Manager of Rate Studies on July 1, 1990. On June  
22 1, 1994, I was promoted to Vice President and Senior Vice President in

1 November 2003. On July 1, 2007, I was promoted to my current position as  
2 President.

3 While attending Penn State, I was employed during the summers of  
4 1972, 1973 and 1974 by the United Telephone System - Eastern Group in its  
5 accounting department. Upon graduation from college in 1975, I was  
6 employed by Herbert Associates, Inc., Consulting Engineers (now Herbert  
7 Rowland and Grubic, Inc.), as a field office manager until September 1977.

8 **Q. What is the purpose of your testimony in this proceeding?**

9 A. My testimony is in support of the proof of revenue under present and  
10 proposed rates and the development of pro forma revenues prepared under  
11 my direction and supervision for United Water Idaho Inc. (the "Company").

12 **Q. Have you prepared exhibits presenting the results of your study?**

13 A. Yes. Exhibit No. 5 presents the proof of revenue including the application of  
14 present and proposed rates to consumption analysis for the twelve months  
15 ended November 30, 2015, and pro forma revenue under present and  
16 proposed rates, including adjustments to revenue.

17

18 **PROOF OF REVENUE – EXHIBIT NO. 5**

19 **Q. Have you prepared proof of revenue schedules under present and  
20 proposed rates?**

21 A. Yes. Schedules 1 through 9 in Exhibit 5 set forth the proof of revenues from  
22 the application of present and proposed rates to the customer consumption

1 analysis. Pages 1 through 3 of Exhibit 5 provide an explanation of the  
2 schedules.

3 **Q. Did you prepare the adjustments as shown in Schedules 4 through**  
4 **Schedule 4D of Exhibit 5?**

5 A. Yes. The billing determinants associated with four revenue adjustments are  
6 summarized in Schedule 4. The pro forma changes to revenues associated  
7 with the four revenue adjustments are set forth in Schedules 4A, 4B, 4C, and  
8 4D.

9 Adjustment R1, shown on Schedule 4A, adjusts revenues by  
10 annualizing for the gain or loss of customers during the test year ended  
11 December 31, 2014. Adjustment R2, shown on Schedule 4B, adjusts  
12 revenues for the projected increase in the average number of customers  
13 through November 30, 2015. Adjustment R3, shown on Schedule 4C,  
14 adjusts revenues due to the projected decline in customer usage for  
15 residential and commercial customers. Adjustment R4, shown on Schedule  
16 4D, adjusts revenues to remove customer leak adjustments. Customer leak  
17 adjustments are recorded as revenue but not billed, so an offsetting entry is  
18 charged to uncollectible accounts, which is also removed for ratemaking  
19 purposes.

20 **Q. How did you determine the projected decline in customer usage for**  
21 **residential customers shown in Adjustment R3?**

22 A. Using billed consumption records from January 2005 through December  
23 2014, our analysis of residential water usage proceeded in three main steps.

1 Step one was to determine the level of baseline indoor usage, which is not  
2 sensitive to weather variations. Step two examines seasonal irrigation  
3 usage and determines its relationship to weather variations and its trend  
4 over time. Step three combines the projected indoor usage with projected  
5 irrigation usage to yield projected total consumption per residential customer.  
6 The procedures in each step will be described below. The input and output  
7 data are shown in Schedules 5 through 8.

8 **Q. Please detail your steps 1 through 3.**

9 A. In Step 1, I examined the month to month variation in billed consumption for  
10 the last seven-year period. I determined that the billed consumption per  
11 customer data for December through April consistently remained well below  
12 the other months' values. Also, the values across years for each month fell  
13 in a much tighter cluster than values for the other months, suggesting  
14 invariance to weather conditions. I reasoned that data for these months  
15 could therefore be used as representative of an indoor rate of consumption.  
16 That is, the consumption for those winter months did not contain a significant  
17 outdoor use component that is dependent on variations in weather. It  
18 should be noted that the values for each month reflect a lag in billing due to  
19 bi-monthly billing and thus, roughly represent consumption spanning late  
20 October through March.

21 I annualized this winter consumption in Schedule 5 of Exhibit No. 5,  
22 by multiplying the gallons per customer per day (column 3) by 365 to yield an  
23 estimate of the total indoor usage per customer per year (column 4). I used

1 linear regression to fit a trendline of this resulting annual indoor consumption  
2 (column 5). The resulting trend equation showed a very good fit, with an  
3 adjusted R-squared of 0.9329. This value can be interpreted as the  
4 percentage of the year to year variation in indoor consumption that can be  
5 explained as a trend over time. The associated F-statistic with this R-  
6 squared indicates that the trendline fits the data to a significance level that is  
7 below one one-thousandth of one percent (less than 0.001%). The slope of  
8 the resulting trendline is negative 1,072, meaning that annual indoor use is  
9 projected to decline by 1,072 gallons per customer per year, or about 1.43  
10 ccf.

11 In Step 2, I calculated the irrigation use (column 6) as the difference  
12 between total billed consumption per customer per year (column 8) and the  
13 annualized winter (i.e., indoor) usage (column 4). I performed a regression  
14 analysis to fit the irrigation consumption to year and to a weather variable,  
15 the Palmer Z index for the Boise, Idaho area. This index is a short-term  
16 (monthly) measure of soil moisture. I used the average Z-index for the 7-  
17 month period of April through October. The irrigation consumption showed a  
18 very good fit to the year and weather variables, with an adjusted R-squared  
19 of 0.903. Like the indoor trendline, this equation had an associated F-  
20 statistic that indicates that the equation fits the data to a significance level  
21 that is below two one-hundredth of one percent (less than 0.02%). The test  
22 statistics for the coefficients on the year and weather variables were each  
23 very strong, with significance levels well below one percent.

1           Using this equation, I fit a trendline of irrigation usage over time  
2 (column 7) by setting the value of the weather variable equal to the 15-year  
3 average of the Palmer Z index. The 15-year average is negative 0.43,  
4 indicating that this level of moderately dry conditions has been “normal” for  
5 the Boise area for the April-October period. The resulting trendline is thus  
6 “normalized” for weather. This normalized irrigation trendline has a slope of  
7 negative 1,119, indicating that, for weather held constant, irrigation use is  
8 projected to decline by 1,119 gallons per customer per year or about 1.50  
9 ccf.

10           In Step 3, I calculated a total consumption trendline as the sum of the  
11 indoor and irrigation trendlines in column 9 (sum of columns 5 and 7) of  
12 Schedule 5. The slope of the resulting total consumption trendline is  
13 negative 2,190 indicating that total consumption, normalized for weather, is  
14 projected to decline by 2,190 gallons per customer per year. (Note that this  
15 slope is the sum of the indoor and irrigation slopes.) This annual decline  
16 corresponds to a decrease of 2.93 ccf per customer per year or 6 gallons per  
17 day.

18           Schedule 6 is a graph of the total billed consumption and estimated  
19 consumption lines. The weather-normalized trendline, where the drought  
20 index is fixed at the 15-year average, is shown along with the results of fitting  
21 the irrigation consumption to the year and to the actual drought index  
22 simultaneously (dotted line). The dotted line is included to show the close  
23 tracking of this line with actual billed consumption for the regression analysis

1 period (2005-2014), which demonstrates the high explanatory power of the  
2 time and weather variables in the regression equations.

3 **Q. How was the adjustment to usage determined in Schedule 4 for**  
4 **residential customers?**

5 A. I took the projected 2015 average projected annual consumption of 153.2  
6 ccf (114,597 gallons) per residential customer and multiplied it by the  
7 number of residential customers in the test year of 77,879 which equals  
8 11,931,391 ccf and subtracted from that the test year residential  
9 consumption of 12,521,573, resulting in a decrease in annual usage of  
10 590,182 ccf.

11 **Q. Please elaborate on what the weather variable means in your irrigation**  
12 **equation.**

13 A. The coefficient on the weather variable is negative 5,177. This means that,  
14 for every point of increase in the drought index, residential consumption is  
15 expected to decrease by 5,177 gallons (6.92 ccf) per year, all else being  
16 equal. For example, if we apply this coefficient to the drought index values  
17 in 2010 (1.35) and 2013 (-1.34), the difference in drought index from 2010 to  
18 2013 is 2.69, and the equation predicts there to be 13,926 (=2.69 x 5,177)  
19 more gallons per customer usage in 2013 than in 2010, all other things being  
20 equal. This difference amounts to over ten percent of total residential  
21 usage. The weather coefficient captures in a statistical form what is already  
22 very well known—that United Water Idaho faces great variability and

1 unpredictability in residential consumption owing to the variability and  
2 unpredictability of the weather.

3 The change in the drought index value from the actual observation of  
4 -0.77 in 2014 to the 15 year average (-.43), accounts for 1,760 gallons (2.35  
5 ccf) per customer per day of the projected decline in usage.

