CASE: UW 174
WITNESS: MALIA BROCK

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 100

Replacement Direct Testimony[1]

September 14, 2018

[1] Consistent with the revised schedule issued by ALJ Power in this docket on May 22, 2018, Staff withdraws its Direct Testimony and related exhibits filed on May 3, 2018. This direct testimony and its related exhibits replace the withdrawn direct testimony filed on May 3, 2018. Staff will not offer the May 3, 2018, direct testimony into the record in this docket because it is replaced and superseded by this direct testimony.

INTRODUCTION

Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.

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

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. My Witness Qualification Statement is found in Exhibit Staff/101.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe the Public Utility Commission of Oregon Staff's (Staff) recommendations regarding Government Camp Water Company, Inc. (GCW or Company) request for a general rate revision in Docket UW 174. In my testimony I will address the following issues:

Q. WHO IS TESTIFYING IN THIS DOCKET?

A. I am testifying as the primary and summary Staff witness in UW 174. Mr. Matt Muldoon will provide additional testimony in Staff/200 regarding cost of capital issues.

Q. DID YOU PREPARE EXHIBITS FOR THIS DOCKET?

A. Yes. I prepared Exhibit Staff/101, consisting of two pages, Exhibit Staff/102, consisting of one page, Exhibit Staff/103, consisting of one page, Exhibit Staff/104, consisting of four pages, and Exhibit/Staff 105, consisting of 77 pages.

ISSUE 1: STAFF'S SUMMARY RECOMMENDATION

Q. What is Staff's summary recommendation?

A. Staff recommends a revenue requirement of $218,939, as compared to GCW's request of $306,289, resulting in an annual revenue increase of $42,545 or 24.12 percent above the Company's 2016 Test Year revenues, with a 7.38 percent rate of return on a rate base of $496,582. The calculation of Staff's revenue requirement is shown in Exhibit Staff/102.

ISSUE 2: GCW'S DESCRIPTION AND REGULATORY HISTORY

Q. Please describe Government Camp Water Company, Inc.

A. GCW is a rate and service regulated investor-owned water utility located in Government Camp, Oregon. Government Camp is a small, unincorporated winter resort community located near Mt. Hood. As there is no municipal water system serving this area, GCW is the major water provider. It currently serves approximately 660 residences and businesses.[2] GCW provides water service to local resorts, Skibowl and Mt. Hood Lodge and Resort, as well as local hotels, restaurants and businesses supporting this resort community. GCW also provides water service to a seasonal residential population and a permanent local population that is estimated to be between 190 and 260 people.

GCW's water source is a captured artesian spring located on federal land supplying an abundance of gravity fed water.[3] GCW possesses a water right dating back to September of 1908, which allows 4.5 cubic feet per second (cfs) of water

[2] Government Camp Water Company, Inc. Initial Testimony (GCW Testimony) at 4.
[3] GCW Testimony at 16.

appropriation.[4] GCW has two storage tanks: one is a 100,000 gallon tank, which was constructed in 1980, and the second is a 250,000 gallon tank, which was installed in 2004 for fire protection.[5] Neither storage capacity nor pumping capacity has changed since Staff's review in the Company's 2011 rate case.

Q. Please describe the ownership history of the Company.

A. According to the Company's Testimony in support of its Application, GCW was organized in 1907.[6] The Utility is an S Corporation.[7] Maryanne Hill purchased GCW in 1961.

On May 12, 2014, Ms. Hill gifted the entire Company to Lesli Ann Bekins by transferring 100 percent of the Company's stock to Ms. Bekins.[8] Ms. Bekins now identifies herself as the Owner and Corporate Secretary of GCW.[9] Ms. Hill and the Company did not seek Commission approval for this 2014 transaction until after this rate case was filed, which led to the schedule for this rate case being amended at the request of the parties and the suspension period for this rate case being extended at the request of the Company in order to give the Commission time to consider whether to approve the 2014 transaction (and additional affiliated interest filings).

On June 5, 2018, the Company filed its petition in Docket No. UP 375, requesting the Commission approve the transfer the water company from Ms. Hill to

[4] GCW Testimony at 15.
[5] GCW Testimony at 16.
[6] GCW Testimony at 4.
[7] GCW Testimony at 4.
[8] GCW Testimony at 4.
[9] GCW Testimony at 2.

Ms. Bekins. The Commission approved transfer of the ownership of the water company to Ms. Bekins at its August 28, 2018 public meeting.[10]

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

A. GCW first filed an application with the Commission on May 12, 2000, for an allocation of exclusive territory that was granted in Order No. 02-287.[11]

The Commission asserted rate and service regulation over GCW in Order No. 09-313 on August 12, 2009, and directed the Company to file the appropriate tariffs within 60 days of that order, or no later than October 12, 2009.[12] The Commission granted the Company nine subsequent extensions to allow the Company to file either the tariffs or a rate case application with supporting documentation. On July 14, 2010, GCW filed tariff sheets to become effective October 1, 2010. At its August 24, 2010 public meeting, the Commission found good and sufficient cause to investigate the propriety and reasonableness of the tariffs and suspended the tariffs pending investigation, opening Docket No. UW 145 in Order No. 10-347.[13]

The rate suspension period in UW 145 was extended twice at the request of the parties. The parties to UW 145 (Staff, GCW, and two Interveners) entered into a stipulation settling all of the issues in UW 145 in July 2011. The Commission

[10] *In re Government Camp Water Company, Inc.*, OPUC Docket No. UP 375, Order No. 18-320 (August 28, 2018).
[11] *In re Government Camp Water Company, Inc.*, OPUC Docket No. WA 67, Order No. 02-287 (April 22, 2002).
[12] *In re Government Camp Water Company, Inc.*, OPUC Docket No. WJ 24, Order No. 09-313 (August 12, 2009).
[13] *In re Government Camp Water Company, Inc.*, OPUC Docket No. UW 145, Order No. 10-347 (September 2, 2010).

adopted that stipulation in Order No. 11-278, issued July 29, 2011.[14] The Stipulation included a 10 percent rate increase over adjusted test year revenues, with a rate effective date of September 1, 2011. It also allowed GCW the opportunity to earn a 7.41 percent rate of return on a rate base of $568,068. The Stipulation allowed GCW to read meters on a yearly basis due to seasonal issues with snow and to bill its customers on a quarterly basis.

The UW 145 Stipulation also included several conditions and requirements for GCW, including the following:

a. Paragraph 12 of the Stipulation required the Company to make a rate filing on or prior to January 2014.

b. Paragraph 9 of the Stipulation required the Company to enter into a three-year meter installation program. The program was "designed to convert all non-metered customers with greater than 3/4 inch service to metered service." In conjunction with this requirement, a plant allowance of $49,500 was entered into Plant in UW 145, which effectively allowed the recovery of costs for the metering program in advance.

c. Paragraph 6 of the Stipulation required the Company to charge Miscellaneous Services Charges according to Schedule 6 as set forth in the tariff sheet designated PUC Oregon No. 1, Original Sheet No. 8.

Additionally, Paragraph 11 of the Stipulation memorialized the fact that during the proceedings in UW 145, the parties to that case became aware of several

[14] *In re Government Camp Water Company, Inc.*, OPUC Docket No. UW 145, Order No. 11-278 (July 29, 2011).

"metered customer accounts mistakenly identified by their line sizes instead of the meter sizes." In that Paragraph, the parties to the Stipulation acknowledged that these accounts "were inaccurately reported, but agreed to move forward for ratemaking purposes" with the affected customers being "continue[d] to be charged as classified" in the proposal recommended in the Stipulation, with one exception, and with the additional expectation that the "Company will make customer line and meter size corrections in the next rate case."

The Company filed this rate case on December 29, 2017. In the course of reviewing that filing, Staff identified multiple affiliated interest agreements that would require Commission's separate approval. Staff also identified that the Company had not sought the Commission's approval of the transfer of all of the stock in the Company, as discussed above. The rate suspension period and schedule for this case were both extended to allow the Commission time to consider those filings, some of which at that time had yet to be filed. The Company filed affiliated interest agreements relating to the owner-officer's salary and leases for its office and storage sites in Docket Nos. UI 402, UI 403, and UI 404. At its August 28, 2018 public meeting, the Commission approved affiliated interest agreements regarding Ms. Bekins' salary as CEO in Docket No. UI 404; the lease of office space used by the Company in Ms. Hill's residence in Docket No. UI 403; and the lease of indoor and outdoor storage space in Docket No. UI 402.[15] Each of these approvals

[15] *In re Government Camp Water Company, Inc.*, OPUC Docket No. UI 404, Order No. 18-318 (August 28, 2018).
In re Government Camp Water Company, Inc., OPUC Docket No. UI 403, Order No. 18-319 (August 28, 2018).

contained a condition indicating that the Commission reserved the right to review, for reasonableness, all financial aspects of these transactions in a rate proceeding. I will address Staff's position regarding the reasonableness of the costs associated with each of these transactions later in my testimony.

Q. Did GCW comply with the requirements of the Stipulation that resolved the Company's last rate case?

A. No. The Company did not fulfill the requirements contained in Paragraph 12 regarding its next rate filing, Paragraph 9 regarding the meter installation program, and Paragraph 6 regarding tariffed charges, all of which were contained in the Stipulation that resolved UW 145. I address each of these issues in more detail later in my testimony.

Q. Please summarize how certain metered customers are identified by their line sizes, as noted in the UW 145 Stipulation.

A. Staff investigated the company's billing practices in order to better understand the account inaccuracies referred to in the UW 145 stipulation and line-versus-meter-size issues with the company's approach to billing and rate design. To summarize GCW's current practices, the Company indicated in its response to data request (DR) 68[16] that there are 304 individual units on the system that are served by master meter accounts. For master meter accounts, the Company explained that it bills the master meter customer (for instance, a homeowner's association) a monthly base rate based on the size of the line going to each individual unit (as

In re Government Camp Water Company, Inc., OPUC Docket No. UI 402, Order No. 18-317 (August 28, 2018).

[16] *See* Exhibit Staff/105, Brock /1-2.

opposed to the size of the master meter) and for total consumption, which is measured through the master meter. GCW does not issue bills to the individual units served by master meters; the master meter customer bills its customer and receives the bill. As discussed below in more detail in conjunction with Staff's general concerns regarding the Company's rates and Staff's recommended rate design, this results in a rate structure and billing practice that departs from the application of what Staff has referred to as the standard AWWA factors, which calculates bills for metered customers in relation to the amount of water delivered by the meter size.

ISSUE 3: SUMMARY OF GCW'S GENERAL RATE FILING

Q. Please describe GCW's request for a general rate revision.

A. The Company filed its request for a general rate increase on December 29, 2017. In its Application, GCW proposed an annual revenue increase of $129,895 to the Company's 2016 annual revenues, or a 73.64 percent increase, resulting in total annual revenues of $306,290. After deducting for operating expenses, the Company's application states that its proposed projected revenues would produce a 10 percent rate of return on a rate base of $558,127. Staff's calculations of the effect of the Company's proposed revenue increase differs; Staff computes the application's rate base at $558,094 and calculates that the Company's proposed revenues would create a rate of return on that rate base of 11.83 percent. The Company also proposes changes to its rate structure to move residential and commercial services into the same customer class, leaving one customer class for those receiving metered service and one for those receiving flat-

rate service. The Company additionally proposes a water hauler rate based on metered service and a new fire prevention rate to cover the cost of fire hydrants.

Q. Why is the Company requesting the general rate increase?

A. GCW asserts that it requires a rate increase to cover cost increases because current rates do not generate enough revenue to cover the cost of operating the system and give the Company an opportunity to earn a reasonable return on its investment and because the capital improvement expenditures need to be updated and included in rate base.[17] Specific examples of such increased costs highlighted in GCW's application are increases to officer wages, affiliated interest costs for office and storage space, contractor expenses, and to add Construction Work in Progress (CWIP) in plant to replace a service line. GCW also proposes to pay $24,000 annually to Ms. Hill upon her retirement at the conclusion of this rate case, and to increase the past combined employee salary expense of $39,600 for both Ms. Hill and Ms. Bekins into a higher salary expense for Ms. Bekins, as she will assume duties of full-time CEO following Ms. Hill's retirement.[18]

Q. What test year period did the Company use in its filing?

A. The Company used the Test Year period January 1, 2016 through December 31, 2016.

Q. Please describe why a Test Year is necessary.

A. The Commission is charged with setting rates at a level that will allow the utility a reasonable opportunity to earn its authorized rate of return during the period the

[17] GCW Testimony at 3.
[18] GCW Testimony at 5.

rates will be in effect. Therefore, Staff's recommendation for rates must estimate both the costs and revenues that will be in effect during that period in order to determine an appropriate revenue requirement for the utility. In determining the revenue requirement appropriate for the rate period, a test year must be utilized as a basis for establishing rates. A historic test year typically involves the use of a past 12-month period (usually the 12-month period immediately preceding the rate case filing) with adjustments for items that are one-time events and those that are known and measurable in the future. A future test year is for a 12-month period that begins after the rate case is filed, and uses utility forecasting and budgeting to derive forward-looking revenues and expenses over a future 12-month period. In Oregon, water utilities have typically chosen to use an historic test year in Commission proceedings, as GCW has done in this case.

Q. Does the Company propose any adjustments to the Company's Test Year expenses?

A. Yes, the Company made several adjustments to its calendar year 2016 information to reflect changes in costs occurring outside of the Test Year. The Company proposed increases to Salaries and Wages-Officers, Employee Pension and Benefits, Rental of Building Real Property, and Contract Services.

Q. What are GCW's current rates and what rate increase has GCW proposed in this case?

A. Tables 1, 2, and 3 below illustrate GCW's current rates provided in its Application.[19]

[19] GCW Testimony at 10-11.

Table 1. Current Rates for Metered Service

CURRENT RATES FOR RESIDENTIAL/COMMERCIAL METERED SERVICE

Line or Meter Size	Metered or Flat	Current Residential Monthly Base or Flat Rate	Residential Consumption Included in Base Rate		Consumption Rate per Unit of Measurement
3/4" or 5/8"	Metered	$15.86	none	Cubic ft	$1.12 Per 100 cf of water used
1"	Metered	$19.82	none	Cubic ft	$1.12 Per 100 cf of water used
1 1/2"	Metered	$24.10	none	Cubic ft	$1.12 Per 100 cf of water used
2"	Metered	$29.81	none	Cubic ft	$1.12 Per 100 cf of water used
4"	Metered	$34.88	none	Cubic ft	$1.12 Per 100 cf of water used
6"	Metered	$40.43	none	Cubic ft	$1.12 Per 100 cf of water used

Table 2. Current Rates for Flat Rate Service

CURRENT FLAT RATES FOR RESIDENTIAL/COMMERCIAL SERVICE

Line or Meter Size	Metered or Flat	Current Monthly Flat Rate	Consumption Rate per Unit of Measurement
3/4" or 5/8"	Flat	$20.75	None
1"	Flat	$24.17	None
1 1/2"	Flat	$28.72	None
2"	Flat	$34.53	None
4"	Flat	$40.07	None
6"	Flat	$45.65	None

Table 3. Current Rate for Water Hauling

CURRENT RATE FOR WATER HAULING		
Commodity Rate	**No. Of Units**	**Unit**
$1.12 per each	100	Cubic Feet

Tables 4, 5, 6, and 7 below illustrate GCW's proposed rates provided in its Application.[20]

[20] GCW Testimony at 12-13.

Table 4. GCW's Proposed Rates for Metered Service

PROPOSED RATES
FOR RESIDENTIAL & COMMERCIAL METERED SERVICE

Meter Size	Metered	Proposed Residential Monthly Base Rate	Residential Consumption Included in Base Rate		Proposed Consumption Rate per Unit of Measurement
3/4" or 5/8"	Metered	$27.56	none	Cubic ft	$1.83 Per 100 cf of water used
1"	Metered	$34.44	none	Cubic ft	$1.83 Per 100 cf of water used
1 1/2"	Metered	$41.88	none	Cubic ft	$1.83 Per 100 cf of water used
2"	Metered	$51.80	none	Cubic ft	$1.83 Per 100 cf of water used
4"	Metered	$60.61	none	Cubic ft	$1.83 Per 100 cf of water used
6"	Metered	$70.26	none	Cubic ft	$1.83 Per 100 cf of water used

Table 5. GCW's Proposed Rates for Flat Rate Service

PROPOSED RATES
FOR RESIDENTIAL & COMMERCIAL FLAT RATE SERVICE

Line Size	Flat Rate	Proposed Monthly Flat Rate	Consumption Rate
3/4" or 5/8"	Flat	$36.07	None
1"	Flat	$42.01	None
1 1/2"	Flat	$49.92	None
2"	Flat	$60.02	None
4"	Flat	$69.65	None
6"	Flat	$79.34	None

Table 6. GCW's Proposed Rates for Water Hauling

PROPOSED RATE FOR WATER HAULERS		
Commodity Rate	**No. Of Units**	**Unit**
$1.83 per each	100	Cubic Feet

Table 7. GCW's Proposed Fire Protection Rate

PROPOSED RATE FOR FIRE PROTECTION	
All metered and flat rate customers	**Monthly Rate**
	$0.28

Q. What would average customer bills be under GCW's proposed rates?

A. Table 8 below, which was included by GCW in its Application,[21] reflects the effect of the Company's proposed rate increase on customer's monthly average bills. Proposed increases by GCW result in the average customer's bill increasing by approximately 74 percent.

Table 8. GCW's Proposed Average Bills, Consumption, and Revenue[22]

FOR RESIDENTIAL & COMMERCIAL METERED SERVICE

Customer Class - METERED	Number of Customers	Average Monthly Bill	Average Monthly Consumption (100 cf)	Total Annual Revenue
Residential/Commercial - 5/8" or ¾"	345	$ 31.59	220	$ 130,792.22
Residential/Commercial - 1"	19	$ 52.05	962	$ 11,867.57
Residential/Commercial - 1 1/2"	5	$ 47.88	328	$ 2,873.04
Residential/Commercial - 2"	21	$ 111.03	3235	$ 27,980.66
Residential/Commercial – 4"	2	$ 300.72	13,114	$ 7,217.19
Residential/Commercial – 6"	1	$ 71.39	62	$ 856.64
TOTAL	393			$ 181,587.32

FOR RESIDENTIAL & COMMERCIAL FLAT RATE SERVICE

Customer Class - FLAT	Number of Customers	Average Monthly Bill	Average Monthly Consumption	Total Annual Revenue
Residential/Commercial - 5/8" or ¾"	256	$ 36.07	none	$ 110,792.96
Residential/Commercial - 1"	2	$ 42.01	none	$ 1,008.23
Residential/Commercial - 1 1/2"	0	$ 49.92	none	$ 0
Residential/Commercial - 2"	9	$ 60.02	none	$ 6,481.76
Residential/Commercial – 4"	0	$ 69.65	none	$ 0
Residential/Commercial – 6"	0	$ 79.34	none	$ 0
TOTAL	267			$ 118,282.96

[21] GCW Testimony at 13-14.

[22] In Table 8 provided in the Company's Application of proposed residential and commercial flat rate services estimating average monthly consumption, Staff would use the term 'unknown,' instead of 'none,' in the average monthly consumption of flat rate services because consumption for flat rate service does occur but is not measured and is therefore unknown.

Q. What effect would GCW's proposed rate increase have compared to current average customer bills?

A. Staff believes a comparison of the likely effect of the Company's proposal on average customer bills is best depicted in Staff's Table 9.

Table 9-Staff's Projection of the Effect of GCW's Proposed Rate Increases

Line Type & Size	Customer Current Average Bill	Customer Proposed Average Bill	$ Change	% Change
Water -METERED-- Residential/Commercial				
5/8" or 3/4"	$18.33	$31.59	$13.26	72%
1"	$30.59	$52.05	$21.46	70%
1 1/2"	$27.77	$47.88	$20.11	72%
2"	$66.04	$111.03	$44.99	68%
3"				
4"	$181.76	$300.72	$118.96	65%
6"	$41.12	$71.39	$30.27	74%
Water - FLAT-- Residential/Commercial				
5/8" or 3/4"	$20.75	$36.07	$15.32	74%
1"	$24.17	$42.01	$17.84	74%
2"	$34.53	$60.02	$25.49	74%

Q. What are Staff's major concerns about the Company's proposed rates?

A. Other than the overall level of the Company's rates, which I will address in my discussion of the Company's requested revenue requirement, Staff has three primary concerns regarding the Company's proposed rates.

1. Difficulties in designing cost-based rates caused by the use of the "customer equivalents" billing method, described further below;

2. The large proportion of customers receiving service as flat rate, rather than metered, customers; and

3 The relationship between the level of rates charged to flat rate customers compared to those charged to metered customers.

Q. Please describe the use of "customer equivalent" billing method proposed by the Company.

A. As can be seen in Table 8 above, the Company has designed its metered customer rates assuming 393 end-use metered customers. In fact, the Company has only 147 meters through which it provides service to those customers. Of the 393 customers, it appears that many are provided service thorugh a master meter. A master meter is a meter that measures the total usage of a condominium association, homeowners association, or other multi-tenant property. The master meter owner is the customer of the utility and, as a result, is the only one receiving an actual bill from the utility. It appears from the Company's rate filing that it proposes to collect its required revenues by charging "customer equivalent" base rate charges to the master meter owners. That base rate charge would be the product of the base rate that would be charged to a customer with a meter the size of the line serving the customer out of the master meter (e.g., $31.59 for a customer served from the master meter through a 5/8" or 1" line) multiplied by the number of customers behind the master meter served through that size of line. For example, a master meter customer who is providing water to five of its occupants through 1" lines behind the master meter would be charged a monthly base rate of

$157.95 ($31.59 * 5). I will refer to this billing method throughout my testimony as the "customer equivalent" method.

Q. Please provide an example of billing using the "customer equivalent" method.

A. The Collins Lake Chalet has 151 dwellings. The Company's response to DR 76 indicates those dwellings are served through 24 1.5" meters, with each meter on a separate building.[23] Per the Company's response to DR 19, service from the master meter to individual dwellings is provided through a 3/4" line.[24] If the Collins Lake Chalet were billed on its meter size, rather than on a "customer equivalent" basis, it would be assessed a $1,173.12 (the 1.5" base rate of $47.88 x 24) monthly base charge. Assuming full occupancy and an equal distribution of the base charge among the Chalet dwelling's end users, each end user would pay a base charge of $7.77 ($1,173.12 / 151) per month.

Under the Company's proposed "customer equivalent" method, the Chalet would be charged $4,770.09 (the 5/8" base rate of $31.59 x 151). The $31.59 is the equivalent of what a customer with a 5/8" meter would be charged. Assuming full occupancy and an equal distribution of the base charge among the Chalet dwelling's end users, each end user would pay a base charge of $31.59 ($4,770.09 / 151) per month.

As can be seen from this example, use of the "customer equivalent" billing method rather than the standard payment by meter size can have a significant impact on a customer's (and therefore an end user's) base rate.

[23] *See* Exhibit Staff/105, Brock/3.
[24] *See* Exhibit Staff/105, Brock/4.

Q. Please explain the difference between the terms "customer" and "end user" as used in your last response.

A. Customer refers to a direct customer of the utility. Those customers receive bills directly from the utility as they are direct customers of GCW. End user refers to both customers and others who receive water as a result of the Comany's provision of water service to a customer, but who are not direct customers of the utility. An example of the latter may be a member of a home owner's association (HOA) who receives water provided by GCW but pays the master meter owner, the HOA, for the water it receives, not GCW.

Q. Does the use of a customer equivalent method impact the commodity charge paid by the master meter customer?

A. No. The master meter customer would be charged for consumption based on the amount of water that actually flows through the meter. The use of the customer equivalent billing method affects only the determination of the base charge.

Q. Why does Staff find the use of the customer equivalent method problematic?

A. Developing just and reasonable rates requires Staff to 1) develop the overall revenue requirement the company will need to recover the costs it incurs to provide service, and 2) allocate that revenue requirement among customers in a manner that reflects the costs imposed by the respective customers. The latter is referred to as rate spread and rate design and will be addressed in more detail later in my testimony.

The use of the customer equivalent billing method has no impact on the Company's revenue requirement, but it limits Staff's ability to design appropriate

rates by distorting the role of the most effective cost indicator – the size of the meter serving the customer – in Staff's "tool box" for designing rates. As I describe in more detail in the Rate Spread and Rate Design section of my testimony, 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."[25] In other words, the costs to supply a customer water are largely driven by the size of the meter. Staff's goal is to equitably assign costs to the various customers of the water utility. The costs of serving a master meter customer are best measured by the size of that customer's meter. How that master meter customer then serves its end-user occupants (i.e., through what line size) is not the most relevant factor in determine the cost imposed on the utility to serve that master meter customer. The use of the customer equivalent method breaks that link between meter size and cost and makes it difficult for Staff to assess the appropriateness of the base charge. Again, it distorts the role of the most effective indicator – the meter size – in Staff's "tool box" for determining appropriate rates.

As described later in my testimony, Staff's proposed rate design does not use the customer equivalent billing method. As a result, Staff is better able to rely on meter sizes in its rate design recommendation.

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

Q. Please describe Staff's concerns regarding the large proportion of customers receiving service as flat rate customers.

A. Staff believes measuring and charging for consumption sends an important price signal to customers regarding their consumption (i.e., that additional usage will increase their bill). That concern has been expressed by the Commission through the adoption of one of its Key Performance Measures (KPMs), KPM #1, which states as its standard:

> Water utilities-Percentage of rate regulated water companies with rate designs promoting efficient use of water resources.[26]

The usage for over 40 percent (267 of the 660 end users shown above on Table 8) of the Company's end users that receive water either directly from the utility or through a master meter is not metered. If you look only at customers who receive service directly from and are billed directly by the utility, over 60 percent (267 of the 414 customers shown on Tables 19 and 20 below) of those customers' usage is not metered. As I discuss in more detail later in my testimony, and consistent with the Stipulation that resolved the last rate case, Staff believes the Commission should direct the Company to pursue a metering program (which, if the Company needs to pursue external funding, might include exploring options such as funding by the Oregon Safe Drinking Water Revolving Loan Fund).

[26] Public Utility Commission of Oregon, Annual Performance Progress Report, Reporting Year 2017 (Sept. 29, 2017), available at https://www.puc.state.or.us/commission/APPR2017.pdf.

Q. What are Staff's concerns regarding the relationship between the rate the Company proposes to charge to flat versus metered customers?

A. The relationship between the rates is apparently inconsistent with the cost-recovery principles that usually govern rate design. Based on the Company's calculations of the rates the Company is proposing, Staff compared the metered customers' estimated monthly bills to the estimated monthly bills for flat-rated customers with the corresponding line size. This comparison shows that customers with meter sizes of one, two, and four inches would pay more per month, on average, than customers with one, two, and four inch line sizes that receive flat rate service. For instance, a two inch metered customer would have an estimated average monthly bill of $111.03 per month, while the flat-rated two inch customer would have a static monthly bill of $60.02 per month. This inverse relationship between metered and flat-rated bills for the same size service is inconsistent with the cost recovery goals that rates are typically designed to accomplish. Overall rates are designed to recover a company's cost of providing service. For metered customers, those costs are recovered through both a base rate that does not vary from month to month and a commodity rate that varies with usage. In total, those rates are designed to recover the company's cost of providing service to the customer.[27] In comparison, flat-rated customers pay one charge per month that should also accomplish that same cost recovery goal. To accomplish that goal, the single flat-rate charge must be large enough to recover costs that are recovered through both the base rate and

[27] *See generally* Principles of Water Rates, Fees, and Charges (M1) (6th Edition). American Water Works Association, 2012, Chapter III.2, Distributing Costs to Customer Classes.

commodity charge for metered customers. Based on the average bill information provided by Government Camp for metered customers, the flat-rate customer's bill would not provide the same level of cost recovery as would the metered customer's bill, assuming there is similar consumption by both metered and flat-rate customers.

ISSUE 4: STAFF'S REVIEW OF GCW'S FILING

Q. Please describe Staff's investigation into GCW's request for a general rate increase.

A. Staff's investigation and analysis of GCW's general rate case filing included a comprehensive examination of the Company's revenues, expenses, proposed adjustments, capital improvements, system capacity, utility plant, accumulated depreciation and expense, GCW's Master Plan, quality of service, consumer complaints, Contribution in Aid of Construction (CIAC), GCW's internal billing and consumption records, and meter reading records. Further, Staff reviewed rate base, rate design, the cost of capital, and the sources and status of GCW's debt. Staff also identified several affiliated interest issues that necessitated additional filings by the Company, and reviewed the financial aspects of those additional filings. Staff has issued just over one hundred data requests to the Company and reviewed GCW's replies throughout the investigation. Staff also did an onsite visit of the Company's office and storage facilities in conjunction with the relevant parallel affiliated interest filings. Staff appreciates the Company's cooperation in this rate case and related dockets.

Q. What major specific issues did Staff investigate?

A. Specific issues included:

- Consumption and billing data;
- The proposed full-time CEO salary;
- The proposed unfunded pension;
- Increased contractor expenses;
- Transportation expenses;
- Plant additions and adjustments;
- Status of proposed Construction Work in Progress;
- Expenses associated with affiliated interest agreements;
- Compliance with the terms of the UW 145 Stipulation;
- Customer billing and service complaints; and
- Cost of capital and status of the Company's debt.

Staff also assessed how to approach rate structure in this case, including billing based on customers' meter size rather than the customer equivalent method described above and whether to make progress toward the use of the standard factors that Staff generally uses to design rates that increase in relation to meter size. This issue is discussed below in Issue 7.

Q. Please summarize Staff's review of GCW's current customer billings and explain issues raised by GCW's billing data.

A. After reviewing the Company's billing and consumption records, I identified three general kinds of issues: (1) billings that appear to be inconsistent with GCW's tariffs;

(2) apparent or potential irregularities in certain accounts' consumption as reported by the Company; and (3) miscalculations involving consumption-based billing.

Q. Please describe the billings that appear inconsistent with GCW's tariffs.

A. Certain charges in the Company's billing records appear to be inconsistent with the Company's current tariffs and Paragraph 6 of the Stipulation in UW 145. Table 10 below depicts excerpted billing records from the Company's response to DR 1 to show that it charged a $25 New Account Setup Fee that is not listed in GCW's existing Miscellaneous Tariff, Schedule No. 6. Additionally, Connection Charges for New Service that are tariffed "at cost" in the Company's current Miscellaneous Schedule No. 6 appear instead to have been billed at a flat rate of $450.

Table 10. Billing Records Excerpted from Data Request (DR) 1[28]

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/12/2016	12-6359	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
03/28/2016	12-6726	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
04/01/2016	12-6511	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
05/24/2016	12-6728	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
05/27/2016	12-6729	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
06/23/2016	12-6727	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
07/20/2016	12-7095	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
08/01/2016	12-7096	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/12/2016	12-7099	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/14/2016	12-7098	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
10/18/2016	12-7470	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
10/20/2016	12-5995	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
11/28/2016	12-5997	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
11/28/2016	12-7471	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/03/2016	12-5999	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-5998	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7468	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7472	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00

[28] *See* Exhibit Staff/105, Brock/5-6. In response to DR 1, the Company provided an entire year's worth of customer billing, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. See OAR 860-001-0480(8).

Also, as shown in the Company's response to DR 80[29] and Table 11 of excerpted records from the Company's response to DR 1, the Company appears to be billing a metered hydrant rate for snow making activities that is not included in its tariffs and is billed once a year following the winter season.

Table 11. Billing Records Excerpted from DR 1[30]

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/01/2016	12-6279	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
01/01/2016	12-6306	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
02/08/2016	12-6360	MH	Quarterly base rate	461.7 · Metered Hydrant Sales	141 · Accounts Receivable	1.00	2,392.43
04/01/2016	12-6649	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
04/01/2016	12-6676	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
07/01/2016	12-7016	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
07/01/2016	12-7044	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
10/01/2016	12-7390	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
10/01/2016	12-7418	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43

Staff compared the meter readings provided by the Company in DR 93 with the billing records provided in DR1 and found another anomaly; it appears that a quarterly meter base rate charge was billed as the equivalent of five one inch meters to three customers although there is only one meter record in the field, noted as serving three accounts. Two of these customers were billed for two meter quarterly base rates charges of $118.92, while the third appears to have been billed for one metered quarterly base rate of $59.46, depicted in Table 12 and Table 13 below.

[29] *See* Exhibit Staff/105, Brock/7.

[30] *See* Exhibit Staff/105, Brock/8-9. In response to DR 1, the Company provided an entire year's worth of customer billing, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. See OAR 860-001-0480(8).

Table 12. Meter Records Excerpted from DR 93[31]

CM	3 accts	17581626	1"	Gal	7175600	7279900	104,300	**13,944**

The above meter record corresponds to the following billing records:

Table 13. Billing Records Excerpted from DR 1[32]

04/01/2016	12-6606	RM 1"	Quarterly base rate	461.1 · Residential Metered	1.00		59.46
01/01/2016	12-6142	CM 1"	Quarterly base rate	461.2 · Commercial Metered	2.00		118.92
01/01/2016	12-6061	CM 1"	Quarterly base rate	461.2 · Commercial Metered	2.00		118.92

Q. Did Staff identify apparent or potential irregularities in certain accounts' consumption in the billing record data?

A. Yes. My review of customer billing records revealed that certain accounts' consumption was either missing from the records or appeared unusually low, particularly when considered in relation to the size of the meter providing the service. One example is a local inn served by the largest meter size (and the only customer with a six inch meter), which was billed only $2.46 for consumption during the entire test year. Per the Company's response to DR 82,[33] the six inch meter provides only fire suppression service to the local inn and usage would only occur in the event of a fire. Staff does not know how this customer gets water service or why the Company

[31] *See* Exhibit Staff/105, Brock/10-11. In response to DR 93, the Company provided a year's worth of meter reading records, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. See OAR 860-001-0480(8).

[32] *See* Exhibit Staff/105, Brock/12-13. In response to DR 1, the Company provided an entire year's worth of customer billing, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. See OAR 860-001-0480(8). Staff notes that the billing records of these accounts are not supported by the meter consumption record, as the meter consumption record recorded 1,000 cf less than the consumption billed.

[33] *See* Exhibit Staff/105, Brock /14.

does not bill this customer a base rate charge for an additional 3/4 inch meter that appears in the Company's response for DR 93 of meter records for this customer.[34]

In another example, in the Company's response to DR 91 regarding missing consumption for a resort, the Company responded that the resort did not pay for 2016 consumption until 2017.[35]

Additionally, the Company's response to a similar question for another resort in DR 87[36] indicated the Company found a billing error due to a change of billing that resulted in the resort not having been billed for two quarters of consumption in 2016. It appears this consumption information was also missing from the billing records provided in response to DR's 1 and 58.

These problems are characteristic of the results of Staff's investigation in this case. In addition to these and the problems described below, I also identified several other additional billing errors that are not described individually in this testimony.

Q. Did Staff identify issues with GCW's overall consumption figures in the billing record data?

A. Yes. Staff was unable to match the total annual consumption provided by the Company on page 11 of the Application (2,281,122 cf) with the billing record data provided in response to DR 1 and DR 58. When Staff sorted the billing records by meter size, the data provided for several metered customers were missing either the corresponding billing record for the base rate or consumption, which may have occurred due to the distortion that results from the line sizes, rather than meter

[34] *See* Exhibit Staff/105, Brock/15-16.
[35] *See* Exhibit Staff/105, Brock/17.
[36] *See* Exhibit Staff/105, Brock/18.

sizes, being used in the Company's practice of billing based on customer equivalents. These inconsistencies made it difficult to rely on the Company's data when designing rates.

Q. **How does Staff recommend the consumption issues it has identified in the billing record data be dealt with in this rate case?**

A. In order to develop and recommend a rate structure going forward, Staff used information provided in response to DR 93, which provided the actual number of meters, the actual meter sizes, and the corresponding consumption record for the meter readings, which totaled 2,507,585 cf in annual consumption.[37] For the consumption figures that were applied in the rate design formulas addressed in Issue 7 below, Staff used the annual consumption measured by the meters from these meter records. As the meters are the consumption source, meter records are the most accurate reflection of consumption. Staff believes this adequately addresses the consumption issues discovered in this case and described above.

Q. Did Staff identify miscalculations in the Company's billing?

A. Yes. Staff noted several apparent mistakes in the amount billed when compared to the amount of consumption measured. Table 14 below, excerpted from the billing records provided in response to DR 58, shows several example anomalies in the amounts billed to customers when considered against the consumption amounts indicated by the Company. In Table 14, the Company's excerpted responses are shown in the seven columns on the left; the results of my analysis are shown in the two columns on the right, highlighted in yellow. The first column in yellow shows my

[37] *See* Exhibit Staff/105, Brock /19-24.

computations of the consumption by converting cf into billing units (100 cf equals one billing unit) by dividing by 100, then multiplying by the rate of $1.12. The second column in yellow provides the comparison to the dollar figure billed to Staff's computation of what the billed amount have been.

Table 14. Billing Records Excerpted from DR 58[38]

Date	Num	Item	Item Description	Qty	Debit	Credit	Staff Check	Difference
01/01/2016	12-6294	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	157.00		6.94	$1.76	-$5.18
04/01/2016	12-6664	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	157.00		6.94	$1.76	-$5.18
07/01/2016	12-7032	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	157.00		6.94	$1.76	-$5.18
10/01/2016	12-7406	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	203.50		9.00	$2.28	-$6.72
01/01/2016	12-6298	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	620.00		3.84	$6.94	$3.10
04/01/2016	12-6668	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	620.00		3.84	$6.94	$3.10
07/01/2016	12-7036	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	620.00		3.84	$6.94	$3.10
01/01/2016	12-6113	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	1,485.25		35.47	$16.63	-$18.84
04/01/2016	12-6481	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	1,485.25		35.47	$16.63	-$18.84
07/01/2016	12-6848	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	1,485.25		35.47	$16.63	-$18.84
10/01/2016	12-7221	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	487.00		11.63	$5.45	-$6.18
01/01/2016	12-6165	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	856.75		15.98	$9.60	-$6.38
04/01/2016	12-6534	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	856.75		15.98	$9.60	-$6.38
07/01/2016	12-6901	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	856.75		15.98	$9.60	-$6.38
10/01/2016	12-7274	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	769.00		14.34	$8.61	-$5.73

Q. How does Staff recommend the above issues identified in Staff's review of GCW's current customer billings and GCW's billing data be addressed in this case?

A. Pursuant to ORS 757.225, the Company is required to charge for services in accordance with its tariff. Staff wants to remind the Company of this requirement. Staff recommends the Company review its billing procedures and exercise due diligence to ensure that its future billings are accurate and made in accordance with its tariffs. Staff will separately consider whether to make a recommendation to the

[38] *See* Exhibit Staff/105, Brock /25-26. In response to DR 58, the Company provided an entire year's worth of customer billing, inclusion of which in this exhibit would encumber the record in this case. Staff proposes to enter the relevant excerpt into the record. All parties have the opportunity to examine the entire response in case any party wishes to offer into evidence any other portion of the response as relevant. *See* OAR 860-001-0480(8).

Commission regarding investigating the Company's potential past noncompliance with ORS 757.225.

As described later in my Cost of Capital testimony, Staff also lowered the Company's recommended rate for return on equity to reflect any errant or questionable practices that resulted in errors in the Company's billing practices.

Q. Please discuss Staff's proposed adjustments to GCW's expenses.

A. Staff adjusted several expense accounts by eliminating the expense, normalizing the expense, transferring expenses from one account to another, or amortizing expenses over the appropriate periods. All of Staff's adjustments are shown in Exhibit Staff /103. The following is a brief explanation of the adjustments that I recommend.

Account 603, Salaries and Wages

Staff reviewed the proposed salary increase and new retirement payment for the Company's officers. Ms. Bekins will assume Ms. Hill's duties in addition to her own upon the retirement of Ms. Hill at the end of this rate case. GCW proposes to pay Ms. Bekins an annual CEO's salary of $56,782 plus the associated payroll taxes as full-time, 40 hour week, employment. The Commission reviewed the affiliated interest agreement pertaining to Ms. Bekins' proposed salary in Docket No. UI 404 and approved Staff's recommendation to approve the contract at a level of $50,130 in salary for Ms. Bekins. The Commission reserved the right to review, for reasonableness, all financial aspects of this transactions in a rate proceeding.

Given the proximity of Staff's recommendation to the timing of this testimony, the extensive review of both Ms. Bekin's duties and comparable market salaries

contained in Staff's UI 404 recommendation, and the level of management involvement that Staff believes would be prudently involved in implementing all of Staff's recommendations in this testimony, Staff also supports the $50,130 recommendation in this proceeding, resulting in a downward adjustment to this account of $6,652.[39] Additionally, during Staff's review of Ms. Bekin's proposed CEO duties, both in this proceeding and in UI 404, Staff observed that many of the CEO duties overlap or are duplicated by the duties of the water operator contracted to provide services as the Water Operator and Direct Responsible Charge (DRC). Overlapping duties include meeting with prospective developers, preparation of reports for Oregon Health Authority and Drinking Water Program, develop plans for capital improvements, fielding customer calls, performing site visits with operator on trouble calls, resolving customer issues, determining and approving repairs and maintenance of system operations, a water feasibility report to the county for new development, and developing plans and infrastructure necessary to meet the future needs. Additionally, the CEO duties also overlap with the bookkeeper's duties relating to resolving and investigating customer billing issues. To account for unnecessarily overlapping duties in evaluating the prudence of the resulting combined expenses of the CEO salary and contractor pay, Staff recommends

[39] *In re Government Camp Water Company, Inc.*, OPUC Docket No. UI 404, Order No. 18-318 (August 28, 2018). Absent Staff's recommendations regarding updating the Company's approach to calculating bills or the recommendation to adopt a meter conversion program, discussed below—both of which Staff believes will necessarily involve increased attention and care from company management in the near future—Staff would support a further downward adjustment to this salary to reflect the reduced level of management engagement and oversight that resulted in errors in the Company's billing practices and unilateral disregard of some parts of the Company's tariffs and certain Commission orders.

additional adjustments below to the contractor expenses in order to arrive at a prudent overall level of expense when these accounts are considered together.

Account 604, Employee Pension & Benefits

GCW proposes to convert Ms. Hill's current salary to form an unfunded annual retirement payment to Ms. Hill in perpetuity. Staff removed the proposed unfunded retirement payment to Ms. Hill, citing it as an imprudent expense that is not reasonable for current utility customers to pay for. This resulted in a downward adjustment of $24,000. Also, while it does not appear to be the best reading of the Company's application, to the extent that the Company may have intended to convey that this is a past obligation incurred by the Company, including this amount in current rates may additionally be impermissible as retroactive ratemaking.

Account 611, Telephone/Communications

In the Company's response to DR 14,[40] the Company indicated that $420 had inadvertently been entered twice into expenses. Accordingly, Staff proposes a downward adjustment of $420 from this account.

Water Operator Contract Labor

Staff reviewed the Company labor expenses in multiple accounts (620, 621, 636, and 639) attributed to the contractor retained under the Water Operator Contract.[41] Due to various adjustments and transfers made by the Company between these accounts for labor expenses billed by the water operator, Staff reviewed all costs in the following accounts for prudence.

[40] *See* Exhibit Staff/105, Brock /27-28.
[41] *See* Exhibit Staff/105, Brock /29-37 (Water Operator Contract and Addendum).

Account 620, O&M Materials and Supplies-Staff identified $4,460 for labor expenses relating to maintenance for spring inspection, cutting down trees on the road, draining, cleaning, and disinfecting and refilling both the 250,000 and the 100,000 gallon water tanks, insulating meter boxes, and removing debris to the dump. Staff made no adjustments to this account.

Account 621, Repairs to Water Plant-Staff identified $3,915 for labor repairs to the water plant. Staff made no adjustments to this account.

Account 636, Contract Services Labor-Staff identified and removed $814 of labor expense that had insufficient detail to determine what labor was entailed.

Account 639, Contract Services, Other- Staff reviewed the water operator contract for $49,959. Included in the contract are provisions under which the water operator is on call 24 hours a day and able to respond within one hour of an emergency. Services included in the contract include reading customer water meters and the master meter in the summer months, transportation to pick up materials and supplies with a mileage reimbursement, and the supervision, technical and professional services required in the course of managing operation and maintenance of the System in the capacity as DRC. The contract provides for certain specified activities to be provided under a base compensation of $4,000 a month, which escalates by 2 percent per year. The contract also states that repairs for labor and maintenance are to be billed at $45 per hour for labor, except that backhoe operator services are billed at $95 per hour. All other non-specified rented, subcontracted or non-inventory items are to billed at cost plus thirty percent. Staff reviewed the contract for prudence

and found the following duties specifically included in the water operator contract that overlap with the duties also designated to the CEO:

1) Represent Owner in all meetings with Oregon Health Authority (OHA) and/or other regulatory agencies where DRC attendance is necessary or otherwise deemed advisable by the Owner;
2) Attend all regular scheduled monthly business meetings, including presentation of monthly progress reports and/or special meetings;
3) Supervise Company-contracted labor;
4) Develop and provide any reports required by OHA or other regulatory agencies as requested by the Owner;
5) Assist with the development of the Owner's operating and capital budgets up to three times per fiscal year;
6) Advise and coordinate with Owner in purchasing supplies, equipment and/or outside repair services;
7) Consult with company's engineer on system recommendations; and
8) Respond to any customer complaints.

Staff removed 50 percent of the $49,959 annual water operator contractor expenses in Account 639 to reflect a prudence adjustment to the overall combined expenses of the increased full-time CEO salary and the water operator contract due to these overlapping duties. Staff estimates that 50 percent of the duties listed above as the CEO's overlap with the duties under the water operator contract. That adjustment reduced expenses by $24,980.

Account 641, Rental of Building/Real Property

As I discussed earlier, Staff's recommendations in both UI 402 and UI 403 contained a condition under which the Commission reserved the right to review, for reasonableness, all financial aspects of these transactions in a rate proceeding.

Given the proximity of Staff's recommendation to the timing of this testimony, the extensive review of both the office and storage spaces and the market rates for comparable space, and Staff's considered review of the rationale supporting the waiver of the transfer pricing rule in connection with the affiliated interest filing, Staff supports the contract prices that the Commission approved in UI 402 and UI 403 as prudent expenses in this rate proceeding.[42] These figures are $12,000 in Docket No. UI 402 and $7,000 in Docket No. UI 403, resulting in a downward adjustment to this account of $3,000.

Account 650, Transportation

GCW included expenses for contractor's mileage as well as gas credit card and repair expenses for a 2004 Buick Rainier. In the Company's DR responses to Staff in DR 28, 29 and 70,[43] the Company indicates that the Buick is 100 percent used by the Company but is owned by Charlomont Hill, LLC.[44] After reviewing accounting records, Staff estimates approximately 84 gallons of gas were used in the test year. Due to this limited level of use and Charlomont Hill LLC's ownership of the Buick

[42] *In re Government Camp Water Company, Inc.*, OPUC Docket No. UI 402, Order No. 18-317 (August 28, 2018).
In re Government Camp Water Company, Inc., OPUC Docket No. UI 403, Order No. 18-319 (August 28, 2018).
[43] *See* Exhibit Staff/105, Brock /38, Brock/39, and Brock/40-41.
[44] Staff notes the affiliated interest relationship with Charlomont Hill, LLC. The Company must seek Commission approval before entering any charges on its book that would fall under ORS 757.495.

Rainier (as opposed to the Company owning the vehicle), a mileage reimbursement is a more reasonable and accurate way to account for the costs of the Company's use of the Buick. Applying estimated mileage at the $0.545 per mile federal mileage rate results in a mileage reimbursement of $736 for the Buick. Including the additional contractor mileage expense of $1,043, the combined mileage reimbursements total $1,779, resulting in a downward adjustment of $873 to this account.

Account 656, Vehicle Insurance

Due to its limited use and Charlomont Hill ownership of the Buick Rainier, Staff proposes to treat Company reimbursement expense for use of the Buick as mileage in Account 650, Transportation, as discussed above. As insurance is included in the mileage reimbursement in Account 650, Staff removed this proposed insurance expense resulting in a downward adjustment of $1,322.

Account 675, Miscellaneous Expense

Staff reviewed GCW's miscellaneous expense and removed finance charges from creditors bills resulting in a downward adjustment of $190. Late payment charges incurred by the Company should not be borne by customers.

Account 408.11 Property Tax

Consistent with Staff's recommendation in Docket No. UI 402 discussed earlier,[45] Staff removed the property tax expense included for the leased barn and storage lot

[45] *In re Government Camp Water Company, Inc.*, OPUC Docket No. UI 402, Order No. 18-317 (August 28, 2018).

belonging to trust/Lesli Ann Bekins. This resulted in a downward adjustment of $1,201.

Account 403, Depreciation Expense

Depreciation Expense As Filed……	$23,498
Removal of Tyrolean Meadows True-up	($288)
Removal of Meter Allowance from UW 145	($2,475)
Removal of CWIP line replacement	($109)
Increase Adjustment for Water Tank Cost	$215
Error Correction	$395
Depreciation Expense—As Adjusted…….....	$21,236

Staff's proposed downward adjustment of $2,262 reflects the difference in the accumulated depreciation expense filed of $23,498 and the adjusted depreciation amount of $21,236.

Q. Does Staff propose any adjustments to the Company's Test Year revenues?

A. Yes. In its initial filing, in response to question 27 in the Application, GCW listed test year Miscellaneous Revenues of $4,562, but adjusted those revenues to a proposed amount of zero revenues for the test year. Staff issued DR 25[46] requesting an explanation of why the Company removed these revenues. The Company responded that these revenues were removed as they were considered pass through costs. It is not clear what the Company means by "pass through" in this context. Customer billing data and the Company's application[47] show that the miscellaneous charges billed to customers took the form of late payment charges, account setup fees, and service connection charges. In the Company's response to DR 99, the Company provided two additional years of Miscellaneous Revenue

[46] *See* Exhibit Staff/105, Brock /42.
[47] GCW Testimony at 8.

income for the years 2015 and 2017.[48] Staff averaged the three years of miscellaneous revenues received by the Company and appropriately included these revenues, adding the three-year average for Miscellaneous Revenues, or $4,966, back into the Revenue Requirement.

Q. Please discuss Staff's review of GCW's proposed net plant.

A. Staff made a number of adjustments to GCW's Utility Plant in Service, Accumulated Depreciation of Plant, Contributions in Aid of Construction (CIAC), and Accumulated Amortization of CIAC as described below.

Account 101, Utility Plant in Service

Staff removed a duplicate entry for Tyrolean Meadows Overrun True Up of $14,419. Per DR 38,[49] the true-up for the Tyrolean plant investment was inadvertently included twice.

Staff removed an allowance for meter installations that was added in UW 145. The Company has already included and individually listed all meters installed in its plant since UW 145. This allowance artificially inflates the Company investments in plant. Per confirmation in the Company's response in DR 40,[50] Staff removed this allowance, resulting in the removal of the $49,500 meter allowance from UW 145.

In DR 37[51] Staff requested an explanation for a corrected entry made in UW 145 in recorded plant costs for the 100,000 gallon wood tank. The Company indicated in its response that the costs for the wooden tank were not previously

[48] *See* Exhibit Staff/105, Brock/43.
[49] *See* Exhibit Staff/105, Brock /44.
[50] *See* Exhibit Staff/105, Brock /45-49.
[51] *See* Exhibit Staff/105, Brock /50-52.

recorded at the correct amount and provided documentation to support that the entry of $48,475 made in UW 145 should actually have been recorded as $59,249.22. After reviewing these records, Staff recommends updating this figure to include the full documented costs of $59,249.22, resulting in an increase to plant of $10,774.22.

Staff moved a proposed Construction Work In Progress (CWIP) service line replacement it to the appropriate CWIP Account 105, which resulted in a downward adjustment to this account of $5,441. This item is discussed further below.

Account 271 Contributions in Aid of Construction / Accumulated Amortization of CIAC

In DR 16,[52] Staff requested the Company provide the Contributions in Aid of Construction (CIAC) plant assets, which were not provided in the Company's original Application. CIAC represents the Company's plant assets that have been paid for by non-Company resources, such as developers or customers. Staff added the CIAC plant records and related Accumulated Amortization of CIAC per the Company's response to DR 16.

Account 105, CWIP

In the Company's response to DR 75,[53] the Company explained that a temporary repair on a service line serving four customers was completed last fall and a permanent line replacement project was identified and approved by the Company on November 10, 2017. However, given the Company's timeline provided in its DR response, construction on the subsequent line replacement appears not to have

[52] *See* Exhibit Staff/105, Brock /53-55.
[53] *See* Exhibit Staff/105, Brock /56.

started yet. Three days after the Company decided to replace the lines, the project was put on hold due to snowfall that began on November 13, 2017. Staff is unaware of any new project developments.

Pursuant to ORS 757.355(2), the Commission may allow CWIP in rate base in water rate cases on a case by case basis if the water utility is required to use the additional revenues solely for the purpose of completing the capital improvement. This is a departure from usual Commission policy against including CWIP specifically available for water utilities.

OAR 860-036-2390 sets forth the requirements for inclusion in water rates:

> The Commission may approve the cost of a specific capital improvement project into rates if: (a) The capital improvement project is under construction; (b) The water utility uses the additional revenues solely for the purpose of completing the capital improvement project; (c) The water utility demonstrates that it is in the public interest to provide funding for the capital improvements through rates; and (d) The costs are approved by the Commission.

This project does not meet those requirements. In light of the Company's response to DR 75, the Company has not established that the line replacement project is under construction at this point in time. Additionally, even if the project has begun, Staff does not have a great deal of confidence in the Company's likely follow-through to use the additional revenues solely to complete the capital project. When, in the last rate case, the Company previously received revenue in advance to complete a capital project, it unilaterally decided to limit the scope of that project beyond the scope approved by the Commission.[54] And finally, Staff does not believe the Company has offered a sufficient rationale for why including this particular project in rates in advance

[54] See discussion of metering program infra, Brock/43, lines 17-21 and Brock/44, lines 1-11.

is in the public interest. Removing the CWIP amount proposed results in a downward adjustment of $5,441.

Q. Please summarize the adjustments made to GCW's Plant.

A. Adjustments made by Staff are as follows:

Gross Plant	
Gross Plant—As Filed	$1,051,997
CIAC	$1,077,641
Tyrolean Meadows Adjustment	($14,419)
Meter Allowance Adjustment	($49,500)
CWIP Line Adjustment	($5,441)
100,000 Gallon Wood Tank Adjustment	$10,774
Rounding Correction	$5
Gross Plant—As Adjusted	$2,071,057
Accumulated Depreciation	
Accumulated Depreciation—As Filed	$520,939
Accumulated Depreciation—As Adjusted	$518,694
CIAC Depreciation	$195,867
Accumulated Depreciation of Plant with CIAC	$714,561

Q. Please summarize all the Staff's adjustments to the Company's request in this case.

A. All the adjustments proposed by Staff can be found on the Adjustment Summary contained in my Exhibit 103.

Q. Does Staff have concerns regarding the Company's metering practices?

A. Yes. Staff has two issues related to the Company's metering practices;

First, 267 of the Company's current customers remain as flat rated customers without a meter. For reasons discussed earlier,[55] Staff believes it is important to meter customer's usage to encourage conservation, consistent with the Commission's KPMs. Second, the Company's unilateral decision not to meet the

[55] See discussion of the Commission's KPM # 1 supra, Brock/20, lines 1-19.

condition in the UW 145 Stipulation to meter certain customers and not to seek the Commission's approval of its decision to depart from the terms of the Stipulation adopted by the Commission does not instill confidence in Staff.

Q. Does Staff have any recommendations to address concerns regarding the Company's metering practices?

A. Yes. The Commission should direct the Company to institute a meter conversion program (MCP) to provide meters to its currently unmetered (i.e., flat rate) customers.

1. Within 6 months of an order in this proceeding, develop a plan for a meter installation program that will result in the conversion of all flat rated customers to meters within five years of the order in this proceeding;
2. Each calendar year, convert at least 50 flat rate customers to meters under the MCP; and
3. Provide annual calendar year MCP reports, due January 1 of the year following the reporting period showing:
   a. The number of flat rated customers converted to meters each year under the MCP
   b. The costs associated with converting the flat rated customers to meters each year.
   c. The number of flat rated customers remaining at the end of that year.
   d. The first report should be due April 1, 2020.

If the Company determines it needs additional funding to institute the MCP, Staff recommends that Company engage with appropriate potential funding sources, including but not limited to Business Oregon and the Oregon Health Authority Drinking Water Services program to request funding from the Oregon Safe Drinking Water Revolving Loan Fund (OSDWRLF).

Q. Did the Company meet the requirements imposed on it under the Stipulation that resolved its last rate case?

A. No. As noted previously, GCW agreed in Paragraph 12 of the Stipulation in UW 145 that it would make a rate filing on or before January 2014. In the Company's response to DR 20[56] it stated that as a small water system, filing a rate case is time consuming and costs money. The Company advised that in January of 2014, the Company requested PUC Staff stipulate to an 18 month extension as it was the Company's perception that a rate case was not yet advisable. Staff has not located any record of that extension and notes that the Commission did not approve an extension. Assuming that such an extension was granted, though, this rate case filing was still substantially later than the extension would have permitted.

In addition, despite an allowance provided in plant in UW 145 to aid a 3 year metering plan to meet the Condition in UW 145 that all customers with greater than 3/4 inch line sizes be converted to meters, there are still 11 customers with greater than 3/4 inch line sizes in the proposed rates: 2 one inch customers and 9 two inch customers. The Company advises in response to DR 18[57] and 67[58] that the

[56] *See* Exhibit Staff/105, Brock/57.
[57] *See* Exhibit Staff/105, Brock /58.
[58] *See* Exhibit Staff/105, Brock /59.

