CASE: UW 173
WITNESS: STEPHANIE YAMADA

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 100

Direct Testimony
In Support of
The Stipulation

April 26, 2018

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

A. My name is Stephanie Yamada. I am a Senior Utility Analyst employed in the Telecommunications and Water Division of the Public Utility Commission of Oregon (OPUC). My business address is 201 High Street SE, Suite 100, Salem, Oregon 97301.

Q. Please describe your educational background and work experience.

A. Please see my Witness Qualification Statement attached as Exhibit Staff/101, Yamada/1.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to introduce and support the Stipulation entered into by the Stipulating parties in Docket UW 173, Illahe Estates Water System, LLC's request for a general rate revision.

Q. Who is testifying in this docket?

A. I am testifying as the Staff witness in UW 173.

Q. Who are the parties in Docket UW 173?

A. The parties in Docket UW 173 are Illahe Estates Water System, LLC (Illahe or Company) and Commission Staff (Staff). No petitions to intervene were filed in this docket.

Q. Did the parties reach a settlement in UW 173?

A. Yes. The Stipulation entered into by Illahe and Staff (the Stipulating Parties) settles all issues in this docket.

Q. Did you prepare any exhibits for this docket?

A. Yes. I prepared Exhibit Staff/101, consisting of one page, Exhibit Staff/102, consisting of 15 pages, and Exhibit Staff/103, consisting of 14 pages.

Q. How is your testimony organized?

A. My testimony is organized as follows:

ISSUE 1 ------ SUMMARY RECOMMENDATION

Q. Please summarize the Stipulating Parties' recommendation in this case.

A. The Stipulating Parties recommend that the Commission adopt the Stipulation agreed to by the Stipulating Parties in UW 173. For water service, the Stipulating Parties agreed to a revenue requirement of $169,708, which represents an increase of 39.59 percent, or $48,136, over 2016 test year revenues. For wastewater service, the Stipulating Parties agreed to a revenue requirement of $102,917, which represents an increase of 27.43 percent, or $22,152, over 2016 test year revenues. The Stipulating Parties also agreed to a 9.5 percent rate of return on a combined water/wastewater rate base of $571,938.

ISSUE 2 ------ ILLAHE DESCRIPTION AND REGULATORY HISTORY

Q. Please describe Illahe Estates Water System, LLC.

A. Illahe is a rate- and service- regulated, investor-owned water and wastewater utility serving approximately 274 water and 266 wastewater customers in Salem, Oregon.[1] Illahe is currently organized as an LLC and is owned by Hiland Water Corporation (Hiland), which owns and operates a number of water utilities throughout Oregon.

Q. Please provide a summary of Illahe's regulatory history.

[1] Illahe Estates Water System, LLC Initial Testimony at 15-16. The Company later clarified that these figures represent end users; there are fewer metered water customers than there are end users. *See* Exhibit Staff/103, Yamada/1-2, Illahe's response to Staff Data Request 31.

A. Illahe first began providing water service in 1966. Illahe's most recent rate case was UW 78, which was completed in February of 2003 and resulted in annual revenues of $91,235.[2] Hiland's acquisition of Illahe was approved on January 11, 2010, with Order No. 10-012 in Docket No. UP 254. The present rate case is Illahe's first rate case under Hiland ownership. In 2016, with Order No. 16-101 in Docket No. UI 365, the Commission approved a Master Service Affiliated Interest Agreement (MSA) between Hiland and Illahe. The MSA specifies the method by which costs incurred at the Hiland level are allocated to Hiland's various subsidiaries, including Illahe.

ISSUE 3 ------ SUMMARY OF ILLAHE'S GENERAL RATE FILING

Q. Please describe Illahe's rate application.

A. Illahe filed its request for a general rate revision (Rate Case Application or Application) on December 18, 2017, using a test year of January 1, 2016, to December 31, 2016. The Company's request was supported by a brief and testimony from Silas Olson, the general manager of Hiland Water Corporation, of which Illahe is a wholly owned subsidiary. The Company's Application proposed annual water revenues of $193,181 and annual wastewater revenues of $104,843, resulting in a total annual revenue requirement of $298,024. For water service, Illahe's request represents an increase of 58.9 percent over 2016 test year revenues of $121,572. For wastewater service, Illahe's request

[2] Annual revenues of $96,770 were approved with Order No. 02-124. This amount was later reduced by $5,535 with Order No. 03-133.

represents an increase of 29.81 percent over 2016 test year revenues of $80,765. The Application also proposed a 10.04 percent rate of return on a water rate base of $454,104 and a wastewater rate base of $119,246.

Q. What were the primary drivers for the Company's request for a rate increase?

A. Illahe has not filed for a general rate revision since 2001, and the Company's costs have increased during that time. In its Application, Illahe asserts that it requires a rate increase because the "current revenue does not cover the expenses necessary to operate the systems to provide adequate water and wastewater services and to allow the utility the opportunity to earn a reasonable return on its investment."[3] Illahe's request is also partially driven by the increased Salaries and Wages expense associated with converting a part-time intern to full-time employee status, as well as Illahe's proposal to increase all employee and officer salaries by 5.9 percent over test year amounts. Furthermore, Hiland has made capital improvements in Illahe since it acquired the company, and requests that these new plant additions be reflected in rate base.

Q. Did the Company request any changes to its rate structures?

A. Yes. In addition to its proposed increases to the water and wastewater revenue requirements, Illahe proposes to make several changes to its rate structures. First, while Illahe's current tariff contains separate schedules for residential and commercial water customers, the Company's Application

[3] Illahe Estates Water System, LLC Rate Case Application at 7.

proposes to collapse all water customers into a single customer class. Furthermore, Illahe proposes to establish a two-rate structure for water service whereby water customers with 5/8", 3/4", and 1" meters would pay the same monthly base rate, and customers with meter sizes of 1 ½" and higher would pay a higher monthly base rate. Illahe also proposes to collapse all residential and commercial wastewater customers into a single class, and to establish a new wastewater class for its single restaurant wastewater customer. Additionally, though Illahe's current tariff shows variable rates in 100 cubic foot (cf) units, Illahe proposes to change the unit of measurement from 100 cf to 100 gallons as a result of Illahe's upgrade to automated water meters. Finally, Illahe proposes to bill customers monthly rather than the current bi-monthly schedule established in UW 78.

Q. What are the current rates and what rate increases did Illahe propose in its Application?

A. Illahe's actual current and proposed rates are shown in Table 1. To make it easier to compare the two, Table 2 shows a comparison between Illahe's current and proposed rates, with current rates adjusted to reflect a monthly billing structure and variable rates stated in 100 gallon units. It should be noted that not all rates shown in these tables are utilized by Illahe's current customer base; the anticipated impacts of Illahe's proposed rates on its current customers are summarized in Table 3.

TABLE 1 ------ Actual Current vs. Illahe-Proposed Rates

Class	Rate Type	Current Rate	Illahe Proposed Rate
Water - Residential	5/8" or 3/4" Base	$37.74 Bimonthly	$31.89 Monthly
Water - Residential	1" Base	$37.74 Bimonthly	$31.89 Monthly
Water - Residential	1 1/2" Base	$37.74 Bimonthly	$114.30 Monthly
Water - Residential	2" Base	None	$114.30 Monthly
Water - Residential	3" Base	None	$114.30 Monthly
Water - Residential	4" Base	None	$114.30 Monthly
Water - Residential	Variable	$0.99 per 100 cf	$0.19 per 100 gal
Water – Commercial/Indust.	5/8" or 3/4" Base	None	$31.89 Monthly
Water – Commercial/Indust.	1" Base	$42.21 Bimonthly	$31.89 Monthly
Water – Commercial/Indust.	1 ½" Base	$135.27 Bimonthly	$114.30 Monthly
Water – Commercial/Indust.	2" Base	$135.27 Bimonthly	$114.30 Monthly
Water – Commercial/Indust.	3" Base	None	$114.30 Monthly
Water – Commercial/Indust.	4" Base	$135.27 Bimonthly	$114.30 Monthly
Water – Commercial/Indust.	Variable Rate	$0.86 per 100 cf	$0.19 per 100 gal
Wastewater – Residential	5/8" or 3/4" Base	$49.87 Bimonthly	$30.07 Monthly
Wastewater – Residential	1" Base	$49.87 Bimonthly	$30.07 Monthly
Wastewater – Residential	1 1/2" Base	$49.87 Bimonthly	$30.07 Monthly
Wastewater – Residential	2" Base	$49.87 Bimonthly	$150.34 Monthly
Wastewater – Residential	3" Base	$49.87 Bimonthly	$150.34 Monthly
Wastewater – Residential	4" Base	$49.87 Bimonthly	$150.34 Monthly
Wastewater – Comm/Indust.	5/8" or 3/4" Base	$1,273.83 Bimonthly	$30.07 Monthly
Wastewater – Comm/Indust.	1" Base	$1,273.83 Bimonthly	$30.07 Monthly
Wastewater – Comm/Indust.	1 1/2" Base	$1,273.83 Bimonthly	$30.07 Monthly
Wastewater – Comm/Indust.	2" Base	$1,273.83 Bimonthly	$150.34 Monthly
Wastewater – Comm/Indust.	3" Base	$1,273.83 Bimonthly	$150.34 Monthly
Wastewater – Comm/Indust.	4" Base	$1,273.83 Bimonthly	$150.34 Monthly
Wastewater – Restaurant	Base, any size	$1,273.83 Bimonthly	$768.68 Monthly

TABLE 2 ------ Adjusted Current vs. Illahe-Proposed Rates

Class	Rate Type	Current Rate (Adjusted)[4]	Illahe Proposed Rate	% Incr.
Water - Residential	5/8" or 3/4" Base	$18.87	$31.89	69%
Water - Residential	1" Base	$18.87	$31.89	69%
Water - Residential	1 1/2" Base	$18.87	$114.30	506%
Water - Residential	2" Base	None	$114.30	N/A
Water - Residential	3" Base	None	$114.30	N/A
Water - Residential	4" Base	None	$114.30	N/A
Water - Residential	Variable	$0.13	$0.19	46%
Water – Commercial/Indust.	5/8" or 3/4" Base	None	$31.89	N/A

[4] Current base rates shown here are adjusted to reflect monthly billing rather than the current actual bi-monthly billing structure. Current variable rates shown here are adjusted to reflect 100 gallon units rather than the actual current units of 100 cf.

Water – Commercial/Indust.	1” Base	$21.11	$31.89	51%
Water – Commercial/Indust.	1 ½” Base	$67.64	$114.30	69%
Water – Commercial/Indust.	2” Base	$67.64	$114.30	69%
Water – Commercial/Indust.	3” Base	None	$114.30	N/A
Water – Commercial/Indust.	4” Base	$67.64	$114.30	69%
Water – Commercial/Indust.	Variable Rate	$0.11	$0.19	73%
Wastewater – Residential	5/8" or 3/4" Base	$24.94	$30.07	21%
Wastewater – Residential	1" Base	$24.94	$30.07	21%
Wastewater – Residential	1 1/2" Base	$24.94	$30.07	21%
Wastewater – Residential	2” Base	$24.94	$150.34	503%
Wastewater – Residential	3” Base	$24.94	$150.34	503%
Wastewater – Residential	4” Base	$24.94	$150.34	503%
Wastewater – Comm/Indust.	5/8" or 3/4" Base	$636.92	$30.07	-95%
Wastewater – Comm/Indust.	1" Base	$636.92	$30.07	-95%
Wastewater – Comm/Indust.	1 1/2" Base	$636.92	$30.07	-95%
Wastewater – Comm/Indust.	2” Base	$636.92	$150.34	-76%
Wastewater – Comm/Indust.	3” Base	$636.92	$150.34	-76%
Wastewater – Comm/Indust.	4” Base	$636.92	$150.34	-76%
Wastewater – Restaurant	Base, any size	$636.92	$768.68	21%

Q. What are the effects of Illahe’s proposed rates on average customers?

A. Eighty-one percent of Illahe’s residential customers are served through 1” meters; for those customers, Illahe’s proposal would result in a 69 percent increase to the base rate and a 46 percent increase to the variable rate, resulting in an average total bill increase of 58 percent. The impact of Illahe’s proposed rates on current customers’ bills is summarized in Table 3.

TABLE 3 ------ Average Bills at Current and Illahe-Proposed Rates

Class	Meter/Line Size	Current Average Monthly[5] Bill	Illahe Proposed Average Monthly Bill[6]	% Change

[5] Illahe currently bills on a bi-monthly basis; current average bills shown here are adjusted to reflect monthly billing.
[6] Application Testimony, Pages 15-16.

Water - Residential	5/8" or 3/4"	$31.07	$49.43	59%
Water - Residential	1"	$34.10	$53.79	58%
Water - Residential	1 ½"	$47.52	$155.50	227%
Water – Commercial/Indust.	1"	$36.17	$56.84	57%
Water – Commercial/Indust.	1 ½"	$104.89	$175.97	68%
Water – Commercial/Indust.	2"	$235.01	$391.38	67%
Water – Commercial/Indust.	4"	$98.22	$164.94	68%
Water – Irrigation[7]	1 ½"	$113.36	$180.05	59%
Wastewater – Residential	5/8" or 3/4"	$24.94	$30.07	21%
Wastewater – Residential	1"	$24.94	$30.07	21%
Wastewater – Residential	1 ½"	$24.94	$30.07	21%
Wastewater – Restaurant	2	$636.92	$768.68	21%

Q. Did the Company request any changes to Utility Plant?

A. Yes. For water, Illahe proposed to add $237,926 to Utility Plant in Service, consisting of assets which were either put into service after or excluded from rate base during UW 78. This includes $123,648 attributable to reservoir capacity which was previously excluded from rate base in UW 78 as well as $83,832 attributable to replacing all meters with automated meters in 2017. For wastewater, Illahe proposed to add $27,456 to Utility Plant in Service, which is attributable to work performed on the sewer lift station in December of 2011.

