FILED January 10, 2019 INDIANA UTILITY **REGULATORY COMMISSION STATE OF INDIANA** INDIANA UTILITY REGULATORY COMMISSION PETITION OF INDIANA-AMERICAN WATER COMPANY, INC. FOR (1) AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER UTILITY SERVICE, (2) REVIEW OF ITS **RATES AND CHARGES FOR CAUSE NO. 45142** WASTEWATER UTILITY SERVICE. (3) APPROVAL OF NEW SCHEDULES OF **RATES AND CHARGES APPLICABLE TO** IURC WATER AND WASTEWATER UTILITY INTERVENOR'S -IG **SERVICE, AND (4) AUTHORITY TO IMPLEMENT A LOW INCOME PILOT** EXHIBIT NO. PROGRAM Verified Revised Direct Testimony and Attachments of Michael P. Gorman On behalf of Indiana-American Water Company, Inc. Industrial Group January 10, 2019 Brubaker & Associates, Inc. Project 10672

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#### STATE OF INDIANA

#### INDIANA UTILITY REGULATORY COMMISSION

PETITION OF INDIANA-AMERICAN WATER COMP ANY, INC. FOR (1) AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER UTILITY SERVICE, (2) REVIEW OF ITS RATES AND CHARGES FOR WASTEWATER UTILITY SERVICE, (3) APPROVAL OF NEW SCHEDULES OF RATES AND CHARGES APPLICABLE TO WATER AND WASTEWATER UTILITY SERVICE, AND (4) AUTHORITY TO IMPLEMENT A LOW INCOME PILOT PROGRAM

CAUSE NO. 45142

#### Verified Direct Testimony of Michael P. Gorman

#### 1 Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

- 2 A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,
- 3 Chesterfield, MO 63017.

#### 4 Q WHAT IS YOUR OCCUPATION?

- 5 A I am a consultant in the field of public utility regulation and a Managing Principal of
- 6 Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

#### 7 Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

8 A This information is provided in Appendix A to this testimony.

1	Q	ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?	
2	А	I am appearing on behalf of the Indiana-American Water Company, Inc. Industrial	
3		Group ("Industrial Group"). The Industrial Group membership consists of entities with	
4		facilities served by Indiana-American Water Company, Inc. ("IAWC" or "Company").	
5	Q	PLEASE SUMMARIZE ISSUES YOU WILL ADDRESS IN YOUR TESTIMONY.	
6	А	In my testimony, I will address several issues dealing with the Company's claimed	
7		revenue deficiency. These issues include the following:	
8		1. TCJA savings.	
9		2. Projected level of labor expense.	
10		3. Plant investment for the forecasted test year.	
11		4. Normal sales revenue.	
12		5. LIPP deferral.	
13		6. Rate of return.	
14		7. Fair value rate increment.	
15		My silence in regard to any issue should not be construed as an endorsement	
16		of IAWC's position.	
17		I. SUMMARY	
18	Q	PLEASE SUMMARIZE YOUR POSITION CONCERNING THE COMPANY'S	
19		PROJECTED LABOR EXPENSE IN ITS PRO FORMA TEST PERIODS.	
20	А	My recommended overall adjustments to IAWC's claimed revenue deficiency are	
21		summarized in Table 1 below:	

TABLE 1 <u>Revenue Requirement Adjustments</u> (\$ Million)				
<b>Description</b>	Step 1		Step 2	
	(1)	(2)	(3)	(4)
IAWC Claimed Rev. Deficiency <sup>1</sup>	\$18.0		\$38.5	
Adjustments: 1. TCJA a. Excess ADIT b. Deferral 2. Labor Expense 3. Proj. Plant Additions 4. Sales Normalization 5. Rate of Return (Total): c. Return on Equity d. Capital Structure	\$2.4 \$2.9 \$2.2 \$2.8 \$1.1 \$13.8	\$8.5 \$5.3	\$2.4 \$2.9 \$2.2 \$7.1 \$1.1 \$16.1	\$9.9 \$6.1
Total Adjustments	\$25.2		\$31.8	
Adjusted Deficiency	(\$7.3)		\$6.7	
<sup>1</sup> Reflects Step 1 and Step 2 claimed Schedule REVREQ1.	revenue increase	over	present revenue,	Source:

In addition to this revenue increase, IAWC is also proposing to defer costs
associated with a Low Income Pilot Program. Each of these adjustments will be
explained in detail throughout this testimony. However, other parties may propose
reasonable adjustments to IAWC's claimed revenue deficiency which I will not address
in this testimony. My absence of commenting on specific issues should not be
construed as support for IAWC's positions.

#### 7 I.A. TCJA Adjustment

#### 8 Q PLEASE SUMMARIZE YOUR RESPONSE TO THE COMPANY'S ESTIMATE OF 9 THE COST OF SERVICE SAVINGS ASSOCIATED WITH THE TCJA.

10 A The Company has fully reflected the operating expense savings associated with the

11 TCJA. However, the Company has acknowledged that the TCJA will also result in a

significant portion of its accumulated deferred income tax ("ADIT") balance, already
collected from customers being in excess of its future income tax liability. ADIT are
balances of income tax expense that has already been collected from customers, that
ultimately will be paid to government taxing authorities. Because the federal tax rate
was changed from 35% down to 21%, part of these prepaid collections of future income
tax liabilities will never be remitted to the government taxing authorities. IAWC witness
John Wilde acknowledges that these balances should be credited back to customers.

8 However, IAWC witness Wilde asserts that the Company cannot accurately 9 estimate either the amount of excess ADIT balance or estimate the amortization period 10 to remain in compliance with IRS normalization rules.<sup>1</sup> As such, the Company's 11 revenue requirement does not include a credit for the amortization of excess ADIT 12 balances that the Company owes to its customers.

As outlined below, the Company's failure to include an estimate of excess ADIT amortization in its Step 1 and Step 2 revenue requirement is a material deficiency in that the Company has claimed a revenue deficiency in the forecasted test year without providing complete transparent estimates of its full cost of service. Therefore, IAWC has not proven that a revenue deficiency exists.

My own estimates, as reflected in Table 1 above, are based on data from the Company and initiate the return of excess ADIT to customers. This excess ADIT credit will serve as a partial offset to IAWC's claimed revenue deficiency in this case. The failure of the Company to even attempt to account for the return of excess ADIT to customers results in an overstatement of the revenue deficiency it has put forth in this proceeding. If IAWC's excess ADIT position is adopted, its proposed changes to retail rates will not result in just and reasonable rates to Indiana customers.

<sup>&</sup>lt;sup>1</sup>Wilde Direct Testimony at 4.

For these reasons, the Company's filing should either be adjusted to reflect the best estimate available for excess ADIT balances and cost of service credit, or the Commission should find that the Company has failed to prove that a revenue deficiency of the size claimed by the Company exists in this proceeding. As we propose a decrease, no adjustments to IAWC's proposed rates should be made in this case.

## 6 Q HAVE YOU ESTIMATED A COST OF SERVICE ADJUSTMENT FOR EXCESS ADIT 7 BALANCES FOR THIS PROCEEDING?

A Yes. Based on a reasonable and best estimate, along with an assumption about the excess ADIT balances being split into protected, and subject to IRS normalization rules, and unprotected where the amortization period can be established by the IURC, an estimate can be made to offset cost of service for the Step 1 increase, and actual balances can be recorded in a regulatory liability or asset account. The adjustment can be made in Step 2, along with a normalized excess ADIT credit for the Step 2 increase.

15The Company has preliminarily estimated an excess ADIT balance of16\$71.1 million (Attachment JRW-1), assuming a 41.5-year amortization of the excess17balance, that produces a tax credit of \$1.7 million, and a revenue requirement credit of18\$2.36 million.<sup>2</sup> This issue is pending a Commission determination in Cause No. 4503219\$4 (Phase 2).

<sup>&</sup>lt;sup>2</sup>IAWC response to OUCC 5-037, Attachment MPG-25, and Tax credit of \$1.71 million times tax conversion factor of 1.375 developed on Schedule REVREQ3.

#### 1 Q PLEASE DESCRIBE THE SECOND TCJA-RELATED COST OF SERVICE 2 ADJUSTMENT.

3 As outlined in IAWC witness Gregory Shimansky's testimony, the Company was Α 4 ordered to track income tax savings from January 3, up until the time rates were 5 adjusted to reflect the lower corporate tax rate. A revision to the Company's rates to 6 reflect income tax savings was made on August 1, 2018. As such, the amount of the 7 income tax savings deferral from January 3 through August 1, 2018 should be reflected as an amortization credit to IAWC's cost of service in this proceeding. I recommend 8 9 this credit be amortized over the two-step increase in this proceeding, which reduces 10 cost of service in Step 1 and Step 2 by \$2.9 million per year. This issue is currently 11 pending in Cause No. 45032 S4 (Phase 2).

12

#### I.B. Labor Expense Adjustment

## 13 Q PLEASE DESCRIBE YOUR PROPOSED ADJUSTMENT FOR LABOR EXPENSE IN 14 THIS PROCEEDING.

15 А The Company has included its budgeted labor expense in the future periods covered 16 by the Step 1 and Step 2 revenue requirement increases in this proceeding. This 17 budgeted labor expense includes actual labor expense costs, along with budgeted 18 positions that have not yet been filled. To the extent the Company includes an 19 employee position in its budget that has not yet been filled, then the Company does not 20 incur the expense included in its budget. Importantly, the Company consistently has a 21 number of unfilled positions relative to its budgeted level of employee expense. As 22 developed on Attachment MPG-1, my labor expense reduces the Company's cost of 23 service to reflect unfilled positions included in its budgeted expense, which reduces its 24 cost of service in the Step 1 and Step 2 increase by \$2.2 million.

#### 1 I.C. Plant Additions

#### 2 Q DO YOU HAVE ANY COMMENTS CONCERNING THE COMPANY'S PROPOSED 3 PLANT ADDITIONS?

4 А Yes. I propose an adjustment to the Company's planned capital expenditures through 5 2020, to spread the capital expenditures out over several years, instead of accelerating capital expenditures in the 2018-2020 time period. The Company's financial plan does 6 7 not outline a clear pace for when capital expenditures will be made, nor justify a 8 heightened pace of investment over that timeframe. Thus, spreading these 9 expenditures over a longer period of time will permit the Company to implement the 10 capital expenditures and modernize its infrastructure, but do so with a lower and more 11 managed rate impact on its retail customers.

Managing growth in capital expenditures from 2018 to a 10% increase in 2019 through 2021 will reduce the increase in Test Period 1 rate base by \$24.3 million, and Test Period 2 rate base by \$62.6 million. As developed on Attachment MPG-2, This will reduce the claimed revenue deficiency in Step 1 and Step 2 by \$2.8 million and \$7.1 million, respectively.

17 I.D. Normal Sales Adjustments

## 18 Q HAS THE COMPANY NORMALIZED ITS SALES ADJUSTMENTS FOR SETTING 19 RATES IN THIS PROCEEDING?

20 A Yes. IAWC witness Gregory Roach outlines the Company's method for estimating 21 normal sales adjustments. He states that he relied on a regression study for residential 22 customers, but did not use the same methodology for the commercial and industrial 23 classes. With respect to residential customers, the Company's normal sales 1 adjustment resulted in a substantial decline in average use per residential customer

2 per gallons per month. This outline is shown in Table 2 below.

TABLE 2 <u>Residential Class Average Usage Per Customer</u> (Gallons)			
Line	Year	Annual Avg. Use <u>Per Month</u>	Annual Percent <u>Change</u>
	Actual <sup>1</sup>		
1 2 3 4 5 6 7 8 9 10	2008 2009 2010 2011 2012 2013 2014 2015 2016 2017	4,939 4,747 4,792 4,615 4,747 4,409 4,268 4,270 4,230 4,181	-3.9% 0.9% -3.7% 2.9% -7.1% -3.2% 0.0% -0.9% -1.2%
11 12 13	Forecast <sup>2</sup> 2018 2019 2020	4,036 3,948 3,861	-3.5% -2.2% -2.2%
	Sources: <sup>1</sup> IAWC Revenue V 2008-2018 Workpa <sup>2</sup> IAWC Revenue V 2008-2018 Workpa	Vorkpapers, IN Av aper, "IN Total Sta Vorkpapers, IN Av aper, "Residential	verage Use ate" tab. verage Use " tab.

3

4

As shown in the table above, in the forecasted test years 2018-2020, the Company is projecting substantial declines in the use of residential customers over this time period. Indeed, the use per customer is an over 7% decline from calendar year
 2017 through 2020 projected.

#### 3 Q DO YOU BELIEVE THE COMPANY'S NORMALIZED RESIDENTIAL SALES

4

#### ADJUSTMENT IS REASONABLE?

- 5 A No. A more reasonable projection of normal sales results in an increase to residential
  6 sales in this case and decrease the revenue deficiency by \$1.1 million.
- 7 I.E. Low Income Pilot Program ("LIPP")

#### 8 Q PLEASE DESCRIBE YOUR RESPONSE TO THE COMPANY'S PROPOSAL FOR A 9 DEFERRAL OF CERTAIN COSTS RELATED TO THE LIPP.

10 IAWC's proposal to defer recovery of around \$200,000 in annual discounts for future А 11 recovery in the next rate case should be denied. This was outlined at page 28 of 12 Mr. Charles Rea's direct testimony. I believe it is reasonable for shareholders to pay 13 these program costs consistent with several recent settlements. Further, I take issue 14 with the Company's proposal to defer costs associated with implementing this program. 15 It is not appropriate to defer a cost in this case that reflects current cost of service, 16 without it being significant or beyond the means of management to control. For these 17 reasons, I believe the Company's proposal to defer costs associated with the LIPP 18 should be denied.

#### 1 I.F. Rate of Return and Capital Structure

#### 2 Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS AND FINDINGS ON A FAIR 3 RETURN ON EQUITY TO USE TO SET RATES FOR IAWC.

A I recommend the Indiana Utility Regulatory Commission ("Commission") award IAWC
a return on common equity of 9.35%, which is the midpoint of my recommended range
of 9.0% to 9.70%. I recommend a 9.35% return on equity in concert with my
recommended adjustments to the Company's ratemaking capital structure. For the
reasons outlined below, if the Commission does not accept my proposed adjustment
to the Company's forecasted capital structure, then a fair return on equity should be set
at the low-end of my recommended range, or 9.0%.

I show that IAWC witness Ms. Ann E. Bulkley's recommended range of 10.00%
to 10.80%, and her point estimate of 10.80% is an excessive and unreasonable return
on equity and will require unjustified increases to retail rates.

## 14 Q PLEASE SUMMARIZE YOUR POSITION CONCERNING THE COMPANY'S 15 PROPOSED RATEMAKING CAPITAL STRUCTURE.

16 А The Company proposes to develop a future test year overall rate of return based on a 17 pro forma forecasted capital structure. The Company's forecasted capital structure 18 includes an excessive amount of common equity which creates unnecessary rate 19 impacts on customers. A more reasonably balanced capital structure will lower costs 20 to customers, without any adverse consequences to either IAWC or its customers. 21 Specifically, a more reasonable capital structure will maintain the Company's financial 22 integrity and access to capital, but at a lower cost to customers compared to the 23 Company's position.

## 1QPLEASE EXPLAIN WHY YOU BELIEVE THE COMPANY'S FORECASTED2CAPITAL STRUCTURE IS NOT REASONABLE FOR SETTING RATES.

3 А The Company's forecasted capital structure reflects a significant increase in its 4 common equity ratio since IAWC's last two rates cases, and the actual capital 5 structures IAWC maintained since 2013. In significant contrast to its parent company 6 and many other operating affiliates, IAWC substantially increased its common equity ratio in 2017, and plans to further increase its equity ratio through the forecast period. 7 8 It is important to note that those increases come from IAWC's parent company, which 9 means that the infusion of additional common equity into the IAWC's capital structure 10 is made solely by the management discretion of American Water Works Company, Inc. 11 ("AWK").<sup>3</sup> Moreover, because the test year projected equity infusions have not yet 12 been made, it remains within the power of the Commission to determine that a capital 13 structure which reflects those future increases in common equity are reasonable and 14 prudent and result in reasonable and just impacts on customer rates. Absent clear 15 evidence that IAWC's equity ratio needs to be increased, the IURC should not accept 16 IAWC's projected change to its capital structure for purposes of setting rates in this 17 proceeding.

18 Importantly, in Cause No. 44682, where the Company sought to issue up to 19 \$200 million in additional debt, and \$82 million in equity financing, the IURC did not 20 accept an OUCC proposal for IAWC to receive IURC approval before it could accept 21 equity infusions from its parent company. In that order, the IURC stated that IAWC 22 planned to maintain a reasonable mix of debt and equity in its financing plan outlined 23 in that order which included a total debt ratio of around 52.6%. It also noted that to the 24 extent IAWC increased its common equity balance based on equity infusions from its

<sup>&</sup>lt;sup>3</sup>AWK is the New York Stock Exchange ticker symbol for American Water Works Company, Inc.

parent company, that the IURC "has extensive investigative powers over matters
 related to a public utility, including the ability to initiate an investigation and order steps
 be taken to adjust a public utility's capital structure if necessary."<sup>4</sup>

4 IAWC has increased its common equity ratio largely through equity infusions 5 from AWK, which were not approved by the IURC. Contrary to its representations in 6 its financial case, IAWC decreased its debt ratio and increased its equity ratio of total 7 capital largely from equity infusions from its parent company. The Commission should 8 exercise its extensive oversight and limit IAWC's cost of capital so it reflects a 9 reasonable ratemaking capital structure and fair and reasonable cost burden on 10 customers.

## 11 Q HAS IAWC'S PARENT COMPANY ALSO INCREASED ITS PERCENTAGE OF 12 COMMON EQUITY CAPITAL?

13 A No. In significant contrast to its subsidiary, AWK has maintained a relatively stable 14 capital structure mix of debt and equity over the same historical time period, and, 15 importantly, AWK's capital structure as projected by *Value Line* anticipates a reduction 16 in the common equity capital percentage of total capital. AWK's capital structure has 17 successfully supported its ability to attract capital under reasonable prices, terms and 18 conditions which have been used to fund infrastructure investments at its water utility 19 subsidiaries, including IAWC.

20 While AWK's capital structure has historically maintained a relatively constant 21 mix of debt and equity capital. Moody's has noted that AWK's plans to finance its capital 22 program largely through the issuance of only additional debt, without the issuance of 23 additional common equity securities, which may reduce its equity ratio and increase its

<sup>&</sup>lt;sup>4</sup>Cause No. 44682, Final Order, May 11, 2016 at 8.

debt ratio. *Value Line*'s projections for AWK also reflect greater use of debt capital. As
 such, IAWC's proposed substantial increase to its common equity ratio is completely
 contrary to the expected reduction of the common equity ratio at AWK.

## 4 Q WHY IS AWK'S CAPITAL STRUCTURE MIX RELEVANT IN ASSESSING IAWC'S 5 PROPOSED RATEMAKING CAPITAL STRUCTURE?

A Because IAWC's primary access to debt and equity capital is through its parent
company, AWK. Hence, the credit rating upon which IAWC is able to attract debt
capital reflects AWK's credit quality and capital structure mix.

#### 9 Q WILL YOUR PROPOSED ADJUSTMENTS TO IAWC'S PROJECTED RATEMAKING

#### 10 CAPITAL STRUCTURE RESULT IN A DISALLOWANCE TO IAWC'S ACTUAL 11 CAPITAL STRUCTURE COSTS?

12 A No. The Company has chosen to use a forecasted test year with a forecasted capital 13 structure. Because of the forecasted nature of the Company's cost of service, the 14 Commission can adjust the Company's forecast to a more reasonable cost of service 15 basis for setting rates. Then, the Company can respond to the rate-setting signals by 16 adjusting its forecast and managing its actual capital structure to conform to what the 17 Commission finds to be a reasonable capital structure for setting rates.

18 IAWC, for example, could modify its dividend payment structure to pay out 19 common equity up to its parent company, and AWK can insert more debt capital into 20 IAWC. There are other mechanisms which AWK can modify IAWC's actual capital 21 structure. With these mechanisms, AWK can manage IAWC's capital structure to 22 conform to what the Commission finds to be appropriate for setting rates. These 23 adjustments to IAWC's actual capital structure, and the Commission setting rates to reflect a reasonable capital structure for ratemaking purposes, will ensure that IAWC
 has a reasonable opportunity to earn the return on equity found reasonable by the IURC
 for setting rates, and customer rates are just and reasonable.

4

5

### Q ARE THERE ANY OTHER ADJUSTMENTS YOU PROPOSE TO THE COMPANY'S TEST YEAR CAPITAL STRUCTURE?

A Yes. IAWC has included as a negative capital component a prepaid pension asset of
 \$3.14 million, and a post-retirement benefit component of a positive \$2.34 million. I
 recommend removing the Company's prepaid pension asset, and the post-retirement
 benefits asset from the ratemaking capital structure.

10 The IURC has set a precedent for determining whether or not the prepaid 11 pension asset should be included in a company's capital structure. The IURC's 12 precedent is to include a prepaid pension asset only to the extent that the Company 13 can prove that it has made contributions to its trust in excess of the ERISA minimum 14 contributions and that any discretionary, excess, contributions are at a lower cost to 15 ratepayers or needed to support the financial integrity of the pension trust. These 16 requirements are logical.

17 Companies must make ERISA minimum contributions and that amount is 18 reasonably recovered through the retail cost of service, but no return on is justified. In 19 contrast, however, discretionary investment costs above the minimum level should be 20 not generally be subject to recovery as part of the capital structure precisely because 21 they are discretionary. Only if those expenditures are justified by showing they are 22 necessary to support the financial integrity of the pension trust or produce a lower cost 23 to retail customers can their inclusion in the capital structure be considered reasonable. 24 IAWC has not shown the amount of the prepaid pension asset it seeks to include in the

capital structure exceeds the ERISA minimum funding levels. Nor has it justified any
 excess contributions as being necessary to support the integrity of the trust or to be at
 a lower cost to customers. Therefore, the prepaid pension asset, and the related post retirement benefit asset should be removed from the ratemaking capital structure.

5 I would note that the post-retirement benefit addition to the capital structure 6 comes close to offsetting the prepaid pension asset, and therefore this adjustment has 7 very little impact on the Company's cost of service. Nevertheless, inclusion of these 8 items in the ratemaking capital structure is simply inconsistent with IURC policy and 9 therefore should be removed.

## 10 Q PLEASE DESCRIBE THE CAPITAL STRUCTURE YOU PROPOSE TO ESTABLISH 11 IAWC'S REVENUE REQUIREMENT IN THIS PROCEEDING.

A reasonable capital structure for setting rates, that should be used as a forecasted
capital structure for the projected test year in this case, includes a common equity ratio
of "investor capital" of 50.0% equity and 50.0% debt.

Using this projected mix of debt and equity investor capital, along with the
 Company's projected cost-free capital and customer contributed capital, I believe a
 50/50 ratio represents a reasonable capital structure to use for ratemaking purposes.

#### 18 Q WHAT OVERALL RATE OF RETURN ARE YOU RECOMMENDING RATES BE SET

19

#### IN THIS PROCEEDING?

A My adjustment to the Company's investor-supplied capital weights, including customersupplied capital, and my recommended return on equity of 9.35% and my proposed capital structure for IAWC produce an overall rate of return of 5.86% for 2019 and 5.93% for 2020, as shown on my Attachment MPG-4. This is a reduction from IAWC's proposed overall rate of return reflecting its excessive common equity return, and
 excessive common equity weighted forecasted capital structure of 6.73% (2019) and
 6.82% (2020).<sup>5</sup>

## Q IF THE COMMISSION DOES NOT ADJUST IAWC'S TEST YEAR FORECASTED CAPITAL STRUCTURE AS YOU PROPOSE, WOULD THAT IMPACT THE RETURN ON EQUITY THAT WOULD BE APPROPRIATE FOR SETTING RATES?

Yes. My return on equity recommendation of 9.35% should be made in combination
with a balanced capital structure that reasonably reflects the investment risk of AWK
and the proxy group used to measure a fair return on equity. If the Commission uses
the equity rich capital structure proposed by IAWC, then IAWC's financial risk will be
reduced relative to my return on equity range. As such, a fair return on equity should
be reduced to reflect this reduction to IAWC's financial risk.

13 With an equity rich capital structure, I believe an authorized return on equity 14 should remain within my estimated return on equity range of 9.0% to 9.7%. However, 15 with the Company's proposed 56% common equity ratio, the return on equity should 16 be set at a level below the 9.35%. For this reason, I recommend a return on equity of 17 around 9.0%, in combination with a 56% common equity ratio be used to set rates in 18 this proceeding. While this still results in a higher rate of return and revenue 19 requirement than my recommended capital structure and return on equity, I believe it 20 reasonably balances the cost to retail customers, with a rate of return that is fair and 21 maintains IAWC's strong credit standing and access to capital.

<sup>&</sup>lt;sup>5</sup> IAWC Financial Exhibit CC, Schedule CC1, Pages 1 and 2.

#### 1 I.G. Fair Value Increment

#### 2 Q WILL YOU RESPOND TO THE COMPANY'S FAIR VALUE RATE OF RETURN 3 RECOMMENDATIONS?

4 A Yes, I also respond to the Company's two fair value operating income increments.

5 First, the Company included a fair value increment based on an acquisition premium it paid for Indiana Cities. That fair value increment was based on the product 6 7 of the net acquisition adjustment (acquisition adjustment less accumulated amortization 8 costs) multiplied by the Company's proposed rate of return. It is my understanding that 9 the Company has received permission to include an acquisition adjustment for its 10 Indiana Cities acquisition in prior rate proceedings. While I do not support this practice, 11 I do not oppose a fair value increment based on the Indiana Cities net acquisition cost. 12 IAWC only included its first fair value increment in its revenue requirement.

13 IAWC witness Ann Bulkley also developed a second fair value increment tied 14 to a restatement of the Company's rate base to a fair value amount. The fair value 15 increment then was based on the difference between fair value rate base and original 16 cost rate base, and the Company's recommended rate of return. Ms. Bulkley's second 17 fair value increment proposal is severely flawed and should not be relied upon for 18 setting rates in this proceeding. I believe this confirms the Company's decision not to 19 use the fair value increment developed by Ms. Bulkley in its claimed revenue deficiency 20 in this proceeding. In any event, Ms. Bulkley's estimate of a fair value rate base is 21 severely flawed and should be rejected.

I also explain why a fair value increment is not appropriate because fair
 compensation is provided to the utility, if performed correctly using original cost
 ratemaking constructs, or fair value constructs, and measuring a fair and reasonable

- operating income entitlement for the utility. As such, the increment proposed by Ms.
   Bulkley simply is not just and reasonable and should be denied.
- 3

#### II. TCJA RATE IMPACTS

#### 4 Q WHAT IS IAWC'S PROPOSAL REGARDING EXCESS ACCUMULATED 5 DEFERRED INCOME TAXES ("ADIT")?

A IAWC included a reduction in income tax expense to reflect the new 21% federal
 corporate tax rate approved in December 2017 by the passage of the Tax Cut and Jobs
 Act ("TCJA"). However, passage of the TCJA also resulted in significant amounts of
 ADIT being in excess of IAWC's future income tax liability. Consistent with the
 treatment of excess ADIT by the Commission after the last major federal tax
 restructuring in 1985, and in the case of other utilities following the passage of the
 TCJA, the excess ADIT balance should be credited back to IAWC's retail customers.

13 IAWC, however, did not include an amortization credit of excess ADIT when 14 calculating its revenue requirement because the Company alleges it is still in the 15 process of measuring the excess balance and developing the amortization periods and 16 will not have that accounting complete until April, 2019. As a result, IAWC has not 17 included a reduction in revenue requirement to amortize the excess ADIT balances 18 back to customers. Instead of calculating the amortization rates as part of its case-in-19 chief, something every other major utility in Indiana was able to do prior to the date 20 proposed by the Company, IAWC proposes the Commission credit back to retail 21 customers the excess ADIT balances through the first or second step rate increase, 22 after IAWC finalizes its amortization periods.

## 1QHAS IAWC MADE ANY ESTIMATE OF THE AMOUNT OF EXCESS ADIT BALANCE2THAT WOULD BE SUBJECT TO CREDIT TO CUSTOMERS IN THIS CASE?

3 А Yes, though it says it is subject to change. IAWC has preliminarily estimated an excess 4 ADIT balance of \$71 million.<sup>6</sup> Further, it claims that this balance is completely protected based on IRS normalization rules. In determining an appropriate amortization period, 5 6 excess ADIT balances are typically separated into a protected balance and an 7 unprotected balance. Protected balances are typically subject to an Average Rate 8 Adjustment Mechanism ("ARAM"), which prescribes that the excess balance be 9 amortized back to cost of service in line with the average remaining life of the assets 10 which created the excess balance. In contrast, excess ADIT balances that are 11 categorized as unprotected can be amortized back to customers based on the 12 discretion of the regulatory commission.

# Q IS IAWC'S PROPOSAL TO INCREASE RATES IN THIS PROCEEDING WITHOUT MAKING A REASONABLE ESTIMATE OF EXCESS ADIT BALANCES, AND CLEAR EVIDENCE ON THE BALANCE BEING PROTECTED OR UNPROTECTED, APPROPRIATE?

17 A No. Even based on IAWC's preliminary analysis, an excess ADIT balance of 18 \$71 million can have a material impact on the cost of service in this proceeding. 19 Indeed, even if one accepts the Company's position that all of the excess ADIT balance 20 is protected and subject to a 30 year amortization rate, there would be revenue credit 21 to customers of a revenue credit to approximately \$3.25 million<sup>7</sup> per year which would 22 serve as an offset to the Company's claimed revenue deficiency. In concert with other,

<sup>&</sup>lt;sup>6</sup>Wilde Direct Testimony at Attachment JRW-1.

<sup>&</sup>lt;sup>7</sup>\$71 million divided by 30 grossed up at 1.375x.

reasonable, revenue reductions, proposed by myself other parties, the ADIT credit
 offsets any claimed revenue deficiency in this proceeding.

#### 3 Q DO YOU HAVE ANY OTHER COMMENTS CONCERNING THE FULL TREATMENT

- 4 OF INCOME TAX SAVINGS CREATED BY THE TCJA?
- 5 A Yes. IAWC has deferred the difference between its actual tax collections and its actual 6 tax expense between January 3 and August 1, 2018 as outlined in the direct testimony 7 of IAWC witness Gregory Shimansky. That regulatory deferral is \$5.8 million. The 8 Company has not reflected this deferred regulatory asset to reduce its cost of service 9 in this proceeding.

#### 10 Q HOW DO YOU PROPOSE THE COMPANY USE THIS DEFERRED REGULATORY

#### 11 LIABILITY ASSOCIATED WITH OVER-COLLECTION OF TAX EXPENSE IN THIS

#### 12 CASE?

A I recommend the Company amortize the \$5.8 million of tax over-collection recorded in
a regulatory liability account over two years. This will reduce its cost of service in Step 1
and Step 2 by \$2.9 million.

#### TABLE 3

#### Amortization of TCJA Regulatory Liability

<u>Line</u>	Description	<u>Amount</u>
1	TCJA Regulatory Liability	\$5,821,888
2	Amortization Period (years)	2
3	Reduction to Cost of Service	\$2,910,944
	Source: Cause No. 45032-S4, Phase 2, Re Testimony of Gregory D. Shimansk	buttal

1 An amortization of two years will return this income tax expense to customers 2 as soon as possible, and align with the Company's proposed two-step rate increase. 3 The Company will need to evaluate whether or not its rates will still be adequate 4 starting in Year 3 after this amortization period is completed. However, due to the 5 alleged uncertainty in sales levels, estimated escalation in O&M expenses, and change 6 in actual capital expenditures, it is not clear that a two-year amortization will result in a 7 revenue requirement deficiency starting in Year 3. Therefore, a two-year amortization 8 will provide credit to customers as fast as possible for this tax over-collection, and will 9 result in rates in this proceeding that are just and reasonable.

10

#### III. PROJECTED LABOR EXPENSE

 11
 Q
 DID IAWC PROPOSE A PRO FORMA ADJUSTMENT FOR SALARIES AND

 12
 WAGES?

A Yes. IAWC Financial Exhibit OPER, Schedule OM5, includes a \$3.4 million pro forma
 adjustment for salaries and wages. The adjustment includes a \$2.2 million increase in

base wages for existing positions, \$0.3 million for positions related to the two
 acquisitions, and \$0.5 million for new positions.

IAWC witness Nikole L. Bowen describes the salaries and wages adjustment in
her Direct Testimony. IAWC's total pro forma operation and maintenance ("O&M")
expense for salaries and wages is \$19.1 million. IAWC developed the associated
payroll taxes, insurance expenses, and other benefits expenses for its employees on
IAWC Financial Exhibit OPER, Schedules OM8, OM9, and OTX2. In total, IAWC
includes approximately \$25.9 million of employee expenses in the pro forma period.

9

10

### Q ARE YOU PROPOSING AN ADJUSTMENT TO IAWC'S \$25.9 MILLION OF EMPLOYEE EXPENSES?

11 A Yes. I propose to eliminate the portion of employee expenses that is attributable to 12 new positions and vacant positions. I believe IAWC's pro forma salaries and wages 13 should only reflect currently staffed positions and should not provide it with cost 14 recovery for unfilled positions.

IAWC includes approximately \$2.2 million of employee expenses for new,
vacant, or posted positions, labor, benefits and payroll tax. IAWC did not provide
evidence that it has verifiable plans to fill these positions by the time rates determined
in this proceeding will go into effect. As such, the costs associated with these vacant
positions is not reasonable and should therefore not be included in cost of service.

20 My labor expense adjustment is developed in Table 4 below.

	TABLE 4 <u>Employee Expenses Adjustment</u> (\$000)	
<u>Line</u>	<b>Description</b>	<u>Amount</u>
1	Pro Forma Employee Expenses	\$25,926
2 3 4	Less: Vacant or Open Positions New Positions Labor Adj.	(1,445) <u>(781)</u> \$2,220
5	Adjusted Pro Forma Employee Expenses	\$23,700
	Sources: IAWC Financial Exhibit OPER, Schedule ON Confidential Workpapers.	/15

#### **IV. PLANT ADDITIONS**

#### 2 Q PLEASE DESCRIBE IAWC'S PROPOSED CAPITAL ADDITIONS.

1

3	А	Mr. Hoffman describes IAWC's proposed capital additions in his Direct Testimony.
4		IAWC proposes to include in rate base approximately \$575 million of capital additions.
5		IAWC includes approximately \$249 million of additions that were placed in service
6		before December 31, 2017. \$48.6 million of this amount was placed in service before
7		November 30, 2015, and stems from IAWC's previous rate case.
8		IAWC proposes to add approximately \$326 million of capital additions between
9		January 1, 2018, and the end of Phase 2, April 30, 2020. Including retirements and the
10		two acquisitions, IAWC proposes to increase its Plant in Service by \$129.6 million in

- 1 Phase 1, and \$186.3 million in Phase 2. Table 5, below, breaks down IAWC's proposed
- 2 Plant in Service increase.

	TABLE 5	
	IAWC Proposed Increase to Plant in S	<u>Service</u>
	(\$000)	
<u>Line</u>	Description	<u>Amount</u>
1	Plant In-Service (12/31/17)	\$ 1,642,697
	Phase I Additions:	
2	Major Projects	\$-
3	Significant Projects	30,023
4	Recurring Investment	73,365
5	Acquisitions	24,524
6	Acquisition Additions	1,428
7	Total Phase I Additions	\$ 129,340
	Phase II Additions:	
8	Major Projects	\$ 76,996
9	Significant Projects	32,700
10	Recurring Investment	73,784
11	Acquisitions	-
12	Acquisition Additions	2,693
13	Total Phase II Additions	\$ 186,172
14	Pro Forma Plant In-Service (5/1/20)	\$ 1,958,208
15	Annual Growth	15.0%/Yr.
	Sources: IAWC Schedule RB1. IAWC Attachment SCEP 2018 to 2020	)_Support.

3 "Major projects" include three projects identified by Mr. Hoffman where the
4 investment exceeds 1% of IAWC's rate base. Mr. Hoffman identifies projects with
5 investment exceeding \$500,000 as "significant projects."
6 Figure 1, below, summarizes IAWC's capital plan from January 1, 2018 to

7 April 30, 2020.



As shown in the figure, IAWC's capital plan is heavily weighted towards the end
of the forecast period. Approximately 50%, \$156 million, of IAWC's planned rate base
growth occurs in the final 7 months of the forecast period.

1

#### 5 Q HOW DOES IAWC'S FORECASTED CAPITAL ADDITIONS COMPARE TO ITS 6 ACTUAL HISTORICAL CAPITAL ADDITIONS?

7 A IAWC's forecasted capital additions through the forecast test period reflect between a
20% and 30% increase in annual capital spending compared to 2017, which in turn
9 reflects the highest capital spending year in the last five years. A comparison of the
10 Company's pro forma planned capital additions, to its actual historical capital additions
11 is summarized in Table 6 below.

TABLE 6 <u>IAWC Capital Expenditures</u> (Millions)			
Line	<u>Year</u>	<u>Amount</u>	
<u>Actual</u>			
1	2008	\$96.7	
2	2009	\$71.9	
3	2010	\$64.0	
4	2011	\$70.6	
5	2012	\$63.6	
6	2013	\$55.2	
7	2014	\$57.2	
8	2015	\$55.8	
9	2016	\$83.5	
10	2017	\$95.1	
Forecaste	<u>ed</u>		
11	2018	\$115.3	
12	2019	\$160.7	
13	2020	\$107.2	
14	2021	\$109.8	
15	2022	\$121.5	
Sources: 2008-2017 2018-2022	7, Hoffmar 2, Attachm	n Direct at 12. Jent SSH-5.	

As shown above in Table 6, IAWC's actual, historical capital expenditures are significantly lower than the forecasted capital expenditures it proposes to include in this rate case. More specifically, 2017 actual capital expenditures were the highest level of actual capital expenditure since 2008. The Company's forecasted 2018 capital expenditures, however, increased by approximately 21% over 2017's level; and 2019 capital expenditures are projected to increase again by almost 40% over the projected 2018 level of capital expenditure. To put it in other terms, the average annual historical capital spend over the period 2008 through 2017 was \$71.36 million. The Company's
 projected 2019 expenditure is a 125.19% increase over that level.

As clearly shown in Table 6 above, the Company is proposing substantial capital investments that largely inflate the test year rate base in this proceeding, and therefore it is incumbent on the utility to prove the reasonableness and the necessity of the capital expenditures that it has proposed to include in this proceeding to set rates year.

#### 8 Q HOW DOES IAWC SUPPORT ITS CAPITAL PLAN?

9 А Mr. Hoffman outlines the Company's capital planning investment initiatives, and 10 strategies about how to identify plant needed, and how to prioritize the capital spending 11 needs. Mr. Hoffman states that the Company developed capital Comprehensive 12 Planning Studies ("CPS") for its service territory, and then develops a prioritization of 13 capital investment projects to use as a key in developing and updating the Company's 14 five-year Strategic Capital Expenditure Plan ("SCEP"). The capital studies start on a 15 15-year planning horizon and prioritize such factors as safety, regulatory compliance, 16 capacity and growth, infrastructure renewal, efficiency, resilience, reliability, and quality 17 of service. These factors then are used in developing the Company's five-year capital 18 investment plan. Mr. Hoffman also outlines the Company's five-year capital plan by 19 major categories including: (1) infrastructure capacity expansion; (2) capital 20 investments needed for environmental or water guality regulations; and (3) 21 rehabilitation projects for service reliability.

What was notably missing from Mr. Hoffman's description of the prioritization of capital plans is risk that failure to implement projects may impede the Company's ability to provide safe and reliable service, and the impact on customer rates of a dramatic increase in forecasted annual capital expenditures. It is critical that any utility plan a
pace of capital expenditures which meets the prioritization of the capital planning
process and ensures the company will maintain safe and reliable service, but creates
no more than a reasonable and balanced impact on customers' rates at the lowest level
possible.

6 This is actually illustrated in this case. Here, Indiana American is proposing a 7 significant increase in its forecasted annual capital expenditures during 2018-2010, 8 followed by a decline in 2021. IAWC's pattern of capital expenditures has the effect of 9 increasing rates in this proceeding, followed by potential declining capital 10 improvements thereafter. As such, levelizing this pattern of capital expenditures can 11 mitigate the impact on customer rates in this case and defer or delay a need to increase 12 rates to reflect a growing rate base.

Q BASED ON THE COMPANY'S MORE DETAILED OUTLOOK FOR THE CAPITAL
 EXPENDITURES PROPOSED TO BE INCLUDED IN THIS CASE, DO YOU BELIEVE
 THE COMPANY HAS PROVEN THE NEED TO SUBSTANTIALLY INCREASE
 CAPITAL EXPENDITURES DURING THE FORECAST TEST PERIOD IN THIS
 PROCEEDING (2018-2020) AS OUTLINED IN THE COMPANY'S PLANNED
 CAPITAL EXPENDITURES?

19 A No. The Company's planning outlines many critical factors used to determine the 20 amount of its annual capital expenditures. I do not dispute the Company's need to 21 make capital expenditures in order to meet environmental and water quality planning 22 criteria, to modernize its infrastructure or to expand its distribution system to connect 23 more customers to the system. However, the Company's evidence in this case does 24 not justify a need to substantially increase annual capital expenditures in order to accomplish these planning criteria. Importantly, the Company's capital planning criteria
do not explicitly include an assessment of how to manage the pace of its annual capital
expenditures in order to meet its operating and regulatory compliance improvements
to its system, while also managing the impact on customers' rates. Because the
Company has not proven the need to substantially increase its annual capital spends,
I recommend annual capital expenditures be largely tied to historical expenditures
escalated for increased costs of capital improvements.

#### 8 Q HOW DO YOU PROPOSE TO MODIFY THE COMPANY'S CAPITAL 9 EXPENDITURES, AND FORECASTED ADDITION TO ITS TEST YEAR RATE BASE 10 IN THIS PROCEEDING?

11 А I recommend the Company's forecasted capital expenditures be levelized over the 12 period 2018-2022. This can be accomplished by reducing the projected increase in 13 capital expenditures in 2018 and 2019, followed by an increase in capital expenditures in 2020 and 2021. I recommend 2018, 2019 and 2020 capital expenditures be 14 increased by approximately 10% per year. Capital expenditures that are not made in 15 16 2018-2020 can be deferred, subject to reasonableness and prudence review, for 17 subsequent time periods. This methodology will moderate the increase in rate base in 18 this case and eliminate or reduce in part the claimed revenue deficiency.

#### 19 Q DID YOU DEVELOP A SCHEDULE SHOWING THE IMPACT ON THE COMPANY'S

#### 20 COST OF SERVICE THROUGH A MORE MODERATE INCREASE IN CAPITAL 21 EXPENDITURES OVER THE FORECAST PERIOD?

A Yes. This is outlined on my Attachment MPG-2. As shown on that attachment, I
 modified the Company's rate base, and claimed revenue deficiency by reducing the

growth in capital expenditures from 2017 actual through 2020 to a managed increase
in capital spend by 10% per year. Doing this reduces the test period Step 1 and Step 2
rate base by \$24.3 million and \$62.6 million, respectively, reduces the depreciation
expense in those years by \$0.7 million and \$1.6 million, and lowers the claimed revenue
deficiency in those years by \$2.8 million and \$7.1 million, respectively.

I believe this more moderate level of forecasted capital expenditures is prudent
and reasonable, because it mitigates impacts on customers' rates, while providing the
Company the ability to still continue to make very large capital improvements to its
system.

10

#### V. NORMAL SALES ADJUSTMENTS

#### 11 Q PLEASE DESCRIBE IAWC'S NORMAL SALES ADJUSTMENT.

12 IAWC includes a normal sales adjustment as a result of IAWC witness Gregory Roach's А statistical analysis. Mr. Roach examined 10 years of monthly residential sales for his 13 14 analysis. Mr. Roach relies on a series of regression analyses and concludes that 15 residential usage per customer is declining at approximately 2.12%, or 1,050 gallons per customer per year.<sup>8</sup> Mr. Roach applied a similar analysis to the commercial class 16 17 but was unable to develop a statistically significant result. Usage for the commercial 18 class was forecasted using a three year average. IAWC also relied on a three year 19 average for other rate classes. IAWC witness Charles B. Rea relied on Mr. Roach's 20 analysis for the residential class's forecasted usage in his revenue workpapers.

IAWC's normal sales adjustment assumes a decrease in sales of approximately
 814,437,000 gallons in the 12 months ending April 30, 2020 compared to the 12 months

<sup>&</sup>lt;sup>8</sup> Roach Direct at 8.

- 1 ending December 31, 2017. This results in an adjustment of approximately \$3.5 million,
- 2 reflected on IAWC Financial Exhibit REV, Schedule REV2.<sup>9</sup>
- 3
  - Mr. Roach states sales are declining in the residential rate class due to
- 4 increasing adoption of low flow / water efficient plumbing fixtures and appliances and a
- 5 growing water conservation ethic. Mr. Roach believes the declining sales will continue
- 6 into the Pro Forma period. He argues:
- Water efficient fixtures and other drivers such as conservation education 7 8 and federal government-mandated standards will continue to drive 9 further water efficiency, and hence an ongoing decline in usage per customer. The rate of the continued trend depends on the pace of 10 fixture replacement within the IAWC service footprint and is influenced 11 by the broadening acceptance of a conservation ethic through raised 12 13 customer and business awareness programs, government conservation 14 policy, and similar behavior modification related programs.<sup>10</sup>
- 15 He continues:
- 16 The regulations mandating water efficient washing machines and 17 dishwashers are relatively new. Based solely on the life expectancy of 18 appliances, the replacement of existing appliances, and the 19 corresponding reduction in water used, the trend in declining usage 20 would likely continue to occur for at least the next 11 years or more (from 21 compliance date for appliance manufactures to meet the new flow rates) 22 if all appliances were replaced in their average life cycles.<sup>11</sup>
- 23 Based on the above, Mr. Roach argues that declining water use will not reach
- 24 an equilibrium during the Pro Forma period. Table 2, above, outlines IAWC's
- 25 residential class average usage per customer forecast.

<sup>&</sup>lt;sup>9</sup> Approximately 80%, or \$2.9 million, is shown on IAWC Financial Exhibit REV, Schedule REV2, line 6. Approximately 20%, or \$0.6 million, is shown on line 7. Line 7 also includes adjustments for normalized sales due to weather for the other rate classes and a Miscellaneous Revenue Normalization adjustment. My proposal does not impact the other line 7 adjustments.

<sup>&</sup>lt;sup>10</sup> Roach Direct at 17-18

<sup>&</sup>lt;sup>11</sup> Roach Direct at 18-19.

1 Q DO YOU AGREE WITH MR. ROACH'S ANALYSIS?

2 А No. Mr. Roach's adjustment for the Residential class assumes in perpetuity a declining 3 usage per customer based on conservation efforts of the Residential class. It is simply 4 not reasonable to assume that the same trend in reductions in usage can be achieved 5 indefinitely. While I do not disagree with Mr. Roach that declining use has been 6 experienced over the last ten years, what is important is that declining use will start to slow as a percentage of rate reduction as greater numbers of residential customers 7 have installed more water efficient appliances and fixtures, and thus the declining use 8 9 will start to slow over time. For this reason, I believe it is more reasonable to use Mr. 10 Roach's estimate for declining use through 2018, then assume a lower declining growth 11 into the forecast period.

