BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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In the Matter of Application of SAN JOSE WATER COMPANY (U168W) for Authority to Adjust Its Cost of Capital and to Reflect That Cost of Capital in Its Rates for the Period from January 1, 2018 through December 31, 2020.	A.17-04-001 (Filed: April 3, 2017)
Application of Golden State Water Company (U133W) for Authority to Establish its Authorized Cost of Capital and Rate of Return for Utility Operations for 2018-2020.	A.17-04-002 (Filed: April 3, 2017)
Application of California-American Water Company (U210W) for Authority to Establish its Authorized Cost of Capital for the Period from January 1, 2018 through December 31, 2020.	A.17-04-003 (Filed: April 3, 2017)
Application of CALIFORNIA WATER SERVICE COMPANY (U-60-W) for Authority to Establish its Authorized Cost of Capital for the Period from January 1, 2018 through December 31, 2020.	A.17-04-006 (Filed: April 3, 2017)

OPENING BRIEF
OF SAN JOSE WATER COMPANY (U-168-W)

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SUBJECT INDEX

Page

SUBJECT INDEX

Page

SUBJECT INDEX

Page

TABLE OF AUTHORITIES

Page

Cases

Calfiornia Pubclic Utitlies Commission Decisions

TABLE OF AUTHORITIES

Page

California Statutes

CPUC Rules and Rulings

Other Authorities

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OPENING BRIEF
OF SAN JOSE WATER COMPANY (U-168-W)

In accordance with Rule 13.11 of the Commission's Rules of Practice and Procedure and Administrative Law Judge ('ALJ") Karl Bemesderfer's Ruling Amending Proceeding Schedule, issued July 17, 2017, San Jose Water Company ("SJWC"), applicant in Application No. 17-04-001, hereby respectfully submits its Opening Brief in the above-captioned consolidated proceeding.

I.

SUMMARY OF POSITION

SJWC requests the opportunity to earn an overall rate of return of 8.63% during the years 2018, 2019 and 2020, based on a cost of common equity of 10.75%, a weighted cost of

long-term debt of 6.21%, and a debt to equity ratio of 46.72% to 53.28%. These proposed values are set forth in the following table drawn from the Direct Testimony of Pauline Ahern (Exhibit SJ-004):

Table 1

Summary of the Overall Rate of Return for 2018, 2019, and 2020[1]

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	46.72%	6.20%	2.90%
Common Equity	53.28%	10.75%	5.73%
Totals	100.00%		8.63%

SJWC's forecasted cost of capital is based on witness Ahern's thorough study of the current cost of equity capital for a proxy group of publicly traded companies engaged in the operation of public water systems and on witness James Lynch's company-specific forecast of SJWC's weighted cost of long-term debt and its capital structure.

ORA's proposal of a significantly lower cost of capital for SJWC is based on narrower and deficient study of the cost of equity and an inappropriately backward-looking assessment of SJWC's cost of debt and capital structure. SJWC's experts carefully evaluated ORA's testimonies and provided rebuttal testimony identifying serious flaws in them. Further deficiencies in the testimony of ORA's witnesses were apparent in the course of the evidentiary hearing held September 13 to 15, 2017, in San Francisco.

SJWC has well supported its forecast of a 10.75% cost of equity and an overall rate of return of 8.63% for SJWC for the years 2018 through 2020. Rates should be set that will provide SJWC a fair opportunity to earn that rate of return.

[1] Exhibit SJ-04 (Ahern), at 3 and Schedule PMA-1; Exhibit SJ-03 (Lynch), Schedule JPL-1R, Schedule 3 (Corrected by JPL).

II.

PROCEDURAL HISTORY

A. Cost of Capital as a Rate Case Issue

Historically, the cost of capital, including the allowed rate of return on equity ("ROE"), presented one set of issues among many addressed in the context of a GRC. Issues related to the cost of capital sometimes were strenuously litigated but often were resolved in the context of multi-issue settlements. Commission decisions, over the years, addressed theoretical and practical issues related to the cost of capital in various ways and by varying standards, but generally have applied the principle that the ROE should be set at the lowest level that meets the test of reasonableness, but should be sufficient to provide a margin of safety for payment of interest, enable the utility to pay a reasonable common dividend, and to allow for some funds to be returned to the business as retained earnings. The Commission has repeatedly observed that "it is the application of informed judgment, not the precision of financial models, which is the key to selecting a specific ROE estimate."[2]

B. The Rate Case Plan and the Cost of Capital

In the 1990s, the Commission adopted the practice of setting costs of capital and ROEs for the major energy utilities in consolidated proceedings solely addressing issues related to those topics.[3] The Commission adopted the same approach for the Class A water companies in its 2007 decision revising the Rate Case Plan for the Class A water utilities. That decision separated consideration of cost of capital from the GRC and provided for the three large multi-district utilities to file cost of capital applications May 1, 2008, with those applications to be reviewed on a consolidated basis, and with the smaller Class A companies to file cost of capital

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[2] *Re Pacific Gas & Electric Co.*, D.02-11-027, at 19, and cases there cited; *see also*, *Re Southern California Edison Co.*, D.12-12-034, at 28.

[3] *See, e.g., Re Sierra Pacific Power Co.*, D.94-11-076, 57 Cal. PUC 2d 533.

applications May 1, 2009, also subject to consolidated review.[4] The Commission considered that the new procedure would "serve to streamline our regulatory process" but stated that "we intend to consider company-specific factors" in the consolidated proceedings, so "concerns of parties that company-specific risks will be overlooked are unfounded."[5]

C. Past Consolidated Cost of Capital Reviews

The Commission conducted its first consolidated cost of capital review of the three large multi-district Class A water companies, California Water Service Company ("CWS"), California-American Water Company ("CAW"), and Golden State Water Company ("GSW"), in 2008. This was the first proceeding for the water companies where the sole subject was cost of capital separated from a general rate case ("GRC"). Following its review, the Commission adopted a return on equity of 10.20% for all three companies, along with individual capital structures and weighted costs of capital for each company.[6]

The following year, in 2009, the Commission conducted a review of the six other, mostly smaller Class A water companies, including SJWC. Again, this was the first proceeding for these water companies where the sole subject was cost of capital separated from a GRC. The Commission's review culminated in D.10-10-035, in which the Commission adopted a base return on equity of 10.20% for all six applicants along with individual capital structures and weighted costs of capital for each water company.[7] For SJWC, the decision adopted a debt to equity ratio of 48% debt and 52% equity, with a cost of debt of 7.03%. Accordingly, the Commission adopted a weighted cost of capital for SJWC of 8.68%.[8]

The Commission conducted another cost of capital review of the four larger Class A companies, CWS, SJWC, CAW, and GSW, in 2011, with SJWC now included in the "larger

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[4] *Rulemaking to Consider Revisions to the General Rate Case Plan for Class A Water Companies*, D.07-05-062, at 14-16 and App.1, at A-3,
[5] *Id.* at 14-15.
[6] *Re California Water Service Co.*, D.09-05-019, at 2.
[7] *Re San Jose Water Co.,* D.10-10-035, at 2.
[8] *Id*. at 3.

companies" group. That review culminated in D.12-07-009, which approved a settlement agreement among the four Class A water companies and ORA (then the Division of Ratepayer Advocates ("DRA")). The Commission approved a cost of equity for all four companies of 9.99%, and a cost of debt and overall rate of return for SJWC of 6.68% and 8.28%, respectively.[9] In that decision, the Commission explained that "in setting the authorized cost of capital for a water utility, it considers various metrics, including the returns allowed by this Commission in the past, the returns allowed by other commissions for similar companies, the general economic conditions, . . . the company's bond rating, and the willingness or ability of banks and other financial intermediaries to lend."[10] Further, to support its adopted return on equity, the Commission stated that it may consider the forecasted risk-free rate of interest and the equity risk premiums presented by the companies' experts.[11] The Commission found that the record supported the settlement agreement and that its adoption was warranted.[12]

Most recently, by D.13-05-007, the Commission approved a settlement agreement among Park Water Company and Apple Valley Ranchos Water Company, San Gabriel Valley Water Company, Suburban Water Systems, Great Oaks Water Company, and DRA establishing the cost of capital, capital structures, and rates of return for all the applicant water companies. The Commission adopted a cost of equity of 9.79% for all the companies.[13]

D. <u>The Current Consolidated Proceeding</u>

The next cost of capital review for the larger Class A companies was due to occur in 2014. In view of the relative stability of capital markets, the prospective applicants, with the support of ORA, submitted a joint request to the Commission's Executive Director for a year's extension of the dates specified for filing cost of capital applications and the Executive Director

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[9] *Re California Water Service Co.*, D.12-07-009, at 2.
[10] *Id*. at 14.
[11] *Id*.
[12] *Id*. at 17.
[13] *Re Park Water Co.*, D.13-05-027, at 2.

granted the joint request. Similar requests were submitted in 2015 and 2016 with ORA's support, and further one-year extensions were granted.

The four large Class A water utilities filed a similar extension request in December 2016, but in this instance ORA opposed the request and the Executive Director did not act upon it. Accordingly, SJWC, GSW, CAW and CWS proceeded to file applications on April 3, 2017, which were consolidated to create the present proceeding for consideration in the present proceeding.

III.

THE COST OF EQUITY FOR SJWC

A. Ms. Ahern's Analysis Supported an ROE of 10.75%

Ms. Ahern testified that, as a wholly-owned subsidiary of SJW Group, SJWC's common stock is not publicly traded, and so a market-based common equity cost cannot be determined directly for SJWC. For this reason, Ms. Ahern assessed the market-based common equity costs of a "Water Proxy Group" of publicly-traded water companies of similar, but not identical risk, as a means of "adding reliability to the informed expert judgment necessary to arrive at a recommended common equity cost rate" – consistent with the principles of fair rate of return established in the *Hope* and *Bluefield* cases.[14] Ms. Ahern applied several well-recognized cost of equity models to the market data for the Water Proxy Group and also applied those models to market data for a non-price regulated proxy group comparable in total risk to the Water Proxy Group. Recognizing that no proxy group is identical in risk to any single entity, Ms. Ahern also assessed the relative risk between SJWC and the Water Proxy Group to determine whether company-specific adjustments to the indicated cost of equity for the Water

[14] Exhibit SJ-04 (Ahern), at 3-4; *see*, *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944); *Bluefield Water Works Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923).

