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BEFORE THE ARIZONA CORPORATION COMMISSION

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IN THE MATTER OF THE APPLICATION OF PIMA UTILITY COMPANY, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANTS AND PROPERTY AND FOR INCREASES IN ITS WATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	Docket No. W-02199A-16-0421
IN THE MATTER OF THE APPLICATION OF PIMA UTILITY COMPANY, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANTS AND PROPERTY AND FOR INCREASES IN ITS WASTEWATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	Docket No. SW-02199A-16-0422

RUCO'S NOTICE OF FILING

The Residential Utility Consumer Office ("RUCO") hereby provides notice of filing the Direct Testimony of John Cassidy, in the above-referenced matter.

RESPECTFULLY SUBMITTED this 20th day of June, 2017.

Daniel W. Pozefsky
Chief Counsel

AN ORIGINAL AND THIRTEEN COPIES of the foregoing filed this 20th day of June, 2017 with:

Docket Control
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

COPIES of the foregoing emailed this 20th day of June, 2017 to:

Timothy La Sota
Legal Division
Arizona Corporation Commission
1200 W. Washington
Phoenix, AZ 85007
legaldiv@azcc.gov
Eabinah@azcc.gov
Consented to Service by Email

Jay L. Shapiro
Shapiro Law Firm, P.C.
1819 E. Morten Ave, Suite 280
Phoenix, AZ 85020
Attorneys for Pima Utility Company
jay@shapslawaz.com
whitney@shapslawaz.com
Consented to Service by Email

By Cheryl Fraulob
Cheryl Fraulob

PIMA UTILITY COMPANY

DOCKET NOS. W-02199A-16-0421 and SW-02199A-16-0422

DIRECT TESTIMONY

OF

JOHN A. CASSIDY, CRRA

ON

REVENUE REQUIREMENT

AND

RATE DESIGN

ON BEHALF OF THE

RESIDENTIAL UTILITY CONSUMER OFFICE

JUNE 20, 2017

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ATTACHMENT

EXECUTIVE SUMMARY

Pima Utility Company ("Pima" "PUC" or "Company") is a Class "B" public service water and wastewater corporation organized as an S corporation under Subtitle A, Chapter 1, Subchapter S of the Internal Revenue Code. The Company serves approximately 10,197 water customers and 10,083 wastewater customers in portions of Maricopa County, Arizona.

Pima filed general rate applications for both the Company's Water and Wastewater Divisions with the Arizona Corporation Commission ("ACC" or "Commission") on November 15, 2016, using a December 31, 2015 test year end.

On November 17, 2016, Pima filed a Motion to Consolidate Docket Numbers W-02199A-16-0421 and SW-02199A-16-0422. In its Motion, Pima stated that "Such relief is appropriate and will conserve judicial resources because both rate applications are for the same Company. Pima's water and wastewater customer bases are largely the same, and Pima is operated and managed as one utility. The facts giving rise to these two rate applications and the legal issues presented therein are identical. Because these matters are inextricably linked, consolidation is consistent with the interests of administrative efficiency and administrative economy." The Commission's Utilitiy Staff subsequently found the Applications sufficient on December 15, 2016, and consolidated the two dockets as W-02199A-16-0421, et al. for purposes of hearing.

For Pima's Water Division, the Company is requesting a gross revenue increase of $337,024 or a 13.90 percent increase over test year adjusted revenue of $2,423,950. RUCO recommends a $20,985 or .87 percent decrease over Water Division test year adjusted revenue of $2,423,950.

For Pima's Wastewater Division, the Company is requesting a gross revenue increase of $369,289, or a 10.82 percent increase over test year revenues of $3,412,382. RUCO is recommending a $165,535 or 4.85 percent reduction over the Wastewater Division's test year revenue of $3,412,382.

The Company is seeking 8.48 percent rate of return on the fair value rate base of both the water and wastewater divisions while RUCO is recommending a rate of return of 7.31 percent for both divisions.

Based on RUCO's analysis of Pima Water Division's rate Application, RUCO is recommending a three-tiered rate design that will result in a typical monthly bill of $11.39, a decrease of $0.73, or 6.04 percent, over the current monthly bill of $12.12 for a residential customer with a 5/8" x 3/4" meter using an average of 5,869 gallons per month.

For the Wastewater Division, RUCO is recommending a rate design that will result in a typical monthly bill of $23.78, a decrease of $1.38, or 5.50 percent, over the current monthly bill of $25.17.

INTRODUCTION

Q. Please state your name, position, employer and address.

A. My Name is John A. Cassidy. I am a Public Utilities Analyst V employed by the Residential Utility Consumer Office ("RUCO"), located at 1110 W. Washington, Suite 220, Phoenix, Arizona 85007.

Q. Please state your educational background and qualifications in the utility regulation field.

A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of Library Science degree from the University of Arizona, and a Master of Business Administration degree with an emphasis in Finance from Arizona State University. I am a CRRA, have nine years of regulatory work experience as a Public Utilities Analyst, both with RUCO as well as with the Arizona Corporation Commission ("ACC") Staff, and have testified in numerous rate proceedings before the ACC. I have attended utility related seminars sponsored by both the National Association of Regulatory Utility Commissioners (NARUC), and the Society of Utility Regulatory Financial Analysts (SURFA). Attachment 1 presents a summary of my prior regulatory work experience.

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to present RUCO's recommendations regarding Pima Utility Company's ("Pima" or "Company") Water and

Wastewater Division's Application for a determination of the current fair value of its utility plant and property and for a permanent increase in its rates and charges based thereon for water and wastewater utility service. The test year utilized by the Company in connection with the preparation of this Application is the 12-month period ended December 31, 2015.

BACKGROUND

Q. Please describe your work effort on this project?

A. I reviewed financial data provided by the Company and performed analytical procedures necessary to understand the Company's filing as it relates to operating income, rate base, the overall revenue requirement and the Company's rate design for both Pima's Water and Wastewater Divisions. My recommendations are based on these analyses. Procedures performed include the in-house formulation and analysis of information provided by the Company to RUCO in data requests, the review and analysis of the Company's responses to Commission Staff data requests, and a review of prior ACC dockets related to the Company's Water and Wastewater Divisions. Finally, I am responsible for RUCO's cost of capital analysis and recommendations, which will be filed under separate cover.

Q. Can you please identify the exhibits you are sponsoring?

A. Yes. I am sponsoring Schedules JAC-1 through JAC-15 to support RUCO's proposed revenue requirement for the Water Division, and Schedules JAC-1 through JAC-16 to support RUCO's proposed revenue requirement for the Wastewater Division. Additionally, I am also sponsoring Schedules JAC RD-1 through JAC RD-2 to support RUCO's proposed rate design for the Water Division's residential and commercial ratepayers, and Schedules JAC RD-1 through JAC RD-2 to support RUCO's proposed rate design for the Wastewater Division's residential and commercial ratepayers.

SUMMARY OF ADJUSTMENTS– WATER DIVISION

I. Rate Base Adjustments Summary

Q. Please summarize the adjustments made by RUCO to rate base for the Company's Water Division.

A. In summary, RUCO is recommending one (1) adjustment to the Water Division's rate base:

Rate Base Adjustment #1 – Cash Working Capital

RUCO proposes a downward adjustment to Cash Working Capital of $26,254. RUCO's adjustment reflects the use of a 41.0 revenue lag day, rather than the 51.0 revenue lag day as calculated by the Company.

II. Operating Income Adjustments Summary

Q. Please summarize RUCO's operating income adjustments to Pima's Water Division.

A. In summary, RUCO makes the following seven (7) operating income adjustments to the Water Division:

Operating Income Adjustment #1 – Depreciation Expense

This adjustment recalculates Depreciation Expense based on RUCO's recommended plant level. RUCO's adjustment represents a downward adjustment to Depreciation Expense in the 2015 test-year of $1,147.

Operating Income Adjustment #2 – Property Taxes

This adjustment reduces property tax expense by $6,167.

Operating Income Adjustment #3 - Salaries and Wages - Officers and Directors

This adjustment reduces Salaries and Wages – Officers and Directors expense by $37,240. This adjustment relates to the salary and wage expense allocated to the Water Division for Mr. Edward J. Robson, Chairman and CEO Emeritus of the Company.

Operating Income Adjustment #4 – Employee Pensions and Benefits

This adjustment reduces Employee Pensions and Benefits expense by $1,141, and is related to the Salary and Wages – Officer and Directors expense adjustment for Mr. Robson.

Operating Adjustment #5 – Rate Case Expense

Consistent with RUCO's methodology which was adopted in the prior Pima rate docket, RUCO proposes that Rate Case Expense be recovered by means of a surcharge. Accordingly, this adjustment reduces Rate Case Expense by the $35,000 normalized expense proposed by the Company.

Operating Income Adjustment #6 – Contractual Services – Other Expense

This adjustment reduces Contractual Services – Other Expense by $8,683. RUCO's adjustment reflects a disallowance of $7,833 in management fees charged to the Water Division by Robson Communities, Inc. ("RCI"), as well as an $849 expense for legal costs relating to the SIB Appeal.

Operating Income Adjustment #7 – Income Tax Expense

This adjustment reduces Income Tax Expense by $88,496. As will be discussed, in light of recent events and because Pima is an "S-Corp"

pass-through entity, RUCO does not make provision for income taxes in the computation of Pima's revenue requirement.

SUMMARY OF ADJUSTMENTS – WASTEWATER DIVISION

I. Rate Base Adjustments Summary

Q. Please summarize the adjustments made by RUCO to rate base for the Company's Wastewater Division.

A. In summary, RUCO makes the following two (2) adjustments to rate base:

Rate Base Adjustment #1 – Accumulated Depreciation

RUCO proposes a downward adjustment to Accumulated Depreciation in the amount of $653,153, which has the effect of increasing net utility plant (i.e., rate base) by this same $653,153 amount.

Rate Base Adjustment #2 – Cash Working Capital

RUCO proposes a downward adjustment to Cash Working Capital of $50,673. RUCO's adjustment reflects the use of a 41.0 revenue lag day, rather than the 51.0 revenue lag day employed in the Lead-Lag study prepared by the Company.

II. Operating Income Adjustments Summary

Q. Please summarize RUCO's operating income adjustments to Pima's Wastewater Division.

A. In summary, RUCO makes the following eight (8) operating income adjustments to the Wastewater Division:

Operating Income Adjustment #1 – Depreciation Expense

This adjustment recalculates Depreciation Expense based on RUCO's recommended plant level. RUCO's adjustment represents a downward adjustment to Depreciation Expense in the 2015 test-year of $111,628.

Operating Income Adjustment #2 – Property Taxes

The adjustment reduces property tax expense by $2,677.

Operating Income Adjustment #3 – Salaries and Wages–Officers and Directors

This adjustment reduces Salaries and Wages – Officers and Directors expense by $48,315. As will be discussed, the adjustment relates to the salary and wage expense allocated to the Wastewater Division for Mr. Edward J. Robson, Chairman and CEO Emeritus of the Company.

Operating Income Adjustment #4 – Employee Pensions and Benefits

This adjustment reduces Employee Pensions and Benefits expense by $1,662, and is related to the Salary and Wages – Officer and Directors expense adjustment for Mr. Robson.

Operating Adjustment #5 – Rate Case Expense

Consistent with RUCO's methodology which was adopted in the prior Pima rate docket, RUCO proposes that Rate Case Expense be recovered by means of a surcharge. Accordingly, this adjustment reduces Rate Case Expense by the $35,000 normalized expense proposed by the Company.

Operating Income Adjustment #6 – Contractual Services – Other Expense

This adjustment reduces Contractual Services – Other Expense by $10,522. Of this amount, RUCO's adjustment reflects a disallowance of $9,673 in management fees charged to the Wastewater Division by Robson Communities, Inc. ("RCI"), as well as an $849 expense for legal costs relating to the SIB Appeal.

Operating Income Adjustment #7 – Deferred Operating Expense

This adjustment reduces Deferred Operating Expense by $64,839. Of this total, RUCO's adjustment reflects the disallowance of deferred plant operating expenses of $62,925, and Wells Fargo Loan Fees of $1,914.

Operating Income Adjustment #8 – Income Tax Expense

This adjustment reduces Income Tax Expense by $107,839. As will be discussed, in light of recent events and because Pima is an "S-Corp" pass-through entity, RUCO does not make provision for income taxes in the computation of Pima's revenue requirement.

ADJUSTMENTS AFFECTING WATER AND WASTEWATER DIVISIONS

Q. Are there specific adjustments to the rate base of each division that are common to both divisions and do not need to be discussed separately?

A. Yes. RUCO's cash working capital adjustment is common to both the Water and Wastewater Divisions. Therefore, the following is a discussion of the cash working capital rate base adjustment made by RUCO for each Division.

I. Cash Working Capital

Q. Can you please explain the concept of working capital?

A. A company's working capital requirement represents the amount of cash the company must have on hand to cover any differences in the time period between when revenues are received and expenses must be paid. The most accurate way to measure working capital requirements is to prepare a lead/lag study. The lead/lag study measures the actual lead and lag days attributable to the individual revenues and expenses.

Q. Did the Company perform a lead/lag study?

A. Yes. Pima did perform a lead/lag study. However, rather than actually testing a sample of billings to customers they calculated days for collection of revenues billed based on an asset turnover approach.

Q. Can you please prepare a summary of the Company's calculation of revenue lead days vs. the calculation as prepared by RUCO?

A. Yes. See following table.

Component	Company	RUCO
Service Lag (Lead)	15.0	15.0
Meter Reading to Bill Days	3.0	3.0
Payment Lag (see A/R Turnover)	33.0	
Billing date to date of collection		23.0
TOTAL REVENUE LAG	51.0	41.0

A/R – Accounts Receivable

Q. Can you explain the large difference in the payment lag as presented by the Company compared to the RUCO's calculation based on billing date to collection date?

A. Yes. It should be noted that the billing date to collection date is always the most complicated due to customer payment habits. There are various ways to do an analysis, i.e. statistical; analysis, utilizing the accounts receivable system to produce various analysis, manually drawing a sample and calculating actual days. Typically the average collection lag is 16 – 30 days.

Q. When reviewing the Company's Accounts/Receivable methodology in determining the lead/lag what conclusions did RUCO reach?

A. The accounts receivable turnover allows the Company a much higher number of days than the traditional approach. For example, the actual billing date on the individual billings provided by the Company, and reviewing the billing procedures, indicates approximately 15 days to the actual due date on the billing. Taking this into consideration the 33 days as calculated by Pima would indicate that every bill sent out would have a previous amount due.

Q. How did RUCO ultimately settle on 23 days as the correct number on days to utilize in its calculations?

A. The 23 days was calculated as the midpoint between 16 days and 30 days as referenced above. Also, RUCO reviewed several recent rate case filings in other dockets and determined that the total of 41 days is reasonable compared to this review. (Arizona Water Company, Docket No. 16-0443 is requesting a 30 day lead/lag on its revenue and in a recent EPCOR filing, Docket 16-0145, the lead/lag days were 40.1. RUCO believes that 41 days is appropriate for both the water and wastewater divisions in this case.

Q. Has RUCO made operating income adjustments which are common to both the Water Division and Wastewater Division which do not need to be discussed separately?

A. Yes. RUCO's operating income adjustments which are common to both Divisions and warrant collective discussion include the following: Property Tax Expense, Salaries and Wages paid to Officers, Employee Benefits and Pensions, Rate Case Expense, Income Tax Expense, and Contractual Services – Other.

II. Property Tax Expense

Q. What property tax expense level does the Company propose for the Water and Wastewater Divisions?

A. As shown in the Company's Schedule C-2, Page 3, the Company proposes test-year adjusted property tax expenses of $122,311 for the Water Division, and test-year adjusted property tax expenses of $171,957 for the Wastewater Division.

Q. Does RUCO agree with the Company's proposed property tax expense levels for the Water and Wastewater Divisions?

A. No. For the Water Division, a review of the Company's Schedule C-2, Page 3 indicates that Mr. Bourassa has included a $6,167 expense component for a "tax on parcels." However, his discussion of property taxes in testimony (Bourassa Direct, p. 9, lines 18-19) is silent as to what

this $6,167 tax on parcels is. As for the Wastewater Division, a similar review of the Company's Schedule C-2, Page 3 indicates that Mr. Bourassa's property tax expense calculation (i) improperly includes a $40,135 10% CWIP component, (ii) fails to account for the net book value of licensed vehicles owned by the Wastewater Division, and (iii) includes a $1,393 expense component for a "tax on parcels," which as noted was not discussed in direct testimony.

Q. Based upon the above considerations, what is RUCO's proposed property tax expense levels for the Company's Water and Wastewater Divisions?

A. The details of RUCO's property tax expense adjustments are presented in Schedule JAC 9. As shown, for the Water Division RUCO reduces test-year adjusted property tax expense by $6,167 to a level of $116,144, and for the Wastewater Division RUCO reduces test-year adjusted property taxes by $2,677 to a level of $169,280.

III. Salaries and Wages Paid to Officers

Q. Does this adjustment relate to salaries and wages paid to Mr. E.J. Robson?

A. Yes. RUCO believes that the salary being requested for Mr. E.J. Robson in this rate case filing is once again excessive based on supporting

documents and responses that have been provided to RUCO in data requests.

Q. What are you referring too when you say "once again" find his salary excessive?

A. In the last rate case filed by Pima[1] a salary of $90,294 was requested in both the water and wastewater divisions. The documentation supporting Mr. Robson's salary indicated he worked only 56.68 hours for each division. Pima was requesting a total of $180,588 in annual salary based on Mr. Robson's working a total of 113.36 hours. Based on an hourly rate this equates to approximately $1,593 per hour which RUCO found excessive. It should also be noted that his total salary was borne entirely by Pima and no allocations to his remaining affiliated companies.

Q. Did Pima adjust its request for Mr. Robson's salary during the discovery phase of that case and prior to hearing?

A. Yes. Pima adjusted its request to $80,396 to be spread over both divisions.[2]

[1] Docket No. W-02199A-11-0329, et al.
[2] Co. Br. At 13

Q. Were additional adjustments made in the last case to Mr. Robson's salary and incorporated into the final decision approved by the ACC Commissioners?

A. Yes. "For Mr. Edward Robson, Pima's Chairman/CEO, Pima proposes a total annual Officers and Directors salary of $80,396. RUCO proposes a total annual Officers and Directors salary of $14,170, and Staff proposes total Officers and Directors salary of $27,372."[3]

Q. What was Mr. Robson's salary approved in that decision?

A. The final decision read as follows, "Based on the evidence presented, the Company's proposed total annual Officers and Directors salary of $80,396 is excessive. We find that in the absence of accurate time records, Staff's recommended salary level of $27,372, which Staff reached by allocating Mr. Robson's salary using NARUC cost causation principles and cost drivers, reasonably and appropriately avoids cost-shifting from other RCI affiliates to Pima's customers, and we will adopt it, along with the corresponding adjustments to pension and benefit expense."[4]

Q. Moving forward to this rate case filing what is Mr. Robson's current salary and is his salary being allocated to other affiliates?

A. Mr. Robson's current salary is $180,000 and is being allocated to all affiliates based on number of customers, direct operating expenses and

[3] Decision No. 73573, Page 9, Lines 11 through 13
[4] Decision No. 73573, Page 12, Lines 20-22 and Page 13, and Lines 1-3.

payroll.[5] Based on the allocation methodology $42,744 has been assigned to the water division and $52,780 has been assigned to the sewer division.

Q. Is RUCO taking exception in this rate case to the salary being assigned to Mr. Robson?

A. Yes. While Pima is now allocating his total salary of $180,000 to all affiliates based on the allocation methodology just discussed RUCO is taking exception to his salary. Based on information the company has provided RUCO is taking exception based on the following:

1) There still remains the absence of accurate time records. This was discussed in the prior case as reasoning for the large reduction and has not been corrected. In responding to Staff Dr. No. CSB 1-16 Part (g) requesting Employee Salary and Wage Information, the Company responded as follows; "The Company notes that Mr. Robson does not maintain time sheets, however, his salary is commensurate with his job duties and responsibilities on behalf of Pima and its several affiliates, and like most chief executive officers, his compensation reflects his ultimate responsibility for the safe operation and financial welfare of Pima and its sister affiliates and not simply how many hours he works at one of the utility entities in a given time period."

[5] Company Response to Staff DR No.CSB-10

2) Pima's Federal Income Tax Filings (Years 2013, 2014 and 2015). When reviewing the Company's Federal Income Tax Filings for a three year period and more specifically IRS Form 1125-E, it states that Mr. Robson's "Percent of time devoted to business" is only 5 percent.

3) When reviewing the STATE OF ARIZONA CORPORATION COMMISSION, CORPORATE ANNUAL REPORT & CERTIFICATE OF DISCLOSURE, Form AR: 0046, Mr. Robson was identified as CHAIRMAN (EMERITUS). The definition of emeritus – "the former holder of an office having retired but allowed to retain their title as an honor."

Q. Was there a follow up request by RUCO to question the Federal Income Tax filings for the three years noted?

A. Yes, and in response to RUCO Data Request 3.02 it is apparent that the Company would rather not acknowledge that Mr. Robson devotes only five percent of his time to his utility businesses.[6] Nevertheless, the Company does state in its response that "[t]he amount allocated to the Company is below the low end of the range of compensation for Top Executives (All) as reported by the 2015 American Water Works Association Compensation Survey for Small to Medium Sized Water and Wastewater Utilities."

[6] See Copy of DR No. 3.02 Attached.

Q. What is RUCO's response to this statement?

A. While this statement may be correct (no evidence was provided), RUCO believes that any executive working for a utility the size of Pima and making $94,555 spends more that 5 percent of their time running the business. Under this assumption an executive working 100 percent for a utility the size of Pima would be paid approximately $1,891,000. ($94,555/.05=$1,891,000)

Q. What is RUCO recommending in this case for Mr. Robson's salary?

A. RUCO cannot agree that ratepayers should pay salaries totally $94,555, to Mr. Robson when he spends only 5 percent of his time overseeing Company activities. Based on the facts as presented RUCO is recommending a total salary of $9,000 to be allocated over both water and sewer divisions. Using the same allocation factors as the Company, $3,917 is being allocated to the water division and $5,083 is being allocated to the wastewater division. Consequently, RUCO's adjustments reduce salary expense for Mr. Robson by $37,240 for the Water Division, and $48,315 for the Wastewater Division. Details of RUCO's salary expense adjustments are presented on Schedule JAC-10.

IV. Employee Pensions and Benefits

Q. As noted above, Staff made a downward adjustment to the salary expense for Mr. Edward J. Robson in the prior Pima rate docket. To your knowledge, did Staff make a corresponding downward adjustment to the employee pension and benefits expense in the Company's prior rate filing?

A. Yes, Staff made a downward adjustment of $1,378 to the Employee Pensions and Benefits expense account for both the Water and Wastewater Divisions in recognition of Mr. Robson's salary having been reduced.

Q. For purposes of its adjustment to Employee Benefits and Pensions, does RUCO borrow upon the above referenced $1,378 adjustment made by Staff in the prior rate docket?

A. Yes. The details of RUCO's adjustment to Employee Pensions and Benefits for both the Water and Wastewater Divisions are presented in Schedule JAC-11. As shown, RUCO's adjustment gives recognition to the change in the employee pensions and benefits expense in the current rate docket as compared to Pima's prior rate docket, and in so doing obtains a multiplier which is then applied to $1,378 adjustment from the prior rate docket to obtain an equivalent expense adjustment. As can be seen, RUCO obtains a $1,141 downward adjustment to Employee Benefits and

Pensions expense for the Water Division, and a $1,662 downward adjustment for the Wastewater Division.

V. Rate Case Expense

Q. Has RUCO made an adjustment to Pima's requested level of rate case expense in this filing?

A. No. The Company's request of $175,000 in rate case expense for both the water and wastewater division for a total rate case expense of $350,000 is appropriate in this case.

Q. What was approved for recovery in the last rate case filing by the Commission for Pima's water and wastewater divisions?

A. The Commission approved $200,000 in rate case expense in the most recent filing for each division for a total of $400,000.

Q. Can you please describe how the Company is requesting recovery of rate case expense in this filing?

A. Yes. Pima has requested recovery of $35,000 annually for each division. The Company proposes that rate case expense be recovered over five years because it believes a 5-year cycle for future rate cases is reasonable given this utility's circumstances.

Q. Is the five year recovery period consistent with the methodology that was approved in the last rate case?

A. No. RUCO had several alternatives for recovery of rate case expense in the last rate case, filed on August 29, 2011, one of which was establishing a surcharge mechanism to ensure that ratepayers did not pay for extensive periods of time subsequent to full recovery. Prior to that filing in 2011 the latest increase in rates approved by the Commission was in 1994 for the water division and year 2000 for the wastewater division. Due to extended time between rate case filings RUCO was concerned that the Company would refrain from filing a rate case for many years as it had in the past.

Q. What was the Company's reaction to RUCO's recommendation of establishing rate case expense recovery through a surcharge mechanism?

A. The Company adopted RUCO's recommendation. "While it is certainly not inappropriate to allow recovery of rate case expense through rates, we find that the Company's adoption of RUCO's alternative recommendation for surcharge as a means of preventing over-recovery of rate case expense reasonable in this case."[7]

[7] See Decision No. 73573, Page 17, Lines 2 through 4

Q. Is it your recommendation that rate case expense continue to be recovered through such a surcharge mechanism?

A. Yes, which is why RUCO makes an adjustment reducing the Company's proposed $35,000 annual rate case expense to $0 for both the Water and Wastewater Divisions. RUCO continues to recommend recovery through a surcharge mechanism. In the last case the Commission approved recovery over a 60 month period or, until full recovery of the expense for each division, whichever comes first. RUCO continues to believe that this is the most advantageous method of recovery and ensures that ratepayers pay no more than what the Commission has authorized for recovery. The details of RUCO's rate case expense adjustment are presented in Schedule JAC-12.

VI. Contractual Services – Other Expense

Q. Please explain RUCO's operating income adjustment to Contractual Services – Other.

A. A review of the Company's response to Staff data request CSB 3-09 indicated that the management fee charged to the Water and Wastewater Divisions by Robson Communities, Inc. ("RCI") was increased by 10 percent in September 2015, with an annualized adjustment made to reflect this higher management fee expense level in months January-August, 2015. Additionally, the Company's response indicated that both the Water and Wastewater Divisions had included an allocated $849 expense in the

Contractual Services – Other expense account for the "WUAA SIB Appeal." Based upon the Company's response to CSB 3.09, RUCO determined that because the Company did not seek out competitive bids for the monthly management fees charged by RCI, the 10.0 percent increase was unwarranted. Additionally, because the Company's Application does not seek authority for a SIB, RUCO determined that the $849 expense for the WUAA SIB Appeal was improper. Details of RUCO's adjustment to Contractual Services – Other are presented in Schedule JAC-13. As can be seen, for the Water Division RUCO makes an $8,683 downward adjustment to Contractual Services – Other expense, and for the Wastewater Division RUCO makes a downward adjustment of $10,522.

VII. Income Tax Expense

Q. Can you please explain the adjustment you made to Income Tax Expense?

A. Yes. RUCO is recommending that income tax expense be reduced by the full amount of the Company's request. This adjustment includes both test year adjustments in addition to the calculation of income tax expense applicable to the proposed increase in revenues in this case. Total reduction as follows:

Division	Test Year Adjustment	Proposed Increase	Total
Water	($ 88,496)	($ 81,411)	($ 169,906)
Wastewater	($ 107,840)	($ 89,830)	($ 197,670)

Details of RUCO's proposed test-year adjusted income tax expenses for the Water Division are presented in Schedule JAC-14, while those for the Wastewater Division are presented in Schedule JAC-15.

Q. Since the last rate case filing by Pima, didn't the Commission pass a policy that allowed Company's organized as a pass-through tax entity to charge income taxes to ratepayers based on the individual owners effective inco0me tax rate?

A. Yes. On February 22, 2013, the Commission voted to allow the pass through of income taxes to limited liability companies, Subchapter S corporations and partnerships in Decision No. 73739. The Decision further stated that the inclusion of income tax expense for tax pass-through entities are equally applicable in the case of sole proprietorships. The Commissions policy reads as follows; "Income tax expense shall be permitted based only upon the effective income tax rates of owners which have actual or potential state and federal income tax liability. The owner or owners of a tax pass-through entity shall not be required to submit personal income tax returns to the Commission, but shall submit documentation showing all owners of the tax pass-through entity, the respective ownership percentages of each owner, and the tax status of

each owner (i.e. whether the owner is a taxable entity or a non-taxable entity)."[8]

Q. Does RUCO agree with the Decision No. 73739?

A. No. RUCO does not support the policy as it is not in the public interest. RUCO has taken exception in rate case filings when pass through entities have requested income tax expense and has not been persuaded that income tax expense for past through entities should be allow in the future.

Q. Can you further expand on the reasons why allowing the income tax pass through is not in the public interest?

A. Yes. (1) Ratepayers should only pay expenses that are incurred by the utility. Sub Chapter S corporations do not pay income taxes. Pima shareholders pay personal income taxes, not corporate income taxes. The Company's shareholders receive their pro-rata share of earnings, losses, and credits which are treated as personal income for income tax reporting purposes. These earnings or losses are subject to the shareholder's individual income tax rates. Once again, ratepayers should not be required to pay individual shareholders personal income taxes as they are expenses that should be paid by the individual shareholders.

[8] See Decision No. 73739, Pages 2 and 3.

(2) As pointed out in RUCO's Opening Brief, filed on July 3, 2012, in the last rate case filing, the Company made an argument that the Commission should impute income tax because FERC adopted this policy.[9] However, as pointed out FERC policy is not controlling precedent in Arizona. In other words, Arizona is not bound by FERC policy. In addition, FERC policy dealt primarily with Master Limited Partnerships, which like S corporations and LLC's are pass through entities.

(3) As pointed out in RUCO's Opening Brief, the Company was originally formed as a C corporation in 1972. In 1973, the Company elected to change to an S corporation. In 1979, subsequent to an ownership change, the Company converted back to a C corporation, and finally in 1986, the Company changed back to as S corporation and has remained as S corporation since that date.[10] RUCO also notes in its Reply Brief, that Pima's shareholders continued to believe that Sub Chapter S status was the most beneficial organizational form throughout the following years even though the Commission had not allowed Pima to recover personal income taxes in rates.[11] In other words, the Commission's long standing policy did not motivate Pima to reorganize as a C corporation - and the reason why? Pima benefited for being an S Corporation.

[9] RUCO's Opening Brief, Docket No. W-02199A-11-0329 et.al.
[10] RUCO's Opening Brief, Docket No. W-02199A-11-0329 et.al.
[11] RUCO's Reply Brief, Docket No. W-02199A-11-0139, et al Page4

Q. Did you review the income tax filings made by the Company during the test year?

A. Yes. RUCO reviewed the income tax filings for the test year ending December 31, 2015. As indicated above, Pima made post-test year income tax expense adjustments of $86,496 in the water division and $107,840 adjustment in the wastewater division for a total of $194,336 The Company is including these expenses as an adjustment in order to pay the personal income tax expenses of its shareholders for the tax year ending December 31, 2015. However, in reviewing the Company's 2015 U.S Income Tax Return for an S Corporation, Form 1120S, the Company's reported taxable income is $79,475. In reviewing the Company's Schedule K-1, Shareholder's Share of Income, Deductions, Credits, etc. they confirm that the amount paid out to shareholders related to income distribution, also totals $79,475.

Q. What is RUCO's concern with the mismatch of the taxes being requested for recovery and the taxes being reported and distributed to shareholders?

A. It clearly indicates that ratepayers are paying considerably more, ($194,336 - $79,475) $114,861, to reimburse shareholders personal income taxes than the shareholders are required to report on their personal income tax return for earnings attributable to income produced by Pima.

Q. Is this fair to ratepayers?

A. No. This is not fair to ratepayers, is extremely bad public policy, and should be discontinued immediately.

ADDITIONAL ADJUSTMENTS - WATER DIVISION

RUCO Operating Income Adjustment # 1 – Depreciation Expense

Q. Did you recalculate annual depreciation since the last rate case filing and what were the results of your recalculation?

A. Yes, I conducted a reconstruction and analysis of the Company's plant balances and depreciation expense since the Company's last rate filing and found no discrepancies in the reported balances shown for the Water Division.

Q. Have you made any changes to the Company's adjusted test year depreciation expense for the Water Division?

A. Yes. The details of RUCO's Depreciation Expense adjustment are presented in Schedule JAC-8. As shown, RUCO proposes adjusted depreciation expense of $679,627 for the Water Division, a reduction of $1,147 to the Company proposed $680,774 depreciation expense level.

ADDITIONAL ADJUSTMENTS - WASTEWATER DIVISION

RUCO Rate Base Adjustment # 1 – Accumulated Depreciation

Q. Did RUCO make an adjustment to Accumulated Depreciation for both the Water Division and the Wastewater Division?

A. No. Although RUCO performed a plant reconstruction analysis for both the Water and Wastewater Divisions, RUCO determined it was necessary to make an adjustment to Accumulated Depreciation only for the Wastewater Division.

Q. Please indicate the amount of the adjustment made to the Accumulated Depreciation balance for the Wastewater Division.

A. As shown in Wastewater Schedule JAC-3, RUCO made a downward adjustment to the Accumulated Depreciation balance in the amount of $653,153. It should be noted that RUCO's adjustment serves to increase net plant balance (i.e., rate base) by this same $653,153 amount. Details of RUCO's Accumulated Depreciation adjustment are presented in Wastewater Schedule JAC-4(b) (Pages 1-5).

Q. Has RUCO prepared a summary table showing which NARUC accounts gave rise to the above referenced $653,153 adjustment to Accumulated Depreciation for the Wastewater Division?

A. Yes. The following table presents information on the NARUC accounts giving rise to RUCO's $653,153 adjustment to Accumulated Depreciation:

NARUC Account	Description	Authorized Depreciation Rate Prior	Current	Company Proposed	RUCO Proposed	RUCO Adjustment
371.1	Pumping Equipment - Lift Stations	10.00%	12.50%	$ (1,591,354)	$ (1,305,727)	$ 285,627
371.3	Pumping Equipment - Recharge Wells	10.00%	12.50%	(1,587,711)	(1,255,691)	332,020
390	Office Furniture & Equipment	6.67%	6.67%	(16,464)	(12,742)	3,722
390.1	Computers and Software	20.00%	20.00%	(41,640)	(30,118)	11,522
393	Tools, Shop And Garage Equipment	10.00%	5.00%	(78,155)	(74,120)	4,035
394	Laboratory Equipment	10.00%	10.00%	(3,066)	(2,668)	398
396	Communication Equipment	10.00%	10.00%	(183,066)	(167,236)	15,830
	Totals			$ (3,501,456)	$ (2,848,303)	$ 653,153

As can be seen, RUCO's $653,153 Accumulated Depreciation adjustment was confined to only seven (7) NARUC accounts, with the lion's share (i.e. $617,647) being accounted for by accumulated depreciation balances reported in only two accounts: NARUC Account No. 371.1, Pumping Equipment – Lift Stations ($285,627), and NARUC Account No. 371.3, Pumping Equipment – Recharge Wells ($332,020). As can further be seen, the current authorized depreciation rate for each of these two accounts was increased from 10.00% to 12.50% in the Company's last rate case.

Q. Was RUCO able to determine what factors contributed to the Company's reported accumulated depreciation balances for the Wastewater Division being over-stated?

A. Yes. In reviewing Pima's Wastewater B-2 Schedules, RUCO found evidence that in some cases fully depreciated plant was re-depreciated

after the addition of new plant to the account. In other cases, RUCO found that several new plant additions had been fully depreciated in the year when they went into rate base. For obvious reasons, such occurrences serve to overstate the balance of accumulated depreciation, as well as depreciation expense in the 2015 test-year.

Q. What methodology does the Company use to depreciate its Wastewater plant?

A. The Company employs the group depreciation methodology.

Q. For purposes of its plant reconstruction analysis, did RUCO likewise employ the group depreciation methodology?

A. No, RUCO employed a vintage-group depreciation methodology. In doing so, RUCO tracked depreciation expense on all plant additions made subsequent to the December 31, 2010 test-year end in Pima's last rate case by the vintage year in which the plant additions were made. Thus, plant additions in years 2011, 2012, 2013, 2014 and 2015 were all tracked separately to avoid the possibility of individual plant account balances becoming over-depreciated.

Q. Does RUCO believe that the vintage-group methodology it employs to be superior to the Company's group depreciation methodology?

A. Yes, because RUCO's vintage group methodology would have prevented these overstatements to accumulated depreciation.

RUCO Operating Income Adjustment # 1 – Depreciation Expense

Q. Did you find that an overstatement to the accumulated depreciation balances for the Wastewater Division necessitated an adjustment being made to annual depreciation expense in the test year?

A. Yes.

Q. What is RUCO's proposed adjustment to the Company's adjusted test year depreciation expense for the Wastewater Division?

A. The details of RUCO's Depreciation Expense adjustment for the Wastewater Division are presented in Schedule JAC-8. As shown, RUCO proposes adjusted depreciation expense of $800,274 for the Wastewater Division, a decrease of $111,628 from the Company proposed $911,901 depreciation expense level.

ADJUSTOR MECHANISMS REQUESTED

I. Purchase Power Adjustor Mechanism

Q. Can you please explain what the Company is proposing when asking for a Purchased Power Adjustment Mechanism ("PPAM")?

A. Yes. As explained in the General Description, Section 1 of the Proposed Plan of Administration, "The PPAM allows Pima to pass through to its customers the increase or decrease in purchased power costs that result from a rate change for any Commission-regulated electric service provider supplying retail electric service to the Company."

Q. In general, does RUCO agree with adjustor mechanisms?

A. RUCO can agree with certain adjustor mechanisms, such as those where certain expenses can vary significantly from year to year and those expense adjustor mechanisms that can also create a reduction in rates. RUCO does not agree with adjustor mechanisms that only go in one direction, that being an increase.

Q. Can you please describe briefly the Plan of Administration ("POA") prepared by the Company for administration of the PPAM.

A. Yes. (1) Within 60 days of the effective date of the Commission Decision authorizing a rate change in the approved tariffs for any Commission-regulated electric service provider supplying retail electric service to the

Company, the Company shall file with Docket Control an analysis of the actual impact on the energy portion of the Company's service costs.

(2) The Company will provide the Commission with spreadsheets detailing exactly how the Company's purchased power expenses were calculated in the time period to a change in the rate that the Company must pay for purchased power.

(3) All revised schedules filed the Commission will be accompanied by documentation prepared by the Company in a format approved by the Utilities Division Staff of the Commission and will contain sufficient detail to enable the Commission to verify accuracy of the Company's calculations.

(4) The surcharges will not become effective until approved by the Commission.

(5) The Company will file annually with the Commission a report detailing the Company's purchased power costs and any conservation or power-shifting measures employed by the Company.

(6) The Company shall provide notice (in a form acceptable to Staff) of the rate increases to customers with the bill where the rate first appears.

II. Property Tax Adjustor Mechanism

Q. Can you please explain what the Company is proposing when asking for a Property Tax Adjustor Mechanism ("PTAM")?

A. Yes. As explained in the General Description, Section 1 of the Proposed Plan of Administration, "The PTAM allows Pima to pass through to its customers the increase or decrease in property taxes that result from a change in the applicable assessment ratio and/or property tax rates."

Q. Can you explain the additional filing requirements as discussed in the Company's POA that was filed in testimony?

A. Yes. Basically the additional reporting requirements as outlined in the POA for the PTAM are the same as discussed in points (1) through (6) above, filed by the Company for the PPAM.

Q. In summary, does RUCO agree with the Company's request for the PPAM and the PTAM?

A. Yes. Even though RUCO has taken exception to certain adjustor mechanisms in past rate case filings since both of these mechanisms can also benefit the ratepayer by a potential reduction in rates, we can agree with the Company's request.

RATE DESIGN

Q. Can you please describe RUCO's rate design for the Water Division?

A. Yes. Like the Company, RUCO proposes a three-tiered, inverted block rate design for residential customers, and a two-tiered rate design for all other customer classes. RUCO's proposed rate design is presented in Rate Design Schedule JAC-1 (Pages 1-2).

Q. What would a typical monthly bill be for a 5/8 x 3/4 inch meter residential customer under RUCO's recommended rates?

A. Under RUCO's recommended residential rates, a 5/8 x 3/4 inch meter customer using an average of 5,869 gallons per month, would have a typical monthly bill of $11.39 which is $0.73, or 6.04 percent, lower than the current bill of $12.12. RUCO's typical bill analysis is presented in Rate Design Schedule JAC-2 (Page 1).

Q. Can you please describe RUCO's rate design for the Wastewater Division?

A. Yes. RUCO proposes that residential wastewater customers be charged a flat monthly fee of $23.78 for wastewater service. RUCO's proposed rate design is presented in Wastewater Rate Design Schedule JAC-1 (Page 1).

Q. What would a typical monthly bill be for a residential wastewater customer under RUCO's recommended rates?

A. Under RUCO's recommended rates, a residential customer would have a typical monthly bill of $23.78 which is $1.38, or 5.50 percent, lower than the current bill of $25.17. RUCO's typical bill analysis is presented in Wastewater Rate Design Schedule JAC-2 (Page 1).

Q. Does this complete your direct testimony in regard to revenue requirement and rate design for Pima?

A. Yes, but with the understanding that my silence on a given issue should not be understood to imply that I agree with the Company's position, as I reserve the right to address the issue in testimony at a later date.

ATTACHMENT 1

PIMA UTILITY COMPANY
DOCKET NOS. W-02199A-16-0421 & SW-02199A-16-0422 (CONSOLIDATED)
RESPONSES TO RUCO'S THIRD SET OF DATA REQUESTS

May 30, 2017

Respondent: Steve Soriano

Title: Vice President & General Manager

Company: Pima Utility Company

Address: 6532 E Riggs Road
Sun Lakes, AZ 85248

Company Response Number: 3.02

Q. In reviewing Mr. Robson's annual salary, as provided by the Company in response to Staff DR No. CSB 3-10, approximately 53.07 percent of Mr. Robson's salary is allocated to PIMA and is further allocated between the water and wastewater systems. In reviewing Pima Utility Company's 2013, 2014 and 2015 Federal Income Tax Returns it states that Mr. Robson's "Percent of time devoted to business," (See IRS Form 1125-E, Compensation of Officers for years 2013, 2014 and 2015) is only 5 percent. Please explain why 53.07 percent of Mr. Robson's salary is being allocated to Pima while he is reporting to the Internal Revenue Service that he only devotes 5 percent of his time to Pima.

RESPONSE: The portion of Mr. Robson's annual salary that equals $180,000 is compensation Mr. Robson receives for his service to all of the Company's affiliated utility companies. Time Mr. Robson devotes to other entities (apart from these affiliated utilities) is not included in this compensation amount.

The approximate 53.07 percentage allocated on the schedule to the Company (or approximately $95,400) pertains only to the portion of the $180,000 salary charged to the affiliated utility companies. The amount allocated to the Company is below the low end of the range of compensation for Top Executives (All) as reported by the 2015 American Water Works Association Compensation Survey for Small and Medium Sized Water and Wastewater Utilities.

The allocations provided on the schedule included in Pima's response to Staff Data Request CSB 3-10 were also submitted in the Quail Creek Water Company 2014 Rate Case, as Quail Creek's response to Staff Data Request JAC 1-14, and were accepted by Staff.

WATER SCHEDULES

TABLE OF CONTENTS TO JAC SCHEDULES

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY OCRB/FVRB COST	(B) RUCO OCRB/FVRB COST
1	Adjusted Original Cost/Fair Value Rate Base	$ 7,806,162	$ 7,779,908
2	Adjusted Operating Income (Loss)	$ 411,711	$ 589,584
3	Current Rate of Return (L2 / L1)	5.27%	7.58%
4	Required Operating Income (L5 X L1)	$ 661,743	$ 568,598
5	Required Rate of Return on Fair Value Rate Base	8.48%	7.31%
6	Operating Income Deficiency (L4 - L2)	$ 250,033	$ (20,985)
7	Gross Revenue Conversion Factor (TJC-1, Page 2)	1.3479	1.0000
8	Required Increase in Gross Revenue Requirement (L7 X L6)	$ 337,024	$ (20,985)
9	Adjusted Test Year Revenue	$ 2,423,950	$ 2,423,950
10	Proposed Annual Revenue (L8 + L9)	$ 2,760,974	$ 2,402,965
11	Required Percentage Increase in Revenue (L8 / L9)	13.90%	-0.87%
12	Rate of Return on Common Equity	11.20%	9.64%

References:
Column (A): Company Schedules A-1 and C-1
Column (B): RUCO Schedule JAC-2, JAC-6, and JAC-14

Pima Utility Company - Water Division
Docket No. W-02199A-16-0421
Test Year Ended December 31, 2015

Water Division
Direct Schedule JAC-2
Page 1 of 1

RATE BASE - ORIGINAL COST

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED OCRB/FVRB	(B) RUCO OCRB/FVRB ADJUSTMENTS	(C) RUCO ADJ'TED OCRB/FVRB
1	Gross Utility Plant in Service	$ 15,963,424	$ -	$ 15,963,424
2				
3	**Less:**			
4	Accumulated Depreciation	(6,717,951)	-	(6,717,951)
5				
6	Net Utility Plant in Service (L1 less L4)	$ 9,245,474	$ -	$ 9,245,474
7				
8	Advances in Aid of Construction	$ -	$ -	$ -
9				
10	Contributions in Aid of Construction (CIAC)	(632,418)	-	(632,418)
11	Accumulated Amortization of CIAC	461,407	-	461,407
12	Net CIAC (L10 less L11)	$ (171,011)	$ -	$ (171,011)
13				
14	Accumulated Deferred Income Taxes (ADIT)	(1,331,835)	-	(1,331,835)
15	Customer Deposits	-	-	-
16				
17	**Add:**			
18	Allowance for Working Capital	$ 59,729	$ (26,254)	$ 33,475
19				
20	Net Regulatory Asset / (Liability)	3,805	-	3,805
21				
22	Rounding	-	-	-
23	TOTAL RATE BASE (Sum L's 9, 10, 13, & 14 Thru 18)	$ 7,806,162	$ (26,254)	$ 7,779,908

References:
Column (A): Company Schedule B-1
Column (B): Schedule JAC-3
Column (C): Column (A) + Column (B)

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED OCRB/FVRB	(B) INTENTIONALLY LEFT BLANK	(C) INTENTIONALLY LEFT BLANK	(D) INTENTIONALLY LEFT BLANK	(E) INTENTIONALLY LEFT BLANK	(F) INTENTIONALLY LEFT BLANK	(G) ADJMT NO. 1 WORKING CAPITAL	(H) RUCO ADJ'TED OCRB/FVRB
1	Gross Utility Plant in Service	$ 15,963,424	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,963,424
2									
3	**Less:**								
4	Accumulated Depreciation	(6,717,951)	-	-	-	-	-	-	(6,717,951)
5									
6	Net Utility Plant in Service (L1 less L4)	$ 9,245,474	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,245,474
7									
8	Advances in Aid of Construction	-	-	-	-	-	-	-	-
9									
10	Contributions in Aid of Construction (CIAC)	(632,418)	-	-	-	-	-	-	(632,418)
11	Accumulated Amortization of CIAC	461,407	-	-	-	-	-	-	461,407
12	Net CIAC (L10 less L11)	$ (171,011)	$ -	$ -	$ -	$ -	$ -	$ -	$ (171,011)
13									
14	Accumulated Deferred Income Taxes (ADIT)	(1,331,835)	-	-	-	-	-	-	(1,331,835)
15	Customer Deposits	-	-	-	-	-	-	-	-
16									
17	**Add:**								
18	Allowance for Working Capital	$ 59,729	$ -	$ -	$ -	$ -	$ -	$ (26,254)	$ 33,475
19									
20	Net Regulatory Asset / (Liability)	3,805	-	-	-	-	-	-	3,805
21									
22	Rounding	-	-	-	-	-	-	-	-
23	TOTAL RATE BASE (Sum L's 9, 10, 13, & 14 T	$ 7,806,162	$ -	$ -	$ -	$ -	$ -	$ (26,254)	$ 7,779,908

References:
Column (A): Company Schedule B-2
Column (B): Intentionally Left Blank
Column (C): Intentionally Left Blank
Column (D): Intentionally Left Blank
Column (E): Intentionally Left Blank
Column (F): Intentionally Left Blank
Column (G): Rate Base Adjustment No. 1 - Working Capital
Column (H): Sum of Columns (A), (B), (C), (D), (E), (F) & (G)

RECONSTRUCTION OF UTILITY PLANT IN SERVICE ("UPIS") & ACCUMULATED DEPRECIATION ("A/D") BALANCES
RATE BASE ADJUSTMENT NO. 1

LINE NO.	NARUC ACCT NO.		Vintage Year	Prior Depreciation Rate	Allowed Depreciation Rate (See Note 1 Below)	Plant In Service Per Decision No. 73573 12/31/2010	Accum. Deprec. Per Decision No. 73573 12/31/2010	Net Plant Per Decision No. 73573 12/31/2010	2011 Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant
1	301	Organization Cost		0.00%	0.00%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	302	Franchise Cost		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-
3	303	Land and Land Rights		0.00%	0.00%	97,637	-	97,637	-	-	-	-	-	-	97,637	-	97,637
4	304	Structures & Improvements		3.00%	3.33%	315,125	(139,450)	175,676	-	-	-	-	-	9,454	315,125	(148,903)	166,222
5	305	Collecting & Impounding Reservoirs		3.00%	2.50%	-	-	-	-	-	-	-	-	-	-	-	-
6	306	Lake, River, Canal Intakes		3.00%	2.50%	-	-	-	-	-	-	-	-	-	-	-	-
7	307	Wells & Springs		3.00%	3.33%	610,601	(261,499)	349,102	6,223	-	6,223	-	-	18,411	616,823	(279,910)	336,913
8	308	Infiltration Galleries		3.00%	6.67%	-	-	-	-	-	-	-	-	-	-	-	-
9	309	Raw Water Supply Mains		3.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment		3.00%	5.00%	-	-	-	-	-	-	-	-	-	-	-	-
11	311	Pumping Equipment		3.00%	12.50%	2,269,738	(370,078)	1,899,660	39,961	11,588	51,550	-	-	68,865	2,321,288	(438,944)	1,882,344
12	320	Water Treatment Equipment		3.00%		-	-	-	-	-	-	-	-	-	-	-	-
13	320.1	Water Treatment Plants		3.00%	3.33%	-	-	-	-	-	-	-	-	-	-	-	-
14	320.2	Solution Chemical Feeders		3.00%	20.00%	58,255	(9,890)	48,365	-	-	-	-	-	1,748	58,255	(11,638)	46,617
15	330	Distribution Reservoirs & Standpipes		3.00%		-	-	-	-	-	-	-	-	-	-	-	-
16	330.1	Storage Tanks		3.00%	2.22%	1,102,197	(490,208)	611,989	11,588	(11,588)	-	-	-	33,066	1,102,197	(523,274)	578,923
17	330.2	Pressure Tanks		3.00%	5.00%	73,937	(24,279)	49,658	-	-	-	-	-	2,218	73,937	(26,497)	47,440
18	331	Transmission & Distribution Mains		3.00%	2.00%	2,916,048	(1,625,867)	1,290,182	2,987	-	2,987	-	-	87,526	2,919,035	(1,713,393)	1,205,642
19	333	Services		3.00%	3.33%	4,724,840	(861,292)	3,863,548	257,036	(890)	256,146	(18,860)	-	145,304	4,962,126	(987,737)	3,974,389
20	334	Meters		3.00%	8.33%	923,202	(361,692)	561,511	41,763	-	41,763	-	-	28,323	964,965	(390,014)	574,951
21	335	Hydrants		3.00%	2.00%	887,381	(550,134)	337,246	-	-	-	-	-	26,621	887,381	(576,756)	310,625
22	336	Backflow Prevention Devices		3.00%	6.67%	-	-	-	-	-	-	-	-	-	-	-	-
23	339	Other Plant & Misc Equipment		3.00%	6.67%	-	-	-	-	-	-	-	-	-	-	-	-
24	340	Office Furniture & Equipment		3.00%	6.67%	4,239	(110)	4,129	-	-	-	-	-	127	4,239	(237)	4,002
25	340.1	Computers & Software		3.00%	20.00%	28,479	(278)	28,201	-	-	-	-	-	854	28,479	(1,133)	27,346
26	341	Transportation Equipment		3.00%	20.00%	61,635	51,073	112,708	30,405	-	30,405	-	-	2,305	92,041	48,768	140,808
27	342	Stores Equipment		3.00%	4.00%	-	-	-	-	-	-	-	-	-	-	-	-
28	343	Tools, Shop & Garage Equipment		3.00%	5.00%	129,989	(33,156)	96,833	4,040	-	4,040	-	-	3,960	134,029	(37,116)	96,913
29	344	Laboratory Equipment		3.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-
30	345	Power Operated Equipment		3.00%	5.00%	124,899	(34,114)	90,785	-	-	-	-	-	3,747	124,899	(37,861)	87,038
31	346	Communication Equipment		3.00%	10.00%	238,939	(76,482)	162,457	7,265	-	7,265	-	-	7,277	246,205	(83,760)	162,445
32	347	Miscellaneous Equipment		3.00%	10.00%	4,517	(1,095)	3,422	2,264	-	2,264	-	-	169	6,782	(1,264)	5,517
33	348	Other Tangible Plant		3.00%		-	-	-	-	-	-	-	-	-	-	-	-
34		RUCO UPIS & Accum. Depre. Balances				$ 14,571,659	$ (4,788,552)	$ 9,783,107	$ 403,533	$ (890)	$ 402,643	$ (18,860)	$ -	$ 439,977	$ 14,955,442	$ (5,209,670)	$ 9,745,772
35		Company UPIS & Accum. Depre. As Filed															
36		RUCO UPIS & Accum. Depre. Adjustments															

RECONSTRUCTION OF UTILITY PLANT IN SERVICE ("UPIS") & ACCUMULATED DEPRECIATION ("A/D") BALANCES
RATE BASE ADJUSTMENT NO. 1