Company made a management decision to meter only those commercial customers who use a large volume of water. The Company expanded on this response to indicate it believes that full implementation of that condition is not in the Company's best interest given the cost and the Company's financial situation. It is troubling that the Company did not comply with the conditions or seek Commission approval to reconsider the plan at the time it made the decision not to comply. This is particularly worrying because $49,500 was added to plant as a meter allowance in UW 145, which has allowed the Company to recover these costs and a return on them in rates over the past eight years, yet the Company's response in DR 40[59] provides documentation of capital expenditures of only $27,959.78 for meter installations.

Q. Does Staff have any recommendations to address concerns regarding this noncompliance?

A. As described below in Issues 6 on Cost of Capital, Staff also lowered the Company's recommended ROE due to questionable management practices that included this unilateral non-compliance with prior Commission orders. In the event the Commission does not adopt Staff's MCP recommendation, Staff recommends that the Commission also add a condition to the Order in UW 174 that all flat rated customers with greater than 3/4 inch line sizes be converted to metered customers, as was expected in compliance with the Commission's order resolving UW 145, and that GCW provide an annual status report, beginning in April of each year as to how they are progressing on this condition. The Commission should also require that the

[59] *See* Exhibit Staff/105, Brock /45.

Company file a new rate case by January 1, 2021, or seek the Commission's approval if it believes that a rate case is not warranted by that date.

ISSUE 5: CUSTOMER CONCERNS

Q. Were customers notified of the proposed rate increase?

A. Yes. GCW filed a copy of the notice sent to customers with the Commission on January 16, 2018. The customer notice was dated January 11, 2018, to notify their customers of the proposed rate increase.

Q. Have GCW customers expressed any concerns to the Commission?

A. Yes, the Pre-Hearing Conference was well attended despite inclement weather conditions in Government Camp on the day the conference was held. Present were the Company, its attorneys, family members, several HOA representatives, the water operator contractor employed by the Company and other customers. One customer used a telephone bridge arranged at the last minute due to the inclement weather conditions.

Many of those in attendance expressed concerns over the amount of the proposed rate increase, the lack of a gradual rate increase, the amount of the proposed pension and wages, infrastructure updates and potential sale of the water system.

One attendee brought up a service issue relating to snow machine making activities that affected water pressure in December of 2016. The Company's responses to DR 55, DR 56, and DR 57[60] explained that the cause was due to an

[60] *See* Exhibit Staff/105, Brock/60, Brock/61, and Brock/62.

error of a Skibowl employee. Snow making activities are now limited to no more than 350 gallons per minute (gpm) of use. Additionally, Skibowl is required to provide phone or text notification of all snow making activities, which could be suspended during high domestic consumption periods. The Company monitors water system pressure during snow making activities hourly to ensure no pressure reduction occurs.

Another attendee brought up a concern relating to the potential effects of a proposed 480 unit condominium build. In the Company's response to DR 53,[61] which requested information about the proposed condominium build, the Company advised the proposal requires approval of a land exchange that has not been finalized between the United State Department of Agriculture and Mt. Hood Meadows. The proposed build falls within GCW's exclusive service area. The Company's response indicates it will comport with OAR 860-036-1270, Refusal of Water Service, which imposes requirements for when a utility must refuse service if they do not have adequate facilities, resources, or capacity to provide the requested service to other customers. Staff is currently in the process of confirming that the source of GCW's water, an artesian spring, has a master meter, which Staff recommends to enable the Company to assess potential new developments against overall water use.

In addition to the comments provided above, Staff, including Consumer Services, received emails and phone calls from several customers who were unable to attend the conference to relay their concerns over the Company's proposed rates.

[61] *See* Exhibit Staff/105, Brock/63.

Many expressed the concern over the lack of a gradual increase, the amount of the proposed increase, the proposed salaries, and the age of the system's infrastructure. One customer relayed their concern that the water tower loan in the name of Charlomont Hill LLC, was an affiliated interest loan from Maryanne Hill and/or Lesli Ann Bekins. Another customer reported periodic past outages due to construction issues, pipes breaking, and a large fire in the area having drained the water tanks resulting in no water and an eight-hour refill time, and a giardia issue resulting in the need to boil water.

ISSUE 6: COST OF CAPITAL

Q. What Cost of Capital did the Company request in this case?

A. The Company requested an 11.9 percent return on equity of $268,442 and a 7.5 percent cost of capital for a water tank loan with an outstanding balance of $204,020 from Charlomont Hill, LLC.[62]

Q. Please describe Staff's investigation of the Company's debt.

A. Staff sent data requests (DR 45, 46, 47, 48, 49, 61, 62, 63, 64 and 65)[63] seeking information and documentation regarding the Company's debt, including the water tank loan terms and a demand loan of $69,656 that was paid off in the interim between UW 145 and the Company filing for UW 174. According to the Company, there is no written agreement for the water tank loan, which had an original balance of $225,000 at 7.5 percent interest with a term of 30 years. The Company provided

[62] GCW Testimony at 7.
[63] *See* Exhibit Staff/105, Brock/64,Brock/65,Brock/66,Brock/67,Brock/68,Brock/69, Brock/70-74,Brock/75, Brock/76 and Brock/77.

a balance sheet for the water tank loan; payments of $1,602.25 began in October of 2004. Loan payments changed in April of 2008 to $1,440.70, without explanation, leaving a balance as of December 2016 of $204,020.[64] The Company indicates that no formal loan documents exist. The Company did not provide a comparison of the current market rate and 7.5 percent loan for the $204,020 balance.[65] Staff notes that Ms. Bekins is a member of and owns 18 percent interest of Charlomont Hill[66]; this affiliated interest therefore may require an additional affiliated interest contract filing.

Q. Please describe Staff's concerns regarding the water tank loan.

A. Staff is concerned regarding the lack of a formal loan documents and the Company's unexplained change in payments since the last rate proceeding. The reduction in payments, according to Staff's estimate, effectively added 122 months to the life of the loan. Based on the repayment schedule and change made to the loan payment amount, the loan would not effectively be a 7.5 percent loan as stated by GCW.

Q. How does Staff propose these concerns be addressed?

A. Staff recommends that the Commission require that before the Company's next rate case, the loan terms be legally formalized in a written agreement that is submitted to the Commission for approval as an affiliate interest agreement.

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[64] *See* Exhibit Staff/105, Brock/70-74.
[65] *See* Exhibit Staff/105, Brock/75.
[66] *See* in re *Government Camp Water Company*, *Requests Approval for the Transfer of a Water Utility*, OPUC Docket No. UP 375, Order No. 18-320 at 4, (August 28, 2018). ("Staff also notes Ms. Bekins holds an 18 percent interest in Charlomont Hill, LLC, which holds the company's debt in the form of a loan taken out prior to Commission regulation of the Company. The Commission should therefore review any changes to this affiliated interest agreement").

Q. What cost of debt is Staff recommending in this case?

A. Given Staff's concerns regarding the lack of documentation and changes to the Charlomont Hill loan, Staff recommends imputing an interest rate of 5.06 percent to Government Camp in this proceeding. That interest rate is based on the interest rates approved for Avion Water Company, Inc.'s debt in Docket No. UW 171.[67] That rate reflects a bank loan at 3.48 percent and personal loan guarantee fees at 1.58 percent, for an effective combined interest rate total of 5.06 percent. Staff believes this interest rate reflects financing that could be obtained in the open market.

Q. What capital structure did Staff recommend?

A. Staff is recommending the use of GCW's actual capital structure in this proceeding. As described above, GCW currently has loans outstanding of $204,020. The remainder of the capital necessary for GCW to fund its rate base comes in the form of equity.

Q. What ROE is Staff recommending in this case?

A. Staff is recommending a 9 percent ROE in this case. Staff arrived at this recommendation by beginning with the 9.25 percent supported by Mr. Muldoon, which was calculated without regard for Company performance issues and its non-compliance with Commission orders, and adjusted downward by 0.25 percent to reflect those questionable practices. The 9 percent recommendation is within the range of ROEs that Mr. Muldoon explains is supportable here.

[67] *In re Avion Water Company, Inc. Request for a General Rate Revision*, Order 17-496, at 4, OPUC Docket No. UW 171 (Dec. 11, 2017).

Q. Please describe the questionable management practices engaged in by the Company.

A. Staff has identified four such practices. I have described each of those areas in more detail earlier in my testimony in the relevant contexts. To summarize, first, the Company failed to comply with the Commission's requirement in Docket No UW 145 to file a rate case by January, 2014. Second, the Company failed to comply with the Commission's requirement in Docket No. UW 145 that all customers with greater than 3/4 inch line sizes be converted to meters, despite a $49,500 allowance having been added to plant in UW 145 to accomplish that conversion. As a result, customers have been overpaying for that conversion program for the last eight years since the implementation of rates in UW 145. Third, the Company failed to seek approval of the transfer of ownership of the water company from Ms. Hill to Ms. Bekins. Fourth, the Company has demonstrated a lack of due diligence in its billing practices as evidenced by the billing errors and the Company's departure from tariffed prices described earlier in my testimony.[68]

Q. Please summarize Staff's Cost of Capital recommendation in this proceeding.

A. Based on the ROE, cost of debt and the capital structure described above, Staff is recommending the cost of capital shown below in Table 15.

[68] Additionally, as noted above, these practices would also support a downward adjustment to the CEO salary approved in the associated affiliated interest docket if Staff's recommendation did not also include certain activities that will necessarily involve immediate increased care and attention of management.

TABLE 15– RECOMMENDED COST OF CAPITAL

Cost of Capital

	Amount	Cap Struct	Cost	Wtd. Cost	
Charlomont Hill LLC (water tank)	204,020	41.08%	5.06%	2.08%	
		0.00%		0.00%	
Total Debt	**204,020**	**41.08%**		**2.08%**	
Equity	292,562	58.92%	9.00%	5.30%	
Total Equity	**292,562**	**58.92%**		5.30%	ROE
Total Debt + Equity	**496,582**	**100.00%**		7.38%	ROR

ISSUE 7: RATE SPREAD AND RATE DESIGN

Q. What are the general components of Staff's recommended rates?

A. Staff's recommended rates are comprised of a mixture of metered and flat base rates. Base rates are charged regardless of water use along with a corresponding commodity or usage rate that is charged per 100 cf of water used for metered customers. Compared to rates based on only commodity usage, metered base rate design relies less on the usage of water to maintain Company funds and ensures that there are adequate funds for the Company to operate during the winter months, when there is generally less water use.

Flat rate customers do not have meters; consumption for flat rate customers is not billed as it cannot be measured. Flat rates for water are billed to customers at a static, year round rate. While static rates provide stability for the Company, they do not encourage customers to save money in order to reduce monthly bills like their metered counterpart.

Q. Please describe Staff's general approach to developing a rate structure.

A. As GCW's customers are billed a mixture of metered and flat rates, Staff reviewed the past rate design adopted in UW 145 as well as customer billing records to assess the Company's proposal and develop a recommendation that is fair and

equitable across GCW's customer base. Water rates are typically designed such that customers with larger meter sizes pay higher base rates than those with smaller meters. This is because, as mentioned earlier, "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."[69] 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."[70] As such, Staff often utilizes a standard set of factors for determining the appropriate relative differences in base rates for different meter sizes.[71] 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. These factors are as shown below in Table 16:

Table 16-AWWA Meter Factors

Meter Size	Standard Factors
5/8"	1
3/4"	1.5
1"	2.5
1 1/2"	5
2"	8
3"	15
4"	25
6"	50

[69] Principles of Water Rates, Fees, and Charges (M1) (6th Edition). American Water Works Association, 2012, Page 324.
[70] *Id.*
[71] *See In re Crooked River Ranch Water Co.*, Docket No. UW 162, Exhibit Staff/100 Hari/30, lines 18-19, filed Feb. 4, 2015.

Staff often recommends iterative progression toward these factors in a company's successive rate cases to gradually reduce the subsidies that may result from alternative rate structures when compared to the standard factors, while also mitigating the risk of rate shock.[72]

Q. What approach to developing a rate structure does Staff recommend here?

A As a general matter, Staff recommends employing factors that increase based on the meter size to make some progress toward applying the standard factors. Consistent with the parties' agreement in concluding UW 145, in considering this approach, Staff also considered how to correct distortions resulting from the Company's current approach to billing that stem from the Company's use of line sizes for some individual end users to calculate the bills that are sent to master meter customers that use meters of different sizes than those line sizes serving the end users. When considering rate design, this practice inflates the appearance of the number of actual metered customers, which is normally determined by the number of meters placed in the field. It also reduces Staff's ability to gradually move toward the standard factors discussed above.

Q. How would Staff recommend that the Commission approach rate structure in order to make progress toward standard factors?

A. The current and proposed rate designs do not apply the standard meter factors that Commission Staff has been moving toward for other water utilities, however, Staff's

[72] See, e.g., *In re Illahe Estates Water System Request for a General Rate Revision*, Order No. 18-235, at 6-7, Docket No. UW 173 (June 22, 2018) (adopting stipulation making progress toward standard factors); *In re Avion Water Company, Inc. Request for a General Rate Revision*, Order No. 17-496, at 7, Docket No. 171 (Dec. 11, 2017) (same).

proposed rates progress toward AWWA factors by approximately 35 percent over the rates adopted in UW 145. Due to the necessity to balance rates between metered and flat rated customers, some customers will have larger or slightly smaller increases.

To move the rate structure for the Company in the direction that Staff has been moving in relation to water utilities, generally, changes to the current Company approach to bill calculations are warranted, which also affects the proposed rate spread and design. As discussed above, bills for individual users served by master meter customers have not been based on meter size at all. Going forward, the Company should bill its customers based on the size of their meter and its associated consumption (and not based on line sizes beyond the meter). Staff considers the following factors shown in Table 17 to be the best fit to make progress toward the standard factors while mitigating potential rate shock as a result of changes in this case.

Table 17-Staff Proposed AWWA Factors for Metered Customers

Meter Size	Standard Factors	Recommended Factors
5/8" & 3/4" (combined)	1.5	1.5
1"	2.5	1.8
1 1/2”	5	2.5
2"	8	3.6
3"	15	5.3
4"	25	9.9
6"	50	19

While review of rate design using this approach may initially appear to reduce the number of metered customers, it actually eliminates the distortion that had resulted from the current non-standard rate design. The current rate design appears

to reflect a count of metered customers based on customer equivalents using end user line sizes instead of the actual numbers of meters in the field that are associated with customers. This leads to billing practices that appear anomalous and in some instances is difficult to explain. Flat rate water customers should continue to be billed based on the line size of their service.

Q. Please describe Staff's recommended rate spread.

A. Staff's recommendation for rate spread and design in UW 174 changes the current billing practice to billing only for the actual size and number of meters in the field along with the corresponding consumption measured by those meters. As anticipated in UW 145, this stops the billing practice of billing for units based on the number and size of lines that run past the Master Meter. This reduces the number of metered customers that are listed in the rate spread table from 393 to 147. It results in a more equitable billing methodology that better enables progressive use of the factors used as a standard by Staff. It also sends a clearer price signal to customers because rates are based on meter size, not customer equivalents relating to end users located beyond the meter.

This shift is reflected below in Table 18 on the proposed rate spread. Rates are spread using a percentage of revenues expressed as a calculation between the numbers of metered customers (44.76 percent) in relation to the number of flat rated customers (55.24 percent), illustrated in Table 18.

Table 18-Rate Spread.

Rate Spread

TOTAL REVENUE REQUIREMENT	218,939	
REVENUE FROM WATER SALES		
Residential and Commercial Flat Rate	115627	55.24%
Residential and Commercial Metered Rate	93673	44.76%
REVENUE FROM SOURCES OTHER THAN WATER SALES		
Miscellaneous Service Charges	4,966	
Fire Protection Sales (Hydrant Mtc)	1,490	
Commercial Water Haulers	3,183	
TOTAL REVENUE (Must equal Total Revenue Requirement)	**218,939**	

Q. Please describe Staff's recommended rate design.

A. As discussed previously, to ensure fair and equitable rates, the metered and flat rate allocation factors should be moved in this rate case toward what Staff has commonly referred to as standard AWWA factors. Under this proposal, factors allocating costs are moved toward the standard factors used to bill in relation to the amount of water delivered by the meter or line size. This proposed change to increase the allocation factors of the larger meter and flat rated line size customers shifts to a more appropriate allocation of the water system costs based on the demand customers place on the water system. Moving customers toward standard meter allocation factors generally helps to decrease subsidies the larger meter sizes are currently receiving when compared against the standard used by Staff. While subsidies will exist until factors can be moved to full standard allocation factors in future rate cases, it is not advisable to move the standard meter allocation factors fully in this rate case due to the likelihood of rate shock to large meter and flat rate line sizes.

Staff's recommendation makes substantial progress toward the use of standard AWWA factors and is the best option to use in this case, especially given that it has been eight years since the Company's last rate case filing.

Staff has removed all flat rate line service sizes that do not have current customers from its rate proposal (flat rate customers exist only for the 3/4, one and two inch line services). Additionally, while the same standard meter factors are often employed irrespective of whether the service is flat or metered, Staff recommends employing a different factor for the metered 1 and 2 inch and the flat rated 1 and 2 inch rates in this case in order to balance the 1 and 2 inch flat rate monthly average rates and the 1 and 2 inch metered monthly average rate. Staff also proposes to a add a base rate for 3 inch meters, as meter records provided in response to DR 93[73] show two 3 inch meters are used to serve customers in the field.

In terms of designing how metered revenues are to be allocated between the base and commodity rate, Staff proposes to change the Company's current 70 percent of customer metered rates allocation to the base (or guaranteed) rate and 30 percent allocation to the consumption (or fluctuating) rate. Due to the discrepancies with consumption noted earlier and to lean toward balancing costs with usage, Staff proposes moving the allocations to the standard generally used by Staff, of 60 percent allocation to base rates and 40 percent allocation to consumption.[74]

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[73] *See* Exhibit Staff/105, Brock /19-24.
[74] *See, e.g.*, *In re Avion Water Company, Inc. Request for a General Rate Revision*, Order No. 17-496, at 5, Docket No. 171 (Dec. 11, 2017) (noting movement toward industry practice).

Staff's proposal for the commodity rate for the residential/commercial customers is $ 1.49 for each 100 cf of water used and $0.30 per customer for fire hydrant maintenance. Staff's Proposed Rates are shown in Tables 19-23.

Table 19.—Staff Proposed Metered Rates

Rate Design

Residential and Commercial Metered Service — Revenue Allocation: **93,673**

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

Base Rates — Revenue Allocation: **56,204**

Meter Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
5/8" and/or 3/4"	73	1.5	110	31.22%	$ 17,544	**$ 20.03**
1"	16	1.8	29	8.21%	$ 4,614	**$ 24.03**
1 1/2"	31	2.5	76	21.78%	$ 12,243	**$ 32.91**
2"	20	3.6	72	20.41%	$ 11,472	**$ 47.80**
3"	3	5.3	16	4.49%	$ 2,524	**$ 70.10**
4"	3	9.9	30	8.48%	$ 4,768	**$ 132.45**
6"	1	19.0	19	5.41%	$ 3,038	**$ 253.18**
TOTAL	147		351	100.00%	$ 56,204	

Table 20. ---Staff Proposed Flat Rates

Residential and Commercial Flat Rate Service — Revenue Allocation: **115,627**

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

Base Rates — Revenue Allocation: **115,627**

Line Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation	Base Rate
5/8" and/or 3/4	256	1.5	384	88.68%	$ 102,542	**$ 33.38**
1"	2	2.0	4	0.92%	$ 1,068	**$ 44.51**
2"	9	5.0	45	10.39%	$ 12,017	**$ 111.27**
TOTAL	267		433	100.00%	$ 115,627	

Table 21. –Staff Proposed Commodity Rate

Commodity Rate — Revenue Allocation: **37,469**

Annual Consumption	2,507,585	cubic feet
Unit of Measurement	100	cubic feet
Annual Units of Consumption	25,076	Units
Commodity Rate:	**$ 1.49424**	per unit

Table 22. Staff Proposed Water Hauler Rate

Water Haulers			Revenue Allocation:	3,183
			Allocated to Base Rates:	0.00%
			Allocated to Commodity Rates:	100.00%
Commodity Rate			Revenue Allocation:	**3,183**
Annual Consumption	213,600	cubic feet		
Unit of Measurement	100	cubic feet		
Annual Units of Consumption	2,136	Units/cfs		
Commodity Rate:	$ **1.49017**	per unit		

Table 23. Staff Proposed Fire Hydrant Rate

Fire Hydrants							Revenue Allocation:	1,490
							Allocated to Base Rates:	100.00%
							Allocated to Commodity Rates:	0.00%
Base Rates							Revenue Allocation:	**1,490**
Meter Size	Customers	Factors	Customer Equivalency	% of Total	Revenue Allocation			Base Rate
ALL	414	1.0	414	100.00%	$	1,490		$ **0.30**
TOTAL	414		414	100.00%	$	1,490		

Q. Please comment on the average bill impacts of Staff's proposal.

A. Due to the recommended change in method from the customer equivalent method currently employed by the Company to the direct billing method recommended by Staff, it is not entirely possible to calculate the average bill impact on customers. This results from the fact that the "average customer" of the Company for each meter/line size schedule changes as the approach does. As an example, a Collins Lake Chalet end user referenced in my customer equivalent example is currently charged under the 5/8" / 3/4" schedule and would be included in the development of "average customer bill" for that rate schedule. Under Staff's proposed meter size billing method, the Collins Chalet end user is not considered a customer for

purposes of calculating the "average customer" bill; an end user's bill would depend on the HOA's approach.

Q. What are the primary customer benefits that will result from Staff's recommended rate design?

A. The primary benefit of Staff's proposal is movement towards rates which more accurately reflect the Company's cost of service. That movement would result from three components of Staff's rate proposal.

The first and primary rate design change Staff is proposing in this case is movement from the current customer equivalent billing method to billing based on actual meter size. As discussed earlier, the customer equivalent billing method limits Staff's ability to design appropriate rates by distorting the role of the most effective cost indicator – the size of the meter serving the customer – in Staff's "tool box" for designing rates. Moving to billing based on actual meter size makes that tool fully available as an integral part of designing cost based rates.

The second component is movement toward use of the full AWWA factors. As I describe earlier, Staff's rate proposal makes significant progress toward use of the full AWWA factors.

The third is a change in the allocation of the costs to be collected through the base charge and commodity charge. Staff is proposing to change that allocation from the 70 percent – base charge, 30 percent - commodity charge allocation present in the Company's current rates to the more standard 60 percent - base charge, 40 percent - commodity charge allocation.

In combination, these changes will allow Staff to develop rates which more closely reflect the cost of providing service to customers. As is discussed earlier, that matching of costs with rates is an important component of achieving the Commission's objective of establishing the just and reasonable rates for customers.

Q. Please comment on the potential weaknesses present in Staff's rate design proposal.

A. The primary weakness of Staff's approach is that it may cause varying and, in some cases, potentially dramatic rate impacts to customers and end users. As noted above, it is not completely possible to calculate the "average customer" bill change because the identity of the "average customer" is not the same under the customer equivalent method compared to Staff's proposed meter size based billing method.

That said, while the change to meter size based billing may cause initial bill impacts, Staff believes the long term benefits of moving to that method and being able to set rates in a way that more appropriately matches rates and costs outweigh the short term rate impacts that may be experienced by customers.

Q. Does Staff have any other rate design recommendations it would like the Company to consider?

A. Yes. Staff encourages the Company to put forward a sensible rate design recommendation that is based on meter sized billing. As discussed above, Staff recognizes that its proposal may have some potentially significant rate impacts for customers and end users. The Company is more knowledgeable than Staff regarding its customers, their usage patterns, and as a result, potential rate impacts. Staff encourages the Company to use that knowledge to propose a rate design that

is based on meter sized billing and makes the most sense for its customers given their usage patterns.

Q. Does that conclude your testimony?

A. Yes.

CASE: UW 174
WITNESS: MALIA BROCK

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 101

Witness Qualification Statement

September 14, 2018

WITNESS QUALIFICATION STATEMENT

NAME: Malia Brock

EMPLOYER: PUBLIC UTIILTY COMMISSION OF OREGON

TITLE: Senior Utility Analyst, Retail Rates and Water Section

ADDRESS: 201 High Street SE. Suite 100
Salem, OR 97301

EXPERIENCE: My assignments over the last eight years while at the Oregon Commission have included service quality issues and monitoring, various dockets, rate cases, rulemakings, and lead investigator in the rural call completion issue. I provide telecommunications technical support to the Commissioners, Consumer Services Division, and other staff members. I possess a combined total of 40 years' experience in telecommunications. Prior experience includes team lead and Telecommunications Administrator in Network Operations for Department of Corrections where I was responsible to manage and program Avaya and Nortel systems supporting the telecommunication networks of 21 secure secure environment locations. I was responsible for contract maintenance, telecommunications budget, supervision, service orders, review and supervision of switch maintenance and upgrades. My lead duties included responsibilities for

oversight of the data and telecommunication networks, servers and email supporting 4,300 employees in 21 locations. Past employment with PNB/US West/Qwest for 25 years add telecommunications experience as network technician, complex line assigner, assignment, carrier services, and customer service.

CASE: UW 174
WITNESS: MALIA BROCK

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 102

Exhibits in Support of Testimony

September 14, 2018

Company Name: Gov't Camp
Docket No. UW 174
Test Year: 2016

Staff/102
Brock/1

Revenue Requirement

Company Proposed Increase
73.64%

Staff Proposed Increase
24.12%

	REVENUES	Test Year-2016	Company Adjustments	Company Proposed Totals	Staff Adjustments to Company Totals	Staff Proposed Totals
460	Unmetered			$ -		$ -
461.1	Residential Flat Rate Water Sales	51,415	38,941	$ 90,356	25,271	$ 115,627
461.2	Commercial Flat Rate Water Sales	16,140	11,787	$ 27,927	(27,927)	
	Residential Metered Water Sales	11,520	9,499	$ 21,019	(21,019)	
	Commercial Metered Water Sales	90,365	70,204	$ 160,569	(66,896)	$ 93,673
462	Fire Protection Sales (Hydrant Mtc.)	-	2,188	$ 2,188	(698)	$ 1,490
465	Hydrant Water Sales (Water Hauling)	2,392	1,839	$ 4,231	(1,048)	$ 3,183
466	Water Sales for Resale			$ -	-	$ -
471	Miscellaneous Services	4,562	(4,562)	$ -	4,966	$ 4,966
475	Cross Connection Control			$ -		$ -
	Other			$ -		$ -
				$ -		$ -
	Total Revenue	**$ 176,394**	**$ 129,896**	**$ 306,290**	**$ (87,351)**	**$ 218,939**
Acct.	**OPERATING EXPENSES**					
601	Salaries and Wages - Employees			$ -	$ -	$ -
603	Salaries and Wages - Officers	28,258	28,524	$ 56,782	$ (6,652)	$ 50,130
604	Employee Pension & Benefits	-	24,000	$ 24,000	$ (24,000)	$ -
610	Purchased Water			$ -	$ -	$ -
611	Telephone/Communications	3,171	(1,748)	$ 1,423	$ (420)	$ 1,003
615	Purchased Power	197		$ 197	$ -	$ 197
616	Fuel for Power Production	-	-	$ -	$ -	$ -
617	Other Utilities	-	-	$ -	$ -	$ -
618	Chemical / Treatment Expense	-	-	$ -	$ -	$ -
619	Office Supplies	767	-	$ 767	$ -	$ 767
619.1	Postage	462	-	$ 462	$ -	$ 462
620	O&M Materials/Supplies	6,583	-	$ 6,583	$ -	$ 6,583
621	Repairs to Water Plant	6,171	-	$ 6,171	$ -	$ 6,171
631	Contract Svcs - Engineering	-	-	$ -	$ -	$ -
632	Contract Svcs - Accounting	3,279	-	$ 3,279	$ -	$ 3,279
633	Contract Svcs - Legal	-	1,782	$ 1,782	$ -	$ 1,782
634	Contract Svcs - Management Fees			$ -	$ -	$ -
635	Contract Svcs - Testing	2,310	(1,055)	$ 1,255	$ -	$ 1,255
636	Contract Svcs - Labor	10,133	(9,319)	$ 814	$ (814)	$ -
637	Contract Svcs - Billing/Collection	8,198	1,640	$ 9,838	$ -	$ 9,838
638	Contract Svcs - Meter Reading			$ -	$ -	$ -
639	Contract Svcs - Other	48,640	1,319	$ 49,959	$ (24,980)	$ 24,980
641	Rental of Building/Real Property	7,000	15,000	$ 22,000	$ (3,000)	$ 19,000
642	Rental of Equipment	-	-	$ -	$ -	$ -
643	Small Tools	-	-	$ -	$ -	$ -
648	Computer/Electronic Expenses	107	-	$ 107	$ -	$ 107
650	Transportation	2,742	(90)	$ 2,652	$ (873)	$ 1,779
656	Vehicle Insurance	1,322	-	$ 1,322	$ (1,322)	$ -
657	General Liability Insurance	4,044	(978)	$ 3,066	$ -	$ 3,066
658	Workers' Comp Insurance	-	-	$ -	$ -	$ -
659	Insurance - Other			$ -	$ -	$ -
666	Amortz. of Rate Case		6,333	$ 6,333	$ -	$ 6,333
667	Gross Revenue Fee (PUC)	479	40	$ 519	$ 138	$ 657
670	Bad Debt Expense	-	-	$ -	$ -	$ -
671	Cross Connection Control Program	150	(75)	$ 75	$ -	$ 75
673	Training and Certification	-	-	$ -	$ -	$ -
674	Consumer Confidence Report	157	-	$ 157	$ -	$ 157
675	Miscellaneous Expense	2,759	(215)	$ 2,544	$ (190)	$ 2,354
OE1	Other Expense 1			$ -	$ -	$ -
OE2	Other Expense 2			$ -	$ -	$ -
OE3	Other Expense 3			$ -	$ -	$ -
OE4	Other Expense 4			$ -	$ -	$ -
OE5	Other Expense 5			$ -	$ -	$ -
	TOTAL OPERATING EXPENSE	**$ 136,929**	**$ 65,158**	**$ 202,087**	**$ (62,113)**	**$ 139,974**
	OTHER REVENUE DEDUCTIONS					
403	Depreciation Expense	23,498		$ 23,498	$ (2,262)	$ 21,236
406	Amort of Plant Acquisition Adjustment			$ -	$ -	$ -
407	Amortization Expense			$ -	$ -	$ -
408.11	Property Tax	9,334	78	$ 9,412	$ (1,201)	$ 8,211
408.12	Payroll Tax	7,742	(2,462)	$ 5,280	$ (1,771)	$ 3,509
408.13	Other			$ -	$ -	$ -
409.10	Federal Income Tax			$ -	$ 6,999	$ 6,999
409.11	Oregon Income Tax			$ -	$ 2,355	$ 2,355
409.13	Extraordinary Items Income Tax			$ -	$ -	$ -
	TOTAL REVENUE DEDUCTIONS	**$ 177,503**	**$ 62,774**	**$ 240,277**	**$ (57,992)**	**$ 182,285**
	Net Operating Income	**$ (1,109)**	**$ 67,122**	**$ 66,013**	**$ (29,359)**	**$ 36,654**
	UTILITY RATE BASE					
101	Utility Plant in Service	1,051,997		$ 1,051,997	$ 1,019,060	$ 2,071,057
105	Construction Work in Progress			$ -	$ -	$ -
108	- Accumulated Depreciation of Plant	520,939		$ 520,939	$ 193,622	$ 714,561
271	- Contributions in Aid of Construction			$ -	$ 1,077,641	$ 1,077,641
272	+ Accumulated Amortization of CIAC			$ -	$ 195,867	$ 195,867
281	- Accumulated Deferred Income Tax			$ -	$ -	$ -
	- Excess Capacity			$ -	$ -	$ -
	= NET RATE BASE INVESTMENT	**$ 531,058**	**$ -**	**$ 531,058**	**$ (56,336)**	**$ 474,722**
	Plus: (working capital)					
151	Materials and Supplies Inventory	10,195		$ 10,195	$ -	$ 10,195
	Working Cash (Total Op Exp /12)	11,411	5,430	$ 16,841	$ (5,176)	$ 11,665
	TOTAL RATE BASE	**$ 552,664**	**$ 5,430**	**$ 558,094**	**$ (61,512)**	**$ 496,582**
	Rate of Return	-0.20%		11.83%		7.38%

CASE: UW 174
WITNESS: MALIA BROCK

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 103

Exhibits in Support of Testimony

September 14, 2018

Company Name: Gov't Camp
Docket No. UW 174
Test Year: 2016

Adjustment Summary

	REVENUES	Company Proposed Totals	Staff Adjustments to Company Totals	Staff Proposed Totals	Explanation of Adjustment
	Unmetered	$ -	$ -	$ -	
	Residential Flat Rate Water Sales	$ 90,356	$ 25,271	$ 115,627	revenue sensitive adjustment-residential and commercial flat rate combined
	Commercial Flat Rate Water Sales	$ 27,927	$ (27,927)	$ -	revenue sensitive adjustment-residential and commercial flat rate combined
	Residential Metered Water Sales	$ 21,019	$ (21,019)	$ -	revenue sensitive adjustment-combining res and commercial metered rate
	Commercial Metered Water Sales	$ 160,569	$ (66,896)	$ 93,673	revenue sensitive adjustment-combining res and commercial metered rate
	Fire Protection Sales (Hydrant Mtc.)	$ 2,188	$ (658)	$ 1,490	DR 36-3 year avg of expenses is $1263 per year/2016 test yr expense was $1,530
	Hydrant Water Sales (Water Hauling)	$ 4,231		$ 3,183	Adjusted to Staff proposed consumption rate
	Water Sales for Resale	$ -	$ -	$ -	
	Miscellaneous Services	$ -	$ 4,966	$ 4,966	2015,2016, 2017 average of Misc Revenues added for revenue inclusion in rate case.
	Cross Connection Control	$ -	$ -	$ -	
	Other	$ -	$ -	$ -	
0		$ -	$ -	$ -	
	Total Revenue	**$ 306,290**	**$ (87,351)**	**$ 218,939**	
Acct.	**OPERATING EXPENSES**				
601	Salaries and Wages - Employees	$ -	$ -	$ -	
603	Salaries and Wages - Officers	$ 56,782	$ (6,652)	$ 50,130	Adj to match salary approved in UI 404
604	Employee Pension & Benefits	$ 24,000	$ (24,000)	$ -	Remove as no current benefit to customers; possible retroactive ratemaking.
610	Purchased Water	$ -	$ -	$ -	
611	Telephone/Communications	$ 1,423	$ (420)	$ 1,003	DR 14--Double entry per Company
615	Purchased Power	$ 197	$ -	$ 197	
616	Fuel for Power Production	$ -	$ -	$ -	
617	Other Utilities	$ -	$ -	$ -	
618	Chemical / Treatment Expense	$ -	$ -	$ -	
619	Office Supplies	$ 767	$ -	$ 767	
619.1	Postage	$ 462	$ -	$ 462	
620	O&M Materials/Supplies	$ 6,583	$ -	$ 6,583	NOTE: Includes $4,460 of Contract Labor billed separately from Operator Contract.
621	Repairs to Water Plant	$ 6,171	$ -	$ 6,171	NOTE: Includes $3,915 of Repair labor billed separately in Water Operator Contract.
631	Contract Svcs - Engineering	$ -	$ -	$ -	
632	Contract Svcs - Accounting	$ 3,279	$ -	$ 3,279	
633	Contract Svcs - Legal	$ 1,782	$ -	$ 1,782	
634	Contract Svcs - Management Fees	$ -	$ -	$ -	
635	Contract Svcs - Testing	$ 1,255	$ -	$ 1,255	
636	Contract Svcs - Labor	$ 814	$ (814)	$ -	Removed labor expense as not enough detail provided of expense.
637	Contract Svcs - Billing/Collection	$ 9,838	$ -	$ 9,838	
638	Contract Svcs - Meter Reading	$ -	$ -	$ -	
639	Contract Svcs - Other	$ 49,959	$ (24,980)	$ 24,980	Remove 50% of contract for DRC for prudence due to overlapping duties of CEO.
641	Rental of Building/Real Property	$ 22,000	$ (3,000)	$ 19,000	Adjusted to approved amounts in UI 402 and UI 403.
642	Rental of Equipment	$ -	$ -	$ -	
643	Small Tools	$ -	$ -	$ -	
648	Computer/Electronic Expenses	$ 107	$ -	$ 107	
650	Transportation	$ 2,652	$ (873)	$ 1,779	Adj Buick to mileage using credit card receipts for gas; cost out of porportion to use.
656	Vehicle Insurance	$ 1,322	$ (1,322)	$ -	DR 28, 29, 69, 70, 71--Buick reimbursed as mileage, rmv insurance, not in UW 145
657	General Liability Insurance	$ 3,066	$ -	$ 3,066	
658	Workers' Comp Insurance	$ -	$ -	$ -	
659	Insurance - Other	$ -	$ -	$ -	
666	Amortz. of Rate Case	$ 6,333	$ -	$ 6,333	
667	Gross Revenue Fee (PUC)	$ 519	$ 138	$ 657	
670	Bad Debt Expense	$ -	$ -	$ -	
671	Cross Connection Control Program	$ 75	$ -	$ 75	
673	Training and Certification	$ -	$ -	$ -	
674	Consumer Confidence Report	$ 157	$ -	$ 157	
675	Miscellaneous Expense	$ 2,544	$ (190)	$ 2,354	Removed finance charges on bills.
OE1	Other Expense 1	$ -	$ -	$ -	
OE2	Other Expense 2	$ -	$ -	$ -	
OE3	Other Expense 3	$ -	$ -	$ -	
OE4	Other Expense 4	$ -	$ -	$ -	
OE5	Other Expense 5	$ -	$ -	$ -	
	TOTAL OPERATING EXPENSE	**$ 202,087**	**$ (62,113)**	**$ 139,974**	
	OTHER REVENUE DEDUCTIONS				
403	Depreciation Expense	$ 23,498	$ (2,262)	$ 21,236	Reflects Plant adj; ratemodel re-calculation
406	Amort of Plant Acquisition Adjustment	$ -	$ -	$ -	
407	Amortization Expense	$ -	$ -	$ -	
408.11	Property Tax	$ 9,412	$ (1,201)	$ 8,211	Rmvd Property Tax for property belonging to Lesli Ann Bekins not approved UI 402.
408.12	Payroll Tax	$ 5,280	$ (1,771)	$ 3,509	Adjusted to .07 Salary Tax ofsalary approved in UI 404.
408.13	Other	$ -	$ -	$ -	
409.10	Federal Income Tax	$ -	$ 6,999	$ 6,999	
409.11	Oregon Income Tax	$ -	$ 2,355	$ 2,355	
409.13	Extraordinary Items Income Tax	$ -	$ -	$ -	
	TOTAL REVENUE DEDUCTIONS	**$ 240,277**	**$ (57,992)**	**$ 182,285**	
	Net Operating Income	**$ 66,013**	**$ (29,359)**	**$ 36,654**	
	UTILITY RATE BASE				
101	Utility Plant in Service	$ 1,051,997	$ 1,019,060	$ 2,071,057	Rmvd meter allwnc, dble Tyrolean Meadows entry/CWIP/corrected Tank expense
105	Construction Work in Progress	$ -	$ -	$ -	
108	- Accumulated Depreciation of Plant	$ 520,939	$ 193,622	$ 714,561	Automatic Rate Model adj. per other Plant adjustments.
271	- Contributions in Aid of Construction	$ -	$ 1,077,641	$ 1,077,641	
272	+ Accumulated Amortization of CIAC	$ -	$ 195,867	$ 195,867	
281	- Accumulated Deferred Income Tax	$ -	$ -	$ -	
	- Excess Capacity	$ -	$ -	$ -	
	= NET RATE BASE INVESTMENT	**$ 531,058**	**$ (56,336)**	**$ 474,722**	
	Plus: (working capital)				
151	Materials and Supplies Inventory	$ 10,195	$ -	$ 10,195	
	Working Cash (Total Op Exp /12)	$ 16,841	$ (5,176)	$ 11,665	
	TOTAL RATE BASE	**$ 558,094**	**$ (61,512)**	**$ 496,582**	
	Rate of Return	11.83%	0.00%	7.38%	

CASE: UW 174
WITNESS: MALIA BROCK

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 104

Exhibits in Support of Testimony

September 14, 2018

Invested Plant

Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	Final Month of Deprec	2016	Accum. Deprec. Ending 2016	Remaining Plant
301	Organization	Various	-	-	-	-	-	Various	-	-	-
302	Franchises	Various	-	-	-	-	-	Various	-	-	-
303	Land and Land Rights	Various	-	-	-	-	-	Various	-	-	-
304	Structures and Improvements	Various	15,038	-	15,038	35	430	Various	418	6,311	8,727
	Water Supply Structures	Jan 1961	293		293	35	8	Dec 1995	-	293	-
	Other Structures	Jan 1961	127		127	35	4	Dec 1995	-	127	-
	UW 145--FENCE	Jul 2000	5,675		5,675	35	162	Jun 2035	162	2,675	3,000
	UW 145--FENCING	Jun 2004	8,943		8,943	35	256	May 2039	256	3,215	5,728
305	Collecting and Impounding Reservoirs	Various	-	-	-	50	-	Various	-	-	-
306	Lake, River and Other Intakes	Various	-	-	-	35	-	Various	-	-	-
307	Wells and Springs	Various	-	-	-	25	-	Various	-	-	-
308	Infiltration Galleries and Tunnels	Various	-	-	-	25	-	Various	-	-	-
309	Supply Main	Various	330,691	-	330,691	50	6,614	Various	6,215	232,740	97,951
	Water Mains & Canals	Jan 1961	11,965		11,965	50	239	Dec 2010	-	11,965	-
	Water Mains & Canals	Jan 1961	509		509	50	10	Dec 2010	-	509	-
	Water Mains & Canals	Jan 1962	2,629		2,629	50	53	Jan 2012	-	2,629	-
	Water Mains & Canals	Jan 1963	2,466		2,466	50	49	Dec 2012	-	2,466	-
	Water Mains & Canals	Jan 1964	169		169	50	3	Dec 2013	-	169	-
	Water Mains & Canals	Jan 1965	323		323	50	6	Dec 2014	-	323	-
	Water Mains & Canals	Jan 1966	999		999	50	20	Dec 2015	-	999	-
	Water Mains & Canals	Jan 1967	735		735	50	15	Dec 2016	15	735	-
	Water Mains & Canals	Jan 1968	326		326	50	7	Dec 2017	7	319	7
	Water Mains & Canals	Jan 1969	6,275		6,275	50	126	Dec 2018	126	6,024	251
	Water Mains & Canals	Jan 1970	89		89	50	2	Dec 2019	2	84	5
	Water Mains & Canals	Jan 1971	10,681		10,681	50	214	Dec 2020	214	9,827	854
	Water Mains & Canals	Jan 1972	56		56	50	1	Dec 2021	1	50	6
	Water Mains & Canals	Jan 1975	3,305		3,305	50	66	Dec 2024	66	2,776	529
	Water Mains & Canals	Jan 1976	1,155		1,155	50	23	Dec 2025	23	947	208
	Water Mains & Canals	Jan 1978	27,405		27,405	50	548	Dec 2027	548	21,376	6,029
	Line Extension	Oct 1980	28,142		28,142	50	563	Oct 2030	563	20,403	7,739
	Line Extension	Dec 1980	24,071		24,071	50	481	Dec 2030	481	17,371	6,700
	Line Extension	Jan 1981	3,227		3,227	50	65	Jan 2031	65	2,323	904
	Line Extension	Jan 1982	4,931		4,931	50	99	Jan 2032	99	3,452	1,479
	Line Extension	Apr 1982	770		770	50	15	Apr 2032	15	535	235
	UW 145--Existing Line to Spring Source (Transmission line)	Jan 1981	62,965		62,965	50	1,259	Dec 2030	1,259	45,335	17,630
	UW 145--Existing Line to Spring Source (Transmission line)	Jun 1981	23,475		23,475	50	470	May 2031	470	16,706	6,769
	UW 145--Existing Line to Spring Source (Transmission line)	Jun 1981	21,467		21,467	50	429	May 2031	429	15,277	6,190
	UW 145--Existing Line to Spring Source (Transmission line)	Oct 1981	3,446		3,446	50	69	Sep 2031	69	2,429	1,017
	UW 145--Existing Line to Spring Source (Transmission line)	Jan 1983	1,006		1,006	50	20	Dec 2032	20	684	322
	UW 145--Existing Line to Spring Source (Transmission line)	Sep 1983	12,979		12,979	50	260	Aug 2033	260	8,653	4,326
	UW 145--Existing Line to Spring Source (Transmission line)	Sep 1984	6,220		6,220	50	124	Aug 2034	124	4,022	2,198
	UW 145--Existing Line to Spring Source (Transmission line)	Sep 1985	4,954		4,954	50	99	Aug 2035	99	3,105	1,849
	UW 145--Existing Line to Spring Source (Transmission line)	Jun 1990	17,183		17,183	50	344	May 2040	344	9,136	8,047
	UW 145--Water Mains and Pipe	Jun 1991	26,030		26,030	50	521	May 2041	521	13,319	12,711
	UW 145--Water Mains and Pipe	Jul 1991	1,268		1,268	50	25	Jun 2041	25	647	621
	UW 145--Water Mains and Pipe	Jun 1992	4,689		4,689	50	94	May 2042	94	2,305	2,384
	UW 145--Water Mains and Pipe	Jun 1993	1,124		1,124	50	22	May 2043	22	530	594
	UW 145--Water Mains and Pipe	Jun 1993	1,471		1,471	50	29	May 2043	29	694	777
	UW 145--Water Mains and Pipe	Jun 1994	2,586		2,586	50	52	May 2044	52	1,168	1,418
	UW 145--Water Mains and Pipe	Jun 1994	1,737		1,737	50	35	May 2044	35	785	952
	UW 145--Water Mains and Pipe	Jun 1995	1,951		1,951	50	39	May 2045	39	842	1,109
	UW 145--Water Mains and Pipe	Jun 1996	4,393		4,393	50	88	May 2046	88	1,808	2,585
	UW 145--Grand Lodge (Ferguson Supply)	Aug 2016	1,519		1,519	50	30	Jul 2066	13	13	1,506
310	Power Generation Equipment	Various	-	-	-	30	-	Various	-	-	-
311	Pumping Equipment	Various	-	-	-	20	-	Various	-	-	-
320	Water Treatment Equipment	Various	582	-	582	20	29	Various	-	582	-
	Purification System	Jan 1961	582		582	20	29	Dec 1980	-	582	-
330	Distribution Reservoir and Standpipes	Various	367,164	-	367,164	50	7,343	Various	7,340	128,388	238,776
	Reservoir and Standpipes	Jan 1961	173		173	50	3	Dec 2010	-	173	-
	Reservoir and Standpipes	Jan 1971	1,072		1,072	50	21	Dec 2020	21	986	86
	Engineering Cost-Wood Tank-Pre SBA	Feb 1980	919		919	50	18	Feb 2030	18	679	240
	Engineering Cost-Wood Tank-Pre SBA	Mar 1980	333		333	50	7	Mar 2030	7	245	88
	Engineering Cost-Wood Tank-Pre SBA	May 1980	671		671	50	13	May 2030	13	492	179
	UW 145--100,000 Gal Wood Tank(adjstd amt in UW 174 per DR 37)	Jun 1980	59,249		59,249	50	1,185	May 2030	1,185	43,351	15,898
	Reservoir and Standpipes	Oct 1980	12,779		12,779	50	256	Oct 2030	256	9,265	3,514
	Tank	Sep 1981	1,510		1,510	50	30	Sep 2031	30	1,067	443
	250,000 Gal Water Tank	Aug 2004	278,926		278,926	50	5,579	Jul 2054	5,579	69,267	209,659
	True-Up of 250,000 Gal Water Tank	Aug 2004	11,532		11,532	50	231	Aug 2054	231	2,864	8,668

331	**Transmission and Distribution Mains**	**Various**	**116,230**	-	**116,230**	**50**	**2,325**	**Various**	**2,311**	**44,814**	**71,416**
	Lines	Jan 1981	4,027		4,027	50	81	Jan 2031	81	2,899	1,128
	Lines	Jul 1981	4,208		4,208	50	84	Jul 2031	84	2,988	1,220
	Lines	Aug 1981	6,560		6,560	50	131	Aug 2031	131	4,647	1,913
	Lines	Jan 1982	4,931		4,931	50	99	Jan 2032	99	3,452	1,479
	UW 145--Water Mains	Jun 1995	25,211		25,211	50	504	May 2045	504	10,883	14,328
	UW 145--Water Mains	Jun 1996	21,149		21,149	50	423	May 2046	423	8,706	12,443
	UW 145--Water Mains	Jun 1998	573		573	50	11	May 2048	11	213	360
	UW 145--Water Mains	Jun 1999	21,163		21,163	50	423	May 2049	423	7,442	13,721
	UW 145--Water Mains	Jun 2002	1,935		1,935	50	39	May 2052	39	564	1,371
	UW 145-ADD: Tyrolean Mdws Paid by Co for Developer	Sep 2007	14,419		14,419	50	288	Aug 2057	288	2,692	11,727
	Wyeast 2015 taps	Jul 2015	10,042		10,042	50	201	Jun 2065	201	301	9,741
	Wyeast 2016	May 2016	1,107		1,107	50	22	May 2066	15	15	1,092
	Wyeast 2016	May 2016	905		905	50	18	May 2066	12	12	893
333	**Services**	**Various**	**61,105**	-	**61,105**	**30**	**2,037**	**Various**	**1,763**	**29,465**	**31,640**
	Services	Jan 1961	809		809	30	27	Dec 1990	-	809	-
	Services	Jan 1962	265		265	30	9	Dec 1991	-	265	-
	Services	Jan 1963	105		105	30	4	Dec 1992	-	105	-
	Services	Jan 1965	200		200	30	7	Dec 1994	-	200	-
	Services	Jan 1966	118		118	30	4	Dec 1995	-	118	-
	Services	Jan 1968	49		49	30	2	Dec 1997	-	49	-
	Services	Jan 1969	124		124	30	4	Dec 1998	-	124	-
	Services	Jan 1970	390		390	30	13	Dec 1999	-	390	-
	Services	Jan 1971	356		356	30	12	Dec 2000	-	356	-
	Services	Jan 1972	105		105	30	4	Dec 2001	-	105	-
	Services	Jan 1973	79		79	30	3	Dec 2002	-	79	-
	Services	Jan 1974	48		48	30	2	Dec 2003	-	48	-
	Services	Jan 1975	201		201	30	7	Dec 2004	-	201	-
	Services	Jan 1976	592		592	30	20	Dec 2005	-	592	-
	Services	Jan 1977	931		931	30	31	Dec 2006	-	931	-
	Services	Jan 1978	2,312		2,312	30	77	Dec 2007	-	2,312	-
	UW 145--Services	Jun 1998	12,184		12,184	30	406	May 2028	406	7,547	4,637
	UW 145--Services	Jun 1999	3,945		3,945	30	132	May 2029	132	2,312	1,633
	UW 145--Services	Jun 2000	3,046		3,046	30	102	May 2030	102	1,684	1,362
	UW 145--Services	Jun 2002	6,702		6,702	30	223	May 2032	223	3,258	3,444
	UW 145--Cap Impr, hot tap 12" (Little Trail)	Apr 2007	2,295		2,295	30	77	Apr 2037	77	746	1,549
	UW 145--Keil & Payne	May 2007	3,190		3,190	30	106	May 2037	106	1,028	2,162
	UW 145--Montg Leige 8" line ext down montg to new hydrant	May 2007	18,910		18,910	30	630	May 2037	630	6,093	12,817
	Parry	May 2015	701		701	30	23	Apr 2045	23	39	662
	Bridge	Oct 2015	1,022		1,022	30	34	Sep 2045	34	43	979
	Scroggins	Oct 2015	150		150	30	5	Sep 2045	5	6	144
	Rice	Jul 2016	90		90	30	3	Jun 2046	2	2	89
	Law, Fritch	Aug 2016	675		675	30	23	Jul 2046	9	9	666
	Fritch, Slavin	Sep 2016	918		918	30	31	Aug 2046	10	10	908
	Parrish	Oct 2016	270		270	30	9	Sep 2046	2	2	268
	Soot	Nov 2016	323		323	30	11	Oct 2046	2	2	321
334	**Meters and Meter Installations**	**Various**	**39,892**	-	**39,892**	**20**	**1,995**	**Various**	**1,942**	**23,122**	**16,770**
	Meters	Jun 1999	7,500		7,500	20	375	May 2019	375	6,594	906
	Meters	Jun 2000	11,174		11,174	20	559	May 2020	559	9,265	1,909
	Meters	Jun 2002	4,125		4,125	20	206	May 2022	206	3,008	1,117
	HD Waterworks-Meters	Oct 2008	1,608		1,608	20	80	Oct 2028	80	663	945
	OR Earth-replace 2 meters, fence materials	Nov 2008	1,756		1,756	20	88	Nov 2028	88	717	1,039
	Meters (Karkanen & Tichie)	Sep 2009	197		197	20	10	Sep 2029	10	72	125
	Meter box & lid w?CIRDR	Oct 2009	964		964	20	48	Oct 2029	48	349	615
	Meter install Tichie (Zuber, Mclain)(225+270)	Nov 2009	495		495	20	25	Nov 2029	25	177	318
	Collins Lake Resort Meter	Dec 2009	338		338	20	17	Dec 2029	17	120	218
	OR Earth-replace Meter Collins Lake Resort	Dec 2009	1,154		1,154	20	58	Dec 2029	58	409	745
	Meters 2011 (mills4-berke & parrish)	Aug 2011	4,126		4,126	20	206	Jul 2031	206	1,117	3,009
	Meters 2012 (Nogaire, Berman, Gaither, Mills-2)	Oct 2012	753		753	20	38	Sep 2032	38	160	593
	Meters 2014 (Allen)	Jan 2014	1,310		1,310	20	66	Dec 2033	66	197	1,114
	Meters 2014 (Berman & Scroggins)	Oct 2014	648		648	20	32	Sep 2034	32	73	575
	Meters 2015 (Bridge)	Jan 2015	1,321		1,321	20	66	Dec 2034	66	132	1,189
	Hydrant Meter 2016 (2")	Apr 2016	1,546		1,546	20	77	Mar 2036	58	58	1,488
	Parrish	Sep 2016	406		406	20	20	Aug 2036	7	7	399
	Parrish, Soot	Dec 2016	405		405	20	20	Nov 2036	2	2	403
	Transportation of Equipment	May 2016	66		66	20	3	May 2036	2	2	64
335	**Hydrants**	**Various**	**13,559**	-	**13,559**	**40**	**339**	**Various**	**268**	**7,575**	**5,984**
	Hydrants	Jan 1961	664		664	40	17	Dec 2000	-	664	-
	Hydrants	Jan 1962	24		24	40	1	Dec 2001	-	24	-
	Hydrants	Jan 1963	44		44	40	1	Dec 2002	-	44	-
	Hydrants	Jan 1964	24		24	40	1	Dec 2003	-	24	-
	Hydrants	Jan 1971	403		403	40	10	Dec 2010	-	403	-
	Hydrants	Jan 1973	40		40	40	1	Dec 2012	-	40	-

	Hydrants	Jan 1974	26		26	40	1	Dec 2013	-	26	-
	Hydrants	Jan 1975	64		64	40	2	Dec 2014	-	64	-
	Hydrants	Jan 1976	75		75	40	2	Dec 2015	-	75	-
	Hydrants	Jan 1978	234		234	40	6	Dec 2017	6	228	6
	Hydrants	Jan 1980	640		640	40	16	Dec 2019	16	592	48
	Hydrants	Sep 1981	2,938		2,938	40	73	Sep 2021	73	2,595	343
	UW 145--Hydrants	Jun 1995	1,716		1,716	40	43	May 2035	43	926	790
	UW 145--Hydrants	Jun 1995	158		158	40	4	May 2035	4	85	73
	UW 145--Hydrants	Jun 1999	4,000		4,000	40	100	May 2039	100	1,758	2,242
	Hydrants	Aug 2016	495		495	40	12	Jul 2056	5	5	490
	Hydrants	Aug 2016	2,014		2,014	40	50	Jul 2056	21	21	1,993
336	**Cross Connection Control**	Various	-	-	-	15	-	Various	-	-	-
339	**Other Plant**	Various	-	-	-	30	-	Various	-	-	-
340	**Office Furniture and Equipment**	Various	2,850	-	2,850	20	143	Various	27	2,570	280
	Desk	Jan 1963	35		35	20	2	Dec 1982	-	35	-
	UW 145--Misc.	Jan 1983	1,006		1,006	20	50	Dec 2002	-	1,006	-
	UW 145--Fax	Aug 1989	795		795	20	40	Jul 2009	-	795	-
	UW 145--Printer	Jun 1991	477		477	20	24	Jun 2011	-	477	-
	UW 145--Copier	Jun 2007	537		537	20	27	May 2027	27	257	280
341	**Transportation Equipment**	Various	12,021	-	12,021	7	1,676	Various	-	12,021	-
	Snow Kat	Jan 1961	450		450	20	23	Dec 1980	-	450	-
	UW 145--Buick-auto	Jan 2005	5,000		5,000	7	714	Dec 2011	-	5,000	-
	Truck	Jan 1963	2,571		2,571	7	367	Dec 1969	-	2,571	-
	UW 145--Snow Cat	Jun 1977	4,000		4,000	7	571	May 1984	-	4,000	-
343	**Tools, Shop, and Garage Equipment**	Various	7,347	-	7,347	15	490	Various	361	5,893	1,454
	UW 145--Pipe Detector	Jun 2000	500		500	15	33	May 2015	-	500	-
	UW 145--Camcorder	Jun 2000	1,434		1,434	15	96	May 2015	-	1,434	-
	UW 145--Tools	Jun 2002	1,936		1,936	15	129	May 2017	129	1,882	54
	UW 145--Tools	Jun 2006	969		969	15	65	May 2021	65	684	285
	UW 145--Tool/Meter used in flushing hydrants	Sep 2008	2,508		2,508	15	167	Sep 2023	167	1,393	1,115
344	**Laboratory Equipment**	Various	-	-	-	15	-	Various	-	-	-
345	**Power Operated Equipment**	Various	174	-	174	10	17	Various	-	174	-
	Thawer	Jan 1973	174		174	10	17	Dec 1982	-	174	-
346	**Communication Equipment**	Various	-	-	-	10	-	Various	-	-	-
347	**Electronic/Computer Equipment**	Various	1,246	-	1,246	5	249	Various	-	1,246	-
	Laptop Computer 1246.00 in 2010	Sep 2010	1,246		1,246	5	249	Aug 2015	-	1,246	-
348	**Miscellaneous Equipment**	Various	25,517	-	25,517	10	2,552	Various	591	23,792	1,725
	General Equipment	Jan 1961	207		207	10	21	Dec 1970	-	207	-
	General Equipment	Jan 1962	9,588		9,588	10	959	Dec 1971	-	9,588	-
	General Equipment	Jan 1963	282		282	10	28	Dec 1972	-	282	-
	General Equipment	Jan 1971	522		522	10	52	Dec 1980	-	522	-
	Miscellaneous	Jan 1977	930		930	10	93	Dec 1986	-	930	-
	General Equipment	Jan 1978	804		804	10	80	Dec 1987	-	804	-
	Miscellaneous Equipment	Jun 2000	7,271		7,271	10	727	May 2010	-	7,271	-
	Mapping Project	Dec 2009	5,913		5,913	10	591	Dec 2019	591	4,188	1,725
	TOTALS	Various	993,416	-	993,416	Various	26,237	Various	21,236	518,694	474,722

Original Plant In Service Cost	993,416
Less: Excess Capacity	-
"Used & Useful" Plant	993,416
Less Accum Depreciation	518,694
NET PLANT	**474,722**

Depreciation Expense	**21,236**

Plant Deleted:

Tyrolean Meadows Overruns True Up	Dec 2017	14,419		14,419	50	288	Dec 2067
ADD: Allowance for Instaling Meters	Oct 2011	49,500		49,500	20	2,475	Sep 2031
CWIP-Line Replacement	Jan 2018	5,441		5,441	50	109	Dec 2067

Plant Added:

DR 37--100,000-GAL WOOD TANK corrected original entry of $48,475 to $59,249.22; original install date unchanged 6-1-1980	Original Amount June 1980	$48,475	Corrected Amount	59,249	Difference	10,774

Company Name: Gov't Camp
Docket No. UW 174
Test Year: 2016

CIAC Plant

Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	Final Month of Deprec	Before 1985	2016	Accum. Deprec. Ending 2016	Remaining Plant
301	Organization	Various	-	-	-	-	-	Various	-	-	-	-
302	Franchises	Various	-	-	-	-	-	Various	-	-	-	-
303	Land and Land Rights	Various	-	-	-	-	-	Various	-	-	-	-
304	Structures and Improvements	Various	-	-	-	35	-	Various	-	-	-	-
305	Collecting and Impounding Reservoirs	Various	-	-	-	50	-	Various	-	-	-	-
306	Lake, River and Other Intakes	Various	-	-	-	35	-	Various	-	-	-	-
307	Wells and Springs	Various	-	-	-	25	-	Various	-	-	-	-
308	Infiltration Galleries and Tunnels	Various	-	-	-	25	-	Various	-	-	-	-
309	Supply Main	Various	-	-	-	50	-	Various	-	-	-	-
310	Power Generation Equipment	Various	-	-	-	30	-	Various	-	-	-	-
311	Pumping Equipment	Various	-	-	-	20	-	Various	-	-	-	-
320	Water Treatment Equipment	Various	-	-	-	20	-	Various	-	-	-	-
330	Distribution Reservoir and Standpipes	Various	-	-	-	50	-	Various	-	-	-	-
331	Transmission and Distribution Mains	Various	1,077,641	-	1,077,641	50	21,553	Various	-	21,553	195,867	881,774
	12" line Lige to Gov Camp Loop	Nov 2002	335,071		335,071	50	6,701	Oct 2052	-	6,701	94,937	240,134
	12" line Multorpor to Skibowl	Oct 2006	198,285		198,285	50	3,966	Sep 2056	-	3,966	40,648	157,637
	8" line WyEast to Blossom	Oct 2006	150,719		150,719	50	3,014	Sep 2056	-	3,014	30,897	119,822
	12" Bore Line under Hwy 26 to Tyrolean	Sep 2007	85,000		85,000	50	1,700	Aug 2057	-	1,700	15,867	69,133
	Tyrolean Overruns - TIF Portion	Jan 2008	14,419		14,419	50	288	Dec 2057	-	288	2,595	11,824
	ODOT Project 4" line replacement	Jul 2013	50,000		50,000	50	1,000	Jun 2063	-	1,000	3,500	46,500
	Tyrolean Overruns - Berman Portion	Nov 2013	14,419		14,419	50	288	Nov 2063	-	288	913	13,506
	12" line from Tyrolean to SkiBowl West	Aug 2015	229,728		229,728	50	4,595	Jul 2065	-	4,595	6,509	223,219
333	Services	Various	-	-	-	30	-	Various	-	-	-	-
334	Meters and Meter Installations	Various	-	-	-	20	-	Various	-	-	-	-
335	Hydrants	Various	-	-	-	40	-	Various	-	-	-	-
336	Cross Connection Control	Various	-	-	-	15	-	Various	-	-	-	-
339	Other Plant	Various	-	-	-	30	-	Various	-	-	-	-
340	Office Furniture and Equipment	Various	-	-	-	20	-	Various	-	-	-	-
341	Transportation Equipment	Various	-	-	-	7	-	Various	-	-	-	-
343	Tools, Shop, and Garage Equipment	Various	-	-	-	15	-	Various	-	-	-	-
344	Laboratory Equipment	Various	-	-	-	15	-	Various	-	-	-	-
345	Power Operated Equipment	Various	-	-	-	10	-	Various	-	-	-	-
346	Communication Equipment	Various	-	-	-	10	-	Various	-	-	-	-
347	Electronic/Computer Equipment	Various	-	-	-	5	-	Various	-	-	-	-
348	Miscellaneous Equipment	Various	-	-	-	10	-	Various	-	-	-	-
	TOTALS	Various	1,077,641	-	1,077,641	Various	21,553	Various	-	21,553	195,867	881,774

Original Plant In Service Cost	1,077,641
Less: Excess Capacity	-
"Used & Useful" Plant	1,077,641
Less Accum Amort of CIAC	195,867
NET PLANT	**881,774**

Depreciation Expense	**21,553**

CASE: UW 174
WITNESS: MALIA BROCK

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 105

Exhibits in Support of Testimony

September 14, 2018

DR 68

DR 19 requested whether the issue regarding customers identified in Condition 11 of the Stipulated Agreement in UW 145 that were billed for a smaller than actual sized meters had been corrected. The Company's response indicates that the Master Meter is sized at 1.5 inches and the customers that are behind the Master Meter are billed a 3/4 inch meter size due to their each having a 3/4 inch line size. In supplemental DR 67:

a. Please identify all customers by name that are currently being billed rates as a 3/4 inch meter size that do not have individual meters.