6 **Q. Please explain your choice of the Palmer Z index to measure weather  
7 conditions.**

8 A. The National Climatic Data Center of the National Oceanic and Atmospheric  
9 Administration (NOAA) compiles various indices to measure drought for  
10 each climatic district in the United States. The various Palmer indices use  
11 temperature data in estimating evapotranspiration combined with  
12 precipitation data in equations designed to measure the level of drought (soil  
13 moisture levels) existing in the given month. The Z index, also referred to as  
14 the "moisture anomaly index", is calibrated such that 0.00 is neutral while  
15 negative represents relatively low soil moisture (drought). For example, the  
16 April-October average index for 2002, the third driest year on record in terms  
17 of precipitation, is -2.07. An alternative index, the Palmer Drought Severity  
18 Index (PDSI) is a measure of long-term drought conditions that is sometimes  
19 used in fitting water demand. The PDSI includes the Z index in its  
20 intermediate calculations. I reasoned that the Palmer Z index had fewer of  
21 the shortcomings sometimes attributed to the Drought Severity Index and  
22 also that domestic watering would be dependent on immediate temperature

1 and precipitation conditions that would be adequately captured by an index  
2 oriented to short term (monthly) measures, as the Z-index does.

3 **Q. How did you determine the projected decline in customer usage for**  
4 **commercial customers?**

5 A. The commercial data table is shown in Schedule 7. First it must be noted  
6 that a change in the customer billing software at the end of 2011 resulted in  
7 a change in the way commercial customers were counted. As a result our  
8 analysis was limited to billing data up to the year 2011.

9 For commercial customers, I began by proceeding with the type of  
10 analysis conducted for residential water usage as described above but in this  
11 case, using data for the ten-year period from 2002-2011. I calculated a  
12 base, indoor usage from winter consumption and calculated an irrigation use  
13 as the difference between total billed consumption and indoor consumption.  
14 However, when I developed regressions of irrigation use on time and  
15 weather, I found that, in contrast to the residential results, the drought index  
16 variable was not significant in explaining the variation in commercial irrigation  
17 consumption. I reasoned that it makes some sense that commercial  
18 seasonal water use is less weather dependent than residential, as such  
19 customers may be on fixed schedules for watering and there are other  
20 seasonal uses (e.g., car washes, laundries, construction) that are relatively  
21 independent of weather. Also, it is noteworthy that the value of the weather  
22 variable did not experience the amount of variation over this particular 10-

1 year period than it typically does, which makes it less likely for a regression  
2 to pick up a relationship to that variable.

3 Since the irrigation consumption regression results showed no reason  
4 to treat irrigation differently than indoor use, I performed a regression  
5 analysis of total billed commercial consumption per customer per year and  
6 found the resulting trend line to yield a very good fit to the consumption data,  
7 with an adjusted R-squared of 0.788 and an associated F-statistic that  
8 indicates that the equation fits the data to a significance level that is below  
9 one-tenth of one percent (0.10%).

10 The resulting trendline slope of negative 15,864 indicates that  
11 commercial consumption can be projected to decline by 15,864 gallons per  
12 customer per year on average, based on customer counts up to 2011. This  
13 decline represents a 3.0% decrease in commercial consumption between  
14 2010 and 2011 or 21.2 ccf per customer per year and 43 gallons per  
15 customer per day. See Schedule 7 and the graph on Schedule 8.

16 The change in the customer count from 2011 to 2012 means that the  
17 data related to number of customers would not be comparable. This lack of  
18 data was adjusted for by taking the 3 percent decline that occurs when  
19 moving along the trendline from 2010 to 2011 and applying this percentage  
20 decline to the consumption in 2014. This approach roughly corresponds to  
21 shifting the trendline up to meet the billed consumption in 2014. This shift is  
22 shown as the dotted line segment in Schedule 8. Projecting a three percent  
23 decline from the 2014 consumption per customer of 569,279 gallons results

1 in a projected decline of 17,178 gallons per customer. Year 2015  
2 consumption is thus projected as 552,201 gallons per commercial customer  
3 per year.

4 **Q. Do your commercial irrigation regression results therefore indicate that**  
5 **weather does not affect commercial consumption?**

6 A. Not at all. The test statistics associated with our regression equations only  
7 state that I cannot with confidence *reject* the hypothesis that weather *does*  
8 *not* affect commercial irrigation consumption. This is not the same as saying  
9 definitively that weather does not affect consumption. In fact, our regression  
10 of irrigation on year and weather estimated a coefficient on the weather  
11 variable of negative 12,651. The p-value on this coefficient was 27% (for a  
12 two-tailed test, i.e., a test that weather has neither positive nor negative  
13 effect). This p-value means that, if weather indeed truly has no effect, then  
14 the chance of seeing the irrigation usage that was measured for the past ten  
15 years is approximately 27 percent. Considering that I could rule out weather  
16 having a positive effect, then the p-value could be halved, to approximately  
17 14 percent. Because analysts typically use a threshold of 5 percent or lower  
18 for a p-value, I could not reject the hypothesis that weather has no effect.

19 **Q. How was the adjustment to usage determined in Schedule 4 for**  
20 **commercial customers?**

21 A. I took the average projected annual consumption of 738.2 ccf per  
22 commercial customer and multiplied it by the number of commercial  
23 customers in the test year of 8,586 which equals 6,338,185 ccf and

1 subtracted from that the test year commercial consumption of 6,582,686,  
2 resulting in a decrease in usage of 244,501 ccf.

3 **Q. What is the significance of the findings of your consumption**  
4 **projections?**

5 A. The past fifteen years of billing data shows a pronounced declining trend in  
6 consumption, particularly when controlling for varying weather conditions.  
7 This trend is to be expected in light of measures aimed to reduce water  
8 demand, such as the federal energy standards for household fixtures and  
9 appliances, United Water Idaho's programs to promote water conservation,  
10 and the requirement that new developments connect to non-potable  
11 irrigation water sources if they are available. The trend is being experienced  
12 and studied in water systems across the country. Because the fixtures and  
13 appliances are gradually and continually being replaced, federal standards  
14 are being tightened, consumer awareness continues to grow, and new  
15 developments continue to be added, this trend of decreasing usage can be  
16 expected to continue.

17 While a decline of 2,190 gallons per residential customer per year (6  
18 gallons per day) appears large, it is well within reason. It is true that studies  
19 for water companies in the eastern and mid-western U.S. are also finding a  
20 declining use, just not to this extent, but they do not serve as a good basis  
21 for comparison because usage in these areas is much lower due largely to  
22 the lower use for outdoor watering. Available study data for arid areas  
23 includes Phoenix, where annual residential water use per customer declined

1 by nearly 20,000 gallons (averaging a 5,000 gallon decline each year) from  
2 2002-2006, a decrease of over 2.8 percent per year. It also helps to put the  
3 decline in the context of potential reductions in a hypothetical household.  
4 For example, for a household that flushes the toilet 10 times per day,  
5 replacing the old standard 3.5 gallons per flush toilet with the current 1.6  
6 gallons per flush model would reduce the household's water consumption by  
7 19 gallons per day.

8 It is crucial to United Water Idaho to be forward rather than backward  
9 looking in estimating its expected water consumption levels in order to insure  
10 that rates are set properly for a sufficient revenue stream. That is, the  
11 Company needs to account for these declining trends, rather than apply  
12 rates that are based on consumption from previous years as if such  
13 consumption levels will continue to hold true.

14 **Q. Could it be argued that consumption is declining over time due to**  
15 **economic conditions?**

16 A. One of the reasons for using data back to 2005 and 2002 is to incorporate a  
17 variety of economic conditions. The decline is also evident for the period  
18 before the economic downturn began in 2008. That is, water use per  
19 customer was on a declining trend even when the economy was growing.  
20 This is also the case in 2010, when the Idaho gross domestic product grew  
21 at an inflation-adjusted rate of two percent while water use per customer  
22 continued its decline.

1     **Q.     Would a five-year average be a reasonable basis to insure sufficient**  
2           **revenue for the Company, considering that it incorporates the low**  
3           **usage of the two wet years of 2010 and 2011?**

4     A.     This approach would have its shortcomings. The first is with respect to the  
5           weather-invariant components of demand. Indoor residential consumption is  
6           not dependent on these weather variations, yet shows a pronounced  
7           declining trend. See my previous statement about the very strong  
8           regression results fitting a time trend to this data. Likewise, commercial  
9           consumption shows an unmistakable downward trend over time. With a  
10          downward time trend, the five-year (or any fixed length) average over the  
11          previous period will be higher than the average in the subsequent years.

12                 Furthermore, the fact that the residential five year average happens to  
13                 equal the 2014 usage per customer (119,242 gallons) actually argues  
14                 *against* rather than in favor of using a five year average. The reason for this  
15                 is because 2014 was drier than normal, with a drought index of -0.77, which  
16                 is notably drier than the 15-year average of -0.43 used in my trendline.  
17                 Apart from considerations of declining time trend, this difference between  
18                 actual and average weather projects a decline of 1,720 gallons per  
19                 residential customer, as noted in an answer to a previous question. The  
20                 company is subject to declining consumption during years of relatively wet  
21                 summers, as evidenced by consumption in Years 2010 and 2011. These  
22                 years were wetter than normal and had consumption *below* the five year

1 average, with consumption per customer of 116,702 and 114,864 gallons,  
2 respectively.

3 **Q. What are the Company's options if it is required to use outdated**  
4 **historical consumption data rather than projected future usage to set**  
5 **rates?**

6 A. In my opinion, if the Company is required to use multi-year average usage  
7 data to set rates, they should explore alternative methods to propose  
8 revenue reconciliation or decoupling mechanisms in order to ensure its  
9 revenue stream and avoid the erosion of their rate of return.

