IN THE TENNESSEE PUBLIC UTILITY COMMISSION
AT NASHVILLE, TENNESSEE

IN RE:	)	
	)	
APPLICATION OF TENNESSEE	)	
WATER SERVICE, INC. FOR	)	**DOCKET NO. 19-** 00028
ADJUSTMENT OF RATES AND	)	
CHARGES, APPROVAL OF A	)	
QUALIFIED INFRASTRUCTURE	)	
INVESTMENT PROGRAM, AND	)	
MODIFICATIONS TO CERTAIN	)	
TERMS AND CONDITIONS FOR THE	)	
PROVISION OF WATER SERVICE.	)	
	)	

DIRECT TESTIMONY
OF
JARED DEASON

ON BEHALF OF
TENNESSEE WATER SERVICE, INC.

February 28, 2019

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I. Introduction and Qualifications

Q. PLEASE STATE YOUR NAME, PROFESSION, AND ADDRESS.

A. My name is Jared Deason. I am the Regulatory Manager for Utilities, Inc. ("UI"). My business address is 200 Weathersfield Ave., Altamonte Springs, FL 32714.

Q. STATE BRIEFLY YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I have a Bachelor's Degree in Applied Economics from Florida State University. I have approximately 9 years of experience in the utility industry, the last three years of which have been with Utilities, Inc. I joined UI in June 2015 as a Financial Analyst assigned to the Florida region. I am currently the Regulatory Manager for UI's Florida Business Unit. I was previously employed by the Florida Public Service Commission in the years 2007 to 2011 as a Regulatory Analyst IV assigned to the water and wastewater section of the former Division of Economic Regulation. In that role I was lead analyst in many water and wastewater rate proceedings. Additionally, I am a current member of the Society of Utility and Regulatory Financial Analysts.

Q. ON WHOSE BEHALF ARE YOU PRESENTING THIS TESTIMONY?

A. I am presenting this testimony and appearing on behalf of Tennessee Water Service, Inc. ("TWS"), the applicant in this proceeding.

II. Purpose of Testimony

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose is to provide testimony on behalf of TWS related to the cost of common equity that would allow TWS the opportunity to earn a fair return on its prudently invested capital.

III. Summary

Q. PLEASE PROVIDE A SUMMARY OF YOUR RECOMMENDED COST OF COMMON EQUITY.

A. The recommended common equity cost rate of 10.50% is summarized on Exhibit JD-1. Because TWS, including its parent company, is not a publicly traded company, a market-based common equity cost rate cannot be precisely observed. Accordingly, a proxy group of companies was assessed in order to determine a recommended common equity cost rate applicable to TWS. Utilizing a proxy group of companies that have relatively similar risk is consistent with the principle of fair rate of return established in the *Hope1* and *Bluefield2* cases, adding dependability to the expert judgment required to arrive at a recommended common equity cost rate.

Nevertheless, no proxy group can adequately reflect all the same risks as any single company. Consequently, an assessment of relative risk between TWS and a proxy group of publicly traded water, wastewater and natural gas utilities ("Proxy Group"), discussed in further detail later in this testimony, must be made to determine whether any adjustment(s) to the Proxy Group's indicated common equity cost rate are necessary.

To establish a recommended common equity cost rate, two well-recognized cost of common equity models (i.e., the Discounted Cash Flow ("DCF") and the Capital Asset Pricing Model ("CAPM")) were applied to the market data of the Proxy Group whose selection will be discussed below.

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1 Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).
2 Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922).

1   The results derived from each are summarized in Exhibit JD-1 and summarized

2   in the below.

3   Summary of Common Equity Cost Rate

4   Proxy Group

5   Discounted Cash Flow Model ("DCF")   9.09%

6   Capital Asset Pricing Model ("CAPM")   9.49%

7   Common Equity Cost Rate Before Adjustments   9.29%

8   Bond Yield Differential   0.64%

9   Private Placement Premium   0.50%

10   Recommended Common Equity Cost Rate   10.50%

11   After reviewing the DCF and CAPM cost rates, I conclude that a common

12   equity cost rate of 9.29%, based upon the average cost rate results, is appropriate before

13   any adjustment for the greater business risks due to its smaller size relative to the Proxy

14   Group as discussed in more detail below. Therefore, the indicated 9.29% common

15   equity cost rate based solely upon the Proxy Group must be adjusted upward to reflect

16   TWS's increased relative business risk. The details of these adjustments will be

17   discussed below. After adjustments, the indicated credit and business risk-adjusted

18   common equity cost rate is 10.50%, which is the recommended equity cost rate which

19   is fair, just, reasonable, as well as conservative.