# 12 Q HOW DO YOU PROPOSE TO MODIFY MR. ROACH'S SALES ADJUSTMENT TO 13 REFLECT A DECLINING RESIDENTIAL CUSTOMER USE DUE TO AN INCREASE 14 IN THE OVERALL EFFICIENCY OF RESIDENTIAL WATER CONSUMPTION 15 RESOURCES?

16 А I propose to do this simply by reducing the annual rate of decrease in sales into the 17 forecast period from 2018. I propose to use Mr. Roach's methodology to establish a 18 2018 normal sales level, and then decrease use per customer by approximately 1% 19 per year through the forecast period. One percent represents a reasonable but 20 conservative estimate of declining use, in light of the 2015 through 2017 weather-21 normalized data that shows little, if any, decline as compared to the 2 percent declining 22 use over the 2013 through 2018 timeframe. Using this methodology would increase 23 revenue at current rates by approximately \$1.2 million, but increase variable operation

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and maintenance costs by approximately \$100,000. As such, this adjustment lowers the Company's claimed revenue deficiency by approximately \$1.1 million.

#### 3 Q DID YOU DEVELOP A SCHEDULE SUPPORTING YOUR ESTIMATED

#### 4 ADJUSTMENT TO THE COMPANY'S NORMALIZED SALES ADJUSTMENT?

5 A Yes. This is developed on my Attachment MPG-3.

I developed a normalized sales amount for 2015 and modeled a decline in sales
of 2% for 2016 and 2017. This results in a forecasted average monthly usage of 4,061
gallons/meter in 2018, or a 3.9% reduction compared to the 2015 to 2017 three year
average. I then transitioned to a 1% decrease in sales for 2019 and 2020, due to the
reasons discussed above.

11 Attachment MPG-3, page 2, shows the impact of my proposed normal sales 12 adjustment. Using a more reasonable forecast, IAWC's residential sales in 2020 13 increase by approximately 274 million gallons. I relied on IAWC's workpapers to model 14 the impact of my revised forecast. Attachment MPG-3, page 3, calculates the revenue 15 impact of my adjustment using the same methodology as the Company. IAWC's 16 normal sales adjustment included two parts, an adjustment for Declining Use and an 17 adjustment for the Normalization of Billing Units. IAWC assumes 19% of the residential 18 normal sales adjustment is related to weather. I applied the same 19% to my 19 adjustment in my attachment.

IAWC's sales forecast overstates the claimed revenue deficiency by
 approximately \$1.2 million. The additional revenue is offset by an increase in variable
 O&M costs of approximately \$100,000.

1

#### VI. LIPP DEFERRAL

#### 2 Q DO YOU HAVE ANY CONCERNS REGARDING INDIANA-AMERICAN'S 3 PROPOSAL TO DEFER RECOVERY OF COSTS RELATED TO A PROPOSED 4 LOW-INCOME PROGRAM?

5 A Yes. The Industrial Group objects to the concept that the funds should come from
6 ratepayers at all. If the Company wishes to establish a low income program,
7 shareholders, and not other customers, should be required to subsidize that rate.

8 Further, Indiana-American has essentially proposed to defer for recovery 9 amounts estimated to be "approximately \$200,000 in annual discounts" (Rea Direct at 10 28) for future recovery in the next rate case. The reason the Company is seeking to 11 defer the costs of the low-income subsidized rate is because it has cannot readily 12 identify the actual costs of the program. (Id.). Indiana-American has provided no 13 indication of how long it intends to run the program, meaning if there is a substantial 14 delay between the order in this cause authorizing the creation of a regulatory asset and 15 the next rate case, its size could be much larger than anticipated. If it chooses to 16 approve a deferral, the Commission should not give the Company unfettered 17 assurance of recovery of program costs without some corresponding guarantee that 18 the costs will not exceed a certain total amount so that the reasonableness of the 19 potential expense can evaluated. Also, because the \$200,000 level was based on the 20 Company's proposed revenue requirement, the final amount of the program should be 21 adjusted downward to reflect the NOI approved by the Commission.

Finally, the Company's proposal leaves open the allocation of any costs on the assumption that the IURC will approve their later recovery in a future proceeding at an undefined point in time. The Industrial Group, explicitly reserves the right to challenge any proposed recovery of the costs of the low income program in future proceedings.
1 Q WHAT DO YOU RECOMMEND?

2 А The Commission should not give the Company any assurance of cost recovery from 3 customers. Instead, the Commission should look to recent settlement agreements in 4 which utilities have agreed to fund low income programs through its own funds, or 5 without an increase in the revenue requirement for other customers. If the 6 Commission nevertheless approves deferral of the pilot program cost, that grant of 7 authority to create a regulatory asset should include a not to exceed cap; and the 8 Commission should expressly reserve for a future proceeding its authority to review 9 the reasonableness and prudence of the recovery as well as the question of 10 allocating recovery for such a program.

11

# VII. RATE OF RETURN

# 12 Q PLEASE DESCRIBE THIS SECTION OF YOUR TESTIMONY.

13 А In this section of my testimony, I will explain the analysis I performed to determine the 14 reasonable rate of return in this proceeding and present the results of my analysis. I 15 begin my estimate of a fair return on equity by reviewing the authorized returns 16 approved by the regulatory commissions in various jurisdictions, and the market 17 assessment of the regulated utility industry investment risk, credit standing, and stock 18 price performance. I used this information to get a sense of the market's perception of 19 the risk characteristics of regulated utility investments in general, which is then used to 20 produce a refined estimate of the market's return requirement for assuming investment 21 risk similar to IAWC's utility operations.

# VII.A. Utility Industry Authorized Returns on Equity, Access to Capital, and Credit Strength

Q PLEASE DESCRIBE THE OBSERVABLE EVIDENCE ON TRENDS IN
 AUTHORIZED RETURNS ON EQUITY FOR REGULATED UTILITIES, UTILITIES'
 CREDIT STANDING, AND UTILITIES' ACCESS TO CAPITAL USED TO FUND
 INFRASTRUCTURE INVESTMENT.

7 A Authorized returns on equity for both electric and gas utilities have declined over the

- 8 last ten years, as illustrated in Figure 2 below. Most authorized returns over the last
- 9 several years have stayed around 9.6% for electric and gas, and 9.4% for water.



#### 1 Q HAVE UTILITIES BEEN ABLE TO ACCESS EXTERNAL CAPITAL TO SUPPORT 2 **INFRASTRUCTURE CAPITAL PROGRAMS?**

- 3 Α Yes. Regulated utility companies including electric, gas and water, have accessed 4 significant amounts of capital to support substantial capital investments over at least 5 the last ten years.
- 6 As shown below in Figure 3, capital expenditures for electric and natural gas 7 utilities have increased considerably over the period 2007 into 2018, and the forecasted 8 capital expenditures remain high but are starting to abate.



9

As shown below in Figure 4, water utility capital expenditures have also been 10 significant over this same time period, and are expected to stay at relatively high levels 11 through at least the next three-year period. As shown in Figure 4 below, capital 12 expenditures for water utilities have been relatively high over the period 2007-2014, 13 and have been steadily increasing over the period 2015-2018. These capital

# 1 expenditures are expected to remain at relatively high levels through the forecast

### 2 period.



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This growth in capital expenditures for water utilities has been recognized by

- 4 market participants. Specifically, Regulatory Research Associates ("RRA") stated as
- 5 follows:

The water utility sector has been on the brink of a massive capital spending undertaking for decades. Legislation that enables the acquisition of municipal systems that has recently been enact [sic] in an additional four states, may finally serve as the necessary catalyst to consolidate this fragmented sector and inject needed investment into the country's deteriorating water infrastructure.

- 12 \* \* \*
- 13 While investments associated with environmental standards or the lack 14 thereof, are understood by the public, the much larger need to update 15 aging distribution pipes is less well known. It is these investments that have been continuously deferred, particularly by municipality-owned 16 17 systems, and represent the lion's share of the necessary upgrades. Widely cited estimates of the investment required to upgrade, replace, 18 and expand water and wastewater infrastructure over the next 20 years 19 ranges from \$385 billion to \$1.3 trillion. 20

### 5 Q IS THERE EVIDENCE OF ROBUST VALUATIONS OF REGULATED UTILITY

### 6 EQUITY SECURITIES?

7 Α Yes. Robust valuations are an indication that utilities can sell securities at high prices, 8 which is a strong indication that they can access equity capital under reasonable terms 9 and conditions, and at relatively low cost. As shown on Attachment MPG-5, the 10 historical valuation of gas and water utilities followed by Value Line, based on a price-11 to-earnings ("P/E") ratio, price-to-cash flow ("P/CF") ratio, and market price-to-book 12 value ("M/B") ratio, indicates utility security valuations today are very strong and robust 13 relative to the last 13 years. These strong valuations of utility stocks indicate that 14 utilities have access to equity capital under reasonable terms and at lower costs.

# 15

16

Q

# HOW SHOULD THE COMMISSION USE THIS MARKET INFORMATION IN ASSESSING A FAIR RETURN FOR IAWC?

A Market evidence is quite clear that capital market costs are near historically low levels. Authorized returns on equity have fallen to the mid 9.0% range; utilities continue to have access to large amounts of external capital to fund large capital programs; and utilities' investment grade credit standings are stable and have improved, due in part to supportive regulatory treatment. The Commission should carefully weigh all this important observable market evidence in assessing a fair return on equity for IAWC.

<sup>&</sup>lt;sup>12</sup>S&P Global Market Intelligence: "RRA Water Advisory: Water Utilities 101; Recent Trends & Key Issues," August 7, 2018 at 1.

# 1 VII.B. Regulated Utility Industry Market Outlook

# 2 Q PLEASE DESCRIBE THE CREDIT RATING OUTLOOK FOR REGULATED

### UTILITIES.

3

- 4 A Regulated utilities' credit ratings have improved over the last few years. Credit analysts
- 5 have observed that utilities have strong access to capital at attractive pricing (i.e., low
- 6 capital costs), which has supported very large capital programs.
- 7 Standard & Poor's ("S&P") recently published a report titled "Industry Top
- 8 Trends 2019: North America Regulated Utilities." In that report, S&P noted the
- 9 following:
- 10 - Ratings Outlook: Rating trends across regulated electric, gas, and water utilities in North America remain mostly stable, reflecting generally 11 12 supportive regulatory oversight. However, the industry's financial measures weakened in 2018 as a result of U.S. tax reform, robust 13 14 capital spending, and flat to slightly negative load growth. In general, 15 those utilities most affected by these developments were those who strategically operate with a minimal financial cushion at their current 16 17 rating.
- 18 \* \* \*
- 19 - Industry Trends: The North America utility industry is mostly stable with some downside ratings exposure. Weaker credit measures from tax 20 21 reform will likely persist in 2019, reflecting tax-related rate reductions 22 carryovers. However, we expect that some utilities will offset this 23 reduced revenue with further equity infusions or asset sales. Other 24 developing trends include rising interest rates, inflation, technology, 25 climate change, and regulatory lag, which could further stress the industry's credit quality.<sup>13</sup> 26
- 27 Moody's more recently did place the industry on "Negative" outlook, to reflect
- 28 the uncertainty and "short-term" cash flow impacts primarily as a result of the change
- 29 in federal tax law, but also the large capital program for the industry.<sup>14</sup>

<sup>&</sup>lt;sup>13</sup>S&P Global Ratings: "Industry Top Trends 2019: North America Regulated Utilities," November 8, 2018, at 1 (emphasis added).

<sup>&</sup>lt;sup>14</sup>*Moody's Investors Service*: "Outlook: Regulated utilities - US, 2019 outlook shifts to negative due to weaker cash flows, continued high leverage," June 18, 2018 at 3.

# 1 VII.C. Federal Reserve and Market Capital Costs Outlook

# 2 Q HAVE YOU CONSIDERED CONSENSUS MARKET OUTLOOKS FOR CHANGES IN 3 INTEREST RATES IN FORMING YOUR RECOMMENDED RETURN ON EQUITY IN 4 THIS CASE?

5 А Yes. The outlook for changes in interest rates, inflation, and Gross Domestic Product 6 ("GDP") growth has been impacted by expectations of how the Federal Reserve Bank 7 ("Fed") will change its monetary policy and impact the interest rate markets. Through 8 operation of the Federal Open Market Committee ("FOMC") the Fed has direct 9 influence on short-term interest rates lending between banks which in turn impacts the 10 short-term interest rate market. The market is also aware that the Fed can impact long-11 term interest rates. In 2008, the Fed also implemented a monetary expansion policy 12 designed to support economic growth, control inflation and spur the labor market. Over 13 the period 2008-2014, the Fed implemented a Quantitative Easing ("QE") program 14 which implemented a structure where it purchased long-term Treasury and mortgage-15 backed securities ("MBS") in open market transactions. This practice resulted in the 16 Fed accumulating approximately \$4.5 billion of these securities at the end of the QE 17 program.

Around June 2017, the Fed announced a plan to start to unwind its balance sheet by a structured and managed process of reducing its balance sheet holdings of Treasury and MBS securities. It is important to note that the Fed has explicitly stated that unwinding its balance sheet will be done in a manner to have minimal disruption on the market.

- 1QDO YOU BELIEVE MARKET PARTICIPANTS AND INDEPENDENT CONSENSUS2ECONOMISTS REFLECT ALL RELEVANT FACTORS IN FORMING THEIR3INTEREST RATE PROJECTIONS?
- A Yes. Because the Fed's actions are well followed by market participants and captured
  in independent economists' outlooks for changes in capital market costs, the Fed
  actions along with all other relevant factors are considered by consensus professional
  economists in forming their outlooks for changes in interest rates, and capital market
  conditions.
- 9 As such, this well-informed outlook for changes in interest rates is certainly
  10 relevant in assessing whether or not the current low-cost capital market costs are
  11 expected to prevail or change over time.

# 12 Q WHAT DO INDEPENDENT ECONOMISTS' OUTLOOKS FOR FUTURE INTEREST

# 13 RATES INDICATE?

A That today's low capital costs are expected to prevail over at least the intermediate term. This is illustrated in both short-term changes in interest rates, and long-term changes in interest rates. Further, there is a clear trend in outlining forecasted changes in interest rates over time, to support the notion that capital market participants are becoming more comfortable with today's low capital market cost environment, and expect this low capital market cost environment will prevail over at least the intermediate time period.

For example, relatively short-term projections of changes in capital market costs
 suggest that the market is expecting capital market costs to stay at relatively low levels.
 This is evidenced from projections over the next two years as outlined in Table 7 below.

## TABLE 7

	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Publication Date	<u>2018</u>	<u>2018</u>	<u>2018</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2020</u>
Federal Funds Rate								
Jul-18	1.7	2.0	2.2	2.4	2.6	2.8	2.9	
Aug-18	1.7	2.0	2.2	2.4	2.6	2.8	2.9	
Sep-18	1.7	2.0	2.2	2.4	2.6	2.8	2.9	
Oct-18		1.9	2.2	2.4	2.7	2.8	2.9	2.9
Nov-18		1.9	2.3	2.5	2.7	2.8	3.0	3.0
Dec-18		1.9	2.3	2.5	2.7	2.9	3.0	3.0
<u>T-Bond, 30 yr.</u>								
Jul-18	3.1	3.3	3.4	3.5	3.6	3.7	3.8	
Aug-18	3.1	3.2	3.3	3.5	3.6	3.7	3.7	
Sep-18	3.1	3.1	3.3	3.4	3.5	3.6	3.7	
Oct-18		3.1	3.3	3.4	3.5	3.6	3.7	3.6
Nov-18		3.1	3.3	3.5	3.6	3.6	3.7	3.7
Dec-18		3.1	3.4	3.5	3.6	3.6	3.7	3.7
GDP Price Index								
Jul-18	2.1	2.2	2.2	2.2	2.2	2.3	2.2	
Aug-18	3.0	2.3	2.2	2.3	2.2	2.3	2.2	
Sep-18	3.0	2.2	2.3	2.3	2.3	2.2	2.2	
Oct-18		2.2	2.3	2.3	2.3	2.2	2.2	2.2
Nov-18		1.7	2.4	2.3	2.3	2.2	2.3	2.2
Dec-18		1.7	2.3	2.2	2.3	2.2	2.2	2.2

As shown in Table 7 above, projected Treasury bond yields are not expected to increase significantly over the next two years from currently prevailing Treasury bond rates. This is despite the fact that there is a relatively high outlook for increases in short-term interest rates, more specifically the Federal Funds Rate. GDP growth is also expected to stay relatively stable over the forecast period.

Importantly, one should recognize that an increase in the Federal Funds Rate
does not automatically result in an increase in long-term interest rates. Specifically, I

1 note that none of the nine increases in the Federal Funds Rate (most recent on 2 December 19, 2018) experienced over the last few years caused comparable changes 3 in long-term interest rates. This is illustrated on my Attachment MPG-6. As shown on 4 that exhibit, the actions taken by the FOMC to increase the Federal Funds Rate have 5 simply flattened the yield curve, and have not resulted in a corresponding increase in 6 long-term interest rates. This is significant because the cost of common equity is impacted by long-term interest rates, not short-term interest rates. As a result, the 7 8 recent increases in the Federal Funds Rate, and the expectation of continued increases 9 in the Federal Funds Rate, have not, and are not expected to, significantly impact long-10 term interest rates.

11 These same outlooks are captured in longer-term projections by consensus 12 economists as outlined in Table 8 below.

## TABLE 8

escription	Quarterly <u>Average</u>	2-Year <u>Projected</u>	5- to 10-Year Projected
<u>2014</u>			
Q1	3.79%	4.40%	5.0% - 5.5%
Q2	3.69%	4.50%	
Q3	3.44%	4.40%	5.3% - 5.6%
Q4	3.26%	4.30%	
<u>2015</u>			
Q1	2.97%	4.00%	4.9% - 5.1%
Q2	2.55%	3.70%	
Q3	2.83%	4.00%	4.8% - 5.0%
Q4	2.84%	3.90%	
<u>2016</u>			
Q1	2.96%	3.80%	4.5% - 4.8%
Q2	2.72%	3.60%	
Q3	2.64%	3.40%	4.3% - 4.6%
Q4	2.29%	3.10%	
<u>2017</u>			
Q1	2.82%	3.70%	4.2% - 4.5%
Q2	3.05%	3.80%	
Q3	2.91%	3.70%	4.3% - 4.5%
Q4	2.82%	3.60%	
<u>2018</u>			
Q1	2.82%	3.60%	4.1% - 4.3%
Q2	3.02%	3.80%	
Q3	3.09%	3.80%	4.2% - 4.4%
Q4	3.07%	3.70%	3.9% - 4.2%
ources:			

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As shown above in Table 8, independent economists' projections of interest rates over the next five to ten years are at relatively low levels at the end of 2018, and

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do not anticipate significant increases in long-term 30-year Treasury bond yields out over this time period relative to the current bond yield. Table 8 also illustrates that this current outlook is significantly different than the outlook for substantial increases in interest rates that prevailed for most of the period over the last five years, but particularly during the period 2015 and earlier. This is clear evidence that market participants are comfortable with today's low capital market costs and expect that these low capital costs will prevail over at least the intermediate period.

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# VII.D. IAWC Investment Risk

# 9 Q PLEASE DESCRIBE THE INVESTMENT RISK CHARACTERISTICS OF IAWC.

A IAWC's investment risk characteristics are best described by its source of capital, and
its ability to recover its cost of service on its regulated operations in Indiana. In terms
of its sources and cost of capital, IAWC receives a majority of its capital from its parent
company, AWK, and its financing affiliate, American Water Capital Corp. ("AWCC").
Indeed, the Company's filing in this case illustrates that AWCC issues a majority of its
bonds that are used to support retail investments by IAWC. Its bond issuances in this
filing are outlined in Table 9 below.

TABLE 9 <u>IAWC Embedded Debt</u> (Millions)									
<u>Line</u>	Description	Em	bedded <u>Debt</u> (1)	<u>Weight</u> (2)					
1	IAWC	\$	52.4	12%					
2	AWCC	\$	377.4	87%					
3	Tax-Exempt	\$	4.6	<u>1%</u>					
4	Total	\$	434.5	100%					
	Source: IAW0	C Fir edul	nancial Ex le CC1, W	khibit CC, /orkpaper 5.					

As shown in Table 9 above, over 87% of IAWC's current embedded debt was issued by AWCC and allocated to IAWC. Importantly, the corporate bonds on IAWC's cost of service are largely legacy bonds, and as these bonds mature they are replaced by bonds that are issued by AWCC.<sup>15</sup>

# 6 Q HOW DOES IAWC PRODUCE EQUITY CAPITAL TO SUPPORT ITS GROWING

# 7 INVESTMENT?

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- A IAWC receives equity from either retained earnings or equity infusions from its parent
   company, AWK. The majority of the equity capital, however, is received from equity
   infusions from its parent company. As shown below in Table 10, IAWC's growth in its
- 11 equity capital was predominantly produced from equity infusions from AWK.

<sup>&</sup>lt;sup>15</sup>In a refinancing order in Cause No. 44682, dated May 11, 2016, IAWC advised the Commission that it entered into a financial service agreement with AWCC. Under the financing order, the Company sought to issue \$200 million for funding maturities and for new bond issues. (Cause No. 44682, pages 1 and 3).

	TABLE 10 <u>IAWC Equity Capital</u> (Thousands)										
<u>Line</u>	<b>Description</b>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>					
1 2 3 4	Common Stock Paid-in Capital Retained Earnings Total Equity	\$ 92,761 \$120,179 <u>\$123,759</u> \$336,699	\$ 92,761 \$120,227 <u>\$133,072</u> \$346,060	\$ 92,761 \$120,275 <u>\$142,445</u> \$355,481	\$ 92,761 <b>\$130,359</b> <u>\$146,655</u> \$369,775	\$92,761 <b>\$192,439</b> <u>\$160,508</u> \$445,707					
5 6 7	Net Income Dividend <b>Payout</b>	\$29 <u>\$21</u> <b>71%</b>	\$33 <u>\$24</u> 72%	\$35 <u>\$17</u> <b>49%</b>	\$33 <u>\$37</u> 11 <b>3%</b>	\$40 <u>\$26</u> <b>65%</b>					
8	5-yr Payout Ratio	<b>73%</b> to IAIG 02-	022 and IAI	G 02-025, At	tachment M	PG-26.					

2 As shown in Table 10 above, through the year-end 2017, IAWC's equity capital 3 increased by approximately \$109 million (\$445.7 less \$336.7 million). This increase in equity capital was accomplished by approximately a \$36.8 million increase in retained 4 earnings and a \$72.2 million increase in paid-in capital. The Company did not sell new 5 6 common stock during this period. In total, over the 5-year period from 2013-2017, 7 about two-thirds of IAWC's increase in equity capital was derived from equity infusions 8 by AWK. The table also shows that over the 5-year period from 2013-2017, IAWC paid 9 AWK 73% of its earnings as dividends.

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10 This table illustrates that two-thirds of IAWC's increase was equity capital 11 derived from equity infusions from AWK. Importantly, while AWK may be making equity 12 contributions to IAWC, it is not clear whether or not those equity contributions are 13 funded by general cash flows of AWK, or issuances of equity or debt securities.

## 1 Q DO YOU HAVE ANY INFORMATION ON THE CREDIT STANDING AND RELATIVE

### 2 INVESTMENT RISK OF AWK AND AWCC?

- 3 A Yes. AWK has a public bond rating, and reports from credit rating agencies illustrate
- 4 that it has a very strong credit standing, largely attributable to its financial strength, and
- 5 its stable and predictable cash flows and earnings produced predominantly from low-
- 6 risk regulated water utility affiliates, like IAWC.
- 7 Specifically, S&P made the following comments concerning AWK's financial
- 8 and business risk:
- 9 Rationale
- 10The ratings affirmation reflects our expectations that the company's11strong commitment to maintain its low-risk, regulated operations12between 90%-95% of AWK's consolidated EBITDA offsets marginally13weaker financial measures.
- 14 \* \* \*
- 15We assess AWK's financial risk profile using our most relaxed financial16ratio benchmarks compared to those used for a typical corporate issuer,17reflecting the company's low-risk, regulated water distribution18operations and its overall effective management of regulatory risk.

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### 20 Outlook

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The stable outlook on AWK and subsidiaries reflects our expectation that the company will continue to focus its strategic growth on its regulated water distribution operations, maintaining the regulated businesses between 90%-95% of consolidated EBITDA. In addition, we expect the company will continue to manage regulatory risk effectively, maintaining financial measures at the lower end of its financial risk profile category. Under our base-case scenario forecast, we expect annual adjusted FFO to debt averaging around 13%-14%.

29 \* \* \*

# 30 Group Influence

31We assess AWK as the parent of a group that includes New Jersey32American Water Co., Pennsylvania American Water Co., and American33Water Capital Corp. (AWCC). As a result, AWK's stand-alone credit

- 1 profile of 'a' becomes the group credit profile, leading to our 'A' issuer 2 credit rating on AWK.
  - \* \*

### 4 Capital structure

- 5 AWK's capital structure consists of about \$6.8 billion of debt, out of 6 which about \$5.4 billion is issued at AWCC and about \$1.3 billion is 7 issued at operating subsidiaries.<sup>16</sup>
- 8 Similarly, Moody's 2018 report states:

### 9 Summary

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- 10American Water Work Company, Inc.'s (American Water, or AWK, A311negative) credit profile is supported by 1) its market position as the12largest US investor-owned water utility holding company, 2) strong13regulatory and operational diversity across 16 states, 3) improving14regulatory support as more states adopt cost recovery trackers.
- 15 The company's credit is constrained by 1) increasing leverage due to 16 financial policies that target over \$8.0 billion of capex, dividend growth 17 approaching 10% and no planned equity issuances over the next five 18 years, 2) a new tax law that will result in cash flow leakage and 3) 19 subordinated holding company debt that is about 23% of total 20 consolidated debt.<sup>17</sup>
- 21 Importantly, Moody's also observed that the authorized common equity ratio for
- AWK's regulated subsidiaries is around 50%, and it commented that AWCC's senior
- 23 unsecured rating is equalized with AWK's.<sup>18</sup>
- 24 Considering Moody's and *Value* Line reports, I believe it is significant that AWK
- 25 is not planning to increase its common equity capital out over the forecast period. This
- is in stark contrast to IAWC's proposal to substantially increase its common equity of

<sup>18</sup>*Id*. at 6.

<sup>&</sup>lt;sup>16</sup>Standard & Poor's RatingsDirect: "Research Update: American Water Works Co. Inc. And Subsidiaries 'A' Ratings Affirmed; Outlooks Remain Stable," June 11, 2018 at 2-3 and 5, emphasis added.

<sup>&</sup>lt;sup>17</sup>*Moody's Investors Service*: "Credit Opinion: American Water Works Company, Inc.; Update following negative outlook," February 16, 2018, provided by IAWC as Crown Point 04-002\_Attachment 05 CONFIDENTIAL, page 1 of 9.

1 total capital used for ratemaking purposes. Clearly, this increased capital of IAWC is 2 not funded by increased equity capital at AWK.

#### Q PLEASE DESCRIBE AWK'S CAPITAL STRUCTURE OVER THE LAST FIVE 3

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# YEARS AND THE PROJECTED CAPITAL STRUCTURE MADE BY VALUE LINE

# FOR THIS COMPANY.

6 А AWK's stable and strong investment grade bond rating was achieved based on a 7 relatively stable mix of debt and equity over the last five years. Further, Value Line's 8 projections indicate that its level of debt and equity percentage of total investor capital 9 will stay relatively constant over the next three to five years. These historical and 10 projected capital structure weights are summarized in Table 11 below.

$\left[ \right]$	TABLE 11										
	American Water Works Company (AWK) <u>Capital Structure</u>										
							Value Line				
Line	<u>Description</u>	2013	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	- 3-5 Yr Projecion*				
1 2 3	Long-Term Debt Common Equity <b>Total</b>	52.51% <u>47.49%</u> 100.00%	52.75% <u>47.25%</u> 100.00%	53.95% <u>46.05%</u> 100.00%	54.79% <u>45.21%</u> 100.00%	55.85% <u>44.15%</u> 100.00%	57.50% <u>42.50%</u> 100.00%				
	Sources: S&P Market Intellige * Value Line Investn	ence, downloade nent Survey, Oc	ed on Novembo stober 12, 2018	er 21, 2018. 3.							

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As shown in Table 11 above, AWK's actual historical capital structure, and a 12 capital structure projected by Value Line, maintains a relatively stable common equity 13 ratio in the range of around 42% to 47%. These equity ratios are significantly lower 14 than the material increase in equity ratios proposed by IAWC for purposes of setting 15 rates in this rate case.

# Q HAS IAWC'S CAPITAL STRUCTURE FROM PRIOR CASES REASONABLY ALIGNED WITH THE RATEMAKING CAPITAL STRUCTURE APPROVED FOR SETTING RATES FOR AWK'S OTHER WATER UTILITY SUBSIDIARIES?

A Yes. As shown below in Table 12, most of AWK's operating utility subsidiaries' rates
are set based on common equity ratios of 52% or lower. There are a few abnormally
high equity ratios (for example, those in New Jersey and California) but those equity
thick capital structures align with lower authorized returns on equity than most other
AWK utility affiliates. Note, however, that even some affiliates such as in Virginia and
New York, with comparatively low equity levels, also show lower authorized returns on
equity.

	TABLE 12AWK Utility AffiliatesRegulatory AuthorizedROEs and Equity Ratios									
<u>Line</u>	<u>Description</u>	Return <u>on Equity</u> (1)	Common Equity <u>Ratio</u> (2)	Order <u>Date</u> (3)						
1	CA-American Water	9.20%	55.39%	1/1/2018						
2	IL-American Water	9.79%	49.80%	1/1/2017						
3	IN-American Water	9.75%	49.85%*	1/29/2015						
4	KY-American Water	9.70%	47.36%	8/28/2016						
5	MO-American Water	10.00%	52.80%	5/28/2018						
6	NJ-American Water	9.60%	54.00%	10/29/2018						
7	NY-American Water	9.10%	46.00%	6/1/2017						
8	PA-American Water	10.00%	53.75%	1/1/2018						
9	VA-American Water	9.25%	46.09%	5/24/2017						
10	WV-American Water	9.75%	45.84%	2/25/2016						
	<ul> <li>WV-American Water 9.75% 45.84% 2/25/2016</li> <li>Source: American Water Company, Q3, 2018</li> <li>Earnings Conference Call.</li> <li>* Reflects only investor-supplied capital.</li> </ul>									

As shown in the table above, IAWC's historic practice of setting rates with an investor equity ratio of around 50% is in line with other water utility affiliates of AWK, and it is in line with AWK's constant level of common equity ratio historically, and projected by *Value Line*.

# 5 VII.E. IAWC's Proposed Capital Structure

# 6 Q WHAT IS IAWC'S PROPOSED CAPITAL STRUCTURE?

A IAWC's proposed forecasted capital structure is shown below in Table 13. IAWC
 witness Scott Rungren forecasts an IAWC capital structure for the pro forma periods

9 ending April 30, 2019 (Step 1) and April 30, 2020 (Step 2).

	IAWC	Proposed Ca	apital Structur	<u>e</u>	
		2019 (S	step 1)	2020 (S	tep 2)
ine	Description	Regulatory <u>Weight</u>	Investors Weight	Regulatory <u>Weight</u>	Investors <u>Weight</u>
		(1)	(2)	(3)	(4)
1	Long-Term Debt	34.98%	43.56%	35.60%	43.64%
2	Common Equity	45.32%	56.44%	45.98%	56.36%
3	ADIT	19.73%		18.45%	
4	AD for Muncie Sewer	0.01%		0.01%	
5	Post Retirement Benefits	0.21%		0.19%	
6	ADITC - Post 1970	0.03%		0.03%	
7	Prepaid Pension	<u>-0.28%</u>		<u>-0.26%</u>	
8	Total	100.00%	100.00%	100.00%	100.00%

# 10 Q IS IAWC'S PROPOSED CAPITAL STRUCTURE REASONABLE?

11 A No. Mr. Rungren's proposed capital structure contains an unreasonably large amount

12 of common equity. Mr. Rungren's proposed capital structure contains far more equity

than IAWC has been awarded in the last several rate cases. Mr. Rungren opines that
an increased common equity ratio is needed to support IAWC's access to capital,
however he provides little to no evidence in support of this position.<sup>19</sup> Indeed,
observable and verifiable evidence illustrates that a ratemaking capital structure such
as IAWC's currently approved 50/50 mix has been more than adequate to provide
access to significant amounts of capital under reasonable terms and conditions, and to
support necessary infrastructure investments in Indiana.

As such, the Company's proposal to substantially increase IAWC's common equity ratio is not just and reasonable because it unnecessarily increases IAWC's cost of capital, revenue requirement and retail rates without being needed to support reasonable access to capital and the continued provision of safe and reliable service. Hence, this proposed capital structure should be rejected because it results in rates that are in excess of the rates needed to maintain IAWC's financial integrity and credit standing.

# 15 Q PLEASE DESCRIBE IAWC'S ACTUAL CAPITAL STRUCTURE MIX OVER THE

- 16 LAST FIVE YEARS.
- 17 A IAWC's historical common equity capital structure is shown in Table 14 below.

<sup>&</sup>lt;sup>19</sup>IAWC response to IAIG-2-035, Attachment MPG-27.

ΤА	BL	E	14	

# Indiana-American Water Company Capital Structure

<u>Line</u>	<b>Description</b>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
1 2 3	Long-Term Debt Common Equity <b>Total</b> Source:	50.59% <u>49.41%</u> 100.00%	48.20% <u>51.80%</u> 100.00%	49.84% <u>50.16%</u> 100.00%	48.78% <u>51.22%</u> 100.00%	44.17% <u>55.83%</u> 100.00%
	Response to IAIG 02	2-025, Attachme	ent MPG-27.			

As shown on Table 14 above, until calendar year 2017 IAWC consistently maintained an investor capital structure was balanced at approximately 50% equity and 50% debt. In 2017, IAWC again paid out nearly all of its earnings up to AWK, and AWK then made an equity infusion in IAWC that substantially increased its common equity ratio.

6 This sudden buildup in IAWC's common equity ratio is in stark contrast to the 7 relatively stable common equity ratio of investor capital for AWK, IAWC leading up to 8 calendar year 2017, the relatively consistent capital structures of AWK's other 9 operating water utility affiliates around the country, and the water utility industry in 10 general.

# 11 Q DID IAWC OUTLINE ITS CAPITAL PLANS AT THE IURC IN ITS LAST FINANCING

12 **ORDER?** 

A Yes. In IAWC's financing order approved in Cause No. 44682, on May 11, 2016, IAWC
sought authority to issue \$200 million of new debt and \$82 million in common equity
capital. The \$200 million of debt was going to be used in part to refinance a little more
than \$50 million of existing debt, which would leave \$143 million of debt to finance the

1 Company's operations. The combination of this debt and equity issuance is expected 2 to leave the Company's long-term debt ratio at around 52.6%.<sup>20</sup> I would also note that 3 the Commission was aware that IAWC may increase its common equity ratio by using 4 equity infusions from its parent company as opposed to selling additional stock to its 5 parent company. Equity issuances from its parent company did not require IURC 6 approval. While IURC recognized this, it also clearly stated that it would exercise its 7 authority to ensure that a capital structure used to set rates would be reasonable, and 8 it would make adjustments to IAWC's capital structure if necessary. Specifically, the

9 IURC stated as follows:

10 We note that the evidence in this Cause demonstrates that Indiana-11 American intends to make a future equity infusion without issuing any 12 securities or evidence of indebtedness and that such action did not 13 require Commission approval. The OUCC responded by noting that 14 whether capital is infused through the issuance of securities or a simple 15 equity infusion, the effect on the utility's capital structure is the same. We find the equity infusion identified in the evidence of Indiana-16 17 American and the OUCC is not a sale or issuance of stock, common 18 stock, or certificates of stock as described in Ind. Code § 8-1-2-76 et seq. Accordingly. Commission approval is not required for Indiana-19 20 American to make equity infusions relating to the requested financing 21 authority in this Cause. We also remind the parties that the Commission 22 has extensive investigative powers over matters related to a public 23 utility, including the ability to initiate an investigation and order steps be taken to adjust a public utility's capital structure if necessary.<sup>21</sup> 24

- 25 Because IAWC has increased its common equity ratio largely through equity 26 infusions from its parent company and those infusions were not balanced with an
- 27 increase in equity ratio at its parent company level, the Commission should exercise its
- 28 discretion and find that IAWC's substantial increase in its common equity ratio is not
- 29 reasonable for ratemaking purposes. I believe this is wholly consistent with the IURC's
- 30 direction to IAWC in its last financing order.
  - <sup>20</sup>*Id*. at 5.

<sup>&</sup>lt;sup>21</sup>*Id.* at 8, emphasis added.

# 1 Q WHY IS A CAPITAL STRUCTURE THAT IS TOO HEAVILY WEIGHTED WITH 2 COMMON EQUITY CAPITAL NOT REASONABLE?

A capital structure should have a reasonable balance of debt and equity so as to
manage the overall cost of capital, while maintaining financial integrity and credit
standing but at the most reasonable cost to customers.

A capital structure with too much common equity, such as proposed by IAWC
in this case, unjustifiably inflates the utility's cost of service, and retail rates by, all other
things being equal, inflating the overall authorized rate of return on the utility's used and
useful plant in service.

For example, the revenue requirement cost of an authorized return on equity of 9% is approximately 12.2% with income taxes included. In comparison, the marginal cost of debt for IAWC is around 4.5%. Hence, the revenue requirement cost of equity capital is almost 2.5x more expensive than the marginal cost of debt capital which simply means in an equity rich capital structure ratepayers are paying more in the overall revenue requirement than is necessary for the utility to secure the needed debt to finance its investments.

17 To address this issue, I recommend a reasonable capital structure which 18 contains a balanced amount of debt and equity be used to set rates.

# 19 Q PLEASE SUMMARIZE THE SPECIFIC REASONS WHY YOU BELIEVE IAWC'S

# 20 PROPOSED CAPITAL STRUCTURE IS TOO EXPENSIVE AND UNREASONABLE

- 21 BECAUSE IT CONTAINS TOO MUCH COMMON EQUITY.
- A I conclude that IAWC's capital structure contains too much common equity by a reviewof the following:
- A comparison to the capital structure used to set rates for IAWC in its last two rate cases.

- A review of the credit rating trend for AWK and AWCC over IAWC's two last rate
   case cycles shows a stable mix of common equity within AWK. IAWC's increased
   equity ratio is an outlier within AWK.
- 3. The capital structure mix for AWK has not changed over this time period, and it is
  the primary capital structure considered by credit rating agencies in assessing
  credit and financial risk of the entity that issues market debt that is used to fund
  IAWC's infrastructure investments.
- 8 All of these points illustrate that a change in capital structure for IAWC is not
- 9 justified, and will unnecessarily increase IAWC's cost of service and retail rates in this
- 10 proceeding.

# 11 Q PLEASE DESCRIBE THE CAPITAL STRUCTURES APPROVED BY THE

# 12 COMMISSION IN IAWC'S LAST TWO RATE CASES.

- 13 A IAWC's approved ratemaking capital structures in its last two rate cases are shown
- 14 below in Table 15.

TABLE 15								
Approved Capital Structure (Investor Capital)								
	Cause No. <u>44022</u>	Cause No. <u>44450</u>						
Description								
Long-Term Debt	51.04%	50.15%						
Common Equity	48.96%	<u>49.85%</u>						
Total	100.00%	100.00%						
Sources: Cause No. 44 41; Cause No. 2015 at 15.	022, Order, Jun . 44450, Order,	e 06, 2012 at January 28,						

15 As shown in Table 15 above, in the last two rate cases, IAWC had a capital

16 structure with a common equity ratio less than 50%.

AWK's bond rating has improved from BBB+/Baa2 in Cause No. 44022 to A/A3
 today. AWK's improved bond rating has been supported at a relatively stable capital
 structure with less than 50% common equity over the last five years. This capital
 structure is projected to remain at relatively low equity levels below 50% over the next
 three- to five-year period. Credit rating agencies have not noted a concern with AWK's
 capital structure mix.

7 This is observable evidence that a capital structure at AWK and at IAWC with a 8 mix of approximately 50% debt and 50% equity is adequate to maintain strong and 9 improving credit standing and allows AWK and IAWC to attract significant amounts of 10 capital to support large capital programs under reasonable terms, conditions and 11 prices.

# 12 Q HAS THE CAPITAL STRUCTURE MIX OF AWK AND IAWC HISTORICALLY 13 SUPPORTED SIGNIFICANT CAPITAL INVESTMENTS BY IAWC?

A Yes. This is illustrated by a significant growth in rate base at IAWC. During this time
period, IAWC's rate base has grown from \$730,789,409 in Cause No. 44022 (2012),<sup>22</sup>
to \$813,051,628 in Cause No. 44450 (2015).<sup>23</sup> In this case, IAWC's Step 1 rate base
has increased to \$1.065 billion (Schedule REVREQ1), which is about a 46% increase
of the 2012 rate base.

<sup>&</sup>lt;sup>22</sup>Final Order at 7. <sup>23</sup>Final Order at 14.

# 1QWHY DO YOU BELIEVE IAWC'S PROPOSED CAPITAL STRUCTURE INCLUDES2AN EXCESSIVE COMMON EQUITY RATIO RELATIVE TO ACCEPTED3REGULATED UTILITY INDUSTRY PRACTICE?

A IAWC's proposed capital structure has a far greater common equity ratio in comparison
to authorized rate-setting capital structures allowed for natural gas, electric and other
water utilities, including other AWK affiliates. These industry outlooks for capital
structures used to set rates for electric, gas and water utilities are outlined in Table 16
below.

	TABLE 16									
	Trends in State Authorized Common Equity Ratios									
(Industry)										
	Natural Gas <sup>1</sup> Electric <sup>1</sup> Water <sup>2</sup>									
<u>Line</u>	<u>Year</u>	Average	Median	Average	Median	Average	<u>Median</u>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)			
1	2010	49.25%	49.90%	49.49%	49.79%	N/A	N/A			
2	2011	52.49%	52.45%	49.09%	49.10%	N/A	N/A			
3	2012	51.13%	51.47%	51.45%	52.00%	N/A	N/A			
4	2013	51.16%	50.43%	50.12%	51.03%	N/A	N/A			
5	2014	51.90%	51.99%	50.28%	50.00%	49.69%	52.00%			
6	2015	49.79%	50.33%	50.24%	50.48%	50.41%	51.36%			
7	2016	51.85%	51.35%	49.70%	49.99%	50.52%	50.54%			
8	2017	51.13%	51.76%	50.02%	49.85%	47.34%	46.05%			
10	Min	49.25%	49.90%	49.09%	49.10%	47.34%	46.05%			
11	Max	52.49%	52.45%	51.45%	52.00%	50.52%	52.00%			
12	Average	51.09%	51.21%	50.05%	50.28%	49.49%	49.99%			
13	Median	51.14%	51.41%	50.07%	50.00%	50.05%	50.95%			
14	Indiana-An	nerican Water	Company	56.35% <sup>3</sup>						
-	Source and N	otos:								
•		UICS.	nonoo dowala	adad 1/2/2010	2					
					>					
	- Excludes	Arkansas, Flo	rida, Indiana a	and Michigan						
	<sup>2</sup> S&P Global	Market Intellig	gence, RRA V	Vater Advisory	,					
	Major Rate	Case Decision	ns, January –	June 2018, Ju	ly 27, 2018, p	. 5 & 6.				
	<sup>3</sup> Bulkley Dire	ect at 40.								
	•									

1 The industry median and average common equity ratios for the electric and gas 2 utility industry over this same time period are 50% and 51%, respectively. Similarly, 3 the average and median common equity ratios for water utilities are around 50%. 4 Again, the majority of regulatory approved capital structures include a common equity 5 ratio of approximately 50% to 52% common equity.

#### **VII.F.** Gorman Proposed Capital Structure 6

#### WHAT IS YOUR PROPOSED CAPITAL STRUCTURE TO BE USED FOR Q 7

#### 8 **RATEMAKING PURPOSES IN THIS CASE?**

	Gorma	TABLE n Proposed (	17 Capital Struct	<u>ure</u>				
2019 (Step 1) 2020 (Step 2)								
<u>Line</u>	Description	Regulatory <u>Weight</u> (1)	Investors <u>Weight</u> (2)	Regulatory <u>Weight</u> (3)	Investors <u>Weight</u> (4)			
1	Long-Term Debt	40.12%	50.00%	40.76%	50.00%			
2	Common Equity	40.12%	50.00%	40.76%	50.00%			
3	ADIT	19.71%		18.44%				
4	AD for Muncie Sewer	0.01%		0.01%				
5	Post Retirement Benefits	0.00%		0.00%				
6	ADITC - Post 1970	0.03%		0.03%				
7	Prepaid Pension	<u>0.00%</u>		<u>0.00%</u>				
8	Total	100.00%	100.00%	100.00%	100.00%			

#### N Л. . in Table 17 bal ٨ 9

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-	_

I conclude this is a reasonable capital structure. I reach this conclusion because

11 the common equity ratio in this proposed capital structure is reasonably comparable to

12 that used to set rates for IAWC in its last two rate cases.

1 The capital structure above is reasonable for rate-setting purposes because it 2 reasonably reflects AWK's and AWCC's capital structure which underlies the 3 consolidated bond rating and access to debt capital for IAWC by its parent company, 4 reasonably reflects IAWC's historical capital structure which has proven to be adequate 5 to support access to significant amounts of capital under reasonable terms and prices. 6 and accomplishes these credit standing and financial integrity maintenance objectives 7 at a lower cost to retail customers than compared to the Company's proposed capital 8 For these reasons, I believe my proposed capital structure is more structure. 9 reasonable for setting rates than the Company's capital structure and should be 10 adopted.

# 11 Q WILL YOUR PROPOSED CAPITAL STRUCTURE ALLOW IAWC TO MAINTAIN ITS 12 FINANCIAL INTEGRITY?

A Yes. My capital structure contains less common equity and more long-term debt capital
 than IAWC's proposed capital structure. As discussed later in my testimony, my
 proposed capital structure will support the Company's financial integrity for regulated
 utility operations, its current strong investment grade bond rating and will mitigate cost
 to customers.

# 18 VII.G. Embedded Cost of Debt

# 19 Q WHAT IS THE COMPANY'S EMBEDDED COST OF DEBT?

A The Company is proposing an embedded cost of long-term debt of 5.26% for 2019 and
5.19% for 2020 as discussed Mr. Rungren and developed on IAWC Financial Exhibit
CC, Schedule CC1, Workpaper 2.

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# VIII. RETURN ON EQUITY

# 2 Q PLEASE DESCRIBE WHAT IS MEANT BY A "UTILITY'S COST OF COMMON 3 EQUITY."

A A utility's cost of common equity is the expected return that investors require on an
investment in the utility. Investors expect to earn their required return from receiving
dividends and through stock price appreciation.