Proxy Group were necessary.[15] Ms. Ahern summarized the results of her analysis in the following table:

Table 2[16]

Summary of Common Equity Cost Rate

	Water Proxy Group
Discounted Cash Flow Model ("DCF")	8.50%
Risk Premium Model ("RPM")	11.19%
Capital Asset Pricing Model ("CAPM")	9.41%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Cos.	10.39%
Common Equity Cost Rate Before Adjustment	10.50%
Flotation Cost Adjustment	0.17%
Business Risk Adjustment	0.10%
Common Equity Cost Rate After Adjustment	10.77%
Recommended Common Equity Cost Rate	10.75%

Ms. Ahern determined that the 10.50% common equity cost rate was appropriate for SJWC, before adjustments, because it was in the upper end of the range of common equity cost results and reflected SJWC's unique and distinguishing risk factors as compared to the Water Proxy Group. The selected rate of return on common equity required upward adjustment by 0.17% to account for flotation costs and by 0.10% to reflect SJWC's greater business risk due to its smaller size. With these adjustments, Ms. Ahern recommended a common equity cost rate of 10.75% for SJWC as "reasonable and conservative."[17]

1. Like the expert witnesses for the other companies, Ms. Ahern applied several standard models to a proxy group of publicly traded companies to guide her analysis.

The cost of common equity must be estimated from market data, using financial models developed for that purpose. These models estimate the investor-required return—the

[15] Exhibit SJ-04 (Ahern), at 4.
[16] *Id.* # at 5, Table 2.
[17] *Id.* at 5-6.

return required by the investor on the funds invested in the publically traded common stocks of firms.[18] Ms. Ahern's testimony is based on marketplace data for the Water Proxy Group, a group of utilities that are as similar in risk as possible to SJWC.[19] This is the same proxy group the other experts, including ORA's expert, have used in this proceeding.

Ms. Ahern further testified that she used multiple models to estimate the cost of common equity because the models are subject to limiting assumptions and other constraints.[20] The use of multiple models adds reliability to the estimation of investor-required return and is supported by the academic literature.[21] For example, Professor Morin states:

> No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment.[22]

Ms. Ahern relied on the Discounted Cash Flow model, the Risk Premium Model, and the Capital Asset Pricing Model in arriving at a recommended common equity cost rate.[23]

Ms. Ahern also testified as to the substantial risks facing the water industry as a whole, and SJWC in particular. She explained that the investor-required rate of return reflects investors' assessment of total investment risk, which includes business and financial risk.[24] Financial risk is created by the introduction of senior capital, *i.e.*, debt or preferred stock, into the capital structure.[25] Business risk reflects the uncertainty associated with owning a company's common stock without considering the company's use of debt and/or preferred financing. Business risks facing the water industry include the regulatory environment, environmental requirements, customer mix and concentration of customers, service territory, economic growth,

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[18] *Id.* at 9.
[19] *Id*.
[20] *Id*.
[21] *Id.* at 10.
[22] *Id*., *quoting* Roger A. Morin, New Regulatory Finance (Pub. Util. Reports, Inc., 2006) (hereinafter, "Morin"), at 428-431.
[23] Exhibit SJ-04 (Ahern), at 10.
[24] *Id.* at 11.
[25] *Id*. at 16.

market demand, uncertainties of supply, operations, capital intensity, and size.[26] In particular, Ms. Ahern explained that water utilities have long-term assets that are of concern to investors with respect to both the return of and the return on capital over an extended future period. [27] Water utilities also face risks associated with water quality and related regulations and customer concerns, as well as supply availability, particularly when supply is limited by drought.[28] Ms. Ahern testified that water utilities require significant capital investment in various aspects of their operations, which is a major risk factor for the water industry. She emphasized that the capital intensity of water utilities requires greater investment to produce a dollar of revenue than is required for other industries, including electric and natural gas utilities, making the need for water utilities to maintain the ability to attract needed new capital, through allowance of a sufficient rate of return, increasingly important.[29]

a. The Water Proxy Group is a set of publicly traded water companies similar in risk to the four applicants.

Ms. Ahern's testimony is based on the marketplace data of the Water Proxy Group, a group of publicly traded water utilities or water utility holding companies similar in risk to SJWC.[30] The Water Proxy Group is comprised of companies included in the Water Utility Group of *Value Line's* Standard Edition (July 15, 2016) with 70% or more of their 2015 total operating income from and 70% or more of their 2015 total assets devoted to regulated water operations.[31] Four of the eight companies in the proxy group are the holding companies of the four applicants. This is the same proxy group that most of the other experts, including ORA's expert, use in this proceeding.

[26] *Id*.
[27] *Id*. at 12.
[28] *Id*. at 13.
[29] *Id.* at 14-16.
[30] *Id*. at 6.
[31] *Id*. at 25.

b. <u>The Discounted Cash Flow ("DCF") model.</u>

The theory behind the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting those cash flows at the cost of capital, or the investor's capitalization rate. The DCF model assumes that an investor buys stock for an expected total return rate which is derived from cash flows received as dividends plus appreciation in market price.[32]

To derive her recommended common equity cost rate input from the DCF model, Ms. Ahern took the average of the mean and median results of the single-stage constant growth DCF model, which resulted in a DCF-based common equity cost rate of 8.50% for the Water Proxy Group. She used the average of the mean and median to mitigate the effect of outliers on either the high or low side.[33]

Ms. Ahern testified that the DCF model tends to mis-specify the investor required common equity return rate when the market value of common stock differs significantly from its book value. It understates or overstates the investor required return rate when market value exceeds or is less than book value, respectively.[34] Ms. Ahern explained that market values of water utilities' common stocks have been well in excess of their book values for many years, which generates DCF results that tend to understate investors' true required rates of return.[35] The finding that regulation may not necessarily result in market-to-book ratios near unity was explained by Professor Bonbright:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market. In short,

[32] *Id.* at *27.*
[33] *Id.* at *30.*
[34] *Id*.
[35] *Id*. at 31.

> market prices are beyond the control, though not beyond the influence of rate regulation.[36]

Ms. Ahern testified that application of the DCF model understates the required return on common equity by approximately 575 basis points (5.75%) due to what currently are significantly high market-to-book ratios.[37] She demonstrated this result mathematically in Schedule PMA-5 to her direct testimony, which shows that a mean market-based DCF cost rate of 8.68% based on the Water Proxy Group, when applied to a book value of $15.546, which is 33.57% of market value, will provide a total annual return opportunity of just $1.349 on the book value. When applied in the context of the DCF model's consideration of dividends and earnings growth, the indicated return on market value falls from 8.68% to 2.91% – an understatement of 577 basis points that effectively denies the investor a realistic opportunity to earn the expected market-based rate of return on the market value of his or her investment. The same gap appears in the difference between the 6.55% average expected growth in market value, shown in Column A on page 2 of Schedule PMA-5 and the growth in market value of just 0.78% shown in Column B of that schedule when the 8.68% DCF cost rate is applied to book value.[38]

Ms. Ahern concluded that the DCF model mis-specifies the investor required cost of common equity when market values vary from book values. This is an important reason why the use of multiple models adds reliability to the estimation of the cost of common equity, rather than relying exclusively on a single model such as the DCF model on which ORA's witness solely relied. Because of the substantial gap that currently exists between market and book values and the DCF model's consequent understatement of investors' required return, Ms. Ahern testified that "it is more imperative than ever not to give exclusive or even primary reliance to the DCF analysis at this time." Exhibit SJ-4 (Ahern), at 37.

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[36] *Id*. at 32. *quoting* James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Pub. Util. Reports, Inc., 1988), at 334.
[37] *Id*. at 5 n. 4.
[38] Exhibit SJ-4 (Ahern), at 36-37 and Schedule PMA-5, page 2 of 10; *see also*, Exhibit SJ-8 (Ahern), which corrects Schedule PMA-5, page 2 of 10.

c. **The Risk Premium Model ("RPM").**

The Risk Premium Model is based on the financial principle of risk and return – that investors require greater returns for bearing greater risks.[39] According to the RPM, the cost of common equity equals the expected cost rate for long-term debt capital plus a risk premium over that cost rate to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on a corporation's assets and earnings.[40]

Ms. Ahern testified that she derived an RPM-based cost of common equity by relying on the results of two risk premium methods. The first method is the Predictive Risk Premium Model ("PRPM") and the second method is the risk premium model using a total market approach.[41]

The PRPM is a new approach for estimating the equity risk premium for public utilities and was developed by a team led by Ms. Ahern herself, based on the work of Robert F. Engle, who won the 2003 Nobel Prize in Economics "for methods of analyzing economic time series with time-varying volatility ("ARCH").[42]" Ms. Ahern calculated a projected equity risk premium for each water utility in the Water Proxy Group, using a generalized form of ARCH, known as GARCH. Application of the GARCH model is presented in Schedule PMA-6 to Ms. Ahern's testimony. Exhibit SJ-04 (Ahern, at 39-40 and Schedule PMA-6, page 2 of 11).

The PRPM estimates the risk/return relationship directly, as the predicted equity risk premium is generated by the predicted volatility, or risk.[43] In other words, it is an evaluation of the ***actual*** results of investor behavior, the variance of historical equity risk premiums. The inputs for the PRPM model are the historical monthly returns on the common shares of each utility in the Water Proxy Group minus the historical monthly yield on long-term U.S. Treasury

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[39] *Id*. at 38.
[40] *Id*.
[41] *Id.*
[42] *Id.* at 39, *citing*, www.nobelprize.org.
[43] *Id*. at 39.

securities through February 2017.[44] Ms. Ahern testified that, consistent with her reliance on the average and median DCF results, she took the average of the mean and median of the PRPM results to derive the PRPM-based equity cost rate of 12.95%.[45]

The total market approach RPM adds a prospective public utility bond yield to the average of the equity risk premium derived from a beta-adjusted total market equity risk premium and an equity risk premium based on the S&P Utilities Index.[46] Ms. Ahern's first step in the total market approach RPM analysis was to derive the prospective public utility bond yield using *Blue Chip Financial Forecasts* consensus forecasts.[47] She then estimated the equity risk premium in the adjusted total market approach by averaging a number of different market inputs.[48] Ms. Ahern testified that she adjusted the results of the market equity risk premium by beta, a measure of relative risk of the Water Proxy Group to that of the market as a whole, to account for the market risk of the Water Proxy Group. This calculation resulted in a beta-adjusted equity risk premium of 4.77%.[49] Ms. Ahern separately calculated four estimated equity risk premiums based on the S&P Utilities Index, producing an average of 4.27%.[50] She then averaged those two results to derive an equity risk premium of 4.52%.[51] Based on these calculations, Ms. Ahern testified that the RPM-based common equity cost rate based on the adjusted total market approach is 9.43% for the Water Proxy Group.[52]

Ms. Ahern concluded that the RPM-based common equity cost rate is 11.19%, derived by averaging the PRPM result of 12.95% with the adjusted total market approach rate of 9.43%. This calculation is displayed in Schedule PMA-6, page 1.[53]

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[44] *Id*.
[45] *Id*. at 40.
[46] *Id.*
[47] *Id*. at 40-41.
[48] *Id*. at 42-46.
[49] *Id*. at 46-47.
[50] *Id*. at 47-48.
[51] *Id*. at 48.
[52] *Id*. Ms. Ahern's calculations are documented in Schedule PMA-6, pages 3-11.
[53] Exhibit SJ-04 (Ahern), at 48.

d. <u>The Capital Asset Pricing Model ("CAPM")</u>.