ISSUE 4 ------ REVENUE REQUIREMENT ISSUES

Q. Please summarize the revenue requirements agreed to by the Stipulating Parties.

[7] There is no current or proposed customer class for irrigation; this represents four current customers who use the potable water for irrigation purposes. They are shown separately from other 1.5" customers here to accurately reflect the bill increases that this particular subset of customers would experience under Illahe's proposed rates. *See* Exhibit Staff/103, Yamada/3, Illahe's response to Staff Data Request 1.

A. The Stipulating Parties agreed to a revenue requirement of $169,708 for water service and $102,917 for wastewater service, for a combined total revenue requirement of $272,625.

Q. What issues did Staff investigate?

A. Staff's investigation and analysis of Illahe's general rate filing included a comprehensive examination of the Company's revenues, expenses, proposed adjustments, rate spread and rate design, rate base, capital improvements, cost of capital, capital structure, and capacity.

Q. Did the Stipulating Parties agree to include any items outside of Illahe's proposed 2016 test year?

A. Yes. The Stipulating Parties agreed to bring all figures forward to reflect calendar year 2017. Expenses were adjusted to reflect known and measurable changes for calendar year 2017. For example, the Stipulating Parties used calendar 2017 depreciation expense and included increases to wages and benefits which were implemented in 2017. For rate base, the Stipulating Parties agreed to include plant additions through 2017. The Stipulating Parties also used 2017 customer counts and usage to design rates.

Q. Please explain why the Stipulating Parties agreed to use 2017 figures.

A. The Stipulating Parties agreed to use 2017 figures in order to address the relative staleness of Illahe's selected 2016 test year. As rates resulting from this rate case will likely go into effect in the latter half of 2018, the use of 2016 figures would result in the implementation of rates that were designed based on nearly two-year-old costs. The Stipulating Parties find that the inclusion of

known and measurable changes through 2017 results in rates that are better suited to Illahe's current situation.

Q. Please explain how costs are assigned to Illahe's water and wastewater operations.

A. Illahe's costs can be sorted into four broad categories. 1) Direct water costs are directly attributable to Illahe's water operations, and are therefore assigned directly to Illahe water. 2) Direct wastewater costs are directly attributable to Illahe's wastewater operations, and are therefore assigned directly to Illahe wastewater. 3) Indirect Illahe-specific costs are incurred at the Illahe level and then allocated to Illahe water and Illahe wastewater. 4) Indirect Hiland costs are incurred at the Hiland level and then allocated to Hiland's various subsidiaries, including Illahe. Indirect Hiland costs are allocated by first allocating 1.5 percent of the total Hiland cost to each of three companies to which Hiland provides limited administrative, management, and support services. Next, the remaining cost is allocated to the rest of Hiland's water systems based on the number of customers served by each system. The MSA approved with Order No. 16-101 explains in greater detail how these Hiland costs are allocated to Hiland's subsidiaries. The Stipulating Parties did not make any changes to the Hiland indirect cost allocation method established in Docket No. UI 365. Once assigned to Illahe, costs are then allocated between Illahe water and Illahe wastewater. Costs that are not directly related to either water or wastewater are allocated 50 percent to water and 50 percent to wastewater.

Q. Why is it appropriate to allocate Illahe's non-directly-assigned costs equally between water and wastewater?

A. Costs that are not directly assigned to either water or wastewater represent indirect costs at the Illahe level and must be allocated between water and wastewater. Illahe states that these costs "are fairly represented based on the number of connections in the system."[8] Because Illahe has nearly equal numbers of water and wastewater customers, the Stipulating Parties agreed that a 50/50 allocation of indirect Illahe costs between water and wastewater was appropriate.

Q. Please discuss the Stipulating Parties' agreement regarding Illahe's expenses.

A. All of the agreed-upon adjustments are summarized in Exhibit Staff/102, Yamada/5-8. The most significant adjustments are explained in more detail below.

Employee Salaries and Wages

In its Application, Illahe requested an Employee Salaries and Wages expense of $41,575 for water and $30,749 for wastewater. As summarized in Table 4 below, these amounts included an increase attributable to bringing an intern from part-time to full-time status, plus a 5.9 percent increase applied to direct and indirect test year wages as well as the increased portion of the former intern's salary.

[8] *See* Exhibit Staff/103, Yamada/4, Illahe's response to Staff Data Request 17.

TABLE 4 ------ Illahe's Proposed Salary/Wage Adjustments

		Water		Wastewater
Test Year	$	36,347	$	26,123
Adjustments to Test Year:				
Intern to Full Time (Hiland Indirect)	$	2,913	$	2,913
5.9% Increase to Test Year (Hiland Indirect)	$	1,140	$	1,140
5.9% Increase to new FT (Hiland Indirect)	$	172	$	172
5.9% Increase to TY (Direct Water/WW)	$	1,004	$	401
Total Adjustment to Test Year	$	5,229	$	4,626
Account Total	**$**	**41,575**	**$**	**30,749**

The Stipulating Parties agreed to include the full amount of Illahe's proposed increase attributable to increasing one employee from part-time intern to full-time employee status. The allocated amounts of $2,913 to both water and wastewater originate from a total salary increase to this employee of $27,168 at the Hiland level. Staff reviewed documentation of this employee's responsibilities, total salary, and hours worked, and determined that the proposed salary increase is appropriate.[9] The Stipulating Parties also agreed to use a salary escalation factor of 3 percent in lieu of the 5.9 percent initially proposed by Illahe. The Stipulating Parties selected this amount because it reflects the actual wage increase implemented by Hiland in 2017. The components of the Employee Salaries and Wages expense agreed to by the Stipulating Parties are summarized in the table below.

TABLE 5 ------ Stipulated Salary/Wage Adjustments

		Water		Wastewater
Test Year	$	36,347	$	26,123
Adjustments to Test Year:				
Intern to Full Time (Hiland Indirect)	$	2,913	$	2,913

[9] *See* Exhibit Staff/103, Yamada/5, Illahe's response to Staff Data Request 9.

3.0% Increase to Test Year (Hiland Indirect)	$	580	$	580
3.0% Increase to new FT (Hiland Indirect)	$	87	$	87
3.0% Increase to TY (Direct Water/WW)	$	511	$	204
Total Adjustment to Test Year	$	4,091	$	3,784
Account Total	**$**	**40,437**	**$**	**29,907**

Employee Pension & Benefits

In its Rate Case Application, Illahe did not initially request any increase to Employee Pension & Benefits above the test year amount. However, in its response to Staff's Data Request 32, Illahe indicated that Hiland implemented a company-sponsored SIMPLE IRA plan in 2017, whereby Hiland matches employee retirement contributions up to 3 percent of wages.[10] As such, the Stipulating Parties agreed to include Hiland's contributions to this plan in the Employee Pension & Benefits expense at an amount equal to 3 percent of Salaries and Wages. For water service, this adjustment results in a $1,195 increase to Employee Pensions & Benefits expense above the test year amount of $4,820. For wastewater service, the adjustment results in an $888 increase above the test year amount of $3,686.

Office & Warehouse Supplies

In its Application, Illahe proposed an Office & Warehouse Supplies expense of $3,947 for water and $3,947 for wastewater. These amounts were allocated to Illahe from an indirect Hiland amount of $36,815 using the allocation method approved by the Commission in UI 365. However, in UI 365, the indirect Hiland amount (that is, the total Hiland amount before application of the

[10] *See* Exhibit Staff/103, Yamada/6, Illahe's response to Staff Data Request 32.

allocation method to determine Illahe's portion) was only $15,411. In response to Staff's Data Request 14, Illahe explained that the UI 365 amount of $15,411 reflected Hiland's actual 2014 Office & Warehouse Supplies expense, and that "costs to repair, replace and maintain tools and equipment that are kept in service trucks and the warehouse" have increased since 2014, as the terms of the MSA anticipated might happen. The Stipulating Parties agreed to use an average of Hiland's actual Office & Warehouse Supplies expense for the three calendar years 2015 through 2017, resulting in a $326 reduction to both water and wastewater compared to what the Company initially requested in its Application. The Office & Warehouse Supplies expense agreed to by the Stipulating Parties is summarized in Table 6 below.

TABLE 6 ------ Stipulated Office & Warehouse Supplies Expense

Year	Hiland Actuals (Indirect)	Allocation to Illahe	Allocation to Illahe Water	Allocation to Illahe Wastewater
2015	$30,203	$6,476	$3,238	$3,238
2016	$36,815	$7,894	$3,947	$3,947
2017	$34,294	$7,354	$3,677	$3,677
3-year average	**$33,771**	**$7,241**	**$3,621**	**$3,621**

Postage

In its Application, Illahe initially proposed a Postage expense of $883 for water and $838 for wastewater. These amounts were partially derived from an indirect Hiland total of $7,819, but the indirect Hiland Postage expense approved in UI 365 was only $366. In response to Staff's Data Request 15, Illahe stated that only the PO Box fee and First-Class Permit fee should have

been included in the indirect portion of the expense, and "the rest of the postage expense should have been re-allocated as a direct expense." Illahe proposed increasing the test year Illahe direct expense of $409.22 by $407.26, resulting in a total Illahe direct expense of $816.48. The increase is primarily attributable to the increased mailings associated with moving from a bi-monthly to monthly billing structure, but also factors in the slightly decreased 2018 bulk postage rates as well as an adjustment for new customers acquired since the test year. The Stipulating Parties agreed to adopt Illahe's revised postage expense, which represented a decrease of $443 to water and $389 to wastewater compared to Illahe's initial request. The Postage expense agreed to by the Stipulating Parties is summarized in Table 7 below.

TABLE 7 ------ Stipulated Postage Expense

Year	Hiland Actuals (Indirect)	Allocation to Illahe	Allocation to Illahe Water	Allocation to Illahe Wastewater
PO Box Fee	$170	$36	$18	$18
First-Class Permit Fee	$215	$46	$23	$23
2016 Illahe Direct	N/A	$409	$205	$205
Increase to Test Year	N/A	$407	$204	$204
Total		**$899**	**$450**	**$450**

Testing

For water service, the Stipulating Parties agreed to increase the 2016 testing expense amount of $750 by $693, resulting in a new water testing expense of $1,443. The $1,443 figure was derived from an average of the costs that Illahe expects to incur for testing over the next three years, as summarized in Table 8 below.

TABLE 8 ------ Projected Water Testing Costs

Test	2018	2019	2020	
Coliform Bacteria	$300	$300	$300	
Lead & Copper	$150	$150	$150	
Stage 2 DBP	$280	$280	$280	
IOC		$285		
Nitrate	$20	$20	$20	
Nitrite		$50		
SOC		$1,150		
VOC		$200		
RADs		$395		
TOTALS	**$750**	**$2,830**	**$750**	**$1,443 Average**

Amortization of Rate Case

In preparing its rate case, Illahe incurred $3,500 in legal fees and $16,681 in consulting fees attributable to KWillis Consulting, for a total of $20,181 in rate case-related expenses. The Stipulating Parties agreed to amortize this amount over three years, resulting in a $6,727 inclusion in Illahe's revenue requirement.

Depreciation Expense

Illahe's Rate Case Application proposed a depreciation expense of $33,287 for water, but this figure appears to have resulted from an inadvertent administrative error. The Stipulating Parties agreed to a depreciation expense of $15,434 for water, which represents calendar year 2017 depreciation on Illahe's water plant assets. This adjustment results in a $17,853 decrease to the water depreciation expense requested in Illahe's Rate Case Application.

Q. Did the Stipulating Parties agree to any other conditions regarding Illahe's expenses?

A. Yes. The Stipulating Parties agreed to a condition whereby Illahe will be required to file an updated version of the information found in Exhibit 1 of the MSA approved in UI 365 with the Commission annually at the same time that it files the Annual Affiliated Interest Report required by OAR 860-036-2360. This information shows the amounts of Hiland indirect costs to be allocated according to the MSA allocation method discussed previously. The annual filing of this information will give the Commission more visibility into costs that might vary from the initial amounts approved in UI 365.

Q. Please explain what the Stipulating Parties agreed to regarding Utility Plant.

A. The Stipulating Parties agreed to include $237,926 in water assets and $27,456 in wastewater assets which were put into service after or excluded from rate base during UW 78. As mentioned previously, the new wastewater asset relates to necessary improvements performed on the sewer lift station in 2011.[11] The new water assets are summarized in Table 9 below.