20   IV. **General Principles**

21   Q.   **WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING**

22   **AT YOUR RECOMMENDED COMMON EQUITY COST RATE OF 10.50**

23   **PERCENT?**

1   **A.**   The cost of capital for a utility can be defined as the returns investors require in order

2   to finance the assets that provide services to customers. From the company's

3   perspective, the required return, which can be provided by debt or equity investors

4   (usually both), has a cost. Individually, the cost of debt (i.e. bonds, debentures, bank

5   loans) and the cost of equity (i.e. common stock and preferred stock) are collectively

6   referred to as the "cost of capital." The cost of capital is based upon the economic

7   principle of "opportunity cost," which means that investing in any asset or security

8   implies a forgone opportunity to invest in alternative assets or securities. Because

9   investments with equivalent risks should offer equivalent returns, the opportunity cost

10   of an investment should equate to the return available on investments of similar risks.

11   Although both debt and equity have required costs, they are fundamentally

12   different. The cost of debt is contractually defined and can be directly observed in the

13   market as interest or as a yield on debt securities. Conversely, the cost of equity has no

14   contractual obligation, neither can it be directly observed in the market as debt can.

15   Because common equity investors' claim on a company's cash flows occur only after

16   debt holders are compensated, the risk (or uncertainty) associated with those residual

17   cash flows determine the cost of equity.

18   Because this "residual risk," common equity investors require higher returns

19   than debt holders. Thus, equity and debt investors are distinct in that they invest in

20   different securities; they face different risks; and, require different returns.

21   According to the basic principles of risk and return, the returns required by

22   investors on any given investment is a function of the investor's perceived risk as

1   reflected in the market prices paid by investors. The higher the risk that investors

2   perceive, the higher the return the investor will require.

3   The returns investors require are also forward-looking, as it is the return the

4   investor expects to receive in the future for investing capital today and is based upon

5   expected economic and capital market conditions. For unregulated utilities that are not

6   price regulated, competition in the marketplace is the determines the prices of products

7   or services. However, for regulated utilities, regulation must act as a surrogate for

8   competition. An adequate level of earnings is needed to assure that the utility can: 1)

9   fulfill its obligation to provide safe and reliable water and sewer service; 2) uphold the

10   integrity of presently-invested capital through future reinvestment; and, 3) attract new

11   capital at a sensible cost and on sensible terms in competition with other companies of

12   equivalent risk. These above principles are consistent with the previously noted fair

13   rate of return standards established by the U.S. Supreme Court in the *Hope* and

14   *Bluefield* cases.

15   For rate base regulated utilities, the authorized return on common equity also

16   means the investor-required return. Also, the investor-required return can be defined

17   as the return required by the investor on the funds invested in the publicly traded

18   common stocks of companies. As stated above, the cost of common equity is not

19   directly observable in the marketplace, since there is no contractual basis on the part of

20   a company to provide a return to its common shareholders, unlike the contractual

21   interest that is due on debt obligations.

22   As such, the cost of equity must be projected from economic and financial

23   market data, by utilizing financial models developed for that purpose, including the

1		DCF and CAPM models. Thus, the recommended equity cost rate is based upon the
2		marketplace data of a proxy group of utilities that have similar risks as TWS based
3		upon selection criteria.

Because financial models produce a range of results from which the required return can be estimated, that estimation must be based upon a wide-ranging review of applicable data, utilizing both qualitative and quantitative information, and not essentially left to a stringent mathematical estimation. The main issue in estimating the equity cost rate is to make certain that the overall analysis realistically mirrors investors' expectations considering capital markets in general, and the relative investment risk of the subject firm as it related to the proxy group.

Because empirical financial models for estimating the cost of equity are subject to limiting assumptions, most finance literature advises using more than one approach to assess the appropriate cost of equity. As a practical matter, no single model is more dependable than all others under all market conditions.

Both the use of the market data of a proxy group of similar risks, including the use of multiple equity cost rate models, improves the reliability to the informed expert judgment used in estimating the equity cost rate. Therefore, it is both sensible and proper to use multiple methods to diminish the effects of limiting assumptions and inputs associated with any single approach. As such, the results of two well-known and most often used market models: the DCF and CAPM were used in attaining the recommended equity cost rate for TWS.

V. **Investment Risks**

Q. **DEFINE THE RISKS THAT TWS FACES AND EXPLAIN WHY IT IS IMPORTANT TO THE DETERMINATION OF A FAIR RATE OF RETURN.**

1   **A.**   The investor-required return on equity reflects investors' assessment of the total

2   investment risk of the subject company. Total investment risk is often viewed in the

3   context of business and financial risk.

4   Business risk is associated with the uncertainty of owning a firm's common

5   stock without the firm's use of debt financing. One way to consider the difference

6   between business and financial risk is to view business risk as the uncertainty in the

7   expected earned return on equity assuming the firm has no outstanding debt.

8   Some examples of business risks faced by utilities include, but are not limited

9   to, the regulatory environment, mandatory environmental compliance obligations,

10   customer mix, the concentration of customers, economic growth of the service territory,

11   market demand, uncertainties associated with water supplies, operations, capital

12   intensity, the amount of operating leverage, all of which have a direct bearing on

13   earnings.