RESPONSE:

Objection. DR 68 is ambiguous and vague as Staff appears to be confusing individual units under a master meter with customers. The master meter customer is the customer of record. Not waiving the foregoing objection, the Company responds that the master meter customer does not provide the Company with names for the individual units, nor is that information necessary to provide water service.

b. Please provide the number of customers currently billed for a meter and metered usage that do not have their own individual meters, including all customers who are served by a Master meter that also serves other customers.

RESPONSE:

Objection. Sub-part (b) of DR 68 is vague and indicates a lack of understanding as to how master meter accounts function. Not waiving this objection, the Company responds that there are 304 individual units served under master meter accounts. The individual units do not have individual meters and are not billed for individual metered usage. The Company charges the master meter customer a base rate for the size of the line going to each individual unit under the master meter account. The total consumption is also billed to the master meter customer. Consumption is measured through the master meter.

c. Please comprehensively explain the methodology employed to bill the customers referred to above in DR 67(a) and DR 67(b), including the methodology used to calculate their usage.

RESPONSE:

Objection. Sub-part (c) is vague and confusing. Staff's DR 67(a) sought information about the Company's intentions to complete its metering program and Staff's DR 67(b) requests information about how Hoodland Fire Station, Stockton, and Smith were determined to be low volume customers. Not waiving this objection and for the purpose of efficiency the Company assumes this sub-part contains a typographical error and intended to request information about DR 68(a) and DR 68(b).

If staff is asking about DR 68(a) and (b), each master meter customer is billed at the tariffed rate for the size of line to each individual unit under the master meter account. Usage is calculated off of the master meter.

If staff is asking about customers referenced in DR 67(a) and DR 67(b), they are billed as flat-rate customers at the tariffed rate for the size of the line serving the customer. Flat rate customers' usage is not calculated.

d. Please explain whether and why the customers referred to above in DR 67(b) are billed individually as flat-rate customers.

RESPONSE:

Objection. Sub-part (d) is vague and confusing. Staff's DR 67(b) requests information about how Hoodland Fire Station, Stockton, and Smith were determined to be low volume customers. Not waiving this objection and for the purpose of efficiency the Company assumes this sub-part contains a typographical error and intended to request information about DR 68(b).

If staff is asking about DR 68(b), the units under a master meter, then the answer is that they are not billed individually as flat rate customers.

If staff is asking about customers referenced in 67(b), they are flat rate customers because they were classified as flat-rate customers in UW 145, and they are not metered.

e. Please explain whether and why the Master Meter that is in service for the customers referred to above in DR 67(b) is charged for the entire water service at the rate for 1.5 inch metered service.

RESPONSE:

Objection. Sub-part (e) is vague and confusing. Staff's DR 67(b) requests information about how Hoodland Fire Station, Stockton, and Smith were determined to be low volume customers. Not waiving this objection and for the purpose of efficiency the Company assumes this sub-part contains a typographical error and intended to request information about DR 68(b). None of the individual units referred to in DR 68(b) are individually billed or deemed the master meter customer. The Company charges the master meter customer a base rate for the size of the line going to each individual unit under the master meter account. How the master meter customer charges the individual unit served is outside the Company's purview.

DR 76

In DR 19, the Company response indicates that Account #311, Collins Lake Chalet, has a Master Meter of 1.5 inches, and that this account is billed for each of the 3/4 inch line sizes providing water to the individual units branching off the Master Meter at the 3/4 inch meter size rate. Customer billing data provided by the Company confirms Collins Lake Chalet is currently billed for 151 3/4 inch meters.

In supplemental DR 76 to DR 19, please explain whether the 1.5 inch Master Meter at Collins Lake Chalet is the ONLY meter serving the multi-dwelling units at this complex. If it is the only meter serving the multi-dwelling units at this complex, please explain how the 1.5 inch Master Meter and the line size associated with that Master Meter is able to provide sufficient water and water pressure to the 151 customers served by the 3/4 inch pipes beyond the Master Meter in the multi-dwelling units at this complex. Describe in your response what line size associated with the Master Meter (e.g., whether it is a 1.5 inch line) and include documentation of that line size.

RESPONSE:

The 151 individual units are spread among 24 buildings. Each building is served by a 1.5" master meter. Therefore, there are 24-1.5" master meters under Collin Lake Homeowners Association's master meter account.

DR 19

Please explain whether the two metered customers listed in Condition 11 in the Stipulated Agreement in UW 145 that were billed for a smaller than actual meter size have been corrected to their correct meter sizes in the proposed new rates?

RESPONSE:

The two metered customers referenced above are actually one customer with two accounts.

1) Account #311 is a master meter providing service to multi-dwellings units. The master meter is 1 ½“, however, the individual service lines are ¾”. Therefore, the base rate for the individual units are charged at the ¾” rate.

2) Account #311.2 is another master meter providing service to the pool and the clubhouse. This master meter is 1 ½”, however, the individual service lines are ¾”. Therefore, the base rate for the pool and clubhouse are charged at the ¾” rate.

The Company is using the correct ¾” meter size in rate design and customer count in its proposal.

DR 1

Please provide billing data to support Government Camp Water Company Inc.'s (Government Camp) sales operating revenue for the 2016 test year. In that billing data, please provide 1) the customer names, 2) the line or meter size, 3) the usage for metered customers, 4) the amount billed for usage, 5) the amount billed for the base charge and 6) the amount billed for other charges for each of the amounts billed to each customer account for each of the four quarters billed in 2016.

RESPONSE:

Billing data provided in separate attachment as Data Response 1 Attachment.

Table 10. Excerpted from DR 1

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/12/2016	12-6359	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
03/28/2016	12-6726	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
04/01/2016	12-6511	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
05/24/2016	12-6728	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
05/27/2016	12-6729	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
06/23/2016	12-6727	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
07/20/2016	12-7095	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
08/01/2016	12-7096	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/12/2016	12-7099	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
09/14/2016	12-7098	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
10/18/2016	12-7470	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
10/20/2016	12-5995	Connection Fee		471.3 · New Connection Fees	141 · Accounts Receivable	1.00	450.00
11/28/2016	12-5997	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
11/28/2016	12-7471	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/03/2016	12-5999	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-5998	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7468	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00
12/12/2016	12-7472	Administrative Fee	New account set-up	471.2 · Application Fees	141 · Accounts Receivable	1.00	25.00

DR 80

With respect to the billing data provided in response to DR 1, in supplemental DR 80, please explain the difference between a MH 4" metered customer, a MH 2" metered customer, a CM 2" metered customer and a CM 4" metered customer. (In this and the following DRs, please see the below billing data excerpted from the Company's response to DR 1 for an example of the data referred to in this data request).

02/08/2016	12-6360	K & E Excavating, Inc	MH	Quarterly	461.7 · Metered Hydrant Sales	1.00	2,392.43
01/01/2016	12-6279	Skibowl E 361	MH 4"	Quarterly	461.2 · Commercial Metered	1.00	104.64
04/01/2016	12-6649	Skibowl E 361	MH 4"	Quarterly	461.2 · Commercial Metered	1.00	104.64
07/01/2016	12-7016	Skibowl E 361	MH 4"	Quarterly	461.2 · Commercial Metered	1.00	104.64
10/01/2016	12-7390	Skibowl E 361	MH 4"	Quarterly	461.2 · Commercial Metered	1.00	104.64
01/01/2016	12-6306	Summit Ski Area 36	MH 2"	Quarterly	461.2 · Commercial Metered	1.00	89.43
04/01/2016	12-6676	Summit Ski Area 36	MH 2"	Quarterly	461.2 · Commercial Metered	1.00	89.43
07/01/2016	12-7044	Summit Ski Area 36	MH 2"	Quarterly	461.2 · Commercial Metered	1.00	89.43
10/01/2016	12-7418	Summit Ski Area 36	MH 2"	Quarterly	461.2 · Commercial Metered	1.00	89.43

RESPONSE:

MH means metered hydrant. Therefore, a MH 4" is a 4" metered hydrant. A MH 2" is a 2" metered hydrant. All MH customers are billed when the Ski Area shuts down following winter season.

1) K & E is a water hauler that draws water from a metered hydrant.
2) Summit Ski Area draws its water from a metered hydrant.
3) Skibowl East originally was classified like Summit Ski Area as a Metered Hydrant customer. A 4" meter was installed, and it has been reclassified as a commercial metered customer.

CM 2" and CM 4" are commercial metered customers with 2" and 4" meters, respectively.

DR 1

Please provide billing data to support Government Camp Water Company Inc.'s (Government Camp) sales operating revenue for the 2016 test year. In that billing data, please provide 1) the customer names, 2) the line or meter size, 3) the usage for metered customers, 4) the amount billed for usage, 5) the amount billed for the base charge and 6) the amount billed for other charges for each of the amounts billed to each customer account for each of the four quarters billed in 2016.

RESPONSE:

Billing data provided in separate attachment as Data Response 1 Attachment.

Table 11. Excerpted from DR 1

Date	Num	Item	Item Description	Account	Split	Qty	Credit
01/01/2016	12-6279	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
01/01/2016	12-6306	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
02/08/2016	12-6360	MH	Quarterly base rate	461.7 · Metered Hydrant Sales	141 · Accounts Receivable	1.00	2,392.43
04/01/2016	12-6649	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
04/01/2016	12-6676	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
07/01/2016	12-7016	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
07/01/2016	12-7044	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43
10/01/2016	12-7390	MH 4"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	104.64
10/01/2016	12-7418	MH 2"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	1.00	89.43

DR 93

Please provide the actual meter reading records to support the billing data provided in DR 1.

RESPONSE:

See DR 93 Response Attachment.

Table 12. Meter Records Excerpted from DR 93

CM	3 accts	17581626	1"	Gal	7175600	7279900	104,300	**13,944**

DR 1

Please provide billing data to support Government Camp Water Company Inc.'s (Government Camp) sales operating revenue for the 2016 test year. In that billing data, please provide 1) the customer names, 2) the line or meter size, 3) the usage for metered customers, 4) the amount billed for usage, 5) the amount billed for the base charge and 6) the amount billed for other charges for each of the amounts billed to each customer account for each of the four quarters billed in 2016.

RESPONSE:

Billing data provided in separate attachment as Data Response 1 Attachment.

Table 13. Billing Records Excerpted from DR 1

Date	Num	Acct. #	Item	Item Description	Account	Split	Qty	
01/01/2016	12-6061	040	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
01/01/2016	12-6061	040	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
04/01/2016	12-6430	040	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
04/01/2016	12-6430	040	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
07/01/2016	12-6797	040	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
07/01/2016	12-6797	040	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
10/01/2016	12-7168	040	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
10/01/2016	12-7168	040	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,161.99	13.01
01/01/2016	12-6142	036	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
01/01/2016	12-6142	036	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
04/01/2016	12-6512	036	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
04/01/2016	12-6512	036	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
07/01/2016	12-6879	036	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
07/01/2016	12-6879	036	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
10/01/2016	12-7252	036	CM 1"	Quarterly base rate	461.2 · Commercial Metered	141 · Accounts Receivable	2.00	118.92
10/01/2016	12-7252	036	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,161.99	13.01
01/01/2016	12-6237	175	RM 1"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00	59.46
01/01/2016	12-6237	175	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
04/01/2016	12-6606	175	RM 1"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00	59.46
04/01/2016	12-6606	175	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
07/01/2016	12-6973	175	RM 1"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00	59.46
07/01/2016	12-6973	175	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,273.08	14.26
10/01/2016	12-7346	175	RM 1"	Quarterly base rate	461.1 · Residential Metered	141 · Accounts Receivable	1.00	59.46
10/01/2016	12-7346	175	C. Cf's used	Water consumption for the quarter ($1.12/100Cf	461.2 · Commercial Metered	141 · Accounts Receivable	1,161.99	13.01
					Staff's Computation of Total Consumption Billed in 2016 per DR 1		14,944	cf
					DR 93 Meter Reading Consumption Measured		13,944	cf
					Staff's Computation of Overbilled Difference		1,000	cf

DR 82

With respect to the billing data provided in DR 1, in supplemental DR 82, please explain the consumption billed in the 2016 test year to customer Best Western Mt Hood Inn, 006. In your response, please confirm whether this customer was billed $2.46 for consumption for the entire year in the 2016 test year.

01/01/2016	12-6016	Best Western Mt Hood Inn	006	CM 6"	Quarterly	461.2 · Cor	141 · Accounts Receivable	1.00	121.29
04/01/2016	12-6384	Best Western Mt Hood Inn	006	CM 6"	Quarterly	461.2 · Cor	141 · Accounts Receivable	1.00	121.29
07/01/2016	12-6751	Best Western Mt Hood Inn	006	CM 6"	Quarterly	461.2 · Cor	141 · Accounts Receivable	1.00	121.29
10/01/2016	12-7122	Best Western Mt Hood Inn	006	CM 6"	Quarterly	461.2 · Cor	141 · Accounts Receivable	1.00	121.29
10/01/2016	12-7122	Best Western Mt Hood Inn	006	C. Cf's use	Water con	461.2 · Cor	141 · Accounts Receivable	219.25	2.46

RESPONSE:

Yes, $2.46 is the correct amount for 2016 consumption for the quarter. The Company provides the Best Western Mt Hood Inn a connection to the water system for fire suppression purposes only. Consumption would increase only in event of a fire.

DR 93

Please provide the actual meter reading records to support the billing data provided in DR 1.

RESPONSE:

See DR 93 Response Attachment.

Excerpted Response to DR 93

CM	6	Best Western Mt. Hood Inn -ByPass	no # avail	3/4"	CF	2	140	138	**138**
CM	6	Best Western Mt. Hood Inn -Main	no # avail	6"	CF	99998506	99999245	739	**739**

DR 91

With respect to the billing data provided in DR 1, in supplemental DR 91, please explain why Summit Ski Area 367.1 is billed for a MH 2 inch meter base rate but has not been billed for consumption.

01/01/2016 12-6306	Summit Ski Area	367.1	MH 2"	Quarterly base rate	461.2 · Commercial Metered	1.00	89.43
04/01/2016 12-6676	Summit Ski Area	367.1	MH 2"	Quarterly base rate	461.2 · Commercial Metered	1.00	89.43
04/18/2016 FC 1579	Summit Ski Area	367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	3.22
07/01/2016 12-7044	Summit Ski Area	367.1	MH 2"	Quarterly base rate	461.2 · Commercial Metered	1.00	89.43
07/18/2016 FC 1581	Summit Ski Area	367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	4.89
07/18/2016 FC 1642	Summit Ski Area	367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	4.98
10/01/2016 12-7418	Summit Ski Area	367.1	MH 2"	Quarterly base rate	461.2 · Commercial Metered	1.00	89.43
10/18/2016 FC 1717	Summit Ski Area	367.1	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	6.67
04/18/2016 FC 1566	Summit Ski Area	367	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	22.00
07/18/2016 FC 1643	Summit Ski Area	367	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	22.40
10/18/2016 FC 1718	Summit Ski Area	367	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	0.40

RESPONSE:

Charlie Wessinger is the "customer of record." In 2014, Mr. Wessinger turned over the management of Summit Ski Area to Mt. Hood Management. Mt. Hood Management ("MHM") paid the water bills.

The Summit Ski Area consumption bill was sent to the MHM in 2016. When payment was not received, Mr. Wessinger was rebilled for the 2016 consumption. The Company received payment from Mr. Wessinger in 2017. Since the Company bills at the end of the ski season (depending on the snow pack), a rebilled charge can be received in the next year.

DR 87

In the billing data provided in DR 1, in supplemental DR 87, Skibowl E 361 is billed for a MH 4 inch meter at $104.64 for each of the four quarters in 2016. Consumption for this account was billed twice on the same day, 3-12-2016, using the same dollar amount and consumption; $1,422.23 for 1270 cubic feet. In your response, please explain why this same amount was billed twice on the same day and explain why this consumption was not billed for each quarter in the same manner as other customer billing data.

03/12/2016 12-6361	Skibowl E 361	C. CF's used	Water consumption for the quarte	461.2 · Commercial Metered	126,985.00	1,422.23
03/12/2016 12-6361	Skibowl E 361	C. CF's used	Water consumption for the quarte	461.2 · Commercial Metered	126,985.00	1,422.23
01/01/2016 12-6279	Skibowl E 361	MH 4"	Quarterly base rate	461.2 · Commercial Metered	1.00	104.64
01/18/2016 FC 1485	Skibowl E 361	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	3.84
04/01/2016 12-6649	Skibowl E 361	MH 4"	Quarterly base rate	461.2 · Commercial Metered	1.00	104.64
04/18/2016 FC 1556	Skibowl E 361	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	1.95
07/01/2016 12-7016	Skibowl E 361	MH 4"	Quarterly base rate	461.2 · Commercial Metered	1.00	104.64
10/01/2016 12-7390	Skibowl E 361	MH 4"	Quarterly base rate	461.2 · Commercial Metered	1.00	104.64
10/18/2016 FC 1708	Skibowl E 361	Late Pmt Penalty	1.8% on Overdue Balance	471.1 · Finance Charges	1.00	1.92

RESPONSE:

Originally, Skibowl E was a winter only customer. Winter only customers were billed consumption at the end of the ski season to ensure that they had funds to pay for their water consumption. During this time period in question, Skibowl E started irrigating in the summer as well; thus, Skibowl E was reclassified as a year-round consumption customer. As a year-round consumption customer, Skibowl E's meter would be read each July and consumption would be billed quarterly.

There were two billing errors on Skibowl E's account on the part of the bookkeeper/billing company. They are both related to the transition of Skibowl E from a winter consumption only customer to a year-round consumption customer. The first error was caught by Ms. Bekins in March 2016. She discovered that Skibowl E had not been billed quarterly (on 10/1/2015 and 1/1/2016) as it should have. To correct this oversite, on March 12, 2016, the Company billed Skibowl E two charges of $1,422.23 (the two missing billings). Skibowl E paid the two bills on April 9, 2016 with a payment of $2,844.46. This corrected the first error.

The second billing error was due to a mix up in the billing by the bookkeeper for the last two quarterly billings. The bookkeeper missed billing Skibowl E for consumption for the last two quarters, which should have been billed on 4/1/2016 and 7/1/2016. This error was discovered by Ms. Bekins as she researched staff's DR 87. It serves as a good example of why Ms. Bekins full-time management and oversight of the Company is critical.

DR 93

Please provide the actual meter reading records to support the billing data provided in DR 1.

RESPONSE:

See DR 93 Response Attachment.

Attachment Page 1

Excerpted Response DR 93 Meter Consumption Data.

COLLINS LAKE CHALET PROJECT Accts 311 & 311.1

TYPE	Bldg #	CF/Gal	Meters Read July 15 2015	Meters Read July 15 2016	2016 Total Cons in CF
CM	A	CF	264910	302250	37,340
CM	B	CF	164070	174670	10,600
CM	C	CF	284220	311580	27,360
CM	D	CF	121460	127910	6,450
CM	E	CF	216420	235580	19,160
CM	F	CF	328720	353120	24,400
CM	G	CF	203240	219130	15,890
CM	H	CF	171430	199470	28,040
CM	I	CF	85790	96790	11,000
CM	J	CF	191690	209280	17,590
CM	K	CF	178050	206490	28,440
CM	L	CF	133160	147300	14,140
CM	M	CF	100980	130230	29,250
CM	N	CF	173510	190050	16,540
CM	O	CF	179670	199590	19,920
CM	P	CF	136740	152820	16,080
CM	Q	CF	85990	104350	18,360
CM	R	CF	16250	20830	4,580
CM	S	CF	110530	120910	10,380
CM	T	CF	81750	87900	6,150
CM	U	CF	25710	26280	570
CM	V	CF	85340	94130	8,790
CM	W	CF	26531	29790	3,259
CM	X	CF	268250	301120	32,870

407,159.00 Total Cons CF 2016

101,789.75 Cons/Qtr beginning Q4 2016

COLLINS LAKE CHALET PROJECT POOL ACCT 311.2

CM	Clubhouse	CF	152890	193200	201,870

Total Cons CF 2016

Cons/Qtr Billed Oct 1, 2016

50467.5

Billed Oct 1, 2016

Attachment Page 2

Excerpted Response DR 93 Meter Consumption Data.

ALPINE CREST SUBDIVISION

					2015	2016	2016
TYPE	Act #	Meter Size	CF/Gal	Meter Number	Jul-15	Jul-15	TOT CONS
RM	320	3/4"	CF	48932629	41586	45487	**3,901**
CM	358	3/4"	CF	49054712	15105	16323	**1,218**
RM	161	3/4"	CF	19228472	6802	8761	**1,959**
RM	339	3/4"	CF	49054708	21167	28462	**7,295**
RM	317	3/4"	CF	82058161	30279	32227	**1,948**
RM	318	3/4"	CF	18238629	13185	19305	**6,120**
RM	324	3/4"	CF	49054709	50876	55769	**4,893**
CM	332	3/4"	CF	48932627	42215	45291	**3,076**
RM	314	3/4"	CF	80674124	7332	8205	**873**
RM	kam	3/4"	CF	76632487	8100	10996	**2,896**
RM	349	3/4"	CF	81340319	9138	9952	**814**
RM	328	3/4"	GAL	89253683	22760	27070	**576**
CM	368	3/4"	CF	92696900	2702	3177	**475**
RM	321	3/4"	CF	79534658	35236	40142	**4,906**
RM	251	3/4"	CF	48932630	12991	13343	**352**
RM	319	3/4"	CF	79534654	10314	11176	**862**

42,164 Total Cons CF 2016

Attachment, Page 3

Excerpted Response/DR 93 Meter Consumption Data-Man Town.

C/R	ACCT#	MTR #	Size	C/G	Jul-15	July 2016	TOT CONS 2016	TOT CF 2016
CM	152	48932632	1"	CF	36774	38276	1,502	**1,502**
RM	263	652	3/4"	CF			0	**0**
CM	331	80674125	3/4"	CF	83473	114167	30,694	**30,694**
RM	184	81458998	3/4"				0	**0**
RM	341	60402820	2"	CF	8370	9660	1,290	**1,290**
CM	302	52213221	1"	CF	43648	44381	733	**733**
CM	5	60820249	1 1/2"	CF	9650	21380	11,730	**11,730**
CM	177	no # avail	3/4"	CF	8019	8831	812	**812**
RM	356	52826338	3/4"	CF	355	364	9	**9**
CM	17	81459001	3/4"	CF			0	**0**
CM	6	no # avail	3/4"	CF	2	140	138	**138**
CM	6	no # avail	6"	CF	99998506	99999245	739	**739**
CM	313	76632485	3/4"	CF	148924	166425	17,501	**17,501**
CM	assign #	81340318	3/4"	CF	2203	2453	250	**250**
CM	8	60638388	2"	CF	5020	10990	5,970	**5,970**
CM	32	48398510	3/4"	CF	207922	212080	4,158	**4,158**
CM	9	77874323	1"	CF	207	1537	1,330	**1,330**
CM	160	93490860	3/4"	CF	13590	17704	4,114	**4,114**
100	100	93490861	3/4"	CF	27833	34278	6,445	**6,445**
CM	10	60209133	2"	Gal	2969800	3096700	126,900	**16,965**
CM	12	52864429	1"	CF	22490	57212	34,722	**34,722**
RM	19	92696899	3/4"	CF	1722	2570	848	**848**
CM	3 accts	17581626	1"	Gal	7175600	7279900	104,300	**13,944**
CM	258	no # avail	1 1/2"	Gal	4483900	4746900	263,000	**35,160**
RM	22	21459000	3/4"	CF			0	**0**
RM	172.1	92696901	3/4"	CF	3876	5291	1,415	**1,415**
RM	329	no # avail	1 1/2"	CF	6150	7780	1,630	**1,630**
CM	tbd	81244247	2"	CF		1741	1,741	**1,741**
CM	338	60390740	2"	CF	261030	306720	45,690	**45,690**
CM	347.1	no number	1"	CF	87015	100237	13,222	**13,222**
CM	347	181208	3/4"	CF	369871	456772	86,901	**86,901**
CM	347	70181208	3"	CF	160	160	0	**0**
CM	347.2	70168553	3"	CF	940	940	0	**0**
CM	347.2	168553	3/4"	CF	360159	432648	72,489	**72,489**
CM	97	87691790	3/4"	CF	64408	75834	11,426	**11,426**
CM	NA	96118260	3/4"	Gal	1299780	1330660	4,128	**552**
CF	147	none yet	3/4"	CF			0	**0**
CM	279	no number	4"	CF	3490	5230	1,740	**1,740**
CM	279	82978763	4"	CF	551944	589827	37,883	**37,883**
CM	98	60660998	2"	CF	587580	700540	112,960	**112,960**
RM	308	48702433	1"	CF	89603	113817	24,214	**24,214**
RM	286	48113633	1"	Gal	738590	769440	30,850	**4,124**
CM	46	7906242	3/4"	CF		1095	1,095	**1,095**
RM	335	60418696	2"	CF	43820	44120	300	**300**
RM	150	10076061	3/4"	CF	3715	4674	959	**959**
CM	59	52519762	1"	CF	43247	57626	14,379	**14,379**
RM	362	18349067	1 1/2"	CF	71500	83230	11,730	**11,730**
CM	242	93490859	3/4"	CF	14356	19887	5,531	**5,531**
CM	280	84197173	3/4"	CF	49261	56492	7,231	**7,231**

Attachment, Page 4

Excerpted Response/DR 93 Meter Consumption Data-Man Town.

CM	24	60228874	2"	Gal	1135000	1301000	166,000	**22,193**
CM	326	80674130	3/4"	CF	33448	36659	3,211	**3,211**
CM	307	81340325	3/4"	CF	64645	81969	17,324	**17,324**
CM	307	48578976	1"	CF	142857	147896	5,039	**5,039**
CM	164	49291936	1"	CF	216988	247692	30,704	**30,704**
CM	7	87567002	3/4"	Gal	187130	242030	54,900	**7,340**
CM	170	90433042	3/4"	CF	20428	25112	4,684	**4,684**
CM	114	92946540	3/4"	CF	3655	5044	1,389	**1,389**
CM	250	60820245	1 1/2"	CF	21320	31800	10,480	**10,480**
CM	250.1	98818291	2"	Gal	3981700	4234900	253,200	**33,850**
CM	183	60228877	2"	Gal	1984900	2039000	54,100	**7,233**
CM	86	660365079	2"	CF	251720	301430	49,710	**49,710**
CM	306	48994670	1"	CF	20665	29858	9,193	**9,193**
RM	312	48994672	1"	CF	177726	178210	484	**484**
CM	363	60725916	2"	CF	238980	312760	73,780	**73,780**
RM	344	18359647	2"	CF	7960	9180	1,220	**1,220**
CM	34	60820247	1 1/2"	CF	17440	17660	220	**220**
CM	71	92696902	3/4"	CF	9749	14619	4,870	**4,870**
CM	249	60202914	2"	Gal	2162400	2308700	146,300	**19,559**
CM	35	60368824	2"	CF	2090510	2288590	198,080	**198,080**
CM	37	60194726	2"	Gal	3833910	4132900	298,990	**39,972**
CM	214	67222037	3/4"	CF	9514	13194	3,680	**3,680**
RM	23	81294937	3/4"	CF			0	**0**
CM	25	45666322	3/4"	Gal	845550	884340	38,790	**5,186**
CM	126	67222042	3/4"	CF	4447	9998	5,551	**5,551**
RM	tbd		3"	CF			0	**0**
RM	348	84197174	3/4"	CF	20717	25228	4,511	**4,511**
CM	38	19019939	1"	CF	789885	845840	55,955	**55,955**
CM	162	93581174	3/4"	CF	39640	53411	13,771	**13,771**
CM	60	93581182	3/4"	CF	18906	26381	7,475	**7,475**
CM	39	935811175	3/4"	CF	12939	20171	7,232	**7,232**
RM	16	79847303	3/4"	CF		0	0	**0**
CM	265	79847305	3/4"	CF		3	3	**3**
RM	351	85451879	3/4"	CF	16400	18348	1,948	**1,948**
CM	232	81340320	3/4"	CF	29893	35311	5,418	**5,418**
RM	156	67222039	3/4"	CF	729	744	15	**15**
CM	57	3.272E+09	1"	GAL	70420	107810	37,390	**4,999**
CM	361	70249091	4"	CF	1305720	1580830	275,110	**275,110**
CM	157	93490862	3/4"	CF	16959	26098	9,139	**9,139**
RM	tbd	67357190	3/4"	CF		35	35	**35**
RM	355	81458887	3/4"	CF			0	**0**
RM	336	60418700	2"	CF	18630	23500	4,870	**4,870**
RM	330	78252142	3/4"	CF	47171	47171	0	**0**
CM	129	95621736	2"	CF	2736580	2818900	82,320	**82,320**
CM	245	76632488	3/4"	CF	83445	88979	5,534	**5,534**
CM	55	60390743	2"	CF	145440	159820	14,380	**14,380**
CM	55	49291937	1"	CF	32449	37172	4,723	**4,723**
CM	340	81340324	3/4"	CF	31474	38067	6,593	**6,593**
CM	304	81458999	3/4"	CF	52532	66730	14,198	**14,198**
CM	4	67357189	3/4"	CF	249	2895	2,646	**2,646**
CM	56	18359645	2"	CF	29920	137290	107,370	**107,370**
CM	3	49054722	3/4"	CF	108359	113634	5,275	**5,275**

Attachment, Page 5

Excerpted Response/DR 93 Meter Consumption Data-Man Town.

CM	125	45666327	3/4"	Gal	799910	864250	64,340	**8,602**
CM	366	84197176	3/4"	CF	11894	13727	1,833	**1,833**
RM	20	93874686	3/4"	CF	2413	4578	2,165	**2,165**
RM	360	90257736	3/4"	CF	23564	30166	6,602	**6,602**
CM	237	93581183	3/4"	CF	13965	16418	2,453	**2,453**
								1,856,392 Total Cons CF 2016

DR 58

DR 1 requested Government Camp Water Company Inc. (Government Camp or Company) provide the following information:
"Please provide billing data to support Government Camp's sales operating revenue for the 2016 test year. In that billing data, please provide 1) the customer names, 2) the line or meter size, 3) the usage for metered customers, 4) the amount billed for usage, 5) the amount billed for the base charge and 6) the amount billed for other charges for each of the amounts billed to each customer account for each of the four quarters billed in 2016."

In supplemental DR 58 to DR 1, please provide a separate sortable excel spreadsheet that contains all the billing information *for all metered customers* for all quarters in 2016. The data in this spreadsheet should be sortable and broken out by 1) the customer names, 2) the meter size for each customer, and the 3) usage billed to same-sized metered customers. Separate worksheets should be provided for a) the 5/8" & 3/4" combined meter customers, b) the 1" meter customers, c) the 1.5" inch meter customers, d) the 2" meter customers, e) the 4" inch meter customers, and f) the 6" meter customers; each spreadsheet is to include the usage broken out for each of the meter sizes. If a customer has multiple meters, please include a separate entry for each meter on each corresponding spreadsheet.

RESPONSE:

See Attachment – DR 58 Response Attachment.

Table 14. Excerpted from DR 58

Date	Num	Item	Item Description	Split	Qty	Credit	Staff Check	Difference
01/01/2016	12-6294	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	157.00	6.94	$1.76	-$5.18
04/01/2016	12-6664	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	157.00	6.94	$1.76	-$5.18
07/01/2016	12-7032	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	157.00	6.94	$1.76	-$5.18
10/01/2016	12-7406	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	203.50	9.00	$2.28	-$6.72
01/01/2016	12-6298	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	620.00	3.84	$6.94	$3.10
04/01/2016	12-6668	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	620.00	3.84	$6.94	$3.10
07/01/2016	12-7036	R. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	620.00	3.84	$6.94	$3.10
01/01/2016	12-6113	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	1,485.25	35.47	$16.63	-$18.84
04/01/2016	12-6481	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	1,485.25	35.47	$16.63	-$18.84
07/01/2016	12-6848	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	1,485.25	35.47	$16.63	-$18.84
10/01/2016	12-7221	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	487.00	11.63	$5.45	-$6.18
01/01/2016	12-6165	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	856.75	15.98	$9.60	-$6.38
04/01/2016	12-6534	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	856.75	15.98	$9.60	-$6.38
07/01/2016	12-6901	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	856.75	15.98	$9.60	-$6.38
10/01/2016	12-7274	C. Cf's used	Water consumption for the quarter ($1.12/100Cf)	141 · Accounts Receivable	769.00	14.34	$8.61	-$5.73

DR 14

Please provide the bills for Account 611, Telephone/Communications and include in your response an explanation of how costs are allocated for this expense.

RESPONSE:

CenturyLink is the communications (non-cellular) provider for the Company and includes the following:

- Package (base plan) - includes one land line phone that is for personal use, so $24.95 is deducted each month. The remaining cost of the Package (for business fax line 503-272-3490 and WIFI) is used for both the Company and Charlomont Hill, LLC ("Charlomont"). As such, the Company pays 50% of this cost.
- Broadband – includes modem router rental and internet that are used for both the Company and Charlomont. As such, the Company pays 50% of this cost.
- Voice – is a business land line (503-272-3281) which is used for both the Company and Charlomont. As such, the Company pays 50% of this cost.
- Entertainment – is for TV, which is for personal use, so 100% of this cost is deducted from the bill.

The Monthly Billing Allocation:

Century Link Water Co %	Total Due	Less	Less Ent/TV	Due	Paid	Notes:
Jan 11 Bill Check Cleared 12-28-18	207.36	-24.95	-77.99	52.21	52.21	Bill due Jan. cleared Dec 2015 & not included in Application
Feb	207.73	-24.95	-77.99	52.395	46.47	Water co % was miscalculated and unerpaid in error
Mar	220.83	-24.95	-82.99	56.445	56.45	Payment included $21.81 bal forwd + 7.50 late fee
April	213.72	-24.95	-82.99	52.89	52.99	Pmt due should have been $52.90 not $52.99 - .01 over pmt
May	215.66	-24.95	-82.99	53.86	51.30	Underpayment miscalculation
June	227.8	-24.95	-82.99	59.93	57.37	Late payment was not allocated to companys payment
July	224.48	-24.95	-82.99	58.27	64.24	Calculation errors - used -12.75 not $24.95 & $8.80 late fee
Aug	215.73	-24.95	-82.99	53.895	53.99	Calc error -24.75 not -24.95
Sept	208.78	-24.95	-82.99	50.42	53.89	Amt pd was calculated from $215.73 toal charges rather than amt due
OCT	208.73	-24.95	-82.99	50.395	52.82	Pmt mis calculated from 215.73 current charge rather than amt due
NOV	208.79	-24.95	-82.99	50.425	52.82	Miscalculation over pmt
DEC	201.79	-24.95	-82.99	46.925	40.99	Miscalculation under pmt
				638.06	635.54	UNDERPAYMENT of $2.52 for year

VERIZON Wireless

The Verizon plan includes four cell phones. One of these is the Company cell phone (503-260-7142). Therefore, 1/4th of the monthly base plan is allocated to the Company. Plus, the monthly cost of the Company cell.

See allocation below:

VERIZON

DATE	SUPPLIER	AMOUNT	BASE PLAN COST (4-ENTITY PLAN)	1/4th Base Plan alloc to Wtr Co	WATER CO CELL	WTR CO TOTAL
1/20/2016	VERIZON	240.84	$70.00	$17.50	22.92	$40.42
2/20/2016	VERIZON	217.6	$70.00	$17.50	22.96	$40.46
3/20/2016	VERIZON	164.69	$45.00	$11.25	22.88	$34.13
4/20/2016	VERIZON	170.79	$45.00	$11.25	22.88	$34.13
5/20/2016	VERIZON	175.76	$45.00	$11.25	22.87	$34.12
6/20/2016	VERIZON	170.76	$45.00	$11.25	22.87	$34.12
7/20/2016	VERIZON	170.76	$45.00	$11.25	22.87	$34.12
8/20/2016	VERIZON	170.79	$45.00	$11.25	22.88	$34.13
9/20/2016	VERIZON	170.79	$45.00	$11.25	22.88	$34.13
10/20/2016	VERIZON	170.79	$45.00	$11.25	22.88	$34.13
11/20/2016	VERIZON	172.63	$40.05	$10.01	22.84	$32.85
12/20/2016	VERIZON	170.73	$40.05	$10.01	22.84	$32.85
		2166.93				$419.60

Verizon and Century Link 2016 bills are attached as Data Response 14 Attachment A & B.

While double checking the telephone expense file in the application, the Company discovered that the reimbursement of $419.57 is a double entry for the telephone charges and should be removed.

DR 31

Please provide a copy of the Water Operator contract for Account 639, Contract Services Other that includes the amount charged for service and duties of the contractor.

RESPONSE:

The Company's Contract for Operation and Maintenance Services as Direct Responsible Charge (with addendum) is attached separately as Data Response 31 Attachment.

Contract for
Operation and Maintenance Services as Direct Responsible Charge

RECITALS

WHEREAS, the Government Camp Water Co. Inc. (Owner) owns and operates a domestic water system in Clackamas County, Oregon (Public Water System ID # OR4100336); and

WHEREAS, Owner intends to supply ample domestic water to all its customers within the service area, both residential and commercial for normal uses of such water; and

WHEREAS, Owner desires that the water system be operated by a State of Oregon Certified Water Operator to provide safe drinking water as well as desirable drinking water to all users within its service area; and

WHEREAS, Andrew R. Tagliafico (Operator) has proposed to provide Contract Water System Operator services to Owner and serve as the Direct Responsible Charge (DRC) of the Government Camp Water Company Inc. Water System (System); and

WHEREAS, it is the intention of the Operator and the Owner to enter an agreement wherein the Operator will serve as DRC for the System and provide complete licensed operations, maintenance, monitoring, repair and reporting services of the water source and distribution; and

WHEREAS, it is the intention of the parties that all services performed by the Operator be in compliance with all state and federal laws, regulations and guidelines at all times.

WITNESSETH,

Incorporating the recitals provided herein, the parties agree as follows:

1. Parties. This third party Agreement is made this 20 day of April, 2015 by and between Government Camp Water Co. Inc. in Clackamas County, hereinafter referred to as Owner, and Andrew Tagliafico, operator Cert # (Operator ID# D-6592) of Who Ltd. PO Box 522 Govt. Camp, OR 97028, hereinafter referred to as Operator.

2. Direct Responsible Charge. Subject to the terms and conditions expressly provided within this Agreement and any addendum hereafter executed by the parties, Operator agrees to oversee the general maintenance, daily operation of the System, and assume the position of Direct Responsible Charge (DRC) of the System. Operator agrees to operate and manage the System in accordance with state and federal law, and regulations

promulgated thereto, including those adopted by the Oregon Health Authority under Chapter 333, Division 061 of the Oregon Administrative Rules (OAR).

3. Services. In accordance with the terms of this Agreement and any addendums attached hereto, Operator agrees to furnish Owner with all labor, equipment, transportation, supervision, technical, professional, and other services for the purpose of treating water and performing duties of distribution for the System; and perform all operations and maintenance necessary and required to properly provide services for the service area.

    a. Operator shall make all decisions that directly impact the quality or quantity of drinking water, manage the day to day operations of the System, maintain the System and perform all tasks necessary within the scope of Operator's obligations under this contract for the operation and maintenance of the System to assure that the water delivered to water users does not exceed maximum contaminant levels, to assure that water system facilities are free of public health hazards, and to assure that water system operation and maintenance are performed as required under state and federal law.

    b. Operator is solely responsible for safely conducting all operation in order to avoid the risk of endangerment to health, bodily harm to persons, and damage to property. Operator will inspect all equipment, materials, and services to discover any condition that might involve risks and for correcting any of those conditions. Operator will immediately notify owner of any known activity, problem or circumstance that threatens or affects the drinking water supply or health, safety or welfare of the users of the drinking water.

    c. Operator will undertake remediation in accordance with governmental requirements and make its best reasonable efforts to mitigate problems, and implement any applicable emergency plan.

4. Availability. Operator agrees to be available on call 24 hours a day and able to respond within 1 hour of an emergency. When it is anticipated that Operator will not be available on call, Operator shall arrange for a qualified representative, other operator personnel, subcontractor/ sub-consultant or other person to act on behalf of Operator.

5. Maintenance of Certification. At Operator's expense, Operator will maintain at all times the requisite Oregon drinking water operator certification, including all continuing education requirements. Operator will pay for all permits, licenses, certification and other applicable government requirements or governing authority requirements and inspections, as well as furnish any documentation, bonds, security or deposits required to permit Operators performance of services. Operator will assure that the water system is in compliance with OAR 333-061-0210 through 333-061-0272 relating to certification of water system operators;

6. Security. Operator will cooperate with owner security requirements, and must promptly comply with any security arrangements.

7. Records. Operator shall maintain and provide to Owner records and accounts concerning the operation, maintenance, repair, and equipping of the facility under this Agreement. Owner will have reasonable and legally permissible access to all documents, records, and reports from the Operator to the State drinking water program. All records must be maintained as specified by Oregon State retention schedules. Operator will have all signatory authority for said reports and other documents, as required under Oregon State drinking water rules. Maintaining monitoring and operating records and making these records available for review when the system is inspected;

8. Water Samples. Operator will arrange and supervise routine collecting and submitting water samples for laboratory analyses at the frequencies prescribed by OAR 333-061-0036. All sampling will be performed by Pixis Labs, or other suitable vendor, who shall send results to the company for monthly reporting to the State of Oregon Drinking Water Program. Operator will take immediate corrective action when the results of analyses or measurements indicate that maximum contaminant levels have been exceeded and report the results of these analyses as prescribed by OAR 333-061-0040. Operator shall work in conjunction with the Owner to notify all customers of the water system and the general public in the service area, as prescribed by OAR 333-061-0042, when the maximum contaminant levels have been exceeded;

9. Professional Services. Where technical, professional or other services not usual or ordinary to that of a Level 1 Operator are necessary, Operator shall arrange for such services at the expense of Owner.

10. Additional Terms:

    a. **Addendum.** This Agreement shall become effective upon the parties' execution of an addendum further describing Operator's compensation or other valuable consideration to be received. Such addendum may include additional terms or conditions deemed advisable by the parties.

    b. **Termination**. This Agreement and the provisions of any addendum attached hereto may be terminated:

        i. By either party at any time for any reason with sixty days (60) written notice to 1) the other party, and 2) the Oregon Health Authority Drinking Water Program;

        ii. Immediately by the mutual consent of the Owner and the Operator;

iii. Immediately by Owner upon entry of any final order by the Oregon Health Authority, or its equivalent, determining that all or a portion of this Agreement, or any addendum hereto, fails to satisfy the laws or regulations of the State of Oregon for the purpose of designating a Direct Responsible Charge over the System;

iv. By Owner, no less than 60 days following a final decision the Oregon Public Utility Commission that all or a portion of the labor and O&M expenses attributed to Operator's compensation under this Agreement should be disallowed in determining Owner's annual revenue requirements, rate schedule and/or tariff. Prior to terminating the Agreement under this provision, Owner shall provide Operator with a reasonable opportunity to amend the terms of Operator's rates, propose additional terms, or perform in accordance with the Commission's final decision.

c. **Additional Instruments**. The parties shall deliver or cause to be delivered at the Closing and at such other times and place as shall be reasonably agreed on, such additional instruments as may reasonably be requested for the purpose of carrying out this Agreement.

d. **Not Assignable.** This Agreement is not assignable by Operator to a third party, without Owner's written consent.

Agreement acknowledged by signature:

Owner: _____ Date:

Addendum to
Contract for Operation and Maintenance Services
between
Andrew R. Tagliafico & Government Camp Water Co. Inc.

This Addendum is executed this 20 day of APRIL, 2015 by and between the Government Camp Water Company, Inc. (Owner) and Andrew Tagliafico (Operator) for the purpose of augmenting and clarifying terms of the contract agreed upon and executed between the parties on 20 APRIL 2015 for Operation and Maintenance Services as Direct Responsible Charge (the Agreement).

The parties hereto further agree as follows:

Services to be provided by Operator to Owner as Direct Responsible Charge (DRC) shall include:

1. Represent the Owner in all meetings with the Oregon Health Authority (OHA) and/or other regulatory agencies where DRC attendance is necessary or as otherwise deemed advisable by Owner. This shall include meetings with the public when required and any and all compliance inspections by the OHA, or other regulatory agencies, as necessary.

2. Attend all regularly scheduled monthly business meetings, including presentation of monthly progress reports. Attend workshops and/or special meetings as may be required of the Government Camp Water Company, Inc., Water System's (System) DRC, or as otherwise deemed advisable by Owner.

3. Provide service and availability as the System's DRC, 24 hours per day, 7 days a week, including weekends and holidays. DRC supervision and service shall include on-site attendance by a licensed operator(s) and sufficient staff to adequately perform services as required to maintain System compliance under state and federal law. Operator, or Operator's agent, shall at all times be available and capable of immediately responding within one hour to any emergency (weekend and holidays included). For purposes of this section, any agent providing service and availability on Operator's behalf shall be duly licensed and will comply with OHA regulations in the event of emergency service with the company's distribution system. All services provided by any agent of the Operator, and any liability arising therefrom shall be deemed to be the service and liability of the Operator.

4. Conduct all routine and periodic services related to the operation and maintenance of the System including, but not limited to, the following:

    a) Routine fire hydrant inspection, repairs and maintenance;

b) On-site supervision and instruction of company-contracted labor as may be required as the System DRC, or as otherwise reasonably requested by Owner;

c) Manage and complete two (2) flushings per year based on water conditions with a written report for each of the flushings for all water distribution systems;

d) Establish and perform a water valve exercise program;

e) In the event of System breaks or other emergency, conduct all necessary water sampling and testing should the Company's contracted laboratory not be available;

f) Respond to any customer complaints as may be required of the System's DRC or as otherwise reasonably requested by Owner;

g) Respond to and investigate potential leaks;

h) Conduct a monthly inspection of the entire System with reports provided to the Owner (weather dependent). Update inspection and maintenance logs within the System, with all preventative and routine maintenance to be entered in the System log books and made available to Owner;

i) Oversee and provide supervision for new connections to the System;

j) Develop and provide all reports required by the Oregon Health Authority or other regulatory agencies as reasonably requested by Owner;

k) Consult with the company's engineer on System recommendations;

l) Assist with the development of Owner's operating and capital budgets up to three times per fiscal year;

m) Advise and coordinate with Owner in purchasing supplies, equipment and/or outside repair services. *Provided*, Owner will be responsible for purchasing chemicals, equipment and parts. Minor and major repair items such as but not limited to maintenance items, expendable supplies, rebuild kits, light bulbs, etc. will be the responsibility of Owner;

n) To the extent practical, conduct services in conformity with the recommendations and obligations identified within the United States Environmental Protection Agency's Best Practices Guide Water System Operator Roles and Responsibilities, EPA Publication No. 816-F-06-037, dated September 2006.

Insurance and Indemnity

5. Operator agrees to maintain insurance coverage for all services rendered by Operator or Operator's agents. Operator will provide certificates of Liability and Worker's

Compensation insurance and provide coverage in accordance with Owner's & the State of Oregon's insurance requirements. Insurance coverage shall indemnify and hold harmless Owner from any and all liability arising from services rendered by the Operator, or any agent thereof. Operator shall defend any suit that may be brought against the Owner, its shareholders or officers in connection with, or arising out of the services furnished by Operator under the Agreement and this Addendum.

a) Operator will provide comprehensive general liability, worker's compensation and automobile liability insurance coverage with Owner named as additionally insured. Limits of liability for both coverages shall be a minimum of:

(1) $500,000.00 per person and $500,000.00 per occurrence for bodily injury and
(2) $500,000.00 property damage;
(3) Copies of all insurance policies shall be provided to the Owner prior to commencement of services.

Compensation

6. Owner agrees to pay compensation to Operator in the amount of four thousand dollars ($4,000) per month with an annual 2% cost of living adjustment (hereinafter Base Payment). In exchange for Base Payment, the Operator shall assume the position of DRC for the System as provided in the Agreement, subject to the following provisions:

a) Services included within the Base Payment shall also include:

(1) Operator's obligations as expressed within Paragraphs 1 through 3 of this Addendum, inclusive;

(2) Operator's reading of customer water meters & master meter in the summer months every June 15, July 15 & August 15, *provided* Owner will provide Field Sheets to Operator in each of the 3 months meters are to be read. *And provided further*, Owner will be responsible for data entry and providing data to Owner's bookkeeper & the sanitary district;

(3) Transportation hours to pick up materials and supplies, *provided* Owner shall reimburse Operator for mileage at the current deductible rate as determined by the United States Internal Revenue Service;

(4) Supervision, technical & professional services rendered in the course of managing operation & maintenance of the System in the capacity of DRC and as provided in the Agreement and this Addendum. *Provided*, services of other billable professionals such as engineers, surveyors, plumbers etc. shall be paid directly by Owner.

b) All other activities and services provided under this proposal will be billed as follows:

(1) $45.00 per hour for labor;
(2) $95.00 per hour for back hoe with operator;
(3) All other non-specified rented, subcontracted or non-inventory items cost plus thirty percent.

c) Subject to the terms of this Addendum and the underlying Agreement, the compensation terms of this Section 6 shall be binding upon the parties for a period of three (3) years unless otherwise agreed upon in writing.

d) For the period of one year following the execution of this Agreement if total compensation to Operator exceeds the sum of $65,000:

(1) The parties shall participate in a budget conference to address revenue, costs and continued performance under the Agreement and this Addendum;

(2) Owner shall be entitled to invite public bidding for all or a portion of the services contemplated under the Agreement and this Addendum.

Agreement acknowledged by signature:

Owner: _____ Date:

DR 28

Please list all vehicles that are covered under the insurance paid by Account 656, Vehicle Insurance, and include in your response how each vehicle is used and the purpose of the vehicle.

RESPONSE:

The vehicle covered is a 2014 Buick Rainier. Uses of the vehicle include, but are not limited to, inspection of lines, performance of meter readings, travel to maintenance/repair sites and customer locations, etc. The vehicle is also used to drive to Welches or Portland for supplies and, on occasion, take samples to the lab.

DR 29

Please list all vehicles that are included in the Account 650, Transportation, and include in your response an explanation of how each vehicle is used and the purpose of the vehicle.

RESPONSE:

1) Company's Buick Rainier – See response to DR 28.

2) WHO Ltd – Water operator's vehicle. WHO Ltd charges miles to the Company when it has to use its vehicle in the performance of work for the Company. This includes, but is not limited to, picking up materials/equipment, delivery of such to site, and taking samples to the lab.