TABLE 9 ------ New Water Plant Assets since UW 78

Account No.	Asset Description	Date Acquired	Original Cost
307	Well Pump & Electrical Upgrade	6/22/2017	$19,393
311	Pressure pumps Improvement	4/20/2017	$3,254
311	Pump House Pipe Replacement	3/31/2015	$2,073
320	Turbo Stripper Upgrade	11/5/2012	$5,727
330	Reservoir Add'l Cost now used & useful	6/12/2016	$123,648
334	Automated Meter Reading	6/30/2017	$81,518
347	Automated Meter Reading Soft/Hardware	6/30/2017	$2,314
	Total		**$237,926**

[11] *See* Exhibit Staff/103, Yamada/7, Illahe's response to Staff Data Request 22.

As shown above, most of the increase to water plant is attributable to the inclusion of $123,648 for a reservoir and $83,832 for automated meters and associated software. The Stipulating Parties also agreed to use Accumulated Depreciation as of December 31, 2017, which is slightly higher than the 2016 amount initially proposed in Illahe's Rate Case Application. The plant amounts agreed to by the Stipulating Parties are summarized in Table 10 below.

TABLE 10 ------ Stipulated Net Utility Plant

	Water	Wastewater	Total
Utility Plant in Service	$721,691	$439,505	$1,161,197
Accumulated Depreciation	$306,932	$327,102	$634,034
Net Utility Plant	**$414,760**	**$112,403**	**$527,163**

Q. Please discuss the inclusion of the $123,648 reservoir item.

A. This relates to a 250,000-gallon reservoir which was initially put into service in October of 2001 with an original cost of $247,295. Order No. 03-133 in Docket No. UW 78 explains that this reservoir may not have been fully used and useful by Illahe's customers at that time, and that the parties in UW 78 agreed to exclude 50 percent of the reservoir's cost from the rates established during that docket. Illahe's proposed inclusion of $123,648 in the present rate case represents the 50 percent portion of the reservoir which was previously excluded from rates in UW 78. The Stipulating Parties agreed to include this in plant because Illahe submitted documentation illustrating that this reservoir is currently 100 percent used and useful.[12]

[12] *See* Exhibit Staff/103, Yamada/8, Illahe's response to Staff Data Request 19.

Q. Please explain why it was necessary for Illahe to replace existing meters with automated meters.

A. Illahe explained its reasons for installing automated meters in response to Staff's Data Request 20.[13] Illahe's plant schedules show that, prior to the 2017 meter replacement discussed here, the most recent investment in meters took place in August of 1985, and Illahe states that the previous meters had become "very old and inaccurate."[14] As meters carry a normal useful life of 20 years, a meter replacement at this time seems appropriate. Furthermore, Illahe asserts that while the estimated cost to replace the previous meters with manually-read meters was $59,000, automated meters provide significantly greater value at a slightly higher cost. Automated meters enable the utility's staff to read meters simply by driving within close proximity to the meter rather than physically opening each box to read and record the consumption. This reduces the amount of time required to read meters, and also eliminates the possibility of human data entry error as well as the need to estimate consumption at times when manual reading is impossible due to weather or other adverse conditions. The new automated meters also provide increased accuracy and detailed consumption data which can be utilized by both customers and the Company to track usage patterns and detect leaks.

Q. Please summarize the cost of capital agreed to by the Stipulating Parties.

[13] *See* Exhibit Staff/103, Yamada/10-13, Illahe's response to Staff Data Request 20.
[14] *See* Exhibit Staff/103, Yamada/12, Illahe's response to Staff Data Request 20 b.

A. The Stipulating Parties agreed to a 9.5 percent return on equity for both water and wastewater. Because Illahe has no debt and its rate base is financed entirely with equity, the rate of return is also 9.5 percent.

Q. Did the Stipulating Parties agree to any other terms regarding Illahe's cost of capital?

A. Yes. The Stipulating Parties agreed that Illahe will be required to engage a minimum of five financial institutions to attempt to obtain debt financing prior to using shareholder equity to finance future capital projects. As Illahe's rate base is currently financed entirely with equity and debt financing can often be acquired at a lower cost than equity, the use of debt to finance capital projects could lower capital costs to ratepayers in future rate cases.

ISSUE 5 ------ RATE SPREAD AND RATE DESIGN

Q. Did the Stipulating Parties agree to implement the changes that Illahe proposed making to its rate structure?

A. Yes. The Stipulating Parties agreed to establish a monthly billing structure, change the unit of measurement from 100 cf to 100 gallons, collapse all residential and commercial customers into a single class, and establish a new class for restaurant wastewater.

Q. Please explain why it is appropriate to collapse residential and commercial water customers into a single customer class.

A. Illahe's cost to provide water does not vary based on the type of customer or the purpose for which the provided water is used because all customers

receive the same water, pumped from the same sources and delivered through the same pipes.[15] The Stipulating Parties agree that meter size is the most meaningful distinction between customers of Illahe, and that the costs associated with serving customers of larger meter sizes are appropriately captured by developing base rates which differ with line size. As such, separate tariff schedules for residential and commercial customers are not necessary.

Q. What rates did the parties stipulate to in UW 173?

A. The rates agreed to by the Stipulating Parties are shown in Table 11 below. A comparison between current rates and the Stipulating Parties' agreed-upon rates are shown in Table 12. Current rates as shown in Table 12 are adjusted to reflect 100 gallon units and a monthly billing structure.

TABLE 11 ------ Stipulated Rates

Class	Rate Type	Rate
Water - Residential/Commercial	Monthly Base Rate - 5/8" & 3/4"	$27.01
Water - Residential/Commercial	Monthly Base Rate - 1"	$31.23
Water - Residential/Commercial	Monthly Base Rate - 1 1/2"	$47.27
Water - Residential/Commercial	Monthly Base Rate - 2"	$81.04
Water - Residential/Commercial	Monthly Base Rate - 3"	$506.51
Water - Residential/Commercial	Monthly Base Rate - 4"	$185.72
Water - Residential/Commercial	Variable per 100 gallons	$0.17
Wastewater - Residential/Commercial	Monthly Flat Rate – Any Size	$29.41
Wastewater - Restaurant	Monthly Flat Rate – Any Size	$751.90

[15] *See* Exhibit Staff/103, Yamada/14, Illahe's response to Staff Data Request 3.

TABLE 12 ------ Comparison of Current and Stipulated Rates

Current Customer Class	Rate Type	Current Rate (Adjusted)[16]	Stipulated Rate[17]	% Incr.
Water - Residential	5/8" or 3/4" Base	$18.87	$27.01	43%
Water - Residential	1" Base	$18.87	$31.23	66%
Water - Residential	1 1/2" Base	$18.87	$47.27	151%
Water - Residential	2” Base	None	$81.04	N/A
Water - Residential	3” Base	None	$506.51	N/A
Water - Residential	4” Base	None	$185.72	N/A
Water - Residential	Variable	$0.13	$0.17	28%
Water - Comm/Indust.	5/8" or 3/4" Base	None	$27.01	N/A
Water - Comm/Indust.	1” Base	$21.11	$31.23	48%
Water - Comm/Indust.	1 ½” Base	$67.64	$47.27	-30%
Water - Comm/Indust.	2” Base	$67.64	$81.04	20%
Water - Comm/Indust.	3” Base	None	$506.51	N/A
Water - Comm/Indust.	4” Base	$67.64	$185.72	175%
Water - Comm/Indust.	Variable Rate	$0.11	$0.17	51%
Wastewater – Residential	Base, any size	$24.94	$29.41	18%
Wastewater - Commercial[18]	Base, any size	$636.92	$751.90	18%

Q. What are the rate components?

A. Water rates consist of a monthly base rate that is charged regardless of the quantity of water used and a variable rate that is charged per 100 gallons of water used. With the exception of the monthly base rate for 3” customers, monthly water base rates increase as meter/line size increases. Wastewater rates consist of a flat monthly base rate, with no variable component.

Q. Please explain how water base rates are developed.

[16] Current base rates shown here are adjusted to reflect monthly billing rather than the current actual bi-monthly billing structure. Variable rates shown here are adjusted to reflect 100 gallon units rather than the actual current units of 100 cf.
[17] Stipulated base rates reflect monthly billing, and variable rates reflect 100 gallon units.
[18] The stipulated rate shown on this line reflects the new restaurant wastewater rate agreed to by the Stipulating Parties. It is shown as a commercial rate in this table because the restaurant is currently Illahe’s only commercial wastewater customer, and this customer currently pays the commercial wastewater rate.

A. Water rates are typically designed such that customers with larger meter sizes pay higher base rates than those with smaller meters. This is because "the safe operating flow, or capacity, of a particular size of meter is essentially the limiting factor in terms of the demand that can be exerted on the water system through the meter."[19] Furthermore, "the potential demand or capacity requirements placed on the water system…is generally an accepted basis for determining the level of charge applicable to the customer."[20] As such, as shown in Table 13 below, Staff often utilizes a standard set of factors for determining the appropriate relative differences in base rates for different meter sizes. For example, the standard factor for a 5/8" base rate is 1 and the standard factor for a 1" base rate is 2.5, which means that a customer with a 1" meter would typically pay a base rate that is approximately 2.5 times that of a customer with a 5/8" meter.

Q. In designing water base rates for this case, did the Stipulating Parties utilize the standard factors discussed above?

A. No. The Stipulating Parties agreed to a modified set of factors designed specifically to make progress toward the standard set of factors while also mitigating rate shock to Illahe's current customers. The standard meter factors and the modified factors used to calculate water base rates in this case are shown in Table 13 below.

[19] Principles of Water Rates, Fees, and Charges (M1) (6th Edition). American Water Works Association, 2012, Page 324.
[20] *Id.*

TABLE 13 ------ Standard & Stipulated Water Factors

Meter Size	Standard Factors	Stipulated Factors
5/8"	1	0.8
3/4"	1.5	0.8
1"	2.5	0.9
1 1/2"	5	1.4
2"	8	2.4
3"	15	15.0
4"	25	5.5

Q. Please explain the issue of rate shock to customers.

A. Rate shock occurs when customers experience sudden, drastic changes in utility rates. While the Stipulating Parties believe that it is appropriate to collapse all water customers into a single class and to vary base rates by increasing meter size as discussed previously, these changes represent a major departure from Illahe's current rates, which were developed in UW 78. Furthermore, as described in the testimony submitted with Illahe's Rate Case Application, after Hiland acquired Illahe in 2010, it "discovered there were inaccuracies in the meter sizes reported by the previous owners in the last rate case (UW 78). This problem was compounded because the approved tariff did not provide rates for all different sized meters."[21] In cases where Illahe discovered that a customer's actual meter size was larger than any rate contemplated in its tariff, Illahe charged the closest available tariffed rate, which resulted in some customers paying base rates that were very low considering their meter size. For example, as shown in Table 1, a

[21] Illahe Estates Water System, LLC Initial Testimony at 6.

4" commercial customer currently pays the same base rate as a 1 1/2" commercial customer, which does not appropriately reflect the increased potential demand associated with a 4" customer compared to a 1 1/2" customer. Using the standard factors discussed previously, a base rate for a 4" meter would be five times that of a base rate for a 1 ½" meter. In other words, if the new 4" base rate were calculated using the full standard factor, then Illahe's single 4" customer would experience an increase of approximately 500 percent in the base rate, which would be an extremely severe rate increase to experience at one time. Because the current rate structure is non-standard, setting base rates using the full standard factors would cause substantial rate shock, with some customers experiencing large rate decreases and others experiencing large rate increases. While the inequities in the current rate structure should be corrected and the Stipulating Parties' agreed-upon rates make some progress toward making that correction, further progress should be made in subsequent rate cases to avoid imposing substantial rate shock on Illahe's customers as a result of the present rate case.

Q. Please explain why the 3" water base rate is higher than the 4" water base rate.

A. The 3" water base rate is higher than the 4" water base rate because the full standard factor of 15 was used to develop the 3" base rate for water, but the factors for all other line sizes were reduced compared to their standard amounts. As a result, the 3" base rate is higher than the base rates at all other

meter sizes, including the 4" base rate. While the 4" base rate would normally be calculated using a standard factor of 25, the Stipulating Parties instead agreed to use a lesser factor of 5.5 to calculate this rate. While it is not ideal for the 3" rate to be higher than the 4" rate, the Stipulating Parties agreed to use modified factors specifically to mitigate rate shock to Illahe's current customers. In future rate cases, rates should be designed to make further progress toward the standard factors. As progress toward the use of the full standard factors at other meter sizes is made in future rate cases, the 4" rate will eventually exceed the 3" rate.

Q. Why did the Stipulating Parties agree to use the full factor for developing the 3" water base rate, but not for the development of other water base rates?

A. In selecting the factors used to calculate water base rates, the Stipulating Parties considered the impact that the resulting rates would have on Illahe's current customers. As discussed previously, Illahe's current rate structure causes some customers to pay substantially different base rates than other customers for the same sized meter. The process of correcting those inequities will result in some customers' rates decreasing while other customers' rates increase. The 3" rate is unique from other rates because Illahe serves only one 3" meter, which is a multi-dwelling development. Furthermore, while Illahe sends only one bill for this 3" customer, the meter actually serves 17 end users.[22] Because of this and because Illahe's current

[22] *See* Exhibit Staff/103, Yamada/1-2, Illahe's response to Staff Data Request 31.

tariff contains no rate for the 3" meter size, Illahe has been charging this 3" customer a rate equal to 17 times the current residential base rate. Because the standard factor for a 3" meter is 15 times the factor for a 5/8" meter, the rate that Illahe has been charging this 3" customer is already close to the standard factor amount. As such, using a decreased factor to calculate this rate would result in a substantial rate decrease for this customer and an even larger increase for customers at other meter sizes. It is not expected that Illahe will acquire another customer at the 3" meter size. It is also not expected that this 3" customer will change meter sizes.