10 **Q. How do your methods and results for projecting consumption per**  
11 **customer compare to what was done in the 2011 case?**

12 A. Our methods are substantially the same as the previous study. In both  
13 studies I used ten years of billing data for the regression analysis, I  
14 estimated separate projections of indoor and irrigation usage for residential  
15 customers, and I estimated a time trend of total usage for commercial  
16 customers.

17 The slight difference in our method for the residential estimates was  
18 that I took the conservative (i.e., projecting higher usage) approach to  
19 selecting the average value of the drought index, using the 15-year average  
20 of -0.43. In the prior study, we used a 30-year index. The 30-year average  
21 index value is currently -0.31. It was -0.16 in the previous study. The 15  
22 year index was nearly the lowest average that could be used. A 16-year  
23 average of -0.44 was the only lower average. In terms of comparing results,

1 the regression results for the current study show slightly flatter trendlines for  
2 both indoor and irrigation usage than those of the prior study.

3 **Q. How did you develop proposed rates?**

4 A. Yes. The proposed rates are an across-the-board increase of 13.2% applied  
5 to both customer charges and volumetric charges. A comparison of present  
6 and proposed rates is shown on Schedule 9 of Exhibit No. 5.

7 **Q. Does this complete your testimony at this time?**

8 A. Yes, it does.

LIST OF CASES IN WHICH PAUL R. HERBERT TESTIFIED

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client/Utility</u>	<u>Subject</u>
1.	1983	Pa. PUC	R-832399	T. W. Phillips Gas and Oil Co.	Pro Forma Revenues
2.	1989	Pa. PUC	R-891208	Pennsylvania-American Water Company	Bill Analysis and Rate Application
3.	1991	WV PSC	91-106-W-MA	Clarksburg Water Board	Revenue Requirements (Rule 42)
4.	1992	Pa. PUC	R-922276	North Penn Gas Company	Cash Working Capital
5.	1992	NJ BPU	WR92050532J	The Atlantic City Sewerage Company	Cost Allocation and Rate Design
6.	1994	Pa. PUC	R-943053	The York Water Company	Cost Allocation and Rate Design
7.	1994	Pa. PUC	R-943124	City of Bethlehem	Revenue Requirements, Cost Allocation, Rate Design and Cash Working Capital
8.	1994	Pa. PUC	R-943177	Roaring Creek Water Company	Cash Working Capital
9.	1994	Pa. PUC	R-943245	North Penn Gas Company	Cash Working Capital
10.	1994	NJ BPU	WR94070325	The Atlantic City Sewerage Company	Cost Allocation and Rate Design
11.	1995	Pa. PUC	R-953300	Citizens Utilities Water Company of Pennsylvania	Cost Allocation and Rate Design
12.	1995	Pa. PUC	R-953378	Apollo Gas Company	Rev. Requirements and Rate Design
13.	1995	Pa. PUC	R-953379	Carnegie Natural Gas Company	Rev. Requirements and Rate Design
14.	1996	Pa. PUC	R-963619	The York Water Company	Cost Allocation and Rate Design
15.	1997	Pa. PUC	R-973972	Consumers Pennsylvania Water Company Shenango Valley Division	Cash Working Capital
16.	1998	Ohio PUC	98-178-WS-AIR	Citizens Utilities Company of Ohio	Water and Wastewater Cost Allocation and Rate Design
17.	1998	Pa. PUC	R-984375	City of Bethlehem - Bureau of Water	Revenue Requirement, Cost Allocation and Rate Design
18.	1999	Pa. PUC	R-994605	The York Water Company	Cost Allocation and Rate Design
19.	1999	Pa. PUC	R-994868	Philadelphia Suburban Water Company	Cost Allocation and Rate Design
20.	1999	WV PSC	99-1570-W-MA	Clarksburg Water Board	Revenue Requirements (Rule 42), Cost Allocation and Rate Design
21.	2000	Ky. PSC	2000-120	Kentucky-American Water Company	Cost Allocation and Rate Design
22.	2000	Pa. PUC	R-00005277	PPL Gas Utilities	Cash Working Capital
23.	2000	NJ BPU	WR00080575	Atlantic City Sewerage Company	Cost Allocation and Rate Design
24.	2001	Ia. St Util Bd	RPU-01-4	Iowa-American Water Company	Cost Allocation and Rate Design
25.	2001	Va. St. CC	PUE010312	Virginia-American Water Company	Cost Allocation and Rate Design
26.	2001	WV PSC	01-0326-W-42T	West-Virginia American Water Company	Cost Allocation And Rate Design
27.	2001	Pa. PUC	R-016114	City of Lancaster	Tapping Fee Study
28.	2001	Pa. PUC	R-016236	The York Water Company	Cost Allocation and Rate Design
29.	2001	Pa. PUC	R-016339	Pennsylvania-American Water Company	Cost Allocation and Rate Design
30.	2001	Pa. PUC	R-016750	Philadelphia Suburban Water Company	Cost Allocation and Rate Design
31.	2002	Va.St.CC	PUE-2002-0375	Virginia-American Water Company	Cost Allocation and Rate Design
32.	2003	Pa. PUC	R-027975	The York Water Company	Cost Allocation and Rate Design
33.	2003	Tn Reg Auth	03-	Tennessee-American Water Company	Cost Allocation and Rate Design
34.	2003	Pa. PUC	R-038304	Pennsylvania-American Water Company	Cost Allocation and Rate Design
35.	2003	NJ BPU	WR03070511	New Jersey-American Water Company	Cost Allocation and Rate Design
36.	2003	Mo. PSC	WR-2003-0500	Missouri-American Water Company	Cost Allocation and Rate Design
37.	2004	Va.St.CC	PUE-200 -	Virginia-American Water Company	Cost Allocation and Rate Design
38.	2004	Pa. PUC	R-038805	Pennsylvania Suburban Water Company	Cost Allocation and Rate Design
39.	2004	Pa. PUC	R-049165	The York Water Company	Cost Allocation and Rate Design
40.	2004	NJ BPU	WRO4091064	The Atlantic City Sewerage Company	Cost Allocation and Rate Design
41.	2005	WV PSC	04-1024-S-MA	Morgantown Utility Board	Cost Allocation and Rate Design
42.	2005	WV PSC	04-1025-W-MA	Morgantown Utility Board	Cost Allocation and Rate Design
43.	2005	Pa. PUC	R-051030	Aqua Pennsylvania, Inc.	Cost Allocation and Rate Design
44.	2006	Pa. PUC	R-051178	T. W. Phillips Gas and Oil Co.	Cost Allocation and Rate Design
45.	2006	Pa. PUC	R-061322	The York Water Company	Cost Allocation and Rate Design
46.	2006	NJ BPU	WR-06030257	New Jersey American Water Company	Cost Allocation and Rate Design
47.	2006	Pa. PUC	R-061398	PPL Gas Utilities, Inc.	Cost Allocation and Rate Design