14   Although analysts at rating agencies, may consider business risks according to

15   individual categories, business risks are inter-related and are not completely distinct

16   from one another. Thus, it is difficult to precisely and numerically quantify the effect

17   of any individual factor on investors' required return on equity. For estimating an

18   appropriate return on equity, the pertinent issue is where investors see the subject firm

19   as falling within a range of risks. As investors view of a firm as being exposed to

20   additional risks, the investors' required return will also increase, and vice versa.

21   For regulated utilities, business risks are both long- and short-term in nature.

22   Short-term business risks are shown in the year-to-year variability in earnings and cash

23   flow brought about by economic or regulatory factors. Long-term business risks point

1   toward the prospect of a decreased ability of investors to earn a return on their invested

2   capital. Because utilities accept the obligation to provide safe, adequate and reliable

3   service at all times, they may not have the option to delay or defer necessary capital

4   investments. Because those investments are capital-intensive in nature, utilities also

5   may not have the option to avoid raising needed external funds during periods of capital

6   market distress.

7 **Q.**   **WHAT RISKS ARE SPECIFIC TO THE WATER AND WASTEWATER**

8   **INDUSTRY?**

9 **A.**   Water is necessary for **sustaining** life and it is the only utility product which is intended

10   for customers to ingest. Accordingly, water quality and the proper treatment of

11   wastewater is of the utmost importance to the public health and the welfare of

12   customers. Therefore, water production/distribution and wastewater treatment are

13   subject to additional and ever-increasing rigid health and safety rules and regulations.

14   In addition to the health and safety concerns, customers also have substantial

15   concerns, such as taste and smell, regarding the water delivered to them. Taste and

16   smell are often the result of naturally occurring elements in water sources such as

17   sulphur, iron, and calcium and not due to water infrastructure neglect or improper

18   maintenance. Regulators are paying ever closer attention to these concerns because of

19   the strong reactions they stir up in customers.

20   Water utilities serve several functions including production, treatment, and

21   delivery. Water utilities obtain their water supply from wells, aquifers, surface water

22   sources such as reservoirs. Over the years, well supplies and aquifers have been

1   threatened, which has led to minor purification treatment changing to major well

2   rehabilitation, extensive treatment and/or replacement.

3   At the same time, the Safe Drinking Water Act's (SDWA) quality standards

4   have strengthened considerably, requiring multiple types of treatment prior to water

5   delivery.

6   Water supplies can often be limited by drought, overuse, runoff, habitat

7   protection, as well as other operational, political and environmental factors.

8   Progressively more rigorous environmental rule and regulations often require

9   additional capital investment in the treatment of water, thereby intensifying the

10   pressure on water utilities' cash flows through increased capital expenditures for

11   infrastructure, repair and replacement. Additionally, the U.S. Environmental Protection

12   Agency (EPA), as well as other state and local environmental agencies, continue to

13   monitor potential contaminants in the water supply and enact or expand regulations

14   when they feel it is necessary.

15   Water and wastewater utilities are usually engaged in the entire process of

16   acquiring supply, producing, treating, and distributing water, serving both a production

17   function in addition to a delivery function. To accomplish this, water utilities require

18   significant capital investment, not only in transmission and distribution systems, but

19   also in sources of supply, production, and storage. Continued capital investment is

20   necessary to both to serve additional customers and to replace aging infrastructure

21   which creates a major risk factor for the entire water and wastewater utility industry.

1 **Q. EXPLAIN THE CAPITAL INTENSITY OF THE WATER AND**
2 **WASTEWATER UTILITY INDUSTRY COMPARED TO THE OTHER**
3 **UTILITY INDUSTRIES.**

4 **A.** As a capital-intensive industry, water and wastewater utilities require significantly

5 greater capital investments in the infrastructure required to produce a dollar of revenue

6 than do other industries, such as electric utilities. As financing needs continue to

7 increase, the competition for capital from traditional sources has also increased, making

8 the need to maintain financial integrity and the ability to attract needed new capital

9 more and more important.

10 **Q. HOW DO WATER AND WASTEWATER UTILITIES RAISE CAPITAL?**

11 **A.** The water and wastewater utility industry requires a high degree of capital intensity,

12 along with the need for sizeable infrastructure capital spending, necessitates regulatory

13 support for sufficient and well-timed rate relief. This includes an adequate rate of

14 return on investment by the regulatory bodies.

15 Considerable water and wastewater utility investment requires substantial

16 financing. The funds typically used for financing are debt, equity and cash flow from

17 utility operations. All of these are linked to the opportunity to earn an adequate rate of

18 return on investment.