Q. In designing residential/commercial wastewater rates for this case, did the Stipulating Parties utilize the standard factors discussed above?

A. No. The Stipulating Parties agreed to a single flat monthly residential/commercial wastewater rate rather than a rate which varies by line size. Wastewater line sizes are not known in all cases, which inhibits the ability to develop wastewater rates which vary based on line size. Furthermore, while the size of a water customer's meter is indicative of the potential demand that the customer could place on the system (as discussed previously), the sizing of wastewater connections is more closely related to clogging potential rather than considerations relating to system capacity. As such, the Stipulating Parties agree that base rates which vary by line size would not necessarily be appropriate for wastewater service. Finally, as all non-restaurant wastewater customers pay the same flat rate according to Illahe's current rate structure, the Stipulating Parties agree that maintaining a single flat wastewater rate for

these customers will reduce the potential for rate shock regarding the change in wastewater rates.

Q. Please explain why the Stipulating Parties agreed to develop a restaurant wastewater rate which is separate from the residential/commercial wastewater rate.

A. The Stipulating Parties agreed to develop a separate rate for restaurant wastewater because Illahe's only non-residential wastewater customer is a 2" restaurant customer which is solely responsible for certain maintenance costs. Specifically, the restaurant "is the cause of the hydro-power cleaning of the sewer pipes to remove grease produced by the restaurant."[23] With its Application, Illahe included documentation showing that the hydro-power cleaning costs average approximately $6,295 annually. The Stipulating Parties designed a higher wastewater rate for the restaurant compared to other customers in order to capture the annual hydro-power cleaning costs plus a portion of general wastewater costs.

Q. What impact will the stipulated rates have on current customers' bills?

A. The impact of the stipulated rates on current customers' bills is summarized in Table 14 below.

[23] Illahe Estates Water System, LLC Initial Testimony at 15.

TABLE 14 ------ Average Bills at Current and Stipulated Rates

Current Customer Class	Meter/Line Size	Average Monthly[24] Bill at Current Rates	Average Monthly Bill at Stipulated Rates	% Change
Water - Residential	5/8" or 3/4"	$31.07	$42.30	36%
Water - Residential	1"	$35.29	$51.82	47%
Water - Residential	1 ½"	$47.52	$83.17	75%
Water - Residential	3"	$528.18	$766.38	45%
Water – Commercial/Indust.	1"	$36.17	$52.97	46%
Water – Commercial/Indust.	1 ½"	$104.89	$101.01	-4%
Water – Commercial/Indust.	2"	$235.01	$322.48	37%
Water – Commercial/Indust.	4"	$98.22	$229.84	134%
Water – Irrigation[25]	1 ½"	$113.36	$104.56	-8%
Wastewater – Residential	Any Size	$24.94	$29.41	18%
Wastewater – Commercial[26]	Any Size	$636.92	$751.90	18%

Q. Did the Stipulating Parties agree to a rate implementation date?

A. Yes. The Stipulating Parties agreed that approved rates should become effective at the later of July 19, 2018, or the day after the date on which tariffs are filed in compliance with a Commission order in this proceeding.

Q. Does this conclude your testimony?

A. Yes.

[24] Illahe currently bills on a bi-monthly basis; current average bills shown here are adjusted to reflect monthly billing.

[25] There is no current or proposed customer class for irrigation; this represents four current customers who use the potable water for irrigation purposes. They are shown separately from other 1.5" customers here to accurately reflect the bill increases that this particular subset of customers would experience under Illahe's proposed rates. *See* Exhibit Staff/103, Yamada/3, Illahe's response to Staff Data Request 1.

[26] The stipulated rate shown on this line reflects the new restaurant wastewater rate agreed to by the Stipulating Parties. It is shown as a commercial rate in this table because the restaurant is currently Illahe's only commercial wastewater customer, and this customer currently pays the commercial wastewater rate.

CASE: UW 173
WITNESS: STEPHANIE YAMADA

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 101

Witness Qualification Statement

April 26, 2018

Docket No: UW 173 Staff/101
Yamada/1

WITNESS QUALIFICATION STATEMENT

NAME:	Stephanie Yamada
EMPLOYER:	Public Utility Commission of Oregon
TITLE:	Senior Utility Analyst, Telecommunications and Water Division.
ADDRESS:	201 High St SE, Suite 100, Salem, OR, 97301
EDUCATION:	Bachelor of Science, Accounting, University of Oregon
EXPERIENCE:	Employed with the Oregon Public Utility Commission since 2013. I am currently a Senior Utility Analyst in the Telecommunications and Water Division.

CASE: UW 173
WITNESS: STEPHANIE YAMADA

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 102

Exhibits in Support
of Testimony

April 26, 2018

Revenue Requirement - Water

Company Proposed Increase	Staff Proposed Increase
58.90%	39.59%

	REVENUES	Test Year	Company Proposed Adjustment	Company Proposed Totals	Staff Adjustments to Company Totals	Staff Proposed Totals
460	Unmetered	$ -	$ -	$ -	$ -	$ -
461.1	Residential	$ 107,587	$ 62,860	$ 170,447	$ (20,172)	$ 150,276
461.2	Commercial	$ 4,687	$ 4,186	$ 8,873	$ 4,621	$ 13,495
462	Fire Protection Sales	$ -	$ -	$ -	$ -	$ -
465	Irrigation Water Sales	$ 3,361	$ 5,260	$ 8,621	$ (8,621)	$ -
466	Water Sales for Resale	$ -	$ -	$ -	$ -	$ -
471	Miscellaneous Services	$ 360	$ (360)	$ -	$ 360	$ 360
475	Cross Connection Control	$ 5,239	$ -	$ 5,239	$ -	$ 5,239
	Other - Construction Revenue	$ 338	$ (338)	$ -	$ 338	$ 338
		$ -	$ -	$ -	$ -	$ -
	Total Revenue	**$ 121,572**	**$ 71,609**	**$ 193,181**	**$ (23,473)**	**$ 169,708**

Acct .	OPERATING EXPENSES					
601	Salaries and Wages - Employees	$ 36,347	$ 5,229	$ 41,575	$ (1,139)	$ 40,437
603	Salaries and Wages - Officers	$ 568	$ 34	$ 602	$ (16)	$ 586
604	Employee Pension & Benefits	$ 4,820	$ -	$ 4,820	$ 1,195	$ 6,015
610	Purchased Water	$ -	$ -	$ -	$ -	$ -
611	Telephone/Communications	$ 2,245	$ -	$ 2,245	$ -	$ 2,245
615	Purchased Power	$ 15,262	$ -	$ 15,262	$ (80)	$ 15,181
616	Fuel for Power Production	$ -	$ -	$ -	$ -	$ -
617	Other Utilities	$ 70	$ -	$ 70	$ (5)	$ 64
618	Chemical / Treatment Expense	$ -	$ -	$ -	$ -	$ -
619	Office Supplies	$ 3,947	$ -	$ 3,947	$ (326)	$ 3,621
619.1	Postage	$ 883	$ -	$ 883	$ (433)	$ 450
620	O&M Materials/Supplies	$ 129	$ -	$ 129	$ -	$ 129
621	Repairs to Water Plant	$ 996	$ -	$ 996	$ -	$ 996
631	Contract Svcs - Engineering	$ -	$ -	$ -	$ -	$ -
632	Contract Svcs - Accounting	$ 190	$ -	$ 190	$ -	$ 190
633	Contract Svcs - Legal	$ -	$ -	$ -	$ -	$ -
634	Contract Svcs - Management Fees	$ -	$ -	$ -	$ -	$ -
635	Contract Svcs - Testing	$ 750	$ 693	$ 1,443	$ -	$ 1,443
636	Contract Svcs - Labor	$ 1,253	$ -	$ 1,253	$ -	$ 1,253
637	Contract Svcs - Billing/Collection	$ 837	$ -	$ 837	$ (114)	$ 724
638	Contract Svcs - Meter Reading	$ -	$ -	$ -	$ -	$ -
639	Contract Svcs - Other	$ 2,622	$ -	$ 2,622	$ (2)	$ 2,620
641	Rental of Building/Real Property	$ 2,792	$ -	$ 2,792	$ -	$ 2,792
642	Rental of Equipment	$ 3,133	$ -	$ 3,133	$ -	$ 3,133
643	Small Tools	$ -	$ -	$ -	$ -	$ -
648	Computer/Electronic Expenses	$ 104	$ -	$ 104	$ (2)	$ 102
650	Transportation	$ 3,046	$ -	$ 3,046	$ -	$ 3,046
656	Vehicle Insurance	$ 629	$ -	$ 629	$ -	$ 629
657	General Liability Insurance	$ 1,106	$ -	$ 1,106	$ -	$ 1,106
658	Workers' Comp Insurance	$ 552	$ -	$ 552	$ (38)	$ 514
659	Insurance - Other	$ -	$ -	$ -	$ -	$ -
666	Amortz. of Rate Case	$ -	$ 3,364	$ 3,364	$ -	$ 3,364
667	Gross Revenue Fee (PUC)	$ -	$ 580	$ 580	$ (71)	$ 509
670	Bad Debt Expense	$ -	$ -	$ -	$ -	$ -
671	Cross Connection Control Program	$ -	$ -	$ -	$ -	$ -
673	Training and Certification	$ 196	$ -	$ 196	$ (46)	$ 150
674	Consumer Confidence Report	$ -	$ -	$ -	$ -	$ -
675	Miscellaneous Expense	$ 446	$ -	$ 446	$ (7)	$ 439
OE1	Advertising & PR	$ 12	$ -	$ 12	$ (12)	$ -
OE2	Stormwater	$ 217	$ -	$ 217	$ -	$ 217
OE3	Other Expense 3	$ -	$ -	$ -	$ -	$ -
OE4	Other Expense 4	$ -	$ -	$ -	$ -	$ -
OE5	Other Expense 5	$ -	$ -	$ -	$ -	$ -
	TOTAL OPERATING EXPENSE	**$ 83,151**	**$ 9,900**	**$ 93,050**	**$ (1,096)**	**$ 91,955**

OTHER REVENUE DEDUCTIONS

403	Depreciation Expense	$ 33,287	$ -	$ 33,287	$ (17,853)	$ 15,434
406	Amort of Plant Acquisition Adjustment	$ -	$ -	$ -	$ -	$ -
407	Amortization Expense	$ -	$ -	$ -	$ -	$ -
408.11	Property Tax	$ 3,955	$ -	$ 3,955	$ -	$ 3,955
408.12	Payroll Tax	$ 2,338	$ 272	$ 2,610	$ 1	$ 2,611
408.13	Other	$ -	$ -	$ -	$ -	$ -
409.10	Federal Income Tax	$ -	$ 9,076	$ 9,076	$ (16)	$ 9,060
409.11	Oregon Income Tax	$ -	$ 3,979	$ 3,979	$ (299)	$ 3,680
409.13	Extraordinary Items Income Tax	$ -	$ -	$ -	$ -	$ -
	TOTAL REVENUE DEDUCTIONS	**$ 122,730**	**$ 23,227**	**$ 145,957**	**$ (19,263)**	**$ 126,694**
	Net Operating Income	**$ (1,158)**	**$ 48,382**	**$ 47,224**	**$ (4,211)**	**$ 43,013**

UTILITY RATE BASE

101	Utility Plant in Service	$ 721,691	$ -	$ 721,691	$ 0	$ 721,691
105	Construction Work in Progress	$ -	$ -	$ -	$ -	$ -
108	- Accumulated Depreciation of Plant	$ 305,662	$ -	$ 305,662	$ 1,270	$ 306,932
271	- Contributions in Aid of Construction	$ -	$ -	$ -	$ -	$ -
272	+ Accumulated Amortization of CIAC	$ -	$ -	$ -	$ -	$ -
281	- Accumulated Deferred Income Tax	$ -	$ -	$ -	$ -	$ -
	- Excess Capacity	$ -	$ -	$ -	$ -	$ -
	= NET RATE BASE INVESTMENT	**$ 416,029**	**$ -**	**$ 416,029**	**$ (1,269)**	**$ 414,760**
	Plus: (working capital)					
151	Materials and Supplies Inventory	$ 30,512	$ (161)	$ 30,351	$ -	$ 30,351
	Working Cash (Total Op Exp /12)	$ 6,930	$ 795	$ 7,724	$ (61)	$ 7,663
	TOTAL RATE BASE	**$ 453,471**	**$ 634**	**$ 454,104**	**$ (1,330)**	**$ 452,774**
	Rate of Return	-0.26%	0.00%	10.40%	0.00%	9.50%