CAPM defines risk as the co-variability of a security's returns with the market's returns as measured by beta. CAPM assumes that all other risk can be eliminated through diversification, except for market, or systemic, risk.[54] The model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately to reflect the systemic risk of the individual security (or proxy group) relative to the total market, as measured by beta.[55]

Ms. Ahern selected the projected yield of 3.64% on long-term U.S. Treasury Bonds as the risk-free rate of return because they are almost risk-free and their term is consistent with the long-term investment horizon and life of the utility rate base.[56] She calculated a set of five market equity risk premiums and applied the average of those five values as the average total market risk premium of 7.42%.[57] Deriving an average beta for the eight companies in the Water Proxy Group by averaging relevant adjusted betas published by Value Line and Bloomberg Financial Services, Ms. Ahern calculated mean and median betas for the Water Proxy Group as a whole. As with the other two models, Ms. Ahern derived her CAPM results by averaging the mean and median results, for a common equity cost rate of 9.41%.[58]

e. <u>Consideration of a non-price-regulated proxy group.</u>

Ms. Ahern also analyzed equity cost data for non-price regulated companies of comparable risk. She explained that *Hope* and *Bluefield* do not require that comparable

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[54] *Id*.
[55] *Id*.
[56] *Id*. at 51-52. Ms. Ahern explained in response to cross-examination that the 3.64% risk-free rate of return is a market-based figure and also is "investor influencing" – as much so as the earnings forecasts and Value Line forecasts on which all the rate of return witnesses rely. Tr. 41:12-25 (Ahern/SJWC). She explained that the 3.64% rate was published by Blue Chip based on input from approximately 64 economists. It is the current market-based risk-free rate because investors rely on it as reflecting expert opinion of what the risk-free rate might be in the future. Tr. 41:19-21, 42:3-43:14 (Ahern/SJWC). *See also*, Tr. 51:14-52:21 (Ahern/SJWC), where Ms. Ahern discussed her reliance on projected U.S. Treasury rates in comparison with looking at the TIPS spread as a measure of inflation expectations.
[57] *Id*. at 51-53.
[58] *Id*. at 50, 54 and Schedule PMA-7.

companies be price-regulated utilities and that non-price regulated firms operating in the competitive marketplace are an "excellent proxy" if selected to be comparable in total risk to the Water Proxy Group.[59] Ms. Ahern selected a set of non-price regulated firms with similar risk profiles to the Water Proxy Group and applied the DCF, RPM, and CAPM models as described above.[60] Ms. Ahern then relied on the average of the mean and median results of the three models, which is 10.39% for the non-price regulated proxy group.[61]

2. Each model considered different factors, contributing toward a well-supported and balanced result.

Ms. Ahern testified that she used multiple cost of common equity models because:

- No single model is so inherently precise that it can be relied upon solely to the exclusion of other theoretically sound models;
- All of the models are market-based;
- The use of multiple models adds reliability to the estimation of the common equity cost rate; and,
- The prudence of using multiple cost of common equity models is supported in both the financial literature and regulatory precedent.[62]

Ms. Ahern further testified that a common equity cost rate in the upper end of the range of common equity cost rate results of 10.50% (before applying flotation cost and business risk size adjustments) is appropriate for SJWC, as it reflects SJWC's unique and distinguishing specific risks relative to the Water Proxy Group.[63]

[59] *Id*. at 54.
[60] *Id*. at 56; *see also, id.*, Schedule PMA-8, indicating the comparable risk of the two proxy groups, and Schedule PMA-9, applying the three equity cost models to Ms. Ahern's proxy group of non-price regulated comparable risk companies.
[61] *Id*. at 57.
[62] *Id*. at 58.
[63] *Id*.

3. Ms. Ahern considered unique and distinguishing risk factors specific to SJWC, which supported her selection of an ROE at the upper end of the range of results indicated by her study of the standard models.

Ms. Ahern testified that risk factors distinguishing SJWC from the utilities in the Water Proxy Group include the following:

- SJWC is subject to a three-year GRC cycle;
- SJWC is heavily dependent upon purchased water for its supply;
- SJWC has been denied the implementation of a full Water Revenue Adjustment Mechanism ("WRAM") by the CPUC;
- SJWC projects capital expenditures for 2017-2020 that will exceed 60% of 2016 net plant;
- SJWC experiences a structural water supply shortage;
- SJWC faces large uncollected balances relative to the true-up from its GRC decision and various balancing and memorandum accounts;
- SJWC faces increasingly stringent environmental permitting; and,
- SJWC is smaller in size than the average utility in the Water Proxy Group.[64]

Ms. Ahern explained each of these factors in detail, noting, for example, that the forecasted data for a test year may not represent the reality of the second and third years of a mandatory three-year GRC cycle, that SJWC's water supply contract represents a fixed obligation, and that providing service in a single geographical area exacerbates SJWC's business risk in comparison with the geographical and regulatory diversification of the Proxy Group companies.[65] Ms. Ahern further noted a history of delays in regulatory decisions for SJWC, including its two most recent GRCs, leading to large uncollected revenue balances that present a significant risk to SJWC's cash flows.[66] She also addressed the risks to capital

[64] *Id*. at 6, 18.
[65] *Id.* at 19-20.
[66] *Id*. at 21.

projects and to SJWC's water rights from increasingly stringent requirements for environmental protection.[67]

Based on these company specific risks and consistent with the basic financial principal of risk and return, Ms. Ahern testified that SJWC requires a greater authorized return on common equity than the indicated market-based common equity cost rate for the Water Proxy Group.[68]

4. Ms. Ahern added factors for flotation costs and company-specific risk due to SJWC's relatively small size.

Flotation costs are those costs associated with the sale of new issuances of common stock, including market pressure and the essential costs of issuance.[69] Ms. Ahern testified that flotation costs must be recognized in the allowed return on common equity because there is no other mechanism in the revenue requirement formula for SJWC to recover such costs. She further testified that flotation costs should be recovered through an adjustment to common equity cost rate even when there has not been an issuance during the test year, nor an expected imminent issuance of additional shares of common stock due to the long and indefinite life of common equity.[70] Moreover, flotation costs must be added as an adjustment to the cost of common equity model results because the models assume no transaction costs.[71] Ms. Ahern testified that an upward adjustment of 0.17% is required to reflect the flotation costs applicable to the Water Proxy Group.[72]

Ms. Ahern also testified that an upward adjustment is necessary to account for SJWC's unique business risk because it is significantly smaller than the average company in the

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[67] *Id*. at 22.
[68] *Id*. at 6.
[69] *Id*. at 59.
[70] *Id*. at 60.
[71] *Id*. at 61.
[72] *Id*. at 62; *see also, id.*, Schedule PMA-10, for Ms. Ahern's calculation of an appropriate flotation cost adjustment.

Water Proxy Group.[73] SJWC's smaller size relative to the Water Proxy Group indicates a greater relative business risk because size has a material bearing on risk.[74] Ms. Ahern relied on Brigham, who explained, "the small-firm effect" as meaning that "the capital market demands higher returns on stocks of small firms."[75]

Ms. Ahern referenced "size premiums" for decile portfolios of publicly traded companies from Duff & Phelps' 2016 Valuation Handbook Guide to Cost of Capital, observing a size premium spread of 0.34% between the deciles in which the Water Proxy Group and SJWC fall. In that context, Ms. Ahern recommended that a conservative business risk adjustment of 0.10% be applied to SJWC's common equity cost rate "to reflect SJWC's greater investment risk due to its smaller size relative to the Water Proxy Group."[76]

Applying a flotation cost adjustment of 0.17% and a 0.10% business (size) risk adjustment to the cost of common equity of 10.50% results in a risk-adjusted cost of common equity of 10.77%.[77] Based on her analysis of the data and model calculations, Ms. Ahern recommended that the Commission adopt the rounded figure of 10.75% as SJWC's risk-adjusted cost of common equity.[78]

B. ORA Witness Rothschild Presented a Narrow and Flawed Analysis to Justify Exceptionally Low Rates of Return on Equity.

ORA witness Aaron Rothschild recommended rates of return on equity ranging from 8.22% to 8.30% for the four applicant companies, with the highest rate of 8.30% proposed for SJWC.[79] Mr. Rothschild testified that he applied the DCF model and the CAPM to the same Water Proxy Group used by the four water companies' witnesses, applying a "market-based

[73] *Id*. at 62-63.
[74] *Id*. at 23, 63.
[75] *Id*. at 24, quoting, Eugene F. Brigham, Fundamentals of Financial Management, 5th ed. (Dryden Press, 1989), at 623.
[76] Exhibit SJ-04, at 63; *see also, id.*, Schedule PMA-11.
[77] *Id*. at 64.
[78] *Id*. at 64-65.
[79] Exhibit ORA-20 (Rothschild), at 2.

perspective that uses "the forecasts represented in market prices." [80] Mr. Rothschild's reliance on the "constant growth" version of the DCF model, his perfunctory CAPM analysis, and his purported but incomplete refusal to consider analysts' forecasts resulted in a narrow analysis generating unreliable results, and several of the factors he considered in that analysis were shown to be inappropriate. The resulting exceptionally low recommended costs of equity should not be persuasive to the Commission.

1. Mr. Rothschild's reliance on market data and other sources of information was flawed and misleading in important respects.