19 Consistent with *Hope* and *Bluefield* cases, a utility's return must be adequate to

20 maintain credit quality and enable it to attract new capital at reasonable terms. If it

21 cannot raise new capital, the utility must rely upon either retained earnings or free cash

22 flow, which are directly linked to earning a sufficient rate of return. The amount of cash

23 flows represents the utility's ability to meet its debt and equity obligations. If retained

1   earnings or cash flows are inadequate, it will be extremely difficult for the water and

2   wastewater utility to attract new capital, at a sensible cost and on sensible terms, to

3   invest in necessary infrastructure replacements and/or upgrades. An inadequate rate of

4   return could be financially destructive for water and wastewater utilities given their

5   requirement to provide safe, adequate and reliable water and wastewater service to their

6   customers.

7   **Q.   EXPLAIN HOW THE DEPRECIATION RATES FOR WATER AND**

8   **WASTEWATER UTILITIES DIFFER FROM OTHER UTILITIES.**

9   **A.**   In addition to its capital-intensive nature, water and wastewater utilities experience

10   lower relative depreciation rates. Depreciation is one of the principal sources of internal

11   cash flows for all utilities, therefore, lower depreciation rates mean that water and

12   wastewater utility depreciation is a lower source of internally-generated cash. This is

13   due to the fact that water and wastewater utility assets have longer lives and, therefore,

14   longer capital recovery periods than other types of utilities. Also, water and wastewater

15   utilities face greater risk due to the effects of inflation which results in a greater

16   replacement cost per dollar of net plant than for other types of utilities. Water and

17   wastewater utilities typically experience an average depreciation rate of approximately

18   2.3%. In contrast, electric utilities experience an average depreciation rate of

19   approximately 3.7%. Low depreciation rates indicate that the pressure on cash flows

20   remains significantly higher for water and wastewater utilities than for other types of

21   utilities.

22   **Q.   EXPLAIN WHY SIZE HAS A BEARING ON RISK.**

1	**A.**	Smaller companies are less capable of handling significant events, which can affect
2		sales, revenues and earnings.

3   For example, if a company were to lose revenues from a few larger customers,

4   it would have a greater effect on a small company than on a much larger company with

5   a larger customer base. Another issue that contributes to the risk effects of size is that

6   investors demand higher returns to compensate for a lack of marketability and liquidity.

7   Because TWS is the regulated utility whose rate base to which the Commission's

8   ultimately allowed overall rate of return will be applied, the relevant risk reflected in

9   the cost of capital must be that of TWS, including the impact of its small size on

10   common equity cost rate. Size is an important factor and TWS is significantly smaller

11   than the average utility in the proxy group based upon market capitalization as will be

12   further discussed in detail below.

13   **Q.**   **EXPLAIN WHY FINANCIAL RISK CONSIDERATIONS ARE IMPORTANT**

14   **TO THE DETERMINATION OF A FAIR RATE OF RETURN.**

15   **A.**   Financial risk is created by the introduction of debt and/or preferred stock into the

16   company's capital structure. It is the additional risk that a company may not have

17   sufficient cash flows to meet its financial obligations. The higher the proportion of debt

18   and/or preferred stock in the capital structure, the higher the financial risk which must

19   be calculated into the common equity cost rate. In other words, investors demand a

20   higher common equity return as compensation for bearing higher investment risk.

21   **Q.**   **CAN THE RISKS TWS HAS BE PROXIED BY CREDIT AND BOND**

22   **RATINGS?**

1   A.   Yes, similar bond/issuer credit ratings are representative of similar combined business

2   and financial risks. Although specific business or financial risks may differ between

3   companies, the same bond/credit rating indicates that the combined risks are similar,

4   but not necessarily equal.

5   It must be kept in mind that a long-term issuer's credit rating is an opinion

6   regarding the particular company's overall financial capacity to pay its financial

7   obligations as they become due and payable. However, it is not a determination of the

8   risks faced by equity investors. The claims of equity holders are subordinate to the

9   claims of debt holders. For this reason, the risks of owning common equity do not

10   directly correspond to the risks of owning bonds.

11   VI.   **The Proxy Group and TWS**

12   Q.   **EXPLAIN HOW THE WATER PROXY GROUP WAS CHOSEN.**

13   A.   The proxy group is a selection of natural gas utilities and water and wastewater utilities

14   that derive at least 50 percent of their revenue from regulated rates. These utilities have

15   market power and are influenced significantly by economic regulation.

16   The chosen proxy group consists of five natural gas companies and seven water

17   and wastewater utilities that derive at least 50 percent of their total revenue from

18   regulated operations. Additionally, the proxy group companies have a median Standard

19   and Poor's bond rating of "A".

20   To apply the DCF and CAPM, it is necessary to use widely and readily available

21   market data. Therefore, the Proxy Group by selecting those publicly traded utilities that

22   met the following criteria:

23   1) They are included in the Water Utility Group or the Natural Gas Utility Group of

24   Value Line's Standard Edition; 2) They have 50% or greater of total operating income

1   derived from, and 50% or greater of 2016 total assets devoted to, regulated operations;

2   3) They have not cut or omitted their common dividends during the past five years; 4)

3   They have Value Line adjusted betas; 5) They have a positive Value Line five-year

4   dividend per share (DPS) growth rate projection; and, 6) They have Value Line five-

5   year earnings per share (EPS) growth rate projections.