Revenue Requirement - Wastewater

Company Proposed Increase	Staff Proposed Increase
29.81%	27.43%

	REVENUES	Test Year	Company Proposed Adjustment	Company Proposed Totals	Staff Adjustments to Company Totals	Staff Proposed Totals
	Unmetered	$ -	$ -	$ -	$ -	$ -
	Residential	$ 72,762	$ 22,857	$ 95,619	$ (2,085)	$ 93,534
	Commercial (Restaurant)	$ 7,643	$ 1,581	$ 9,224	$ (201)	$ 9,023
	Fire Protection Sales	$ -	$ -	$ -	$ -	$ -
	Irrigation Water Sales	$ -	$ -	$ -	$ -	$ -
	Water Sales for Resale	$ -	$ -	$ -	$ -	$ -
	Miscellaneous Services	$ 360	$ (360)	$ -	$ 360	$ 360
	Cross Connection Control	$ -	$ -	$ -	$ -	$ -
	Other	$ -	$ -	$ -	$ -	$ -
	0	$ -	$ -	$ -	$ -	$ -
	Total Revenue	**$ 80,765**	**$ 24,078**	**$ 104,843**	**$ (1,926)**	**$ 102,917**
Acct .	**OPERATING EXPENSES**					
601	Salaries and Wages - Employees	$ 26,123	$ 4,626	$ 30,749	$ (842)	$ 29,907
603	Salaries and Wages - Officers	$ 568	$ 34	$ 602	$ (16)	$ 586
604	Employee Pension & Benefits	$ 3,686	$ -	$ 3,686	$ 888	$ 4,574
610	Purchased Water	$ -	$ -	$ -	$ -	$ -
611	Telephone/Communications	$ 861	$ -	$ 861	$ -	$ 861
615	Purchased Power	$ 1,831	$ -	$ 1,831	$ -	$ 1,831
616	Fuel for Power Production	$ -	$ -	$ -	$ -	$ -
617	Other Utilities	$ 70	$ -	$ 70	$ (5)	$ 64
618	Chemical / Treatment Expense	$ 4,686	$ -	$ 4,686	$ -	$ 4,686
619	Office Supplies	$ 3,947	$ -	$ 3,947	$ (326)	$ 3,621
619.1	Postage	$ 838	$ -	$ 838	$ (389)	$ 450
620	O&M Materials/Supplies	$ 6,291	$ -	$ 6,291	$ -	$ 6,291
621	Repairs to Water Plant	$ 456	$ -	$ 456	$ (67)	$ 389
631	Contract Svcs - Engineering	$ -	$ -	$ -	$ -	$ -
632	Contract Svcs - Accounting	$ 190	$ -	$ 190	$ -	$ 190
633	Contract Svcs - Legal	$ 63	$ -	$ 63	$ -	$ 63
634	Contract Svcs - Management Fees	$ 1,200	$ -	$ 1,200	$ -	$ 1,200
635	Contract Svcs - Testing	$ 6,840	$ -	$ 6,840	$ -	$ 6,840
636	Contract Svcs - Labor	$ -	$ -	$ -	$ -	$ -
637	Contract Svcs - Billing/Collection	$ 837	$ -	$ 837	$ (114)	$ 724
638	Contract Svcs - Meter Reading	$ -	$ -	$ -	$ -	$ -
639	Contract Svcs - Other	$ 4,151	$ -	$ 4,151	$ (2)	$ 4,149
641	Rental of Building/Real Property	$ 2,792	$ -	$ 2,792	$ -	$ 2,792
642	Rental of Equipment	$ 1,287	$ -	$ 1,287	$ -	$ 1,287
643	Small Tools	$ -	$ -	$ -	$ -	$ -
648	Computer/Electronic Expenses	$ 104	$ -	$ 104	$ (2)	$ 102
650	Transportation	$ 393	$ -	$ 393	$ -	$ 393
656	Vehicle Insurance	$ 629	$ -	$ 629	$ -	$ 629
657	General Liability Insurance	$ 1,106	$ -	$ 1,106	$ -	$ 1,106
658	Workers' Comp Insurance	$ 552	$ -	$ 552	$ (38)	$ 514
659	Insurance - Other	$ -	$ -	$ -	$ -	$ -
666	Amortz. of Rate Case	$ -	$ 3,364	$ 3,364	$ -	$ 3,364
667	Gross Revenue Fee (PUC)	$ -	$ 314	$ 314	$ (6)	$ 309
670	Bad Debt Expense	$ -	$ -	$ -	$ -	$ -
671	Cross Connection Control Program	$ -	$ -	$ -	$ -	$ -
673	Training and Certification	$ 196	$ -	$ 196	$ (46)	$ 150
674	Consumer Confidence Report	$ -	$ -	$ -	$ -	$ -
675	Miscellaneous Expense	$ 2,137	$ -	$ 2,137	$ (7)	$ 2,130
OE1	Advertising & PR	$ 12	$ -	$ 12	$ (12)	$ -
OE2	Stormwater	$ -	$ -	$ -	$ -	$ -
OE3	Other Expense 3	$ -	$ -	$ -	$ -	$ -
OE4	Other Expense 4	$ -	$ -	$ -	$ -	$ -
OE5	Other Expense 5	$ -	$ -	$ -	$ -	$ -
	TOTAL OPERATING EXPENSE	**$ 71,845**	**$ 8,338**	**$ 80,183**	**$ (982)**	**$ 79,201**

OTHER REVENUE DEDUCTIONS

403	Depreciation Expense	$ 6,626	$ -	$ 6,626	$ 0	$ 6,626
406	Amort of Plant Acquisition Adjustment	$ -	$ -	$ -	$ -	$ -
407	Amortization Expense	$ -	$ -	$ -	$ -	$ -
408.11	Property Tax	$ 228	$ -	$ 228	$ -	$ 228
408.12	Payroll Tax	$ 1,915	$ 272	$ 2,187	$ 1	$ 2,188
408.13	Other	$ -	$ -	$ -	$ -	$ -
409.10	Federal Income Tax	$ -	$ 2,189	$ 2,189	$ 196	$ 2,385
409.11	Oregon Income Tax	$ -	$ 1,031	$ 1,031	$ (63)	$ 968
409.13	Extraordinary Items Income Tax	$ -	$ -	$ -	$ -	$ -
	TOTAL REVENUE DEDUCTIONS	**$ 80,613**	**$ 11,830**	**$ 92,444**	**$ (848)**	**$ 91,596**
	Net Operating Income	**$ 152**	**$ 12,248**	**$ 12,399**	**$ (1,079)**	**$ 11,321**

UTILITY RATE BASE

101	Utility Plant in Service	$ 439,505	$ -	$ 439,505	$ 0	$ 439,505
105	Construction Work in Progress	$ -	$ -	$ -	$ -	$ -
108	- Accumulated Depreciation of Plant	$ 327,102	$ -	$ 327,102	$ 0	$ 327,102
271	- Contributions in Aid of Construction	$ -	$ -	$ -	$ -	$ -
272	+ Accumulated Amortization of CIAC	$ -	$ -	$ -	$ -	$ -
281	- Accumulated Deferred Income Tax	$ -	$ -	$ -	$ -	$ -
0	- Excess Capacity	$ -	$ -	$ -	$ -	$ -
	= NET RATE BASE INVESTMENT	**$ 112,403**	**$ -**	**$ 112,403**	**$ 0**	**$ 112,403**
	Plus: (working capital)					
151	Materials and Supplies Inventory	$ -	$ 161	$ 161	$ -	$ 161
0	Working Cash (Total Op Exp /12)	$ 5,987	$ 695	$ 6,682	$ (81)	$ 6,600
	TOTAL RATE BASE	**$ 118,390**	**$ 856**	**$ 119,246**	**$ (81)**	**$ 119,164**
	Rate of Return	0.13%	0.00%	10.40%	0.00%	9.50%

Adjustment Summary - Water

		Company Proposed Totals	Staff Adjustments to Company Totals	Staff Proposed Totals	Explanation of Adjustment
	REVENUES				
460	Unmetered	$ -	$ -	$ -	
461.1	Residential	$ 170,447	$ (20,172)	$ 150,276	Attributable to overall reduction to revenue requirement
461.2	Commercial	$ 8,873	$ 4,621	$ 13,495	Included revenue attributable to four current irrigation customers
462	Fire Protection Sales	$ -	$ -	$ -	
465	Irrigation Water Sales	$ 8,621	$ (8,621)	$ -	Combined with Commercial Water Sales
466	Water Sales for Resale	$ -	$ -	$ -	
471	Miscellaneous Services	$ -	$ 360	$ 360	Used test year amount
475	Cross Connection Control	$ 5,239	$ -	$ 5,239	No adjustment
	Other - Construction Revenue	$ -	$ 338	$ 338	Used test year amount
0		$ -	$ -	$ -	
	Total Revenue	**$ 193,181**	**$ (23,473)**	**$ 169,708**	
Acct .	**OPERATING EXPENSES**				
601	Salaries and Wages - Employees	$ 41,575	$ (1,139)	$ 40,437	Reduced 5.9% increase to 3.0% 2017 actual
603	Salaries and Wages - Officers	$ 602	$ (16)	$ 586	Reduced 5.9% increase to 3.0% 2017 actual
604	Employee Pension & Benefits	$ 4,820	$ 1,195	$ 6,015	Added 3% of test year wages to reflect new retirement matching program
610	Purchased Water	$ -	$ -	$ -	
611	Telephone/Communications	$ 2,245	$ -	$ 2,245	No adjustment
615	Purchased Power	$ 15,262	$ (80)	$ 15,181	Based on provided documentation (Direct Water PGE bills)
616	Fuel for Power Production	$ -	$ -	$ -	
617	Other Utilities	$ 70	$ (5)	$ 64	Based on provided documentation (Hiland Indirect waste mgmt, sanitary, janitorial)
618	Chemical / Treatment Expense	$ -	$ -	$ -	
619	Office Supplies	$ 3,947	$ (326)	$ 3,621	Used 3-year average (Hiland Indirect) (DR 14)
619.1	Postage	$ 883	$ (433)	$ 450	Used company-provided method (DR 15).
620	O&M Materials/Supplies	$ 129	$ -	$ 129	No adjustment
621	Repairs to Water Plant	$ 996	$ -	$ 996	No adjustment
631	Contract Svcs - Engineering	$ -	$ -	$ -	
632	Contract Svcs - Accounting	$ 190	$ -	$ 190	No adjustment
633	Contract Svcs - Legal	$ -	$ -	$ -	
634	Contract Svcs - Management Fees	$ -	$ -	$ -	
635	Contract Svcs - Testing	$ 1,443	$ -	$ 1,443	No adjustment
636	Contract Svcs - Labor	$ 1,253	$ -	$ 1,253	No adjustment
637	Contract Svcs - Billing/Collection	$ 837	$ (114)	$ 724	Based on provided docs (Hiland indirect).
638	Contract Svcs - Meter Reading	$ -	$ -	$ -	
639	Contract Svcs - Other	$ 2,622	$ (2)	$ 2,620	Based on provided documentation (Direct Water)
641	Rental of Building/Real Property	$ 2,792	$ -	$ 2,792	No adjustment
642	Rental of Equipment	$ 3,133	$ -	$ 3,133	No adjustment
643	Small Tools	$ -	$ -	$ -	
648	Computer/Electronic Expenses	$ 104	$ (2)	$ 102	Based on provided documentation (Hiland Indirect -> Technology Services)
650	Transportation	$ 3,046	$ -	$ 3,046	No adjustment

656	Vehicle Insurance	$ 629	$ -	$ 629	No adjustment
657	General Liability Insurance	$ 1,106	$ -	$ 1,106	No adjustment
658	Workers' Comp Insurance	$ 552	$ (38)	$ 514	Based on provided documentation (Hiland Indirect -> Workers Comp)
659	Insurance - Other	$ -	$ -	$ -	
666	Amortz. of Rate Case	$ 3,364	$ -	$ 3,364	No adjustment
667	Gross Revenue Fee (PUC)	$ 580	$ (71)	$ 509	Calculated automatically @ 0.3% of gross revenue
670	Bad Debt Expense	$ -	$ -	$ -	
671	Cross Connection Control Program	$ -	$ -	$ -	
673	Training and Certification	$ 196	$ (46)	$ 150	Based on provided documentation (Hiland Indirect -> Training & Education)
674	Consumer Confidence Report	$ -	$ -	$ -	
675	Miscellaneous Expense	$ 446	$ (7)	$ 439	Based on provided documentation (Hiland Indirect)
OE1	Advertising & PR	$ 12	$ (12)	$ -	Removed - charitable contribution
OE2	Stormwater	$ 217	$ -	$ 217	No adjustment
OE3	Other Expense 3	$ -	$ -	$ -	
OE4	Other Expense 4	$ -	$ -	$ -	
OE5	Other Expense 5	$ -	$ -	$ -	
	TOTAL OPERATING EXPENSE	**$ 93,050**	**$ (1,096)**	**$ 91,955**	
	OTHER REVENUE DEDUCTIONS				
403	Depreciation Expense	$ 33,287	$ (17,853)	$ 15,434	2017 Amnt. App: ~$33K; Provided sheet: ~$20K w/ incorrect formulas (Plant column AT)
406	Amort of Plant Acquisition Adjustment	$ -	$ -	$ -	
407	Amortization Expense	$ -	$ -	$ -	
408.11	Property Tax	$ 3,955	$ -	$ 3,955	No adjustment
408.12	Payroll Tax	$ 2,610	$ 1	$ 2,611	Estimated effect of staff's wage adjustment
408.13	Other	$ -	$ -	$ -	
409.10	Federal Income Tax	$ 9,076	$ (16)	$ 9,060	Calculated automatically
409.11	Oregon Income Tax	$ 3,979	$ (299)	$ 3,680	Calculated automatically @ 6.6% of taxable income
409.13	Extraordinary Items Income Tax	$ -	$ -	$ -	
	TOTAL REVENUE DEDUCTIONS	**$ 145,957**	**$ (19,263)**	**$ 126,694**	
	Net Operating Income	**$ 47,224**	**$ (4,211)**	**$ 43,013**	Reduced ROE to 9.5%
	UTILITY RATE BASE				
101	Utility Plant in Service	$ 721,691	$ 0	$ 721,691	No adjustment
105	Construction Work in Progress	$ -	$ -	$ -	
108	- Accumulated Depreciation of Plant	$ 305,662	$ 1,270	$ 306,932	Minor adjustments to depreciation formulas
271	- Contributions in Aid of Construction	$ -	$ -	$ -	
272	+ Accumulated Amortization of CIAC	$ -	$ -	$ -	
281	- Accumulated Deferred Income Tax	$ -	$ -	$ -	
	- Excess Capacity	$ -	$ -	$ -	
	= NET RATE BASE INVESTMENT	**$ 416,029**	**$ (1,269)**	**$ 414,760**	
	Plus: (working capital)				
151	Materials and Supplies Inventory	$ 30,351	$ -	$ 30,351	No adjustment
	Working Cash (Total Op Exp /12)	$ 7,724	$ (61)	$ 7,663	Calculated automatically @ 1/12th of operating expenses.
	TOTAL RATE BASE	**$ 454,104**	**$ (1,330)**	**$ 452,774**	
	Rate of Return	10.40%	0.00%	9.50%	