# Q PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A REGULATED 8 UTILITY'S COST OF COMMON EQUITY.

9 A In general, determining a fair cost of common equity for a regulated utility has been
10 framed by two hallmark decisions of the U.S. Supreme Court: <u>Bluefield Water Works</u>
11 <u>& Improvement Co. v. Pub. Serv. Comm'n of W. Va.</u>, 262 U.S. 679 (1923) and <u>Fed.</u>
12 <u>Power Comm'n v. Hope Natural Gas Co.</u>, 320 U.S. 591 (1944).

These decisions identify the general financial and economic standards to be considered in establishing the cost of common equity for a public utility. Those general standards provide that the authorized return should: (1) be sufficient to maintain financial integrity; (2) attract capital under reasonable terms; and (3) be commensurate with returns investors could earn by investing in other enterprises of comparable risk.

# 18 Q PLEASE DESCRIBE THE METHODS YOU HAVE USED TO ESTIMATE IAWC'S

19

# COST OF COMMON EQUITY.

A I have used several models based on financial theory to estimate IAWC's cost of
 common equity. These models are: (1) a constant growth Discounted Cash Flow
 ("DCF") model using consensus analysts' growth rate projections; (2) a constant growth
 DCF using sustainable growth rate estimates; (3) a multi-stage growth DCF model;

(4) a Risk Premium model; and (5) a Capital Asset Pricing Model ("CAPM"). I have
 applied these models to a group of publicly traded utilities with investment risk similar
 to IAWC.

# 4 VIII.A. Risk Proxy Group

# 5 Q PLEASE DESCRIBE HOW YOU IDENTIFIED A PROXY UTILITY GROUP THAT 6 COULD BE USED TO ESTIMATE IAWC'S CURRENT MARKET COST OF EQUITY.

7 A I relied on a water utility proxy group that I determined to be comparable in investment
8 risk to IAWC. My recommended water utility proxy group is the same utility proxy group
9 used by IAWC witness Mrs. Bulkley to estimate IAWC's return on equity with two
10 exceptions. I excluded Connecticut Water Service Inc. and SJW because as Ms.
11 Bulkley pointed out these companies announced their merger on March 15, 2018.

In addition, I also developed a gas utility proxy group comparable to IAWC. My
 gas utility proxy group was developed by starting with the gas companies followed by
 *Value Line.* In developing my gas proxy group I excluded South Jersey Industries, Inc.
 because on October 16, 2017, it announced the acquisition of Elizabethtown Gas and
 Elkton Gas and Chesapeake Utilities Corporation because it is not rated by S&P or
 Moody's.

18

# 19 Q WHY DID YOU RELY ON GAS UTILITIES AS A PROXY GROUP IN ESTIMATING 20 IAWC'S COST OF EQUITY?

A I relied on a gas utility proxy group along with the water utility proxy group to better measure IAWC's cost of equity. This was necessary for several reasons. First, gas utilities' securities are more widely followed than are water utility stocks, and therefore the estimated cost of equity from a gas utility proxy group provides a more robust estimate of IAWC's current market cost of equity. Second, the asset capitalization and
 operations of gas and water utilities are very similar. Both utility groups' operations are
 dependent on large main investment and operations, infrastructure replacement and
 upgrades, and reliability and safety compliance with state, local and federal regulations.
 The two groups together produce a better investment risk proxy than only a water utility
 proxy group.

For these reasons, I believe these two proxy groups are reasonable to estimate
the investment risk of IAWC.

### 9 Q WHY IS IT APPROPRIATE TO EXCLUDE COMPANIES WHICH ARE INVOLVED IN

# 10 MERGER AND ACQUISITION ("M&A") ACTIVITY FROM THE PROXY GROUPS?

A M&A activity can distort the market factors used in DCF and risk premium studies. M&A activity can have impacts on stock prices, growth outlooks, and relative volatility in historical stock prices if the market was anticipating or expecting the M&A activity prior to it actually being announced. This distortion in the market data thus impacts the reliability of the DCF and risk premium estimates for a company involved in M&A.

16 Moreover, companies generally enter into M&A in order to produce greater 17 shareholder value by combining companies. The enhanced shareholder value 18 normally could not be realized had the two companies not combined.

When companies announce a merger or acquisition, the public assesses the proposed merger and develops outlooks on the value of the two companies after the combination based on expected synergies or other value additions created by the M&A.

As a result, the stock value before the merger is completed may not reflect the forward-looking earnings and dividend payments for the company absent the merger or on a stand-alone basis. Therefore, an accurate DCF return estimate on companies involved in M&A activities cannot be produced because their stock prices do not reflect
the stand-alone investment characteristics of the companies. Rather, the stock price
more likely reflects the shareholder enhancement produced by the proposed
transaction. For these reasons, it is appropriate to remove companies involved in M&A
activities from a proxy group used to estimate a fair return on equity for a utility.

# 6 Q WHY IS IT APPROPRIATE TO EXCLUDE COMPANIES THAT DO NOT HAVE A 7 BOND RATING FROM S&P OR MOODY'S?

8 Credit rating agencies undertake a detailed assessment of the business and financial А 9 risk in awarding a bond rating. This bond rating is available to public capital market 10 participants, and is a generally independent assessment of the investment risk of the 11 subject company. While a bond rating generally assesses the credit strength of the 12 company, it is useful in determining the predictability and strength of the company's 13 cash flows to meet its financial obligations including cash needed to meet common 14 equity shareholders' investment return outlooks. For these reasons, credit ratings from 15 S&P and Moody's are information that is available to the investment community to 16 assess the overall investment risk of the underlying company.

17 Because Chesapeake Utilities does not have a bond rating from S&P or 18 Moody's, it is not possible to rely on independent market participants' assessment of 19 its investment risk in comparison to IAWC. Because credit rating data was not available 20 to determine that it is reasonably comparable in investment risk to IAWC, it was 21 excluded from the proxy group. 1QPLEASE DESCRIBE WHY YOU BELIEVE YOUR WATER UTILITY PROXY GROUP2IS REASONABLY COMPARABLE IN INVESTMENT RISK TO IAWC.

- A The water proxy group is shown on page 1 of Attachment MPG-7. This proxy group
  has an average credit rating from S&P of A, which is identical to S&P's credit rating for
  IAWC (AWK)<sup>24</sup>.
- 6 The water proxy group has an average common equity ratio of 48.1% from S&P
  7 and 55.5% (excluding short-term debt) from *Value Line* for 2017.
- 8 I believe that my water proxy group reasonably approximates the investment
  9 risk of IAWC, and can be used to estimate a fair return on equity for IAWC.

# 10 Q PLEASE DESCRIBE WHY YOU BELIEVE YOUR GAS UTILITY PROXY GROUP IS 11 REASONABLY COMPARABLE IN INVESTMENT RISK TO IAWC.

- 12 A The gas proxy group is shown on page 2 of Attachment MPG-7. This proxy group has 13 an average bond rating from S&P of A-, which is a notch lower than S&P's senior 14 unsecured bond rating for IAWC (AWK) of A. The proxy group has an average bond 15 rating from Moody's of A3, which is identical to Moody's credit rating for IAWC (AWK).
- 16 The gas proxy group has an average common equity ratio of 48.8% from S&P 17 and 50.8% (excluding short-term debt) from *Value Line* in 2017, this is reasonably 18 consistent with the equity ratios for water utilities in my water proxy group reported from 19 those same sources.
- I believe that my gas proxy group reasonably approximates the investment risk
  of IAWC, and can be used to estimate a fair return on equity for IAWC.

<sup>&</sup>lt;sup>24</sup>Bulkley Direct Testimony at 27.

# 1 VIII.B. Discounted Cash Flow Model

# 2 Q PLEASE DESCRIBE THE DCF MODEL.

3 А The DCF model posits that a stock price is valued by summing the present value of 4 expected future cash flows discounted at the investor's required rate of return or cost 5 of capital. This model is expressed mathematically as follows:  $P_{0} = \frac{D_{1}}{(1+K)^{1}} + \frac{D_{2}}{(1+K)^{2}} \dots \frac{D_{\infty}}{(1+K)^{\infty}}$ (Equation 1) 6 7 8  $P_0$  = Current stock price D = Dividends in periods  $1 - \infty$ 9 10 K = Investor's required return 11 This model can be rearranged in order to estimate the discount rate or investor-12 required return, known as "K." If it is reasonable to assume that earnings and dividends 13 will grow at a constant rate, then Equation 1 can be rearranged as follows: 14  $K = D_1/P_0 + G$ (Equation 2) 15 K = Investor's required return  $D_1$  = Dividend in first year 16  $P_0$  = Current stock price 17 18 G = Expected constant dividend growth rate 19 Equation 2 is referred to as the annual "constant growth" DCF model. 20 Q PLEASE DESCRIBE THE INPUTS TO YOUR CONSTANT GROWTH DCF MODEL. 21 А As shown in Equation 2 above, the DCF model requires a current stock price, expected 22 dividend, and expected growth rate in dividends.

# 23 Q WHAT STOCK PRICE HAVE YOU RELIED ON IN YOUR CONSTANT GROWTH

- 24 DCF MODEL?
- A I relied on the average of the weekly high and low stock prices of the utilities in the
   proxy group over a 13-week period ending on November 16, 2018. An average stock

price is less susceptible to market price variations than a price at a single point in time.
 Therefore, an average stock price is less susceptible to aberrant market price
 movements, which may not reflect the stock's long-term value.

A 13-week average stock price reflects a period that is still short enough to contain data that reasonably reflects current market expectations but the period is not so short as to be susceptible to market price variations that may not reflect the stock's long-term value. In my judgment, a 13-week average stock price is a reasonable balance between the need to reflect current market expectations and the need to capture sufficient data to smooth out aberrant market movements.

### 10 Q WHAT DIVIDEND DID YOU USE IN YOUR CONSTANT GROWTH DCF MODEL?

11 A I used the most recently paid quarterly dividend as reported in *Value Line*.<sup>25</sup> This 12 dividend was annualized (multiplied by 4) and adjusted for next year's growth to 13 produce the  $D_1$  factor for use in Equation 2 above. In other words, I calculate  $D_1$  by 14 multiplying the annualized dividend ( $D_0$ ) by (1+G).

# 15 Q WHAT DIVIDEND GROWTH RATES HAVE YOU USED IN YOUR CONSTANT 16 GROWTH DCF MODEL?

17 A There are several methods that can be used to estimate the expected growth in 18 dividends. However, regardless of the method, for purposes of determining the market-19 required return on common equity, one must attempt to estimate investors' consensus 20 about what the dividend, or earnings growth rate, will be and not what an individual 21 investor or analyst may use to make individual investment decisions.

<sup>&</sup>lt;sup>25</sup>*The Value Line Investment Survey*, October 12 and November 30, 2018.

As predictors of future returns, securities analysts' growth estimates have been shown to be more accurate than growth rates derived from historical data.<sup>26</sup> That is, assuming the market generally makes rational investment decisions, analysts' growth projections are more likely to influence investors' decisions, which are captured in observable stock prices, than growth rates derived only from historical data.

For my constant growth DCF analysis, I have relied on a consensus, or mean,
of professional securities analysts' earnings growth estimates as a proxy for investor
consensus dividend growth rate expectations. I used the average of analysts' growth
rate estimates from three sources: Zacks, Yahoo! Finance, and Reuters. All such
projections were available on November 16, 2018, and all were reported online.

11 Each consensus growth rate projection is based on a survey of securities 12 analysts. There is no clear evidence whether a particular analyst is most influential on 13 general market investors. Therefore, a single analyst's projection does not as reliably 14 predict consensus investor outlooks as does a consensus of market analysts' 15 projections. The consensus estimate is a simple arithmetic average, or mean, of 16 surveyed analysts' earnings growth forecasts. A simple average of the growth 17 forecasts gives equal weight to all surveyed analysts' projections. Therefore, a simple 18 average, or arithmetic mean, of analyst forecasts is a good proxy for market consensus 19 expectations.

<sup>&</sup>lt;sup>26</sup>See, e.g., David Gordon, Myron Gordon, and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989 at 54.
#### 1 Q WHAT ARE THE GROWTH RATES YOU USED IN YOUR CONSTANT GROWTH 2 DCF MODEL?

A The growth rates I used in my DCF analysis are shown in Attachment MPG-8. The
average growth rates for my water and gas proxy groups are 6.12% and 5.42%,
respectively.

#### 6 Q WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?

A As shown in Attachment MPG-9, the average and median constant growth DCF returns
for my water proxy group are 8.24% and 8.50%, respectively. The average and median
constant growth DCF returns for my gas proxy group are 8.11% and 8.27%,
respectively.

### 11QDO YOU HAVE ANY COMMENTS ON THE RESULTS OF YOUR CONSTANT12GROWTH DCF ANALYSIS?

A Yes. The constant growth DCF analysis for my water proxy group is based on an
average growth rate of 6.12% that is slightly offset by the lower dividend yield
produced by the recently strong stock performance of the water utilities. Similarly, the
constant growth DCF analysis for my gas proxy group is based on an average growth
rate of 5.42%.

The growth rates for both of my proxy groups are approximately 120-190
basis points above the sustainable growth rate of 4.2% for the U.S. economy,
discussed later in my testimony. This means that the constant growth model will yield
results that are conservative (i.e., higher) than could reasonably be expected over the

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long-term. I take this factor into consideration in assessing the weight given to the
 constant growth DCF model when making my final recommendation.

#### 3 Q HOW DID YOU ESTIMATE A MAXIMUM LONG-TERM SUSTAINABLE GROWTH

4 **RATE?** 

5 A In my multi-stage growth DCF analysis, I will discuss academic and investment 6 practitioner support for using the projected long-term GDP growth outlook as a 7 maximum sustainable growth rate projection in greater detail. Based on that support 8 and my own experience, I will explain why I consider the using the long-term GDP 9 growth rate as a conservative projection for the maximum sustainable growth rate to 10 be logical, and generally consistent with academic and economic practitioner accepted 11 practices.

12 In short, however, the rationale for using a long-term GDP growth outlook as a 13 proxy for a long-term sustainable growth rate for a utility stock is that over the long term 14 the growth rate of a utility cannot exceed the growth rate of the economy in which it 15 sells its goods and services. This means the long-term maximum sustainable growth 16 rate for a utility investment is best proxied by the projected long-term Gross Domestic 17 Product ("GDP"). Blue Chip Financial Forecasts projects that over the next 5 and 10 18 years, the U.S. nominal GDP will grow at an annual rate of approximately 4.20%. 19 These GDP growth projections reflect a real growth outlook of around 2.0% and an 20 inflation outlook of around 2.1% going forward. I believe the projected average growth 21 rate over the next 10 years of 4.20% is a reasonable proxy of long-term sustainable growth.27 22

<sup>&</sup>lt;sup>27</sup>Blue Chip Financial Forecasts, December 1, 2018, at 14.

#### 1 VIII.C. Sustainable Growth DCF

#### 2 Q PLEASE DESCRIBE HOW YOU ESTIMATED A SUSTAINABLE LONG-TERM 3 GROWTH RATE FOR YOUR SUSTAINABLE GROWTH DCF MODEL.

A A sustainable growth rate is based on the percentage of the utility's earnings that is
retained and reinvested in utility plant and equipment. These reinvested earnings
increase the earnings base (rate base). Earnings grow when plant funded by
reinvested earnings is put into service, and the utility is allowed the opportunity to earn
its authorized return on such additional rate base investment.

9 The internal growth methodology is tied to the percentage of earnings retained 10 in the company and not paid out as dividends. The earnings retention ratio is 1 minus 11 the dividend payout ratio. As the payout ratio declines, the earnings retention ratio 12 increases. An increased earnings retention ratio will fuel stronger growth because the 13 business funds more investments with retained earnings.

The payout ratios of the proxy group are shown in my Attachment MPG-10. These dividend payout ratios and earnings retention ratios then can be used to develop a sustainable long-term earnings retention growth rate. A sustainable long-term earnings retention ratio will help gauge whether analysts' current three- to five-year growth rate projections can be sustained over an indefinite period of time.

A close examination of some of the gas utilities shows that growth rates are being driven up significantly by relatively short-term factors. Specifically, as shown on my Attachment MPG-11, page 3, the internal growth rate for Atmos Energy increase from about 5.62% to 12.09%. The increase in the internal growth rate is significantly different than the impact in the other companies, which reflects the outlook for significant capital investments over the next three to five years. This growth created through selling stock to the public will not be sustained indefinitely. As such, the growth rate for Atmos Energy and some of the other gas utilities are skewing the group average
 growth rates and inflating the DCF return estimates for these companies. Therefore,
 the median growth rates for the sustainable growth rate more accurately reflects the
 central tendencies of the proxy group results for both the water and the gas investment
 groups.

6 The data used to estimate the long-term sustainable growth rate is based on 7 the Company's current market-to-book ratio and on *Value Line*'s three- to five-year 8 projections of earnings, dividends, earned returns on book equity, and stock issuances. 9 As shown in Attachment MPG-11, pages 1 and 3, the average sustainable 10 growth rates for the water and gas proxy groups using this internal growth rate model 11 are 6.68% and 7.77%, respectively.

#### 12 Q WHAT IS THE DCF ESTIMATE USING THESE SUSTAINABLE LONG-TERM 13 GROWTH RATES?

A DCF estimate based on these sustainable growth rates is developed in Attachment
 MPG-12. As shown there, a sustainable growth DCF analysis produces water proxy
 group average and median DCF results for the 13-week period of 8.82% and 8.81%,
 respectively. The sustainable growth DCF analysis for the gas proxy group produces
 average and median results of 10.51% and 10.57%, respectively.

I am placing minimal emphasis on the results of this sustainable growth DCF
 analysis because a significant amount of the sustainable growth is produced by
 expected sales of additional shares over the next three to five years. As shown on my
 Attachment MPG-11, the internal growth by reinvesting retained earnings is about
 5.45% and 5.62% for water and gas, respectively. However, after reflecting sales of
 additional shares, the sustainable growth rates are =altered by approximately 150-250

basis points. While this growth rate may be achieved over the relatively short run, this
significant impact on the internal growth caused by sales of additional shares is not
sustainable. Therefore, I do not believe that the sustainable growth rate DCF analysis
is producing reliable results in this case.

#### 5 VIII.D. Multi-Stage Growth DCF Model

#### 6 Q HAVE YOU CONDUCTED ANY OTHER DCF STUDIES?

Yes. My first constant growth DCF is based on consensus analysts' growth rate
projections so it is a reasonable reflection of rational investment expectations over the
next three to five years. The limitation on this constant growth DCF model is that it
cannot reflect a rational expectation that a period of high or low short-term growth can
be followed by a change in growth to a rate that is more reflective of long-term
sustainable growth. Hence, I performed a multi-stage growth DCF analysis to reflect
this outlook of changing growth expectations.

#### 14 Q WHY DO YOU BELIEVE GROWTH RATES CAN CHANGE OVER TIME?

A Analyst-projected growth rates over the next three to five years will change as utility earnings growth outlooks change. Utility companies go through cycles in making investments in their systems. When utility companies are making large investments, their rate base grows rapidly, which in turn accelerates earnings growth. Once a major construction cycle is completed or levels off, growth in the utility rate base slows and its earnings growth slows from an abnormally high three- to five-year rate to a lower sustainable growth rate.

As major construction cycles extend over longer periods of time, and even with an accelerated construction program, the growth rate of the utility will slow simply because rate base growth will slow (as each new dollar of invested capital produces a
smaller percentage increase from the last) and the utility has limited human and capital
resources available to expand its construction program. Therefore, the three- to
five-year growth rate projection should be used as a long-term sustainable growth rate,
but not without making a reasonable informed judgment to determine whether it
considers the current market environment, the industry, and whether the three- to fiveyear growth outlook is sustainable.

#### 8 Q PLEASE DESCRIBE YOUR MULTI-STAGE GROWTH DCF MODEL.

9 A The multi-stage growth DCF model reflects the possibility of non-constant growth for a
10 company over time. The multi-stage growth DCF model reflects three growth periods:
11 (1) a short-term growth period consisting of the first five years; (2) a transition period,
12 consisting of the next five years (6 through 10); and (3) a long-term growth period
13 starting in year 11 through perpetuity.

For the short-term growth period, I relied on the consensus analysts' growth projections described above in relationship to my constant growth DCF model. For the transition period, the growth rates were reduced or increased by an equal factor reflecting the difference between the analysts' growth rates and the long-term sustainable growth rate. For the long-term growth period, I assumed each company's growth would converge to the maximum sustainable long-term growth rate.

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#### Q WHY IS THE GDP GROWTH PROJECTION A REASONABLE PROXY FOR THE MAXIMUM SUSTAINABLE LONG-TERM GROWTH RATE?

A Utilities cannot indefinitely sustain a growth rate that exceeds the growth rate of the
 economy in which they sell services. Utilities' earnings/dividend growth is created by

increased utility investment or rate base. Such investment, in turn, is driven by service
 area economic growth and demand for utility service. In other words, utilities invest in
 plant to meet sales demand growth. Sales growth, in turn, is tied to economic growth
 in their service areas.

5 The U.S. Department of Energy, Energy Information Administration ("EIA") has 6 observed that utility sales growth tracks the U.S. GDP growth, albeit at a lower level, 7 as shown in Attachment MPG-13. Utility sales growth has lagged behind GDP growth 8 for more than a decade. As a result, nominal GDP growth is a very conservative proxy 9 for utility sales growth, rate base growth, and earnings growth. Therefore, the U.S. 10 GDP nominal growth rate is a conservative proxy for the highest sustainable long-term 11 growth rate of a utility.

#### 12 Q IS THERE RESEARCH THAT SUPPORTS YOUR POSITION THAT, OVER THE

#### 13 LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT GROW AT A

#### 14 **RATE GREATER THAN THE GROWTH OF THE U.S. GDP**?

- 15 A Yes. This concept is supported in published analyst literature and academic work.
- 16 Specifically, in a textbook titled "Fundamentals of Financial Management," published
- 17 by Eugene Brigham and Joel F. Houston, the authors state as follows:
- 18The constant growth model is most appropriate for mature companies19with a stable history of growth and stable future expectations. Expected20growth rates vary somewhat among companies, but dividends for21mature firms are often expected to grow in the future at about the same22rate as nominal gross domestic product (real GDP plus inflation).28
- 23 The use of the economic growth rate is also supported by investment
- 24 practitioners as outlined as follows:

#### 25 Estimating Growth Rates

<sup>&</sup>lt;sup>28</sup> *"Fundamentals of Financial Management*," Eugene F. Brigham and Joel F. Houston, Eleventh Edition 2007, Thomson South-Western, a Division of Thomson Corporation at 298 (emphasis added).

1 One of the advantages of a three-stage discounted cash flow model is 2 that it fits with life cycle theories in regards to company growth. In these 3 theories, companies are assumed to have a life cycle with varying 4 growth characteristics. Typically, the potential for extraordinary growth 5 in the near term eases over time and eventually growth slows to a more 6 stable level.

7 \* \* \*

8 Another approach to estimating long-term growth rates is to focus on 9 estimating the overall economic growth rate. Again, this is the approach 10 used in the *Ibbotson Cost of Capital Yearbook*. To obtain the economic 11 growth rate, a forecast is made of the growth rate's component parts. 12 Expected growth can be broken into two main parts: expected inflation 13 and expected real growth. By analyzing these components separately, 14 it is easier to see the factors that drive growth.<sup>29</sup>

#### 15 Q IS THERE ANY ACTUAL INVESTMENT HISTORY THAT SUPPORTS THE NOTION

#### 16 THAT THE CAPITAL APPRECIATION FOR STOCK INVESTMENTS WILL NOT

#### 17 EXCEED THE NOMINAL GROWTH OF THE U.S. GDP?

- A Yes. This is evident by a comparison of the compound annual growth of the U.S. GDP compared to the geometric growth of the U.S. stock market. Morningstar measured the historical geometric growth of the U.S. stock market over the period 1926-2017 to be approximately 5.8%.<sup>30</sup> During this same time period, the U.S. nominal compound annual growth of the U.S. GDP was approximately 6.0%.<sup>31</sup>
- As such, the geometric annual growth of the U.S. nominal GDP has been higher but comparable to the geometric annual growth of the U.S. stock market capital appreciation. This historical relationship indicates that the U.S. GDP growth outlook is a conservative estimate of the long-term sustainable growth of U.S. stock investments.

<sup>29</sup>Morningstar, Inc., Ibbotson SBBI 2013 Valuation Yearbook at 51-52.
 <sup>30</sup>Duff & Phelps, 2018 SBBI Yearbook at 6-17.

<sup>&</sup>lt;sup>31</sup>U.S. Bureau of Economic Analysis, February 28, 2018.

### 1QHOW DID YOU DETERMINE A SUSTAINABLE LONG-TERM GROWTH RATE THAT2REFLECTS THE CURRENT CONSENSUS OUTLOOK OF THE MARKET?

A I relied on the consensus analysts' projections of long-term GDP growth. *Blue Chip Economic Indicators* publishes consensus economists' GDP growth projections twice
a year. These consensus analysts' GDP growth outlooks are the best available
measure of the market's assessment of long-term GDP growth. These analyst
projections reflect all current outlooks for GDP and are likely the most influential on
investors' expectations of future growth outlooks. The consensus economists'
published GDP growth rate outlook is 4.20% over the next 10 years.<sup>32</sup>

10 Therefore, I propose to use the consensus economists' projected 5- and 11 10-year average GDP consensus growth rates of 4.20%, as published by *Blue Chip* 12 *Financial Indicators*, as an estimate of long-term sustainable growth. *Financial* 13 *Forecasts* projections provide real GDP growth projections of 2.1% and GDP inflation 14 of 2.1%<sup>33</sup> over the 5-year and 10-year projection periods. These consensus GDP 15 growth forecasts represent the most likely views of market participants because they 16 are based on published consensus economist projections.

### 17QDO YOU CONSIDER OTHER SOURCES OF PROJECTED LONG-TERM GDP18GROWTH?

A Yes, and these alternative sources corroborate the consensus analysts' projections I
 relied on. For example, consider the analysts' projections shown in Table 18 below.

<sup>32</sup>Blue Chip Financial Forecasts, December 1, 2018, at 14. <sup>33</sup>Id.

TABLE 18				
GDP Forecasts				
Source	Term	Real <u>GDP</u>	<u>Inflation</u>	Nominal <u>GDP</u>
Blue Chip Financial Forecasts EIA - Annual Earnings Outlook Congressional Budget Office Moody's Analytics Social Security Administration The Economist Intelligence Unit	5-10 Yrs 28 Yrs 6 Yrs 25 Yrs 48 Yrs 25 Yrs	2.1% 2.0% 1.8% 2.0% 1.9%	2.1% 2.3% 2.1% 1.8% 1.8%	4.2% 4.4% 4.0% 3.8% 4.4% 3.7%

1 The EIA in its *Annual Energy Outlook* projects real GDP out until 2050. In its 2 2018 Annual Report, the EIA projects real GDP through 2050 to be 2.0% and a 3 long-term GDP price inflation projection of 2.3%. The EIA data supports a long-term 4 nominal GDP growth outlook of 4.4%.<sup>34</sup>

Also, the Congressional Budget Office ("CBO") makes long-term economic
projections. The CBO is projecting real GDP growth to be 1.8% during the next 6 years,
with a GDP price inflation outlook of 2.1%. The CBO 6-year outlook for nominal GDP
based on this projection is 4.0%.<sup>35</sup>

9 Moody's Analytics also makes long-term economic projections. In its recent 10 25-year outlook to 2047, Moody's Analytics is projecting real GDP growth of 2.0% with 11 GDP inflation of 1.8%.<sup>36</sup> Based on these projections, Moody's is projecting nominal 12 GDP growth of 3.8% over the next 25 years.

 <sup>&</sup>lt;sup>34</sup>DOE/EIA Annual Energy Outlook 2018 With Projections to 2050, February 2018, Table 20.
 <sup>35</sup>CBO: The Budget and Economic Outlook: 2018 to 2028, April 2018.
 <sup>36</sup>www.economy.com, Moody's Analytics Forecast, January 24, 2018.

1 The Social Security Administration ("SSA") makes long-term economic 2 projections out to 2095. The SSA's nominal GDP projection, under its intermediate 3 cost scenario of approximately 50 years, is 4.4%.<sup>37</sup>

The Economist Intelligence Unit, a division of *The Economist* and a third-party data provider to MI, makes a long-term economic projection out to 2050. The Economist Intelligence Unit is projecting real GDP growth of 1.9% with an inflation rate of 1.8% out to 2050. The real GDP growth projection is in line with the consensus economists. The long-term nominal GDP projection based on these outlooks is approximately 3.7%.<sup>38</sup>

10 The real GDP and nominal GDP growth projections made by these independent 11 sources support the use of the 4.2% consensus economist 5-year and 10-year 12 projected GDP growth outlooks as a reasonable estimate of market participants' 13 long-term GDP growth outlooks.

### 14 Q WHAT STOCK PRICE, DIVIDEND, AND GROWTH RATES DID YOU USE IN YOUR 15 MULTI-STAGE GROWTH DCF ANALYSIS?

16 А I relied on the same 13-week average stock prices and the most recent quarterly 17 dividend payment data discussed above. For stage one growth, I used the consensus 18 analysts' growth rate projections discussed above in my constant growth DCF model. 19 The first stage covers the first five years, consistent with the time horizon of the 20 securities analysts' growth rate projections. The second stage, or transition stage, 21 begins in year 6 and extends through year 10. The second stage growth transitions 22 the growth rate from the first stage to the third stage using a straight linear trend. For 23 the third stage, or long-term sustainable growth stage, starting in year 11, I used a

<sup>&</sup>lt;sup>37</sup>www.ssa.gov, "2018 OASDI Trustees Report," Table VI.G4.

<sup>&</sup>lt;sup>38</sup>S&P Global Market Intelligence, Economist Intelligence Unit, downloaded on March 14, 2018.

4.20% long-term sustainable growth rate based on the consensus economists' long term projected nominal GDP growth rate.

#### 3 Q WHAT ARE THE RESULTS OF YOUR MULTI-STAGE GROWTH DCF MODEL?

A As shown in Attachment MPG-14, the average and median DCF returns on equity for
my water proxy group using the 13-week average stock price are 6.56% and 6.53%,
respectively. The average and median DCF results for my gas proxy group based on
this model are 7.05% and 7.02%, respectively.

#### 8 Q PLEASE SUMMARIZE THE RESULTS FROM YOUR DCF ANALYSES.

TABLE 19 Summary of DCF Results				
Description	Wa <u>Proxy</u> <u>Average</u>	ter <u>Group</u> <u>Median</u>	Ga <u>Proxy</u> <u>Average</u>	as <u>Group</u> <u>Median</u>
Constant Growth DCF Model (Analysts' Growth)	8.24%	8.50%	8.11%	8.27%
Constant Growth DCF Model (Sustainable Growth)	8.82%	8.81%	10.51%	10.57%
Multi-Stage Growth DCF Model	6.56%	6.53%	7.05%	7.02%

9 A The results from my DCF analyses are summarized in Table 19 below:

10

After a careful review of the DCF results for both proxy groups and considering

11 the observable market data discussed above, I conclude that my DCF studies support

12 a return on equity of 9.0% for IAWC.

#### 1 VIII.E. Risk Premium Model

#### 2 Q PLEASE DESCRIBE YOUR BOND YIELD PLUS RISK PREMIUM MODEL.

A This model is based on the principle that investors require a higher return to assume
 greater risk. Common equity investments have greater risk than bonds because bonds
 have more security of payment in bankruptcy proceedings than common equity and the
 coupon payments on bonds represent contractual obligations. In contrast, companies
 are not required to pay dividends or guarantee returns on common equity investments.
 Therefore, common equity securities are considered to be riskier than bond securities.

9 This risk premium model is based on two estimates of an equity risk premium. 10 First, I estimated the difference between the required return on utility common equity 11 investments and U.S. Treasury bonds. The difference between the required return on 12 common equity and the Treasury bond yield is the risk premium. I estimated the risk 13 premium on an annual basis for each year over the period January 1986 through 14 September 2018. The common equity required returns were based on regulatory 15 commission-authorized returns for gas utility companies. Authorized returns are 16 typically based on expert witnesses' estimates of the contemporary investor-required 17 return.

18 The second equity risk premium estimate is based on the difference between 19 regulatory commission-authorized returns on common equity and contemporary 20 "A" rated utility bond yields by Moody's. I selected the period January 1986 through 21 September 2018 because public utility stocks consistently traded at a premium to book 22 value during that period. This is illustrated in Attachment MPG-15, which shows the 23 market-to-book ratio since 1986 for the gas utility industry was consistently above a 24 multiple of 1.0x. Over this period, regulatory authorized returns were sufficient to 25 support market prices that at least exceeded book value. This is an indication that regulatory authorized returns on common equity supported a utility's ability to issue
 additional common stock without diluting existing shares. It further demonstrates
 utilities were able to access equity markets without a detrimental impact on current
 shareholders.

5 Based on this analysis, as shown in Attachment MPG-16, the average indicated 6 equity risk premium over U.S. Treasury bond yields has been 5.45%. Since the risk 7 premium can vary depending upon market conditions and changing investor risk 8 perceptions, I believe using an estimated range of risk premiums provides the best 9 method to measure the current return on common equity for a risk premium 10 methodology.

11 I incorporated five-year and 10-year rolling average risk premiums over the 12 study period to gauge the variability over time of risk premiums. These rolling average 13 risk premiums mitigate the impact of anomalous market conditions and skewed risk 14 premiums over an entire business cycle. As shown on my Attachment MPG-16, the 15 five-year rolling average risk premium over Treasury bonds ranged from 4.17% to 16 6.71%, while the 10-year rolling average risk premium ranged from 4.30% to 6.48%.

As shown on my Attachment MPG-17, the average indicated equity risk premium over contemporary Moody's utility bond yields was 4.08%. The five-year and 10-year rolling average risk premiums ranged from 2.80% to 5.55% and 3.11% to 5.25%, respectively.

# 1QDO YOU BELIEVE THAT THE TIME PERIOD USED TO DERIVE THESE EQUITY2RISK PREMIUM ESTIMATES IS APPROPRIATE TO FORM ACCURATE3CONCLUSIONS ABOUT CONTEMPORARY MARKET CONDITIONS?

4 A Yes. The time period I use in this risk premium study is a generally accepted period to
5 develop a risk premium study using "expectational" data.

6 Contemporary market conditions can change dramatically during the period that 7 rates determined in this proceeding will be in effect. A relatively long period of time 8 where stock valuations reflect premiums to book value is an indication that the 9 authorized returns on equity and the corresponding equity risk premiums were 10 supportive of investors' return expectations and provided utilities access to the equity 11 markets under reasonable terms and conditions. Further, this time period is long 12 enough to smooth abnormal market movement that might distort equity risk premiums. 13 While market conditions and risk premiums do vary over time, this historical time period 14 is a reasonable period to estimate contemporary risk premiums.

15 Alternatively, some studies, such as Duff & Phelps referred to later in this 16 testimony, have recommended that use of "actual achieved investment return data" in 17 a risk premium study should be based on long historical time periods. The studies find 18 that achieved returns over short time periods may not reflect investors' expected 19 returns due to unexpected and abnormal stock price performance. Short-term, 20 abnormal actual returns would be smoothed over time and the achieved actual 21 investment returns over long time periods would approximate investors' expected 22 returns. Therefore, it is reasonable to assume that averages of annual achieved returns. 23 over long time periods will generally converge on the investors' expected returns.

24 My risk premium study is based on expectational data, not actual investment 25 returns, and, thus, need not encompass a very long historical time period.

### 1QBASED ON HISTORICAL DATA, WHAT RISK PREMIUM HAVE YOU USED TO2ESTIMATE IAWC'S COST OF COMMON EQUITY IN THIS PROCEEDING?

3 А The equity risk premium should reflect the relative market perception of risk in the utility 4 industry today. I have gauged investor perceptions in utility risk today in Attachment 5 MPG-18, where I show the yield spread between utility bonds and Treasury bonds over 6 the last 38 years. As shown in this exhibit, the average utility bond yield spreads over 7 Treasury bonds for "A" and "Baa" rated utility bonds for this historical period are 1.50% 8 and 1.94%, respectively. The utility bond yield spreads over Treasury bonds for "A" 9 and "Baa" rated utilities for 2017 were 1.10% and 1.48%, respectively. Similarly, the 10 "A" and "Baa" utility spreads through September 2018 are 1.12% and 1.51%, 11 respectively. The current average "A" rated utility bond yield spread over Treasury 12 bond yields is now lower than the 38-year average spread. The current "Baa" rated 13 utility bond yield spread over Treasury bond yields is lower than the 38-year average 14 spread.

A current 13-week average "A" rated utility bond yield of 4.40% when compared to the current Treasury bond yield of 3.25%, as shown in Attachment MPG-19, implies a yield spread of 115 basis points. This current utility bond yield spread is lower than the 38-year average spread for "A" rated utility bonds of 150 basis points. The current spread for the "Baa" rated utility bond yield of 159 basis points is also lower than the 38-year average spread of 1.94%.

These utility bond yield spreads are evidence that the market perceives utility investment risk as relatively low compared to historical valuation and corporate security valuation. This relative valuation and pricing demonstrate that utilities continue to have strong access to capital and at low costs in the current market.

#### 1 Q IS THERE MARKET EVIDENCE TO HELP GAUGE MARKET RISK PREMIUMS 2 **BASED ON OBSERVABLE MARKET EVIDENCE?**

3 Α Yes. Market data does illustrate how the market is pricing investment risk, and gauging 4 the current demands for returns based on securities of varying levels of investment risk. 5 This market evidence includes bond yield spreads for different bond return ratings as 6 implied by the yield spreads for Treasury, corporate and utility bonds. These spreads 7 provide an indication of the market's return requirement for securities of different levels 8 of investment risk and required risk premiums.

9

Table 20 below shows the utility and corporate bond spreads relative to 10 Treasury bond yields.

TABLE 20         Comparison of Yield Spreads Over Treasury Bonds				
Description	<u>Utility</u> <u>A Baa</u>		<u>Corporate</u> Aaa Baa	
Average Historical Spread 2016 Spread 2017 Spread 2018 Spread	1.50% 1.33% 1.10% 1.12%	1.94% 2.08% 1.48% 1.51%	0.84% 1.07% 0.85% 0.80%	1.93% 2.12% 1.55% 1.62%
Source: Attachment MPG-18.				

11 As shown above in Table 20, the average historical bond yield spread over the 12 period 1980-September 2018 shows a fairly divergent spread for utilities relative to 13 corporate bonds. Specifically, the average historical utility bond yield spread is greater 14 than the current yield spread based on 2017-2018 data. This is an indication that the 15 market is placing a higher value on utility securities currently, and indicating a 16 preference for lower-risk investment securities. Specifically, the 38-year average yield 17 spread for A-rated utilities of 1.50% is greater than the 2018 average spread of 1.12%.

1 Again, this indicates the market is paying a premium for a lower-risk utility security now 2 compared to the past. This phenomenon is also evident in spreads for general 3 corporate securities. An AAA-rated corporate bond 38-year average spread is 0.84%, 4 which is comparable to the average spread in 2017 and slightly higher than the 2018 5 spread of 0.80. For higher-risk bonds, utility Baa and corporate bonds reflect 6 reasonably consistent yield spreads, suggesting that these higher-risk utility and 7 corporate bond securities are not receiving the same premium valuation as are the 8 lower-risk A-rated and AAA-rated utility and corporate bond securities.

9 A relative low yield for utility and corporate bonds is also reflected in outlooks 10 of real returns on these bond yields relative to that earned in the past. Over the period 11 1926-2017, long-term corporate bond yields have earned around 6.0%, compared to 12 inflation of around 3.0%.<sup>39</sup> This implies a historical real return on long-term corporate 13 bonds of around 3.3%. In 2017-2018, long-term corporate bonds rated AAA averaged 14 around 3.80%. At that time, future inflation outlooks over the long term were expected 15 to be around 2% which implies a current real return outlook on long-term corporate 16 bonds of only 1.80%. Again, this indicates that bond yields are being priced at a 17 premium by the market participants.

This information supports the finding that higher-risk securities are being valued to produce higher-risk spreads relative to low-risk securities in the current marketplace. As such, I believe this information supports the use of an above average risk premium in the current marketplace in order to accurately estimate the market's required return for making an investment in a security of higher risk (common stock) compared to a security of lower risk (utility and Treasury bond yields). For these reasons, I believe an

<sup>39</sup>Duff & Phelps 2018 SBBI Yearbook at 6-17.

above average risk premium is supported by observable market evidence in this
 proceeding.

#### 3 Q WHAT IS YOUR RECOMMENDED RETURN FOR IAWC BASED ON YOUR RISK

#### 4 PREMIUM STUDY?

A I am recommending more weight be given to the high-end risk premium estimates than
the low-end. Hence, I propose to provide 70% weight to my high-end risk premium
estimates and 30% to the low-end. Applying these weights, the risk premium for
Treasury bond yields would be approximately 6.0%,<sup>40</sup> which is considerably higher than
the 32-year average risk premium of 5.45% and reasonably reflective of the 3.7%
projected Treasury bond yield. A Treasury bond risk premium of 6.0% and projected
Treasury bond yield of 3.7% produce a risk premium estimate of 9.70%.

12 Similarly, applying these weights to the utility risk premium indicates a risk 13 premium of 4.75%.<sup>41</sup> This risk premium is above the 32-year historical average risk 14 premium of 4.08%. Adding this risk premium to the current observable Baa utility bond 15 yield of 4.84% produces an estimated return on equity of approximately 9.47%, 16 rounded to 9.59%.

Based on this methodology, my Treasury bond risk premium and my utility bond
risk premium indicate a return in the range of 9.60% to 9.70%, with a midpoint of 9.65%,
rounded to 9.70%.

 $<sup>^{40}(4.17\% * 30\%) + (6.71\% * 70\%) = 5.95\%</sup>$ , rounded to 6.0%.

 $<sup>^{41}(2.80\% * 30\%) + (5.55\% * 70\%) = 4.73\%</sup>$ , rounded to 4.75%.

#### 1 VIII.F. Capital Asset Pricing Model ("CAPM")

#### 2 Q PLEASE DESCRIBE THE CAPM.

A The CAPM method of analysis is based upon the theory that the market-required rate of return for a security is equal to the risk-free rate, plus a risk premium associated with the specific security. This relationship between risk and return can be expressed mathematically as follows:

$$R_i = R_f + B_i \times (R_m - R_f)$$
 where:

7

8	R <sub>i</sub> =	Required return for stock i
9	R <sub>f</sub> =	Risk-free rate
10	R <sub>m</sub> =	Expected return for the market portfolio
11	B <sub>i</sub> =	Beta - Measure of the risk for stock

12 The stock-specific risk term in the above equation is beta. Beta represents the 13 investment risk that cannot be diversified away when the security is held in a diversified 14 portfolio. When stocks are held in a diversified portfolio, firm-specific risks can be 15 eliminated by balancing the portfolio with securities that react in the opposite direction 16 to firm-specific risk factors (e.g., business cycle, competition, product mix, and 17 production limitations).

18 The risks that cannot be eliminated when held in a diversified portfolio are 19 non-diversifiable risks. Non-diversifiable risks are related to the market in general and referred to as systematic risks. Risks that can be eliminated by diversification are 20 21 non-systematic risks. In a broad sense, systematic risks are market risks and 22 non-systematic risks are business risks. The CAPM theory suggests the market will 23 not compensate investors for assuming risks that can be diversified away. Therefore, 24 the only risk investors will be compensated for are systematic, or non-diversifiable, 25 risks. The beta is a measure of the systematic, or non-diversifiable risks.

#### 1 Q PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.

A The CAPM requires an estimate of the market risk-free rate, the Company's beta, and
the market risk premium.

#### 4 Q WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE RATE?

A As previously noted, *Blue Chip Financial Forecasts*' projected 30-year Treasury bond
 yield is 3.70%.<sup>42</sup> The current 30-year Treasury bond yield is 3.25%, as shown in
 Attachment MPG-19. I used *Blue Chip Financial Forecasts*' projected 30-year Treasury
 bond yield of 3.70% for my CAPM analysis.

### 9 Q WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN ESTIMATE 10 OF THE RISK-FREE RATE?

11 А Treasury securities are backed by the full faith and credit of the United States 12 government, so long-term Treasury bonds are considered to have negligible credit risk. 13 Also, long-term Treasury bonds have an investment horizon similar to that of common 14 stock. As a result, investor-anticipated long-run inflation expectations are reflected in 15 both common stock required returns and long-term bond yields. Therefore, the nominal 16 risk-free rate (or expected inflation rate and real risk-free rate) included in a long-term 17 bond yield is a reasonable estimate of the nominal risk-free rate included in common 18 stock returns.

19 Treasury bond yields, however, do include risk premiums related to 20 unanticipated future inflation and interest rates. A Treasury bond yield is not a risk-free 21 rate. Risk premiums related to unanticipated inflation and interest rates reflect 22 systematic market risks. Consequently, for companies with betas less than 1.0, using

<sup>&</sup>lt;sup>42</sup>Blue Chip Financial Forecasts, December 1, 2018 at 2.

the Treasury bond yield as a proxy for the risk-free rate in the CAPM analysis can
 produce an overstated estimate of the CAPM return.

#### 3 Q WHAT BETA DID YOU USE IN YOUR ANALYSIS?

A As shown in Attachment MPG-20, the average *Value Line* beta estimates for the water
and gas proxy groups are 0.73 and 0.65, respectively. This means that both proxy
groups are less risky than the market as a whole.

#### 7 Q HOW DID YOU DERIVE YOUR MARKET RISK PREMIUM ESTIMATE?

- 8 A I derived two market risk premium estimates: a forward-looking estimate and one based
  9 on a long-term historical average.
- 10 The forward-looking estimate was derived by estimating the expected return on 11 the market (as represented by the S&P 500) and subtracting the risk-free rate from this 12 estimate. I estimated the expected return on the S&P 500 by adding an expected 13 inflation rate to the long-term historical arithmetic average real return on the market. 14 The real return on the market represents the achieved return above the rate of inflation. 15 Duff & Phelps' 2018 SBBI Yearbook estimates the historical arithmetic average 16 real market return over the period 1926 to 2017 to be 9.0%.<sup>43</sup> A current consensus 17 analysts' inflation projection, as measured by the Consumer Price Index, is 2.3%.<sup>44</sup> Using these estimates, the expected market return is 11.51%.<sup>45</sup> The market risk 18 premium then is the difference between the 11.51% expected market return and my 19 20 3.70% risk-free rate estimate, or approximately 7.80%.

<sup>&</sup>lt;sup>43</sup>Duff & Phelps, 2018 SBBI Yearbook at 6-18.

<sup>&</sup>lt;sup>44</sup>Blue Chip Financial Forecasts, December 1, 2018 at 2.

<sup>&</sup>lt;sup>45</sup>{ [ (1 + 0.090) \* (1 + 0.023) ] – 1 } \* 100.

1 My historical estimate of the market risk premium was also calculated by using 2 data provided by Duff & Phelps in its *2018 SBBI Yearbook*. Over the period 1926 3 through 2017, the Duff & Phelps study estimated that the arithmetic average of the 4 achieved total return on the S&P 500 was  $12.1\%^{46}$  and the total return on long-term 5 Treasury bonds was  $6.00\%.^{47}$  The indicated market risk premium is 6.0% (12.1% -6 6.0% = 6.1%).