LIST OF CASES IN WHICH PAUL R. HERBERT TESTIFIED

<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client/Utility</u>	<u>Subject</u>	
48.	2006	NM PRC	06-00208-UT	New Mexico American Water Company	Cost Allocation and Rate Design
49.	2006	Tn Reg Auth	06-00290	Tennessee American Water Company	Cost Allocation and Rate Design
50.	2007	Ca. PUC	U-339-W	Suburban Water Systems	Water Conservation Rate Design
51.	2007	Ca. PUC	U-168-W	San Jose Water Company	Water Conservation Rate Design
52.	2007	Pa. PUC	R-00072229	Pennsylvania American Water Company	Cost Allocation and Rate Design
53.	2007	Ky. PSC	2007-00143	Kentucky American Water Company	Cost Allocation and Rate Design
54.	2007	Mo. PSC	WR-2007-0216	Missouri American Water Company	Cost Allocation and Rate Design
55.	2007	Oh. PUC	07-1112-WS-IR	Ohio American Water Company	Cost Allocation and Rate Design
56.	2007	Il. CC	07-0507	Illinois American Water Company	Customer Class Demand Study
57.	2007	Pa. PUC	R-00072711	Aqua Pennsylvania, Inc.	Cost Allocation and Rate Design
58.	2007	NJ BPU	WR07110866	The Atlantic City Sewerage Company	Cost Allocation and Rate Design
59.	2007	Pa. PUC	R-00072492	City of Bethlehem – Bureau of Water	Revenue Reqmts, Cost Alloc.
60.	2007	WV PSC	07-0541-W-MA	Clarksburg Water Board	Cost Allocation and Rate Design
61.	2007	WV PSC	07-0998-W-42T	West Virginia American Water Company	Cost Allocation and Rate Design
62.	2008	NJ BPU	WR08010020	New Jersey American Water Company	Cost Allocation and Rate Design
63.	2008	Va St CC	PUE-2008-0009	Virginia American Water Company	Cost Allocation and Rate Design
64.	2008	Tn.Reg.Auth.	08-00039	Tennessee American Water Company	Cost Allocation and Rate Design
65.	2008	Mo PSC	WR-2008-0311	Missouri American Water Company	Cost Allocation and Rate Design
66.	2008	De PSC	08-96	Artesian Water Company, Inc.	Cost Allocation and Rate Design
67.	2008	Pa PUC	R-2008-2032689	Penna. American Water Co. – Coatesville Wastewater	Cost Allocation and Rate Design
68.	2008	AZ CC.	W-01303A-08-0227 SW-01303A-08-0227	Arizona American Water Co. - Water - Wastewater	Cost Allocation and Rate Design
69.	2008	Pa PUC	R-2008-2023067	The York Water Company	Cost Allocation and Rate Design
70.	2008	WV PSC	08-0900-W-42T	West Virginia American Water Company	Cost Allocation and Rate Design
71.	2008	Ky PSC	2008-00250	Frankfort Electric and Water Plant Board	Cost Allocation and Rate Design
72.	2008	Ky PSC	2008-00427	Kentucky American Water Company	Cost Allocation and Rate Design
73.	2009	Pa PUC	2008-2079660	UGI – Penn Natural Gas	Cost of Service Allocation
74.	2009	Pa PUC	2008-2079675	UGI – Central Penn Gas	Cost of Service Allocation
75.	2009	Pa PUC	2009-2097323	Pennsylvania American Water Co.	Cost Allocation and Rate Design
76.	2009	Ia St Util Bd	RPU-09-	Iowa-American Water Company	Cost Allocation and Rate Design
77.	2009	Il CC	09-0319	Illinois-American Water Company	Cost Allocation and Rate Design
78.	2009	Oh PUC	09-391-WS-AIR	Ohio-American Water Company	Cost Allocation and Rate Design
79.	2009	Pa PUC	R-2009-2132019	Aqua Pennsylvania, Inc.	Cost Allocation and Rate Design
80.	2009	Va St CC	PUE-2009-0059	Aqua Virginia, Inc.	Cost Allocation (only)
81.	2009	Mo PSC	WR-2010-0131	Missouri American Water Company	Cost Allocation and Rate Design
82.	2010	VaSt CorpCom	PUE-2010-00001	Virginia American Water Company	Cost Allocation and Rate Design
83.	2010	Ky PSC	2010-00036	Kentucky American Water Company	Cost Allocation and Rate Design
84.	2010	NJ BPU	WR10040260	New Jersey American Water Company	Cost Allocation and Rate Design
85.	2010	Pa PUC	2010-2167797	T.W. Phillips Gas and Oil Co.	Cost Allocation and Rate Design
86.	2010	Pa PUC	2010-2166212	Pennsylvania American Water Co. - Wastewater	Cost Allocation and Rate Design
87.	2010	Pa PUC	R-2010-2157140	The York Water Company	Cost Allocation and Rate Design
88.	2010	Ky PSC	2010-00094	Northern Kentucky Water District	Cost Allocation and Rate Design
89.	2010	WV PSC	10-0920-W-42T	West Virginia American Water Co.	Cost Allocation and Rate Design
90.	2010	Tn Reg Auth	10-00189	Tennessee American Water Company	Cost Allocation and Rate Design
91.	2010	Ct PU RgAth	10-09-08	United Water Connecticut	Cost Allocation and Rate Design
92.	2010	Pa PUC	R-2010-2179103	City of Lancaster-Bureau of Water	Rev Rqmts, Cst Alloc/Rate Design
93.	2011	Pa PUC	R-2010-2214415	UGI Central Penn Gas, Inc.	Cost Allocation
94.	2011	Pa PUC	R-2011-2232359	The Newtown Artesian Water Co.	Revenue Requirement
95.	2011	Pa PUC	R-2011-2232243	Pennsylvania-American Water Co.	Cost Allocation and Rate Design
96.	2011	Pa PUC	R-2011-2232985	United Water Pennsylvania Inc.	Demand Study, COS/Rate Design
97.	2011	Pa PUC	R-2011-2244756	City of Bethlehem-Bureau of Water	Rev. Rqmts/COS/Rate Design
98.	2011	Mo PSC	WR-2011-0337-338	Missouri American Water Company	Cost Allocation and Rate Design

LIST OF CASES IN WHICH PAUL R. HERBERT TESTIFIED

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client/Utility</u>	<u>Subject</u>
99.	2011	Oh PUC	11-4161-WS-AIR	Ohio American Water Company	Cost Allocation and Rate Design
100.	2011	NJ BPU	WR11070460	New Jersey American Water Company	Cost Allocation and Rate Design
101.	2011	Id PUC	UWI-W-11-02	United Water Idaho Inc.	Cost Allocation and Rate Design
102.	2011	Il CC	11-0767	Illinois-American Water Company	Cost Allocation and Rate Design
103.	2011	Pa PUC	R-2011-2267958	Aqua Pennsylvania, Inc.	Cost Allocation and Rate Design
104.	2011	VaStCom	2011-00099	Aqua Virginia, Inc.	Cost Allocation
105.	2011	VaStCom	2011-00127	Virginia American Water Company	Cost Allocation and Rate Design
106.	2012	TnRegAuth	12-00049	Tennessee American Water Company	Cost Allocation and Rate Design
107.	2012	Ky PSC	2012-00072	Northern Kentucky Water District	Cost Allocation and Rate Design
108.	2012	Pa PUC	R-2012-2310366	Lancaster, City of – Sewer Fund	Cost Allocation and Rate Design
109.	2012	Ky PSC	2012-00520	Kentucky American Water Co.	Cost Allocation and Rate Design
110.	2013	WV PSC	12-1649-W-42T	West Virginia American Water Co.	Cost Allocation and Rate Design
111.	2013	Ia St Util Bd	RPU-2013-000_	Iowa American Water Company	Cost Allocation and Rate Design
112.	2013	Pa PUC	R-2013-2355276	Pennsylvania American Water Co.	Cost Allocation and Rate Design
113.	2013	Pa PUC	R-2012-2336379	The York Water Company	Cost Allocation and Rate Design
114.	2013	Pa PUC	R-2013-2350509	City of DuBois – Bureau of Water	Cost Allocation and Rate Design
115.	2013	Pa PUC	R-2013-2390244	City of Bethlehem – Bureau of Water	Cost Allocation and Rate Design
116.	2014	Pa PUC	R-2014-2418872	City of Lancaster – Bureau of Water	Cost Allocation and Rate Design
117.	2014	Pa PUC	R-2014-2428304	Borough of Hanover	Cost Allocation and Rate Design

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION  
OF UNITED WATER IDAHO INC. FOR  
AUTHORITY TO INCREASE ITS RATES  
AND CHARGES FOR WATER SERVICE  
IN THE STATE OF IDAHO

**Case No. UWI-W-15-01**

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

EXHIBIT TO ACCOMPANY THE

DIRECT TESTIMONY OF PAUL R. HERBERT

UNITED WATER IDAHO INC.  
BOISE, IDAHO

APPLICATION OF PRESENT AND PROPOSED RATES  
TO CONSUMPTION ANALYSIS FOR THE  
TWELVE MONTHS ENDED NOVEMBER 30, 2015  
AND PRO FORMA REVENUE  
UNDER PRESENT AND PROPOSED RATES

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Harrisburg, Pennsylvania

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UNITED WATER IDAHO INC.  
BOISE, IDAHO

APPLICATION OF PRESENT AND PROPOSED RATES  
TO CONSUMPTION ANALYSIS FOR THE  
TWELVE MONTHS ENDED NOVEMBER 30, 2015  
AND PRO FORMA REVENUE  
UNDER PRESENT AND PROPOSED RATES

INTRODUCTION

This report is organized into nine schedules. Schedule 1 summarizes the application of proposed rates to the consumption analysis for the twelve months ended November 30, 2015, and the pro forma revenues under proposed rates for the twelve months ended November 30, 2015. Schedule 2 summarizes the application of present rates to the consumption analysis and the pro forma revenues under present rates for the twelve months ended November 30, 2015. Schedules 3 and 4 set forth the application of present and proposed rates to the detailed consumption analysis and billing determinants. Schedules 5 through 8 describe the usage adjustment in Schedule 4C.

PRESENT RATE APPLICATION

Schedule 2 summarizes the pro forma revenues under present rates. Column 2 presents the revenues per books. Columns 3 and 4 present the removal of unbilled revenue accrued. Column 5 presents the revenues from the application of present rates to the detailed consumption analysis for the twelve months ended December 31, 2014. The application of rates and customer classifications presented are from the application of present rates in Schedule 3. The adjustment factor in column 6 is calculated by dividing column 4 by column 5.

Column 7 of Schedule 2 is the result of applying the adjustment factor in column 6 to the revenues in column 5. The application of present base rates to the pro forma test year adjustments of number of bills and consumption shown in Schedule 4 is presented in Schedules 4A, 4B, 4C AND 4D, column 5 and brought forward to columns 8, 9 and 10 of Schedule 2.

#### PROPOSED RATE APPLICATION

Schedule 1 summarizes the pro forma revenues under proposed rates for the twelve months ended November 30, 2015, and determines the revenue increase by customer classification under proposed rates. A comparison of present and proposed rates is presented in Schedule 9. Column 2 of Schedule 1 sets forth the pro forma revenues under present rates brought forward from column 12 of Schedule 2. Column 3 is the result of applying proposed rates to the detailed consumption analysis presented in Schedule 3. The adjustment factor is applied to the revenues in column 3 to determine the proposed revenues in column 5. Columns 6, 7, 8 and 9 show the results of applying proposed rates to the pro forma adjustments brought forward from column 7 of Schedules 4A, 4B, 4C and 4D. Column 10 of Schedule 1 is the sum of columns 5, 6, 7, 8 and 9 and is the total pro forma revenues under proposed rates. The proposed increase in revenues is shown in column 11 by subtracting the pro forma revenues under present rates in column 2 from the pro forma revenues under proposed rates in column 10. The percent increase is shown in column 12.