Mr. Rothschild claimed to rely on "market data" rather than "expert" forecasts for two stated reasons: 1) that the actual cost of equity water companies will pay will be determined by the market and not by financial publications; and 2) that predicting capital markets is not done well. He determined that the cost of equity for the average company in the Water Proxy Group is 8.25%, within the range of his DCF results and higher than his CAPM result.[81]

Mr. Rothschild claimed that the applicants' witnesses recommended costs of equity considerably higher than the return expectations published by various financial industry sources. He considered their recommendations to be above current investor expectations due to flaws in their models and their rejection of interest rate forecasts incorporated in market prices.[82] He pointed to two recent decisions by state regulatory agencies in New York and Virginia as indicating costs of equity of 9.1% and 9.25%, respectively.[83] One of these decisions came in a water utility case in which the New York Public Service Commission ("NYPSC") approved a settlement proposed by the applicant and the NYPSC staff, in which the choice of ROE was dwarfed by other revenue requirement elements – a dubious precedent to be sure.[84] In fact, the parties to the NYPSC settlement agreed that "each provision of this Proposal is in consideration

[80] *Id.* at 4.
[81] *Id.* at 4-5.
[82] *Id.* at 5.
[83] *Id.* at 6.
[84] *See,* Exhibit ORA-21 (Rothschild), at 91-93 (NYPSC Order in Case 16-W-0259, at 21-23); *see also*, Tr. 237:11-26; 240:19-243:10 (Rothschild).

and support of all the other provisions" and none of those provisions may be cited or relied upon as "binding precedent in any other proceeding before the Commission or any other regulatory agency."[85]

Mr. Rothschild pointed to several market indicators as supporting his low cost of equity recommendations. These included the high market demand for stocks, indicating that investors are paying more for the same earnings; low market volatility; and low bond yields, with U.S. Treasury yields "in a basic downtrend since the early 1980's."[86] His chart of declining Treasury yields for a 30 to 40 year period, giving an impression of continuing decline, was misleading, as compared to a chart showing relatively level 30-year Treasury bond rates over the five years since the last Cost of Capital decision for the applicant companies.[87] Indeed, Ms. Ahern noted in rebuttal that current yields on 30-year U.S. Treasury bonds are now slightly higher than they were just before the Commission issued its last decision authorizing an ROE for the four applicant companies in July 2012, and the Commission considered interest rate forecasts in setting that ROE.[88]

Mr. Rothschild completed his survey of market indicators by noting the difficulty of forecasting interest rates with a view that the trading industry is based on an "illusion of skill" and that "the selection of stocks is more like rolling dice than like playing poker."[89] The relevance of stock trading skills to the selection of interest rates for purposes of calculating costs of capital was not established.[90] Similarly, Mr. Rothschild cited a McKinsey study from 2010, which found that analysts were overly optimistic, slow to revise their forecasts, and prone to making increasingly inaccurate forecasts during economic downturns (such as the "Great

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[85] Exhibit SJ-11 (Joint Proposal in Case 16-W-0259), at 25; *see also*, Tr. 239:1-240:18 (Rothschild).
[86] *Id.* at 8-9.
[87] *Compare*, Exhibit ORA-20 (Rothschild), at 19 (Chart 8) *with* Exhibit SJ-12; *see also*, Tr. 243:11-244:24 (Rothschild/ORA).
[88] Exhibit SJ-05 (Ahern), at 31.
[89] Exhibit ORA-20 (Rothschild), at 19-20, *quoting,* Daniel Kahneman, Thinking Fast and Slow (New York: Farrar, Straus and Gigoux, 2011), at 215.
[90] *See*, Tr. 246:1-247:16 (Rothschild/ORA).

Recession" from which the economy was then just beginning to recover). What this implies for interest rate forecasts in the current "Goldilocks economy" (to use Mr. Rothschild's phrase) is difficult to fathom.[91]

Mr. Rothschild mistakenly assumes that the only interest costs relevant to the calculation of a cost of equity rate are current interest costs. Because current interest costs are near historic lows, they provide the basis for his low equity cost recommendations. He criticizes Dr. Villadsen and Dr. Vilbert for expecting increased interest rates and he faults Ms. Ahern for using long-range interest forecasts in her CAPM, and claims that adding a separate factor for the expectation of increased interest rates "would amount to a double count."[92] Mr. Rothschild, however, does not identify any place in which any of the experts have added "a separate factor." All that they have done has been to recognize that they are calculating costs of equity capital for a future period – the years 2018 through 2020 – and accordingly have employed projected interest rates in their predictive models appropriate to that future period.

For example, Dr. Villadsen, testifying for CAW, was asked about her use of a risk-free rate of 3.6% based on forecasts of bond yields one year in the future. Dr. Villadsen clarified that a 20-year U.S. Treasury bond issued September 1, 2017, and a 20-year U.S. Treasury bond issued one year from now are "two different products" and that yield to maturity starting today and one year from today relate to two different financial instruments.[93] Likewise, Ms. Ahern responded to Mr. Rothschild's reliance on today's "relatively low interest rate environment" by noting that rates set in this proceeding will be in effect through 2020 and that both ratemaking and the cost of capital are prospective in nature, so "it is the level of future interest rates which is relevant to the cost of equity for SJWC and the other water companies in this proceeding."[94]

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[91] *Compare*, Exhibit ORA-20 (Rothschild), at 7 and 21.
[92] *Id.* at 25-26.
[93] Tr. 107:8-109:21 (Villadsen/Cal-Am); *see also*, Tr. 129:3-15 (Villadsen/Cal-Am).
[94] Exhibit SJ-5 (Ahern/SJWC), at 28.

Ms. Ahern effectively rebutted all of Mr. Rothschild's claims that current market conditions justify his unusually low proposed ROEs. Noting his claim that "on balance, the cost of equity has decreased in the recent sharp increase in water company stocks" followed by his acknowledgement that "a portion of the increase in the price-to-earnings ratio of the Water Proxy Group may be due to factors others [*sic*] than decrease in the cost of equity," Ms. Ahern found it "impossible to draw any conclusions regarding the relationship of the increase to a lower investor required return on common equity."[95] Ms. Ahern went on to demonstrate that, contrary to Mr. Rothschild's assertions, while price/earnings multiples for the Water Proxy Group increased over the past five years, their earnings-per-share growth rates have tended to decline. Thus, the ORA witness's claim of a linkage between high price/earnings multiples and a reduced cost of capital should be disregarded.[96]

Ms. Ahern also rebutted Mr. Rothschild's claim that the relatively low current level of the VIX volatility index indicates a lower cost of equity. She noted that the VIX, a measure of the expected 30-day volatility of a stock index, is very reactive to geo-political conditions, justifying care in evaluating its relevance to equity risk. She noted Mr. Rothschild's chart showing that the Water Proxy Group has outperformed the broad market since 2015, which appears inconsistent with his suggestion that investors expect volatility will remain low, since this expectation suggests greater investment in sectors riskier than utilities, traditionally an investor's "safe haven." Ms. Ahern also noted commentary in a study cited by Mr. Rothschild suggesting that market intervention by the Federal Reserve complicates use of the VIX to measure near-term uncertainty and risk aversion.[97]

Ms. Ahern noted other, longer-term measures of expected volatility that support higher expectations of such volatility than indicated by the VIX, and she also noted measures of increased investor perception of risk since the last Cost of Capital decision, D.12-07-009, which

[95] *Id.* at 19, *citing* Exhibit ORA-20 (Rothschild), at 10, 13.
[96] *Id.* at 20-21; Exhibit SJ-07 (Ahern), Schedule 14.
[97] Exhibit SJ-05 (Ahern), at 21-23.

was issued in July 2012. One is the change in predicted equity risk premiums for both the Water Proxy Group and the overall market derived by use of the Predicted Risk Premium Model ("PRPM"), which was addressed in Ms. Ahern's direct testimony. In her rebuttal testimony, Ms. Ahern applied the PRPM to demonstrate significant increases in median and mean equity risk premiums for the Water Proxy Group from June 2012 to July 2017, indicating "an increase in the volatility and investors' perception of the risk of the common stocks of the companies in the Water Proxy Group" over that period, while the spot variance for the overall market indicated a decline in those factors over the same time period. The trend in betas for the Water Proxy Group corroborates these results.[98] In view of this analysis, Ms. Ahern concluded that "Mr. Rothschild's interpretation of current market conditions indicating a lower cost of common equity is not supported by either his own documentation or empirical measures of the risk of the Water Proxy Group.[99]

2. Mr. Rothschild's almost exclusive reliance on the DCF model resulted in an unreliable analysis.

Mr. Rothschild relied entirely on the DCF model, applying both constant growth and non-constant growth assumptions, to develop his cost of equity recommendations, using a simplified CAPM analysis to confirm his results.[100] While he described the elements of the CAPM, he did not apply that model, but instead simply averaged the *Value Line* forecasts of total annual return for the 30 companies in the Dow Jones Industrial Average, compared the beta of the Water Proxy Group to that of Dow Jones 30, and, on that basis, concluded that the cost of equity recommendations derived from his DCF analysis were "conservatively high."[101]

Ms. Ahern criticized Mr. Rothschild's exclusive reliance on the DCF model as "both misplaced and inconsistent with the academic literature supporting the use of multiple cost of

[98] Exhibit SJ-05 (Ahern), at 23-25.
[99] *Id.* at 26.
[100] Exhibit ORA-20 (Rothschild), at 26.
[101] *Id.* at 43-45.

common equity models in determining the cost of common equity."[102] As she had noted in her direct testimony, she confirmed that the various models are subject to limiting assumptions and constraints, making it prudent and appropriate to use multiple methodologies to mitigate those limitations. She quoted at length from Professor Morin's widely-referenced textbook, including his advice that "Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods," along with similar references to other academic studies.[103] As Ms. Ahern concluded,

> Just as the use of the market data of a proxy group of similar risk companies adds reliability to the informed expert judgment used in arriving at a recommended common equity cost rate, so does the use of multiple common equity cost rate models. Therefore, exclusive reliance upon the DCF is not warranted in setting an allowed return on common equity in this proceeding.[104]

Ms. Ahern also criticized Mr. Rothschild's heavy reliance on the DCF model because it produces estimates of common equity cost consistent with investors' expected return ***only*** when stock price and book value are reasonably similar, that is, when their ratio is close to unity.[105] She explained that the "simplified" DCF model assumes a market-to-book ratio of one, and so understates investors' required return rate when market value exceeds book value, because investors evaluate their returns on the market value of a utility's equity while regulators set returns on book common equity.[106]

Ms. Ahern recalled the calculation accompanying her direct testimony demonstrating how applying a market-based DCF cost rate to a book value substantially below market value will understate investors' required return on market value, leaving "no realistic opportunity to earn the expected market-based rate of return on book value."[107] As part of her rebuttal to Mr. Rothschild, Mr. Ahern provided a revised calculation using data from Mr. Rothschild's

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[102] Exhibit SJ-05 (Ahern), at 3.
[103] *Id.* at 3-6, *citing*, Morin, *supra*, at 431.
[104] Exhibit SJ-05 (Ahern), at 6.
[105] *Id.* at 6, *quoting* Morin, *supra*, at 434.
[106] Exhibit SJ-05 (Ahern), at 7.
[107] *Id.* at 8. See discussion of Schedule PMA-5 at page 11, *supra*.

Schedules ALR 2 and ALR 3. In comparison with the 577 basis point understatement of the required rate of return indicated in Schedule PMA-5, Schedule PMA-5R demonstrates that Mr. Rothschild's 8.63% constant growth DCF cost rate results in an understatement or the return on market value of 562 basis points.[108]

Ms. Ahern also noted in her rebuttal testimony that the Commission, in its last fully litigated cost of capital proceeding for SJWC (or for any of the Class A water companies), relied on the "wide range of the models and our own best judgment" to adopt a just and reasonable return.[109]

3. Mr. Rothschild's application of the "sustainable growth" version of the DCF model produced flawed results.

Mr. Rothschild primarily relied on the constant growth form of the DCF model, which depends on an assumption that investors can reasonably expect that growth of retained earnings and dividends will be constant over time. He described the constant growth model as a formula, by which the cost of equity is calculated as the sum of the dividend rate as a percentage of market price plus the growth rate, "g", which is calculated "br + sv", that is, the sum of the earnings retention rate times the rate of return on equity plus the rate of "continuous new stock financing" times the fraction of funds raised by sale of stock that increases the book value of common equity. The term "br + sv" is referred to as the "sustainable growth" element of the constant growth DCF model.[110]

Several of the applicants' witnesses criticized Mr. Rothschild's implementation of the sustainable growth formula. For example, Dr. Vilbert, a witness for CWS, testified that the ORA witness "relied on several fundamental logical inconsistencies that run counter to Mr. Rothschild's statements about the benefits of the sustainable growth approach." The most fundamental inconsistency Dr. Vilbert identified was that Mr. Rothschild forecasted an *r* of

[108] Exhibit SJ-05 (Ahern), at 9 and Schedule PMA-R5; *see also*, Exhibit SJ-09 (Ahern), correcting notes (7) and (8) of Schedule PMA-R5.
[109] Exhibit SJ-05 (Ahern), at 9, *quoting*, *Re San Jose Water Co.*, D.10-10-035, at 47-48.
[110] *Id*. at 28-29; Tr. 247:17-248:9 (Rothschild/ORA).