2012								
Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	97,637	-	97,637
-	-	-	-	-	9,627	315,125	(158,531)	156,595
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
22,464	-	22,464	-	-	19,187	639,287	(299,097)	340,190
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
14,921	21,452	36,373	(129,748)	-	104,253	2,227,913	(413,448)	1,814,465
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
8,266	-	8,266	(3,793)	-	3,529	62,728	(11,373)	51,355
-	-	-	-	-	-	-	-	-
144,910	(21,452)	123,458	(75,200)	-	32,326	1,150,456	(480,400)	670,056
-	-	-	-	-	2,465	73,937	(28,962)	44,975
3,891	-	3,891	(2,640)	-	82,724	2,920,287	(1,793,477)	1,126,810
219,056	-	219,056	(285,761)	-	150,574	4,895,421	(852,550)	4,042,871
88,841	-	88,841	(152,506)	-	36,283	901,300	(273,791)	627,508
-	-	-	(2,640)	-	25,105	884,741	(599,221)	285,520
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	(2,639)	-	105	1,600	2,297	3,897
-	-	-	-	-	1,661	28,479	(2,794)	25,685
-	-	-	(23,000)	-	4,698	69,040	67,070	136,110
-	-	-	-	-	-	-	-	-
-	-	-	-	-	4,468	134,029	(41,584)	92,445
-	-	-	-	-	-	-	-	-
-	-	-	-	-	4,163	124,899	(42,025)	82,874
-	-	-	-	-	10,259	246,205	(94,018)	152,186
1,125	-	1,125	-	-	306	7,907	(1,570)	6,337
-	-	-	-	-	-	-	-	-
$ 503,474	$ -	$ 503,474	$ (677,928)	$ -	$ 491,732	$ 14,780,989	$ (5,023,474)	$ 9,757,515

RECONSTRUCTION OF UTILITY PLANT IN SERVICE ("UPIS") & ACCUMULATED DEPRECIATION ("A/D") BALANCES
RATE BASE ADJUSTMENT NO. 1

2013								
Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	97,637	-	97,637
6,912	-	6,912	-	-	10,609	322,037	(169,139)	152,898
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
88,588	-	88,588	(38,328)	-	22,125	689,547	(282,895)	406,652
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
108,380	1,781	110,161	(49,393)	-	282,287	2,288,681	(646,342)	1,642,339
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
7,452	-	7,452	-	-	13,291	70,180	(24,664)	45,516
-	-	-	-	-	-	-	-	-
2,878	(2,878)	-	-	-	25,540	1,150,456	(505,940)	644,516
-	-	-	-	-	3,697	73,937	(32,658)	41,279
13,437	-	13,437	-	-	58,540	2,933,724	(1,852,017)	1,081,707
235,076	-	235,076	(81,078)	-	165,582	5,049,419	(937,053)	4,112,366
80,068	7,445	87,513	(110,709)	-	74,112	878,103	(237,194)	640,909
12,937	(7,445)	5,492	(2,196)	-	17,728	888,037	(614,753)	273,284
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
1,232	-	1,232	-	-	148	2,832	2,149	4,981
3,176	1,290	4,466	(2,631)	-	5,879	30,314	(6,043)	24,272
29,206	-	29,206	-	-	16,729	98,246	50,341	148,587
-	-	-	-	-	-	-	-	-
1,954	(1,290)	664	-	-	6,718	134,693	(48,302)	86,391
-	-	-	-	-	-	-	-	-
3,137	-	3,137	-	-	6,323	128,036	(48,348)	79,688
12,408	-	12,408	(7,979)	-	24,842	250,633	(110,881)	139,752
996	-	996	-	-	840	8,903	(2,411)	6,492
-	-	-	-	-	-	-	-	-
$ 607,837	$ (1,097)	$ 606,740	$ (292,314)	$ -	$ 734,990	$ 15,095,415	$ (5,466,149)	$ 9,629,265

RECONSTRUCTION OF UTILITY PLANT IN SERVICE ("UPIS") & ACCUMULATED DEPRECIATION ("A/D") BALANCES
RATE BASE ADJUSTMENT NO. 1

2014									
Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	97,637	-	97,637
4,062	-	4,062	(1,500)	-	10,766	324,599	(178,406)	146,193
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	(4,000)	-	22,895	685,547	(301,790)	383,757
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
33,985	1,957	35,942	(27,510)	-	286,612	2,297,113	(905,445)	1,391,669
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
13,590	-	13,590	(17,348)	-	13,660	66,422	(20,976)	45,446
-	-	-	-	-	-	-	-	-
6,648	(1,957)	4,691	(3,000)	-	25,559	1,152,147	(528,499)	623,648
-	-	-	-	-	3,697	73,937	(36,355)	37,582
-	-	-	-	-	58,674	2,933,724	(1,910,691)	1,023,033
202,923	-	202,923	(52,550)	-	170,649	5,199,792	(1,055,153)	4,144,639
26,588	-	26,588	(21,117)	-	73,374	883,574	(289,451)	594,123
-	-	-	-	-	17,761	888,037	(632,513)	255,523
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	189	2,832	1,960	4,792
2,293	-	2,293	-	-	6,292	32,607	(12,335)	20,273
84,764	-	84,764	(8,000)	-	27,326	175,010	31,016	206,026
-	-	-	-	-	-	-	-	-
1,054	-	1,054	-	-	6,761	135,747	(55,063)	80,684
-	-	-	-	-	-	-	-	-
-	-	-	-	-	6,402	128,036	(54,750)	73,286
-	-	-	-	-	25,063	250,633	(135,945)	114,689
5,817	(5,817)	-	-	-	890	8,903	(3,301)	5,602
-	-	-	-	-	-	-	-	-
$ 381,724	$ (5,817)	$ 375,907	$ (135,025)	$ -	$ 756,571	$ 15,336,296	$ (6,087,695)	9,248,600

RECONSTRUCTION OF UTILITY PLANT IN SERVICE ("UPIS") & ACCUMULATED DEPRECIATION ("A/D") BALANCES
RATE BASE ADJUSTMENT NO. 1

2015								
Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	97,637	-	97,637
4,050	-	4,050	(3,650)	-	10,816	324,999	(185,572)	139,428
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
33,163	-	33,163	-	-	23,381	718,709	(325,171)	393,539
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
381,903	-	381,903	(46,031)	-	308,131	2,632,985	(1,167,545)	1,465,440
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
9,751	-	9,751	-	-	14,260	76,173	(35,236)	40,938
-	-	-	-	-	-	-	-	-
-	-	-	(10,000)	-	25,467	1,142,147	(543,965)	598,181
-	-	-	-	-	3,697	73,937	(40,052)	33,885
-	-	-	-	-	58,674	2,933,724	(1,969,366)	964,358
281,645	-	281,645	(48,046)	-	177,042	5,433,391	(1,184,149)	4,249,241
66,732	-	66,732	(28,213)	-	75,206	922,093	(336,444)	585,649
3,368	-	3,368	-	-	17,794	891,404	(650,308)	241,097
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	189	2,832	1,771	4,603
3,784	-	3,784	(22,766)	(1,700)	4,623	13,625	4,108	17,734
2,000	-	2,000	(7,445)	(1,600)	34,458	169,565	2,403	171,968
-	-	-	-	-	-	-	-	-
4,738	-	4,738	-	-	6,906	140,485	(61,969)	78,516
-	-	-	-	-	-	-	-	-
-	-	-	-	-	6,402	128,036	(61,152)	66,884
1,652	-	1,652	-	-	25,146	252,285	(161,090)	91,195
494	-	494	-	-	915	9,397	(4,216)	5,181
-	-	-	-	-	-	-	-	-
793,280	-	793,280	$ (166,151)	$ (3,300)	$ 793,106	$ 15,963,424	$ (6,717,951)	$ 9,245,474
						$ 15,963,424	$ (6,717,951)	
						$ -	$ 0	

RUCO RATE BASE ADJUSTMENT # 1
CASH WORKING CAPITAL

Line No.	Description	[A] Company Adjusted Test Year As Filed	[B] RUCO Expense Adjustments	[C] RUCO Recommended Expense	[D] Revenue Lag Days	[E] Expense (Lead) / Lag Days	[F] Net (Lead) / Lag Days ([D] - [E])	[G] (Lead) / Lag Factor [F] / 365	[H] Cash Working Capital Requirement ([C] x [G])
1	Salaries and Wages	$ 351,929	$ (37,240)	$ 314,689	41.00	13.00	28.00	0.07671	$ 24,141
2	Employee Pensions and Benefits	53,750	(1,141)	52,609	41.00	18.00	23.00	0.06301	3,315
3	Purchased Water	-	-	-	41.00	-	41.00	0.11233	-
4	Purchased Power	238,567	-	238,567	41.00	51.74	(10.74)	(0.02942)	(7,020)
5	Chemicals	16,377	-	16,377	41.00	12.11	28.89	0.07915	1,296
6	Repairs and Maintenance	74,217	-	74,217	41.00	22.35	18.65	0.05110	3,792
7	Office Supplies and Expense	72,824	-	72,824	41.00	16.02	24.98	0.06844	4,984
8	Contractual Services - Engineering	297	-	297	41.00	29.33	11.67	0.03197	9
9	Contractual Services - Accounting	4,148	-	4,148	41.00	24.00	17.00	0.04658	193
10	Contractual Services - Legal	5,414	-	5,414	41.00	96.02	(55.02)	(0.15074)	(816)
11	Contractual Services - Other	87,018	(8,683)	78,335	41.00	14.11	26.89	0.07367	5,771
12	Contractual Services - Water Testing	29,786	-	29,786	41.00	(22.42)	63.42	0.17375	5,175
13	Rents	2,680	-	2,680	41.00	(3.83)	44.83	0.12282	329
14	Transportation Expense	29,667	-	29,667	41.00	39.26	1.74	0.00477	141
15	Insurance - Vehicle	14,085	-	14,085	41.00	(182.50)	223.50	0.61233	8,625
16	Insurance - General Liability	26,844	-	26,844	41.00	(182.50)	-	-	-
17	Insurance - Health & Life	729	-	729	41.00	18.00	23.00	0.06301	46
18	Miscellaneous Expense	30,053	-	30,053	41.00	-37.27	78.27	0.21444	6,445
19	TAXES								
20	Taxes Other than Income	44,751	-	44,751	41.00	5.91	35.09	0.09614	4,302
21	General Taxes-Property[1]	127,891	(6,167)	121,724	41.00	214.29	(173.29)	(0.47477)	(57,791)
22	Income Tax[1]	169,906	(169,906)	-	41.00	37.00	4.00	0.01096	-
23	INTEREST								
24	Interest on Long-Term Debt	-	271,860	271,860	41.00		41.00	0.11233	30,538
25	TOTAL CASH WORKING CAPITAL EXPENSES	1,380,935	48,723	1,429,658					
26	**RUCO Recommended Cash Working Capital**								**$ 33,476**
27	**Company Proposed Cash Working Capital**								**$ 59,729**
28	**RUCO Cash Working Capital Adjustment**								**$ (26,254)**

[1] At Proposed Rates

OPERATING INCOME

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO TEST YEAR ADJM'TS	(C) RUCO TEST YEAR AS ADJ'TED	(D) RUCO PROP'D CHANGES	(E) RUCO AS RECOMM'D
1	**Revenues:**					
2	Metered Water Revenues	$ 2,402,343	$ -	$ 2,402,343	$ (20,985)	$ 2,381,358
3	Unmetered Water Revenues	-	-	-	-	-
4	Other Water Revenues	21,607	-	21,607	-	21,607
5	Total Water Revenues	$ 2,423,950	$ -	$ 2,423,950	$ (20,985)	$ 2,402,965
6						
7	**Operating Expenses:**					
8	Salaries and Wages	$ 351,929	$ (37,240)	$ 314,689	$ -	$ 314,689
9	Employee Pensions and Benefits	53,750	(1,141)	52,609	-	52,609
10	Purchased Water	-	-	-	-	-
11	Purchased Power	235,046	-	235,046	-	235,046
12	Chemicals	15,759	-	15,759	-	15,759
13	Repairs and Maintenance	74,217	-	74,217	-	74,217
14	Office Supplies and Expense	72,822	-	72,822	-	72,822
15	Contractual Services - Engineering	297	-	297	-	297
16	Contractual Services - Accounting	4,148	-	4,148	-	4,148
17	Contractual Services - Legal	5,414	-	5,414	-	5,414
18	Contractual Services - Other	87,018	(8,683)	78,335	-	78,335
19	Contractual Services - Water Testing	29,786	-	29,786	-	29,786
20	Rents	2,680	-	2,680	-	2,680
21	Transportation Expense	29,667	-	29,667	-	29,667
22	Insurance - Vehicle	14,085	-	14,085	-	14,085
23	Insurance - General Liability	26,844	-	26,844	-	26,844
24	Insurance - Health & Life	729	-	729	-	729
25	Regulatory Commission Expense	-	-	-	-	-
26	Regulatory Commission Expense - Rate Cas	35,000	(35,000)	-	-	-
27	Bad Debt Expense	6,663	-	6,663	-	6,663
28	Miscellaneous Expense	30,053	-	30,053	-	30,053
29	Depreciation & Amortization Expense	680,774	(1,147)	679,627	-	679,627
30	Taxes Other Than Income	44,751	-	44,751	-	44,751
31	Property Taxes	122,311	(6,167)	116,144	(347)	115,796
32	Income Tax	88,496	(88,496)	-	-	-
33						
34	**Total Operating Expenses**	$ 2,012,240	$ (177,873)	$ 1,834,367	$ (347)	$ 1,834,019
35						
36	**Operating Income**	$ 411,711	$ 177,873	$ 589,584	$ (20,638)	$ 568,946

References:
Column (A): Company Schedule C-1
Column (B): JAC-7, Columns (B) Thru (I)
Column (C): Column (A) + Column (B)
Column (D): JAC-7, Columns B Thru K
Column (E): Column (C) + Column (D)

SUMMARY OF OPERATING INCOME ADJUSTMENTS
TEST YEAR AS FILED AND ADJUSTMENTS

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) ADJMT NO. 1 DEPRECIATION EXPENSE	(C) ADJMT NO. 2 PROPERTY TAX EXPENSE	(D) ADJMT NO. 3 SALARY/WAGE EXPENSE	(E) ADJMT NO. 4 EMPLOYEE PENSIONS AND BENEFITS	(F) ADJMT NO. 5 RATE CASE EXPENSE	(G) ADJMT NO. 6 CONTRACTUAL SERVICES - OTHER	(H) INTENTIONALLY LEFT BLANK	(I) INTENTIONALLY LEFT BLANK	(J) INTENTIONALLY LEFT BLANK	(K) ADJMT NO. 7 INCOME TAXES	(L) RUCO AS ADJ'TD
1	**Revenues:**												
2	Metered Water Revenues	$2,402,343	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,402,343
3	Unmetered Water Revenues	-	-	-	-	-	-	-	-	-	-	-	-
4	Other Water Revenues	21,607	-	-	-	-	-	-	-	-	-	-	21,607
5	Total Water Revenues	$2,423,950	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,423,950
6													
7	**Operating Expenses:**												
8	Salaries and Wages	$ 351,929	-	$ -	$ (37,240)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 314,689
9	Employee Pensions and Benefits	53,750	-	-	-	(1,141)	-	-	-	-	-	-	52,609
10	Purchased Water	-	-	-	-	-	-	-	-	-	-	-	-
11	Purchased Power	235,046	-	-	-	-	-	-	-	-	-	-	235,046
12	Chemicals	15,759	-	-	-	-	-	-	-	-	-	-	15,759
13	Repairs and Maintenance	74,217	-	-	-	-	-	-	-	-	-	-	74,217
14	Office Supplies and Expense	72,822	-	-	-	-	-	-	-	-	-	-	72,822
15	Contractual Services - Engineering	297	-	-	-	-	-	-	-	-	-	-	297
16	Contractual Services - Accounting	4,148	-	-	-	-	-	-	-	-	-	-	4,148
17	Contractual Services - Legal	5,414	-	-	-	-	-	-	-	-	-	-	5,414
18	Contractual Services - Other	87,018	-	-	-	-	-	(8,683)	-	-	-	-	78,335
19	Contractual Services - Water Testing	29,786	-	-	-	-	-	-	-	-	-	-	29,786
20	Rents	2,680	-	-	-	-	-	-	-	-	-	-	2,680
21	Transportation Expense	29,667	-	-	-	-	-	-	-	-	-	-	29,667
22	Insurance - Vehicle	14,085	-	-	-	-	-	-	-	-	-	-	14,085
23	Insurance - General Liability	26,844	-	-	-	-	-	-	-	-	-	-	26,844
24	Insurance - Health & Life	729	-	-	-	-	-	-	-	-	-	-	729
25	Regulatory Commission Expense	-	-	-	-	-	-	-	-	-	-	-	-
26	Regulatory Commission Expense - Rate Case	35,000	-	-	-	-	(35,000)	-	-	-	-	-	-
27	Bad Debt Expense	6,663	-	-	-	-	-	-	-	-	-	-	6,663
28	Miscellaneous Expense	30,053	-	-	-	-	-	-	-	-	-	-	30,053
29	Depreciation & Amortization Expense	680,774	(1,147)	-	-	-	-	-	-	-	-	-	679,627
30	Taxes Other Than Income	44,751	-	-	-	-	-	-	-	-	-	-	44,751
31	Property Taxes	122,311	-	(6,167)	-	-	-	-	-	-	-	-	116,144
32	Income Tax	88,496	-	-	-	-	-	-	-	-	-	(88,496)	-
33													
34	**Total Operating Expenses**	$2,012,240	$ (1,147)	$ (6,167)	$ (37,240)	$ (1,141)	$ (35,000)	$ (8,683)	$ -	$ -	$ -	$ (88,496)	$ 1,834,367
35													
36	**Operating Income**	$ 411,711	$ 1,147	$ 6,167	$ 37,240	$ 1,141	$ 35,000	$ 8,683	$ -	$ -	$ -	$ 88,496	$ 589,584

ADJUSTMENTS:	REFERENCE:
1 - Depreciation Expense	JAC Testimony and Schedule JAC-8, Page 1 of 1
2 - Property Tax Expense	JAC Testimony and Schedule JAC-9, Page 1 of 1
3 - Salaries and Wages - Officer and Director	JAC Testimony and Schedule JAC-10, Page 1 of 1
4 - Employee Pensions and Benefits	JAC Testimony and Schedule JAC-11, Page 1 of 1
5 - Rate Case Expense	JAC Testimony and Schedule JAC-12, Page 1 of 1
6 - Contractual Services - Other	JAC Testimony and Schedule JAC-13, Page 1 of 2
Intentionally Left Blank	N/A
Intentionally Left Blank	N/A
Intentionally Left Blank	N/A
7 - Income Tax Expense	JAC Testimony and Schedule JAC-14, Page 1 of 1

RUCO OPERATING INCOME ADJUSTMENT # 1
DEPRECIATION EXPENSE

Line No.	NARUC Account	Description	[A] Company As Filed	[B] RUCO Non-Depreciable or Adjusted Balances	[C] RUCO Depreciable UPIS Recommended	[D] Proposed Depreciation Rate	[E] RUCO Depreciation Expense Recommended
		#REF!					
1	301	Organization Cost	$ -	$ -	$ -	0.00%	$ -
2	302	Franchise Cost	-	-	-	0.00%	-
3	303	Land and Land Rights	97,637	(97,637)	-	0.00%	-
4	304	Structures & Improvements	324,999	-	324,999	3.33%	10,822
5	305	Collecting & Impounding Reservoirs	-	-	-	2.50%	-
6	306	Lake, River, Canal Intakes	-	-	-	2.50%	-
7	307	Wells & Springs	718,709	(3,902)	714,807	3.33%	23,803
8	308	Infiltration Galleries	-	-	-	6.67%	-
9	309	Raw Water Supply Mains	-	-	-	2.00%	-
10	310	Power Generation Equipment	-	-	-	5.00%	-
11	311	Pumping Equipment	2,632,985	(5,937)	2,627,048	8.33%	218,833
12	320	Water Treatment Equipment	-	-	-	3.33%	-
13	320.1	Water Treatment Plants	-	-	-	3.33%	-
14	320.2	Solution Chemical Feeders	76,173	-	76,173	20.00%	15,235
15	330	Distribution Reservoirs & Standpipes	-	-	-	2.22%	-
16	330.1	Storage Tanks	1,142,147	-	1,142,147	2.22%	25,356
17	330.2	Pressure Tanks	73,937	-	73,937	5.00%	3,697
18	331	Transmission & Distribution Mains	2,933,724	-	2,933,724	2.00%	58,674
19	333	Services	5,433,391	(15,692)	5,417,699	3.33%	180,409
20	334	Meters	922,093	-	922,093	8.33%	76,810
21	335	Hydrants	891,404	-	891,404	2.00%	17,828
22	336	Backflow Prevention Devices	-	-	-	6.67%	-
23	339	Other Plant & Misc Equipment	-	-	-	6.67%	-
24	340	Office Furniture & Equipment	2,832	-	2,832	6.67%	189
25	340.1	Computers & Software	13,625	-	13,625	20.00%	2,725
26	341	Transportation Equipment	169,565	-	169,565	20.00%	33,913
27	342	Stores Equipment	-	-	-	4.00%	-
28	343	Tools, Shop & Garage Equipment	140,485	-	140,485	5.00%	7,024
29	344	Laboratory Equipment	-	-	-	10.00%	-
30	345	Power Operated Equipment	128,036	-	128,036	5.00%	6,402
31	346	Communication Equipment	252,285	-	252,285	10.00%	25,229
32	347	Miscellaneous Equipment	9,397	-	9,397	10.00%	940
33	348	Other Tangible Plant	-	-	-	10.00%	-
34		Totals	$ 15,963,424	$ (123,168)	$ 15,840,256		$ 707,889

Line No.			Gross CIAC	CIAC Amortization Rate	
35		Less: Contributions-in-Aid-of-Construction (CIAC) Amortizations	$ (632,418)	4.4689%	$ (28,262)
36		RUCO Total Depreciation Expense			679,627
37		Company Adjusted Depreciation Expense As Filed			680,774
38		RUCO Increase/(Decrease) Expense Adjustment			$ (1,147)

References:
Company B-2 and C-1 Schedules, and RUCO Schedule JAC-4, page 1

RUCO OPERATING INCOME ADJUSTMENT # 2
PROPERTY TAXES

LINE NO.	Property Tax Calculation	(A) RUCO AS ADJUSTED	(B) RUCO RECOMMENDED
1	RUCO Adjusted Test Year Revenues - 2015	$ 2,423,950	$ 2,423,950
2	Multiplied by 2	2	2
3	Subtotal (Line 1 * Line 2)	$ 4,847,901	$ 4,847,901
4a	RUCO Adjusted Test Year Revenues - 2015	2,423,950	
4b	RUCO Recommended Revenue, Per Schedule JAC-6		2,402,965
5	Subtotal (Line 4 + Line 5)	$ 7,271,851	$ 7,250,866
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	$ 2,423,950	$ 2,416,955
8	Department of Revenue Mutilplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	$ 4,847,901	$ 4,833,910
10	Plus: 10% of CWIP - 2015	-	-
11	Less: Net Book Value of Licensed Vehicles	171,968	171,968
12	Full Cash Value (Line 9 + Line 10 - Line 11)	$ 4,675,932	$ 4,661,942
13	Assessment Ratio	18.0%	18.0%
14	Assessment Value (Line 12 * Line 13)	$ 841,668	$ 839,150
15	Composite Property Tax Rate (Per Company Schedule C-2, Page 3, Line 15)	13.7992%	13.7992%
16	RUCO Proposed Property Tax Expense (Line 14 * Line 15)	$ 116,144	
17	Company Proposed Property Tax	122,311	
18	RUCO Test Year Adjustment (Line 16-Line 17)	$ (6,167)	
19	Property Tax - RUCO Recommended Revenue (Line 14 * Line 15)		$ 115,796
20	RUCO Test Year Adjusted Property Tax Expense (Line 16)		116,144
21	Increase/(Decrease) to Property Tax Expense		$ (347)
22	Increase/(Decrease) to Property Tax Expense		$ (347)
23	Increase in Revenue Requirement		(20,985)
24	Increase /(Decrease) to Property Tax per Dollar Increase in Revenue (Line19/Line 20)		0.016559

RUCO OPERATING INCOME ADJUSTMENT # 3
SALARIES AND WAGES - OFFICER and DIRECTOR

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENT	(C) RUCO AS ADJUSTED
1	Salaries and Wages Expense - Officer and Director	$ 94,555	$ (85,555)	$ 9,000
	Adjustment to Water Division	**$ 41,157**	**$ (37,240)**	**$ 3,917**
	Adjustment to Wastewater Division	53,398	$ (48,315)	5,083
2	RUCO SALARY AND WAGE EXPENSE ADJUSTMENT CALCULATION:			
4	Calculation of Salary and Wage Expense - Robson	$ 180,000		
5	RUCO Calculation Based on Time Spent (See Federal Income Tax Filings)			
6	"Percent of Time Devoted to Business"	5.00%		
7	TOTAL SALARY AS CALCULATED BY RUCO	$ 9,000		
	Salary Allocated to Water	$ 9,000	43.5270%	$ 3,917
	Salary Allocated to Sewer	$ 9,000	56.4730%	5,083
			100.0000%	$ 9,000

PAYROLL COSTS OF MR. ROBSON AS PROVIDED BY COMPANY

Allocation Methodology - Mr. Robson's annual salary of $180,000 is allocated to eight companies including Pima Utility Company (Water and Sewer Divisions). Salary for each is determined by a 3 factor allocation process including number of customers, direct operating expenses and payroll, all based on a three year average.

Salary Allocation per Pima

Salary allocated to Water	$ 41,157	22.9%
Salary allocated to Sewer	$ 53,398	29.7%
	$ 94,555	52.5%

RUCO OPERATING INCOME ADJUSTMENT # 4
EMPLOYEE PENSIONS AND BENEFITS

Line No.	DESCRIPTION	[A] COMPANY AS FILED	[B] RUCO ADJUSTMENT	[C] RUCO AS ADJUSTED
1	**Employee Benefits and Pensions - Water**	**$ 53,750**	**$ (1,141)**	**$ 52,609**
2				
3	Employee Benefits and Pensions - Wastewater	$ 139,603	$ (1,662)	$ 137,940

		[A]	[B]	[C]	[D]	[E]
	Employee Benefits & Pensions	Current Rate Docket	Prior Rate Docket	Delta Multiplier	Staff Adjustment in Prior Rate Docket	RUCO Adjustment
14	Water Division	$ 53,750	$ 64,900	0.82820	$ (1,378)	$ (1,141)
15	Wastewater Division	139,603	115,720	1.20638	(1,378)	(1,662)
16	Combined Total	$ 193,353	$ 180,620	1.07050	$ (2,756)	$ (2,804)

RUCO OPERATING INCOME ADJUSTMENT # 5
RATE CASE EXPENSE

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENT	(C) RUCO AS ADJUSTED
1	Rate Case Expense Total	$ 35,000	$ (35,000)	$ -
2	Company Estimated Rate Case Expense		$ 175,000	
3	Amortization Period, in Years		5	
4	Company Proposed Annual Rate Case Expense		$ 35,000	

Information obtained from Company Schedule C-2 (Page 4)

RUCO OPERATING INCOME ADJUSTMENT # 6
CONTRACTUAL SERVICES - OTHER EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] RUCO ADJUSTMENT	[C] RUCO AS ADJUSTED
1	January Management Fee	$ 6,527.92	$ -	$ 6,527.92
2	February Management Fee	6,527.92	-	6,527.92
3	March Management Fee	6,527.92	-	6,527.92
4	April Management Fee	6,527.92	-	6,527.92
5	May Management Fee	6,527.92	-	6,527.92
6	June Management Fee	6,527.92	-	6,527.92
7	July Management Fee	6,527.92	-	6,527.92
8	August Management Fee	6,527.92	-	6,527.92
9	September Management Fee	7,180.71	(652.79)	6,527.92
10	October Management Fee	7,180.71	(652.79)	6,527.92
11	November Management Fee	7,180.71	(652.79)	6,527.92
12	December Management Fee	7,180.71	(652.79)	6,527.92
13	Mgt. Fee Adjustment (Jan.-Aug.)	5,222.32	(5,222.32)	-
14	WUAA SIB Appeal	849.11	(849.11)	-
15	Total	$ 87,018	$ (8,683)	$ 78,335

Information obtained from Company response to Staff data request CSB 1-20.

RUCO OPERATING INCOME ADJUSTMENT # 7
INCOME TAX EXPENSE

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENT	(C) RUCO AS ADJUSTED
1	Income Tax Expense	$ 88,496	$ (88,496)	$ -

Information obtained from Company Schedule C-1

COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) DOLLAR AMOUNT	(B) CAPITAL RATIO	(C) COST RATE	(D) WEIGHTED COST RATE
1	Long-Term Debt	$ 8,370,000	37.50%	3.42%	1.28%
2	Common Equity	13,950,000	62.50%	9.64%	6.03%
3	Total Capitalization	$ 22,320,000	100.00%		
4	WEIGHTED AVERAGE COST OF CAPITAL				7.31%

References:
Columns (A) Thru (D): JAC Cost of Capital Testimony

Rate Design

Monthly Usage Charge	Present	Company Proposed Rates	RUCO Recommended Rates
Meter Size (All Classes):			
5/8x3/4 Inch	$ 7.39	$ 9.09	$ 6.36
3/4 Inch	11.09	13.64	9.54
1 Inch	21.12	22.73	15.90
1 1/2 Inch	36.96	45.46	31.80
2 Inch	59.14	72.74	50.88
3 Inch	137.28	145.47	101.76
4 Inch	184.80	227.30	159.00
6 Inch	369.60	454.61	318.00
Irrigation	180.00	180.00	180.00
Gallons In Minimum (All Classes, except irrigation)	-	-	-
Gallons In Minimum (Irrigation)	-	-	-
Commodity Charge - Per 1,000 Gallons			
5/8 x 3/4" and 3/4" Meter (Residential)			
First 4,000 gallons	$ 0.7100	$ 0.7313	N/A
4,001 to 10,000 gallons	1.0100	1.0313	N/A
All gallons over 10,000	1.4500	1.4813	N/A
5/8 x 3/4" and 3/4" Meter (Residential)			
First 3,000 gallons	N/A	N/A	$ 0.7100
3,001 to 8,000 gallons	N/A	N/A	1.0100
All gallons over 8,000	N/A	N/A	1.4500
3/4" Meter (Commerical)			
First 10,000 gallons	1.0100	1.0313	N/A
Over 10,000 gallons	1.4500	1.4813	N/A
3/4" Meter (Commerical)			
First 8,000 gallons	N/A	N/A	1.0100
Over 8,000 gallons	N/A	N/A	1.4500
1" Meter (Residential and Commercial)			
First 30,000 gallons	1.0100	1.0313	N/A
Over 30,000 gallons	1.4500	1.4813	N/A
1" Meter (Residential and Commercial)			
First 21,000 gallons	N/A	N/A	1.0100
Over 21,000 gallons	N/A	N/A	1.4500

Rate Design

1.5" Meter (Residential and Commercial)			
First 65,000 gallons	1.0100	1.0313	N/A
Over 65,000 gallons	1.4500	1.4813	N/A
1.5" Meter (Residential and Commercial)			
First 56,000 gallons	N/A	N/A	1.0100
Over 56,000 gallons	N/A	N/A	1.4500
2" Meter (Residential and Commercial)			
First 110,000 gallons	1.0100	1.0313	N/A
Over 110,000 gallons	1.4500	1.4813	N/A
2" Meter (Residential and Commercial)			
First 98,000 gallons	N/A	N/A	1.0100
Over 98,000 gallons	N/A	N/A	1.4500
3" Meter (Residential and Commercial)			
First 275,000 gallons	1.0100	1.0313	N/A
Over 275,000 gallons	1.4500	1.4813	N/A
3" Meter (Residential and Commercial)			
First 210,000 gallons	N/A	N/A	1.0100
Over 210,000 gallons	N/A	N/A	1.4500
4" Meter (Residential and Commercial)			
First 375,000 gallons	1.0100	1.0313	N/A
Over 375,000 gallons	1.4500	1.4813	N/A
4" Meter (Residential and Commercial)			
First 375,000 gallons	N/A	N/A	1.0100
Over 375,000 gallons	N/A	N/A	1.4500
6" Meter (Residential and Commercial)			
First 800,000 gallons	1.0100	1.0313	N/A
Over 800,000 gallons	1.4500	1.4813	N/A
6" Meter (Residential and Commercial)			
First 670,000 gallons	N/A	N/A	1.0100
Over 670,000 gallons	N/A	N/A	1.4500
Irrigation (all meter sizes)			
All Usage	0.5500	0.6666	0.6666
Construction/Standpipe			
All Usage	1.4500	1.4813	1.4813

Pima Utility Company - Water Division
Docket No. W-02199A-16-0421
Test Year Ended December 31, 2015

Water Division
Rate Design Schedule JAC-2

Typical Bill Analysis
General Service 3/4-Inch Meter

Company Proposed	Gallons	Present Rates	Proposed Rates	Dollar Increase	Percent Increase
Average Usage	5,869	$ 12.12	$ 13.94	$ 1.83	15.06%
Median Usage	4,500	$ 10.74	$ 12.53	$ 1.80	16.73%
RUCO Recommended					
Average Usage	5,869	$ 12.12	$ 11.39	$ (0.73)	-6.04%
Median Usage	4,500	$ 10.74	$ 10.01	$ (0.73)	-6.82%

Present & Proposed Rates (Without Taxes)
General Service 3/4-Inch Meter

Gallons Consumption	Present Rates	Company Proposed Rates	% Increase	RUCO Recommended Rates	% Increase
-	$ 7.39	$ 9.09	23.00%	$ 6.36	-13.96%
1,000	8.10	9.82	21.25%	7.07	-12.74%
2,000	8.81	10.55	19.78%	7.78	-11.71%
3,000	9.52	11.29	18.53%	8.49	-10.84%
4,000	10.23	12.02	17.45%	9.50	-7.15%
5,000	11.24	13.05	16.07%	10.51	-6.51%
6,000	12.25	14.08	14.92%	11.52	-5.97%
7,000	13.26	15.11	13.94%	12.53	-5.52%
8,000	14.27	16.14	13.11%	13.54	-5.13%
9,000	15.28	17.17	12.38%	14.99	-1.91%
10,000	16.29	18.21	11.74%	16.44	0.91%
11,000	17.74	19.69	10.96%	17.89	0.83%
12,000	19.19	21.17	10.29%	19.34	0.77%
13,000	20.64	22.65	9.72%	20.79	0.72%
14,000	22.09	24.13	9.23%	22.24	0.67%
15,000	23.54	25.61	8.79%	23.69	0.63%
16,000	24.99	27.09	8.41%	25.14	0.59%
17,000	26.44	28.57	8.06%	26.59	0.56%
18,000	27.89	30.06	7.76%	28.04	0.53%
19,000	29.34	31.54	7.48%	29.49	0.50%
20,000	30.79	33.02	7.23%	30.94	0.48%
25,000	38.04	40.42	6.26%	38.19	0.39%
30,000	45.29	47.83	5.61%	45.44	0.33%
35,000	52.54	55.24	5.13%	52.69	0.28%
40,000	59.79	62.64	4.77%	59.94	0.25%
45,000	67.04	70.05	4.49%	67.19	0.22%
50,000	74.29	77.46	4.26%	74.44	0.20%
75,000	110.54	114.49	3.57%	110.69	0.13%
100,000	146.79	151.52	3.22%	146.94	0.10%

WASTEWATER SCHEDULES

TABLE OF CONTENTS TO JAC SCHEDULES

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY OCRB/FVRB COST	(B) RUCO OCRB/FVRB COST
1	Adjusted Original Cost/Fair Value Rate Base	$ 8,592,112	$ 9,194,592
2	Adjusted Operating Income (Loss)	$ 455,043	$ 837,526
3	Current Rate of Return (L2 / L1)	5.30%	9.11%
4	Required Operating Income (L5 X L1)	$ 728,370	$ 671,991
5	Required Rate of Return on Fair Value Rate Base	8.48%	7.31%
6	Operating Income Deficiency (L4 - L2)	$ 273,326	$ (165,535)
7	Gross Revenue Conversion Factor (TJC-1, Page 2)	1.3511	1.0000
8	Required Increase in Gross Revenue Requirement (L7 X L6)	$ 369,289	$ (165,535)
9	Adjusted Test Year Revenue	$ 3,412,382	$ 3,412,382
10	Proposed Annual Revenue (L8 + L9)	$ 3,781,671	$ 3,246,847
11	Required Percentage Increase in Revenue (L8 / L9)	10.82%	-4.85%
12	Rate of Return on Common Equity	11.20%	9.64%

RATE BASE - ORIGINAL COST

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED OCRB/FVRB	(B) RUCO OCRB/FVRB ADJUSTMENTS	(C) RUCO ADJ'TED OCRB/FVRB
1	Gross Utility Plant in Service	$ 25,011,061	$ -	$ 25,011,061
2				
3	**Less:**			
4	Accumulated Depreciation	(14,949,778)	653,153	(14,296,625)
5				
6	Net Utility Plant in Service (L1 less L4)	$ 10,061,283	$ 653,153	$ 10,714,437
7				
8	Advances in Aid of Construction	$ -	$ -	$ -
9				
10	Contributions in Aid of Construction (CIAC)	(1,261,344)	-	(1,261,344)
11	Accumulated Amortization of CIAC	888,415	-	888,415
12	Net CIAC (L10 less L11)	$ (372,929)	$ -	$ (372,929)
13				
14	Accumulated Deferred Income Taxes (ADIT)	(1,188,519)	-	(1,188,519)
15	Customer Deposits	-	-	-
16				
17	**Add:**			
18	Allowance for Working Capital	$ 92,277	$ (50,673)	$ 41,604
19				
20	Net Regulatory Asset / (Liability)	-	-	-
21				
22	Rounding	-	-	-
23	TOTAL RATE BASE (Sum L's 9, 10, 13, & 14 Thru 18)	$ 8,592,112	$ 602,480	$ 9,194,592

References:
Column (A): Company Schedule B-1
Column (B): Schedule JAC-3
Column (C): Column (A) + Column (B)

Pima Utility Company - Wastewater Division
Docket No. W-02199A-16-0421
Test Year Ended December 31, 2015

Wastewater Division
Direct Schedule JAC-3
Page 1 of 1

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED OCRB/FVRB	(B) ADJMT NO. 1 UPIS & A/D RECONSTRUCTION	(C) INTENTIONALLY LEFT BLANK	(D) INTENTIONALLY LEFT BLANK	(E) INTENTIONALLY LEFT BLANK	(F) INTENTIONALLY LEFT BLANK	(G) ADJMT NO. 2 WORKING CAPITAL	(H) RUCO ADJ'TED OCRB/FVRB
1	Gross Utility Plant in Service	$ 25,011,061	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,011,061
2									
3	**Less:**								
4	Accumulated Depreciation	(14,949,778)	653,153	-	-	-	-	-	(14,296,625)
5									
6	Net Utility Plant in Service (L1 less L4)	$ 10,061,283	$ 653,153	$ -	$ -	$ -	$ -	$ -	$ 10,714,437
7									
8	Advances in Aid of Construction	-	-	-	-	-	-	-	-
9									
10	Contributions in Aid of Construction (CIAC)	(1,261,344)	-	-	-	-	-	-	(1,261,344)
11	Accumulated Amortization of CIAC	888,415	-	-	-	-	-	-	888,415
12	Net CIAC (L10 less L11)	$ (372,929)	$ -	$ -	$ -	$ -	$ -	$ -	$ (372,929)
13									
14	Accumulated Deferred Income Taxes (ADIT)	(1,188,519)	-	-	-	-	-	-	(1,188,519)
15	Customer Deposits	-	-	-	-	-	-	-	-
16									
17	**Add:**								
18	Allowance for Working Capital	$ 92,277	$ -	$ -	$ -	$ -	$ -	$ (50,673)	$ 41,604
19									
20	Net Regulatory Asset / (Liability)	-	-	-	-	-	-	-	-
21									
22	Rounding	-	-	-	-	-	-	-	-
23	TOTAL RATE BASE (Sum L's 9, 10, 13, & 14 Thru 18	$ 8,592,112	$ 653,153	$ -	$ -	$ -	$ -	$ (50,673)	$ 9,194,592

References:
Column (A): Company Schedule B-2
Column (B): Adjustment No. 1 - Adjust Test-Year Plant & Accumulated Depreciation (See Schedule JAC-4.(b), Page 5, and JAC Direct Testimony)
Column (C): Intentionally Left Blank
Column (D): Intentionally Left Blank
Column (E): Intentionally Left Blank
Column (F): Intentionally Left Blank
Column (G): Adjustment No. 2 - Working Capital
Column (H): Sum of Columns (A), (B), (C), (D), (E), (F) & (G)

UTILITY PLANT IN SERVICE ("UPIS") & UPIS ACCUMULATED DEPRECIATION ADJUSTMENT NO. 1
DIRECT PLANT RECONSTRUCTION SCHEDULE
TEST YEAR ENDED DECEMBER 31, 2015

Line No.	NARUC Account No.	Description	Vintage Year	Previously Allowed Deprec. Rate	Allowed Deprec. Rate	Per Decision 73573 Company Plant at 12/31/2010	Per Decision 73573 Accum. Deprec. At 12/31/2010	Per Decision 73573 Company Net Plant at 12/31/2010	Year 2011 Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant	Annual Deprc. Going Forward	OK	2011 Fully Depreciated Accounts	2011 Non-Depreciable Accounts	=	2011 Total Fully or Non-Depreciable Accounts
		Direct Plant:																					
1	351	Organization Cost		0.00%	0.00%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	*	$ -	$ -		$ -
2	352	Franchise Cost		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
3	353	Land and Land Rights		0.00%	0.00%	91,528	-	91,528	-	-	-	-	-	-	91,528	-	91,528	-	*	-	91,528		91,528
4	354	Structures & Improvements		3.33%	3.33%	250,433	(84,144)	166,288	37,995	-	37,995	-	-	8,972	288,428	(93,116)	195,311	9,605	*	-	-		-
5	355	Power Generation Equipment		5.00%	5.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
6	360	Collection Sewers - Forced		2.00%	2.00%	97,523	(15,117)	82,406	-	-	-	-	-	1,950	97,523	(17,067)	80,456	1,950	*	-	-		-
7	361.1	Collection Sewers - Gravity		2.00%	2.00%	3,854,512	(1,206,261)	2,648,251	-	-	-	-	-	77,090	3,854,512	(1,283,352)	2,571,161	77,090	*	-	-		-
8	361.2	Manholes & Cleanouts		2.00%	2.00%	1,791,722	(529,549)	1,262,173	4,083	-	4,083	-	-	35,875	1,795,805	(565,425)	1,230,381	35,916		-	-		-
9	362	Special Collecting Structures		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
10	363	Services to Customers		2.00%	2.00%	632,249	(146,469)	485,780	3,456	-	3,456	-	-	12,680	635,705	(159,148)	476,556	12,714	*	-	-		-
11	364	Flow Measuring Devices		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-
12	365	Flow Measruring Installations		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
13	366	Reuse Services		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
14	367	Reuse Meters And Installation		8.33%	8.33%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
15	370	Receiving Wells		3.57%	3.33%	226,251	(126,073)	100,178	7,218	-	7,218	-	-	8,206	233,469	(134,279)	99,190	8,335	*	-	-		-
16	371.1	Pumping Equipment - Lift Stations		10.00%	12.50%	1,530,818	(1,223,056)	307,762	74,607	-	74,607	-	-	156,812	1,605,425	(1,379,868)	225,557	160,543	*	-	-		-
17	371.2	Other Pumping Equipment		10.00%	12.50%	103,441	(36,728)	66,713	-	-	-	-	-	10,344	103,441	(47,073)	56,369	10,344		-	-		-
18	371.3	Pumping Equipment - Recharge Wells		10.00%	12.50%	1,409,156	(1,121,882)	287,275	54,322	-	54,322	-	-	143,632	1,463,478	(1,265,513)	197,965	146,348		-	-		-
19	374	Reuse Distribution Reservoirs		2.50%	2.50%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
20	375	Reuse Trans. and Dist. System		2.00%	2.50%	134,184	(35,217)	98,967	-	-	-	-	-	2,684	134,184	(37,901)	96,283	2,684	*	-	-		-
21	380	Treatment & Disposal Equipment		5.00%	5.00%	9,897,283	(5,730,370)	4,166,914	293,574	-	293,574	-	-	502,204	10,190,858	(6,232,573)	3,958,284	509,543	*	-	-		-
22	381	Plant Sewers		5.00%	5.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
23	382	Outfall Sewer Lines		3.33%	3.33%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
24	389	Other Sewer Plant & Misc. Equipment		6.67%	6.67%	972,509	(585,769)	386,740	-	-	-	-	-	64,866	972,509	(650,635)	321,874	64,866	*	-	-		-
25	390	Office Furniture & Equipment		6.67%	6.67%	6,713	(1,422)	5,291	-	-	-	-	-	448	6,713	(1,869)	4,844	448	*	-	-		-
26	390.1	Computers and Software		20.00%	20.00%	11,823	(9,222)	2,601	-	-	-	-	-	2,365	11,823	(11,586)	236	2,365	*	-	-		-
27	391	Transportation Equipment		20.00%	20.00%	24,796	(24,351)	445	-	-	-	-	-	445	24,796	(24,796)	-	4,959	*	24,796	-		24,796
28	392	Stores Equipment		4.00%	4.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
29	393	Tools, Shop And Garage Equipment		10.00%	5.00%	114,967	(79,721)	35,245	5,622	(2,309)	3,313	-	-	11,662	118,279	(91,383)	26,896	11,828	*	-	-		-
30	394	Laboratory Equipment		10.00%	10.00%	1,993	(1,694)	299	-	-	-	-	-	199	1,993	(1,893)	100	199	*	-	-		-
31	395	Power Operated Equipment		5.00%	5.00%	-	1,016	1,016	-	-	-	-	-	-	-	1,016	1,016	-	*	-	-		-
32	396	Communication Equipment		10.00%	10.00%	170,929	(126,566)	44,363	-	2,309	2,309	-	-	17,208	173,238	(143,774)	29,464	17,324	*	-	-		-
33	397	Miscellaneous Equip.		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
34	398	Other Tangible Plant		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-		-
35		**RUCO Total Direct UPIS & Accum. Depre.**				$ 21,322,831	$(11,082,595)	$ 10,240,236	$ 480,876	$ -	$ 480,876	$ -	$ -	$ 1,057,642	$ 21,803,707	$ (12,140,237)	$ 9,663,470	$ 1,077,060		$ 24,796	$ 91,528	=	$ 116,324

Depreciable Plant	$ 21,712,179
Depreciation	$ 1,057,642
CIAC Amortization Rate	4.8712%

UTILITY PLANT IN SERVICE ("UPIS") & UPIS ACCUMULATED DEPRECIATION ADJUSTMENT NO. 1
DIRECT PLANT RECONSTRUCTION SCHEDULE
TEST YEAR ENDED DECEMBER 31, 2015

0.833333333	3.57%	0.5	226,251	7,986.66
			7,218	254.80
			-	-
0.166666667	3.33%	0.5	(11,163)	(197.03)
				8,044.43

Line No.	NARUC Account No.	Description	Vintage Year	Previously Allowed Deprec. Rate	Allowed Deprec. Rate	December 31, 2011: Company Plant at 12/31/2011	December 31, 2011: Accum. Deprec. At 12/31/2011	December 31, 2011: Company Net Plant at 12/31/2011	Year 2012: Plant Additions (Per Books)	Year 2012: Plant Adjustments	Year 2012: Adjusted Plant Additions	Year 2012: Plant Retirements	Year 2012: Salvage A/D Only	Year 2012: Depreciation (Calculated)	Year 2012: Plant Balance	Year 2012: Accum. Deprec.	Net Plant
		Direct Plant:															
1	351	Organization Cost		0.00%	0.00%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2	352	Franchise Cost		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-
3	353	Land & Land Rights		0.00%	0.00%	91,528	-	91,528	-	-	-	-	-	-	91,528	-	91,528
4	354	Structures & Improvements		3.33%	3.33%	288,428	(93,116)	195,311	4,879	29,627	34,506	-	-	10,179	322,934	(103,296)	219,638
5	355	Power Generation Equipment		5.00%	5.00%	-	-	-	-	38,086	38,086	-	-	952	38,086	(952)	37,133
6	360	Collection Sewers - Forced		2.00%	2.00%	97,523	(17,067)	80,456	-	-	-	-	-	1,950	97,523	(19,018)	78,505
7	361.1	Collection Sewers - Gravity		2.00%	2.00%	3,854,512	(1,283,352)	2,571,161	-	-	-	-	-	77,090	3,854,512	(1,360,442)	2,494,070
8	361.2	Manholes & Cleanouts		2.00%	2.00%	1,795,805	(565,425)	1,230,381		-	-	-	-	35,916	1,795,805	(601,341)	1,194,465
9	362	Special Collecting Structures		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-
10	363	Services to Customers		2.00%	2.00%	635,705	(159,148)	476,556	-	-	-	-	-	12,714	635,705	(171,862)	463,842
11	364	Flow Measuring Devices		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-
12	365	Flow Measruring Installations		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-
13	366	Reuse Services		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-
14	367	Reuse Meters And Installation		8.33%	8.33%	-	-	-	-	-	-	-	-	-	-	-	-
15	370	Receiving Wells		3.57%	3.33%	233,469	(134,279)	99,190	2,715	(2,715)	-	(11,163)	-	8,044	222,306	(131,160)	91,146
16	371.1	Effluent Pumping Equipment - Lift Stations		10.00%	12.50%	1,605,425	(1,379,868)	2,985,293	78,432	(67,713)	10,720	(42,373)	-	160,803	1,573,772	(1,498,299)	75,473
17	371.2	Other Pumping Equipment		10.00%	12.50%	103,441	(47,073)	150,514	2,881	2,715	5,596	-	-	11,067	109,038	(58,139)	50,898
18	371.3	Pumping Equipment - Recharge Wells		10.00%	12.50%	1,463,478	(1,265,513)	197,965	117,755	-	117,755	(65,476)	-	154,740	1,515,757	(1,354,777)	160,979
19	374	Reuse Distribution Reservoirs		2.50%	2.50%	-	-	-	-	-	-	-	-	-	-	-	-
20	375	Reuse Trans. and Dist. System		2.00%	2.50%	134,184	(37,901)	96,283	-	-	-	-	-	2,795	134,184	(40,696)	93,488
21	380	Treatment & Disposal Equipment		5.00%	5.00%	10,190,858	(6,232,573)	3,958,284	295,607	-	295,607	(255,374)	-	510,549	10,231,091	(6,487,748)	3,743,343
22	381	Plant Sewers		5.00%	5.00%	-	-	-	-	-	-	-	-	-	-	-	-
23	382	Outfall Sewer Lines		3.33%	3.33%	-	-	-	-	-	-	-	-	-	-	-	-
24	389	Other Sewer Plant & Misc. Equipment		6.67%	6.67%	972,509	(650,635)	321,874	-	-	-	-	-	64,866	972,509	(715,501)	257,008
25	390	Office Furniture & Equipment		6.67%	6.67%	6,713	(1,869)	4,844	-	-	-	-	-	448	6,713	(2,317)	4,396
26	390.1	Computers and Software		20.00%	20.00%	11,823	(11,586)	236	-	-	-	-	-	236	11,823	(11,823)	-
27	391	Transportation Equipment		20.00%	20.00%	24,796	(24,796)	-	-	-	-	(2,583)	-	(258)	22,213	(21,955)	258
28	392	Stores Equipment		4.00%	4.00%	-	-	-	-	-	-	-	-	-	-	-	-
29	393	Tools, Shop And Garage Equipment		10.00%	5.00%	118,279	(91,383)	26,896	-	-	-	(34,442)	-	9,264	83,837	(66,205)	17,632
30	394	Laboratory Equipment		10.00%	10.00%	1,993	(1,893)	100	-	-	-	-	-	100	1,993	(1,993)	-
31	395	Power Operated Equipment		5.00%	5.00%	-	1,016	1,016	-	-	-	-	-	-	-	1,016	1,016
32	396	Communication Equipment		10.00%	10.00%	173,238	(143,774)	29,464	3,302	-	3,302	(4,598)	-	17,259	171,943	(156,436)	15,507
33	397	Miscellaneous Equip.		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-
34	398	Other Tangible Plant		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-
35		**RUCO Total Direct UPIS & Accum. Depre.**				$ 21,803,707	$ (12,140,237)	$ 9,663,470	$ 505,572	$ 0	$ 505,572	$ (416,009)	$ -	$ 1,078,716	$ 21,893,271	$ (12,802,944)	$ 9,090,327

Line No.	Annual Depre. Going Forward	OK	2012: Fully Depreciated Accounts	2012: Non-Depreciable Accounts	=	2012: Total Fully or Non-Depreciable Accounts
1	$ -		$ -	$ -		$ -
2	-		-	-		-
3	-		-	91,528		91,528
4	10,754		-	-		-
5	1,904		-	-		-
6	1,950		-	-		-
7	77,090		-	-		-
8	35,916		-	-		-
9	-		-	-		-
10	12,714		-	-		-
11	-		-	-		-
12	-		-	-		-
13	-		-	-		-
14	-		-	-		-
15	7,403		-	-		-
16	196,722		1,530,818	-		1,530,818
17	13,630		-	-		-
18	189,470		1,409,156	-		1,409,156
19	-		-	-		-
20	3,355		-	-		-
21	511,555		-	-		-
22	-		-	-		-
23	-		-	-		-
24	64,866		-	-		-
25	448		-	-		-
26	2,365		11,823	-		11,823
27	4,443		24,796	-		24,796
28	-		-	-		-
29	4,192		-	-		-
30	199		1,993	-		1,993
31	-		-	-		-
32	17,194		-	-		-
33	-		-	-		-
34	-		-	-		-
35	$ 1,156,168		$ 2,978,586	$ 91,528		$ 3,070,114

Depreciable Plant	$	21,801,743
Depreciation	$	1,078,716
Rate		4.9478%

UTILITY PLANT IN SERVICE ("UPIS") & UPIS ACCUMULATED DEPRECIATION ADJUSTMENT NO. 1
DIRECT PLANT RECONSTRUCTION SCHEDULE
TEST YEAR ENDED DECEMBER 31, 2015