## USAGE ADJUSTMENT

Schedules 6 through 8 demonstrate the decline in annual usage for residential and commercial customers when normalized for weather. These charts were used to determine the projected average annual customer's usage of 153.2ccf for residential customers and 738.2ccf for commercial customers. See Schedule 4, adjustment R3 for related consumption adjustments.

UNITED WATER IDAHO INC.

SUMMARY OF PROFORMA REVENUES UNDER PROPOSED RATES FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2015  
AND THE CALCULATION OF THE REVENUE INCREASE UNDER PROPOSED RATES

Customer Classification (1)	Pro Forma Revenues, Present Rates (Schedule 2) (2)	Bill Analysis Revenues, Proposed Rates (Schedule 3) (3)	Adjustment Factor (Sch. 2, col 6) (4)	Revenues, Proposed Rates (5)=(4)X(3)	Adjustment R1 Annualization of Test Year Growth Proposed Rates (6)	Adjustment R2 Customer Growth from 12/31/2014 thru 11/30/2015 Proposed Rates (7)	Adjustment R3 Weather and other Usage Adjustments Proposed Rates (8)	Adjustment R4 Pro Forma Leak Adjustment Proposed Rates (9)	Total Pro Forma Revenue Proposed Rates (10)=(5)+(6)+ (7)+(8)+(9)	Proposed Increase (11)=(10)-(2)	Percent Increase (12)
	<b>METERED SALES</b>										
Residential	\$ 30,462,415	\$ 35,273,824	0.99999785	\$ 35,273,748	\$ 268,169	\$ 172,100	\$ (1,130,658)	\$ (105,753)	\$ 34,477,606	\$ 4,015,191	13.2%
Commercial	13,012,091	14,987,392	1.00003028	14,987,846	112,078	92,206	(486,728)	-	14,725,400	1,713,310	13.2%
Municipal	179,409	202,972	1.00027128	203,027	-	-	-	-	203,027	23,619	13.2%
Total Metered Sales	\$ 43,653,914	\$ 50,464,188		\$ 50,464,621	\$ 380,247	\$ 264,306	\$ (1,597,387)	\$ (105,753)	\$ 49,406,034	\$ 5,752,119	13.2%
<b>UNMETERED SALES</b>											
Residential	\$ 11,824	\$ 13,381	1.00000000	\$ 13,381	\$ -	\$ -	\$ -	\$ -	\$ 13,381	\$ 1,557	13.2%
Private Fire Protection	969,688	1,073,809	1.00009668	1,073,913	18,498	4,908	-	-	1,097,319	127,631	13.2%
Subtotal Unmetered Sales	\$ 981,512	\$ 1,087,190		\$ 1,087,294	\$ 18,498	\$ 4,908	\$ -	\$ -	\$ 1,110,700	\$ 129,188	13.2%
Total Sales of Water	\$ 44,635,426	\$ 51,551,378		\$ 51,551,915	\$ 398,745	\$ 269,213	\$ (1,597,387)	\$ (105,753)	\$ 50,516,733	\$ 5,881,308	13.2%
Other Operating Revenues	192,416	192,416		192,416	-	-	-	-	192,416	-	0.0%
Total	\$ 44,827,841	\$ 51,743,794		\$ 51,744,330	\$ 398,745	\$ 269,213	\$ (1,597,387)	\$ (105,753)	\$ 50,709,149	\$ 5,881,308	13.1%

UNITED WATER IDAHO INC.

SUMMARY OF REVENUE UNDER PRESENT RATES AND PRO FORMA REVENUES UNDER PRESENT RATES  
FOR THE TWELVE MONTHS ENDED NOVEMBER 30, 2015

Customer Classification (1)	Adjusted Revenues, Per Books Test Year Rates 12/31/2014 (2)	Removal of Other Revenues and Net Unbilled Revenue Accrual (3)	Adjusted Test Year Book Revenue (4)	Bill Analysis Revenues, Test Year Rates (Schedule 3) (5)	Adjustment Factor (6)=(4)/(5)	Adjusted Revenue Under Present Rates (7)=(6)X(5)	Adjustment R1 Annualization of Test Year Growth (8)	Adjustment R2 Customer Growth 11/30/2015 (9)	Adjustment R3 Weather and other Pro Forma Usage Adjustments Present Rates (10)	Adjustment R4 Pro Forma Leak Adjustment Present Rates (11)	Total Pro Forma Revenue Present Rates (12)=(7)+(8)+(9)+(10)+(11)
<b>METERED SALES</b>											
Residential	\$ 31,164,849	(a) \$ 1,153	\$ 31,166,002	\$ 31,166,069	0.99999785	\$ 31,166,002	\$ 236,935	\$ 152,055	\$ (999,126)	\$ (93,450)	\$ 30,462,415
Commercial	13,381,399	(137,396)	13,244,003	13,243,602	1.00003028	13,244,003	99,040	81,480	(412,432)	-	13,012,091
Municipal	179,402	7	179,409	179,360	1.00027128	179,409	-	-	-	-	179,409
<b>Total Metered Sales</b>	<b>\$ 44,725,650</b>	<b>\$ (136,237)</b>	<b>\$ 44,589,413</b>	<b>\$ 44,589,031</b>		<b>\$ 44,589,413</b>	<b>\$ 335,975</b>	<b>\$ 233,534</b>	<b>\$ (1,411,558)</b>	<b>\$ (93,450)</b>	<b>\$ 43,653,914</b>
<b>UNMETERED SALES</b>											
Residential	\$ 11,824	-	\$ 11,824	\$ 11,824	1.00000000	\$ 11,824	-	-	-	-	\$ 11,824
Private Fire Protection	949,005	-	949,005	948,913	1.00009668	949,005	16,346	4,337	-	-	965,688
Subtotal Unmetered Sales	960,828	-	960,828	960,737		960,828	16,346	4,337	-	-	981,512
<b>Total Sales of Water</b>	<b>\$ 45,686,479</b>	<b>\$ (136,237)</b>	<b>\$ 45,550,242</b>	<b>\$ 45,549,767</b>		<b>\$ 45,550,242</b>	<b>\$ 352,321</b>	<b>\$ 237,871</b>	<b>\$ (1,411,558)</b>	<b>\$ (93,450)</b>	<b>\$ 44,635,426</b>
<b>Net Unbilled Revenue Accrual</b>											
<b>Total Water Revenue</b>	<b>\$ 45,686,479</b>	<b>\$ -</b>	<b>\$ 45,550,242</b>	<b>\$ 45,549,767</b>		<b>\$ 45,550,242</b>	<b>\$ 352,321</b>	<b>\$ 237,871</b>	<b>\$ (1,411,558)</b>	<b>\$ (93,450)</b>	<b>\$ 44,635,426</b>
<b>Other Operating Revenues</b>	<b>54,525</b>	<b>137,891</b>	<b>192,416</b>	<b>192,416</b>		<b>192,416</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>192,416</b>
<b>Total</b>	<b>\$ 45,741,003</b>	<b>\$ 1,654</b>	<b>\$ 45,742,657</b>	<b>\$ 45,742,183</b>		<b>\$ 45,742,657</b>	<b>\$ 352,321</b>	<b>\$ 237,871</b>	<b>\$ (1,411,558)</b>	<b>\$ (93,450)</b>	<b>\$ 44,827,841</b>

(a) Does not include unmetered sales.

UNITED WATER IDAHO INC.

APPLICATION OF PRESENT RATES AND PROPOSED RATES TO CONSUMPTION ANALYSIS  
YEAR ENDED DECEMBER 31, 2014

Rate Block CCF	Number Of Bills	Total Consumption	Present Rate	Revenue	Proposed Rate	Proposed Revenue
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Residential - Bi-Monthly</u>						
Customer Charge						
5/8	94,077	0	\$ 20.80	\$ 1,956,802	\$ 23.55	\$ 2,215,513
3/4	322,368	0	20.80	6,705,254	23.55	7,591,766
1	45,397	0	26.60	1,207,560	30.10	1,366,450
1 1/2	1,455	0	45.50	66,203	51.50	74,933
2	619	0	70.60	43,701	79.90	49,458
3	3	0	137.70	413	155.80	467
Subtotal	463,919	0		9,979,933		11,298,587
Winter Usage	0	4,179,084	1.4647	6,121,104	1.6576	6,927,250
Summer Usage						
Up to 3 CCF	0	573,480	1.4647	839,976	1.6576	950,600
Over 3 CCF	0	7,769,009	1.8310	14,225,055	2.0720	16,097,387
Subtotal	0	12,521,573		21,186,136		23,975,237
Subtotal	463,919	12,521,573		31,166,069		35,273,824
Flat Rate	148		79.89	11,824	\$ 90.41	13,381
Total Class	464,067	12,521,573		\$31,177,893		\$ 35,287,205
<u>Commercial - Bi-Monthly</u>						
Customer Charge						
5/8	2,852	0	\$ 20.80	\$ 59,322	\$ 23.55	\$ 67,165
3/4	12,291	0	20.80	255,653	23.55	289,453
1	14,451	0	26.60	384,397	30.10	434,975
1 1/2	10,304	0	45.50	468,832	51.50	530,656
2	11,268	0	70.60	795,521	79.90	900,313
3	776	0	137.70	106,855	155.80	120,901
4	229	0	256.90	58,830	290.70	66,570
6	24	0	428.90	10,294	485.40	11,650
8	0	0	561.10	0	635.00	0
Subtotal	52,195	0		2,139,704		2,421,683
Winter Usage	0	2,528,661	1.4647	3,703,730	1.6576	4,191,508
Summer Usage						
Up to 3 CCF	0	62,112	1.4647	90,975	1.6576	102,957
Over 3 CCF	0	3,991,913	1.8310	7,309,193	2.0720	8,271,244
Subtotal	0	6,582,686		11,103,898		12,565,709
Total Class	52,195	6,582,686		\$13,243,602		\$14,987,392

UNITED WATER IDAHO INC.