3) Cunningham Consulting – Bookkeeper's vehicle. Cunningham Consulting charges miles to the Company when it has to use its vehicle in the performance of work for the Company. This includes, but is not limited to, travel for banking, attendance of meetings in Government Camp, Post Office runs, etc.

DR 70

In supplemental DR 70 to the Company's response to DR 28, please provide a copy of the registration for the 2014 Buick Rainier and explain in your response whether the Company owns the Buick Rainier. If this vehicle is not owned by Government Camp, please indicate what percentage of its use is for the Company versus personal or other uses.

RESPONSE:

In its response to DR 70, the Company amends, in part, its response to DR 28 by clarifying that the Buick Rainier is a 2004 model rather than 2014. The Company's description of the Buick Rainier as a 2014 model was a typographical error.

Responding to DR 70, a copy of the Buick Rainier's registration is attached as DR 70 Response Attachment. The Buick is not owned by the Company, but it used exclusively (100%) by the Company for water business.

PASSENGER REGISTRATION CARD

PLATE NUMBER	TITLE NUMBER	FUEL TYPE	FARM ID NO.		NEW EXPIRATION DATE
		GASOLINE			MAR 31, 2020
2004	BUIC	UT	RNR	VEHICLE IDENTIFICATION NUMBER	HVUT DATE
EQUIPMENT NO.	WEIGHT/LENGTH				FEE
		- NONE -			$112.00
ODOMETER READING	ODOMETER DATE	ODOMETER MESSAGE			

*CHARLOMONT HILL LLC
30294 E BLOSSOM TRAIL
PO BOX 67
GOVERNMENT CAMP OR 97028-0067

GVCP

COUNTY OF RESIDENCE: CLACKAMAS
COUNTY OF USE

NEW ADDRESS (HOUSE NUMBER, STREET, CITY, STATE, ZIP CODE)

VALIDATING STAMP

NEW PLATE NUMBER | NEW STICKER NUMBER

CUSTOMER COPY

DR 25

Please explain why Account 471, Miscellaneous Services, revenues were not included in the Application's total revenue requirement for 2016.

RESPONSE:

The Company's 2016 Profit and Loss Statement show Other Income (Acct 471) of $4,561.81. In its application, the Company included $4,562 in Miscellaneous Revenue, which was then removed as Pass Through Costs.

DR 99

Please provide the amounts recorded by the Company for Account 471 Miscellaneous Services during 2015 and 2017.

RESPONSE:

See table below:

			Jan - Dec 15
Other Income			
	471 · Misc Service Revenues		
		471.5 · Other Misc Revenues	35
		471.4 · Permit Fees/Metered Hydrant Sls	180
		471.2 · Application Fees	150
		471.1 · Finance Charges	699.81
		471 · Misc Service Revenues - Other	80
	Total 471 · Misc Service Revenues		1,144.81
Total Other Income			1,144.81

			Jan - Dec 17
Other Income			
	471 · Misc Service Revenues		
		471.4 · Permit Fees/Metered Hydrant Sls	250.36
		471.3 · New Connection Fees	7,344.48
		471.2 · Application Fees	850.01
		471.1 · Finance Charges	745.95
	Total 471 · Misc Service Revenues		9,190.80
Total Other Income			9,190.80

DR 38

In the plant worksheet submitted, Account 331, Transmission and Distribution Mains, please explain whether the Tyrolean Meadows true-up of costs in the amount of $14,419 agreed to in the Stipulation for UW 145, Condition 10, was entered twice to Plant (it appears it was added in UW 145 and again in UW 174). If the amount was entered twice, please explain which in-service date is correct.

RESPONSE:

It appears that this item was mistakenly entered twice. The in-service date of 9/1/2007 is correct.

DR 40

In the plant worksheet submitted, Account 334, Meters and Meter Installations, please provide the backup documentation of how the meter allowance provided in UW 145 of $49,500 towards the installation of 55 additional customer meters was spent. Please include in your response, receipts for the 55 meters purchased, the dates they were installed and the names of the customers that received them.

RESPONSE:

There was an oversight on this. The Company didn't recall the metering allowance so it was inadvertently missed. The Metering Allowance of $49,500 should have been removed from the proposed Plant, and the following meter plan detail should be included in Plant.

The 3-year meter plan included the following:

2012 Metering Plan	**$549.77**	**1 meter**
2013 Metering Plan	**$20,521.17**	**13 meters**
2014 Metering Plan	**$6,888.84**	**5 meters**
	$27,959.78	

The spreadsheets included in Data Response 40 Attachment show the information you have requested for each year of the metering plan. However, there are numerous entries and providing each and every receipt/invoice is burdensome. In an effort to be efficient, the Company will be happy to provide the receipt/invoice you want to review if you would please identify the item, date, and cost.

YEAR 2012 - FIRST YEAR OF METERING PLAN

Date	Vendor	Inv #	Description	Nogarie Metering Plan	Total
9/15/2012	Andrew	3424	Metering Plan	7 hrs Install meter valve can	$315.00
9/17/2012	Andy	3424	Metering Plan	2 hrs set valve can Nogarie	$90.00
10/10/2012	HD	5584861	Metering Plan	Nogarie Meter	$71.32
10/19/2012	FEI	2559129	Metering Plan	Nogarie Mtr Bix	$73.45
				TOTAL COST	**$549.77**

CUSTOMER NAME
Nogarie

YEAR 2013 - SECOND YEAR OF METERING PLAN

Date	Inv #	Vendor	Category	Cost	Location	CK #
5/17/2013	3452	Andrew	Metering Plan	$225.00	Museum Meter Install - 5 hrs labor	5141
5/20/2013	3452	Andrew	Metering Plan	$112.50	Museum town for adltional mtr parts-2.5 hrs	5141
5/22/2013	2692943	Ferguson	Metering Plan	$0.90	Museum meter	5131
5/23/2013	3452	Andrew	Metering Plan	$112.50	Museum Meter Install - 2.5 hrs labor	5141
5/25/2013	Museum	Chris Scott Plumbing	Metering Plan	$340.00	Museum Meter ($260 labor $80 parts)	5130
5/28/2013	3452	Andrew	Metering Plan	$540.00	Campbell/Skowhede/Landauer 12 hrs labor	5141
5/28/2013	359517	Ferguson	Metering Plan	$299.00	Campbell/Landauer/Haugen	5153
5/28/2013	2696720	Ferguson	Metering Plan	$1.12	Campbell/Landauer/Skowhede	5137
5/28/2013	B021641	HD Supply	Metering Plan	$406.06	Campbell/Landauer/Skowhede	5135
5/29/2013	3452	Andrew	Metering Plan	$405.00	Carrier/Landauer - 9 hrs labor	5141
5/29/2013	67965	Mtn Bldg Supply	Metering Plan	$18.73	Landauer	5136
5/30/2013	3452	Andrew	Metering Plan	$405.00	Skowhede & parts run for meters & CO2 9 hrs	5141
5/30/2013	68010	Mtn Bldg Supply	Metering Plan	$28.71	Carrier/Skowhede	5136
5/31/2013	3452	Andrew	Metering Plan	$585.00	Skowhede/ Carrier 13 hrs	5141
5/31/2013	3452	Andrew	Metering Plan	$90.00	Move gravel for backfill - 1 hr machine	5141
5/31/2013	3452	Andrew	Metering Plan	$26.50	Museum Meter misc parts	5141
5/31/2013	3452	Andrew	Metering Plan	$34.00	Mattheson CO2 Tanks refil 1 tank	5141
5/31/2013	3452	Andrew	Metering Plan	$310.50	1" minus rock stockpile for metering plan 11.5 yds	5141
5/31/2013	2698749	Ferguson	Metering Plan	$82.59	Campbell/Landauer/Skowhede	5137
6/3/2013	360218	Ferguson	Metering Plan	$580.26	Campbell/Landauer/Skowhede	5153
6/11/2013	3534	Andrew	Metering Plan	$225.00	Campbell Meter install 5 hrs labor	5154
6/11/2013	3534	Andrew	Metering Plan	$90.00	Campbell Meter backfill 1 hour machine	5154
6/18/2013	3534	Andrew	Metering Plan	$135.00	parts run to town	5154
6/18/2013	3454	Andrew	Metering Plan	$135.00	parts run to town Morst Rave Putnam 3 hrs	5154
6/18/2013	B112620	HD Supply	Metering Plan	$515.06	Morse Ravi Putnam parts	5149
6/19/2013	362663	Ferguson	Metering Plan	$167.42	Morse Ravi Putnam parts	5150
6/24/2013	3534	Andrew	Metering Plan	$810.00	Morse dig, install meter & backfill	5154
6/24/2013	3454	Andrew	Metering Plan	$720.00	Morse dig up wtrsvc & install meter 16 hrs	5154
6/24/2013	3454	Andrew	Metering Plan	$90.00	Backfill Morse 1 hr machine	5154
6/25/2013	3534	Andrew	Metering Plan	$810.00	Ravi Putnam dig install meters & packfill	5154
6/25/2013	3454	Andrew	Metering Plan	$720.00	Dig up & instal meter @ both Ravi Putnam houses 16 hrs labor	5154
6/25/2013	3454	Andrew	Metering Plan	$90.00	Backfill @ both Ravi Putnam houses 1 hr machine	5154
6/25/2013	68564	Mtn Bldg Supply	Metering Plan	$3.73	Ravi Putnam	5155
7/2/2013	3534	Andrew	Metering Plan	$630.00	Wilcox meter dig up service install meter backfill	5154
7/2/2013	3454	Andrew	Metering Plan	$540.00	Dig up watersvc at Whicox - install meter - 12 hrs labor	5154
7/2/2013	3454	Andrew	Metering Plan	$90.00	Backfill Wilcox - 1 hr machine	5154
7/2/2013	364801	Ferguson	Metering Plan	$287.76	Wilcox metering parts	5162
7/2/2013	2720727	Ferguson	Metering Plan	$102.68	Wilcox metering parts	5164
7/8/2013	3456	Andrew	Metering Plan	$720.00	Dig up water svcs Ingersol Red Roof and Reed College	5167
7/8/2013	3456	Andrew	Metering Plan	$720.00	Dig up water svc at Ingersol & Reed College 16 hrs labor	5167
7/9/2013	3456	Andrew	Metering Plan	$720.00	Dig up water svc at Barlow Pass West	5167
7/9/2013	3456	Andrew	Metering Plan	$720.00	Dig up water svc at Barlow Pass West Condo - 16 hrs labor	5167
7/9/2013	2724463	Ferguson	Metering Plan	$150.27	Ingersol, BPW, Reed College metering parts	5165
7/9/2013	B194731	HD Supply	Metering Plan	$2,786.23	Ingersol, BPW, Reed College meters & parts	5161
7/10/2013	3456	Andrew	Metering Plan	$810.00	Install meters at Ingersol and Neth duplex	5167
7/10/2013	3456	Andrew	Metering Plan	$810.00	Install meters @ Ingersol & Neth - 18 hrs labor	5167
7/10/2013	365483	Ferguson	Metering Plan	$471.98	Ingersol, BPW, Reed College meters & parts	5163
7/10/2013	68923	Mtn Bldg Supply	Metering Plan	$25.38	Ingersol - Neth	5173
7/11/2013	3456	Andrew	Metering Plan	$900.00	Install meters at Barlow Pass West & Reed College begin backfill	5167
7/11/2013	3456	Andrew	Metering Plan	$720.00	Install meters at Barlow Pass West & Reed College begin backfill 16 hrs	5167
7/11/2013	3456	Andrew	Metering Plan	$180.00	Backfill meter boxes BPW & Reed College 2 hrs machine	5167
7/15/2013	68546	Mtn Bldg Supply	Metering Plan	$22.29	Morse	5155
			TOTAL COST	$20,521.17		

CUSTOMER NAMES
Ingersol - Mt Hood
Museum
Barlow Pass West
Reed College
Neth
Ravi Putnam
Ravi Pubnam Rental
Campbell
Skowhede
Carrier
Landauer
Wilcox
Morse

YEAR 2014 - THIRD YEAR OF METERING PLAN

Date	Inv #	Vendor	Category	Cost	Project or Locatoin	CK #	Dt of CK
9/24/2014	110954	Andrew	Metering Plan / Cap Improvement	$180.00	labor 4 hrs parts for meter parmelee	5280	10/6/2014
9/24/2014	3467	Andrew	Metering Plan / Cap Improvement	$135.00	labor 3 hrs Parmelee meter install& backfill	5280	10/6/2014
9/24/2014	3114168	FEI	Metering Plan / Cap Improvement	$79.92	Parmelee	5517	12/31/2014
9/24/2014	110954	HD Supply	Metering Plan / Cap Improvement	$126.65	Perrodin	5469	9/30/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	$142.50	backhoe 1.5 hrs backfll at Parmelee	5280	10/6/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	$75.00	materials 3 yds @$25/yd crushed rock for Parmelee	5280	10/6/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	$270.00	Labor 6 hrs dig up waterline at Trails Club	5280	10/6/2014
9/25/2014	3467	Andrew	Metering Plan / Cap Improvement	$270.00	Labor 6 hrs dig up waterline at Boy Scouts	5280	10/6/2014
9/25/2014	428334	FEI	Metering Plan / Cap Improvement	$68.41	Perrodin	5471	10/2/2014
9/25/2014	D020932	HD Supply	Metering Plan / Cap Improvement	$176.99	Perrodin	5470	10/1/2014
9/26/2014	3467	Andrew	Metering Plan / Cap Improvement	$450.00	labor 10 hrs saw cut A C and dig up service Perrodin	5280	10/6/2014
9/26/2014	3116540	FEI	Metering Plan / Cap Improvement	$415.89	Trails Club	5467	9/30/2014
9/27/2014	3467	Andrew	Metering Plan / Cap Improvement	$135.00	B & R Rentals for A C Saw Perrodin	5280	10/6/2014
9/27/2014	3467	Andrew	Metering Plan / Cap Improvement	$405.00	labor 9 hrs install Perrodin meter & backfill	5280	10/6/2014
9/29/2014	3467	Andrew	Metering Plan / Cap Improvement	$50.00	materials 2 yds crushed rock @$25/yds Perrodin	5280	10/6/2014
9/29/2014	3467	Andrew	Metering Plan / Cap Improvement	$135.00	labor 3 hrs get meter boxes town Boy Scouts+Trails Club	5280	10/6/2014
9/29/2014	3467	Andrew	Metering Plan / Cap Improvement	$675.00	labor 15 install meter at Boy Scouts & Trails Club	5280	10/6/2014
9/29/2014	3118127	FEI	Metering Plan / Cap Improvement	$79.95	Perrodin	5468	9/30/2014
9/30/2014	3467	FEI	Metering Plan / Cap Improvement	$59.48	Parmelee	5471	10/2/2014
9/30/2014	3467	Andrew	Metering Plan / Cap Improvement	$675.00	labor 15 install meter at Boy Scouts & Trails Club	5280	10/6/2014
10/4/2014	3467	Andrew	Metering Plan / Cap Improvement	$270.00	labot 6 hrs set meter boxes at Boy Scounts & Trails Club	5280	10/6/2014
12/2/2014	437666	FEI	Metering Plan / Cap Improvement	$693.03	Bridge pipe & fitings	5517	12/31/2014
12/3/2014	3177399	FEI	Metering Plan / Cap Improvement	$301.02	Bridge meter, pipe & fitings	5516	12/31/2014
12/3/2014	3472	Andrew	Metering Plan / Cap Improvement	$380.00	4 hrs Dig waterline Bridge duplex	5511	12/22/2014
12/3/2014	3472	Andrew	Metering Plan / Cap Improvement	$360.00	8 hrs Install meter at bridge plex	5511	12/22/2014
12/5/2014	3472	Andrew	Metering Plan / Cap Improvement	$90.00	2 hr man - backfill meter boxes Bridge plex	5511	12/22/2014
12/5/2014	3472	Andrew	Metering Plan / Cap Improvement	$190.00	2 hr machine - backfill meter boxes Bridge plex	5511	12/22/2014
			TOTAL COST	**$6,888.84**			

CUSTOMERS NAMES
Perrodin
Parmelee
Trails Club
Boy Scouts
Bridge duplex

SUMMARY

Count	Acct #	Customer Name	Location	Meter #	Date Install
1	71	Nogarie	8940 E Round Mtn Lp	92696902	09/15/12
2	306	Mt Hood Museum	88900 E G.C. Loop	48994670	05/23/13
3	242	Landauer	30397 E Blossom Tr	93490859	05/29/13
4	100	Carrier/OR Exp LLC	30467 Blossom	93490861	05/31/13
5	157	Skowhede	30460 E Blossom Tr	93490862	05/31/13
6	105	Campbell, Jim & Laura	80703 E Lige	93490860	06/11/13
7	114	Morse, Dorte&Greg	30225 E Blossom Tr	92946540	06/24/13
8	60	Putnam/Ravi	88567 E Frontage	93581182	06/25/13
9	162	Ravi/Putnam	30960 E Multorpor Dr	93581174	06/25/13
10	237	Wilcox	89107 E Little Tr	93581183	07/02/13
11	250	Ingersol - Mt. Hood Resort Lodging	89048 E Little Tr	60820245	07/10/13
12	34	Neth	89055 E G.C. Loop	60820247	07/10/13
13	39	Reed Inst. Ski Cabin	30545 E Mucoy St	956811175	07/11/13
14	5	Barlow Pass West	30395 E WyEast	608202249	07/11/13
15	214	M. Parmelee	30700 E Meldrum St	67222037	09/25/14
16	126	Perrodin	88875 E Round Ntn Lp	67222042	09/29/14
17	8	Boy Scouts of America	27901 E West Leg Rd	60638388	10/04/14
18	56	Trails Club	30133 E West Leg Rd	18359645	10/04/14
19	9	Bridge, Duane & Shari	88256 E Steel Ln	77874323	12/4/2014

2012 Metering Plan	**$549.77**
2013 Metering Plan	**$20,521.17**
2014 Metering Plan	**$6,888.84**
TOTAL COST	**$27,959.78**

DR 37

In the plant worksheet submitted, Account 330, Distribution Reservoir and Standpipes, please explain the difference in the UW 145 stated amount for the 100,000 Gal Wood Tank of $41,700 to the corrected amount filed in UW 174 of $48,475. Please include in your explanation supporting documentation of the actual cost in June 1980.

RESPONSE:

Below is the plant entry in question.

UW 145	100,000-GAL WOOD TANK (Corrected Amount)	6/1/1980	48,475

In UW 145, the total cost of the tank was not recorded at the correct amount. In researching information to respond to Data Request 37, the Company found additional information (summarized in the table below) confirming the cost of the wood tank. This summary shows that the $48,475 (referenced above) was incorrect. Attached as Data Response 37 Attachment A, you will find Small Business Administration (SBA) documentation supporting the total cost of the wood tank project as $139,000. Removing costs that are already included in plant in UW 145 (not including the plant entry above) leaves a total of $100,949.22. Therefore, the cost correction to the plant entry should be $100,949.22 minus the $41,700 from the UW 145 original entry. This results in a corrected adjustment to the plant entry above of $59,249.22.

The cost of the tank has been depreciating since 1980 at a service life of 50 years. Due to the error noted above, it has depreciated at the incorrect amount. The Company requests that staff amend the plant entry above to show a corrected amount of $59,249.22. This will ensure the remaining correct cost is being depreciated.

SBA DISB DT	TOTAL AMT	SBA Disbursement Check #	AMOUNT	PAID TO	
9/16/1980	25,918.06	15230016	25,918.06	CCB	National Tank & Pipe payment for Tank
	2,130.97	15230017	2,130.97	Wtr Wks Supply	Pipe & Fittings
	347.00	15230018	347.00	Borrower	Mercer - Rebar
	13,245.74	65109453	13,245.74	Wtr Wks Supply	Pipe & Fittings
	3,080.00	65109454	3,080.00	Morrison Knudsen	Concrete work & concrete pump
	854.20	65109455	854.20	Bruce Erickson PE	Consulting Engineer
	622.00	65109456	622.00	Borrower	Robt. Marshall /Mileage for Hauling
10/8/1980	692.64	15499542	692.64	Water Works Supply	Pipe & Fittings
	4,819.83	15499543	4,819.83	Bruce Erickson PE	Engineering
10/27/1980	27,609.00	15735110	already in plant*	Govt Camp Excav	Labor, materials & machine
	533.30	15735111	already in plant*	Bitte Church & Winchell	CPA- app requirements & acctg SBA forms
	1,000.00	15735112	1,000.00	Borrower	Govt Camp Excavation / Labor, materials & machine
12/9/1980	603.50	15843933	603.50	Statewide Rent-a-fence	Fencing
	1,025.37	15843934	1,025.37	Water Works Supply	Pipe & Fittings
	186.00	15843935	186.00	Bruce Erickson PE	Engineer & draftsperson
	627.20	15843936	627.20	A & A Drilling	Pipe & Fittings
	19,503.79	15843937	19,503.79	Govt Camp Excav	Labor, materials & machine
	2,433.13	15843938	2,433.13	Borrower	Casual Labor
1980 TOTAL	105,231.73		77,089.43		
1/12/1981	1,035.00	65858378	1,035.00	Bruce Erickson PE	Engineer & draftsperson
	85.15	65858379	85.15	Water Works Supply	Pipe & Fittings
	210.00	65858380	210.00	Borrower	Casual Labor
7/13/1981	4,207.98	see SBA letter	already in plant*	Water Works Supply	Pipe & Fittings
8/24/1981	1,025.66	17337934	1,025.66	Water Works Supply	Pipe & Fittings
	3,500.00	17337935	3,500.00	Govt Camp Excav	Labor, materials & machine
	2,674.60	17337936	2,674.60	Govt Camp Excav	Labor, materials & machine
9/21/1981	1,764.06	67357991	1,764.06	Borrower	Water Works Sup & Pacific Water Wks P & F
10/15/1981	2,000.00	17561242	2,000.00	Borrower	Govt. Camp Excav - Labor, materials & machine
	2,447.88	17561243	2,447.88	Govt Camp Excav	Labor, materials & machine
1981 TOTAL	18,950.33		14,742.35		
2/11/1982	4,930.50	18182130	already in plant*	Govt Camp Excav	Labor, materials & machine
4/22/1982	1,000.00	18557113	1,000.00	Govt Camp Excav	Labor materials & machine
	770.00	18557114	already in plant*	Borrower	Govt. Camp Excav - Labor, materials & machine
8/31/1982	2,342.31	19234803	2,342.31	Pacific Water Wks Supply	Pipe & Fittings
10/21/1982	5,775.13	20059169	4,183.18	Pacific Water Wks Supply	Pipe & Fittings
		20059168	1,591.95	Borrower	Govt. Camp Excav - Labor, materials & machine
1982 TOTAL	14,817.94		9,117.44		
GRAND TOTAL	139,000.00		100,949.22		

1980	77,089.43	100,949.22	Cost Not In Plant
1981	14,742.35	(41,700.00)	Minus UW 145 Entry
1982	9,117.44	59,249.22	Corrected Entry Amount
	100,949.22		

*Yellow highlighted costs are already in plant

Note: The pre-SBA loan engineering entries below are already included in plant. This engineering work was required as a prerequisite condition of the loan. The costs are not included in the SBA documents because they occurred prior to the loan. Data Response 37 Attachment B documents the pre-SBA loan engineering costs.

Engineering Cost Wood Tank - Pre SBA	2/29/1980	919
Engineering Cost Wood Tank - Pre SBA	3/18/1980	333
Engineering Cost Wood Tank - Pre SBA	5/12/1980	671

DR 16

Please provide a separate Plant schedule for all CIAC contributions in excel format.

RESPONSE:

A copy of the Company CIAC plant and depreciation schedule is attached in excel format as Data Response 16 Attachment.

GOVERNMENT CAMP WATER
UW 174

CIAC Plant

Acct No.	Account Description	Date Acquired	Utility Plant Orig Cost	Less Excess Capacity Adj to Plant	Total Adj Plant	NARUC Asset Life	Annual Deprec	Final Month of Deprec	Before 1985	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Accum. Deprec. Ending 2016	Remaining Plant
301	**Organization**	Various	-	-	-	-	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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302	**Franchises**	Various	-	-	-	-	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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303	**Land and Land Rights**	Various	-	-	-	-	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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304	**Structures and Improvements**	Various	-	-	-	35	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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305	**Collecting and Impounding Reservoirs**	Various	-	-	-	50	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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306	**Lake, River and Other Intakes**	Various	-	-	-	35	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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307	**Wells and Springs**	Various	-	-	-	25	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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308	**Infiltration Galleries and Tunnels**	Various	-	-	-	25	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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309	**Supply Main**	Various	-	-	-	50	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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310	**Power Generation Equipment**	Various	-	-	-	30	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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311	**Pumping Equipment**	Various	-	-	-	20	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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320	**Water Treatment Equipment**	Various	-	-	-	20	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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330	**Distribution Reservoir and Standpipes**	Various	-	-	-	50	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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331	**Transmission and Distribution Mains**	Various	1,077,641	-	1,077,641	50	21,553	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,117	6,701	6,701	6,701	8,446	14,248	15,670	15,670	15,670	15,670	15,670	16,218	16,958	18,873	21,553	195,867	881,774
	12" line Lige to Gov Camp Loop	Nov 2002	335,071		335,071	50	6,701	Oct 2052	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,117	6,701	6,701	6,701	6,701	6,701	6,701	6,701	6,701	6,701	6,701	6,701	6,701	6,701	6,701	94,937	240,134
	12" line Multorpor to Skibowl	Oct 2006	198,285		198,285	50	3,966	Sep 2056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	991	3,966	3,966	3,966	3,966	3,966	3,966	3,966	3,966	3,966	3,966	40,648	157,637
	8" line WyEast to Blossom	Oct 2006	150,719		150,719	50	3,014	Sep 2056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	754	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014	30,897	119,822
	12" Bore Line under Hwy 26 to Tyrolean	Sep 2007	85,000		85,000	50	1,700	Aug 2057	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	567	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	15,867	69,133
	Tyrolean Overruns - TIF Portion	Jan 2008	14,419		14,419	50	288	Dec 2057	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	288	288	288	288	288	288	288	288	288	2,595	11,824
	ODOT Project 4" line replacement	Jul 2013	50,000		50,000	50	1,000	Jun 2063	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	500	1,000	1,000	1,000	3,500	46,500
	Tyrolean Overruns - Berman Portion	Nov 2013	14,419		14,419	50	288	Nov 2063	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	288	288	288	913	13,506
	12" line from Tyrolean to SkiBowl West	Aug 2015	229,728		229,728	50	4,595	Jul 2065	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,914	4,595	6,509	223,219
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333	**Services**	Various	-	-	-	30	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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334	**Meters and Meter Installations**	Various	-	-	-	20	-	Various	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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335	**Hydrants**	**Various**	**-**	**-**	**-**	**40**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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336	**Cross Connection Control**	**Various**	**-**	**-**	**-**	**15**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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339	**Other Plant**	**Various**	**-**	**-**	**-**	**30**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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340	**Office Furniture and Equipment**	**Various**	**-**	**-**	**-**	**20**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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341	**Transportation Equipment**	**Various**	**-**	**-**	**-**	**7**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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343	**Tools, Shop, and Garage Equipment**	**Various**	**-**	**-**	**-**	**15**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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344	**Laboratory Equipment**	**Various**	**-**	**-**	**-**	**15**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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345	**Power Operated Equipment**	**Various**	**-**	**-**	**-**	**10**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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346	**Communication Equipment**	**Various**	**-**	**-**	**-**	**10**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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347	**Electronic/Computer Equipment**	**Various**	**-**	**-**	**-**	**5**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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348	**Miscellaneous Equipment**	**Various**	**-**	**-**	**-**	**10**	**-**	**Various**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	TOTALS	**Various**	**1,077,641**	**-**	**1,077,641**	**Various**	**21,553**	**Various**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,117**	**6,701**	**6,701**	**6,701**	**8,446**	**14,248**	**15,670**	**15,670**	**15,670**	**15,670**	**15,670**	**16,218**	**16,958**	**18,873**	**21,553**	**195,867**	**881,774**

Original Plant In Service Cost	1,077,641
Less: Excess Capacity	-
"Used & Useful" Plant	1,077,641
Less Accum Amort of CIAC	195,867
NET PLANT	**881,774**

Depreciation Expense	**21,553**

DR 75

Please provide the status of the CWIP project of $5,441 to replace lines necessary to correct a repair problem. Please explain in your response whether the project has been started and when you expect it to complete. Please include in your response all documentation in the Company's possession of the current status of and timeline for project, including any project plans or contract(s) associated with the project.

RESPONSE:

As the timeline below indicates, the capital project started in November 2017. Due to the timing of the customer complaint, identification of the problem and the area's short construction season, the Company was forced to temporarily delay physical construction. The line connects to 4 homes. This is a small project; and therefore, doesn't require engineering plans or contracts. The revenues from the CWIP will be used solely for the purpose of completing the project. Staff has already received a copy of the estimate for the line replacement in the application, Exhibit 4.

LINE REPLACEMENT TIMELINE

DATE	ACTIVITY
9/13/2017	Customer complaint re: low volume/pressure
10/31/2017	Company makes repair/identifies further problems including numerous leaks and tree roots
10/31/2017	Solution identified, replace 1940 lines and move the lines away from trees
11/10/2017	Company receives estimate for line replacement
11/10/2017	Company makes decision to replace lines
11/13/2017	Starts snowing, construction halted
	ESTIMATED TIMETABLE
	As soon as snow melts company will begin replacement of line.
Phase 1	Cummins - Tap a line on Steel & connect home & old line will be abandoned
Phase 2	Robinson, Anja - Tap a line on Steel & connect home & old line will be abandoned
Phase 3	Lukovich & Murphy's line is in an easement which is the access to both cabins off of steel lane. A new line will tap off of Steel and run down the 150-175' easement.

DR 20

Please provide an explanation for the lack of compliance to Condition 12 in the Stipulated Agreement in UW 145, requiring Government Camp to file a new rate case in or prior to January 2014, as the subsequent rate case was filed December 29, 2017.

RESPONSE:

The Company is a small water system. Filing a rate case is a big deal for the Company. It is very time consuming and costs money to file a rate case. This is above and beyond the time and costs required to operate and maintain the water system. Further, the Company has been going through a lot of changes in the last few years. For example; transitioning to new ownership/ management with the attendant training and mentoring; negotiating an operator contract; hiring and bringing up to speed a new bookkeeping and billing service. It's been a very busy and demanding time for this small Company. In January of 2014, the Company requested PUC Staff stipulate to an 18 month extension. It was the Company's perception that a rate case was not yet advisable.

DR 18

Please explain whether Condition 9 (a three-year metering program to install meters to all commercial customers with service line sizes greater than 3/4 inch) in the Stipulated Agreement for UW 145 has been met? If it has not been met, please explain in your response the number of commercial customers without meters with service line sizes greater than 3/4 inch and when those customers will have meters.

RESPONSE:

The Company has completed the three-year metering program. However, after delving into the logistics and researching the costs associated with this program, the Company made a management decision to meter only those commercial customers who use a large volume of water. The research showed that commercial customers with lines over ¾", consume less water, not more than those with ¾-inch lines. Therefore, the Company determined that because of this lower volume, it wasn't cost effective to meter these lower volume customers with lines over ¾". The commercial customers without meters with service lines sizes greater than ¾" are shown below. We have no plans to meter these commercial customers in the foreseeable future

Customer	Acct #	Reason to not include in metering plan
Hoodland Fire	28	Low water use
Stockton	29	Low water use
Smith, Raelene	202	Low water use

DR 67

In Government Camp's response to DR 18 regarding Condition 9 in the Stipulated Agreement in UW 145, the Company indicated it "made a management decision to meter only those commercial customers who use a large volume of water." In its response, the Company provided a table listing three low-volume commercial customer accounts (Hoodland Fire, Stockton, and Smith). In the billing data supplied in response to DR 1, there are a total of eight flat-rate commercial and residential customers with 2 inch lines. In supplemental DR 66:

a. Please advise whether the Company plans to complete the metering program in compliance with Condition 9 of the Stipulated agreement between parties in UW 145, and

RESPONSE:

The Company approached its three year metering plan by determining the most cost effective implementation plan. In UW 174, the Company intends to seek Staff and the Commission's reconsideration of the metering plan. It is the Company's determination that full implementation of the three year metering plan is not in the Company's best interest given cost and the Company's financial position.

b. Please provide how the Company determined that Hoodland Fire, Stockton, and Smith were low-volume customers without meters by which to gauge customer usage.

RESPONSE:

The Company's management decision is to not to meter low volume customers. However, each situation is unique. The Company determined not to meter the three customers below because:

Hoodland Fire Station - is unmanned; there is little or no consistent water use.

Stockton – This is a vacation rental. The Company intended to meter this customer; however, the water line is under asphalt. In order to install a meter, the asphalt driveway would have to be torn up. The Company determined that it is not cost effective, and it would be needlessly disruptive to tear up the asphalt to install a meter to determine water usage.

Smith – This account has 2 units. The customer lives in one unit but travels a lot and is absent much of the time making it a low volume user. However, the second unit is a rental. The Company will consider this account for metering in the future.

DR 55

During the Pre-Hearing Conference held for UW 174 on February 20, 2018, an attendee expressed concerns relating to a recent water pressure issue that may have been related to snow making activities at a ski resort. Please describe this water pressure issue and provide all documentation that the Company has regarding the issue and its resolution.

RESPONSE:

In December 2016, the Company was notified of a low water pressure issue in the water system. It was determined that the low water pressure was the result of snow making activities at Mt Hood Ski Bowl (Ski Bowl). Following an investigation, it was concluded that the cause was an error on the part of a Ski Bowl employee. The employee was subsequently removed from snow making duties.

As a result of this event, the Company added the following requirements for future snow making activities:

- Total snow making activities are limited to no more than 350 gallons per minute ("GPM").
- Ski Bowl is required to provide phone or text notification to the Company prior to beginning daily snow making activities.
- The Company may, if necessary, suspend snow making during high domestic consumption periods.
- During snow making activities, the Company monitors water system pressure hourly to ensure no reduction in pressure occurs.

This was a one-time incident and no further events have occurred since. The Company's new requirements and procedures regarding snow making activities will be required of all snow making entities.

DR 56

Please identify all customers of the Company that use snow making machines and indicate in your response whether these customers are billed by the metered or flat rate method.

RESPONSE:

There are 2 customers, both metered, that use snow making machines:

- Summit Ski Area
- Mt Hood Ski Bowl

DR 57

Please advise what actions or steps the Company has taken and plans the Company has made to ensure that water pressure does not fall below accepted standards due to snow making activities or other customer uses.

RESPONSE:

The Company established new requirements for snow making customers after the incident of December 2016 (see DR 55). These requirements are:

- Total snow making activities are limited to no more than 350 GPM.
- Ski Bowl is required to provide phone or text notification to the Company prior to beginning daily snow making activities.
- The Company may, if necessary, suspend snow making during high domestic consumption periods.
- During snow making activities, the Company monitors water system pressure hourly to ensure no reduction in pressure occurs.

DR 53

During the Pre-Hearing Conference held for UW 174 on February 20, 2018, an attendee expressed concerns relating to a proposed 480-unit condominium development in Government Camp. Please describe the proposed development and include in your response the status of the development project, the proposed completion date, and an explanation of whether Government Camp Water Company Inc. (Company) plans to provide water service to the development. Please provide all documents memorializing any negotiations or agreements by the Company to serve the proposed condominiums in this development.

RESPONSE:

The development described during the Pre-Hearing Conference relates to a proposed federal land exchange between the United States Department of Agriculture and Mt. Hood Meadows. Conditional authority to enter the transaction was provided by Congress in 2009 (PUBLIC LAW 111–11, Sec. 1206—MAR. 30, 2009; 123 STAT. 991). The land exchange has not been finalized and remains inchoate.

The Company is not a party to the land exchange or potential project development plans should the exchange be finalized. The Company has not entered into any negotiations or agreements to serve a 480-unit condominium or residential development. The proposed acquisition land is within the Company's exclusive service area.

The Company has not and will not enter into any agreement to provide service that is contrary to OAR 860-036-1270 Refusal of Water Utility Service, which states:

> (1) A water utility must refuse to provide service if:
>
> (b) The water utility does not have adequate facilities, resources, or capacity to provide the requested service without impairing service to other customers.

DR 45

In Government Camp's Application filing for UW 145, in answer to Question 5 on page 8, the utility listed an outstanding loan balance of $212,010 for a loan on the (glass fused steel 250 gallon) water tank to Maryanne Hill. Please provide the following loan information; 1) interest rate, 2) term of the loan & 3) loan amount.

RESPONSE:

- Interest rate = 7.5%
- Term of the loan = 30 years
- Loan amount = $225,000

DR 46

In Government Camp's Application filing for UW 145, in answer to Question 5 on page 8, the utility listed an outstanding loan balance to Maryanne Hill in the amount of $69,656, as a "Demand" loan at 6% interest. Please advise whether Government Camp still has this loan. If it does not explain why.

RESPONSE:

No, Government Camp Water no longer has the loan referenced above. The loan was repaid and no longer exists.

DR 47

In the utility's Application filed for UW 174, page 7, the outstanding balance of the water tank loan from Charlomont Hill, LLC is listed at $204,020. The water tank loan is listed as the single outstanding loan in the utility's Application for UW 174. Please confirm whether Charlomont Hill, LLC is the creditor or debtor on this loan. Please also explain whether this is the same loan referenced in UW 145 and that is the subject of DR 45, above. In the response, please also provide: 1) the date and terms of this loan, 2) interest rate, and 3) the loan amount.

RESPONSE:

Charlomont Hill, LLC is the creditor. It is the same loan referenced in UW 145 and is the subject of DR 45.

1) Date = September 2004, Loan term = 30 years
2) Interest rate = 7.5%
3) Loan amount = $225,000

DR 48

Please explain whether the water tank loan referred to on page 7 of the Application filed in UW 174, and referred to in DR 45 and 47, above, was restructured in any way following the conclusion of UW 145. If it was, please explain why the company did not seek approval from the OPUC for that restructuring. Please include in the response an explanation of the roles of Maryanne Hill and Charlomont Hill, LLC in that loan.

RESPONSE:

No, the water tank loan has not been restructured in any way since the conclusion of UW 145. The loan has never been restructured in any way.

Ms. Hill owns Charlomont Hill, LLC. When the loan was taken out for the new water tank, she also owned the Company. Charlomont Hill, LLC loaned money to the Company for the water tank.

DR 49

Please provide a copy all terms and agreements of the loan(s) referred to in DR45 through 48, above, including a copy of the loan agreement with Charlomont Hill, LLC for the water tank.

RESPONSE:

There is no written loan document.

The terms are:

1) Date = September 2004
2) Loan term = 30 years
3) Interest rate = 7.5%
4) Loan amount = $225,000

DR 61

Please explain all terms and conditions that govern the loan from Charlomont Hill LLC for the water tank, including all terms and conditions regarding its repayment.

RESPONSE:

The terms and conditions of the loan from Charlomont Hill LLC to the Company were provided in responses to DR 45 and DR 47.

RESPONSE to DR 45:

- Interest rate = 7.5%
- Term of the loan = 30 years
- Loan amount = $225,000

RESPONSE TO DR 47:

Charlomont Hill, LLC is the creditor. It is the same loan referenced in UW 145 and is the subject of DR 45.

1) Date = September 2004, Loan term = 30 years
2) Interest rate = 7.5%
3) Loan amount = $225,000

The Company pays Charlomont Hill LLC $1,440.70 per month in repayment of the loan.

DR 62

Please provide a balance sheet that includes all monthly payments, interest billed, and the monthly loan balance for the $225,000 loan from Charlomont Hill LLC for the water tank from its inception in 2004 through the 2016 test year.

RESPONSE:

See the Loan Schedule below.

INTEREST AT 7.5%					
BEGINNING BALANCE					$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
OCT	2004	$ 1,602.25	$ 1,406.25	$ 196.00	$ 224,804.00
NOV		$ 1,602.25	$ 1,405.03	$ 197.23	$ 224,606.78
DEC		$ 1,602.25	$ 1,403.79	$ 198.46	$ 224,408.32
					$ 224,408.32
JAN	2005	$ 1,602.25	$ 1,402.55	$ 199.70	$ 224,208.62
FEB		$ 1,602.25	$ 1,401.30	$ 200.95	$ 224,007.67
MAR		$ 1,602.25	$ 1,400.05	$ 202.20	$ 223,805.47
APRIL		$ 1,602.25	$ 1,398.78	$ 203.47	$ 223,602.01
MAY		$ 1,602.25	$ 1,397.51	$ 204.74	$ 223,397.27
JUNE		$ 1,602.25	$ 1,396.23	$ 206.02	$ 223,191.25
JULY		$ 1,602.25	$ 1,394.95	$ 207.30	$ 222,983.95
AUG		$ 1,602.25	$ 1,393.65	$ 208.60	$ 222,775.35
SEPT		$ 1,602.25	$ 1,392.35	$ 209.90	$ 222,565.44
OCT		$ 1,602.25	$ 1,391.03	$ 211.22	$ 222,354.23
NOV		$ 1,602.25	$ 1,389.71	$ 212.54	$ 222,141.69
DEC		$ 1,602.25	$ 1,388.39	$ 213.86	$ 221,927.83
					$ 221,927.83
JAN	2006	$ 1,602.25	$ 1,387.05	$ 215.20	$ 221,712.62
FEB		$ 1,602.25	$ 1,385.70	$ 216.55	$ 221,496.08
MAR		$ 1,602.25	$ 1,384.35	$ 217.90	$ 221,278.18
APRIL		$ 1,602.25	$ 1,382.99	$ 219.26	$ 221,058.92
MAY		$ 1,602.25	$ 1,381.62	$ 220.63	$ 220,838.29
JUNE		$ 1,602.25	$ 1,380.24	$ 222.01	$ 220,616.27
JULY		$ 1,602.25	$ 1,378.85	$ 223.40	$ 220,392.88
AUG		$ 1,602.25	$ 1,377.46	$ 224.79	$ 220,168.08
SEPT		$ 1,602.25	$ 1,376.05	$ 226.20	$ 219,941.88
OCT		$ 1,602.25	$ 1,374.64	$ 227.61	$ 219,714.27
NOV		$ 1,602.25	$ 1,373.21	$ 229.04	$ 219,485.23
DEC		$ 1,602.25	$ 1,371.78	$ 230.47	$ 219,254.77

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INTEREST AT 7.5%					
BEGINNING BALANCE					$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
					$ 219,254.77
JAN	2007	$ 1,602.25	$ 1,370.34	$ 231.91	$ 219,022.86
FEB		$ 1,602.25	$ 1,368.89	$ 233.36	$ 218,789.50
MAR		$ 1,602.25	$ 1,367.43	$ 234.82	$ 218,554.69
APRIL		$ 1,602.25	$ 1,365.97	$ 236.28	$ 218,318.40
MAY		$ 1,602.25	$ 1,364.49	$ 237.76	$ 218,080.64
JUNE		$ 1,602.25	$ 1,363.00	$ 239.25	$ 217,841.40
JULY		$ 1,602.25	$ 1,361.51	$ 240.74	$ 217,600.66
AUG		$ 1,602.25	$ 1,360.00	$ 242.25	$ 217,358.41
SEPT		$ 1,602.25	$ 1,358.49	$ 243.76	$ 217,114.65
OCT		$ 1,602.25	$ 1,356.97	$ 245.28	$ 216,869.37
NOV		$ 1,602.25	$ 1,355.43	$ 246.82	$ 216,622.55
DEC		$ 1,602.25	$ 1,353.89	$ 248.36	$ 216,374.19
					$ 216,374.19
JAN	2008	$ 1,602.25	$ 1,352.34	$ 249.91	$ 216,124.28
FEB		$ 1,602.25	$ 1,350.78	$ 251.47	$ 215,872.81
MAR		$ 1,602.25	$ 1,349.21	$ 253.04	$ 215,619.76
APRIL		$ 1,440.70	$ 1,347.62	$ 93.08	$ 215,526.68
MAY		$ 1,440.70	$ 1,347.04	$ 93.66	$ 215,433.03
JUNE		$ 1,440.70	$ 1,346.46	$ 94.24	$ 215,338.78
JULY		$ 1,440.70	$ 1,345.87	$ 94.83	$ 215,243.95
AUG		$ 1,440.70	$ 1,345.27	$ 95.43	$ 215,148.52
SEPT		$ 1,440.70	$ 1,344.68	$ 96.02	$ 215,052.50
OCT		$ 1,440.70	$ 1,344.08	$ 96.62	$ 214,955.88
NOV		$ 1,440.70	$ 1,343.47	$ 97.23	$ 214,858.66
DEC		$ 1,440.70	$ 1,342.87	$ 97.83	$ 214,760.82
					$ 214,760.82
JAN	2009	$ 1,440.70	$ 1,342.26	$ 98.44	$ 214,662.38
FEB		$ 1,440.70	$ 1,341.64	$ 99.06	$ 214,563.32
MAR		$ 1,440.70	$ 1,341.02	$ 99.68	$ 214,463.64
APRIL		$ 1,440.70	$ 1,340.40	$ 100.30	$ 214,363.34
MAY		$ 1,440.70	$ 1,339.77	$ 100.93	$ 214,262.41
JUNE		$ 1,440.70	$ 1,339.14	$ 101.56	$ 214,160.85
JULY		$ 1,440.70	$ 1,338.51	$ 102.19	$ 214,058.65
AUG		$ 1,440.70	$ 1,337.87	$ 102.83	$ 213,955.82
SEPT		$ 1,440.70	$ 1,337.22	$ 103.48	$ 213,852.34
OCT		$ 1,440.70	$ 1,336.58	$ 104.12	$ 213,748.22
NOV		$ 1,440.70	$ 1,335.93	$ 104.77	$ 213,643.45
DEC		$ 1,440.70	$ 1,335.27	$ 105.43	$ 213,538.02
					$ 213,538.02

INTEREST AT 7.5%					
BEGINNING BALANCE					$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
					$ 213,538.02
JAN	2010	$ 1,440.70	$ 1,334.61	$ 106.09	$ 213,431.93
FEB		$ 1,440.70	$ 1,333.95	$ 106.75	$ 213,325.18
MAR		$ 1,440.70	$ 1,333.28	$ 107.42	$ 213,217.76
APRIL		$ 1,440.70	$ 1,332.61	$ 108.09	$ 213,109.67
MAY		$ 1,440.70	$ 1,331.94	$ 108.76	$ 213,000.91
JUNE		$ 1,440.70	$ 1,331.26	$ 109.44	$ 212,891.46
JULY		$ 1,440.70	$ 1,330.57	$ 110.13	$ 212,781.34
AUG		$ 1,440.70	$ 1,329.88	$ 110.82	$ 212,670.52
SEPT		$ -	$ 1,329.19	$ (1,329.19)	$ 213,999.71
OCT		$ -	$ 1,337.50	$ (1,337.50)	$ 215,337.21
NOV		$ 1,148.38	$ 1,345.86	$ (197.48)	$ 215,534.68
DEC		$ 1,148.38	$ 1,347.09	$ (198.71)	$ 215,733.40
JAN	2011	$ 1,462.37	$ 1,348.33	$ 114.04	$ 215,619.36
FEB		$ 848.38	$ 1,347.62	$ (499.24)	$ 216,118.60
MAR		$ 1,148.38	$ 1,350.74	$ (202.36)	$ 216,320.96
APRIL		$ 1,148.38	$ 1,352.01	$ (203.63)	$ 216,524.59
MAY		$ 1,148.38	$ 1,353.28	$ (204.90)	$ 216,729.49
JUNE		$ 1,148.38	$ 1,354.56	$ (206.18)	$ 216,935.67
JULY		$ 1,148.38	$ 1,355.85	$ (207.47)	$ 217,143.13
AUG		$ -	$ 1,357.14	$ (1,357.14)	$ 218,500.28
SEPT		$ 7,245.30	$ 1,365.63	$ 5,879.67	$ 212,620.61
OCT		$ 1,440.70	$ 1,328.88	$ 111.82	$ 212,508.78
NOV		$ 1,440.70	$ 1,328.18	$ 112.52	$ 212,396.26
DEC		$ 1,440.70	$ 1,327.48	$ 113.22	$ 212,283.04
2011 Total:		$ 19,620.05	$ 16,169.69	$ 3,450.36	
JAN	2012	$ 1,440.70	$ 1,326.77	$ 113.93	$ 212,169.11
FEB		$ 1,440.70	$ 1,326.06	$ 114.64	$ 212,054.47
MAR		$ 1,440.70	$ 1,325.34	$ 115.36	$ 211,939.11
APRIL		$ 1,440.70	$ 1,324.62	$ 116.08	$ 211,823.03
MAY		$ 1,440.70	$ 1,323.89	$ 116.81	$ 211,706.22
JUNE		$ 1,440.70	$ 1,323.16	$ 117.54	$ 211,588.68
JULY		$ 1,440.70	$ 1,322.43	$ 118.27	$ 211,470.41
AUG		$ 1,440.70	$ 1,321.69	$ 119.01	$ 211,351.40
SEPT		$ 1,440.70	$ 1,320.95	$ 119.75	$ 211,231.65
OCT		$ 1,440.70	$ 1,320.20	$ 120.50	$ 211,111.15
NOV		$ 1,440.70	$ 1,319.44	$ 121.26	$ 210,989.89
DEC		$ 1,440.70	$ 1,318.69	$ 122.01	$ 210,867.88
2012 Total:		$ 17,288.40	$ 15,873.24	$ 1,415.16	

INTEREST AT 7.5%					
BEGINNING BALANCE					$ 225,000.00
		PAYMENT	INTEREST	PRINCIPAL	
JAN	2013	$ 1,440.70	$ 1,317.92	$ 122.78	$ 210,745.10
FEB		$ 1,440.70	$ 1,317.16	$ 123.54	$ 210,621.56
MAR		$ 1,440.70	$ 1,316.38	$ 124.32	$ 210,497.25
APRIL		$ 1,440.70	$ 1,315.61	$ 125.09	$ 210,372.15
MAY		$ 1,440.70	$ 1,314.83	$ 125.87	$ 210,246.28
JUNE		$ 1,440.70	$ 1,314.04	$ 126.66	$ 210,119.62
JULY		$ 1,440.70	$ 1,313.25	$ 127.45	$ 209,992.17
AUG		$ 1,440.70	$ 1,312.45	$ 128.25	$ 209,863.92
SEPT		$ 1,440.70	$ 1,311.65	$ 129.05	$ 209,734.87
OCT		$ 1,440.70	$ 1,310.84	$ 129.86	$ 209,605.01
NOV		$ 1,440.70	$ 1,310.03	$ 130.67	$ 209,474.34
DEC		$ 1,440.70	$ 1,309.21	$ 131.49	$ 209,342.86
2013 Total:		$ 17,288.40	$ 15,763.38	$ 1,525.02	
JAN	2014	$ 1,440.70	$ 1,308.39	$ 132.31	$ 209,210.55
FEB		$ 1,440.70	$ 1,307.57	$ 133.13	$ 209,077.41
MAR		$ 1,440.70	$ 1,306.73	$ 133.97	$ 208,943.45
APRIL		$ 1,440.70	$ 1,305.90	$ 134.80	$ 208,808.64
MAY		$ 1,440.70	$ 1,305.05	$ 135.65	$ 208,673.00
JUNE		$ 1,440.70	$ 1,304.21	$ 136.49	$ 208,536.51
JULY		$ 1,440.70	$ 1,303.35	$ 137.35	$ 208,399.16
AUG		$ 1,440.70	$ 1,302.49	$ 138.21	$ 208,260.95
SEPT		$ 1,440.70	$ 1,301.63	$ 139.07	$ 208,121.88
OCT		$ 1,440.70	$ 1,300.76	$ 139.94	$ 207,981.95
NOV		$ 1,440.70	$ 1,299.89	$ 140.81	$ 207,841.13
DEC		$ 1,440.70	$ 1,299.01	$ 141.69	$ 207,699.44
JAN	2015	$ 1,440.70	$ 1,298.12	$ 142.58	$ 207,556.86
FEB		$ 1,440.70	$ 1,297.23	$ 143.47	$ 207,413.39
MAR		$ 1,440.70	$ 1,296.33	$ 144.37	$ 207,269.03
APRIL		$ 1,440.70	$ 1,295.43	$ 145.27	$ 207,123.76
MAY		$ 1,440.70	$ 1,294.52	$ 146.18	$ 206,977.58
JUNE		$ 1,440.70	$ 1,293.61	$ 147.09	$ 206,830.49
JULY		$ 1,440.70	$ 1,292.69	$ 148.01	$ 206,682.48
AUG		$ 1,440.70	$ 1,291.77	$ 148.93	$ 206,533.55
SEPT		$ 1,440.70	$ 1,290.83	$ 149.87	$ 206,383.68
OCT		$ 1,440.70	$ 1,289.90	$ 150.80	$ 206,232.88
NOV		$ 1,440.70	$ 1,288.96	$ 151.74	$ 206,081.13
DEC		$ 1,440.70	$ 1,288.01	$ 152.69	$ 205,928.44

INTEREST AT 7.5% BEGINNING BALANCE		PAYMENT	INTEREST	PRINCIPAL	$ 225,000.00
JAN	2016	$ 1,440.70	$ 1,287.05	$ 153.65	$ 205,774.79
FEB		$ 1,440.70	$ 1,286.09	$ 154.61	$ 205,620.19
MAR		$ 1,440.70	$ 1,285.13	$ 155.57	$ 205,464.61
APRIL		$ 1,440.70	$ 1,284.15	$ 156.55	$ 205,308.07
MAY		$ 1,440.70	$ 1,283.18	$ 157.52	$ 205,150.54
JUNE		$ 1,440.70	$ 1,282.19	$ 158.51	$ 204,992.03
JULY		$ 1,440.70	$ 1,281.20	$ 159.50	$ 204,832.53
AUG		$ 1,440.70	$ 1,280.20	$ 160.50	$ 204,672.04
SEPT		$ 1,440.70	$ 1,279.20	$ 161.50	$ 204,510.54
OCT		$ 1,440.70	$ 1,278.19	$ 162.51	$ 204,348.03
NOV		$ 1,440.70	$ 1,277.18	$ 163.52	$ 204,184.50
DEC		$ 1,440.70	$ 1,276.15	$ 164.55	$ 204,019.96

DR 63

Please provide a comparison of the current market rate and the 7.5 percent loan for $204,020 currently owed to Charlomont Hill LLC.

RESPONSE:

Objection. Data Requests are written interrogatories or requests for production of documents. OAR 860-001-0540. The submission of data requests upon a party is subject to the discovery rules in the Oregon Rules of Civil Procedure. OAR 860-001-0540(1). In addition, Data Requests must be commensurate with the needs of the case, the resources available to the parties, and the importance of the issues to which the discovery relates. OAR 860-001-0500(1). Discovery that is unreasonably cumulative, duplicative, burdensome, or overly broad is not allowed. OAR 860-001-0500(2).

DR 63 is neither a request for production nor an interrogatory. Rather it instructs the Company to undertake an independent investigation on the PUC Staff's behalf by conducting a market survey of current rates. This is not a permissible request under either OAR 860-001-0540 or the Oregon Rules of Civil Procedure. Moreover, DR 63 is not reasonably calculated to lead to admissible evidence. The Charlomont Hill LLC loan originated prior to the PUC exercise of regulatory jurisdiction over the Company. The Charlomont Hill LLC loan was also the subject of review in UW 145.

DR 64

Please explain whether and how the Company sought alternative sources of financing for the water tank loan that the Company obtained from Charlomont Hill LLC, and provide documentation of the Company's inquiries regarding alternative sources of financing for that water tank.

RESPONSE:

Objection. Data Request 64 is irrelevant and not reasonably calculated to lead to admissible evidence. ORCP 36(B)(1). The Company was not a PUC rate-regulated water company at the time the loan originated. As such, there was no requirement to seek alternative sources of financing for the water tank loan. In addition, the loan has been subjected to review in UW 145. UW 145 concluded in a final order that was not appealed.

DR 65

Please provide a balance sheet that includes all monthly payments, interest billed, and the monthly loan balance for the $69,656 "Demand" loan from Maryanne Hill from its inception through its payoff date.

RESPONSE:

Objection. Data Requests are written interrogatories or requests for production of documents. OAR 860-001-0540. The submission of data requests upon a party is subject to the discovery rules in the Oregon Rules of Civil Procedure. OAR 860-001-0540(1). In addition, Data Requests must be commensurate with the needs of the case, the resources available to the parties, and the importance of the issues to which the discovery relates. OAR 860-001-0500(1). Discovery that is unreasonably cumulative, duplicative, burdensome, or overly broad is not allowed. OAR 860-001-0500(2).

DR 65 improperly seeks to compel the Company to create documents and work product. Not waiving the objection, the Company responds, the information sought is not readily available in a format conducive to easily creating a balance sheet as requested. The loan was paid off in full with no interest attached.

CASE: UW 174
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 200

Replacement Direct Testimony[1]

September 14, 2018

[1] Consistent with the revised schedule issued by ALJ Power in this docket on May 22, 2018, Staff withdraws its Direct Testimony and related exhibits filed on May 3, 2018. This direct testimony and its related exhibits replace the withdrawn direct testimony filed on May 3, 2018. Staff will not offer the May 3, 2018 direct testimony into the record in this docket because it is replaced and superseded by this direct testimony.

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

A. My name is Matt Muldoon. I am a Senior Economist for the Public Utility Commission of Oregon (Commission or OPUC). My business address is: 201 High Street SE, Suite 100, Salem, OR 97301.

Q. Please describe your educational background and work experience.

A. My educational background and work experience are set forth in my Witness Qualification Statement, which is provided as Exhibit Staff/201.