Line No.	NARUC Account No.	Description	Vintage Year	Previously Allowed Deprec. Rate	Allowed Deprec. Rate	December 31, 2012 Company Plant at 12/31/2012	December 31, 2012 Accum. Deprec. At 12/31/2012	December 31, 2012 Company Net Plant at 12/31/2012	Year 2013 Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant	Annual Depre. Going Forward	OK	2013 Fully Depreciated Accounts	2013 Non-Depreciable Accounts	2013 Total Fully or Non-Depreciable Accounts
	Direct Plant:																					
1	351	Organization Cost		0.00%	0.00%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -
2	352	Franchise Cost		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
3	353	Land & Land Rights		0.00%	0.00%	91,528	-	91,528	-	-	-	-	-	-	91,528	-	91,528	-		-	91,528	91,528
4	354	Structures & Improvements		3.33%	3.33%	322,934	(103,296)	219,638	1,620	-	1,620	-	-	10,781	324,554	(114,076)	210,477	10,808		-	-	-
5	355	Power Generation Equipment		5.00%	5.00%	38,086	(952)	37,133	-	-	-	-	-	1,904	38,086	(2,856)	35,229	1,904		-	-	-
6	360	Collection Sewers - Forced		2.00%	2.00%	97,523	(19,018)	78,505	-	-	-	-	-	1,950	97,523	(20,968)	76,555	1,950		-	-	-
7	361.1	Collection Sewers - Gravity		2.00%	2.00%	3,854,512	(1,360,442)	2,494,070	-	-	-	-	-	77,090	3,854,512	(1,437,532)	2,416,980	77,090		-	-	-
8	361.2	Manholes & Cleanouts		2.00%	2.00%	1,795,805	(601,341)	1,194,465	132,214	-	132,214	-	-	37,238	1,928,019	(638,579)	1,289,440	38,560		-	-	-
9	362	Special Collecting Structures		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
10	363	Services to Customers		2.00%	2.00%	635,705	(171,862)	463,842	-	-	-	-	-	12,714	635,705	(184,576)	451,128	12,714		-	-	-
11	364	Flow Measuring Devices		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
12	365	Flow Measruring Installations		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
13	366	Reuse Services		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
14	367	Reuse Meters And Installation		8.33%	8.33%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
15	370	Receiving Wells		3.57%	3.33%	222,306	(131,160)	91,146	-	-	-	-	-	7,403	222,306	(138,563)	83,743	7,403		-	-	-
16	371.1	Effluent Pumping Equipment - Lift Stations		10.00%	12.50%	1,573,772	(1,498,299)	75,473	24,023	-	24,023	(20,854)	-	5,567	1,576,942	(1,483,013)	93,929	197,118		1,530,818	-	1,530,818
17	371.2	Other Pumping Equipment		10.00%	12.50%	109,038	(58,139)	50,898	-	-	-	-	-	13,630	109,038	(71,769)	37,269	13,630		-	-	-
18	371.3	Pumping Equipment - Recharge Wells		10.00%	12.50%	1,515,757	(1,354,777)	160,979	63,090	1,097	64,187	(57,087)	-	13,769	1,522,857	(1,311,459)	211,398	190,357		1,409,156	-	1,409,156
19	374	Reuse Distribution Reservoirs		2.50%	2.50%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
20	375	Reuse Trans. and Dist. System		2.00%	2.50%	134,184	(40,696)	93,488	-	-	-	-	-	3,355	134,184	(44,051)	90,133	3,355		-	-	-
21	380	Treatment & Disposal Equipment		5.00%	5.00%	10,231,091	(6,487,748)	3,743,343	329,022	-	329,022	(194,532)	-	514,917	10,365,581	(6,808,133)	3,557,449	518,279		-	-	-
22	381	Plant Sewers		5.00%	5.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
23	382	Outfall Sewer Lines		3.33%	3.33%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
24	389	Other Sewer Plant & Misc. Equipment		6.67%	6.67%	972,509	(715,501)	257,008	-	-	-	-	-	64,866	972,509	(780,368)	192,141	64,866		-	-	-
25	390	Office Furniture & Equipment		6.67%	6.67%	6,713	(2,317)	4,396	2,440	-	2,440	-	-	529	9,154	(2,846)	6,307	611		-	-	-
26	390.1	Computers and Software		20.00%	20.00%	11,823	(11,823)	-	2,232	-	2,232	-	-	223	14,055	(12,046)	2,009	2,811		11,823	-	11,823
27	391	Transportation Equipment		20.00%	20.00%	22,213	(21,955)	258	19,428	-	19,428	-	-	1,426	41,640	(23,381)	18,260	8,328		24,796	-	24,796
28	392	Stores Equipment		4.00%	4.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
29	393	Tools, Shop And Garage Equipment		10.00%	5.00%	83,837	(66,205)	17,632	25,986	-	25,986	(2,432)	-	4,781	107,391	(68,554)	38,838	5,370		-	-	-
30	394	Laboratory Equipment		10.00%	10.00%	1,993	(1,993)	-	-	-	-	-	-	-	1,993	(1,993)	-	199		1,993	-	1,993
31	395	Power Operated Equipment		5.00%	5.00%	-	1,016	1,016	-	-	-	-	-	-	-	1,016	1,016	-		-	-	-
32	396	Communication Equipment		10.00%	10.00%	171,943	(156,436)	15,507	4,974	-	4,974	-	-	10,527	176,917	(166,963)	9,954	17,692		170,929	-	170,929
33	397	Miscellaneous Equip.		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
34	398	Other Tangible Plant		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
35		**RUCO Total Direct UPIS & Accum. Depre.**				$ 21,893,271	$ (12,802,944)	$ 9,090,327	$ 605,030	$ 1,097	$ 606,127	$ (274,904)	$ -	$ 782,671	$ 22,224,494	$ (13,310,710)	$ 8,913,784	$ 1,173,045		$ 3,149,515	$ 91,528	$ 3,241,043

Depreciable Plant	$ 22,132,965
Depreciation	$ 782,671
Rate	3.54%

UTILITY PLANT IN SERVICE ("UPIS") & UPIS ACCUMULATED DEPRECIATION ADJUSTMENT NO. 1
DIRECT PLANT RECONSTRUCTION SCHEDULE
TEST YEAR ENDED DECEMBER 31, 2015

						December 31, 2013			Year 2014										2014			
Line No.	NARUC Account No.	Description	Vintage Year	Previously Allowed Deprec. Rate	Allowed Deprec. Rate	Company Plant at 12/31/2013	Accum. Deprec. At 12/31/2013	Company Net Plant at 12/31/2013	Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant	Annual Deprec. Going Forward	OK	Fully Depreciated Accounts	Non-Depreciable Accounts	Total Fully or Non-Depreciable Accounts
	Direct Plant:																					
1	351	Organization Cost		0.00%	0.00%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -
2	352	Franchise Cost		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
3	353	Land & Land Rights		0.00%	0.00%	91,528	-	91,528	-	-	-	-	-	-	91,528	-	91,528	-		-	91,528	91,528
4	354	Structures & Improvements		3.33%	3.33%	324,554	(114,076)	210,477	29,640	-	29,640	-	-	11,301	354,193	(125,377)	228,816	11,795		-	-	-
5	355	Power Generation Equipment		5.00%	5.00%	38,086	(2,856)	35,229	-	-	-	-	-	1,904	38,086	(4,761)	33,325	1,904		-	-	-
6	360	Collection Sewers - Forced		2.00%	2.00%	97,523	(20,968)	76,555	-	-	-	-	-	1,950	97,523	(22,919)	74,604	1,950		-	-	-
7	361.1	Collection Sewers - Gravity		2.00%	2.00%	3,854,512	(1,437,532)	2,416,980	-	-	-	-	-	77,090	3,854,512	(1,514,622)	2,339,890	77,090		-	-	-
8	361.2	Manholes & Cleanouts		2.00%	2.00%	1,928,019	(638,579)	1,289,440	-	-	-	-	-	38,560	1,928,019	(677,139)	1,250,880	38,560		-	-	-
9	362	Special Collecting Structures		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
10	363	Services to Customers		2.00%	2.00%	635,705	(184,576)	451,128	8,701	-	8,701	-	-	12,801	644,405	(197,377)	447,028	12,888		-	-	-
11	364	Flow Measuring Devices		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
12	365	Flow Measruring Installations		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
13	366	Reuse Services		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
14	367	Reuse Meters And Installation		8.33%	8.33%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
15	370	Receiving Wells		3.57%	3.33%	222,306	(138,563)	83,743	-	-	-	-	-	7,403	222,306	(145,966)	76,340	7,403		-	-	-
16	371.1	Pumping Equipment - Lift Stations		10.00%	12.50%	1,576,942	(1,483,013)	93,929	(18,605)	18,605	-	(97,777)	-	(346)	1,479,164	(1,384,890)	94,275	184,896		1,530,818	-	1,530,818
17	371.2	Other Pumping Equipment		10.00%	12.50%	109,038	(71,769)	37,269	-	5,108	5,108	-	-	13,949	114,145	(85,718)	28,427	14,268		-	-	-
18	371.3	Pumping Equipment - Recharge Wells		10.00%	12.50%	1,522,857	(1,311,459)	211,398	103,844	(9,478)	94,366	(67,639)	-	15,883	1,549,584	(1,259,703)	289,881	193,698		1,409,156	-	1,409,156
19	374	Reuse Distribution Reservoirs		2.50%	2.50%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
20	375	Reuse Trans. and Dist. System		2.00%	2.50%	134,184	(44,051)	90,133	4,533	-	4,533	(1,250)	-	3,396	137,467	(46,196)	91,270	3,437		-	-	-
21	380	Treatment & Disposal Equipment		5.00%	5.00%	10,365,581	(6,808,133)	3,557,449	142,827	4,371	147,197	(76,305)	-	520,051	10,436,474	(7,251,879)	3,184,594	521,824		-	-	-
22	381	Plant Sewers		5.00%	5.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
23	382	Outfall Sewer Lines		3.33%	3.33%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
24	389	Other Sewer Plant & Misc. Equipment		6.67%	6.67%	972,509	(780,368)	192,141	2,933	-	2,933	-	-	64,964	975,442	(845,332)	130,111	65,062		-	-	-
25	390	Office Furniture & Equipment		6.67%	6.67%	9,154	(2,846)	6,307	-	-	-	-	-	611	9,154	(3,457)	5,697	611		-	-	-
26	390.1	Computers and Software		20.00%	20.00%	14,055	(12,046)	2,009	1,460	-	1,460	-	-	592	15,515	(12,638)	2,876	3,103		11,823	-	11,823
27	391	Transportation Equipment		20.00%	20.00%	41,640	(23,381)	18,260	-	-	-	-	-	3,369	41,640	(26,750)	14,891	8,328		24,796	-	24,796
28	392	Stores Equipment		4.00%	4.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
29	393	Tools, Shop And Garage Equipment		10.00%	5.00%	107,391	(68,554)	38,838	3,901	-	3,901	-	-	5,467	111,292	(74,021)	37,272	5,565		-	-	-
30	394	Laboratory Equipment		10.00%	10.00%	1,993	(1,993)	-	4,096	-	4,096	-	-	205	6,089	(2,198)	3,892	609		1,993	-	1,993
31	395	Power Operated Equipment		5.00%	5.00%	-	1,016	1,016	-	-	-	-	-	-	-	1,016	1,016	-		-	-	-
32	396	Communication Equipment		10.00%	10.00%	176,917	(166,963)	9,954	-	-	-	-	-	599	176,917	(167,562)	9,355	17,692		170,929	-	170,929
33	397	Miscellaneous Equip.		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
34	398	Other Tangible Plant		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
35		**RUCO Total Direct UPIS & Accum. Depre.**				$ 22,224,494	$ (13,310,710)	$ 8,913,784	$ 283,329	$ 18,605	$ 301,935	$ (242,972)	$ -	$ 779,750	$ 22,283,457	$ (13,847,489)	$ 8,435,968	$ 1,170,682		$ 3,149,515	$ 91,528	$ 3,241,043

Depreciable Plant	$ 22,191,929
Depreciation	$ 779,750
Rate	3.51%

UTILITY PLANT IN SERVICE ("UPIS") & UPIS ACCUMULATED DEPRECIATION ADJUSTMENT NO. 1
DIRECT PLANT RECONSTRUCTION SCHEDULE
TEST YEAR ENDED DECEMBER 31, 2015

Line No.	NARUC Account No.	Description	Vintage Year	Previously Allowed Deprec. Rate	Allowed Deprec. Rate	December 31, 2014 Company Plant at 12/31/2014	December 31, 2014 Accum. Deprec. At 12/31/2014	December 31, 2014 Company Net Plant at 12/31/2014	Test Year End December 31, 2015 Plant Additions (Per Books)	Plant Adjustments	Adjusted Plant Additions	Plant Retirements	Salvage A/D Only	Depreciation (Calculated)	Plant Balance	Accum. Deprec.	Net Plant	Annual Deprec. Going Forward	OK	2015 Fully Depreciated Accounts	2015 Non-Depreciable Accounts	2015 Total Fully or Non-Depreciable Accounts
	Direct Plant:																					
1	351	Organization Cost		0.00%	0.00%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -
2	352	Franchise Cost		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
3	353	Land & Land Rights		0.00%	0.00%	91,528	-	91,528	-	-	-	-	-	-	91,528	-	91,528	-		-	91,528	91,528
4	354	Structures & Improvements		3.33%	3.33%	354,193	(125,377)	228,816	84,757	2,880	87,637	-	-	13,254	441,830	(138,631)	303,199	14,713		-	-	-
5	355	Power Generation Equipment		5.00%	5.00%	38,086	(4,761)	33,325	100,000	1,219	101,219	(1,200)	-	4,405	138,104	(7,965)	130,139	6,905		-	-	-
6	360	Collection Sewers - Forced		2.00%	2.00%	97,523	(22,919)	74,604	1,652,229	(2,880)	1,649,349	-	-	18,444	1,746,872	(41,363)	1,705,509	34,937		-	-	-
7	361.1	Collection Sewers - Gravity		2.00%	2.00%	3,854,512	(1,514,622)	2,339,890	-	-	-	(79,363)	-	76,297	3,775,149	(1,511,556)	2,263,593	75,503		-	-	-
8	361.2	Manholes & Cleanouts		2.00%	2.00%	1,928,019	(677,139)	1,250,880	10,192	-	10,192	-	-	38,662	1,938,211	(715,802)	1,222,410	38,764		-	-	-
9	362	Special Collecting Structures		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
10	363	Services to Customers		2.00%	2.00%	644,405	(197,377)	447,028	16,380	-	16,380	-	-	13,052	660,785	(210,429)	450,355	13,216		-	-	-
11	364	Flow Measuring Devices		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
12	365	Flow Measruring Installations		10.00%	10.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
13	366	Reuse Services		2.00%	2.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
14	367	Reuse Meters And Installation		8.33%	8.33%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
15	370	Receiving Wells		3.57%	3.33%	222,306	(145,966)	76,340	478,418	(26,898)	451,520	-	-	14,921	673,826	(160,886)	512,939	22,438		-	-	-
16	371.1	Pumping Equipment - Lift Stations		10.00%	12.50%	1,479,164	(1,384,890)	94,275	516,240	(1,219)	515,021	(98,724)	-	19,562	1,895,461	(1,305,727)	589,734	236,933		1,530,818	-	1,530,818
17	371.2	Other Pumping Equipment		10.00%	12.50%	114,145	(85,718)	28,427	-	-	-	-	-	14,268	114,145	(99,986)	14,159	14,268		-	-	-
18	371.3	Pumping Equipment - Recharge Wells		10.00%	12.50%	1,549,584	(1,259,703)	289,881	35,177	26,898	62,075	(23,948)	-	19,936	1,587,711	(1,255,691)	332,020	198,464		1,409,156	-	1,409,156
19	374	Reuse Distribution Reservoirs		2.50%	2.50%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
20	375	Reuse Trans. and Dist. System		2.00%	2.50%	137,467	(46,196)	91,270	18,588	(18,588)	-	-	-	3,437	137,467	(49,633)	87,834	3,437		-	-	-
21	380	Treatment & Disposal Equipment		5.00%	5.00%	10,436,474	(7,251,879)	3,184,594	175,123	23,482	198,605	(175,847)	-	522,393	10,459,232	(7,598,426)	2,860,807	522,962		-	-	-
22	381	Plant Sewers		5.00%	5.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
23	382	Outfall Sewer Lines		3.33%	3.33%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
24	389	Other Sewer Plant & Misc. Equipment		6.67%	6.67%	975,442	(845,332)	130,111	10,025	(4,894)	5,131	-	-	65,233	980,573	(910,565)	70,008	65,404		-	-	-
25	390	Office Furniture & Equipment		6.67%	6.67%	9,154	(3,457)	5,697	-	-	-	-	-	611	9,154	(4,067)	5,086	611		-	-	-
26	390.1	Computers and Software		20.00%	20.00%	15,515	(12,638)	2,876	1,678	-	1,678	(730)	-	833	16,463	(12,742)	3,721	3,293		11,823	-	11,823
27	391	Transportation Equipment		20.00%	20.00%	41,640	(26,750)	14,891	-	-	-	-	-	3,369	41,640	(30,118)	11,522	8,328		24,796	-	24,796
28	392	Stores Equipment		4.00%	4.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
29	393	Tools, Shop And Garage Equipment		10.00%	5.00%	111,292	(74,021)	37,272	2,127	-	2,127	(1,447)	-	1,547	111,972	(74,120)	37,852	5,599		114,967	-	114,967
30	394	Laboratory Equipment		10.00%	10.00%	6,089	(2,196)	3,892	1,213	-	1,213	-	-	470	7,302	(2,668)	4,634	730		1,993	-	1,993
31	395	Power Operated Equipment		5.00%	5.00%	-	1,016	1,016	-	-	-	-	-	-	-	1,016	1,016	-		-	-	-
32	396	Communication Equipment		10.00%	10.00%	176,917	(167,562)	9,355	7,381	-	7,381	(1,232)	-	906	183,066	(167,236)	15,830	18,307		170,929	-	170,929
33	397	Miscellaneous Equip.		10.00%	10.00%	-	-	-	570	-	570	-	-	28	570	(28)	541	57		-	-	-
34	398	Other Tangible Plant		0.00%	0.00%	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-
35		**RUCO Total Direct UPIS & Accum. Depre.**				$ 22,283,457	$ (13,847,489)	$ 8,435,968	$ 3,110,096	$ (0)	$ 3,110,096	$ (382,491)	$ -	$ 831,627	$ 25,011,061	$ (14,296,625)	$ 10,714,437	$ 1,284,868		$ 3,264,481	$ 91,528	$ 3,356,010
36		Company UPIS & Accum. Depre. As Filed													25,011,061	(14,949,778)						
37		RUCO UPIS & Accum. Depre. Adjustments													$ -	$ 653,153						

Depreciable Plant	$ 24,919,533
Depreciation	$ 831,627
Rate	3.34%

				Company A/D	RUCO A/D	A/D Overstatement
371.1	Pumping Equipment - Lift Stations	10.00%	12.50%	(1,591,354)	(1,305,727)	285,627
371.3	Pumping Equipment - Recharge Wells	10.00%	12.50%	(1,587,711)	(1,255,691)	332,020
390	Office Furniture & Equipment	6.67%	6.67%	(16,464)	(12,742)	3,722
390.1	Computers and Software	20.00%	20.00%	(41,640)	(30,118)	11,522
393	Tools, Shop And Garage Equipment	10.00%	5.00%	(78,155)	(74,120)	4,035
394	Laboratory Equipment	10.00%	10.00%	(3,066)	(2,668)	398
396	Communication Equipment	10.00%	10.00%	(183,066)	(167,236)	15,830
				(3,501,456)	(2,848,303)	653,153

RUCO RATE BASE ADJUSTMENT # 2
CASH WORKING CAPITAL

Line No.	Description	[A] Company Adjusted Test Year As Filed	[B] RUCO Expense Adjustments	[C] RUCO Recommended Expense	[D] Revenue Lag Days	[E] Expense (Lead) / Lag Days	[F] Net (Lead) / Lag Days ([D] - [E])	[G] (Lead) / Lag Factor [F] / 365	[H] Cash Working Capital Requirement ([C] x [G])
1	Salaries and Wages	$ 586,136	$ -	$ 586,136	41.00	13.00	28.00	0.07671	$ 44,964
2	Employee Pensions and Benefits	78,458	(48,315)	30,143	41.00	18.00	23.00	0.06301	1,899
3	Purchased Water	139,495	(1,662)	137,833	41.00	-	41.00	0.11233	15,483
4	Purchased Power	149,692	-	149,692	41.00	51.74	(10.74)	(0.02942)	(4,405)
5	Chemicals	107,881	-	107,881	41.00	12.11	28.89	0.07915	8,539
6	Repairs and Maintenance	176,709	-	176,709	41.00	22.35	18.65	0.05110	9,029
7	Office Supplies and Expense	76,710	-	76,710	41.00	16.02	24.98	0.06844	5,250
8	Contractual Services - Engineering	3,534	-	3,534	41.00	29.33	11.67	0.03197	113
9	Contractual Services - Accounting	4,148	-	4,148	41.00	24.00	17.00	0.04658	193
10	Contractual Services - Legal	3,404	-	3,404	41.00	96.02	(55.02)	(0.15074)	(513)
11	Contractual Services - Other	108,299	(10,522)	97,777	41.00	14.11	26.89	0.07367	7,203
12	Contractual Services - Water Testing	19,670	-	19,670	41.00	(22.42)	63.42	0.17375	3,418
13	Rents	7,339	-	7,339	41.00	(3.83)	44.83	0.12282	901
14	Transportation Expense	27,038	-	27,038	41.00	39.26	1.74	0.00477	129
15	Insurance - Vehicle	3,524	-	3,524	41.00	(182.50)	223.50	0.61233	2,158
16	Insurance - General Liability	48,767	-	48,767	41.00	(182.50)	-	-	-
17	Insurance - Health & Life	799	-	799	41.00	18.00	23.00	0.06301	50
18	Miscellaneous Expense	24,725	-	24,725	41.00	-37.27	78.27	0.21444	5,302
19	TAXES								
20	Taxes Other than Income	58,058	-	58,058	41.00	5.91	35.09	0.09614	5,581
21	General Taxes-Property[1]	178,073	(2,677)	175,397	41.00	214.29	(173.29)	(0.47477)	(83,273)
22	Income Tax[1]	197,670	(197,670)	-	41.00	37.00	4.00	0.01096	-
23	INTEREST								
24	Interest on Long-Term Debt	-	271,860	271,860	41.00	14.71	26.29	0.07203	19,583
25	TOTAL CASH WORKING CAPITAL EXPENSES	2,000,128	11,013	2,011,141					
26	**RUCO Recommended Cash Working Capital**								**$ 41,604**
27	**Company Proposed Cash Working Capital**								**$ 92,277**
28	**RUCO Cash Working Capital Adjustment**								**$ (50,673)**

[1] At Proposed Rates

OPERATING INCOME

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO TEST YEAR ADJM'TS	(C) RUCO TEST YEAR AS ADJ'TED	(D) RUCO PROP'D CHANGES	(E) RUCO AS RECOMM'D
1	**Revenues:**					
2	Flat Rate Revenues	$ 3,286,947	$ -	$ 3,286,947	$ (165,535)	$ 3,121,412
3	Metered Revenues	105,384	-	105,384	-	105,384
4	Other Revenues	20,050	-	20,050	-	20,050
5	Total Sewer Revenues	$ 3,412,382	$ -	$ 3,412,382	$ (165,535)	$ 3,246,847
6						
7	**Operating Expenses:**					
8	Salaries and Wages	$ 586,136	$ -	$ 586,136	$ -	$ 586,136
9	Salaries and Wages - Off. And Dir.	78,458	(48,315)	30,143	-	30,143
10	Employee Pensions and Benefits	139,603	(1,662)	137,940	-	137,940
11	Purchased Power	149,734	-	149,734	-	149,734
12	Chemicals	107,964	-	107,964	-	107,964
13	Materials and Supplies	176,709	-	176,709	-	176,709
14	Office Supplies and Expense	76,726	-	76,726	-	76,726
15	Contractual Services - Engineering	3,534	-	3,534	-	3,534
16	Contractual Services - Accounting	4,148	-	4,148	-	4,148
17	Contractual Services - Legal	3,404	-	3,404	-	3,404
18	Contractual Services - Other	108,299	(10,522)	97,777	-	97,777
19	Contractual Services - Water Testing	19,670	-	19,670	-	19,670
20	Rents - Equipment	7,339	-	7,339	-	7,339
21	Transportation Expenses	27,038	-	27,038	-	27,038
22	Insurance - Vehicle	3,524	-	3,524	-	3,524
23	Insurance - General Liability	48,767	-	48,767	-	48,767
24	Insurance - Worker's Comp	799	-	799	-	799
25	Reg. Comm. Exp.	-	-	-	-	-
26	Reg. Comm. Exp. - Rate Case	35,000	(35,000)	-	-	-
27	Bad Debt Expense	8,816	-	8,816	-	8,816
28	Miscellaneous Expense	24,725	-	24,725	-	24,725
29	Depreciation Expense	911,901	(111,628)	800,274	-	800,274
30	Amortization of Deferred Operating Costs	97,191	(64,839)	32,352	-	32,352
31	Taxes Other Than Income	58,058	-	58,058	-	58,058
32	Property Taxes	171,957	(2,677)	169,280	(2,742)	166,538
33	Income Tax	107,839	(107,839)	-	-	-
34						
35	**Total Operating Expenses**	$ 2,957,338	$ (382,483)	$ 2,574,855	$ (2,742)	$ 2,572,114
36						
37	**Operating Income**	$ 455,043	$ 382,483	$ 837,526	$ (162,793)	$ 674,733

References:
Column (A): Company Schedule C-1
Column (B): JAC-7, Columns (B) Thru (I)
Column (C): Column (A) + Column (B)
Column (D): JAC-7, Columns B Thru K
Column (E): Column (C) + Column (D)

Pima Utility Company - Wastewater Division
Docket No. W-02199A-16-0421
Test Year Ended December 31, 2015

Wastewater Division
Direct Schedule JAC-7
Page 1 of 1

SUMMARY OF OPERATING INCOME ADJUSTMENTS
TEST YEAR AS FILED AND ADJUSTMENTS

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) ADJMT NO. 1 DEPRECIATION EXPENSE	(C) ADJMT NO. 2 PROPERTY TAX EXPENSE	(D) ADJMT NO. 3 SALARY/WAGE EXPENSE	(E) ADJMT NO. 4 EMPLOYEE BENEFITS AND PENSIONS	(F) ADJMT NO. 5 RATE CASE EXPENSE	(G) ADJMT NO. 6 CONTRACTUAL SERVICES - OTHER	(H) ADJMT NO. 7 DEFERRED OPER. EXPENSE	(I) INTENTIONALLY LEFT BLANK	(J) INTENTIONALLY LEFT BLANK	(K) ADJMT NO. 8 INCOME TAXES	(L) RUCO AS ADJ'TD
1	**Revenues:**												
2	Flat Rate Revenues	$ 3,286,947	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,286,947
3	Metered Revenues	105,384	-	-	-	-	-	-	-	-	-	-	105,384
4	Other Revenues	20,050	-	-	-	-	-	-	-	-	-	-	20,050
5	Total Sewer Revenues	$ 3,412,382	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,412,382
6													
7	**Operating Expenses:**												
8	Salaries and Wages	$ 586,136	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 586,136
9	Salaries and Wages - Off. And Dir.	78,458	-	-	(48,315)	-	-	-	-	-	-	-	30,143
10	Employee Pensions and Benefits	139,603	-	-	-	(1,662)	-	-	-	-	-	-	137,940
11	Purchased Power	149,734	-	-	-	-	-	-	-	-	-	-	149,734
12	Chemicals	107,964	-	-	-	-	-	-	-	-	-	-	107,964
13	Materials and Supplies	176,709	-	-	-	-	-	-	-	-	-	-	176,709
14	Office Supplies and Expense	76,726	-	-	-	-	-	-	-	-	-	-	76,726
15	Contractual Services - Engineering	3,534	-	-	-	-	-	-	-	-	-	-	3,534
16	Contractual Services - Accounting	4,148	-	-	-	-	-	-	-	-	-	-	4,148
17	Contractual Services - Legal	3,404	-	-	-	-	-	-	-	-	-	-	3,404
18	Contractual Services - Other	108,299	-	-	-	-	-	(10,522)	-	-	-	-	97,777
19	Contractual Services - Water Testing	19,670	-	-	-	-	-	-	-	-	-	-	19,670
20	Rents - Equipment	7,339	-	-	-	-	-	-	-	-	-	-	7,339
21	Transportation Expenses	27,038	-	-	-	-	-	-	-	-	-	-	27,038
22	Insurance - Vehicle	3,524	-	-	-	-	-	-	-	-	-	-	3,524
23	Insurance - General Liability	48,767	-	-	-	-	-	-	-	-	-	-	48,767
24	Insurance - Worker's Comp	799	-	-	-	-	-	-	-	-	-	-	799
25	Reg. Comm. Exp.	-	-	-	-	-	-	-	-	-	-	-	-
26	Reg. Comm. Exp. - Rate Case	35,000	-	-	-	-	(35,000)	-	-	-	-	-	-
27	Bad Debt Expense	8,816	-	-	-	-	-	-	-	-	-	-	8,816
28	Miscellaneous Expense	24,725	-	-	-	-	-	-	-	-	-	-	24,725
29	Depreciation Expense	911,901	(111,628)	-	-	-	-	-	-	-	-	-	800,274
30	Amortization of Deferred Operating Costs	97,191	-	-	-	-	-	-	(64,839)	-	-	-	32,352
31	Taxes Other Than Income	58,058	-	-	-	-	-	-	-	-	-	-	58,058
32	Property Taxes	171,957	-	(2,677)	-	-	-	-	-	-	-	-	169,280
33	Income Tax	107,839	-	-	-	-	-	-	-	-	-	(107,839)	-
34													
35	**Total Operating Expenses**	$ 2,957,338	$ (111,628)	$ (2,677)	$ (48,315)	$ (1,662)	$ (35,000)	$ (10,522)	$ (64,839)	$ -	$ -	$ (107,839)	$ 2,574,855
36													
37	**Operating Income**	$ 455,043	$ 111,628	$ 2,677	$ 48,315	$ 1,662	$ 35,000	$ 10,522	$ 64,839	$ -	$ -	$ 107,839	$ 837,526

ADJUSTMENTS:	REFERENCE:
1 - Depreciation Expense	JAC Testimony and Schedule JAC-8, Page 1 of 1
2 - Property Tax Expense	JAC Testimony and Schedule JAC-9, Page 1 of 1
3 - Salaries and Wages - Officer and Director	JAC Testimony and Schedule JAC-10, Page 1 of 1
4 - Employee Pensions and Benefits	JAC Testimony and Schedule JAC-11, Page 1 of 1
5 - Rate Case Expense	JAC Testimony and Schedule JAC-12, Page 1 of 1
6 - Contractual Services - Other	JAC Testimony and Schedule JAC-13, Page 1 of 1
7 - Deferred Operating Expenses	JAC Testimony and Schedule JAC-14, Page 1 of 1
Intentionally Left Blank	N/A
Intentionally Left Blank	N/A
8 - Income Tax Expense	JAC Testimony and Schedule JAC-15, Page 1 of 1

RUCO OPERATING INCOME ADJUSTMENT # 1
DEPRECIATION EXPENSE

Line No.	NARUC Account	Description	[A] Company As Filed	[B] RUCO Non-Depreciable or Adjusted Balances	[C] RUCO Depreciable UPIS Recommended	[D] Proposed Depreciation Rate	[E] RUCO Depreciation Expense Recommended
		#REF!					
1	351	Organization Cost	$ -	$ -	$ -	0.00%	$ -
2	352	Franchise Cost	-	-	-	0.00%	-
3	353	Land and Land Rights	91,528	(91,528)	-	0.00%	-
4	354	Structures & Improvements	441,830	-	441,830	3.33%	14,713
5	355	Power Generation Equipment	138,104	-	138,104	5.00%	6,905
6	360	Collection Sewers - Force	1,746,872	-	1,746,872	2.00%	34,937
7	361.1	Collection Sewers - Gravity	3,775,149	-	3,775,149	2.00%	75,503
8	361.2	Manholes & Cleanouts	1,938,211	-	1,938,211	2.00%	38,764
9	362	Special Collecting Structures	-	-	-	2.00%	-
10	363	Services to Customers	660,785	-	660,785	2.00%	13,216
11	364	Flow Measuring Devices	-	-	-	10.00%	-
12	365	Flow Measuring Installations	-	-	-	10.00%	-
13	366	Reuse Services	-	-	-	2.00%	-
14	367	Reuse Meters and Meter Installations	-	-	-	8.33%	-
15	370	Receiving Wells	673,826	-	673,826	3.57%	24,056
16	371.1	Pumping Equipment - Lift Stations	1,895,461	(1,530,818)	364,643	6.67%	24,322
17	371.2	Other Pumping Equipment	114,145	-	114,145	6.67%	7,613
18	371.3	Pumping Equipment - Recharge Wells	1,587,711	(1,409,156)	178,554	6.67%	11,910
19	374	Reuse Distribution Reserviors	-	-	-	2.50%	-
20	375	Reuse Transmission and Distribution	137,467	-	137,467	2.00%	2,749
21	380	Treatment & Disposal Equipment	10,459,232	-	10,459,232	5.00%	522,962
22	381	Plant Sewers	-	-	-	5.00%	-
23	382	Outfall Sewer Lines	-	-	-	3.33%	-
24	389	Other Plant & Misc Equipment	980,573	-	980,573	6.67%	65,404
25	390	Office Furniture & Equipment	9,154	-	9,154	6.67%	611
26	390.1	Computers & Software	16,463	(11,823)	4,640	20.00%	928
27	391	Transportation Equipment	41,640	(24,796)	16,844	20.00%	3,369
28	392	Stores Equipment	-	-	-	4.00%	-
29	393	Tools, Shop & Garage Equipment	111,972	(111,972)	-	10.00%	-
30	394	Laboratory Equipment	7,302	(1,993)	5,309	10.00%	531
31	395	Power Operated Equipment	-	-	-	5.00%	-
32	396	Communication Equipment	183,066	(170,929)	12,137	10.00%	1,214
33	397	Miscellaneous Equipment	570	-	570	10.00%	57
34	398	Other Tangible Plant	-	-		10.00%	
35		Post in Service AFUDC	-	-		4.52%	
36		Totals	$ 25,011,061	$ (3,353,015)	$ 21,658,046		849,763
					Gross CIAC	CIAC Amortization Rate	
37		Less: Contributions-in-Aid-of-Construction (CIAC) Amortizations			$ (1,261,344)	3.9235%	$ (49,489)
38		RUCO Total Depreciation Expense					800,274
39		Company Adjusted Depreciation Expense As Filed					911,901
40		RUCO Increase/(Decrease) Expense Adjustment					$ (111,628)

References:
Company B-2 and C-1 Schedules, and RUCO Schedule JAC-4, page 1

RUCO OPERATING INCOME ADJUSTMENT # 2
PROPERTY TAXES

LINE NO.	Property Tax Calculation	(A) RUCO AS ADJUSTED	(B) RUCO RECOMMENDED
1	RUCO Adjusted Test Year Revenues - 2015	$ 3,412,382	$ 3,412,382
2	Multiplied by 2	2	2
3	Subtotal (Line 1 * Line 2)	$ 6,824,763	$ 6,824,763
4a	RUCO Adjusted Test Year Revenues - 2015	3,412,382	
4b	RUCO Recommended Revenue, Per Schedule JAC-6		3,246,847
5	Subtotal (Line 4 + Line 5)	$ 10,237,145	$ 10,071,610
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	$ 3,412,382	$ 3,357,203
8	Department of Revenue Mutilplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	$ 6,824,763	$ 6,714,406
10	Plus: 10% of CWIP - 2010	-	-
11	Less: Net Book Value of Licensed Vehicles	11,522	11,522
12	Full Cash Value (Line 9 + Line 10 - Line 11)	$ 6,813,241	$ 6,702,884
13	Assessment Ratio	18.0%	18.0%
14	Assessment Value (Line 12 * Line 13)	$ 1,226,383	$ 1,206,519
15	Composite Property Tax Rate (Per Company Schedule C-2, Page 3, Line 15)	13.8032%	13.8032%
16	RUCO Proposed Property Tax Expense (Line 14 * Line 15)	$ 169,280	
17	Company Proposed Property Tax	171,957	
18	RUCO Test Year Adjustment (Line 16-Line 17)	$ (2,677)	
19	Property Tax - RUCO Recommended Revenue (Line 14 * Line 15)		$ 166,538
20	RUCO Test Year Adjusted Property Tax Expense (Line 16)		169,280
21	Increase/(Decrease) to Property Tax Expense		$ (2,742)
22	Increase/(Decrease) to Property Tax Expense		$ (2,742)
23	Increase in Revenue Requirement		(165,535)
24	Increase /(Decrease) to Property Tax per Dollar Increase in Revenue (Line19/Line 20)		0.016564

RUCO OPERATING INCOME ADJUSTMENT # 3
SALARIES AND WAGES - OFFICER and DIRECTOR

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENT	(C) RUCO AS ADJUSTED
1	Salaries and Wages Expense - Officer and Director	$ 94,555	$ (85,555)	$ 9,000
	Adjustment to Water Division	$ 41,157	$ (37,240)	$ 3,917
	Adjustment to Wastewater Division	**$ 53,398**	**$ (48,315)**	**$ 5,083**
2	RUCO SALARY AND WAGE EXPENSE ADJUSTMENT CALCULATION:			
4	Calculation of Salary and Wage Expense - Robson	$ 180,000		
5	RUCO Calculation Based on Time Spent (See Federal Income Tax Filings)			
6	"Percent of Time Devoted to Business"	5.00%		
7	TOTAL SALARY AS CALCULATED BY RUCO	$ 9,000		
	Salary Allocated to Water	$ 9,000	43.5270%	$ 3,917
	Salary Allocated to Sewer	$ 9,000	56.4730%	5,083
			100.0000%	$ 9,000

PAYROLL COSTS OF MR. ROBSON AS PROVIDED BY COMPANY

Allocation Methodology - Mr. Robson's annual salary of $180,000 is allocated to eight companies including Pima Utility Company (Water and Sewer Divisions). Salary for each is determined by a 3 factor allocation process including number of customers, direct operating expenses and payroll, all based on a three year average.

Salary Allocation per Pima

Salary allocated to Water	$ 41,157	22.9%
Salary allocated to Sewer	$ 53,398	29.7%
	$ 94,555	52.5%

RUCO OPERATING INCOME ADJUSTMENT # 4
EMPLOYEE PENSIONS AND BENEFITS

Line No.	DESCRIPTION	[A] COMPANY AS FILED	[B] RUCO ADJUSTMENT	[C] RUCO AS ADJUSTED
1	Employee Benefits and Pensions - Water	$ 53,750	$ (1,141)	$ 52,609
2				
3	**Employee Benefits and Pensions - Wastewater**	**$ 139,603**	**$ (1,662)**	**$ 137,940**
4				
5				
6				

7		(a)	(b)	(c)	(d)	(e)
8						
9					Staff	
10					Adjustment	
11		Current	Prior	Multiplier	in Prior	RUCO Adjustment
12	Employee Benefits & Pensions	Rate Docket	Rate Docket	(a / b)	Rate Docket	(c * d)
13						
14	Water Division	$ 53,750	$ 64,900	0.82820	$ (1,378)	$ (1,141)
15	Wastewater Division	139,603	115,720	1.20638	(1,378)	(1,662)
16	Combined Total	$ 193,353	$ 180,620	1.07050	$ (2,756)	$ (2,804)

OPERATING INCOME ADJUSTMENT # 5
RATE CASE EXPENSE

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENT	(C) RUCO AS ADJUSTED
1	Annual Rate Case Expense	$ 35,000	$ (35,000)	$ -
2	Company Estimated Rate Case Expense		$ 175,000	
3	Amortization Period, in Years		5	
4	Company Proposed Annual Rate Case Expense		$ 35,000	

Information obtained from Company Schedule C-2 (Page 4)

RUCO OPERATING INCOME ADJUSTMENT # 6
CONTRACTUAL SERVICES - OTHER EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] RUCO ADJUSTMENT	[C] RUCO AS ADJUSTED
1	January Management Fee	$ 8,060.58	$ -	$ 8,060.58
2	February Management Fee	8,060.58	-	8,060.58
3	March Management Fee	8,060.58	-	8,060.58
4	April Management Fee	8,060.58	-	8,060.58
5	May Management Fee	8,060.58	-	8,060.58
6	June Management Fee	8,060.58	-	8,060.58
7	July Management Fee	8,060.58	-	8,060.58
8	August Management Fee	8,060.58	-	8,060.58
9	September Management Fee	8,866.64	(806.06)	8,060.58
10	October Management Fee	8,866.64	(806.06)	8,060.58
11	November Management Fee	8,866.64	(806.06)	8,060.58
12	December Management Fee	8,866.64	(806.06)	8,060.58
13	Mgt. Fee Adjustment (Jan.-Aug.)	6,448.48	(6,448.48)	-
14	WUAA SIB Appeal	849.11	(849.11)	-
15	Total	$ 107,249	$ (10,522)	$ 96,727

Information provided in Company response to Staff data requests CSB 1-20 and CSB 3-09.

RUCO OPERATING INCOME ADJUSTMENT # 7
AMORTIZATION OF DEFERRED COSTS

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] RUCO ADJUSTMENT	[C] RUCO AS ADJUSTED
1	Amortization - Wells Fargo Loan Fees	1,913.76	(1,913.76)	-
2	Amortization - Deferred Plant Operating Costs	62,925.36	(62,925.36)	-
3	Amortization - AFUDC	32,352.00	-	32,352.00
4	TOTALS	97,191	(64,839)	32,352

Account details as obtained from Company response to Staff DR CSB 3-18.

RUCO OPERATING INCOME ADJUSTMENT # 8
INCOME TAX EXPENSE

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENT	(C) RUCO AS ADJUSTED
1	Income Tax Expense	$ 107,839	$ (107,839)	$ -

Information obtained from Company Schedule C-1

COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) DOLLAR AMOUNT	(B) CAPITAL RATIO	(C) COST RATE	(D) WEIGHTED COST RATE
1	Long-Term Debt	$ 8,370,000	37.50%	3.420%	1.28%
2	Common Equity	13,950,000	62.50%	9.64%	6.03%
3	Total Capitalization	$ 22,320,000	100.00%		
4	WEIGHTED AVERAGE COST OF CAPITAL				7.31%

References:
Columns (A) Thru (D): JAC Cost of Capital Testimony

Rate Design

Monthly Usage Charge	Present	Company Proposed Rates	RUCO Recommended Rates
Meter Size (All Classes):			
5/8x3/4 Inch	$ 25.1685	$ 27.9119	$ 23.7842
3/4 Inch	39.1230	43.3874	36.9712
1 Inch	65.6880	72.8480	62.0752
1 1/2 Inch	129.9060	144.0658	122.7612
2 Inch	207.4170	230.0255	196.0091
3 Inch	402.6750	446.5666	380.5477
4 Inch	629.1810	697.7617	594.6058
6 Inch	1,198.4400	1,198.4400	1,022.7220
Commodity Charge - Per 1,000 Gallons			
Effluent Sales:			
Per Acre Foot	$ 180.00	$ 181.11	$ 181.11
Per 1,000 Gallons	0.5100	0.5656	0.5656
Recovered Effluent Sales:			
Per Acre Foot	$ 180.00	$ 181.11	$ 181.11
Per 1,000 Gallons	0.5100	0.5656	0.5656

Pima Utility Company - Wastewater Division
Docket No. W-02199A-16-0421
Test Year Ended December 31, 2015

Wastewater Division
Rate Design Schedule JAC-2

Typical Bill Analysis
Residential

Company Proposed	Gallons	Present Rates	Proposed Rates	Dollar Increase	Percent Increase
Average Usage	6,362	$ 25.17	$ 27.91	$ 2.74	10.90%
Median Usage	4,000	N/A	N/A	N/A	N/A
RUCO Recommended					
Average Usage	6,362	$ 25.17	$ 23.78	$ (1.38)	-5.50%
Median Usage	N/A	N/A	N/A	N/A	N/A

Present & Proposed Rates (Without Taxes)
Residential

Gallons	Present	Company Proposed	%	RUCO Recommended	%
	5/8 x 3/4"	5/8 x 3/4"		5/8 x 3/4"	
Consumption	Rates	Rates	Increase	Rates	Increase
-	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
1,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
2,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
3,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
4,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
5,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
6,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
7,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
8,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
9,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
10,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
11,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
12,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
13,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
14,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
15,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
16,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
17,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
18,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
19,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
20,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
25,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
30,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
35,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
40,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
45,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
50,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
75,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%
100,000	$ 25.17	$ 27.91	10.90%	$ 23.78	-5.50%

PIMA UTILITY COMPANY

DOCKET NOS. W-02199A-16-0421 and SW-02199A-16-0422

DIRECT TESTIMONY

OF

JOHN A. CASSIDY, CRRA

ON

COST OF CAPITAL

ON BEHALF OF THE

RESIDENTIAL UTILITY CONSUMER OFFICE

JUNE 20, 2017

TABLE OF CONTENTS

EXHIBITS

EXECUTIVE SUMMARY

RUCO recommends that the Commission adopt a 7.31 percent overall rate of return for Pima Utility Company ("Pima," or "Company"), based upon (i) a pro forma capital structure consisting of 37.50 percent long-term debt and 62.50 percent common equity, (ii) a provisional 3.42 percent cost of long-term debt, and (iii) RUCO's recommended 9.64 percent cost of common equity, as shown below:

	Weight	Cost	Weighted Cost
Long-Term Debt	37.50 %	3.42 %	1.28 %
Common Equity	62.50 %	9.64 %	6.03 %
Overall Rate of Return			7.31 %

RUCO's 9.64 percent cost of equity is derived from estimates obtained from three cost of equity estimation models: the Constant Growth Discounted Cash Flow Model ("DCF"), the Capital Asset Pricing Model ("CAPM"), and the Comparable Earnings Model ("CE"). RUCO's recommended 9.64 percent estimated cost of equity represents the arithmetic mean of the results obtained from RUCO's DCF (9.74 percent), CAPM (7.89 percent), and CE (11.30 percent) models, as follows:

Cost of Equity Estimation Model	Cost Estimate
Constant Growth Discounted Cash Flow	9.74 %
Capital Asset Pricing Model	7.89 %
Comparable Earnings	11.30 %
Average Cost of Equity	9.64 %

I will also demonstrate that the Company's proposed capital structure consisting of 35 percent long-term debt and 65 percent common equity serves to overstate the equity component in the Company's capital structure.

I will further demonstrate that the 11.20 percent cost of equity recommendation put forth by Pima Utility Company witness, Mr. Thomas J. Bourassa, significantly over-states the Company's actual cost of equity.

I. INTRODUCTION

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

A. My name is John A. Cassidy. I am a Public Utilities Analyst V with the Residential Utility Consumers Office ("RUCO"). My business address is 1110 W. Washington Street, Suite 220, Phoenix, AZ.

Q. Please describe your educational background and professional experience.

A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of Library Science degree from the University of Arizona, and a Master of Business Administration degree with an emphasis in Finance from Arizona State University. I have been awarded the professional designation Certified Rate of Return Analyst ("CRRA") by the Society of Utility and Regulatory Financial Analysts ("SURFA") based upon experience and the successful completion of a written examination. I have nine years of professional regulatory work experience as a Public Utilities Analyst, both with RUCO and the Arizona Corporation Commission ("ACC") Staff, and have testified in numerous rate proceedings as a cost of capital witness before this Commission. Additionally, I have attended utility related seminars sponsored by both SURFA and the National Association of Regulatory Utility Commissioners (NARUC). Attachment 1 contains a summary of my prior regulatory work experience.

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to present RUCO's recommendations for the establishment of a fair value rate of return for Pima. For purposes of establishing a fair

value rate of return on its invested capital in this proceeding, the Company has elected to use its original cost rate base ("OCRB") as its fair value rate base ("FVRB").

Q. Will RUCO provide direct testimony on the rate base, operating income and rate design issues in this proceeding?

A. Yes. In addition to filing cost of capital testimony, on behalf of RUCO I am also filing direct testimony which will address the issues of rate base, operating income, and rate design. My direct testimony addressing those issues will be filed under separate cover.

II. SUMMARY OF TESTIMONY AND RECOMMENDATIONS

Q. Briefly summarize how your cost of capital testimony is organized.

A. My cost of capital testimony is organized into twelve (12) different sections as identified in my "Table of Contents." In summary, I have derived cost of equity estimates obtained from both the Constant Growth Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). The DCF and CAPM are market-based cost of equity estimation models, and both have consistently been employed by RUCO and ACC Staff in prior rate proceedings. Additionally, the DCF and CAPM are methodologies which the ACC has traditionally given the most weight when establishing authorized rates of return for utilities operating within its Arizona jurisdiction. In addition to cost of equity estimates obtained from the DCF and CAPM models, I have also prepared a Comparable Earnings ("CE") analysis, which gives consideration to actual realized returns on equity achieved by RUCO's proxy group of publicly traded sample water companies. RUCO's recommended cost of equity in this proceeding represents the arithmetic mean (i.e., simple average) of the cost of equity results obtained from the DCF, CAPM and CE

models. The Company's witness, Mr. Thomas J. Bourassa, obtains cost of equity estimates from (i) the Constant Growth DCF model; (ii) the Risk Premium Model ("RPM"); and (iii) three versions of the CAPM; namely: the Traditional CAPM, the Empirical CAPM ("ECAPM"), and a Modified CAPM. My testimony will conclude with a discussion of Mr. Bourassa's cost of equity estimation methodology, and I will demonstrate that his analyses significantly overstates the Company's actual cost of equity.

Q. Please summarize the cost of capital recommendations to be addressed in your testimony.

A. Based upon the results of my analysis, I make the following recommendations:

I recommend that the Commission adopt a 7.31 percent overall rate of return for the Company, based upon (i) a capital structure consisting of 37.5 percent long-term debt, and 62.5 percent common equity, (ii) a provisional 3.42 percent cost of long-term debt, and (iii) a cost of common equity of 9.64 percent. The components included in my cost of capital calculation are as follows:[1]

	Weight	Cost	Weighted Cost
Long-Term Debt	37.50 %	3.42 %	1.28 %
Common Equity	62.50 %	9.64 %	6.03 %
Overall Rate of Return			7.31 %

The cost of equity estimates included in my calculations are derived from the following three cost of equity models, with RUCO's recommended 9.64 percent cost of equity being

[1] *See* JAC Schedule 1.

the arithmetic mean (i.e., simple average) of the results obtained from RUCO's Constant Growth DCF, CAPM and CE models:[2]

	Cost Estimate
Constant Growth Discounted Cash Flow	9.74 %
Capital Asset Pricing Model	7.89 %
Comparable Earnings	11.30 %
Average Cost of Equity	9.64 %

III. ECONOMIC PRINCIPLES APPLICABLE TO ARIZONA

Q. What are the basic economic principles which apply in the determination of a fair rate of return for regulated public utilities in Arizona?

A. For regulated public utilities in Arizona, rates are established in a manner designed to allow for recovery of the utility's costs, including capital costs. This is traditionally referred to as "cost of service" ratemaking. Rates are established using the "rate base – rate of return" concept, wherein utilities are allowed to recover specific operating expenses, taxes and depreciation, and granted an opportunity to earn a fair value rate of return on the assets utilized (i.e., fair value rate base) in providing service to ratepayers. Rate base is derived from the asset side of the utility's balance sheet, while rate of return is developed from the liability/stockholders' equity side of the balance sheet. The revenue impact of the cost of capital in rates is determined by multiplying rate base by rate of return. In the instant docket, RUCO is recommending an overall rate of return for Pima of 7.31 percent.

[2] *See* JAC Schedule 2.

Q. Is the Company proposing that its original cost rate base also be used as its fair value rate base?

A. Yes.

Q. What is the meaning of a "fair rate of return" when analyzing a rate case application?

A. From an economic standpoint, a "fair rate of return" is one which allows an efficient and economically well managed utility the ability to maintain its financial integrity, attract capital, and establish comparable returns for similar risk investments. These concepts are derived from economic and financial theory and are generally implemented using financial models and economic concepts. From a technical perspective, a "fair rate of return" is an ex post (after the fact) earned return on an asset base. Conversely, the cost of capital is an ex ante (before the fact) expected, or required, return on a capital base. In regulatory proceedings, the two terms are often used interchangeably.

Q. As regulated entities granted natural monopoly status, are public utilities guaranteed to earn their authorized rate of return?

A. No. Public utilities are afforded an opportunity to earn their authorized rate of return, they are not guaranteed to earn the rate of return authorized in a rate case. Many factors are involved in determining a rate of return. However, investments in new plant assets made subsequent to a rate case and/or increases to operating expenses between rate cases can have a negative impact on a utility's realized rate of return. Conversely, an increase in revenues and/or a decrease in operating expenses can have a positive impact on the earned rate of return. In the former scenario, a public utility will generally file for a rate

increase. In the latter scenario, should a public utility earn a rate of return in excess of that approved by a utility commission, then the commission may instruct the utility to file a rate application in order that new rates be established to provide rate relief to ratepayers.

IV. GENERAL ECONOMIC CONDITIONS

Q. Why are economic and financial conditions important in the determination of the cost of capital for a regulated public utility such as EWAZ?

A. Economic and financial conditions are important because the cost of capital, both fixed-cost debt as well as common equity, is largely determined by current and future economic and financial conditions. At any given time, the cost of capital is influenced by each of the following: (i) the level of economic activity (i.e., economic growth); (ii) the stage of the business cycle; (iii) the rate of inflation; and (iv) expected future economic conditions. That current and future economic and financial conditions largely determine the cost of equity is consistent with the Court's ruling in the *Bluefield* decision, which held that

> "[a] rate of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally." Bluefield, 262 U.S. at 679.[3]

Measures of general economic indicators influencing the cost of capital are presented in Schedule JAC-6 (Pages 1-7).

[3] *Bluefield Water Works and Improvement Company v. Public Service Commission of the State of West Virginia* (262 U.S. 679), as cited in Parcell, David C., *The Cost of Capital: A Practitioner's Guide*, prepared for the Society of Utility and Regulatory Financial Analysts (SURFA): 2010 Edition (p.26).

Q. Briefly describe the recent trends in economic conditions and their impact on capital costs over the past thirty years?

A. From the early 1980's through the end of 2007, the United States economy experienced a period of relative stability. This period was characterized by longer economic expansions, small contractions, low and/or declining inflation, and declining interest rates and other capital costs. However, in 2008 and 2009 the economy experienced a steep decline as a result of the sub-prime mortgage lending crisis and had a negative impact on the financial markets both here in the US and internationally. This economic decline is generally considered to be the worst financial crisis since the Great Depression, and is often referred to as, the "Great Recession." Since 2008, central banks in the U.S. (i.e., the Federal Reserve Bank) and other foreign countries have initiated accommodative monetary policies designed to stimulate economic growth and reduce unemployment in an effort to recover from this worldwide recession.