The long-term government bond yield of 6.0% occurred during a period of
inflation of around 3.0%, thus implying a real return on long-term government bonds of
around 3.0%.

#### 10 Q HOW DOES YOUR ESTIMATED MARKET RISK PREMIUM RANGE COMPARE TO 11 THAT ESTIMATED BY DUFF & PHELPS?

12 A The Duff & Phelps analysis indicates a market risk premium falls somewhere in the 13 range of 5.0% to 7.1%. My market risk premium falls in the range of 6.1% to 7.8%. My 14 average market risk premium of 6.95% is at the high end of the Duff & Phelps range.

#### 15 Q HOW DOES DUFF & PHELPS MEASURE A MARKET RISK PREMIUM?

A Duff & Phelps makes several estimates of a forward-looking market risk premium based on actual achieved data from the historical period of 1926 through 2017 as well as normalized data. Using this data, Duff & Phelps estimates a market risk premium derived from the total return on large company stocks (S&P 500), less the income return on Treasury bonds. The total return includes capital appreciation, dividend or coupon reinvestment returns, and annual yields received from coupons and/or dividend payments. The income return, in contrast, only reflects the income return received from

> <sup>46</sup>Duff & Phelps, 2018 Yearbook at 6-17. <sup>47</sup>Id.

dividend payments or coupon yields. Duff & Phelps claims the income return is the
only true risk-free rate associated with Treasury bonds and is the best approximation
of a truly risk-free rate.<sup>48</sup> I disagree with this assessment from Duff & Phelps because
it does not reflect a true investment option available to the marketplace and therefore
does not produce a legitimate estimate of the expected premium of investing in the
stock market versus that of Treasury bonds. Nevertheless, I will use Duff & Phelps'
conclusion to show the reasonableness of my market risk premium estimates.

8 Duff & Phelps' range is based on several methodologies. First, Duff & Phelps 9 estimates a market risk premium of 7.07% based on the difference between the total 10 market return on common stocks (S&P 500) less the income return on 20-year Treasury 11 bond investments over the 1926-2017 period.<sup>49</sup>

12 Second, Duff & Phelps used the Ibbotson & Chen supply-side model, which produced a market risk premium estimate of 6.04%.<sup>50</sup> In the 2017 edition of the 13 14 Valuation Handbook, Duff & Phelps explained that the historical market risk premium 15 based on the S&P 500 was influenced by an abnormal expansion of price-to-earnings 16 ("P/E") ratios relative to earnings and dividend growth during the period, primarily over 17 the last 30 years. Duff & Phelps believes this abnormal P/E expansion is not 18 sustainable.<sup>51</sup> Therefore, Duff & Phelps adjusted this market risk premium estimate to 19 normalize the growth in the P/E ratio to be more in line with the growth in dividends and 20 earnings.

Finally, Duff & Phelps develops its own recommended equity, or market, risk premium by employing an analysis that takes into consideration a wide range of economic information, multiple risk premium estimation methodologies, and the current

<sup>&</sup>lt;sup>48</sup>Duff & Phelps 2018 Valuation Handbook at 3-41.

<sup>&</sup>lt;sup>49</sup>Duff & Phelps 2018 Valuation Handbook at 3-45.

<sup>&</sup>lt;sup>50</sup>Id.

<sup>&</sup>lt;sup>51</sup>Duff & Phelps 2018 Valuation Handbook at 3-44.

state of the economy by observing measures such as the level of stock indices and
corporate spreads as indicators of perceived risk. Based on this methodology, and
utilizing a "normalized" risk-free rate of 3.5%, Duff & Phelps concludes the current
expected, or forward-looking, market risk premium is 5.0%, implying an expected return
on the market of 8.5%.<sup>52</sup>

It should be noted that Duff & Phelps' market risk premiums are measured over
a 20-year Treasury bond. Because I am relying on a projected 30-year Treasury bond
yield, the results of my CAPM analysis should be considered conservative estimates
for the cost of equity.

#### 10 Q WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

11 А As shown in Attachment MPG-21, based on my low market risk premium of 6.10% and 12 my high market risk premium of 7.8%, a risk-free rate of 3.70%, and an average water 13 utility beta of 0.73, my CAPM analysis produces a return in the range of 8.12% to 14 9.36%. Similarly, using the same inputs and a Value Line beta of 0.65 for my gas proxy group produces a return in the range of 7.67% to 8.77%. Based on my assessment of 15 16 risk premiums in the market, as discussed above, I will place primary reliance on my 17 high-end CAPM return estimates. This produces a recommended CAPM return 18 estimate of 9.40%.

19 The projected risk-free rate of 3.7% aligns with an outlook for future inflation of 20 around 2%. This implies a relatively high premium for low-risk Treasury securities in 21 the market, and indicates the market is still paying a premium for relatively low-risk 22 securities, thus indicating that the market risk premium is relatively high in the current 23 market. Based on this assessment of observable market evidence, I recommend the

<sup>&</sup>lt;sup>52</sup>Duff & Phelps 2018 Valuation Handbook at 3-32, 3-33 and 3-62.

- 1 high-end CAPM return estimate because it closely aligns the market risk premium with
- 2 the prevailing risk-free rate. I recommend a CAPM return of approximately 9.00%.

#### 3 VIII.G. Return on Equity Summary

#### 4 Q BASED ON THE RESULTS OF YOUR RETURN ON COMMON EQUITY ANALYSES

#### 5 DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY DO YOU

#### 6 **RECOMMEND FOR IAWC?**

7 A Based on my analyses, I estimate IAWC's current market cost of equity to be 9.35%.

TABLE 21			
Return on Common Equity Summary			
Description	<u>Results</u>		
DCF	9.00%		
Risk Premium	9.70%		
САРМ	9.40%		

8 My recommended return on common equity of 9.35% is at the midpoint of my 9 estimated range of 9.00% to 9.70%. As shown in Table 21 above, the high end of my 10 estimated range is based on my risk premium studies. The low end is based on my 11 DCF return. My CAPM result falls within my recommended range.

My return on equity estimates reflect observable market evidence, the impact of Fed policies on current and expected long-term capital market costs, an assessment of the current risk premium built into current market securities, and a general assessment of the current investment risk characteristics of the regulated utility industry and the market's demand for utility securities. As outlined above, the midpoint of my recommended range, or 9.35%, would be fair and reasonable based on my

1 recommended ratemaking capital structure including a 50% mix of debt and equity 2 investor capital. If the Company's proposed ratemaking capital structure is adopted 3 with an approximately 56% equity ratio of total investor capital, then I believe a return 4 on equity at the low-end of my range, or 9%, would be appropriate for setting rates. 5 The Company's proposed equity thick capital structure reflects much lower financial 6 risk than IAWC has experienced in the past, much lower financial risk than AWK's and 7 AWCC's credit rating, and much lower financial risk than that reflected in the proxy 8 group used to estimate a fair return in this case. Therefore, a return on equity should 9 be reduced in the face of this lower financial risk, relative to the proxy group I used to 10 set rates and AWK/AWCC's financial standing supporting its published bond rating.

11

#### IX. FINANCIAL INTEGRITY

### 12 Q WILL YOUR RECOMMENDED OVERALL RATE OF RETURN SUPPORT AN 13 INVESTMENT GRADE BOND RATING FOR IAWC?

A Yes. I have reached this conclusion by comparing the key credit rating financial ratios
 for IAWC at my proposed return on equity and the Company's proposed capital
 structure to S&P's benchmark financial ratios using S&P's new credit metric ranges.

### 17 Q PLEASE DESCRIBE THE MOST RECENT S&P FINANCIAL RATIO CREDIT 18 METRIC METHODOLOGY.

A S&P publishes a matrix of financial ratios corresponding to its assessment of the
 business risk of utility companies and related bond ratings. On May 27, 2009, S&P

expanded its matrix criteria by including additional business and financial risk
 categories.<sup>53</sup>

Based on S&P's most recent credit matrix, the business risk profile categories
are "Excellent," "Strong," "Satisfactory," "Fair," "Weak," and "Vulnerable." Most utilities
have a business risk profile of "Excellent" or "Strong."

6 The financial risk profile categories are "Minimal," "Modest," "Intermediate,"
7 "Significant," "Aggressive," and "Highly Leveraged." Most of the utilities have a financial
8 risk profile of "Aggressive." AWK, which is used as a proxy for IAWC, has an "Excellent"
9 business risk profile and an "Intermediate" financial risk profile.

### 10 Q PLEASE DESCRIBE S&P'S USE OF THE FINANCIAL BENCHMARK RATIOS IN 11 ITS CREDIT RATING REVIEW.

A S&P evaluates a utility's credit rating based on an assessment of its financial and
business risks. A combination of financial and business risks equates to the overall
assessment of IAWC's total credit risk exposure. On November 19, 2013, S&P updated
its methodology. In its update, S&P published a matrix of financial ratios that defines
the level of financial risk as a function of the level of business risk.

S&P publishes ranges for primary financial ratios that it uses as guidance in its
credit review for utility companies. The two core financial ratio benchmarks it relies on
in its credit rating process include: (1) Debt to Earnings Before Interest, Taxes,
Depreciation and Amortization ("EBITDA"); and (2) Funds From Operations ("FFO") to
Total Debt.<sup>54</sup>

<sup>53</sup>S&P updated its 2008 credit metric guidelines in 2009, and incorporated utility metric benchmarks with the general corporate rating metrics. *Standard & Poor's RatingsDirect.* "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded," May 27, 2009.

<sup>&</sup>lt;sup>54</sup>Standard & Poor's RatingsDirect: "Criteria: Corporate Methodology," November 19, 2013.

### 1QHOWDIDYOUAPPLYS&P'SFINANCIALRATIOSTOTESTTHE2REASONABLENESS OF YOUR RATE OF RETURN RECOMMENDATIONS?

3 Α I calculated each of S&P's financial ratios based on IAWC's cost of service for its retail 4 jurisdictional operations for 2020. While S&P would normally look at total consolidated 5 IAWC financial ratios in its credit review process, my investigation in this proceeding is 6 not the same as S&P's. I am attempting to judge the reasonableness of my proposed 7 cost of capital for rate-setting in IAWC's retail regulated utility operations. Hence, I am 8 attempting to determine whether my proposed equity rate of return will in turn support 9 cash flow metrics, balance sheet strength, and earnings that will support an investment 10 grade bond rating and IAWC's financial integrity.

#### 11 Q DID YOU INCLUDE ANY OFF-BALANCE SHEET DEBT EQUIVALENTS?

# A No. Even though S&P accounts for off-balance sheet debt equivalents such as operating leases, I did not have the necessary information to identify the exact amount, if any, attributed to IAWC. Therefore, I did not include any off-balance sheet debt equivalents.

### 16 Q PLEASE DESCRIBE THE RESULTS OF THIS CREDIT METRIC ANALYSIS AS IT 17 RELATES TO IAWC.

A The S&P financial metric calculations for IAWC at a 9.35% equity return are developed
on Attachment MPG-22, page 1. The credit metrics produced below, with IAWC's
financial risk profile from S&P of "Intermediate" and business risk score by S&P of

"Excellent," will be used to assess the strength of the credit metrics based on IAWC's
 gas retail operations in Indiana.

Based on an equity return of 9.35%, IAWC will be provided an opportunity to
produce a debt to Earnings Before Interest, Taxes, Depreciation and Amortization
("EBITDA") ratio of 4.2x. This is within S&P's "Significant" guideline range of 4.0x to
5.0x, which is IAWC's current financial risk rating. This ratio supports IAWC's
investment grade credit rating.

8 IAWC's retail operations FFO to total debt coverage at a 9.35% equity return is
9 19%, which is within S&P's "Intermediate" metric guideline range of 13% to 23%, range.
10 This FFO/total debt ratio will support IAWC's investment grade bond rating.

IAWC's adjusted total debt ratio, based on my proposed capital structure, is
50%. As shown on Attachment MPG-22, page 3, this adjusted debt ratio is reasonably
consistent with the industry median adjusted debt ratio for an "A" rated utility of 51.5%.
Hence, I concluded this capital structure reasonably supports IAWC's current
investment grade bond rating.

16Indeed, at my proposed capital structure and the Company's proposed17embedded cost of debt, my recommended return on equity of 9.35% produces financial18credit metrics for IAWC that will continue to support credit ratings at an investment19grade utility level, albeit at a higher cost to ratepayers than a more reasonable,20balanced, capital structure. This indicates that the 9.35% recommended return on21equity is a conservative and reasonable result that will meet the Hope and Bluefield22standards.

1QIF THE COMMISSION DOES NOT ADOPT YOUR RATEMAKING CAPITAL2STRUCTURE AND AWARDS IAWC A RETURN ON EQUITY OF 9%, WOULD THE3RESULTING RATE OF RETURN SUPPORT IAWC'S CREDIT METRICS AT AN4INVESTMENT GRADE LEVEL?

5 Yes. The weighted cost of equity at a 9% return on equity and a 56% common equity А 6 ratio would be a little more than 5 percentage points. The weighted return on equity at 7 a 9.35% return on equity and a 50% common equity is around 4.7%. Hence, IAWC's 8 EBITDA would increase using a 56% common equity ratio and 9% return on equity 9 relative to my recommended return. This increase in EBITDA would also increase FFO. 10 As such, IAWC's credit metrics would increase relative to those described above, if the 11 Commission set its rates based on a 56% common equity ratio of total capital and a 12 return on equity of 9%.

13

#### X. RESPONSE TO IAWC WITNESS MS. BULKLEY

#### 14 X.A. Summary of Response to Ms. Bulkley

### WHAT RETURN ON COMMON EQUITY IS MS. BULKLEY PROPOSING FOR THIS PROCEEDING?

A Ms. Bulkley is recommending a return on equity of 10.80% based on her range of
10.0% to 10.80%.<sup>55</sup> Her recommended return on equity is based on: (1) a constant
growth Discounted Cash Flow ("DCF"), (2) a Constant Growth projected DCF analysis,
(3) an expected earnings analysis, and (4) a traditional CAPM studies. Ms. Bulkley's
general practice is to exclude the operating affiliates of the subject company. However,
due to the small number of water utilities followed by *Value Line*, she presents the
results both including and excluding AWK. Similarly, Ms. Bulkley has conducted her

<sup>&</sup>lt;sup>55</sup>Bulkley Direct Testimony at 7.

analyses with and without SJW Group and Connecticut Water Services, Inc, which
 have announced their merger in March 2018.

#### 3 Q DOES MS. BULKLEY MAKE COMMENTS CONCERNING THE RELIABILITY OF 4 MARKET-BASED MODELS TO MEASURE A FAIR RETURN ON EQUITY FOR 5 IAWC?

A Yes. Ms. Bulkley opines that the traditional DCF model is not producing reasonable
results at this time due to anomalous market conditions. (Bulkley Direct at 7). She
goes on to state that current market conditions reflect a low interest rate environment,
which affects security valuation and yields, relative to historical levels. She also opines
that the market has an expectation for higher interest rates. She believes these factors
affect the results of DCF and CAPM return estimates based on current market factors.
(*Id.* at 23).

## 13 Q HAS MS. BULKLEY IDENTIFIED FACTORS THAT ARE DIFFERENT THAN THOSE 14 THAT HAVE EXISTED IN OTHER RATE CASES OVER THE LAST FIVE TO TEN 15 YEARS?

16 А No. As detailed later, economists have consistently been projecting increases in 17 interest rates relative to current observable interest rates over approximately the last 18 five years. They were doing so even during IAWC's last rate case. However, those 19 projections for increased interest rates have turned out to be inaccurate. Instead, 20 interest rates have been relatively stable and at low levels for approximately the last 21 five to ten years. Also, I show that projected interest rates over the next five to ten 22 years have been moderated by independent consensus economists. This is clear 23 evidence that the market now is embracing the sustainability of relatively low capital

market costs in the current market relative to what independent economists have projected in prior periods. Again, this shows market conditions are not anomalous and DCF and CAPM return estimates continue to be reliable and accurate. I also believe a comparison of the components of the DCF return for utilities generally, and water utilities specifically, to other income return investment options and growth investment options show that the results of DCF models are producing reliable and accurate estimates of the current market cost for utility companies.

# Q PLEASE EXPLAIN WHY YOU BELIEVE THE DCF MODEL IS PRODUCING 9 RELIABLE RESULTS FOR UTILITY COMPANIES WHEN THE DCF RETURN 10 COMPONENT IS COMPARED TO ALTERNATIVE INVESTMENTS?

A In short, because the results of the DCF, risk premium, and CAPM analyses all produce
 reasonable and accurate estimates of the current market cost of equity for IAWC that
 reflect consensus cost of capital estimates for companies of similar investment risk.

In other words, the DCF model is producing an economically logical estimate of
the current market cost of equity. This is because the DCF model reflects the
observable dividend yield on utility stocks, and adds to that an estimate of expected
growth. Both of these DCF components can, themselves, also be compared to
alternative investments and are shown to be reasonable.

The current dividend yield of a water utility stock (2.14%) is lower but comparable to the current yield of Treasury bonds (3.02%) and the yields on "A" rated utility bonds (4.24%) as shown my Attachment MPG-5. It is normal for utility dividend yields generally, and water utility dividend yields specifically, to be lower than the yields of observable utility bond yields, because a stock's dividend and price are expected to grow over time.

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1 The income return component of water utility stocks is reasonable in 2 relationship to alternative income investments. Utility stock dividend yields are based 3 directly on utility dividend payments and observable stock prices. For example, as 4 shown on Attachment MPG-5, utility bond yields generally on average have had a yield 5 spread to water utility stocks of 2.19%. Currently, the yield spread is 2.10%. This 6 indicates the income return on water utility stocks (dividend yield) is logically competitive with the income return available on utility bond investments. This is an 7 8 indication that the water utility stock yield component of the DCF estimate is robust and 9 logical relative to historical standards. There is no depression to the yield component 10 of the DCF return.

The growth component of the DCF return relates to earnings and stock growth over time. The growth outlook for utility stocks is not depressed generally, nor is it for water utility stock specifically. Therefore, the DCF return is not understated due to the DCF growth rate component. Specifically, the water proxy group's growth in dividends and earnings, based on current analysts' growth rate outlooks is around 6.1% as shown on my Attachment MPG-5.

17 On Attachment MPG-5, the annual growth in dividends for water utilities over 18 the last 13 years has been approximately 5.6%. A forward growth rate of 6.1% is higher 19 than the realized historical growth. Also, water utility earnings growth is expected to 20 be considerably higher than the growth of the U.S. Gross Domestic Product ("GDP"), 21 which generally is regarded as the maximum sustainable growth of the market in 22 general. Long-term sustainable growth going forward for equity investments is around 23 4.2% as described above. Based on these factors, the growth rate component of a 24 water utility DCF return is quite robust and produces a highly competitive DCF return 25 estimate.

1 Furthermore, a return on equity is fair if it is adequate to cover the cost of the 2 utility's dividend, and its cost of funding future growth. My recommended return on 3 equity accomplishes these objectives. For example, as shown on my Attachment 4 MPG-5, the current cost of water utility dividends as a proportion of book value is 5.79% 5 (dividend per share divided by book value per share). This indicates that a 9.35% 6 return on equity can produce earnings that can pay the dividend at roughly a 60% 7 dividend payout ratio, or 40% earnings retention ratio. Producing earnings that cover 8 dividends and support a 40% earnings retention ratio will accomplish the cost of paying 9 the dividend and funding future growth for the utility.

For these reasons, both dividend yield and growth components of a utility DCF
 study indicate robust and economically logical DCF results compared to alternative
 market investments.

### Q WHAT ARE YOUR COMMENTS CONCERNING THE RELIABILITY OF A CAPM RETURN ESTIMATE?

15 А A CAPM return estimate is largely determined by the accuracy of a utility beta, and the 16 measurement of a market risk premium. The risk-free rate is simply based on 17 observable Treasury bond yields or projected Treasury bond yields that will prevail 18 during the period rates will be in effect and the utility will be entitled to fair 19 compensation. In measuring a CAPM return estimate, my proxy group indicated a beta 20 for water utilities of around 0.73, as shown in Attachment MPG-20. This beta is 21 reasonably comparable to the average betas experienced by water utilities (0.71) and 22 gas utilities (0.75) over the last five years. (See Attachment MPG-23.) Further, 23 recognizing the relatively low level of risk-free rates and corresponding high market risk 24 premium, producing a CAPM return estimate reflecting above average market risk

premium is consistent with observable market evidence as discussed above. For these reasons, I believe the CAPM return estimate also produces a return estimate that is consistent with observable market evidence, and independent economists' projections of interest rates, and beta coefficients for low-risk utility companies that are reasonably consistent with historical betas and above average market risk premium which is corroborated by observable market evidence.

I disagree with Ms. Bulkley's proposal to develop DCF and CAPM return
estimates based on analysts' projected security valuation and other factors. This
methodology does not estimate a fair return for both the investors and ratepayers in
this proceeding and should be rejected as unreasonable and biased.

#### 11 Q ARE MS. BULKLEY'S RETURN ON EQUITY ESTIMATES REASONABLE?

A No. Ms. Bulkley's estimated return on equity is overstated and should be rejected. Ms.
Bulkley's analyses produce excessive results for various reasons, including the
following:

#### 15 1. Her constant growth DCF results are based on very high short-term growth rates.

- Her projected DCF is based on projections not reflective of the rate-effective period and inflated short-term growth rates.
- Her CAPM is based on inflated market risk premiums and an unreasonably high projected risk-free rate.
#### 1 Q PLEASE SUMMARIZE MS. BULKLEY'S RETURN ON EQUITY ESTIMATES.

A Ms. Bulkley's return on equity estimates are summarized in Table 22 below. In
Column 2, I show the results with prudent and sound adjustments to correct the flaws
referenced above. With such adjustments to her proxy group's DCF, and CAPM return
estimates, Ms. Bulkley's own studies show my recommended return on equity for IAWC
is reasonable.

TABLE 22										
Bulkley Return on Equity Estim	nates									
Description Mean <sup>1</sup> Adjusted										
	(1)	(2)								
I. DCF										
A. Constant Growth DCF, including AWK										
30-Day Average	9.38%	9.38%								
90-Day Average	9.48%	9.48%								
180-Day Average	9.41%	9.41%								
B. Constant Growth DCF. excluding AWK										
30-Day Average	9.15%	9.15%								
90-Day Average	9.25%	9.25%								
180-Day Average	9.18%	9.18%								
C. Constant Growth DCF, excluding SJW and CTWS										
30-Day Average	9.24%	9.24%								
90-Day Average	9.30%	9.30%								
180-Day Average	9.23%	9.23%								
D. Projected Stock Price DCF										
including AWK	9.95%	Reject								
excluding AWK	9.72%	Reject								
excluding CTWS and SJW	9.63%	Reject								
E. DCF Results	9.3%	9.3%								
II. EXPECTED EARNINGS										
A. Expected Earnings, including AWK										
2018	10.94%	Reject								
2021-2023	12.50%	Reject								
B Expected Farnings excluding AWK										
2018	11.07%	Reject								
2021-2023	12.79%	Reject								
D. Eveneted Foreigns, evaluating CTM/C and C IM/										
2018	11 00%	Reject								
2021-2023	12.50%	Reject								
		,								
Current 30-Xr Treasury (BL = 3 14%)	12 55%	0.01%								
Current 30-Yr Treasury $(VI = 3.14\%)$	12.00%	8.80%								
Near-Term Projected 30-Vr Treasury (BL $= 3.54\%$ )	12.20%	9.00%								
Near-Term Projected 30-Yr Treasury ( $VI = 3.54\%$ )	12.00%	9.41%								
Long-Term Projected 30-Yr Treasury ( $RL = 4.20\%$ )	$\frac{12.31\%}{12.31\%} = \frac{12.31\%}{12.31\%} = 12$									
Long-Term Projected 30-Yr Treasury ( $M = 4.20\%$ )	12.01%	Reject								
Long Territ Tojected 30-11 Treasury (VL - 4.2070)	12.00/0	Nejeci								
CAPM Results (Excluding AWK)										
Current 30-Yr Treasury (BL – 3.14%)	12.61%	9.05%								
Current 30-Yr Treasury (VL – 3.14%)	12.34%	8.88%								

Sources: <sup>1</sup> Bulkley Direct Testimony at 36, 38, and 42.								
IV. Recommend	ed Return on Equity	10.8%	9.35%					
Long-Term Pr	ojected 30-Yr Treasury (VL – 4.20%)	12.69%	Reject					
Long-Term Pr	ojected 30-Yr Treasury (BL – 4.20%)	13.62%	Reject					
Near-Term Pr	ojected 30-Yr Treasury (VL – 3.54%)	12.52%	9.10%					
Near-Term Pr	ojected 30-Yr Treasury (BL – 3.54%)	13.50%	9.42%					
Current 30-Yr	Treasury ( <i>VL</i> – 3.14%)	12.41%	8.57%					
Current 30-Yr	Treasury (BL – 3.14%)	13.43%	8.89%					
CAPM Result	s (Excluding CTWS and SJC)							
Long-Term Pr	ojected 30-Yr Treasury (VL – 4.20%)	12.62%	Reject					
Long-Term Pr	ojected 30-Yr Treasury (BL – 4.20%)	12.87%	Reject					
Near-Term Pr	ojected 30-Yr Treasury (VL – 3.54%)	12.44%	9.28%					
Near-Term Pr	ojected 30-Yr Treasury (BL – 3.54%)	12.71%	9.45%					

### 1 X.B. Bulkley DCF

### 2 X.B.1. Bulkley Constant Growth DCF

# Q PLEASE DESCRIBE MS. BULKLEY'S CONSTANT GROWTH DCF RETURN 4 ESTIMATES.

- 5 A Her constant growth DCF returns are developed on Attachment AEB-1. Ms. Bulkley's 6 constant growth DCF models are based on consensus growth rates published by 7 Zacks, Thomson First Call (provided by Yahoo! Finance), and Thomson Reuters, and 8 individual growth rate projections made by *Value Line*.
- 9 She relied on dividend yield calculations based on average stock prices over
- 10 three different time periods: 30-day, 90-day, and 180-day, all reflecting one-half year
- 11 dividend growth adjustments.

### 1 Q ARE THE CONSTANT GROWTH DCF RESULTS PRODUCED BY MS. BULKLEY 2 REASONABLE?

A Ms. Bulkley's constant growth DCF mean results generally support a return on equity
no higher than 9.3%.

5 Similar to my constant growth DCF result, Ms. Bulkley's constant growth DCF 6 return estimates are based on a proxy group average growth rate of approximately 7 7.28% (Attachment AEB-1). The 7.1% sustainable long-term growth rate is simply an 8 overstated and unreliable estimate of a growth rate for a DCF model. Specifically, 9 consensus economists project the long-term growth rate of the U.S. GDP to be around 10 4.2% as outlined above. It is simply not economically logical or rational to expect that 11 a water utility can grow at 7.2% when the economy in which it sells services is growing 12 at only 4.2%. As such, Ms. Bulkley's DCF analysis that supports a midpoint return on 13 equity of 9.38% overstates a DCF return for her water proxy group sample, because 14 the growth rate simply is not sustainable indefinitely.

Ms. Bulkley's low-end estimate of 8.54% is based on lower growth outlooks, but it is also higher than the proxy group indicated return, as Ms. Bulkley did not consider all the low-end DCF returns in producing this estimate. Rather, she artificially excluded certain DCF returns that are below 7% without proper economic justification. A more appropriate methodology would have to use the proxy group median results, which our analysis suggests is 9.15%. (*Id.*).

### 21 X.B.2. Bulkley Projected Stock Price DCF

### 22 Q DID MS. BULKLEY PERFORM ADDITIONAL DCF ANALYSES?

A Yes. Ms. Bulkley developed a DCF estimate using *Value Line* projected stock prices
 and dividends during 2018 and 2020-2022 periods. Importantly, these projections do

1 not reflect the market valuation of securities. Rather, they reflect Value Line projections 2 of future stock prices and dividend payments. As described in more detail later, security 3 analysts' projections of changes in future capital market costs and interest rates have 4 proven to be unreliable. Indeed, current observable costs of capital are just as likely to 5 reflect future actual capital costs as are security analysts' projections. Therefore, Ms. 6 Bulkley's use of projected stock prices does not reflect current capital market costs, 7 and is not a reliable estimate of what the future stock market price or a return on equity 8 will be in prospective periods. Indeed, because it is highly uncertain to be accurate, 9 measuring a fair return on equity in this way simply tilts the regulatory balance in favor 10 of investors by requiring customers to pay rates that support costs of capital that are 11 higher than observable current market costs of capital, and are in no way tied to a likely 12 estimate or an accurate estimate of what the Company's cost of capital may be in the 13 future.

The results of her projected stock price DCF model are presented on her
Attachment AEB-2, and show an average DCF return of 9.95% including AWK, 9.72%
excluding AWK and 9.83% excluding CTWS and SJW.

### 17 Q DO YOU HAVE ANY CONCERNS WITH MS. BULKLEY'S PROJECTED DCF 18 MODEL?

A Yes. Ms. Bulkley's DCF study based on "projected" stock prices does not reflect current
 market capital costs, or capital market costs that are established by the market
 participants in either the current or future markets. Rather, it simply reflects *Value Line*'s estimate of future stock market prices, dividend yields, and resulting DCF
 studies. This model does not rely on observable market data to estimate a fair return.

- As such, the DCF returns using this methodology are not reasonable for setting
   rates because it does not measure the return investors demand to assume the risk of
   the proxy group investment. Therefore, the return from this model does not measure
   a return that is fair to both investors and customers.
- 5 For these reasons, this projected stock price DCF methodology simply is 6 fraught with imbalanced estimates of a fair return and should, therefore, be rejected.

#### 7 X.C. Bulkley Expected Earnings Analysis

#### 8 Q PLEASE DESCRIBE MS. BULKLEY'S EXPECTED EARNINGS ANALYSIS.

9 Ms. Bulkley's Expected Earnings analysis is based on the projected returns on book А 10 equity for the water utility companies followed by Value Line and included in her proxy 11 group as developed on her Attachment AEB-3 and presented on Table 4 of her direct 12 testimony. Based on this analysis, Ms. Bulkley concluded that the return on equity for 13 her proxy group is 10.94% for 2018 and 12.50% for the projected period 2021-2023, 14 including AWK. Similarly, the results excluding AWK are 11.07% for 2018 and 12.79% 15 for 2021-2023. Finally, the results excluding CTW and SJW are 11.00% for 2018 and 16 12.50% for 2021-2023.

# 17QPLEASE DESCRIBE THE PROBLEMS WITH MS. BULKLEY'S EXPECTED18EARNINGS ANALYSIS.

A Ms. Bulkley's Expected Earnings analysis should be rejected because this approach
does not measure the market required return appropriate for the investment risk of
IAWC. Rather, it measures the book accounting return. The market required return is
not the same as the accounting return, and the two can be – and in this instance are –
vastly different.

1 The significant discrepancy between the level and meaning of a market-2 required return and a book return on equity, can have significant implications to both 3 investors and customers, when used to set a fair return on equity for ratemaking 4 Simply stated, a market return provides a pure measure of fair purposes. 5 compensation to investors, and allows for setting rates that provide no more than fair 6 compensation. Conversely, using the earned return on book equity can cause 7 compensation to be either too high or too low, and rates to be set either too low or too 8 high, depending on the specific circumstances when the book return is measured.

9 For example, if the proxy group's earned return on book equity is lower than the 10 market return, then this could be an indication that the rates for the proxy group are too 11 low and not providing fair compensation. As such, the measured book return on equity 12 would be an indication rates need to be increased. However, if the earned return on 13 book equity was used to estimate a fair return for ratemaking purposes, then this 14 depressed earnings level could result in rates being set below a level that provides fair 15 compensation to investors, and may not support its financial integrity. Conversely, if 16 the earned return on book equity for the proxy companies is above a fair market return 17 on equity, then that could be an indication that the rates for the proxy companies 18 produce more earnings than necessary to fairly compensate investors, and using this 19 inflated return on equity would result in rates which are not just and reasonable for customers. In other words, the market return on equity is an indication of whether or 20 21 not earnings are fair and reasonable, whereas the book return on equity generally is 22 used to determine whether or not rate revenues for utilities are either too high or too 23 low. They cannot be used interchangeably.

24 The market-required return is a long-standing practice in setting rates for utility 25 companies. This is because the market sets the required rate of return for assuming

1 the risk of an investment. To the extent the utility's earnings are adequate to allow it to 2 attract investors, then it will be able to sell new equity shares to the market to secure 3 capital needed to fund additional rate base investments. If this long-standing practice 4 of setting authorized returns consistent with market returns is rejected, in favor of Ms. 5 Bulkley's proposal to look at book returns on equity, then the balance between 6 estimating a fair return that is fair to both investors and customers will be turned upside 7 down, and the rate-setting practice could be substantially impaired and would not be 8 reliable.

9 The earned return on book equity is simply not an accurate or legitimate basis 10 upon which to determine what a fair and reasonable return on equity for both investors 11 and customers would be in setting rates. A fair return on equity needs to be a return 12 that represents fair compensation to utility investors, but results in rate impacts on 13 customers that are no more than necessary to produce that fair compensation – except 14 to the extent greater earnings are necessary to maintain financial integrity or credit 15 standing. For these reasons, this methodology simply should be rejected.

#### 16 X.D. Bulkley CAPM Studies

#### 17 Q PLEASE DESCRIBE MS. BULKLEY'S CAPM ANALYSIS.

18 A The CAPM analysis is based upon the theory that the market required rate of return for 19 a security is equal to the risk-free rate, plus a risk premium associated with the specific 20 security. The risk premium associated with the specific security is expressed 21 mathematically as:

- 22 Bi x (Rm Rf) where:
- 23Bi = Beta Measure of the risk for the stock24Rm = Expected return for the market portfolio25Rf = Risk-free rate

### 1 Q PLEASE DESCRIBE THE ISSUES YOU HAVE WITH MS. BULKLEY'S CAPM 2 STUDY.

A I have primarily two issues with Ms. Bulkley's CAPM study. First, I believe the market
risk premiums she used in her CAPM studies are overstated because they do not reflect
a reasonable estimate of the expected return on the market. My second material
concern with Ms. Bulkley's CAPM study is that she uses projected Treasury bond yields
five years out as an estimate of the current market risk-free rate. This is substantially
flawed for several reasons.

9 First, the projected Treasury bond yield of 4.2% is considerably higher than 10 current observable yields of 3.1%, and yields estimated over the next two years of 11 3.7%. Projections of Treasury bond yields five years out are highly uncertain and do 12 not reasonably reflect capital market costs that exist today, or that will exist during the 13 period rates determined in this proceeding will be in effect.

#### 14 Q PLEASE DESCRIBE MS. BULKLEY'S MARKET RISK PREMIUMS.

A Ms. Bulkley derived her market risk premiums by conducting a DCF analysis for the
market. Ms. Bulkley estimated a market return of 15.64% for the S&P 500 Index.
Hence, she produced market risk premiums in the range of 11.44% using risk-free rates
of 3.14%, 3.54%, and 4.20%, respectively.<sup>56</sup>

### 19 Q WHAT ISSUES DO YOU HAVE WITH MS. BULKLEY'S DCF-DERIVED MARKET

20

### **RISK PREMIUM ESTIMATES?**

A Ms. Bulkley's DCF-derived market risk premiums are based on a market return of 15.64%, which consists of a growth rate component of 13.56% and expected dividend

<sup>&</sup>lt;sup>56</sup> Bulkley Direct at 40-41.

yield of 1.95%.<sup>57</sup> As discussed above with respect to my own DCF model, the DCF
model requires a long-term sustainable growth rate. Ms. Bulkley's sustainable market
growth rate of 13.56% is far too high to be a rational outlook for sustainable long-term
market growth. This growth rate is approximately three times the growth rate of the
U.S. GDP long-term growth outlook of 4.2%.

6 As a result of this wildly unreasonable, high long-term market growth rate 7 estimate, Ms. Bulkley's market DCF return used in her CAPM analysis is inflated and 8 not reliable. Consequently, Ms. Bulkley's market risk premiums should be given very 9 minimal weight in estimating the Company's CAPM-based required cost of common 10 equity.

# 11 Q DO HISTORICAL ACTUAL RETURNS ON THE MARKET SUPPORT MS. 12 BULKLEY'S PROJECTED MARKET RETURNS?

A No. The historical data shows just how unreasonable Ms. Bulkley's projected DCF
return on the market is going forward. For example, Duff & Phelps estimates the actual
capital appreciation for the S&P 500 over the period 1926 through 2017 to have been
5.8% to 7.7%.<sup>58</sup> This compares to Ms. Bulkley's projected growth of the market of
13.56%.

Further, historically the geometric and arithmetic average growth rates of the market of 5.8%<sup>59</sup> and 7.7%, respectively, have tracked growth of GDP over this same time period of approximately 6.4%.

### 21 This review of historical data establishes two facts very clearly. First, historical 22 actual achieved growth has been substantially less than projected by Ms. Bulkley.

<sup>57</sup> Id.
 <sup>58</sup>Duff & Phelps, 2018 SBBI Yearbook at 6-17.
 <sup>59</sup>Id.

Second, historical growth of the market has tracked historical growth of the U.S. GDP.
Projected growth of the U.S. GDP now is in the 4.0% to 4.5% range. This information
strongly supports the conclusion that Ms. Bulkley's projected growth on the market of
13.56% is wildly overstated. While I do not endorse the use of a historical growth rate
to draw assessments of the market's forward-looking growth rate outlooks, this data
can be used to show how the market return estimates produced by Ms. Bulkley are
unreasonable and inflated.

# 8 Q WHY DO YOU BELIEVE THAT MS. BULKLEY'S LONG-TERM PROJECTED RISK9 FREE RATE IS NOT RELIABLE?

10 Ms. Bulkley's use of a long-term (a yield projected to prevail in 5 to 10 years out) А 11 projected bond yield of 4.20%<sup>60</sup> is not reflective of market participants' outlooks for 12 IAWC's cost of capital during the period rates determined in this proceeding will be in 13 effect. This bond yield is largely based on projections of Treasury bond yields five 14 years out. Those projections are highly uncertain and in any event do not reflect the 15 cost of capital in the test period or even the period over the next two to three years, the 16 period in which rates determined in this proceeding will largely be in effect. The CAPM 17 methodology should be based on observable bond yields in the market today, or at 18 most reflect bond yield projections over the next two to three years, the rate-effective 19 period in this case. Ms. Bulkley's use of 5-year projections is inconsistent with the 20 principles underlying the CAPM, and leads to an inflated estimate of the cost of equity.

<sup>60</sup>Blue Chip Financial Forecasts, June 1, 2018 at 14.

# 1QCAN MS. BULKLEY'S CAPM ANALYSIS BE REVISED TO REFLECT A MORE2REASONABLE MARKET RISK PREMIUM AND RECENT RISK-FREE RATES?

A Yes. Using Ms. Bulkley's risk-free rates of 3.14% and 3.54%, the average published
Bloomberg and *Value Line* beta estimates of 0.752 (0.758 excluding AWK and 0.823
excluding CTWS and SJW) and 0.725 (0.736, excluding AWK and 0.742 excluding
CTWS and SJW),<sup>61</sup> respectively, and my calculated high-end market risk premium of
7.8%<sup>62</sup>, Ms. Bulkley's CAPM would be no higher than 9.5%.

8 X.E. Additional Risks

9 Q DID MS. BULKLEY CONSIDER ADDITIONAL BUSINESS RISKS TO TRY TO 10 JUSTIFY A RETURN ON EQUITY WITHIN HER RANGE?

11 A Yes. Ms. Bulkley believes that the Company is exposed to several additional risks that 12 should be accounted for: (1) its intense capital investment program; and (2) risk 13 associated with declining average use per customer. Ms. Bulkley believes that these 14 additional risks should be considered in determining where, within a reasonable range, 15 the return on equity for IAWC falls.<sup>63</sup>

### 16 Q WHY DO YOU BELIEVE THAT IAWC FACES RISKS THAT ARE COMPARABLE TO

17 THE RISKS FACED BY MS. BULKLEY'S AND YOUR PROXY GROUP 18 COMPANIES?

A The business risks identified by Ms. Bulkley are among those considered in the
 assigning of a credit rating by the various credit rating agencies. As shown on my
 Attachment MPG-7, the average S&P credit rating for my proxy group of A is identical

<sup>&</sup>lt;sup>61</sup>Schedule AEB-7.

<sup>&</sup>lt;sup>62</sup>Attachment MPG-21.

<sup>&</sup>lt;sup>63</sup>Bulkley Direct Testimony at 42-49.

to IAWC's credit rating from S&P. S&P and other credit rating agencies go through
 great detail in assessing a utility's business risk and financial risk in order to evaluate
 their assessment of its total investment risk. This total investment risk assessment of
 IAWC, in comparison to a proxy group, is fully absorbed into the market's perception of

5 IAWC's risk, and therefore the proxy group fully captures the investment risk of IAWC.

## 6 Q HOW DOES S&P ASSIGN CORPORATE CREDIT RATINGS FOR REGULATED

#### 7 UTILITIES?

- 8 A In assigning corporate credit ratings, the credit rating agency considers both business
- 9 and financial risks. Business risks, among others, include a company's size,
- 10 competitive position, generation portfolio, and capital expenditure programs, as well as
- 11 consideration of the regulatory environment, current state of the industry, and the
- 12 economy as a whole. Specifically, S&P states:

13 To determine the assessment for a corporate issuer's business risk profile, the criteria combine our assessments of industry risk, country 14 risk, and competitive position. Cash flow/leverage analysis determines 15 16 a company's financial risk profile assessment. The analysis then 17 combines the corporate issuer's business risk profile assessment and 18 its financial risk profile assessment to determine its anchor. In general, 19 the analysis weighs the business risk profile more heavily for investment-grade anchors, while the financial risk profile carries more 20 weight for speculative-grade anchors.<sup>64</sup> 21

22 Q DO YOU BELIEVE THAT IAWC'S CAPITAL EXPENDITURE FORECASTS ARE OUT

### 23 OF LINE WITH THE UTILITY INDUSTRY?

- A No. As shown on my Attachment MPG-5, the industry as a whole is expected to require
- 25 access to the external capital markets due to producing less cash flow per share than
- 26 capital spending per share. Importantly, this is expected to change in three to five

<sup>&</sup>lt;sup>64</sup>Standard & Poor's RatingsDirect: "Criteria/Corporates/General: Corporate Methodology," November 19, 2013.

years. As can be seen on that schedule, the industry is expected to produce more
 cash than it is expected to invest in the 2021-2023 time period. Hence, Ms. Bulkley's
 assertion that the Company will need to access the capital markets in the near term is
 not unique to IAWC.

5 Therefore, Ms. Bulkley's assertion that IAWC's capital program will place 6 additional pressure on its cash flows is misguided.

# Q DID MS. BULKLEY ALSO OFFER AN ASSESSMENT OF CURRENT MARKET 8 CONDITIONS IN SUPPORT OF HER RECOMMENDED RETURN ON EQUITY 9 RANGE?

10 A Yes. Ms. Bulkley suggests a few factors that gauge investor sentiment, including 11 (1) the impact of the currently low interest rate environment on utility valuations and 12 dividend yields, (2) the market expectation of higher interest rates, and (3) the effect in 13 tax reform (TCJA).<sup>65</sup> She concludes that the current market conditions are anomalous 14 and support a return on equity in the upper end of her range.

15QDO YOU BELIEVE THAT MS. BULKLEY'S USE OF THESE MARKET SENTIMENTS16SUPPORTS HER FINDINGS THAT IAWC'S MARKET COST OF EQUITY IS17CURRENTLY AT THE UPPER END OF HER RANGE OF 10.0% TO 10.8%?

A No. The market sentiment toward utility investments is that the market is placing high
 value on utility securities, recognizing their low risk and stable investment
 characteristics.

This is illustrated by current utility bond yield spreads as discussed above. The current strong utility bond valuation is an indication of the market's sentiment that utility

<sup>&</sup>lt;sup>65</sup>Bulkley Direct Testimony at 10-26.

bonds are of lower risk and are generally regarded as a safe haven by the investment
 industry.

Further, other measures of utility stock valuations also support the conclusion
that there is a robust market for utility stocks. As shown on my Attachment MPG-5,
financial valuation measures - *e.g.*, P/E ratio and market price to cash flow ratio - for
the proxy group show that utility stock valuation measures are robust.

For all these reasons, direct assessments of valuation measures and market
sentiment toward utility securities support the credit rating agencies' findings, as quoted
above, and show that the utility industry is largely regarded as a low-risk, safe haven
investment. All of this supports my findings that utilities' market cost of equity is very
low in today's very low-cost capital market environment.

### 12 Q DO YOU HAVE ANY COMMENTS CONCERNING MS. BULKLEY'S CONTENTION 13 THAT INTEREST RATES ARE GOING TO INCREASE?

14 А Yes. Ms. Bulkley develops her CAPM studies mainly relying on near-term and long-15 term projected interest rates, which she believes are expected to increase. (Bulkley 16 Direct Testimony at 21-23). Ms. Bulkley's proposal to rely mainly on forecasted 17 Treasury bond yields is unreasonable because she is not considering the highly likely 18 outcome that current observable interest rates will prevail during the period in which 19 rates determined in this proceeding will be in effect. This is important because current 20 observable interest rates are actual market data that provide a measure of the current 21 cost of capital, but the accuracy of forecasted interest rates is problematic at best.

22 Nevertheless, as outlined above, long-term projected interest rates do not imply 23 that capital market participants are expecting significant increases in the current 24 observable capital market costs. Therefore, inflating the authorized return on equity based on uncertain increases in capital market costs would result in a return on equity
that is higher than necessary to provide fair compensation, and would not result in the
establishment of rates that are just and reasonable.

### 4 Q WHY DO YOU BELIEVE THAT THE ACCURACY OF FORECASTED INTEREST 5 RATES IS HIGHLY PROBLEMATIC?

A Over the last several years, observable current interest rates have been a more
 accurate predictor of future interest rates than economists' consensus projections.
 Attachment MPG-24 illustrates this point. On this schedule, under Columns 1 and 2, I
 show the actual market yield for Treasury bonds at the time a projection is made, and
 the corresponding projection for Treasury bond yields two years in the future,
 respectively.

As shown in Columns 1 and 2, over the last several years, Treasury yields were projected to increase relative to the actual Treasury yields at the time of the projection. In Column 4, I show what the Treasury yield actually turned out to be two years after the forecast. In Column 5, I show the actual yield change at the time of the projections relative to the projected yield change.

As shown in this schedule, economists have consistently been projecting that interest rates will increase over the near term. However, as shown in Column 5, those yield projections have turned out to be overstated in almost every case. Indeed, actual Treasury yields have decreased or remained flat over the last several years rather than increasing as the economists' projections indicated. As such, current observable interest rates are at least as likely to accurately predict future interest rates as are economists' projections.