12.0% and used a historical *r* of 11.0% as assumed levels of return on book equity while recommending an ROE for CWS of only 8.22%. Dr. Vilbert noted Mr. Rothschild's failure to explain how a regulated utility with an allowed ROE of 8.22% "could be expected to 'sustainably' grow earnings in a manner consistent with the much higher assumed rates of return on book equity that are the basis of his calculations."[111] Dr. Vilbert also pointed out inconsistencies in Mr. Rothschild's reliance on historical data while claiming to employ expected values, and in his criticism of using analysts' earnings growth rate forecasts while himself relying on *Value Line* forecasts to drive the sustainable growth calculation.[112]

Dr. Vilbert acknowledged that the "sustainable growth" rate method of estimating "g" in the DCF model is reasonable, but presents the problem of estimating four parameters and of some "fundamental inconsistencies" that cause the methodology to "ultimately collapse down to a much lower number."[113] Referring to an excerpt from an academic textbook introduced as an ORA exhibit, Dr. Vilbert found confirmation that the sustainable growth rate and "the views of security analysts" are alternative options for estimating "g" in the DCF model, and that "there are many estimates, many methods and you should use more than just one."[114]

SJWC witness Ahern also criticized Mr. Rothschild's reliance on "sustainable growth" in his constant growth DCF analysis. She pointed out that the return on equity ("ROE") used in his growth rate analysis is based in part on expectations in *Value Line* and *Zacks* 5-year forecasts of earnings per share ("EPS") growth, and this allowance for growth due to sales of new common stock above book value is based entirely on *Value Line* 5-year growth forecasts. Thus, Ms. Ahern concluded,

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[111] Exhibit CWS-5 (Vilbert), at 6-7. This "inconsistency" noted by Dr. Vilbert is an aspect of the same deficiency in the "simplified" DCF model recognized by Ms. Ahern and discussed above – that it presumes a market-to-book ratio of 1.00.
[112] *Id.* at 7-8.
[113] Tr. 71:13-72:18 (Vilbert/CWS).
[114] Tr. 75:15-76:28 (Vilbert/CWS); *see also*, Exhibit ORA-3.

> Mr. Rothschild's sustainable growth methodology is not only a short-term forecast, no longer than the security analysts' five-year forecasts of EPS growth used in my DCF analysis, but it also relies on analysts' growth forecasts, a practice Mr. Rothschild has criticized.[115]

Ms. Ahern went on to criticize Mr. Rothschild's sustainable growth methodology as "inherently circular," because the ROEs he uses to derive his sustainable growth rate, which are used to recommend ROEs in this proceeding, are themselves based on regulatory outcomes. Also, not only do the expected Value Line ROEs on which he relies substantially exceed the ROE his model recommends, they even exceed Ms. Ahern's own recommended 10.75% cost of equity for SJWC.[116] Ms. Ahern noted that the circularity and inconsistency of the sustainable growth methodology is recognized in the academic literature, referencing Professor Morin's discussion of "three problems in the practical application of the sustainable growth method":

> The first is that it may be even more difficult to estimate what *b*, *r*, *s* and *v* investors have in mind than it is to estimate what *g* they envisage. It would appear far more economical and expeditions to use available growth forecasts and obtain *g* directly instead of relying on four individual forecasts of the determinants of such growth. *It seems only logical that the measurement and forecasting errors inherent in using four different variables to predict growth far exceed the forecasting error inherent in the direct forecast of growth itself.*
>
> *Second, there is a potential element of circularity in estimating g by a forecast of b and ROE for the utility being regulated, since ROE is determined in large part by regulation. To estimate what ROE resides in the minds of investors is equivalent to estimating the market's assessment of the outcome of regulatory hearings.* Expected ROE is exactly what regulatory commissions set in determining an allowed rate of return. In other words, the method requires an estimate of return on equity before it can even be implemented. *Common sense would dictate the inconsistency of a return on equity recommendation that is different than the expected ROE that the method assumes the utility will earn forever*. For example, using an expected return on equity of 11% to determine the growth rate and using the growth rate to recommend a return on equity of 9% is inconsistent. *It is not reasonable to assume that this regulatory utility company is expected to earn 11% forever, but recommend a 9% return on equity. The only way this utility can earn 11% is that rates be set by the regulator so that the utility will, in fact, earn 11%...*

[115] Exhibit SJ-05 (Ahern), at 10-11.
[116] *Id.* at 11.

> Third, the empirical finance literature discussed earlier demonstrates that the sustainable growth method of determining growth is not as significantly correlated to measures of value, such as stock price and price/earnings ratios, as other historical measures or analysts' growth forecasts. *Other proxies for growth such as historical growth rates and analysts' growth forecasts outperform retention growth estimates*. [117]

Ms. Ahern concluded that Mr. Rothschild's application of the DCF model was flawed due to his use of the sustainable growth formula (br + sv), which is an exercise in circularity, because it ignores the fact that the cost of equity to be authorized in this proceeding will be applied to SJWC's book value rate base and thus become the allowed future earned return on book common equity – *i.e.*, the expected ROE component of the sustainable growth formula.

Curiously, ORA witness Rothschild relied on an excerpt from another academic treatise as evidence that "investors care about the sustainable growth calculation." [118] However, a close reading of page 67 of the referenced excerpt, received into evidence as Exhibit ORA-3, indicates that investors may care about estimating return (*r*), and possibly growth (*g*), but no mention of "sustainable growth" or its formula (*br* + *sv*) is to be found in the referenced material. It is fair to conclude that the sustainable growth term of the DCF model is an item of some academic interest but of little use in the real regulatory world.

4. Mr. Rothschild's criticism of the use of forecasts of EPS growth forecasts in the DCF model was unjustified.

Mr. Rothschild criticized the use of forecasted growth rates and interest rates, asserting that analysts' earnings forecasts used by the Companies' witnesses in their DCF analyses were overly optimistic. [119] Ms. Ahern took issue with this claim, testifying that a rate of return analyst must attempt to emulate investor behavior in evaluating factors that influence investors. One such factor is the EPS growth rate forecasts of securities analysts. She noted that the cost of common equity is forward-looking, as it is a function of investor expectations.

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[117] *Id*. at 11-12, *quoting* Morin, *supra*, at 306-07 (emphasis added); *see*, Schedule PMA-R6.
[118] Tr. 248:10-249:11 (Rothschild/ORA), referencing Brealey & Myers, Principles of Corporate Finance (excerpt received as Exhibit ORA-3).
[119] Exhibit ORA-20 (Rothschild), at 6.

Ms. Ahern pointed to the "significant body of empirical evidence indicating the superiority of analysts' EPS growth rates in a DCF analysis," contending that analysts' earnings forecasts remain the best predictor of growth to use in the DCF model.[120] She saw no justification for Mr. Rothschild's ignoring the ample evidence of the proven reliability and superiority of analysts' EPS forecasts, noting that the ORA witness acknowledged as much when he used an "expected dividend yield," a factor based on analysts' projected growth rates, in his own DCF analysis.[121] After detailing the empirical evidence and academic literature supporting reliance on analysts' EPS growth forecasts, Ms. Ahern concluded that Mr. Rothschild should have relied on such EPS growth rate projections in his DCF analysis. [122]

5. Mr. Rothschild failed to refute Ms. Ahern's demonstration of firm-specific risks justifying an ROE for SJWC in the upper end of the range for the Water Proxy Group and an additional 0.10% to reflect SJWC's small size.

As noted above, SJWC witness Ahern testified that a common equity cost of 10.50% is appropriate for SJWC to reflect SJWC's unique and distinguishing specific risks relative to the Water Proxy Group.[123] Ms. Ahern also recommended an upward adjustment of 0.10% for SJWC's smaller size relative to the Water Proxy Group. This adjustment together with an adjustment for flotation costs of 0.17% supported her recommendation of an ROE of 10.75% for SJWC.[124]

a. Mr. Rothschild's denial of adjustments based on firm-specific risks was poorly substantiated.

Mr. Rothschild claimed that all the applicants' witnesses "fail[ed] to demonstrate that firm-specific risks warrant an adjustment to the cost of equity," because they did not show risks for their companies that were both higher than for the proxy group and "non-diversifiable."[125]

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[120] Exhibit SJ-05 (Ahern), at 13.
[121] *Id.* at 13-14.
[122] *Id*. at 14-17.
[123] Exhibit SJ-04 (Ahern), at 58.
[124] *Id.* at 62-65.
[125] Exhibit ORA-20 (Rothschild), at 45-46.

The only aspect of Ms. Ahern's testimony addressing firm-specific risk to which Mr. Rothschild specifically referred was her reference to the 2016 Valuation Guide to Cost of Capital as supporting a higher cost of equity for SJWC because of its small size.[126] He also expressed "concerns" about "excessive equity risk premiums in her CAPM and RP approaches" and "unjustified firm-specific risk adjustments" but failed to elaborate on those "concerns" in any way.[127]

The only substantiation Mr. Rothschild offered for not recognizing firm-specific risks as "relatively higher than for the proxy group" was an alleged "CPUC tradition of not adjusting financial model (*e.g.* CAPM) results to account for financial, business or regulatory risks," and the only case he cited to document that "tradition" was a recent Commission decision rejecting a request by the small local telephone companies ("LECs") to add premiums to CAPM results for a proxy group because the LECs had offered no basis for comparing the proxy group to their own circumstances and had failed to show size-related risks that would justify a specific size premium.[128]

Mr. Rothschild failed to note that the Commission justified its denial of a small-size premium in the recent LEC case, in part, by the fact that the Commission is required to provide subsidies "sufficient to meet the revenue requirements" for each LEC and that these subsidies mitigate the business risk these companies face.[129] Mr. Rothschild also failed to mention that this Commission decision granted the LECs a return on equity capital of 10.80% (higher than the ROE proposed by SJWC witness Ahern), based on very lightly leveraged capital structures

[126] *Id.* at 46, 48.
[127] *Id.* at 56.
[128] *Id.* at 47, *citing*, *Re Calaveras Tel. Co., et al.*, D.16-12-035, at 28, 31, 32.
[129] D.16-12-035, at 32 n. 73. This Commission decision is included in Exhibit ORA-21 (Rothschild), at 555 *et seq.*

assumed to include only 30% debt.[130] Any concern about firm-specific risks may well have been subsumed in the Commission's uniform approach for setting these companies' rates of return.