Q. What is the purpose of your testimony?

A. My testimony is in support of Staff analyst Malia Brock's Staff/100 testimony Issue 6 regarding: Cost of Common Equity, also known as Return on Equity (ROE) for Government Camp Water Company, Inc. (GCW or Company)

Ms. Brock applies other considerations to my findings and makes summary recommendations to the Commission in Exhibit No. Staff/100.

Q. What are your findings?

A. I recommend a point ROE of 9.25 percent within a range of reasonable ROEs of 8.17 to 9.26 percent.

Q. Did you prepare a table showing the overall Cost of Capital (CoC) resulting from your analysis?

A. No. My ROE is an input into the calculations for CoC and overall Rate of Return (ROR) provided in Ms. Brock's Staff/100 testimony.

Q. How is your testimony organized?

A. My testimony is organized as follows:

Q. Did you prepare exhibits in support of your opening testimony?

A. Yes. I prepared the following exhibits:

Staff/201 ..... Witness Qualification Statement
Staff/202 ... . Staff Three–Stage Discounted Cash Flow (DCF) ROE Modeling
Staff/203 ..... Treasury Inflation Protected Securities (TIPS) Analysis
Staff/204 . GDP Analysis with U.S. Bureau of Economic Analysis (BEA) Data
Staff/205 ..... Simple DCF Check on ROE Modeling
Staff/206 ..... Value Line (VL) Water Utility Profiles
Staff/207 ..... Merger News with Bearing on Water Utilities

ISSUE 1 – COST OF COMMON EQUITY (ROE)

Q. Does your recommended ROE meet appropriate standards?

A. Yes. The 9.25 percent point ROE I recommend meets the *Hope* and *Bluefield* standards, as well as the requirements of Oregon Revised Statute (ORS) 756.040. My recommendations are consistent with establishing "fair and reasonable rates" that are both "commensurate with the return on investments in other enterprises having corresponding risks" and "sufficient to ensure confidence in the financial integrity of the utility, allowing the utility to establish and maintain credit ratings and attract capital."[2]

Q. Describe the analysis underlying Staff's ROE recommendation.

[2] *See* ORS 756.040(1) (a) and (b).

A. I rely on two different Three-Stage "Discounted Cash Flow" (DCF) models,[3] applied using a cohort group of peer utilities, to estimate the expected return on common equity required by investors.

As a check or directional vector aid that helps select a point estimate point in my Three-Stage DCF modeling generated range or reasonable ROEs, I use a Simple Gordon Growth DCF model. This Simple DCF model points to the upper end of my range of reasonable ROEs, while supporting my recommendation of a 9.25 percent point ROE.

ISSUE 2 – THREE-STAGE DCF MODELING

Q. Describe the two DCF models that you used.

A. My first model is a conventional Three-Stage Discounted Dividend Model, which Staff denotes as a "30-year Three-stage Discounted Dividend Model with Terminal Valuation based on Growing Perpetuity" (referred to as "Model X").

My second model is the "30-year Three-stage Discounted Dividend Model with Terminal Valuation Based on P/E Ratio" (referred to as "Model Y").

The three stages of the models are: 1) where I use near-term, next-five-year Value Line's (VL) forecasts of dividends per share for each company; 2) then five years where the rate of dividend growth converges from first period

[3] *See also* the Commission's discussion of multistage versus single-stage DCF models in Order No. 01-777 at page 27.

to the growth rate in the third stage from years 10 to 30 in the future. This is the third "long-term" stage, for which growth rates are discussed.

Model X includes a terminal value calculation, in which I assume dividends per share grow indefinitely at the rate of growth in Stage 3 ("growing perpetuity"). This represents stock held indefinitely as an excellent alternative to investing in US Treasuries or other fixed income alternatives.

In contrast, Model Y terminates in a sale of stock where the price is determined by my escalated price/earnings (P/E) ratio. This represents stock held and receiving dividends toward a goal, and the sale of the stock once the goal is reached. For example, one saving toward retirement would sell the stock as needed in retirement.

Q. How do you address dividend timing?

A. Each model uses two sets of calculations that differ in the assumed timing of dividend receipt. One set of calculations is based on the standard assumption that the investor receives dividends at the end of each period.

The second set of calculations assumes the investor receives dividends at the beginning of each period. Each model averages the unadjusted ROE values to generate an Internal Rate of Return (IRR) produced with each set of calculations for each peer utility. This approach accounts for the time value of money, closely replicating actual quarterly receipt of dividends by investors.

Q. How do you account for differences in peer utility capital structures?

A. Each model employs the Hamada equation[4] to calculate an adjustment for differences in capital structure between each peer utility and my notional 50 percent common equity capital structure.

Q. What price do you use for each peer utility's stock?

A. I use the average of closing prices for each utility from the first trading day in June, July, and August 2018 to represent a reasonable snapshot of 2018, Q2.

Q. How do Staff's two DCF models differ?

A. Model X uses the calculation of a growing perpetuity as part of the terminal valuation in 2046.

Model Y uses the current price-earnings (P/E) ratio multiplied by the estimated "earnings per share" (EPS) in 2047, which establishes the stock's "selling price" in 2046 for terminal valuation. I estimate the 2047 EPS analogously with methods used to estimate the 2046 dividend in both models; i.e., based on VL estimates to which multiple growth rates are sequentially applied.

PEER SCREEN

Q. How did you select comparable companies (peers) to estimate ROE?

A. I used companies that met the following criteria as peer utilities:

1. Covered by VL as an U.S. Water Utility;
2. Forecasted by VL to have Positive Dividend Growth;

[4] Dr. Robert Hamada's Equation as used in Staff/202, Muldoon/4 separates the financial risk of a levered firm, represented by its mix of common stock, preferred stock, and debt, from its fundamental business risk. Staff corrects its ROE modeling for divergent amounts of debt, also referred to as leverage, between the Company and its peers.

3. No Decline in Annual Dividend in Last Five Years per SNL and VL; and
4. Primarily Domestic US Water Utility Sourced Cash Flows.

Q. What cohort of companies resulted from your screens?

A. Please see Exhibit Staff/202, Muldoon/2 for detailed Staff screens.

Q. What is of most interest regarding your findings while screening publicly traded water utilities?

A. American Water Works Company seeks to acquire Connecticut Water Services, Inc. Staff does not include these companies in its modeling, because of the uncertainties inherent in extrapolating current trends through substantial reorganization. Other Companies interested in like mergers potentially with the same utilities, but making little progress on the proposed transactions to date are treated as sensitivities. Those sensitivity results mirror the small cap findings. It is important to note that Staff sensitivity analysis can increase but never reduces the Company's modeling results.

SENSITIVITY ANALYSIS

Q. Did Staff also do sensitivity analysis to quantify the impact capitalization size has on required ROE?

A. Yes. Staff's modeling utilized: A) water utilities that passed Staff's Screen, B) the earlier group restricted to Small- and Mid-Cap companies as a sensitivity, and C) the first group restricted to Small-Cap companies as another sensitivity. The gap between results for these categories of peers is also

used to adjust modeling results upward to reflect the very small capitalization of GCW.

Q. How does Staff apply informed judgment to its modeling?

A. Staff examined its full range of ROE results including sensitivities. Within that range, Staff determined that 8.17 percent to 9.26 percent is a reasonable narrowing of focus on Staff's peer companies, reflective of utility size.

GROWTH RATES

Q. What long-term growth rates did you use in the two DCF models?[5]

A. I used three different long-term growth rates, with different methods employed in developing each.

The first method uses the Congressional Budget Office's (CBO) growth rate. CBO is a non-partisan conservative source which has a long track record of reliable projections.

My second method uses a 50 percent weight applied to the average annual growth rate resulting from estimates of long-term GDP by the Energy Information Administration (EIA), PricewaterhouseCooper (PwC), the Social Security Administration (SSA), and the CBO, with each receiving one-quarter of the 50 percent weight. The remaining 50 percent is the average annual historical real U.S. Gross Domestic Product (GDP) growth rate, established

[5] Methods used here related to GDP-based growth rates are similar, if not identical to methods Staff has used in past proceedings. *See*, as an example, Staff's discussion of these methods and, to a limited extent, their conceptual underpinnings in Docket No. UE 233, at Exhibit Staff/800, Storm/46-52.

using regression analysis, for the period 1980 through 2017,[6] to which I apply the Treasury Inflation-Protected Securities (TIPS) inflation forecast.

Last, I employ a nominal historical growth rate. See Table 1 below:

Table 1
Long-Run 20-Year GDP Growth Rates[7]

Stage 3 – Long-Term Annual Dividend and EPS Growth Rates					
Component	Real Rate	TIPS Inflation Forecast	20-Yr Nominal Rate	Weight	Weighted Rate
Energy Information Administration	2.00%	1.99%	4.03%	12.50%	0.50%
PricewaterhouseCooper	1.80%	1.99%	3.83%	12.50%	0.48%
Social Security Administration	2.20%	1.99%	4.23%	12.50%	0.53%
Congressional Budget Office			4.00%	12.50%	0.50%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Composite				100%	4.41%
Congressional Budget Office Long-Term 20-Year Budget Outlook			4.00%	100.0%	4.00%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Social Security Administration	2.20%	1.99%	4.23%	50.0%	2.12%
Near Historical				100%	4.52%

Q. Does this approach capture a reasonable set of investor expectations similar to Staff's analysis in other recent general rate cases?

A. Yes, Staff modeling captures the expectations of investors who think variously that: A) future conditions will mirror the past, B) federal agency expert analysis also informs the historical track record, and C) Relying on the CBO avoids excessive market hype that could overstate likely future earnings. Staff also looked at a near-historical growth rate as shown, but the results were intermediate from other finds and not materially informative.

6 Staff discussed this approach in recent Staff cost of equity testimony in several rate case proceedings. *See*, as an example, in Docket No. UE 233 Exhibit Staff/800, Storm/46, line 15 through Storm/50 line 3.

7 *See* Staff/202 for this material in electronic form.

Q. Did your analysis include the construction of a synthetic forward curve using U.S. Treasuries (UST) TIPS break even points?

A. Yes. My forward curve is provided in Exhibit Staff/203, reflecting implied market-based inflationary expectations. Staff's recommendations are consistent with market activity indicating investor expectations of future inflation.

Q. Assume one ignored current downward adjustments by a broad spectrum of federal agencies and instead presumed that future U.S. GDP growth would look like the past 30 years. Would a ROE based on that assumption fall within Staff's recommended range?

A. Yes, I extracted and ran regression on data from U.S. Bureau of Economic Analysis (BEA) to generate the annual real historical GDP growth rate. My recommended range of ROEs includes values that presume GDP growth over the next 30 years would look like that of the past 30 years.

HAMADA EQUATION

Q. Why is your application of the Hamada Equation to un-lever (remove debt from) peers and to re-lever at a 50 percent LT Debt reasonable?

A. I employ the Hamada Equation as a check on the reasonableness of my modeling results. This eliminates bias based on differences in the amount of LT Debt in peer utilities.

INFORMED STAFF ANALYSIS

Q. Do you monitor and analyze current and projected market conditions?

A. Yes. My analysis includes analysis of the current economic climate and its impact on my estimates of long-term growth. I also rely heavily on feeds from SNL Financial LC (SNL), Bloomberg, Moody's, S&P, WSJ and other sources to make sure that my financial understandings are reflective of investor expectations.

The key news continues to be: 1) a frantic state of acquisitions and mergers (M&A); 2) new services and partnerships offered to very small water utilities and institutions able to provide clear financial profiles to larger energy and water utilities as potential business partners; and 3) a somewhat higher expectation of future water company stock price appreciation after the market corrections earlier this year.

Q. What do you mean by "clear financial profile"?

A. A very small water utility or institutional water provider needs to be able to identify every financial obligation for which water utility assets were pledges as a guarantee, every form of indebtedness and the interest rates and maturities of same; and all other claims against and obligations of the utility.

Q. Why is this important to managers who oversee both regulated and non-regulated businesses?

A. Often such managers have limited time to work on divergent problems. At this time, stopping and putting the time into tracking down and organizing

pertinent details of a small utilities' finances gives these managers new options in how to manage their utilities. Conversely, not having a clear financial profile can be a barrier to considering new ways to manage small water utility operations that are more cost effective while also consuming less manager attention.

Q. Focusing back on your work, did you use robust and proven analytical methodologies?

A. Yes. My methods are robust, and parallel Staff's work over the last decade.

ISSUE 3 – SIMPLE DCF GORDON GROWTH MODEL

Q. The basic interpretation of your Simple DCF model is that one would look to the upper range of the more powerful Three-Stage DCF model range of reasonable ROEs. Did Staff take this approach?

A. Yes, Staff recommends the top of its range of reasonable ROEs, 9.25 percent, for a point ROE.

Q. What is the range of ROE's generated by the Simple DCF Model?

A. The Simple Single-Stage DCF (Gordon Growth) model generated a range of 9.05 to 9.35 percent and point estimate of 9.20 percent ROE. This is supportive of Staff's recommended 9.25 point recommendation in Staff's more robust Three-Stage DCF modeling.

Q. Is there another way to interpret Staff's Simple DCF results?

A. Yes, some cost-of-capital practitioners disaggregate results to highlight the highest results for each individual peer company. In Staff's Simple DCF Model this would be a result in an 11.23 percent upper ROE limit.

Staff emphasizes that this is not a best approximation of reasonable ROEs or appropriate point ROE from Staff's perspective. However, the Commission might feel that the very small customer base and lack of clarity around GCW financial obligations and encumbrance of assets merits upward consideration of ROE to reflect increased financial risk.

Q. Does Staff recommend the Commission adopt such an interpretation?

A. No. Staff puts greater reliance on its Three Stage DCF modeling results and recommends use of the Simple DCF as just a pointer or vector within the Three-Stage DCF model results. When so employed, the Simple DCF 9.20 percent point ROE check on Staff's primary larger model work is supportive of Staff's recommended 9.25 percent point ROE.

CONCLUSION

Cost of Capital

Q. Is it practicable for GCW to adhere to best IOU practices?

A. Yes, but corporate management attention is finite and confronted with many demands and opportunities. Very small water utilities have more options for more efficient management at lower cost than were available just a few years ago. However, to access new management approaches requires managers to assemble clear financial profiles of their small water utilities.

Q. What is your recommendation regarding ROE?

A. I recommend that the Commission consider a range of reasonable ROEs from 8.17 percent to 9.26 percent, and a point ROE of **9.25** percent

developed using my two robust Three-Stage DCF models. I recommend the upper limit of my reasonable range of ROE's due to the results of my Simple DCF model, which I used as a general pointer within the more powerful three-stage modeling results.

My sensitivity analysis examines and corrects for differences in capital structure and capitalization size.

Q. How do your recommendations relate to Staff Witness Brock's recommendations?

A. My recommendations are addressed and put into context by Ms. Brock in Exhibit Staff/100. Ms. Brock overlays other considerations to provide summary ROE, CoC and ROR recommendations to the Commission.

Q. Why is your recommended ROE at the top end of a range of reasonable ROEs resultant from your modeling?

A. The Company is quite small and is making a transition to better financial recordkeeping and tracking. That transition is essential for the Company to access strategic resources that would otherwise not be as accessible. At the moment, early in this transition, this Company may appear to potential investors as riskier than like situated peer water utilities. Staff's 9.25 percent point ROE at the top of range compensates a potential investor for holding this Company's equity with subordinate rights to any perfected outstanding debt.

Q. Does that conclude your testimony?

A. Yes.

CASE: UW 174
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 201

Witness Qualification Statement

September 14, 2018

WITNESS QUALIFICATION STATEMENT

NAME: Matthew J. Muldoon

EMPLOYER: PUBLIC UTIILTY COMMISSION OF OREGON

TITLE: Senior Economist
Energy – Rates Finance and Audit Division

ADDRESS: 201 High Street SE, Suite 100
Salem, OR 97301

EDUCATION: In 1981, I received a Bachelor of Arts Degree in Political Science from the University of Chicago. In 2007, I received a Masters of Business Administration from Portland State University with a certificate in Finance.

EXPERIENCE: From April of 2008 to the present, I have been employed by the OPUC. My current responsibilities include financial and rate analysis with an emphasis on Cost of Capital. I have worked on Cost of Capital in the following general rate case dockets: AVA UG 186; UG 201, UG 246, UG 284, UG 288, and UG 325 current; NWN UG 221; PAC UE 246, and UE 263; PGE UE 262, UE 283, and UE 294; and CNG UG 287 and UG 305..

From 2002 to 2008 I was Executive Director of the Acceleration Transportation Rate Bureau, Inc. where I developed new rate structures for surface transportation and created metrics to insure program success within regulated processes.

I was the Vice President of Operations for Willamette Traffic Bureau, Inc. from 1993 to 2002. There I managed tariff rate compilation and analysis. I also developed new information systems and did sensitivity analysis for rate modeling.

OTHER: I have prepared, and defended formal testimony in contested hearings before the OPUC, ICC, STB, WUTC and ODOT. I have also prepared OPUC Staff testimony in BPA rate cases.

Abbreviations: AVA – Avista Corp., CNG – Cascade Natural Gas Company, IPC – Idaho Power Company, NWN – Northwest Natural Gas Company, PAC – PacifiCorp, PGE – Portland General Electric Company

CASE: UW 174
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 202

3-Stage Discounted Cash Flow (DCF)
Primary ROE Modeling

Exhibits in Support
of Replacement Direct Testimony

September 14, 2018

STAFF EXHIBIT 202

PROVIDED IN ELECTRONIC FORMAT ONLY

CASE: UW 174
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 203

Staff Synthetic Forward Curve TIPS Analysis
Market-Implied Inflation Expectations

Exhibits in Support
of Replacement Direct Testimony

September 14, 2018

STAFF EXHIBIT 203

PROVIDED IN ELECTRONIC FORMAT ONLY

CASE: UW 174
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
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STAFF EXHIBIT 204

Staff GDP Analysis with BEA Historical Data

Exhibits in Support
of Replacement Direct Testimony

September 14, 2018

STAFF EXHIBIT 204

PROVIDED IN ELECTRONIC FORMAT ONLY

CASE: UW 174
WITNESS: MATT MULDOON

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STAFF EXHIBIT 205

Simple – Single-Stage – Gordon Growth Discounted Cash Flow (DCF) Check on ROE Modeling

Exhibits in Support of Replacement Direct Testimony

September 14, 2018

STAFF EXHIBIT 205

PROVIDED IN ELECTRONIC FORMAT ONLY

CASE: UW 174
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
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STAFF EXHIBIT 206

Value Line (VL)
Water Utility Profiles

Exhibits in Support
of Replacement Direct Testimony

September 14, 2018

The Water Utility Industry carries one of the lowest Timeliness ranks of any industry under review by *Value Line*.

Prospects for higher short-term interest rates seem likely as the Federal Reserve once again raised the Fed Funds rate and indicated that more hikes are on the way. With yields on Treasury notes maturing by 2021 carrying a higher yield than that of most water utilities stocks, investors could be tempted to switch into fixed-income securities.

In general, the Tax Cuts and Jobs Act will not have a major impact on water utilities' bottom lines. All of the savings will be passed through to customers.

The fundamentals of the industry remain unchanged. Following years of low capital investments, most water utilities are spending heavily to modernized existing pipelines and other facilities.

Regulators continue to play a constructive, nonadversarial role in working with the utilities to improve the nation's water systems.

Short-Term Interest Rates Are Rising

The Federal Reserve increased the key federal funds rate by 25 basis points last month. Moreover, citing historically low unemployment, the Fed stated that it planned on increasing rates in a gradual manner through 2020. How does this impact water utilities? For starters, dividend paying stocks and fixed-income vehicles have always been in competition for income-oriented investors. Over the past decade, the extraordinary easy monetary policy (along with quantitative easing), had made dividend stocks much more appealing. This is no longer the case, however. The median yield on all dividend paying stocks in the *Value Line* universe is just about 2.0%. Individuals can now purchase an extremely secure three-month Treasury bill and get almost 2%, with as close to zero risk as possible. Moreover, should an investor be willing to extend slightly further out on the yield curve to one- or two-year Treasury notes, yields of 2.31% and 2.54% can be had. As the front end of the curve continues to rise over the next several years, utility stocks may continue to lose much of their former luster.

The Tax Cuts And Jobs Act

For most U.S.-based companies, the recent TCJA provided a nice boost to the bottom line. Water utilities were not among them, however. Knowing that regulatory commissions would mandate that the tax savings be passed on to customers, water companies simply set up reserve accounts. The surplus funds generated by the tax cut will go straight towards reducing ratepayers bills. Still, we would suggest that the TCJA is not a neutral event. That's because state regulatory commissions are given a little more flexibility when it comes to the next time a water utility in their state seeks rate relief. For example, even if a utility has a very sound reason for higher rates, but water users are already paying high prices, politicians will get push back from their constituents (i.e. voters) to keep their bills down. So, with the consumer benefiting from the tax cut, regulators will have a little more breathing room the next time a petition for higher rates is filed.

INDUSTRY TIMELINESS: 94 (of 97)

Industry Fundamentals Remain Unchanged

Following a period in which both water utilities and regulators allowed the condition of the nation's water infrastructure to deteriorate significantly, utilities have been playing catchup over the past decade or so. Thousands of miles of aging pipelines, as well as waste- water projects, are being replaced or refurbished. As a result, capital expenditures are relatively large for most members of this group. This also means that many of the balance sheets are only average, as they have had to rely upon the issuance of new debt to fund their construction projects

Another trend that continues, (particularly for two of the biggest publicly traded water utilities, *American Water Works* and *Aqua American*) is consolidation. Larger companies are acquiring smaller water districts as a means of expanding the customer base. This strategy has proven profitable to date and we expect it possibly to accelerate. Indeed, there are over 50,000 small, inefficient water districts that could be combined to extract huge cost savings.

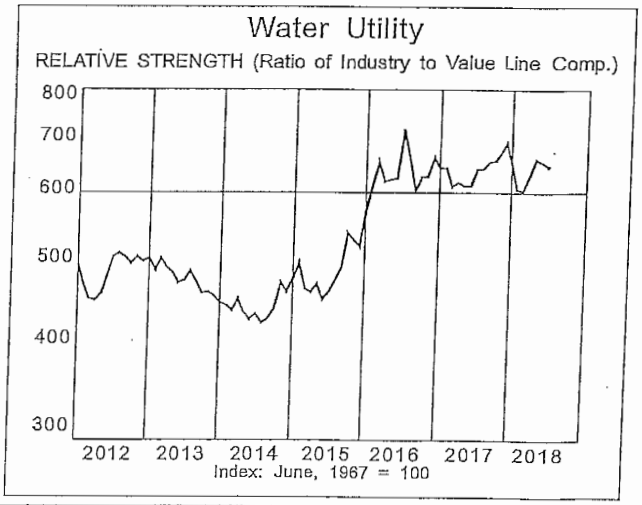
Regulation

Perhaps the best thing that water utilities have going for them is constructive regulation, as authorities realize that the nation's water systems are in a terrible state and much has to be done to fix the problem. Relations between regulators and utilities can sometimes be hostile as was the case in the electric utility industry in the 1980's and 1990's. Accounts should always keep a close eye on any change in this relationship as state commissions determine the rate of return that a regulated company can earn.

Conclusion

In general, water utility companies have done pretty well over the past few year. However, the premium that these stocks trade at is starting to seem expensive. While part of this will always be due to the scarcity value (there are only a handful of large-cap stocks in this group), the recent flattening of the front end of treasury yield curve could prove to provide investors with a better alternative.

James A. Flood



AMER. STATES WATER NYSE-AWR

RECENT PRICE 58.12 | P/E RATIO 33.2 (Trailing: 31.8 Median: 20.0) | RELATIVE P/E RATIO 1.80 | DIV'D YLD 1.9% | VALUE LINE

TIMELINESS 4 Lowered 5/18/18
SAFETY 2 Raised 7/20/12
TECHNICAL 3 Lowered 7/6/18
BETA .80 (1.00 = Market)

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+5%)	3%
Low	45	(-25%)	-3%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	4	0	2	1	1	1	1	1	8
to Sell	3	2	4	0	1	0	4	1	3

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	104	104	113
to Sell	79	77	105
Hld's(000)	27880	24143	25895

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
High:	23.1	21.0	19.4	19.8	18.2	24.1	33.1	38.7	44.1	47.2	58.4	60.0								Target Price Range
Low:	16.8	13.5	14.9	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1	50.1								2021 2022 2023
	6.89	6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	*12.65*	*12.45*	Revenues per sh	*15.35*
	1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	*3.05*	*3.25*	"Cash Flow" per sh	*4.00*
	.67	.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.60	1.62	1.88	*1.75*	*1.90*	Earnings per sh A	*2.45*
	.44	.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	*1.05*	*1.12*	Div'd Decl'd per sh B■	*1.45*
	1.34	1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	*3.40*	*3.40*	Cap'l Spending per sh	*3.25*
	7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	*15.20*	*15.95*	Book Value per sh D	*17.35*
	30.36	30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	*36.80*	*37.00*	Common Shs Outst'g C	*37.50*
	18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*22.0*
	1.00	1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29			Relative P/E Ratio	*1.20*
	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%			Avg Ann'l Div'd Yield	*2.8%*
							318.7	361.0	398.9	419.3	466.9	472.1	465.8	458.6	436.1	440.6	*440*	*450*	Revenues ($mill)	*575*
							26.8	29.5	41.4	42.0	54.1	62.7	61.1	60.5	59.7	69.4	*68.0*	*74.0*	Net Profit ($mill)	*92.0*
							37.8%	38.9%	43.2%	41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	*23.0%*	*23.0%*	Income Tax Rate	*23.0%*
							6.9%	3.2%	5.8%	2.0%	2.5%	--	--	--	2.5%	--	*Nil*	*1.0%*	AFUDC % to Net Profit	*1.0%*
							46.2%	45.9%	44.3%	45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	38.0%	*41.5%*	*42.0%*	Long-Term Debt Ratio	*46.0%*
							53.8%	54.1%	55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	62.0%	*58.5%*	*58.0%*	Common Equity Ratio	*54.0%*
							577.0	665.0	677.4	749.1	787.0	818.4	832.6	791.5	815.3	854.9	*1010*	*1125*	Total Capital ($mill)	*1200*
							825.3	866.4	855.0	896.5	917.8	981.5	1003.5	1060.8	1150.9	1205.0	*1250*	*1310*	Net Plant ($mill)	*1495*
							6.4%	5.9%	7.6%	7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	9.3%	*8.5%*	*9.0%*	Return on Total Cap'l	*9.0%*
							8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	*12.0%*	*12.5%*	Return on Shr. Equity	*14.0%*
							8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	13.1%	*12.0%*	*13.0%*	Return on Com Equity	*14.0%*
							3.1%	3.2%	5.8%	5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	6.2%	*5.5%*	*5.5%*	Retained to Com Eq	*6.0%*
							64%	61%	47%	49%	45%	47%	53%	54%	56%	52%	*58%*	*58%*	All Div'ds to Net Prof	*59%*

% TOT. RETURN 6/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.9	13.9
3 yr.	62.9	32.8
5 yr.	139.0	71.5

CAPITAL STRUCTURE as of 3/31/18
Total Debt $390.4 mill. Due in 5 Yrs $100.7 mill.
LT Debt $281.1 mill. LT Interest $19.6 mill. (35% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.3 mill.
Pension Assets-12/17 $173.6 mill.
Oblig. $207.7 mill.

Pfd Stock None

Common Stock 36,733,416 shs. as of 5/1/18

MARKET CAP: $2.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	.4	.2	6.0
Accts Receivable	20.0	26.1	19.2
Other	146.5	129.2	120.5
Current Assets	166.9	155.5	145.7
Accts Payable	43.7	51.0	38.8
Debt Due	90.3	59.3	109.3
Other	43.9	46.4	48.4
Current Liab.	177.9	156.7	196.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	4.5%	1.5%	*4.0%*
"Cash Flow"	6.5%	4.5%	*6.0%*
Earnings	9.0%	7.0%	*6.0%*
Dividends	7.0%	10.5%	*8.0%*
Book Value	5.0%	4.5%	*4.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	100.9	114.6	133.0	110.1	458.6
2016	93.5	112.0	123.8	106.8	436.1
2017	98.8	113.2	124.4	104.2	440.6
2018	94.7	*114.3*	*126*	*105*	*440*
2019	*97.0*	*118*	*128*	*107*	*450*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	.32	.41	.56	.31	1.60
2016	.28	.45	.59	.30	1.62
2017	.34	.62	.57	.35	1.88
2018	.20	*.50*	*.60*	*.40*	*1.75*
2019	*.30*	*.55*	*.63*	*.42*	*1.90*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.2025	.2025	.213	.213	.83
2015	.213	.213	.224	.224	.87
2016	.224	.224	.224	.242	.91
2017	.242	.242	.255	.255	.99
2018	.255	.255			

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 258,949 customers in 70 cities in 10 counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,274 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS sub. Sold Chaparral City Wtr. of AZ. (6/11). Employs 758. BlackRock, Inc. owns 11.7% of out. shares; Vanguard, 9.5%;; off. & dir. 1.5%. (4/18 Proxy). Chairman: Lloyd Ross. Pres. & CEO: Robert Sprowls. Inc: CA. Addr.: 630 East Foothill Blvd., San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

A recent ruling is hurting American States Water's utility operations. Earlier this year, California regulators made a decision on Golden States Water's petition for higher rates. Despite being granted a higher return on equity, the permitted return on rate base was lowered. This has had a more meaningful impact on the utility than was expected, and was the main reason for first-quarter results falling short of the consensus.

We are lowering our near-term earnings estimates. Management believes that the California authorities' decree will shave $3.6 million off the top line and reduce share earnings $0.07 this year. As a result, we have deducted $0.10 a share from both our 2018 and 2019 earnings expectations.

Nonregulated activities should do pretty well. Through its ASUS subsidiary, American States provides water services to 11 U.S. Army bases. As more of these installations are privatized in the coming years, we think ASUS will win its fair share of competitive bids for these 50-year contracts. Responsible for 25% of first-quarter earnings, this percentage ought to rise in the future. This is good news because profitability in this segment isn't capped, as is the case in the utility sector.

The equity's dividend yield is unattractive relative to its peer group. Investors purchase water utility stocks for the income they generate. At the recent quote, AWR is yielding less than the *Value Line* median. Often with issues that have strong dividend growth potential, holders are willing to accept a lower current yield. However, we are now expecting the dividend to be raised only 6% at the next board meeting (being held in early August). Also, since our last report in April, the value of AWR has increased about 10%. By comparison, the S&P 500 Index is up approximately 2%. Moreover, considering that the Federal Reserve is expected to continue raising short-term interest rates into next year, we believe one- and two-year U.S. Treasury notes may well draw greater interest from those seeking safe income. Thus, some investors may want to take profits now, as AWR is also rated to underperform the market averages in the year ahead.

James A. Flood *July 13, 2018*

(A) Primary earnings. Excludes nonrecurring gains/(losses): '04, 7¢; '05, 13¢; '06, 3¢; '08, (14¢); '10, (23¢); '11, 10¢. Next earnings report due early August.

(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.

(C) In millions, adjusted for split.

(D) Includes intangibles. As of 12/31/17; $7.9 million/$0.22 a share.

Company's Financial Strength	A
Stock's Price Stability	75
Price Growth Persistence	75
Earnings Predictability	95

AMERICAN WATER NYSE-AWK

RECENT PRICE 86.31 | P/E RATIO 26.2 (Trailing: 35.2 / Median: 19.0) | RELATIVE P/E RATIO 1.42 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 3 Lowered 5/11/18
SAFETY 3 New 7/25/08
TECHNICAL 3 Lowered 7/6/18
BETA .65 (1.00 = Market)

2021-23 PROJECTIONS

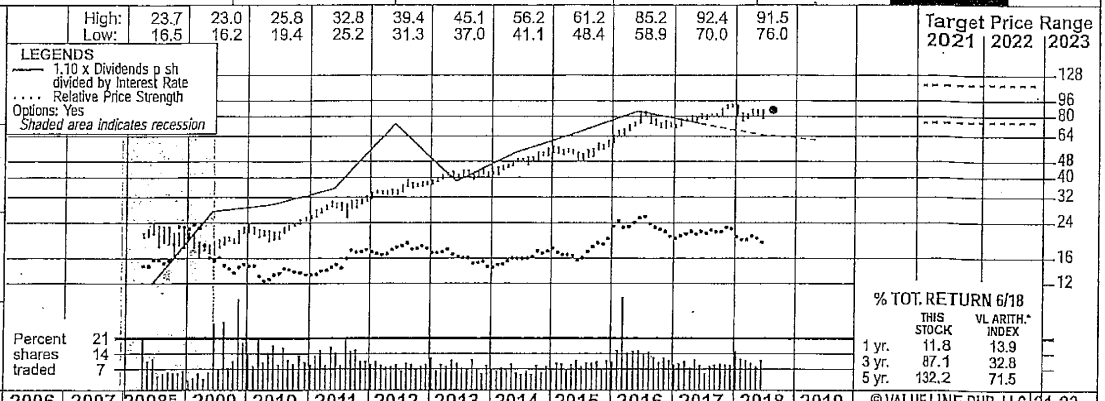
	Price	Gain	Ann'l Total Return
High	115	(+35%)	10%
Low	75	(-15%)	Nil

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	2	0	7	13	2	0	9
to Sell	0	0	3	0	0	0	0	0	2

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	262	265	282
to Sell	292	237	337
Hld's(000)	160782	153130	150336



2002	2003	2004	2005	2006	2007	2008E	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
--	--	--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.20	20.00	Revenues per sh	22.95
--	--	--	--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	5.80	6.30	"Cash Flow" per sh	7.70
--	--	--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.30	3.50	Earnings per sh A	4.50
--	--	--	--	--	--	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.95	Div'd Decl'd per sh B■	2.60
--	--	--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	9.60	9.55	Cap'l Spending per sh	9.20
--	--	--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	31.75	33.90	Book Value per sh D	42.00
--	--	--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	179.00	180.00	Common Shs Outst'g C	187.50
--	--	--	--	--	--	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.5
--	--	--	--	--	--	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70			Relative P/E Ratio	1.20
--	--	--	--	--	--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%			Avg Ann'l Div'd Yield	2.7%
						2336.9	2440.7	2710.7	2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	3357.0	3440	3600	Revenues ($mill)	4300
						187.2	209.9	267.8	304.9	374.3	369.3	429.8	476.0	468.0	426.0	590	630	Net Profit ($mill)	845
						37.4%	37.9%	40.4%	39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	43.3%	21.0%	21.0%	Income Tax Rate	21.0%
						--	--	--	--	6.2%	5.1%	--	--	5.1%	4.0%	5.0%	5.0%	AFUDC % to Net Profit	5.0%
						53.1%	56.9%	56.8%	55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	54.7%	56.5%	57.5%	Long-Term Debt Ratio	57.5%
						46.9%	43.1%	43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	45.3%	43.5%	42.5%	Common Equity Ratio	42.5%
						8750.2	9289.0	9561.3	9580.3	9635.5	9940.7	10364	10911	10967	11875	13085	14400	Total Capital ($mill)	18625
						9991.8	10524	11059	11021	11739	12391	12900	13933	14992	16246	17400	18800	Net Plant ($mill)	21200
						3.7%	3.8%	4.4%	4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	4.9%	5.0%	5.5%	Return on Total Cap'l	6.5%
						4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	10.0%	10.5%	Return on Shr. Equity	10.5%
						4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	7.9%	10.0%	10.5%	Return on Com Equity	10.5%
						3.0%	1.8%	2.8%	3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	2.5%	4.5%	4.5%	Retained to Com Eq	4.5%
						34%	65%	56%	52%	57%	40%	50%	50%	56%	68%	55%	56%	All Div'ds to Net Prof	58%

CAPITAL STRUCTURE as of 3/31/18
Total Debt $8007.0 mil. Due in 5 Yrs $2192.0 mil.
LT Debt $6403.0 mil. LT Interest $320.0 mil. (54% of Cap'l)

Leases, Uncapitalized: Annual rentals $15.0 mil.
Pension Assets12/16 $1649.0 mil
Oblig. $2034.0 mil.
Pfd Stock $7.0 mil. Pfd Div'd $.4 mill

Common Stock 178,047,882 shs.
as of 4/26/18

MARKET CAP: $15.4 billion (Large Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	75.0	82.0	81.0
Accts Receivable	269.0	272.0	273.0
Other	440.0	366.0	375.0
Current Assets	784.0	720.0	729.0
Accts Payable	154.0	195.0	133.0
Debt Due	1423.0	1227.0	1604.0
Other	815.0	903.0	802.0
Current Liab.	2392.0	2325.0	2539.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	3.0%	3.5%	4.0%
"Cash Flow"	50.0%	6.0%	7.0%
Earnings	--	7.5%	10.0%
Dividends	--	8.5%	10.0%
Book Value	1.0%	4.0%	6.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	698.0	782.0	896.0	783.0	3159.0
2016	743.0	827.0	930.0	802.0	3302.0
2017	756.0	844.0	936.0	821.0	3357.0
2018	761.0	859	975	845	3440
2019	780	890	1050	880	3600

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	.44	.68	.96	.56	2.64
2016	.46	.77	.83	.57	2.62
2017	.52	.73	1.12	.01	2.38
2018	.59	.81	1.20	.70	3.30
2019	.60	.88	1.27	.75	3.50

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.28	.31	.31	.31	1.21
2015	.31	.34	.34	.34	1.33
2016	.34	.375	.375	.375	1.47
2017	.375	.415	.415	.415	1.62
2018	.415	.455			

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in 46 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 88% of 2017 revenues. New Jersey is its largest market accounting for 25% of regulated revenues. Has 6,900 employees. The Vanguard Grp, owns 10.4% of outstanding shares; BlackRock, Inc., 7.4%; officers & directors, less than 1.0%. (3/18 Proxy). President & CEO: Susan N. Story. Chair.: George MacKenzie. Address: 1025 Laurel Oak Road, Voorhees, NJ 08043. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works has hiked the quarterly dividend by a generous amount. Since our last report in April, the board raised the payout by $0.04 a share to $0.455 a share. This was at the higher end of the 7%-10% target range. The growth rate was also well above the industry average.

The method of the company's success is not a mystery. American Water has been following a simple formula for some time now. By continually purchasing smaller water districts, it can meaningfully reduce operating expenses due to economies of scale. Making this easier is the current state of the water sector in the U.S. Most districts are small and municipally run. Many local governments do not have the financial wherewithal to maintain and replace aging pipelines and waste facilities. In addition, because of the many redundancies in the water operations, American Water can really cut costs and raise operating margins.

Bottom-line prospects are good for both this year and next. The company's operating strategy (with a few exceptions mostly resulting from unusual expenses), has enabled the utility to be more profitable than the rest of the group. This year, we expect share net to recover to $3.30 and rise another 6% in 2019, to $3.50.

The capital budget remains large. The utility will most likely spend $1.7 billion annually through early next decade on improving its water assets. External debt will likely aid in funding a decent portion of the expenditures. Still, the company's balance sheet should not deteriorate much.

Certain investors may find these shares of interest. True, the equity is only expected to keep pace with the market in the year ahead. But, that's not too bad considering the Water Utility Industry ranks among the lowest of all the groups followed by *Value Line*. Also, investors often have to forfeit a substantial amount of current income when purchasing a stock with healthy dividend growth prospects. In this case, AWK's yield is close to the industry norm. And though total return potential out to 2021-2023 is subpar, that's the case for the entire group. Thus, AWK is a viable option for those investors who must have exposure to the water sector.

James A. Flood *July 13, 2018*

(A) Diluted earnings. Excludes nonrecur. losses: '08, $4.62; '09, $2.63; '11, $0.07. Disc. oper.: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014, except for ($0.65) loss in '17 due to change in tax law. Next earnings report due mid-August. Quarterly earnings do not sum in '16 due to rounding. (B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available. (C) In millions. (D) Includes intangibles. On 12/31/17: $1.379 billion, $7.72/share. (E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	90

AQUA AMERICA NYSE-WTR

RECENT PRICE 35.44 | P/E RATIO 25.3 (Trailing: 26.1, Median: 22.0) | RELATIVE P/E RATIO 1.37 | DIV'D YLD 2.5% | VALUE LINE

TIMELINESS 4 Lowered 5/18/18
SAFETY 2 Raised 4/20/12
TECHNICAL 3 Lowered 6/29/18
BETA .75 (1.00 = Market)

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+40%)	12%
Low	40	(+15%)	6%

Insider Decisions

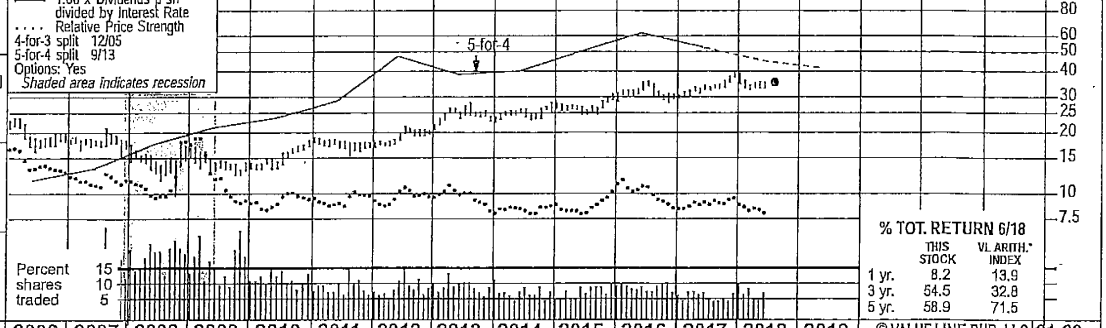
	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	1	8	0	0	7	6	6	7	0
to Sell	1	0	1	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	187	187	192
to Sell	120	134	191
Hld's(000)	105796	95401	96914

High: 21.3 17.6 17.2 18.4 19.0 21.5 28.1 28.2 31.1 35.8 39.6 39.4
Low: 15.1 9.8 12.3 13.2 15.4 16.8 20.6 22.4 24.4 28.0 29.4 32.4

LEGENDS
1.60 x Dividends p sh divided by Interest Rate
Relative Price Strength
4-for-3 split 12/05
5-for-4 split 9/13
Options: Yes
Shaded area indicates recession



% TOT. RETURN 6/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	8.2	13.9
3 yr.	54.5	32.8
5 yr.	58.9	71.5

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
2.28	2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.62	4.56	4.75	5.00	Revenues per sh	6.35
.76	.77	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.07	2.12	2.20	2.40	"Cash Flow" per sh	2.90
.43	.46	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.40	1.50	Earnings per sh [A]	1.95
.26	.28	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	Div'd Decl'd per sh [B] ■	1.25
.96	1.06	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.69	2.65	2.65	Cap'l Spending per sh	2.10
3.49	4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	11.02	11.00	12.00	Book Value per sh	14.50
141.49	154.31	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.25	178.75	Common Shs Outst'g [C]	180.00
23.6	24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	24.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	23.0
1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.25	1.24			Relative P/E Ratio	1.25
2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%			Avg Ann'l Div'd Yield	2.8%
						627.0	670.5	726.1	712.0	757.8	768.6	779.9	814.2	819.9	809.5	850	890	Revenues ($mill)	1145
						97.9	104.4	124.0	144.8	153.1	205.0	213.9	201.8	234.2	239.7	250	270	Net Profit ($mill)	350
						39.7%	39.4%	39.2%	32.9%	39.0%	10.0%	10.5%	6.9%	8.2%	6.6%	9.0%	15.0%	Income Tax Rate	10.0%
						--	--	--	--	--	1.1%	2.4%	3.1%	3.8%	6.3%	6.5%	6.5%	AFUDC % to Net Profit	3.5%
						54.1%	55.6%	56.6%	52.7%	52.7%	48.9%	48.5%	50.3%	48.4%	50.6%	51.0%	53.5%	Long-Term Debt Ratio	53.5%
						45.9%	44.4%	43.4%	47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	49.4%	49.0%	46.5%	Common Equity Ratio	46.5%
						2306.6	2495.5	2706.2	2646.8	2929.7	3003.6	3216.0	3469.5	3587.7	3965.4	4250	4600	Total Capital ($mill)	5600
						2997.4	3227.3	3469.3	3612.9	3936.2	4167.3	4402.0	4688.9	5001.6	5399.9	5775	6070	Net Plant ($mill)	6800
						5.7%	5.6%	5.9%	6.9%	6.6%	8.0%	7.8%	6.9%	7.6%	7.1%	7.0%	7.0%	Return on Total Cap'l	7.5%
						9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	12.5%	13.0%	Return on Shr. Equity	12.5%
						9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.2%	12.5%	13.0%	Return on Com Equity	12.5%
						2.8%	2.7%	3.7%	4.6%	4.3%	6.7%	6.1%	4.7%	5.6%	5.1%	5.0%	5.0%	Retained to Com Eq	4.5%
						70%	72%	65%	60%	61%	50%	52%	60%	56%	59%	59%	61%	All Div'ds to Net Prof	62%

CAPITAL STRUCTURE as of 3/31/18
Total Debt $2186.8 mill. Due in 5 Yrs $368.4 mill.
LT Debt $2063.1 mill. LT Interest $83.0 mill.
(51% of Cap'l)

Pension Assets-12/17 $270.4 mill.
Oblig. $321.0 mill.

Pfd Stock None
Common Stock 177,897,654 shares
as of 4/30/18

MARKET CAP: $6.3 billion (Large Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	3.7	4.2	3.2
Receivables	97.4	98.6	91.8
Inventory (AvgCst)	13.0	14.4	15.3
Other	14.6	14.0	13.8
Current Assets	128.7	131.2	124.1
Accts Payable	59.9	59.2	40.2
Debt Due	157.2	117.4	123.7
Other	84.4	107.9	95.2
Current Liab.	301.5	284.5	259.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	3.5%	2.0%	5.5%
"Cash Flow"	7.0%	6.5%	6.0%
Earnings	8.5%	9.5%	7.5%
Dividends	7.5%	8.0%	9.0%
Book Value	6.5%	7.5%	5.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	190.3	205.8	221.0	197.1	814.2
2016	192.6	203.9	226.6	196.8	819.9
2017	187.8	203.4	215.0	203.3	809.5
2018	194.3	215.7	225	215	850
2019	205	225	235	225	890

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.27	.32	.38	.17	1.14
2016	.29	.34	.41	.28	1.32
2017	.28	.34	.43	.30	1.35
2018	.29	.36	.44	.31	1.40
2019	.31	.38	.48	.33	1.50

Calendar	QUARTERLY DIVIDENDS PAID [B] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.152	.152	.165	.165	.63
2015	.165	.165	.178	.178	.69
2016	.178	.178	.1913	.1913	.74
2017	.1913	.1913	.2047	.2047	.79
2018	.2047	.2047			

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Has 1,530 employees. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues '2017: residential, 60%; commercial, 16%; industrial, wastewater & other, 24%. Off. & dir. own less than 1% of the common stock; Vanguard Group, 10.0%; Blackrock, Inc, 8.8%; State Street Capital, 5.0% (3/18 Proxy). President & Chief Executive Officer: Christopher Franklin. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Tel.: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America is pretty busy on the regulatory front. Due to its wide geographical base, the water utility is continually involved in rate cases with several state authorities. Indeed, so far in 2018, rate decisions have been made in seven states including Illinois, Indiana, Ohio, and Pennsylvania. Final decisions in four other states are pending, and are expected to be made before yearend.

Meanwhile, the company is growing through acquisition. Aqua America is following the same strategy as industry leader American Water Works. That is, the utility is taking advantage of the incredibly fragmented water business to purchase some of the over 50,000 water districts in the U.S. These local entities typically don't have the financial means to spend the funds required to maintain and refurbish their antiquated infrastructure. By absorbing these smaller water districts, Aqua is able to wring significant savings from these operations due to the amount of redundancies in this industry. Most acquisitions are relatively small, so the company has to continually buy a host of small water authorities. We think that Aqua will be able to increase its customer base by at least 3% annually using this strategy.

Aqua has a large capital budget. Due in part to all of the M&A activity, the utility will probably spend $500 million this year on modernizing its water assets. The annual outlays should remain substantial through early next decade.

The balance sheet remains solid. Despite the large construction program, Aqua has managed to stay in sound financial strength. Of the nine companies we follow in the industry, it is one of only two that garner an 'A' Financial Strength rating.

These shares are ranked to underperform the market averages in the year ahead. Even with the company's improving fundamentals, the equity seems almost fully valued at this juncture. In addition, with the Federal Reserve announcing that it plans on raising short-term rates into 2020, yields on U.S. Treasury notes could be viewed as a more attractive option than utilities. Finally, like almost all members in this group, total return prospects out to 2021-2023 are subpar.

James A. Flood *July 13, 2018*

(A) Diluted eqs. Excl. nonrec. gains: '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. May not sum due to rounding. Next earnings report due August 1st.
(B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	65
Earnings Predictability	90

CALIFORNIA WATER NYSE-CWT

RECENT PRICE 39.90 | P/E RATIO 27.5 (Trailing: 30.0 Median: 20.0) | RELATIVE P/E RATIO 1.49 | DIV'D YLD 1.9% | VALUE LINE

TIMELINESS 4 Lowered 3/9/18
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Lowered 6/29/18
BETA .80 (1.00 = Market)

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+25%)	8%
Low	35	(-10%)	-1%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	1	1	1	1	1	1	1	1	0
Options	0	0	1	0	0	0	19	0	0
to Sell	1	0	0	0	0	0	2	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	80	74	114
to Sell	71	70	85
Hld's(000)	38931	33803	34461

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
High:	22.7	23.3	24.1	19.8	19.4	19.3	23.4	26.4	26.0	36.8	46.2	45.8								
Low:	17.1	13.8	16.7	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3								
	8.67	8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	*14.10*	*14.40*	Revenues per sh	*15.20*
	1.32	1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	*2.80*	*3.00*	"Cash Flow" per sh	*3.30*
	.63	.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	*1.45*	*1.65*	Earnings per sh A	*1.90*
	.56	.56	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	*.75*	*.78*	Div'd Decl'd per sh B ■	*1.02*
	2.91	2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	*4.35*	*3.95*	Cap'l Spending per sh	*3.65*
	6.56	7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	*14.45*	*15.00*	Book Value per sh C	*16.70*
	30.36	33.86	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	*48.50*	*49.00*	Common Shs Outst'g D	*50.00*
	19.8	22.1	20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*23.0*
	1.08	1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.34			Relative P/E Ratio	*1.25*
	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%			Avg Ann'l Div'd Yield	*2.4%*
							410.3	449.4	460.4	501.8	560.0	584.1	597.5	588.4	609.4	666.9	*685*	*705*	Revenues ($mill) E	*760*
							39.8	40.6	37.7	36.1	42.6	47.3	56.7	45.0	48.7	67.2	*70.5*	*80.0*	Net Profit ($mill)	*95.0*
							37.7%	40.3%	39.5%	40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	30.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
							8.6%	7.6%	4.2%	7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	3.5%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
							41.6%	47.1%	52.4%	51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	42.7%	*43.0%*	*42.5%*	Long-Term Debt Ratio	*42.0%*
							58.4%	52.9%	47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.3%	*57.0%*	*57.5%*	Common Equity Ratio	*58.0%*
							690.4	794.9	914.7	931.5	908.2	1024.9	1045.9	1154.4	1191.2	1209.3	*1240*	*1280*	Total Capital ($mill)	*1435*
							1112.4	1198.1	1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	2048.0	*2075*	*2100*	Net Plant ($mill)	*2200*
							7.1%	6.5%	5.5%	5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	7.1%	*7.0%*	*7.5%*	Return on Total Cap'l	*7.5%*
							9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	*10.0%*	*11.0%*	Return on Shr. Equity	*11.5%*
							9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.7%	*10.0%*	*11.0%*	Return on Com Equity	*11.5%*
							3.8%	3.8%	3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.7%	*5.0%*	*6.0%*	Retained to Com Eq	*5.5%*
							61%	60%	66%	71%	62%	56%	55%	71%	68%	51%	*52%*	*47%*	All Div'ds to Net Prof	*54%*

LEGENDS
1.33 x Dividends p sh divided by Interest Rate
Relative Price Strength
2-for-1 split 6/11
Options: Yes
Shaded area indicates recession

Target Price Range 2021 | 2022 | 2023

% TOT. RETURN 6/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	7.8	13.9
3 yr.	82.5	32.8
5 yr.	126.2	71.5

CAPITAL STRUCTURE as of 3/31/18
Total Debt $796.7 mill. Due in 5 Yrs $291.0 mill.
LT Debt $515.7 mill. LT Interest $36.0 mill. (43% of Cap'l)

Pension Assets-12/17 $460.9 mill. Oblig. $671.3 mill.

Pfd Stock None

Common Stock 48,074,000 shs.

MARKET CAP: $1.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	25.5	94.8	34.7
Other	116.6	133.1	131.1
Current Assets	142.1	227.9	165.8
Accts Payable	77.8	94.0	73.6
Debt Due	123.3	291.0	281.0
Other	49.1	106.0	109.7
Current Liab.	250.2	491.0	464.3

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	4.0%	1.5%	*2.5%*
"Cash Flow"	5.5%	3.5%	*4.5%*
Earnings	4.5%	4.0%	*9.5%*
Dividends	2.0%	2.5%	*6.5%*
Book Value	4.5%	5.0%	*3.0%*

Calendar	QUARTERLY REVENUES ($ mill.) E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	122.0	144.4	183.5	138.5	588.4
2016	121.7	152.4	184.3	151.0	609.4
2017	122.1	171.1	211.7	162.0	666.9
2018	132.2	*173*	*215*	*164.8*	*685*
2019	*135*	*180*	*220*	*170*	*705*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.03	.21	.52	.18	.94
2016	d.02	.24	.48	.31	1.01
2017	.02	.39	.70	.29	1.40
2018	d.05	*.42*	*.73*	*.35*	*1.45*
2019	*.11*	*.45*	*.74*	*.35*	*1.65*

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.1625	.1625	.1625	.1625	.65
2015	.1675	.1675	.1675	.1675	.67
2016	.1725	.1725	.1725	.1725	.69
2017	.18	.18	.18	.18	.72
2018	.1875	.1875			

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 484,900 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '17: residential, 72%; business, 19%; industrial, 4%; public authorities, 4%; other 1%. Off. and dir. own 1% of common stock (4/18 proxy). Has 1,163 employees. Pres. and CEO: Martin A. Kropelnicki Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

California Water Service Group's profits should rebound in the second quarter. The regulated and nonregulated water provider posted a net loss of $0.05 in the March interim. Several factors, including higher wages and benefit costs, general operating expenses (water production), as well as an unforeseen water main break in the San Francisco area weighed on results. Nevertheless, we expect that earnings recovered nicely in the recently ended second quarter, to $0.42 a share. That said, the miss has spurred us to shave a dime from our current-year bottom-line estimate, to $1.45 a share.

Revenues are still on track to rise. Indeed, recent rate increases for customers and recoverable production costs played a role in the first quarter's 8% year-over-year advance. This was able to offset a $1.2 million revenue reduction associated with cost of capital adjustment. On balance, our call for modest top-line improvement in this year and next remains unaltered.

The company made an attempt to acquire SJW Group. Subsequent to the merger announcement of SJW Group and Connecticut Water, CWT stepped in with an unsolicited all-cash tender offer for the former, worth $68.25 a share. However, the bid was immediately rejected, despite the lofty premium at the time of the proposal. Connecticut Water's go-shop period has come to an end, and both sides have reiterated their desires for a deal, thus shutting the door on California's efforts. Looking forward, we do not think there is any acquisition activity on the horizon.

But abundant capital investments are likely on tap over the long haul. California ought to stick to its plan to heavily invest in its aging infrastructure. Old water mains and pipes, as well as inefficient treatment plants, need to be brought up to speed. This should help reduce operating costs and prevent future uninsured losses from water main breaks.

This equity lacks investment appeal at this juncture. CWT shares are pegged to underperform the year-ahead broader market (Timeliness: 4). Moreover, total return potential over the three- to five-year stretch is nothing to write home about at the recent quotation.

Nicholas P. Patrikis *July 13, 2018*

(A) Basic EPS. Excl. nonrecurring gain (loss): '02, 4¢; '11, 4¢. Next earnings report due late August.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '17 : $24.8 mill., $0.52/sh.
(D) In millions, adjusted for splits.
(E) Excludes non-reg. rev.