### 1 Q DO YOU HAVE ANY FURTHER COMMENTS IN REGARD TO MS. BULKLEY'S 2 INTEREST RATE PROJECTIONS?

3 А Yes. First, it is simply not known how much, if any, long-term interest rates will increase 4 from current levels or whether they have already fully accounted for the termination of the Fed's QE program and the increase in the Federal Funds Rate. Nevertheless, I do 5 6 agree that this Fed program introduced risk or uncertainty in short-term interest rate markets. However, the increase in short-term interest rates had no impact on longer-7 8 term yields. In fact, as the EEI pointed out: "Investors have feared rising rates for longer 9 than many professional investors have been in the business. But the 35-year bond bull 10 market has defied all skeptics and yields have fallen rather than risen."<sup>66</sup> This notion 11 is also supported by the president of the Saint Louis Federal Reserve, who stated that 12 even though the short-term interest rates have increased the longer-term yields remain at historically low levels, which is referred to as "flattening" of the yield curve."67 13

Second, I would note IAWC is largely shielded from significant changes in capital market costs. To the extent long-term interest rates ultimately increase above current levels, which may have an impact on required returns on common equity, at that point in time, IAWC, like all other utilities, can file to change rates to restate its authorized rate of return at the prevailing market levels.

Finally, while current observable interest rates are actual market data that provide a measure of the current cost of capital, the accuracy of forecasted interest rates is problematic at best.

<sup>&</sup>lt;sup>66</sup>EEI Q4 2017 Financial Update: "Stock Performance" at 6.

<sup>&</sup>lt;sup>67</sup>Assessing the Risk of Yield Curve Inversion: An Update, July 20, 2018.

#### 1 Q DO YOU HAVE ANY COMMENTS CONCERNING MS. BULKLEY'S CONCLUSIONS

#### 2 ABOUT THE IMPACT OF THE TAX CUT AND JOBS ACT ("TCJA")?

- 3 A Yes. As discussed above, even though the cash flows for some utilities will be
- 4 impacted by the TCJA, this impact is not significant enough to trigger a credit
- 5 downgrade for a utility with solid financial metrics. Specifically, Moody's states:
- 6 The vast majority of US regulated utilities, however, continue to maintain 7 stable rating outlooks. We do not expect the cash flow reduction 8 associated with tax reform to materially impact their credit profiles 9 because sufficient cushion exists within projected financial metrics for 10 their current ratings. Nonetheless, further actions could occur on a 11 company specific basis.
- 12 \* \* \*
- 13The change in outlook to negative from stable for the 24 companies14affected in this rating action primarily reflects the incremental cash flow15shortfall caused by tax reform on projected financial metrics that were16already weak, or were expected to become weak.68
- 17 My recommended return on equity reflects all relevant market factors, including
- 18 the reduction in the federal tax rate.
- 19

### XI. FAIR VALUE INCREMENT

20 Q HAS THE COMPANY INCLUDED A FAIR VALUE OPERATING INCOME 21 ADJUSTMENT IN ITS CLAIMED REVENUE DEFICIENCY IN THIS PROCEEDING? 22 А Yes. Although the Company is calculating its revenue requirement using an original 23 cost methodology, as shown on the Company's revenue Schedule REVREQ1, the 24 Company is included a fair value operating income increment of \$450K in Step 1 and 25 \$425K in Step 2. This fair value increment was based on acquisition premiums the 26 Company paid for its purchase of Indiana City Utilities Companies, and the Company's 27 estimated overall rate of return for Step 1 increase of 6.73%, and Step 2 increase of

<sup>&</sup>lt;sup>68</sup>Supra, footnote 14.

6.82%. These fair value increments were based on these IAWC proposed overall rates
 of return, and acquisition adjustment net of accumulated deferred income taxes of \$6.7
 million in the Step 1 increase, and \$6.2 million in the Step 2 increase.<sup>69</sup>

4

5

### Q DID THE COMPANY EVIDENCE PROVIDE OTHER METHODS OF DEVELOPING A FAIR VALUE INCREMENT?

- A Yes. However, it did not use the alternative fair value increments in developing the
  Company's claimed revenue deficiency. On Attachment AB-12, IAWC witnesses Mr.
  Roach and Ms. Bulkley recommend a rate of return of 6.82% for 2020 and 6.73% for
  2019.<sup>70</sup> Ms. Bulkley uses the Company's requested rate of return to apply to the
  difference between fair value adjusted rate base of approximately \$1.755 billion (April
  30, 2020) and \$1.567 billion (April 30, 2019), and the original cost rate base of \$1.24
  billion (April 30, 2020) and \$1.08 billion (April 30, 2019).<sup>71</sup>
- Using these methodologies applied to the total difference between fair value and original cost rate base, Ms. Bulkley develops alternative fair value operating income increments ranging from \$0.92 million to \$24.50 million (April 2020) and \$3.5 million to \$22.6 million (April 2019).
- While the Company does not use these alternative fair value increments in
  establishing its revenue requirement, I will nevertheless respond to Ms. Bulkley's
  methodology in deriving these fair value increments to the extent the Commission
  considers those estimates in determining the Company's authorized NOI.

<sup>69</sup>Schedule REVREQ4.

<sup>&</sup>lt;sup>70</sup>Attachment AEB-12.

### 1 Q DO YOU BELIEVE THAT MS. BULKLEY HAS ACCURATELY AND REASONABLY 2 MEASURED HER FAIR VALUE INCREMENT IN THIS PROCEEDING?

A No. Ms. Bulkley's fair value methodology is severely flawed and produces an excessive fair value increment if used for ratemaking purposes. Importantly, the Company did not rely on Ms. Bulkley's methodology so I will respond to this only to illustrate the deficiencies in her methodology. Further, I also comment on the appropriateness and the need for a fair value increment in order to set a revenue requirement in this proceeding which fairly compensates IAWC for its investment in utility plant and equipment.

### 10 Q WHY DO YOU BELIEVE THAT MS. BULKLEY'S FAIR VALUE INCREMENT 11 METHODOLOGY IS UNRELIABLE AND PRODUCES A FLAWED ESTIMATE?

A Ms. Bulkley's methodology is flawed because she has not reasonably nor accurately
 measured a fair value rate base in this proceeding. Indeed, the methodology is so
 severely flawed it should be rejected.

PLEASE DESCRIBE THE METHODOLOGY MS. BULKLEY USED TO PRODUCE A

#### 15 **Q**

16

### FAIR VALUE RATE BASE.

17 A Ms. Bulkley did not perform a fair value methodology of IAWC's rate base in this 18 proceeding. Rather, she performed a methodology that started with a fair value 19 estimate made by IAWC in its last rate case (Cause No. 44450), a period where fair 20 value rate base was measured based on 2015 data. In the last case, the Company 21 measured a fair value rate base of \$1.22 billion based on a 2015 test year. Ms. Bulkley 22 then inflated that fair value rate base to the future test year proposed in this proceeding 23 (April 30, 2019 and April 30, 2020) using a composite inflation escalation rate of 2.2%. She then inflated this year-end 2015 rate base to April 30, 2019 and April 30, 2020.
 She next included net investor-supplied plant additions that came after year-end 2015,
 or in addition to the fair value rate base investment estimated for Cause No. 44450.
 Those plant additions from the last case amounted to \$407.6 million through April 30,
 2020, and \$250.4 million through April 30, 2019.

6 With this methodology as outlined in her Attachment AEB-12, she estimated a
7 fair value rate base at April 30, 2020 of \$1.755 billion, and at April 30, 2019 of
8 \$1.567 billion.

### 9 Q PLEASE DESCRIBE THE DEFICIENCIES IN MS. BULKLEY'S FAIR VALUE 10 ESTIMATE.

11 А There are many errors and omissions in Ms. Bulkley's fair value estimate. These errors 12 render her fair value rate base estimate flawed and unreliable. The errors include the 13 following. First, she acknowledges that the Company's fair value rate base estimate of 14 \$1.22 billion as it estimated in Cause No. 44450 was never approved as reasonable by 15 the Commission. Indeed, Ms. Bulkley observes that the rate decision from IAWC's last 16 rate case was settled, and the Company's fair value rate base was never used to 17 establish the revenue requirement approved by the Commission in that case. As such, 18 her starting point is not a reasonable de facto estimate of IAWC's fair value rate base 19 in the 2015 rate case, and she has not proved it to be accurate in this case.

Second, while she reflects escalation to that fair value estimate from the plant in-service in that 2015 test year, she has failed to reflect the reduction in the fair value of the 2015 rate base caused by depreciation of those assets over this four- to five-year period. That is, the estimated "remaining" life of those facilities will be shorter now than in 2015, which will reduce the fair value of the rate base in 2019 and 2020, relative to the fair value estimate in 2015. Ms. Bulkley's analysis simply does not reflect this
 expected operating life of the assets, and the expectation that as assets move closer
 to their end of life, their fair value will decline.

4 Ms. Bulkley also failed to recognize that many of the facilities need to be 5 upgraded to comply with environmental and water regulations, which is a major 6 component of the Company's capital expenditures planning process. As such, she 7 failed to recognize any technological obsolescence, or regulatory obsolescence 8 created by new water or environmental regulations relative to IAWC's 2015 plant 9 investment. Obsolete or non-compliant infrastructure that needs to be modernized will 10 have less value due to changes in environmental and water regulations. Ms. Bulkley's 11 analysis simply ignores this valuation aspect. Ms. Bulkley's analysis also ignores any 12 changes in the expected useful life of the facilities between 2015 and more recently. 13 As such, there is no current assessment of the current remaining life aspect of the 14 facilities used by Ms. Bulkley to determine a fair value for this case.

For all these reasons, Ms. Bulkley's fair value estimate for IAWC's rate base investments in this case is simply fraught with errors, is not reliable nor credible, and should not be used for setting rates.

# 18 Q SHOULD A FAIR VALUE NOI BE GREATER THAN AN NOI BASED ON ORIGINAL

19 **COST?** 

A No. The NOI should be about the same whether an original cost rate base or a fair
 value rate base is used. Because IAWC's proposed fair value NOI exceeds its
 proposed original cost NOI, this suggests that methods used to determine the fair value
 rate base or the fair rate of return, or both, were flawed.

1 2 Q

### COST AND FAIR VALUE METHODOLOGIES?

3 Α Investors should be fairly compensated and rates should be just and reasonable using 4 either an original cost or a fair value rate-setting methodology. In an original cost 5 methodology, investors are compensated entirely by the allowed return on rate 6 base. The increase in value of the assets included in rate base is not reflected in the original cost methodology. Therefore, investors are compensated for the expectation 7 that asset values will increase over time, by applying a market-based rate of return to 8 9 the original cost of assets. This provides total compensation to investors on a current 10 basis through the rate of return.

EXPLAIN WHY THE NOI SHOULD BE COMPARABLE USING BOTH ORIGINAL

On the other hand, in a fair value methodology, the expected escalation or growth to the value of utility assets is reflected in setting rates. Therefore, the total return to investors in a fair value methodology includes both the expected growth in the value of the assets (i.e., growth in the fair value rate base), plus the rate of return applied to the fair value rate base.

16 The primary difference between a rate of return to apply to original rate base, 17 and a rate of return to apply to a fair value rate base, relates to compensating investors 18 for the expected growth to the asset values. In an original cost rate of return, the 19 expected growth rate in asset values is included in the rate of return and investors are 20 compensated for this growth in the utility's operating income. Conversely, in a fair value 21 methodology, expected growth in the value of the assets is picked up in the growth to 22 the rate base itself, and not in the rate of return.

Regardless of the methodology, however, the NOI should be approximately thesame.

#### 1 Q WHAT IS A FAIR RATE OF RETURN TO APPLY TO A FAIR VALUE RATE BASE?

A Fair compensation for investors is based on the return an investor would expect to
receive by making an alternative comparable risk investment. The return, then, is made
up of an expectation that the investment value will grow, and the investment may
receive some current return on the asset.

6 For example, consider an expected return on a stock investment that was 7 valued by an investor at an expected return of 10%. If the investor required return is 8 10% and the dividend yield on the stock is 4%, then an investor would expect that the 9 stock price would increase by 6% per year. Consequently, the total return to the equity 10 investor is produced through both the dividend yield (4%), or current return, and stock 11 price appreciation (6%), or unrealized return. The combination of the two produces the 10% required return.

Similarly, let us assume that a utility investor expects a 10% return. If the value
of assets included in rate base is expected to grow by 4%, then the utility should be
allowed to earn a 6% rate of return on its fair value rate base. Investors are fairly
compensated by the 6% current return and 4% growth to the fair value of the rate base,
unrealized return.

A total return on a fair value ratemaking methodology is similar to the return expected by making stock investments. It is derived from both a current return and the return derived from an increase in the value of the underlying investment, unrealized return.

### 1 Q HOW THEN CAN YOU ESTIMATE A FAIR RATE OF RETURN TO APPLY TO A 2 FAIR VALUE RATE BASE?

A The most direct way is to start with the rate of return developed for original cost rate base. The return on equity in this return should be adjusted to remove the expected future growth in utility asset values. Over time, investors will receive fair compensation by the equity return on rate base, plus the increase in the investment value of the utility assets. This is comparable to a stock investor who is compensated by receiving both dividends and stock price appreciation.

### 9 Q CAN YOU PROVIDE AN EXAMPLE THAT SHOWS HOW ORIGINAL COST RATE

#### 10

11

### OF RETURN, AND YOUR PROPOSED DEVELOPMENT OF A FAIR VALUE RATE OF RETURN, BOTH RESULT IN FAIR COMPENSATION TO INVESTORS?

12 А Yes. An example is shown below in Table 23. Under the original cost methodology, if 13 the beginning of year rate base is \$100, the return is assumed to be 10%, escalation 14 to the value of utility assets is assumed to be 3%, and the annual depreciation rate is 15 3%. Based on these assumptions, depreciation expense for the year would be \$3, and 16 capital expenditures are assumed to be \$3.10, which was developed assuming that 3% 17 of the rate base would be replaced, and the cost of replacement would escalate by 3% 18 per year. The end of year rate base in this example, then, is \$100.10. The current 19 return produced on this rate base is the beginning of year rate base multiplied by the 20 10% rate of return, or \$10. Hence, the total return on the original cost methodology is 21 \$10, or 10%.

In column 2, I show the compensation to investors using a fair value methodology. Here, again, investors' compensation is 10%. In the fair value methodology the beginning of year rate base is \$100, the fair value rate of return is 7%, and the asset escalation is 3%. Depreciation expense then would be \$3.10, which is
the original cost depreciation expense adjusted by the growth in the value of the
asset. Capital expenditures are again \$3.10. Year-end rate base is \$103, which
reflects the 3% escalation to the value of the beginning of year rate base. In a fair value
methodology, investor compensation is based on the current return of \$7, and
appreciation in the value of rate base is \$3, for a total investor return of \$10, or 10%.

TABLE 23 Original Cost and Fair Value Comparison									
DescriptionOriginal CostFair Value(1)(2)									
Beginning Rate Base	\$100	\$100							
Rate of Return	10%	7%							
Asset Escalation	3%	3%							
Depreciation Expense (3%)	\$3.0	\$3.1							
Capital Expenditures	\$3.1	\$3.1							
Year-End Rate Base	\$100.1	\$103.0							
Current Return	\$10	\$7							
Asset Appreciation	<u>\$ 0</u>	<u>\$3</u>							
Total Return \$10 \$10									
Total Return (%)	\$10 (10%)	\$10 (10%)							

### 7 Q DOES THIS CONCLUDE YOUR VERIFIED DIRECT TESTIMONY?

8 A Yes, it does.

### **Qualifications of Michael P. Gorman**

#### 1 Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

- 2 A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,
- 3 Chesterfield, MO 63017.

#### 4 Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and a Managing Principal with
the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory
consultants.

### 8 Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK 9 EXPERIENCE.

- A In 1983 I received a Bachelor of Science Degree in Electrical Engineering from
   Southern Illinois University, and in 1986, I received a Master's Degree in Business
   Administration with a concentration in Finance from the University of Illinois at
   Springfield. I have also completed several graduate level economics courses.
- 14 In August of 1983, I accepted an analyst position with the Illinois Commerce Commission ("ICC"). In this position, I performed a variety of analyses for both formal 15 16 and informal investigations before the ICC, including: marginal cost of energy, central 17 dispatch, avoided cost of energy, annual system production costs, and working capital. 18 In October of 1986, I was promoted to the position of Senior Analyst. In this position, I 19 assumed the additional responsibilities of technical leader on projects, and my areas 20 of responsibility were expanded to include utility financial modeling and financial 21 analyses.

In 1987, I was promoted to Director of the Financial Analysis Department. In
this position, I was responsible for all financial analyses conducted by the Staff. Among
other things, I conducted analyses and sponsored testimony before the ICC on rate of
return, financial integrity, financial modeling and related issues. I also supervised the
development of all Staff analyses and testimony on these same issues. In addition, I
supervised the Staff's review and recommendations to the Commission concerning
utility plans to issue debt and equity securities.

8 In August of 1989, I accepted a position with Merrill-Lynch as a financial 9 consultant. After receiving all required securities licenses, I worked with individual 10 investors and small businesses in evaluating and selecting investments suitable to their 11 requirements.

In September of 1990, I accepted a position with Drazen-Brubaker & 12 Associates, Inc. ("DBA"). In April 1995, the firm of Brubaker & Associates, Inc. was 13 14 formed. It includes most of the former DBA principals and Staff. Since 1990, I have 15 performed various analyses and sponsored testimony on cost of capital, cost/benefits 16 of utility mergers and acquisitions, utility reorganizations, level of operating expenses 17 and rate base, cost of service studies, and analyses relating to industrial jobs and 18 economic development. I also participated in a study used to revise the financial policy 19 for the municipal utility in Kansas City, Kansas.

At BAI, I also have extensive experience working with large energy users to distribute and critically evaluate responses to requests for proposals ("RFPs") for electric, steam, and gas energy supply from competitive energy suppliers. These analyses include the evaluation of gas supply and delivery charges, cogeneration and/or combined cycle unit feasibility studies, and the evaluation of third-party asset/supply management agreements. I have participated in rate cases on rate design and class cost of service for electric, natural gas, water and wastewater utilities.
 I have also analyzed commodity pricing indices and forward pricing methods for third
 party supply agreements, and have also conducted regional electric market price
 forecasts.

In addition to our main office in St. Louis, the firm also has branch offices in
Phoenix, Arizona and Corpus Christi, Texas.

#### 7 Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?

8 А Yes. I have sponsored testimony on cost of capital, revenue requirements, cost of 9 service and other issues before the Federal Energy Regulatory Commission and 10 numerous state regulatory commissions including: Arkansas, Arizona, California, 11 Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, 12 Michigan, Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, North 13 Carolina, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, 14 Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and before the 15 provincial regulatory boards in Alberta and Nova Scotia, Canada. I have also 16 sponsored testimony before the Board of Public Utilities in Kansas City, Kansas; 17 presented rate setting position reports to the regulatory board of the municipal utility in 18 Austin, Texas, and Salt River Project, Arizona, on behalf of industrial customers; and 19 negotiated rate disputes for industrial customers of the Municipal Electric Authority of 20 Georgia in the LaGrange, Georgia district.

# 1QPLEASEDESCRIBEANYPROFESSIONALREGISTRATIONSOR2ORGANIZATIONS TO WHICH YOU BELONG.

A I earned the designation of Chartered Financial Analyst ("CFA") from the CFA Institute.
 The CFA charter was awarded after successfully completing three examinations which
 covered the subject areas of financial accounting, economics, fixed income and equity
 valuation and professional and ethical conduct. I am a member of the CFA Institute's
 Financial Analyst Society.

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#### STATE OF INDIANA

#### INDIANA UTILITY REGULATORY COMMISSION

PETITION OF INDIANA-AMERICAN WATER COMP ANY, INC. FOR (1) AUTHORITY TO INCREASE ITS RATES AND CHARGES FOR WATER UTILITY SERVICE, (2) REVIEW OF ITS RATES AND CHARGES FOR WASTEWATER UTILITY SERVICE, (3) APPROVAL OF NEW SCHEDULES OF RATES AND CHARGES APPLICABLE TO WATER AND WASTEWATER UTILITY SERVICE, AND (4) AUTHORITY TO IMPLEMENT A LOW INCOME PILOT PROGRAM

#### **CAUSE NO. 45142**

#### Verification

I, Michael P. Gorman, a Consultant and Managing Principal of Brubaker & Associates,

Inc., affirm under penalties of perjury that the foregoing representations are true and correct to

the best of my knowledge, information and belief.

br Michael P. Gorman January 10, 2019

### Labor Expense Adjustment

Line	Description	<u>Amount</u>
		(1)
	Operations & Maintenance Adjustments	
1	Salaries and Wages	\$ (1,587,592)
2	Group Insurance	(363,023)
3	Other Benefits	(150,813)
4	Total Operations & Maintenance Adjustments	\$ (2,101,428)
	General Taxes Adjustments	
5	Payroll Taxes	(124,394)
6	Total General Taxes Adjustments	\$ (124,394)
7	Total Operating Income Adjustments	\$ (2,225,821)

Source: IAWC Financial Exhibit OPER, Schedule OM5 Confidential Workpapers.

### Capital Additions Adjustment Summary

<u>Line</u>	Description	Phase 1	Phase 2
		(1)	(2)
1	Plant in Service Adjustment <sup>1</sup>	\$ (24,800,000)	\$ (63,800,000)
2	Reduced Accumulated Depreciation <sup>2</sup>	 469,040	 1,150,090
3	Total Rate Base Adjustments (Line 1 + Line 2)	\$ (24,330,960)	\$ (62,649,910)
4	IAWC Pre-Tax Rate of Return <sup>3</sup>	8.57%	8.68%
5	Adjusted Return on Rate Base (Line 3 * Line 4)	\$ (2,086,034)	\$ (5,436,806)
6	Decreased Depreciation Expense <sup>4</sup>	\$ (714,369)	\$ (1,626,746)
7	Revenue Requirement Impact (Line 5 + Line 6)	\$ (2,800,403)	\$ (7,063,552)

Sources:

<sup>1</sup> Attachment MPG-2, page 2, column 5, lines 8 and 9.

<sup>2</sup> Attachment MPG-2, page 4, line 15.

<sup>3</sup> IAWC Financial Exhibit CC, Schedule CC1.

<sup>4</sup> Attachment MPG-2, page 5, line 7.

### Capital Additions Adjustment Proposed Capital Plan (Millions)

			AWC						Cur	nulative	
		C	apital		Propose	d Plan			Pre	oposed	
<u>Line</u>	<u>Year</u>	<u>Plan<sup>1</sup></u> (1)		<u>Amount</u> (2)		<u>Growth</u> (3)	<u>Change</u> (4)		<u>Plan</u> (5)		
1	2017	\$	95.1	\$	95.1		\$	-	\$	95.1	
2	2018		115.3		104.6	10.0%		(10.7)		199.7	
3	2019		160.7		115.1	10.0%		(45.6)		314.8	
4	2020		107.2		126.6	10.0%		19.4		441.4	
5	2021		109.8		132.9	5.0%		23.1		574.3	
6	2022		121.5		135.6	<u>2.0%</u>		14.1		709.8	
7	Total	\$	709.6	\$	709.8	7.4%	\$	0.2			
8	1/1/18 to 4/30/19 <sup>2</sup>	\$	126.4	\$	101.6		\$	(24.8)	\$	(24.8)	
9	5/1/19 to 4/30/20 <sup>2</sup>		199.3		160.3			(39.0)		(63.8)	
10	Total	\$	325.7	\$	261.9		\$	(63.8)		、	

Sources:

<sup>1</sup> Hoffman Direct at 12.

<sup>2</sup> IAWC Financial Workpapers, IN 2018 UPIS\_Support. Excludes Wastewater.

			14	W	C Plan		Proposed Plan								
			Monthly		Monthly			Plant		New Monthly		Ν	lew Monthly	D	epreciation
			Plant	D	epreciation	Depr.		Balance		Plant	Depr.	D	epreciation		Expense
Line	Month		Balance		Expense	Rate	A	Adiustment <sup>1</sup>		Balance	Rate		Expense	Γ	Difference
			(1)		(2)	(3)	-	(4)		(5)	(6)		(7)	-	(8)
			( )		( )	.,		()		( )	( )		.,		( )
1	January 18	\$	1,601,479,290	\$	3,806,102	2.85%	\$	-	\$	1,601,479,290	2.85%	\$	3,806,102	\$	-
2	February		1,605,954,995		3,824,007	2.86%		(1,653,333)		1,604,301,662	2.86%		3,820,070		(3,937)
3	March		1,608,573,649		3,832,850	2.86%		(3,306,667)		1,605,266,982	2.86%		3,824,971		(7,879)
4	April		1,608,992,461		3,828,483	2.86%		(4,960,000)		1,604,032,461	2.86%		3,816,681		(11,802)
5	May		1,612,703,509		3,838,756	2.86%		(6,613,333)		1,606,090,176	2.86%		3,823,014		(15,742)
6	June		1,618,449,074		3,855,211	2.86%		(8,266,667)		1,610,182,407	2.86%		3,835,519		(19,692)
7	July		1,617,846,043		3,813,597	2.83%		(9,920,000)		1,607,926,043	2.83%		3,790,213		(23,383)
8	August		1,622,670,991		3,827,110	2.83%		(11,573,333)		1,611,097,658	2.83%		3,799,814		(27,296)
9	September		1,633,651,681		3,848,775	2.83%		(13,226,667)		1,620,425,014	2.83%		3,817,613		(31,161)
10	October		1,640,481,807		3,869,699	2.83%		(14,880,000)		1,625,601,807	2.83%		3,834,599		(35,100)
11	November		1,648,051,721		3,890,716	2.83%		(16,533,333)		1,631,518,388	2.83%		3,851,684		(39,032)
12	December		1,659,918,254		3,927,281	2.84%		(18,186,667)		1,641,731,587	2.84%		3,884,252		(43,029)
13	January 19		1,682,974,902		3,972,998	2.83%		(19,840,000)		1,663,134,902	2.83%		3,926,162		(46,836)
14	February		1,693,064,368		3,996,503	2.83%		(21,493,333)		1,671,571,035	2.83%		3,945,767		(50,735)
15	March		1,697,723,961		4,012,877	2.84%		(23,146,667)		1,674,577,294	2.84%		3,958,166		(54,711)
16	April		1,702,260,342		4,029,488	2.84%		(24,800,000)		1,677,460,342	2.84%		3,970,783		(58,705)
17	Phase 1 Tot	al		\$	62,174,450							\$	61,705,410	\$	(469,040)
18	May 19	\$	1,717,710,497	\$	3,572,803	2.50%	\$	(28,050,000)	\$	1,689,660,497	2.50%	\$	3,514,459		(58,343)
19	June		1,722,565,175		3,585,293	2.50%		(31,300,000)		1,691,265,175	2.50%		3,520,146		(65,147)
20	July		1,727,834,461		3,599,353	2.50%		(34,550,000)		1,693,284,461	2.50%		3,527,380		(71,973)
21	August		1,734,272,950		3,615,707	2.50%		(37,800,000)		1,696,472,950	2.50%		3,536,900		(78,808)
22	September		1,741,353,515		3,634,760	2.50%		(41,050,000)		1,700,303,515	2.50%		3,549,076		(85,684)
23	October		1,748,172,564		3,653,495	2.51%		(44,300,000)		1,703,872,564	2.51%		3,560,912		(92,582)
24	November		1,759,164,563		3,686,131	2.51%		(47,550,000)		1,711,614,563	2.51%		3,586,496		(99,636)
25	December		1,805,125,226		3,767,647	2.50%		(50,800,000)		1,754,325,226	2.50%		3,661,618		(106,029)
26	January 20		1,850,030,519		3,857,723	2.50%		(54,050,000)		1,795,980,519	2.50%		3,745,016		(112,706)
27	February		1,853,636,487		3,867,082	2.50%		(57,300,000)		1,796,336,487	2.50%		3,747,542		(119,540)
28	March		1,856,492,446		3,875,727	2.51%		(60,550,000)	ı	1,795,942,446	2.51%		3,749,319		(126,408)
29	April		1,863,941,922		3,892,444	2.51%		(63,800,000)		1,800,141,922	2.51%		3,759,211		(133,233)
30	Phase 2 Tot	al		\$	44,608,163							\$	43,458,074	\$	(1,150,090)
24	$M_{\rm ev} 20^2$	۴	4 005 045 000				۴	(02.000.000)	¢	4 004 045 000					
31	iviay 20	\$	1,895,615,092				Э	(03,800,000)	Ф	1,831,815,092					

### Capital Additions Adjustment Monthly Depreciation Expense

Sources:

IAWC Financial Exhibit RB, Schedule RB6 WP1.

<sup>1</sup> Attachment MPG-2, page 2.

<sup>2</sup> IAWC Financial Exhibit OPER, Schedule DEPR1W.

### Capital Additions Adjustment Change In Accumulated Depreciation

<u>Line</u>	<b>Description</b>		<u>Phase 1</u> (1)	<u>Phase 2</u> (2)				
	IAWC Plan	_						
1	Retirements	\$	(20,236,533)	\$	(13,254,133)			
2	Removal & Salvage		(25,507,511)		(14,986,449)			
3	Depreciation Expense		62,174,450		44,608,163			
4	Transfers		-		-			
5	Adjustments		-		-			
6	Southern Indiana Pumps Adj.	-	(32,544)		(10,476)			
7	Pro Forma Acc. Depreciation Adjustment	\$	16,397,863	\$	16,357,106			
	Proposed Plan	_						
8	Retirements	\$	(20,236,533)	\$	(13,254,133)			
9	Removal & Salvage		(25,507,511)		(14,986,449)			
10	Depreciation Expense <sup>2</sup>		61,705,410		43,458,074			
11	Transfers		-		-			
12	Adjustments		-		-			
13	Southern Indiana Pumps Adj.		(32,544)		(10,476)			
14	Pro Forma Acc. Depreciation Adjustment	\$	15,928,822	\$	15,207,016			
15	Difference (Line 14 - Line 7)	\$	(469,040)	\$	(1,150,090)			

Sources:

IAWC Financial Exhibit RB, Schedule RB6 WP1.

<sup>1</sup> Attachment MPG-2, page 3, column 2, lines 17 and 30.

<sup>2</sup> Attachment MPG-2, page 3, column 7, lines 17 and 30.
### <u>Capital Additions Adjustment</u> Change In Depreciation Expense

<u>Line</u>	<b>Description</b>		<u>Phase 1</u> (1)		<u>Phase 2</u> (2)
	IAWC Plan	_			
1 2 3	Pro Forma Water Utility Plant Pro Forma Water Depreciation Expense Depreciation Rate (Line 2 / Line 1)	\$ \$	1,717,710,497 43,746,160 2.55%	\$ \$	1,895,615,092 48,333,617 2.55%
	Proposed Plan	_			
4 5 6	Adjusted Utility Plant <sup>1</sup> Depreciation Rate (Line 3) Depreciation Expense (Line 4 * Line 5)	\$ \$	1,689,660,497 2.55% 43,031,791	\$ \$	1,831,815,092 2.55% 46,706,871
	Proposed Adjustment	_			
7	Difference (Line 6 - Line 2)	\$	(714,369)	\$	(1,626,746)

Sources:

IAWC Financial Exhibit OPER, Schedule DEPR1W.

<sup>1</sup> Attachment MPG-2, page 3, column 5, lines 18 and 31.

### <u>Normal Sales Adjustment</u> Residential Class Average Usage Per Customer (Gallons)

<u>Line</u>	<u>Year</u> (1)	Annual Avg. Use <u>Per Month</u> (2)	Annual Percent <u>Change</u> (3)
	IAWC Proposed		
	Actual <sup>1</sup>		
1 2 3 4 5 6 7 8 9 10	2008 2009 2010 2011 2012 2013 2014 2015 2016 2017	4,939 4,747 4,792 4,615 4,747 4,409 4,268 4,270 4,230 4,181	-3.9% 0.9% -3.7% 2.9% -7.1% -3.2% 0.0% -0.9% -1.2%
	Forecast <sup>2</sup>		
11 12 13	2018 2019 2020	4,036 3,948 3,861	-3.5% -2.2% -2.2%
	Adjusted Sales		
14 15 16 17 18 19	2015 <sup>3</sup> 2016 2017 2018 2019 2020	4,271 4,186 4,102 4,061 4,021 3,980	-2.0% -2.0% -1.0% -1.0% -1.0%

### Sources:

<sup>1</sup> IAWC Revenue Workpapers, IN Average Use 2008-2018 Workpaper, "IN Total State" tab.

<sup>2</sup> IAWC Revenue Workpapers, IN Average Use 2008-2018 Workpaper, "Residential" tab.

<sup>3</sup> 5-year average usage from 2013 to 2017.

### Normal Sales Adjustment Water Usage Adjustment (1000 Gallons)

		Are	a #1	Area #2 W	inchester	Area #2 M	ooresville
<u>Line</u>	<b>Description</b>	12/31/2017	4/30/2020	12/31/2017	4/30/2020	12/31/2017	4/30/2020
		(1)	(2)	(3)	(4)	(5)	(6)
	IAWC Proposed						
1	Average Number of Customers	261,307	265,565	1,755	1,768	3,394	3,427
2	Monthly Usage Per Customer	4.181	3.926	3.540	3.356	4.020	3.799
3	Annual Water Usage	13,111,735	12,510,751	74,567	71,207	163,743	156,237
4	IAWC Water Usage Adjustment		(801,563)		(3,879)		(8,995)
	Adjusted Sales						
5	Average Number of Customers	261,307	265,565	1,755	1,768	3,394	3,427
6	Monthly Usage Per Customer <sup>1</sup>	4.181	4.012	3.540	3.432	4.020	3.883
7	Annual Water Usage	13,111,735	12,784,283	74,567	72,817	163,743	159,698
8	Proposed Water Usage Adjustment		(532,416)		(2,282)		(5,567)
9	Difference		269,146		1,597		3,428

#### Sources:

IAWC Revenue Workpapers, IN Average Use 2008-2018 Workpaper, "Workpaper" tab.

<sup>1</sup> Updated 4/30/2020 values were calculated using the Company's IN Average Use 2008-2018 Workpaper and changing the Usage Per Customer on the "Residential" tab to match Attachment MPG-3, page 1.

Normal Sales Adjustment Revenue Impact (1000 Gallons)

<u>Line</u>	<b>Description</b>		<u>Amount</u> (1)
	IAWC Proposed		
1 2 3	Area 1 - Usage Adjustment Area 2 Winchester - Usage Adjustment Area 2 Mooresville - Usage Adjustment		(801,563) (3,879) (8,995)
4 5 6	Area 1 - Decreased Revenue Area 2 Winchester - Decreased Revenue Area 2 Mooresville - Decreased Revenue	\$ \$ \$	(3,489,716) (14,635) (34,079)
7	Total Usage Adjustment	\$	(3,538,430)
8 9	Declining Use Adjustment Normalization of Billing Units Adjustment	\$ \$	(2,854,679) (683,751)
	Adjusted Sales <sup>1</sup>		
10 11 12	Area 1 - Usage Adjustment Area 2 Winchester - Usage Adjustment Area 2 Mooresville - Usage Adjustment		(532,416) (2,282) (5,567)
13 14 15	Area 1 - Decreased Revenue Area 2 Winchester - Decreased Revenue Area 2 Mooresville - Decreased Revenue	\$ \$ \$	(2,317,950) (8,609) (21,090)
16	Total Sales Adjustment	\$	(2,347,649)
17 18	Declining Use Adjustment Normalization of Billing Units Adjustment	\$ \$	(1,894,000) (453,649)
19	Change to Revenues at Present Rates	\$	1,190,781
20 21	Variable O&M Adjustments Fuel and Power Chemicals	\$ \$	(97,330) (26,262)
22	Net Change to Revenues at Present Rates	\$	1,067,188

Sources:

IAWC Revenue Workpapers, IN 2018 Rate Case - Water Workpaper, REV2 WP1, Present Rates Adj. <sup>1</sup>Attachment MPG-3, page 2, line 8.

### Rate of Return

Line	Description (2019)		Amount	Weight	$\frac{Cost}{(3)}$	WACC
			(1)	(-)	(0)	(+)
1	Long-Term Debt	\$	443,482,975	40.12%	5.26%	2.11%
2	Common Equity	\$	443,482,975	40.12%	9.35%	3.75%
3	ADIT	\$	217,863,201	19.71%	0.00%	0.00%
4	AD for Muncie Sewer	\$	85,859	0.01%	0.00%	0.00%
5	Post Retirement Benefits	\$	-	0.00%	0.00%	0.00%
6	ADITC - Post 1970	\$	381,500	0.03%	7.31%	0.00%
7	Prepaid Pension	\$	-	<u>0.00%</u>	0.00%	<u>0.00%</u>
8	Total	\$ ´	1,105,296,509	100.00%		5.86%
9	Long-Term Debt	\$	443,482,975	50.00%	5.26%	2.63%
10	Common Equity	\$	443,482,975	<u>50.00%</u>	9.35%	4.68%
11	Total	\$	886,965,949	100.00%		7.31%
Line	Description (2020)		Amount	Weight	Cost	WACC

		(1)	(2)	(3)	(4)
12	Long-Term Debt	\$ 497,790,186	40.76%	5.19%	2.12%
13	Common Equity	\$ 497,790,186	40.76%	9.35%	3.81%
14	ADIT	\$ 225,159,739	18.44%	0.00%	0.00%
15	AD for Muncie Sewer	\$ 88,164	0.01%	0.00%	0.00%
16	Post Retirement Benefits	\$ -	0.00%	0.00%	0.00%
17	ADITC - Post 1970	\$ 344,492	0.03%	7.27%	0.00%
18	Prepaid Pension	\$ -	<u>0.00%</u>	0.00%	<u>0.00%</u>
19	Total	\$ 1,221,172,767	100.00%		5.93%
20	Long-Term Debt	\$ 497.790.186	50.00%	5.19%	2.60%
21	Common Equity	\$ 497,790,186	50.00%	9.35%	4.68%
22	Total	\$ 995,580,372	100.00%		7.27%

Source: Schedule CC1, Page 1 and 2 of 3.

#### Water Utilities (Valuation Metrics)

		Price to Earnings (P/E) Ratio <sup>1</sup>													
		13-Year													
Line	Company	Average	2018 <sup>2</sup>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	2009	2008	<u>2007</u>	<u>2006</u>
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Amer. States Water	22.19	34.30	25.71	25.59	24.73	20.10	17.17	14.30	15.36	15.73	21.20	22.59	24.00	27.73
2	Amer. Water Works	21.03	26.70	33.79	27.71	20.51	20.02	19.90	16.71	16.80	14.61	15.64	18.92	N/A	N/A
3	Aqua America	24.53	26.00	24.66	23.86	23.51	20.76	21.18	21.94	21.26	21.08	23.09	24.93	31.97	34.70
4	California Water	23.39	28.70	26.90	29.65	24.77	19.69	20.13	17.88	21.28	20.30	19.69	19.77	26.06	29.24
5	Conn. Water Services	22.42	32.50	26.53	23.29	17.58	17.52	18.37	19.39	23.04	20.67	18.41	22.17	23.00	28.98
6	Consolidated Water	27.89	20.80	29.01	44.81	22.69	28.29	20.02	12.41	22.39	26.87	19.03	37.79	35.39	43.05
7	Middlesex Water	21.76	26.10	28.39	25.65	19.11	18.49	19.70	20.83	21.73	17.81	21.02	19.80	21.59	22.72
8	SJW Corp.	22.50	23.30	18.84	15.68	16.64	11.19	24.34	20.37	21.17	29.12	28.67	26.24	33.43	23.51
9	York Water Co. (The)	25.93	26.60	34.63	N/A	23.52	23.07	26.26	24.44	23.91	20.72	21.87	24.58	30.26	31.25
10	Average	23.66	27.22	27.61	27.03	21.45	19.90	20.79	18.70	20.77	20.77	20.96	24.09	28.21	30.15
11	Median	23.39	26.60	26.90	25.62	22.69	20.02	20.02	19.39	21.28	20.67	21.02	22.59	28.16	29.11

		Market Price to Cash Flow (MP/CF) Ratio <sup>1</sup>													
<u>Line</u>	Company	13-Year <u>Average</u> (1)	<u>2018 <sup>2/a</sup></u> (2)	<u>2017</u> (3)	<u>2016</u> (4)	<u>2015</u> (5)	<u>2014</u> (6)	<u>2013</u> (7)	<u>2012</u> (8)	<u>2011</u> (9)	<u>2010</u> (10)	<u>2009</u> (11)	<u>2008</u> (12)	<u>2007</u> (13)	<u>2006</u> (14)
12	Amer. States Water	12.14	20.33	16.36	15.34	14.09	11.82	10.41	8.13	8.07	8.26	10.09	10.38	11.76	12.74
13	Amer. Water Works	10.02	14.44	15.64	13.80	10.55	10.07	9.41	8.26	7.74	6.29	6.77	7.26	N/A	N/A
14	Aqua America	14.11	16.32	15.72	15.22	14.32	13.20	13.48	12.67	12.21	10.68	11.07	12.82	16.54	19.24
15	California Water	11.01	15.30	12.56	12.79	10.49	9.50	9.28	7.87	8.85	9.51	9.92	10.09	12.51	14.44
16	Conn. Water Services	13.19	18.84	16.66	14.62	11.28	11.32	11.60	11.22	12.34	11.45	11.33	12.64	12.72	15.46
17	Consolidated Water	14.78	13.05	10.65	12.68	12.99	14.85	12.13	6.81	11.32	13.37	11.93	19.91	23.26	29.19
18	Middlesex Water	12.99	15.66	17.51	16.29	11.85	11.33	11.81	12.06	12.47	11.05	10.78	11.51	12.58	13.98
19	SJW Corp.	10.08	12.60	10.29	8.45	7.98	6.43	9.40	8.10	8.39	10.29	10.53	11.68	15.13	11.75
20	York Water Co. (The)	17.31	18.15	22.80	N/A	15.68	15.13	16.61	15.71	15.51	13.81	14.75	15.85	20.15	23.57
21	Average	12.93	16.08	15.35	13.65	12.14	11.52	11.57	10.09	10.77	10.52	10.80	12.46	15.58	17.55
22	Median	12.46	15.66	15.72	14.21	11.85	11.33	11.60	8.26	11.32	10.68	10.78	11.68	13.93	14.95

		Market Price to Book Value (MP/BV) Ratio <sup>1</sup>													
		13-Year													
Line	<u>Company</u>	Average (1)	<u>2018 <sup>2/b</sup></u> (2)	<u>2017</u> (3)	<u>2016</u> (4)	<u>2015</u> (5)	<u>2014</u> (6)	<u>2013</u> (7)	<u>2012</u> (8)	<u>2011</u> (9)	<u>2010</u> (10)	<u>2009</u> (11)	<u>2008</u> (12)	<u>2007</u> (13)	<u>2006</u> (14)
23	Amer. States Water	2.38	3.68	3.35	3.07	3.10	2.38	2.17	1.71	1.59	1.72	1.77	1.95	2.22	2.22
24	Amer. Water Works	1.66	2.64	2.67	2.48	1.92	1.75	1.55	1.40	1.20	0.95	0.85	0.81	N/A	N/A
25	Aqua America	2.75	3.26	3.02	3.02	2.74	2.69	2.85	2.42	2.45	2.23	2.19	2.33	3.10	3.49
26	California Water	1.99	2.81	2.61	2.18	1.74	1.79	1.64	1.62	1.70	1.76	1.90	1.93	2.11	2.16
27	Conn. Water Services	1.94	2.40	2.32	2.31	1.79	1.79	1.70	1.42	1.93	1.79	1.73	2.01	2.02	2.02
28	Consolidated Water	1.64	1.31	1.20	1.24	1.18	1.24	1.23	0.86	1.06	1.33	1.65	2.26	3.40	3.39
29	Middlesex Water	1.95	2.79	2.80	2.64	1.83	1.71	1.72	1.63	1.62	1.54	1.47	1.76	1.87	1.96
30	SJW Corp.	1.97	2.65	2.39	1.95	1.64	1.60	1.71	1.63	1.66	1.78	1.70	2.03	2.69	2.24
31	York Water Co. (The)	2.62	3.09	3.77	N/A	2.68	2.52	2.47	2.28	2.28	2.05	2.02	2.28	2.89	3.11
32	Average	2.11	2.74	2.68	2.36	2.07	1.94	1.89	1.66	1.72	1.68	1.70	1.93	2.54	2.57
33	Median	2.05	2.79	2.67	2.40	1.83	1.79	1.71	1.63	1.66	1.76	1.73	2.01	2.46	2.23

Sources:

<sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.

<sup>2</sup> The Value Line Investment Survey, October 12, 2018.

Notes:
<sup>a</sup> Based on the average of the high and low price for 2017 and the projected 2017 Cash Flow per share, published in The Value Line Investment Survey, October 12, 2018.

<sup>b</sup> Based on the average of the high and low price for 2017 and the projected 2017 Book Value per share, published in The Value Line Investment Survey, October 12, 2018.