In response to cross-examination, Ms. Ahern noted that relative liquidity was not a factor in her recommendation that the Commission consider SJWC's small size when setting the authorized rate of return, because "the research indicates that all else equal, including liquidity, that size is a factor that is not taken into account by the models. Therefore it needs to be reflected in the cost of equity as an adjustment."[131] Ms. Ahern made clear that it was SJWC's small size in relation to the companies in the Water Proxy Group that was significant – not its size relative to the other applicant companies.[132]

b. Mr. Rothschild's denial that firm-specific risks can warrant adjusting <u>the cost of equity unless they are "non-diversifiable" is not justified.</u>

Mr. Rothschild declared as Gospel that a company's cost of equity "is not impacted by risks that can be managed through diversification."[133] According to him, investors buy stocks as part of diversified portfolios, which cancel out the diversifiable risks of each company.[134] When asked whether equity investors consider a company's specific business risks in choosing where to invest their capital, he replied,

> Investors consider risks that are non-diversifiable. If . . . a business risk of a firm is non-diversifiable, that's something that they consider when investing . . . in terms of their required return. If one of these risks is . . . diversifiable, they don't demand compensation for it.[135]

In response to a data request, however, ORA affirmed that it was Mr. Rothschild's opinion that investors "do consider company business and financial risk because, if for no other reason, some investors buy stock for reasons other than building a diversified portfolio."[136]

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[130] D.16-12-035, at 2. In fact, Mr. Rothschild was not aware of the 10.80% allowed ROE. Tr. 254:18-255:1 (Rothschild/ORA).
[131] Tr. 44:7-17 (Ahern/SJWC).
[132] Tr. 47:18-48:3, 48:19-49:11 (Ahern/SJWC).
[133] Exhibit ORA-20, (Rothschild), at 47.
[134] *Id.* at 44-45.
[135] Tr. 250:17-27 (Rothschild/ORA).
[136] Exhibit SJ-13 (Exhibit of Counsel), at 6.

When asked whether this was, indeed, his opinion, Mr. Rothschild recited his Gospel passage about diversifiable risks not impacting the cost of equity, but when probed about purchasers considering aspects of a stock other than the diversifiable nature of risk, he ventured into other "aspects of what an investor is looking at" and appeared to acknowledge that an investor's required cost of equity may vary depending on "the percentages of, say, oil wells that are going to be successful."[137] When asked whether it was consistent to say investors consider a variety of factors but then to apply a rigid mandate of diversifiability, Mr. Rothschild replied that "[t]he concept of non-diversifiable risk is an integral part of the capital asset pricing model which all the witnesses use." He confirmed that a "standard element of the CAPM is to measure only non-diversifiable risk."[138]

SJWC concedes that the CAPM applies the standard of nondiversifiable risk. That is exactly the sort of risk that Ms. Ahern and the other water company experts tried to calculate in conducting their CAPM analyses of the cost of equity capital for the Water Proxy Group. But Ms. Ahern's opinion that a common equity cost of 10.50%, was appropriate for SJWC in order to reflect "SJWC's previously discussed unique and distinguishing specific risks relative to the Water Proxy Group"[139] was not part of her CAPM analysis. To the contrary, that opinion was provided in the context of her assessment of the results of her CAPM analysis as well as her DCF and RPM analyses. Likewise, Ms. Ahern's recommendation of a 0.10% equity rate premium in recognition of SJWC's small size was unrelated to her CAPM analysis. Thus, by Mr. Rothschild's own reluctant admission, the principle of nondiversifiability of risk ***does not apply to either of Ms. Ahern's SJWC-specific adjustments*** to the Water Proxy Group's equity cost rate.

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[137] Tr. 251:10-253:19 (Rothschild/ORA).
[138] Tr. 253:24-254:17 (Rothschild/ORA).
[139] Exhibit SJ-04 (Ahern), at 58.

6. Mr. Rothschild's concern about Ms. Ahern's equity risk premiums was unjustified.

As noted above, aside from her "firm-specific risk adjustments," the only "primary concern" ORA witness Rothschild expressed regarding the testimony of SJWC witness Ahern was about "excessive equity risk premiums in her CAPM and RP approaches," but he failed to explain the basis for that "concern."[140] Ms. Ahern responded to Mr. Rothschild's description of her "excessive" equity risk premiums by calling the criticism "misplaced," because the average market return on which those risk premiums were based was 11.37%. Viewing her risk premium estimates in the context of historical U.S. market returns over a 90-year period, she concluded that the average expected total market return of 11.37%, which was used to derive the market equity risk premium in her CAPM analysis, was consistent with historical experience and "well within the bounds of a reasonable range."[141]

7. Mr. Rothschild omission of a flotation cost adjustment was unwarranted.

As noted above, SJWC witness Ahern included a flotation cost adjustment of 0.17% in her calculation of the cost of equity for SJWC. As explained in both her direct and her rebuttal testimony, she did so because "there is no other mechanism in the ratemaking paradigm through which such real and legitimate costs can be recovered." She noted that historical flotation costs are a permanent loss of investment to the utility and should be accounted for whatever the market-to-book ratio may be, but all of the equity cost models used in this proceeding assumed no transaction costs.[142] Accordingly, Mr. Rothschild's omission of a flotation cost adjustment to the recommended ROE was unjustified.

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[140] Exhibit ORA-20 (Rothschild), at 56.
[141] Exhibit SJ-05 (Ahern), at 26.
[142] Exhibit SJ-04 (Ahern), at 61; Exhibit SJ-05 (Ahern), at 32-33.

C. Recent Commission Determinations of Equity Costs for Other Utilities Support a Result Closer to SJWC's Proposal Than to That of ORA.

Ms. Ahern recommended that the Commission adopt a cost of equity for SJWC of 10.75%.[143] Mr. Rothschild proposed a return on equity for SJWC of just 8.30%.[144] Recent Commission determinations of equity costs for other public utilities support a result much closer to Ms. Ahern's recommendation than to that of Mr. Rothschild.

Reference has been made above to the most recent Commission decisions setting returns on equity for SJWC and the other Class A water companies at 9.99% or 9.79%.[145] Those decisions approved settlements among the parties; the most recent fully litigated determination of ROEs for Class A water utilities was D.10-10-035, which set an ROE of 10.20% for the four applicants in this proceeding.

More recent determinations of ROE in Commission decisions indicate no decline in the returns the Commission has considered appropriate. The Commission's December 2016 decision granting a 10.80% ROE for a group of small local exchange telephone companies was referenced by Mr. Rothschild and discussed above.[146] Ms. Ahern also referenced recent Commission decisions setting ROEs for electric and gas utilities, presenting a table showing the results of all fully litigated decisions for the five large electric and gas utilities operating in California from 2012 to date. As shown, the ROEs granted by the Commission ranged from 10.10% to 10.45%, with a mean of 10.25%.[147]

Of particular interest is the Commission's most recent action, in July of this year, approving a settlement among the four largest energy utilities, ORA, and The Utility Reform Network ("TURN") that set new rates of return on equity for those utilities in a range from

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[143] Exhibit SJ-04 (Ahern), at 64.
[144] Exhibit ORA-20 (Rothschild), at 2.
[145] See discussion at page 5, *supra*, of D.12-07-009 and D.13-05-027.
[146] Exhibit ORA-20 (Rothschild), at 47, *citing*, *Re* D.16-12-035; see pages 30-31, *supra*.
[147] Exhibit SJ-05 (Ahern), at18 and Schedule PRA-R11; Tr. 39:15-40:3 (Ahern/SJWC).

10.05% to 10.30%, with a mean of 10.20%.[148] That recent decision extended the next Cost of Capital applications for the large energy utilities by two years – until April 2019 – while specifically finding that "[t]he requested reductions in authorized ROE reflect ***financial market stability since 2012***."[149] If the Commission was comfortable in July 2017 setting ROEs for the largest energy utilities at rates just five or ten basis points lower than they were set in 2012, then the ROEs adopted in this proceeding for four Class A water utilities should at worst be set in a similar relationship to the ROEs the Commission adopted for the same companies in 2012.

IV.

CAPITAL STRUCTURE AND THE COST OF LONG-TERM DEBT FOR SJWC

A. SJWC's Chief Financial Officer Presented a Well-Substantiated Forecast of SJWC's Long-Term Debt Cost and Capital Structure for the Three-Year Duration of the Capital Costs to Be Set in This Proceeding.

James Lynch, Chief Financial Officer for SJWC, testified that SJWC's forecasted weighted average cost of long-term debt will average 6.20% for the three-year period 2018-2020.[150] Mr. Lynch projected SJWC's common equity ratio as averaging 53.28% for the three-year forecast period. Accordingly, SJWC's long-term debt ratio will average 46.72% for the years 2018-2020.[151] Mr. Lynch also described company-specific risks facing SJWC that are relevant and necessary to consider in determining the appropriate capital structure for SJWC.[152]

[148] *Re Southern California Edison Co.*, D.17-07-005, at 7; *see also*, Exhibit SJ-10 (Ahern), updating Schedule RMA-R11.
[149] D.17-07-005, *supra*, at 14 (Finding of Fact 4).
[150] Exhibit SJ-01 (Lynch), at 7-8; Exhibit SJ-03 (Lynch), Schedule 4 (Corrected by JPL).
[151] Exhibit SJ-01 (Lynch), at 6.
[152] *Id*. at 1.

1. Mr. Lynch supported his recommended capital structure by discussing SJWC's financial requirements, company specific risks, and plans for issuing long-term debt and common equity.

a. SJWC's financing needs.

Mr. Lynch explained that SJWC forecasted its financing needs based on its expected earnings, capital expenditures, and dividend payments for the years 2018 through 2020.[153] During the years 2018 through 2020, SJWC expects to disburse about $360 million for capital projects, retire assets at a cost of $13 million, repay advances and fund CIAC taxes of $4 million, and make $58 million in dividend payments. SJWC plans to use internally generated funds and a new equity issuance to finance approximately 76% of its forecasted financing needs, with the remainder to be satisfied by issuing new long-term debt.[154]

b. SJWC's company specific risks.