Adjustment Summary - Wastewater

		Company Proposed Totals	Staff Adjustments to Company Totals	Staff Proposed Totals	Explanation of Adjustment
	REVENUES				
	Unmetered	$ -	$ -	$ -	
	Residential	$ 95,619	$ (2,085)	$ 93,534	Attributable to overall reduction to revenue requirement
	Commercial (Restaurant)	$ 9,224	$ (201)	$ 9,023	Attributable to overall reduction to revenue requirement
	Fire Protection Sales	$ -	$ -	$ -	
	Irrigation Water Sales	$ -	$ -	$ -	
	Water Sales for Resale	$ -	$ -	$ -	
	Miscellaneous Services	$ -	$ 360	$ 360	Used test year amount
	Cross Connection Control	$ -	$ -	$ -	
	Other	$ -	$ -	$ -	
		$ -	$ -	$ -	
	Total Revenue	**$ 104,843**	**$ (1,926)**	**$ 102,917**	
Acct .	**OPERATING EXPENSES**				
601	Salaries and Wages - Employees	$ 30,749	$ (842)	$ 29,907	Reduced 5.9% increase to 3.0% 2017 actual
603	Salaries and Wages - Officers	$ 602	$ (16)	$ 586	Reduced 5.9% increase to 3.0% 2017 actual
604	Employee Pension & Benefits	$ 3,686	$ 888	$ 4,574	Added 3% of test year wages to reflect new retirement matching program
610	Purchased Water	$ -	$ -	$ -	
611	Telephone/Communications	$ 861	$ -	$ 861	No adjustment
615	Purchased Power	$ 1,831	$ -	$ 1,831	No adjustment
616	Fuel for Power Production	$ -	$ -	$ -	
617	Other Utilities	$ 70	$ (5)	$ 64	Based on provided documentation (Hiland Indirect waste mgmt, sanitary, janitorial)
618	Chemical / Treatment Expense	$ 4,686	$ -	$ 4,686	No adjustment
619	Office Supplies	$ 3,947	$ (326)	$ 3,621	Used 3-year average (Hiland Indirect) (DR 14)
619.1	Postage	$ 838	$ (389)	$ 450	Used company-provided method (DR 15).
620	O&M Materials/Supplies	$ 6,291	$ -	$ 6,291	No adjustment
621	Repairs to Water Plant	$ 456	$ (67)	$ 389	Based on provided documentation (Direct Wastewater)
631	Contract Svcs - Engineering	$ -	$ -	$ -	
632	Contract Svcs - Accounting	$ 190	$ -	$ 190	No adjustment
633	Contract Svcs - Legal	$ 63	$ -	$ 63	No adjustment
634	Contract Svcs - Management Fees	$ 1,200	$ -	$ 1,200	No adjustment
635	Contract Svcs - Testing	$ 6,840	$ -	$ 6,840	No adjustment
636	Contract Svcs - Labor	$ -	$ -	$ -	
637	Contract Svcs - Billing/Collection	$ 837	$ (114)	$ 724	Based on provided docs (Hiland indirect).
638	Contract Svcs - Meter Reading	$ -	$ -	$ -	
639	Contract Svcs - Other	$ 4,151	$ (2)	$ 4,149	Based on provided documentation (Direct Wastewater)
641	Rental of Building/Real Property	$ 2,792	$ -	$ 2,792	No adjustment
642	Rental of Equipment	$ 1,287	$ -	$ 1,287	No adjustment
643	Small Tools	$ -	$ -	$ -	
648	Computer/Electronic Expenses	$ 104	$ (2)	$ 102	Based on provided documentation (Hiland Indirect -> Technology Services)
650	Transportation	$ 393	$ -	$ 393	No adjustment

656	Vehicle Insurance	$ 629	$ -	$ 629	No adjustment
657	General Liability Insurance	$ 1,106	$ -	$ 1,106	No adjustment
658	Workers' Comp Insurance	$ 552	$ (38)	$ 514	Based on provided documentation (Hiland Indirect -> Workers Comp)
659	Insurance - Other	$ -	$ -	$ -	
666	Amortz. of Rate Case	$ 3,364	$ -	$ 3,364	No adjustment
667	Gross Revenue Fee (PUC)	$ 314	$ (6)	$ 309	Calculated automatically @ 0.3% of gross revenue
670	Bad Debt Expense	$ -	$ -	$ -	
671	Cross Connection Control Program	$ -	$ -	$ -	
673	Training and Certification	$ 196	$ (46)	$ 150	Based on provided documentation (Hiland Indirect -> Training & Education)
674	Consumer Confidence Report	$ -	$ -	$ -	
675	Miscellaneous Expense	$ 2,137	$ (7)	$ 2,130	Based on provided documentation (Hiland Indirect)
OE1	Advertising & PR	$ 12	$ (12)	$ -	Removed - charitable contribution
OE2	Stormwater	$ -	$ -	$ -	
OE3	Other Expense 3	$ -	$ -	$ -	
OE4	Other Expense 4	$ -	$ -	$ -	
OE5	Other Expense 5	$ -	$ -	$ -	
	TOTAL OPERATING EXPENSE	**$ 80,183**	**$ (982)**	**$ 79,201**	
	OTHER REVENUE DEDUCTIONS				
403	Depreciation Expense	$ 6,626	$ 0	$ 6,626	No adjustment
406	Amort of Plant Acquisition Adjustment	$ -	$ -	$ -	
407	Amortization Expense	$ -	$ -	$ -	
408.11	Property Tax	$ 228	$ -	$ 228	No adjustment
408.12	Payroll Tax	$ 2,187	$ 1	$ 2,188	Estimated effect of staff's wage adjustment
408.13	Other	$ -	$ -	$ -	
409.10	Federal Income Tax	$ 2,189	$ 196	$ 2,385	Calculated automatically
409.11	Oregon Income Tax	$ 1,031	$ (63)	$ 968	Calculated automatically @ 6.6% of taxable income
409.13	Extraordinary Items Income Tax	$ -	$ -	$ -	
	TOTAL REVENUE DEDUCTIONS	**$ 92,444**	**$ (848)**	**$ 91,596**	
	Net Operating Income	**$ 12,399**	**$ (1,079)**	**$ 11,321**	Reduced ROE to 9.5%
	UTILITY RATE BASE				
101	Utility Plant in Service	$ 439,505	$ 0	$ 439,505	No adjustment
105	Construction Work in Progress	$ -	$ -	$ -	
108	- Accumulated Depreciation of Plant	$ 327,102	$ 0	$ 327,102	No adjustment
271	- Contributions in Aid of Construction	$ -	$ -	$ -	
272	+ Accumulated Amortization of CIAC	$ -	$ -	$ -	
281	- Accumulated Deferred Income Tax	$ -	$ -	$ -	
	- Excess Capacity	$ -	$ -	$ -	
	= NET RATE BASE INVESTMENT	**$ 112,403**	**$ 0**	**$ 112,403**	
	Plus: (working capital)				
151	Materials and Supplies Inventory	$ 161	$ -	$ 161	No adjustment
	Working Cash (Total Op Exp /12)	$ 6,682	$ (81)	$ 6,600	Calculated automatically @ 1/12th of operating expenses.
	TOTAL RATE BASE	**$ 119,246**	**$ (81)**	**$ 119,164**	
	Rate of Return	10.40%	0.00%	9.50%	

Cost of Capital

Water Cost of Capital

	Amount	Cap Struct	Cost	Wtd. Cost	
	-	0.00%	0.00%	0.00%	
	-	0.00%	0.00%	0.00%	
	-	0.00%	0.00%	0.00%	
Total Debt	**-**	**0.00%**		**0.00%**	
Equity - Water	452,774	100.00%	9.50%	9.50%	
	-	0.00%	0.00%	0.00%	
	-	0.00%	0.00%	0.00%	
Total Equity	**452,774**	**100.00%**		**9.50%**	**ROE**
Total Debt + Equity	**452,774**	**100.00%**		**9.50%**	**ROR**

Wastewater Cost of Capital

	Amount	Cap Struct	Cost	Wtd. Cost	
	-	0.00%	0.00%	0.00%	
	-	0.00%	0.00%	0.00%	
	-	0.00%	0.00%	0.00%	
Total Debt	**-**	**0.00%**		**0.00%**	
Equity - Wastewater	119,164	100.00%	9.50%	9.50%	
	-	0.00%	0.00%	0.00%	
	-	0.00%	0.00%	0.00%	
Total Equity	**119,164**	**100.00%**		**9.50%**	**ROE**
Total Debt + Equity	**119,164**	**100.00%**		**9.50%**	**ROR**

Rate Design - Water

Residential & Commercial Water

Revenue Allocation: **163,771**

Allocated to Base Rates: 60.00%
Allocated to Commodity Rates: 40.00%

Base Rates

Revenue Allocation: **98,262**

Meter Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
5/8" & 3/4"	42	0.8	34	13.86%	$ 13,615	**$ 27.01**
1"	192	0.9	178	73.24%	$ 71,965	**$ 31.23**
1 1/2"	6	1.4	8	3.46%	$ 3,404	**$ 47.27**
2"	1	2.4	2	0.99%	$ 972	**$ 81.04**
3"	1	15.0	15	6.19%	$ 6,078	**$ 506.51**
4"	1	5.5	6	2.27%	$ 2,229	**$ 185.72**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
TOTAL	243		243	100.00%	$ 98,262	

Commodity Rate

Revenue Allocation: **65,508**

Annual Consumption	39,502,199	Gallons
Unit of Measurement	100	Gallons
Annual Units of Consumption	395,022	Units

Commodity Rate: **$ 0.16583** per unit

Rate Design - Wastewater

Residential & Commercial Wastewater

Revenue Allocation: **93,534**

Allocated to Base Rates: 100.00%
Allocated to Commodity Rates: 0.00%

Base Rates

Revenue Allocation: **93,534**

Line Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
All	265	1.0	265	100.00%	$ 93,534	**$ 29.41**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
TOTAL	265		265	100.00%	$ 93,534	

Commodity Rate

Revenue Allocation: **-**

Annual Consumption	-	Gallons
Unit of Measurement	100	Gallons
Annual Units of Consumption	-	Units

Commodity Rate: **$ -** per unit

Rate Design - Wastewater

Restaurant Wastewater

Revenue Allocation: **9,023**

Allocated to Base Rates: 100.00%
Allocated to Commodity Rates: 0.00%

Base Rates

Revenue Allocation: **9,023**

Line Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
Any	1	1.0	1	100.00%	$ 9,023	**$ 751.90**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
			-	0.00%	$ -	**$ -**
TOTAL	1		1	100.00%	$ 9,023	

Commodity Rate

Revenue Allocation: **-**

Annual Consumption	-	Gallons
Unit of Measurement	100	Gallons
Annual Units of Consumption	-	Units