APPLICATION OF PRESENT RATES AND PROPOSED RATES TO CONSUMPTION ANALYSIS  
YEAR ENDED DECEMBER 31, 2014

Rate Block CCF	Number Of Bills	Total Consumption	Present Rate	Revenue	Proposed Rate	Proposed Revenue
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Other Public Authority - Bi-Monthly</u>						
Customer Charge						
5/8	17	0	\$ 20.80	\$ 354	\$ 23.55	\$ 400
3/4	46	0	20.80	957	23.55	1,083
1	184	0	26.60	4,894	30.10	5,538
1 1/2	107	0	45.50	4,869	51.50	5,511
2	223	0	70.60	15,744	79.90	17,818
3	6	0	137.70	826	155.80	935
4	6	0	256.90	1,541	290.70	1,744
Subtotal	589	0		29,185		33,029
Winter Usage	0	17,633	1.4647	25,827	1.6576	29,228
Summer Usage						
Up to 3 CCF	0	872	1.4647	1,277	1.6576	1,445
Over 3 CCF	0	67,215	1.8310	123,071	2.0720	139,269
Subtotal	0	85,720		150,175		169,943
Total Class	589	85,720		\$179,360		\$202,972
<u>Private Fire Lines - Bi-Monthly</u>						
Fire Line Size						
3" and smaller	2,637	0	\$ 36.68	\$ 96,725	\$ 41.50	\$ 109,436
4"	3,154	0	55.60	175,362	62.92	198,450
6"	2,994	0	138.10	413,471	156.28	467,902
8"	882	0	226.92	200,143	256.80	226,498
10"	54	0	353.88	19,110	400.46	21,625
12"	36	0	530.06	19,082	599.84	21,594
Hydrants	975	0	22.24	21,684	25.16	24,531
Sprinkler	6	0	555.80	3,335	628.98	3,774
Total Private Fire	10,738	0		\$ 948,913		\$ 1,073,809
Total	527,589	19,189,979		\$45,549,767		\$ 51,551,378

**UNITED WATER IDAHO INC.**

**SUMMARY OF BILLING DETERMINANTS FOR REVENUE ADJUSTMENTS**

**ADJUSTMENT R1 ANNUALIZATION OF TEST YEAR GROWTH**

	<u>Number of Customers</u>		<u>Gain/Loss</u>	<u>1/2 of Growth</u>	<u>Number Of Bi-Monthly Bills</u>	<u>Average Usage Per bill - CCF</u>	<u>Usage Adjustment CCF</u>
	<u>12/31/2013</u>	<u>12/31/2014</u>					
Residential	76,645	77,879	1,234	617	3,702	25.53	94,512
Commercial	8,445	8,586	141	70.5	423	123.03	52,043
Private Fire	1,702	1,800	98	49	294	-	-

**ADJUSTMENT R2 WEIGHTED CUSTOMER GROWTH THROUGH 11/30/2015**

	<u>Number of Customers</u>		<u>Gain/Loss</u>	<u>Number of Bi-Monthly Bills</u>	<u>Average Usage Per Bill - CCF</u>	<u>Usage Adjustment CCF</u>
	<u>12/31/2014</u>	<u>Weighted Projected Cust. 11/30/2015</u>				
Residential	77,879	78,275	396	2,376	25.53	60,659
Commercial	8,586	8,644	58	348	123.03	42,816
Private Fire	1,800	1,813	13	78	-	-

**ADJUSTMENT R3 WEATHER AND OTHER USAGE ADJUSTMENT**

	<u>Test Year Customers</u>	<u>Pro Forma Annual Usage Per Customer</u>	<u>Total Pro Forma Usage - CCF</u>	<u>Test Year Usage CCF</u>	<u>Pro Forma Usage Adjustment - CCF</u>
Residential	77,879	153.20	11,931,063	12,521,573	(590,510)
Commercial	8,586	738.20	6,338,185	6,582,686	(244,501)

**ADJUSTMENT R4 LEAK ADJUSTMENT**

	<u>Test Year Customers</u>	<u>Pro Forma Annual Usage Per Customer</u>	<u>Total Pro Forma Usage - CCF</u>	<u>Test Year Usage CCF</u>	<u>Pro Forma Usage Adjustment - CCF</u>
Residential	-	-	(56,710)	0	(56,710)

UNITED WATER IDAHO INC.

R1 - APPLICATION OF PRESENT RATES AND PROPOSED RATES TO NUMBER OF CUSTOMERS ADDED IN TEST YEAR  
YEAR ENDED DECEMBER 31, 2014

Rate Block CCF	Number Of Bills	Total Consumption	Present Rate	Revenue	Proposed Rate	Proposed Revenue
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<u>Residential - Bi-Monthly</u>						
Customer Charge						
3/4	3,702	0	20.80	\$ 77,002	\$ 23.55	\$ 87,182
Subtotal	3,702	0		77,002		87,182
Winter Usage	0	31,548	1.4647	46,208	1.6576	52,293
Summer Usage						
Up to 3 CCF	0	4,329	1.4647	6,341	1.6576	7,176
Over 3 CCF	0	58,648	1.8310	107,384	2.0720	121,518
Subtotal	0	94,524		159,933		180,987
Total Class	3,702	94,524		\$ 236,935		\$ 268,169
<u>Commercial - Bi-Monthly</u>						
Customer Charge						
1	423	0	26.60	11,252	\$ 30.10	12,732
Subtotal	423	0		11,252		12,732
Winter Usage	0	19,992	1.4647	29,282	1.6576	33,138
Summer Usage						
Up to 3 CCF	0	491	1.4647	719	1.6576	814
Over 3 CCF	0	31,560	1.8310	57,787	2.0720	65,393
Subtotal	0	52,043		87,788		99,345
Total Class	423	52,043		\$ 99,040		\$ 112,078
<u>Private Fire Lines - Bi-Monthly</u>						
Fire Line Size						
4"	294	0	55.60	16,346	\$ 62.92	18,498
Total Private Fire	294	0		\$ 16,346		\$ 18,498
Total	4,419	146,568		\$ 352,321		\$ 398,745

UNITED WATER IDAHO INC.

R2 - APPLICATION OF PRESENT RATES AND PROPOSED RATES TO NUMBER OF CUSTOMERS ADDED IN FUTURE YEAR  
YEAR ENDED NOVEMBER 30, 2015

Rate Block CCF <u>(1)</u>	Number Of Bills <u>(2)</u>	Total Consumption <u>(3)</u>	Present Rate <u>(4)</u>	Revenue <u>(5)</u>	Proposed Rate <u>(6)</u>	Proposed Revenue <u>(7)</u>
<u>Residential - Bi-Monthly</u>						
Customer Charge 3/4	2,376	0	20.80	\$ 49,421	\$ 23.55	\$ 55,955
Subtotal	<u>2,376</u>	<u>0</u>		<u>49,421</u>		<u>55,955</u>
Winter Usage	0	20,244	1.4647	29,651	1.6576	33,556
Summer Usage Up to 3 CCF	0	2,780	1.4647	4,072	1.6576	4,608
	<u>0</u>	<u>37,636</u>	1.8310	<u>68,911</u>	2.0720	<u>77,981</u>
Subtotal	<u>0</u>	<u>60,659</u>		<u>102,634</u>		<u>116,145</u>
Total Class	2,376	60,659		\$ 152,055		\$ 172,100
<u>Commercial - Bi-Monthly</u>						
Customer Charge 1	348	0	26.60	9,257	\$ 30.10	10,475
Subtotal	<u>348</u>	<u>0</u>		<u>9,257</u>		<u>10,475</u>
Winter Usage	0	16,447	1.4647	24,090	1.6576	27,263
Summer Usage Up to 3 CCF	0	404	1.4647	592	1.6576	670
Over 3 CCF	<u>0</u>	<u>25,964</u>	1.8310	<u>47,541</u>	2.0720	<u>53,798</u>
Subtotal	<u>0</u>	<u>42,816</u>		<u>72,223</u>		<u>81,731</u>
Total Class	348	42,816		\$ 81,480		\$ 92,206
<u>Private Fire Lines - Bi-Monthly</u>						
Fire Line Size 4"	78	0	\$ 55.60	4,337	\$ 62.92	4,908
Total Private Fire	78	0		\$ 4,337		\$ 4,908
Total	2,802	103,475		\$ 237,871		\$ 269,213

UNITED WATER IDAHO INC.