Company's Financial Strength	B++
Stock's Price Stability	75
Price Growth Persistence	35
Earnings Predictability	65

CONNECTICUT WATER NDQ-CTWS

RECENT PRICE 66.20 | P/E RATIO 35.8 (Trailing: 39.6 Median: 20.0) | RELATIVE P/E RATIO 1.95 | DIV'D YLD 1.9% | VALUE LINE

TIMELINESS — Suspended 3/23/18
SAFETY 3 New 1/18/13
TECHNICAL — Suspended 3/23/18
BETA .65 (1.00 = Market)

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(Nil)	2%
Low	45	(-30%)	-6%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	0	0	5	0	1	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	54	53	59
to Sell	45	33	58
Hld's(000)	6356	5642	6062

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
High:	25.6	29.0	26.4	27.9	29.1	32.8	36.4	37.5	39.9	58.3	65.0	69.7								
Low:	22.4	19.3	17.3	20.0	23.3	26.2	27.8	31.0	33.2	37.5	50.8	48.9								
	5.77	5.91	6.04	5.81	5.68	7.05	7.24	6.93	7.85	7.93	9.47	8.29	8.45	8.58	8.77	8.87	*9.45*	*9.95*	Revenues per sh	*12.80*
	1.78	1.89	1.91	1.62	1.52	1.90	1.95	1.93	2.04	2.11	2.64	2.63	2.97	3.18	3.31	3.39	*3.35*	*3.85*	"Cash Flow" per sh	*4.50*
	1.12	1.15	1.16	.88	.81	1.05	1.11	1.19	1.13	1.13	1.53	1.66	1.92	2.04	2.08	2.13	*1.85*	*2.40*	Earnings per sh [A]	*2.90*
	.81	.83	.84	.85	.86	.87	.88	.90	.92	.94	.96	.98	1.01	1.05	1.12	1.18	*1.24*	*1.30*	Div'd Decl'd per sh [B■]	*1.52*
	1.98	1.49	1.58	1.96	1.96	2.24	2.44	3.28	3.06	2.61	2.79	3.02	4.11	4.29	5.93	4.39	*4.45*	*4.00*	Cap'l Spending per sh	*3.35*
	10.06	10.46	10.94	11.52	11.60	11.95	12.23	12.67	13.05	13.50	20.95	17.92	18.83	20.01	20.98	24.34	*24.70*	*25.70*	Book Value per sh [D]	*26.80*
	7.94	7.97	8.04	8.17	8.27	8.38	8.46	8.57	8.68	8.76	8.85	11.04	11.12	11.19	11.25	12.07	*12.15*	*12.25*	Common Shs Outst'g [C]	*12.50*
	24.3	23.5	22.9	28.6	29.0	23.0	22.2	18.4	20.7	23.0	19.4	18.4	17.5	17.6	23.3	26.5	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*19.0*
	1.33	1.34	1.21	1.52	1.57	1.22	1.34	1.23	1.32	1.44	1.23	1.03	.92	.89	1.22	1.33			Relative P/E Ratio	*1.05*
	3.0%	3.0%	3.1%	3.4%	3.6%	3.6%	3.6%	4.1%	3.9%	3.6%	3.2%	3.2%	3.0%	2.9%	2.3%	2.1%			Avg Ann'l Div'd Yield	*2.9%*
							61.3	59.4	66.4	69.4	83.8	91.5	94.0	96.0	98.7	107.1	*115*	*122*	Revenues ($mill)	*160*
							9.4	10.2	9.8	9.9	13.6	18.3	21.3	22.8	23.4	25.1	*22.5*	*29.5*	Net Profit ($mill)	*36.0*
							27.2%	19.5%	35.2%	41.3%	32.0%	28.0%	14.4%	3.5%	9.9%	19.0%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
							1.7%	--	--	--	1.7%	2.0%	2.4%	2.3%	5.1%	3.1%	*3.0%*	*2.5%*	AFUDC % to Net Profit	*2.5%*
							46.9%	50.6%	49.5%	53.2%	49.0%	46.9%	45.7%	44.1%	45.4%	46.3%	*46.5%*	*45.5%*	Long-Term Debt Ratio	*45.0%*
							52.7%	49.1%	50.2%	46.5%	50.8%	52.9%	54.1%	55.7%	54.4%	53.6%	*53.5%*	*54.5%*	Common Equity Ratio	*55.0%*
							196.5	221.3	225.6	254.2	364.6	373.6	386.8	402.4	433.8	547.8	*560*	*580*	Total Capital ($mill)	*610*
							302.3	325.2	344.2	362.4	447.9	471.9	506.9	546.3	601.4	697.7	*700*	*715*	Net Plant ($mill)	*750*
							5.9%	5.5%	5.4%	4.9%	4.8%	5.9%	6.4%	6.5%	6.3%	5.4%	*4.5%*	*6.0%*	Return on Total Cap'l	*6.5%*
							9.0%	9.3%	8.6%	8.3%	7.3%	9.2%	10.1%	10.1%	9.9%	8.5%	*7.5%*	*9.5%*	Return on Shr. Equity	*11.0%*
							9.1%	9.4%	8.7%	8.3%	7.3%	9.2%	10.2%	10.1%	9.9%	8.3%	*7.5%*	*9.5%*	Return on Com Equity	*11.0%*
							1.9%	2.3%	1.6%	1.4%	2.8%	3.8%	4.8%	4.9%	4.6%	3.5%	*2.5%*	*4.5%*	Retained to Com Eq	*5.0%*
							79%	76%	81%	83%	62%	59%	53%	52%	54%	55%	*67%*	*54%*	All Div'ds to Net Prof	*52%*

% TOT. RETURN 6/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	20.1	13.9
3 yr.	105.0	32.8
5 yr.	159.0	71.5

Target Price Range 2021 | 2022 | 2023

CAPITAL STRUCTURE as of 3/31/18
Total Debt $258.4 mill. Due in 5 Yrs $6.2 mill.
LT Debt $252.2 mill. LT Interest $9.0 mill. (46% of Cap'l)

Leases, Uncapitalized: Annual rentals $.3 mill.
Pension Assets-12/17 $73.1 mill. Oblig. $88.6 mill.

Pfd Stock $0.8 mill. Pfd Divd NMF

Common Stock 12,089,125 shs.

MARKET CAP: $800 million (Small Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	1.6	3.6	4.0
Accounts Receivable	13.0	15.0	12.8
Other	14.8	17.1	19.4
Current Assets	29.4	35.7	36.2
Accts Payable	13.1	11.3	6.9
Debt Due	4.9	6.2	6.2
Other	37.1	24.0	34.0
Current Liab.	55.1	41.5	47.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	3.5%	1.0%	*6.5%*
"Cash Flow"	7.0%	8.0%	*5.5%*
Earnings	8.5%	10.5%	*5.5%*
Dividends	2.5%	3.5%	*5.5%*
Book Value	6.5%	6.5%	*3.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	20.0	26.6	28.4	21.0	96.0
2016	21.6	26.1	29.5	21.5	98.7
2017	22.5	27.9	31.8	24.9	107.1
2018	24.9	*30.0*	*33.5*	*26.6*	*115*
2019	*27.0*	*32.0*	*35.0*	*28.0*	*122*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	.28	.77	.79	.20	2.04
2016	.28	.89	.84	.07	2.08
2017	.36	.73	.90	.14	2.13
2018	d.10	*.77*	*.93*	*.25*	*1.85*
2019	*.38*	*.80*	*.95*	*.27*	*2.40*

Calendar	QUARTERLY DIVIDENDS PAID [B■] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.2475	.2475	.2575	.2575	1.01
2015	.2575	.2575	.2675	.2675	1.05
2016	.2675	.2625	.2825	.2825	1.12
2017	.2625	.2975	.2975	.2975	1.18
2018	.2975	.3125			

BUSINESS: Connecticut Water Service, Inc. is a non-operating holding company, whose income is derived from earnings of its wholly-owned subsidiary companies (regulated water utilities). In 2017, 95% of net income was derived from these activities. Provides water services to 450,000 people in 80 municipalities throughout Connecticut and Maine. Acquired The Maine Water Company, January, 2012; Biddeford and Saco Water, December, 2012; Heritage Village, February, 2017. Inc.: Conn.. Has 294 employees. Chairman/President/Chief Executive Officer: Eric W. Thornburg. Officers and directors own 1.2% of the common stock; BlackRock, Inc., 7.0% (4/18 proxy). Address: 93 West Main Street, Clinton, CT 06413. Telephone: (860) 669-8636. Internet: www.ctwater.com.

Connecticut Water's all-stock merger with SJW Group, announced early this year, appears to be back on track. There has been a bit of noise surrounding the transaction, specifically an amended 45-day go-shop provision in which Connecticut could have solicited offers from other parties. This period has since ended, and no proposals of interest have been officially received. However, prior to the abovementioned go-shop process, news broke that California Water Service made a sizable cash offer for SJW Group ($68.25 per share), which subsequently sent SJW stock markedly higher. On a similar note, Eversource Energy attempted to enter the race with a bid (which was promptly rejected) for Connecticut Water. To reiterate the deal points, CTWS shareholders would receive 1.1375 shares of SJW Group common stock (merger is currently valued at $77.20) for each share of CTWS stock held. Overall, the board of directors from both entities are now fully behind the merger, and are presently moving forward to secure shareholder and regulatory approval. The transaction is expected to close by the end of 2018.

The deal with SJW ought to create significant value on several fronts. The combined company would be the third-largest investor-owned water utility in the U.S., spanning Connecticut, Texas, Maine, and California. Indeed, the total geographic customer base would expand noticeably, with operational efficiency and customer service likely to improve from scale. Moreover, capital investments are poised to continue over the long haul, as both companies already have strategic plans in motion to boost spending on water mains, treatment plants, and other aging infrastructure. Connecticut is on track to spend nearly $70 million this year on upgrades.

At the recent quotation, there is still some near-term upside to Connecticut Water's stock price. This issue is unranked for Timeliness due to the pending merger but, based on SJW's recent price, shares of CTWS are trading at roughly a 15% discount to the deal's valuation. We think it would be wise for investors, both short and long term, to hold on to their shares, for now.

Nicholas P. Patrikis *July 13, 2018*

(A) Diluted earnings. Next earnings report due late August.
(B) Dividends historically paid in mid-March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions
(D) Includes intangibles. In 2017: $67.0 million/$5.55 a share.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	50
Earnings Predictability	85

CONSOL. WATER CO. NDQ-CWCO

RECENT PRICE 12.75 | P/E RATIO 21.3 (Trailing: 34.5 Median: 25.0) | RELATIVE P/E RATIO 1.16 | DIV'D YLD 2.8% | VALUE LINE

TIMELINESS 4 Raised 6/29/18
SAFETY 3 New 1/17/14
TECHNICAL 2 Lowered 7/6/18
BETA .95 (1.00 = Market)

2021-23 PROJECTIONS

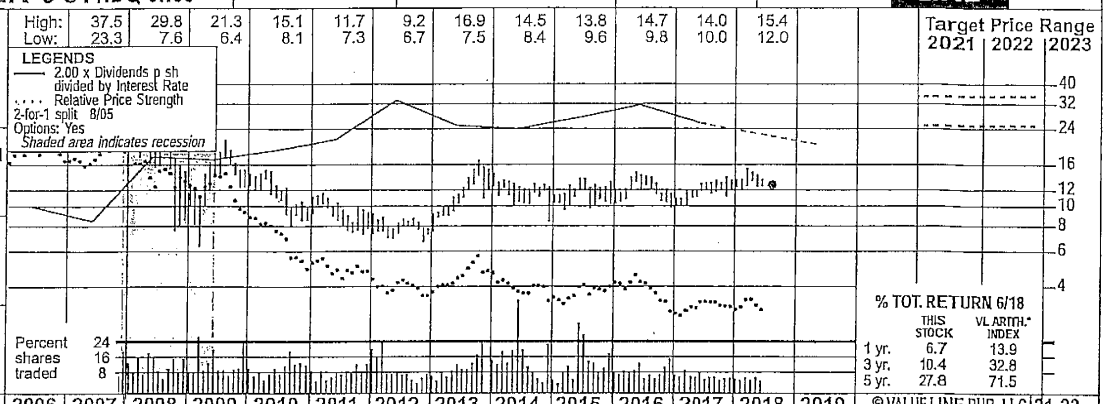
	Price	Gain	Ann'l Total Return
High	35	(+175%)	30%
Low	25	(+95%)	20%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	7	0	8	0	5	0	0
to Sell	0	0	0	0	0	0	2	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	39	42	40
to Sell	32	21	38
Hld's(000)	7940	7715	8203



% TOT. RETURN 6/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	6.7	13.9
3 yr.	10.4	32.8
5 yr.	27.8	71.5

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
1.52	1.68	2.02	1.12	2.71	3.41	4.52	3.99	3.49	3.79	4.49	4.35	4.46	3.86	3.89	4.18	*4.05*	*4.20*	Revenues per sh	*10.00*
.50	.63	.77	.37	.87	1.20	.95	1.18	.86	.83	1.17	.96	.80	.89	.95	1.12	*1.05*	*1.15*	"Cash Flow" per sh	*1.90*
.32	.42	.49	.23	.59	.79	.50	.74	.43	.42	.64	.58	.42	.51	.27	.41	*.60*	*.70*	Earnings per sh A	*1.30*
.21	.21	.23	.12	.24	.20	.33	.28	.30	.30	.30	.30	.30	.30	.30	.31	*.35*	*.40*	Div'd Decl'd per sh B■	*.65*
.39	.19	.24	.77	1.83	.54	.46	.18	.09	.96	.31	.29	.32	.21	.23	.31	*.20*	*.20*	Cap'l Spending per sh	*1.90*
2.64	3.89	4.20	2.54	7.49	8.21	8.36	8.53	8.69	8.83	9.20	9.44	9.58	9.81	9.79	9.91	*10.45*	*11.15*	Book Value per sh D	*12.50*
7.99	11.37	11.51	23.46	14.13	14.40	14.53	14.54	14.55	14.57	14.59	14.69	14.72	14.78	14.87	14.92	*15.00*	*15.25*	Common Shs Outst'g C	*16.00*
21.6	19.3	23.1	80.0	43.0	35.4	37.8	19.0	26.9	22.4	12.4	20.0	28.3	22.7	44.8	29.0	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*22.5*
1.18	1.10	1.22	4.26	2.32	1.88	2.27	1.27	1.71	1.41	.79	1.12	1.49	1.14	2.35	1.41			Relative P/E Ratio	*1.25*
3.1%	2.6%	2.0%	.7%	.9%	.7%	1.7%	2.0%	2.6%	3.2%	3.8%	2.6%	2.5%	2.6%	2.5%	2.6%			Avg Ann'l Div'd Yield	*2.2%*
						65.7	58.0	50.7	55.2	65.5	63.8	65.6	57.1	57.9	62.3	*61.0*	*64.0*	Revenues ($mill)	*160*
						7.2	10.8	6.3	6.1	9.3	8.6	6.3	7.5	4.0	6.1	*9.0*	*10.5*	Net Profit ($mill)	*21.0*
						--	--	--	--	--	--	--	--	--	--	*NMF*	*NMF*	Income Tax Rate	*NMF*
						--	--	--	4.0%	--	--	--	--	--	--	*NMF*	*NMF*	AFUDC % to Net Profit	*NMF*
						14.8%	13.8%	11.8%	5.1%	3.7%	--	--	--	3.7%	--	*Nil*	*Nil*	Long-Term Debt Ratio	*Nil*
						85.2%	86.2%	88.2%	94.9%	96.3%	99.8%	99.8%	100.0%	100.0%	100.0%	*100%*	*100%*	Common Equity Ratio	*100%*
						142.7	143.9	143.3	135.6	139.4	138.9	141.2	145.0	145.6	147.9	*157*	*170*	Total Capital ($mill)	*200*
						65.1	61.2	56.2	64.3	61.6	58.6	56.4	53.7	53.1	50.5	*55.0*	*65.0*	Net Plant ($mill)	*125*
						5.7%	8.1%	4.9%	5.0%	7.0%	6.2%	4.4%	5.2%	2.7%	4.2%	*5.5%*	*6.0%*	Return on Total Cap'l	*10.5%*
						5.9%	8.7%	5.0%	4.7%	6.9%	6.2%	4.4%	5.2%	2.7%	4.2%	*5.5%*	*6.0%*	Return on Shr. Equity	*10.5%*
						5.9%	8.7%	5.0%	4.7%	6.9%	6.2%	4.4%	5.2%	2.7%	4.1%	*5.5%*	*6.0%*	Return on Com Equity	*10.5%*
						2.8%	4.6%	1.5%	1.0%	3.6%	3.0%	1.2%	2.1%	NMF	1.1%	*2.5%*	*2.5%*	Retained to Com Eq	*5.0%*
						52%	46%	69%	79%	48%	51%	73%	59%	112%	73%	*58%*	*57%*	All Div'ds to Net Prof	*50%*

CAPITAL STRUCTURE as of 3/31/18
Total Debt $.3 mill. Due in 5 Yrs $0.3 mill.
LT Debt None LT Interest None

Leases, Uncapitalized: Annual rentals $.6 mill.

No Defined Benefit Pension Plan

Pfd Stock NMF (33,488 shares out.)
Div'd NMF

Common Stock 14,959,309 shs.
as of 5/4/18

MARKET CAP: $200 million (Small Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	39.3	47.2	43.7
Accts Receivable	16.5	15.0	14.8
Other	5.1	4.5	7.3
Current Assets	60.9	66.7	65.8
Accts Payable	4.9	5.7	5.6
Debt Due	.5	.7	.3
Other	1.3	1.2	1.3
Current Liab.	6.7	7.6	7.2

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	5.0%	.5%	*16.5%*
"Cash Flow"	2.0%	.5%	*11.5%*
Earnings	-3.0%	-4.5%	*22.0%*
Dividends	5.0%	--	*13.5%*
Book Value	5.0%	2.0%	*4.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	14.7	14.4	14.6	13.4	57.1
2016	14.0	15.4	14.4	14.1	57.9
2017	15.6	15.3	16.6	14.8	62.3
2018	14.3	*15.5*	*15.5*	*15.7*	*61.0*
2019	*16.0*	*16.0*	*16.0*	*16.0*	*64.0*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	.13	.15	.12	.11	.51
2016	.15	.15	d.13	.10	.27
2017	.18	.11	.08	.04	.41
2018	.14	*.17*	*.16*	*.13*	*.60*
2019	*.19*	*.18*	*.17*	*.16*	*.70*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.075	.075	.075	.075	.30
2015	.075	.075	.075	.075	.30
2016	.075	.075	.075	.075	.30
2017	.075	.075	.075	.075	.30
2018	.085	.085			

BUSINESS: Consolidated Water Co. Ltd. develops and operates seawater desalination plants and water distribution systems in areas where naturally occurring supplies of potable water are scarce or nonexistent. Its desalination process involves reverse osmosis tech. It provides water in the Cayman Islands, Belize, the Bahamas, the British Virgin Islands, and Bali. At 12/31/17, it operated 13 plants with a capacity of 25.8 million gallons per day. Inc.: Cayman Islands. Has 120 employees. President & CEO : Frederick McTaggart. Off./Dir. own 2.5% of stock; First Manhattan, 5.1% (4/18 proxy). Address: Regatta Office Park Windward Three, 4th Floor, West Bay Road P.O. Box 1114 Grand Cayman, KYI-1102, Cayman Islands. Tel.: (345) 945-4277. Internet: www.cwco.com.

Consolidated Water's Aerex subsidiary isn't doing well. CWCO owns 51% of this business, which manufactures custom and speciality products, as well as provides designing and engineering services, for municipal systems. The fundamentals of this market are excellent as many water utilities, after deferring capital improvement for decades, are now spending heavily to upgrade and refurbish existing pipelines. Since becoming involved in Aerex, results have not matched expectations, however. Sales have been declining, forcing a recent writedown (noncash) in the value of the company.

The news out of Mexico remains encouraging. Consolidated has been working for some time on planning a large desalination plant to provide water mostly to Tijuana. The city's population has been expanding, and there is a need for more potable water. In March, the company found two partners, including Suez International, a global leader in water treatment, to form a joint venture. Having such a credible associate has greatly reduced the risk related to the construction of the Rosarito plant.

Operations in the Caribbean remain the heart of the business. Through subsidiaries, Consolidated uses desalination plants to provide water to several countries in this region. In the first quarter, the Cayman Islands represented 42% of the company's total revenues, and 51% of its operating profit. Relations with regulators here have not always been smooth. A new agency named "OfReg" was established two years ago, and it is yet to be seen if a long-term deal can be reached between the two parties.

The company has a small, but pristine, balance sheet. At the end of the first quarter, all debt outstanding totaled only $0.3 million. Moreover, the company had almost $44 million in cash on hand, or close to $3 a share.

These shares offer the highest potential total returns in the group, but also the greatest downside. CWCO builds projects in which it is not guaranteed a return on the assets, as is the case with the other members in this industry. Therefore, this stock may carry too much uncertainty for a typical utility investor.

James A. Flood *July 13, 2018*

(A) Fully diluted earnings. Excludes losses from discontinued operations: '17, $0.08 a share. Next earnings report due mid-August.
(B) Dividends historically paid in late January, April, July, and October. ■ Dividend reinvestment plan available.
(C) In millions adjusted for stock split.
(D) Includes intangibles. As of 12/31/17, $12.1 million/$0.81 a share.

Company's Financial Strength	B+
Stock's Price Stability	30
Price Growth Persistence	20
Earnings Predictability	45

MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 42.37 | P/E RATIO 28.2 (Trailing: 29.6 Median: 20.0) | RELATIVE P/E RATIO 1.53 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 3 Raised 3/23/18
SAFETY 2 New 10/21/11
TECHNICAL 3 Lowered 6/29/18
BETA .80 (1.00 = Market)

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+20%)	7%
Low	35	(-15%)	-2%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	7	0
to Sell	1	1	1	1	0	0	0	1	1

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	46	49	49
to Sell	41	36	57
Hld's(000)	9500	8418	8601

High:	20.2	19.8	17.9	19.3	19.4	19.6	22.5	23.7	28.0	44.5	46.7	45.2
Low:	16.9	12.0	11.6	14.7	16.5	17.5	18.6	19.1	21.2	25.0	32.2	34.0

LEGENDS
1.20 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2021 | 2022 | 2023

% TOT. RETURN 6/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	8.9	13.9
3 yr.	101.3	32.8
5 yr.	144.9	71.5

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.96	7.19	7.26	7.77	8.16	8.00	8.20	8.50	Revenues per sh	9.40
1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.40	2.55	"Cash Flow" per sh	3.15
.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.50	1.65	Earnings per sh A	2.10
.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.96	Div'd Decl'd per sh B■	1.11
1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	3.05	3.00	Cap'l Spending per sh	2.50
7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	14.85	15.15	Book Value per sh	16.75
10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.50	16.75	Common Shs Outst'g C	17.00
23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43			Relative P/E Ratio	1.15
3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%			Avg Ann'l Div'd Yield	2.6%
						91.0	91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	130.8	135	142	Revenues ($mill)	160
						12.2	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	22.8	25.0	27.5	Net Profit ($mill)	35.5
						33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	32.7%	21.0%	21.0%	Income Tax Rate	21.0%
						--	--	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	3.1%	2.5%	2.0%	AFUDC % to Net Profit	2.5%
						45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.0%	37.0%	Long-Term Debt Ratio	37.0%
						51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.8%	62.5%	62.5%	Common Equity Ratio	62.5%
						259.4	267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370.7	390	410	Total Capital ($mill)	460
						366.3	376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	557.2	565	575	Net Plant ($mill)	600
						5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	6.9%	7.0%	7.5%	Return on Total Cap'l	8.5%
						8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	9.8%	10.0%	11.0%	Return on Shr. Equity	12.5%
						8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	9.9%	10.0%	11.0%	Return on Com Equity	12.5%
						2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	3.8%	4.0%	4.5%	Retained to Com Eq	6.0%
						78%	98%	75%	87%	83%	73%	67%	63%	58%	62%	61%	58%	All Div'ds to Net Prof	53%

CAPITAL STRUCTURE as of 3/31/18
Total Debt $174.6 mill. Due in 5 Yrs $34.9 mill.
LT Debt $140.1 mill. LT Interest $5.5 mill.
(Total interest coverage: 9.5x)
(38% of Cap'l)

Pension Assets-12/17 $69.2 mill.
Oblig. $88.0 mill.
Pfd Stock $2.4 mill. Pfd Div'd: $.1 mill.

Common Stock 16,359,184 shs.
as of 4/30/18

MARKET CAP: $700 million (Small Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	3.9	4.9	2.0
Other	22.8	24.3	23.2
Current Assets	26.7	29.2	25.2
Accts Payable	12.3	13.9	11.0
Debt Due	18.2	34.9	34.5
Other	16.6	15.7	18.5
Current Liab.	47.1	64.5	64.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	2.5%	3.5%	3.0%
"Cash Flow"	4.5%	7.0%	7.0%
Earnings	5.0%	8.0%	8.0%
Dividends	2.0%	2.0%	5.5%
Book Value	3.5%	3.5%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	28.8	31.7	34.7	30.8	126.0
2016	30.6	32.7	37.8	31.8	132.9
2017	30.1	33.0	36.2	31.5	130.8
2018	31.2	*34.0*	*37.5*	*32.3*	*135*
2019	*33.0*	*36.0*	*39.0*	*34.0*	*142*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	.22	.31	.41	.28	1.22
2016	.29	.36	.54	.19	1.38
2017	.27	.33	.46	.32	1.38
2018	.27	*.35*	*.55*	*.33*	*1.50*
2019	*.32*	*.39*	*.59*	*.35*	*1.65*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.19	.19	.19	.1925	.76
2015	.1925	.1925	.1925	.19875	.78
2016	.19875	.19875	.19875	.21125	.81
2017	.21125	.21125	.21125	.22375	.86
2018	.22375	.22375			

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2017, the Middlesex System accounted for 58% of operating revenues. At 12/31/17, the company had 315 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 6.4% (4/18 proxy). Add.: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.

Middlesex Water stock has regained some ground over the past three months. Shares of the Northeast water provider struggled in the early part of this year, but have been performing better of late. Since our April review, they are up more than 15% in value, and are trading just several points shy of their recently etched all-time high price. At this time, it appears the market is pricing in a good amount of MSEX's anticipated top- and bottom-line growth, which includes a lower corporate tax bill, as well as recently approved water rate hikes. (The latter took effect April 1st, and ought to be evident in the second quarter).

First-quarter financial results were mixed. The company generated revenues of $31.2 million, about 4% higher than the previous-year tally, due largely to a wider Delaware customer base and increased water usage from industrial and commercial customers in New Jersey. Meantime, earnings of $0.27 a share came in flat, year over year, as an uptick in operation and maintenance expenses (increased production costs and unforeseen weather-related expenses) kept the lid on the bottom line. Consequently, we now look for revenues of $135 million (down $1 million from our prior call) and share net of $1.50 (down $0.05) this year.

Investments in its aging infrastructure are under way. Middlesex has kicked off its capital spending program, known as "Water For Tomorrow," with a $52 million project along its New Jersey territory. The construction of the Western Transmission Main will supplement its existing main, which services 300,000 customers through Middlesex County. Over the next five years, the company has earmarked approximately $300 million to the program in an effort to increase efficiency and ultimately lower costs across its water delivery systems.

At the current valuation, this issue does not stand out. The recent run-up in price has eroded most of the gains we envision over the pull to next decade. Too, MSEX stock is neutrally ranked for the year ahead, and the dividend yield is only average. All told, we continue to recommend investors exercise patience and wait for a better entry point.

Nicholas P. Patrikis *July 13, 2018*

(A) Diluted earnings. Next earnings report due early August.

(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.

(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	65
Price Growth Persistence	40
Earnings Predictability	80

SJW GROUP NYSE-SJW

RECENT PRICE 66.89 | P/E RATIO 25.7 (Trailing: 24.4, Median: 21.0) | RELATIVE P/E RATIO 1.40 | DIV'D YLD 1.7% | VALUE LINE

TIMELINESS — Suspended 5/4/18
SAFETY 3 New 4/22/11
TECHNICAL — Suspended 5/4/18
BETA .75 (1.00 = Market)

2021-23 PROJECTIONS

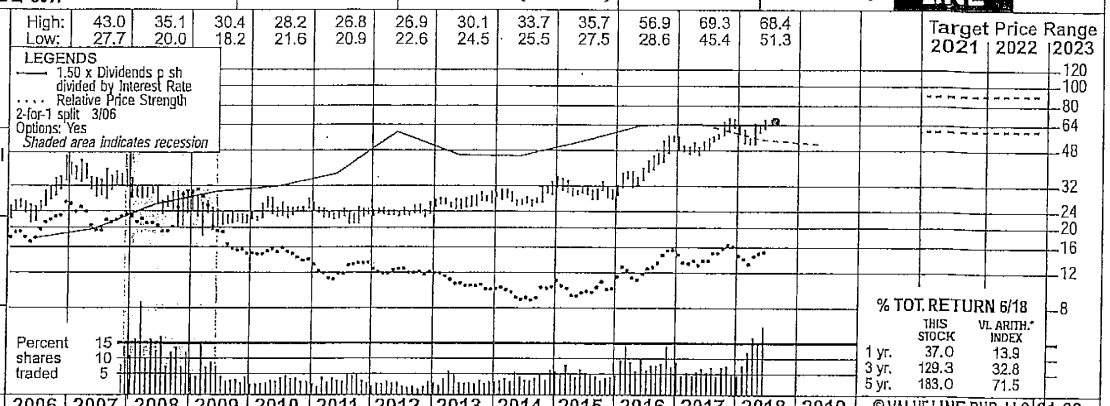
	Price	Gain	Ann'l Total Return
High	90	(+35%)	9%
Low	60	(-10%)	Nil

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	1	0	9	6	0	7	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	74	59	72
to Sell	56	67	73
Hld's(000)	12340	11290	11728



2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
7.97	8.20	9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	*19.05*	*18.85*	Revenues per sh	*21.10*
1.55	1.75	1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	*5.00*	*5.25*	"Cash Flow" per sh	*5.65*
.78	.91	.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	*2.60*	*3.00*	Earnings per sh [A]	*3.45*
.46	.49	.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	*1.12*	*1.20*	Div'd Decl'd per sh [B] ■	*1.45*
2.06	3.41	2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	*5.50*	*5.25*	Cap'l Spending per sh	*5.00*
8.40	9.11	10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	*22.65*	*23.40*	Book Value per sh	*24.55*
18.27	18.27	18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	*21.00*	*22.00*	Common Shs Outst'g [C]	*23.00*
17.3	15.4	19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*22.0*
.94	.88	1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.93			Relative P/E Ratio	*1.20*
3.4%	3.5%	3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%			Avg Ann'l Div'd Yield	*1.9%*
220.3	216.1	215.6	239.0	261.5	276.9	319.7	305.1	339.7	389.2	*400*	*415*	Revenues ($mill)	*485*
20.2	15.2	15.8	20.9	22.3	23.5	51.8	37.9	52.8	59.2	*54.5*	*66.0*	Net Profit ($mill)	*80.0*
39.5%	40.4%	38.8%	41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	36.7%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
2.3%	2.0%	2.0%	--	--	--	--	2.0%	2.0%	1.0%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
46.0%	49.4%	53.7%	56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	48.2%	*48.5%*	*48.0%*	Long-Term Debt Ratio	*48.0%*
54.0%	50.6%	46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.8%	*51.5%*	*52.0%*	Common Equity Ratio	*52.0%*
470.9	499.6	550.7	607.9	610.2	656.2	744.5	764.6	855.0	894.3	*925*	*990*	Total Capital ($mill)	*1090*
684.2	718.5	785.5	756.2	831.6	898.7	963.0	1036.8	1146.4	1239.3	*1275*	*1300*	Net Plant ($mill)	*1350*
5.8%	4.4%	4.3%	4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	7.9%	*7.5%*	*8.0%*	Return on Total Cap'l	*8.5%*
8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	*11.5%*	*13.0%*	Return on Shr. Equity	*14.0%*
8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	12.8%	*11.5%*	*13.0%*	Return on Com Equity	*14.0%*
3.3%	1.2%	1.2%	3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	8.2%	*6.5%*	*7.5%*	Retained to Com Eq	*8.0%*
59%	80%	80%	61%	59%	62%	29%	42%	31%	36%	*43%*	*40%*	All Div'ds to Net Prof	*42%*

CAPITAL STRUCTURE as of 3/31/18
Total Debt $431.2 mill. Due in 5 Yrs $14.3 mill.
LT Debt $431.2 mill. LT Interest $20.0 mill.
(LT Interest Coverage: 3.6x)
(48% of Cap'l)

Leases, Uncapitalized: Annual rentals $6.7 mill.

Pension Assets-12/17 $133.4 mill.
Oblig. $196.2 mill.

Pfd Stock None.
Common Stock 20,585,136 shs.

MARKET CAP: $1.4 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	25.3	7.8	7.0
Accts Receivable	16.4	17.3	18.3
Other	57.9	41.8	35.8
Current Assets	99.6	66.9	61.1
Accts Payable	18.7	23.0	22.5
Debt Due	14.3	--	
Other	30.6	62.1	72.9
Current Liab.	63.6	85.1	95.4

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	5.0%	5.5%	4.0%
"Cash Flow"	7.0%	11.0%	3.5%
Earnings	8.0%	18.5%	6.0%
Dividends	4.5%	5.0%	8.5%
Book Value	5.5%	8.0%	3.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	62.1	72.4	83.0	87.6	305.1
2016	61.1	86.9	112.3	79.4	339.7
2017	69.0	102.1	124.6	93.5	389.2
2018	75.0	*105*	*125*	*95.0*	*400*
2019	*78.0*	*110*	*130*	*97.0*	*415*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	.23	.36	.46	.80	1.85
2016	.16	.82	.92	.67	2.57
2017	.18	.90	.94	.84	2.86
2018	.06	*.86*	*1.00*	*.68*	*2.60*
2019	*.30*	*.95*	*1.05*	*.70*	*3.00*

Calendar	QUARTERLY DIVIDENDS PAID [B] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.1875	.1875	.1875	.1875	.75
2015	.1950	.1950	.1950	.1950	.78
2016	.2025	.2025	.2025	.2025	.81
2017	.2175	.2175	.2175	.3875	1.04
2018	.28	.28			

BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 230,000 connections with a total population of roughly one million people in the San Jose area and 14,000 connections that reach about 42,000 residents in the region between San Antonio and Austin, Texas. The company also offers nonregulated water-related services and owns and operates commercial real estate investments. Has about 411 employees. Officers and directors (including Nancy O. Moss) own 22.9% of outstanding shares (3/18 proxy). Chairman & CEO: Richard Roth. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

Shares of SJW Group have risen significantly in value over the past three months. The surge in price (+30% since our April review) has much to do with outside interest from California Water Service and its recent attempt to hijack SJW's merger with Connecticut Water (more below). After the agreement was announced, California tossed its hat into the ring with a $68.25 per share all-cash proposal. The purchase price may have been somewhat attractive, but offered considerably less long-term operational upside. Promptly, SJW's board rejected the offer, solidifying its first-choice deal with CTWS.

The previously announced merger agreement with Connecticut Water is on track. Initial terms of the all-stock transaction state that CTWS shareholders will receive 1.1375 shares of SJW stock for each share of CTWS held. Following several interjections from third parties and a 45-day go-shop amendment, the deal's value has skyrocketed in conjunction with SJW's share price. Both boards of directors are now fully behind the merger, and the deal is awaiting shareholder and regulatory approval. All things considered, a closing date within 2018 remains the target.

We think the merger ought to bear fruit over the pull to 2021-2023. A wider geographic footprint (California, Connecticut, Maine, and Texas) and increased scale should undoubtedly drive operational synergies and improve customer service. The latter will be pleased to hear that an immediate rate hike is probably not in the cards. Once completed, the third-largest water and waste water utility anticipates annual revenues of $500 million, with the deal being accretive to the bottom line from the get-go. Moreover, investments in water mains, treatment facilities, and other aging infrastructure should further boost efficiencies.

SJW Group shares are unranked for Timeliness due to the pending merger. In light of the recent price advance, this may be an opportune time to take some profits off the table. Meanwhile, business prospects appear bright over the pull to 2021-2023, but we suggest long-term investors hold off until there is more postmerger clarity.

Nicholas P. Patrikis *July 13, 2018*

(A) Diluted earnings. Excludes nonrecurring losses: '03, $1.97; '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due late August. Quarterly earnings may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for stock splits.
(D) Paid special dividend of $0.17 per share on 11/17

Company's Financial Strength	B+
Stock's Price Stability	65
Price Growth Persistence	30
Earnings Predictability	45

YORK WATER NDQ-YORW

RECENT PRICE 32.75 | P/E RATIO 31.2 (Trailing: 32.4 Median: 24.0) | RELATIVE P/E RATIO 1.70 | DIV'D YLD 2.0% | VALUE LINE

TIMELINESS 5 Lowered 6/8/18
SAFETY 3 Lowered 7/17/15
TECHNICAL 4 Lowered 6/29/18
BETA .80 (1.00 = Market)

2021-23 PROJECTIONS

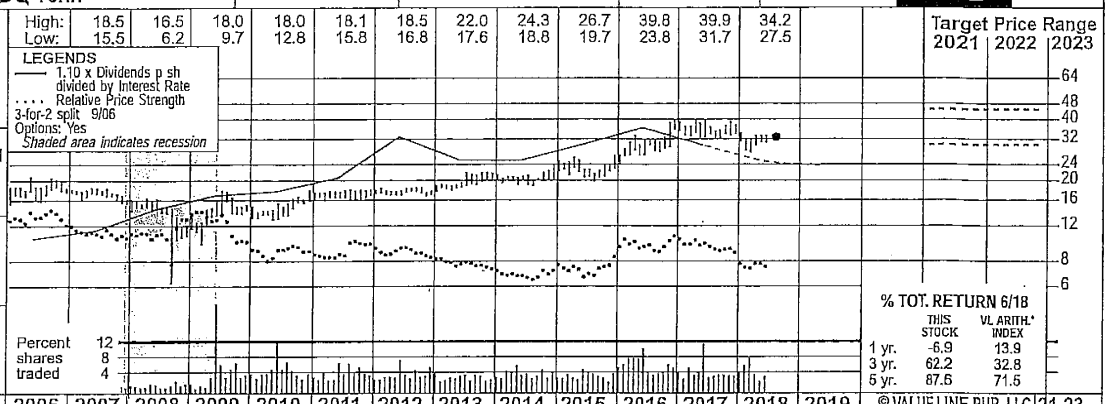
	Price	Gain	Ann'l Total Return
High	45	(+35%)	10%
Low	30	(-10%)	1%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	2	1	3	2	2	1	5	2	1
Options	4	0	0	0	0	0	0	0	0
to Sell	1	5	0	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	40	29	38
to Sell	30	35	40
Hld's(000)	5125	4588	4449



% TOT. RETURN 6/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-6.9	13.9
3 yr.	62.2	32.8
5 yr.	87.6	71.5

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
2.05	2.17	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	3.77	*3.85*	*4.00*	Revenues per sh	*5.30*
.57	.65	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	1.53	*1.65*	*1.75*	"Cash Flow" per sh	*2.25*
.40	.47	.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	1.01	*1.05*	*1.15*	Earnings per sh [A]	*1.60*
.35	.37	.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	.65	*.70*	*.75*	Div'd Decl'd per sh [B]	*1.00*
.66	1.07	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	1.95	*1.50*	*1.25*	Cap'l Spending per sh	*1.25*
3.90	4.06	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	9.28	*9.35*	*10.55*	Book Value per sh	*11.75*
9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	12.87	*12.80*	*12.75*	Common Shs Outst'g [C]	*12.75*
26.9	24.5	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	34.6	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*22.5*
1.47	1.40	1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72	1.72			Relative P/E Ratio	*1.25*
3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%	1.9%			Avg Ann'l Div'd Yield	*2.7%*
						32.8	37.0	39.0	40.6	41.4	42.4	45.9	47.1	47.6	48.6	*49.5*	*51.0*	Revenues ($mill)	*67.5*
						6.4	7.5	8.9	9.1	9.3	9.7	11.5	12.5	11.8	13.0	*13.5*	*14.5*	Net Profit ($mill)	*20.5*
						36.1%	37.9%	38.5%	35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	25.9%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
						10.1%	--	1.2%	1.1%	1.1%	.8%	1.8%	1.6%	1.9%	6.7%	*2.0%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
						54.5%	45.7%	48.3%	47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	43.0%	*35.5%*	*35.0%*	Long-Term Debt Ratio	*34.0%*
						45.5%	54.3%	51.7%	52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	57.0%	*64.5%*	*65.0%*	Common Equity Ratio	*66.0%*
						153.4	160.1	176.4	180.2	184.8	188.4	189.4	196.3	198.7	209.5	*210*	*220*	Total Capital ($mill)	*235*
						211.4	222.0	228.4	233.0	240.3	244.2	253.2	261.4	270.9	288.8	*295*	*300*	Net Plant ($mill)	*320*
						5.7%	6.2%	6.5%	6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	7.5%	*7.5%*	*7.5%*	Return on Total Cap'l	*10.0%*
						9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	*10.0%*	*10.0%*	Return on Shr. Equity	*13.5%*
						9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	10.9%	*10.0%*	*10.0%*	Return on Com Equity	*13.5%*
						1.4%	1.9%	2.7%	2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	4.0%	*3.5%*	*3.5%*	Retained to Com Eq	*5.0%*
						85%	78%	72%	73%	74%	74%	64%	62%	67%	63%	*67%*	*65%*	All Div'ds to Net Prof	*63%*

CAPITAL STRUCTURE as of 3/31/18
Total Debt $90.0 mill. Due in 5 Yrs $42.5 mill.
LT Debt $78.0 mill. LT Interest $5.3 mill.
(39% of Cap'l)
Pension Assets12/17 $41.4 mill.
Oblig. $44.6 mill.

Pfd Stock None

Common Stock 12,892,798 shs.

MARKET CAP: $425 million (Small Cap)

CURRENT POSITION ($MILL.)	2016	2017	3/31/18
Cash Assets	4.2	--	--
Accounts Receivable	4.3	4.5	4.2
Inventory (Avg. Cost)	.7	.9	.9
Other	3.4	3.2	3.3
Current Assets	12.6	8.6	8.4
Accts Payable	3.7	3.1	3.2
Debt Due	--	--	12.0
Other	4.5	6.0	5.6
Current Liab.	8.2	9.1	20.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	3.5%	3.5%	*6.0%*
"Cash Flow"	6.0%	6.0%	*7.5%*
Earnings	5.5%	6.5%	*9.0%*
Dividends	3.5%	3.5%	*8.0%*
Book Value	5.0%	3.5%	*5.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	11.2	11.9	12.4	11.6	47.1
2016	11.3	11.8	12.6	11.9	47.6
2017	11.3	12.3	12.7	12.3	48.6
2018	11.6	*12.5*	*12.9*	*12.5*	*49.5*
2019	*12.0*	*12.8*	*13.3*	*12.9*	*51.0*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2015	.20	.22	.28	.27	.97
2016	.19	.23	.27	.23	.92
2017	.20	.23	.31	.27	1.01
2018	.20	*.25*	*.32*	*.28*	*1.05*
2019	*.24*	*.27*	*.33*	*.31*	*1.15*

Calendar	QUARTERLY DIVIDENDS PAID [B] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.1431	.1431	.1431	.1431	.572
2015	.1495	.1495	.1495	.1555	.604
2016	.1555	.1555	.1555	.1602	.627
2017	.1602	.1602	.1602	.1666	.647
2018	.1666	.1666			

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2017, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 198,000. Has more than 69,000 customers. Residential customers accounted for 64% of 2017 revenues; commercial and industrial (28%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 102 full-time employees at 12/31/17. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (3/18 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water's first-quarter bottom line was unchanged compared to the previous-year figure. The regulated utility posted earnings of $0.20 a share for the March period, missing our mark by $0.02. Nevertheless, we are retaining our current-year profit forecast of $1.05 per share, as we think a lower effective tax rate, combined with higher asset improvement deductions, should help offset rising expenses in the back half of 2018. Meantime, first-quarter revenues of $11.6 million were fractionally above our call, though the beat was not significant enough to spur an upward revision.

As we expected, the company has inquired about a rate increase. In May, York asked the Pennsylvania Public Utility Commission for more than $6 million (annual revenues) in customer rate hikes to recover replacement costs associated with water pipeline improvements, other infrastructure upgrades, as well as personnel and operational cost increases. York hopes to recover expenses incurred since its last rate case filing in 2013, and help balance future capital investments. A time frame for the decision has not yet been established.

Capital spending ought to continue through 2018 and beyond. Year to date, York Water has invested only about $3.0 million, specifically to complete a raw water pumping station and some modest infrastructure upgrades. An additional $20 million is likely to be spent by year's end. Going forward, we expect further infrastructure upgrades and improvements to its waste water treatment plants. This spending is necessary not only as a response to its aging pipes and delivery methods, but also to handle its expanding customer base.

This equity lacks investment appeal at this juncture. Shares of York Water have been lowered two spots on our Timeliness ranking scale, to 5 (Lowest). Thus, short-term accounts should turn the page. Similarly, those with a buy-and-hold mantra should take a pass, as the shares offer limited price upside 3- to 5-years out. Lastly, as a stand-alone dividend play (2.0% current yield), we think investors can find more-attractive options elsewhere.

Nicholas P. Patrikis *July 13, 2018*

(A) Diluted earnings. Next earnings report due late August.
(B) Dividends historically paid in late February, June, September, and December.
(C) In millions, adjusted for split.

Company's Financial Strength	B+
Stock's Price Stability	60
Price Growth Persistence	55
Earnings Predictability	90

CASE: UW 174
WITNESS: MATT MULDOON

PUBLIC UTILITY COMMISSION
OF
OREGON

STAFF EXHIBIT 207

Security Market News
(News Investors Are Seeing)

Exhibits in Support
of Replacement Direct Testimony

September 14, 2018

Merger News Water Utility Investors Are Seeing

American Water Works' Acquisition of Pivotal Home Solutions is Credit Negative

by Nana Hamilton, Analyst; Ryan Wobbrock, VP andSenior Analyst; and Dexter East, Associate Analyst – Moody's – Apr. 16, 2018

Last Wednesday, **American Water Works Company**, Inc. (**AWK**, A3 negative) announced an **agreement** with The **Southern Company** (Baa2 negative) **to acquire Southern's home warranty business**, **Pivotal Home Solutions**, for a total consideration of **$365 million**, including approximately $7 million of working capital. AWK plans to finance the acquisition with an equal mix of debt and equity. The acquisition is credit negative for AWK because it **increases** its **unregulated business exposure**, particularly to services **unrelated to** the **water business**.

Although the transaction is slightly positive to AWK's ratio of funds from operations (FFO) to net debt, we **expect** the company's **credit metrics to weaken** over the next two years owing to **continued debt-funded growth**, an **increasing dividend and tax leakage** resulting from US federal tax reform.

AWK plans to permanently finance half of the acquisition with debt issued through its non-operating financing subsidiary American Water Capital Corp (AWCC, A3 negative). **We expect** that this **debt**, which is about 3.75x of estimated Pivotal EBITDA, **will be pushed down to American Water Enterprises** Inc., which holds the company's market-based businesses, and will be supported by Pivotal's EBITDA. However, we estimate that the percentage of **debt** at AWCC **not recovered in utility rates will increase** to approximately 25% following the transaction from 23% at the end of 2017, a credit negative.

The acquisition purchase price implies an EBITDA multiple of 7.5x based on Pivotal's 2017 full-year EBITDA. We see an uplift to AWK's FFO/net debt ratio of 20-30 basis points with the additional cash flow from Pivotal and the associated debt financing. However, with our expectation that AWK's financial metrics will weaken, we continue to expect its FFO/net debt ratio over the next several years to hover near our previously indicated 15% quantitative downgrade guidance for an A3 rating.

We generally view AWK's unregulated businesses as neutral to the company's overall credit because they constitute less than 15% of operations and are largely within AWK's core competencies of water system operations. At the end of 2017, unregulated operations were about 5% of AWK's EBITDA and approximately 9% of net income. With the addition of Pivotal to AWK's existing homeowner services business, we expect that unregulated operations will increase to approximately 8% of consolidated EBITDA and approximately 14% of net income over the next few years. Although the contribution of unregulated operations remains below 15%, **Pivotal adds to AWK operations** that are **higher risk relative** to the **utility operations** because they **depend on market prices for cost recovery** and are **subject to greater competition**.

Pivotal also adds services such as gas line and HVAC operations, as shown in the exhibit below, that are **not related to AWK's core business**.

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Connecticut Water Service's Board Rebuffs Eversource Energy's Acquisition Bid

by Selene Balasta – S&P Global Market Intelligence – Apr. 19, 2018

Eversource Energy said **April 19** that it has made a **non-binding proposal to acquire a**ll outstanding shares of **Connecticut Water** Service Inc. at $63.50 per share, in cash or in Eversource common shares. **Connecticut Water** confirmed receiving the proposal, but its **board of directors maintained** that **SJW Group's bid** is **still** the **best** option for their shareholders.

SJW Group also **affirmed** its **commitment to** the **merger**.

In a bid made during the election of Connecticut Water shareholders on April 5, Eversource said it is offering a "superior alternative" to the all-stock transaction announced by SJW Group on March 15. Eversource first expressed interest in buying the water utility in the second half of 2017.

Eversource said its bid represents a **21% premium to Connecticut Water's closing share price on March 14**. Connecticut Water shareholders who opted to receive Eversource shares would also be eligible to receive the **equivalent of** an **81% dividend uplift** based on the closing price of Eversource's shares on April 4, **as well as** an **annualized quarterly dividend** of 29.75 cents per share declared **by Connecticut Water** on January 18.

Eversource is the **parent** company of **Aquarion** Water Co. Inc., a Connecticut-based water utility which serves nearly 230,000 customers in Connecticut, Massachusetts and New Hampshire, and is near Connecticut Water's service territory.

"Eversource's acquisition of Connecticut Water would be a compelling, superior alternative to the SJW transaction for Connecticut Water's customers, employees, suppliers, communities and shareholders," said **Eversource Chairman**, **President** and **CEO James Judge** in the proposal. The **geographical proximity** of the Connecticut Water and Aquarion systems would "**enable cost-effective infrastructure investment and support regional economic growth**," Judge added.

Meanwhile, under the **SJW Group's** "**merger of equals**," **Connecticut** Water **shareholders** would **receive 1.1375 shares** of **SJW** Group common **stock for each share** of **Connecticut Water**. This is the **equivalent** of **$63.70 per share**, based on SJW Group's closing share price on **April 19. At** deal **close**, the combined company would be **40% owned** by **Connecticut Water** shareholders and **60%** by **SJW** Group shareholders, on a fully diluted basis.

"Having carefully reviewed the unsolicited acquisition proposal, we continue to believe that Connecticut Water's merger with **SJW** Group is in the **best interest** of our **shareholders**, particularly given the **significant growth opportunity** that the combined

organization will have **as a leading pure-play water company**," said **Carol Wallace**, **Chairman** of the **Connecticut Water** board of directors.

Connecticut Water's board unanimously recommended that **Connecticut Water shareholders vote** in favor of the company's merger with the **SJW** Group. The **merger** is **expected** to **close** by the **end** of **2018**, **subject to** certain conditions and **approvals from** the **shareholders** of SJW Group stockholders and Connecticut Water, as well as **approval from regulatory** bodies. The transaction is not subject to any financing condition.

Eversource Energy has **retained Goldman** Sachs as its financial adviser and Ropes & Gray as its legal adviser on the matter. **Wells Fargo** Securities LLC **serves** as **Connecticut Water's** financial adviser and Sullivan & Cromwell LLP as its legal counsel.

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Eversource Energy Discloses Proposal to Acquire Connecticut Water Service, Inc. for $63.50 per Share

Eversource Press Release– S&P Global Market Intelligence – Apr. 18, 2018

Acquisition would combine two local Connecticut businesses with highly complementary footprints in the Northeast

Proposal represents superior alternative to generate value for shareholders, employees, customers, and local communities

Eversource Energy (NYSE: ES) today **announced** that on April 5, 2018 it made a **proposal to acquire** all the outstanding shares of **Connecticut Water** Service, Inc. (Nasdaq: CTWS) **for $63.50 per share in cash and/or** in **Eversource common shares** at the election of Connecticut Water shareholders.

Eversource believes its proposal is a **superior alternative to** the **all-stock transaction proposed** in **SJW** Group's (NYSE: SJW) agreement announced March 15, 2018 **to acquire Connecticut Water**. Eversource's proposal represents a 21% premium to Connecticut Water's closing share price on March 14, 2018, the day prior to the SJW announcement. Eversource's proposal also represents a premium of 22% to Connecticut Water's 20-day volume-weighted average price as of March 14, 2018. In addition, those Connecticut Water shareholders who elect to receive Eversource shares would realize the equivalent of an 81% dividend uplift based on the closing price of Eversource's shares on April 4, 2018 and the annualized quarterly dividend of $0.2975 per share declared by Connecticut Water on January 18, 2018.

Eversource has attempted to engage privately with Connecticut Water for some time. The company expressed its interest in pursuing an acquisition of Connecticut Water in 2017. On April 5, 2018, Eversource verbally communicated its intent to submit a proposal to David C. Benoit, the Chief Executive Officer of Connecticut Water, and delivered a written proposal the same day. On April 17, 2018, Eversource sent a follow-up communication to Connecticut Water expressing its continued interest in pursuing an acquisition.

We believe that our proposal represents a unique opportunity to deliver significant and immediate value to Connecticut Water's shareholders, customers, employees, and local communities," said Eversource Chairman, President and Chief Executive Officer Jim Judge. "As such, we were surprised and disappointed that Connecticut Water's Board of Directors has been unwilling to engage in discussions with us. We urge the Board of Connecticut Water to act in the best interests of its shareholders by meeting with us to seriously discuss our compelling proposal."

Eversource has a best-in-class financial profile, including a market capitalization of approximately $19 billion, a long-track record of consistent and robust earnings and dividend growth, an industry best S&P credit rating, and a strong and growing dividend. There would be no financing contingency as part of the transaction.

The proposed transaction would combine two highly complementary local businesses, and would enable cost-effective regional investment and support economic growth. **Eversource** is the **parent** company **of Aquarion Water** Company, a Connecticut based water utility whose service territory is in close proximity to Connecticut Water's service territory. Aquarion Water serves nearly 230,000 customers in Connecticut, Massachusetts, and New Hampshire, with approximately 90% located in Connecticut. Connecticut Water serves approximately 125,000 customers in Connecticut and Maine with approximately 85% located in Connecticut.

"The proposed transaction would provide Connecticut Water customers with the benefit of premier service quality and a highly reliable water supply into the future," said Aquarion President and Chief Executive Officer Charles Firlotte. "The combined company would have a complementary service territory and would allow for an expansion of the superior customer service our employees proudly provide."

Eversource has retained Goldman Sachs as its financial advisor and Ropes & Gray as its legal advisor on this matter.

The full text of Eversource's April 5, 2018 non-binding proposal to acquire Connecticut Water appears below:

April 5, 2018

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Mr. **David** C. **Benoit**
President and Chief Executive Officer
Connecticut Water Service, Inc.
93 West Main Street
Clinton, CT 06413

Dear David:

On behalf of Eversource Energy ("Eversource"), I am hereby submitting a proposal to acquire Connecticut Water Service, Inc. ("Connecticut Water"). As you are likely aware, we expressed interest in pursuing an acquisition of Connecticut Water in the second half of 2017. At this time, we are proposing terms for an acquisition that we firmly view as superior to the terms of the proposed transaction with San Jose Water

("SJW"), reasonably likely to lead to a Superior CTWS Proposal (as defined in the merger agreement with SJW) and in the best interest of the customers, employees, suppliers, local communities and shareholders of Connecticut Water due to the greater benefits achievable through an Eversource transaction.

Eversource proposes to acquire all of the outstanding shares of Connecticut Water common stock for $63.50 per share in cash and/or in Eversource common stock at the election of Connecticut Water shareholders. Connecticut Water shareholders electing to receive Eversource stock as consideration would realize the equivalent of an 81% dividend uplift based on the closing price of Eversource's common stock on April 4, 2018 and the annualized quarterly cash dividend of $0.2975 per share declared by Connecticut Water on January 18, 2018. The $63.50 consideration payable to Connecticut Water shareholders would not be reduced by the termination fee payable to SJW.

The $63.50 price represents a 21% premium to Connecticut Water's undisturbed share price on March 14, 2018 and a 22% premium to the 20-day VWAP for the period ending March 14, 2018.

Eversource has a market capitalization of approximately $19 billion and is an A+ rated company by Standard & Poor's, making Eversource a strong financial partner for the transaction. There would be no financing contingency as part of the transaction.

Eversource has consistently demonstrated credibility, expertise, and responsiveness in its proceedings before the Connecticut Public Utilities Regulatory Authority ("CT PURA") and has a strong track record for successful regulatory outcomes. In particular, **Eversource** has considerable experience in obtaining regulatory approvals required for utility mergers and acquisitions. This is evidenced through our **recent acquisition** of **Aquarion Water** Company ("Aquarion"), for which we **obtained regulatory approvals in four states** and completed the transaction within five months from the regulatory filing date and within six months from the announcement of the transaction.

In the final decision issued by **CT PURA approving** the **Aquarion acquisition**, attributes of the transaction that were cited as particularly beneficial to customers and employees included local ownership, financial stability, employee benefits and community support. In fact, Eversource is uniquely positioned to create substantial benefits for customers served by Connecticut Water, while preserving local ownership and accountability. As part of the approvals required to complete the Aquarion acquisition, Eversource obtained regulatory approval in Maine with a positive outcome for the company and a minimum of administrative process. In summation, Eversource's acquisition of Connecticut Water would be a compelling, superior alternative to the SJW transaction for Connecticut Water's customers, employees, suppliers, communities and shareholders. An Eversource transaction would also leverage the geographical proximity of the Connecticut Water and Aquarion systems to enable cost-effective infrastructure investment and support regional economic growth.

I have reviewed this opportunity with Eversource's Board of Trustees, which supports the submission of this proposal. We are prepared to engage with you immediately and to reach a definitive agreement as expeditiously as possible. For the avoidance of doubt, this proposal is a non-binding indication of interest, subject to confirmatory due diligence. A binding obligation with respect to this transaction will result only from the execution of a definitive agreement containing terms and conditions that are mutually acceptable to the parties.

We look forward to your prompt response.

Sincerely,

James J. Judge
Chairman, President and Chief Executive Officer
Eversource Energy

About Eversource:
Eversource (NYSE: ES) transmits and delivers electricity and natural gas and supplies water to approximately 4 million customers in Connecticut, Massachusetts and New Hampshire. Recognized as the top U.S. utility for its energy efficiency programs by the sustainability advocacy organization Ceres, Eversource harnesses the commitment of about 8,000 employees across three states to build a single, united company around the mission of safely delivering reliable energy and water with superior customer service. For more information, please visit our website (www.eversource.com) and follow us on Twitter (@EversourceCorp) and Facebook (facebook.com/EversourceEnergy). For more information on our water services, visit www.aquarionwater.com.