The recession bottomed out in June 2009, and while the economy has expanded since that time it has done so at the slowest pace of any recovery since World War II.[4] This is evidenced by the national unemployment rate having fallen from a high of 9.6 percent in 2010 to 4.9 percent in 2016, with the current national unemployment rate being 4.4 percent as of April 2017.[5] At the State level, Arizona's unemployment rate continues to

[4] Long, Heather, and Luhby, Tami, "Yes, This is the Slowest U.S. Recovery since WWII," CNNMoney.com (October 5, 2016). http://money.cnn.com/2016/10/05/news/economy/us-recovery-slowest-since-wwii/

[5] Council of Economic Advisors, United States Department of Labor, Bureau of Labor Statistics, *Economic Indicators* (April 2017), p. 11. https://www.gpo.gov/fdsys/pkg/ECONI-2017-04/pdf/ECONI-2017-04-Pg11.pdf

lag that of the nation, and currently stands at 5.0 percent as of April 2017.[6] However, the severity of the recession and the slow economic recovery suggest that its impact may continue to be felt for an extended period of time.

Q. Please describe how the economic and financial indicators were examined and how they relate generally to the cost of capital.

A. Schedules JAC-6 (Pages 1 and 2) present relevant economic data such as Real Gross Domestic Product ("GDP") Growth, Industrial Production Growth, Unemployment, Consumer Price Index ("CPI") and Producer Price Index. As can be seen, 2007 marked the sixth year of economic expansion, but beginning in 2008 the economy entered into a significant decline, as indicated by negative real GDP and industrial production growth as well as an increase in the unemployment rate. Since 2010 the economy has begun to rebound; however, overall economic growth has continued at a slower pace than that in prior expansions following an economic downturn.

As measured by the CPI, inflation has generally been declining over the past several business cycles. Since 2008, annual inflation has been 3.0 percent or lower, with average inflation being 1.57 percent over the 9-year period, 2008-2016,[7] and 1.36 percent over the most recent 5-year period, 2012-2016.[8] Thus, inflation continues to remain at the lowest levels experienced in the past 40+ years, and is indicative of lower capital costs.

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[6] United States Department of Labor, Bureau of Labor Statistics, Arizona Unemployment Rate. http://www.bls.gov/eag/eag.az.htm

[7] Utilizing the CPI figures as presented in Schedule JAC-6 (Page 1), average annual inflation over the 9-year period, 2008-2016, was 1.57%: ((0.1% + 2.7% + 1.5% + 3.0% + 1.7% + 1.5% + 0.8% + 0.7% + 2.1%) / 9 = 1.57%).

[8] Over the 5-year period, 2012-2016, average annual inflation was 1.36%: ((1.7% + 1.5% + 0.8% + 0.7% + 2.1%) / 5 = 1.36%).

Q. Over the next 10-year period (i.e., 2017-2026), is inflation expected to remain at relatively low levels?

A. Yes. The Federal Reserve Bank of Cleveland ("Cleveland Fed") reports that its latest estimate of 10-year expected inflation over the period, 2017-2026, is 1.84 percent.[9] The Cleveland Fed's expected inflation report is presented in RUCO Exhibit JAC-A.

Q. How does this 10-year projected 1.84 percent inflation rate compare to average 10-year historical inflation over the last forty years (i.e., 1977-2016)?

A. Based on the annual rates of inflation as presented in Schedule JAC-6 (Page 1), average inflation measured over a 10-year historical period going back to 1977 is as follows:

Historical 10-year inflation (1977-1986)	6.68 %
Historical 10-year inflation (1987-1996)	3.67 %
Historical 10-year inflation (1997-2006)	2.45 %
Historical 10-year inflation (2007-2016)	1.82 %
Projected 10-year inflation (2017-2026)	1.84 %

As can be seen, inflation has fallen in each of the last four 10-year historical periods, with average inflation over the most recent 10-year period (i.e., 2007-2016) being 1.82 percent. Thus, as evidenced by the Cleveland Fed's 1.84 percent projected average annual rate of inflation over the 10-year period, 2017-2026, the historically low inflation of the past ten years is expected to continue, as the delta is only 2 basis points (1.84% - 1.82% = 0.02%).

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[9] Federal Reserve Board of Cleveland, "Inflation Expectations," (News Release dated May 12, 2017). https://www.clevelandfed.org/our-research/indicators-and-data/inflation-expectations.aspx
The inflation expectations model employed by the Cleveland Fed uses Treasury yields, inflation data, inflation swaps, and survey-based measures of inflation expectations to calculate the expected inflation rate (CPI) over the next 30 years. The Cleveland Fed updates its 10-year expected inflation estimate on a monthly basis.

Q. Is there any way of knowing what investors currently expect average inflation to be over the next 10-years?

A. Yes. The 10-year breakeven inflation rate represents a market-based measure of investor expectations as to expected inflation over the next 10-years, and is computed as the difference between the current nominal yield on the 10-year Treasury Note (2.21 percent) and the current real (i.e., inflation adjusted) rate on the 10-Year Treasury Inflation-Indexed Constant Maturity Securities, or TIPS, (0.40 percent). Thus, measured as of the close of market trading on May 31, 2017, the current spot 10-year breakeven inflation rate is 1.81 percent (2.21% - 0.40% = 1.81%),[10] a figure lower than both the Cleveland Fed's 1.84 percent 10-year expected inflation rate, as well as the 1.82 percent rate of inflation over the 10-year period, 2007-2016.

Q. Holding all other factors constant, does a 1.81 percent 10-year breakeven inflation rate provide further evidence that the current low interest rate environment will continue into the future?

A. Yes, it does.

Q. What has been the trend in interest rates over the forty-year period, 1975-2015?

A. As shown in Schedule JAC-6 (Pages 3 – 4), interest rates rose sharply to record levels during the period, 1975-1981, when inflation was high and generally rising. Interest rates declined substantially, as did inflation, during the remainder of the 1980s and throughout

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[10] The 10-year nominal rate and the 10-year TIPS rate are available from the U.S. Department of the Treasury. https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2017

the 1990s. Interest rates declined even further during the period, 2000-2005, and after trending slightly upward in years 2006-2008, have since continued on a downward path reaching levels in years 2009-2016 not previously seen since the early 1960s. In 2008, the Federal Reserve (the "Fed") initiated an accommodative monetary policy by lowering the federal funds ("Fed Funds") rate (the rate the Fed charges banks for overnight transfers of funds), and in an effort to promote increased lending and liquidity, eventually initiated a policy of quantitative easing, an unconventional monetary policy used when short-term interest rates are at or approaching zero. As a consequence, in years 2012-2016, both U.S. and corporate bond yields declined to their lowest levels in more than 40 years, with the yield on the benchmark 10-year Treasury Note falling to an all-time low in July 2016.[11]

Q. Is the decline in long-term interest rates which has taken place since the mid-1980s something which the financial markets and professional forecasters saw coming and accurately predicted?

A. No, it is not. As reported in a recent study prepared by the Council of Economic Advisors,[12] "forecasters largely missed the secular decline of the last three decades" because "past forecasts of long-term nominal interest rates have tended to err on the side of mean reversion."[13] (emphasis added) As evidence of such mean reversion, the authors of the study prepared a graphic presentation (10-Year Treasury Rates and Historical

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[11] On July 8, 2016, the 10-year Treasury Note traded at an all-time low of 1.361 percent. http://www.wsj.com/articles/government-bond-yields-in-u-s-europe-hit-historic-lows-1467731411

[12] Executive Office of the President, Council of Economic Advisors, "Long-Term Interest Rates: A Survey," (July 2015). https://www.whitehouse.gov/sites/default/files/docs/interest_rate_report_final.pdf

[13] *Ibid*., p. 12.

Economist Forecasts) showing that forecasts made by a group of more than 50 private-sector economists of the benchmark 10-year Treasury rate, as reported by *Blue Chip Economic Indicators* ("*Blue Chip*"), had systematically been overstated. This graphic presentation is provided as RUCO Exhibit JAC-B. As shown, *Blue Chip* forecasts have consistently exceeded the actual path (shown in blue) of nominal 10-year Treasury rates since 1995, and supports a conclusion that forecasters mistakenly believed the yield on the 10-year Treasury Note would—during the period(s) under study—revert back to a perceived historical mean. In the study, the authors further note the following:

> "Although economists' forecasts steadily declined after 1995, their pace of decline has lagged well behind the realized drop-off in interest rates. Indeed, since 1996, long-range private sector forecasts have exhibited a root mean square error of 2.7 percentage points relative to the nominal Treasury rate realized 10 years later."[14]

Q. What conclusions do the authors of the study to which you cite above draw regarding the decline in long-term interest rates?

A. As noted in the Executive Summary of the report, the authors state the following:

> This report surveys the recent thinking on the many drivers of long-term interest rates in recent decades and going forward. It concludes:
>
> - **The decline in long-term interest rates over the past thirty years was real, global, and unexpected.** While lower inflation explains some of the decline in nominal interest rates, the downtrend is evident even when adjusting nominal interest rates for the rate of inflation. The decline has also been evident across a wide range of countries, reflecting the increasing integration of the global economy. Financial markets and professional forecasters alike consistently failed to predict the secular shift, focusing too much on cyclical factors and missing the long-term trend.

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[14] *Ibid.*, p. 10. In a footnote, the authors describe the "root mean square error" as follows: "The root mean square error is a commonly used measure of the deviation between predicted and actual values. The difference between the two values is squared and then summed over time. The square root of that number is typically reported as a summary statistic, with large values indicating large prediction errors."

- **The decline is consistent with several theoretical frameworks economists have used to analyze interest rates.** The interest rate settles at the level that equates the supply of saving with the demand for investment, and innumerable factors affect both sides of the equation. Many frameworks suggest that long-term interest rates are closely related to productivity growth. Other factors such as the rate of population growth and technological advance, as well as aggregate demand and the stance of fiscal and monetary policy, also play a role.

- **A number of factors, both transitory and longer-lived, have contributed to the decline—with many of these factors suggesting that long-run equilibrium interest rates have fallen.** Transitory factors include global fiscal and monetary policies, shifts in the term premium and inflation risk, and post-crisis private-sector deleveraging. More persistent factors include lower potential output and productivity growth, shifting demographics, and the global "saving glut."

Ultimately, interest rates reflect underlying macroeconomic conditions; there is no "optimal" long-term rate of interest. Rather, policy should support long-run growth, maintain price stability, and support a stable financial system.[15] (emphasis added)

Q. Has the secular decline in long-term interest rates which has taken place over the last 30 years proven beneficial to equity investors in the United States?

A. Yes. In a recent report published by McKinsey & Company,[16] the 30-year period, 1985-2014, was characterized as the "golden era for investment returns," as real (i.e., inflation adjusted) total returns on equities averaged 7.9 percent in the United States over this period, a figure 140 basis points higher than the 6.5 percent 100 year average, and 220 basis points higher than the 5.7 percent 50 year average (emphasis added).[17] As noted in the report, the underpinnings of these above average equity returns were made possible by the confluence of the following four exceptional factors:

(i) A sharp decline in inflation from the unusually high levels of the late 1970s and early 1980s;
(ii) The resultant decline in nominal long-term interest rates,

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[15] *Ibid*., Executive Summary, p. 4.
[16] McKinsey Global Institute, "Diminishing Returns: Why Investors May Need to Lower their Expectations," May 2016. www.mckinsey.com/industries/.../why-investors-may-need-to-lower-their-sights
[17] *Ibid*., p. 2. As noted in the report, over this same 30-year period Western European investors also achieved real total returns on equity of 7.9 percent, a figure 300 basis points higher than the 4.9 percent 100 year average.

(iii) Strong global GDP growth, lifted by positive demographics, productivity gains, and rapid growth in China; and

(iv) Even stronger corporate profit growth, reflecting revenue growth from new markets, declining corporate taxes, and advances in automation and global supply chains that contained costs.[18]

Q. Over this same 1985-2014 time period, did bond investors also achieve higher real returns on fixed-income investments?

A. Yes. As measured by returns on 10-year U.S. Treasury Bonds, fixed income investors achieved total real returns of 5.0 percent over the 30-year period, 1985-2014, a figure 330 basis points higher than the 1.7 percent 100 year average, and 250 basis points higher than the 2.5 percent 50 year average.[19]

Q. Going forward, does the McKinsey report anticipate this 'golden era' for investment returns to continue?

A. No, it does not. In fact, the purpose of the report is to place investors on notice that on a going-forward basis they should begin to lower their expectations regarding investment returns on both equity and debt securities, as "[t]his era is coming to an end."[20] Based upon its analysis, the McKinsey report lays out two scenarios as to what investors might expect over the 20-year period, 2016-2035; Scenario 1 being a *slow growth* scenario, and Scenario 2 being a *growth recovery* scenario. In the report, McKinsey points out that in both its *slow growth* and *growth recovery* scenarios, "U.S. and Western European equity and bond returns fail to match those of the past 30 years and could be lower than the 50-

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[18] *Ibid.*, pp. 10-16.
[19] *Ibid.*, pp. 2-3. As further noted in the report (p. 11), of this 5.0 percent real total return for U.S. bond investors capital gains accounted for fully 1.9 percent (190 basis points) due to nominal interest rates falling from 9 percent to 2 percent.
[20] *Ibid.*, p. 3.

and 100-year averages."[21] Furthermore, under Scenario 1 "slow growth could reduce total U.S. equity returns by more than 250 basis points and bond returns[22] by 400 basis points or more below the 1985-2014 period (emphasis added);"[23] under Scenario 2, "in a growth-recovery scenario, U.S. equity and bond returns would be 140-240 and 300-400 basis points, respectively, below the average of the 1985-2014 period."[24] As presented in the McKinsey report, the following is a summary of both historical real total investment returns on equities and 10-year U.S. Treasury Bonds over the 100-year period, 1915-2014, the 50-year period, 1965-2014, and the 30-year period, 1985-2014, as contrasted with the expected investment returns over the 20-year period, 2016-2035, under each of the above noted scenarios:[25]

Historical and Projected Investment Returns on U.S. Equities and 10-Year Treasury Bonds

	Historical Returns			Prospective Returns (2016-2035)	
Investment	1915-2014	1965-2014	1985-2014	Slow Growth	Growth Recovery
U.S. Equities	6.5%	5.7%	7.9%	4.0-5.0%	5.5-6.5%
10-Year Treasuries	1.7%	2.5%	5.0%	0-1.0%	1.0-2.0%

[21] *Ibid*., p. 21.
[22] For purposes of its analysis, investment returns on bonds are measured by the return on 10-year U.S. Treasury Bonds.
[23] *Ibid*.
[24] *Ibid*., p. 22.
[25] *Ibid*., p. 2, Exhibit 1.

Q. Briefly discuss the reasons cited in the McKinsey report for the expected decline in investment returns on equity and debt securities over the 20-year period, 2016-2035.

A. As noted earlier, the McKinsey report attributed the on-set of the so-called 'golden era' of investment returns to the confluence of four exceptional factors. The authors now view the fundamental economic and business conditions which contributed to above-average returns over the past 30 years to "have run out of steam, and in some cases are in the process of reversing."[26] Specifically, the report cites to the following three contributing factors as reasons for the expected decline in investment returns going forward:

- the steep decline in interest rates over the past 30 years is unlikely to be repeated
- expected slower GDP growth, due to (i) an aging population and (ii) declining productivity growth, and
- lower profit margins for businesses facing greater competition from (i) emerging markets, (ii) technology and tech-enabled firms, and (iii) small and medium-sized enterprises.[27]

Q. For purposes of its analysis of the U.S. equity market, the findings of the McKinsey report are based on aggregate returns of non-financial companies included in the Standard & Poor's 500 ("S&P 500").[28] Are regulated public utilities included in the S&P 500?

A. Yes. Among the 500 companies currently included in the S&P 500, 28 are regulated public utilities. Of this number, most are electric service providers, however, there is one

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[26] *Ibid.*, p. 17.
[27] *Ibid.*, pp. 17-19.
[28] *Ibid.*, p. 5.

publicly-traded water utility included in the S&P 500; namely, American Water Works Company, Inc. (Ticker: AWK).[29]

Q. In light of the above, is it reasonable to assume that on a going-forward basis equity investment returns for regulated public utilities might also be expected to decline over the 20-year period, 2016-2035?

A. Yes, I believe that is a reasonable assumption. Furthermore, this would be true irrespective of whether regulated public utilities were included in the S&P 500, as a broad based decline in investment returns over the next 20-year period would bring about a reduction in the opportunity cost of capital, or the expected return on alternative investment opportunities.

[29] https://en.wikipedia.org/wiki/List_of_S%26P_500_companies It should be noted that while RUCO includes American Water Works (AWK) in its proxy group of publicly-traded water utilities, the Company's cost of capital witness, Mr. Thomas Bourassa, does not.

Q. As noted, in response to the onset of the Great Recession the Fed was forced to adopt an aggressive accommodative policy, ultimately lowering the federal funds rate ("fed funds rate") to a level of 0 to ¼ percent. However, beginning on December 16, 2015, the Federal Open Market Committee ("FOMC") raised the federal funds rate ("fed funds rate") by ¼ percent (25 basis points) from a level of 0 - ¼ percent, to ¼ - ½ percent. In doing so, did the action taken by the Fed signal a change in monetary policy by the U.S. central bank?

A. No. While the increase to the fed funds rate marked the first time the FOMC had raised the rate it charged banks for overnight transfers of funds since mid-2006,[30] in a press release issued on December 16, 2015, the Fed made the following statement: "The stance of monetary policy remains accommodative after this increase, thereby supporting further improvement in labor market conditions and a return to 2 percent inflation."[31]

Q. After raising the fed funds rate in December 2015, was the Fed expected to continue to take steps to raise the fed funds rate in 2016?

A. Yes. In keeping with its plan to "normalize" interest rates, it was generally believed that the Fed would raise the fed funds rate four more times by ¼ percent (25 basis points) in 2016, an annual increase of 1.0 percent (100 basis points).[32]

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[30] The Fed last raised the fed funds rate on June 29, 2006.
http://www.federalreserve.gov/monetarypolicy/openmarket.htm
[31] Federal Reserve Board, Federal Open Market Committee, *Press Release* (December 16, 2015).
http://www.federalreserve.gov/newsevents/press/monetary/20151216a.htm
[32] Blue Chip Financial Forecasts (December 1, 2015), p.1.

Q. But rather than doing so, the Fed raised the fed funds rate only one time in 2016, correct?

A. Yes, and that increase did not take place until December 14, 2016, when the FOMC raised the fed funds rate by an additional ¼ percent (25 basis points), to ½ - ¾ percent.[33]

Q. And since that time, the FOMC has raised the fed funds rate only once in 2017, correct?

A. Yes. On March 15, 2017, the FOMC again hiked the fed funds rate by ¼ percent (25 basis points), to ¾ - 1.0 percent. In doing so, the FOMC once again affirmed that "the stance of monetary policy remains accommodative."[34]

Q. Is the FOMC expected to raise the fed funds rate again this year (i.e., 2017), and if so, how many times?

A. Yes. At the present time, much of Wall Street believes the Fed will raise interest rates two more times this this year; once in June, and again in September. However, "substantially lower-than-expected inflation" may "stop the Fed in its tracks."[35] Lower inflation, as measured by the Fed's preferred inflation index, the personal consumption expenditure (PCE) index, came in at 1.8 percent in the first quarter of 2017, but some anticipate further weakness in PCE inflation going forward. Specifically, Andrew Hollenhorst, an economist with Citigroup, foresees "a reduction in the PCE rate to as low

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[33] Federal Reserve Board, Federal Open Market Committee, *Press Release* (December 14, 2016). https://www.federalreserve.gov/newsevents/pressreleases/monetary20161214a.htm

[34] Federal Reserve Board, Federal Open Market Committee, *Press Release* (March 15, 2017). https://www.federalreserve.gov/newsevents/pressreleases/monetary20170315a.htm

[35] Cox, Jeff, "The Fed Wants to Raise Rates this Year, One Thing Could Stand in the Way," CNBC.com, May 24, 2017. http://www.cnbc.com/2017/05/24/the-fed-wants-to-raise-rates-but-inflation-could-stand-in-the-way.html

as 1.4 percent, a pretty good distance from the Fed's 2 percent inflation target."[36] Thus, should inflation remain lower than the Fed's 2.0 percent desired level, the FOMC might be hard pressed to justify continued hikes in the fed funds rate.

Q. Assuming the FOMC were to continue raising the fed funds rate at a time when inflation remained below the Fed's 2.0 target, would doing so place the U.S. economy at risk of going into a recession?

A. Yes. David Rosenberg, chief economist and strategist at Gluskin Sheff, believes that the bond market, as evidenced by "the compression in yields between shorter-dated and longer-duration government debt," is providing troubling evidence of an inverted yield curve. He points out that yields on longer-term government debt "have refused to move higher," this despite the Fed signaling its intent to unwind its bloated balance sheet later this year. Thus, "with the Fed continuing to push the funds rate higher, this means a flatter yield curve with the risk of it inverting — take note because this has presaged every recession over the past 50 years (emphasis added)." Rosenberg states that despite the Fed's rhetoric having "tilted toward continuing down the path of steady rate hikes," he points out that "the market has been down this path before — in 2016 projections early in the year called for four rate hikes, but just one was enacted by year's end." Finally, while Rosenberg would agree that the bond market has largely priced in the Fed's anticipated near-term June rate hike, he cautions that a subsequent rate hike "can't be sustained,"

[36] *Ibid*.

and ends with the caveat, "[j]ust remember that 10 of the last 13 Fed hiking cycles have been miscalculations that ended in recession (emphasis added)."[37]

Q. Have others cautioned the Fed not to proceed with plans to hike the fed funds rate more than one additional time this year?

A. Yes, James Bullard, president of the Federal Reserve Bank of St. Louis, recently warned that the Fed's planned rate increases "may be too fast for an economy that has shown recent signs of weakness." Citing the lower inflation data released following the FOMC rate hike in March 2017, Bullard stated that "U.S. inflation and inflation expectations have surprised to the downside in recent months," and that the Fed's plans for two additional interest rate hikes is, "overly aggressive relative to actual incoming data on U.S. macroeconomic performance." Bullard sees the U.S. economy as mired in "a low-inflation, low-growth rut," and feels the central bank should raise rates only one more time, "until it is clear the economy has shifted to a higher gear."[38]

Q. In light of the above, is it possible that an anticipated Fed rate increase in June 2017 may not take place?

A. Yes. At the most recent FOMC meeting, held May 3, 2017, FOMC members "generally judged that it would be prudent to await additional evidence indicating that the recent slowdown in the pace of economic activity had been transitory before taking another step in removing accommodation." Thus, while there was "general support for a rate increase

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[37] Cox, Jeff, "The Fed Wants to Raise Rates this Year, One Thing Could Stand in the Way," CNBC.com, May 24, 2017. http://www.cnbc.com/2017/05/24/the-fed-wants-to-raise-rates-but-inflation-could-stand-in-the-way.html

[38] "St. Louis Fed's Bullard Says Expected Rate Hikes 'Too Aggressive,'" CNBC.com, May 19, 2017. http://www.cnbc.com/2017/05/19/st-louis-feds-bullard-says-expected-rate-hikes-too-aggressive.html

if the economic data improved," the question becomes whether Fed officials "will see enough evidence of improvement before the June meeting" to justify raising rates.[39]

Q. As noted earlier, the report issued by the Council of Economic Advisors found that long-term interest rates are closely related to productivity growth. What is productivity growth, and why is it important?

A. Productivity growth (i.e., more output for the same volume of inputs) is economic growth which cannot be explained by changes in the other key factor inputs, capital and labor. Rising output per hour is seen as the most common definition of improving productivity, and a benchmark for how efficiently the economy is performing. Gains in productivity typically stem from innovation, new ideas and technological progress.[40] As to its importance, Warren Buffet has described productivity growth as, "the 'secret sauce' of America's remarkable gains in living standards since the nation's founding in 1776," and the link to our nation's "prosperity,"[41] while economist Paul Krugman is noted for having observed that, "productivity isn't everything, but in the long run it is almost everything."[42]

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[39] Appelbaum, Binyamin, "Fed Sounds Note of Caution on Raising Interest Rates," NYTimes.com (May 24, 2017). https://www.nytimes.com/2017/05/24/business/economy/fed-interest-rates-minutes.html?_r=0

[40] Lambert, John, "Prodictivity is Everything," *GAM.com* https://www.gam.com/en/insights-content/2016/macroeconomics/productivity-is-everything/

[41] Buffet, Warren, "Letter to the Shareholders of Berkshire Hathaway, Inc.," Berkshire Hathaway 2015 Annual Report, p. 21. http://www.berkshirehathaway.com/letters/2015ltr.pdf

[42] Krugman, Paul, The Age of Diminishing Expectations, 1994, as quoted in Lambert, John, "Prodictivity is Everything," GAM.com https://www.gam.com/en/insights-content/2016/macroeconomics/productivity-is-everything/

Q. As a measure of overall economic health, is productivity growth in the U.S. rising, or falling?

A. Productivity is a key ingredient in determining future growth in wages, prices and overall economic output, and at present the U.S. economy is experiencing the "longest slide in worker productivity since the late 1970s," and Fed Chair Yellen recently characterized "the outlook for productivity growth as a 'key uncertainty for the U.S. economy.'"[43] (emphasis added) Over time, it is believed that "persistently weak productivity would weigh on American living standards," and be "a force that could prompt Federal Reserve officials to keep interest rates low for years to come."[44]

Q. Many have used the expression, "new normal," when describing the current state of the economy. Given the current downward trend in productivity growth, what is the estimated 'new normal' for real (i.e., inflation adjusted) GDP growth going forward?

A. In a recent *Economic Letter* published by the Federal Reserve Bank of San Francisco, the new normal pace of real GDP growth is estimated to fall in the range of 1½ to 1¾ percent.[45] As noted in the *Letter*, this estimate is based on "trends in demographics, education, and productivity," and assumes that

(i) the aging and retirement of the baby boom generation is expected to hold down employment growth relative to population growth,

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[43] Leubsdorf, Ben, "Productivity Slump Threatens Economy's Long-Term Growth," *WSJ.com*, August 9, 2016. http://www.wsj.com/articles/u-s-productivity-dropped-at-0-5-pace-in-the-second-quarter-1470746092

[44] *Ibid*.

[45] Fernald, John, "What is the New Normal for U.S. Growth?," *Economic Letter 2016-30*, Federal Reserve Bank of San Francisco (October 11, 2016), p.1. http://www.frbsf.org/economic-research/publications/economic-letter/2016/october/new-normal-for-gdp-growth/

(ii) educational attainment has plateaued, reducing the contribution of labor quality to productivity growth, and
(iii) the slower forecast for overall GDP growth reflects the pace of productivity growth as measured over the period, 1973-2015.

As presented in the *Economic Letter*,[46] productivity growth grew at an average rate of approximately 2.75 percent during the period, 1948-1973, fell to a level of approximately 1.25 percent during the period, 1973-1995, rose to a level of approximately 2.50 percent during the period, 1995-2004, and has since fallen to an average level of approximately 1.00 percent during the period, 2004-2015. However, over the 5-year period, 2010-2015, average productivity growth has fallen to a level of approximately 0.3 percent.

Q. Among the factors taken into consideration by the author when estimating the new normal for real GDP growth, which factor causes the greatest uncertainty?

A. As noted by the author, the major source of uncertainty about the future is productivity growth. While the author acknowledges that changes in trend productivity growth have historically been "unpredictable and large," and that a new wave of "IT revolution from machine learning and robots" might boost productivity growth, until such a development occurs "the most likely outcome is a continuation of slow productivity growth."[47]

Q. What conclusions does the author draw concerning real GDP growth going forward?

A. The author states that once the U.S. economy fully recovers from the Great Recession, real GDP growth "is likely to be well below historical norms, plausibly in the range of 1½

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[46] *Ibid*., Figure 2: *Variation in productivity growth by trend period* (p. 2).
[47] *Ibid*., p. 4.

to 1¾ percent per annum." The author further notes that this slower pace of growth will lead to (i) slower growth in average wages and living standards for workers, (ii) relatively modest growth in sales for businesses, and from a monetary policy perspective (iii) a low 'speed limit' for the economy. Citing to another recent *Economic Letter* published by the Federal Reserve Bank of San Francisco,[48] the author concludes by saying that this slower pace of growth also suggests "a lower equilibrium or neutral rate of interest."[49] (emphasis added)

Q. As discussed in the *Economic Letter* cited to above, what is the equilibrium, or neutral rate of interest?

A. In the article, the equilibrium, or neutral rate of interest is referred to as the "natural real rate of interest," "r*," or "r-star," and defined by the author as the "short-term real (inflation-adjusted) rate that balances monetary policy so that it is neither accommodative nor contractionary in terms of growth and inflation."[50] (emphasis added)

Q. Is the natural real rate of interest (r-star), synonymous with (i.e., same thing as) the fed funds rate?

A. No, it is not. The fed funds rate is the rate the Fed charges banks for overnight transfers of funds, while the natural real rate of interest is a conceptual interest rate which cannot be observed but must instead be estimated. In fact, when making public statements

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[48] Williams, John C., "Monetary Policy in a Low R-star World," *Economic Letter 2016-23*, Federal Reserve Bank of San Francisco (August 15, 2016). http://www.frbsf.org/economic-research/publications/economic-letter/2016/august/monetary-policy-and-low-r-star-natural-rate-of-interest/

[49] *Ibid*.

[50] *Ibid*., pp. 1-2.

regarding monetary policy and the fed funds rate, Fed Chairwoman Janet Yellen often cites to what she refers to as the "neutral rate" (i.e., r-star), contrasting its level to that of the fed funds rate.[51]

Q. Has the natural real rate of interest (r-star), experienced a significant decline over the last 25 years?

A. Yes, as a variety of economic factors have "pushed natural interest rates very low."[52] As noted by the author, in 1990 the inflation-adjusted natural rate of interest (r-star) was estimated to be between 2½ to 3½ percent in the United States, Canada, the euro area, and the United Kingdom. On the eve of the global financial crisis, by 2007 these rates had declined to between 2 and 2½ percent. By 2015, they had declined even further, with the inflation-adjusted natural rate being "nearly zero for the United States, and below zero for the euro area."[53]

Q. What is the key takeaway from the trend in lower global natural real rates of interest (r-star) which has taken place over the past quarter century?

A. As noted by the author, the key takeaway from this global trend is two-fold: (i) "interest rates are going to stay lower than we've come to expect in the past," and (ii) that future low interest rate levels are "not due to easy monetary policy," but instead reflect "the rate

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[51] Coy, Peter, "The Search for the Elusive Natural Interest Rate," *Bloomberg.com*, (July 22, 2016). http://www.bloomberg.com/news/articles/2016-07-22/the-search-for-the-elusive-natural-interest-rate

[52] Williams (2016), p. 2.

[53] *Ibid*., p.2, and as presented in Figure 1: *Estimated inflation-adjusted natural rates of interest* (p. 2).

expected to prevail when the economy is at full strength and the stance of monetary policy is neutral (emphasis added)."[54]

Q. When testifying before the Congressional Joint Economic Committee, has Fed Chair Yellen made reference to the natural real rate of interest (r-star)?

A. Yes. When testifying before the Joint Economic Committee, United States Congress, on November 17, 2016, Ms. Yellen referred to the natural real rate of interest (r-star) as, "the neutral federal funds rate," characterizing it as "neither expansionary nor contractionary" and the rate which "keeps the economy on an even keel (emphasis added)."[55]

Q. What trends do the economic indicators suggest for common share prices?

A. As shown in Schedule JAC-6 (Pages 5 and 6), stock prices were stagnant during the high inflation/high interest rate environment of the late 1970s and early 1980s. In 1983, however, equity prices began to rise steadily, particularly as measured by the Dow Jones Industrial Average ("DJIA"), before peaking in 2007. With the onset of the Great Recession in 2008, equity prices declined sharply from their highs of 2007, reaching a low in the first quarter of 2009. Beginning in the third quarter of 2009, equity prices again began to rise, eventually recovering the losses sustained as a consequence of the "crash" in 2008 and, as evidenced by the performance of the DJIA, the S&P 500 Composite Index ("S&P 500"), and the NASDAQ Composite Index ("NASDAQ"), went on to reach new all-time highs in the fourth quarter of 2016. Following the election of Donald Trump as

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[54] *Ibid*.

[55] Yellen, Janet L., "*The Economic Outlook*," Testimony before the Joint Economic Committee, U.S. Congress, Washington, DC (November 17, 2016). https://www.federalreserve.gov/newsevents/testimony/yellen20161117a.htm

President, the bond market experienced a sell-off, but the stock market continued to rise due to expectations of rising inflation and anticipated stronger economic growth brought about by President-elect Trump's promised infrastructure fiscal stimulus spending program. Thus, since the election the equity markets have continued to rise, with the DJIA closing above 21,000 for the first time on March 1, 2017,[56] and both the S&P 500 and NASDAQ indices reaching new all-time highs on May 5, 2017.[57]

Q. You mention above that the bond market experienced a sell-off following the election of Donald Trump as President in November of 2016. Because interest rates move inversely to bond prices, a bond market sell-off is suggestive of a rise in long-term interest rates. At present, are long-term interest rates rising, or falling?

A. Long-term interest rates are falling, as evidenced by the yield on the benchmark 10-year U.S. Treasury Note having fallen to a new low of 2.147% in 2017, a figure 45 basis points lower than its high of 2.6% in March 2016 (2.6% - 2.15% = 0.45%).[58] As noted by the Wall Street Journal, this lower 10-year Treasury yield is attributable to a change in investor sentiment regarding inflation expectations:

> "The latest slide in the 10-year Treasury yield strengthened the bond market's turnaround after a big selloff in late 2016. Sell Treasurys was a popular way for investors to bet that a large fiscal stimulus in the U.S. would lead to stronger growth and higher inflation, known as the reflation trade. Confidence over President Donald Trump's fiscal

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[56] Imbert, Fred, "Dow Closes above 21,000 as Stocks Post Best Day of 2017 after Trump's Speech," *www.cnbc.com* (March 1, 2017). http://www.cnbc.com/2017/03/01/us-markets.html

[57] Imbert, Fred, "S&P, Nasdaq Notch Record Close ahead of the French Election," *www.cnbc.com* (May 5, 2017). http://www.cnbc.com/2017/05/05/us-markets.html

[58] Zeng, Min, "U.S. 10-Year Yield Falls to New Low for 2017," WSJ.com (June 7, 2017). https://www.wsj.com/articles/u-s-10-year-yield-falls-to-new-low-for-2017-1496760298

> agenda has been waning this year, causing investors to dial back bets on higher yields."[59] (emphasis added)

Thus, despite the Fed's stated desire to continue raising short-term interest rates, long-term interest rates continue to fall, as investor expectations of rising inflation has moderated significantly.

Q. What conclusions can be drawn from the above discussion of economic and financial conditions as they relate to the cost of capital?

A. Despite expectations that the Fed may raise the fed funds rate in June 2017, I believe the probability of continued rate hikes going forward to be low. As discussed previously in my direct testimony, long-term interest rates have experienced a secular decline over the last 35 years, and inflation has fallen to levels not seen since the early 1960s. Given this back drop, there is ample evidence to suggest that on a going-forward basis both long-term interest rates and inflation will continue to remain low, for as discussed in the McKinsey Report investment returns on equities and fixed-income debt securities are expected to decline over the course of the next 20 years. As previously discussed, the so-called 'natural real rate of interest' (i.e., r-star) which allows the economy 'to remain on an even keel' is expected to remain low going forward, and this trend is indicative of a decline in the cost of capital generally – both long-term debt and common equity – relative to levels seen in the past. Although the U.S. economy continues its slow recovery from the Great Recession, future GDP growth is expected to decline from levels experienced in the past, due largely to a decline in productivity growth. Although investors initially

[59] *Ibid.*

expected the economy to experience stronger growth and higher inflation in the near-term as a consequence of President Trump's planned infrastructure fiscal stimulus, recent trading in the bond market suggests this is no longer the case. Furthermore, should the Fed continue to raise short-term interest rates at a time when inflation remains below the Fed's target of 2.0 percent, doing so might cause the yield curve to invert, bringing about an economic recession. Thus, the preponderance of evidence suggests that interest rates and the cost of equity will continue to remain low for an extended period of time as real GDP growth and inflation are expected to remain below 2.0 percent on a going forward basis.

V. CAPITAL STRUCTURE AND COST OF DEBT

Q. What capital structure does Pima propose in this proceeding?

A. The Company proposes (*See* Bourassa Direct, p. 2, lines 1-8; and Schedule D-1 (Page 1)) a pro forma capital structure consisting of 35.0 percent long-term debt and 65.0 percent common equity.

Q. How does the 35.0 percent debt / 65.0 percent equity capital structure proposed by Pima compare to the sample average capital structure for RUCO's proxy group of companies?

A. Schedule JAC-6 (Page 7) presents the common equity ratios for RUCO's proxy group of sample companies. As shown, the current (i.e., 2016) sample average common equity ratio for RUCO's proxy group is 55.1 percent. Thus, the 65.0 percent equity component

in Pima's proposed capital structure exceeds RUCO's sample average common equity ratio by 99 basis points (65.0% - 55.1% = 9.9%).[60]

Q. In light of the above, does this suggest that Pima has significantly less exposure to financial risk than do RUCO's proxy group of sample companies?

A. Yes, as the Company's proposed 35.0 debt / 65.0 percent equity capital structure is significantly less highly leveraged than the sample average capital structure for RUCO's proxy group of sample companies.

Q. Do investors need to be compensated for exposure to financial risk?

A. Yes, which on a risk-adjusted basis would suggest a downward adjustment to the cost of equity for Pima.

Q. What support does the Company provide for its proposed pro forma capital structure?

A. As noted in Mr. Bourassa's direct testimony, the Company's actual test-year end capital structure consists of 27.61 percent long-term debt and 72.39 percent common equity. However, concurrent to the filing of its rate application, Pima filed a Financing Application requesting authority to issue new long-term debt.[61] As noted by Mr. Bourassa (Bourassa Direct, p. 2, lines 6-8), the new debt will bring the debt and equity proportions "to approximately 35 percent debt and 65 percent equity" (emphasis added). Mr. Bourassa

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[60] As shown in Schedule JAC-6 (Page 7), Pima's 65.0 percent common equity ratio exceeds the 53.7 percent projected (i.e., 2020-2022) sample average common equity ratio for RUCO's proxy group of companies by 113 basis points (65.0% - 53.7% = 11.3%).

[61] See Pima Application (Financing), Docket No. SW-02199A-16-0380 (dated October 20, 2016).

goes on to say that for purposes of his analysis and recommendations, "I am assuming a capital structure consisting of 35 percent debt and 65 percent equity" (emphasis added). Although not mentioned by Mr. Bourassa in direct testimony, Pima's Financing Application seeks authority to issue evidence of indebtedness in an amount not to exceed $8,370,000.

Q. What is the stated purpose of the Company's request for authority to issue $8,370,000 in new debt?

A. As contemplated in the Company's Financing Application, the requested $8,370,000 debt authorization is threefold: (1) to retire an existing loan from Wells Fargo ($6.138 million principal balance outstanding as of August 31, 2016), (2) to reduce equity in the capital structure using debt capital to achieve and maintain a capital structure consisting of approximately 65% equity and 35% long-term debt, and (3) to fund infrastructure improvements of approximately $7.5 million over the 5-year period, 2016-2020. It should be noted that a Staff Report (dated December 28, 2016) was issued recommending approval of the Company's requested debt authority, and that Pima's financing request was authorized by the Commission in Decision No. 75985 (dated February 24, 2017).

Q. What capital structure does RUCO recommend in this proceeding?

A. As shown in Schedule JAC-1, RUCO recommends a pro forma capital structure consisting of 37.50 percent long-term debt and 62.50 percent common equity.

Q. Why does RUCO recommend a different pro forma capital structure for Pima than the Company-proposed 35.0 percent debt / 65.0 percent equity pro-forma capital structure?

A. In short, RUCO believes the equity component (i.e., 65.0 percent) in the Company's proposed pro forma capital structure to be overstated. RUCO's belief in this regard is supported by two considerations. First, as will be discussed, the Company's common equity balance was overstated by $3,261,336 in Pima's last rate case (i.e., Docket No. W-02199A-11-0329, et al.), and RUCO has concerns that the overstatement to the common equity component in the Company's prior rate docket may not properly be reflected in the Company's proposed common equity balance in the instant docket. Second, as noted above, the Company's newly authorized debt will, in part, be used to fund infrastructure improvements totaling approximately $7.5 million over the 5-year period, 2016-2020. However, as presented in Exhibit 3 of the Company's Financing Application, the lion's share of these capital expenditures are not scheduled to take place until the outer years (i.e., 2018, 2019 and 2020). Thus, because (i) the $8,370,000 balance of newly authorized debt is scheduled to be drawn down in July 2017,[62] and (ii) the need for additional equity to fund Pima's planned infrastructure improvement projects won't be needed until years 2018, 2019 and 2020, RUCO believes that for ratemaking purposes its proposed 37.50 percent debt / 62.5 percent equity pro-forma capital structure is more representative of what Pima's actual capital structure will be through the year 2020.

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[62] As noted in the Company's Financing Application (p. 2, lines 18-21), Pima's new debt will be used to retire the Company's current outstanding debt, which is scheduled to mature on July 25, 2017.

Q. Please discuss the $3,261,336 overstatement made by the Company to the equity component in Pima's last rate case.

A. In direct testimony filed by the Company's cost of capital witness, Mr. Thomas J. Bourassa, in Pima's last rate case (Docket No. W-02199A-11-0329, et al.), the reported equity component in Pima's proposed pro-forma, end of test-year capital structure was $18,563,072.[63] In filing direct testimony, Staff witness John A. Cassidy made a $4,836,113 downward adjustment to the Company's proposed $18,563,072 equity component, obtaining an adjusted common equity balance of $13,726,959 ($18,563,072 - $4,836,113 = $13,726,959).[64] Subsequently, in rebuttal testimony filed by Mr. Bourassa, Pima proposed a pro-forma, end of test-year capital structure consisting of an adjusted equity balance of $15,301,736.[65] Both Staff and RUCO adopted the Company's adjusted $15,301,736 common equity balance, and for ratemaking purposes the Commission likewise adopted it, as rates were established based upon a capital structure consisting of 64.6 percent equity and 35.4 percent debt.[66] Nevertheless, the $15,301,736 common equity balance agreed to by the parties represented a $3,261,336 downward adjustment to the $18,563,072 common equity balance as originally proposed by the Company in direct testimony ($18,563,072 - $15,301,736 = $3,261,336) -- by any measure, not an insignificant sum of money.

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[63] *See* Pre-filed Direct Testimony of Thomas J. Bourassa, Schedule D-1 (Page 1), *Pima Utility Company*, Docket No. W-02199A-11-0329, et al. (dated August 29, 2011).

[64] *See* Pre-filed Direct Testimony of John A. Cassidy (pp. 7-8), and Schedule JAC-10, *Pima Utility Company*, Docket No. W-02199A-11-0329, et al. (dated April 3, 2012).

[65] *See* Pre-filed Rebuttal Testimony of Thomas J. Bourassa, Rebuttal Schedule D-1 (Pages 1 and 2), *Pima Utility Company*, Docket No. W-02199A-11-0329, et al. (dated April 27, 2012).

[66] *See* Decision No. 73573, p. 29 (dated November 21, 2012).

Q. You indicated earlier that RUCO has concerns that this $3,261,336 overstatement to the common equity component in Pima's last rate case may not properly have been accounted for in the Company's proposed common equity balance in this proceeding. Did RUCO issue a data request asking the Company to provide documentation demonstrating that the equity component in its proposed pro-forma capital structure in this docket has not been overstated?

A. Yes, and the inquiries made in RUCO 2.05 and the Company's response are presented in Exhibit JAC-C. As shown, RUCO requested that the Company: (i) provide a reconciliation schedule showing that the $3,261,336 downward adjustment to common equity had properly been carried forward to Pima's common equity balances in the subsequent years, 2011-2015; (ii) provide copies of audited financial statements for the years ending, December 31, 2011 through December 31, 2016; and (iii) admit, in the event the $3,261,336 downward adjustment to common equity had not properly been carried forward, that a downward adjustment of $3,261,336 to the Company's proposed $15,545,954 common equity balance in this docket is necessary.

Q. What was the Company's response to RUCO 2.05?

A. As can be seen, Pima was non-responsive to RUCO 2.05, dismissing RUCO's data request as being, "utterly immaterial" to the setting of rates in this docket.

Q. In a regulatory rate proceeding, what party has the burden of proof?

A. Although I am not an attorney, it is my understanding that in a regulatory rate proceeding the burden of proof falls upon the Applicant (i.e., Pima) to support the numbers presented in its Application. RUCO believes its request for information made of the Company in

RUCO 2.05 to be entirely reasonable, particularly when considering that the $3,261,336 downward adjustment made to common equity in the Company's prior rate case represented fully 17.57 percent of the $18,563,072 common equity balance originally proposed by the Company ($3,261,336 / $18,563,072 = 17.57%). By any reasonable standard, a downward adjustment to the equity component in the capital structure of this magnitude in Pima's prior rate case is highly material in the present docket; this, despite the Company's attempt to suggest otherwise.

Q. Briefly discuss Pima's planned capital improvement projects in years, 2016-2020, and their significance to RUCO's proposed 37.5 percent debt / 62.5 percent equity pro forma capital structure.

A. As noted earlier, Exhibit 3 of the Company's Financing Application presents a listing of future capital improvement projects and their estimated costs for Pima's Water and Wastewater Divisions over the 5-year period, 2016-2020. Below is a summary breakout of those annual anticipated costs for each division, the combined total annual costs, and the percent of total costs to be expended annually:

Year	Water Division	Waste Water Division	Combined Total	Percent of Total
2016	$ 190,898	$ 162,971	$ 353,869	4.68%
2017	975,000	335,000	1,310,000	17.34%
2018	2,780,000	110,000	2,890,000	38.26%
2019	750,000	750,000	1,500,000	19.86%
2020	750,000	750,000	1,500,000	19.86%
Total	$5,445,898	$2,107,971	$7,553,869	100.00%

As can be seen, the majority of Pima's planned capital expenditures won't be incurred until years 2018-2020, and in response to RUCO 2.04, which is presented in Exhibit JAC-C, the Company acknowledges that (i) the entire principal balance of Pima's newly

authorized debt would be drawn down upon maturity of its current outstanding debt, and (ii) after repaying its existing debt (a figure projected to be $5,626,500), that debt proceeds of $2,743,500 would be available to fund the Company's projected capital improvements in 2017 ($1,310,000) and 2018 ($2,890,000). Thus, at the earliest, the need for additional equity capital to fund the Company's planned infrastructure projects would not arise until mid-2018, as the newly authorized debt proceeds would be sufficient to cover all of the planned 2017 capital expenditures, leaving the $1,433,500 residual debt proceed balance ($2,743,500 – $1,310,000 = $1,433,500) available to cover all but $1,456,500 of the 2018 capital expenditures ($2,890,000 - $1,433,500 = $1,456,500).

Q. Does RUCO have concerns that the Company might conceivably effectuate a rebalancing of its capital structure by swapping out equity for debt after rates have been established until such time additional equity capital was needed to fund the remaining 2018 capital expenditures?

A. Yes, for as contemplated in Pima's prior financing application (Docket No. W-02199A-11-0403), the Company requested authority to "rebalance" its capital structure by buying back $2.5 million of equity capital with $2.5 million of debt capital. While Pima's current financing application makes no mention of such capital structure rebalancing, this fact does not preclude Pima from effectuating a temporary rebalancing of its capital structure until such time additional equity capital was needed to fund the outer year capital improvement projects. Thus, adoption of RUCO's proposed 37.50 percent debt / 62.50 percent pro-forma capital structure would serve to mitigate the adverse impact of such a temporary capital structure rebalancing upon ratepayers.

Q. What is the Company's proposed cost of debt?

A. As shown in Schedule D-1, the Company proposes a 3.42 percent cost of long-term debt.[67]

Q. How does the Company's proposed cost of debt in this proceeding compare to the Commission authorized cost of debt in Pima's prior rate case (i.e., Docket No. W-02199A-11-0329, et al.)?

A. In the Company's prior rate docket, the Commission authorized a 4.25 percent cost of debt.[68] Thus, it would appear that the Company's proposed 3.42 percent cost of debt is 83 basis points lower than that authorized in the Company's last rate case (4.25% - 3.42% = 0.83%).

Q. As shown in Schedule D-1, is the above referenced 4.25 percent authorized cost of debt reported to be Pima's test-year end cost of debt?

A. No, it is not. As presented in Schedule D-1, Pima's test-year end cost of debt is reported to be 3.035 percent, a figure 121.5 basis points lower than the 4.25 percent cost of debt authorized in Decision No. 73573 (4.25% - 3.035% = 1.215%). Furthermore, a review of the Company's annual reports filed with the ACC in years, 2012-2015, similarly reports the interest rate on the Company's current outstanding debt to be 3.035 percent.

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[67] Exhibit 4 of the Company's financing application contains the term sheet associated with the Company's newly authorized debt, and as indicated in that document the 3.42 percent cost rate represents the sum of a 5-year LIBOR rate (1.42%) plus 2.00% (1.42% + 2.00% = 3.42%).

[68] *See* Decision No. 73573 (p. 29), dated November 21, 2012.

Q. What is RUCO's proposed cost of debt in this proceeding?

A. RUCO provisionally adopts the Company's proposed 3.42 percent cost of debt. However, RUCO will issue a data request to the Company requesting clarification as to the actual cost of its currently outstanding debt, and the reasons why it differs from the Commission authorized 4.25 percent cost rate. Additionally, RUCO will inquire if there has been a change to the 5-year LIBOR rate cited to in the term sheet (i.e., 1.42%) since the filing of the Company's financing Application in order to update its recommended cost of debt, as necessary.

VI. SELECTION OF PROXY GROUP

Q. Was RUCO able to directly estimate the cost of common equity for the Company?

A. No. The common stock of EWAZ is not publicly-traded, and thus it is not possible to directly estimate the Company's cost of common equity. Therefore, RUCO employed a proxy group of publicly-traded water utility companies to indirectly estimate EWAZ's cost of equity utilizing financial market data available for each sample company.

Q. What publicly-traded water utility companies has RUCO selected for inclusion in its proxy group?

A. RUCO's proxy group consists of the following nine publicly-traded water utility companies: American States Water, American Water Works, Aqua America, Artesian Resources Corp., California Water, Connecticut Water, Middlesex Water, SJW Corp., and York Water. These nine water utilities comprise the entire universe of publicly-traded water utility companies followed by both the Standard Large-Cap, and the Small and Mid-Cap,

editions of *The Value Line Investment Survey*. Attachment 2 contains the most recent *Value Line* quarterly update for each of RUCO's nine proxy companies.

Q. For purposes of his analysis, does the Company's cost of capital witness employ the same proxy group as that of RUCO?

A. No. The company's witness, Mr. Thomas J. Bourassa, employs a proxy group consisting of only seven companies. For purposes of his analysis, Mr. Bourassa excludes both American Water Works and Artesian Resources Corp. from his proxy group of sample companies.

VII. DCF ANALYSIS

Q. What is the theory and methodological basis of the DCF model?

A. The DCF model is one of the oldest and most commonly used models for estimating the COE for public utilities, and the only one which intrinsically takes into consideration the price investors are willing to pay for a given unit of return. The DCF is based on the "dividend discount model" of financial theory, which maintains that the value (price) of any security or commodity is the discounted present value of all future cash flows.

The most common variant of the DCF model assumes that dividends are expected to grow at a constant rate and the following formula will generate the cost of capital.

$$K = \frac{D}{P} + g$$

Where: K = discount rate (cost of equity)
P_0 = current stock price
D_0 = current annualized dividend

D_1 = expected dividend

D_0 / P_0 = current dividend yield

D_1 / P_0 = expected dividend yield

g = expected constant dividend growth rate

This formula essentially recognizes that the return expected, or required, by investors is comprised of two factors: the dividend yield (current income) and expected growth in dividends (future income).

Q. Please explain how RUCO employed the DCF model.

A. For purposes of its analysis, RUCO employs the constant growth DCF model. In doing so, RUCO combines the current annualized dividend (D_0) for each sample company with several indicators of expected dividend growth, thereby obtaining for each sample company a measure of next year's expected dividend (D_1).

Q. How did RUCO derive the dividend yield component of the DCF equation?

A. Several different methods can be used to compute the dividend yield component in the constant growth DCF model. However, for purposes of its analysis RUCO utilizes the Gordon quarterly compounding method to compute the dividend yield component, as it gives recognition to the timing of dividend payments and dividend increases. The Gordon quarterly compounding method is expressed as follows:

$$Yield = \frac{D_0(1 + 0.5g)}{P_0}$$

The current (P_0) stock price in my yield calculation represents the average closing stock price for each proxy company over the most recent three month period (February – April,

2017). The current (D_0) dividend is the current annualized dividend rate for each proxy company. Because the expected (D_1) dividend represents the quantity, [D_0 * (1 + .05g)], the above equation is representative of the expected dividend yield, (D_1 / P_0).

Q. How does RUCO estimate the dividend growth (g) component of the DCF equation?

A. In estimating the dividend growth (g) rate in its DCF analysis, RUCO gives consideration to the following five indicators of growth:

1. Five-year average (Years 2012-2016) historical earnings retention (i.e., fundamental) growth, as reported by *Value Line*;
2. Five-year compound average annual historical growth (Years 2012-2016) in earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS), as reported by *Value Line*;
3. Five-year average (Years 2017-2021) projected earnings retention growth, as reported by *Value Line*;
4. Five-year compound average annual projected growth (Years 2017-2021) in EPS, DPS, and BVPS, as reported by *Value Line*; and,
5. Five - year projections of EPS growth, as reported by Yahoo Finance.

RUCO believes this combination of growth indicators to be a representative and appropriate set with which to estimate investor expectations of dividend growth for its proxy group of sample companies, as each is a determinant of dividend growth. Additionally, these growth indicators are reflective of the types of information that investors normally take into consideration when making an investment decision.

Q. Please describe RUCO's DCF calculations.

A. RUCO's DCF analysis is presented in Schedule JAC-3, Pages 1 through 4. Page 1 presents RUCO's overall DCF cost of equity estimation results for its proxy group of sample companies. As can be seen, "raw" DCF calculations are presented on several bases: mean, median, and high values. Page 2 presents the calculation of the dividend yield for each proxy company prior to adjustment for growth. Pages 3 and 4 present RUCO's historical and projected growth rate calculations for its proxy group of companies.