R3 - APPLICATION OF PRESENT RATES AND PROPOSED RATES TO USAGE ADJUSTMENTS  
YEAR ENDED NOVEMBER 30, 2015

<u>Rate Block</u> <u>CCF</u> <u>(1)</u>	<u>Number</u> <u>Of Bills</u> <u>(2)</u>	<u>Total</u> <u>Consumption</u> <u>(3)</u>	<u>Present</u> <u>Rate</u> <u>(4)</u>	<u>Revenue</u> <u>(5)</u>	<u>Proposed</u> <u>Rate</u> <u>(6)</u>	<u>Proposed</u> <u>Revenue</u> <u>(7)</u>
<u>Residential - Bi-Monthly</u>						
Customer Charge	0	0		\$ -		\$ -
Winter Usage	0		1.4647	-	1.6576	-
Winter Usage	0	(197,083)	1.4647	(288,668)	1.6576	(326,685)
Summer						
Up to 3 CCF	0	(27,045)	1.4647	(39,613)	1.6576	(44,830)
Over 3 CCF	0	(366,382)	1.8310	(670,845)	2.0720	(759,144)
Subtotal	0	(590,510)		(999,126)		(1,130,658)
Total Class	0	(590,510)		(999,126)		(1,130,658)
<u>Commercial - Bi-Monthly</u>						
Customer Charge	0	0		\$ -		\$ -
Winter Usage	0	(93,922)	1.4647	(137,568)	1.6576	(155,685)
Summer						
Up to 3 CCF	0	(2,307)	1.4647	(3,379)	1.6576	(3,824)
Over 3 CCF	0	(148,272)	1.8310	(271,485)	2.0720	(307,219)
Subtotal	0	(244,501)		(412,432)		(466,728)
Total Class	0	(244,501)		(412,432)		(466,728)
Total	0	(835,011)		\$ (1,411,558)		\$ (1,597,387)

UNITED WATER IDAHO INC.

R4 - APPLICATION OF PRESENT RATES AND PROPOSED RATES TO LEAK ADJUSTMENT  
YEAR ENDED NOVEMBER 30, 2015

Rate Block CCF <u>(1)</u>	Number Of Bills <u>(2)</u>	Total Consumption <u>(3)</u>	Present Rate <u>(4)</u>	Revenue <u>(5)</u>	Proposed Rate <u>(6)</u>	Proposed Revenue <u>(7)</u>
<u>Residential - Bi-Monthly</u>						
Customer Charge	0	0		\$ -		\$ -
Winter Usage	0		1.4647	-	1.6576	-
Winter Usage Summer	0	(14,178)	1.4647	(20,766)	1.6576	(23,501)
Up to 3 CCF	0	(14,178)	1.4647	(20,766)	1.6576	(23,501)
Over 3 CCF	0	(28,355)	1.8310	(51,918)	2.0720	(58,752)
Subtotal	0	(56,710)		(93,450)		(105,753)
Total Class	0	(56,710)		(93,450)		(105,753)

**United Water Idaho**  
**Residential Consumption Trends, 2000-2018**  
(gallons per customer)

Year (1)	Drought Index (2)	Indoor Consumption			Irrigation			Total Consumption			Change from Previous Year (d) Amount (10)	Percent (11)
		Per Day Actual (a) (3)	Annualized		Irrigation (6) - (4)	Trendline(c) (7)	Billed Consumption (8)	Trendline (9)	Amount (10)			
			Actual (4)	Trendline (b) (5)								
			$=(3) \times 365$				$=(5) + (7)$					
2000	-0.52	202	73,752	69,740	77,711	162,303	147,451	(5,175)	-3.2%			
2001	-1.51	192	70,242	68,669	76,592	157,127	145,261	63	0.0%			
2002	-1.6	196	71,537	67,597	75,474	157,190	143,071	(5,440)	-3.5%			
2003	-0.56	198	72,265	66,525	74,355	151,750	140,880	(7,756)	-5.1%			
2004	-0.03	196	71,413	65,454	73,236	143,993	138,690	(12,578)	-8.7%			
2005	0.06	178	65,075	64,382	72,117	131,416	136,500	4,177	3.2%			
2006	-0.24	174	63,445	63,311	70,999	135,593	134,309	3,432	2.5%			
2007	-1.48	171	62,483	62,239	69,880	139,025	132,119	(9,092)	-6.5%			
2008	-0.72	166	60,458	61,168	68,761	129,933	129,929	(6,750)	-5.2%			
2009	0.5	160	58,238	60,096	67,643	123,183	127,739	(6,481)	-5.3%			
2010	1.35	163	59,494	59,024	66,524	116,702	125,548	(1,838)	-1.6%			
2011	1.26	161	58,735	57,953	65,405	114,864	123,358	7,908	6.4%			
2012	-0.85	155	56,668	56,881	64,286	122,772	121,168	(142)	-0.1%			
2013	-1.34	155	56,543	55,810	63,168	122,630	118,977	(3,388)	-2.8%			
2014	-0.77	149	54,462	54,738	62,049	119,242	116,787	(4,646)	-4.0%			
2015	-0.43	*	53,666	53,666	60,930	114,597	114,597	(2,190)	-1.9%			
2016	-0.43		52,595	52,595	59,812	112,406	112,406	(2,190)	-1.9%			
2017	-0.43		51,523	51,523	58,693	110,216	110,216	(2,190)	-1.9%			
2018	-0.43		50,452	50,452	57,574	108,026	108,026	(2,190)	-2.0%			
											Future Annual	
											Changes (e)	
CCF per customer per year			2014	2015	2014	2015	2014	2015				
Gallons per customer per day			72.8	71.7	86.6	81.5	159.4	153.2	-2.9			
			149	147	177	167	327	314	-6.0			

Notes:

\* 15-year average.

a) From total billed consumption per customer for January, February, March, April, and December.

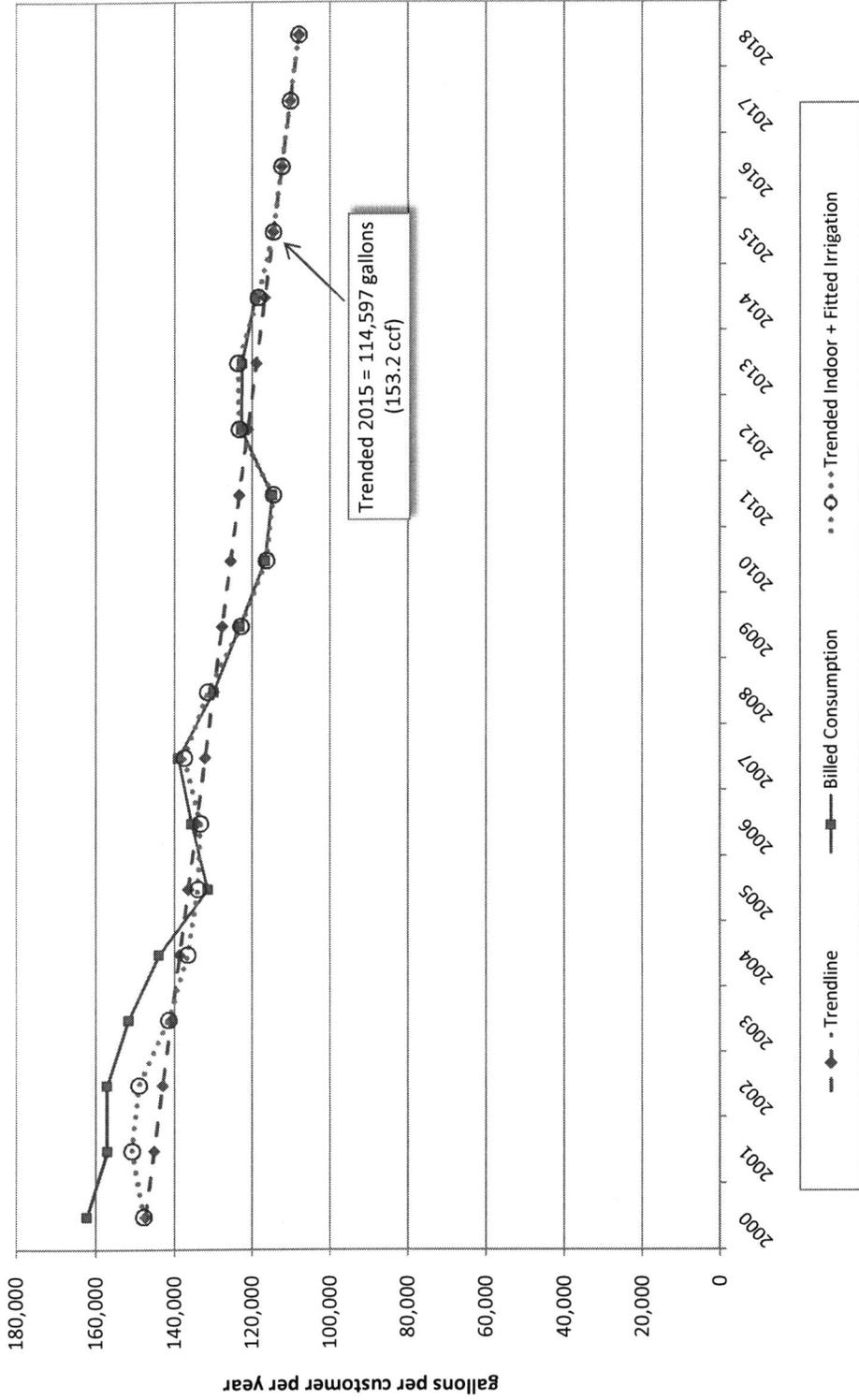
b) From a trendline fit to estimated indoor billed consumption from 2005-2014, with slope -1,071.6 and intercept 2,212,900.

c) From linear regression of estimated billed irrigation (2005-2014) on year and drought index, with coefficient of -1,118.7 on year and -5,176.7 on drought index, and intercept of 2,312,923. Trendline is weather-normalized by setting drought index value to -0.43, which is the climate division's 15-year average.

d) For historical years, measured as year to year change in billed consumption. For 2015, measured as difference in projected 2015 from actual 2014. For future years, measured as change in projected consumption in future years.

e) Future annual changes (i.e., movement along trendline).