Forward Looking Statement:

This news release includes statements concerning Eversource Energy's expectations, beliefs, plans, objectives, goals, strategies, assumptions of future events, future financial performance or growth and other statements that are not historical facts. These statements are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. In some cases, readers can identify these forward-looking statements through the use of words or phrases such as "estimate," "expect," "anticipate," "intend," "plan," "project," "believe," "forecast," "should," "could" and other similar expressions. Forward-looking statements are based on current expectations, estimates, assumptions or projections and are not guarantees of future performance.

These expectations, estimates, assumptions or projections may vary materially from actual results. Accordingly, any such statements are qualified in their entirety by reference to, and are accompanied by important factors that could cause our actual results to differ materially from those contained in our forward-looking statements, including, but not limited to, in the case of Eversource's proposal to acquire Connecticut Water, the failure to complete the subject transaction upon the terms set forth in Eversource's proposal; cyber-attacks or breaches, including those resulting in the compromise of the confidentiality of our proprietary

information and the personal information of our customers; acts of war or terrorism or grid disturbances that may disrupt our transmission and distribution systems; ability or inability to commence and complete our major strategic development projects and opportunities; actions or inactions of local, state and federal regulatory, public policy and taxing bodies; substandard performance of suppliers; climate change; disruption to our transmission and distribution systems; new technology and conservation of energy; contamination or failure of our water supplies; unauthorized access to confidential and proprietary information; changes in laws, regulations or regulatory policy; changes in economic conditions, including impact on interest rates, tax policies, and customer demand and payment ability; changes in business conditions, which could include disruptive technology related to our current or future business model; changes in weather patterns, including extreme weather and other effects of climate change; reputational risk; changes in levels or timing of capital expenditures; technological developments and alternative energy sources; disruptions in the capital markets or other events that make Eversource Energy's access to necessary capital more difficult or costly; developments in legal or public policy doctrines; changes in accounting standards and financial reporting regulations; actions of rating agencies; and other presently unknown or unforeseen factors. minimum of administrative process.

Other risk factors are detailed in Eversource's reports filed with the Securities and Exchange Commission (SEC) and updated as necessary, and are available on the SEC's website at www.sec.gov. All such factors are difficult to predict and contain uncertainties that may materially affect Eversource Energy's actual results many of which are beyond our control. You should not place undue reliance on the forward-looking statements; each speaks only as of the date on which such statement is made, and, except as required by federal securities laws, Eversource Energy undertakes no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events.

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UW 174 Staff ROE Summary

Stage 3 – Long-Term Annual Dividend and EPS Growth Rates					
Component	Real Rate	TIPS Inflation Forecast	20-Yr Nominal Rate	Weight	Weighted Rate
Energy Information Administration	2.00%	1.99%	4.03%	12.50%	0.50%
PricewaterhouseCooper	1.80%	1.99%	3.83%	12.50%	0.48%
Social Security Administration	2.20%	1.99%	4.23%	12.50%	0.53%
Congressional Budget Office			4.00%	12.50%	0.50%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Composite				100%	4.41%
Congressional Budget Office Long-Term 20-Year Budget Outlook			4.00%	100.0%	4.00%
BEA Nominal Historical,1980 Q1 – 2017 Q4	2.76%	1.99%	4.80%	50.0%	2.40%
Social Security Administration	2.20%	1.99%	4.23%	50.0%	2.12%
Near Historical				100%	4.52%

Note: Near Historical assumes that various federal initiatives will have greater long-run positive impact than the Congressional Budget Office expects.

Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity						
	X	CBO	4.00%	Composite	4.41%	0	4.80%
1	Staff Screen	6.58%		6.95%		7.30%	
2	Low Cap (Small Cap & Mid Cap) Sensitivity	6.44%		6.81%		7.16%	
3	Small Cap Sensitivity	6.61%		6.97%		7.32%	

Model Y: 3 Stage DCF - Dividend Growth with Terminal Value as Sales based upon EPS Growth and Terminal Stock Sale						
	Y	CBO	4.00%	Composite	4.41%	0	4.80%
1	Staff Screen	7.20%		7.53%		7.84%	
2	Low Cap (Small Cap & Mid Cap) Sensitivity	7.08%		7.41%		7.72%	
3	Small Cap Sensitivity	7.43%		7.76%		8.08%	

1 Hamada to Right →

Model X: 3 Stage DCF - Dividend Growth with Terminal Value as Perpetuity (Hamada Adjusted)						
X	CBO	4.00%	Composite	4.41%	0	4.80%
Staff Screen	7.06%		7.43%		7.78%	
Low Cap (Small Cap & Mid Cap) Sensitivity	7.06%		7.43%		7.78%	
Small Cap Sensitivity	7.39%		7.75%		8.10%	

Hamada to Right →

Model Y: 3 Stage DCF - Dividend & EPS Growth with Terminal Value as Stock Sale (Hamada Adjusted)						
Y	CBO	4.00%	Composite	4.41%	0	4.80%
Staff Screen	7.68%		8.01%		8.32%	
Low Cap (Small Cap & Mid Cap) Sensitivity	7.70%		8.03%		8.34%	
Small Cap Sensitivity	8.21%		8.54%		8.86%	

- Hamada Adjustments to Right Fully Account for Differences in the Amount of Debt in Capital Structure — Above Right
- Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by : 12.5 bps
- Sensitivity Study to Account for Difference in Capitalization Size -- Upward Shift: 13.5 bps

Informed Range of Model 8.17% **to** 9.26% **ROE**

Repeated Upward Shift for Micro Cap is reflected below

Point ROE Recommendation **9.25%** **ROE**

Staff recommends the high end of a range of reasonable ROEs due to the Company's small size and operational challenges.

Government Camp Water
Peer Screen

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		Screen:		1 Water Utilities Followed by Value Line (VL) Passing Staff Screen											
Water Utility				2 " that are Small & Medium Capitalization / VL	See Note Below										
Government Camp Water				3 " that are Small Capitalization / VL				Yahoo Fin.	VL	Value Line	SNL or VL	VL 2018	VL	VL 2018	VL
(GCW)		1	2	Sensitivity matches 3 above as a peer group	NYSE	VL	Yahoo Fin.	8/9/2018	8/9/2018	Water Utility	No Div	LT Debt	2021-2023	Common	Preferred
Screen #	**Abbreviated Utility**	**UW 174 VL Group**	**UW 174 VL Low-Cap**	**VL Corporate Name Gas Utility**	**NSDQ Ticker**	**8/9/2018 Beta**	**8/9/2018 Beta**	**Mkt Cap $ Billions**	**Mkt Cap $ Billions**	**w VL Beta < 1 8/9/2018**	**Declines 5 years**	**< 56% of Capital**	**LT Debt % of Capital**	**Equity % of Capital**	**Stock of Capital**
1	American States	0	Yes	American States Water Company	**AWR**	0.80	-0.22	2.19	2.10	Yes	Pass	41.5%	46.0%	58.5%	0.0%
2	American Water	No	No	American Water Works Company, Inc.	**AWK**	0.65	-0.07	15.92	15.40	Yes	**Fail**	54.5%	57.5%	43.5%	2.0%
3	Aqua America	**Sensitivity**	No	Aqua America, Inc.	**WTR**	0.75	0.17	6.66	6.30	Yes	Pass	51.0%	53.5%	49.0%	0.0%
4	California Water	**Sensitivity**	Yes	California Water Service Group	**CWT**	0.80	0.28	1.93	1.90	Yes	Pass	43.0%	42.0%	57.0%	0.0%
5	Connecticut Water	**Merger**	**Merger**	Connecticut Water Services, Inc.	**CTWS**	0.65	-0.53	0.83	0.80	Yes	Pass	46.5%	45.0%	53.0%	0.5%
6	Consolidated Water	No	No	Consolidated Water Co. Ltd.	**CWCO**	0.95	0.53	0.20	0.20	Yes	Pass	0.0%	0.0%	99.0%	1.0%
7	Middlesex Water	Yes	**Yes**	Middlesex Water Company	**MSEX**	0.80	0.20	0.75	0.70	Yes	Pass	37.0%	37.0%	62.5%	0.5%
8	SJW	**Merger**	**Merger**	SJW Group	**SJW**	0.75	-0.07	1.29	1.40	Yes	Pass	48.5%	48.0%	51.5%	0.0%
9	York Water	Yes	**Yes**	The York Water Company	**YORW**	0.80	0.24	0.38	0.43	Yes	Pass	35.5%	34.0%	64.5%	0.0%
	TOTAL PEERS	**7**	**6**	*Note: Staff further segregates VL Small-Cap in sensitivity modeling to test the effects of Capitalization Size on modeling sesults.*											

Government Camp Water
Peer Screen

1	2	3	4	17	18	
		Screen:	1			
Water Utility			2			
Government Camp Water (GCW)		1	2	3		
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	VL Div. Growth Rate > 0%	Notes	Screen #
1	American States	0	Yes	Pass	Also has 11 contracts for military installations	1
2	American Water	No	No	Pass	Strategy: Growth through acquisitions and controlling expenses.	2
3	Aqua America	Sensitivity	No	Pass	Key Focus on infrastructure upgrades and acquisitions.	3
4	California Water	Sensitivity	Yes	Pass	Attempt to purchase SJW after SJW and CT Water announced merger. Pending.	4
5	Connecticut Water	Merger	Merger	Pass	Eversource, CA Water & SJW all bid on CT Water. CT Water favors SJW.	5
6	Consolidated Water	No	No	Fail	Flat Dividend Growth, Higher Risk International Desalination Projects	6
7	Middlesex Water	Yes	Yes	Pass	Also operates water and wastewater services and upgrades under contract with cities and private clients	7
8	SJW	Merger	Merger	Pass	Eversource, CA Water & SJW all bid on CT Water. CT Water favors SJW.	8
9	York Water	Yes	Yes	Pass	Oldest Water Utility in US - in continuous operation since 1816.	9
	TOTAL PEERS	7	6			

GCW Water Peer Dividends

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
																											Value Line Estimate	
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2012 Yr	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2013 Yr	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Yr	2018 Yr
1	American States	0	Mid-Cap	AWR	**0.64**	0.1775	0.1775	0.2025	0.2025	**0.76**	0.2025	0.2025	0.213	0.213	**0.83**	0.213	0.213	0.224	0.224	**0.87**	0.224	0.224	0.224	0.242	**0.91**	**0.87**	0.99	1.05
3	Aqua America	Sensitivity	Large-Cap	WTR	**0.54**	0.14	0.14	0.152	0.152	**0.58**	0.152	0.152	0.165	0.165	**0.63**	0.165	0.165	0.178	0.178	**0.69**	0.178	0.178	0.1913	0.1913	**0.74**	**0.69**	0.79	0.85
4	California Water	Sensitivity	Mid-Cap	CWT	**0.63**	0.16	0.16	0.16	0.16	**0.64**	0.1625	0.1625	0.1625	0.1625	**0.65**	0.1675	0.1675	0.1675	0.1675	**0.67**	0.1725	0.1725	0.1725	0.1725	**0.69**	**0.67**	0.72	0.75
5	Connecticut Water	Merger	Merger	CTWS	**0.96**	0.2425	0.2425	0.2475	0.2475	**0.98**	0.2475	0.2475	0.2575	0.2575	**1.01**	0.2575	0.2575	0.2675	0.2675	**1.05**	0.2675	0.2825	0.2825	0.2825	**1.12**	**1.06**	1.18	1.24
7	Middlesex Water	Yes	Small-Cap	MSEX	**0.74**	0.19	0.1875	0.1875	0.19	**0.75**	0.19	0.19	0.19	0.1925	**0.76**	0.1925	0.1925	0.1925	0.19875	**0.78**	0.19875	0.19875	0.19875	0.21125	**0.81**	**0.78**	0.86	0.91
8	SJW	Merger	Merger	SJW	**0.71**	0.1825	0.1825	0.1825	0.1825	**0.73**	0.1875	0.1875	0.1875	0.1875	**0.75**	0.195	0.195	0.195	0.195	**0.78**	0.2025	0.2025	0.2025	0.2025	**0.81**	**0.78**	1.04	1.12
9	York Water	Yes	Small Cap	YORW	**0.54**	0.14	0.138	0.138	0.138	**0.55**	0.1431	0.1431	0.1431	0.1431	**0.57**	0.1495	0.1495	0.1495	0.1555	**0.60**	0.1555	0.1555	0.1555	0.1602	**0.63**	**0.60**	0.65	0.70
	TOTAL	7	6																									

(Low-Cap

GCW Water Peer EPS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
										Value Line Estimated EPS																	Value Line Estimated Near Fu	
Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2013 Yr	2014 Q1	2014 Q2	2014 Q3	2014 Q4	2014 Yr	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2015 Yr	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2016 Yr	2014-16 Average	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2017 Yr	2018 Q1	2018 Q2
1	American States	0	Mid-Cap	AWR	**1.61**	0.28	0.39	0.54	0.36	**1.57**	0.32	0.41	0.56	0.31	**1.60**	0.28	0.45	0.59	0.30	**1.62**	**1.60**	0.34	0.62	0.57	0.35	**1.88**	0.25	0.50
3	Aqua America	Sensitivity	Large-Cap	WTR	**1.16**	0.24	0.31	0.38	0.27	**1.20**	0.27	0.32	0.38	0.17	**1.14**	0.29	0.34	0.41	0.28	**1.32**	**1.22**	0.28	0.34	0.43	0.30	**1.35**	0.29	0.36
4	California Water	Sensitivity	Mid-Cap	CWT	**1.02**	**(0.11)**	0.36	0.70	0.24	**1.19**	0.03	0.21	0.52	0.18	**0.94**	**(0.02)**	0.24	0.48	0.31	**1.01**	**1.05**	0.02	0.39	0.70	0.29	**1.40**	**(0.05)**	0.42
5	Connecticut Water	Merger	Merger	CTWS	**1.66**	0.27	0.67	0.76	0.22	**1.92**	0.28	0.77	0.79	0.20	**2.04**	0.28	0.89	0.84	0.07	**2.08**	**2.01**	0.36	0.73	0.90	0.14	**2.13**	**(0.10)**	0.77
7	Middlesex Water	Yes	Small-Cap	MSEX	**1.03**	0.20	0.29	0.42	0.22	**1.13**	0.22	0.31	0.41	0.28	**1.22**	0.29	0.36	0.54	0.19	**1.38**	**1.24**	0.27	0.33	0.46	0.32	**1.38**	0.27	0.35
8	SJW	Merger	Merger	SJW	**1.12**	0.04	0.34	1.88	0.28	**2.54**	0.23	0.36	0.46	0.80	**1.85**	0.16	0.82	0.92	0.67	**2.57**	**2.32**	0.18	0.90	0.94	0.84	**2.86**	0.06	0.86
9	York Water	Yes	Small Cap	YORW	**0.75**	0.16	0.22	0.23	0.28	**0.89**	0.20	0.22	0.28	0.27	**0.97**	0.19	0.23	0.27	0.23	**0.92**	**0.93**	0.20	0.23	0.31	0.27	**1.01**	0.20	0.25
	TOTAL	8	6																									

GCW Water Peer Dividends

	1	2	3	4	5	30	31	32	33	34	35		
						d Near Future Dividends in Blue				VL Avg	Div. Growth		
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2019 Yr	2020 Yr	2021 Yr	2022 Yr	2020- 22 / Yr	2020-22 vs. 2014-16	Screen #	
1	1	American States	0	Mid-Cap	AWR	1.14	1.24	1.35	1.46	1.35	7.5%	1	1
2	3	Aqua America	Sensitivity	Large-Cap	WTR	0.94	1.03	1.14	1.25	1.14	8.8%	3	2
3	4	California Water	Sensitivity	Mid-Cap	CWT	0.81	0.88	0.95	1.02	0.95	6.0%	4	3
4	5	Connecticut Water	Merger	Merger	CTWS	1.31	1.38	1.45	1.52	1.45	5.4%	5	4
5	7	Middlesex Water	Yes	Small-Cap	MSEX	0.96	1.01	1.06	1.11	1.06	5.2%	7	5
6	8	SJW	Merger	Merger	SJW	1.19	1.27	1.36	1.45	1.36	9.7%	8	6
7	9	York Water	Yes	Small Cap	YORW	0.77	0.84	0.92	1.00	0.92	7.4%	9	7
		TOTAL	7	6						VL H2O Screen	7.0%	Mean	
						= Small- & Mid-Cap)				VL (Low Cap) H2O Screen	6.5%		
										VL Small-Cap) H2O Screen	6.3%		

GCW Water Peer EPS

	1	2	3	4	5	30	31	32	33	34	35	36	37	38		
						ture Earnings per Share in Blue							VL Avg	EPS Growth		
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Ticker	2018 Q3	2018 Q4	2018 Yr	2019 Yr	2020 Yr	2021 Yr	2022 Yr	2020 - 22 / Yr	2020-22 vs. 2014-16	Screen #	
1	1	American States	0	Mid-Cap	AWR	0.60	0.40	1.75	1.91	2.08	2.26	2.45	2.26	6.0%	1	1
2	3	Aqua America	Sensitivity	Large-Cap	WTR	0.44	0.31	1.40	1.52	1.66	1.81	1.95	1.81	6.7%	3	2
3	4	California Water	Sensitivity	Mid-Cap	CWT	0.73	0.35	1.45	1.55	1.66	1.78	1.90	1.78	9.3%	4	3
4	5	Connecticut Water	Merger	Merger	CTWS	0.93	0.25	1.85	2.08	2.33	2.61	2.90	2.61	4.4%	5	4
5	7	Middlesex Water	Yes	Small-Cap	MSEX	0.55	0.33	1.50	1.63	1.78	1.94	2.10	1.94	7.7%	7	5
6	8	SJW	Merger	Merger	SJW	1.00	0.68	2.60	2.79	3.00	3.23	3.45	3.23	5.6%	8	6
7	9	York Water	Yes	Small Cap	YORW	0.32	0.28	1.05	1.17	1.30	1.45	1.60	1.45	7.7%	9	7
		TOTAL	8	6									VL H2O Screen	7.5%	Mean	
									(Low-Cap = Small- & Mid-Cap)			VL (Low-Cap) H2O Screen		7.7%		

1	2	3	4	5	6	7	8	9	10	11	#	12	13	14	15	16	17	#	18	19		
GCW GRC					Yahoo Finance							VL 2018 Cap Structure								*Hamada*		
Staff Hamada Adjustments					$ Stock Closing Price			*3-Day*	*Div Yield*	*VL 2018*		% Long	%		2018	Hamada	*Relevered*		Equity	*Adjustment*		
					1st Trading Day of Month			*Avg $*	*at*	*Return on*		Term	Common	VL	VL	Unlevered	*Beta*		Risk	*Equity*		
Screen #	**Abbreviated Utility**	**UW 174 VL Group**	**UW 174 VL Low-Cap**	**Ticker**	**Jun.** 6/1/2018	**Jul.** 7/1/2018	**Aug.** 8/1/2018	*Stock Price*	*Recent Price*	*Common Equity*		**Debt**	**Equity**	**Beta**	**Tax Rate**	**Beta**	*Equity at 50.0%*		**Premium**	*At 50.0%*	**Screen #**	
1	American States	0	Mid-Cap	AWR	57.16	60.12	59.68	58.99	1.5%	12.0%		41.5	58.5	0.80	23.0%	0.52	0.92		4.20%	0.49%	1	1
2	Aqua America	Sensitivity	Large-Cap	WTR	35.18	36.94	37.21	36.44	2.0%	12.5%		51.0	49.0	0.75	9.0%	0.39	0.74		4.20%	**-0.06%**	3	2
3	California Water	Sensitivity	Mid-Cap	CWT	38.95	40.91	40.31	40.06	1.7%	10.0%		43.0	57.0	0.80	21.0%	0.50	0.90		4.20%	0.41%	4	3
4	Connecticut Water	**Merger**	**Merger**	CTWS	65.32	64.42	69.25	66.33	1.7%	7.5%		46.5	53.5	0.65	21.0%	0.39	0.69		4.20%	0.17%	5	4
5	Middlesex Water	Yes	Small-Cap	MSEX	42.17	44.29	44.94	43.80	1.8%	10.0%		37.0	62.5	0.80	21.0%	0.55	0.98		4.20%	0.74%	7	5
6	SJW	**Merger**	**Merger**	SJW	66.22	64.68	61.81	64.24	1.3%	11.5%		48.5	51.5	0.75	21.0%	0.43	0.77		4.20%	0.08%	8	6
7	York Water	Yes	Small Cap	YORW	31.80	31.00	29.55	30.78	2.0%	10.0%		35.5	64.5	0.80	21.0%	0.56	1.00		4.20%	0.83%	9	7
	TOTAL	**7**	**6**																**VL H2O Screen**	**0.48%**	**Mean**	

Dividend Yield = (Annual Dividends per Share) / Price per Share

When Value Line (VL) Beta ratio exceeds 99.9 or earnings are negative, VI shows "NMF" for 'no meaningful figure'.

(Low-Cap = Small- & Mid-Cap)

VL (Low Cap) H2O Screen **0.62%**

VL Small-Cap) H2O Screen **0.78%**

4.80% Annual Growth Rate - Stage 3

Dividend Growth with Terminal Value as Perpetuity

E.O.Y. Cash Flows Staff Model X

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
						Terminal Value as			2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2045		
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	% of NPV_{DIV}	NPV @ IRR	Recent Price	Initial Stage					Transition Stage					Final Stage																				Terminal Value	2046 Div	2046 Perpetuity	Screen #	
1	1	American States	0	Mid-Cap	6.9%	56.9%	(0.00)	(58.99)	0.99	1.05	1.14	1.24	1.35	1.46	1.61	1.75	1.87	1.96	2.06	2.15	2.26	2.37	2.48	2.60	2.72	2.85	2.99	3.14	3.29	3.44	3.61	3.78	3.96	4.15	4.35	4.56	4.78	250.97	5.01	245.96	1	1
2	3	Aqua America	Sensitivity	Large-Cap	7.8%	46.2%	0.00	(36.44)	0.79	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	158.54	4.36	154.18	3	2
3	4	California Water	Sensitivity	Mid-Cap	7.0%	56.3%	0.00	(40.06)	0.72	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	169.90	3.44	166.47	4	3
4	5	Connecticut Water	Merger	Merger	6.7%	59.2%	(0.00)	(66.33)	1.18	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	278.49	5.08	273.41	5	4
5	7	Middlesex Water	Yes	Small-Cap	6.9%	56.1%	(0.00)	(43.80)	0.86	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	184.31	3.70	180.61	7	5
6	8	SJW	Merger	Merger	6.8%	58.8%	0.00	(64.24)	1.04	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	272.52	5.12	267.41	8	6
7	9	York Water	Yes	Small Cap	7.6%	48.2%	0.00	(30.78)	0.65	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	132.81	3.43	129.38	9	7
		TOTALS	7	4	Mean																																				
					7.24%	52.73%	0%	VL H2O Screen																																		
					7.11%	54.37%	0%	VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)																																		
					7.26%	52.16%	0%	VL Small-Cap) H2O Screen																																		

B.O.Y. Cash Flows Staff Model X

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
						Terminal Value as			2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2045		
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	% of NPV_{DIV}	NPV @ IRR	Recent Price	Initial Stage					Transition Stage					Final Stage																				Terminal Value	2046 Div	2046 Perpetuity	Screen #	
1	1	American States	0	Mid-Cap	7.05%	55.0%	(0.00)	(58.99)	1.05	1.14	1.24	1.35	1.46	1.61	1.75	1.87	1.96	2.06	2.15	2.26	2.37	2.48	2.60	2.72	2.85	2.99	3.14	3.29	3.44	3.61	3.78	3.96	4.15	4.35	4.56	4.78	5.01	250.36	5.25	245.10	1	1
2	3	Aqua America	Sensitivity	Large-Cap	7.92%	43.9%	0.00	(36.44)	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	4.36	157.80	4.57	153.24	3	2
3	4	California Water	Sensitivity	Mid-Cap	7.07%	53.6%	(0.00)	(40.06)	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	3.44	169.57	3.60	165.97	4	3
4	5	Connecticut Water	Merger	Merger	6.84%	57.6%	(0.00)	(66.33)	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	5.08	278.40	5.32	273.08	5	4
5	7	Middlesex Water	Yes	Small-Cap	7.05%	54.4%	(0.00)	(43.80)	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	3.70	184.25	3.88	180.37	7	5
6	8	SJW	Merger	Merger	6.91%	57.1%	0.00	(64.24)	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	5.12	271.98	5.36	266.61	8	6
7	9	York Water	Yes	Small Cap	7.72%	46.1%	0.00	(30.78)	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	132.30	3.59	128.71	9	7
		TOTALS	7	6	Mean																																				
					7.36%	50.62%	0%	VL H2O Screen																																		
					7.22%	51.78%	0%	VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)																																		
					7.39%	50.26%	0%	VL Small-Cap) H2O Screen																																		

Average B.O.Y. & E.O.Y. Cash Flows Model X

	1	2	3	4	5	6	7	8	9		
						Terminal Value as	Average 2017 - 2021 Dividend Growth Rates				
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Average IRR	% of NPV_{DIV}	EOY	BOY	Average	Screen #	
1	1	American States	0	Mid-Cap	6.99%	56.0%	8.1%	8.6%	8.3%	1	1
2	3	Aqua America	Sensitivity	Large-Cap	7.84%	45.0%	9.6%	10.0%	9.8%	3	2
3	4	California Water	Sensitivity	Mid-Cap	7.02%	54.9%	7.2%	8.0%	7.6%	4	3
4	5	Connecticut Water	Merger	Merger	6.79%	58.4%	5.3%	5.3%	5.3%	5	4
5	7	Middlesex Water	Yes	Small-Cap	7.00%	55.3%	5.4%	5.2%	5.3%	7	5
6	8	SJW	Merger	Merger	6.86%	58.0%	6.9%	6.6%	6.8%	8	6
7	9	York Water	Yes	Small Cap	7.65%	47.1%	9.1%	9.3%	9.2%	9	7
		TOTALS	7	6	Mean						
					7.30%	51.67%	8%	VL H2O Screen			
					7.16%	53.33%	7%	VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)			
					7.32%	51.21%	7%	VL Small-Cap) H2O Screen			
								Sensitivity Mirrors Small Cap			

4.80% Annual Growth Rate - Stage 3

EPS Growth to Determine a Sale Terminal Value **EPS Growth**

E.O.Y. Cash Flows

Staff **Model** **Y**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
						Terminal Value as			2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2045				
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	% of NPV_{DIV}	NPV @ IRR	Recent Price*	Initial Stage					Transition Stage					Final Stage																				Terminal Value	2046 Div	2046 Sale	2047	Screen #	
1	1	American States	0	Mid-Cap	7.2%	58.3%	0.00	(58.99)	0.99	1.05	1.14	1.24	1.35	1.46	1.61	1.75	1.87	1.96	2.06	2.15	2.26	2.37	2.48	2.60	2.72	2.85	2.99	3.14	3.29	3.44	3.61	3.78	3.96	4.15	4.35	4.56	4.78	275.87	5.01	270.86		1	1
				e					1.88	1.75	1.91	2.08	2.26	2.45	2.68	2.89	3.08	3.23	3.38	3.54	3.71	3.89	4.08	4.27	4.48	4.69	4.92	5.15	5.40	5.66	5.93	6.22	6.52	6.83	7.16	7.50	7.86		8.24		8.63		
2	3	Aqua America	Sensitivity	Large-Cap	8.2%	49.2%	0.00	(36.44)	0.79	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	191.96	4.36	187.60		3	2
				e					1.35	1.40	1.52	1.66	1.81	1.95	2.15	2.33	2.48	2.60	2.72	2.85	2.99	3.13	3.28	3.44	3.60	3.78	3.96	4.15	4.35	4.56	4.78	5.01	5.25	5.50	5.76	6.04	6.33		6.63		6.95		
3	4	California Water	Sensitivity	Mid-Cap	7.4%	58.9%	0.00	(40.06)	0.72	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	203.62	3.44	200.19		4	3
				e					1.40	1.45	1.55	1.66	1.78	1.90	2.13	2.33	2.49	2.61	2.74	2.87	3.01	3.15	3.30	3.46	3.63	3.80	3.99	4.18	4.38	4.59	4.81	5.04	5.28	5.53	5.80	6.08	6.37		6.68		7.00		
4	5	Connecticut Water	Merger	Merger	7.1%	61.0%	0.00	(66.33)	1.18	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	315.90	5.08	310.82		5	4
				e					2.13	1.85	2.08	2.33	2.61	2.90	3.14	3.36	3.56	3.73	3.91	4.10	4.29	4.50	4.71	4.94	5.18	5.43	5.69	5.96	6.25	6.55	6.86	7.19	7.53	7.90	8.27	8.67	9.09		9.52		9.98		
5	7	Middlesex Water	Yes	Small-Cap	7.7%	60.1%	0.00	(43.80)	0.86	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	244.15	3.70	240.45		7	5
				e					1.38	1.50	1.63	1.78	1.94	2.10	2.33	2.53	2.70	2.83	2.97	3.11	3.26	3.41	3.58	3.75	3.93	4.12	4.32	4.52	4.74	4.97	5.21	5.46	5.72	5.99	6.28	6.58	6.90		7.23		7.58		
6	8	SJW	Merger	Merger	6.8%	59.1%	0.00	(64.24)	1.04	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	276.66	5.12	271.54		8	6
				e					2.86	2.60	2.79	3.00	3.23	3.45	3.77	4.06	4.31	4.52	4.73	4.96	5.20	5.45	5.71	5.98	6.27	6.57	6.89	7.22	7.56	7.93	8.31	8.71	9.13	9.56	10.02	10.50	11.01		11.54		12.09		
7	9	York Water	Yes	Small Cap	8.3%	52.9%	0.00	(30.78)	0.65	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	179.30	3.43	175.87		9	7
				e					1.01	1.05	1.17	1.30	1.45	1.60	1.77	1.93	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	2.99	3.14	3.29	3.45	3.61	3.78	3.97	4.16	4.36	4.56	4.78	5.01	5.25		5.51		5.77		
		TOTALS	7	6		Mean																																				
					7.78%	55.88%	0%		VL H2O Screen																																		
					7.67%	57.55%	0%		VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)																																		
					8.01%	56.49%	0%		VL Small-Cap) H2O Screen																																		

B.O.Y. Cash Flows

Staff **Model** **Y** **EPS Growth**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
						Terminal Value as			2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2045				
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	IRR	% of NPV_{DIV}	NPV @ IRR	Recent Price*	Initial Stage					Transition Stage					Final Stage																				Terminal Value	2046 Div	2046 Sale	2047	#	
1	1	American States	0	Mid-Cap	7.3%	56.5%	0.00	(58.99)	1.05	1.14	1.24	1.35	1.46	1.61	1.75	1.87	1.96	2.06	2.15	2.26	2.37	2.48	2.60	2.72	2.85	2.99	3.14	3.29	3.44	3.61	3.78	3.96	4.15	4.35	4.56	4.78	5.01	276.12	5.25	270.86		1	1
				e					1.88	1.75	1.91	2.08	2.26	2.45	2.68	2.89	3.08	3.23	3.38	3.54	3.71	3.89	4.08	4.27	4.48	4.69	4.92	5.15	5.40	5.66	5.93	6.22	6.52	6.83	7.16	7.50	7.86		8.24		8.63		
2	3	Aqua America	Sensitivity	Large-Cap	8.4%	47.0%	0.00	(36.44)	0.85	0.94	1.03	1.14	1.25	1.39	1.52	1.63	1.71	1.79	1.87	1.96	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	3.00	3.14	3.29	3.45	3.61	3.79	3.97	4.16	4.36	192.17	4.57	187.60		3	2
				e					1.35	1.40	1.52	1.66	1.81	1.95	2.15	2.33	2.48	2.60	2.72	2.85	2.99	3.13	3.28	3.44	3.60	3.78	3.96	4.15	4.35	4.56	4.78	5.01	5.25	5.50	5.76	6.04	6.33		6.63		6.95		
3	4	California Water	Sensitivity	Mid-Cap	7.6%	57.2%	0.00	(40.06)	0.75	0.81	0.88	0.95	1.02	1.12	1.21	1.28	1.35	1.41	1.48	1.55	1.62	1.70	1.78	1.87	1.96	2.05	2.15	2.25	2.36	2.47	2.59	2.72	2.85	2.98	3.13	3.28	3.44	203.79	3.60	200.19		4	3
				e					1.40	1.45	1.55	1.66	1.78	1.90	2.13	2.33	2.49	2.61	2.74	2.87	3.01	3.15	3.30	3.46	3.63	3.80	3.99	4.18	4.38	4.59	4.81	5.04	5.28	5.53	5.80	6.08	6.37		6.68		7.00		
4	5	Connecticut Water	Merger	Merger	7.2%	59.4%	0.00	(66.33)	1.24	1.31	1.38	1.45	1.52	1.66	1.79	1.90	1.99	2.08	2.18	2.29	2.40	2.51	2.63	2.76	2.89	3.03	3.18	3.33	3.49	3.66	3.83	4.02	4.21	4.41	4.62	4.85	5.08	316.14	5.32	310.82		5	4
				e					2.13	1.85	2.08	2.33	2.61	2.90	3.14	3.36	3.56	3.73	3.91	4.10	4.29	4.50	4.71	4.94	5.18	5.43	5.69	5.96	6.25	6.55	6.86	7.19	7.53	7.90	8.27	8.67	9.09		9.52		9.98		
5	7	Middlesex Water	Yes	Small-Cap	7.8%	58.5%	0.00	(43.80)	0.91	0.96	1.01	1.06	1.11	1.21	1.30	1.38	1.45	1.52	1.59	1.67	1.75	1.83	1.92	2.01	2.11	2.21	2.31	2.43	2.54	2.66	2.79	2.93	3.07	3.21	3.37	3.53	3.70	244.33	3.88	240.45		7	5
				e					1.38	1.50	1.63	1.78	1.94	2.10	2.33	2.53	2.70	2.83	2.97	3.11	3.26	3.41	3.58	3.75	3.93	4.12	4.32	4.52	4.74	4.97	5.21	5.46	5.72	5.99	6.28	6.58	6.90		7.23		7.58		
6	8	SJW	Merger	Merger	7.0%	57.3%	0.00	(64.24)	1.12	1.19	1.27	1.36	1.45	1.62	1.78	1.91	2.00	2.10	2.20	2.31	2.42	2.53	2.65	2.78	2.91	3.05	3.20	3.36	3.52	3.69	3.86	4.05	4.24	4.45	4.66	4.88	5.12	276.90	5.36	271.54		8	6
				e					2.86	2.60	2.79	3.00	3.23	3.45	3.77	4.06	4.31	4.52	4.73	4.96	5.20	5.45	5.71	5.98	6.27	6.57	6.89	7.22	7.56	7.93	8.31	8.71	9.13	9.56	10.02	10.50	11.01		11.54		12.09		
7	9	York Water	Yes	Small Cap	8.5%	50.8%	0.00	(30.78)	0.70	0.77	0.84	0.92	1.00	1.11	1.20	1.28	1.34	1.41	1.47	1.54	1.62	1.70	1.78	1.86	1.95	2.05	2.14	2.25	2.36	2.47	2.59	2.71	2.84	2.98	3.12	3.27	3.43	179.46	3.59	175.87		9	7
				e					1.01	1.05	1.17	1.30	1.45	1.60	1.77	1.93	2.06	2.16	2.26	2.37	2.48	2.60	2.73	2.86	2.99	3.14	3.29	3.45	3.61	3.78	3.97	4.16	4.36	4.56	4.78	5.01	5.25		5.51		5.77		
		TOTALS	7	6		Mean																																				
					7.90%	54.02%	0%		VL H2O Screen																																		
					7.78%	55.76%	0%		VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)																																		
					8.14%	56.27%	0%		VL Small-Cap) H2O Screen																																		

Average B.O.Y. & E.O.Y. Cash Flows

Model **Y** **EPS Growth**

	1	2	3	4	5	6	7	8	9	
						Terminal Value as	Average 2016 - 2020 Dividend Growth Rates			
	Screen #	Abbreviated Utility	UW 174 VL Group	UW 174 VL Low-Cap	Average IRR	% of NPV_{DIV}	EOY	BOY	Average	Screen #
1	1	American States	0	Mid-Cap	7.2%	57.4%	8.1%	8.6%	8.3%	1	1
2	3	Aqua America	Sensitivity	Large-Cap	8.3%	48.1%	9.6%	10.0%	9.8%	3	2
3	4	California Water	Sensitivity	Mid-Cap	7.5%	58.0%	7.2%	8.0%	7.6%	4	3
4	5	Connecticut Water	Merger	Merger	7.1%	60.2%	5.3%	5.3%	5.3%	5	4
5	7	Middlesex Water	Yes	Small-Cap	7.8%	59.3%	5.4%	5.2%	5.3%	7	5
6	8	SJW	Merger	Merger	6.9%	58.2%	6.9%	6.6%	6.8%	8	6
7	9	York Water	Yes	Small Cap	8.4%	51.8%	9.1%	9.3%	9.2%	9	7
		TOTALS	7	6		Mean					
					7.84%	56.16%	7.5%			VL H2O Screen	
					7.72%	57.51%	7.1%			VL (Low Cap) H2O Screen (Low-Cap = Small- & Mid-Cap)	
					8.08%	57.13%	6.6%			VL Small-Cap) H2O Screen	

Simple Discounted Cash Flow (DCF) Model

AKA: **Gordon Growth Model**

This simple model presumes that whatever is happening next quarter will happen forever.

	A	B	C	D	E	F	G	H	I	J $(1+L)^{1/4}-1$	K	L $(O/F)*(1+N)$	M	N $(1+L+J)^{4}-1$	O	P	
											2017 VL		SIMPLE DCF ROE				
	Utility	Ticker	Staff Peers	Staff Low Cap Sensitivity	Staff Small Cap Sensitivity	Recent Stock Price	VL EPS 2017	VL EPS 2020-2022	Company "Combined LT Growth Rate"	Quarterly Co. Growth Rate	"Last" Q-4 $ Quarterly Dividend	t+1 Dividend Yield Co. Growth Rate	Staff Peers	Staff Low Cap Sensitivity	Staff Small Cap Sensitivity	Utility	
1	American States	AWR	Yes	Yes	No	58.99	1.88	2.26	6.0%	1.5%	0.2475	0.43%	7.78%	7.78%		American States	1
2	Aqua America	WTR	Yes	No	No	36.44	1.35	1.81	6.7%	1.6%	0.1975	0.55%	9.08%			Aqua America	2
3	California Water	CWT	Yes	Yes	No	40.06	1.40	1.78	9.3%	2.2%	0.1800	0.46%	11.23%	11.23%		California Water	3
4	Middlesex Water	MSEX	Yes	Yes	Yes	65.57	1.38	1.94	7.7%	1.9%	0.2150	0.33%	9.12%	9.12%	9.12%	Middlesex Water	4
5	York Water	YORW	Yes	Yes	Yes	75.19	1.01	1.45	7.7%	1.9%	0.1625	0.22%	8.68%	8.68%	8.68%	York Water	5
												Average:	9.18%	9.20%	8.90%		

In General,Staff Disagrees with this Simple Gordon Growth DCF Model
However, this model may provide a check on Staff's Three Stage DCF Modeling.

- Common Stock Flotation Costs Adjustment Shifts Range of Reasonable ROE's Upward by : 12.5 bps
- Sensitivity Study to Account for Difference in Capitalization Size -- Maximum Upward Shift: 2.5 bps

Informed Range of Modeled Results 9.05% **to** 9.35% ROE

Point ROE Recommendation **9.20%** **ROE**

Top of Range for Commission Consideration 9.35% ROE

This is a tool used to introduce students to certain elementary concepts in finance.
If dividends were to grow at a steady rate forever, regardless of everything known otherwise,

then:

$P_0 = D_1 / (r - g)$

P_0	The current stock price
D_1	The quarterly dividend expected in the next quarter
r	The cost of equity capital
g	The perpetual growth rate

EXHIBIT 2

Expense Accounts O&M (Operations/

Date	Supplier	Test Yea
5/10/2016	Welches Mtn Bldg Supply	
6/1/2016	Ferguson Ent. Inc	
6/4/2016	Welches Mtn Bldg Supply	
7/4/2016	Ferguson Ent. Inc	
8/1/2016	Ferguson Ent. Inc	
8/1/2016	Ferguson Ent. Inc	
11/8/2016	Ferguson Ent. Inc	
11/8/2016	Welches Mtn Bldg Supply	
12/6/2016	Welches Mtn Bldg Supply	
12/31/2016	Ferguson Ent. Inc	
10/23/2016	**Government Camp Snow Removal**	
9/30/2016	One Call Concepts, Inc	
11/3/2016	One Call Concepts, Inc	
5/10/2016	**maintenance**	
5/11/2016	**maintenance**	
5/27/2016	**maintenance**	
5/30/2016	**maintenance**	
8/5/2016	**maintenance**	
8/18/2016	**maintenance**	
9/12/2016	**maintenance**	
10/14/2016	**maintenance**	
10/14/2016	maintenance	
10/17/2016	**maintenance**	
10/17/2016	supplies	
10/18/2016	**maintenance**	
10/24/2016	**maintenance**	
10/25/2016	**maintenance**	
10/25/2016	supplies	
10/26/2016	**maintenance**	
10/31/2016	**maintenance**	
TOTALS		

Expenses Included in Application

/Maintenance & Materials/Supplies) - Account 620

Summa

		Test Year	$6,582.89
		Adjustment	$0.00
		Proposed	$6,582.89

r	Adjustment	Description	Total
$35.73		Supplies	$35.73
$238.36		Pipe, nipples, gate valve, various fittings	$238.36
$168.03		Various Supplies	$168.03
$263.94		Paint	$263.94
$161.82		Various Supplies	$161.82
$704.99		Various Supplies	$704.99
$148.57		Clamp, Adapters, Coupler	$148.57
$31.35		Fittings	$31.35
$2.79		Fittings	$2.79
$179.28		Clamp, Couplings, Tees, Nipples, etc.	$179.28
$1,332.03		**Snow removal**	**$1,332.03**
$21.00		Locates	$21.00
$52.50		Locates	$52.50
$180.00		**Spring inspection**	**$180.00**
$180.00		**cut down trees on co road**	**$180.00**
$270.00		**cut down trees at source/rehang wire for fence**	**$270.00**
$90.00		**Locates**	**$90.00**
$90.00		**Locates**	**$90.00**
$45.00		**locates**	**$45.00**
$67.50		**locates**	**$67.50**
$90.00		**debris to dump**	**$90.00**
$38.00		dump fee	$38.00
$900.00		**drain/clean/disinfect/fill 250,000tank**	**$900.00**
$65.00		bleach, boots, squeeges/brooms	$65.00
$180.00		**drain/refill/monitor tank**	**$180.00**
$225.00		**insulate meter boxes**	**$225.00**
$315.00		**drain wood tank/disinfect etc**	**$315.00**
$12.00		bleach, boots, squeeges/brooms	$12.00
$135.00		**drain, refill tank, remove moss**	**$135.00**
$360.00		**hydrant maintenance**	**$360.00**
			$0.00
			$0.00
$6,582.89	**$0.00**		**$6,582.89**

ary Contract Labor $4,459.53

Comments
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1144 O&M
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Total	$4,459.53

$1,332.03
$180.00
$180.00
$270.00
$90.00
$90.00
$45.00
$67.50
$90.00
$900.00
$180.00
$225.00
$315.00
$135.00
$360.00

						MAINTENANCE WO	
	# of units	Cost per unit					
	5/10/2016		maintenance	4	$45.00	S	
	5/11/2016		maintenance	4	$45.00	c	
	5/27/2016		maintenance	6	$45.00	c	
	5/30/2016		maintenance	2	$45.00	L	
	8/5/2016		maintenance	2	$45.00	L	
	8/18/2016		maintenance	1	$45.000		
	9/12/2016		maintenance	1.5	$45.00	lo	
	10/14/2016		maintenance	2	$45.00	d	
	10/14/2016		maintenance	1	$38.00	d	
	10/17/2016		maintenance	20	$45.00	d	
			supplies	1	$65.00	b	
	10/18/2016		maintenance	4	$45.00	d	
	10/24/2016		maintenance	5	$45.00	in	
	10/25/2016		maintenance	7	$45.00	d	
			supplies	1	$12.00	b	
	10/26/2016		maintenance	3	$45.00	d	
	10/31/2016		maintenance	8	$45.00	h	
mileage	113	$0.575	transportation (Parish)				
-$64.98	$3,242.50						

Contract Labor Tota

RKSHEET From Andy's Other Contract-Labor Detail				
Total Cost	Adjustment		Total	
pring inspection		$180.00		$180.00
ut down trees on co road		$180.00		$180.00
ut down trees at source/rehang wire for fence		$270.00		$270.00
ocates		$90.00		$90.00 Mel
ocates		$90.00		$90.00
locates		$45.00		$45.00
ocates		$67.50		$67.50
ebris to dump		$90.00		$90.00
ump fee		$38.00		$38.00
rain/clean/disinfect/fill 250,000tank		$900.00		$900.00
leach, boots, squeeges/brooms		$65.00		$65.00
rain/refill/monitor tank		$180.00		$180.00
nsulate meter boxes		$225.00		$225.00
rain wood tank/disinfect etc		$315.00		$315.00
leach, boots, squeeges/brooms		$12.00		$12.00
rain, refill tank, remove moss		$135.00		$135.00
ydrant maintenance		$360.00		$360.00
$64.98	-$64.98		$0.00	In Transportation

l in Account	$3127.50

drum, Blossom, & Skibowl

REPAIR	From Andy's Other Contract-Labor Detail				
Repair Date	Labor		Hours	Rate	
	4/24/2016	repair	1.5		$
	4/24/2016	saw rental	1		$
	4/26/2016	repair	7.5		$
	4/26/2016	crushed rock per yd	0.5		$
	5/6/2016	repair	10.5		$
	5/6/2016	crushed rock per yd	2		$
	5/12/2016	repair	3		$
	7/7/2016	repair	6		$
	7/8/2016	repair	4		$
	7/11/2016	repair	2		$
	7/12/2016	repair	11		$
	7/12/2016	backhoe	2		$
	7/14/2016	repair	6		$
	7/20/2016	backhoe	2		$
	8/30/2016	repair	3		$
	8/30/2016	backhoe-repair	2		$
	8/30/2016	repair-sw rental	1		$1
	9/2/2016	repair	3.5		$
	9/2/2016	backhoe	3		$
	9/7/2016	repair	3		$
	9/8/2016	backhoe-repair	4		$
	9/8/2016	labor-repair	10		$
	9/8/2016	asphalt per ton	6.2		$1
	9/28/2016	repair	9		$
	10/5/2016	repair	4		$
	10/21/2016	repair	3		$
$6,076.30			$6,076.30		

Repairs to Water Plant

	Expense	Adjustment	Total
45.00	saw Wyeast cut asphalt for 2" leak	$67.50	
55.00	Saw rental from B&R Rentals	$55.00	
45.00	fix 2" leak Wyeast	$337.50	
24.00	backfill for leak repair Wyeast	$12.00	
45.00	wtr leak on Lige	$472.50	
24.00	backfill for repair on Lige	$48.00	
45.00	replace lid at museum	$135.00	
45.00	Dig 2 wtr leaks	$270.00	
45.00	Fix leaks & backfill behind musem	$180.00	
45.00	Repair fence @ spring	$90.00	
45.00	Repair leak Fire Hydrant	$495.00	
90.00	Dig Fire Hydrant backhoe	$180.00	
45.00	Dig wtr leak on steel	$270.00	
45.00	wtr leaks & backfill - 90.00	$90.00	
45.00	service line repair	$135.00	
90.00	dig - backhoe	$180.00	
20.00	asphalt saw rental	$120.00	
45.00	service line repair	$157.50	
90.00	service line repair	$270.00	
45.00	service line repair Siler	$135.00	
90.00	prep work for rd wk Wyeast & Steel	$360.00	
45.00	asphalt repair	$450.00	
36.50	asphalt for street repair	$846.30	
45.00	repair/regrade valve cans	$405.00	
45.00	adjust regrade valve cans	$180.00	
45.00	leak repair Wyeast	$135.00	

$3915.00

Contract Services - Labor - Account 636

Date	Supplier	Test Year	Adjustment
5/9/2016	WHO, Ltd	992.50	
5/24/2016	WHO, Ltd	1,890.00	
6/5/2016	WHO, Ltd	360.00	
7/18/2016	WHO, Ltd	1,485.00	
8/18/2016	WHO, Ltd	270.00	
9/19/2016	WHO, Ltd	1,893.15	
10/23/2016	WHO, Ltd	2,195.50	
11/21/2016	WHO, Ltd	1,047.00	
	moved to approp acct		-6076.3
	moved to approp acct		-3242.5
TOTAL		**$10,133.15**	**-$9,318.80**

1065.00+828.15 = 1893.15

Test Year	$10,133.15
Adjustment	-$9,318.80
Proposed	$814.35

Description	Total	Check #
	$992.50	1053
	$1,890.00	1064
	$360.00	1069
	$1,485.00	1110
	$270.00	1119
	$1,893.15	1130
	$2,195.50	1143
	$1,047.00	1159
Identified & Moved to Repairs	-$6,076.30	
Identified & Moved to O&M	-$3,242.50	
	$0.00	
	$0.00	
	$0.00	
	$0.00	
	$814.35	

						As of change in Payments	
		Payments	Remaining	New	Same	Same	Effective
	As stated	made:	Loan:	Payment:	Interest:	Payments:	Interest:
Principal	$225,000.00		$215,619.76		**$198,727.20**	$215,619.76	$215,619.76
Periods	360	42	318		318	**440**	318
Rate	7.50%		7.50%		7.50%	7.50%	**6.63%**
Rate/12	0.00625		0.00625		0.00625	0.00625	0.00552
Payment	$1,573.23	$1,602.25	**$1,563.16**	$1,440.70	$1,440.70	$1,440.70	$1,440.70

$204,020.00		
214	144	
5.06%	214	
0.004216667		
$1,449.21		

TIPS Implied Forward Curve

2028 through 2047 TIPs-Implied Average Annual Inflation Rate: 1.99%

Yr. End Mo.-Yr.	Years	Individually Implied Price Levels					Implied Forward Curve/Price Level					Implied Price Level	Check
		5-Yr	7-Yr	10-Yr	20-Yr	30-Yr	5-Yr	7-Yr	10-Yr	20-Yr	30-Yr		
Dec-17	0	100.00	100.00	100.00	100.00	100.00	100.00					100.00	
Dec-18	1	101.75	101.81	101.87	101.89	101.95	101.75					101.75	
Dec-19	2	103.52	103.65	103.77	103.82	103.93	103.52					103.52	
Dec-20	3	105.33	105.52	105.72	105.79	105.95	105.33					105.33	
Dec-21	4	107.17	107.42	107.69	107.79	108.02	107.17					107.17	
Dec-22	5	109.04	109.37	109.71	109.83	110.12	109.04					109.04	
Dec-23	6		111.34	111.76	111.91	112.26		111.18				111.18	
Dec-24	7		113.35	113.85	114.03	114.45		113.35				113.35	
Dec-25	8			115.98	116.19	116.68			115.64			115.64	
Dec-26	9			118.15	118.39	118.95			117.97			117.97	
Dec-27	10			120.35	120.63	121.26			120.35			120.35	
Dec-28	11				122.91	123.62				122.66		122.66	122.74
Dec-29	12				125.24	126.03				125.01		125.01	125.18
Dec-30	13				127.61	128.48				127.41		127.41	127.67
Dec-31	14				130.03	130.99				129.85		129.85	130.20
Dec-32	15				132.49	133.54				132.34		132.34	132.78
Dec-33	16				135.00	136.13				134.88		134.88	135.42
Dec-34	17				137.56	138.78				137.46		137.46	138.11
Dec-35	18				140.16	141.49				140.10		140.10	140.85
Dec-36	19				142.81	144.24				142.78		142.78	143.65
Dec-37	20				145.52	147.05				145.52		145.52	146.50
Dec-38	21					149.91					148.51	148.51	149.40
Dec-39	22					152.83					151.56	151.56	152.37
Dec-40	23					155.80					154.67	154.67	155.39
Dec-41	24					158.84					157.84	157.84	158.48
Dec-42	25					161.93					161.08	161.08	161.63
Dec-43	26					165.08					164.39	164.39	164.83
Dec-44	27					168.30					167.77	167.77	168.11
Dec-45	28					171.57					171.21	171.21	171.44
Dec-46	29					174.91					174.73	174.73	174.85
Dec-47	30					178.32					178.32	178.32	178.32

Average Quarterly Values for FRB H15 Data

See FRB H.15 Tab for Data Feed Sources.