Q. What does RUCO conclude from its DCF cost of equity estimation analyses?

A. The DCF cost of equity rates obtained for RUCO's proxy group fall into a range between 7.78 percent and 9.74 percent. The highest DCF estimate is 9.74 percent. RUCO concludes that 9.74 percent represents the current DCF-derived cost of equity for the proxy group. Accordingly, RUCO adopts a DCF-derived cost of equity of 9.74 percent for the Company, which is based on the high end of the DCF range.

VIII. CAPM ANALYSIS

Q. Please describe the theory and methodological basis of the CAPM.

A. Developed in the 1960s and 1970s as an extension of modern portfolio theory, the CAPM describes the relationship between a security's investment risk and its market rate of return.[69] This relationship identifies the rate of return which investors expect a security to earn so that its market return is comparable with the market returns earned by other

[69] The CAPM makes the following assumptions: 1) single holding period; 2) perfect and competitive securities market; 3) no transaction costs; 4) no restrictions on short selling or borrowing; 5) the existence of a risk-free rate; and 6) homogeneous expectations.

securities that have similar risk. The relationship is specified by the Security Market Line (SLM) that indicates the relationship between each security or portfolio's "beta" and its resulting return. Beta is a measure of relative risk (i.e., volatility) between a given equity security and the market as a whole.

Q. How is the CAPM derived?

A. The general form of the CAPM is:

$$K = R_f + \beta (R_m - R_f)$$

Where: K = *cost of equity*

R_f = *risk free rate*

R_m = *return on market*

β = *beta*

$R_m - R_f$ = *market risk premium*

Q. Can you please identify the strengths of using the CAPM model in your analysis?

A. Yes. The CAPM is cited as having the following strengths (1) it is based on the concept of risk and return; (2) it is company specific as it relates to the specific beta's within the industry; (3) it has widespread use as it recognizes that investors can and do diversify; (4) it's highly structured and easy to apply when using the assumptions of the model; (5) the model is formulistic and the data used in the computations is readily available; (6) it is a forward looking concept; and (7) it is a method for converting changes in interest rates to the cost of equity.

Q. What risk-free (R_f) rate does RUCO use in its CAPM analysis?

A. For purposes of its CAPM analysis, RUCO uses a risk-free rate of 3.02 percent. RUCO's risk-free rate represents a composite 3-month average yield on the 30-year long-term U.S. Treasury Bond, measured over the 3-month period, February - April 2016. The calculation of RUCO's risk-free rate is presented in Schedule JAC-4 (Page 1).

Q. Is it customary to use the yield on U.S. Treasury securities as the risk-free (R_f) rate in the CAPM?

A. Yes, because debt securities issued by the United States Department of the Treasury are considered to be free of default risk. Two general types of U.S. Treasury securities are most often used as the risk-free *(Rf)* rate component, short-term U.S. Treasury bills and long-term U.S. Treasury bonds. For purposes of its analysis, RUCO elected to use the yield on 30-year U.S. Treasury bonds as a proxy for the risk-free rate because yields on long-term Treasury bonds more closely match the useful life of the plant assets to be funded by the Company's common equity capital.

Q. Did RUCO consider use of a forecasted long-term Treasury bond rate as the risk-free rate to be used in its CAPM analysis?

A. No. The appropriate interest rate to be used in the CAPM is the current rate borne by investors in the market place. Use of a forecasted risk-free rate overstates cost of equity estimates derived from the CAPM. Use of a current long-term Treasury rate is reflective of investor's expectations, and as such is the appropriate risk-free rate to be used in the CAPM.

Q. What beta coefficients does RUCO employ in its CAPM analysis?

A. RUCO employs the most recent *Value Line* beta reported for each company in its proxy group. Once again, beta[70] is a measure of the relative risk, or volatility, of a particular stock in relation to the market as a whole. The overall market is assumed to have a beta of 1.0. Stocks having beta coefficients less than 1.0 are considered to be less risky than the market, whereas stocks having betas greater than 1.0 are considered to be more risky than the market. As regulated entities which have been granted natural monopoly status, public utilities are considered less risky than the market and typically have betas less than 1.0.

Q. How does RUCO estimate the market risk premium (R_m-R_f) component?

A. The market risk premium component (R_m-R_f) represents the investor-expected premium of common stocks above that of the risk-free rate, or government bonds. For purposes of its analysis, RUCO estimated the market risk premium by comparing annual realized returns on equity for the S&P 500 group with annual yields on 20-year long-term Treasury bonds over the period, 1978-2016. As shown in Schedule JAC-4 (Page 2), the market risk premium component used in RUCO's CAPM represents the average of differential returns on equity for the S&P 500 group and the annual yields on 20-year U.S. Treasury bonds over this 1978-2016 period of time. RUCO determined the average ROE on the S&P 500 to be 13.67 percent, and the average 20-year U.S. Treasury bond yield to be 6.71 percent. Thus, based upon these returns RUCO concluded the market risk premium (R_m-R_f) component in its CAPM to be 6.95 percent.

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[70] See Attachment 2 – Individual proxy companies beta identified

Q. What did RUCO conclude the overall CAPM COE to be?

A. As shown in Schedule JAC-4 (Page 1), RUCO determined the CAPM derived cost of equity to be 7.89 percent for its proxy group of sample companies.

IX. CE ANALYSIS

Q. Please describe the basis of the Comparable Earnings (CE) methodology.

A. The CE method is designed to measure returns expected to be earned on the original cost book value of similar risk business enterprises, in this case RUCO's proxy group of companies. Thus, it provides a direct measure of the fair return, since it translates into practice the competitive principle upon which regulation rests, and provides additional support that the Company will be allowed the opportunity to earn a fair rate of return.

Q. How did RUCO apply the CE methodology?

A. RUCO applied the CE methodology by examining realized returns on equity for its proxy group of sample companies over both the 10-year period, 2007-2016, and the 5-year period, 2012-2016, as well as projected returns on equity for 2017 and 2018, and 2020-2022.

Q. What cost of equity results were obtained from RUCO's CE analysis?

A. As shown in Schedule JAC-5, RUCO computed historical returns on equity for its sample companies over both a 5- and 10-year period, and projected returns on equity over the 5-year period, 2017-2021. Based upon its analysis, RUCO generated mean, median, and average of mean and median CE cost of equity estimates ranging from a low of 8.90

percent to a high of 11.30 percent. The results of RUCO's CE cost of equity analysis for it proxy group of companies can be summarized as follows:

	Historic ROE's	Projected ROE's
Mean	9.20 % - 9.90 %	11.30 %
Median	8.90 % - 9.30 %	11.30 %
Average of Mean and Median	9.10 % - 9.60 %	11.30 %

For purposes of its analysis, RUCO adopts the 11.30 percent projected average of mean and median cost of equity estimate as its CE-derived cost of equity estimate for the Company.

X. RUCO RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA

Q. Please summarize Mr. Bourassa's cost of capital analyses and recommendations.

A. Mr. Bourassa recommends a return on equity of no less than 11.2 percent for Pima based on estimates derived from two constant growth DCF models,[71] one risk premium model,[72] and three CAPM models,[73] using a sample group of seven publicly-traded water companies.[74] Based upon his analyses, Mr. Bourassa determined the cost of equity for his sample group fell in the range of 8.8 percent to 11.3 percent, with the mid-point indicated cost of equity being 10.1 percent. For purposes of his cost of equity recommendation for Pima, however, Mr. Bourassa makes an upward 120 basis point

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[71] One DCF model employs exclusive use of analysts' forecasts of growth to estimate the dividend growth rate, while the other DCF model employs both analysts' forecasts of growth and historical growth estimates to estimate dividend growth (*See* Bourassa Direct, p.2, lines 22-23, and Schedule D-4.7 (Pages 1-2)).

[72] *See* Bourassa Direct, p.27, line 6, and Schedule D-4.9.

[73] Mr. Bourassa employs estimates derived from (i) the traditional CAPM, (ii) the empirical CAPM, and (iii) a modified CAPM methodology (*See* Bourassa Direct, p.3, lines 1-2, and Schedule D-4.11).

[74] The seven publicly-traded companies in Mr. Bourassa's sample include American States Water, Aqua America, California Water, Connecticut Water, Middlesex Water, SJW Corp., and York Water.

adjustment for small size and business risk, resulting in a range of estimates from 10.0 percent to 12.5 percent, with the upwardly-adjusted mid-point indicated cost of equity being 11.3 percent. To this 11.3 percent midpoint value Mr. Bourassa then makes a 10 basis point downward adjustment for financial risk, resulting in an adjusted mid-point cost of equity of estimate of 11.2 percent, which Mr. Bourassa employs as his recommended cost of equity for Pima in this proceeding. The summary results of Mr. Bourassa's cost of capital analyses are presented in Schedule D-4.1. As shown in Schedule D-1 (Page 1), Mr. Bourassa recommends an 8.48 percent overall rate of return for Pima based upon an anticipated pro forma capital structure consisting of 35.0 percent debt and 65.0 percent equity, and a 3.42 percent cost of long-term debt.

In his constant growth DCF analyses, Mr. Bourassa estimates the dividend growth (g) component based upon (i) an average of both historical and forecasted growth and (ii) forecasted growth. The 5- and 10-year historical growth metrics employed by Mr. Bourassa include stock price growth, book value per share (BVPS), earnings per share (EPS), and dividends per share (DPS). Mr. Bourassa justifies use of stock price as a growth metric on grounds that in equilibrium, stock prices should grow at the same rate as BVPS, EPS and DPS (Bourassa Direct, pp. 32-33, lines 24:2). The historical stock price growth rates in Mr. Bourassa's DCF analysis are computed using historical stock prices obtained from the Yahoo Finance website, while the BVPS, EPS and DPS historical growth rates are obtained from *Value Line*. Mr. Bourassa makes exclusive use of 5-year EPS forecasts from *Value Line* for his projected dividend growth estimates. In each of his two constant growth DCF analyses, the current dividend yield (D_0/P_0) component for each of his sample companies is based upon a September 30, 2016 closing spot market (P_0)

price. For purposes of his cost of equity analyses, Mr. Bourassa relies upon an 8.8 percent adjusted average Constant Growth DCF cost estimate, obtained from use of a 5-year average historical and projected dividend growth rate, the details of which are presented in Schedule D-4.7 (page 2).[75] However, as shown in that schedule the actual sample average DCF cost estimate for Mr. Bourassa's sample companies is 8.4 percent. Mr. Bourassa justifies reliance on the higher 8.8 percent adjusted average figure on grounds that cost of equity estimates less than 7.0 percent (i.e., the expected yield on Baa bonds, plus 100 basis points) should be excluded from consideration (Bourassa Direct, p. 34, lines 14-16).[76]

In his Risk Premium (RPM) analysis, Mr. Bourassa utilizes the 15-year historical period, 2001-2015, over which to estimate the equity risk premium to be used in his RPM. In each year, he obtains a composite average annual total return for his sample companies, subtracts from this value the average annual yield on long-term Treasury bonds, with the resulting quantity being the annual risk premium for his sample companies in that year. For purposes of his analyses, Mr. Bourassa then obtains two measures of the annual risk premium: a 6.1 percent average annual risk premium, measured over the 15-year period, 2001-2015; and an 8.8 percent average annual risk premium, measured over the 5-year period, 2011-2015. To each, he then adds a 3.8 percent average forecasted long-term Treasury yield, obtained from estimates provided by *Blue Chip Financial Forecasts* and *Value Line* covering the 3-year period, 2017-2019. Finally, as measured over the 15-year

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[75] Footnote 3 of Schedule D-4.7 (page 2) improperly makes reference to Schedule D-4.5, Col. 7. The proper reference should be to Schedule D-4.4, Col. 7.

[76] As shown in Schedule D-4.7 (page 2), in obtaining his 8.8 percent adjusted average indicated DCF cost estimate Mr. Bourassa excludes from consideration the 5.78 percent estimate for SJW Corp., as it is less than 7.0 percent.

period, 2001-2015, Mr. Bourassa obtains a 9.9 percent RPM estimated cost of equity for his sample companies, and as measured over the 5-year period, 2011-2015, obtains a 12.6 percent RPM estimated cost of equity. Mr. Bourassa determines the mid-point of these two RPM equity cost estimates to be 11.3 percent,[77] and adopts it as his RPM estimated cost of equity. In closing, it should be noted that in the development of the annual risk premiums in his RPM analysis, Mr. Bourassa gives exclusive consideration to arithmetic mean returns, and gives no consideration to estimates obtained from geometric, or compound annual growth returns. Mr. Bourassa's RPM analysis is presented in Schedule D-4.9, and his forecasts of long-term Treasury rates are presented in Schedule D-4.8.

For purposes of his CAPM analyses, Mr. Bourassa presents estimates obtained from three different versions of the CAPM: (i) the Traditional CAPM, utilizing a 7.8 percent market risk premium ("MRP");[78] (ii) the Empirical CAPM, utilizing this same 7.8 percent MRP; and (iii) a Modified CAPM, utilizing a 6.80 percent MRP,[79] and incorporating a 2.95 percent (i.e., 295 basis point) upward size risk adjustment.[80] In each of Mr. Bourassa's three variations of the CAPM, he employs as his risk-free (R_f) rate the same 3.8 percent forecasted 30-year long-term Treasury rate used in his RPM analysis. The results of Mr. Bourassa's CAPM analyses are presented in Schedule D-4.11. As shown, Mr. Bourassa

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[77] In actuality, the mid-point is 11.25 percent ((9.9% + 12.6%) / 2 = 11.25%).

[78] As shown in Schedule D-4.11, Footnote 3, this 7.8 percent MRP is computed as an average of a 7.00 percent Historical MRP as measured over the period, 1926-2015, and an 8.6 percent Current MRP ((7.00% + 8.60%) / 2 = 7.8%).

[79] As shown in Schedule D-4.11, Footnote 4, this 6.8 percent MRP is computed as an average of a 5.00 percent Historical MRP as measured over the period, 1963-2015, and an 8.6 percent Current MRP ((5.00% + 8.60%) / 2 = 6.8%).

[80] See Bourassa Direct, p. 44. As shown in Schedule D-4.11, Footnote 5, this 2.95 percent upward size risk premium was obtained from the *Duff & Phelps Size Study*.

derives a 9.2 percent estimated cost of equity for his sample companies from the Traditional CAPM, a 9.8 percent estimated equity cost rate from the Empirical CAPM, and an 11.4 percent estimated cost of equity from the Modified CAPM. Mr. Bourassa's CAPM analyses is presented in Schedule D-4.11. As shown, he adopts a 10.1 percent CAPM estimated equity cost rate for his sample companies, a figure which represents the average cost estimate obtained from each of his three CAPM models ((9.2% + 9.8% + 11.4%) / 3 = 10.1%).

Q. Turning first to Mr. Bourassa's DCF analysis, does RUCO believe historical stock price growth to be an appropriate metric with which to estimate the dividend growth (g) component in the constant growth DCF model?

A. No, because stock price growth is **not** a determinant of dividend growth. In fact, the reverse is true, for without the ability to demonstrate growth in such metrics as earnings per share (EPS), dividends per share (DPS), earnings retention and book value per share (BVPS), investors would be unwilling to bid up the share price of a company's common equity in the market. In this regard, dividend growth is a determinant of stock price growth, not *vice versa*. That Mr. Bourassa uses stock price growth as a metric to estimate dividend growth places, figuratively speaking, the cart before the horse.

Q. Earlier you pointed out that in his Constant Growth DCF analysis, Mr. Bourassa relied upon an 8.8 percent adjusted average cost of equity estimate, rather than the sample average 8.4 percent estimate obtained for his proxy group of publicly-traded water companies on grounds that the cost of equity estimate obtained for one sample company (i.e., SJW Corp.) was less than 7.0 percent. Would you care to comment on Mr. Bourassa's exclusion of cost of equity estimates below 7.0 percent?

A. Yes, I would. While I am appreciative of Mr. Bourassa's desire to obtain a higher, rather than lower, cost of equity estimate for his client, I believe caution should be exercised when excluding the results obtained from a cost of equity analysis for the following reasons. First, the use of a sample to estimate the cost of equity is appropriate as it reduces the sample error resulting from random fluctuations in the market at the time the information is gathered. Thus, reliance on Mr. Bourassa's 8.4 percent sample average DCF cost results is appropriate, while the 8.8 percent adjusted average DCF estimate obtained by excluding individual sample results less than 7.0 percent overstates the DCF derived cost of equity for his sample companies. Second, the analyst can reduce sample error by increasing the size of the sample. For purposes of his analyses, however, Mr. Bourassa's proxy group of sample companies consists of only seven of the nine publicly-traded water utility companies followed by *Value Line*.[81] Thus, until such time that Mr. Bourassa has further reduced sample error in his cost of equity analyses by incorporating Constant Growth DCF cost of equity estimates obtained from both American Water Works

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[81] The Large-Cap edition of the *Value Line Investment Survey* follows eight publicly-traded water utilities; the seven companies included in Mr. Bourassa's proxy group, plus American Water Works (NYSE Ticker: AWK) which he excludes from his proxy group. In addition, the Small-Mid Cap edition of the *Value Line Investment Survey* follows Artesian Resources Corp. (NASDAQ Ticker: ARTNA), which is also excluded from Mr. Bourassa's proxy group.

(AWK) and Artesian Resources Corp. (ARTNA), no consideration should be given to his 8.8 percent adjusted average DCF equity cost estimate.

Q. Moving on to a discussion of Mr. Bourassa's RPM analysis as presented in Schedule D-4.9, does RUCO believe Mr. Bourassa's 11.3 percent (i.e., mid-point) RPM cost of equity estimate to be overstated due to his having employed both a 6.1 percent average annual risk premium computed over a 15-year period (2001-2015), as well as an 8.8 percent average annual risk premium computed over a 5-year period (2011-2015)?

A. Yes. As shown, the historical data presented in Schedule D-4.9 covers the 15-year period, 2001-2015; thus, only the 6.1 percent average annual risk premium pertaining to this 15-year period (Schedule D-4.9, line 16) should be used to estimate the RPM estimated cost of equity in his analysis. Based upon the other figures appearing in Schedule D-4.9, this would suggest an estimated RPM cost of equity for Mr. Bourassa's sample companies of 9.9 percent, a figure representing the sum of the 6.1 percent 15-year average annual risk premium, plus Mr. Bourassa's proposed 3.8 percent forecasted risk-free rate (6.1% + 3.8% = 9.9%). Support for this position can be found in Mr. Bourassa's discussion of the RPM (Bourassa Direct, p. 35, lines 2-3), in which he states that in implementing the RPM, "**it is assumed that the past relationship will continue into the future**" (emphasis added).

Q. Based upon the above statement, Mr. Bourassa appears to acknowledge that the historical period used to obtain the equity risk premium component in the RPM be one which is representative of expected future performance, correct?

A. Yes.

Q. In light of the above, should Mr. Bourassa's 12.6 percent (i.e., Schedule D-4.9, line 21) estimated RPM equity cost rate based upon an 8.8 percent (i.e., Schedule D-4.9, line 17) 5-year average annual risk premium measured over the period, 2011-2015 be given any weight in this proceeding?

A. No, it should not, and for obvious reasons neither should Mr. Bourassa's 11.3 percent "mid-point" RPM equity cost estimate (i.e., Schedule D-4.9, line 22). Further support for this position can be found in the McKinsey Report, discussed earlier in my direct testimony, which anticipates both equity returns and returns on fixed cost debt securities to fall over the next twenty year period.

Q. As shown in Schedule D-4.9, Mr. Bourassa employs a 3.8 percent forecasted long-term Treasury rate in his RPM cost of equity analysis. Does Mr. Bourassa's use of a forecasted rate in his RPM analysis comport to the RPM methodology as described in his direct testimony?

A. No, it does not. In describing the RPM (Bourassa Direct, pp. 34-35, lines 23:2), Mr. Bourassa states that the "general approach" involves adding the "current debt yield" to the equity risk premium component to derive an RPM derived estimated cost of equity (emphasis added). This would suggest that rather than using a forecasted measure of

the long-term Treasury rate, Mr. Bourassa should instead have used either a current spot, or recent average, measure of the yield on the 30-year Treasury bond.

Q. In regard to the "current debt yield," does RUCO believe the 'general approach' to the RPM as described by Mr. Bourassa to be the appropriate RPM methodology?

A. Yes, and for two reasons. First, the current yield on the 30-year U.S. Treasury Bond is reflective of the rate borne by investors in the marketplace. Thus, to set rates based upon forecasted measures of long-term U.S. Treasury debt instruments ignores the fact that ratepayers don't have the luxury of obtaining comparable "forecasted" returns on investments today, here and now. This is particularly true when considering the present low rates paid by banks on passbook savings accounts. Second, regulated public utilities are granted natural monopoly status to serve customers in their certificated service territory, and as a consequence the ratepayers they serve are captive to the tariffed rates authorized to be charged. Thus, to set rates based on cost of equity estimates obtained through the use of forecasted measures of long-term Treasury debt yields is inequitable/unfair to ratepayers.

Q. Please quantify the extent to which Mr. Bourassa's use of a 3.8 percent forecasted 30-year treasury rate overstates his RPM derived estimated cost of equity.

A. As shown in RUCO Schedule JAC-4 (Page 1), the current 3-month average yield on the 30-year U.S. Treasury Bond is 3.02 percent. Thus, Mr. Bourassa's use of a forecasted 3.8 percent long-term Treasury rate overstates his estimated RPM cost of equity by an additional 78 basis points (3.80% - 3.02% = 0.78%).

Q. For purposes of his 3.8 percent forecasted long-term Treasury rate, Mr. Bourassa incorporates estimates provided by *Blue Chip Financial Forecasts* (See Bourassa Direct, pp. 35-36, and Schedule D-4.8). Is there reason to believe that interest rate forecasts provided by *Blue Chip Financial Forecasts* have systematically been overstated?

A. Yes. As shown in RUCO Exhibit JAC-B, a recent study found that estimates for 10-year U.S. Treasury rates provided by *Blue Chip Economic Indicators* have consistently and systematically been overstated.[82]

Q. For purposes of his RPM analysis, does Mr. Bourassa employ a compound geometric mean in the computation of the annual total returns presented in Schedule D-4.9?

A. No, he does not. Mr. Bourassa makes exclusive use of an arithmetic mean returns when computing the annual total returns presented in Schedule D-4.9.

Q. Why is exclusive use of arithmetic returns in the development of Mr. Bourassa's RPM equity risk premium inappropriate?

A. It is inappropriate for two reasons. First, exclusive use of arithmetic returns leads to the development of higher, and potentially excessive, risk premiums. Second, investors have

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[82] "Long-Term Interest Rates: A Survey," Council of Economic Advisors, Executive Office of the President of the United States, July 2015, p.11, Figure 5.
https://www.whitehouse.gov/sites/default/files/docs/interest_rate_report_final_v2.pdf

access to both arithmetic and geometric returns, and utilize both when making investment decisions. For example, mutual fund investors rely on geometric returns when evaluating a fund's historic and prospective returns, and *Value Line* reports historic investment returns on a geometric or compound annual growth rate basis. Thus, to exclude geometric returns in the development of an equity risk premium fails to give recognition to their importance in the investment decision-making process.

Q. Has the Arizona Corporation Commission (ACC) previously ruled on the issue of geometric returns and whether they should be considered in the development of an equity risk premium?

A. Yes, and the ACC has consistently ruled that geometric returns should be considered in the development of an equity risk premium.[83]

Q. In failing to give recognition to geometric, or compound annual growth, returns in his RPM analysis, does Mr. Bourassa overstate the annual risk premiums for his sample companies?

A. Yes, which suggests that his RPM cost of equity results have further been overstated.

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[83] *See* Decision No. 70011 (dated November 27, 2007), in *UNS Gas, Inc.* (Docket No. G-04204A-06-0463); Decision No. 70360 (dated May 27, 2008), in *UNS Electric, Inc.* (Docket No. E-04204A-06-0783); Decision No. 71308 (dated October 21, 2009), in *Chaparral City Water Company* (Docket No. W-02113A-07-0551); Decision No. 71623 (dated April 14, 2010), in *UNS Gas, Inc.* (Docket No. G-04204A-08-0571); Decision No. 71845 (dated August 25, 2010), in *Arizona Water Company* (Docket No. W-01445A-08-0440); Decision No. 71914 (dated September 30, 2010), in *UNS Electric, Inc.* (Docket No. E-04204A-09-0206);

Q. Turning now to Mr. Bourassa's Traditional CAPM cost of equity analysis, as shown in Schedule D-4.11 he obtains estimates from both a Historical Market Risk Premium (MRP) CAPM as well as a Current MRP CAPM. In both, however, the risk-free (R_f) rate component is the same 3.8 percent forecasted long-term Treasury rate as that used by Mr. Bourassa in his RPM analysis. How does RUCO respond?

A. For the reasons noted above in my discussion of Mr. Bourassa's RPM analysis, use of forecasted Treasury yields in the CAPM is inappropriate, and serves to overstate the estimated market cost of equity. This is particularly true given that Mr. Bourassa relies, in part, on estimates from *Blue Chip Economic Indicators*. The appropriate risk-free (R_f) rate to be used in the CAPM is the current long-term Treasury rate. The current 3-month average yield on the 30-year U.S. Treasury Bond is 3.02 percent. Thus, Mr. Bourassa's use of a forecasted 3.8 percent risk-free rate overstates the cost of equity estimates derived from both his Historical MRP and Current MRP CAPM models by 78 basis points (3.80% - 3.02% = 0.78%).

Q. Does RUCO have concerns regarding the 7.00 percent market risk premium (RP_m) component of Mr. Bourassa's Historical MRP CAPM?

A. No.

Q. Does RUCO have concerns regarding the 8.60 percent market risk premium (MRP) component employed by Mr. Bourassa in his Current MRP CAPM?

A. Yes, as this 8.60 percent MRP is clearly not reflective of current market conditions and has been significantly overstated.

Q. What evidence does RUCO have to demonstrate that the 8.60 percent market risk (RP_m) premium in Mr. Bourassa's Current MRP CAPM is overstated?

A. Evidence of its overstatement can be found in rebuttal testimony filed by Mr. Bourassa in the last Quail Creek Water Company rate case.[84] Specifically, in Rebuttal (Page 10, lines 20-22), Mr. Bourassa alludes to a recent *Wall Street Journal* article which reported, as he states, that "estimates of the equity risk premium for the S&P 500 as of the end of April 2015 was one of the highest estimates going back to 1960." A review of the article to which Mr. Bourassa cites[85] reveals that as of the end of April 2015, the equity risk premium on the S&P 500 was 5.8 percent, and was based upon the research findings of Dr. Aswath Damodaran, Professor of Finance at the Stern School of Business at New York University.

Q. Does Dr. Damodaran regularly update his research findings as to the current equity risk premium for the S&P 500?

A. Yes, Dr. Damodaran maintains a website dedicated to that purpose.[86] In visiting the website, RUCO found that he had updated his analysis to May 1, 2017, and as of that date the current equity risk premium on the S&P 500 was estimated to be 5.34 percent.

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[84] *Quail Creek Water Company* (Docket No. W-02514A-14-0343), Rebuttal Testimony (Cost of Capital) filed by Thomas J. Bourassa, dated June 3, 2015.
[85] Lahart, Justin, "Lower Yields May be Stocks' Real Threat," *The Wall Street Journal*, Heard on the Street Column, May 17, 2015. http://www.wsj.com/articles/lower-yields-may-be-stocks-real-threat-1431885420
[86] http://pages.stern.nyu.edu/~adamodar/

Q. Would an equity risk premium on the S&P 500 of 5.34 percent, measured as of May 1, 2017, be considered an indication of the "current" MRP?

A. Yes, because the S&P 500 is a broad based market index of 500 publicly-traded companies, and the performance of the S&P 500 is often used as a proxy for that of the market as a whole.

Q. Does RUCO have further evidence that Mr. Bourassa's 8.60 percent current MRP is overstated?

A. Yes. According to Duff & Phelps, the current equity risk premium is 5.5 percent.[87]

Q. In light of the above, please quantify the degree to which Mr. Bourassa's 8.60 percent current market risk premium is overstated.

A. Based upon the above referenced Dr. Damodaran (5.34%) and Duff & Phelps (5.5%) measures of the current equity risk premium, the current average equity risk premium is 5.42 percent ((5.34% + 5.50%) / 2 = 5.42%). Therefore, Mr. Bourassa has overstated the current equity risk premium component in his Current MRP CAPM analysis by **318 basis points** (8.60% - 5.42% = 3.18%).

[87] Duff & Phelps is a resource to which Mr. Bourassa frequently cites in testimony. Duff & Phelps determined the current Equity Risk Premium to be 5.5 percent on November 15, 2016.
http://www.duffandphelps.com/assets/pdfs/publications/valuation/coc/us-normalized-risk-free-rate-nov15-16.pdf

Q. Please explain why cost of equity estimates obtained from the ECAPM should not be relied upon.

A. The ECAPM modification to the traditional CAPM is predicated on the notion that cost of equity estimates derived from the CAPM are biased downward for companies having a beta coefficient less than 1.0, and biased upward for companies having a beta coefficient greater than 1.0. When obtaining cost of equity estimates from the CAPM, use of an adjusted beta serves to increase the beta coefficient for companies with a beta less than 1.0, and decrease the beta coefficient for companies with a beta greater than 1.0. As noted previously, the beta values utilized by Mr. Bourassa in his CAPM analyses are provided by *Value Line*. However, because *Value Line* betas are "adjusted" betas, the ECAPM beta adjustment is an unnecessary redundancy, and serves to overstate the cost of equity.

Q. To what authority does Mr. Bourassa cite as support for his reliance on cost of equity estimates derived from the ECAPM?

A. As authority (Bourassa Direct, p. 38, lines 1-4), Mr. Bourassa cites to Dr. Roger Morin, at pages 189-191 of his book, *New Regulatory Finance*.[88]

Q. Have you had an opportunity to review Dr. Morin's discussion of the ECAPM on the above cited pages (i.e., 189-191) of his book, *New Regulatory Finance*?

A. Yes, I have, and on page 189 of that book, Dr. Morin points out that "**several finance scholars** have developed, refined and expanded versions of the CAPM by relaxing the

[88] Morin, Roger, *New Regulatory Finance*, Virginia: Public Utilities Reports (2006).

constraints imposed on the CAPM" (emphasis added), with the ECAPM being a refined/expanded variation of the CAPM.

Q. Does RUCO have knowledge of a recent decision issued by the Federal Energy Regulatory Commission ("FERC") in which the above cited passage from Dr. Morin's book is referenced when ruling on whether cost of equity estimates obtained from the ECAPM should be considered in a rate case?

A. Yes. In a Corrected Initial Decision (dated December 29, 2015) issued in Docket No. EL14-12-002, the FERC ruled that ECAPM estimates proposed by a Dr. Avera, a cost of capital witness in the rate proceeding before the FERC, should not be considered. In attempting to make his case for the ECAPM, Dr. Avera cited as authority Dr. Morin's book, *New Regulatory Finance* (p. 189); nevertheless, the FERC ruled as follows:

> 330. This Initial Decision will not consider the ECAPM in determining the proper Base ROEs for the MISO TOs. **The quote from New Regulatory Finance suggests that at this time the ECAPM is relied upon by no more than a few "financial scholars."** In addition, all of the proxy-group companies have betas below 1.0. Accordingly, they will inevitably have higher COEs under an ECAPM than under a CAPM. Dr. Avera's CAPM already supports providing the MISO TOs a Base ROE above the Midpoint. **There is no need to include an obscure, and arguably more controversial, variant of that pricing model.**[89] (emphasis added)

Q. In light of the above, is it RUCO's position that cost of equity estimates derived from Mr. Bourassa's ECAPM should be given no weight in this proceeding?

A. Yes.

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[89] Federal Energy Regulatory Commission, Corrected Initial Decision in Docket No. EL14-12-002 (Issued December 29, 2015), Finding of Fact No. 330, p. 102. http://stmedia.startribune.com/documents/ALJ+transmission+ruling.pdf

Q. Please explain why cost of equity estimates obtained from Mr. Bourassa's Modified CAPM should not be relied upon.

A. First, as shown in Schedule D-4.11, the 6.80 percent MRP component of Mr. Bourassa's Modified CAPM incorporates the same 8.60 percent current MRP as employed by Mr. Bourassa in his Traditional CAPM model, and as previously discussed, this 8.60 percent current MRP was overstated by 318 basis points (8.60% - 5.42% = 3.18%). Thus, by any reasonable standard, the MRP component in Mr. Bourassa's Modified CAPM has been significantly overstated. Second, for the reasons noted in my earlier discussion of Mr. Bourassa's Traditional CAPM, the risk free rate in Mr. Bourassa's Modified CAPM has likewise been overstated by 78 basis points (3.80% - 3.02% = 0.78%). Third, Mr. Bourassa's Modified CAPM also incorporates an upward 295 basis point size risk premium (RP_S). In view of the previously noted overstatements to Mr. Bourassa's Traditional CAPM, and considering that Mr. Bourassa's 11.4 percent Modified CAPM estimated cost of equity exceeds by 220 basis points his 9.2 percent Traditional CAPM estimate (11.4% - 9.2% = 2.2%), there is ample evidence to suggest that his Modified CAPM estimate is significantly overstated.

Q. As shown in Schedule D-4.1, Mr. Bourassa's proposed 11.2 percent recommended cost of equity makes provision for an upward 110 basis point company-specific/small size risk premium adjustment. Does this fact further suggest that Mr. Bourassa's Modified CAPM results have been significantly overstated?

A. Yes, because the 295 basis point upward size risk premium (RP_S) adjustment in Mr. Bourassa's Modified CAPM represents a double-counting of a size risk adjustment made to his overall cost of equity analysis.

Q. Does RUCO believe that it is appropriate to make an upward small size risk premium adjustment to the cost of equity for Pima in this proceeding?

A. No. Empirical research has demonstrated that a small company risk premium adjustment to the cost of equity is unwarranted for regulated utilities. Annie Wong, of Western Connecticut State University, conducted a study on utility stocks to determine if the so-called size effect exists in the utility industry, and she writes as follows:

> The fact that the two samples show different, though weak, results indicates that utility and industrial stocks do not share the same characteristics. First, given firm size, utility stocks are consistently less risky than industrial stocks. Second, industrial betas tend to decrease with firm size but utility betas do not. These findings may be attributed to the fact that all public utilities operate in an environment with regional monopolistic power and regulated financial structure. As a result, the business and financial risks are very similar among the utilities regardless of their size. Therefore, utility betas would not necessarily be expected to be related to firm size. The object of this study is to examine if the size effect exists in the utility industry. After controlling for equity values, there is some weak evidence that firm size is a missing factor from the CAPM for the industrial but not for the utility stocks. This implies that although the size phenomenon has been strongly documented for industrials, the findings suggest that <u>there is no need to adjust for the firm size in utility regulations</u>.[90] (emphasis added)

Q. Has the Commission previously ruled on the issue of firm size and whether it warrants a risk premium adjustment to the cost of equity?

A. Yes. In Decision No. 64282,[91] the ACC ruled for Arizona Water that firm size does not warrant recognition of a risk premium stating, "We do not agree with the Company's proposal to assign a risk premium to Arizona Water based on its size relative to other publicly traded water utilities...." The Commission confirmed its previous ruling in

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[90] Annie Wong, "Utility Stock and the Size Effect: An Empirical Analysis," *Journal of the Midwest Finance Association*, (1993), p.98.
[91] Dated December 28, 2001.

Decision No. 64727[92] for Black Mountain Gas agreeing with Staff that "the 'firm size phenomenon' does not exist for regulated utilities, and that therefore there is no need to adjust for risk for small firm size in utility regulation." All companies have firm-specific risks; therefore, the existence of unique risks for a company does not lead to the conclusion that its total risk is greater than other entities. Moreover, as previously discussed, investors cannot expect compensation for firm-specific risk since it can be eliminated through diversification.

Q. Has the ACC issued a more recent decision which reconfirms its prior ruling regarding firm size?

A. Yes, in the recent EPCOR Water Arizona case.[93] In Decision No. 75268[94], the ACC ruled as follows:

> **Nor are we persuaded** by Ms. Ahern's claim **that EPCOR's "size" should be recognized as a business risk factor**. Although a company's size may sometimes be considered as a business risk factor, **for utilities of substantial size (i.e., those that have access to the equity capital markets) it is a minimal consideration in determining business risk**. Small utilities, (e.g., non-class A utilities) may have additional risk due to the inability to hire employees or contract for sufficient levels of expertise management, technical & financial) to perform effectively and efficiently. Small utilities also have other risks such as information access, greater annual variability in operating expenses, and greater regulatory risk both due to lack of skilled rate case personnel and the percentage of operating expenses and rate base components reviewed by Staff and intervenors. Due to the latter two reasons, for any adopted return on equity the distribution of actual returns is greater for a small utility than for a large utility, and greater variability means greater risk. However, most of the proxy companies used in the cost of capital analyses, including EPCOR, are a conglomeration of many smaller water systems and have the capacity to attract the appropriate level of talent for proficient operation. Thus, the business risk for any of the EPCOR systems parallels that of the

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[92] Dated April 17, 2002.
[93] *EPCOR Water Arizona, Inc.* (Docket No. WS-01303A-14-0010).
[94] Dated September 8, 2015.

sample companies, and **we do not believe a cost of equity adjustment for size is appropriate**. (emphasis added)

Q. Does this suggest that pursuant to Decision No. 75268, Mr. Bourassa's upward 110 basis point adjustment for small size is unwarranted?

A. Yes, and this is true despite the fact that Pima is a Class "B" utility without access to the capital markets. In RUCO's judgement, Pima is atypical of most regulated water utilities in Arizona as the Company is owned by the Robson Family, one of the most successful real estate developers in Arizona. Thus, Pima's financial strength should render moot any consideration of providing for an upward small size risk adjustment to the Company's cost of equity in this proceeding.

XI. CONCLUSION AND RECOMMENDATIONS

Q. Please summarize RUCO's cost of capital recommendations in this proceeding.

A. RUCO recommends that the Commission adopt the following:

1) A pro forma capital structure composed of 37.50 percent long-term debt and 62.50 percent common equity;
2) A cost of debt of 3.42 percent;
3) A cost of common equity of 9.64 percent; and
4) An overall rate of return of 7.31 percent.

Q. Does this conclude your direct testimony?

A. Yes, it does.

ATTACHMENT 1

Attachment 1

John A. Cassidy, CRRA

EDUCATION

Arizona State University -- Master of Business Administration-Finance (May 1987)

University of Arizona -- Master of Library Science (August 1980)

Arizona State University -- B.A. History, Latin American Studies (May 1976)

EXPERIENCE

Public Utilities Analyst V – Residential Utility Consumer Office (RUCO), Phoenix, AZ (July 2015-Present)

Public Utilities Analyst III -- Arizona Corporation Commission, Phoenix, AZ (March 2013-July 2015)

Public Utilities Analyst II -- Arizona Corporation Commission, Phoenix, AZ (May 2012-March 2013)

Public Utility Consultant -- Arizona Corporation Commission, Phoenix, AZ (Jan. 2012-May 2012)

Regulatory Utility Consultant – Self-Employed, Tempe, AZ (2009-2010)

- Assisted in the preparation of testimony filed by the Residential Utility Consumer Office (RUCO) in the Litchfield Park W/WW rate case (Docket No. SW-01428A-09-0103, et al)

Regulatory Utility Consultant – Self-Employed, Tempe, AZ (2007-2008)

- Filed formal cost of capital testimony/schedules on behalf of intervener, Anthem Town Council, and testified at evidentiary hearing in the Arizona-American Water Co., Anthem Water and Anthem/Agua Fria WW rate case (Docket No. WS-01303A-06-0403)

Utilities Auditor II -- Arizona Corporation Commission, Phoenix, AZ (Aug. 1993-Nov. 1997)

PROFESSIONAL DEVELOPMENT

Certified Rate of Return Analyst (CRRA) (May 2016)

Annual Regulatory Studies Program ("Camp NARUC"), Institute of Public Utilities, Michigan State University, East Lansing, MI (August 4-15, 2014)

Annual Financial Forum, Society of Utility and Regulatory Financial Analysts (SURFA) Indianapolis, IN (April 2013 and April 2016); New Orleans, LA (April 2017)

NARUC Utility Rate School, San Diego, CA (May 13-17, 2013)

HONORS

CPA Candidate - Passed the CPA exam (1997), but opted not to pursue certification

Beta Gamma Sigma - National Honor Society in Business Administration

Rate Dockets Testified - Cost of Capital:

Pima Water Company	Docket No. W-02199A-16-0421, et al.
Arizona Public Service Company	Docket No. E-01345A-16-0036
EPCOR Water Arizona	Docket No. WS-01303A-16-0145
Southwest Gas Corporation	Docket No. G-01551A-16-0107
Liberty Utilities (Bella Vista W / Rio Rico W/WW)	Docket Nos. W-02465A-15-0367, et al.
Arizona Water Company	Docket No. W-01445A-15-0277
Liberty Utilities (Black Mountain Sewer)	Docket Nos. SW-02361A-15-0206, et al.
Quail Creek Water Company	Docket No. W-02514A-14-0343
EPCOR Water Arizona	Docket No. WS-01303A-14-0010
Utility Source, L.L.C.	Docket No. WS-04235A-13-0331
Verde Santa Fe Wastewater Company	Docket No. SW-03437A-13-0292
Chaparral City Water Company	Docket No. W-02113A-13-0118
Payson Water Company	Docket No. W-03514A-13-0111
Lago Del Oro Water Company	Docket No. W-01944A-13-0215
Las Quintas Serenas Water Company	Docket No. W-01583A-13-0117
Litchfield Park Service Company	Docket Nos. SW-01428A-13-0042, et al.
Adaman Mutual Water Company	Docket No. W-01997A-12-0501
Global Water Utilities	Docket Nos. W-01212A-12-0309, et al.
New River Utility Company	Docket No. W-01737A-12-0478
Arizona Water Company	Docket No. W-01445A-12-0348
Far West Water & Sewer, Inc.	Docket No. WS-03478A-12-0307
Cordes Lakes Water Company	Docket No. W-02060A-12-0356
Rio Rico Utilities, Inc.	Docket No. WS-02676A-12-0196
Ray Water Company	Docket No. W-01380A-12-0254
Vail Water Company	Docket No. W-01651B-12-0339
Valley Water Company	Docket No. W-01412A-12-0195
Arizona Water Company	Docket No. W-01445A-11-0310
Pima Utility Company	Docket Nos. W-02199A-11-0329, et al.

Rate Dockets Testified - Revenue Requirement/Rate Design:

Pima Water Company	Docket No. W-02199A-16-0421, et al.
Arizona Water Company	Docket No. W-01445A-15-0277
Quail Creek Water Company	Docket No. W-02514A-14-0343
Beaver Dam Water Company	Docket No. W-03067A-12-0232
Eden Water Company	Docket No. W-02068A-11-0471
Great Prairie Oasis, dba Sunland Water Co.	Docket No. W-04015A-12-0051

Financing Dockets - Responsible for ACC Staff Report:

Arizona Public Service Company	Docket No. E-01345A-11-0423
Tucson Electric Power Company	Docket No. E-01933A-12-0176
Chaparral City Water Company	Docket No. W-02113A-13-0047
Payson Water Company	Docket No. W-03514A-13-0142
Lago Del Oro Water Company	Docket No. W-01944A-13-0242
Duncan Valley Electric Cooperative, Inc.	Docket No. E-01703A-13-0272
Sulphur Springs Valley Electric Cooperative, Inc.	Docket No. E-01575A-12-0457
Trico Electric Cooperative, Inc.	Docket No. E-01461A-12-0056
Great Prairie Oasis, dba Sunland Water Co.	Docket No. W-04015A-12-0050
Columbus Electric Cooperative, Inc.	Docket No. E-01851A-11-0415
Pima Utility Company	Docket Nos. W-02199A-11-0403, et al.

ATTACHMENT 2

AMER. STATES WATER NYSE-AWR

RECENT PRICE 43.96 | P/E RATIO 26.6 (Trailing: 27.1, Median: 20.0) | RELATIVE P/E RATIO 1.36 | DIV'D YLD 2.2% | VALUE LINE

TIMELINESS 3 Raised 3/10/17
SAFETY 2 Raised 7/20/12
TECHNICAL 2 Raised 4/14/17
BETA .75 (1.00 = Market)

2020-22 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+25%)	8%
Low	40	(-10%)	1%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	0	0	0	0	0	0
Options	4	1	1	5	0	2	2	3	11
to Sell	3	2	2	4	3	4	1	3	2

Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	95	84	102
to Sell	90	88	87
Hld's(000)	23585	23554	24607

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
High:	21.9	23.1	21.0	19.4	19.8	18.2	24.1	33.1	38.7	44.1	47.2	45.9								
Low:	15.1	16.8	13.5	14.9	15.6	15.3	17.0	24.0	27.0	35.8	37.3	41.1								
	6.53	6.89	6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.45	12.65	Revenues per sh	15.95
	1.26	1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.85	3.05	"Cash Flow" per sh	3.85
	.67	.67	.39	.53	.66	.67	.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.60	1.62	1.70	1.80	Earnings per sh A	2.35
	.43	.44	.44	.44	.45	.46	.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.96	1.02	Div'd Decl'd per sh B■	1.35
	1.59	1.34	1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.15	3.15	Cap'l Spending per sh	3.60
	6.61	7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.20	14.85	Book Value per sh	16.80
	30.24	30.36	30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.60	36.70	Common Shs Outst'g C	37.00
	16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
	.86	1.00	1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.35			Relative P/E Ratio	1.30
	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%			Avg Ann'l Div'd Yield	2.8%
							301.4	318.7	361.0	398.9	419.3	466.9	472.1	465.8	458.6	436.1	455	465	Revenues ($mill)	590
							28.0	26.8	29.5	41.4	42.0	54.1	62.7	61.1	60.5	59.7	62.0	66.0	Net Profit ($mill)	87.0
							42.6%	37.8%	38.9%	43.2%	41.7%	39.9%	36.3%	38.4%	38.4%	36.8%	36.5%	35.0%	Income Tax Rate	35.0%
							8.5%	6.9%	3.2%	5.8%	2.0%	2.5%	--	--	2.5%	.5%	1.5%	2.0%	AFUDC % to Net Profit	2.5%
							46.9%	46.2%	45.9%	44.3%	45.4%	42.2%	39.8%	39.1%	41.1%	39.4%	40.0%	42.0%	Long-Term Debt Ratio	43.5%
							53.1%	53.8%	54.1%	55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	60.0%	58.0%	Common Equity Ratio	56.5%
							569.4	577.0	665.0	677.4	749.1	787.0	818.4	832.6	791.5	815.3	870	935	Total Capital ($mill)	1100
							776.4	825.3	866.4	855.0	896.5	917.8	981.5	1003.5	1060.8	1150.9	1200	1250	Net Plant ($mill)	1400
							6.7%	6.4%	5.9%	7.6%	7.1%	8.3%	8.9%	8.6%	9.0%	8.6%	8.5%	8.5%	Return on Total Cap'l	9.0%
							9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	12.0%	12.0%	Return on Shr. Equity	14.0%
							9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	12.0%	12.0%	Return on Com Equity	14.0%
							3.9%	3.1%	3.2%	5.8%	5.3%	6.6%	6.8%	5.7%	6.0%	5.3%	5.0%	5.5%	Retained to Com Eq	6.0%
							58%	64%	61%	47%	49%	45%	47%	53%	54%	56%	56%	57%	All Div'ds to Net Prof	57%

% TOT. RETURN 3/17

	THIS STOCK	VL ARITH.* INDEX
1 yr.	15.1	20.2
3 yr.	47.1	22.0
5 yr.	178.5	78.0

CAPITAL STRUCTURE as of 12/31/16
Total Debt $411.3 mill. Due in 5 Yrs $41.7 mill.
LT Debt $321.0 mill. LT Interest $20.0 mill. (39% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.5 mill.
Pension Assets-12/16 $150.9 mill.
Oblig. $180.4 mill.
Pfd Stock None.

Common Stock 36,586,831 shs.
as of 2/21/17

MARKET CAP: $1.6 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	76.0	4.4	.4
Accts Receivable	18.8	18.9	20.0
Other	114.7	109.4	146.5
Current Assets	209.5	132.7	166.9
Accts Payable	41.9	50.6	43.7
Debt Due	.3	28.3	90.3
Other	57.1	44.6	43.9
Current Liab.	99.3	123.5	177.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	5.5%	3.0%	4.5%
"Cash Flow"	7.5%	6.5%	6.0%
Earnings	10.0%	9.5%	6.5%
Dividends	7.0%	10.5%	7.5%
Book Value	5.5%	5.0%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	102.0	115.6	138.3	109.9	465.8
2015	100.9	114.6	133.0	110.1	458.6
2016	93.5	112.0	123.8	106.8	436.1
2017	100	115	130	110	455
2018	100	118	132	115	465

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	.28	.39	.54	.36	1.57
2015	.32	.41	.56	.31	1.60
2016	.28	.45	.59	.30	1.62
2017	.33	.45	.57	.35	1.70
2018	.35	.47	.60	.38	1.80

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.1775	.1775	.2025	.2025	.76
2014	.2025	.2025	.213	.213	.83
2015	.213	.213	.224	.224	.87
2016	.224	.224	.224	.242	.91
2017	.242				

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to 261,002 customers in 75 cities and 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to 23,940 customers in the city of Big Bear Lake and in areas of San Bernardino County. Sold Chaparral City Water of Arizona (6/11). Has 736 employees. Blackrock Inc., owns 9.9% of out. shares; Vanguard, 9.4%; off. & dir. 1.4%. (4/16 Proxy). Chairman: Lloyd Ross. President & Chief Executive Officer: Robert J. Sprowls. Inc: CA. Address: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com.

We expect to see improvement in American States Water's bottom line. Following three-consecutive years of flat earnings, the company seems poised to post a decent increase in share earnings in 2017, to $1.70 (+5%). This should result from a combination of rate relief and greater contributions from nonregulated businesses (see below). The trend will likely continue into 2018, as we think earnings of $1.80 a share (+6%) are possible.

A major rate case should be filed soon. According to California law, a water utility must petition the state regulatory commission (CPUC) for rate relief triennially. American States' Golden State Water (GSWC) subsidiary plans on tending a petition by June seeking higher tariffs for the years 2019 through 2021. It will probably take at least until 2019 for the CPUC to render a decision, but GSWC can implement higher rates, subject to refunds, in the interim. (In 2016's fourth quarter, the company had to take an $0.08-a-share charge to comply with the CPUC's last December rate ruling.)

The nonregulated businesses continue to grow in importance. Through its ASUS subsidiary, the company recently signed a 50-year, $510 million contract to supply water to the Eglin Air Force Base. ASUS now services 10 military installations and it will continue to bid on contracts to provide water to more bases as the government has decided that outsourcing this function to private entities makes the most economic sense. Last year, share earnings from this operation rose 3%, to account for $0.33 (20%) of the company's profits. In 2017, management estimates that income from this segment will increase 10%, to $0.36 a share. American Water will benefit in the long run, as this sector becomes larger because the CPUC cannot cap the returns on equity in this segment as it does with the water utility operations.

These shares do not stand out for special consideration at this time. For starters, the equity is ranked to only perform in line with the broader market averages in the upcoming 12-month period. Moreover, total return potential through 2020-2022 is well below the *Value Line* median.

James A. Flood *April 14, 2017*

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

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

(C) In millions, adjusted for split.