6   The following twelve companies meet these criteria:

7   • Atmos Energy Corporation;

8   • Northwest Natural Gas Company;

9   • One Gas, Inc.;

10   • Southwest Gas Holdings;

11   • Spire, Inc.;

12   • American States Water Co.;

13   • American Water Works Co. Inc.;

14   • Aqua America, Inc.;

15   • California Water Service Corp.;

16   • Middlesex Water Co.;

17   • SJW Corp.; and,

18   • York Water Co.

19 **Q. HAVE YOU REVIEWED THE FINANCIAL DATA FOR THE PROXY**

20   **GROUP?**

21 **A.** Yes. Exhibit JD-2 contains comparative capitalization and financial statistics for the

22   Proxy Group for the years from their most recent 10-K filing with the Securities and

23   Exchange Commission. The average S&P bond rating was "A". The average

1		percentage of revenue derived from regulated operations was 89.72%. The average
2		common equity ratio was 51.03%. The average market capitalization in millions was
3		3,821.
4	**VII.**	**Common Equity Cost Rate Models**
5	**Q.**	**ARE THE COST OF COMMON EQUITY MODELS USED MARKET-BASED?**
6	**A.**	Yes. The DCF model is market-based in that market prices are utilized in developing
7		the dividend yield component of the model. The CAPM model reflects the market's
8		assessment of bond/credit risk. In addition, the use of beta in the CAPM to determine
9		the equity market premium also reflects the market's assessment of market/systematic
10		risk, as betas are derived from regression analyses of market prices.
11	**VIII.**	**Discounted Cash Flow Model (DCF)**
12	**Q.**	**EXPLAIN THE THEORETIC BASIS OF THE DCF MODEL.**
13	**A.**	The DCF is one of the oldest and most commonly used models for estimating cost of
14		the common equity for utilities. The DCF is based on the "dividend discount model"
15		of financial theory, which affirms that the value or price of any security is the
16		discounted present value of all future cash flows. There are two fundamental principles
17		of the DCF. First, investors value an asset on-the-basis of the future cash flows.
18		Second, future dollars are valued less than present dollars due to the effects of inflation
19		on dollars.
20	**Q.**	**WHICH VERSION OF THE DCF MODEL IS UTILIZED?**
21	**A.**	The single-stage constant growth DCF model is utilized. The single-stage DCF model
22		is expressed as:
23		$K = (D1 / P0) + g$
24		Where: K = Cost of Equity Capital

1		D1 = Expected Dividend Per Share in one year
2		P0 = Current Market Price (including an adjustment for Flotation Costs)
3		G = Expected Dividend Per Share Growth

4 **Q. DESCRIBE THE DIVIDEND YIELD USED IN THE APPLICATION OF THE**

5 **DCF.**

6 **A.** The dividend yield is the average of the expected dividend yield as determined by the

7 most recent Value Line Ratings & Reports for each company in the Proxy Group.

8 **Q. WHAT ARE FLOTATION COSTS AND HOW IS THE FLOTATION COST**

9 **ADJUSTMENT INCLUDED WITH THE CURRENT MARKET PRICE IN THE**

10 **APPLICATION OF THE DCF MODEL?**

11 **A.** Flotation cost is a generic term used to encompass various types of costs associated

12 with the issuance of new common shares of stock. These various issuance costs include

13 issuance or underwriting costs, market pressure (the tendency for a company's stock

14 price to decline when new shares are sold), and market break (the periodic declines in

15 capital markets, or "breaks", in which it is more difficult to sell any new stock issues).

16 Several studies have indicated that the average flotation costs associated with the

17 issuance of new common shares for utilities is approximately four percent.

18 The application of the four percent flotation cost adjustment was done in the

19 conventional manner by simply multiplying the proxy group's average current market

20 price of stock by .96 (1-4 percent flotation costs adjustment).

21 **Q. DESCRIBE THE BASIS OF THE GROWTH RATES OF THE PROXY GROUP**

22 **IN THE APPLICATION OF THE DCF MODEL.**

1   **A.**   For the Growth Rates of the proxy group, the most recent Value Line Ratings & Reports

2   for each company in the proxy group was utilized. The Value Line Ratings & Reports

3   contain projected growth rates in dividends for up to four years.

4   Investors who have limited resources are more likely to rely upon widely

5   available financial information services, such as Value Line. Investors also recognize

6   that such analysts have additional insights into the various dynamics of the industries

7   and individual companies they analyze, as well as a company's ability to adapt to ever

8   changing economic and market conditions.