United Water Idaho  
Residential Consumption per Customer Trends  
2001-2018



Billed 2014 Consumption per Customer:  
119,242 gallons per year  
159.4 ccf per year  
327 gallons per customer per day

Projected 2015 Consumption per Customer:  
114,597 gallons per year  
153.2 ccf per year  
314 gallons per customer per day

Projected annual rate of decline in future years (i.e., along trendline): 2,190 gallons per year (2.9 ccf/customer/year, 6.0 gallons/customer/day)

**United Water Idaho**  
**Commercial Consumption Trends, 2001-2018**  
(gallons per customer)

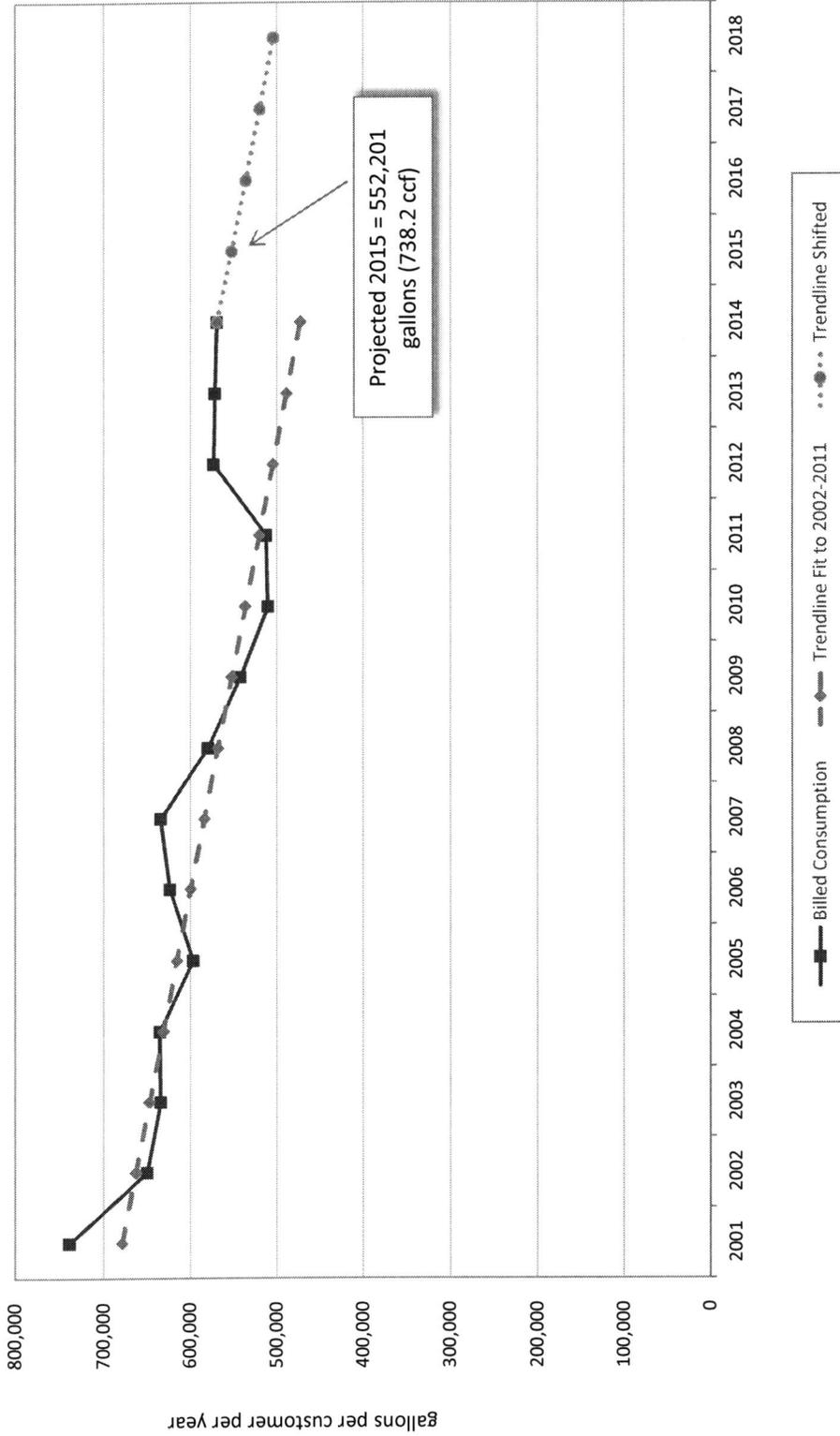
Year (1)	Total Consumption per Customer				
	Billed Consumption (2)	Trended on 2002-2011 (a) (3)	Trendline Shifted (b) (4)	Change from Previous Year (c) Amount (5)	Percent (6)
2001	738,845	679,043		(88,787)	-12.0%
2002	650,058	663,179		(15,780)	-2.4%
2003	634,278	647,315		973	0.2%
2004	635,250	631,450		(38,645)	-6.1%
2005	596,606	615,586		27,062	4.5%
2006	623,667	599,722		10,696	1.7%
2007	634,363	583,858		(54,873)	-8.7%
2008	579,490	567,994		(37,597)	-6.5%
2009	541,893	552,129		(31,728)	-5.9%
2010	510,165	536,265		1,963	0.4%
2011	512,128	520,401		60,893	11.7%
2012	573,021	504,537		(1,484)	-0.3%
2013	571,537	488,673		(2,258)	-0.5%
2014	569,279	472,808	569,279	(17,078)	-3.0%
2015			<b>552,201</b>	(16,566)	-3.0%
2016			535,635	(16,069)	-3.0%
2017			519,565	(15,587)	-3.0%
2018			503,979		
		<u>2014</u>	<u>2015</u>		
CCF per customer per year	761.1		738.2		
Gallons per customer per day	1,560		1,513		

(a) Customer counts changed significantly from 2011 to 2012 due to a change in customer software. As a result, the trendline was fit to 2002-2011. The trendline has a slope of -15,864.

(b) Percentage reduction along trendline from 2010 to 2011 is 3%. This reduction is applied to 2014 consumption per customer.

(c) For historical years, measured as year to year change in billed consumption. For 2015, measured as difference in projected 2015 from actual 2014. For future years, measured as change in projected consumption in future years.

United Water Idaho  
Commercial Consumption per Customer Trends  
2001-2018



Billed 2014 Consumption per Customer:  
569,279 gallons per year  
761.1 ccf per year  
1,560 gallons per customer per day

Projected 2015 Consumption per Customer:  
552,201 gallons per year  
738.2 ccf per year  
1,513 gallons per customer per day

UNITED WATER IDAHO INC.

COMPARISON OF PRESENT AND PROPOSED RATES

Bi-Monthly Customer Charge	Present Rates	Proposed Rates	Percentage Increase
5/8"	\$ 20.80	\$ 23.55	13.2%
3/4"	20.80	23.55	13.2%
1"	26.60	30.10	13.2%
1-1/2"	45.50	51.50	13.2%
2"	70.60	79.90	13.2%
3"	137.70	155.80	13.1%
4"	256.90	290.70	13.2%
6"	428.90	485.40	13.2%
8"	561.10	635.00	13.2%
10"	807.40	913.70	13.2%

Consumption Charge	Present Rates*	Proposed Rates*	Percentage Increase
Winter Rates			
Up to 3 CCF	\$ 1.46470	\$ 1.6576	13.2%
Over 3 CCF	1.46470	\$ 1.6576	13.2%
Summer Rates			
Up to 3 CCF	1.46470	\$ 1.6576	13.2%
Over 3 CCF	1.83100	\$ 2.0720	13.2%
* Per CCF			
Flat Rate	\$ 79.89	\$ 90.41	13.2%

Private Fire			
Size	Monthly Present Rates	Monthly Proposed Rates	Percentage Increase
3" and Smaller	\$ 18.34	\$ 20.75	13.1%
4"	27.80	31.46	13.2%
6"	69.05	78.14	13.2%
8"	113.46	128.40	13.2%
10"	176.94	200.23	13.2%
12"	265.03	299.92	13.2%
Sprinkler	277.90	314.49	13.2%
Hydrant	11.12	12.58	13.1%