Commodity Rate: **$ -** per unit

Summary of Rates, Bills, and Revenues*

WATER

			BASE RATES			COMMODITY RATES			AVERAGE BILLS			REVENUES		
Meter Type & Size	Total Projected Customers	Total Projected Consumption (Gallons)	Current Rate (Monthly Equivalent)	Staff Proposed Rate	Difference (%)	Current Rate (Converted to 100 Gal)	Staff Proposed Rate	Difference (%)	Current Rate	Staff Proposed Rate	Difference (%)	Base Rate	Commodity Rate	Total
Water - Residential														
5/8" or 3/4"	42	4,645,872	$ 18.87	$ 27.01	43.16%	$ 0.13	$ 0.17	25.31%	$ 31.07	$ 42.30	36.15%	$ 13,615	$ 7,704	$ 21,319
1"	191	28,445,304	$ 18.87	$ 31.23	65.53%	$ 0.13	$ 0.17	25.31%	$ 35.29	$ 51.82	46.81%	$ 71,590	$ 47,172	$ 118,762
1 1/2"	1	259,764	$ 18.87	$ 47.27	150.52%	$ 0.13	$ 0.17	25.31%	$ 47.52	$ 83.17	75.03%	$ 567	$ 431	$ 998
3"	1	1,880,472	$ 320.79	$ 506.51	57.89%	$ 0.13	$ 0.17	25.31%	$ 528.18	$ 766.38	45.10%	$ 6,078	$ 3,118	$ 9,197
TOTAL	**235**	**35,231,412**										**$ 91,850**	**$ 58,426**	**$ 150,276**
Water - Commercial														
1"	1	157,296	$ 21.11	$ 31.23	48.00%	$ 0.11	$ 0.17	44.25%	$ 36.17	$ 52.97	46.43%	$ 375	$ 261	$ 636
1 1/2"	1	388,860	$ 67.64	$ 47.27	-30.10%	$ 0.11	$ 0.17	44.25%	$ 104.89	$ 101.01	-3.70%	$ 567	$ 645	$ 1,212
2"	1	1,747,080	$ 67.64	$ 81.04	19.82%	$ 0.11	$ 0.17	44.25%	$ 235.01	$ 322.48	37.22%	$ 972	$ 2,897	$ 3,870
4"	1	319,296	$ 67.64	$ 185.72	174.59%	$ 0.11	$ 0.17	44.25%	$ 98.22	$ 229.84	134.00%	$ 2,229	$ 530	$ 2,758
TOTAL	**4**	**2,612,532**										**$ 4,143**	**$ 4,332**	**$ 8,476**
Water - Irrigation														
1 1/2"	4	1,658,255	$ 67.64	$ 47.27	-30.10%	$ 0.13	$ 0.17	25.31%	$ 113.36	$ 104.56	-7.76%	$ 2,269	$ 2,750	$ 5,019
TOTAL	**4**	**1,658,255**										**$ 2,269**	**$ 2,750**	**$ 5,019**
												Revenue from Water Sales	**$ 98,262**	**$ 65,508**	**$ 163,771**
												Misc. Revenue			$ 360
												Cross Connection			$ 5,239
												Other - Construction			$ 338
TOTAL WATER	**243**	**39,502,199**										**TOTAL WATER REVENUE**			**$ 169,708**

WASTEWATER

			BASE RATES			COMMODITY RATES			AVERAGE BILLS			REVENUES		
Line Type & Size	Total Projected Customers	Total Projected Consumption (Gallons)	Current Rate (Monthly Equivalent)	Staff Proposed Rate	Difference (%)	Current Rate (Converted to 100 Gal)	Staff Proposed Rate	Difference (%)	Current Rate	Staff Proposed Rate	Difference (%)	Base Rate	Commodity Rate	Total
Wastewater - Residential & Commercial														
5/8" or 3/4"	59		$ 24.94	$ 29.41	17.96%	$ -	$ -	N/A	$ 24.94	$ 29.41	17.96%	$ 20,824	$ -	$ 20,824
1"	204		$ 24.94	$ 29.41	17.96%	$ -	$ -	N/A	$ 24.94	$ 29.41	17.96%	$ 72,003	$ -	$ 72,003
1 1/2"	2		$ 24.94	$ 29.41	17.96%	$ -	$ -	N/A	$ 24.94	$ 29.41	17.96%	$ 706	$ -	$ 706
TOTAL	**265**	**-**										$ 93,534	$ -	**$ 93,534**
Wastewater - Restaurant														
Any size	1		$ 636.92	$ 751.90	18.05%	$ -	$ -	N/A	$ 636.92	$ 751.90	18.05%	$ 9,023	$ -	$ 9,023
TOTAL	**1**	**-**										$ 9,023	$ -	**$ 9,023**
												Revenue from Water Sales	$ 102,557	$ -	**$ 102,557**
												Misc. Revenue			$ 360
TOTAL WASTEWATER	**266**	**-**										**TOTAL WASTEWATER REVENUE**			**$ 102,917**

TOTAL WATER & WASTEWATER REVENUE	**$ 272,624**

*The new rate design will not have residential, commercial, and irrigation customer classes. Those classes are listed in some locations on this summary page solely to provide visual clarification of the impact of the new rate design on customers who were previously associated with those classes in the former rate structure.

Invested Plant - Water

Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	2017	Accum. Deprec. Ending 2017	Remaining Plant
301	Organization	Various	-	-	-	-	-	-	-	-
302	Franchises	Various	-	-	-	-	-	-	-	-
303	Land and Land Rights	Various	6,672	-	6,672	-	-	-	-	6,672
304	Structures and Improvements	Various	192,170	-	192,170	35	5,491	3,320	161,162	31,008
305	Collecting and Impounding Reservoirs	Various	-	-	-	50	-	-	-	-
306	Lake, River and Other Intakes	Various	-	-	-	35	-	-	-	-
307	Wells and Springs	Various	24,520	-	24,520	25	981	616	4,188	20,332
308	Infiltration Galleries and Tunnels	Various	-	-	-	25	-	-	-	-
309	Supply Main	Various	-	-	-	50	-	-	-	-
310	Power Generation Equipment	Various	-	-	-	30	-	-	-	-
311	Pumping Equipment	Various	53,703	-	53,703	20	2,104	1,397	35,372	18,331
320	Water Treatment Equipment	Various	5,727	-	5,727	20	286	286	1,479	4,247
330	Distribution Reservoir and Standpipes	Various	255,780	-	255,780	50	5,285	5,285	49,616	206,164
331	Transmission and Distribution Mains	Various	94,053	-	94,053	50	1,881	1,881	47,231	46,822
333	Services	Various	-	-	-	30	-	-	-	-
334	Meters and Meter Installations	Various	85,740	-	85,740	20	4,287	2,378	6,600	79,140
335	Hydrants	Various	-	-	-	40	-	-	-	-
336	Cross Connection Control	Various	-	-	-	15	-	-	-	-
339	Other Plant	Various	-	-	-	30	-	-	-	-
340	Office Furniture and Equipment	Various	-	-	-	20	-	-	-	-
341	Transportation Equipment	Various	-	-	-	7	-	-	-	-
343	Tools, Shop, and Garage Equipment	Various	-	-	-	15	-	-	-	-
344	Laboratory Equipment	Various	-	-	-	15	-	-	-	-
345	Power Operated Equipment	Various	-	-	-	10	-	-	-	-
346	Communication Equipment	Various	1,013	-	1,013	10	101	-	1,013	-
347	Electronic/Computer Equipment	Various	2,314	-	2,314	5	463	270	270	2,044
348	Miscellaneous Equipment	Various	-	-	-	10	-	-	-	-
	TOTALS	**Various**	**721,691**	**-**	**721,691**	**Various**	**20,879**	**15,434**	**306,932**	**414,760**

Original Plant In Service Cost	721,691
Less: Excess Capacity	-
"Used & Useful" Plant	721,691
Less Accum Depreciation	306,932
NET PLANT	**414,760**

Depreciation Expense	**15,434**

Invested Plant - Wastewater

Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	2017	Accum. Deprec. Ending 2017	Remaining Plant
351	Organization	Various	-	-	-	-	-	-	-	-
353	Land and Land Rights	Various	-	-	-	-	-	-	-	-
354-355	Structures	Various	239,281	-	239,281	35	6,837	2,589	233,050	6,231
360-361	Collection Sewers	Various	-	-	-	50	-	-	-	-
363	Flow Measuring Devices	Various	-	-	-	10	-	-	-	-
364	Receiving Wells/Manholes	Various	-	-	-	25	-	-	-	-
365	Lift Station Pumps <= 5 hp	Various	-	-	-	5	-	-	-	-
366	Lift Station Pumps > 5 hp	Various	-	-	-	10	-	-	-	-
367	Treatment Process Pumps <= 5 hp	Various	4,869	-	4,869	20	243	-	4,869	-
368	Treatment Process Pumps > 5 hp	Various	-	-	-	10	-	-	-	-
369	Effluent/Outfall Pumps	Various	-	-	-	25	-	-	-	-
371	Treatment & Disposal Equipment	Various	-	-	-	25	-	-	-	-
372	Chlorination/Dechlorination/Ammonia	Various	2,336	-	2,336	25	93	93	1,534	802
373-374	UV/Ozone Disinfection Equipment	Various	-	-	-	5	-	-	-	-
380	Outfall Sewer Lines	Various	188,863	-	188,863	50	3,777	3,777	84,768	104,096
389	Plant Sewers	Various	-	-	-	50	-	-	-	-
399	Other Plant	Various	4,156	-	4,156	25	166	166	2,882	1,275
	TOTALS	**Various**	**439,505**	**-**	**439,505**	**Various**	**11,117**	**6,626**	**327,102**	**112,403**

Original Plant In Service Cost	439,505
Less: Excess Capacity	-
"Used & Useful" Plant	439,505
Less Accum Depreciation	327,102
NET PLANT	**112,403**

Depreciation Expense	**6,626**

CASE: UW 173
WITNESS: STEPHANIE YAMADA

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 103

Exhibits in Support
of Testimony

April 26, 2018

OPUC Data Request 31

With its Rate Case Application, in the folder "2016 Test Year Expenses → Indirect Costs → 2016 Payment Processing," Illahe submitted documentation of Hiland indirect test year costs totaling $6,751 attributable to BKCD Processing, Paytrace, and ACH Works. Furthermore, in its response to Staff's Data Request 15, Illahe described its calculation of postage expense attributable to 243 bills per month. Regarding these costs,

a. Please describe how Illahe customers are billed for and pay for service. For example,
   i. Does Hiland utilize a billing service or perform its own billing?
   ii. Are paper bills mailed to all customers monthly?
   iii. Do some or all customers submit payments electronically online?
b. Please explain how Illahe determined that 243 bills will be sent to Illahe customers monthly.
c. Please describe the Payment Processing costs attributable to BKCD Processing, Paytrace, and ACH Works.
d. If Hiland utilizes a billing service to bill Illahe customers, does the amount Hiland pays for that service include postage expenses for bills mailed to customers by the service? Please explain and provide supporting documentation including the contract that applies to engagement of the billing service.

Response to OPUC Data Request 31

a. Billing services are completed by Hiland Water staff using a utility billing program called RVS Software Utility Billing Systems. The program generates bills and is used to track water usages and customer account information, including balances. Customers are provided multiple options to pay their water bills including cash/check, e-check (electronic funds transfer) or credit card.

   i. Hiland Water staff perform all billing services for Illahe. It does not contract with a separate billing service provider.

   ii. Paper bills are currently mailed bi-monthly.

   iii. Some of the customers submit payments electronically online, some pay over the phone, and some mail in payments.

b. In some cases, there are multiple customers served through one meter. Only one water bill is mailed per meter. See chart below:

Description	Meter Size	EDU's
Burning Tree Estates #1	1"	4
Burning Tree Estates #4	1"	2

Burning Tree Estates #5	1”	4
Burning Tree Estates #6	1”	4
Burning Tree Estates #7	1”	3
Burning Tree Estates #8	1”	3
Miller, Rob	1”	2
Illahe Terrace	3”	17
Total Quantity	8 Meters	39 EDU’s

Actual Meters	Quantity	EDU's
5/8"	36	36
3/4"	6	6
1"	192	207
1.5"	6	6
2"	1	1
3"	1	17
4"	1	1
Total	243	274

*EDU = Equivalent Dwelling Unit

c. BKCD Processing represents the fees charged by credit card companies for processing credit cards payments. Paytrace is the merchant that provides the software and interface to receive credit card payments. ACH Works is the merchant through which e-checks are processed using the Automated Clearing House network (electronic transfer of funds).

d. Hiland does not utilize an outside billing service.

OPUC Data Request 1

Illahe's Application Testimony (page 13 & page 15) shows that it has four irrigation customers. However, neither Illahe's current nor proposed tariffs include a schedule for irrigation rates. Regarding Illahe's irrigation customers:

a. Please identify the four irrigation customers.
b. Do these customers possess unique characteristics compared to other Illahe customers? Please explain.
c. Does the irrigation service reflect unique characteristics compared to other services offered by Illahe (e.g., water quality)? Please explain.
d. Under which tariff schedule are these customers currently being billed?
e. Under which proposed tariff schedule does Illahe propose to bill these customers?

Response to OPUC Data Request 1

a. *Our records identify the irrigation accounts as the following:*
   Acct #821 Burning Tree Estates #2 c/o Bertolucci Management
   Acct #822 Burning Tree Estates #3 c/o Bertolucci Management
   Acct #946 John McGonegal c/o Gleneagles #2
   Acct #947 John McGonegal c/o Gleneagles #2
b. *No. The only difference is the application of use (irrigation) and that these water meters serve common areas that are communally owned by a group of properties. None of these customers pay for sewer.*
c. *No. The irrigation service is a normal water service and is not limited to irrigation use. It is simply that Illahe is aware of how the water is used. The services do not include sewer for these accounts. All types of customers receive the same water service through the same pipes. The water is pumped from the same sources.*
d. *They are currently billed under tariff Schedule No. 2 for 1.5-2" meters since these are 1.5" meters.*
e. *Illahe proposes to bill this group under proposed Schedule No. 1 for meters based on their size. Since they are 1.5", the rates would correlate with all meters sized 1.5" and larger.*

OPUC Data Request 17
Referring to p. 2 of Attachment A to the Company's Application, please explain why an allocation of 50% of costs to water and 50% of costs to wastewater is appropriate.