9   **Q.**   **PROVIDE A SUMMARY OF THE DCF MODEL RESULTS.**

10 **A.**   As shown on Exhibit JD-3, the average result of the single-stage DCF model is 9.09%.

11 **IX.**   **Capital Asset Pricing Model (CAPM)**

12 **Q.**   **EXPLAIN THE THEORETICAL BASIS OF THE CAPM MODEL.**

13 **A.**   CAPM theory defines risk as the co-variability of a security's returns with the market's

14   returns as measured by beta (β). Stocks that have a beta less than 1.0 indicates that it

15   has a variability less than the market and conversely stocks that have a beta greater than

16   1.0 have a higher variability than the market. Large utility stocks are typically less

17   variable than the overall market and therefore have an average beat less than 1.0.

18   The CAPM assumes that all unsystematic risk, can be eliminated through

19   diversification. The risk that cannot be eliminated through diversification is referred to

20   as systematic risk. Additionally, the CAPM postulates that investors require

21   compensation for systematic risks that are the result of macroeconomic and other

22   events that affect the returns on assets.

23   CAPM's starting point is the risk-free rate. To this is added a premium that

24   investors demand to compensate them for the extra risk are accepting. This equity

1   market premium consists of the expected return from the return rate on the market as a

2   whole less the risk-free rate. The equity risk premium is then multiplied by "beta." The

3   CAPM model utilized is expressed as:

4          $Rs = Rf + \beta(Rm - Rf) + FC$

5   Where: Rs = Return rate on the common stock

6   Rf = Risk-free rate of return

7   Rm = Return rate on the market as a whole

8   β = Adjusted beta (volatility of the security relative to the market as a whole)

9   FC = Flotation Costs

10   **Q.   DESCRIBE THE SELECTION OF THE BETA UTILIZED IN THE CAPM**

11   **MODEL.**

12   **A.**   I relied upon an average of the adjusted betas published by the Value Line. Value Line

13   adjusts its calculated (or "raw") betas to reflect the tendency of the beta to regress to

14   the market mean of 1.00, and then calculates its beta over a five-year period of data.

15   **Q.   DESCRIBE THE SELECTION OF THE RISK-FREE RATE OF RETURN FOR**

16   **YOUR CAPM ANALYSIS.**

17   **A.**   The risk-free rate utilized for the CAPM is 3.48%. The risk-free rate of 3.48% is based

18   upon the average of the 30-year Treasury Note consensus forecast for the six quarters

19   ending with the 2nd quarter 2020, from the January 1, 2019 Blue Chip Financial

20   Forecast.

21   **Q.   WHY IS THE YIELD ON THE LONG-TERM TREASURY BONDS**

22   **APPROPRIATE FOR USE AS THE RISK-FREE RATE UTILIZED IN THE**

23   **CAPM ANALYSIS.**

1	A.	The risk-free rate reflects the level of return which can be achieved without accepting
2		any risk. In actuality, there is no such thing as a purely riskless asset. In my CAPM
3		analysis, the risk-free rate is recognized by using the 30-year Treasury Note because
4		the government has the ability to print money and raise taxes and is generally accepted
5		has being the closest asset that can be considered risk-free.

6   Additionally, the 30-year Treasury Note is consistent with the long-term

7   investment horizon and life of the rate base to which the allowed rate of return is

8   applied.

9 **Q.** **EXPLAIN THE ESTIMATION OF THE RETURN RATE ON THE MARKET**

10   **AS A WHOLE.**

11 **A.** The return rate on the market as a whole was calculated using a DCF model for a large

12   number of dividend paying S&P 500 stocks. As of April 16, 2018, the result was

13   12.81%.

14 **Q.** **HOW WAS A FLOTATION COSTS ADJUSTMENT UTILIZED IN THE**

15   **APPLICATION OF THE CAPM MODEL?**

16 **A.** Stated previously, flotation cost is a generic term used to encompass various types of

17   costs associated with the issuance of new common shares of stock. 20 basis points

18   were added to the CAPM result to account for a flotation cost of four percent.

19 **Q.** **WHAT ARE THE RESULTS OF THE APPLICATION OF THE CAPM TO**

20   **THE PROXY GROUP?**

21 **A.** As shown in Exhibit JD-4, the average CAPM equity cost rate is 9.49%.

22 **X.** **Business Risk Adjustments**

23 **Q.** **DOES TWS ENCOUNTER UNIQUE BUSINESS RISK RELATIVE TO THE**

24   **PROXY GROUP?**

1   A.   Yes, the proxy group consist of 12 large public traded utilities. In contrast, TWS is a

2   much smaller privately utility and therefore has several risks that the proxy group does

3   not face. These risks include: (1) TWS is more capital intensive larger water utilities

4   or natural gas utilities; (2) TWS experiences lower relative depreciation rates than

5   natural gas utilities, thereby providing less cash flow; (3) TWS is more likely to

6   experience consistently negative free cash flow, thereby increasing their financing

7   requirements; (4) TWS credit metrics are inferior to those of larger water utilities and

8   natural gas utilities; (5) TWS is substantially smaller than the other water utilities and

9   natural gas utilities in the proxy group by every measure including total revenues, total

10   assets, and market capitalization; and (6) TWS's earnings are much more volatile

11   (uncertain) than larger water utilities' and natural gas utilities' earnings.