Company's Financial Strength	A
Stock's Price Stability	80
Price Growth Persistence	75
Earnings Predictability	85

AMERICAN WATER NYSE-AWK

RECENT PRICE 77.72 | P/E RATIO 26.3 (Trailing: 29.6 / Median: NMF) | RELATIVE P/E RATIO 1.34 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 3 Raised 2/3/17
SAFETY 3 New 7/25/08
TECHNICAL 4 Lowered 3/10/17
BETA .65 (1.00 = Market)

2020-22 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	90	(+15%)	6%
Low	60	(-25%)	-3%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	0	0	1	0	0	0
Options	0	0	2	0	0	0	0	0	9
to Sell	0	0	2	0	0	0	0	0	1

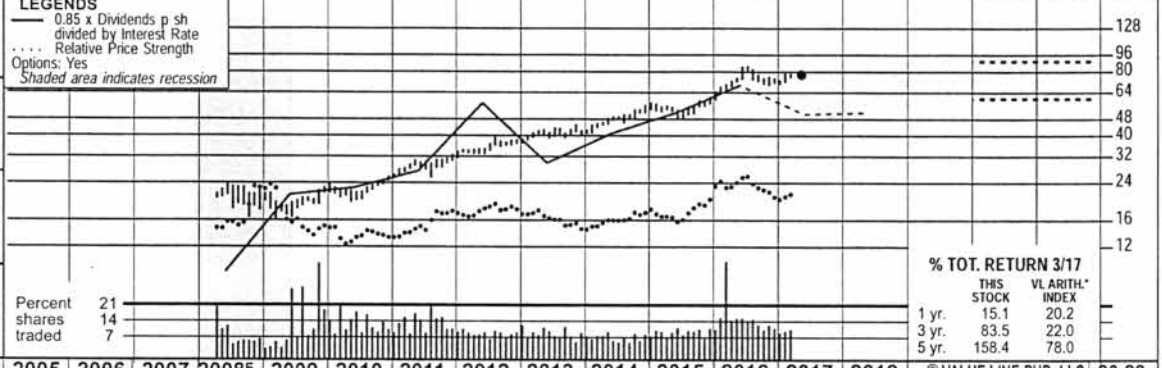
Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	280	265	316
to Sell	254	289	278
Hld's(000)	150627	142186	145668

	High:	23.7	23.0	25.8	32.8	39.4	45.1	56.2	61.2	85.2	78.7
	Low:	16.5	16.2	19.4	25.2	31.3	37.0	41.1	48.4	58.9	70.0

LEGENDS
0.85 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2020 | 2021 | 2022



Percent shares traded 21 14 7

% TOT. RETURN 3/17

	THIS STOCK	VL ARITH.* INDEX
1 yr.	15.1	20.2
3 yr.	83.5	22.0
5 yr.	158.4	78.0

2001	2002	2003	2004	2005	2006	2007	2008E	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
--	--	--	--	--	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	*19.40*	*20.45*	Revenues per sh	*23.05*
--	--	--	--	--	.65	d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	*5.85*	*6.20*	"Cash Flow" per sh	*7.45*
--	--	--	--	--	d.97	d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	*3.05*	*3.25*	Earnings per sh A	*4.15*
--	--	--	--	--	--	--	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	*1.61*	*1.76*	Div'd Decl'd per sh B■	*2.35*
--	--	--	--	--	4.31	4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	*6.25*	*6.15*	Cap'l Spending per sh	*6.30*
--	--	--	--	--	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	*30.80*	*32.40*	Book Value per sh D	*39.45*
--	--	--	--	--	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	*178.50*	*179.00*	Common Shs Outst'g C	*187.50*
--	--	--	--	--	--	--	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	*Bold figures are*		Avg Ann'l P/E Ratio	*18.0*
--	--	--	--	--	--	--	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.46	*Value Line*		Relative P/E Ratio	*1.15*
--	--	--	--	--	--	--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	*estimates*		Avg Ann'l Div'd Yield	*3.1%*
2214.2	2336.9	2440.7	2710.7	2666.2	2876.9	2901.9	3011.3	3159.0	3302.0	*3465*	*3665*	Revenues ($mill)	*4325*
d342.3	187.2	209.9	267.8	304.9	374.3	369.3	429.8	476.0	468.0	*545*	*580*	Net Profit ($mill)	*780*
--	37.4%	37.9%	40.4%	39.5%	40.7%	39.1%	39.4%	39.1%	39.2%	*38.5%*	*38.0%*	Income Tax Rate	*36.5%*
--	--	--	--	--	6.2%	5.1%	--	5.1%	1.4%	*2.0%*	*2.5%*	AFUDC % to Net Profit	*3.5%*
50.9%	53.1%	56.9%	56.8%	55.7%	53.9%	52.4%	52.4%	53.7%	52.4%	*54.0%*	*55.0%*	Long-Term Debt Ratio	*54.0%*
49.1%	46.9%	43.1%	43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	*46.0%*	*45.0%*	Common Equity Ratio	*46.0%*
9245.7	8750.2	9289.0	9561.3	9580.3	9635.5	9940.7	10364	10911	10967	*11900*	*12850*	Total Capital ($mill)	*16000*
9318.0	9991.8	10524	11059	11021	11739	12391	12900	13933	14992	*15675*	*16400*	Net Plant ($mill)	*18000*
NMF	3.7%	3.8%	4.4%	4.8%	5.4%	5.1%	5.5%	5.7%	5.6%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
NMF	4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	*10.0%*	*10.0%*	Return on Shr. Equity	*10.5%*
NMF	4.6%	5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	*10.0%*	*10.0%*	Return on Com Equity	*10.5%*
NMF	3.0%	1.8%	2.8%	3.5%	3.6%	4.7%	4.3%	4.7%	4.0%	*4.5%*	*4.5%*	Retained to Com Eq	*4.5%*
--	34%	65%	56%	52%	57%	40%	50%	50%	56%	*53%*	*55%*	All Div'ds to Net Prof	*57%*

CAPITAL STRUCTURE as of 12/31/16
Total Debt $7172.0 mil. Due in 5 Yrs $1698.0 mil.
LT Debt $5749.0 mil. LT Interest $300.0 mil. (52% of Cap'l)

Leases, Uncapitalized: Annual rentals $14.0 mill.
Pension Assets 12/16 $1443.0 mill
Oblig. $1864.0 mill.
Pfd Stock $10.0 mill. Pfd Div'd $.5 mill

Common Stock 178,214,748 shs.
as of 2/16/17

MARKET CAP: $12.9 billion (Large Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	23.1	45.0	75.0
Accts Receivable	267.1	255.0	269.0
Other	638.3	357.0	440.0
Current Assets	928.5	657.0	784.0
Accts Payable	285.8	126.0	154.0
Debt Due	511.1	682.0	1423.0
Other	444.1	725.0	815.0
Current Liab.	1241.0	1533.0	2392.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	3.0%	3.5%	*4.5%*
"Cash Flow"	23.0%	8.5%	*6.5%*
Earnings	--	11.0%	*8.5%*
Dividends	--	9.0%	*10.0%*
Book Value	1.5%	4.0%	*5.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	679.0	754.8	846.1	731.4	3011.3
2015	698.0	782.0	896.0	783.0	3159.0
2016	743.0	827.0	930.0	802.0	3302.0
2017	*765*	*870*	*985*	*845*	*3465*
2018	*810*	*920*	*1045*	*890*	*3665*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	.39	.62	.86	.52	2.39
2015	.44	.68	.96	.56	2.64
2016	.46	.77	.83	.57	2.62
2017	*.53*	*.82*	*1.03*	*.67*	*3.05*
2018	*.57*	*.88*	*1.09*	*.71*	*3.25*

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

BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in over 47 states and Canada. (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86.5% of 2016 revenues. New Jersey is its largest market accounting for 25.4% of regulated revenues. Has 6,800 employees. The Vanguard Group, owns 9.6% of outstanding shares; BlackRock, Inc., 8.2%; officers & directors, less than 1.0%. (3/17 Proxy). President & CEO: Susan N. Story. Chair.: George MacKenzie. Address: 1025 Laurel Oak Road, Voorhees, NJ 08043. Tel.: 856-346-8200. Internet: www.amwater.com.

American Water Works' earnings and dividend prospects are bright. Last year, the utility posted a rare earnings decline due to a $0.22-a-share expense related to a chemical spill in West Virginia. Boosted by higher rates in certain states and cost savings (more below), share earnings should rise to $3.05 in 2017. Furthermore, the good news should continue into 2018, as we expect per-share earnings to increase a solid 7%, to $3.25. What's more, management forecast that the bottom line will experience growth of 7%-10% over the next three- to five-year period. Based upon these income expectations, the annual hike in the dividend should average almost double digits.

Growth through acquisitions and controlling expenses remain the company's main strategy. A very high percentage of water utilities in the U.S. are fairly small and run by local authorities. Because the nation's water infrastructure is antiquated, many small towns and cities don't have the funds required to modernize their pipelines. Moreover, since the industry is rife with redundancies, larger entities can buy out smaller ones and achieve significant synergies by combining systems. Indeed, American Water Works puts great significance on its internal expense ratio. Since 2010, this percentage has decreased from 42% to under 35%.

Spending on infrastructure should remain high. Through early next decade, the utility has earmarked well over $5 billion to replace old pipes and other aging facilities. Not all of the expenditures can be met through internal sources, so debt levels should increase. The utility has been hesitant to issue new shares over the past seven years, but we think this policy could change as the value of the equity has increased severalfold in the interim.

Shares of AWK do not have much appeal. Despite being viewed as a defensive play for its high scores for Price Stability, Earnings Predictability, and steady flow of dividend income, AWK has outperformed the broader market averages in the past three months, as well as over the one-, three-, and five-year periods. At the recent quote, the equity is already trading well within our projected 2020-2022 Target Price Range.

James A. Flood *April 14, 2017*

(A) Diluted earnings. Excludes nonrecurring losses: '08, $4.62; '09, $2.63; '11, $0.07. Discontinued operations: '06, ($0.04); '11, $0.03; '12, ($0.10); '13,($0.01). GAAP used as of 2014. Next earnings report due mid-May. Quarterly earnings do not sum in '16 due to rounding. (B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available. (C) In millions. (D) Includes intangibles. In 12/16: $1.345 billion, $7.55/share. (E) Pro forma numbers for '06 & '07.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	90
Earnings Predictability	95

AQUA AMERICA NYSE-WTR

RECENT PRICE 32.29 | P/E RATIO 23.4 (Trailing: 24.5 Median: 22.0) | RELATIVE P/E RATIO 1.19 | DIV'D YLD 2.5% | VALUE LINE

TIMELINESS 3 Lowered 8/26/16
SAFETY 2 Raised 4/20/12
TECHNICAL 4 Raised 4/7/17
BETA .70 (1.00 = Market)

2020-22 PROJECTIONS

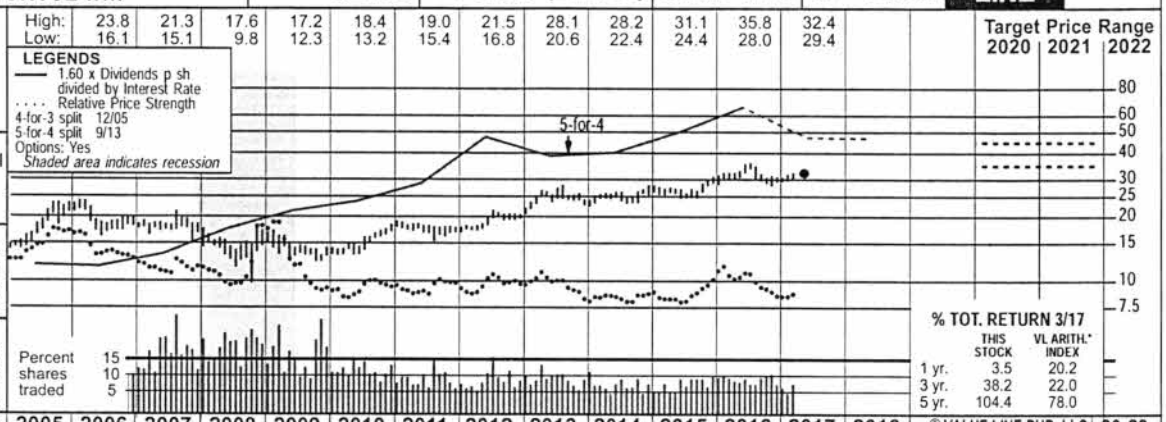
	Price	Gain	Ann'l Total Return
High	45	(+40%)	11%
Low	35	(+10%)	4%

Insider Decisions

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

Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	179	163	182
to Sell	152	169	171
Hld's(000)	85171	85606	88568



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
2.16	2.28	2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.62	*4.75*	*5.00*	Revenues per sh	*6.05*
.69	.76	.77	.87	.97	1.01	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.07	*6.15*	*2.25*	"Cash Flow" per sh	*2.75*
.41	.43	.46	.51	.57	.56	.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	*1.40*	*1.45*	Earnings per sh [A]	*1.85*
.24	.26	.28	.29	.32	.35	.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	*.80*	*.85*	Div'd Decl'd per sh [B]■	*1.15*
.87	.96	1.06	1.23	1.47	1.64	1.43	1.58	1.66	1.89	1.90	1.98	1.73	1.84	2.07	2.16	*2.05*	*2.25*	Cap'l Spending per sh	*2.25*
3.32	3.49	4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.43	*11.10*	*11.75*	Book Value per sh	*14.85*
142.47	141.49	154.31	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	*178.00*	*178.50*	Common Shs Outst'g [C]	*180.00*
23.6	23.6	24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.9	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*21.0*
1.21	1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.18	1.26			Relative P/E Ratio	*1.30*
2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%			Avg Ann'l Div'd Yield	*2.9%*
602.5	627.0	670.5	726.1	712.0	757.8	768.6	779.9	814.2	819.9	*845*	*895*	Revenues ($mill)	*1085*
95.0	97.9	104.4	124.0	144.8	153.1	205.0	213.9	201.8	234.2	*250*	*260*	Net Profit ($mill)	*335*
38.9%	39.7%	39.4%	39.2%	32.9%	39.0%	10.0%	10.5%	6.9%	8.2%	*9.0%*	*9.0%*	Income Tax Rate	*10.0%*
--	--	--	--	--	--	1.1%	2.4%	3.1%	3.8%	*3.5%*	*3.0%*	AFUDC % to Net Profit	*3.5%*
55.4%	54.1%	55.6%	56.6%	52.7%	52.7%	48.9%	48.5%	50.3%	48.4%	*47.0%*	*49.0%*	Long-Term Debt Ratio	*51.0%*
44.6%	45.9%	44.4%	43.4%	47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	*53.0%*	*51.0%*	Common Equity Ratio	*49.0%*
2191.4	2306.6	2495.5	2706.2	2646.8	2929.7	3003.6	3216.0	3469.5	3587.7	*3740*	*4100*	Total Capital ($mill)	*5500*
2792.8	2997.4	3227.3	3469.3	3612.9	3936.2	4167.3	4402.0	4688.9	5001.6	*5085*	*5275*	Net Plant ($mill)	*5800*
5.9%	5.7%	5.6%	5.9%	6.9%	6.6%	8.0%	7.8%	6.9%	7.6%	*7.5%*	*7.5%*	Return on Total Cap'l	*7.5%*
9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	*12.5%*	*12.5%*	Return on Shr. Equity	*12.5%*
9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	*12.5%*	*12.5%*	Return on Com Equity	*12.5%*
3.2%	2.8%	2.7%	3.7%	4.6%	4.3%	6.7%	6.1%	4.7%	5.6%	*5.5%*	*5.0%*	Retained to Com Eq	*4.5%*
67%	70%	72%	65%	60%	61%	50%	52%	60%	56%	*57%*	*59%*	All Div'ds to Net Prof	*62%*

CAPITAL STRUCTURE as of 12/31/16
Total Debt $1894.8 mill. **Due in 5 Yrs** $430.5 mill.
LT Debt $1737.6 mill. **LT Interest** $76.3 mill. (48% of Cap'l)

Pension Assets-12/16 $242.4 mill. **Oblig.** $308.2 mill.
Pfd Stock None
Common Stock 177,445,993 shares as of 2/13/17

MARKET CAP: $5.7 billion (Large Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	4.1	3.2	3.7
Receivables	97.0	99.1	97.4
Inventory (AvgCst)	12.8	12.4	13.0
Other	38.6	13.7	14.6
Current Assets	152.5	128.4	128.7
Accts Payable	60.0	56.5	59.9
Debt Due	70.0	52.3	157.2
Other	95.3	84.4	84.4
Current Liab.	225.3	193.2	301.5

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	4.0%	2.0%	*5.0%*
"Cash Flow"	7.5%	7.0%	*6.0%*
Earnings	8.5%	11.0%	*7.0%*
Dividends	8.0%	8.0%	*9.0%*
Book Value	7.0%	7.5%	*6.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	182.7	195.3	210.5	191.4	779.9
2015	190.3	205.8	221.0	197.1	814.2
2016	192.6	203.9	226.6	196.8	819.9
2017	*195*	*210*	*235*	*205*	*845*
2018	*205*	*225*	*250*	*215*	*895*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.24	.31	.38	.27	1.20
2015	.27	.32	.38	.17	1.14
2016	.29	.34	.41	.28	1.32
2017	*.30*	*.35*	*.45*	*.30*	*1.40*
2018	*.31*	*.36*	*.47*	*.31*	*1.45*

Calendar	QUARTERLY DIVIDENDS PAID [B] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.14	.14	.152	.152	.58
2014	.152	.152	.165	.165	.63
2015	.165	.165	.178	.178	.69
2016	.178	.178	.1913	.1913	.74
2017	.1913				

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Has 1,551 employees. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues '2016: residential, 59%; commercial, 16%; industrial, wastewater & other, 25%. Off. & dir. own less than 1% of the common stock; Vangurad Group, 8.9%; Blackrock, Inc, 8.1%; State Street Capital, 6.0% (3/17 Proxy). President & Chief Executive Officer: Christopher Franklin. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Tel.: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America is in for another good year in 2017. Last year, the company posted a 16% increase in share earnings, due in part, to several different states granting its water utilities higher rates. (An unusual income item in 2016 also helped the numbers look better.) North Carolina and Ohio have already granted increased tariffs for this year. All told, we think that the company's share net can rise 6% over 2016's strong number.

A more moderate gain seems to be in the cards for 2018. A petition to raise customers' bills in Pennsylvania was recently filed and should be ruled upon next year. We think the rates will probably only be sufficient to raise Aqua's share net $0.05 a share, or only 3.6%.

Dividend growth prospects are strong through early next decade. Although the yield premium that water stocks used to carry relative to the *Value Line* median has narrowed considerably over the past couple of years, Aqua still should average annual hikes in the payout of 9% over the next three- to five-year period.

Aqua has the balance sheet to make more and bigger acquisitions. The domestic water industry consists of thousands of small locally-run water districts. Due to the redundancy of many of the tasks, consolidation has been the trend over the past decade or so because huge synergies can be achieved. Moreover, the smaller, inefficient water districts are finding it difficult to raise the needed funds to upgrade their deteriorating pipeline systems. In the fourth quarter of 2016, the company announced that it would be making acquisitions of over $100 million. This is greater than all the tuck-in acquisitions made over the past half decade. With its solid finances, the utility has room to make bigger purchases in the future. As these purchases are integrated into the system, large cost saving can be achieved.

Investors can find better options elsewhere. The strong performance by the water utility industry has left the stocks with dividend yields that are only moderately higher than the *Value Line* median. True, dividend growth potential is strong, but WTR still offers below-average total return potential through 2020-2022.

James A. Flood *April 14, 2017*

(A) Diluted egs. Excl. nonrec. gains: '01, 2¢; '02, 4¢; '03, 3¢; '12, 18¢. Excl. gain from disc. operations: '12, 7¢; '13, 9¢; '14, 11¢. May not sum due to rounding. Next earnings report due mid-May.
(B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	70
Earnings Predictability	90

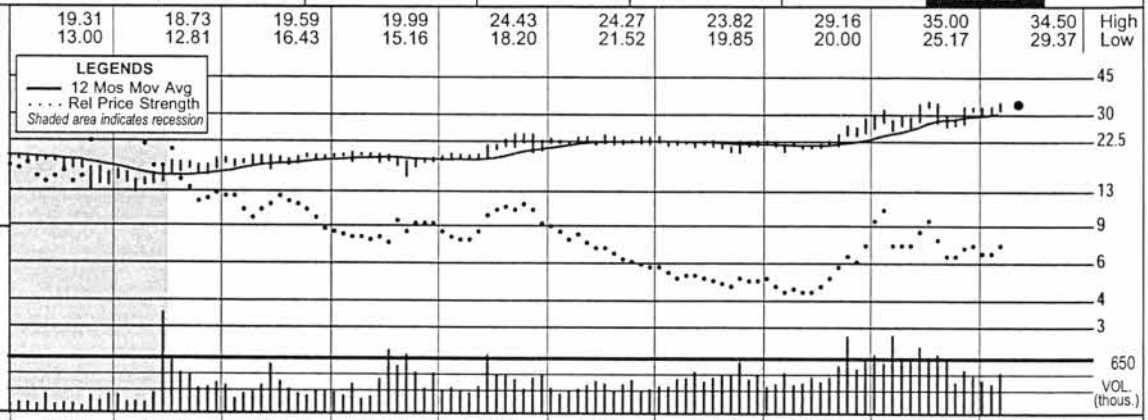
ARTESIAN RES. CORP. NDQ--ARTNA

RECENT PRICE 33.73 | TRAILING P/E RATIO 23.9 | RELATIVE P/E RATIO 1.15 | DIV'D YLD 2.7% | VALUE LINE

RANKS

PERFORMANCE 3 Average
Technical 3 Average
SAFETY 3 Average
BETA .60 (1.00 = Market)

Financial Strength B
Price Stability 75
Price Growth Persistence 40
Earnings Predictability 75



© VALUE LINE PUBLISHING LLC	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017/2018
SALES PER SH	7.59	8.11	8.48	7.56	8.10	7.82	8.13	8.50	8.67	
"CASH FLOW" PER SH	1.65	1.84	1.92	1.64	2.04	1.87	2.04	2.22	2.43	
EARNINGS PER SH	.86	.97	1.00	.83	1.13	.94	1.07	1.26	1.41	NA/NA
DIV'DS DECL'D PER SH	.71	.72	.75	.76	.79	.82	.85	.87	.90	
CAP'L SPENDING PER SH	6.09	2.32	2.57	1.83	2.36	2.40	2.66	2.28	3.10	
BOOK VALUE PER SH	11.86	12.15	12.44	13.12	13.57	13.80	14.09	14.61	15.23	
COMMON SHS OUTST'G (MILL)	7.40	7.51	7.65	8.61	8.71	8.83	8.91	9.06	9.13	
AVG ANN'L P/E RATIO	20.1	16.4	18.2	22.5	18.3	23.9	20.5	18.0	20.9	NA/NA
RELATIVE P/E RATIO	1.21	1.09	1.16	1.41	1.17	1.34	1.08	.93	1.14	
AVG ANN'L DIV'D YIELD	4.1%	4.5%	4.1%	4.1%	3.8%	3.7%	3.9%	3.8%	3.1%	
SALES ($MILL)	56.2	60.9	64.9	65.1	70.6	69.1	72.5	77.0	79.1	
OPERATING MARGIN	45.1%	46.9%	46.5%	45.5%	48.7%	47.0%	48.8%	43.0%	44.4%	
DEPRECIATION ($MILL)	5.8	6.6	7.0	7.4	7.9	8.3	8.7	8.8	9.2	
NET PROFIT ($MILL)	6.4	7.3	7.6	6.7	9.8	8.3	9.5	11.3	13.0	
INCOME TAX RATE	40.8%	40.1%	40.0%	40.8%	40.2%	40.2%	40.1%	--	--	
NET PROFIT MARGIN	11.4%	11.9%	11.7%	10.4%	14.0%	12.0%	13.1%	14.7%	16.4%	
WORKING CAP'L ($MILL)	d20.9	d23.3	d27.9	d11.4	d11.4	d12.3	d13.5	d8.8	d4.7	
LONG-TERM DEBT ($MILL)	107.6	106.0	105.1	106.5	106.3	105.5	105.0	103.6	102.3	
SHR. EQUITY ($MILL)	87.8	91.2	95.1	113.0	118.2	121.8	125.6	132.3	139.0	
RETURN ON TOTAL CAP'L	4.7%	5.2%	5.6%	4.6%	5.9%	5.1%	5.5%	6.3%	6.7%	
RETURN ON SHR. EQUITY	7.3%	8.0%	8.0%	6.0%	8.3%	6.8%	7.6%	8.5%	9.3%	
RETAINED TO COM EQ	1.4%	2.1%	2.0%	.5%	2.5%	.9%	1.6%	2.6%	3.4%	
ALL DIV'DS TO NET PROF	81%	74%	75%	92%	70%	87%	79%	69%	63%	

Bold figures are consensus earnings estimates and, using the recent prices, P/E ratios.

Note: No analyst estimates available.

ANNUAL RATES

of change (per share)	5 Yrs.	1 Yr.
Sales	1.0%	2.0%
"Cash Flow"	4.5%	9.0%
Earnings	6.0%	12.0%
Dividends	3.0%	3.0%
Book Value	3.0%	4.5%

QUARTERLY SALES ($mill.)

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/14	16.9	17.9	19.6	18.1	72.5
12/31/15	18.0	19.5	20.8	18.7	77.0
12/31/16	18.5	19.4	21.8	19.4	79.1
12/31/17					

EARNINGS PER SHARE

Fiscal Year	1Q	2Q	3Q	4Q	Full Year
12/31/13	.20	.28	.29	.17	.94
12/31/14	.24	.22	.37	.24	1.07
12/31/15	.28	.36	.41	.21	1.26
12/31/16	.30	.33	.48	.30	1.41
12/31/17					

QUARTERLY DIVIDENDS PAID

Cal-endar	1Q	2Q	3Q	4Q	Full Year
2014	.209	.212	.212	.215	.85
2015	.215	.218	.218	.222	.87
2016	.222	.225	.225	.228	.90
2017	.228				

INSTITUTIONAL DECISIONS

	2Q'16	3Q'16	4Q'16
to Buy	38	35	35
to Sell	38	35	30
Hld's(000)	3491	3488	3582

ASSETS ($mill.)	2014	2015	12/31/16
Cash Assets	.2	.2	.2
Receivables	8.4	6.4	7.8
Inventory	1.9	1.7	1.6
Other	6.1	6.1	5.0
Current Assets	16.6	14.4	14.6
Property, Plant & Equip, at cost	496.2	514.8	539.7
Accum Depreciation	98.4	105.2	110.3
Net Property	397.8	409.6	429.4
Other	7.8	7.6	7.0
Total Assets	422.2	431.6	451.0
LIABILITIES ($mill.)			
Accts Payable	3.8	5.5	5.6
Debt Due	19.9	11.8	8.4
Other	6.5	5.9	5.3
Current Liab	30.2	23.2	19.3

LONG-TERM DEBT AND EQUITY as of 12/31/16

Total Debt $110.8 mill. **Due in 5 Yrs.** $59.0 mill.
LT Debt $102.3 mill.
Including Cap. Leases None
(42% of Cap'l)
Leases, Uncapitalized Annual rentals $.1 mill.

Pension Liability $1.0 mill. in '16 vs. $1.1 mill. in '15

Pfd Stock None **Pfd Div'd Paid** None

Common Stock 9,133,000 shares
(58% of Cap'l)

INDUSTRY: Water Utility

BUSINESS: Artesian Resources Corp. operates as a holding company of wholly owned subsidiaries offering water, wastewater services, and related services. It holds Certificates of Public Convenience and Necessity, for about 283 square miles of exclusive water service territory and approximately 25 square miles of wastewater service territory, most of which is in Delaware and some in Maryland, and Pennsylvania. Its largest connected regional water system, consisting of about 141 square miles and 74,000 metered customers, is located in northern and portions of southern New Castle County, Delaware. Artesian Wastewater Management, Inc. is a regulated entity that owns wastewater collection and treatment infrastructure, and provides wastewater services to customers in Delaware as a regulated public wastewater service company. It currently operates wastewater treatment facilities for the town of Middletown, in southern New Castle County, under a 20-year contract that expires in July 2022. Has 225 employees. Chairman, C.E.O. & President: Dian C. Taylor. Address: 664 Churchmans Rd., Newark, DE 19702. Tel.: (302) 453-6900. Internet: http://www.artesianwater.com. *J.V.*

April 14, 2017

TOTAL SHAREHOLDER RETURN

Dividends plus appreciation as of 3/31/2017

3 Mos.	6 Mos.	1 Yr.	3 Yrs.	5 Yrs.
2.72%	15.88%	20.09%	61.33%	107.76%

CALIFORNIA WATER NYSE-CWT

RECENT PRICE 35.40 | P/E RATIO 26.0 (Trailing: 35.0 / Median: 20.0) | RELATIVE P/E RATIO 1.33 | DIV'D YLD 2.0% | VALUE LINE

TIMELINESS 3 Lowered 12/23/16
SAFETY 3 Lowered 7/27/07
TECHNICAL 2 Raised 4/14/17
BETA .75 (1.00 = Market)

2020-22 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+40%)	11%
Low	30	(-15%)	-1%

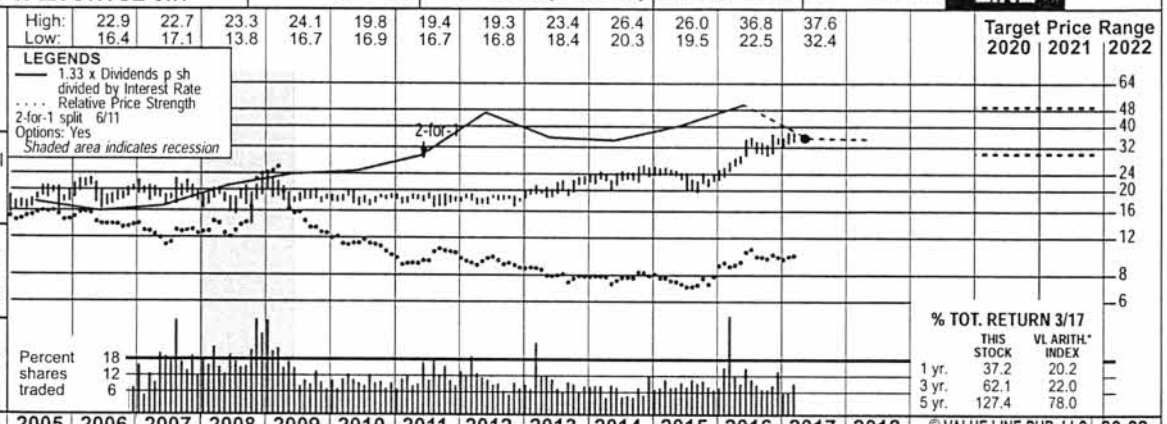
Insider Decisions

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

Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	87	75	93
to Sell	78	73	82
Hld's(000)	35876	33965	34200

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
High:	22.9	22.7	23.3	24.1	19.8	19.4	19.3	23.4	26.4	26.0	36.8	37.6								
Low:	16.4	17.1	13.8	16.7	16.9	16.7	16.8	18.4	20.3	19.5	22.5	32.4								
	8.13	8.67	8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.45	14.05	Revenues per sh	14.70
	1.10	1.32	1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	2.65	2.80	"Cash Flow" per sh	3.15
	.47	.63	.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.35	1.45	Earnings per sh [A]	1.75
	.56	.56	.56	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	Div'd Decl'd per sh [B] ■	.99
	2.04	2.91	2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	3.85	3.65	Cap'l Spending per sh	3.65
	6.48	6.56	7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.25	14.60	Book Value per sh [C]	16.00
	30.36	30.36	33.86	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.00	48.00	Common Shs Outst'g [D]	50.00
	27.1	19.8	22.1	20.1	24.9	29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	23.0
	1.39	1.08	1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.56			Relative P/E Ratio	1.45
	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%			Avg Ann'l Div'd Yield	2.5%
	367.1	410.3	449.4	460.4	501.8	560.0	584.1	597.5	588.4	609.4	645	675	Revenues ($mill) [E]	735
	31.2	39.8	40.6	37.7	36.1	42.6	47.3	56.7	45.0	48.7	65.0	70.0	Net Profit ($mill)	88.0
	39.9%	37.7%	40.3%	39.5%	40.5%	37.5%	30.3%	33.0%	36.0%	35.5%	35.0%	35.0%	Income Tax Rate	35.0%
	8.3%	8.6%	7.6%	4.2%	7.6%	8.0%	4.3%	2.7%	4.3%	6.1%	5.0%	5.0%	AFUDC % to Net Profit	5.0%
	42.9%	41.6%	47.1%	52.4%	51.7%	47.8%	41.6%	40.1%	44.4%	44.6%	45.0%	45.0%	Long-Term Debt Ratio	43.0%
	56.6%	58.4%	52.9%	47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	55.0%	55.0%	Common Equity Ratio	57.0%
	674.9	690.4	794.9	914.7	931.5	908.2	1024.9	1045.9	1154.4	1191.2	1250	1275	Total Capital ($mill)	1400
	1010.2	1112.4	1198.1	1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1859.3	1900	1930	Net Plant ($mill)	2000
	5.9%	7.1%	6.5%	5.5%	5.5%	6.3%	6.0%	6.3%	5.2%	5.5%	6.5%	6.5%	Return on Total Cap'l	7.0%
	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.5%	10.0%	Return on Shr. Equity	11.0%
	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.5%	10.0%	Return on Com Equity	11.0%
	1.8%	3.8%	3.8%	3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.4%	4.5%	5.0%	Retained to Com Eq	5.0%
	77%	61%	60%	66%	71%	62%	56%	55%	71%	68%	53%	52%	All Div'ds to Net Prof	56%



CAPITAL STRUCTURE as of 12/31/16
Total Debt $655.0 mill. Due in 5 Yrs $174.0 mill.
LT Debt $531.7 mill. LT Interest $33.4 mill. (45% of Cap'l)

Pension Assets-12/16 $376.5 mill.
Oblig. $564.8 mill.

Pfd Stock None

Common Stock 47,965,000 shs.

MARKET CAP: $1.7 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	19.6	8.8	25.5
Other	134.5	118.8	116.6
Current Assets	154.1	127.6	142.1
Accts Payable	59.4	66.4	77.8
Debt Due	85.7	40.2	123.3
Other	72.6	41.9	49.1
Current Liab.	217.7	148.5	250.2

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	4.0%	2.0%	2.5%
"Cash Flow"	5.0%	3.5%	5.0%
Earnings	4.0%	3.0%	9.0%
Dividends	1.5%	2.0%	6.5%
Book Value	5.0%	5.0%	3.0%

Calendar	QUARTERLY REVENUES ($ mill.) [E] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	110.5	158.4	191.2	137.4	597.5
2015	122.0	144.4	183.5	138.4	588.3
2016	121.7	152.4	184.3	151.0	609.4
2017	135	160	195	155	645
2018	140	170	205	160	675

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	d.11	.36	.70	.24	1.19
2015	.03	.21	.52	.18	.94
2016	d.02	.24	.48	.31	1.01
2017	.05	.35	.65	.30	1.35
2018	.07	.38	.67	.33	1.45

Calendar	QUARTERLY DIVIDENDS PAID [B] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.16	.16	.16	.16	.64
2014	.1625	.1625	.1625	.1625	.65
2015	.1675	.1675	.1675	.1675	.67
2016	.1725	.1725	.1725	.1725	.69
2017	.18				

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 482,400 customers in 100 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp; West Hawaii Utilities (9/08). Revenue breakdown, '16: residential, 72%; business, 20%; industrial, 4%; public authorities, 3%; other 1%. Off. and dir. own 1% of common stock (4/16 proxy). Has 1,163 employees. Pres., Chrm., and CEO: Peter C. Nelson. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Web: www.calwatergroup.com.

California Water Service Group reported standout financial results to conclude 2016. The regulated and nonregulated water provider generated revenues of $151 million and $0.31 a share in net income during the December period. Both figures improved markedly year over year, easily besting our estimates. While the showing was stellar, it is worth noting that organic operations (top and bottom lines) got some help from one-time items associated with the rate case decision, namely the resolution of balancing accounts and the recovery of drought costs. These benefits outpaced an uptick in maintenance and wholesale water expenses. All things considered. . .

Growth is likely on tap for 2017 and 2018. Overall, the company's ability to immediately impose water rate hikes on its customers far outweighs the manageable increases in operating costs. Drought conditions continue to be a concern, mainly on water usage restrictions and operating expenses, but this essentially becomes a wash once the Public Utilities Commission approves recovery. Thus, our 2017 revenue estimate of $645 million and share net expectation of $1.35 are unchanged, for now. Moreover, we are unveiling our 2018 revenue and earnings estimates of $675 million and $1.45 a share, respectively.

Aggressive capital investment in the coming years was an additional component of the rate case decision. California Water spent a record $229 million on infrastructure upgrades and system improvements last year. With an allotment of $658 million for its capital budget to be spread over the pull to 2019, we see no slowdown of spending in sight.

The company raised its quarterly dividend by 4%, to $0.18 a share. This marks the 49th consecutive annual payout increase. That said, the current yield, while roughly on par with the broader market averages, is noticeably weaker than in prior years, mainly due to the stock's recent price surge.

Based on this issue's rich valuation, we think better options can be found elsewhere, for now. But we still like the long-term story, and suggest investors keep CWT on their radars should a meaningful dip in share price occur.

Nicholas P. Patrikis *April 14, 2017*

(A) Basic EPS. Excl. nonrecurring gain (loss): '01, 2¢; '02, 4¢; '11, 4¢. Next earnings report due late May.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '16 : $21.9 mill., $0.46/sh.
(D) In millions, adjusted for splits.
(E) Excludes non-reg. rev.

Company's Financial Strength	B++
Stock's Price Stability	85
Price Growth Persistence	35
Earnings Predictability	75

CONNECTICUT WATER NDQ-CTWS

RECENT PRICE 52.96 | P/E RATIO 26.0 (Trailing: 25.5 Median: 20.0) | RELATIVE P/E RATIO 1.33 | DIV'D YLD 2.1% | VALUE LINE

TIMELINESS 5 Lowered 4/7/17
SAFETY 3 New 1/18/13
TECHNICAL 2 Raised 4/14/17
BETA .65 (1.00 = Market)

2020-22 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+15%)	6%
Low	40	(-25%)	-4%

Insider Decisions

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

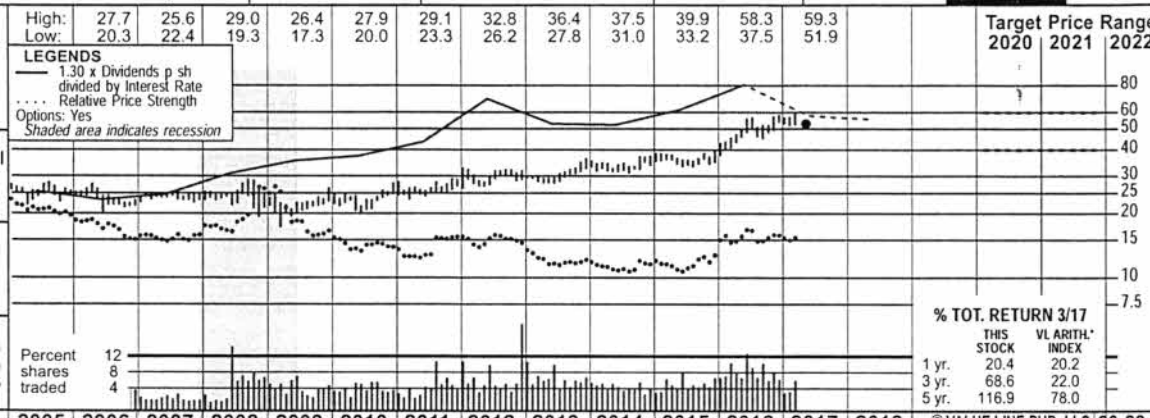
Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	49	51	59
to Sell	52	48	45
Hld's(000)	5138	5226	5436

High:	27.7	25.6	29.0	26.4	27.9	29.1	32.8	36.4	37.5	39.9	58.3	59.3							
Low:	20.3	22.4	19.3	17.3	20.0	23.3	26.2	27.8	31.0	33.2	37.5	51.9							

LEGENDS
— 1.30 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2020 | 2021 | 2022



% TOT. RETURN 3/17

	THIS STOCK	VL ARITH.* INDEX
1 yr.	20.4	20.2
3 yr.	68.6	22.0
5 yr.	116.9	78.0

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
5.93	5.77	5.91	6.04	5.81	5.68	7.05	7.24	6.93	7.65	7.93	9.47	8.29	8.45	8.58	8.77	*9.20*	*10.00*	Revenues per sh	*13.35*
1.78	1.78	1.89	1.91	1.62	1.52	1.90	1.95	1.93	2.04	2.11	2.64	2.63	2.97	3.18	3.31	*3.40*	*3.55*	"Cash Flow" per sh	*3.90*
1.13	1.12	1.15	1.16	.88	.81	1.05	1.11	1.19	1.13	1.13	1.53	1.66	1.92	2.04	2.08	*2.20*	*2.35*	Earnings per sh A	*2.65*
.80	.81	.83	.84	.85	.86	.87	.88	.90	.92	.94	.96	.98	1.01	1.05	1.12	*1.20*	*1.24*	Div'd Decl'd per sh B■	*1.40*
1.86	1.98	1.49	1.58	1.96	1.96	2.24	2.44	3.28	3.06	2.61	2.79	3.02	4.11	4.29	5.93	*4.50*	*4.35*	Cap'l Spending per sh	*3.35*
9.25	10.06	10.46	10.94	11.52	11.60	11.95	12.23	12.67	13.05	13.50	20.95	17.92	18.83	20.01	20.98	*21.75*	*22.60*	Book Value per sh D	*23.75*
7.65	7.94	7.97	8.04	8.17	8.27	8.38	8.46	8.57	8.68	8.76	8.85	11.04	11.12	11.19	11.25	*11.50*	*11.50*	Common Shs Outst'g C	*12.00*
21.5	24.3	23.5	22.9	28.6	29.0	23.0	22.2	18.4	20.7	23.0	19.4	18.4	17.5	17.6	23.3	*Bold figures are*		Avg Ann'l P/E Ratio	*19.0*
1.10	1.33	1.34	1.21	1.52	1.57	1.22	1.34	1.23	1.32	1.44	1.23	1.03	.92	.89	1.22	*Value Line*		Relative P/E Ratio	*1.20*
3.3%	3.0%	3.0%	3.1%	3.4%	3.6%	3.6%	3.6%	4.1%	3.9%	3.6%	3.2%	3.2%	3.0%	2.9%	2.3%	*estimates*		Avg Ann'l Div'd Yield	*2.8%*
59.0	61.3	59.4	66.4	69.4	83.8	91.5	94.0	96.0	98.7	*106*	*115*	Revenues ($mill)	*160*
8.8	9.4	10.2	9.8	9.9	13.6	18.3	21.3	22.8	23.4	*25.5*	*27.0*	Net Profit ($mill)	*32.0*
32.4%	27.2%	19.5%	35.2%	41.3%	32.0%	28.0%	14.4%	3.5%	9.9%	*19.0%*	*20.0%*	Income Tax Rate	*28.0%*
--	1.7%	--	--	--	1.7%	2.0%	2.4%	2.3%	5.1%	*3.0%*	*2.5%*	AFUDC % to Net Profit	*2.5%*
47.8%	46.9%	50.6%	49.5%	53.2%	49.0%	46.9%	45.7%	44.1%	45.4%	*47.0%*	*47.0%*	Long-Term Debt Ratio	*46.5%*
51.8%	52.7%	49.1%	50.2%	46.5%	50.8%	52.9%	54.1%	55.7%	54.4%	*53.0%*	*53.0%*	Common Equity Ratio	*53.5%*
193.2	196.5	221.3	225.6	254.2	364.6	373.6	386.8	402.4	433.8	*470*	*490*	Total Capital ($mill)	*535*
284.3	302.3	325.2	344.2	362.4	447.9	471.9	506.9	546.3	601.4	*615*	*635*	Net Plant ($mill)	*675*
5.5%	5.9%	5.5%	5.4%	4.9%	4.8%	5.9%	6.4%	6.5%	6.3%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
8.7%	9.0%	9.3%	8.6%	8.3%	7.3%	9.2%	10.1%	10.1%	9.9%	*10.0%*	*10.5%*	Return on Shr. Equity	*11.0%*
8.7%	9.1%	9.4%	8.7%	8.3%	7.3%	9.2%	10.2%	10.1%	9.9%	*10.0%*	*10.5%*	Return on Com Equity	*11.0%*
1.6%	1.9%	2.3%	1.6%	1.4%	2.8%	3.8%	4.8%	4.9%	4.6%	*4.5%*	*5.0%*	Retained to Com Eq	*5.0%*
82%	79%	76%	81%	83%	62%	59%	53%	52%	54%	*55%*	*53%*	All Div'ds to Net Prof	*53%*

CAPITAL STRUCTURE as of 12/31/16
Total Debt $201.9 mill. Due in 5 Yrs $19.8 mill.
LT Debt $197.0 mill. LT Interest $7.7 mill. (44% of Cap'l)

Leases, Uncapitalized: Annual rentals $.3 mill.
Pension Assets-12/16 $62.7 mill. Oblig. $79.3 mill.

Pfd Stock $0.8 mill. Pfd Divd NMF

Common Stock 11,248,000 shs.

MARKET CAP: $600 million (Small Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	2.5	.7	1.6
Accounts Receivable	12.0	11.0	13.0
Other	21.7	15.3	14.8
Current Assets	36.2	27.0	29.4
Accts Payable	10.0	11.9	13.1
Debt Due	4.4	2.8	4.9
Other	9.2	22.2	37.1
Current Liab.	23.6	36.9	55.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	4.0%	3.0%	*7.5%*
"Cash Flow"	6.5%	9.5%	*3.5%*
Earnings	8.0%	12.0%	*4.5%*
Dividends	2.5%	3.0%	*4.5%*
Book Value	6.0%	9.0%	*3.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	20.3	25.4	27.6	20.7	94.0
2015	20.0	26.6	28.4	21.0	96.0
2016	21.6	26.1	29.5	21.5	98.7
2017	*23.0*	*28.0*	*32.0*	*23.0*	*106*
2018	*25.0*	*30.0*	*35.0*	*25.0*	*115*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	.27	.67	.76	.22	1.92
2015	.28	.77	.79	.20	2.04
2016	.28	.89	.84	.07	2.08
2017	*.30*	*.79*	*.88*	*.23*	*2.20*
2018	*.35*	*.80*	*.90*	*.30*	*2.35*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.2425	.2425	.2475	.2475	.98
2014	.2475	.2475	.2575	.2575	1.01
2015	.2575	.2575	.2675	.2675	1.05
2016	.2675	.2825	.2825	.2825	1.12
2017	.2825				

BUSINESS: Connecticut Water Service, Inc. is a non-operating holding company, whose income is derived from earnings of its wholly-owned subsidiary companies (regulated water utilities). In 2016, 95% of net income was derived from these activities. Provides water services to 440,000 people in 79 municipalities throughout Connecticut and Maine. Acquired The Maine Water Company, January, 2012; Biddeford and Saco Water, December, 2012; Heritage Village, February 2017. Inc.: Conn.. Has 266 employees. Chairman/President/Chief Executive Officer: Eric W. Thornburg. Officers and directors own 2.6% of the common stock; BlackRock, Inc. 7.0%; (4/16 proxy). Address: 93 West Main Street, Clinton, CT 06413. Telephone: (860) 669-8636. Internet: www.ctwater.com.

Connecticut Water Service has closed the book on its acquisition of Heritage Village Water Company. The deal was finalized in February of this year for a total value of $20.7 million. In sum, approximately 7,700 customers (water & wastewater) spanning Southbury, Middlebury, and Oxford, Connecticut will be brought under the umbrella. This addition brings the company's footprint to 79 communities in the Northeast, serving over 440,000 people. Indeed, we look for the acquisition to positively impact the top line.

A second deal, which is a bit larger in stature (in terms of cost), is in the queue. As mentioned in our January review, Connecticut Water has entered into an agreement to purchase The Avon Water Company at a cash-and-stock price of about $37 million. Avon serves nearly 4,800 water customers across several communities in Connecticut. Currently, the acquisition is pending approval from the Public Utilities Regulatory Authority, which should be decided within the second quarter. The deal is expected to close by the third quarter of this year.

Top- and bottom-line growth should be more profound going forward. Taking into consideration a jump in the customer base, with further additions possible in the back half of 2017, we think revenue growth of 7% is achievable this year. Meanwhile, earnings are poised to advance nicely, as our model calls for share-net expansion of 6% in 2017. Operation and maintenance costs may inch higher in the near term due to integration, but expenses seem to be under control. What's more, over the long haul, the company's growth-through-acquisition model will probably remain in place. Solid free cash flow generation, along with a manageable amount of debt, augurs well for this strategy.

Our recommendation on this equity has not changed much over the past three months. The stock price, though slightly off of fresh all-time highs, already appears to be reflecting a good amount of the gains we envision over the 2020-2022 time frame. Moreover, the issue is pegged as a market laggard over the coming six to 12 months (Timeliness: 5). All told, we continue to advise investors to take a pass on these richly valued shares, for now.

Nicholas P. Patrikis *April 14, 2017*

(A) Diluted earnings. Next earnings report due late May.
(B) Dividends historically paid in mid-March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. In 2016: $30.4 million/$2.70 a share.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	50
Earnings Predictability	85

MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 37.09 | P/E RATIO 26.3 (Trailing: 26.9 Median: 20.0) | RELATIVE P/E RATIO 1.34 | DIV'D YLD 2.3% | VALUE LINE

TIMELINESS 3 Raised 3/10/17
SAFETY 2 New 10/21/11
TECHNICAL 3 Lowered 3/10/17
BETA .75 (1.00 = Market)

2020-22 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+35%)	10%
Low	35	(-5%)	1%

Insider Decisions

	J	J	A	S	O	N	D	J	F
to Buy	0	0	0	0	0	0	0	0	0
Options	7	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	2	1	0	0	1

Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	59	50	40
to Sell	52	56	62
Hld's(000)	7208	7495	7874

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
High:	20.5	20.2	19.8	17.9	19.3	19.4	19.6	22.5	23.7	28.0	44.5	42.8						
Low:	16.5	16.9	12.0	11.6	14.7	16.5	17.5	18.6	19.1	21.2	25.0	34.6						

Target Price Range 2020 | 2021 | 2022: 64, 48, 40, 32, 24, 20, 16, 12, 8, 6

% TOT. RETURN 3/17

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.5	20.2
3 yr.	85.3	22.0
5 yr.	131.0	78.0

																			© VALUE LINE PUB. LLC	20-22
5.87	5.98	6.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.50	8.65	Revenues per sh	9.40
1.18	1.20	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.35	2.50	"Cash Flow" per sh	3.10
.66	.73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.50	1.60	Earnings per sh [A]	2.05
.62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.84	.87	Div'd Decl'd per sh [B]■	1.02
1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	1.80	1.90	Cap'l Spending per sh	2.05
7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	13.95	14.35	Book Value per sh	16.45
10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.50	16.75	Common Shs Outst'g [C]	17.00
24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	21.0
1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.35			Relative P/E Ratio	1.30
3.8%	3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%			Avg Ann'l Div'd Yield	2.4%
						86.1	91.0	91.2	102.7	102.1	110.4	114.8	117.1	126.0	132.9	140	145	Revenues ($mill)	160
						11.8	12.2	10.0	14.3	13.4	14.4	16.6	18.4	20.0	22.7	25.0	27.0	Net Profit ($mill)	35.0
						32.6%	33.2%	34.1%	32.1%	32.7%	33.9%	34.1%	35.0%	34.5%	34.0%	35.0%	36.0%	Income Tax Rate	37.0%
						--	--	--	6.8%	6.1%	3.4%	1.9%	1.7%	1.9%	2.7%	2.0%	2.0%	AFUDC % to Net Profit	2.5%
						49.0%	45.6%	46.6%	43.1%	42.3%	41.5%	40.4%	40.5%	39.4%	37.9%	37.5%	37.5%	Long-Term Debt Ratio	38.0%
						49.6%	51.8%	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.5%	62.0%	Common Equity Ratio	61.5%
						268.8	259.4	267.9	310.5	312.5	316.5	321.4	335.8	345.4	355.4	370	385	Total Capital ($mill)	450
						333.9	366.3	376.5	405.9	422.2	435.2	446.5	465.4	481.9	517.8	525	535	Net Plant ($mill)	575
						5.6%	5.8%	5.0%	5.7%	5.2%	5.4%	5.9%	6.3%	6.6%	7.1%	7.5%	7.5%	Return on Total Cap'l	8.0%
						8.6%	8.6%	7.0%	8.1%	7.5%	7.8%	8.7%	9.2%	9.6%	10.3%	11.0%	11.0%	Return on Shr. Equity	12.5%
						8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	11.0%	11.0%	Return on Com Equity	12.5%
						1.8%	2.0%	.1%	2.1%	1.0%	1.4%	2.4%	3.1%	3.5%	4.3%	5.0%	5.0%	Retained to Com Eq	6.0%
						79%	78%	98%	75%	87%	83%	73%	67%	63%	58%	56%	54%	All Div'ds to Net Prof	50%

CAPITAL STRUCTURE as of 12/31/16
Total Debt $152.7 mill. Due in 5 Yrs $32.1 mill.
LT Debt $134.5 mill. LT Interest $5.3 mill.
(Total interest coverage: 7.6x)
(38% of Cap'l)

Pension Assets-12/16 $59.4 mill.
Oblig. $78.6 mill.
Pfd Stock $2.4 mill. Pfd Div'd: $.1 mill.

Common Stock 16,296,000 shs.

MARKET CAP: $600 million (Small Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	2.7	3.5	3.9
Other	20.2	20.9	22.8
Current Assets	22.9	24.4	26.7
Accts Payable	6.4	6.5	12.3
Debt Due	24.9	8.7	18.2
Other	12.6	13.1	16.6
Current Liab.	43.9	28.3	47.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	2.0%	3.0%	3.5%
"Cash Flow"	4.5%	6.5%	7.5%
Earnings	5.0%	8.0%	8.5%
Dividends	1.5%	1.5%	4.5%
Book Value	4.0%	3.0%	4.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	27.1	29.2	32.7	28.1	117.1
2015	28.8	31.7	34.7	30.8	126.0
2016	30.6	32.7	37.8	31.8	132.9
2017	32.0	34.0	39.0	35.0	140
2018	33.0	37.0	40.0	35.0	145

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	.20	.29	.42	.22	1.13
2015	.22	.31	.41	.28	1.22
2016	.29	.36	.54	.19	1.38
2017	.30	.37	.55	.28	1.50
2018	.33	.38	.57	.32	1.60

Calendar	QUARTERLY DIVIDENDS PAID [B]■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.1875	.1875	.1875	.19	.75
2014	.19	.19	.19	.1925	.76
2015	.1925	.1925	.1925	.19875	.78
2016	.19875	.19875	.19875	.21125	.81
2017	.21125				

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2016, the Middlesex System accounted for 60% of operating revenues. At 12/31/16, the company had 309 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 6.4% (4/16 proxy). Add.: 1500 Ronson Road, Iselin, NJ 08830. Tel.: 732-634-1500. Internet: www.middlesexwater.com.

Middlesex Water Company stumbled a bit in the fourth quarter. Its woes were mainly isolated to the bottom line, as earnings of $0.19 a share for the December period declined more than 30%, year over year. A substantial increase in operation and maintenance expenses, coupled with higher, unforeseen costs associated with its water main asset assessment program, weighed on profitability. Nonetheless, full-year top- and bottom-line figures improved moderately, thanks to strong performances in the first three quarters of 2016. However, the advance was not quite on par with consensus and, as a result, the market punished the relatively overvalued stock. Presently, MSEX shares are trading around levels of last fall.

We are lowering our 2017 revenue and earnings estimates. Largely owing to loftier labor expenses, we are shaving a dime from our current-year net income call, to $1.50 a share. Meanwhile, our 2018 bottom-line estimate is being initiated at $1.60 a share.

The current yield is appetizing. Though the return is 100 to 200 basis points below historical norms, MSEX shares presently offer a 2.3% yield. This outpaces the majority of equities in the water utility industry. Indeed, the recent price descent is helping to bolster its appeal. Looking further out, based on our 3- to 5-year Target Price Range and projected annual payout increases, we think this rate of return should hold steady.

Elevated capital spending on infrastructure upgrades is likely over the pull to 2020-2022. Middlesex is in the midst of a $12 million overhaul of its Edison and South Amboy infrastructures (improving water mains and service lines to bolster distribution capabilities). This is apt to be followed by upgrades down the road to other municipalities.

This issue is absent of investment appeal at the moment, with the exception of its solid dividend yield. Slated to only mirror the broader market over the coming six to 12 months (Timeliness: 3), investors would do well to wait for some clarity on a bottom-line recovery in the near term. Furthermore, at recent levels, capital appreciation potential over the long run is nothing to write home about.

Nicholas P. Patrikis *April 14, 2017*

(A) Diluted earnings. Next earnings report due early May.

(B) Dividends historically paid in mid-Feb., May, Aug., and November.■ Div'd reinvestment plan available.