Staff TIPS Analysis

Quarterly Aggregation

Average Monthly Inflation Indexed Rates by Quarter					
Qtr	TIPS-05m	TIPS-07m	TIPS-10m	TIPS-20m	TIPS-30m
2003-Q1	1.33	1.81	2.07		
2003-Q2	1.15	1.61	1.94		
2003-Q3	1.36	1.84	2.21		
2003-Q4	1.24	1.65	2.01		
2004-Q1	0.82	1.26	1.71		
2004-Q2	1.26	1.69	2.05		
2004-Q3	1.17	1.55	1.89	2.28	
2004-Q4	0.93	1.30	1.69	2.08	
2005-Q1	1.17	1.41	1.71	1.93	
2005-Q2	1.30	1.44	1.68	1.83	
2005-Q3	1.59	1.70	1.82	1.98	
2005-Q4	1.92	1.98	2.04	2.13	
2006-Q1	2.00	2.05	2.09	2.08	
2006-Q2	2.34	2.39	2.46	2.48	
2006-Q3	2.37	2.37	2.37	2.38	
2006-Q4	2.40	2.36	2.32	2.29	
2007-Q1	2.28	2.33	2.33	2.36	
2007-Q2	2.35	2.40	2.44	2.49	
2007-Q3	2.38	2.44	2.45	2.46	
2007-Q4	1.54	1.81	1.92	2.11	
2008-Q1	0.58	1.02	1.32	1.81	
2008-Q2	0.79	1.17	1.48	2.03	
2008-Q3	1.18	1.47	1.70	2.16	
2008-Q4	2.73	2.92	2.60	2.73	
2009-Q1	1.37	1.54	1.79	2.34	
2009-Q2	1.12	1.37	1.72	2.31	
2009-Q3	1.17	1.41	1.74	2.22	
2009-Q4	0.58	0.94	1.37	1.98	
2010-Q1	0.47	0.94	1.43	2.00	2.16
2010-Q2	0.46	0.91	1.36	1.77	1.88
2010-Q3	0.20	0.57	1.06	1.68	1.76
2010-Q4	-0.11	0.28	0.75	1.48	1.65
2011-Q1	0.07	0.67	1.09	1.71	2.00
2011-Q2	-0.29	0.33	0.80	1.49	1.78
2011-Q3	-0.65	-0.22	0.28	0.95	1.25
2011-Q4	-0.75	-0.39	0.05	0.61	0.85
2012-Q1	-1.02	-0.60	-0.17	0.51	0.78
2012-Q2	**-1.08**	**-0.75**	**-0.35**	**0.35**	**0.66**
2012-Q3	-1.27	-1.01	-0.63	0.02	0.43
2012-Q4	**-1.42**	**-1.15**	**-0.76**	**-0.02**	**0.36**
2013-Q1	-1.40	-0.98	-0.59	0.19	0.56
2013-Q2	**-1.04**	**-0.62**	**-0.25**	**0.47**	**0.80**
2013-Q3	-0.32	0.17	0.56	1.16	1.43
2013-Q4	**-0.29**	**0.25**	**0.57**	**1.19**	**1.50**
2014-Q1	-0.16	0.37	0.58	1.11	1.39
2014-Q2	**-0.25**	**0.27**	**0.43**	**0.88**	**1.14**
2014-Q3	-0.13	0.24	0.32	0.72	0.98
2014-Q4	**0.19**	**0.39**	**0.45**	**0.75**	**0.95**
2015-Q1	0.11	0.23	0.27	0.52	0.71
2015-Q2	**-0.10**	**0.22**	**0.30**	**0.67**	**0.91**
2015-Q3	0.26	0.48	0.57	0.92	1.14
2015-Q4	**0.36**	**0.51**	**0.66**	**1.02**	**1.24**
2016-Q1	0.15	0.32	0.49	0.88	1.11
2016-Q2	**-0.24**	**-0.05**	**0.19**	**0.62**	**0.85**
2016-Q3	-0.22	-0.09	0.08	0.44	0.62
2016-Q4	**-0.06**	**0.12**	**0.33**	**0.69**	**0.86**
2017-Q1	0.07	0.33	0.44	0.75	0.95
2017-Q2	**0.10**	**0.30**	**0.44**	**0.76**	**0.94**
2017-Q3	0.17	0.36	0.45	0.75	0.94
2017-Q4	**0.32**	**0.44**	**0.50**	**0.72**	**0.87**

Average Monthly Nominal UST Rates by Quarter					
Qtr	UST-05m	UST-07m	UST-10m	UST-20m	UST-30m
2003-Q1	2.91	3.46	3.92	4.90	
2003-Q2	2.57	3.13	3.62	4.59	
2003-Q3	3.14	3.72	4.23	5.17	
2003-Q4	3.25	3.78	4.29	5.16	
2004-Q1	2.99	3.52	4.02	4.89	
2004-Q2	3.72	4.18	4.60	5.36	
2004-Q3	3.51	3.92	4.30	5.07	
2004-Q4	3.49	3.85	4.17	4.87	
2005-Q1	3.88	4.09	4.30	4.76	
2005-Q2	3.87	3.99	4.16	4.55	
2005-Q3	4.04	4.11	4.21	4.51	
2005-Q4	4.39	4.42	4.49	4.77	
2006-Q1	4.55	4.55	4.57	4.76	4.64
2006-Q2	4.99	5.02	5.07	5.29	5.14
2006-Q3	4.84	4.85	4.90	5.09	4.99
2006-Q4	4.60	4.60	4.63	4.83	4.74
2007-Q1	4.65	4.65	4.68	4.90	4.80
2007-Q2	4.76	4.79	4.85	5.07	4.99
2007-Q3	4.50	4.60	4.73	5.01	4.94
2007-Q4	3.79	3.98	4.26	4.65	4.61
2008-Q1	2.75	3.15	3.66	4.40	4.41
2008-Q2	3.16	3.46	3.89	4.59	4.58
2008-Q3	3.11	3.44	3.86	4.49	4.45
2008-Q4	2.18	2.63	3.25	3.97	3.68
2009-Q1	1.76	2.23	2.74	3.69	3.45
2009-Q2	2.23	2.88	3.31	4.19	4.17
2009-Q3	2.47	3.12	3.52	4.28	4.32
2009-Q4	2.30	2.98	3.46	4.27	4.33
2010-Q1	2.42	3.16	3.72	4.49	4.62
2010-Q2	2.25	2.93	3.49	4.20	4.37
2010-Q3	1.55	2.19	2.79	3.60	3.85
2010-Q4	1.49	2.18	2.86	3.84	4.16
2011-Q1	2.12	2.83	3.46	4.32	4.56
2011-Q2	1.86	2.55	3.21	4.07	4.34
2011-Q3	1.15	1.78	2.43	3.34	3.70
2011-Q4	0.95	1.50	2.05	2.75	3.04
2012-Q1	0.90	1.44	2.04	2.80	3.14
2012-Q2	**0.79**	**1.24**	**1.82**	**2.55**	**2.94**
2012-Q3	0.67	1.08	1.64	2.37	2.75
2012-Q4	**0.69**	**1.12**	**1.71**	**2.46**	**2.86**
2013-Q1	0.83	1.32	1.95	2.75	3.14
2013-Q2	**0.92**	**1.39**	**2.00**	**2.78**	**3.15**
2013-Q3	1.51	2.12	2.71	3.44	3.72
2013-Q4	**1.44**	**2.12**	**2.75**	**3.50**	**3.79**
2014-Q1	1.60	2.22	2.76	3.42	3.68
2014-Q2	**1.66**	**2.19**	**2.62**	**3.18**	**2.87**
2014-Q3	1.70	2.16	2.50	3.01	3.26
2014-Q4	**1.60**	**2.00**	**2.28**	**2.69**	**2.97**
2015-Q1	1.45	1.77	1.97	2.32	2.55
2015-Q2	**1.52**	**1.91**	**2.17**	**2.62**	**2.89**
2015-Q3	1.55	1.94	2.22	2.65	2.96
2015-Q4	**1.59**	**1.94**	**2.19**	**2.60**	**2.96**
2016-Q1	1.37	1.69	1.92	2.32	2.72
2016-Q2	**1.24**	**1.54**	**1.75**	**2.15**	**2.57**
2016-Q3	1.13	1.40	1.56	1.91	2.28
2016-Q4	**1.61**	**1.93**	**2.13**	**2.52**	**2.82**
2017-Q1	1.94	2.25	2.44	2.78	3.04
2017-Q2	**1.81**	**2.07**	**2.26**	**2.64**	**2.90**
2017-Q3	1.82	2.06	2.24	2.58	2.82
2017-Q4	**2.07**	**2.25**	**2.37**	**2.62**	**2.82**

Implied Market-based Inflationary Expectations					
Qtr	5-Yr	7-Yr	10-Yr	20-Yr	30-Yr
2003-Q1	1.58	1.65	1.85		
2003-Q2	1.42	1.52	1.68		
2003-Q3	1.78	1.87	2.03		
2003-Q4	2.01	2.13	2.28		
2004-Q1	2.17	2.26	2.31		
2004-Q2	2.47	2.50	2.55		
2004-Q3	2.34	2.37	2.41	2.79	
2004-Q4	2.56	2.55	2.48	2.79	
2005-Q1	2.72	2.68	2.58	2.83	
2005-Q2	2.57	2.55	2.48	2.72	
2005-Q3	2.44	2.41	2.39	2.52	
2005-Q4	2.47	2.44	2.45	2.64	
2006-Q1	2.55	2.50	2.48	2.69	
2006-Q2	2.65	2.62	2.61	2.80	
2006-Q3	2.47	2.48	2.52	2.71	
2006-Q4	2.20	2.24	2.31	2.54	
2007-Q1	2.36	2.32	2.35	2.54	
2007-Q2	2.41	2.39	2.41	2.58	
2007-Q3	2.13	2.16	2.28	2.55	
2007-Q4	2.24	2.17	2.34	2.54	
2008-Q1	2.17	2.13	2.34	2.59	
2008-Q2	2.37	2.29	2.40	2.56	
2008-Q3	1.93	1.96	2.16	2.33	
2008-Q4	-0.55	-0.29	0.65	1.24	
2009-Q1	0.39	0.69	0.95	1.35	
2009-Q2	1.11	1.51	1.60	1.88	
2009-Q3	1.30	1.72	1.77	2.06	
2009-Q4	1.72	2.04	2.09	2.29	
2010-Q1	1.96	2.22	2.28	2.49	2.47
2010-Q2	1.80	2.03	2.13	2.43	2.49
2010-Q3	1.35	1.63	1.73	1.92	2.09
2010-Q4	1.59	1.90	2.12	2.36	2.51
2011-Q1	2.05	2.16	2.37	2.61	2.56
2011-Q2	2.15	2.22	2.41	2.57	2.56
2011-Q3	1.81	2.00	2.15	2.39	2.45
2011-Q4	1.71	1.89	1.99	2.14	2.19
2012-Q1	1.92	2.04	2.20	2.29	2.36
2012-Q2	**1.86**	**1.99**	**2.17**	**2.21**	**2.28**
2012-Q3	1.94	2.09	2.28	2.35	2.31
2012-Q4	**2.11**	**2.27**	**2.47**	**2.48**	**2.50**
2013-Q1	2.23	2.31	2.54	2.55	2.58
2013-Q2	**1.95**	**2.01**	**2.25**	**2.32**	**2.34**
2013-Q3	1.82	1.95	2.15	2.29	2.29
2013-Q4	**1.73**	**1.86**	**2.17**	**2.31**	**2.29**
2014-Q1	1.77	1.85	2.18	2.30	2.29
2014-Q2	**1.90**	**1.92**	**2.20**	**2.30**	**1.73**
2014-Q3	1.83	1.92	2.18	2.28	2.29
2014-Q4	**1.41**	**1.61**	**1.83**	**1.95**	**2.02**
2015-Q1	1.35	1.54	1.70	1.79	1.85
2015-Q2	**1.63**	**1.69**	**1.86**	**1.95**	**1.97**
2015-Q3	1.29	1.47	1.65	1.73	1.82
2015-Q4	**1.23**	**1.43**	**1.53**	**1.58**	**1.72**
2016-Q1	1.23	1.37	1.43	1.45	1.61
2016-Q2	**1.48**	**1.58**	**1.56**	**1.53**	**1.72**
2016-Q3	1.35	1.49	1.48	1.47	1.66
2016-Q4	**1.67**	**1.80**	**1.80**	**1.83**	**1.96**
2017-Q1	1.87	1.92	2.01	2.03	2.10
2017-Q2	**1.71**	**1.78**	**1.82**	**1.88**	**1.96**
2017-Q3	1.65	1.70	1.79	1.83	1.88
2017-Q4	**1.75**	**1.81**	**1.87**	**1.89**	**1.95**

FRB **H.15** Market Yield on U.S. Treasury (UST) Securities at Constant Maturity, Quoted on an Investment Basis in Percent per Year

Staff Accessed , Mar.8, 2018 at: http://federalreserve.gov/releases/h15/data.htm

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https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15

Monthly

TIPS-05m	5	Year	Inflation Indexed	H.15 ID
TIPS-07m	7			RIFLGFCY05_XII_N.M
TIPS-10m	10			RIFLGFCY07_XII_N.M
TIPS-20m	20			RIFLGFCY**10**_XII_N.M
TIPS-30m	30			RIFLGFCY**20**_XII_N.M
				RIFLGFCY**30**_XII_N.M

Month	TIPS-05m	TIPS-07m	TIPS-10m	TIPS-20m	TIPS-30m
2003-01	1.65	2.10	2.29		
2003-02	1.24	1.74	1.99		
2003-03	1.09	1.60	1.94		
2003-04	1.36	1.85	2.18		
2003-05	1.18	1.61	1.91		
2003-06	0.91	1.37	1.72		
2003-07	1.30	1.76	2.11		
2003-08	1.48	1.97	2.32		
2003-09	1.29	1.80	2.19		
2003-10	1.21	1.68	2.08		
2003-11	1.27	1.64	1.96		
2003-12	1.23	1.64	1.98		
2004-01	1.09	1.48	1.89		
2004-02	0.86	1.31	1.76		
2004-03	0.52	0.98	1.47		
2004-04	1.02	1.49	1.90		
2004-05	1.34	1.77	2.09		
2004-06	1.41	1.80	2.15	**TIPS-20**	
2004-07	1.29	1.68	2.02	2.44	
2004-08	1.12	1.51	1.86	2.23	
2004-09	1.10	1.46	1.80	2.16	
2004-10	0.97	1.35	1.73	2.13	
2004-11	0.90	1.27	1.68	2.09	
2004-12	0.92	1.28	1.67	2.02	
2005-01	1.13	1.40	1.72	1.98	
2005-02	1.08	1.33	1.63	1.85	
2005-03	1.29	1.49	1.79	1.95	
2005-04	1.23	1.42	1.71	1.87	
2005-05	1.28	1.41	1.65	1.82	
2005-06	1.39	1.49	1.67	1.80	
2005-07	1.67	1.75	1.88	2.00	
2005-08	1.71	1.79	1.89	2.02	
2005-09	1.40	1.56	1.70	1.93	
2005-10	1.70	1.82	1.94	2.09	
2005-11	1.97	2.03	2.06	2.16	
2005-12	2.09	2.10	2.12	2.14	
2006-01	1.93	1.98	2.01	2.05	
2006-02	1.98	2.02	2.05	2.01	
2006-03	2.09	2.15	2.20	2.17	
2006-04	2.26	2.34	2.41	2.43	
2006-05	2.30	2.36	2.45	2.48	
2006-06	2.45	2.48	2.53	2.54	
2006-07	2.46	2.48	2.51	2.52	
2006-08	2.27	2.29	2.29	2.31	
2006-09	2.38	2.35	2.32	2.31	
2006-10	2.51	2.45	2.41	2.38	
2006-11	2.41	2.35	2.29	2.23	
2006-12	2.28	2.28	2.25	2.26	
2007-01	2.47	2.47	2.44	2.42	
2007-02	2.34	2.38	2.36	2.38	
2007-03	2.04	2.14	2.18	2.27	
2007-04	2.12	2.20	2.26	2.35	
2007-05	2.29	2.32	2.37	2.45	
2007-06	2.65	2.67	2.69	2.67	
2007-07	2.60	2.63	2.64	2.62	
2007-08	2.39	2.45	2.44	2.47	
2007-09	2.14	2.24	2.26	2.30	
2007-10	2.01	2.15	2.20	2.26	
2007-11	1.35	1.65	1.77	1.99	
2007-12	1.27	1.62	1.79	2.08	
2008-01	0.86	1.24	1.47	1.81	
2008-02	0.65	1.09	1.41	1.87	
2008-03	0.23	0.73	1.09	1.76	
2008-04	0.62	1.00	1.36	1.91	
2008-05	0.79	1.16	1.46	2.00	
2008-06	0.97	1.35	1.63	2.19	
2008-07	0.84	1.24	1.57	2.09	
2008-08	1.15	1.47	1.68	2.15	
2008-09	1.55	1.71	1.85	2.25	
2008-10	2.75	2.96	2.75	2.87	
2008-11	3.69	3.84	2.89	3.00	
2008-12	1.76	1.96	2.17	2.32	
2009-01	1.59	1.72	1.91	2.46	
2009-02	1.29	1.48	1.75	2.31	
2009-03	1.23	1.43	1.71	2.26	
2009-04	1.11	1.29	1.57	2.22	
2009-05	1.07	1.34	1.72	2.36	
2009-06	1.18	1.48	1.86	2.36	
2009-07	1.18	1.44	1.82	2.31	
2009-08	1.29	1.49	1.77	2.22	
2009-09	1.03	1.29	1.64	2.13	
2009-10	0.83	1.12	1.48	2.04	
2009-11	0.48	0.84	1.28	1.90	
2009-12	0.43	0.86	1.36	1.99	
2010-01	0.42	0.85	1.37	2.00	**TIPS-30**
2010-02	0.42	0.90	1.42	2.03	2.16
2010-03	0.56	1.08	1.51	1.98	2.15
2010-04	0.62	1.10	1.50	1.90	2.05
2010-05	0.41	0.86	1.31	1.72	1.83
2010-06	0.34	0.76	1.26	1.69	1.77
2010-07	0.34	0.73	1.24	1.80	1.87
2010-08	0.13	0.51	1.02	1.65	1.76
2010-09	0.13	0.46	0.91	1.58	1.66
2010-10	-0.32	0.02	0.53	1.32	1.44
2010-11	-0.21	0.17	0.67	1.44	1.61
2010-12	0.21	0.65	1.04	1.67	1.89
2011-01	0.06	0.62	1.06	1.70	1.97
2011-02	0.25	0.84	1.24	1.85	2.13
2011-03	-0.09	0.54	0.96	1.58	1.89
2011-04	-0.14	0.49	0.86	1.48	1.79
2011-05	-0.34	0.29	0.78	1.47	1.77
2011-06	-0.38	0.21	0.76	1.53	1.78
2011-07	-0.49	0.09	0.62	1.36	1.62
2011-08	-0.75	-0.36	0.14	0.81	1.10
2011-09	-0.72	-0.39	0.08	0.69	1.02
2011-10	-0.63	-0.28	0.19	0.72	0.99
2011-11	-0.85	-0.46	0.00	0.55	0.78
2011-12	-0.78	-0.44	-0.03	0.56	0.78
2012-01	-0.92	-0.55	-0.11	0.51	0.74
2012-02	-1.11	-0.69	-0.25	0.45	0.72
2012-03	-1.03	-0.57	-0.14	0.56	0.87
2012-04	**-1.06**	**-0.65**	**-0.21**	**0.50**	**0.79**
2012-05	**-1.12**	**-0.79**	**-0.34**	**0.44**	**0.68**
2012-06	**-1.05**	**-0.82**	**-0.50**	**0.10**	**0.50**
2012-07	-1.15	-0.92	-0.60	-0.01	0.39
2012-08	-1.19	-0.94	-0.59	0.06	0.47
2012-09	-1.47	-1.17	-0.71	0.02	0.44
2012-10	**-1.47**	**-1.18**	**-0.75**	**-0.01**	**0.41**
2012-11	**-1.38**	**-1.13**	**-0.77**	**-0.06**	**0.35**
2012-12	**-1.40**	**-1.13**	**-0.76**	**0.00**	**0.33**
2013-01	-1.39	-1.04	-0.61	0.20	0.48
2013-02	-1.39	-0.94	-0.57	0.19	0.57
2013-03	-1.43	-0.97	-0.59	0.19	0.62
2013-04	**-1.38**	**-0.97**	**-0.65**	**0.07**	**0.48**
2013-05	**-1.14**	**-0.69**	**-0.36**	**0.35**	**0.72**
2013-06	**-0.59**	**-0.21**	**0.25**	**0.98**	**1.21**
2013-07	-0.45	0.02	0.46	1.09	1.34
2013-08	-0.33	0.15	0.55	1.16	1.44
2013-09	-0.17	0.34	0.66	1.22	1.50
2013-10	**-0.41**	**0.11**	**0.43**	**1.05**	**1.37**
2013-11	**-0.38**	**0.18**	**0.55**	**1.20**	**1.51**
2013-12	**-0.09**	**0.47**	**0.74**	**1.32**	**1.61**
2014-01	-0.09	0.45	0.63	1.17	1.44
2014-02	-0.26	0.30	0.55	1.12	1.40
2014-03	-0.14	0.37	0.56	1.05	1.33
2014-04	**-0.11**	**0.38**	**0.54**	**0.98**	**1.23**
2014-05	**-0.34**	**0.21**	**0.37**	**0.82**	**1.08**
2014-06	**-0.29**	**0.23**	**0.37**	**0.84**	**1.11**
2014-07	-0.27	0.18	0.28	0.72	0.98
2014-08	-0.21	0.15	0.22	0.64	0.90
2014-09	0.10	0.38	0.46	0.81	1.05
2014-10	**0.06**	**0.32**	**0.38**	**0.74**	**0.96**
2014-11	**0.14**	**0.37**	**0.45**	**0.77**	**0.99**
2014-12	**0.37**	**0.47**	**0.51**	**0.73**	**0.89**
2015-01	0.17	0.24	0.27	0.50	0.66
2015-02	0.11	0.22	0.26	0.52	0.73
2015-03	0.04	0.23	0.28	0.55	0.73
2015-04	**-0.26**	**-0.01**	**0.08**	**0.42**	**0.65**
2015-05	**-0.10**	**0.27**	**0.33**	**0.70**	**0.96**
2015-06	**0.05**	**0.39**	**0.50**	**0.89**	**1.13**
2015-07	0.14	0.42	0.50	0.87	1.11
2015-08	0.31	0.49	0.56	0.87	1.08
2015-09	0.33	0.52	0.65	1.01	1.24
2015-10	**0.21**	**0.39**	**0.57**	**0.98**	**1.22**
2015-11	**0.40**	**0.55**	**0.69**	**1.03**	**1.25**
2015-12	**0.46**	**0.59**	**0.73**	**1.06**	**1.26**
2016-01	0.33	0.49	0.67	1.05	1.26
2016-02	0.14	0.30	0.47	0.85	1.09
2016-03	-0.03	0.16	0.34	0.73	0.99
2016-04	**-0.22**	**-0.03**	**0.19**	**0.60**	**0.86**
2016-05	**-0.22**	**-0.04**	**0.21**	**0.64**	**0.86**
2016-06	**-0.27**	**-0.07**	**0.17**	**0.63**	**0.82**
2016-07	-0.32	-0.16	0.04	0.42	0.61
2016-08	-0.17	-0.06	0.09	0.43	0.62
2016-09	-0.17	-0.05	0.12	0.47	0.64
2016-10	**-0.26**	**-0.10**	**0.10**	**0.49**	**0.69**
2016-11	**-0.07**	**0.11**	**0.32**	**0.69**	**0.86**
2016-12	**0.15**	**0.36**	**0.56**	**0.89**	**1.04**
2017-01	0.03	0.27	0.42	0.74	0.92
2017-02	0.01	0.29	0.40	0.73	0.93
2017-03	0.18	0.42	0.49	0.79	0.99
2017-04	**0.08**	**0.28**	**0.39**	**0.72**	**0.91**
2017-05	**0.09**	**0.29**	**0.47**	**0.80**	**0.99**
2017-06	**0.14**	**0.32**	**0.46**	**0.75**	**0.93**
2017-07	0.23	0.42	0.55	0.84	1.01
2017-08	0.16	0.35	0.43	0.74	0.93
2017-09	0.12	0.31	0.37	0.67	0.87
2017-10	**0.25**	**0.42**	**0.50**	**0.77**	**0.94**
2017-11	**0.30**	**0.43**	**0.50**	**0.72**	**0.87**
2017-12	**0.42**	**0.48**	**0.50**	**0.68**	**0.80**

Monthly

UST-05m	5	Year	H.15 ID	RIFLGFCY05_N.M
UST-07m	7			RIFLGFCY07_N.M
UST-10m	10			RIFLGFCY**10**_N.M
UST-20m	20			RIFLGFCY**20**_N.M
UST-30m	30			RIFLGFCY**30**_N.M

Month	UST-05m	UST-07m	UST-10m	UST-20m	UST-30m
2003-01	3.05	3.60	4.05	5.02	
2003-02	2.90	3.45	3.90	4.87	
2003-03	2.78	3.34	3.81	4.82	
2003-04	2.93	3.47	3.96	4.91	
2003-05	2.52	3.07	3.57	4.52	
2003-06	2.27	2.84	3.33	4.34	
2003-07	2.87	3.45	3.98	4.92	
2003-08	3.37	3.96	4.45	5.39	
2003-09	3.18	3.74	4.27	5.21	
2003-10	3.19	3.75	4.29	5.21	
2003-11	3.29	3.81	4.30	5.17	
2003-12	3.27	3.79	4.27	5.11	
2004-01	3.12	3.65	4.15	5.01	
2004-02	3.07	3.59	4.08	4.94	
2004-03	2.79	3.31	3.83	4.72	
2004-04	3.39	3.89	4.35	5.16	
2004-05	3.85	4.31	4.72	5.46	
2004-06	3.93	4.35	4.73	5.45	
2004-07	3.69	4.11	4.50	5.24	
2004-08	3.47	3.90	4.28	5.07	
2004-09	3.36	3.75	4.13	4.89	
2004-10	3.35	3.75	4.10	4.85	
2004-11	3.53	3.88	4.19	4.89	
2004-12	3.60	3.93	4.23	4.88	
2005-01	3.71	3.97	4.22	4.77	
2005-02	3.77	3.97	4.17	4.61	
2005-03	4.17	4.33	4.50	4.89	
2005-04	4.00	4.16	4.34	4.75	
2005-05	3.85	3.94	4.14	4.56	
2005-06	3.77	3.86	4.00	4.35	
2005-07	3.98	4.06	4.18	4.48	
2005-08	4.12	4.18	4.26	4.53	
2005-09	4.01	4.08	4.20	4.51	
2005-10	4.33	4.38	4.46	4.74	
2005-11	4.45	4.48	4.54	4.83	
2005-12	4.39	4.41	4.47	4.73	
2006-01	4.35	4.37	4.42	4.65	**UST-30**
2006-02	4.57	4.56	4.57	4.73	4.54
2006-03	4.72	4.71	4.72	4.91	4.73
2006-04	4.90	4.94	4.99	5.22	5.06
2006-05	5.00	5.03	5.11	5.35	5.20
2006-06	5.07	5.08	5.11	5.29	5.15
2006-07	5.04	5.05	5.09	5.25	5.13
2006-08	4.82	4.83	4.88	5.08	5.00
2006-09	4.67	4.68	4.72	4.93	4.85
2006-10	4.69	4.69	4.73	4.94	4.85
2006-11	4.58	4.58	4.60	4.78	4.69
2006-12	4.53	4.54	4.56	4.78	4.68
2007-01	4.75	4.75	4.76	4.95	4.85
2007-02	4.71	4.71	4.72	4.93	4.82
2007-03	4.48	4.50	4.56	4.81	4.72
2007-04	4.59	4.62	4.69	4.95	4.87
2007-05	4.67	4.69	4.75	4.98	4.90
2007-06	5.03	5.05	5.10	5.29	5.20
2007-07	4.88	4.93	5.00	5.19	5.11
2007-08	4.43	4.53	4.67	5.00	4.93
2007-09	4.20	4.33	4.52	4.84	4.79
2007-10	4.20	4.33	4.53	4.83	4.77
2007-11	3.67	3.87	4.15	4.56	4.52
2007-12	3.49	3.74	4.10	4.57	4.53
2008-01	2.98	3.31	3.74	4.35	4.33
2008-02	2.78	3.21	3.74	4.49	4.52
2008-03	2.48	2.93	3.51	4.36	4.39
2008-04	2.84	3.19	3.68	4.44	4.44
2008-05	3.15	3.46	3.88	4.60	4.60
2008-06	3.49	3.73	4.10	4.74	4.69
2008-07	3.30	3.60	4.01	4.62	4.57
2008-08	3.14	3.46	3.89	4.53	4.50
2008-09	2.88	3.25	3.69	4.32	4.27
2008-10	2.73	3.19	3.81	4.45	4.17
2008-11	2.29	2.82	3.53	4.27	4.00
2008-12	1.52	1.89	2.42	3.18	2.87
2009-01	1.60	1.98	2.52	3.46	3.13
2009-02	1.87	2.30	2.87	3.83	3.59
2009-03	1.82	2.42	2.82	3.78	3.64
2009-04	1.86	2.47	2.93	3.84	3.76
2009-05	2.13	2.81	3.29	4.22	4.23
2009-06	2.71	3.37	3.72	4.51	4.52
2009-07	2.46	3.14	3.56	4.38	4.41
2009-08	2.57	3.21	3.59	4.33	4.37
2009-09	2.37	3.02	3.40	4.14	4.19
2009-10	2.33	2.96	3.39	4.16	4.19
2009-11	2.23	2.92	3.40	4.24	4.31
2009-12	2.34	3.07	3.59	4.40	4.49
2010-01	2.48	3.21	3.73	4.50	4.60
2010-02	2.36	3.12	3.69	4.48	4.62
2010-03	2.43	3.16	3.73	4.49	4.64
2010-04	2.58	3.28	3.85	4.53	4.69
2010-05	2.18	2.86	3.42	4.11	4.29
2010-06	2.00	2.66	3.20	3.95	4.13
2010-07	1.76	2.43	3.01	3.80	3.99
2010-08	1.47	2.10	2.70	3.52	3.80
2010-09	1.41	2.05	2.65	3.47	3.77
2010-10	1.18	1.85	2.54	3.52	3.87
2010-11	1.35	2.02	2.76	3.82	4.19
2010-12	1.93	2.66	3.29	4.17	4.42
2011-01	1.99	2.72	3.39	4.28	4.52
2011-02	2.26	2.96	3.58	4.42	4.65
2011-03	2.11	2.80	3.41	4.27	4.51
2011-04	2.17	2.84	3.46	4.28	4.50
2011-05	1.84	2.51	3.17	4.01	4.29
2011-06	1.58	2.29	3.00	3.91	4.23
2011-07	1.54	2.28	3.00	3.95	4.27
2011-08	1.02	1.63	2.30	3.24	3.65
2011-09	0.90	1.42	1.98	2.83	3.18
2011-10	1.06	1.62	2.15	2.87	3.13
2011-11	0.91	1.45	2.01	2.72	3.02
2011-12	0.89	1.43	1.98	2.67	2.98
2012-01	0.84	1.38	1.97	2.70	3.03
2012-02	0.83	1.37	1.97	2.75	3.11
2012-03	1.02	1.56	2.17	2.94	3.28
2012-04	**0.89**	**1.43**	**2.05**	**2.82**	**3.18**
2012-05	**0.76**	**1.21**	**1.80**	**2.53**	**2.93**
2012-06	**0.71**	**1.08**	**1.62**	**2.31**	**2.70**
2012-07	0.62	0.98	1.53	2.22	2.59
2012-08	0.71	1.14	1.68	2.40	2.77
2012-09	0.67	1.12	1.72	2.49	2.88
2012-10	**0.71**	**1.15**	**1.75**	**2.51**	**2.90**
2012-11	**0.67**	**1.08**	**1.65**	**2.39**	**2.80**
2012-12	**0.70**	**1.13**	**1.72**	**2.47**	**2.88**
2013-01	0.81	1.30	1.91	2.68	3.08
2013-02	0.85	1.35	1.98	2.78	3.17
2013-03	0.82	1.32	1.96	2.78	3.16
2013-04	**0.71**	**1.15**	**1.76**	**2.55**	**2.93**
2013-05	**0.84**	**1.31**	**1.93**	**2.73**	**3.11**
2013-06	**1.20**	**1.71**	**2.30**	**3.07**	**3.40**
2013-07	1.40	1.99	2.58	3.31	3.61
2013-08	1.52	2.15	2.74	3.49	3.76
2013-09	1.60	2.22	2.81	3.53	3.79
2013-10	**1.37**	**1.99**	**2.62**	**3.38**	**3.68**
2013-11	**1.37**	**2.07**	**2.72**	**3.50**	**3.80**
2013-12	**1.58**	**2.29**	**2.90**	**3.63**	**3.89**
2014-01	1.65	2.29	2.86	3.52	3.77
2014-02	1.52	2.15	2.71	3.38	3.66
2014-03	1.64	2.23	2.72	3.35	3.62
2014-04	**1.70**	**2.27**	**2.71**	**3.27**	**3.52**
2014-05	**1.59**	**2.12**	**2.56**	**3.12**	**3.39**
2014-06	**1.68**	**2.19**	**2.60**	**3.15**	**3.42**
2014-07	1.70	2.17	2.54	3.07	3.33
2014-08	1.63	2.08	2.42	2.94	3.20
2014-09	1.77	2.22	2.53	3.01	3.26
2014-10	**1.55**	**1.98**	**2.30**	**2.77**	**3.04**
2014-11	**1.62**	**2.03**	**2.33**	**2.76**	**3.04**
2014-12	**1.64**	**1.98**	**2.21**	**2.55**	**2.83**
2015-01	1.37	1.67	1.88	2.20	2.46
2015-02	1.47	1.79	1.98	2.34	2.57
2015-03	1.52	1.84	2.04	2.41	2.63
2015-04	**1.35**	**1.69**	**1.94**	**2.33**	**2.59**
2015-05	**1.54**	**1.93**	**2.20**	**2.69**	**2.96**
2015-06	**1.68**	**2.10**	**2.36**	**2.85**	**3.11**
2015-07	1.63	2.04	2.32	2.77	3.07
2015-08	1.54	1.91	2.17	2.55	2.86
2015-09	1.49	1.88	2.17	2.62	2.95
2015-10	**1.39**	**1.76**	**2.07**	**2.50**	**2.89**
2015-11	**1.67**	**2.02**	**2.26**	**2.69**	**3.03**
2015-12	**1.70**	**2.04**	**2.24**	**2.61**	**2.97**
2016-01	1.52	1.85	2.09	2.49	2.86
2016-02	1.22	1.53	1.78	2.20	2.62
2016-03	1.38	1.68	1.89	2.28	2.68
2016-04	**1.26**	**1.57**	**1.81**	**2.21**	**2.62**
2016-05	**1.30**	**1.60**	**1.81**	**2.22**	**2.63**
2016-06	**1.17**	**1.44**	**1.64**	**2.02**	**2.45**
2016-07	1.07	1.33	1.50	1.82	2.23
2016-08	1.13	1.40	1.56	1.89	2.26
2016-09	1.18	1.46	1.63	2.02	2.35
2016-10	**1.27**	**1.56**	**1.76**	**2.17**	**2.50**
2016-11	**1.60**	**1.93**	**2.14**	**2.54**	**2.86**
2016-12	**1.96**	**2.29**	**2.49**	**2.84**	**3.11**
2017-01	1.92	2.23	2.43	2.75	3.02
2017-02	1.90	2.22	2.42	2.76	3.03
2017-03	2.01	2.30	2.48	2.83	3.08
2017-04	**1.82**	**2.10**	**2.30**	**2.67**	**2.94**
2017-05	**1.84**	**2.11**	**2.30**	**2.70**	**2.96**
2017-06	**1.77**	**2.01**	**2.19**	**2.54**	**2.80**
2017-07	1.87	2.13	2.32	2.65	2.88
2017-08	1.78	2.03	2.21	2.55	2.80
2017-09	1.80	2.03	2.20	2.53	2.78
2017-10	**1.98**	**2.20**	**2.36**	**2.65**	**2.88**
2017-11	**2.05**	**2.23**	**2.35**	**2.60**	**2.80**
2017-12	**2.18**	**2.32**	**2.40**	**2.60**	**2.77**

Annual

TIPS-05a	5	Year	Inflation Indexed	H.15 ID
TIPS-07a	7			RIFLGFCY05_XII_N.A
TIPS-10a	10			RIFLGFCY07_XII_N.A
TIPS-20a	20			RIFLGFCY**10**_XII_N.A
TIPS-30a	30			RIFLGFCY**20**_XII_N.A
				RIFLGFCY**30**_XII_N.A

Year	TIPS-05a	TIPS-07a	TIPS-10a	TIPS-20a	TIPS-30a
2003	1.27	1.73	2.06		
2004	1.04	1.45	1.83	2.14	
2005	1.50	1.63	1.81	1.97	
2006	2.28	2.29	2.31	2.31	
2007	2.15	2.25	2.29	2.36	
2008	1.30	1.63	1.77	2.18	
2009	1.06	1.32	1.66	2.21	
2010	0.26	0.68	1.15	1.73	1.82
2011	-0.41	0.09	0.55	1.19	1.47
2012	-1.19	-0.87	-0.48	0.22	0.56
2013	0.76	-0.29	0.07	0.75	1.07
2014	-0.09	0.32	0.44	0.86	1.11
2015	0.15	0.36	0.45	0.78	1.00
2016	-0.01	0.07	0.27	0.65	0.86
2017	**0.17**	**0.36**	**0.46**	**0.75**	**0.92**

Annual

Year	UST-05a	UST-07a	UST-10a	UST-20a	UST-30a
2003	2.97	3.52	4.01	4.96	
2004	3.43	3.87	4.27	5.04	
2005	4.05	4.15	4.29	4.64	
2006	4.75	4.76	4.80	5.00	4.91
2007	4.43	4.51	4.63	4.91	4.84
2008	2.80	3.17	3.66	4.36	4.28
2009	2.20	2.82	3.26	4.11	4.08
2010	1.93	2.62	3.22	4.03	4.25
2011	1.52	2.16	2.78	3.62	3.91
2012	0.76	1.22	1.80	2.54	2.92
2013	1.17	1.74	2.35	3.12	3.45
2014	1.64	2.14	2.54	3.07	3.34
2015	1.53	1.89	2.14	2.55	2.84
2016	1.33	1.63	1.84	2.22	2.59
2017	**1.91**	**2.16**	**2.33**	**2.65**	**2.69**

NWN UG 344

Bureau of Economic Analysis (BEA)

Current-Dollar and "Real" Gross Domestic Product (GDP)

Staff Accessed March 6, 2018

Data Recompiled by BEA on Feb. 28, 2018

Annual

http://www.bea.gov/national/index.htm

Quarterly

(Seasonally adjusted annual rates)

Yr	GDP in billions of current dollars	GDP in billions of chained 2009 dollars
1929	104.6	1,056.6
1930	92.2	966.7
1931	77.4	904.8
1932	59.5	788.2
1933	57.2	778.3
1934	66.8	862.2
1935	74.3	939.0
1936	84.9	1,060.5
1937	93.0	1,114.6
1938	87.4	1,077.7
1939	93.5	1,163.6
1940	102.9	1,266.1
1941	129.4	1,490.3
1942	166.0	1,771.8
1943	203.1	2,073.7
1944	224.6	2,239.4
1945	228.2	2,217.8
1946	227.8	1,960.9
1947	249.9	1,939.4
1948	274.8	2,020.0
1949	272.8	2,008.9
1950	300.2	2,184.0
1951	347.3	2,360.0
1952	367.7	2,456.1
1953	389.7	2,571.4
1954	391.1	2,556.9
1955	426.2	2,739.0
1956	450.1	2,797.4
1957	474.9	2,856.3
1958	482.0	2,835.3
1959	522.5	3,031.0
1960	543.3	3,108.7
1961	563.3	3,188.1
1962	605.1	3,383.1
1963	638.6	3,530.4
1964	685.8	3,734.0
1965	743.7	3,976.7
1966	815.0	4,238.9
1967	861.7	4,355.2
1968	942.5	4,569.0
1969	1,019.9	4,712.5
1970	1,075.9	4,722.0
1971	1,167.8	4,877.6
1972	1,282.4	5,134.3
1973	1,428.5	5,424.1
1974	1,548.8	5,396.0
1975	1,688.9	5,385.4
1976	1,877.6	5,675.4
1977	2,086.0	5,937.0
1978	2,356.6	6,267.2
1979	2,632.1	6,466.2
1980	2,862.5	6,450.4
1981	3,211.0	6,617.7
1982	3,345.0	6,491.3
1983	3,638.1	6,792.0
1984	4,040.7	7,285.0
1985	4,346.7	7,593.8
1986	4,590.2	7,860.5
1987	4,870.2	8,132.6
1988	5,252.6	8,474.5
1989	5,657.7	8,786.4
1990	5,979.6	8,955.0
1991	6,174.0	8,948.4
1992	6,539.3	9,266.6
1993	6,878.7	9,521.0
1994	7,308.8	9,905.4
1995	7,664.1	10,174.8
1996	8,100.2	10,561.0
1997	8,608.5	11,034.9
1998	9,089.2	11,525.9
1999	9,660.6	12,065.9
2000	10,284.8	12,559.7
2001	10,621.8	12,682.2
2002	10,977.5	12,908.8
2003	11,510.7	13,271.1
2004	12,274.9	13,773.5
2005	13,093.7	14,234.2
2006	13,855.9	14,613.8
2007	14,477.6	14,873.7
2008	14,718.6	14,830.4
2009	14,418.7	14,418.7
2010	14,964.4	14,783.8
2011	15,517.9	15,020.6
2012	16,155.3	15,354.6
2013	16,691.5	15,612.2
2014	17,427.6	16,013.3
2015	18,120.7	16,471.5
2016	18,624.5	16,716.2
2017	19,386.2	17,092.5

Quarter	GDP in billions of current dollars	GDP in billions of chained 2009 dollars	Qtr#
1947Q1	243.1	1,934.5	1
1947Q2	246.3	1,932.3	2
1947Q3	250.1	1,930.3	3
1947Q4	260.3	1,960.7	4
1948Q1	266.2	1,989.5	5
1948Q2	272.9	2,021.9	6
1948Q3	279.5	2,033.2	7
1948Q4	280.7	2,035.3	8
1949Q1	275.4	2,007.5	9
1949Q2	271.7	2,000.8	10
1949Q3	273.3	2,022.8	11
1949Q4	271.0	2,004.7	12
1950Q1	281.2	2,084.6	13
1950Q2	290.7	2,147.6	14
1950Q3	308.5	2,230.4	15
1950Q4	320.3	2,273.4	16
1951Q1	336.4	2,304.5	17
1951Q2	344.5	2,344.5	18
1951Q3	351.8	2,392.8	19
1951Q4	356.6	2,398.1	20
1952Q1	360.2	2,423.5	21
1952Q2	361.4	2,428.5	22
1952Q3	368.1	2,446.1	23
1952Q4	381.2	2,526.4	24
1953Q1	388.5	2,573.4	25
1953Q2	392.3	2,593.5	26
1953Q3	391.7	2,578.9	27
1953Q4	386.5	2,539.8	28
1954Q1	385.9	2,528.0	29
1954Q2	386.7	2,530.7	30
1954Q3	391.6	2,559.4	31
1954Q4	400.3	2,609.3	32
1955Q1	413.8	2,683.8	33
1955Q2	422.2	2,727.5	34
1955Q3	430.9	2,764.1	35
1955Q4	437.8	2,780.8	36
1956Q1	440.5	2,770.0	37
1956Q2	446.8	2,792.9	38
1956Q3	452.0	2,790.6	39
1956Q4	461.3	2,836.2	40
1957Q1	470.6	2,854.5	41
1957Q2	472.8	2,848.2	42
1957Q3	480.3	2,875.9	43
1957Q4	475.7	2,846.4	44
1958Q1	468.4	2,772.7	45
1958Q2	472.8	2,790.9	46
1958Q3	486.7	2,855.5	47
1958Q4	500.4	2,922.3	48
1959Q1	511.1	2,976.6	49
1959Q2	524.2	3,049.0	50
1959Q3	525.2	3,043.1	51
1959Q4	529.3	3,055.1	52
1960Q1	543.3	3,123.2	53
1960Q2	542.7	3,111.3	54
1960Q3	546.0	3,119.1	55
1960Q4	541.1	3,081.3	56
1961Q1	545.9	3,102.3	57
1961Q2	557.4	3,159.9	58
1961Q3	568.2	3,212.6	59
1961Q4	581.6	3,277.7	60
1962Q1	595.2	3,336.8	61
1962Q2	602.6	3,372.7	62
1962Q3	609.6	3,404.8	63
1962Q4	613.1	3,418.0	64
1963Q1	622.7	3,456.1	65
1963Q2	631.8	3,501.1	66
1963Q3	645.0	3,569.5	67
1963Q4	654.8	3,595.0	68
1964Q1	671.1	3,672.7	69
1964Q2	680.8	3,716.4	70
1964Q3	692.8	3,766.9	71
1964Q4	698.4	3,780.2	72
1965Q1	719.2	3,873.5	73
1965Q2	732.4	3,926.4	74
1965Q3	750.2	4,006.2	75
1965Q4	773.1	4,100.6	76
1966Q1	797.3	4,201.9	77
1966Q2	807.2	4,219.1	78
1966Q3	820.8	4,249.2	79
1966Q4	834.9	4,285.6	80
1967Q1	846.0	4,324.9	81
1967Q2	851.1	4,328.7	82
1967Q3	866.6	4,366.1	83
1967Q4	883.2	4,401.2	84
1968Q1	911.1	4,490.6	85
1968Q2	936.3	4,566.4	86
1968Q3	952.3	4,599.3	87
1968Q4	970.1	4,619.8	88
1969Q1	995.4	4,691.6	89
1969Q2	1,011.4	4,706.7	90
1969Q3	1,032.0	4,736.1	91
1969Q4	1,040.7	4,715.5	92
1970Q1	1,053.5	4,707.1	93
1970Q2	1,070.1	4,715.4	94
1970Q3	1,088.5	4,757.2	95
1970Q4	1,091.5	4,708.3	96
1971Q1	1,137.8	4,834.3	97
1971Q2	1,159.4	4,861.9	98
1971Q3	1,180.3	4,900.0	99
1971Q4	1,193.6	4,914.3	100
1972Q1	1,233.8	5,002.4	101
1972Q2	1,270.1	5,118.3	102
1972Q3	1,293.8	5,165.4	103
1972Q4	1,332.0	5,251.2	104
1973Q1	1,380.7	5,380.5	105
1973Q2	1,417.6	5,441.5	106
1973Q3	1,436.8	5,411.9	107
1973Q4	1,479.1	5,462.4	108
1974Q1	1,494.7	5,417.0	109
1974Q2	1,534.2	5,431.3	110
1974Q3	1,563.4	5,378.7	111
1974Q4	1,603.0	5,357.2	112
1975Q1	1,619.6	5,292.4	113
1975Q2	1,656.4	5,333.2	114
1975Q3	1,713.8	5,421.4	115
1975Q4	1,765.9	5,494.4	116
1976Q1	1,824.5	5,618.5	117
1976Q2	1,856.9	5,661.0	118
1976Q3	1,890.5	5,689.8	119
1976Q4	1,938.4	5,732.5	120
1977Q1	1,992.5	5,799.2	121
1977Q2	2,060.2	5,913.0	122
1977Q3	2,122.4	6,017.6	123
1977Q4	2,168.7	6,018.2	124
1978Q1	2,208.7	6,039.2	125
1978Q2	2,336.6	6,274.0	126
1978Q3	2,398.9	6,335.3	127
1978Q4	2,482.2	6,420.3	128
1979Q1	2,531.6	6,433.0	129
1979Q2	2,595.9	6,440.8	130
1979Q3	2,670.4	6,487.1	131
1979Q4	2,730.7	6,503.9	132
1980Q1	2,796.5	6,524.9	133
1980Q2	2,799.9	6,392.6	134
1980Q3	2,860.0	6,382.9	135
1980Q4	2,993.5	6,501.2	136
1981Q1	3,131.8	6,635.7	137
1981Q2	3,167.3	6,587.3	138
1981Q3	3,261.2	6,662.9	139
1981Q4	3,283.5	6,585.1	140
1982Q1	3,273.8	6,475.0	141
1982Q2	3,331.3	6,510.2	142
1982Q3	3,367.1	6,486.8	143
1982Q4	3,407.8	6,493.1	144
1983Q1	3,480.3	6,578.2	145
1983Q2	3,583.8	6,728.3	146
1983Q3	3,692.3	6,860.0	147
1983Q4	3,796.1	7,001.5	148

1980 through 2017 Q4

Average	2.67%	Real	
1	8.783381	1980	
2	8.762896		
3	8.761378		
4	8.779742		
5	8.800219	1981	
6	8.792899		
7	8.804310		
8	8.792565		
9	8.775704	1982	
10	8.781125		
11	8.777525		
12	8.778495		
13	8.791516	1983	
14	8.814078		
15	8.833463		
16	8.853880		
17	8.873552	1984	
18	8.890961		
19	8.900753		
20	8.908695		
21	8.918583	1985	
22	8.927699		
23	8.943140		
24	8.950611		
25	8.959838	1986	
26	8.964414		
27	8.974441		
28	8.979606		
29	8.986572	1987	
30	8.997729		
31	9.006754		
32	9.023131		
33	9.028735	1988	
34	9.041863		
35	9.047621		
36	9.060784		
37	9.070814	1989	
38	9.078647		
39	9.086080		
40	9.088195		
41	9.099085	1990	
42	9.102944		
43	9.103189		
44	9.094638		
45	9.089934	1991	
46	9.097664		
47	9.102454		
48	9.106800		
49	9.118554	1992	
50	9.129510		
51	9.139188		
52	9.149156		
53	9.151026	1993	
54	9.156950		
55	9.161812		
56	9.175076		
57	9.184838	1994	
58	9.198409		
59	9.204292		
60	9.215577		
61	9.218993	1995	
62	9.222476		
63	9.231005		
64	9.238072		
65	9.244616	1996	
66	9.261927		
67	9.271134		
68	9.281647		
69	9.289235	1997	
70	9.304213		
71	9.316860		
72	9.324588		
73	9.334432	1998	
74	9.344084		
75	9.357087		
76	9.373369		
77	9.381323	1999	
78	9.389532		
79	9.402043		
80	9.419247		
81	9.422148	2000	
82	9.440857		
83	9.442063		
84	9.447726		
85	9.444883	2001	
86	9.450168		
87	9.447000		
88	9.449775		
89	9.458941	2002	
90	9.464440		
91	9.469299		
92	9.469932		
93	9.475102	2003	
94	9.484337		
95	9.500948		
96	9.512569		
97	9.518303	2004	
98	9.525604		
99	9.534653		
100	9.543263		
101	9.553866	2005	
102	9.559073		
103	9.567441		
104	9.573135		
105	9.585078	2006	
106	9.588064		
107	9.588955		
108	9.596752		
109	9.597370	2007	
110	9.604994		
111	9.611697		
112	9.615259		
113	9.608412	2008	
114	9.613362		
115	9.608553		
116	9.587200		
117	9.573246	2009	
118	9.571895		
119	9.575157		
120	9.584789		
121	9.589106	2010	
122	9.598720		
123	9.605452		
124	9.611731		
125	9.607861	2011	
126	9.615112		
127	9.617211		
128	9.628412		
129	9.635020	2012	
130	9.639678		
131	9.640875		
132	9.641103		
133	9.648073	2013	
134	9.649988		
135	9.657670		
136	9.667379		
137	9.665078	2014	
138	9.676323		
139	9.689025		
140	9.694013		
141	9.701983	2015	
142	9.708743		
143	9.712787		
144	9.713996		
145	9.715446	2016	
146	9.720976		
147	9.727830		
148	9.732189		

OLS Regression

Annualized Real LN GPD Q

2.76%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.987298453
R Square	0.974758234
Adjusted R Square	0.974589956
Standard Error	0.048462262
Observations	152

ANOVA

	df	SS	MS	F	Significance F
Regression	1	13.60428747	13.60428747	5792.532028	9.4979E-122
Residual	150	0.352288621	0.002348591		
Total	151	13.95657609			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	8.795133966	0.007900568	1113.228024	1.0678E-295	8.779523191	8.810744741	8.779523191	8.810744741
X Variable 1	0.006818244	8.95856E-05	76.10868563	9.4979E-122	0.006641231	0.006995257	0.006641231	0.006995257

GDP is an array of expenditure and income data collected by BEA directly and through other government agencies.

Note

July 31, 2013, 14th Comprehensive Significant Revision:
BEA revised its tables back to 1929 in to order to count:
1 Artistic Works
2 Research and Development
as Capital Investments that Depreciate Over Time
rather than one time expenditures

From an Economy based on
(Industry and Manufacturing)
to one based on
(Knowledge and Information)

This comprehensive revision did not cause a large percentage jump.
The relative difference of actual amounts over time changed little.

1984Q1	3,912.8	7,140.6	149	149	9.735258	2017	
1984Q2	4,015.0	7,266.0	150	150	9.742796		
1984Q3	4,087.4	7,337.5	151	151	9.750564		
1984Q4	4,147.6	7,396.0	152	152	9.756825		

1985Q1	4,237.0	7,469.5	153
1985Q2	4,302.3	7,537.9	154
1985Q3	4,394.6	7,655.2	155
1985Q4	4,453.1	7,712.6	156
1986Q1	4,516.3	7,784.1	157
1986Q2	4,555.2	7,819.8	158
1986Q3	4,619.6	7,898.6	159
1986Q4	4,669.4	7,939.5	160
1987Q1	4,736.2	7,995.0	161
1987Q2	4,821.5	8,084.7	162
1987Q3	4,900.5	8,158.0	163
1987Q4	5,022.7	8,292.7	164
1988Q1	5,090.6	8,339.3	165
1988Q2	5,207.7	8,449.5	166
1988Q3	5,299.5	8,498.3	167
1988Q4	5,412.7	8,610.9	168
1989Q1	5,527.4	8,697.7	169
1989Q2	5,628.4	8,766.1	170
1989Q3	5,711.6	8,831.5	171
1989Q4	5,763.4	8,850.2	172
1990Q1	5,890.8	8,947.1	173
1990Q2	5,974.7	8,981.7	174
1990Q3	6,029.5	8,983.9	175
1990Q4	6,023.3	8,907.4	176
1991Q1	6,054.9	8,865.6	177
1991Q2	6,143.6	8,934.4	178
1991Q3	6,218.4	8,977.3	179
1991Q4	6,279.3	9,016.4	180
1992Q1	6,380.8	9,123.0	181
1992Q2	6,492.3	9,223.5	182
1992Q3	6,586.5	9,313.2	183
1992Q4	6,697.6	9,406.5	184
1993Q1	6,748.2	9,424.1	185
1993Q2	6,829.6	9,480.1	186
1993Q3	6,904.2	9,526.3	187
1993Q4	7,032.8	9,653.5	188
1994Q1	7,136.3	9,748.2	189
1994Q2	7,269.8	9,881.4	190
1994Q3	7,352.3	9,939.7	191
1994Q4	7,476.7	10,052.5	192
1995Q1	7,545.3	10,086.9	193
1995Q2	7,604.9	10,122.1	194
1995Q3	7,706.5	10,208.8	195
1995Q4	7,799.5	10,281.2	196
1996Q1	7,893.1	10,348.7	197
1996Q2	8,061.5	10,529.4	198
1996Q3	8,159.0	10,626.8	199
1996Q4	8,287.1	10,739.1	200
1997Q1	8,402.1	10,820.9	201
1997Q2	8,551.9	10,984.2	202
1997Q3	8,691.8	11,124.0	203
1997Q4	8,788.3	11,210.3	204
1998Q1	8,889.7	11,321.2	205
1998Q2	8,994.7	11,431.0	206
1998Q3	9,146.5	11,580.6	207
1998Q4	9,325.7	11,770.7	208
1999Q1	9,447.1	11,864.7	209
1999Q2	9,557.0	11,962.5	210
1999Q3	9,712.3	12,113.1	211
1999Q4	9,926.1	12,323.3	212
2000Q1	10,031.0	12,359.1	213
2000Q2	10,278.3	12,592.5	214
2000Q3	10,357.4	12,607.7	215
2000Q4	10,472.3	12,679.3	216
2001Q1	10,508.1	12,643.3	217
2001Q2	10,638.4	12,710.3	218
2001Q3	10,639.5	12,670.1	219
2001Q4	10,701.3	12,705.3	220
2002Q1	10,834.4	12,822.3	221
2002Q2	10,934.8	12,893.0	222
2002Q3	11,037.1	12,955.8	223
2002Q4	11,103.8	12,964.0	224
2003Q1	11,230.1	13,031.2	225
2003Q2	11,370.7	13,152.1	226
2003Q3	11,625.1	13,372.4	227
2003Q4	11,816.8	13,528.7	228
2004Q1	11,988.4	13,606.5	229
2004Q2	12,181.4	13,706.2	230
2004Q3	12,367.7	13,830.8	231
2004Q4	12,562.2	13,950.4	232
2005Q1	12,813.7	14,099.1	233
2005Q2	12,974.1	14,172.7	234
2005Q3	13,205.4	14,291.8	235
2005Q4	13,381.6	14,373.4	236
2006Q1	13,648.9	14,546.1	237
2006Q2	13,799.8	14,589.6	238
2006Q3	13,908.5	14,602.6	239
2006Q4	14,066.4	14,716.9	240
2007Q1	14,233.2	14,726.0	241
2007Q2	14,422.3	14,838.7	242
2007Q3	14,569.7	14,938.5	243
2007Q4	14,685.3	14,991.8	244
2008Q1	14,668.4	14,889.5	245
2008Q2	14,813.0	14,963.4	246
2008Q3	14,843.0	14,891.6	247
2008Q4	14,549.9	14,577.0	248
2009Q1	14,383.9	14,375.0	249
2009Q2	14,340.4	14,355.6	250
2009Q3	14,384.1	14,402.5	251
2009Q4	14,566.5	14,541.9	252
2010Q1	14,681.1	14,604.8	253
2010Q2	14,888.6	14,745.9	254
2010Q3	15,057.7	14,845.5	255
2010Q4	15,230.2	14,939.0	256
2011Q1	15,238.4	14,881.3	257
2011Q2	15,460.9	14,989.6	258
2011Q3	15,587.1	15,021.1	259
2011Q4	15,785.3	15,190.3	260
2012Q1	15,973.9	15,291.0	261
2012Q2	16,121.9	15,362.4	262
2012Q3	16,227.9	15,380.8	263
2012Q4	16,297.3	15,384.3	264
2013Q1	16,475.4	15,491.9	265
2013Q2	16,541.4	15,521.6	266
2013Q3	16,749.3	15,641.3	267
2013Q4	16,999.9	15,793.9	268
2014Q1	17,031.3	15,757.6	269
2014Q2	17,320.9	15,935.8	270
2014Q3	17,622.3	16,139.5	271
2014Q4	17,735.9	16,220.2	272
2015Q1	17,874.7	16,350.0	273
2015Q2	18,093.2	16,460.9	274
2015Q3	18,227.7	16,527.6	275
2015Q4	18,287.2	16,547.6	276
2016Q1	18,325.2	16,571.6	276
2016Q2	18,538.0	16,663.5	276
2016Q3	18,729.1	16,778.1	276
2016Q4	18,905.5	16,851.4	277
2017Q1	19,057.7	16,903.2	278
2017Q2	19,250.0	17,031.1	279
2017Q3	19,500.6	17,163.9	280
2017Q4	19,736.5	17,271.7	281

Date	Supplier	Test	Description	Total	
1/13/2016	Citi Cards	115.16	Maintenance	$115.16	
1/25/2016	US Bank	33.45	Fuel	$33.45	
2/19/2016	DMV	86.00	Registration	$86.00	Ck #20
3/11/2016	AAA	51.00	Semi Annual	$51.00	
3/22/2016	US Bank	43.17	Fuel	$43.17	
4/11/2016	Cunningham Consulting,	231.12	Mileage	$231.12	
5/2/2016	Weston Dealership	79.59	Buick	$79.59	cred
5/10/2016	US Bank	31.73	Fuel	$31.73	
5/23/2016	US Bank	22.05	Fuel	$22.05	
5/24/2016	WHO, Ltd	66.13	Mileage	$0.00	
6/29/2016	Weston Dealership	944.55	Buick Repair	$944.55	cred
7/5/2016	Cunningham Consulting,	170.32	Mileage	$170.32	
7/18/2016	WHO, Ltd	132.83	Mileage	$132.83	
8/1/2016	US Bank	22.13	Maintenance	$22.13	
8/14/2016	WHO Ltd	89.00	minus over	$65.59	I
8/18/2016	WHO, Ltd	64.98	Mileage	$64.98	
8/22/2016	US Bank	80.61	Fuel &	$80.61	
9/19/2016	WHO, Ltd	64.98	Mileage	$64.98	
9/23/2016	Cunningham Consulting,	96.12	Mileage	$96.12	
10/18/2016	Citi Cards	30.70	Maintenance	$30.70	
10/23/2016	WHO, Ltd	129.50	Mileage	$129.50	
10/25/2016	Nordstrom Visa	24.87	Maintenance	$24.87	
11/21/2016	WHO, Ltd	64.98	Mileage	$64.98	
12/30/2016	Weston Dealership	67.15	Buick Repair	$67.15	
				$0.00	
				$0.00	
TOTAL		**$2,742.12**		**$2,652.58**	

Check #
1038
1040
)33 Charlomont Hill Acct-written off this
1078
1082
1092
dit cd approval cd 07699P - Ck # 1065
1055
1062
1064 - Moved to Capital Plant
dit cd approval cd 95002O - Ck # 1108
1104
1110 Moved from Repairs
1116
nvoice #106 - net mileage expense
1119 - Moved from Repairs
1124
1130
1134
1141
1143 Moved from Repairs
1145
1159 - Moved from Repairs
credit cd approval cd 63576Z

Use of Buick Based on Mileage

	33.45	US Bank
	43.17	US Bank
	31.73	US Bank
	22.05	US Bank
	80.61	**US Bank**
	211.01	**Total Gas Receipts**
$	84.40	**gallons used @ 2.50 per gallon**
	1,350	**Mileage based on 16 mpg**
$	**736.00**	**Government Mileage Reimbursement**

	231.12	Cunningham Consulting
	170.32	Cunningham Consulting
	132.83	WHO Ltd
	22.13	WHO Ltd
	65.59	WHO Ltd
	64.98	WHO Ltd
	64.98	WHO Ltd
	96.12	Cunningham Consulting
	129.5	WHO Ltd
	64.98	WHO Ltd
	1042.55	**All contractor mileage**

736	mileage
1043	contractor
1779	**total**

Company	**2652**
Staff	**1779**
Difference	**873**