12   Therefore, I am recommending two adjustments that compensate TWS for the

13   above listed additional risks that TWS must be compensated for. These adjustments

14   are a bond yield differential and a private placement premium.

15 XI. **Bond Yield Differential**

16 Q.   **EXPLAIN WHAT THE BOND YIELD DIFFERENTIAL IS AND HOW IT WAS**

17   **CALCULATED.**

18 A.   A bond yield differential was determined by calculating the average spread between

19   'A' rated Utility 25/30 Corporate Bonds and 'BBB' rated Utility 25/30 Corporate

20   Bonds as found in the Value Line Selection & Opinion Reports for the past 120 months.

21   This adjustment compensates for the difference between the credit quality of A rated

22   debt and the credit quality of the minimum investment grade rating.   TWS is

23   comparable to companies with the lowest investment grade bond rating, which is BBB.

24   Therefore, a bond yield differential of 64 basis points was added to reflect the

1		difference in yields between an A rated bond, which is the median bond rating for the
2		Proxy Group, and a BBB assumed bond rating for TWS. Further detail is found in
3		Exhibit JD-5.
4	**XII.**	**Private Placements Premium**
5	**Q.**	**EXPLAIN WHAT A PRIVATE PLACEMENT PREMIUM IS AND WHY IT**
6		**SHOULD BE INCLUDED IN CALCULATING TWS'S FAIR RATE OF**
7		**RETURN.**
8	**A.**	A private placement is essentially the private sale of corporate debt or equity securities
9		by a firm to a select number of investors. The buyers are typically institutional
10		investors, such as insurance companies. Due to the scarcity of publicly disseminated
11		information, private placement issuances are generally less liquid than exchange traded
12		securities and thus, most private debt placements are held by the buyer until maturity.
13		This lack of liquidity usually reflected in higher yields that investors require to invest
14		in the security.
15		Private placements typically offer between 10 and 40 basis-points additional
16		premium over comparably rated public bonds, with the premium increasing to 100 basis
17		points or more for more structured transactions.
18		Therefore, A private placement premium of 50 basis points was added to reflect
19		the difference in yields on publicly traded debt and privately placed debt, which is
20		illiquid. To adequality attract capital, an adjustment to reflect the fact that investors
21		require a premium for the lack of liquidity of privately placed debt must be included.
22	**XIII.**	**Conclusion**
23	**Q.**	**WHAT IS THE RECOMMENDED COST OF COMMON EQUITY FOR TWS?**

Proxy Group	
Discounted Cash Flow Model ("DCF")	9.09%
Capital Asset Pricing Model ("CAPM")	9.49%
Indicated Common Equity Cost Rate Before Adjustments	9.29%
Bond Yield Differential	0.64%
Private Placement Premium	0.50%
Recommended Common Equity Cost Rate	10.50%

1   **A.**   After applying the business risk adjustments to the average of the common equity cost

2   rate models, an adjusted cost of common equity of 10.50 percent results as summarized

3   in the table below:

4

5   Based upon the foregoing, I conclude that an appropriate cost of common equity

6   for the Company currently is 10.50%. In my opinion, a common equity cost rate of

7   10.50%, is fair, just, reasonable and conservative given current capital market

8   conditions, providing TWS with sufficient earnings to enable it to attract necessary new

9   capital.

10   **Q.**   **DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?**

11   **A.**   Yes. However, I reserve the right to update or amend this testimony upon receipt of

12   additional data or other information that may become available.

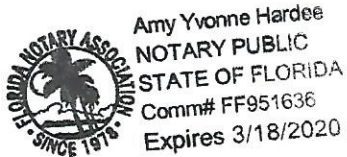STATE OF Florida   )

                                    :ss

County of ___Leon___)

DATED this 27th day of February, 2019.

_____
Jared Deason

SUBSCRIBED AND SWORN TO before me this 27th day of February, 2019, by
Jared Deason, who is personally known

_____
Notary Public for the State of Florida Amy Yvonne Hardee

Amy Yvonne Hardee
NOTARY PUBLIC
STATE OF FLORIDA
Comm# FF951636
Expires 3/18/2020

SUMMARY OF RESULTS

(A) Single-Stage DCF ROE	9.09%
<u>(C) CAPM ROE</u>	<u>9.49%</u>
AVERAGE	9.29%
Plus Bond Yield Differenital	0.64%
Plus Private Placement Premium	0.50%
Recommended Cost of Equity	**10.50%**