Response to OPUC Data Request 17
An allocation of 50% of costs to water and 50% of costs to wastewater is appropriate and fair because indirect costs are fairly represented based on the number of connections in the system. At Illahe, the number of water and wastewater customers is nearly identical; therefore, the variance is negligible.

OPUC Data Request 9
Illahe proposes a $27,168 increase to the Hiland indirect Salaries and Wages expense, which it attributes to the increase of one employee from part-time to full-time status. Regarding this employee, please provide:

a. The total current annual amount of this employee's salary,
b. The number of hours that this employee works per month, and
c. A description of this employee's duties and responsibilities.
d. What increased responsibilities or additional work this employee will take on moving from part-time to full-time.

Response to OPUC Data Request 9
A. The total amount of this employee's current salary is $39,978.00.

B. This employee works an average of 173 hours per month.

C. As Staff Accountant, this employee's current full-time duties pertain to accounting, such as general bookkeeping, accounts payable, payroll, inventory tracking, classifying and recording numerical data, managerial accounting, cost allocations, PUC reports, and assisting in data collection in preparation of rate cases. Additionally, the Staff Accountant is charged with other administrative tasks, such as coordination, tracking, and reporting of water sampling required by the Oregon Drinking Water Program.

D. Prior to becoming full-time, this employee functioned more as an assistant to the General Manager. It was determined that a part-time Accounting Intern was not adequate to accomplish the accounting tasks that needed to be completed and that the General Manager was overloaded with work. The same was true for the Compliance Manager, which is why the compliance work described above was added to the job description of the Staff Accountant. The primary tasks added as a full-time employee include maintaining an inventory system, providing support in the area of compliance by providing coordination, tracking and reporting of water sampling, and increased responsibility in all accounting functions.

OPUC Data Request 32
Please provide all Hiland employees' 2017 W-2s. Please note social security numbers should either be redacted or submitted according to the instructions regarding confidential information below.

Response to OPUC Data Request 32
W-2's will be submitted according to the instructions provided for confidential information. Additionally, accompanying documentation from Edward Jones is being provided as documentation pertaining to the company sponsored SIMPLE IRA plan started in February 2017. For each calendar year, the company makes contributions that match each employee's SIMPLE IRA salary reduction contributions up to a limit of 3% of the employees' compensation for the calendar year. Employees' salary reduction contributions are shown the W-2's being submitted confidentially.

OPUC Data Request 22

For the wastewater plant asset shown below, please provide:

a. A description of the project to which it relates, and
b. An explanation for why the project was necessary.
c. An explanation for why the amount spent was prudent.

Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost
380	Replacement of sewer lift station piping	12/31/2011	27,456

Response to OPUC Data Request 22

a. This project replaced and re-configured major components of the wastewater lift station on Brown Island road. The lift station is a crucial collection point for the wastewater system at Illahe. This project included the addition of a new vault, re-location and replacement of check valves, and installation of isolation valves and other piping in the vault. There was also upgrade work completed around the area of the lift station to ensure the integrity of the collection system.
b. When Hiland became the owner of Illahe, it identified that the wastewater system was not in compliance with its DEQ permit. To bring the wastewater system into compliance, substantial work at and around the lift station was required. In order to keep the lift station operational, maintain the operation of the wastewater collection system, comply with the DEQ permit, and continue wastewater collection without sanitary incidents, this project was necessary.
c. The amount spent was prudent because it was the necessary cost to comply with the DEQ permit and safely continue uninterrupted wastewater service to Illahe's customers.

OPUC Data Request 19

In Illahe's previous rate case (UW 78), 50% of the cost of a 250,000 gallon reservoir was excluded from the water rate base due to unnecessary capacity. As a result, $123,648 of the total cost of $247,295 was excluded from rate base. With its present Rate Case Application, Illahe proposes to add the previously-excluded $123,648 to the water rate base with an in-service date of June 12, 2016. Regarding this asset, please explain how the reservoir came to be "used and useful" effective June 12, 2016. Please include any calculations performed by the Company during its analysis to determine that this asset is now fully "used and useful."

Response to OPUC Data Request 19

Order No. 03-133 states that Illahe and PUC staff agreed during the last rate case to include only 50 percent of the 250,000 gallon reservoir cost in the rate base at that time, but the order detailed that it was not claiming that the reservoir was actually 50 percent used and useful. Illahe is under different ownership now, but we have reviewed the available documentation pertaining to UW 78 and have concluded that whether there was unused capacity and how much capacity was unused was not settled. Rather, the agreement from the UW 78 settlement was to incorporate the remaining $123,648 into the rate base using a later (but not yet determined) in-service date so that Illahe's cost recovery of the excluded amount would be borne by a greater number of water users as the water system continued to grow. June 12, 2016 was selected as a proposed in-service date for the purpose of inclusion in the rate base because 2016 is the test year for UW 173.

There has been substantial water system growth since UW 78 and the reservoirs are undoubtedly 100% used and useful at this time. Reservoir capacity is vital to provide fire protection, serve as a buffer for instantaneous peak demand, and to provide storage in the event of outage. The following calculations were used to determine that the reservoirs are 100% used and useful:

FIRE PROTECTION: Based on Marion County Fire Code, homes ranging from 4,801-6,200 sq. ft. require 2,000 gpm for a minimum of 120 minutes.

2,000 gpm x 120 min = 240,000 gallons

STORAGE CAPACITY FOR OUTAGES:

Average daily demand in 2016 (test year) = 108,000 gallons
Average daily demand June through Sept 2016 (test peak use period) = 216,000 gallons
Necessary storage capacity for 72 hours of outage (average): 3 days x 108,000 gallons = 324,000 gallons
Necessary storage capacity for 72 hours of outage (peak): 3 days x 216,000 gallons = 648,000 gallons
Range of storage capacity for outages: 324,000-648,000 gallons

TOTAL APPROPRIATE RESERVOIR STORAGE:

Lower End: 240,000 gal (Fire Protection) + 324,000 gal (72 hours average demand) = 564,000 gallons

Upper End: 240,000 gal (Fire Protection) + 648,000 gal (72 hours peak season demand) = 888,000 gallons

Actual Storage (400,000 gal) < Recommended Range = Actual Storage is 100% used and useful.

OPUC Data Request 20

Illahe's Rate Case Application describes having previously upgraded to automated meters. Furthermore, Illahe proposes to include in water rate base the following plant items relating to the meter replacement:

Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost
334	Automated Meter Reading	6/30/2017	$81,518
347	Automated Meter Reading Soft/Hardware	6/30/2017	$2,314

Regarding the meter replacements,

a. Please explain why and how the upgrade to automated meters was necessary and how it benefits customers.
b. Did Illahe consider any other alternatives to automated meters before performing the meter replacement? If so, for each alternative considered, please provide:
    a. The estimated cost of the project, and
    b. The reason it was not selected by Illahe.
c. Please provide a description of the Automating Meter Reading asset displayed in Acct. No. 334, above, and an explanation for why the asset was necessary.
d. Please provide a description of the Automated Meter Reading Soft/Hardware asset displayed in Acct. No. 347, above, and an explanation for why the asset was necessary.

Response to OPUC Data Request 20

a. Accurate measurement of water production and usage is a vital element of effective water system management for the following reasons:
    1. Water Loss Management. Accurate tracking of water usage compared with the amount of water pumped is a standard and useful method of identifying how much water is leaking in the water system. It is important to identify, locate and repair water leaks to maximize public safety, mitigate potential property damage, minimize ongoing operation costs, and to preserve water. Without accurate measurement and calculation of water pumped and usage, it is impossible to gauge how much water is being lost and whether operational issues need to be addressed.
    2. Fairness. Meters have an expected useful life of 20 years. Over time, a meter will lose accuracy. The diminished accuracy is not predictable or consistent. Consequently, water customers are billed based on the calculated usage from the meter even though actual usage likely exceeds what is charged wherever an older meter is used.
    3. Conservation. Accurate tracking of usage is useful for water users to understand how much water they actually consume and alter their water usage choices if they choose to. Conservation is an issue that has been specifically brought to Illahe's attention by the community it serves.

Considering the elements described above, it was necessary to replace the old water meters, most of which were installed before 1986. They were very old and inaccurate, which has been verified by the improved calculated water loss since meter replacement. The decision to upgrade to automated meters rather than simply replace the meters with manual meters was made because of benefits it affords the customers, directly and indirectly, and because the additional cost to install the selected version of automated meters was reasonable. The benefits to the customers are as follows:

1. Accelerated Leak Identification in Plumbing. When reading the water meters, a report is automatically generated that details any water meters that have been registering uninterrupted usage for an unusual amount of time. For example, the report may identify a meter with a "small leak 2-3 weeks" or a "large leak 1-2 weeks." This report provides indicators that allow our office to notify a water user of unusual usage and often leads to discovery of leaks in their plumbing. This benefit to customers saves them cost by mitigating potential property damage and reducing their water consumption.
2. Elimination of Human Data Entry Error. The new system eliminates the need to manually read water meters, manually record readings, and manually enter readings into our billing program. Subsequently, errors related to these tasks are eliminated to the benefit of the customers.
3. Meter Data Storage Features. The new meters store hourly usage data for six months. The ability to access this data is a benefit to customers who find their reported usage inexplicable, which happens regularly. As an example, a customer in Illahe was recently charged for 17,000 gallons of usage over a two month period during the winter. She was concerned because her Illahe residence had not been inhabited during that period. Upon hearing back from her plumber that there was not leak, she called Illahe for an explanation. By accessing her meter data, we were able to ascertain that water was only being used in the middle of the night on Sundays, Tuesdays, Wednesdays, and Fridays. The same amount was used each time the water was run so we reported that data to the customer and suggested that perhaps her irrigation was turning on according to a programmed schedule that she was unaware of.
4. Conservation Facilitation. It is helpful to customers who believe their water usage should be lower or wish to find ways to lower it to see more detailed usage patterns in order to analyze how water is being used in their home. The automatically generated report of unusual usage can lead to the discovery of a running toilet in a seldom used bathroom or night time irrigation use that is lasting twice as long as needed. The availability of information to correct these issues ultimately leads to water conservation.
5. Elimination of Estimated Meter Reading. In Oregon, manually read meters can be difficult or impossible to read in wet or inclement weather. While we have always strived to gather actual readings whenever possible, estimated readings were sometimes necessary. Not only does this lead to inaccurate water billings that are adjusted in subsequent months, but it leads to overall less precision

when determining water loss factors and efficiently managing water operations overall. With the new automated meter system, the need to estimate water meter readings has been eliminated.

b. Yes. Other options considered for meter replacement include replacement with manually read meters and replacement with a fixed base automated water meter system.
    i. The estimated cost to replace the old meters with manually read meters is $59,000.

    An estimate was not created for a fixed base automated water meter system, but it would have been cost prohibitive as fixed base systems require substantial infrastructure investment.

    ii. Replacing the old meters with new manually read meters was not selected because of the benefits listed in the answer to section "a" of this data request. The additional benefits of the selected automated meter reading system are a very good value compared to the additional cost incurred to install the selected system instead of manually read meters.

    A fixed base automated water meter system was not selected because it would have been cost prohibitive. Fixed base systems are more commonly used at very large municipalities where the cost of the infrastructure can be spread over a larger number of water users that are geographically centralized. It offers superior real-time monitoring of water use but little else that would have justified the cost for a small water system such as Illahe.

c. The assets listed in Acct. No. 334 above are the installed water meters that register customer water usage and system water production. They are necessary for the measurement of water usage, both for operational and billing purposes. The meters that were installed are commonly called "radio-read" meters. These meters are attached to short-range radio transmitters that are placed inside the meter box. In order to read the meters, a staff person only needs to drive close enough to the meter for the receiver (described in answer "d") to receive the reading and register the usage. All customers now have radio meters. This is a change from the old manual meters and reading method, which required someone to physically open each meter box to read and manually write down the meter reading to be processed by the office for billing and calculation of system water loss.

d. The asset listed in Acct. No. 334 above is the equipment and software required to perform the radio meter reading. The equipment, known as a "street machine," includes special antennas that are temporarily mounted to the meter reading vehicle during meter reading, a laptop computer, converter box, and software. The software operates the meter reading program, which is used both during the time of meter reading and in the office to download the meter readings into billing software. Additionally, there is software that is used in

combination with this asset equipment to utilize the meter data storage features and download historical information from individual water meters.

OPUC Data Request 3

Referring to Application Testimony (Page 5), please explain why Illahe proposes to combine all water customers into a single customer class. Please further explain why it is appropriate for all water customers to be combined into a single customer class, e.g., all they all similarly situated with similar costs to the system?

Response to OPUC Data Request 3

Residential, commercial, irrigation, and non-irrigation customers receive the same water service through the same pipes. The water is pumped from the same sources and the cost to provide service is the same.

It is more appropriate to charge for water service based on meter size than customer class because it is the same water at the same cost. Additionally, meter size has the most impact on potential instantaneous water demand and subsequently has a closer correlation to cost than the purpose of the water used, which has no direct correlation. Indirectly, differences in expected demand over time can be inferred through customer class (commercial vs. residential vs. irrigation), but it is not Illahe's opinion that differences in demand over time alters the cost of providing water service. Any differences in water demand over time are accounted for through usage charges rather than base fees.

The wastewater rate for the restaurant is the exception because of the special pipe cleaning cost attributed to its impact, which is why it is its own customer class with its own tariff.