(C) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	40
Earnings Predictability	85

SJW CORP. NYSE-SJW

RECENT PRICE 47.77 | P/E RATIO 20.6 (Trailing: 18.6 Median: 23.0) | RELATIVE P/E RATIO 1.05 | DIV'D YLD 1.8% | VALUE LINE

TIMELINESS 4 Raised 1/27/17
SAFETY 3 New 4/22/11
TECHNICAL 3 Lowered 4/14/17
BETA .70 (1.00 = Market)

2020-22 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+55%)	13%
Low	50	(+5%)	3%

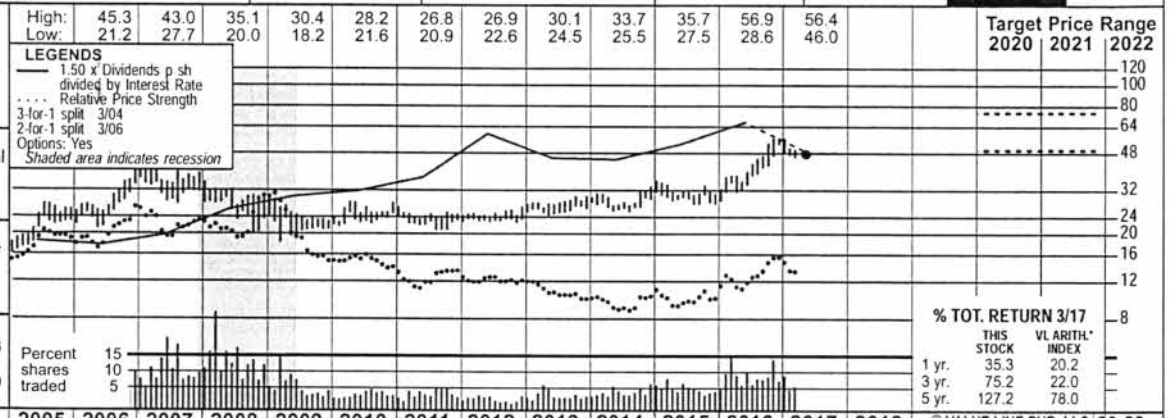
Insider Decisions

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

Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	64	50	81
to Sell	68	70	59
Hld's(000)	9308	9513	9218

High:	45.3	43.0	35.1	30.4	28.2	26.8	26.9	30.1	33.7	35.7	56.9	56.4						
Low:	21.2	27.7	20.0	18.2	21.6	20.9	22.6	24.5	25.5	27.5	28.6	46.0						



2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
7.45	7.97	8.20	9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	16.20	15.90	Revenues per sh	19.55
1.49	1.55	1.75	1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	4.40	4.40	"Cash Flow" per sh	4.90
.77	.78	.91	.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.25	2.35	Earnings per sh A	2.75
.43	.46	.49	.51	.53	.57	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	.87	.93	Div'd Decl'd per sh B■	1.12
2.63	2.06	3.41	2.31	2.83	3.87	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	6.00	5.50	Cap'l Spending per sh	5.00
8.17	8.40	9.11	10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	21.20	21.60	Book Value per sh	23.90
18.27	18.27	18.27	18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	21.00	22.00	Common Shs Outst'g C	23.00
18.5	17.3	15.4	19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	22.0
.95	.94	.88	1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.83			Relative P/E Ratio	1.40
3.0%	3.4%	3.5%	3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%			Avg Ann'l Div'd Yield	1.8%
206.6	220.3	216.1	215.6	239.0	261.5	276.9	319.7	305.1	339.7	340	350	Revenues ($mill)	450
19.3	20.2	15.2	15.8	20.9	22.3	23.5	51.8	37.9	52.8	47.0	52.0	Net Profit ($mill)	63.0
39.4%	39.5%	40.4%	38.8%	41.1%	41.1%	38.7%	32.5%	38.1%	38.8%	39.0%	39.0%	Income Tax Rate	39.0%
2.7%	2.3%	2.0%	--	--	--	--	--	2.0%	1.0%	1.5%	1.5%	AFUDC % to Net Profit	1.5%
47.7%	46.0%	49.4%	53.7%	56.6%	55.0%	51.1%	51.6%	49.8%	50.7%	49.0%	48.5%	Long-Term Debt Ratio	49.0%
52.3%	54.0%	50.6%	46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.0%	51.5%	Common Equity Ratio	51.0%
453.2	470.9	499.6	550.7	607.9	610.2	656.2	744.5	764.6	855.0	870	925	Total Capital ($mill)	1075
645.5	684.2	718.5	785.5	756.2	831.6	898.7	963.0	1036.8	1146.4	1200	1250	Net Plant ($mill)	1325
5.7%	5.8%	4.4%	4.3%	4.9%	5.0%	5.0%	8.3%	6.3%	7.4%	6.5%	6.5%	Return on Total Cap'l	7.0%
8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	10.5%	11.0%	Return on Shr. Equity	11.5%
8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	10.5%	11.0%	Return on Com Equity	11.5%
3.5%	3.3%	1.2%	1.2%	3.1%	3.3%	2.8%	10.2%	5.7%	8.6%	6.5%	6.5%	Retained to Com Eq	7.0%
57%	59%	80%	80%	61%	59%	62%	29%	42%	31%	39%	40%	All Div'ds to Net Prof	41%

CAPITAL STRUCTURE as of 12/31/16
Total Debt $447.6 mill. **Due in 5 Yrs** $14.3 mill.
LT Debt $433.3 mill. **LT Interest** $20.0 mill. (51% of Cap'l)

Leases, Uncapitalized: Annual rentals $6.6 mill.

Pension Assets-12/16 $113.9 mill.
Oblig. $174.1 mill.

Pfd Stock None.

Common Stock 20,456,000 shs.

MARKET CAP: $975 million (Mid Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	2.4	5.2	25.3
Accts Receivable	15.0	16.4	16.4
Other	50.7	51.8	57.9
Current Assets	68.1	73.4	99.6
Accts Payable	7.0	16.2	18.7
Debt Due	13.8	38.1	14.3
Other	23.9	25.3	30.6
Current Liab.	44.7	79.6	63.6

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	5.0%	5.5%	3.5%
"Cash Flow"	7.0%	12.0%	2.0%
Earnings	8.0%	20.5%	3.0%
Dividends	4.0%	3.0%	6.0%
Book Value	5.5%	6.5%	4.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	54.6	70.4	125.4	69.3	319.7
2015	62.1	72.4	83.0	87.6	305.1
2016	61.1	86.9	112.3	79.4	339.7
2017	65.0	90.0	100	85.0	340
2018	68.0	92.0	103	87.0	350

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	.04	.34	1.88	.28	2.54
2015	.23	.36	.46	.80	1.85
2016	.16	.82	.92	.67	2.57
2017	.25	.65	.75	.60	2.25
2018	.27	.67	.78	.63	2.35

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.1825	.1825	.1825	.1825	.73
2014	.1875	.1875	.1875	.1875	.75
2015	.1950	.1950	.1950	.1950	.78
2016	.2025	.2025	.2025	.2025	.81
2017	.2175				

BUSINESS: SJW Corporation engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 229,000 connections with a total population of roughly one million people in the San Jose area and 13,000 connections that reaches about 39,000 residents in the region between San Antonio and Austin, Texas. The company also offers nonregulated water-related services and owns and operates commercial real estate investments. Has about 406 employees. Officers and directors (including Nancy O. Moss) own 26.9% of outstanding shares (3/17 proxy). Chairman: Charles J. Toeniskoetter. Inc.: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

Shares of SJW Corp. have cooled a bit in price subsequent to an impressive run-up over the course of last year. The stock nearly doubled in value during 2016 and, not surprisingly, we have seen higher selling volume in the early stages of this year, as investors were likely taking some profits off the table. In our view, this pullback (shares are down approximately 15% in price since our January report) is warranted. December-period top- and bottom-line results declined, year over year, which was in line with our expectations.

Several factors will probably keep revenues and net income at bay this year. Cumulative rate increases stemming from the 2015 California Rate Case decision are being largely overshadowed by lower revenue adjustments in its conservation memorandum accounts. On top of that, water production expenses ought to continue to rise. Specifically, higher per-unit prices for purchased water, ground water extraction, and energy charges are apt to be a bottom-line drag. In addition, elevated maintenance and administrative expenses are likely to increase overall operating expenses. On balance, our current-year revenue estimate of $340 million and earnings call of $2.25 take into account the abovementioned headwinds.

SJW boosted its quarterly dividend payout. The board of directors announced a 7% increase to the distribution, to $0.2175 per share. Long-term, income-seeking accounts should find comfort in the company's long-standing track record of dividend hikes, but at recent levels, the annual yield of 1.8% (slightly below market average: 2.0%) pales in comparison to most of its peers in the water utility industry.

Massive infrastructure investments over the next few years are still on the docket. Leading up to the 2020-2022 time frame, we expect SJW to spend roughly $300 million to revamp its plant and water systems. This ought to improve production efficiency and help curb operating expenses.

There is little to like here at the moment. The stock is unfavorably ranked for Timeliness (4), and capital gains potential 3 to 5 years out is subpar.

Nicholas P. Patrikis *April 14, 2017*

(A) Diluted earnings. Excludes nonrecurring losses: '03, $1.97; '04, $3.78; '05, $1.09; '06, $16.36; '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due late May. Quarterly earnings may not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for stock splits.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	25
Earnings Predictability	45

YORK WATER NDQ-YORW

RECENT PRICE 34.70 | P/E RATIO 34.7 (Trailing: 37.7 / Median: 24.0) | RELATIVE P/E RATIO 1.77 | DIV'D YLD 1.8% | VALUE LINE

TIMELINESS 5 Lowered 3/17/17
SAFETY 3 Lowered 7/17/15
TECHNICAL 2 Raised 4/14/17
BETA .75 (1.00 = Market)

2020-22 PROJECTIONS

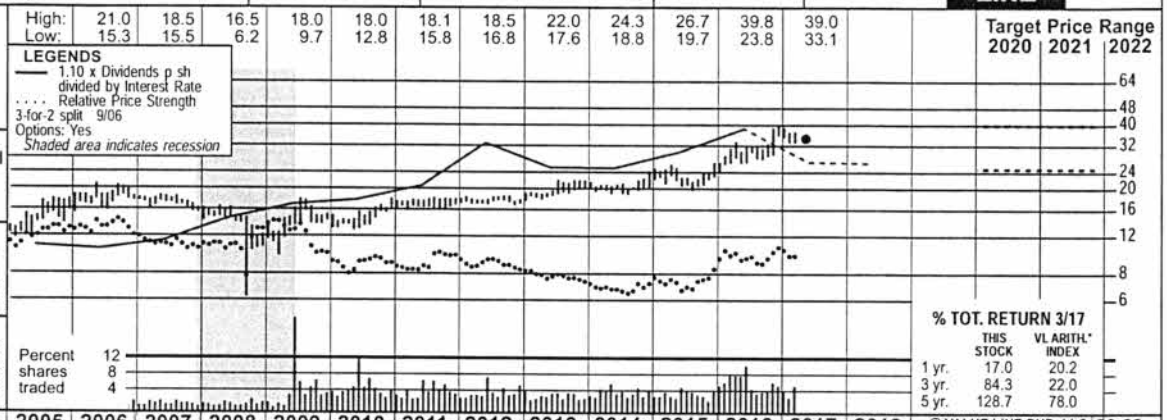
	Price	Gain	Ann'l Total Return
High	40	(+15%)	6%
Low	25	(-30%)	-5%

Insider Decisions

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

Institutional Decisions

	2Q2016	3Q2016	4Q2016
to Buy	44	37	46
to Sell	38	36	34
Hld's(000)	4006	4033	4284



% TOT. RETURN 3/17

	THIS STOCK	VL ARITH.* INDEX
1 yr.	17.0	20.2
3 yr.	84.3	22.0
5 yr.	128.7	78.0

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	© VALUE LINE PUB. LLC	20-22
2.05	2.05	2.17	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.70	*3.90*	*4.15*	Revenues per sh	*5.65*
.59	.57	.65	.65	.79	.77	.86	.88	.95	1.07	1.09	1.12	1.19	1.36	1.45	1.42	*1.65*	*1.70*	"Cash Flow" per sh	*2.05*
.43	.40	.47	.49	.56	.58	.57	.57	.64	.71	.71	.72	.75	.89	.97	.92	*1.05*	*1.10*	Earnings per sh A	*1.40*
.34	.35	.37	.39	.42	.45	.48	.49	.51	.52	.53	.54	.55	.57	.60	.63	*.66*	*.70*	Div'd Decl'd per sh B	*.90*
.75	.66	1.07	2.50	1.69	1.85	1.69	2.17	1.18	.83	.74	.94	.76	1.10	1.11	1.03	*1.50*	*1.25*	Cap'l Spending per sh	*.85*
3.79	3.90	4.06	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.51	8.88	*9.10*	*9.55*	Book Value per sh	*11.00*
9.46	9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.85	*13.00*	*12.75*	Common Shs Outst'g C	*12.00*
17.8	26.9	24.5	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	32.8	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*22.5*
.91	1.47	1.40	1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.18	1.72			Relative P/E Ratio	*1.40*
4.4%	3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.1%			Avg Ann'l Div'd Yield	*2.8%*
						31.4	32.8	37.0	39.0	40.6	41.4	42.4	45.9	47.1	47.6	*51.0*	*53.0*	Revenues ($mill)	*68.0*
						6.4	6.4	7.5	8.9	9.1	9.3	9.7	11.5	12.5	11.8	*13.5*	*14.0*	Net Profit ($mill)	*17.0*
						36.5%	36.1%	37.9%	38.5%	35.3%	37.6%	37.6%	29.8%	27.5%	31.3%	*29.0%*	*30.0%*	Income Tax Rate	*32.5%*
						3.6%	10.1%	--	1.2%	1.1%	1.1%	.8%	1.8%	1.6%	1.9%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.0%*
						46.5%	54.5%	45.7%	48.3%	47.1%	46.0%	45.1%	44.8%	44.4%	42.6%	*43.5%*	*44.0%*	Long-Term Debt Ratio	*45.0%*
						53.5%	45.5%	54.3%	51.7%	52.9%	54.0%	54.9%	55.2%	55.6%	57.4%	*56.5%*	*56.0%*	Common Equity Ratio	*55.0%*
						125.7	153.4	160.1	176.4	180.2	184.8	188.4	189.4	196.3	198.7	*210*	*215*	Total Capital ($mill)	*240*
						191.6	211.4	222.0	228.4	233.0	240.3	244.2	253.2	261.4	270.9	*275*	*280*	Net Plant ($mill)	*295*
						6.7%	5.7%	6.2%	6.5%	6.4%	6.4%	6.5%	7.4%	7.6%	7.2%	*8.0%*	*7.5%*	Return on Total Cap'l	*8.0%*
						9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	*11.5%*	*11.5%*	Return on Shr. Equity	*12.5%*
						9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	*11.5%*	*11.5%*	Return on Com Equity	*12.5%*
						1.7%	1.4%	1.9%	2.7%	2.5%	2.4%	2.4%	3.9%	4.4%	3.4%	*4.5%*	*4.0%*	Retained to Com Eq	*4.5%*
						82%	85%	78%	72%	73%	74%	74%	64%	62%	67%	*63%*	*64%*	All Div'ds to Net Prof	*64%*

CAPITAL STRUCTURE as of 12/31/16
Total Debt $84.6 mill. **Due in 5 Yrs** $30.5 mill.
LT Debt $84.6 mill. **LT Interest** $5.4 mill.

(43% of Cap'l)

Pension Assets 12/16 $35.5 mill.
Oblig. $40.8 mill.

Pfd Stock None

Common Stock 12,852,000 shs.

MARKET CAP: $450 million (Small Cap)

CURRENT POSITION ($MILL.)	2014	2015	12/31/16
Cash Assets	1.5	2.9	4.2
Accounts Receivable	4.0	3.5	4.3
Inventory (Avg. Cost)	.8	.8	.7
Other	4.9	4.6	3.4
Current Assets	11.2	11.8	12.6
Accts Payable	1.6	1.8	3.7
Debt Due	--	--	--
Other	4.3	4.4	4.5
Current Liab.	5.9	6.2	8.2

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '14-'16 to '20-'22
Revenues	4.0%	3.5%	*7.5%*
"Cash Flow"	6.5%	6.5%	*6.5%*
Earnings	5.5%	6.0%	*7.0%*
Dividends	3.5%	3.0%	*7.0%*
Book Value	5.0%	3.5%	*4.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	10.6	11.8	12.0	11.5	45.9
2015	11.2	11.9	12.4	11.6	47.1
2016	11.3	11.8	12.6	11.9	47.6
2017	*12.0*	*12.5*	*13.5*	*13.0*	*51.0*
2018	*12.5*	*13.0*	*14.0*	*13.5*	*53.0*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2014	.16	.22	.23	.28	.89
2015	.20	.22	.28	.27	.97
2016	.19	.23	.27	.23	.92
2017	*.22*	*.25*	*.30*	*.28*	*1.05*
2018	*.23*	*.26*	*.32*	*.29*	*1.10*

Calendar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.138	.138	.138	.138	.552
2014	.1431	.1431	.1431	.1431	.572
2015	.1495	.1495	.1495	.1555	.604
2016	.1555	.1555	.1555	.1602	.627
2017	.1602				

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2016, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 196,000. Has more than 67,000 customers. Residential customers accounted for 63% of 2016 revenues; commercial and industrial (29%); other (8%). It also provides sewer billing services. Incorporated: PA. York had 105 full-time employees at 12/31/16. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (3/17 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

York Water's 2016 bottom line was dragged down by several factors. These included higher income taxes due to fewer-than-expected asset improvements (discussed below), and higher depreciation and retirement expenses. The company registered profits of $0.92 a share for the full year, a nickel less than the like-2015 figure. The top line, however, got a boost from an increased number of customers, thanks largely to recent acquisitions, along with marginally higher billings. Revenues increased $0.5 million, year over year, to $47.6 million.

The company should benefit from IRS Tangible Property Rules going forward, as planned spending is scheduled to ramp up this year and next. York fell short of its target asset improvement volume in 2016, spending just over $1.00 a share. As a consequence, it was unable to take advantage of certain tax deductions due to the lack of eligible improvements, resulting in a higher tax bill. This probably wont be the case this year. Management is guiding investments of approximately $23 million and $16 million in 2017 and 2018, respectively, which should help reduce income taxes. Spending will likely be allocated towards completion of a new untreated water pumping station, beginning a dam upgrade project, as well as general improvements to pipes and facilities that support its expanding customer base.

We are leaving intact our 2017 top- and bottom-line estimates. The recent close of West York Borough wastewater ought to supplement revenue growth. Meanwhile, the abovementioned tax benefits augur well for a rebound in share net.

The valuation is still a bit stretched. Shares of the water utility declined about 10% in price since our January review, as investors digested yearend results. But despite the pullback, YORW shares remain fairly expensive, trading more than 34.0x our 12-month forward-looking earnings-per-share forecast. There is little to be excited about over the long haul, too. Much of the gains we foresee over the 3- to 5-year horizon are already reflected in the stock price. Thus, we continue to advise investors to exercise patience and wait for a more-attractive entry point.

Nicholas P. Patrikis *April 14, 2017*

(A) Diluted earnings. Next earnings report due late May.
(B) Dividends historically paid in late-December, February, June, and September.
(C) In millions, adjusted for splits.

Company's Financial Strength	B+
Stock's Price Stability	75
Price Growth Persistence	55
Earnings Predictability	95

ATTACHMENT 3

American States Water Company (AWR)

NYSE - Nasdaq Real Time Price. Currency in USD

46.9396 -0.16 (-0.34%)

As of 1:21PM EDT. Market open

Summary Conversations Statistics Profile Financials Options Holders Historical Data Analysts

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	3	3	5	6
Avg. Estimate	0.44	0.58	1.69	1.8
Low Estimate	0.43	0.57	1.65	1.72
High Estimate	0.45	0.6	1.71	1.9
Year Ago EPS	0.45	0.59	1.62	1.69

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	2	2	5	5
Avg. Estimate	112.47M	145.66M	452.3M	467.5M
Low Estimate	107M	127M	441M	453M
High Estimate	117.93M	164.32M	469.47M	481.42M
Year Ago Sales	111.95M	123.81M	436.09M	452.3M
Sales Growth (year/est)	0.50%	17.70%	3.70%	3.40%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.44	0.58	0.3	0.32
EPS Actual	0.45	0.59	0.3	0.34
Difference	0.01	0.01	N/A	0.02
Surprise %	2.30%	1.70%	N/A	6.30%

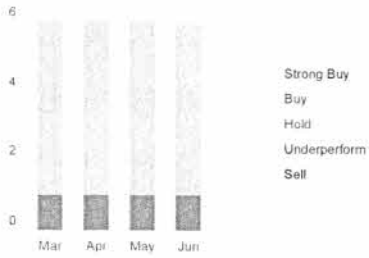
EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.44	0.58	1.69	1.8
7 Days Ago	0.44	0.58	1.69	1.8
30 Days Ago	0.45	0.59	1.69	1.81
60 Days Ago	0.45	0.56	1.69	1.81
90 Days Ago	0.44	0.55	1.7	1.82

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)

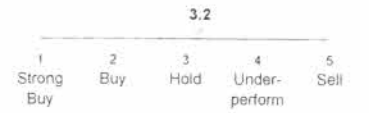
EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	AWR	Industry	Sector	S&P 500
Current Qtr.	-2.20%	N/A	N/A	0.20
Next Qtr.	-1.70%	N/A	N/A	0.21
Current Year	4.30%	N/A	N/A	0.09
Next Year	6.50%	N/A	N/A	0.12
Next 5 Years (per annum)	5.05%	N/A	N/A	0.10
Past 5 Years (per annum)	1.98%	N/A	N/A	N/A

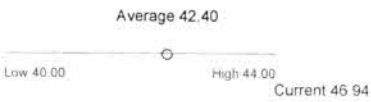
Recommendation Trends ›



Recommendation Rating ›



Analyst Price Targets (5) ›



Upgrades & Downgrades ›

↑ Upgrade	Ladenburg Thalmann: Sell to Neutral	5/11/2016
↓ Downgrade	Ladenburg Thalmann: Neutral to Sell	2/26/2016
↓ Downgrade	Brean Capital: Buy to Hold	10/31/2014
↑ Upgrade	Brean Capital: Hold to Buy	2/28/2014

American Water Works Company, Inc. (AWK)

NYSE - Nasdaq Real Time Price. Currency in USD

☆ Add to watchlist

Quote Lookup

78.9300 -0.07 (-0.09%)

As of 1:22PM EDT. Market open.

People also watch
WTR AWR CWT MSEX CTWS

Summary | Conversations | Statistics | Profile | Financials | Options | Holders | Historical Data | Analysts

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	10	10	14	16
Avg. Estimate	0.8	1.07	3.03	3.29
Low Estimate	0.75	0.96	3	3.2
High Estimate	0.84	1.12	3.05	3.4
Year Ago EPS	0.77	1.05	2.84	3.03

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	7	7	11	12
Avg. Estimate	861.87M	982.55M	3.46B	3.64B
Low Estimate	851.8M	958.81M	3.4B	3.53B
High Estimate	875.32M	1.01B	3.59B	3.82B
Year Ago Sales	827M	930M	3.3B	3.46B
Sales Growth (year/est)	4.20%	5.70%	4.90%	5.10%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.73	1.01	0.57	0.53
EPS Actual	0.77	1.05	0.57	0.52
Difference	0.04	0.04	N/A	-0.01
Surprise %	5.50%	4.00%	N/A	-1.90%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.8	1.07	3.03	3.29

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.8	1.07	3.03	3.29
30 Days Ago	0.81	1.06	3.04	3.29
60 Days Ago	0.82	1.03	3.05	3.28
90 Days Ago	0.81	1.04	3.05	3.28

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	1	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	AWK	Industry	Sector	S&P 500
Current Qtr.	3.90%	N/A	N/A	0.20
Next Qtr.	1.90%	N/A	N/A	0.21
Current Year	6.70%	N/A	N/A	0.09
Next Year	8.60%	N/A	N/A	0.12
Next 5 Years (per annum)	7.70%	N/A	N/A	0.10
Past 5 Years (per annum)	9.40%	N/A	N/A	N/A

Recommendation Trends ›

14

Aqua America, Inc. (WTR)

NYSE - Nasdaq Real Time Price. Currency in USD

33.06 -0.15 (-0.45%)

As of 1:21PM EDT. Market open.

Summary Conversations Statistics Profile Financials Options Holders Historical Data Analysts

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	8	8	12	12
Avg. Estimate	0.34	0.43	1.36	1.44
Low Estimate	0.33	0.41	1.34	1.39
High Estimate	0.35	0.45	1.38	1.47
Year Ago EPS	0.33	0.41	1.32	1.36

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	6	6	9	9
Avg. Estimate	208.28M	235.71M	844.9M	858.15M
Low Estimate	200.94M	223.8M	812.19M	547.6M
High Estimate	214M	245M	873.57M	930.47M
Year Ago Sales	203.88M	226.59M	819.88M	844.9M
Sales Growth (year/est)	2.20%	4.00%	3.10%	1.60%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.33	0.4	0.29	0.3
EPS Actual	0.33	0.41	0.28	0.28
Difference	N/A	0.01	-0.01	-0.02
Surprise %	N/A	2.50%	-3.40%	-6.70%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.34	0.43	1.36	1.44

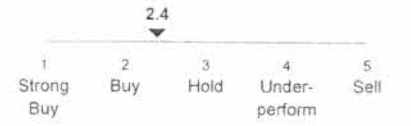
EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.34	0.43	1.36	1.44
30 Days Ago	0.34	0.43	1.37	1.45
60 Days Ago	0.35	0.43	1.37	1.45
90 Days Ago	0.35	0.43	1.38	1.45

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	WTR	Industry	Sector	S&P 500
Current Qtr.	3.00%	N/A	N/A	0.20
Next Qtr.	4.90%	N/A	N/A	0.21
Current Year	3.00%	N/A	N/A	0.09
Next Year	5.90%	N/A	N/A	0.12
Next 5 Years (per annum)	5.25%	N/A	N/A	0.10
Past 5 Years (per annum)	8.39%	N/A	N/A	N/A

Recommendation Trends ›

Recommendation Rating ›



Analyst Price Targets (9) ›

Artesian Resources Corporation (ARTNA)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

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Quote Lookup

37.10 -0.43 (-1.15%)

As of 1:08PM EDT. Market open.

Summary Conversations Statistics Profile Financials Options Holders Historical Data Analysts

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	0.38	0.45	1.49	1.59
Low Estimate	0.38	0.45	1.49	1.59
High Estimate	0.38	0.45	1.49	1.59
Year Ago EPS	0.33	0.48	1.41	1.49

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	20.55M	22.12M	82.05M	85.22M
Low Estimate	20.55M	22.12M	82.05M	85.22M
High Estimate	20.55M	22.12M	82.05M	85.22M
Year Ago Sales	19.39M	21.83M	79.09M	82.05M
Sales Growth (year/est)	6.00%	1.30%	3.70%	3.90%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.37	0.41	0.25	0.35
EPS Actual	0.33	0.48	0.3	0.34
Difference	-0.04	0.07	0.05	-0.01
Surprise %	-10.80%	17.10%	20.00%	-2.90%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.38	0.45	1.49	1.59

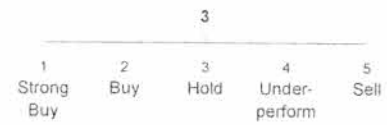
EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.38	0.45	1.49	1.59
30 Days Ago	0.41	0.45	1.55	1.7
60 Days Ago	0.38	0.44	1.49	1.65
90 Days Ago	N/A	N/A	1.46	1.61

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	ARTNA	Industry	Sector	S&P 500
Current Qtr.	15.20%	N/A	N/A	0.20
Next Qtr.	-6.20%	N/A	N/A	0.21
Current Year	5.70%	N/A	N/A	0.09
Next Year	6.70%	N/A	N/A	0.12
Next 5 Years (per annum)	4.00%	N/A	N/A	0.10
Past 5 Years (per annum)	7.06%	N/A	N/A	N/A

Recommendation Trends ›

Recommendation Rating ›



Analyst Price Targets (1) ›

California Water Service Group (CWT)

NYSE - Nasdaq Real Time Price. Currency in USD

☆ Add to watchlist

Quote Lookup

35.50 -0.25 (-0.70%)

As of 1:12PM EDT. Market open.

Summary Conversations Statistics Profile Financials Options Holders Historical Data Analysts

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	6	5	7	8
Avg. Estimate	0.33	0.67	1.3	1.39
Low Estimate	0.3	0.65	1.25	1.28
High Estimate	0.39	0.7	1.37	1.49
Year Ago EPS	0.24	0.48	1.01	1.3

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	3	2	4	5
Avg. Estimate	164.71M	202.25M	651.69M	672.19M
Low Estimate	163M	197M	644M	656M
High Estimate	167.62M	207.5M	655M	683M
Year Ago Sales	152.44M	184.27M	609.37M	651.69M
Sales Growth (year/est)	8.00%	9.80%	6.90%	3.10%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.24	0.57	0.2	0.05
EPS Actual	0.24	0.48	0.31	0.02
Difference	N/A	-0.09	0.11	-0.03
Surprise %	N/A	-15.80%	55.00%	-60.00%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.33	0.67	1.3	1.39

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.33	0.67	1.3	1.39
30 Days Ago	0.32	0.69	1.3	1.4
60 Days Ago	0.32	0.64	1.3	1.4
90 Days Ago	0.34	0.62	1.3	1.4

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	1	1	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	CWT	Industry	Sector	S&P 500
Current Qtr.	37.50%	N/A	N/A	0.20
Next Qtr.	39.60%	N/A	N/A	0.21
Current Year	28.70%	N/A	N/A	0.09
Next Year	6.90%	N/A	N/A	0.12
Next 5 Years (per annum)	9.70%	N/A	N/A	0.10
Past 5 Years (per annum)	-3.31%	N/A	N/A	N/A

Recommendation Trends ›

Recommendation Rating ›

Analyst Price Targets (6) ›

Connecticut Water Service, Inc. (CTWS)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

54.38 -0.43 (-0.78%)

As of 1:17PM EDT. Market open.

Summary Conversations Statistics Profile Financials Options Holders Historical Data Analysts

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	2	2	2	3
Avg. Estimate	0.73	0.91	2.19	2.29
Low Estimate	0.68	0.88	2.17	2.22
High Estimate	0.78	0.93	2.2	2.35
Year Ago EPS	0.89	0.84	2.08	2.19

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	2	3
Avg. Estimate	29.67M	32.91M	107.67M	113.71M
Low Estimate	29.67M	32.91M	106M	110M
High Estimate	29.67M	32.91M	109.33M	116.14M
Year Ago Sales	26.05M	29.48M	98.67M	107.67M
Sales Growth (year/est)	13.90%	11.60%	9.10%	5.60%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.72	0.82	0.11	0.37
EPS Actual	0.89	0.84	0.07	0.36
Difference	0.17	0.02	-0.04	-0.01
Surprise %	23.60%	2.40%	-36.40%	-2.70%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.73	0.91	2.19	2.29

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.73	0.91	2.19	2.29
30 Days Ago	0.73	0.9	2.2	2.32
60 Days Ago	0.73	0.9	2.2	2.32
90 Days Ago	N/A	N/A	2.24	2.32

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	1	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	CTWS	Industry	Sector	S&P 500
Current Qtr.	-18.00%	N/A	N/A	0.20
Next Qtr.	8.30%	N/A	N/A	0.21
Current Year	5.30%	N/A	N/A	0.09
Next Year	4.60%	N/A	N/A	0.12
Next 5 Years (per annum)	6.00%	N/A	N/A	0.10
Past 5 Years (per annum)	1.99%	N/A	N/A	N/A

Middlesex Water Company (MSEX)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

35.88 -0.44 (-1.21%)

As of 1:12PM EDT. Market open.

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	0.38	0.55	1.5	1.63
Low Estimate	0.38	0.55	1.5	1.63
High Estimate	0.38	0.55	1.5	1.63
Year Ago EPS	N/A	N/A	1.38	1.5

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	34M	39M	137M	141M
Low Estimate	34M	39M	137M	141M
High Estimate	34M	39M	137M	141M
Year Ago Sales	N/A	N/A	132.91M	137M
Sales Growth (year/est)	N/A	N/A	3.10%	2.90%

Earnings History	Invalid Date	Invalid Date	12/30/2016	3/30/2017
EPS Est.	N/A	N/A	0.29	0.31
EPS Actual	N/A	N/A	0.19	0.27
Difference	N/A	N/A	-0.1	-0.04
Surprise %	N/A	N/A	-34.50%	-12.90%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.38	0.55	1.5	1.63

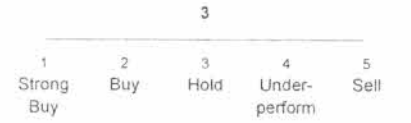
EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.38	0.55	1.5	1.63
30 Days Ago	0.38	0.55	1.54	1.63
60 Days Ago	0.38	0.55	1.54	1.63
90 Days Ago	0.38	0.55	1.54	1.63

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	MSEX	Industry	Sector	S&P 500
Current Qtr.	N/A	N/A	N/A	0.20
Next Qtr.	N/A	N/A	N/A	0.21
Current Year	8.70%	N/A	N/A	0.09
Next Year	8.70%	N/A	N/A	0.12
Next 5 Years (per annum)	2.70%	N/A	N/A	0.10
Past 5 Years (per annum)	4.62%	N/A	N/A	N/A

Recommendation Trends ›

Recommendation Rating ›



Analyst Price Targets (1) ›

SJW Group (SJW)

NYSE - Nasdaq Real Time Price. Currency in USD

Add to watchlist

Quote Lookup

51.56 +0.56 (+1.09 %)

As of 12:30PM EDT. Market open.

Summary | Conversations | Statistics | Profile | Financials | Options | Holders | Historical Data | Analysts

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	0.64	0.76	2.14	2.29
Low Estimate	0.64	0.76	2.14	2.29
High Estimate	0.64	0.76	2.14	2.29
Year Ago EPS	0.82	0.92	2.57	2.14

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	91M	107M	350M	356M
Low Estimate	91M	107M	350M	356M
High Estimate	91M	107M	350M	356M
Year Ago Sales	86.94M	112.34M	339.71M	350M
Sales Growth (year/est)	4.70%	-4.80%	3.00%	1.70%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.41	0.45	0.65	0.22
EPS Actual	0.82	0.92	0.67	0.18
Difference	0.41	0.47	0.02	-0.04
Surprise %	100.00%	104.40%	3.10%	-18.20%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.64	0.76	2.14	2.29

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.64	0.76	2.14	2.29
30 Days Ago	0.67	0.73	2.15	2.29
60 Days Ago	0.67	0.73	2.15	2.29
90 Days Ago	0.67	0.73	2.15	2.29

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	SJW	Industry	Sector	S&P 500
Current Qtr.	-22.00%	N/A	N/A	0.20
Next Qtr.	-17.40%	N/A	N/A	0.21
Current Year	-16.70%	N/A	N/A	0.09
Next Year	7.00%	N/A	N/A	0.12
Next 5 Years (per annum)	14.00%	N/A	N/A	0.10
Past 5 Years (per annum)	27.21%	N/A	N/A	N/A

The York Water Company (YORW)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

33.83 -0.32 (-0.92 %)

As of 1:00PM EDT. Market open.

Currency in USD

Earnings Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	0.22	0.28	0.96	0.99
Low Estimate	0.22	0.28	0.96	0.99
High Estimate	0.22	0.28	0.96	0.99
Year Ago EPS	0.23	0.27	0.92	0.96

Revenue Estimate	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
No. of Analysts	1	1	1	1
Avg. Estimate	12.2M	13M	48.8M	50.9M
Low Estimate	12.2M	13M	48.8M	50.9M
High Estimate	12.2M	13M	48.8M	50.9M
Year Ago Sales	11.82M	12.6M	47.58M	48.8M
Sales Growth (year/est)	3.20%	3.20%	2.60%	4.30%

Earnings History	6/29/2016	9/29/2016	12/30/2016	3/30/2017
EPS Est.	0.23	0.28	0.26	0.19
EPS Actual	0.23	0.27	0.23	0.2
Difference	N/A	-0.01	-0.03	0.01
Surprise %	N/A	-3.60%	-11.50%	5.30%

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Current Estimate	0.22	0.28	0.96	0.99

EPS Trend	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
7 Days Ago	0.22	0.28	0.96	0.99
30 Days Ago	0.22	0.28	0.96	0.99
60 Days Ago	0.22	0.28	0.95	1.01
90 Days Ago	N/A	N/A	1.03	1.16

EPS Revisions	Current Qtr. (Jun 2017)	Next Qtr. (Sep 2017)	Current Year (2017)	Next Year (2018)
Up Last 7 Days	N/A	N/A	N/A	N/A
Up Last 30 Days	N/A	N/A	N/A	N/A
Down Last 30 Days	N/A	N/A	N/A	N/A
Down Last 90 Days	N/A	N/A	N/A	N/A

Growth Estimates	YORW	Industry	Sector	S&P 500
Current Qtr.	-4.30%	N/A	N/A	0.20
Next Qtr.	3.70%	N/A	N/A	0.21
Current Year	4.30%	N/A	N/A	0.09
Next Year	3.10%	N/A	N/A	0.12
Next 5 Years (per annum)	4.90%	N/A	N/A	0.10
Past 5 Years (per annum)	7.56%	N/A	N/A	N/A

Recommendation Trends ›

Recommendation Rating ›

Analyst Price Targets (1) ›

Low 27.00 High 27.00

SCHEDULES

PRO FORMA CAPITAL STRUCTURE - WEIGHTED AVERAGE COST OF CAPITAL

Line No	Description	[A] Pro Forma Capitalization Per Company	[B] RUCO Adjustments	[C] RUCO Adjusted Pro Forma Capitalization	[D] Capital Ratio	[E] Cost Rate	[F] Weighted Cost
1	Long-Term Debt	$ 8,370,000	$ -	$ 8,370,000	37.50%	3.42%	1.28%
2	Common Equity	15,545,954	(1,595,954)	13,950,000	62.50%	9.64%	6.03%
3	TOTAL CAPITALIZATION	$ 23,915,954	$ (1,595,954)	$ 22,320,000	100.00%		**7.31%**

[A] : Company Schedule D-1 (Note: In Mr. Bourassa's Schedule D-1 workpapers, the dollar value of long-term debt and common equity are hidden from view.)
[B] : [C] - [A]
[C] : Dollar values predicated on a capital structure consisting of 37.5% long-term debt and 62.5% common equity. See Testimony.
[D] : Capital ratio based on values shown in Columd [C].
[E] : Company Schedule D-1, and RUCO Schedule JAC-2.
[F] : [D] * [E]

Pima Utility Company
Test Year Ending December 31, 2015
Docket No. W-02199A-16-0421

Cost of Capital -- Common Equity

Line No			[A] Cost Estimate
1	Discounted Cash Flow Model ("DCF")	Schedule JAC - 3	9.74%
2	Capital Asset Pricing Model ("CAPM")	Schedule JAC - 4	7.89%
3	Comparable Earnings Model ("CE")	Schedule JAC - 5	11.30%
4	Cost of Common Equity		9.64%

[A]: From Schedules JAC-3, JAC-4 and JAC-5

PROXY GROUP -- DCF ANALYSIS

Line No	Proxy Group Companies	(A) Current Dividend Yield (D_0/P_0)	(B) Historic Retention Growth	(C) Projected Retention Growth	(D) Historical Per Share Growth Rates	(E) Projected Per Share Growth Rates	(F) Projected EPS Growth	(G) Average Growth	(H) Expected Dividend Yield (D_1/P_0)	(I) DCF Rates
1	American States Water Co.	2.2%	6.1%	5.5%	7.6%	6.8%	5.05%	6.2%	2.3%	8.5%
2	American Water Works Co., Inc	2.0%	4.3%	4.5%	7.7%	8.5%	7.40%	6.5%	2.0%	8.5%
3	Aqua America, Inc.	2.4%	5.5%	5.0%	8.5%	7.8%	5.25%	6.4%	2.5%	8.9%
4	Artesian Resources	2.7%	2.2%	N/A	5.9%	N/A	4.00%	4.0%	2.8%	6.8%
5	California Water Service Group	2.0%	3.1%	4.8%	3.5%	7.4%	9.70%	5.7%	2.1%	7.8%
6	Connecticut Water Service, Inc.	2.1%	4.2%	4.8%	8.6%	4.0%	5.15%	5.4%	2.1%	7.5%
7	Middlesex Water	2.3%	2.9%	5.3%	5.4%	5.7%	2.70%	4.4%	2.3%	6.7%
8	SJW Corporation	1.8%	6.1%	6.7%	9.8%	3.7%	14.00%	8.0%	1.9%	9.9%
9	York Water Company	1.8%	3.3%	4.3%	4.1%	6.8%	4.90%	4.7%	1.9%	6.6%
10	Mean	2.15%	4.18%	5.13%	6.78%	6.35%	6.46%	5.70%	2.21%	**7.91%**
11	Median	2.09%	4.18%	4.92%	7.59%	6.82%	5.15%	5.69%	2.15%	**7.78%**
12	Composite-Mean		6.39%	7.33%	**8.98%**	8.56%	8.67%	7.91%		
12	Composite-Median		6.33%	7.06%	**9.74%**	8.96%	7.30%	7.84%		

References:

Column [A] : Schedule JAC - 3, page 3 of 4
Column [B] : Schedule JAC - 3, page 4 of 4
Column [C] : Schedule JAC - 3, page 4 of 4
Column [D] and Column [E] : Schedule JAC - 3, page 2 of 4
Column [F] : See Yahoo Finance, Growth Estimates - Next 5 Years - See Attachment 7
Column [G] : Average Columns [B] through [F]
Column [H] : Column [A] * (1 + (Column [G]* (0.5)))
Column [I] : Column [G] + Column [H]

PROXY GROUP -- PER SHARE GROWTH RATES

Line No	Proxy Group Companies	5-Year Compound Average Annual Historical Growth, 2012-2016				5-Year Compound Average Annual Projected Growth, 2017-2021			
		EPS	DPS	BVPS	Average	EPS	DPS	BVPS	Average
1	American States Water Co.	7.7%	10.6%	4.5%	7.6%	7.7%	8.2%	4.4%	6.8%
2	American Water Works Co., Inc	8.8%	10.3%	3.9%	7.7%	9.6%	9.8%	6.2%	8.5%
3	Aqua America, Inc.	9.7%	8.2%	7.7%	8.5%	7.0%	9.2%	7.3%	7.8%
4	Artesian Resources Corp.	11.2%	3.4%	3.0%	5.9%				
5	California Water Service Group	3.3%	2.2%	5.0%	3.5%	11.6%	7.5%	3.1%	7.4%
6	Connecticut Water Service, Inc.	13.0%	3.6%	9.2%	8.6%	5.0%	4.6%	2.5%	4.0%
7	Middlesex Water	10.4%	2.1%	3.5%	5.4%	8.2%	4.7%	4.2%	5.7%
8	SJW Corporation	18.3%	3.3%	7.7%	9.8%	1.4%	6.7%	3.0%	3.7%
9	York Water Company	5.3%	3.5%	3.6%	4.1%	8.8%	7.4%	4.4%	6.8%
10					6.78%				6.35%

Reference:
Value Line Investment Survey (April 14, 2017)

PROXY GROUP -- DIVIDEND YIELD

Line No	Proxy Group Companies	(A) DPS	(B) February 2017 - April 2017 High	(C) February 2017 - April 2017 Low	(D) February 2017 - April 2017 Average	(E) Yield
1	American States Water Co.	$0.97	$46.84	$41.14	$44.09	2.2%
2	American Water Works Co., Inc.	$1.50	$81.49	$71.63	$76.54	2.0%
3	Aqua America, Inc.	$0.77	$33.69	$29.53	$31.57	2.4%
4	Artesian Resources Corp.	$0.91	$40.40	$29.83	$33.52	2.7%
5	California Water Service Group	$0.72	$39.40	$33.40	$35.54	2.0%
6	Connecticut Water Service, Inc.	$1.13	$59.26	$51.87	$54.04	2.1%
7	Middlesex Water	$0.85	$40.80	$34.55	$36.95	2.3%
8	SJW Corporation	$0.87	$52.84	$46.02	$48.64	1.8%
9	York Water Company	$0.64	$39.75	$33.10	$35.26	1.8%
10	Average					**2.15%**

References:

Column (A) - Value Line Investment Survey (April 14, 2017)

(Reflects annualization of most recent quarterly dividend)

Columns (B), (C), and (D) - Yahoo Finance

http://finance.yahoo.com

PROXY GROUP -- GROWTH RATES - RETAINED TO COMMON EQUITY

Line No	Proxy Group Companies	(A) 2012	(B) 2013	(C) 2014	(D) 2015	(E) 2016	Average	2017	2018	2020-'22	Average
1	American States Water Co.	6.6%	6.8%	5.7%	6.0%	5.3%	6.1%	5.0%	5.5%	6.0%	5.5%
2	American Water Works Co., Inc	3.6%	4.7%	4.3%	4.7%	4.0%	4.3%	4.5%	4.5%	4.5%	4.5%
3	Aqua America, Inc.	4.3%	6.7%	6.1%	4.7%	5.6%	5.5%	5.5%	5.0%	4.5%	5.0%
4	Artesian Resources Corp.	2.5%	0.9%	1.6%	2.6%	3.4%	2.2%				
5	California Water Service Group	3.4%	3.4%	4.1%	2.0%	2.4%	3.1%	4.5%	5.0%	5.0%	4.8%
6	Connecticut Water Service, Inc.	2.8%	3.8%	4.8%	4.9%	4.6%	4.2%	4.5%	5.0%	5.0%	4.8%
7	Middlesex Water	1.4%	2.4%	3.1%	3.5%	4.3%	2.9%	5.0%	5.0%	6.0%	5.3%
8	SJW Corporation	3.3%	2.8%	10.2%	5.7%	8.6%	6.1%	6.5%	6.5%	7.0%	6.7%
9	York Water Company	2.4%	2.4%	3.9%	4.4%	3.4%	3.3%	4.5%	4.0%	4.5%	4.3%
10	Average						**4.18%**				**5.13%**

Source: Value Line Investment Survey (April 14, 2017)

CAPITAL ASSET PRICING MODEL -- PROXY COMPANY COST RATES

Line No	Proxy Group Companies	[A] Risk Free Rate	[B] BETA		[C] Risk Premium		[D] Beta X Risk Premium	[E] CAPM Rates
1	American States Water Co.	3.02%	0.75	X	6.95%	=	5.22%	8.23%
2	American Water Works Co., Inc.	3.02%	0.65	X	6.95%	=	4.52%	7.54%
3	Aqua America, Inc.	3.02%	0.70	X	6.95%	=	4.87%	7.89%
4	Artesian Resources Corp.	3.02%	0.60	X	6.95%	=	4.17%	7.19%
5	California Water Service Group	3.02%	0.75	X	6.95%	=	5.22%	8.23%
6	Connecticut Water Service, Inc.	3.02%	0.65	X	6.95%	=	4.52%	7.54%
7	Middlesex Water	3.02%	0.75	X	6.95%	=	5.22%	8.23%
8	SJW Corporation	3.02%	0.70	X	6.95%	=	4.87%	7.89%
9	York Water Company	3.02%	0.75	X	6.95%	=	5.22%	8.23%
10	Average							**7.89%**

	20 year Treasury Bonds		30 year Treasury Bonds
11			
12	February, 2017	2.76%	3.03%
13	March, 2017	2.83%	3.08%
14	April, 2017	2.67%	2.94%
15	Average	2.75%	3.02%
16			
17	RUCO Risk-Free Rate	3.02%	

REFERENCES

Column [A]: United States Treasury Department - Attachment 2

https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2016

Column [B]: Value Line Investment Survey (April 14, 2017) - See Attachment 1

Column [C]: JAC - 4, Page 2 of 2

Column [D]: [B] * [C]

Column [E]: [A] + [D]

STANDARD & POOR'S 500 COMPOSITE
20-YEAR U.S. TREASURY BOND YIELDS
RISK PREMIUMS

Line No.	Year	[A] EPS	[B] BVPS	[C] ROE	[D] 20-YEAR T-BOND	[E] RISK PREMIUM
1	1977		$79.07			
2	1978	$12.33	$85.35	15.00%	7.90%	7.10%
3	1979	$14.86	$94.27	16.55%	8.86%	7.69%
4	1980	$14.82	$102.48	15.06%	9.97%	5.09%
5	1981	$15.36	$109.43	14.50%	11.55%	2.95%
6	1982	$12.64	$112.46	11.39%	13.50%	-2.11%
7	1983	$14.03	$116.93	12.23%	10.38%	1.85%
8	1984	$16.64	$122.47	13.90%	11.74%	2.16%
9	1985	$14.61	$125.20	11.80%	11.25%	0.55%
10	1986	$14.48	$126.82	11.49%	8.98%	2.51%
11	1987	$17.50	$134.07	13.42%	7.92%	5.50%
12	1988	$23.75	$141.32	17.25%	8.97%	8.28%
13	1989	$22.87	$147.26	15.85%	8.81%	7.04%
14	1990	$21.73	$153.01	14.47%	8.19%	6.28%
15	1991	$16.29	$158.85	10.45%	8.22%	2.23%
16	1992	$18.86	$149.74	12.22%	7.29%	4.93%
17	1993	$21.89	$180.88	13.24%	7.17%	6.07%
18	1994	$30.60	$193.06	16.37%	6.59%	9.78%
19	1995	$33.96	$216.51	16.58%	7.60%	8.98%
20	1996	$38.73	$237.08	17.08%	6.83%	10.25%
21	1997	$39.72	$249.52	16.33%	6.69%	9.64%
22	1998	$37.71	$266.40	14.62%	5.72%	8.90%
23	1999	$48.17	$290.68	17.29%	6.20%	11.09%
24	2000	$50.00	$325.80	16.22%	6.23%	9.99%
25	2001	$24.70	$338.37	7.44%	5.63%	1.81%
26	2002	$27.59	$321.72	8.36%	5.43%	2.93%
27	2003	$48.73	$367.17	14.15%	4.96%	9.19%
28	2004	$58.55	$414.75	14.98%	5.04%	9.94%
29	2005	$69.93	$453.06	16.12%	4.64%	11.48%
30	2006	$81.51	$504.39	17.03%	5.00%	12.03%
31	2007	$66.18	$529.59	12.80%	4.91%	7.89%
32	2008	$14.88	$451.37	3.03%	4.36%	-1.33%
33	2009	$50.97	$513.58	10.56%	4.11%	6.45%
34	2010	$77.35	$579.14	14.16%	4.03%	10.13%
35	2011	$86.95	$613.14	14.59%	3.62%	10.97%
36	2012	$86.51	$666.97	13.52%	2.54%	10.98%
37	2013	$100.20	$715.84	14.49%	3.12%	11.37%
38	2014	$102.31	$726.96	14.18%	3.07%	11.11%
39	2015	$86.53	$740.29	11.79%	2.55%	9.25%
40	2016	$94.55	$768.98	12.53%	2.22%	10.31%
41	Average			**13.67%**	**6.71%**	**6.95%**

[A]: Diluted earnings per share on the S&P 500 Composite Index.
[B]: Book value per share on the S&P 500 Composite Index.
[C]: Average of current- and prior year [B] / current year [A].
[D]: Annual income returns on 20-year U.S. Treasury bonds.
[E]: [C] - [D]

Sources for [A] and [B]: Standard & Poor's 2015 Analysts' Handbook and Standard & Poor's 500 Earnings Report
https://ycharts.com/indicators/reports/sp_500_earnings
Source for [D]: Morningstar 2015 Classic Yearbook (Table A-7) and U.S. Department of the Treasury
https://www.treasury.gov/Pages/default.aspx

COMPARABLE EARNINGS ANALYSIS

RETURN ON COMMON EQUITY FOR RUCO'S PROXY GROUP OF COMPANIES

Company	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2020 - 2022	10-Year Historical Average 2007-2016	5-Year Historical Average 2012-2016	5-Year Projected Average 2017-2021
American States Water Co.	9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.1%	12.0%	12.0%	14.0%	10.9%	12.3%	12.7%
American Water Works			5.2%	6.5%	7.2%	8.4%	7.8%	8.7%	9.4%	9.0%	10.0%	10.0%	10.5%	7.8%	8.7%	10.2%
Aqua America, Inc.	9.7%	9.3%	9.4%	10.6%	11.6%	11.0%	13.4%	12.9%	11.7%	12.7%	12.5%	12.5%	12.5%	11.2%	12.3%	12.5%
Artesian Resources Corp.	7.4%	7.3%	8.0%	8.0%	6.0%	8.3%	6.8%	7.6%	8.5%	9.3%				7.7%	8.1%	N/A
California Water Service Group	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.4%	9.5%	10.0%	11.0%	8.5%	8.1%	10.2%
Connecticut Water Service, Inc.	8.7%	9.1%	9.4%	8.7%	8.3%	7.3%	9.2%	10.2%	10.1%	9.9%	10.0%	10.5%	11.0%	9.1%	9.3%	10.5%
Middlesex Water	8.7%	8.9%	7.0%	8.2%	7.5%	7.8%	8.7%	9.3%	9.6%	10.3%	11.0%	11.0%	12.5%	8.6%	9.1%	11.5%
SJW Corporation	8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	12.5%	10.5%	11.0%	11.5%	8.9%	10.4%	11.0%
York Water	9.5%	9.2%	8.6%	9.8%	9.5%	9.3%	9.3%	11.0%	11.5%	10.4%	11.5%	11.5%	12.5%	9.8%	10.3%	11.8%
Mean	8.7%	8.8%	7.9%	8.6%	8.5%	9.0%	9.2%	10.6%	10.1%	10.4%	10.9%	11.1%	11.9%	9.2%	9.9%	**11.30%**
Median	8.7%	9.0%	8.2%	8.6%	8.0%	8.4%	8.7%	10.2%	9.9%	10.3%	10.8%	11.0%	12.0%	8.9%	9.3%	**11.30%**
Average of Mean and Median														9.1%	9.6%	**11.30%**

Source: Value Line Investment Survey (April 14, 2017).