#### Natural Gas Utilities (Valuation Metrics)

							Price	e to Earnin	gs (P/E) Ra	atio <sup>1</sup>					
		13-Year													
Line	Company	Average	2018 <sup>2</sup>	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Atmos Energy	16 52	23 50	22.04	20.80	17 50	16.09	15 87	15 93	14 36	13 21	12 54	13 59	15 87	13 52
2	Chesaneake Litilities	17.88	26.20	27.84	21 77	19 15	17 70	15.62	14.81	14 16	12 21	14.20	14 15	16.72	17.85
3	New Jersey Resources	17.00	32.00	22.38	21.25	16.10	11.73	15.02	16.83	16.76	14.98	14.20	12 27	21.61	16.13
4	NiSource Inc	19.96	20.40	NMF	23.18	37.34	22 74	18 89	17.87	19.36	15.33	14.34	12.07	18 82	19.16
5	Northwest Nat. Gas	20.24	29.30	NME	26.10	23.69	20.69	19.38	21.08	19.00	16.00	15 17	18.08	16.74	15.10
6	ONE Gas Inc	21.72	24.80	23 47	22.74	19 79	17.83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds	18.39	22 40	27.92	21 71	17.95	18.03	18.90	16.94	18 48	16.81	14.96	15.90	17 18	11.86
8	Southwest Gas	17.51	20.50	22.21	21.64	19.35	17.86	15 76	15.00	15.69	13.97	12 20	20.27	17.26	15.94
9	Spire Inc	16.53	21 20	19.82	19.61	16 49	19.80	21.25	14 46	13.05	13 74	13.39	14.31	14 19	13.60
10	UGI Corp	15.66	19.50	20.84	19.33	17 71	15.81	15 44	16.38	15.03	10.86	10.30	13.30	15 14	13.97
11	WGL Holdings Inc	16 71	N/A	25.40	20.05	16.99	15 15	18 25	15.27	16.97	15 11	12.58	13.66	15.60	15 46
				20.10	20.00	10.00	10.10	10.20	10.21	10.07		.2.00	10.00	10.00	10.10
12	Average	17.86	23.98	23.55	21.73	20.23	17.58	17.53	16.46	16.29	14.32	13.46	14.76	16.91	15.33
13	Median	17.45	22.95	22.38	21.64	17.95	17.83	17.11	16.15	16.22	14.48	13.80	13.91	16.73	15.66
		42 Veen					Market Pri	ce to Cash	Flow (MP/	CF) Ratio					
		13-rear	2/2												
Line	Company	Average	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
14	Atmos Energy	8.28	12.33	11.99	11.36	9.30	8.79	7.72	7.02	6.87	6.15	5.76	6.48	7.44	6.36
15	Chesapeake Utilities	9.46	13.07	13.78	12.06	10.16	9.25	8.12	7.46	7.35	6.36	9.48	7.88	8.58	9.40
16	New Jersey Resources	11.82	11.78	14.45	13.94	11.71	8.95	11.29	12.29	12.71	11.32	11.34	9.15	13.76	11.01
17	NiSource Inc.	7.79	8.71	12.11	8.56	10.38	10.56	8.71	7.81	6.81	5.09	4.06	4.87	6.69	6.87
18	Northwest Nat. Gas	13.24	12.98	59.72	11.57	9.46	8.84	8.61	9.48	9.08	8.94	8.26	8.75	8.54	7.83
19	ONE Gas Inc.	10.39	11.61	11.89	11.10	9.19	8.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	South Jersey Inds.	10.89	12.29	12.33	10.88	10.70	10.57	11.57	10.95	11.98	10.78	9.57	10.38	11.23	8.32
21	Southwest Gas	6.08	8.25	9.10	7.41	6.56	6.35	5.94	5.55	5.60	4.91	3.84	4.89	5.42	5.28
22	Caire Inc	9.52	9 33	10.39	10.32	8.47	12.03	13.76	8.80	8.08	8.12	8.58	8.95	8.46	8.46
	Spire inc.	0.02	0.00			-									
23	UGI Corp.	7.64	9.58	10.09	9.02	8.47	7.49	6.55	6.30	7.51	6.02	5.74	7.11	7.92	7.48
23 24	UGI Corp. WGL Holdings Inc.	7.64 9.17	9.58 N/A	10.09 12.92	9.02 11.36	8.47 9.59	7.49 8.46	6.55 9.83	6.30 9.03	7.51 9.52	6.02 8.34	5.74 7.17	7.11 7.68	7.92 8.39	7.48 7.81

25 Average 26 Median

		Market Price to Book Value (MP/BV) Ratio <sup>1</sup>													
l ino	Company	13-Year	2018 <sup>2/b</sup>	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
	<u>company</u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
27	Atmos Energy	1.52	2.06	2.16	2.11	1.72	1.55	1.39	1.28	1.30	1.18	1.05	1.20	1.40	1.34
28	Chesapeake Utilities	1.91	2.51	2.51	2.28	2.19	2.12	1.83	1.66	1.61	1.40	1.37	1.64	1.84	1.85
29	New Jersey Resources	2.26	2.70	2.70	2.52	2.28	2.13	2.05	2.33	2.31	2.09	2.16	1.92	2.17	2.01
30	NiSource Inc.	1.42	1.80	1.96	1.84	1.95	1.94	1.58	1.37	1.15	0.92	0.69	0.94	1.16	1.19
31	Northwest Nat. Gas	1.85	2.34	2.41	1.92	1.63	1.59	1.56	1.72	1.70	1.78	1.73	1.96	2.05	1.69
32	ONE Gas Inc.	1.56	1.90	1.89	1.67	1.26	1.07	N/A							
33	South Jersey Inds.	2.12	2.09	2.29	1.79	1.77	2.07	2.27	2.21	2.59	2.38	1.95	2.08	2.21	1.93
34	Southwest Gas	1.55	1.84	2.13	1.96	1.68	1.68	1.61	1.51	1.43	1.24	0.97	1.20	1.46	1.46
35	Spire Inc.	1.55	1.58	1.65	1.64	1.44	1.33	1.34	1.51	1.46	1.39	1.68	1.71	1.66	1.71
36	UGI Corp.	2.02	2.53	2.62	2.41	2.29	1.97	1.69	1.45	1.75	1.55	1.66	2.01	2.16	2.21
37	WGL Holdings Inc.	1.81	N/A	2.69	2.45	2.15	1.69	1.71	1.66	1.63	1.50	1.45	1.59	1.64	1.59
38	Average	1.79	2.13	2.27	2.05	1.85	1.74	1.70	1.67	1.69	1.54	1.47	1.62	1.78	1.70
39	Median	1.75	2.07	2.29	1.96	1.77	1.69	1.65	1.58	1.62	1.45	1.56	1.67	1.75	1.70

9.04

8.84

9.21

8.66

8.47

8.31

8.55

7.80

7.60

7.24

7.38 7.71 7.62 7.78 8.64

8.42

7.88

7.82

10.69

11.10

9.45

9.46

Sources:

<sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.

<sup>2</sup> The Value Line Investment Survey, November 30, 2018.

9.37

9.00

10.99

11.70

16.25

12.11

Notes:

<sup>a</sup> Based on the average of the high and low price for 2018 and the projected 2018 Cash Flow per share, published in The Value Line Investment Survey, November 30, 2018.
 <sup>b</sup> Based on the average of the high and low price for 2018 and the projected 2018 Book Value per share, published in The Value Line Investment Survey, November 30, 2018.

#### Water Utilities (Valuation Metrics)

								Dividen	d Yield <sup>1</sup>						
	-	13-Year													
Line	Company	Average	2018 2/a	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	2008	<u>2007</u>	2006
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Amer. States Water	2.60%	1.93%	2.05%	2.20%	2.21%	2.63%	2.75%	3.15%	3.20%	2.98%	2.94%	2.86%	2.46%	2.47%
2	Amer. Water Works	2.70%	2.13%	2.01%	2.02%	2.46%	2.53%	2.05%	3.43%	3.11%	3.85%	4.20%	1.92%	N/A	N/A
3	Aqua America	2.55%	2.37%	2.37%	2.35%	2.57%	2.53%	2.36%	2.80%	2.85%	3.11%	3.09%	2.80%	2.11%	1.81%
4	California Water	2.84%	1.85%	1.91%	2.30%	2.88%	2.77%	3.12%	3.45%	3.36%	3.24%	3.07%	3.12%	2.97%	2.94%
5	Conn. Water Services	3.18%	2.09%	2.09%	2.31%	2.93%	3.00%	3.21%	3.24%	3.62%	3.94%	4.11%	3.58%	3.60%	3.64%
6	Consolidated Water	2.33%	2.55%	2.61%	2.48%	2.59%	2.53%	2.58%	3.78%	3.19%	2.60%	1.99%	1.72%	0.70%	0.94%
7	Middlesex Water	3.51%	2.19%	2.19%	2.28%	3.33%	3.65%	3.71%	3.96%	4.02%	4.23%	4.71%	3.99%	3.69%	3.67%
8	SJW Corp.	2.40%	1.87%	1.93%	2.01%	2.53%	2.64%	2.68%	2.95%	2.94%	2.78%	2.84%	2.27%	1.74%	2.02%
9	York Water Co. (The)	2.86%	2.27%	1.86%	N/A	2.63%	2.79%	2.80%	3.06%	3.10%	3.50%	3.62%	3.49%	2.75%	2.50%
10	Average	2.77%	2.14%	2.11%	2.25%	2.68%	2.79%	2.81%	3.31%	3.27%	3.36%	3.40%	2.86%	2.50%	2.50%
11	Median	2.70%	2.13%	2.05%	2.29%	2.59%	2.64%	2.75%	3.24%	3.19%	3.24%	3.09%	2.86%	2.61%	2.49%
12	20-Yr Treasury Yields <sup>3</sup>	3.48%	3.02%	2.65%	2.23%	2.55%	3.07%	3.12%	2.54%	3.62%	4.03%	4.11%	4.36%	4.91%	4.99%
13	20-Yr TIPS <sup>3</sup>	1 30%	0.02%	0.75%	0.66%	0.78%	0.87%	0.75%	0.21%	1 10%	1 73%	2 21%	2 10%	2 36%	2 31%
10	Implied Inflation <sup>b</sup>	0.450/	0.02/0	1.000/	1.500/0	1 759/	0.07 /0	0.75%	0.2170	2.400/	0.000/	4.050/	2.13/0	2.30%	2.01/0
14	Implied Initation	2.15%	2.06%	1.09%	1.30%	1.75%	2.19%	2.33%	2.33%	2.40%	2.20%	1.65%	2.13%	2.49%	2.02%
15	Real Dividend Yield <sup>c</sup>	0.61%	0.05%	0.22%	0.68%	0.92%	0.58%	0.45%	0.97%	0.84%	1.07%	1.52%	0.71%	0.01%	-0.12%
	Utility														
16	Nominal "A" Rated Yield <sup>4</sup>	4.95%	4.24%	4.00%	3.93%	4.12%	4.28%	4.48%	4.13%	5.04%	5.46%	6.04%	6.53%	6.07%	6.07%
17	Real "A" Rated Yield	2.75%	2.11%	2.07%	2.34%	2.33%	2.04%	2.08%	1.76%	2.58%	3.13%	4.11%	4.31%	3.49%	3.36%
	Spreads (Utility Bond - Stock)														
18	Nominal <sup>d</sup>	2.19%	2.10%	1.89%	1.68%	1.43%	1.49%	1.67%	0.82%	1.78%	2.11%	2.64%	3.67%	3.57%	3.57%
19	Real <sup>e</sup>	2.14%	2.06%	1.85%	1.66%	1.41%	1.46%	1.63%	0.80%	1.73%	2.06%	2.59%	3.59%	3.48%	3.48%
	Spreads (Treasury Bond - Stock)														
20	Nominal <sup>f</sup>	0.71%	0.88%	0.54%	-0.02%	-0.13%	0.29%	0.31%	-0.77%	0.36%	0.67%	0.71%	1.50%	2.41%	2.49%
21	Real <sup>g</sup>	0.69%	0.86%	0.53%	-0.02%	-0.13%	0.28%	0.30%	-0.75%	0.35%	0.66%	0.70%	1.47%	2.35%	2.43%



Sources:

<sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.

<sup>2</sup> The Value Line Investment Survey, October 12, 2018.

- <sup>3</sup> St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.
- www.moodys.com, Bond Yields and Key Indicators, through November 16, 2018.

Notes:

Based on the average of the high and low price for 2018 and the projected 2018 Dividends Declared per share,

published in The Value Line Investment Survey, October 12, 2018.

- Line 16 = (1 + Line 14) / (1 + Line 15) 1.
- Line 17 = (1 + Line 12) / (1 +Line 16) 1.

The spread being measured here is the nominal A-rated utility bond yield over the average nominal utility dividend yield; (Line 18 - Line 12).

The spread being measured here is the real A-rated utility bond yield over the average real utility dividend yield; Line 19 - Line 17)

The spread being measured here is the nominal 20-Year Treasury yield over the average nominal utility dividend yield; (Line 14 - Line 12). The spread being measured here is the real 20-Year TIPS yield over the average real utility dividend yield; Line 15 - Line 17)

#### Natural Gas Utilities (Valuation Metrics)

**-**···

	Dividend Yield														
<u>Line</u>	Company	13-Year <u>Average</u> (1)	2018 <sup>2/a</sup> (2)	<u>2017</u> (3)	<u>2016</u> (4)	<u>2015</u> (5)	<u>2014</u> (6)	<u>2013</u> (7)	<u>2012</u> (8)	<u>2011</u> (9)	<u>2010</u> (10)	<u>2009</u> (11)	<u>2008</u> (12)	<u>2007</u> (13)	<u>2006</u> (14)
1	Atmos Energy	3.72%	2.20%	2.27%	2.39%	2.88%	3.11%	3.53%	4.13%	4.19%	4.70%	5.34%	4.78%	4.16%	4.66%
2	Chesapeake Utilities	2.99%	1.74%	1.69%	1.91%	2.18%	2.44%	2.87%	3.25%	3.36%	3.91%	4.09%	4.10%	3.62%	3.76%
3	New Jersey Resources	3.22%	2.56%	2.69%	2.86%	3.14%	3.50%	3.71%	3.38%	3.33%	3.69%	3.46%	3.35%	3.02%	3.19%
4	NiSource Inc.	4.16%	3.09%	2.79%	2.76%	3.53%	2.69%	3.30%	3.84%	4.53%	5.66%	7.64%	5.69%	4.29%	4.21%
5	Northwest Nat. Gas	3.61%	3.07%	3.02%	3.28%	4.01%	4.14%	4.22%	3.83%	3.85%	3.63%	3.73%	3.27%	3.12%	3.73%
6	ONE Gas Inc.	2.43%	2.49%	2.37%	2.32%	2.71%	2.28%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	3.27%	3.67%	3.20%	3.64%	3.95%	3.40%	3.14%	3.22%	2.81%	3.00%	3.43%	3.08%	2.81%	3.15%
8	Southwest Gas	2.86%	2.80%	2.46%	2.62%	2.87%	2.72%	2.69%	2.75%	2.78%	3.15%	4.01%	3.19%	2.56%	2.60%
9	Spire Inc.	3.88%	3.19%	3.09%	3.08%	3.53%	3.78%	3.96%	4.11%	4.31%	4.70%	3.91%	3.94%	4.43%	4.34%
10	UGI Corp.	2.82%	2.03%	2.01%	2.35%	2.50%	2.61%	3.01%	3.68%	3.30%	3.48%	3.23%	2.85%	2.69%	2.96%
11	WGL Holdings Inc.	3.91%	N/A	2.56%	2.94%	3.41%	4.24%	3.94%	3.89%	4.06%	4.37%	4.62%	4.22%	4.19%	4.48%
12	Average	3.42%	2.68%	2.56%	2.74%	3.16%	3.17%	3.44%	3.61%	3.65%	4.03%	4.35%	3.85%	3.49%	3.71%
13	Median	3.35%	2.68%	2.56%	2.76%	3.14%	3.11%	3.42%	3.75%	3.60%	3.80%	3.96%	3.65%	3.37%	3.75%
14	20-Yr Treasury Yields <sup>3</sup>	3.48%	3.02%	2.65%	2.23%	2.55%	3.07%	3.12%	2.54%	3.62%	4.03%	4.11%	4.36%	4.91%	4.99%
15	20-Yr TIPS <sup>3</sup>	1.30%	0.92%	0.75%	0.66%	0.78%	0.87%	0.75%	0.21%	1.19%	1.73%	2.21%	2.19%	2.36%	2.31%
16	Implied Inflation <sup>b</sup>	2.15%	2.08%	1.89%	1.56%	1.75%	2.19%	2.35%	2.33%	2.40%	2.26%	1.85%	2.13%	2.49%	2.62%
17	Real Dividend Yield <sup>c</sup>	1.24%	0.59%	0.65%	1.17%	1.38%	0.96%	1.06%	1.25%	1.22%	1.73%	2.45%	1.68%	0.97%	1.06%
	Utility														
18	Nominal "A" Rated Yield <sup>4</sup>	4.95%	4.24%	4.00%	3.93%	4.12%	4.28%	4.48%	4.13%	5.04%	5.46%	6.04%	6.53%	6.07%	6.07%
19	Real "A" Rated Yield	2.75%	2.11%	2.07%	2.34%	2.33%	2.04%	2.08%	1.76%	2.58%	3.13%	4.11%	4.31%	3.49%	3.36%
	Spreads (Utility Bond - Stock)														
20	Nominal	1.53%	1.56%	1.44%	1.19%	0.96%	1.11%	1.04%	0.52%	1.39%	1.43%	1.69%	2.68%	2.59%	2.36%
21	Real <sup>e</sup>	1.50%	1.52%	1.41%	1.17%	0.94%	1.08%	1.01%	0.51%	1.36%	1.40%	1.66%	2.62%	2.52%	2.30%
	Spreads (Treasury Bond - Stock)														
22	Nominal <sup>f</sup>	0.06%	0.34%	0.09%	-0.52%	-0.61%	-0.10%	-0.32%	-1.06%	-0.03%	0.00%	-0.24%	0.51%	1.42%	1.28%
23	Real <sup>g</sup>	0.06%	0.33%	0.09%	-0.51%	-0.60%	-0.10%	-0.31%	-1.04%	-0.03%	0.00%	-0.23%	0.50%	1.39%	1.25%



Sources:

<sup>3</sup> St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.
 <sup>4</sup> www.moodys.com, Bond Yields and Key Indicators, through November 16, 2018.

- <sup>1</sup> The spread being measured here is the normal 20-Year Treasury yield over the average normal utility dividend yield; Line 14 Line 12). <sup>9</sup> The spread being measured here is the real 20-Year TIPS yield over the average real utility dividend yield; Line 15 Line 17)

<sup>&</sup>lt;sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.
<sup>2</sup> The Value Line Investment Survey, November 30, 2018.

 <sup>&</sup>lt;sup>a</sup> Based on the average of the high and low price for 2017 and the projected 2017 Dividends Declared per share,

b
 Line 16 = (1 + Line 14) / (1 + Line 15) - 1.

 c
 Line 17 = (1 + Line 12) / (1 + Line 15) - 1.

<sup>&</sup>lt;sup>d</sup> The spread being measured here is the nominal A-rated utility bond yield over the average nominal utility dividend yield; (Line 18 - Line 12). <sup>e</sup> The spread being measured here is the real A-rated utility bond yield over the average real utility dividend yield; Line 19 - Line 17)

### Water Utilities (Valuation Metrics)

								Dividend p	per Share <sup>1</sup>					
		13-Year												
Line	Company	Average	2018 <sup>2</sup>	2017	<u>2016</u>	<u>2015</u>	2014	2013	<u>2012</u>	<u>2011</u>	<u>2010</u>	2009	2008	2007
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Amer. States Water	0.70	1.08	0.99	0.91	0.87	0.83	0.76	0.64	0.55	0.52	0.51	0.50	0.48
2	Amer. Water Works	1.13	1.78	1.62	1.47	1.33	1.21	0.84	1.21	0.90	0.86	0.82	0.40	N/A
3	Aqua America	0.57	0.85	0.79	0.74	0.69	0.63	0.58	0.54	0.50	0.47	0.44	0.41	0.38
4	California Water	0.64	0.75	0.72	0.69	0.67	0.65	0.64	0.63	0.62	0.60	0.59	0.59	0.58
5	Conn. Water Services	0.99	1.24	1.18	1.12	1.05	1.01	0.98	0.96	0.94	0.92	0.90	0.88	0.87
6	Consolidated Water	0.29	0.35	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.28	0.33	0.20
7	Middlesex Water	0.76	0.91	0.86	0.81	0.78	0.76	0.75	0.74	0.73	0.72	0.71	0.70	0.69
8	SJW Corp.	0.75	1.12	1.04	0.81	0.78	0.75	0.73	0.71	0.69	0.68	0.66	0.65	0.61
9	York Water Co. (The)	0.55	0.70	0.65	N/A	0.60	0.57	0.55	0.54	0.53	0.52	0.51	0.49	0.48
10	Average	0.70	0.98	0.91	0.86	0.79	0.75	0.68	0.70	0.64	0.62	0.60	0.55	0.54
43	Industry CAGR	5.61%												

Sources:

<sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.

<sup>2</sup> The Value Line Investment Survey, October 12, 2018.

Notes:

CAGR = Compound Annual Growth Rate

								Dividend p	er Share <sup>1</sup>						
		13-Year													
Line	<u>Company</u>	<u>Average</u>	2018 <sup>2</sup>	<u>2017</u>	2016	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	2009	2008	2007	2006
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Atmos Energy	1.47	1.94	1.80	1.68	1.56	1.48	1.40	1.38	1.36	1.34	1.32	1.30	1.28	1.26
2	Chesapeake Utilities	1.00	1.39	1.26	1.19	1.12	1.07	1.01	0.96	0.91	0.87	0.83	0.81	0.78	0.77
3	New Jersey Resources	0.77	1.10	1.04	0.98	0.93	0.86	0.81	0.77	0.72	0.68	0.62	0.56	0.51	0.48
4	NiSource Inc.	0.88	0.78	0.70	0.64	0.83	1.02	0.98	0.94	0.92	0.92	0.92	0.92	0.92	0.92
5	Northwest Nat. Gas	1.72	1.89	1.88	1.87	1.86	1.85	1.83	1.79	1.75	1.68	1.60	1.52	1.44	1.39
6	ONE Gas Inc.	1.39	1.84	1.68	1.40	1.20	0.84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	0.81	1.15	1.10	1.06	1.02	0.96	0.90	0.83	0.75	0.68	0.61	0.56	0.51	0.46
8	Southwest Gas	1.31	2.08	1.98	1.80	1.62	1.46	1.32	1.18	1.06	1.00	0.95	0.90	0.86	0.82
9	Spire Inc.	1.72	2.25	2.10	1.96	1.84	1.76	1.70	1.66	1.61	1.57	1.53	1.49	1.45	1.40
10	UGI Corp.	0.71	1.02	0.96	0.93	0.89	0.79	0.74	0.71	0.68	0.60	0.52	0.50	0.48	0.46
11	WGL Holdings Inc.	1.62	N/A	2.02	1.93	1.83	1.72	1.66	1.59	1.55	1.50	1.47	1.41	1.37	1.35
12	Average	1.20	1.54	1.50	1.40	1.34	1.25	1.24	1.18	1.13	1.08	1.04	1.00	0.96	0.93
13	Industry CAGR	4.32%													

### Natural Gas Utilities (Valuation Metrics)

Sources:

<sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.

<sup>2</sup> The Value Line Investment Survey, November 30, 2018.

Notes:

CAGR = Compound Annual Growth Rate

### Water Utilities (Valuation Metrics)

		Ca	ash Flow / (	Capital Spe	nding
<u>Line</u>	<u>Company</u>	<u>2017</u> (1)	<u>2018</u> (2)	<u>2019</u> (3)	3 - 5 yr <u>Projection</u> (4)
1	Amer. States Water	0.96x	0.81x	0.96x	1.23x
2	Amer. Water Works	0.64x	0.60x	0.66x	0.84x
3	Aqua America	0.79x	0.83x	0.91x	1.38x
4	California Water	0.56x	0.61x	0.75x	0.90x
5	Conn. Water Services	0.77x	0.71x	0.99x	1.34x
6	Consolidated Water	3.64x	5.25x	5.75x	1.00x
7	Middlesex Water	0.73x	0.87x	0.88x	1.30x
8	SJW Corp.	0.72x	0.86x	0.99x	1.13x
9	York Water Co. (The)	0.79x	0.85x	1.03x	1.60x
10	Average	1.07x	1.27x	1.43x	1.19x
11	Median	0.77x	0.83x	0.96x	1.23x

Sources:

The Value Line Investment Survey Investment Analyzer Software, downloaded on July 9, 2018.

The Value Line Investment Survey, October 12, 2018.

Notes:

Based on the projected Cash Flow per share and Capital Spending per share.

### Natural Gas Utilities (Valuation Metrics)

		Ca	ash Flow /	Capital Spe	nding
<u>Line</u>	<u>Company</u>	<u>2017</u> (1)	<u>2018</u> (2)	<u>2019</u> (3)	3 - 5 yr <u>Projection</u> (4)
1	Atmos Energy	0.62x	0.54x	0.53x	0.61x
2	Chesapeake Utilities	0.50x	0.48x	0.60x	0.70x
3	New Jersey Resources	0.70x	1.66x	1.69x	1.79x
4	NiSource Inc.	0.41x	0.59x	0.58x	0.61x
5	Northwest Nat. Gas	0.14x	0.70x	0.85x	1.02x
6	ONE Gas Inc.	0.87x	0.87x	0.90x	1.09x
7	South Jersey Inds.	0.81x	0.89x	0.87x	0.75x
8	Southwest Gas	0.68x	0.61x	0.63x	0.75x
9	Spire Inc.	0.72x	0.77x	0.76x	0.83x
10	UGI Corp.	1.29x	1.40x	1.38x	1.38x
11	WGL Holdings Inc.	0.61x	N/A	N/A	N/A
12 13	Average Median	0.67x 0.68x	0.85x 0.73x	0.88x 0.80x	0.95x 0.79x

Sources:

The Value Line Investment Survey Investment Analyzer Software, downloaded on July 9, 2018.

The Value Line Investment Survey, November 30, 2018.

Notes:

Based on the projected Cash Flow per share and Capital Spending per share.

#### Water Utilities (Valuation Metrics)

							Percen	t Dividend	s to Book	Value 1					
		13-Year													
<u>Line</u>	<u>Company</u>	Average (1)	<u>2018 <sup>2/a</sup></u> (2)	<u>2017</u> (3)	<u>2016</u> (4)	<u>2015</u> (5)	<u>2014</u> (6)	<u>2013</u> (7)	<u>2012</u> (8)	<u>2011</u> (9)	<u>2010</u> (10)	<u>2009</u> (11)	<u>2008</u> (12)	<u>2007</u> (13)	<u>2006</u> (14)
1	Amer. States Water	5.93%	7.11%	6.85%	6.76%	6.85%	6.28%	5.98%	5.38%	5.07%	5.13%	5.21%	5.57%	5.45%	5.47%
2	Amer. Water Works	3.51%	5.61%	5.38%	5.03%	4.71%	4.42%	3.17%	4.82%	3.73%	3.65%	3.58%	1.56%	0.00%	0.00%
3	Aqua America	6.88%	7.73%	7.17%	7.10%	7.06%	6.80%	6.72%	6.79%	6.99%	6.93%	6.77%	6.52%	6.56%	6.32%
4	California Water	5.51%	5.19%	4.98%	5.02%	5.00%	4.96%	5.10%	5.58%	5.72%	5.69%	5.83%	6.02%	6.27%	6.34%
5	Conn. Water Services	6.06%	5.02%	4.85%	5.34%	5.25%	5.36%	5.47%	4.58%	6.96%	7.05%	7.10%	7.19%	7.28%	7.37%
6	Consolidated Water	3.21%	3.35%	3.13%	3.06%	3.06%	3.13%	3.18%	3.26%	3.40%	3.45%	3.28%	3.89%	2.37%	3.21%
7	Middlesex Water	6.49%	6.13%	6.12%	6.03%	6.09%	6.24%	6.37%	6.47%	6.50%	6.49%	6.90%	7.01%	6.89%	7.17%
8	SJW Corp.	4.59%	4.96%	4.61%	3.93%	4.14%	4.22%	4.58%	4.83%	4.86%	4.95%	4.83%	4.61%	4.69%	4.53%
9	York Water Co. (The)	7.27%	7.00%	7.01%	N/A	7.05%	7.02%	6.92%	6.98%	7.08%	7.16%	7.31%	7.97%	7.95%	7.78%
10	Average	5.48%	5.79%	5.57%	5.28%	5.47%	5.38%	5.28%	5.41%	5.59%	5.61%	5.65%	5.59%	5.27%	5.35%
11	Median	5.65%	5.61%	5.38%	5.18%	5.25%	5.36%	5.47%	5.38%	5.72%	5.69%	5.83%	6.02%	6.27%	6.32%

							Divid	dends to E	arnings Ra	atio <sup>1</sup>					
<u>Line</u>	<u>Company</u>	13-Year <u>Average</u> (1)	<u>2018 <sup>2/b</sup></u> (2)	<u>2017</u> (3)	<u>2016</u> (4)	<u>2015</u> (5)	<u>2014</u> (6)	<u>2013</u> (7)	<u>2012</u> (8)	<u>2011</u> (9)	<u>2010</u> (10)	<u>2009</u> (11)	<u>2008</u> (12)	<u>2007</u> (13)	<u>2006</u> (14)
12	Amer. States Water	0.56	0.65	0.53	0.56	0.55	0.53	0.47	0.45	0.49	0.47	0.62	0.65	0.59	0.68
13	Amer. Water Works	0.53	0.54	0.68	0.56	0.50	0.51	0.41	0.57	0.52	0.56	0.66	0.36	N/A	N/A
14	Aqua America	0.61	0.61	0.59	0.56	0.61	0.53	0.50	0.61	0.61	0.66	0.71	0.70	0.68	0.63
15	California Water	0.65	0.58	0.51	0.68	0.71	0.55	0.63	0.62	0.72	0.66	0.61	0.62	0.77	0.86
16	Conn. Water Services	0.71	0.75	0.55	0.54	0.51	0.53	0.59	0.63	0.83	0.81	0.76	0.79	0.83	1.06
17	Consolidated Water	0.60	0.58	0.76	1.11	0.59	0.71	0.52	0.47	0.71	0.70	0.38	0.65	0.25	0.41
18	Middlesex Water	0.74	0.52	0.62	0.59	0.64	0.68	0.73	0.83	0.87	0.75	0.99	0.79	0.80	0.83
19	SJW Corp.	0.54	0.48	0.36	0.32	0.42	0.30	0.65	0.60	0.62	0.81	0.81	0.60	0.58	0.47
20	York Water Co. (The)	0.73	0.64	0.64	N/A	0.62	0.64	0.74	0.75	0.74	0.73	0.79	0.86	0.83	0.78
21	Average	0.63	0.59	0.58	0.61	0.57	0.55	0.58	0.61	0.68	0.68	0.70	0.67	0.67	0.72
22	Median	0.64	0.58	0.59	0.56	0.59	0.53	0.59	0.61	0.71	0.70	0.71	0.65	0.72	0.73

							Cash Flo	w to Capit	al Spendin	ig Ratio <sup>1</sup>					
		13-Year													
Line	Company	Average	2018 <sup>2/c</sup>	2017	2016	<u>2015</u>	<u>2014</u>	<u>2013</u>	2012	<u>2011</u>	<u>2010</u>	2009	2008	2007	2006
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
23	Amer. States Water	1.00	0.81	0.96	0.76	1.17	1.41	1.06	1.40	1.00	1.00	0.81	0.76	1.14	0.74
24	Amer. Water Works	0.61	0.60	0.64	0.71	0.79	0.89	0.79	0.81	0.71	0.81	0.64	0.45	- 0.10	0.15
25	Aqua America	0.82	0.83	0.79	0.96	0.91	1.03	1.05	0.76	0.76	0.75	0.77	0.72	0.77	0.61
26	California Water	0.70	0.61	0.56	0.49	0.60	0.89	0.86	0.76	0.73	0.65	0.73	0.77	0.85	0.63
27	Conn. Water Services	0.75	0.71	0.77	0.56	0.74	0.72	0.87	0.95	0.81	0.67	0.59	0.80	0.85	0.77
28	Consolidated Water	3.77	5.25	3.64	4.09	4.22	2.49	3.26	3.73	0.87	9.93	6.70	2.08	2.23	0.47
29	Middlesex Water	0.95	0.87	0.73	0.75	1.24	1.32	1.37	1.14	0.98	0.81	0.94	0.72	0.90	0.58
30	SJW Corp.	0.65	0.86	0.72	0.69	0.74	0.88	0.62	0.52	0.75	0.42	0.70	0.64	0.35	0.62
31	York Water Co. (The)	0.99	0.85	0.79	N/A	1.31	1.23	1.56	1.19	1.48	1.28	0.81	0.41	0.51	0.42
32	Average	1.14	1.27	1.07	1.13	1.30	1.21	1.27	1.25	0.90	1.81	1.41	0.82	0.83	0.56
33	Median	0.83	0.83	0.77	0.73	0.91	1.03	1.05	0.95	0.81	0.81	0.77	0.72	0.85	0.61

Sources:

<sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.

<sup>2</sup> The Value Line Investment Survey, October 12, 2018.

Notes:

Based on the projected 2018 Dividends Declared per share and Book Value per share, published in The Value Line Investment Survey, October 12, 2018.

<sup>b</sup> Based on the projected 2018 Dividends Declared per share and Earnings per share, published in The Value Line Investment Survey, October 12, 2018.

<sup>c</sup> Based on the projected 2018 Cash Flow per share and Capital Spending per share, published in The Value Line Investment Survey, October 12, 2018.

#### Natural Gas Utilities (Valuation Metrics)

		Percent Dividends to Book Value 1													
		13-Year													
<u>Line</u>	<u>Company</u>	<u>Average</u> (1)	<u>2018 <sup>2/a</sup></u> (2)	<u>2017</u> (3)	<u>2016</u> (4)	<u>2015</u> (5)	<u>2014</u> (6)	<u>2013</u> (7)	<u>2012</u> (8)	<u>2011</u> (9)	<u>2010</u> (10)	<u>2009</u> (11)	<u>2008</u> (12)	<u>2007</u> (13)	<u>2006</u> (14)
1	Atmos Energy	5.30%	4.53%	4.90%	5.04%	4.96%	4.81%	4.92%	5.28%	5.44%	5.55%	5.61%	5.75%	5.82%	6.25%
2	Chesapeake Utilities	5.41%	4.37%	4.23%	4.35%	4.78%	5.18%	5.25%	5.39%	5.42%	5.49%	5.60%	6.71%	6.66%	6.95%
3	New Jersey Resources	7.21%	6.90%	7.26%	7.21%	7.16%	7.45%	7.60%	7.86%	7.69%	7.72%	7.48%	6.42%	6.54%	6.40%
4	NiSource Inc.	5.36%	5.55%	5.46%	5.08%	6.89%	5.22%	5.22%	5.25%	5.19%	5.22%	5.25%	5.34%	4.97%	5.02%
5	Northwest Nat. Gas	6.58%	7.17%	7.27%	6.30%	6.53%	6.58%	6.59%	6.57%	6.55%	6.44%	6.43%	6.41%	6.39%	6.32%
6	ONE Gas Inc.	3.79%	4.74%	4.48%	3.88%	3.41%	2.44%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	South Jersey Inds.	6.89%	7.67%	7.34%	6.53%	6.98%	7.04%	7.12%	7.09%	7.26%	7.13%	6.69%	6.40%	6.22%	6.09%
8	Southwest Gas	4.35%	5.15%	5.25%	5.14%	4.82%	4.57%	4.33%	4.16%	3.98%	3.90%	3.89%	3.83%	3.74%	3.80%
9	Spire Inc.	5.98%	5.06%	5.09%	5.06%	5.07%	5.04%	5.31%	6.22%	6.30%	6.53%	6.56%	6.74%	7.33%	7.43%
10	UGI Corp.	5.53%	5.13%	5.28%	5.65%	5.72%	5.14%	5.07%	5.35%	5.77%	5.41%	5.35%	5.72%	5.82%	6.54%
11	WGL Holdings Inc.	6.86%	N/A	6.88%	7.21%	7.33%	7.14%	6.73%	6.45%	6.60%	6.57%	6.72%	6.71%	6.88%	7.13%
12	Average	5.87%	5.63%	5.77%	5.59%	5.78%	5.51%	5.82%	5.96%	6.02%	6.00%	5.96%	6.00%	6.04%	6.19%
13	Median	5.74%	5.14%	5.28%	5.14%	5.72%	5.18%	5.28%	5.80%	6.03%	5.99%	6.02%	6.41%	6.30%	6.36%
							<b>D</b> 1-1								
		13-Year					DIVI	dends to E	arnings Ra	atio					
Line	Company	Average	2018 <sup>2/b</sup>	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
	<u></u>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
14	Atmos Energy	0.58	0.49	0.50	0.50	0.50	0.50	0.56	0.66	0.60	0.62	0.67	0.65	0.66	0.63
15	Chesapeake Utilities	0.50	0.44	0.47	0.42	0.42	0.43	0.45	0.48	0.48	0.48	0.58	0.58	0.61	0.67
16	New Jersey Resources	0.53	0.40	0.60	0.61	0.52	0.41	0.59	0.57	0.56	0.55	0.52	0.41	0.65	0.51
17	NiSource Inc.	0.88	0.60	1.79	0.64	1.32	0.61	0.62	0.69	0.88	0.87	1.10	0.69	0.81	0.81
18	Northwest Nat. Gas	0.60	0.86	- 0.97	0.88	0.95	0.86	0.82	0.81	0.73	0.62	0.57	0.59	0.52	0.59
19	ONE Gas Inc.	0.52	0.55	0.56	0.53	0.54	0.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	South Jersey Inds.	0.60	0.71	0.89	0.79	0.71	0.61	0.59	0.54	0.52	0.50	0.51	0.49	0.48	0.37
21	Southwest Gas	0.49	0.53	0.55	0.57	0.55	0.49	0.42	0.41	0.44	0.44	0.49	0.65	0.44	0.41
22	Spire Inc.	0.62	0.52	0.61	0.60	0.58	0.75	0.84	0.59	0.56	0.65	0.52	0.56	0.63	0.59
23	UGI Corp.	0.43	0.35	0.42	0.45	0.44	0.41	0.46	0.60	0.50	0.38	0.33	0.38	0.41	0.41
24	WGL Holdings Inc.	0.64	N/A	0.65	0.59	0.58	0.64	0.72	0.59	0.69	0.66	0.58	0.58	0.65	0.69
25	Average	0.58	0.54	0.55	0.60	0.65	0.56	0.61	0.59	0.59	0.58	0.59	0.56	0.59	0.57
26	Median	0.57	0.52	0.56	0.59	0.55	0.50	0.59	0.59	0.56	0.58	0.54	0.58	0.62	0.59
							Cash Flo	w to Capit	al Spendin	g Ratio <sup>1</sup>					

		13-Year													
Line	Company	Average	2018 <sup>2/c</sup>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>	<u>2006</u>
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
27	Atmos Energy	0.69	0.54	0.62	0.59	0.60	0.65	0.55	0.59	0.68	0.77	0.78	0.81	0.94	0.82
28	Chesapeake Utilities	0.74	0.48	0.50	0.50	0.53	0.71	0.65	0.79	1.12	1.10	1.14	0.83	0.82	0.45
29	New Jersey Resources	1.47	1.66	0.70	0.59	0.67	1.79	1.46	1.48	1.51	1.55	1.75	2.11	1.67	2.14
30	NiSource Inc.	0.79	0.59	0.41	0.59	0.53	0.56	0.57	0.65	0.75	1.11	1.06	0.94	1.11	1.37
31	Northwest Nat. Gas	0.99	0.70	0.14	1.01	1.12	1.15	0.98	1.01	1.33	0.55	1.02	1.35	1.21	1.34
32	ONE Gas Inc.	0.86	0.87	0.87	0.92	0.86	0.79	N/A							
33	South Jersey Inds.	0.91	0.89	0.81	0.76	0.50	0.53	0.51	0.58	0.70	0.75	1.01	1.67	1.70	1.40
34	Southwest Gas	0.90	0.61	0.68	0.83	0.84	0.99	1.05	0.90	0.82	1.37	1.28	0.85	0.78	0.72
35	Spire Inc.	1.19	0.77	0.72	0.96	0.92	0.98	0.78	0.95	1.53	1.61	1.93	1.64	1.42	1.28
36	UGI Corp.	1.47	1.40	1.29	1.35	1.48	1.53	1.32	1.52	1.28	1.36	1.52	1.72	1.62	1.69
37	WGL Holdings Inc.	1.02	N/A	0.61	0.56	0.60	0.63	0.71	0.93	1.02	1.60	1.60	1.60	1.17	1.18
38	Average	1.02	0.85	0.67	0.79	0.79	0.94	0.86	0.94	1.07	1.18	1.31	1.35	1.24	1.24
39	Median	0.98	0.73	0.68	0.76	0.67	0.79	0.74	0.92	1.07	1.23	1.21	1.48	1.19	1.31

Sources:

<sup>1</sup> The Value Line Investment Survey Investment Analyzer Software, downloaded on June 21, 2018.

<sup>2</sup> The Value Line Investment Survey, November 30, 2018.

Notes:

<sup>a</sup> Based on the projected 2018 Dividends Declared per share and Book Value per share, published in The Value Line Investment Survey, November 30, 2018.

<sup>b</sup> Based on the projected 2018 Dividends Declared per share and Earnings per share, published in The Value Line Investment Survey, November 30, 2018.

<sup>c</sup> Based on the projected 2018 Cash Flow per share and Capital Spending per share, published in The Value Line Investment Survey, November 30, 2018.

**Timeline of Federal Funds Rate Increases** 



#### Fed FFR Actions:

1	December 2015	$0.25 \rightarrow$	0.50
2	December 2016	$0.50 \rightarrow$	0.75
3	March 2017	$0.75 \rightarrow$	1.00
4	June 2017	$1.00 \rightarrow$	1.25
5	December 2017	1.25 →	1.50
6	March 2018	1.50 →	1.75
7	June 2018	1.75 →	2.00
8	September 2018	2.00 →	2.25

#### Sources:

Federal Reserve Bank of New York, https://apps.newyorkfed.org/markets/autorates/fed-funds-search-page Board of Governors of the Federal Reserve System, https://www.federalreserve.gov/datadownload/ Moody's Credit Trends, https://credittrends.moodys.com/

### Proxy Group Water Utilities

		Credit	t Ratings	Common	Equity Ratios
Line	Company	S&P <sup>1</sup>	Moody's <sup>2</sup>	S&P <sup>1</sup>	Value Line <sup>3</sup>
		(1)	(2)	(3)	(4)
1	American States Water Company	A+	A2	53.9%	62.0%
2	American Water Works Company, Inc.	А	A3	40.0%	45.3%
3	Aqua America, Inc.	A+	NR	NA	49.4%
4	California Water Service Group	A+	NR	39.6%	57.3%
5	Middlesex Water Company	А	NR	51.3%	61.8%
6	York Water Company (The)	A-	NR	55.5%	57.0%
7	Average	Α	A2	48.1%	55.5%
8	American Water Works Co.	A <sup>4</sup>	A3 <sup>4</sup>		56.4% <sup>5</sup>
9	Indiana-American Water Co.				<b>50.0%</b> <sup>6</sup>

Note: If credit rating/common equity ratio unavailable for utility, subsidiary data used. Sources:

<sup>1</sup> S&P Capital IQ, downloaded December 4, 2018.

<sup>2</sup> Moodys.com, downloaded December 4, 2018.

<sup>3</sup> The Value Line Investment Survey, October 12, 2018.

<sup>4</sup> Direct testimony of Ann E. Bulkley at 27.

<sup>5</sup> Direct testimony of Ann E. Bulkley at 50.

<sup>6</sup> Attachment MPG-4.

### Proxy Group Gas Utilities

		Credit	Ratings <sup>1</sup>	Common Equity Ratios			
<u>Line</u>		<u>S&amp;P<sup>1</sup></u>	Moody's <sup>2</sup>	S&P <sup>1</sup>	Value Line <sup>3</sup>		
		(1)	(2)	(3)	(4)		
1	Atmos Energy Corporation	А	A2	56.0%	56.0%		
2	New Jersey Resources Corporation	BBB+	Aa2	55.6%	55.4%		
3	NiSource Inc.	BBB+	Baa2	38.3%	36.5%		
4	Northwest Natural Gas Company	A+	A3	43.3%	52.1%		
5	ONE Gas, Inc.	А	A2	57.9%	62.2%		
6	Southwest Gas Holdings, Inc.	BBB+	A3	44.3%	50.2%		
7	Spire Inc.	A-	Baa2	45.9%	50.0%		
8	UGI Corporation	NR	A2	NA	44.2%		
9	Average	A-	A3	48.8%	50.8%		
10	American Water Works Co.	$A^4$	A3 <sup>4</sup>		56.4% <sup>5</sup>		
11	Indiana-American Water Co.				50.0% <sup>6</sup>		

Note: If credit rating/common equity ratio unavailable for utility, subsidiary data used. Sources:

- <sup>3</sup> The Value Line Investment Survey, November 30, 2018.
- <sup>4</sup> Direct testimony of Ann E. Bulkley at 27.
- <sup>5</sup> Direct testimony of Ann E. Bulkley at 50.
- <sup>6</sup> Attachment MPG-4.

<sup>&</sup>lt;sup>1</sup> S&P Capital IQ, downloaded December 4, 2018.

<sup>&</sup>lt;sup>2</sup> Moodys.com, downloaded December 4, 2018.

### Consensus Analysts' Growth Rates Water Utilities

		Zacks <sup>1</sup>		Yahoo <sup>2</sup>		Reuters <sup>3</sup>		MI <sup>4</sup>		Average of	
<u>Line</u>	Company	Estimated Growth % (1)	Number of <u>Estimates</u> (2)	Estimated <u>Growth %</u> (3)	Number of <u>Estimates</u> (4)	Estimated <u>Growth %</u> (5)	Number of <u>Estimates</u> (6)	Estimated <u>Growth %</u> (5)	Number of <u>Estimates</u> (6)	Growth <u>Rates</u> (7)	
1	American States Water Company	6.00%	NA	6.00%	NA	6.00%	1	6.50%	2	6.13%	
2	American Water Works Company, Inc.	7.80%	NA	8.20%	NA	10.60%	2	8.26%	6	8.72%	
3	Aqua America, Inc.	5.30%	NA	5.00%	NA	9.00%	1	6.67%	3	6.49%	
4	California Water Service Group	7.00%	NA	9.80%	NA	NA	NA	6.50%	3	7.77%	
5	Middlesex Water Company	NA	NA	2.70%	NA	NA	NA	NA	NA	2.70%	
6	York Water Company (The)	NA	NA	4.90%	NA	NA	NA	NA	NA	4.90%	
7	Average	6.53%	N/A	6.10%	N/A	8.53%	1	6.98%	4	6.12%	
8	Median									6.31%	

Sources:

<sup>1</sup> Zacks, http://www.zacks.com/, downloaded on November 16, 2018.

<sup>2</sup> Yahoo Finance, http://finance.yahoo.com/, downloaded on November 16, 2018.

<sup>3</sup> Reuters, http://www.reuters.com/, downloaded on November 16, 2018.

<sup>4</sup> S&P Market Intelligence, https://platform.mi.spglobal.com, downloaded on November 16, 2018.

### Consensus Analysts' Growth Rates Gas Utilities

		Zacks <sup>1</sup>		Yahoo <sup>2</sup>		Reuters <sup>3</sup>		MI <sup>4</sup>		Average of	
Line	<u>Company</u>	Estimated <u>Growth %</u> (1)	Number of <u>Estimates</u> (2)	Estimated <u>Growth %</u> (3)	Number of <u>Estimates</u> (4)	Estimated <u>Growth %</u> (5)	Number of <u>Estimates</u> (6)	Estimated <u>Growth %</u> (5)	Number of <u>Estimates</u> (6)	Growth <u>Rates</u> (7)	
1	Atmos Energy Corporation	6.50%	NA	6.45%	NA	6.45%	2	5.50%	2	6.23%	
2	New Jersey Resources Corporation	7.00%	NA	6.65%	NA	6.65%	2	6.33%	3	6.66%	
3	NiSource Inc.	5.50%	NA	5.92%	NA	5.92%	3	5.12%	3	5.62%	
4	Northwest Natural Gas Company	4.30%	NA	4.00%	NA	4.00%	1	4.33%	3	4.16%	
5	ONE Gas, Inc.	5.70%	NA	5.50%	NA	5.50%	2	5.50%	2	5.55%	
6	Southwest Gas Holdings, Inc.	4.00%	NA	4.00%	NA	4.00%	1	5.40%	3	4.35%	
7	Spire Inc.	4.00%	NA	2.80%	NA	2.80%	2	3.57%	2	3.29%	
8	UGI Corporation	8.00%	NA	7.85%	NA	7.85%	2	6.50%	2	7.55%	
9	Average	5.63%	N/A	5.40%	N/A	5.40%	2	5.28%	3	5.42%	
10	Median									5.58%	

#### Sources:

<sup>1</sup> Zacks, http://www.zacks.com/, downloaded on November 16, 2018.

<sup>2</sup> Yahoo Finance, http://finance.yahoo.com/, downloaded on November 16, 2018.

<sup>3</sup> Reuters, http://www.reuters.com/, downloaded on November 16, 2018.