Mr. Lynch noted that many California water utilities share similar risks and uncertainties associated with economic, environmental, water quality, and water supply considerations. He explained, however, that SJWC is experiencing additional, unique challenges. For one, SJWC has experienced a steep decline in water sales.[155] Water sales have decreased due to a number of factors, including California's water restrictions in light of the historic drought, environmental concerns, and persistent conservation messages communicated to water customers.[156] SJWC was subject to a 30% reduction conservation mandate through the middle of 2016, and remains subject to a 20% reduction conservation mandate today.[157] SJWC is pleased that it was able to achieve 28% and 29% water use reductions in 2015 and 2016, respectively.[158] However, the ongoing regulatory and consumer response to the drought highlights the risks SJWC faces in light of climate change and the

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[153] *Id*.
[154] *Id*.
[155] *Id*. at 2.
[156] *Id*.
[157] *Id*. at 4.
[158] *Id.*

regulatory process.[159] SJWC has also experienced a higher variability in sales associated with consumption restrictions and conservation messaging than members of the Water Proxy Group because it operates a single large urban water system.[160]

SJWC sought Commission approval to establish a temporary Mandatory Conservation Revenue Adjustment Memorandum Account ("MCRAMA") to track the impact of mandated conservation on SJWC's revenue, which was granted only after SJWC agreed to a 20 basis point reduction to its authorized ROE.[161] However, as Mr. Lynch testified, SJWC's subsequent request to recover the accumulated MCRAMA balance was ultimately denied.[162] After the fact, the Commission reversed course and only allowed SJWC to use an alternative and less favorable mechanism, a temporary Water Conservation Memorandum Account ("WCMA"), and only after a lengthy and costly regulatory process.[163] Moreover, the Commission has not authorized SJWC a Water Revenue Adjustment Mechanism ("WRAM"). SJWC has requested a "full" WRAM that would decouple sales from revenue similar to the mechanisms the Commission has approved for the five other Class A water utilities in its last two GRC applications, but the Commission has denied those requests.[164]

Mr. Lynch further testified that SJWC's capital expenditure program is intended to systematically replace aging infrastructure and provide new infrastructure to address changing conditions within its service territory.[165] The 2018 through 2020 planned capital budgets also include new infrastructure to further develop SJWC's recycled water program, which will help SJWC secure a "new long term drought proof water supply source."[166] Despite the necessity and importance of these investments, Mr. Lynch explained that the risk associated with

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[159] *Id*.
[160] *Id*. at 2.
[161] *Id*. at 3.
[162] *Id*.
[163] *Id*. The allowed recovery amount under the WCMA was significantly lower than what was requested under the MCRAMA. *Id*.
[164] *Id*. at 4-5.
[165] *Id*. at 2
[166] *Id*. at 3.

operating a single fully integrated urban water system, securing long-term sources of water, and managing a multi-year capital budget of greater than $360 million are significant.[167]

As a result of similar pressing capital obligations and regulatory issues in recent years, SJW Group (formerly SJW Corp.), SJWC's parent company, needed to infuse equity capital into SJWC in 2013 for the first time in over 25 years, due to significant cash flow requirements associated with its infrastructure replacement programs compounded by its then weakened earnings.[168]

c. SJWC's planned issuance of new equity and debt.

Mr. Lynch explained that SJWC faces uncertainty as to its ability to access long-term financing due to the turbulence in Washington D.C., and because certain indicators suggest future market uncertainties. However, SJWC issued new common equity in 2013 and plans to make another issuance of $25 million of new common equity in 2018, as market conditions permit. SJWC expects to borrow a total of $80 million during the years 2018 through 2020[169]

2. Mr. Lynch's forecasts for SJWC's long term debt ratio and cost of long-term debt support SJWC's requested weighted cost of debt.

As a result of its forecasted earnings, equity issuance and increased borrowings, SJWC's common equity ratio is projected to range from 52.76% to 53.67% over the three-year forecast period, for an average of 53.28%. Accordingly, SJWC's long-term debt ratio is projected to range from 46.33% to 47.24%, for an average of 46.72% for the period covered by this Cost of Capital determination.[170]

Mr. Lynch explained that he estimated SJWC's cost of future long-term debt using the *Blue Chip* forecast (March 1, 2017). He adjusted the Blue Chip forecast for corporate Aaa bonds to account for SJWC's A rating and further adjusted the forecast to reflect SJWC's credit

[167] *Id*.
[168] *Id*. at 4.
[169] *Id*. at 5-6.
[170] *Id*. at 6.

profile (size and business risk) and the estimated issuance cost.[171] Based on these adjustments, Mr. Lynch testified that SJWC's cost of new long-term debt is 5.57%.[172] Mr. Lynch corrected this figure from 5.62% as presented in his direct testimony, in response to a data request from ORA.[173] Exhibit SJ-03 (Lynch), the schedules to Mr. Lynch's rebuttal testimony, includes his corrected Schedules 1 to 8 under the heading JPL-1R, with changes shown by highlighting.[174]

Mr. Lynch testified that the weighted average cost of long-term debt consists of interest and issuance costs, with issuance costs amortized over the lives of the related debt instruments. He calculated the weighted average cost of long-term debt, including the forecasted cost of future debt financing, by averaging the beginning of the year cost of debt with the end of year cost of debt for each year.[175] SJWC's forecasted weighted average cost of long-term debt is 6.25% for the year 2018, 6.20% for 2019, and 6.14% for 2020, with an average for the three years of 6.20%. Mr. Lynch recommended that the Commission adopt a uniform weighted average cost of debt for SJWC of 6.20% for 2018 through 2020.[176]

3. <u>SJWC supports retention of the Water Cost of Capital Adjustment Mechanism.</u>

Mr. Lynch explained that the Commission adopted a water cost of capital adjustment mechanism("WCCM") in a previous cost of capital decision, D.10-10-035, that provides for an automatic upward or downward adjustment of ROE in the second and third years of the cost of

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[171] Exhibit SJ-01 (Lynch), at 6.
[172] Exhibit SJ-03 (Lynch), Schedule JPL-1R, Schedule 5.1 (Corrected by JPL).
[173] *See* Tr. 9:5-12 (Lynch/SJWC) ("The schedules in the direct testimony were replaced . . . in response to a data request. And those have been corrected to reflect a change in the estimated cost of debt issuance for our . . . 2019 proposed issuance in our forecasts that we provided to them.").
[174] Tr. 10:7-12 (Lynch/SJWC).
[175] Exhibit SJ-01 (Lynch), at 7; Exhibit SJ-03 (Lynch), Schedule JPL-1R, Schedule 5.1 (Corrected by JPL).
[176] Exhibit SJ-01 (Lynch), at 7-8; Exhibit SJ-03 (Lynch), Schedule JPL-1R, Schedule 4 (Corrected by JPL). Mr. Lynch's corrections to the schedules accompanying his direct testimony, as highlighted in the corrected schedules in Schedule JPL-1R to his rebuttal testimony (Exhibit SJ-03) show a one-basis-point change to weighted average long-term debt for 2018-2020 in corrected Schedules 4 and 8, but corrected Schedule 8 also shows that the weighted cost of long-term debt, as an element in the recommended overall rate of return of 8.63%, was unchanged at 2.90%. Thus, the effect of Mr. Lynch's corrections disappeared in the rounding.

capital period if an index of interest rates changes beyond a specified threshold.[177] Mr. Lynch recommended that the Commission retain the cost of capital adjustment mechanism.[178]

ORA witness Mukunda Dawadi also endorsed retention of the WCCM. SJWC witness Ahern agreed.[179]

B. ORA Witness Dawadi's Proposals for SJWC's Capital Structure and Cost of Debt Were Seriously Flawed and Should Not Be Accepted by the Commission.

ORA witness Dawadi recommended separate capital structures and costs of debt for each of the four applicant companies. For SJWC, his recommendations were for a cost of debt of 5.96%, a debt ratio of 47.2%, and an overall rate of return on rate base (incorporating Mr. Rothschild's recommended ROE) of 7.19%.[180] All these amounts vary significantly from those proposed by SJWC's witnesses. As will be explained in the sections that follow, Mr. Dawadi's recommendations for SJWC's capital structure and cost of debt were seriously flawed and should not be accepted by the Commission.

1. Mr. Dawadi's proposed capital structure for SJWC was improperly based on historical data unadjusted for foreseeable future events.

Mr. Dawadi based his recommended capital structures on a weighted average of each applicant's historical "actual capital structure for regulated operations" as reported in their Annual Reports to the Commission for the years 2013 through 2016. He based his recommendations on four reasons:

- They were based on "actual capital structures supporting regulated operations that applicants have reported to the Commission";
- They rely on a uniform methodology that can be applied consistently;
- They incorporate previous Commission guidance on capital structure by lowering three of the four applicants' equity ratio closer to 50%; and

[177] Exhibit SJ-01 (Lynch), at 5.
[178] *Id.*
[179] Exhibit ORA-28 (Dawadi), at 17; Exhibit SJ-05 (Ahern), at 38.
[180] Exhibit ORA 28 (Dawadi), at 1-3.

- They benefit ratepayers by incorporating "generally higher recommended levels of debt," with even greater future debt levels to be "fully evaluated."[181]

Unfortunately for his proposals, all of Mr. Dawadi's four reasons are either flawed or inconsequential or both.

a. Basing a forecast on past reported capital structures without adjustment for known or foreseeable future events is inconsistent with future test year ratemaking and will produce inaccurate results.

Mr. Dawadi's first reason for considering his recommended capital structures was that they were based on "actual capital structures supporting regulated operations that applicants have reported to the Commission." SJWC witness Lynch disagreed with this claim, testifying that the capital structure as submitted in SJWC's Annual Reports to the Commission for the past four years "does not reflect forecasted operating results, planned capital expenditures, future dividend activity, or planned equity and debt offerings during the three-year period covered by this Cost of Capital proceeding."[182] Mr. Lynch explained that Mr. Dawadi should have based his recommended capital structure on the forecasted capital structure that Mr. Lynch provided in his direct testimony. Since SJWC's forecasted capital structure was known to Mr. Dawadi and he stated no objection to the elements of SJWC's forecast and that forecast covered the same future period as this proceeding, "a more reasonable approach would have been to use the forecasted capital structure as the basis of his recommendation."[183]

In response to cross-examination, Mr. Dawadi claimed that his use of average historical capital structures was for the purpose of forecasted capital structure.[184] But he admitted that he was not forecasting any specific debt issuance for any particular company. He

[181] *Id.* at 5-7.
[182] Exhibit SJ-02 (Lynch), at 2-3.
[183] *Id.* at 3. A forward-looking estimate also is consistent with the Commission's practice of forward-looking test year ratemaking. Tr. 27:15-28:3 (Lynch/SJWC).
[184] Tr. 271:15-272:5 (Dawadi/ORA).

didn't consider such plans and believed "that shouldn't matter."[185] It would be fair to agree that considering an applicant's plans for debt issuance – or any other changes in capital structure – "shouldn't matter" unless the witness had been assigned the task of forecasting the applicant's capital structure. Mr. Dawadi's reliance on historical data unadjusted to reflect known future events makes his capital structure recommendations completely unreliable.

b. Use of an appropriate and relevant methodology is more important than uniformity and consistent application.