ECONOMIC INDICATORS

Line No	Year	Real GDP Growth	Industrial Production Growth	Unemployment Rate	Consumer Price Index	Producer Price Index
1	1975	-1.1%	-8.9%	8.5%	7.0%	6.6%
2	1976	5.4%	10.8%	7.7%	4.8%	3.7%
3	1977	5.5%	5.9%	7.0%	6.8%	6.9%
4	1978	5.0%	5.7%	6.0%	9.0%	9.2%
5	1979	2.8%	4.4%	5.8%	13.3%	12.8%
6	1980	-0.2%	-1.9%	7.0%	12.4%	11.8%
7	1981	1.8%	1.9%	7.5%	8.9%	7.1%
8	1982	-2.1%	-4.4%	9.5%	3.8%	3.6%
9	1983	4.0%	3.7%	9.5%	3.8%	0.6%
10	1984	6.8%	9.3%	7.5%	3.9%	1.7%
11	1985	3.7%	1.7%	7.2%	3.8%	1.8%
12	1986	3.1%	0.9%	7.0%	1.1%	-2.3%
13	1987	2.9%	4.9%	6.2%	4.4%	2.2%
14	1988	3.8%	4.5%	5.5%	4.4%	4.0%
15	1989	3.5%	1.8%	5.3%	4.6%	4.9%
16	1990	1.8%	-0.2%	5.6%	6.1%	5.7%
17	1991	-0.5%	-2.0%	6.8%	3.1%	-0.1%
18	1992	3.0%	3.1%	7.5%	2.9%	1.6%
19	1993	2.7%	3.4%	6.9%	2.7%	0.2%
20	1994	4.0%	5.5%	6.1%	2.7%	1.7%
21	1995	3.7%	4.8%	5.6%	2.5%	2.3%
22	1996	4.5%	4.3%	5.4%	3.3%	2.8%
23	1997	4.5%	7.3%	4.9%	1.7%	-1.2%
24	1998	4.2%	5.8%	4.5%	1.6%	0.0%
25	1999	3.7%	4.5%	4.2%	2.7%	2.9%
26	2000	4.1%	4.0%	4.0%	3.4%	3.6%
27	2001	1.1%	-3.4%	4.7%	1.6%	-1.6%
28	2002	1.8%	0.2%	5.8%	2.4%	1.2%
29	2003	2.8%	1.2%	6.0%	1.9%	4.0%
30	2004	3.8%	2.3%	5.5%	3.3%	4.2%
31	2005	3.3%	3.2%	5.1%	3.4%	5.4%
32	2006	2.7%	2.2%	4.6%	2.5%	1.1%
33	2007	1.8%	2.5%	4.6%	4.1%	6.2%
34	2008	-0.3%	-3.5%	5.8%	0.1%	-0.9%
35	2009	-2.8%	-11.5%	9.3%	2.7%	4.3%
36	2010	2.5%	5.5%	9.6%	1.5%	4.7%
37	2011	1.6%	3.1%	8.9%	3.0%	4.7%
38	2012	2.2%	2.9%	8.1%	1.7%	1.4%
39	2013	1.7%	2.0%	7.4%	1.5%	0.8%
40	2014	2.4%	3.1%	6.2%	0.8%	-1.2%
41	2015	2.6%	-0.7%	5.3%	0.7%	-3.8%
42	2016	1.6%	-1.2%	4.9%	2.1%	1.9%

Source: Council of Economic Advisors, Economic Indicators, various issues.

ECONOMIC INDICATORS

Line No	Year	Real GDP* Growth	Industrial Production Growth	Unemployment Rate	Consumer Price Index	Producer Price Index
1	**2003**					
2	1st Qtr.	1.2%	1.1%	5.8%	4.8%	5.6%
3	2nd Qtr.	3.5%	-0.9%	6.2%	0.0%	-0.5%
4	3rd Qtr.	7.5%	-0.9%	6.1%	3.2%	3.2%
5	4th Qtr.	2.7%	1.5%	5.9%	-0.3%	2.8%
6	**2004**					
7	1st Qtr.	3.0%	2.8%	5.6%	5.2%	5.2%
8	2nd Qtr.	3.5%	4.9%	5.6%	4.4%	4.4%
9	3rd Qtr.	3.6%	4.6%	5.4%	0.8%	0.8%
10	4th Qtr.	2.5%	4.3%	5.4%	3.6%	7.2%
11	**2005**					
12	1st Qtr.	4.1%	3.8%	5.3%	4.4%	5.6%
13	2nd Qtr.	1.7%	3.0%	5.1%	1.6%	-0.4%
14	3rd Qtr.	3.1%	2.7%	5.0%	8.8%	14.0%
15	4th Qtr.	2.1%	2.9%	4.9%	-2.0%	4.0%
16	**2006**					
17	1st Qtr.	5.4%	3.4%	4.7%	4.8%	-0.2%
18	2nd Qtr.	1.4%	4.5%	4.6%	4.8%	5.6%
19	3rd Qtr.	0.1%	5.2%	4.7%	0.4%	-4.4%
20	4th Qtr.	3.0%	3.5%	4.5%	0.0%	3.6%
21	**2007**					
22	1st Qtr.	0.9%	2.5%	4.5%	4.8%	6.4%
23	2nd Qtr.	3.2%	1.6%	4.5%	5.2%	6.8%
24	3rd Qtr.	2.3%	1.8%	4.6%	1.2%	1.2%
25	4th Qtr.	2.9%	1.7%	4.8%	0.6%	6.5%
26	**2008**					
27	1st Qtr.	-1.8%	1.9%	4.9%	2.8%	9.6%
28	2nd Qtr.	1.3%	0.2%	5.3%	7.6%	14.0%
29	3rd Qtr.	-3.7%	-3.0%	6.0%	2.8%	-0.4%
30	4th Qtr.	-8.9%	6.0%	6.9%	-13.2%	-28.4%
31	**2009**					
32	1st Qtr.	-5.3%	-11.6%	8.1%	2.4%	-0.4%
33	2nd Qtr.	-0.3%	-12.9%	9.3%	3.2%	9.2%
34	3rd Qtr.	1.4%	-9.3%	9.6%	2.0%	-0.8%
35	4th Qtr.	4.0%	-4.5%	10.0%	2.5%	8.8%
36	**2010**					
37	1st Qtr.	1.6%	2.7%	9.7%	0.9%	6.5%
38	2nd Qtr.	3.9%	6.5%	9.7%	-1.2%	-2.4%
39	3rd Qtr.	2.8%	6.9%	9.6%	2.8%	4.0%
40	4th Qtr.	2.8%	6.2%	9.6%	2.8%	9.2%
41	**2011**					
42	1st Qtr.	-1.5%	5.4%	9.0%	4.8%	9.6%
43	2nd Qtr.	2.9%	3.6%	9.0%	3.2%	3.6%
44	3rd Qtr.	0.8%	3.3%	9.1%	2.4%	6.4%
45	4th Qtr.	4.6%	4.0%	8.7%	0.4%	-1.2%
46	**2012**					
47	1st Qtr.	2.3%	4.5%	8.3%	3.2%	2.0%
48	2nd Qtr.	1.6%	4.7%	8.2%	0.0%	-2.8%
49	3rd Qtr.	2.5%	3.4%	8.1%	4.0%	9.6%
50	4th Qtr.	0.1%	2.8%	7.8%	0.0%	-3.6%
51	**2013**					
52	1st Qtr.	1.9%	2.5%	7.7%	2.0%	1.2%
53	2nd Qtr.	1.1%	2.0%	7.6%	1.2%	2.4%
54	3rd Qtr.	3.0%	2.6%	7.3%	1.6%	0.0%
55	4th Qtr.	3.8%	3.3%	7.0%	1.2%	0.3%
56	**2014**					
57	1st Qtr.	-1.2%	3.2%	6.6%	1.6%	0.3%
58	2nd Qtr.	4.0%	4.2%	6.2%	3.6%	0.2%
59	3rd Qtr.	5.0%	4.7%	6.1%	0.0%	0.0%
60	4th Qtr.	2.3%	4.5%	5.7%	-2.8%	-0.8%
61	**2015**					
62	1st Qtr.	2.0%	3.5%	5.6%	-0.2%	-2.3%
63	2nd Qtr.	2.6%	1.5%	5.4%	0.6%	1.2%
64	3rd Qtr.	2.0%	1.1%	5.2%	0.0%	-1.8%
65	4th Qtr.	0.9%	-0.8%	5.0%	0.2%	-0.9%
66	**2016**					
67	1st Qtr.	0.80%	-1.7%	4.9%	1.1%	-2.7%
68	2nd Qtr.	1.40%	-1.3%	4.9%	1.0%	-2.2%
69	3rd Qtr.	3.50%	-1.2%	4.9%	1.1%	-1.5%
70	4th Qtr.	2.10%	-0.1%	4.7%	1.8%	0.9%

*GDP=Gross Domestic Product
Source: Council of Economic Advisors, Economic Indicators, various issues.

INTEREST RATES

Line No	Year	Prime Rate	US Treasury T Bills 3 Month	US Treasury T Bonds 10 Year	Utility Bonds Aaa		Utility Bonds Aa	Utility Bonds A	Utility Bonds Baa
1	1975	7.86%	5.84%	7.99%	9.03%		9.44%	10.09%	10.96%
2	1976	6.84%	4.99%	7.61%	8.63%		8.92%	9.29%	9.82%
3	1977	6.83%	5.27%	7.42%	8.19%		8.43%	8.61%	9.06%
4	1978	9.06%	7.22%	8.41%	8.87%		9.10%	9.29%	9.62%
5	1979	12.67%	10.04%	9.43%	9.86%		10.22%	10.49%	10.96%
6	1980	15.27%	11.51%	11.43%	12.30%		13.00%	13.34%	13.95%
7	1981	18.89%	14.03%	13.92%	14.64%		15.30%	15.95%	16.60%
8	1982	14.86%	10.69%	13.01%	14.22%		14.79%	15.86%	16.45%
9	1983	10.79%	8.63%	11.10%	12.52%		12.83%	13.66%	14.20%
10	1984	12.04%	9.58%	12.46%	12.72%		13.66%	14.03%	14.53%
11	1985	9.93%	7.48%	10.62%	11.68%		12.06%	12.47%	12.96%
12	1986	8.33%	5.98%	7.67%	8.92%		9.30%	9.58%	10.00%
13	1987	8.21%	5.82%	8.39%	9.52%		9.77%	10.10%	10.53%
14	1988	9.32%	6.69%	8.85%	10.05%		10.26%	10.49%	11.00%
15	1989	10.87%	8.12%	8.49%	9.32%		9.56%	9.77%	9.97%
16	1990	10.01%	7.51%	8.55%	9.45%		9.65%	9.86%	10.06%
17	1991	8.46%	5.42%	7.86%	8.85%		9.09%	9.36%	9.55%
18	1992	6.25%	3.45%	7.01%	8.19%		8.55%	8.69%	8.86%
19	1993	6.00%	3.02%	5.87%	7.29%		7.44%	7.59%	7.91%
20	1994	7.15%	4.29%	7.09%	8.07%		8.21%	8.31%	8.63%
21	1995	8.83%	5.51%	6.57%	7.68%		7.77%	7.89%	8.29%
22	1996	8.27%	5.02%	6.44%	7.48%		7.57%	7.75%	8.16%
23	1997	8.44%	5.07%	6.35%	7.43%		7.54%	7.60%	7.95%
24	1998	8.35%	4.81%	5.26%	6.77%		6.91%	7.04%	7.26%
25	1999	8.00%	4.66%	5.65%	7.21%		7.51%	7.62%	7.88%
26	2000	9.23%	5.85%	6.03%	7.88%		8.06%	8.24%	8.36%
27	2001	6.91%	3.44%	5.02%	7.47%		7.59%	7.78%	8.02%
28	2002	4.67%	1.62%	4.61%		[1]	7.19%	7.37%	8.02%
29	2003	4.12%	1.01%	4.01%			6.40%	6.58%	6.84%
30	2004	4.34%	1.38%	4.27%			6.04%	6.16%	6.40%
31	2005	6.19%	3.16%	4.29%			5.44%	5.65%	5.93%
32	2006	7.96%	4.73%	4.80%			5.84%	6.07%	6.32%
33	2007	8.05%	4.41%	4.63%			5.94%	6.07%	6.33%
34	2008	5.09%	1.48%	3.66%			6.18%	6.53%	7.25%
35	2009	3.25%	0.16%	3.26%			5.75%	6.04%	7.06%
36	2010	3.25%	0.14%	3.22%			5.24%	5.46%	5.96%
37	2011	3.25%	0.06%	2.78%			4.78%	5.04%	5.57%
38	2012	3.25%	0.09%	1.80%			3.83%	4.13%	4.86%
39	2013	3.25%	0.06%	2.35%			4.24%	4.47%	4.98%
40	2014	3.25%	0.03%	2.54%			4.19%	4.28%	4.80%
41	2015	3.27%	0.06%	2.14%			4.00%	4.12%	5.03%
42	2016	3.51%	0.33%	1.84%					

[1] Note: Moody's has not published Aaa utility bond yields since 2001.

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

INTEREST RATES

Line No		Prime Rate	US Treasury T Bills 3 Month	US Treasury T Bonds 10 Year	Utility Bonds Aa	Utility Bonds A	Utility Bonds Baa
1	2007						
2	Jan	8.25%	4.96%	4.76%	5.78%	5.96%	6.16%
3	Feb	8.25%	5.02%	4.72%	5.73%	5.90%	6.10%
4	Mar	8.25%	4.97%	4.56%	5.66%	5.85%	6.10%
5	Apr	8.25%	4.88%	4.69%	5.83%	5.97%	6.24%
6	May	8.25%	4.77%	4.75%	5.86%	5.99%	6.23%
7	June	8.25%	4.63%	5.10%	6.18%	6.30%	6.54%
8	July	8.25%	4.84%	5.00%	6.11%	6.25%	6.49%
9	Aug	8.25%	4.34%	4.67%	6.11%	6.24%	6.51%
10	Sept	7.75%	4.01%	4.52%	6.10%	6.18%	6.45%
11	Oct	7.50%	3.97%	4.53%	6.04%	6.11%	6.36%
12	Nov	7.50%	3.49%	4.15%	5.87%	5.97%	6.27%
13	Dec	7.25%	3.08%	4.10%	6.03%	6.16%	6.51%
14	2008						
15	Jan	6.00%	2.86%	3.74%	5.87%	6.02%	6.35%
16	Feb	6.00%	2.21%	3.74%	6.04%	6.21%	6.60%
17	Mar	5.25%	1.38%	3.51%	5.99%	6.21%	6.68%
18	Apr	5.00%	1.32%	3.68%	5.99%	6.29%	6.82%
19	May	5.00%	1.71%	3.88%	6.07%	6.27%	6.79%
20	June	5.00%	1.90%	4.10%	6.19%	6.38%	6.93%
21	July	5.00%	1.72%	4.01%	6.13%	6.40%	6.97%
22	Aug	5.00%	1.79%	3.89%	6.09%	6.37%	6.98%
23	Sept	5.00%	1.46%	3.69%	6.13%	6.49%	7.15%
24	Oct	4.00%	0.84%	3.81%	6.95%	7.56%	8.58%
25	Nov	4.00%	0.30%	3.53%	6.83%	7.60%	8.98%
26	Dec	3.25%	0.04%	2.42%	5.93%	6.54%	8.13%
27	2009						
28	Jan	3.25%	0.12%	2.52%	6.01%	6.39%	7.90%
29	Feb	3.25%	0.31%	2.87%	6.11%	6.30%	7.74%
30	Mar	3.25%	0.25%	2.82%	6.14%	6.42%	8.00%
31	Apr	3.25%	0.17%	2.93%	6.20%	6.48%	8.03%
32	May	3.25%	0.15%	3.29%	6.23%	6.49%	7.76%
33	June	3.25%	0.17%	3.72%	6.13%	6.20%	7.30%
34	July	3.25%	0.19%	3.56%	5.63%	5.97%	6.87%
35	Aug	3.25%	0.18%	3.59%	5.33%	5.71%	6.36%
36	Sept	3.25%	0.13%	3.40%	5.15%	5.53%	6.12%
37	Oct	3.25%	0.08%	3.39%	5.23%	5.55%	6.14%
38	Nov	3.25%	0.05%	3.40%	5.33%	5.64%	6.18%
39	Dec	3.25%	0.07%	3.59%	5.52%	5.79%	6.26%
40	2010						
41	Jan	3.25%	0.06%	3.73%	5.55%	5.77%	6.16%
42	Feb	3.25%	0.10%	3.69%	5.69%	5.87%	6.25%
43	Mar	3.25%	0.15%	3.73%	5.64%	5.84%	6.22%
44	Apr	3.25%	0.15%	3.85%	5.62%	5.81%	6.19%
45	May	3.25%	0.16%	3.42%	5.29%	5.50%	5.97%
46	June	3.25%	0.12%	3.20%	5.22%	5.46%	6.18%
47	July	3.25%	0.16%	3.01%	4.99%	5.26%	5.98%
48	Aug	3.25%	0.15%	2.70%	4.75%	5.01%	5.55%
49	Sept	3.25%	0.15%	2.65%	4.74%	5.01%	5.53%
50	Oct	3.25%	0.13%	2.54%	4.89%	5.10%	5.62%
51	Nov	3.25%	0.13%	2.76%	5.12%	5.37%	5.85%
52	Dec	3.25%	0.15%	3.29%	5.32%	5.56%	6.04%

Line No		Prime Rate	US Treasury T Bills 3 Month	US Treasury T Bonds 10 Year	Utility Bonds Aa	Utility Bonds A	Utility Bonds Baa
1	2011						
2	Jan	3.25%	0.15%	3.39%	5.29%	5.57%	6.06%
3	Feb	3.25%	0.14%	3.58%	5.42%	5.68%	6.10%
4	Mar	3.25%	0.11%	3.41%	5.33%	5.56%	5.97%
5	Apr	3.25%	0.06%	3.46%	5.32%	5.55%	5.98%
6	May	3.25%	0.04%	3.17%	5.08%	5.32%	5.74%
7	June	3.25%	0.04%	3.00%	5.04%	5.26%	5.67%
8	July	3.25%	0.03%	3.00%	5.05%	5.27%	5.70%
9	Aug	3.25%	0.05%	2.30%	4.44%	4.69%	5.22%
10	Sept	3.25%	0.02%	1.98%	4.24%	4.48%	5.11%
11	Oct	3.25%	0.02%	2.15%	4.21%	4.52%	5.24%
12	Nov	3.25%	0.01%	2.01%	3.92%	4.25%	4.93%
13	Dec	3.25%	0.02%	1.98%	4.00%	4.33%	5.07%
14	2012						
15	Jan	3.25%	0.02%	1.97%	4.03%	4.34%	5.06%
16	Feb	3.25%	0.08%	1.97%	4.02%	4.36%	5.02%
17	Mar	3.25%	0.09%	2.17%	4.16%	4.48%	5.13%
18	Apr	3.25%	0.08%	2.05%	4.10%	4.40%	5.11%
19	May	3.25%	0.09%	1.80%	3.92%	4.20%	4.97%
20	June	3.25%	0.09%	1.62%	3.79%	4.08%	4.91%
21	July	3.25%	0.10%	1.53%	3.58%	3.93%	4.85%
22	Aug	3.25%	0.11%	1.68%	3.65%	4.00%	4.88%
23	Sept	3.25%	0.10%	1.72%	3.69%	4.02%	4.81%
24	Oct	3.25%	0.10%	1.75%	3.68%	3.91%	4.54%
25	Nov	3.25%	0.11%	1.65%	3.60%	3.84%	4.42%
26	Dec	3.25%	0.08%	1.72%	3.75%	4.00%	4.56%
27	2013						
28	Jan	3.25%	0.07%	1.91%	3.90%	4.15%	4.66%
29	Feb	3.25%	0.10%	1.98%	3.95%	4.18%	4.74%
30	Mar	3.25%	0.09%	1.96%	3.90%	4.15%	4.66%
31	Apr	3.25%	0.06%	1.76%	3.74%	4.00%	4.49%
32	May	3.25%	0.05%	1.93%	3.91%	4.17%	4.65%
33	June	3.25%	0.05%	2.30%	4.27%	4.53%	5.08%
34	July	3.25%	0.04%	2.58%	4.44%	4.68%	5.21%
35	Aug	3.25%	0.04%	2.74%	4.53%	4.73%	5.28%
36	Sept	3.25%	0.02%	2.81%	4.58%	4.80%	5.31%
37	Oct	3.25%	0.06%	2.62%	4.48%	4.70%	5.17%
38	Nov	3.25%	0.07%	2.72%	4.56%	4.77%	5.24%
39	Dec	3.25%	0.07%	2.90%	4.59%	4.81%	5.25%
40	2014						
41	Jan	3.25%	0.05%	2.86%	4.44%	4.63%	5.09%
42	Feb	3.25%	0.06%	2.71%	4.38%	4.53%	5.01%
43	Mar	3.25%	0.05%	2.72%	4.40%	4.51%	5.00%
44	Apr	3.25%	0.04%	2.71%	4.30%	4.41%	4.85%
45	May	3.25%	0.03%	2.56%	4.16%	4.26%	4.69%
46	June	3.25%	0.03%	2.60%	4.23%	4.29%	4.73%
47	July	3.25%	0.03%	2.54%	4.16%	4.23%	4.66%
48	Aug	3.25%	0.03%	2.42%	4.07%	4.13%	4.65%
49	Sept	3.25%	0.02%	2.53%	4.18%	4.24%	4.79%
50	Oct	3.25%	0.02%	2.30%	3.96%	4.06%	4.67%
51	Nov	3.25%	0.02%	2.33%	4.03%	4.09%	4.75%
52	Dec	3.25%	0.04%	2.21%	3.90%	3.95%	4.70%

Line No		Prime Rate	US Treasury T Bills 3 Month	US Treasury T Bonds 10 Year	Utility Bonds Aa	Utility Bonds A	Utility Bonds Baa
1	2015						
2	Jan	3.25%	0.03%	1.88%	3.52%	3.58%	4.39%
3	Feb	3.25%	0.02%	1.98%	3.62%	3.67%	4.44%
4	Mar	3.25%	0.03%	2.04%	3.67%	3.74%	4.51%
5	Apr	3.25%	0.02%	1.94%	3.63%	3.75%	4.51%
6	May	3.25%	0.02%	2.20%	4.05%	4.17%	4.91%
7	June	3.25%	0.02%	2.36%	4.29%	4.39%	5.13%
8	July	3.25%	0.03%	2.32%	4.27%	4.40%	5.22%
9	Aug	3.25%	0.07%	2.17%	4.13%	4.25%	5.23%
10	Sept	3.25%	0.02%	2.17%	4.25%	4.39%	5.42%
11	Oct	3.25%	0.02%	2.07%	4.13%	4.29%	5.47%
12	Nov	3.25%	0.13%	2.26%	4.22%	4.40%	5.57%
13	Dec	3.50%	0.23%	2.24%	4.18%	4.35%	5.55%
14	2016						
15	Jan	3.50%	0.26%	2.09%	4.09%	4.27%	5.49%
16	Feb	3.50%	0.31%	1.78%	3.94%	4.11%	5.28%
17	Mar	3.50%	0.30%	1.89%	3.93%	4.16%	5.12%
18	Apr	3.50%	0.23%	1.81%	3.74%	4.00%	4.75%
19	May	3.50%	0.27%	1.81%	3.65%	3.93%	4.60%
20	Jun	3.50%	0.27%	1.64%			
21	Jul	3.50%	0.30%	1.50%			
22	Aug	3.50%	0.30%	1.56%			
23	Sep	3.50%	0.29%	1.63%			
24	Oct	3.50%	0.33%	1.76%			
25	Nov	3.50%	0.45%	2.14%			
26	Dec	3.75%	0.51%	2.49%			
27	2017						
28	Jan	3.75%	0.51%	2.43%			
29	Feb	3.75%	0.52%	2.42%			
30	Mar	4.00%	0.74%	2.48%			
31	Apr	4.00%	0.80%	2.30%			

[1] Note: Moody's has not published Aaa utility bond yields since 2001.

Sources: Council of Economic Advisors, Economic Indicators; Moody's Bond Record; Federal Reserve Bulletin; various issues.

STOCK PRICE INDICATORS

Line No	Year	S&P Composite	NASDAQ Composite	DJIA	S&P Dividend/Price Ratio	S&P Earnings/Price Ratio
1	1975			802.49	4.31%	9.15%
2	1976			974.92	3.77%	8.90%
3	1977			894.63	4.62%	10.79%
4	1978			820.23	5.28%	12.03%
5	1979			844.40	5.47%	13.46%
6	1980			891.41	5.26%	12.66%
7	1981			932.92	5.20%	11.96%
8	1982			884.36	5.81%	11.60%
9	1983			1,190.34	4.40%	8.03%
10	1984			1,178.48	4.64%	10.02%
11	1985			1,328.23	4.25%	8.12%
12	1986			1,792.76	3.49%	6.09%
13	1987			2,275.99	3.08%	5.48%
14	1988			2,060.82	3.64%	8.01%
15	1989	322.84		2,508.91	3.45%	7.41%
16	1990	334.59		2,678.94	3.61%	6.47%
17	1991	376.18	491.69	2,929.33	3.24%	4.79%
18	1992	415.74	$599.26	3,284.29	2.99%	4.22%
19	1993	451.21	715.16	3,522.06	2.78%	4.46%
20	1994	460.42	751.65	3,793.77	2.82%	5.83%
21	1995	541.72	925.19	4,493.76	2.56%	6.09%
22	1996	670.50	1,164.96	5,742.89	2.19%	5.24%
23	1997	873.43	1,469.49	7,441.15	1.77%	4.57%
24	1998	1,085.50	1,794.91	8,625.52	1.49%	3.46%
25	1999	1,327.33	2,728.15	10,464.88	1.25%	3.17%
26	2000	1,427.22	2,783.67	10,734.90	1.15%	3.63%
27	2001	1,194.18	2,035.00	10,189.13	1.32%	2.95%
28	2002	993.94	1,539.73	9,226.43	1.61%	2.92%
29	2003	965.23	1,647.17	8,993.59	1.77%	3.84%
30	2004	1,130.65	1,986.53	10,317.39	1.72%	4.89%
31	2005	1,207.06	2,099.03	10,547.67	1.83%	5.36%
32	2006	1,310.67	2,265.17	11,408.67	1.87%	5.78%
33	2007	1,476.66	2,577.12	13,169.98	1.86%	5.29%
34	2008	1,220.89	2,162.46	11,252.61	2.37%	3.54%
35	2009	946.73	1,841.03	8,876.15	2.40%	1.86%
36	2010	1,139.31	2,347.70	10,662.80	1.98%	6.04%
37	2011	1,268.89	2,680.42	11,966.36	2.05%	6.77%
38	2012	1,379.56	2,965.77	12,967.08	2.24%	6.20%
39	2013	1,642.51	3,537.69	14,999.67	2.14%	5.57%
40	2014	1,930.67	4,374.31	16,773.99	2.04%	5.25%
41	2015	2,061.20	4,943.49	17,590.61	2.10%	4.59%
42	2016	2,092.39	4,982.49	17,908.08	2.19%	4.17%

Source: Council of Economic Advisors, Economic Indicators, various issues.
https://www.gpo.gov/fdsys/browse/collection.action?collectionCode=ECONI

STOCK PRICE INDICATORS

Line No		S&P Composite	NASDAQ Composite	DJIA	S&P Dividends/Price Ratio	S&P Earnings/Price Ratio
1	**2004**					
2	1st Qtr.	1,133.29	2,041.95	10,488.43	1.64%	4.62%
3	2nd Qtr.	1,122.87	1,984.13	10,289.04	1.71%	4.92%
4	3rd Qtr.	1,104.15	1,872.90	10,129.85	1.79%	5.18%
5	4th Qtr.	1,162.07	2,050.22	10,362.25	1.75%	4.83%
6						
7	**2005**					
8	1st Qtr.	1,191.98	2,056.01	10,648.48	1.77%	5.11%
9	2nd Qtr.	1,181.65	2,012.24	10,382.35	1.85%	5.32%
10	3rd Qtr.	1,225.91	2,144.61	10,532.24	1.83%	5.42%
11	4th Qtr.	1,262.07	2,246.09	10,827.79	1.86%	5.60%
12						
13	**2006**					
14	1st Qtr.	1,283.04	2,287.97	10,996.04	1.85%	5.61%
15	2nd Qtr.	1,281.77	2,240.46	11,188.84	1.90%	5.86%
16	3rd Qtr.	1,288.40	2,141.97	11,274.49	1.91%	5.88%
17	4th Qtr.	1,389.48	2,390.26	12,175.30	1.81%	5.75%
18						
19	**2007**					
20	1st Qtr.	1,425.30	2,444.85	12,470.97	1.84%	5.85%
21	2nd Qtr.	1,496.43	2,552.37	13,214.26	1.82%	5.65%
22	3rd Qtr.	1,490.81	2,609.68	13,488.43	1.86%	5.15%
23	4th Qtr.	1,494.09	2,701.59	13,502.95	1.91%	4.51%
24						
25	**2008**					
26	1st Qtr.	1,350.19	2,332.91	12,383.86	2.11%	4.55%
27	2nd Qtr.	1,371.65	2,426.26	12,508.59	2.10%	4.05%
28	3rd Qtr.	1,251.94	2,290.87	11,322.40	2.29%	3.94%
29	4th Qtr.	909.80	1,599.64	8,795.61	2.98%	1.65%
30						
31	**2009**					
32	1st Qtr.	809.31	1,485.14	7,774.06	3.00%	0.86%
33	2nd Qtr.	892.23	1,731.41	8,327.83	2.45%	0.82%
34	3rd Qtr.	996.68	1,985.25	9,229.93	2.16%	1.19%
35	4th Qtr.	1,088.70	2,162.33	10,172.78	1.99%	4.57%
36						
37	**2010**					
38	1st Qtr.	1,121.60	2,274.88	10,454.42	1.94%	5.21%
39	2nd Qtr.	1,135.25	2,343.40	10,570.54	1.97%	6.51%
40	3rd Qtr.	1,096.39	2,237.97	10,390.24	2.09%	6.30%
41	4th Qtr.	1,204.00	2,534.62	11,236.02	1.95%	6.15%
42						
43	**2011**					
44	1st Qtr.	1,302.74	2,741.01	12,024.62	1.85%	6.13%
45	2nd Qtr.	1,319.04	2,766.64	12,370.73	1.97%	6.35%
46	3rd Qtr.	1,237.12	2,613.11	11,671.47	2.15%	7.69%
47	4th Qtr.	1,225.65	2,600.91	11,798.65	2.25%	6.91%
48						
49	**2012**					
50	1st Qtr.	1,347.44	2,902.90	12,839.80	2.12%	6.29%
51	2nd Qtr.	1,350.39	2,928.62	12,765.58	2.30%	6.45%
52	3rd Qtr.	1,402.21	3,029.86	13,118.72	2.27%	6.00%
53	4th Qtr.	1,418.21	3,001.69	13,142.91	2.28%	6.07%
54						
55	**2013**					
56	1st Qtr.	1,514.41	3,177.10	14,000.30	2.21%	5.59%
57	2nd Qtr.	1,609.77	3,369.49	14,961.28	2.15%	5.66%
58	3rd Qtr.	1,675.31	3,643.63	15,255.25	2.14%	5.65%
59	4th Qtr.	1,770.45	3,960.54	15,751.96	2.06%	5.42%
60						
61	**2014**					
62	1st Qtr.	1,834.30	4,210.05	16,170.26	2.04%	5.39%
63	2nd Qtr.	1,900.37	4,195.81	16,603.50	2.06%	5.26%
64	3rd Qtr.	1,975.95	4,483.51	16,953.85	2.02%	5.38%
65	4th Qtr.	2012.04	4607.88	17368.36	2.03%	4.97%
66						
67	**2015**					
68	1st Qtr.	2063.46	4821.99	17806.47	2.02%	4.80%
69	2nd Qtr.	2102.03	5017.47	18007.48	2.05%	4.60%
70	3rd Qtr.	2,026.14	4,921.81	17,065.52	2.16%	4.72%
71	4th Qtr.	2,053.17	5,000.70	17,482.97	2.16%	4.23%
72						
73	**2016**					
74	1st Qtr.	1948.32	4609.47	16,635.76	2.31%	4.20%
75	2nd Qtr.	2074.99	4845.55	17,763.85	2.19%	4.14%
76	3rd Qtr.	2161.36	5165.06	18,367.92	2.13%	4.11%
77	4th Qtr.	2184.88	5309.89	18,864.77	2.13%	4.22%

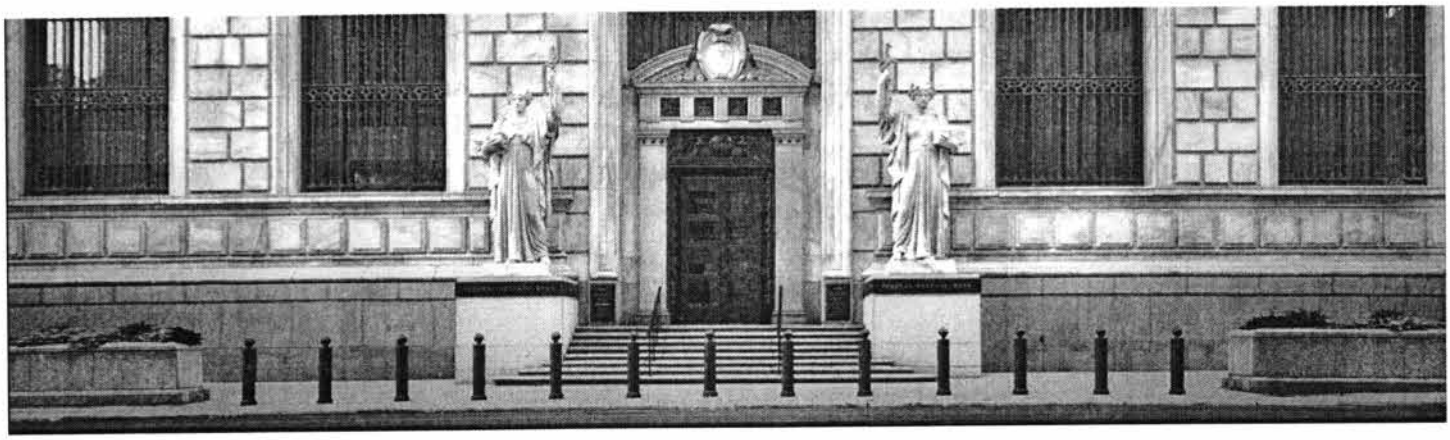
Source: Council of Economic Advisors, Economic Indicators, various issues.
https://www.gpo.gov/fdsys/browse/collection.action?collectionCode=ECONI

PROXY GROUP COMMON EQUITY RATIOS

	Company	2009	2010	2011	2012	2013	2014	2015	2016	Projected 2020-22
1	American States Water Co.	54.1%	55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	60.6%	56.5%
2	American Water Works Co., Inc	43.1%	43.2%	44.2%	46.1%	47.6%	47.4%	46.2%	47.5%	46.0%
3	Aqua America, Inc.	44.4%	43.4%	47.3%	47.3%	51.1%	51.5%	49.7%	51.6%	49.0%
4	Artesian Rtesources Corp.	46.2%	47.5%	51.5%	52.7%	53.6%	53.6%	57.0%	58.0%	
5	California Water Service Group	52.9%	47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	55.4%	57.0%
6	Connecticut Water Service, Inc.	49.1%	50.2%	46.5%	50.8%	52.9%	54.1%	55.8%	54.4%	53.5%
7	Middlesex Water	52.1%	55.8%	56.6%	57.4%	58.7%	58.8%	59.8%	61.5%	61.5%
8	SJW Corporation	50.6%	46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	49.3%	51.0%
9	York Water Company	54.3%	51.7%	52.9%	54.0%	54.9%	55.2%	55.5%	57.4%	55.0%
10	Average	49.6%	49.0%	49.5%	51.5%	54.0%	54.4%	54.3%	55.1%	53.7%

Source: Value Line (April 14, 2017)

EXHIBIT JAC-A



Inflation Expectations

05.12.17

The Federal Reserve Bank of Cleveland's inflation expectations model uses Treasury yields, inflation data, inflation swaps, and survey-based measures of inflation expectations to calculate the expected inflation rate (CPI) over the next 30 years. The Cleveland Fed model is run every month on the date of the CPI release.

Latest Inflation Expectations Model Release (May 12, 2017)

The Federal Reserve Bank of Cleveland reports that its latest estimate of 10-year expected inflation is 1.84 percent. In other words, the public currently expects the inflation rate to be less than 2 percent on average over the next decade.

Historical Data

- Excel ⓓ : This spreadsheet contains the inflation expectations model's output from 1982 to the present. Output includes expected inflation for horizons from 1 year to 30 years, the real risk premium, the inflation risk premium, and the real interest rate.
- Archives: View previous releases of inflation expectations going back to January 2015.

How to Interpret the Data

We report 10-year expected inflation, which is the rate that inflation is expected to average over the next 10 years.

We also provide the model's estimates of the inflation risk premium, the real risk premium, and the real interest rate (see the charts below and the Excel file above). The **inflation risk premium** is a measure of the premium investors require for the possibility that inflation may rise or fall more than they expect over the period in which they hold a bond. Similarly, the **real risk premium** is a measure of the compensation investors require for holding real (inflation-protected) bonds over some period, given the fact that future short-term rates might be different from what they expect. Both the real risk premium and the inflation risk premium can be interpreted as investors' assessment of risk. In the case of the real risk premium, it is an assessment of the risk of unexpected changes in the real interest rate, and in the case of the inflation risk premium, it is an assessment of the risk of unexpected changes in inflation.

In figure 2 below we compare the model's estimate of 10-year real interest rates against TIPS yields. The figure can be interpreted as illustrating the importance of factors not in the model (taxes, liquidity, the embedded option) for the TIPS market. As TIPS are not used in the model, it also serves as a simple out-of-sample test for the model.

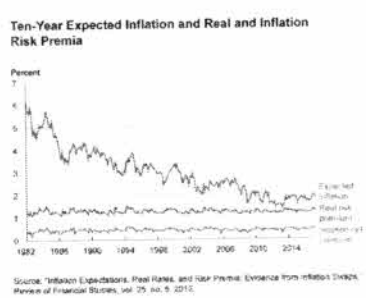
Figure 3, yield curve, shows the model's estimates for expected inflation at horizons of 1 to 30 years at three points in time: the current month, the previous month, and the previous year.

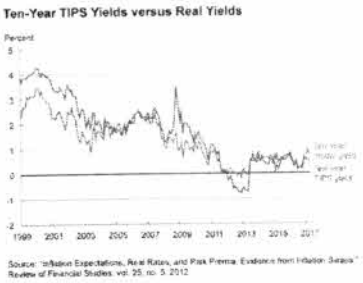
The Excel file also provides estimates of the 1-month and 1-year **real interest rate**. These estimates can be interpreted as the actual interest rate, minus inflation, over the next month or the next year.

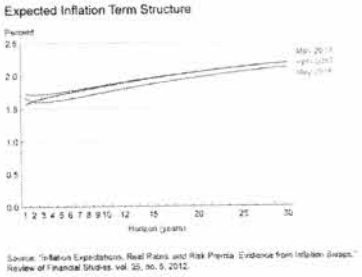
Resources

- Inflation Expectations, Real Rates, and Risk Premia : This working paper provides the technical details of the model.
- Inflation: Noise, Risk and Expectations : This *Commentary* explains to a more general audience how the model's estimates are better than alternative approaches.
- A New Approach to Gauging Inflation Expectations : This *Commentary* explains how the model is constructed and what it provides to a more general audience.

Charts







Questions?

- For additional information, contact us.
- To receive an email when new inflation expectations are posted, subscribe to our alert.

Headlines

05.24.17

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Kristle Cortés

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Gary Wagner | Christopher Vecchio

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Upcoming **Events**

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06.22.17

2017 Policy Summit on Housing, Human Capital, and Inequality

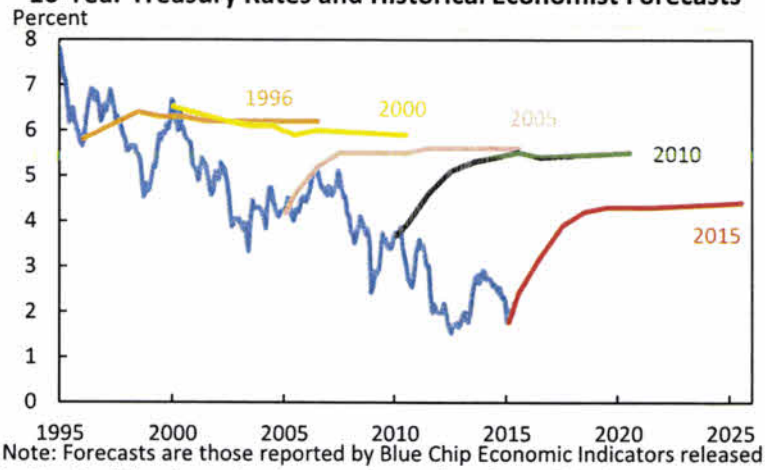
On June 22 and 23, the Cleveland Fed holds its biennial Policy Summit on Housing, Human Capital, and Inequality. The forum highlights the latest research and field initiatives on topics related to equitable development.

EXHIBIT JAC-B

have tended to be inaccurate. Between 1984 and 2012, CBO, private-sector forecasters, and the Administration all systematically overestimated the path of nominal interest rates just two years into the future (CBO 2015a).

Figure 5

10-Year Treasury Rates and Historical Economist Forecasts



Note: Forecasts are those reported by Blue Chip Economic Indicators released in March of the given calendar year, the median of over 50 private-sector economists. Source: Blue Chip Economic Indicators, Aspen Publishers.

A central question in forming a long-run forecast is whether interest rates are statistically stationary—i.e., whether they have a tendency to return to a definite long-run mean value or average. To the extent interest rates are mean-reverting, the historical average may contain the most useful information for projecting the long-run long-term interest rate. On the other hand, if changes in interest rates are permanent (or at least, highly persistent), recent data may contain more useful information about long-run interest rates than historical data. In general, econometric tests suggest that real and nominal interest rates revert to their mean very slowly, with close to unit root (non-stationary)[9] properties.[10] Tests for non-stationarity tend to be weak, however, in that distinguishing between a true unit root and mean reversion with very high persistence is difficult in a finite sample of data (Neely and Rapach 2008).

Economic theory strongly suggests that real interest rates are bounded, if not fully mean reverting (as discussed in more detail in section III).[11] A high return on investment should trigger a reallocation of resources from consumption toward capital accumulation, driving down the marginal product of capital and the real interest rate over time. Similarly, a low return on

[9] A time series is said to contain a unit root if its random changes contain a permanent component. In this case it is statistically non-stationary.

[10] Hamilton et. al. (2015) reject the hypothesis that the real interest rate converges to a fixed constant. The difficulty in predicting the long-run real interest rate leads them to be skeptical of models, like the Ramsey model considered below, that place a strong emphasis on the link between output growth and the real interest rate.

[11] Even when interest rates are mean-reverting, and therefore stationary in the statistical sense, they can be "trend-stationary," reverting to means that evolve deterministically over time rather than being constants. Thus, stationarity of interest rates does not rule out the possibility that they trend upward or downward over long periods as a result of somewhat predictable, secular economic forces.

EXHIBIT JAC-C

PIMA UTILITY COMPANY
DOCKET NOS. W-02199A-16-0421 & SW-02199A-16-0422 (CONSOLIDATED)
RESPONSES TO RUCO'S SECOND SET OF DATA REQUESTS

March 16, 2017

Respondent: Thomas J. Bourassa, CPA

Title: Rate Consultant

Address: 139 W. Wood Drive
Phoenix, AZ 85029

Company Response Number: 2.01

Q. Long-Term Debt – As contemplated in the Company's Financing Application in Docket No. SW-02199A-16-0380, the stated purpose of Pima's request to issue evidence of indebtedness in an amount not to exceed $8,370,000 is threefold:

i) To retire an existing loan from Wells Fargo ($6.138 million principal balance outstanding as of August 31, 2016),
ii) To reduce equity in the capital structure using debt capital to achieve and maintain a capital structure consisting of approximately 65% equity and 35% long-term debt, and
iii) To fund infrastructure improvements of approximately $7.5 million over the 5-year period, 2016-2020.

In light of the above, please respond to the following:

1) In order to reduce the equity component in its capital structure, indicate if the Company intends to effectuate a "rebalancing" of the capital structure by buying back high cost common equity with low cost long-term debt,

RESPONSE: The repayment of the existing loan (projected to be $5,656,500 by July 2017) and the funding of projected capital improvements (projected to be $7,553,869) over the next few years exceeds the new loan of $8,370,000 by over $4.8 million suggesting that none of the new loan proceeds are required to "rebalance" the capital structure. However, that does not mean that the Company may not need to issue additional dividends and/or "buy back" equity in future years in order to achieve a 65% equity and 35% debt target capital structure. The need to rebalance the capital structure and amount required will depend, in large part, on the pace of construction and

the associated capital investment, and on the increases to the equity balance from net earnings over the next few years as well as reductions to the loan balance from principal payments.

2) If yes to 1 above, indicate the dollar value of common equity to be purchased with long-term debt,

RESPONSE: Please see the response to (1) above.

3) If no to 1 above, indicate the reason(s) why the Company elected not to "rebalance" its capital structure by buying back high cost equity with low cost debt,

RESPONSE: Please see the response to (1) above.

4) To the extent the Company does not intend to effectuate a rebalancing of its capital structure, explain why the Stockholders' Equity balance reported in the proforma capital structure in Schedule D-1 (Page 1) is $15,545,954, a figure $786,874 less than the $16,332,828 balance reported as of the December 31, 2015 test year end ($16,332,828 - $15,545,954 = $786,874), and

RESPONSE: The D-1 (page 1), as filed, does not reflect dollar amounts for the proforma capital structure, only percentages of debt and equity. If RUCO is referring to the work paper D-1 schedule, the $15,545,954 is the proforma equity balance required to achieve 65% equity and 35% debt assuming a debt balance of $8,370,000 at the end of 2015. This would indicate that if the new loan were to have been issued at the end of 2015, some "rebalancing" would have been required to immediately achieve these percentages of debt and equity. However, the new loan was only just

approved and will not be issued until mid-2017. Based upon the projected equity and debt balances at the end of 2017, the Company anticipates the equity and debt in the capital structure to be approximately at the target levels of 65% equity and 35% debt. Beyond 2017, and because the loan is an amortizing loan, the Company anticipates that the equity thickness will increase and some rebalancing of equity through issuance of additional dividends may be required so as to reduce the equity balance and to achieve a target 65% equity and 35% debt capital structure.

5) Admit that in a Financing Application filed in Docket No. W-02199A-11-0403 (dated November 8, 2011), the Company requested authority to "rebalance" its capital structure by buying back $2,500,000 of equity capital with $2,500,000 of debt capital.

RESPONSE: Admit.

PIMA UTILITY COMPANY
DOCKET NOS. W-02199A-16-0421 & SW-02199A-16-0422 (CONSOLIDATED)
RESPONSES TO RUCO'S SECOND SET OF DATA REQUESTS

March 16, 2017

Respondent: Thomas J. Bourassa, CPA

Title: Rate Consultant

Address: 139 W. Wood Drive
Phoenix, AZ 85029

Company Response Number: 2.02

Q. Statement of Changes in Stockholders' Equity – A review of Schedule E-4 (Page 1) for both the Water and Waste Water Divisions in the Company's filing presents an analysis of changes to the Stockholders' Equity section of the Company's Balance Sheet. However, the data presented reflects changes measured as of December 31, 2007, December 31, 2008, December 31, 2009, and December 31, 2010. Please update these schedules to provide an analysis of the changes to the Stockholders' Equity section of the Company's Balance Sheet for both the Water and Waste Water divisions measured as of December 31, 2011, December 31, 2012, December 31, 2013, December 31, 2014, the December 31, 2015 test year end, and, if available, the December 31, 2016 projected year end.

RESPONSE: Please see the attached revised E-4 schedules. See also the attached changes in stockholder's equity from 2010 to 2015 for each division and on a combined basis.

PIMA UTILITY COMPANY
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March 16, 2017

Respondent: Thomas J. Bourassa, CPA

Title: Rate Consultant

Address: 139 W. Wood Drive
Phoenix, AZ 85029

Company Response Number: 2.03

Q. Statement of Changes in Stockholders' Equity – A review of the Company's Schedule E-4 (Page 1) as filed in the Company's Application indicates that dividend distributions were made (in years 2008, 2009 and 2010) to shareholders by the Water Division but not by the Waste Water Division. Please (a) indicate if it is customary for the Company to account for dividend distributions to be paid only from stockholders' equity from the Water Division, and if so (b) state the reason(s) as to why the Company accounts for dividend distributions in this fashion.

RESPONSE: The water and wastewater divisions are not separate companies. Pima is one utility that provides water and wastewater utility service with one set of stockholders. That said, for rate making proposes it is customary to show equity distributions and or paid-in-capital adjustments on one division and not the other in order for the individual divisional balance sheets presented on the separate divisional E-1 balance sheets to balance.

PIMA UTILITY COMPANY
DOCKET NOS. W-02199A-16-0421 & SW-02199A-16-0422 (CONSOLIDATED)
RESPONSES TO RUCO'S SECOND SET OF DATA REQUESTS

March 16, 2017

Respondent: Thomas J. Bourassa, CPA

Title: Rate Consultant

Address: 139 W. Wood Drive
Phoenix, AZ 85029

Company Response Number: 2.04

Q. Long-Term Debt – As detailed in Exhibit 3 of the Company's Financing Application (Docket No. SW-02199A-16-0380), the capital outlays for the above noted $7.5 million ($7,553,869 actual cost) infrastructure improvement projects are scheduled as follows:

	2016	2017	2018	2019	2020	Total
Water	$190,898	$975,000	$2,780,000	$750,000	$750,000	$5,445,898
Sewer	$162,971	$335,000	$ 110,000	$750,000	$750,000	$2,107,971
Totals	$353,869	$1,310,000	$2,890,000	$1,500,000	$1,500,000	$7,553,869
Percent	4.68%	17.34%	38.26%	19.86%	19.86%	100.00%

In light of the above, please respond to the following:

1) As noted in the Company's Financing Application (p. 2, lines 20-21), the outstanding principal balance of the Company's existing loan from Wells Fargo is due and payable on or before July 25, 2017. Indicate if the Company plans to draw down the entire $8,370,000 debt principal of its newly requested Wells Fargo debt as of this date, and

RESPONSE: The Company plans to draw down the new loan in 2017 on or around the time the existing loan expires and has to be repaid and not before.

2) To the extent the Company does plan to draw down the entire $8,370,000 balance on or before July 25, 2017, what assurances do ratepayers have that the Company will refrain from effectuating a rebalancing of its capital structure

Respondent: Thomas J. Bourassa, CPA

Title: Rate Consultant

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Phoenix, AZ 85029

(i.e., swapping out equity for debt) after rates have been established in this docket, as
(a) $5,890,000, or 77.97%, of the $7,553,869 infrastructure improvement project costs ($5,890,000/$7,553,869 = 77.97%) are not scheduled to be incurred until years 2018 ($2,890,000), 2019 ($1,500,000) and 2020 ($1,500,000), and
(b) interest will accrue on the entire $8,370,000 outstanding principal debt balance effective immediately (i.e., as of July 25, 2017)?

RESPONSE: In the Company's view it does not matter whether the draw down of new debt and repayment of existing debt occur before rates are set in the instant case. Rate payers are not harmed, and in fact benefit, by using the more leveraged proforma capital structure to set rates rather than the less leveraged actual capital structure at the end of the test year.

a) The Company does not plan to use all the proceeds from the new debt to fund the $7,553,869 of new infrastructure projects. The Company intends to repay existing debt and fund new capital projects with the remaining proceeds. After repaying existing debt (projected to be $5.626,500 at the time of payoff), the remaining proceeds of $2,743,500 will fund the projected 2017 and 2018 capital improvements of $1,310,000 and $2,890,000, respectively.

b) The Company will incur interest expense on the existing loan until repaid and on the new loan from draw down until repaid.

PIMA UTILITY COMPANY
DOCKET NOS. W-02199A-16-0421 & SW-02199A-16-0422 (CONSOLIDATED)
RESPONSES TO RUCO'S SECOND SET OF DATA REQUESTS

March 16, 2017

Respondent:

Title:

Company:

Address:

Company Response Number: 2.05

Q. Common Equity – In the Company's prior rate case (Docket No. W-02199A-11-0329, et al.), the Company employed a December 31, 2010 test year end, and as shown in Schedule D-1 (Page 1) of the Company's Application, the Company initially proposed the following proforma consolidated capital structure:

	Dollar Amount	Percent
Long-Term Debt	$8,370,000	31.08 %
Common Equity	$18,539,615	68.92 %
Totals	$26,933,072	100.00%

However, pursuant to adjustments made to the Company's proposed capital structure by Staff in Direct testimony, the Company, in Rebuttal Schedule D-1 (Page 1), subsequently proposed the following consolidated capital structure:

	Dollar Amount	Percent
Long-Term Debt	$8,370,000	35.36 %
Common Equity	$15,301,736	64.64 %
Totals	$23,671,736	100.00%

Both Staff and RUCO subsequently apopted the Company's modified consolidated capital structure in Surrebuttal testimony, and in Decision No. 73573 (dated November 21, 2012), the Commission likewise adopted it for rate-making purposes.

Respondent:

Title:

Company:

Address:

In light of the above, please respond to the following:

1) Provide a reconciliation schedule (in Excel format with formulas intact) demonstrating that the $3,237,879 reduction ($18,539,615 - $15,301736 = $3,237,879) made to Common Equity in the Company's proposed December 31, 2010 test year end capital structure in Rebuttal testimony, and adopted by Decision No. 73573 in Docket No. W-02199A-11-0329, et al., has properly been carried forward to Pima's Common Equity balances as of (i) the December 31, 2011 year end, (ii) the December 31, 2012 year end, (iii) the December 31, 2013 year end, (iv) the December 31, 2014 year end, (v) the December 31, 2015 test year end, and if available, (vi) the December 31, 2016 projected year end;
2) Provide copies of the Company's audited financial statements for the years ending: (i) December 31, 2011, (ii) December 31, 2012, (iii) December 31, 2013, (iv) December 31, 2014, and if available (v) December 31, 2016; and
3) To the extent the above noted $3,237,879 reduction made to Common Equity by the Company in its December 31, 2010 test year end capital structure in Docket No. W-02199A-11-0329, et al. has not properly been carried forward, admit that a downward adjustment of $3,237,879 to the Company's proposed $15,545,954 consolidated Common Equity balance (*See* Schedule D-1 (Page 1) of the Company's Application, as supported in Mr. Bourassa's workpapers) is necessary.

OBJECTION: This data request is not reasonably calculated to lead to the discovery of admissible evidence in this rate case. The purpose of this rate case is to determine rates based on a finding of fair value rate base, rates that will be charged during the period rates will be in effect. The capital structure used to set rates in the last case was a profoma capital structure and is utterly immaterial to the setting of rates in this rate case. The same is true of RUCO's request that the Company prepare reconciliation schedules

Respondent:

Title:

Company:

Address:

and produce audited financial statements for several historic years as this information has nothing to do with this rate case.