<sup>4</sup> S&P Market Intelligence, https://platform.mi.spglobal.com, downloaded on November 16, 2018.

### **Constant Growth DCF Model** (Consensus Analysts' Growth Rates) Water Utilities

<u>Line</u>	Company	13-Week AVG <u>Stock Price<sup>1</sup></u> (1)	Analysts' <u>Growth<sup>2</sup></u> (2)	Annualized <u>Dividend<sup>3</sup></u> (3)	Adjusted <u>Yield</u> (4)	Constant <u>Growth DCF</u> (5)
1	American States Water Company	\$61.20	6.13%	\$1.10	1.91%	8.03%
2	American Water Works Company, Inc.	\$88.94	8.72%	\$1.82	2.22%	10.94%
3	Aqua America, Inc.	\$36.11	6.49%	\$0.84	2.48%	8.97%
4	California Water Service Group	\$42.00	7.77%	\$0.75	1.92%	9.69%
5	Middlesex Water Company	\$46.78	2.70%	\$0.90	1.96%	4.66%
6	York Water Company (The)	\$30.82	4.90%	\$0.67	2.27%	7.17%
7 8	Average Median	\$50.98	6.12%	\$1.01	2.13%	8.24% 8.50%

Sources:

<sup>2</sup> Attachment MPG-8, page 1.
<sup>3</sup> The Value Line Investment Survey, October 12, 2018.

<sup>&</sup>lt;sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

### Constant Growth DCF Model (Consensus Analysts' Growth Rates) Gas Utilities

<u>Line</u>	Company	13-Week AVG <u>Stock Price<sup>1</sup></u> (1)	Analysts' <u>Growth<sup>2</sup></u> (2)	Annualized <u>Dividend<sup>3</sup></u> (3)	Adjusted <u>Yield</u> (4)	Constant <u>Growth DCF</u> (5)
1	Atmos Energy Corporation	\$94.13	6.23%	\$2.10	2.37%	8.59%
2	New Jersey Resources Corporation	\$46.24	6.66%	\$1.17	2.70%	9.36%
3	NiSource Inc.	\$25.85	5.62%	\$0.78	3.19%	8.80%
4	Northwest Natural Gas Company	\$67.23	4.16%	\$1.90	2.94%	7.10%
5	ONE Gas, Inc.	\$80.94	5.55%	\$1.84	2.40%	7.95%
6	Southwest Gas Holdings, Inc.	\$79.90	4.35%	\$2.08	2.72%	7.07%
7	Spire Inc.	\$74.48	3.29%	\$2.25	3.12%	6.41%
8	UGI Corporation	\$54.74	7.55%	\$1.04	2.04%	9.59%
9 10	Average Median	\$65.44	5.42%	\$1.65	2.68%	8.11% 8.27%

Sources:

<sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

<sup>2</sup> Attachment MPG-8, page 2.

<sup>3</sup> The Value Line Investment Survey, November 30, 2018.

### Payout Ratios Water Utilities

		Dividends Per Share		Earnings	s Per Share	Payout Ratio		
Line		<u>2017</u>	Projected	2017	Projected	2017	Projected	
		(1)	(2)	(3)	(4)	(5)	(6)	
1	American States Water Company	\$0.99	\$1.50	\$1.88	\$2.50	52.66%	60.00%	
2	American Water Works Company, Inc.	\$1.62	\$2.60	\$2.38	\$4.50	68.07%	57.78%	
3	Aqua America, Inc.	\$0.79	\$1.25	\$1.35	\$1.95	58.52%	64.10%	
4	California Water Service Group	\$0.72	\$1.02	\$1.40	\$1.90	51.43%	53.68%	
5	Middlesex Water Company	\$0.86	\$1.11	\$1.38	\$2.20	62.32%	50.45%	
6	York Water Company (The)	\$0.65	\$1.00	\$1.01	\$1.60	64.36%	62.50%	
7	Average	\$0.94	\$1.41	\$1.57	\$2.44	59.56%	58.09%	

Source:

The Value Line Investment Survey, October 12, 2018.

### Payout Ratios **Gas Utilities**

		Dividend	Dividends Per Share		s Per Share	Payout Ratio		
Line		<u>2017</u>	Projected	<u>2017</u>	<b>Projected</b>	<u>2017</u>	Projected	
		(1)	(2)	(3)	(4)	(5)	(6)	
1	Atmos Energy Corporation	\$1.80	\$2.60	\$3.60	\$5.15	50.00%	50.49%	
2	New Jersey Resources Corporation	\$1.04	\$1.24	\$1.73	\$2.95	60.12%	42.03%	
3	NiSource Inc.	\$0.70	\$1.20	\$0.39	\$1.80	179.49%	66.67%	
4	Northwest Natural Gas Company	\$1.88	\$2.20	-\$1.94	\$3.50	-96.91%	62.86%	
5	ONE Gas, Inc.	\$1.68	\$2.50	\$3.02	\$4.75	N/A <sup>1</sup>	52.63%	
6	Southwest Gas Holdings, Inc.	\$1.98	\$2.60	\$3.62	\$5.40	54.70%	48.15%	
7	Spire Inc.	\$2.10	\$3.00	\$3.43	\$5.00	61.22%	60.00%	
8	UGI Corporation	\$0.96	\$1.12	\$2.29	\$3.40	41.92%	32.94%	
9	Average	\$1.52	\$2.06	\$2.02	\$3.99	74.57%	51.97%	

Source:

The Value Line Investment Survey, November 30, 2018. Notes:

<sup>1</sup> Negative Payout Ratios are not included in Average.

#### Sustainable Growth Rate Water Utilities

		3 to 5 Year Projections S										Sustainable
		Dividends	Earnings	Book Value	Book Value		Adjustment	Adjusted	Payout	Retention	Internal	Growth
<u>Line</u>		<u>Per Share</u> (1)	Per Share (2)	Per Share (3)	<u>Growth</u> (4)	<u>ROE</u> (5)	Factor (6)	<u>ROE</u> (7)	<u>Ratio</u> (8)	<u>Rate</u> (9)	<u>Growth Rate</u> (10)	<u>Rate</u> (11)
1	American States Water Company	\$1.50	\$2.50	\$17.35	3.73%	14.41%	1.02	14.67%	60.00%	40.00%	5.87%	7.30%
2	American Water Works Company, Inc.	\$2.60	\$4.50	\$42.00	6.87%	10.71%	1.03	11.07%	57.78%	42.22%	4.67%	6.62%
3	Aqua America, Inc.	\$1.25	\$1.95	\$14.50	5.64%	13.45%	1.03	13.82%	64.10%	35.90%	4.96%	5.54%
4	California Water Service Group	\$1.02	\$1.90	\$16.70	2.95%	11.38%	1.01	11.54%	53.68%	46.32%	5.35%	6.90%
5	Middlesex Water Company	\$1.11	\$2.20	\$16.75	3.62%	13.13%	1.02	13.37%	50.45%	49.55%	6.62%	8.45%
6	York Water Company (The)	\$1.00	\$1.60	\$11.70	4.74%	13.68%	1.02	13.99%	62.50%	37.50%	5.25%	5.25%
7	Average	\$1.41	\$2.44	\$19.83	4.59%	12.79%	1.02	13.08%	58.09%	41.91%	5.45%	6.68%

Sources and Notes:

Cols. (1), (2) and (3): The Value Line Investment Survey, October 12, 2018. Col. (4): [Col. (3) / Page 2 Col. (2) ] (1/5) - 1. Col. (5): Col. (2) / Col. (3). Col. (6): [ 2 \* (1 + Col. (4)) ] / (2 + Col. (4)). Col. (7): Col. (6) \* Col. (5). Col. (8): Col. (1) / Col. (2). Col. (9): 1 - Col. (8). Col. (10): Col. (9) \* Col. (7). Col. (11): Col. (10) + Page 2 Col. (9).

### Sustainable Growth Rate Water Utilities

		13-Week Average	2017 Book Value	Market to Book	Common Shares Outstanding (in Millions) <sup>2</sup>					
<u>Line</u>	<u>Company</u>	<u>Stock Price<sup>1</sup></u> (1)	Per Share <sup>2</sup> (2)	<u>Ratio</u> (3)	<u>2017</u> (4)	<u>3-5 Years</u> (5)	<u>Growth</u> (6)	<u>S Factor<sup>3</sup></u> (7)	<u>V Factor<sup>4</sup></u> (8)	<u>S * V</u> (9)
1	American States Water Company	\$61.20	\$14.45	4.24	36.68	37.50	0.44%	1.88%	76.39%	1.43%
2	American Water Works Company, Inc.	\$88.94	\$30.13	2.95	178.44	187.50	1.00%	2.94%	66.12%	1.94%
3	Aqua America, Inc.	\$36.11	\$11.02	3.28	177.71	180.00	0.26%	0.84%	69.48%	0.58%
4	California Water Service Group	\$42.00	\$14.44	2.91	48.01	50.00	0.82%	2.37%	65.62%	1.56%
5	Middlesex Water Company	\$46.78	\$14.02	3.34	16.35	17.00	0.78%	2.61%	70.03%	1.83%
6	York Water Company (The)	\$30.82	\$9.28	3.32	12.87	12.80	-0.11%	-0.36%	69.89%	-0.25%
7	Average	\$50.98	\$15.56	3.34	78.34	80.80	0.66%	2.13%	69.59%	1.47%

Sources and Notes:

<sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

<sup>2</sup> The Value Line Investment Survey, October 12, 2018.

<sup>3</sup> Expected Growth in the Number of Shares, Column (3) \* Column (6).

<sup>4</sup> Expected Profit of Stock Investment, [1 - 1 / Column (3)].

#### Sustainable Growth Rate Gas Utilities

		3 to 5 Year Projections Sus										
		Dividends	Earnings	Book Value	Book Value		Adjustment	Adjusted	Payout	Retention	Internal	Growth
Line		Per Share	Per Share	Per Share	Growth	ROE	Factor	ROE	<u>Ratio</u>	Rate	Growth Rate	Rate
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Atmos Energy Corporation	\$2.60	\$5.15	\$46.55	4.85%	11.06%	1.02	11.33%	50.49%	49.51%	5.61%	12.09%
2	New Jersey Resources Corporation	\$1.24	\$2.95	\$22.70	9.64%	13.00%	1.05	13.59%	42.03%	57.97%	7.88%	7.97%
3	NiSource Inc.	\$1.20	\$1.80	\$15.00	3.19%	12.00%	1.02	12.19%	66.67%	33.33%	4.06%	4.83%
4	Northwest Natural Gas Company	\$2.20	\$3.50	\$29.40	2.61%	11.90%	1.01	12.06%	62.86%	37.14%	4.48%	7.96%
5	ONE Gas, Inc.	\$2.50	\$4.75	\$43.40	2.98%	10.94%	1.01	11.11%	52.63%	47.37%	5.26%	6.43%
6	Southwest Gas Holdings, Inc.	\$2.60	\$5.40	\$54.55	7.65%	9.90%	1.04	10.26%	48.15%	51.85%	5.32%	8.36%
7	Spire Inc.	\$3.00	\$5.00	\$51.00	4.33%	9.80%	1.02	10.01%	60.00%	40.00%	4.00%	6.14%
8	UGI Corporation	\$1.12	\$3.40	\$28.45	9.37%	11.95%	1.04	12.49%	32.94%	67.06%	8.37%	8.37%
9	Average	\$2.06	\$3.99	\$36.38	5.58%	11.32%	1.03	11.63%	51.97%	48.03%	5.62%	7.77%
10	Median											7.96%

Sources and Notes:

Cols. (1), (2) and (3): The Value Line Investment Survey, November 30, 2018. Col. (4): [Col. (3) / Page 4 Col. (2) ] ^ (1/5) - 1. Col. (5): Col. (2) / Col. (3). Col. (6): [2 \* (1 + Col. (4)) ] / (2 + Col. (4)). Col. (7): Col. (6) \* Col. (5). Col. (8): Col. (1) / Col. (2). Col. (9): 1 - Col. (8). Col. (10): Col. (9) \* Col. (7). Col. (11): Col. (10) + Page 4 Col. (9).

#### Sustainable Growth Rate Gas Utilities

		13-Week Average	2017 Book Value <u>Per Share<sup>2</sup></u> (2)	7 Market alue to Book _ are <sup>2</sup> Ratio	Commo Outstandin	n Shares g (in Millions) <sup>2</sup>				
<u>Line</u>	<u>Company</u>	Stock Price <sup>1</sup> (1)		<u>Ratio</u> (3)	<u>2017</u> (4)	<u>3-5 Years</u> (5)	<u>Growth</u> (6)	<u>S Factor<sup>3</sup></u> (7)	V Factor <sup>4</sup> (8)	<u>S * V</u> (9)
1	Atmos Energy Corporation	\$94.13	\$36.74	2.56	106.10	130.00	4.15%	10.62%	60.97%	6.48%
2	New Jersey Resources Corporation	\$46.24	\$14.33	3.23	86.32	86.50	0.04%	0.13%	69.01%	0.09%
3	NiSource Inc.	\$25.85	\$12.82	2.02	337.02	350.00	0.76%	1.53%	50.40%	0.77%
4	Northwest Natural Gas Company	\$67.23	\$25.85	2.60	28.74	32.00	2.17%	5.65%	61.55%	3.48%
5	ONE Gas, Inc.	\$80.94	\$37.47	2.16	52.31	55.00	1.01%	2.18%	53.71%	1.17%
6	Southwest Gas Holdings, Inc.	\$79.90	\$37.74	2.12	48.09	55.00	2.72%	5.76%	52.77%	3.04%
7	Spire Inc.	\$74.48	\$41.26	1.81	48.26	55.00	2.65%	4.78%	44.60%	2.13%
8	UGI Corporation	\$54.74	\$18.18	3.01	173.99	173.00	-0.11%	-0.34%	66.79%	-0.23%
9	Average	\$65.44	\$28.05	2.44	110.10	117.06	1.93%	4.38%	57.47%	2.45%

Sources and Notes:

<sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

<sup>2</sup> The Value Line Investment Survey, November 30, 2018.

<sup>3</sup> Expected Growth in the Number of Shares, Column (3) \* Column (6).

<sup>4</sup> Expected Profit of Stock Investment, [1 - 1 / Column (3)].

### Constant Growth DCF Model (Sustainable Growth Rate) Water Utilities

<u>Line</u>	<u>Company</u>	13-Week AVG <u>Stock Price<sup>1</sup></u> (1)	Sustainable <u>Growth<sup>2</sup></u> (2)	Annualized <u>Dividend<sup>3</sup></u> (3)	Adjusted <u>Yield</u> (4)	Constant <u>Growth DCF</u> (5)
1	American States Water Company	\$61.20	7.30%	\$1.10	1.93%	9.23%
2	American Water Works Company, Inc.	\$88.94	6.62%	\$1.82	2.18%	8.80%
3	Aqua America, Inc.	\$36.11	5.54%	\$0.84	2.46%	8.00%
4	California Water Service Group	\$42.00	6.90%	\$0.75	1.91%	8.81%
5	Middlesex Water Company	\$46.78	8.45%	\$0.90	2.07%	10.53%
6	York Water Company (The)	\$30.82	5.25%	\$0.67	2.28%	7.52%
7	Average	\$50.98	6.68%	\$1.01	2.14%	8.82%
8	Median					8.81%

Sources:

<sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

<sup>2</sup> Attachment MPG-11, page 1.

<sup>3</sup> The Value Line Investment Survey, October 12, 2018.

### **Constant Growth DCF Model** (Sustainable Growth Rate) **Gas Utilities**

Line	Company	13-Week AVG <u>Stock Price<sup>1</sup></u> (1)	Sustainable <u>Growth<sup>2</sup></u> (2)	Annualized <u>Dividend<sup>3</sup></u> (3)	Adjusted <u>Yield</u> (4)	Constant <u>Growth DCF</u> (5)
1	Atmos Energy Corporation	\$94.13	12.09%	\$2.10	2.50%	14.59%
2	New Jersey Resources Corporation	\$46.24	7.97%	\$1.17	2.73%	10.70%
3	NiSource Inc.	\$25.85	4.83%	\$0.78	3.16%	8.00%
4	Northwest Natural Gas Company	\$67.23	7.96%	\$1.90	3.05%	11.01%
5	ONE Gas, Inc.	\$80.94	6.43%	\$1.84	2.42%	8.85%
6	Southwest Gas Holdings, Inc.	\$79.90	8.36%	\$2.08	2.82%	11.18%
7	Spire Inc.	\$74.48	6.14%	\$2.25	3.21%	9.34%
8	UGI Corporation	\$54.74	8.37%	\$1.04	2.06%	10.43%
9	Average	\$65.44	7.77%	\$1.65	2.74%	10.51%
10	Median					10.57%

Sources:

<sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

<sup>2</sup> Attachment MPG-11, page 3.
<sup>3</sup> The Value Line Investment Survey, November 30, 2018.

**Electricity Sales Are Linked to U.S. Economic Growth** 



Note:

1988 represents the base year. Graph depicts increases or decreases from the base year.

Sources:

U.S. Energy Information Administration

Federal Reserve Bank of St. Louis

#### Multi-Stage Growth DCF Model Water Utilities

	<u>Company</u>	13-Week AVG	Annualized	First Stage	Second Stage Growth				Third Stage	Multi-Stage	
<u>Line</u>		CompanyStock Price1Dividend2(1)(2)	Dividend <sup>2</sup>	<u>Dividend<sup>2</sup></u> <u>Growth<sup>3</sup></u> (2) (3)	Year 6	Year 7	Year 8	Year 9	Year 10	 Growth <sup>4</sup>	Growth DCF
			(2)		(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	American States Water Company	\$61.20	\$1.10	6.13%	5.80%	5.48%	5.16%	4.84%	4.52%	4.20%	6.29%
2	American Water Works Company, Inc.	\$88.94	\$1.82	8.72%	7.96%	7.21%	6.46%	5.71%	4.95%	4.20%	7.05%
3	Aqua America, Inc.	\$36.11	\$0.84	6.49%	6.11%	5.73%	5.35%	4.96%	4.58%	4.20%	7.00%
4	California Water Service Group	\$42.00	\$0.75	7.77%	7.17%	6.58%	5.98%	5.39%	4.79%	4.20%	6.53%
5	Middlesex Water Company	\$46.78	\$0.90	2.70%	2.95%	3.20%	3.45%	3.70%	3.95%	4.20%	5.93%
6	York Water Company (The)	\$30.82	\$0.67	4.90%	4.78%	4.67%	4.55%	4.43%	4.32%	4.20%	6.53%
7 8	Average Median	\$50.98	\$1.01	6.12%	5.80%	5.48%	5.16%	4.84%	4.52%	4.20%	6.56% 6.53%

Sources:

<sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

<sup>2</sup> The Value Line Investment Survey, October 12, 2018.

<sup>3</sup> Attachment MPG-8, page 1.

<sup>4</sup> Blue Chip Financial Forecasts, December 1, 2018 at 14.

#### Multi-Stage Growth DCF Model Gas Utilities

		13-Week AVG	Annualized	First Stage	Second Stage Growth				Third Stage	Multi-Stage	
Line	<u>Company</u>	Stock Price <sup>1</sup>	Dividend <sup>2</sup>	Growth <sup>3</sup>	Year 6	Year 7	Year 8	Year 9	Year 10	Growth <sup>4</sup>	Growth DCF
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Atmos Energy Corporation	\$94.13	\$2.10	6.23%	5.89%	5.55%	5.21%	4.88%	4.54%	4.20%	6.84%
2	New Jersey Resources Corporation	\$46.24	\$1.17	6.66%	6.25%	5.84%	5.43%	5.02%	4.61%	4.20%	7.28%
3	NiSource Inc.	\$25.85	\$0.78	5.62%	5.38%	5.14%	4.91%	4.67%	4.44%	4.20%	7.64%
4	Northwest Natural Gas Company	\$67.23	\$1.90	4.16%	4.16%	4.17%	4.18%	4.19%	4.19%	4.20%	7.13%
5	ONE Gas, Inc.	\$80.94	\$1.84	5.55%	5.33%	5.10%	4.88%	4.65%	4.43%	4.20%	6.77%
6	Southwest Gas Holdings, Inc.	\$79.90	\$2.08	4.35%	4.33%	4.30%	4.28%	4.25%	4.23%	4.20%	6.92%
7	Spire Inc.	\$74.48	\$2.25	3.29%	3.44%	3.60%	3.75%	3.90%	4.05%	4.20%	7.15%
8	UGI Corporation	\$54.74	\$1.04	7.55%	6.99%	6.43%	5.88%	5.32%	4.76%	4.20%	6.65%
9 10	Average Median	\$65.44	\$1.65	5.42%	5.22%	5.02%	4.81%	4.61%	4.40%	4.20%	7.05% 7.02%

Sources:

<sup>1</sup> Yahoo! Finance, downloaded November 19, 2018.

<sup>2</sup> The Value Line Investment Survey, November 30, 2018.

<sup>3</sup> Attachment MPG-8, page 2.

<sup>4</sup> Blue Chip Financial Forecasts, December 1, 2018 at 14.

### **Common Stock Market/Book Ratio**



Source:

<sup>1980 - 2000:</sup> Mergent Public Utility Manual.

<sup>2001 - 2015:</sup> AUS Utility Reports, multiple dates.

<sup>2016 - 2017:</sup> Value Line Investment Survey, multiple dates.

<sup>\*</sup> Value Line Investment Survey Reports, September 14, October 26, November 16 and November 30, 2018.

		Authorized Gas	30 yr. Treasury	Indicated Risk	Rolling 5 - Year	Rolling 10 - Year
Line	Year	Returns <sup>1</sup>	Bond Yield <sup>2</sup>	Premium	Average	Average
		(1)	(2)	(3)	(4)	(5)
1	1986	13.46%	7.80%	5.66%		
2	1987	12.74%	8.58%	4.16%		
3	1988	12.85%	8.96%	3.89%		
4	1989	12.88%	8.45%	4.43%		
5	1990	12.67%	8.61%	4.06%	4.44%	
6	1991	12.46%	8.14%	4.32%	4.17%	
7	1992	12.01%	7.67%	4.34%	4.21%	
8	1993	11.35%	6.60%	4.75%	4.38%	
9	1994	11.35%	7.37%	3.98%	4.29%	
10	1995	11.43%	6.88%	4.55%	4.39%	4.42%
11	1996	11.19%	6.70%	4.49%	4.42%	4.30%
12	1997	11.29%	6.61%	4.68%	4.49%	4.35%
13	1998	11.51%	5.58%	5.93%	4.73%	4.55%
14	1999	10.66%	5.87%	4.79%	4.89%	4.59%
15	2000	11.39%	5.94%	5.45%	5.07%	4.73%
16	2001	10.95%	5.49%	5.46%	5.26%	4.84%
17	2002	11.03%	5.43%	5.60%	5.45%	4.97%
18	2003	10.99%	4.96%	6.03%	5.47%	5.10%
19	2004	10.59%	5.05%	5.54%	5.62%	5.25%
20	2005	10.46%	4.65%	5.81%	5.69%	5.38%
21	2006	10.40%	4.90%	5.50%	5.70%	5.48%
22	2007	10.22%	4.83%	5.39%	5.66%	5.55%
23	2008	10.39%	4.28%	6.11%	5.67%	5.57%
24	2009	10.22%	4.07%	6.15%	5.79%	5.70%
25	2010	10.15%	4.25%	5.90%	5.81%	5.75%
26	2011	9.92%	3.91%	6.01%	5.91%	5.80%
27	2012	9.94%	2.92%	7.02%	6.24%	5.95%
28	2013	9.68%	3.45%	6.23%	6.26%	5.97%
29	2014	9.78%	3.34%	6.44%	6.32%	6.06%
30	2015	9.60%	2.84%	6.76%	6.49%	6.15%
31	2016	9.54%	2.60%	6.94%	6.68%	6.29%
32	2017	9.72%	2.90%	6.83%	6.64%	6.44%
33	2018 <sup>3</sup>	9.62%	3.06%	6.56%	6.71%	6.48%
34	Average	10.98%	5.54%	5.45%	5.41%	5.40%
35	Minimum				4.17%	4.30%
36	Maximum				6.71%	6.48%

### Equity Risk Premium - Treasury Bond

Sources:

<sup>&</sup>lt;sup>1</sup> Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3. S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions, January-September 2018, October 11, 2018, p. 9.

<sup>&</sup>lt;sup>2</sup> St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

<sup>&</sup>lt;sup>3</sup> Data includes January - September, 2018.

		Authorized Gas	Average	Indicated Risk	Rolling 5 - Year	Rolling
Line	Year	Returns <sup>1</sup>	Bond Yield <sup>2</sup>	Premium	Average	<u>Average</u>
		(1)	(2)	(3)	(4)	(5)
1	1986	13.46%	9.58%	3.88%		
2	1987	12.74%	10.10%	2.64%		
3	1988	12.85%	10.49%	2.36%		
4	1989	12.88%	9.77%	3.11%		
5	1990	12.67%	9.86%	2.81%	2.96%	
6	1991	12.46%	9.36%	3.10%	2.80%	
7	1992	12.01%	8.69%	3.32%	2.94%	
8	1993	11.35%	7.59%	3.76%	3.22%	
9	1994	11.35%	8.31%	3.04%	3.21%	
10	1995	11.43%	7.89%	3.54%	3.35%	3.16%
11	1996	11.19%	7.75%	3.44%	3.42%	3.11%
12	1997	11.29%	7.60%	3.69%	3.49%	3.22%
13	1998	11.51%	7.04%	4.47%	3.64%	3.43%
14	1999	10.66%	7.62%	3.04%	3.64%	3.42%
15	2000	11.39%	8.24%	3.15%	3.56%	3.45%
16	2001	10.95%	7.76%	3.19%	3.51%	3.46%
17	2002	11.03%	7.37%	3.66%	3.50%	3.50%
18	2003	10.99%	6.58%	4.41%	3.49%	3.56%
19	2004	10.59%	6.16%	4.43%	3.77%	3.70%
20	2005	10.46%	5.65%	4.81%	4.10%	3.83%
21	2006	10.40%	6.07%	4.33%	4.33%	3.92%
22	2007	10.22%	6.07%	4.15%	4.43%	3.96%
23	2008	10.39%	6.53%	3.86%	4.32%	3.90%
24	2009	10.22%	6.04%	4.18%	4.27%	4.02%
25	2010	10.15%	5.47%	4.68%	4.24%	4.17%
26	2011	9.92%	5.04%	4.88%	4.35%	4.34%
27	2012	9.94%	4.13%	5.81%	4.68%	4.55%
28	2013	9.68%	4.48%	5.20%	4.95%	4.63%
29	2014	9.78%	4.28%	5.50%	5.22%	4.74%
30	2015	9.60%	4.12%	5.48%	5.38%	4.81%
31	2016	9.54%	3.93%	5.61%	5.52%	4.94%
32	2017	9.72%	4.00%	5.72%	5.50%	5.09%
33	2018 <sup>3</sup>	9.62%	4.18%	5.44%	5.55%	5.25%
34	Average	10.98%	6.90%	4.08%	4.05%	4.01%
35	Minimum				2.80%	3.11%
36	Maximum				5.55%	5.25%

### Equity Risk Premium - Utility Bond

Sources:

September 2018, October 11, 2018, p. 9.

<sup>&</sup>lt;sup>1</sup> Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 p. 5, and Jan. 2011 p. 3. S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions, January-

<sup>&</sup>lt;sup>2</sup> Mergent Public Utility Manual, Mergent Weekly News Reports, 2003.

The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record.

The utility yields from 2010-2017 were obtained from http://credittrends.moodys.com/.

<sup>&</sup>lt;sup>3</sup> Data includes January - September, 2018.
#### **Bond Yield Spreads**

			Public Utility Bond				Corporate Bond				Utility to Corporate	
		T-Bond			A-T-Bond	Baa-T-Bond			Aaa-T-Bond	Baa-T-Bond	Baa	A-Aaa
Line	Year	Yield <sup>1</sup>	A <sup>2</sup>	Baa <sup>2</sup>	Spread	Spread	Aaa <sup>3</sup>	Baa <sup>3</sup>	Spread	Spread	Spread	Spread
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	1980	11.30%	13.34%	13.95%	2.04%	2.65%	11.94%	13.67%	0.64%	2.37%	0.28%	1.40%
2	1981	13.44%	15.95%	16.60%	2.51%	3.16%	14.17%	16.04%	0.73%	2.60%	0.56%	1.78%
3	1982	12.76%	15.86%	16.45%	3.10%	3.69%	13.79%	16.11%	1.03%	3.35%	0.34%	2.07%
4	1983	11.18%	13.66%	14.20%	2.48%	3.02%	12.04%	13.55%	0.86%	2.38%	0.65%	1.62%
5	1984	12.39%	14.03%	14.53%	1.64%	2.14%	12.71%	14.19%	0.32%	1.80%	0.34%	1.32%
6	1985	10.79%	12.47%	12.96%	1.68%	2.17%	11.37%	12.72%	0.58%	1.93%	0.24%	1.10%
7	1986	7.80%	9.58%	10.00%	1.78%	2.20%	9.02%	10.39%	1.22%	2.59%	-0.39%	0.56%
8	1987	8.58%	10.10%	10.53%	1.52%	1.95%	9.38%	10.58%	0.80%	2.00%	-0.05%	0.72%
9	1988	8.96%	10.49%	11.00%	1.53%	2.04%	9.71%	10.83%	0.75%	1.87%	0.17%	0.78%
10	1989	8.45%	9.77%	9.97%	1.32%	1.52%	9.26%	10.18%	0.81%	1.73%	-0.21%	0.51%
11	1990	8.61%	9.86%	10.06%	1.25%	1.45%	9.32%	10.36%	0.71%	1.75%	-0.30%	0.54%
12	1991	8.14%	9.36%	9.55%	1.22%	1.41%	8.77%	9.80%	0.63%	1.67%	-0.25%	0.59%
13	1992	7.67%	8.69%	8.86%	1.02%	1.19%	8.14%	8.98%	0.47%	1.31%	-0.12%	0.55%
14	1993	6.60%	7.59%	7.91%	0.99%	1.31%	7.22%	7.93%	0.62%	1.33%	-0.02%	0.37%
15	1994	7.37%	8.31%	8.63%	0.94%	1.26%	7.96%	8.62%	0.59%	1.25%	0.01%	0.35%
16	1995	6.88%	7.89%	8.29%	1.01%	1.41%	7.59%	8.20%	0.71%	1.32%	0.09%	0.30%
17	1996	6.70%	7.75%	8.17%	1.05%	1.47%	7.37%	8.05%	0.67%	1.35%	0.12%	0.38%
18	1997	6.61%	7.60%	7.95%	0.99%	1.34%	7.26%	7.86%	0.66%	1.26%	0.09%	0.34%
19	1998	5.58%	7.04%	7.26%	1.46%	1.68%	6.53%	7.22%	0.95%	1.64%	0.04%	0.51%
20	1999	5.87%	7.62%	7.88%	1.75%	2.01%	7.04%	7.87%	1.18%	2.01%	0.01%	0.58%
21	2000	5.94%	8.24%	8.36%	2.30%	2.42%	7.62%	8.36%	1.68%	2.42%	-0.01%	0.62%
22	2001	5.49%	7.76%	8.03%	2.27%	2.54%	7.08%	7.95%	1.59%	2.45%	0.08%	0.68%
23	2002	5.43%	7.37%	8.02%	1.94%	2.59%	6.49%	7.80%	1.06%	2.37%	0.22%	0.88%
24	2003	4.96%	6.58%	6.84%	1.62%	1.89%	5.67%	6.77%	0.71%	1.81%	0.08%	0.91%
25	2004	5.05%	6.16%	6.40%	1.11%	1.35%	5.63%	6.39%	0.58%	1.35%	0.00%	0.53%
26	2005	4.65%	5.65%	5.93%	1.00%	1.28%	5.24%	6.06%	0.59%	1.42%	-0.14%	0.41%
27	2006	4.90%	6.07%	6.32%	1.17%	1.42%	5.59%	6.48%	0.69%	1.58%	-0.16%	0.48%
28	2007	4.83%	6.07%	6.33%	1.24%	1.50%	5.56%	6.48%	0.72%	1.65%	-0.15%	0.52%
29	2008	4.28%	6.53%	7.25%	2.25%	2.97%	5.63%	7.45%	1.35%	3.17%	-0.20%	0.90%
30	2009	4.07%	6.04%	7.06%	1.97%	2.99%	5.31%	7.30%	1.24%	3.23%	-0.24%	0.73%
31	2010	4.25%	5.47%	5.96%	1.22%	1.71%	4.95%	6.04%	0.70%	1.79%	-0.08%	0.52%
32	2011	3.91%	5.04%	5.57%	1.13%	1.66%	4.64%	5.67%	0.73%	1.76%	-0.10%	0.40%
33	2012	2.92%	4.13%	4.83%	1.21%	1.90%	3.67%	4.94%	0.75%	2.02%	-0.11%	0.46%
34	2013	3.45%	4.48%	4.98%	1.03%	1.53%	4.24%	5.10%	0.79%	1.65%	-0.12%	0.24%
35	2014	3.34%	4.28%	4.80%	0.94%	1.46%	4.16%	4.86%	0.82%	1.52%	-0.06%	0.12%
36	2015	2.84%	4.12%	5.03%	1.27%	2.19%	3.89%	5.00%	1.05%	2.16%	0.03%	0.23%
37	2016	2.60%	3.93%	4.67%	1.33%	2.08%	3.66%	4.71%	1.07%	2.12%	-0.04%	0.27%
38	2017	2.90%	4 00%	4.38%	1 10%	1 48%	3 74%	4 44%	0.85%	1.55%	-0.06%	0.26%
39	2018 4	3.06%	4.18%	4.57%	1.12%	1.51%	3.87%	4.68%	0.80%	1.62%	-0.11%	0.32%
40	Average	6.53%	8.03%	8.46%	1.50%	1.94%	7.36%	8.45%	0.84%	1.93%	0.01%	0.66%

Yield Spreads Treasury Vs. Corporate & Treasury Vs. Utility



Sources:

<sup>2</sup> The utility yields for the period 1980-2000 were obtained from Mergent Public Utility Manual, Mergent Weekly News Reports, 2003.

The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record.

The utility yields for the period 2010-2017 were obtained from http://credittrends.moodys.com/.

<sup>3</sup> The corporate yields for the period 1980-2009 were obtained from the St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

The corporate yields from 2010-2017 were obtained from http://credittrends.moodys.com/.

<sup>4</sup> Data includes January - September, 2018.

<sup>&</sup>lt;sup>1</sup> St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

# **Treasury and Utility Bond Yields**

		Treasury	"A" Rated Utility	"Baa" Rated Utility
<u>Line</u>	Date	Bond Yield <sup>1</sup>	Bond Yield <sup>2</sup>	<b>Bond Yield<sup>2</sup></b>
		(1)	(2)	(3)
1	11/16/18	3.33%	4.49%	5.00%
2	11/09/18	3.40%	4.53%	5.00%
3	11/02/18	3.46%	4.58%	5.06%
4	10/26/18	3.32%	4.44%	4.91%
5	10/19/18	3.38%	4.48%	4.95%
6	10/12/18	3.32%	4.42%	4.88%
7	10/05/18	3.40%	4.52%	4.94%
8	09/28/18	3.19%	4.33%	4.75%
9	09/21/18	3.20%	4.36%	4.77%
10	09/14/18	3.13%	4.30%	4.74%
11	09/07/18	3.11%	4.29%	4.72%
12	08/31/18	3.02%	4.24%	4.64%
13	08/24/18	2.97%	4.21%	4.59%
14	Average	3.25%	4.40%	4.84%
15	Spread To Treasury		1.15%	1.59%

Sources:

<sup>1</sup> St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.

<sup>2</sup> http://credittrends.moodys.com/.

# Value Line Beta Water Utilities

<u>Line</u>	Company	<u>Beta</u>
1	American States Water Company	0.75
2	American Water Works Company, Inc.	0.60
3	Aqua America, Inc.	0.70
4	California Water Service Group	0.75
5	Middlesex Water Company	0.75
6	York Water Company (The)	0.80
7	Average	0.73

Source: *The Value Line Investment Survey,* October 12, 2018.

# Value Line Beta Gas Utilities

<u>Line</u>	Company	<u>Beta</u>		
1	Atmos Energy Corporation	0.60		
2	New Jersey Resources Corporation	0.70		
3	NiSource Inc.	0.50		
4	Northwest Natural Gas Company	0.60		
5	ONE Gas, Inc.	0.65		
6	Southwest Gas Holdings, Inc.	0.70		
7	Spire Inc.	0.65		
8	UGI Corporation	0.80		
9	Average	0.65		

Source: *The Value Line Investment Survey,* November 30, 2018.

## CAPM Return Water Utilities

<u>Line</u>	<b>Description</b>	High Market Risk <u>Premium</u> (1)	Low Market Risk <u>Premium</u> (2)
1	Risk-Free Rate <sup>1</sup>	3.70%	3.70%
2	Risk Premium <sup>2</sup>	7.80%	6.10%
3	Beta <sup>3</sup>	0.73	0.73
4	САРМ	9.36%	8.12%

Sources:

<sup>1</sup> Blue Chip Financial Forecasts; December 1, 2018, at 2.

<sup>2</sup> Duff & Phelps, 2018 SBBI Yearbook at 6-17 and 6-18, and Duff & Phelps, 2018 Valuation Handbook at 3-33 and 3-45.

<sup>3</sup> Attachment MPG-20, page 1.

## CAPM Return Gas Utilities

1 Risk-Free Rate <sup>1</sup> $3.70\%$ $3.70\%$	2)
2 Diale Dramium <sup>2</sup> $= 7.000$	70%
2 Risk Premium 7.80% 6.	0%
3 Beta <sup>3</sup> 0.65 0	65
4 <b>CAPM</b> 8.77% 7.	57%

Sources:

<sup>1</sup> Blue Chip Financial Forecasts; December 1, 2018, at 2.

<sup>2</sup> Duff & Phelps, 2018 SBBI Yearbook at 6-17 and 6-18, and Duff & Phelps, 2018 Valuation Handbook at 3-33 and 3-45.

<sup>3</sup> Attachment MPG-20, page 2.

### Standard & Poor's Credit Metrics

			Retail				
		Co	ost of Service	S&P Benc	hmark (Low V	olatility) <sup>1</sup>	
<u>Line</u>	<b>Description</b>	Amount (1)		Intermediate (2)	Significant (3)	Aggressive (4)	<u>Reference</u> (5)
			(-)	(_)	(-)	(1)	(-)
1	Rate Base (Total Company) <sup>2</sup>	\$ `	1,222,170,152				Schedule REVREQ1.
2	Weighted Common Return		3.81%				Page 2, Line 14, Col. 4.
3	Pre-Tax Rate of Return		7.36%				Page 2, Line 20, Col. 5.
4	Income to Common	\$	46,581,396				Line 1 x Line 2.
5	EBIT	\$	89,932,713				Line 1 x Line 3.
6	Depreciation & Amortization	\$	54,155,429				Schedule REVREQ1.
7	Imputed Amortization	\$	-				N/A
8	Capitalized Interest	\$	17,780				Response to IAIG 02-028.
9	Deferred Income Taxes & ITC	\$	12,655,761				Schedule OPINC, Page 1.
10	Funds from Operations (FFO)	\$	113,410,366				Sum of Line 4 and Lines 6 through 9.
11	Imputed Interest Expense	\$	-				N/A
12	EBITDA	\$	144,088,142				Sum of Lines 5 through 7 and Line 11
13	Total Adjusted Debt Ratio		50.0%	51.5%	53.1%	56.0%	Page 2, Line 21, Col. 2 and Page 3.
14	Debt to EBITDA		4.2x	3.0-4.0x	4.0x - 5.0x	5.0x - 6.0x	(Line 1 x Line 13) / Line 12.
15	FFO to Total Debt		19%	13% - 23%	9% - 13%	6% - 9%	Line 10 / (Line 1 x Line 13).
16	Indicative Credit Rating	B		А	A-	BBB	

Sources:

<sup>1</sup> Standard & Poor's: "Criteria: Corporate Methodology," November 19, 2013.

<sup>2</sup> 2020 Test Year (Step 2).

#### Note:

Based on the June 2018 S&P report, AWK has an "Excellent" business profile and an "Intermediate" financial profile, and A credit rating. It falls under the 'Low Volatility' matrix.

S&P Business/Financial Risk Profile Matrix									
Business Risk Financial Risk Profile									
	Intermediate	Significant	Aggressive						
Excellent	Α	A-	BBB						
Strong	A-	BBB	BB						
Satisfactory	BBB	BB+	BB-						

#### Pre-Tax Rate of Return

<u>Line</u>	Description (2019)		<u>Amount</u> (1)	<u>Weight</u> (2)	<u>Cost</u> (3)	<u>WACC</u> (4)	Pre-Tax <u>WACC</u> (5)
1	Long-Term Debt	\$	443,482,975	40.12%	5.26%	2.11%	2.11%
2	Common Equity	\$	443,482,975	40.12%	9.35%	3.75%	5.16%
3	ADIT	\$	217,863,201	19.71%	0.00%	0.00%	0.00%
4	AD for Muncie Sewer	\$	85,859	0.01%	0.00%	0.00%	0.00%
5	Post Retirement Benefits	\$	-	0.00%	0.00%	0.00%	0.00%
6	ADITC - Post 1970	\$	381,500	0.03%	7.31%	0.00%	0.00%
7	Prepaid Pension	\$	-	<u>0.00%</u>	0.00%	<u>0.00%</u>	<u>0.00%</u>
8	Total	\$1	,105,296,509	100.00%		5.86%	7.27%
9	Long-Term Debt	\$	443,482,975	50.00%	5.26%	2.63%	2.63%
10	Common Equity	\$	443,482,975	<u>50.00%</u>	9.35%	<u>4.68%</u>	<u>3.40%</u>
11	Total	\$	886,965,949	100.00%		7.31%	6.03%

12 Tax Conversion Factor<sup>1</sup>

1.375039

Line	Description (2020)		<u>Amount</u> (1)	<u>Weight</u> (2)	<u>Cost</u> (3)	<u>WACC</u> (4)	Pre-Tax <u>WACC</u> (5)
13	Long-Term Debt	\$	497,790,186	40.76%	5.19%	2.12%	2.12%
14	Common Equity	\$	497,790,186	40.76%	9.35%	3.81%	5.24%
15	ADIT	\$	225,159,739	18.44%	0.00%	0.00%	0.00%
16	AD for Muncie Sewer	\$	88,164	0.01%	0.00%	0.00%	0.00%
17	Post Retirement Benefits	\$	-	0.00%	0.00%	0.00%	0.00%
18	ADITC - Post 1970	\$	344,492	0.03%	7.27%	0.00%	0.00%
19	Prepaid Pension	\$	-	<u>0.00%</u>	0.00%	<u>0.00%</u>	<u>0.00%</u>
20	Total	\$1	1,221,172,767	100.00%		5.93%	7.36%
21	Long-Term Debt	\$	497 790 186	50.00%	5 19%	2 60%	2 60%
22	Common Equity	\$	497,790,186	<u>50.00</u> %	9.35%	<u>4.68%</u>	<u>6.43%</u>
23	Total	\$	995,580,372	100.00%		7.27%	9.02%

Sources:

<sup>1</sup>Schedule REVREQ3.

- Attachment MPG-4.

### S&P Adjusted Debt Ratio Operating Subsidiaries of Value Line Electric, Gas and Water Utilities (Industry Medians)

	% Distril	bution of 10 Ye	ear Average
<u>Median</u>	<u>&lt;50</u>	<u>50 to 55</u>	<u>&gt;55</u>
45.17%	100%	0%	0%
53.26%	33%	33%	33%
51.47%	25%	50%	25%
53.11%	35%	41%	24%
52.82%	20%	48%	32%
56.04%	18%	29%	53%
52.59%	33%	67%	0%
	<u>Median</u> 45.17% 53.26% 51.47% 53.11% 52.82% 56.04% 52.59%	Median         <50           45.17%         100%           53.26%         33%           51.47%         25%           53.11%         35%           52.82%         20%           56.04%         18%           52.59%         33%	% Distribution of 10 Ye           Median         <50         50 to 55           45.17%         100%         0%           53.26%         33%         33%           51.47%         25%         50%           53.11%         35%         41%           52.82%         20%         48%           56.04%         18%         29%           52.59%         33%         67%

Sources:

S&P Capital IQ, downloaded October 18, 2018.

### Historical Betas of Gas and Water Utilities

Line	<u>Company</u>	6-Year <u>Average</u> (1)	<u>Dec 18</u> (2)	<u>Dec 17</u> (3)	<u>Dec 16</u> (4)	<u>Dec 15</u> (5)	<u>Dec 14</u> (6)	<u>Dec 13</u> (7)
	Value Line Gas Utilities:						.,	
1	Atmos Energy Corporation	0.73	0.60	0.70	0.70	0.80	0.80	0.80
2	Chesapeake Utilities Corporation	0.67	0.65	0.70	0.65	0.65	0.65	0.70
3	New Jersey Resources Corporation	0.77	0.70	0.80	0.80	0.80	0.80	0.70
4	NiSource Inc.	0.70	0.50	0.60	NMF	NMF	0.85	0.85
5	Northwest Natural Gas Company	0.66	0.60	0.70	0.65	0.65	0.70	0.65
6	ONE Gas, Inc.	0.68	0.65	0.70	NA	NA	NA	NA
7	South Jersey Industries, Inc.	0.79	0.80	0.85	0.80	0.80	0.80	0.70
8	Southwest Gas Holdings, Inc.	0.78	0.70	0.80	0.75	0.80	0.85	0.80
9	Spire Inc. (Laclede Gas)	0.68	0.65	0.70	0.70	0.70	0.70	0.65
10	UGI Corporation	0.86	0.80	0.90	0.90	0.95	0.85	0.75
11	WGL Holdings, Inc.	0.74	NA	0.80	0.75	0.75	0.75	0.65
12	Average	0.74	0.67	0.75	0.74	0.77	0.78	0.73
		6-Year						
		<u>Average</u>	<u>Oct 18</u>	<u>Oct 17</u>	<u>Oct 16</u>	<u>Oct 15</u>	<u>Oct 14</u>	<u>Oct 13</u>
	Value Line Water Utilities:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
13	American States Water Company	0.73	0.75	0.80	0.70	0.70	0.70	0.70
14	American Water Works Company, Inc.	0.66	0.60	0.65	0.65	0.70	0.70	0.65
15	Aqua America, Inc.	0.69	0.70	0.70	0.70	0.75	0.70	0.60
16	California Water Service Group	0.73	0.75	0.80	0.75	0.75	0.70	0.65
17	Connecticut Water Service, Inc.	0.65	0.60	0.65	0.60	0.65	0.65	0.75
18	Middlesex Water Company	0.73	0.75	0.80	0.70	0.75	0.70	0.70
19	SJW Group	0.76	0.65	0.75	0.70	0.75	0.85	0.85
20	York Water Company (The)	0.74	0.80	0.80	0.70	0.75	0.70	0.70
21	Average	0.71	0.70	0.74	0.69	0.73	0.71	0.70

Source:

Value Line Investment Survey, multiple dates.