Proxy Group

Company	Utility	S & P Bond Rating	% Regulated Revenue	V/L Market Capital (Millions)	Equity Ratio	Value Line Beta
Atmos Energy Corporation	NG	A	96.30%	$10,471	56.69%	0.60
Northwest Natural Gas Company	NG	A+	96.16%	$1,682	47.10%	0.60
ONE Gas, Inc	NG	A	100.00%	$4,008	55.71%	0.65
Southwest Gas Holdings	NG	BBB+	51.09%	$3,913	47.07%	0.70
Spire Inc.	NG	A-	96.08%	$3,629	54.28%	0.65
American States Water	WAW	A+	77.24%	$2,354	58.22%	0.70
American Water Works	WAW	A	88.11%	$15,732	41.08%	0.55
Aqua America	WAW	A+	99.43%	$5,792	47.70%	0.70
California Water Service Group	WAW	A+	93.93%	$2,182	46.22%	0.70
Middlesex Water	WAW	A	88.28%	$825	56.86%	0.75
SJW Group	WAW	A	96.63%	$1,511	50.39%	0.60
York Water	WAW	A-	100.00%	$400	56.71%	0.75
Average		**A**	**89.72%**	**$ 3,821**	**51.03%**	**0.67**

Sources:
Value Line Ratings and Reports
S.E.C. Form 10K for Companies

Discounted Cash Flow Model Cost of Equity for
Water and Wastewater Industry

COMPANY	TYPE	Div_0	Div_1	Div_4	EPS_4	ROE_4	GR_{1-4}	RECENT STOCK PRICE HI-PR	LO-PR	AVG-PR[1]
Atmos Energy Corporation	NG	1.94	2.10	2.60	5.15	0.11	0.06	99.80	89.32	94.56
Northwest Natural Gas Company	NG	1.89	1.93	2.20	3.50	0.12	0.03	66.64	65.89	66.27
ONE Gas, Inc	NG	1.84	2.00	2.50	4.75	0.11	0.06	84.66	83.16	83.91
Southwest Gas Holdings	NG	2.08	2.18	2.60	5.40	0.10	0.05	83.65	76.38	80.02
Spire Inc.	NG	2.25	2.37	3.00	5.00	0.10	0.07	79.59	78.72	79.16
American States Water	WAW	1.06	1.14	1.50	2.50	0.14	0.08	68.51	67.78	68.15
American Water Works	WAW	1.78	1.95	2.60	4.50	0.11	0.08	92.43	91.40	91.92
Aqua America	WAW	0.85	0.91	1.25	1.95	0.13	0.09	34.28	33.95	34.12
California Water Service Group	WAW	0.75	0.78	1.02	1.90	0.12	0.08	46.48	46.11	46.30
Middlesex Water	WAW	0.91	0.96	1.11	2.25	0.13	0.04	51.16	49.51	50.34
SJW Group	WAW	1.12	1.20	1.45	3.45	0.18	0.05	65.38	59.00	62.19
York Water	WAW	0.67	0.70	1.00	1.60	0.14	0.11	32.98	32.45	32.72

Average Dividend and Growth Rate: 1.518   0.067

Stock Price w/ 4 percentage Flotation Costs: 63.169

ROE: 9.09%

Sources:
Stock prices obtained from Yahoo Finance for the 30-day period November 1, 2018 through November 30, 2018
Natural Gas (NG) company dividends, earnings, and ROE obtained from Value Line Ratings & Reports issued November 30, 2018
Water and Wastewater (WAW) company dividends, earnings and ROE obtained from Value Line Ratings & Reports issued January 11, 2019

Notes:
[1] Average Stock Prices include four percent flotation cost

Singel-Stage DCF Model: $K = (D1 / P0) + g$

where:
K = Cost of Equity Capital
D1 = Expected Dividend Per Share in one year
P0 = Current Market Price (inlusive of flotation costs adjustment)
G = Expected Dividend Per Share Growth

Capital Asset Pricing Model Cost of Equity for
Water and Wastewater Industry

CAPM analysis formula

ROE   = RF + Beta (MR-RF)

ROE   = Investor's required rate of return

RF   = Risk-free rate (Blue Chip forecast for Long-term Treasury bond)

Beta   = Measure of industry-specific risk (Average for natural gas and water utilities followed by Value Line)

MR   = Market return (Value Line Investment Analyzer Web Browser)

$$\boxed{9.49\%} = 3.48\% + 0.62 \ (\ 12.81\% - 3.48\% \ ) + 0.20\%$$

Note:
The market return using a quarterly DCF model for a large number of dividend paying stocks followed
by Value Line. As of January 2019, the result was 12.81%
20 basis points to the CAPM result to account for a flotation cost of four percent were added.

Bond Yield Differential for
Water and Wastewater Industry

120-Month Average Bond Yield =	0.1599
BBB-	
	0.16%
BBB	
	0.16%
BBB+	
	0.16%
A-	
	0.16%
A	
Bond Yield Differential	**0.64%**