# Accuracy of Interest Rate Forecasts (Long-Term Treasury Bond Yields - Projected Vs. Actual)

		Publication Data		Actual Yield	Projected Yield	
		Prior Quarter	Projected	Projected	in Projected	Higher (Lower)
Line	Date	Actual Yield	Yield	Quarter	Quarter	Than Actual Yield*
		(1)	(2)	(3)	(4)	(5)
1	Dec 00	E 90/	E 90/	10.02	E 69/	0.2%
2	Mar-01	5.7%	5.6%	2Q. 02	5.8%	-0.2%
3	Jun-01	5.4%	5.8%	3Q, 02	5.2%	0.6%
4	Sep-01	5.7%	5.9%	4Q, 02	5.1%	0.8%
5	Dec-01	5.5%	5.7%	1Q, 03	5.0%	0.7%
6	Mar-02	5.3%	5.9%	2Q, 03	4.7%	1.2%
7	Jun-02	5.6%	6.2%	3Q, 03	5.2%	1.0%
8	Sep-02	5.8%	5.9%	4Q, 03	5.2%	0.7%
9	Dec-02	5.2%	5.7%	1Q, 04	4.9%	0.8%
10	Mar-03	5.1%	5.7%	2Q, 04	5.4%	0.3%
11	Jun-03	5.0%	5.4%	3Q, 04	5.1%	0.3%
12	Sep-03	4.7%	5.8%	40,04	4.9%	0.9%
10	Mar-04	5.2%	5.9%	20.05	4.0%	1.170
15	lun=04	4.9%	6.2%	30,05	4.0%	1.4%
16	Sep-04	5.4%	6.0%	4Q, 05	4.8%	1.2%
17	Dec-04	5.1%	5.8%	1Q, 06	4.6%	1.2%
18	Mar-05	4.9%	5.6%	2Q, 06	5.1%	0.5%
19	Jun-05	4.8%	5.5%	3Q, 06	5.0%	0.5%
20	Sep-05	4.6%	5.2%	4Q, 06	4.7%	0.5%
21	Dec-05	4.5%	5.3%	1Q, 07	4.8%	0.5%
22	Mar-06	4.8%	5.1%	2Q, 07	5.0%	0.1%
23	Jun-06	4.6%	5.3%	3Q, 07	4.9%	0.4%
24	Sep-06	5.1%	5.2%	4Q, 07	4.6%	0.6%
25	Dec-06	5.0%	5.0%	1Q, 08	4.4%	0.6%
26	Mar-07	4.7%	5.1%	2Q, 08	4.6%	0.5%
27	Jun-07	4.8%	5.1%	30,08	4.5%	0.7%
20	Sep-07	5.0%	5.2%	40,08	3.1%	1.0%
29	Mar-08	4.9%	4.0%	20.09	4.0%	0.8%
31	lun=08	4.0%	4.0%	30,09	4.0%	0.6%
32	Sep-08	4.6%	5.1%	4Q, 09	4.3%	0.8%
33	Dec-08	4.5%	4.6%	1Q, 10	4.6%	0.0%
34	Mar-09	3.7%	4.1%	2Q, 10	4.4%	-0.3%
35	Jun-09	3.5%	4.6%	3Q, 10	3.9%	0.8%
36	Sep-09	4.0%	5.0%	4Q, 10	4.2%	0.8%
37	Dec-09	4.3%	5.0%	1Q, 11	4.6%	0.4%
38	Mar-10	4.3%	5.2%	2Q, 11	4.3%	0.9%
39	Jun-10	4.6%	5.2%	3Q, 11	3.7%	1.5%
40	Sep-10	4.4%	4.7%	4Q, 11	3.0%	1.7%
41	Dec-10	3.9%	4.6%	1Q, 12	3.1%	1.5%
42	Mar-11	4.2%	5.1%	2Q, 12	2.9%	2.2%
43	Jun-11 Son 11	4.6%	5.2%	30, 12	2.8%	2.5%
44	Dec-11	4.3%	4.2%	40, 12	2.9%	0.7%
46	Mar-12	3.0%	3.8%	20 13	3.2%	0.7%
40	Jun-12	3.1%	3.7%	30, 13	3.7%	0.0%
48	Sep-12	2.9%	3.4%	4Q, 13	3.8%	-0.4%
49	Dec-12	2.8%	3.4%	1Q, 14	3.7%	-0.3%
50	Mar-13	2.9%	3.6%	2Q, 14	3.4%	0.2%
51	Jun-13	3.1%	3.7%	3Q, 14	3.3%	0.4%
52	Sep-13	3.2%	4.2%	4Q, 14	3.0%	1.2%
53	Dec-13	3.7%	4.2%	1Q, 15	2.6%	1.7%
54	Mar-14	3.8%	4.4%	2Q 15	2.9%	1.5%
55	Jun-14	3.7%	4.3%	3Q 15	2.8%	1.5%
56	Sep-14	3.4%	4.3%	4Q 15	3.0%	1.3%
57	Dec-14	3.3%	4.0%	1Q 16	2.7%	1.3%
58	Mar-15	3.0%	3.7%	2Q 16	2.6%	1.1%
60	Son-15	2.0%	3.1%	40.16	2.3%	1.4%
61	Dec-15	2.8%	3.7%	10 17	3.0%	0.7%
62	Mar-16	3.0%	3.5%	2Q 17	2.9%	0.6%
63	Jun-16	2.7%	3.4%	3Q 17	2.8%	0.6%
64	Sep-16	2.6%	3.1%	4Q 17	2.8%	0.3%
65	Dec-16	2.3%	3.4%	1Q 18	3.0%	0.4%
66	Mar-17	2.8%	3.7%	2Q 18	3.1%	0.6%
67	Jun-17	3.0%	3.7%	3Q 18	3.1%	0.6%
68	Jul-17	2.9%	3.7%	4Q 18		
69	Aug-17	2.9%	3.7%	4Q 18		
70	Sep-17	2.9%	3.6%	4Q 18		
71	Uct-17	2.8%	3.6%	10 19		
72	NOV-17	2.8%	3.6%	10,19		
73	DeC-17	2.8%	3.0%	20 10		
74	Jan-10 Feb-19	2.0%	3.0%	20/19		
76	Mar-18	2.8%	3.7%	20 19		
77	Apr-18	3.0%	3.8%	30 19		
78	May-18	3.0%	3.8%	3Q 19		
79	Jun-18	3.0%	3.8%	3Q 19		
80	Jul-18	3.1%	3.8%	4Q 19		
81	Aug-18	3.1%	3.7%	4Q 19		
82	Sep-18	3.1%	3.7%	4Q 19		
83	Oct-18	3.1%	3.6%	1Q 20		
84	Nov-18	3.1%	3.7%	1Q 20		
85	Dec-18	3.1%	3.7%	1Q 20		

Source: Blue Chip Financial Forecasts, Various Dates. \* Col. 2 - Col. 4.

#### OUCC 05-037

## DATA INFORMATION REQUEST Indiana-American Water Company Cause No. 45142

#### **Information Requested**:

In response to OUCC Data Request No. 1.21, Petitioner states the remaining life of Indiana-American property is 41.49 years. Please respond to the following:

- a. Does 41.49 years represent Petitioner's current best estimate of remaining useful life using ARAM? Please explain.
- b. Are removal costs included in any way in the calculation of the 41.49 years? Please explain.

#### **Information Provided**:

See response to OUCC 10-001 in Cause # 45032 S4 for Indiana-American Water which is attached as OUCC 05-037\_Attachment – Response from Cause No. 45032 - OUCC 10-001.

#### Attachment:

OUCC 05-037\_Attachment – Response from Cause No. 45032 - OUCC 10-001.

### OUCC 10-001

## DATA INFORMATION REQUEST Indiana-American Water Company Cause No. 45032 S4

#### Information Requested:

In response to OUCC Data Request No. 1.21 (attached) in Cause No. 45142, Indiana-American's pending rate case, Indiana-American states the remaining life of Indiana-American's property is 41.49 years. Please respond to the following.

- a. Does 41.49 years represent Indiana-American's current best estimate of remaining useful life using ARAM? Please explain.
- b. Are removal costs included in any way in the calculation of the 41.49 years? Please explain.

#### Information Provided:

a. As explained, ARAM as a method does not yield a single period over which the amortization will occur. Property associated with each tax guideline class and vintage will have a different remaining life and vintage, and ARAM will reverse only when the relevant book to tax differences for that guideline class and vintage begin to reverse. So in an ARAM calculation you will have guideline class vintage combinations that will reverse in 1 year, and you will have guideline class vintage combination that will not start reversing for over 12 years and will not finish normalizing excess for over XX years. Therefore, for any utility the remaining useful life that ARAM will be reversing is the longest book life associated with plant.

As indicated 41.49 years is a composite remaining life that would be typical of a RSGM life calculation, and Indiana-American would expect to be the period in which the majority of EADIT balances would reverse using ARAM. It would be the life inclusive of all plant related property, not isolated to protected or unprotected. This is similar to what NIPSCO testified to and as stated in the final order of Cause # 44988 on pages 81-82.

b. No, the 41.49 years does not include the cost of removal rate. We are using the 2017 book depreciation composite rate only. Including the cost of removal rate though does not change the estimated remaining life of the assets.

### IAIG 02-022

## DATA INFORMATION REQUEST Indiana-American Water Company Cause No. 45142

#### **Information Requested**:

On an electronic spreadsheet with all formulas intact, please provide the five-year projected and five-year historical capital structure, capital expenditures and capital funding. Please identify all debt and common equity components such as retained earnings, paid-in capital, etc. on a monthly basis consistent with IAWC Financial Exhibit CC, Workpapers 6 through 12.

#### **Objection**:

Indiana American objects to the request on the grounds and to the extent the request seeks an analysis, calculation, or compilation which has not already been performed and to which Petitioner objects to performing.

#### **Information Provided**:

Subject to and without waiver of the foregoing objection, Indiana American is providing the following:

Please see IAIG 02-022\_Attachment for the requested information, with the exception of capital expenditures.

Annual capital expenditures for the period 2013-2017 can be found in Table 1 on page 12 of the Direct Testimony of Stacy S. Hoffman. Projected capital expenditures for the period of 2018-2020 can be found in Attachment SSH-3 to Mr. Hoffman's direct testimony.

#### Attachment:

IAIG 02-022\_Attachment

Attachment MPG-26 Page 2 of 21

CAUSE NO. 45142 IAIG 02-022 ATTACHMENT

Actual Data	<u>Sep-13</u>	<u>Oct-13</u>	<u>Nov-13</u>	<u>Dec-13</u>	<u>Jan-14</u>	<u>Feb-14</u>	<u>Mar-14</u>	<u>Apr-14</u>	<u>May-14</u>	<u>Jun-14</u>	<u>Jul-14</u>
Long-Term Debt	\$360,247,232	\$360,247,232	\$360,247,232	\$344,871,559	\$344,871,559	\$344,871,559	\$344,869,912	\$346,552,912	\$346,552,912	\$346,550,854	\$346,550,854
Unamortized Debt Expense	4,999,022	4,977,376	4,955,730	4,929,183	4,907,537	4,885,891	4,864,244	4,850,105	4,828,458	4,806,812	4,782,715
Unamort Discount	<u>87,517</u>	87,267	<u>87,017</u>	87,017	<u>87,017</u>	86,266	<u>86,016</u>	<u>85,766</u>	<u>85,516</u>	85,266	<u>85,016</u>
Total Long-Term Debt	\$355,160,694	\$355,182,590	\$355,204,486	\$339,855,360	\$339,877,005	\$339,899,402	\$339,919,652	\$341,617,041	\$341,638,938	\$341,658,776	\$341,683,124
Common Stock	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900
Paid-in Capital	120,164,994	120,169,502	120,172,956	120,178,728	120,181,707	120,185,421	120,189,301	120,193,029	120,196,754	120,201,111	120,204,762
Retained Earnings	<u>124,816,841</u>	<u>127,365,652</u>	<u>128,544,340</u>	<u>123,759,293</u>	<u>125,859,259</u>	<u>127,618,977</u>	<u>125,524,732</u>	<u>127,757,520</u>	130,614,661	<u>129,212,974</u>	<u>132,669,406</u>
Total Equity	\$337,742,735	\$340,296,053	\$341,478,196	\$336,698,921	\$338,801,866	\$340,565,298	\$338,474,933	\$340,711,448	\$343,572,315	\$342,174,985	\$345,635,068
Permanent Financings Reflected in A	ctual Data										
Long-Term Debt Issuances				\$6,702,401							
Paid-in Capital Additions											
Pojected Data	<u>Oct-18</u>	<u>Nov-18</u>	<u>Dec-18</u>	<u>Jan-19</u>	<u>Feb-19</u>	<u>Mar-19</u>	<u>Apr-19</u>	<u>May-19</u>	<u>Jun-19</u>	<u>Jul-19</u>	<u>Aug-19</u>
Long-Term Debt *	\$395 104 676	\$395 104 676	\$395 104 676	\$30 <i>1</i> 211 027	\$304 211 027	\$20/ 211 027	\$30 <i>1</i> 211 027	\$20/ 211 027	\$30 <i>1</i> 211 027	\$301 211 027	\$443 711 027
Unamortized Debt Expense	6 872 145	6 836 855	6 801 564	6 766 274	6 730 983	6 695 693	6 660 402	6 625 112	6 589 821	6 554 531	7 013 553
Unamort Discount	1,196,008	1,192,090	1,188,173	1,184,256	1,180,339	1,176,422	1,172,505	1,168,588	1,164,671	1,160,754	1.651.149
Total Long-Term Debt	\$387,036,523	\$387,075,731	\$387,114,938	\$386,260,497	\$386,299,705	\$386,338,912	\$386,378,120	\$386,417,327	\$386,456,535	\$386,495,742	\$435,046,325
Common Stock	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900	\$92,760,900
Paid-in Capital	192,438,908	232,438,908	232,438,908	232,438,908	232,438,908	232,438,908	232,438,908	232,438,908	232,438,908	232,438,908	232,438,908
Retained Earnings	174,605,069	<u>177,852,059</u>	<u>171,074,492</u>	<u>174,082,329</u>	<u>176,853,892</u>	<u>172,157,989</u>	<u>175,388,175</u>	179,049,084	<u>176,870,657</u>	<u>181,754,646</u>	<u>186,207,397</u>
Total Equity	\$459,804,877	\$503,051,867	\$496,274,300	\$499,282,136	\$502,053,700	\$497,357,797	\$500,587,982	\$504,248,892	\$502,070,465	\$506,954,454	\$511,407,205

Permanent Financings Reflected in Projected Data	
Long-Term Debt Issuances	
Paid-in Capital Additions	\$40,000,000

\$49,500,000

\* Long-Term Debt face amount for the forecast period is \$153 higher here than shown in IAWC Financial Exhibit CC, Workpapers 1, 2, 5, and 6, and Schedule CC1. This results from the new 4.20% series of long-term debt issued in August 2018 being shown as \$69,125,847 in IAWC Financial Exhibit CC, whereas the actual issue amount was \$69,126,000.

Attachment MPG-26 Page 4 of 21 Cause No. 45142 IAIG 02-022\_Attachment Page 3 of 6

<u>Aug-14</u> Sep-14 Oct-14 Nov-14 Dec-14 Jan-15 <u>Feb-15</u> Mar-15 Apr-15 <u>May-15</u> Jun-15 Jul-15 Aug-15 \$386,550,854 \$346,550,854 \$346,550,854 \$346,550,854 \$322,035,171 \$321,227,717 \$346,2 5,144,622 4,741,691 4,716,974 4,698,398 4,677,016 4,655,633 4,893,419 4,870,482 4,848,324 4,826,166 4,804,007 4,781,849 5,524,124 207.466 84,516 84,266 84,016 83,766 83,516 83,266 83,016 82,766 82,516 82,266 82,016 1.040.831 \$381,198,766 \$341,724,648 \$341,749,614 \$341,768,440 \$317,274,389 \$316,488,568 \$341,251,032 \$341,274,219 \$341,296,627 \$341,319,036 \$341,341,444 \$341,363,852 \$412,662,762

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<u>Sep-19</u>	<u>Oct-19</u>	<u>Nov-19</u>	<u>Dec-19</u>	<u>Jan-20</u>	<u>Feb-20</u>	<u>Mar-20</u>	<u>Apr-20</u>
\$443,711,027	\$443,711,027	\$443,711,027	\$443,711,027	\$442,796,685	\$442,796,685	\$442,796,685	\$442,796,685
6,976,887	6,940,222	6,903,556	6,866,891	6,830,225	6,793,560	6,756,894	6,720,229
<u>1,645,857</u>	1,640,565	<u>1,635,273</u>	<u>1,629,981</u>	<u>1,624,689</u>	<u>1,619,397</u>	<u>1,614,105</u>	<u>1,608,813</u>
\$435,088,283	\$435,130,240	\$435,172,198	\$435,214,155	\$434,341,771	\$434,383,728	\$434,425,686	\$434,467,644

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\$49,500,000

Sep-15 <u>Oct-15</u> <u>Nov-15</u> Dec-15 <u>Jan-16</u> <u>Feb-16</u> <u>Mar-16</u> <u>Apr-16</u> <u>May-16</u> <u>Jun-16</u> <u>Jul-16</u> <u>Aug-16</u> <u>Sep-16</u> \$354,227,717 \$354,227,717 \$354,227,717 \$354,227,717 \$353,391,606 \$353,3 5,347,095 5,501,631 5,479,186 5,456,741 5,434,295 5,414,430 5,392,314 5,369,540 5,324,649 5,302,204 5,279,759 5,257,314 5,234,869 1,020,249 1,037,891 1,034,951 1,032,011 1,029,070 1,026,130 1,023,190 1,017,309 1,014,369 1,011,429 1,008,488 1,005,548 1,002,608 \$347,688,195 \$347,713,580 \$347,738,966 \$347,764,351 \$346,951,046 \$346,976,102 \$347,001,817 \$347,027,202 \$347,052,588 \$347,077,973 \$347,103,359 \$347,128,744 \$347,154,130

\$92,760,900\$92,760,90

\$10,000,000

<u>Oct-16</u> Nov-16 <u>Dec-16</u> <u>Jan-17</u> <u>Feb-17</u> <u>Mar-17</u> <u>Apr-17</u> <u>May-17</u> <u>Jun-17</u> <u>Jul-17</u> <u>Aug-17</u> <u>Sep-17</u> Oct-17 \$327,621,606 \$353,391,606 \$353,391,606 \$352,535,523 \$352,535 \$35 5,214,302 5,327,919 5,459,384 5,441,046 5,418,477 5,396,491 5,373,049 5,350,484 5,305,354 5,282,789 5,260,224 6,625,335 6,591,507 999,667 1,211,134 <u>1,207,321</u> 1,203,786 1,200,251 1,196,716 1,193,181 1,189,646 1,186,110 1,182,575 1,179,040 1,208,513 1,204,699 \$321,407,636 \$346,721,088 \$346,743,239 \$345,913,260 \$345,938,781 \$345,965,758 \$345,991,859 \$346,017,959 \$346,044,059 \$346,070,159 \$346,096,259 \$346,018,981 \$346,056,622

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<u>Nov-17</u> <u>Dec-17</u> <u>Jan-18</u> <u>Feb-18</u> <u>Mar-18</u> <u>Apr-18</u> <u>May-18</u> <u>Jun-18</u> <u>Jul-18</u> <u>Aug-18</u> <u>Sep-18</u> \$353,852,829 \$353,852,829 \$352,978,676 \$352,978,676 \$352,978,676 \$352,978,676 \$325,9 6,523,254 6,557,278 6,489,025 6,454,796 6,420,567 6,386,338 6,352,539 6,319,168 6,285,798 6,968,902 6,936,678 <u>1,197,073</u> 1,200,886 <u>1,193,259</u> <u>1,189,446</u> <u>1,185,633</u> 1,181,819 1,178,006 1,174,192 1,170,379 1,203,894 1,200,011 \$346,094,665 \$346,132,503 \$345,296,392 \$345,334,434 \$345,372,476 \$345,410,519 \$318,448,132 \$318,485,315 \$318,522,499 \$386,931,880 \$386,967,987

\$92,760,900\$92,760,90

\$69,126,000

\$62,000,000

### IAIG 02-025

## DATA INFORMATION REQUEST Indiana-American Water Company Cause No. 45142

#### **Information Requested**:

On an electronic spreadsheet with all formulas intact, please provide the Company's regulatory balance sheet, income statement, statement of cash flows from the annual report to the IURC for the period 2012-2017.

#### **Information Provided**:

Please see IAIG 02-025\_Attachment which provides the Company's balance sheet, income statement and statement of cash flows from the annual report to the IURC for the period 2013-2017. The data is not readily available for the 2012 period.

#### Attachment:

IAIG 02-025 Attachment

Attachment MPG-26 Page 9 of 21

CAUSE NO. 45142 IAIG 02-025 ATTACHMENT

#### Indiana-American Water Company 2017 Balance Sheet

#### Assets

	2017	2016
Property, plant and equipment		
Utility plant - at original cost, net	\$1,236,181	\$1,158,479
Utility plant acquisition adjustments, net	23,102	24,439
Non-utility property, net	227	232
Total property, plant and equipment, net	1,259,510	1,183,150
Current assets		
Cash	1,110	716
Restricted funds	1,376	2,926
Accounts receivable	15,404	14,038
Allowance for uncollectible accounts	(2,795)	(2,245)
Unbilled revenues	11,275	11,027
Receivable from affiliated company	0	568
Federal income tax receivable - affiliated company	1,965	0
Materials and supplies	1,410	1,401
Other	740	590
Total current assets	30,485	29,021
Decidatory and other long torm assate		
Regulatory and other long-term assets	22 617	26.961
Regulatory assets	22,017	20,801
Bronaid ponsion expense	2 006	/כ/ דכס ג
Othor	5,880	4,027
Total regulatory and other long term accets	27 264	22 614
Total assets	\$1 317 359	\$1 244 785
	<i></i>	<i></i>
Capitalization and Liabilit	ies	
Capitalization	2017	2016
Common stockholder's equity	\$445,707	\$369,775
Long-term debt	324,782	351,328
Total capitalization	770,489	721,103
Current liabilities		
Notes payable - affiliated company	2.745	33.064
Current portion long-term debt	27.874	856
Accounts payable	24,692	19,303
Accounts payable affiliated company	4,798	0
Federal income tax payable - affiliated company	0	186
State income tax payable	783	1,337
Accrued taxes	11,613	10,318
Accrued interest	4,221	4,195

#### Other 14,454 15,662 Total current liabilities 91,180 84,921 Regulatory and other long-term liabilities Advances for construction 38,966 39,901 Deferred income taxes, net 107,574 189,150 Deferred investment tax credits 431 **Regulatory liabilities** 141,838 50,776 Accrued postretirement benefit expense 3,751 Other 1,864 Total regulatory and other long-term liabilities 294,424 286,623 Contributions in aid of construction 161,266 152,138 Commitments and contingencies (see Note 15) 0 \$1,317,359 Total capitalization and liabilities \$1,244,785

468

3,628

2,700

0

#### Indiana-American Water Company 2017 Income Statement

	2017	2016
Operating revenues	\$222,515	\$212,475
Operating expenses (income)		
Operation and maintenance	73,077	76,749
Depreciation	37,840	35,827
Amortization	12,078	11,590
General taxes	15,684	14,004
(Gain) loss on disposition of property	(7)	486
Total operating expenses, net	138,672	138,656
Operating income	83,843	73,819
Other income (expenses)		
Interest, net	(19,315)	(19,109)
Allowance for other funds used during construction	775	308
Allowance for borrowed funds used during construction	293	133
Amortization of debt expense	(339)	(327)
Other, net	(62)	(45)
Total other expenses, net	(18,648)	(19,040)
Income before income taxes	65,195	54,779
Provision for income taxes	25,584	22,200
Net income	\$39,611	\$32,579

#### 2017 Statement of Cash Flows

	2017	2016
Cash flows from operating activities		
Net income	\$39,611	\$32,579
Adjustments to reconcile net cash flows provided by operating activities		
Depreciation and amortization	49,918	47,417
Amortization of debt issuance costs	339	327
Provision for deferred income taxes	12,693	11,318
Amortization of deferred investment tax credits	(37)	(72)
Provision for losses on accounts receivable	2,317	2,257
Allowance for other funds used during construction	(775)	(308)
(Gain) loss on asset dispositions and acquisitions	(7)	486
Pension and non-pension postretirement benefits	3,285	3,316
Other, net	341	2,239
Changes in assets and liabilities	(2 5 4 2)	(2,202)
Accounts receivable and unbilled revenues	(3,542)	(2,393)
Federal income tax - affiliated company	(2,151)	651
State income tax	(554)	1,142
Other current assets	(114)	143
Pension and non-pension postretirement benefit contributions	(2,343)	(2,874)
Accounts payable	598	2,961
Accounts receivable and payable - affiliated company	4,021	(568)
Accrued interest	26	0
Accrued taxes	1,295	(282)
Other current liabilities	(1,325)	980
Net cash provided by operating activities	103,594	99,319
Cash flows from investing activities		
Capital expenditures	(95,731)	(90,986)
Acquisitions	(6.529)	0
Removal costs from property, plant and equipment retirements,		
net of salvage of \$679 in 2017 and \$1,387 in 2016	(9,594)	(8,348)
Proceeds from the disposition of property, plant and equipment	69	13
Net cash used in investing activities	(111,785)	(99,321)
Cash flows from financing activities		
Cash hows from infancing activities	0	0
Proceeds from issuance of long-term debt	10 117	0
Proceeds from issuance of long-term debt - amiliated company	10,117	25,770
Repayment of long-term debt	(0, (5, 6)	(25,770)
Repayment of long-term debt - aminated company	(9,656)	(836)
Net (repayments) borrowings of notes payable - affiliated company	(30,319)	23,175
Debt issuance costs	(82)	(308)
Advances and contributions for construction, not of refunds	(1,317)	0
Advances and contributions for construction, net of refutios	2.000	2 255
of \$2,585 and \$1,317 in 2017 and 2016	2,069	3,255
Capital contributions	62,000	10,000
Dividends paid	(25,777)	(36,917)
Net cash provided by (used in) financing activities	/,035	(1,631)
Net increase in cash and restricted funds	(1,156)	(1,633)
Cash and restricted funds at beginning of year	3,642	5,275
Cash and restricted funds at end of year	\$2,486	\$3,642
Cash paid (received) during the year for:		
Interest, net of capitalized amount	18,819	19,319
Income taxes	(7,293)	10,718
Non-cash investing activity Capital expenditures acquired on account but uppaid as of year and	14 279	9 805
capital experiantices acquired on account but unpaid as or year end	14,213	5,005
Non-cash financing activity		
Capital contributions (see Note 11)	80	84

#### Indiana-American Water Company 2016 Balance Sheet

Assets

	2016	2015
Property, plant and equipment		
Utility plant - at original cost, net	\$1,158,479	\$1,100,783
Utility plant acquisition adjustments, net	24,439	25,799
Non-utility property, net	232	506
Total property, plant and equipment, net	1,183,150	1,127,088
Current assets		
Cash	716	618
Restricted funds	2,926	4,657
Accounts receivable	14,038	13,779
Allowance for uncollectible accounts	(2,245)	(1,992)
Unbilled revenues	11,027	10,955
Receivable from affiliated company	568	0
Federal income tax receivable - affiliated company	0	2,379
Materials and supplies	1,401	1,512
Other	590	622
Total current assets	29,021	32,530
Regulatory and other long-term assets		
Regulatory assets	26,861	29,293
Goodwill	757	757
Prepaid pension expense	4,827	5,503
Other	169	195
Total regulatory and other long-term assets	32,614	35,748
Total assets	\$1,244,785	\$1,195,366
Capitalization and Liabilit	ties	
	2016	2015
Capitalization		
Common stockholder's equity	\$369,775	\$355,481
Long-term debt	351,328	352,363
Total capitalization	721,103	707,844
Current liabilities		
Notes payable - affiliated company	36,948	13,773
Current portion long-term debt	856	836
Accounts payable	19,303	15,221
Accounts payable affiliated company	0	10,205
Federal income tax payable - affiliated company	186	0
State income tax payable	1,337	152
Accrued Interest	4,195	4,549
Accrued taxes	10,318	10,600
Other	11,778	9,813
	84,921	65,149
Regulatory and other long-term liabilities		
Deferred income taxes, net	189,150	172,277
Advances for construction	39,901	49,294
Deferred investment tax credits	468	540
Regulatory liabilities	50,776	50,044
Accrued postretirement benefit expense	3,628	3,773
Other	2,700	10,765
Total regulatory and other long-term liabilities	286,623	286,693
Contributions in aid of construction	152,138	135,680
Commitments and contingencies (see Note 15)	0	0
Total capitalization and liabilities	\$1,244,785	\$1,195,366

#### Indiana-American Water Company 2016 Income Statement

	2016	2015
Operating revenues	\$212,475	\$206,225
Operating expenses (income)		
Operation and maintenance	76,749	69,357
Depreciation	35,827	34,144
Amortization	11,590	11,061
General taxes	14,004	14,455
Loss (gain) on disposition of property	486	(73)
Total operating expenses, net	138,656	128,944
Operating income	73,819	77,281
Other income (expense)		
Interest, net	(19,109)	(19,965)
Allowance for other funds used during construction	308	407
Allowance for borrowed funds used during construction	133	208
Amortization of debt expense	(327)	(313)
Other, net	(45)	(67)
Total other expenses, net	(19,040)	(19,730)
Income before income taxes	54,779	57,551
Provision for income taxes	22,200	22,237
Net income	\$32,579	\$35,314

2016 Statement o	of Cash Flows
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	2016	2015
Cash flows from operating activities		
Net income	\$32,579	\$35,314
Adjustments to reconcile net cash flows provided by operating activities		
Depreciation and amortization	47,417	45,205
Amortization of debt issuance costs	327	313
Provision for deferred income taxes	11,318	14,647
Amortization of deferred investment tax credits	(72)	(81)
Provision for losses on accounts receivable	2.257	2.042
Allowance for other funds used during construction	(308)	(407)
Loss (gain) on asset dispositions and acquisitions	486	(73)
Pension and non-pension postretirement benefits	3,316	4.013
Other, net	2,239	(1,457)
Changes in assets and liabilities	_)_000	(1):077
Accounts receivable and unbilled revenues	(2 393)	(2.087)
State income tax	1 142	655
Federal income tax - affiliated company	651	(5 222)
Other current assets	1/3	(3,222)
Pansion and non-nension postratizement benefit contributions	(2 874)	(2 250)
	2,074)	(3,233)
Accounts payable	(569)	200
Accounts receivable and payable - anniated company	(308)	506 (204)
Accrued taxes	(282)	(384)
Other current habilities	980	1,002
Net cash provided by operating activities	99,319	90,926
Cook flows from investing activities		
Capital expenditures	(00.096)	(55,672)
	(90,986)	(55,672)
Acquisitions	0	(2,050)
Removal costs from property, plant and equipment retirements,	(0.0.10)	(0.000)
net of salvage of \$1,387 for 2016 and \$158 for 2015	(8,348)	(6,839)
Proceeds from the disposition of property, plant and equipment	13	100
Net funds released	1,/31	1,013
Net cash used in investing activities	(97,590)	(63,448)
Cook flows from financias activities		
Cash flows from financing activities		(40,000)
Repayment of long-term debt	(25,770)	(40,000)
Proceeds from issuance of long-term debt - affiliated company	25,770	98,000
Repayment of long-term debt - affiliated company	(836)	(25,807)
Debt issuance costs	(308)	(104)
Net borrowings (repayments) of notes payables - affiliated company	23,175	(43,410)
Advances and contributions for construction, net of refunds	3,255	1,287
of \$1,317 for 2016 and \$2,469 for 2015		
Capital contributions	10,000	0
Dividends paid	(36,917)	(17,393)
Net cash used in financing activities	(1,631)	(27,427)
Net increase in cash and cash equivalents	98	51
Cash and cash equivalents at beginning of year	618	567
Cash and cash equivalents at end of year	\$716	\$618
Cook maid (manipud) during the second form		
Cash paid (received) during the year for:	10 240	20.002
interest, net of capitalized amount	19,319	20,002
Income taxes, net of refunds of \$0 in 2016 and \$829 in 2015	10,718	15,246
New week to construct the		
Non-cash investing activity	0.005	40.00
Capital expenditures acquired on account but unpaid as of year end	9,805	10,094
Non and financing activity		
Non-cash financing activity	-	· · · ·
Dividends accrued	0	8,548
Capital contribution (see Note 11)	84	48

#### Indiana-American Water Company 2015 Balance Sheet

Assets

	2015	2014
Property, plant and equipment		
Utility plant - at original cost, net	\$1,100,783	\$1,067,114
Utility plant acquisition adjustments, net	25,945	27,158
Non-utility property, net	506	531
Total property, plant and equipment, net	1,127,234	1,094,803
Current assets		
Cash	618	567
Restricted funds	4,657	5,670
Accounts receivable	13,779	12,678
Allowance for uncollectible accounts	(1,992)	(2,031)
Unbilled revenues	10,955	12,050
Federal income tax receivable - affiliated company	2,379	0
State income tax receivable	0	503
Materials and supplies	1,512	1,503
Other Total current assets	32 530	<u> </u>
	52,550	
Regulatory and other long-term assets	20.202	22.247
Regulatory assets	29,293	30,017
	611	611
Other	5,503	0,250
Total regulatory and other long term assets	25 602	27 019
Total assets	\$1,195,366	\$1,163,386
Capitalization and Liabilities	2015	2014
Capitalization		
Common stockholder's equity	\$355,481	\$346,060
Long-term debt	352,363	281,144
Total capitalization	707,844	627,204
Current liabilities		
Notes payable - affiliated company	13,773	57,183
Current portion long-term debt	836	40,807
Accounts payable	15,221	10,350
Accounts payable affiliated company	10,205	1,123
Federal income tax payable - affiliated company	0	2,796
State income tax payable	152	0
Accrued interest	4,549	4,668
Accrued taxes	10,600	10,984
Other Total surrent lisbilities	9,813	8,/13
	05,149	130,024
Regulatory and other long-term liabilities		
Deferred income taxes, net	172,277	159,118
Advances for construction	49,294	51,996
Deferred investment tax credits	540	621
Regulatory liabilities	50,044	48,286
Accrued postretirement benefit expense	3,773	3,655
Other	10,765	9,618
I otal regulatory and other long-term liabilities	286,693	273,294
Contributions in aid of construction	135,680	126,264
commitments and contingencies (see Note 15)	61 105 200	61 102 200
rotal capitalization and liabilities	\$1,132,3pp	\$1,163,386

#### Indiana-American Water Company 2015 Income Statement

	2015	2014
Operating revenues	\$206,225	\$200,555
Operating expenses (income)		
Operation and maintenance	69,357	71,861
Depreciation	34,144	30,409
Amortization	11,061	10,517
General taxes	14,455	13,334
Loss (gain) on disposition of property	(73)	2
Total operating expenses, net	128,944	126,123
Operating income	77,281	74,432
Other income (expense)		
Interest, net	(19,965)	(20,762)
Allowance for other funds used during construction	407	709
Allowance for borrowed funds used during construction	208	910
Amortization of debt expense	(313)	(288)
Other, net	(67)	(98)
Total other expenses, net	(19,730)	(19,529)
Income before income taxes	57,551	54,903
Provision for income taxes	22,237	21,773
Net income	\$35,314	\$33,130

2015 Statement	of Cash Flows
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	2015	2014
Cash flows from operating activities		
Net income	\$35,314	\$33,130
Adjustments to reconcile net cash flows provided by operating activities		
Depreciation and amortization	45,205	40,926
Amortization of debt issuance costs	313	288
Provision for deferred income taxes	14,647	12,171
Amortization of deferred investment tax credits	(81)	115
Provision for losses on accounts receivable	2.042	3.603
Allowance for other funds used during construction	(407)	(709)
Loss (gain) on asset dispositions and acquisitions	(73)	2
Pension and non-pension postretirement benefits	4.013	1.745
Other, net	(1.457)	(1,237)
Changes in assets and liabilities	(1):077	(1)2077
Accounts receivable and unbilled revenues	(2 087)	(745)
State income tax	(2,007)	2 682
Federal income tax - affiliated company	(5 222)	2,002
Ather current assets	(3,222)	1 / 27
Dension and non-nonsion nectratirement henefit contributions	(2 250)	(2,612)
Accounts payable	(3,239)	(2,012)
Accounts payable	292	(1,213)
Accounts receivable and payable - anniated company	506	5,655
Accrued taxes	(384)	(3,834)
Other current liabilities	1,002	1,542
Net cash provided by operating activities	90,926	93,689
Cash flows from investing activities		
Canital expenditures	(55 672)	(59 596)
	(2,050)	(2 /82)
Removal costs from property plant and equipment retirements	(2,050)	(2,402)
net of solvage of \$158 for 2015 and \$222 for 2014	(6 820)	(4 025)
Brocoods from the dispesition of property, plant and equipment	(0,859)	(4,923)
Not funds released	1 012	1 022
Net cash used in investing activities	(62,448)	(65.971)
Net cash used in investing activities	(03,448)	(05,971)
Cash flows from financing activities		
Repayment of long-term debt	(40.000)	0
Proceeds from issuance of long-term debt - affiliated company	98.000	1.683
Repayment of long-term debt - affiliated company	(25.807)	(24,519)
Debt issuance costs	(104)	0
Net (repayments) borrowings of notes payables - affiliated company	(43,410)	20,124
Advances and contributions for construction, net of refunds	1 287	(994)
of \$2,469 for 2015 and \$1,893 for 2014	1,207	(554)
Capital contributions	0	0
Dividends naid	(17 393)	(23.817)
Not cash used in financing activities	(17,333)	(23,017)
Net cash used in mancing activities		(27,323)
	51	195
Cash and cash equivalents at beginning of year		372
Cash and cash equivalents at end of year	\$618	\$567
Cash paid (received) during the year for:		
Interest, net of capitalized amount	20,002	12,660
Income taxes, net of refunds of \$829 in 2015 and \$3,445 in 2014	15,246	9,796
Non-cash investing activity	40.000	
Capital expenditures acquired on account but unpaid as of year end	10,094	4,380
Non-cash financing activity		
Dividends declared and unnaid	8 548	0
Capital contribution (see Note 11)	48	48

#### Indiana-American Water Company 2014 Balance Sheet

Assets

	2014	2013
Property, plant and equipment		
Utility plant - at original cost, net	\$1,067,114	\$1,034,171
Utility plant acquisition adjustments, net	27,158	28,517
Non-utility property, net	531	555
Total property, plant and equipment, net	1,094,803	1,063,243
Current assets		
Cash	567	372
Restricted funds	5,670	6,702
Accounts receivable	12,678	13,544
Allowance for uncollectible accounts	(2,031)	(1,946)
Unbilled revenues	12,050	13,957
Accounts receivable - affiliated company	0	2,730
State income tax receivable	503	3,185
Materials and supplies	1,503	1,431
Deferred income taxes	3,230	743
Other	625	2,124
Total current assets	34,795	42,842
Regulatory and other long-term assets		
Regulatory assets	30,017	31,287
Goodwill	611	611
Prepaid pension expense	6,256	5,389
Other	134	172
Total regulatory and other long-term assets	37,018	37,459
Total assets	\$1,166,616	\$1,143,544
Capitalization and Liabilities		
	2014	2013
Capitalization		
Common stockholder's equity	\$346,060	\$336,699
Long-term debt	281,144	344,784
Total capitalization	627,204	681,483
Current liabilities		
Notes payable - affiliated company	57,183	37,059
Current portion long-term debt	40,807	0
Accounts payable	10,350	11,860
Accounts payable affiliated company	3,919	0
Accrued interest	4,668	4,689
Accided taxes	10,984	14,794
Total current liabilities	136 624	7,747
	130,024	70,145
Regulatory and other long-term liabilities		
Deferred income taxes, net	162,348	151,411
Advances for construction	51,996	55,075
Deferred investment tax credits	621	736
Regulatory liabilities	48,286	44,794
Accrued postretirement benefit expense	3,655	3,504
Other Tables substances death as been by hittig	9,618	10,981
rotal regulatory and other long-term liabilities	276,524	266,501
Commitments and contingencies (see Note 15)	126,264	119,411
Total canitalization and liabilities	<u> </u>	<u> </u>
iotal suprementation and natimites	ŶŦ,100,010	4+U,C++1,1+4

#### Indiana-American Water Company 2014 Income Statement

	2014	2013
Operating revenues	\$200,555	\$199,177
Operating expenses (income)		
Operation and maintenance	71,861	74,672
Depreciation	30,409	29,508
Amortization	10,517	10,159
General taxes	13,334	15,952
Loss (gain) on disposition of property	2	(142)
Total operating expenses, net	126,123	130,149
Operating income	74,432	69,028
Other income (expense)		
Interest, net	(20,665)	(22,200)
Interest on short-term debt to affiliated company	(97)	(39)
Allowance for other funds used during construction	709	808
Allowance for borrowed funds used during construction	910	783
Amortization of debt expense	(288)	(302)
Other, net	(98)	(42)
Total other expenses, net	(19,529)	(20,992)
Income before income taxes	54,903	48,036
Provision for income taxes	21,773	18,917
Net income	\$33,130	\$29,119

2014 Statement	of Cash Flows
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	2014	2013
Cash flows from operating activities		
Net income	\$33,130	\$29,119
Adjustments to reconcile net cash flows provided by operating activities		
Depreciation and amortization	40,926	39,667
Amortization of debt issuance costs	288	302
Provision for deferred income taxes	12,171	15,783
Amortization of deferred investment tax credits	115	(219)
Provision for losses on accounts receivable	3,603	2,783
Allowance for other funds used during construction	(709)	(808)
Loss (gain) on asset dispositions and acquisitions	2	(142)
Pension and non-pension postretirement benefits	1,745	5,004
Other, net	(1,237)	(44)
Changes in assets and liabilities		
Accounts receivable and unbilled revenues	(745)	(6,717)
State income tax refund due	2,682	189
Other current assets	4,157	(2,825)
Pension and non-pension postretirement benefit contributions	(2,612)	(5,312)
Accounts payable	(1,213)	148
Accrued taxes	(3,834)	3,598
Other current liabilities	5,220	244
Net cash provided by operating activities	93,689	80,770
Cash flows from investing activities		
Capital expenditures	(59,596)	(59,521)
Acquisitions	(2,482)	(483)
Removal costs from property, plant and equipment retirements,		
net of salvage	(4,925)	(4,716)
Net proceeds from notes receivable - affiliated company	0	561
Proceeds from the disposition of property, plant and equipment	0	143
Net funds released	1,032	0
Net cash used in investing activities	(65,971)	(64,016)
Cash flows from financing activities		
Repayment of long-term debt	0	(1,667)
Proceeds from issuance of long-term debt - affiliated company	1,683	1,420
Repayment of long-term debt - affiliated company	(24,519)	(21,953)
Debt issuance costs	0	(119)
Net borrowings of notes payables - affiliated company	20,124	25,749
Advances and contributions for construction, net of refunds of \$1,893 for 2014 and \$1,291 for 2013	(994)	(120)
Dividends paid	(23,817)	(20,685)
Net cash used in financing activities	(27,523)	(17,375)
Net increase in cash and cash equivalents	195	(621)
Cash and cash equivalents at beginning of year	372	993
Cash and cash equivalents at end of year	\$567	\$372
Cash naid (received) during the year for-		
Lasin paid (received) during the year for:	12 000	22.200
Interest, net of capitalized amount	12,660	22,286
Income taxes, net of refunds of \$829 in 2015 and \$3,445 in 2014	9,796	4,814
Non-cash investing activity	4 2 2 2	6 400
Capital expenditures acquired on account but unpaid as of year end	4,380	6,483
Non-cash financing activity		
Capital contribution (see Note 12)	48	43
Lont-term debt issued (See Note 6)	0	6,702

### IAIG 02-035

## DATA INFORMATION REQUEST Indiana-American Water Company Cause No. 45142

### **Information Requested**:

Please provide a detailed analysis supporting IAWC's decision to increase its common equity ratio in this case, compared to the common equity ratio approved by the IURC in its last two rate cases specifically addressing the following:

- a. Any claim the increase in common equity ratio is necessary to increase the credit standing by IAWC.
- b. Any claim the increase in common equity ratio is necessary to attract external debt capital.
- c. Whether IAWC's common equity ratio is reasonably consistent with the ratemaking capital structure of other American Water Works affiliated regulated water utilities.
- d. Whether IAWC's increase in common equity ratio is a result of lower cost debt issue and greater access to debt than affiliate water companies with common equity ratios lower than that proposed by IAWC in this proceeding.
- e. Any other justification for the increase in common equity ratio proposed in this rate case.

### **Objection**:

Indiana American objects to subpart d. of the request on the grounds and to the extent subpart d. is vague and ambiguous and provides no basis from which Indiana American can determine what information is sought.

### **Information Provided**:

Subject to and without waiver of the foregoing objection, Indiana American is providing the following:

a. The company's capital structure in this case is a projected capital structure which begins with the actual capital structure as of the end of the historic base period, 12/31/2017. The capital structure used for setting rates under the Company's proposal will be the actual capital structure at the time of the respective compliance filings to implement Step 1 and Step 2 rates. The Company's capital structure is a reasonably balanced capital structure consistent with the range of debt-to-equity that the Company disclosed in its most recent

financing case, Cause No. 44682. The Company's projected capital structure ensures that IAWC has access to the capital markets under reasonable terms under all economic conditions, which is imperative to IAWC's service obligations, while also producing a reasonable overall cost of capital. Maintaining and improving the Company's credit profile will provide IAWC the ability to attract equity financing and issue debt to outside lenders at reasonable terms. Therefore, the Company has increased its equity ratio, as noted in part e below, to become closer aligned with the water utility industry average as represented by the firms in Ann Bulkley's proxy group.

- b. It is important that IAWC maintain financial ratios that will allow it to attract capital in the market on reasonable terms. This is also important with respect to IAWC's ability to attract equity capital from its parent company, American Water Works Company ("AWK"). Although IAWC has issued the majority of its debt in recent years through its financing affiliate, American Water Capital Corp. ("AWCC"), IAWC has the fiduciary responsibility to maintain a financial profile that will allow it to issue debt directly to outside lenders in the event that it is unable to do so through AWCC, or to allow it to take advantage of more favorable financing terms than it could obtain through AWCC.
- c. Yes, the Company's equity ratio is reasonably consistent with equity ratios of other American Water regulated water utilities in recent rate cases. For example, in the most recent Pennsylvania-American case, the affiliate's equity ratio was 53.75%, and California-American's equity ratio is 55.39%. In addition, New Jersey-American has an equity ratio of 54% in its ongoing rate case.
- d. This request is somewhat unclear; however, to the extent the Company understands the question, the answer is no.
- e. IAWC also evaluates its equity ratio in relation to that of the other market-traded water utilities. The Company's cost of equity expert, Ann Bulkley, noted on page 50 of her Direct Testimony that "IAWC's proposed common equity ratio of 56.36 percent is consistent with the mean and median common equity ratios for the proxy group (excluding AWK)." Excluding AWK, the mean and median equity ratios of the proxy group were 55.62% and 56.60%, respectively, at December 31, 2017.