Mr. Lynch responded to Mr. Dawadi's reliance on the uniformity of his methodology by noting that uniformity should not take priority over use of the proper methodology. As Mr. Lynch testified, "more important than uniformity and consistent application is that the methodology employed is appropriate and relevant," and Mr. Dawadi's approach was neither of these. In a forward-looking test year state like California, he should have used forecasted information.[186]

c. The fact that Mr. Dawadi proposes lower equity ratios that may be consistent with "Commission guidance" does not make his proposals reasonable, especially not as applied to SJWC.

Mr. Dawadi claimed that his recommendations incorporated previous Commission guidance on capital structure by lowering three of the four applicants' equity ratio closer to 50%. Mr. Lynch responded to this claim by noting that a methodology employed to determine a capital structure is not "more reasonable" just because it results in a predetermined, allegedly preferred outcome. Rather, "the methodology should consider the capital structure necessary to provide adequate interest coverage at an acceptable leverage ratio to achieve forecasted results."[187] Mr. Lynch also noted that the Commission decision on which Mr. Dawadi relied for "guidance" acknowledged responsibility to ensure that adopted capital structures are within a range "sufficient to maintain reasonable credit ratings and to attract capital" and did not rigidly enforce

[185] Tr. 294:13-295:8 (Dawadi/ORA)
[186] Exhibit SG-2 (Lynch), at 3-4.
[187] *Id.* at 4.

a particular limit on equity ratios. He concluded that the Commission's intended the 50% to 45% equity range as "a theoretical preference rather than a practical guideline."[188]

While Mr. Dawadi saw value in proposing rate structures consistent with what he considered Commission "guidance," he presented his recommendations as reflecting the utilities' "actual capital structures." He expressly denied that he was proposing any "hypothetical capital structure."[189]

It is also worthy of note that Mr. Lynch's forecasted equity ratio for SJWC of 53.28% is more in line with the "Commission guidance" to which Mr. Dawadi refers than are his own recommended ratios for the other three applicants – ranging from 54.13% to 54.44%. Thus, this third reason offered by Mr. Dawadi provides no support for his recommended capital structure for SJWC.

d. Mr. Dawadi provided no analysis or information to support his claim that the applicants could increase their debt burden without adverse consequences that is at all relevant to SJWC.

The last reason Mr. Dawadi offered to support his proposed capital structures for the four applicants was that his proposals would benefit ratepayers by incorporating "generally higher recommended levels of debt," and that even greater future debt levels should be "fully evaluated."[190] Mr. Lynch agreed that long-term debt generally is the least costly component of a utility's capital structure, but he emphasized that SJWC's debt rating is highly dependent on the amount of leverage actually employed.[191] He noted that increased debt requires higher interest payments, more restrictive borrower covenants, and a greater repayment burden – all factors that increase risk and affect the debt rating, which, in turn, is a key factor considered by investors. As a result, more debt may ultimately lead to an overall more expensive capital structure, through a higher investor-required equity cost rate, to the detriment of ratepayers.

[188] *Id.* at 4-5, referencing, *Re California Water Service Co.*, D.09-05-019.
[189] Tr. 326:26-327:19 (Dawadi/ORA).
[190] Exhibit ORA-28 (Dawadi), at 5-7.
[191] Exhibit SG-02 (Lynch), at 5-6.

Because Mr. Dawadi presented no analysis to demonstrate the impact of his proposed increase in leverage on future debt or equity costs, Mr. Lynch concluded that there was no basis to conclude that it would result in less burden on current or future ratepayers.[192]

In addition, none of the information Mr. Dawadi provided in support of increasing leverage is at all relevant to SJWC. The one reference he made to a Commission regulated utility is to a bland pronouncement by the parent company of GSW about GSW's obligation to comply with a CPUC decision on capital structure. Beyond that he refers to brief excerpts from a Brookings Institute study of municipal water utilities and a seriously dated OXERA study of investors' opinions about the water sector in the United Kingdom.[193]

Mr. Lynch observed that the Brookings Institute study examined the ratio of long-term debt to assets for large municipal water utilities and that while the study found an average debt-to asset ratio of 56%, it never indicated this to be a s safe level of debt or that cities with less debt could safely incur added borrowings – in fact the study stated that "many cities simply do not have the capacity to take on additional debt."[194] Mr. Lynch saw no greater relevance in the OXERA study, concluding that "[n]either of the two studies supports Mr. Dawadi's assertion that the applicants could take on more debt in their capital structures."[195]

When asked about these references that he included in his testimony, Mr. Dawadi abandoned the field. When asked whether he had reviewed the entire Brookings Institute study, he declared that he had not relied on it to form his opinion on recommended capital structures. He could not even confirm whether the report addressed publicly-owned water systems, stating again that he did not rely on the document.[196] When a fundamental error in the Brookings Institute study was pointed out to him (the 56% debt figure was not an average but only a benchmark, met or exceeded by just 20 of the 97 municipal utilities studied), Mr. Dawadi pled

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[192] *Id.* at 6; see also, Tr. 14:6-22 (Lynch/SJWC). .
[193] Exhibit ORA-28 (Dawadi), at 7-8 and Attachments B and C.
[194] Exhibit SG-02 (Lynch), at 7.
[195] *Id.* at 7-8.
[196] Tr. 272:6-274:15 (Dawadi/ORA).

ignorance.[197] His answers to questions about the OXERA study indicated a similarly incomplete assessment of the document's relevance to his debt leverage claims.[198]

C. Mr. Dawadi Erred in His Estimate of the Cost of Long-Term Debt for SJWC Due to His Failure to Recognize the Amortization of Redemption Premiums Associated With Early Retirement of High-Cost Debt.

Mr. Dawadi recommended a substantially lower cost of debt, 5.96%, for SJWC than the 6.20% cost of debt that SJWC proposed.[199] He claimed to have removed double-counted issuance costs of approximately $3.49 million in calculating SJWC's cost of debt, noting also that SJWC had acknowledged and corrected an error in its workpapers causing the double-counting of 0.05% of the cost of new debt issuances.[200]. The correction of this error in SJWC's workpapers was the same correction that Mr. Lynch made to Schedules 1 to 8 associated with his direct testimony, as presented in Exhibit SJ-03, Schedule JPL-1R – reducing SJWC's indicated cost associated with $80 million in new debt, planned for issuance in 2019, from 5.62% to 5.57%.[201]

Mr. Dawadi also claimed that SJWC and two other applicants "accounted twice for certain debt issuance costs associated with past debt issuances." According to the ORA witness, the three companies' proposed calculation of the effective cost of existing debt "adds unamortized issuance costs to the annual cost of existing debt while also subtracting these unamortized issuance costs from net proceeds" – essentially double-counting and inflating the cost of debt.[202]

Mr. Dawadi's was mistaken.

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[197] Tr. 275:1-276:20 (Dawadi/ORA); Exhibit ORA-28 (Dawadi), Att. B; Exhibit SG-14, page 6 of 10 and App. A.
[198] Tr. 306:6-309:7 (Dawadi/ORA).
[199] Exhibit ORA-28 (Dawadi), at 11.
[200] *Id.* at 11-12 and Att. D.
[201] *See*, Exhibit SJ-02 (Lynch), at 8-9; also see the discussion of these corrections at page 39, *supra*; *compare especially*, Exhibit SJ-03 (Lynch), Schedule JPL-1R, Schedule 5.1 (Corrected by JPL), with Exhibit SJ-01 (Lynch), Schedule 5.1.
[202] Exhibit ORA-28 (Dawadi), at 12.

As Mr. Lynch testified, the methodology Mr. Dawadi used to calculate SJWC's debt cost failed to incorporate the early redemption premium on several series of SJWC's First Mortgage Bonds in determining net long-term debt proceeds. These bonds were refinanced in 1993 with SJWC's Series B Senior Notes, as the Commission approved in a 1993 financing decision.[203]

Mr. Lynch explained that amounts paid to redeem bonds with a new debt instrument reduce the net proceeds from the new issue. In accordance with Financial Accounting Standards Board ("FASB") Accounting Standards, "the regulated entity shall capitalize the excess [of the cost of reacquired debt over the net carrying amount of the old debt] and amortize it over the period during which it will be allowed for rate-making purposes."[204] He testified that SJWC properly included the amount it paid to redeem the First Mortgage Bonds, amounting to $3,485,275, as a reduction of loan proceeds from debt borrowings in its weighted average effective interest rate calculation. He reflected this cost as a separate line item in Schedule 6.1 and did not include it in Series B Senior note issuance costs, so there was no double counting as alleged by Mr. Dawadi.[205]

Mr. Dawadi, incorrectly identifying the bond redemption premium as a double counting error, failed to reflect it as a reduction of net proceeds. Since both the bond redemption premium and debt issuance costs reduce borrowing proceeds, they should be treated consistently, as a reduction of net proceeds, in determining the weighted average effective interest rate. The net proceeds, reduced by both these costs, represents the proceeds actually received by SJWC, so it is the proper denominator to use in the weighted average effective interest rate calculation, just as interest expense plus amortization of both bond

[203] Exhibit SJ-02 (Lynch), at 9, referencing, *Re San Jose Water Co.*, D.93-08-018.
[204] Exhibit SJ-02 (Lynch), at 9, quoting, FASB Accounting Standards Codification 980-470-40-2.
[205] Exhibit SJ-02 (Lynch), at 9; Exhibit SJ-01, Schedule 6.1; Exhibit SJ-03 (Lynch), Schedule JPL-1R, Scheduled 6.1 (Corrected by JPL).

issuance costs and bond redemption premium comprises the proper numerator.[206] This is not double counting, but rather a proper recognition of both the correct amount of bond proceeds and the correct cost of servicing that debt. The Commission's two most recent decisions addressing SJWC's cost of capital allowed the bond redemption premium as a reduction of net proceeds in determining the weighted average effective interest rate.[207] Not allowing recognition of redemption premiums is not only in conflict with accounting rules, but also would create a perverse incentive for utilities not to refinance high interest rate debt in the future, ultimately to the detriment of ratepayers.

Another error in Mr. Dawadi's analysis is that he failed to reflect the correct interest expense during 2019 associated with SJWC's proposed issuance of $80 million of new debt (Series M) in that year. Mr. Lynch properly included only a half-year's interest expense and debt issuance cost amortization for that new debt in his interest expense calculation, but in calculating the weighted average cost of debt, he properly included the annual expense for the new debt. Mr. Dawadi, however, in calculating the effective cost of Series M debt, failed to make the adjustment from six months to 12 months and so understated the annual cost of the Series M debt in his weighted average cost of debt calculation.[208]

Mr. Lynch identified one additional error in Mr. Dawadi's calculations. SJWC calculated weighted averages of net proceeds and annual charges for the years 2018 to 2020 by averaging beginning and end or period amounts, and then averaged the three annual averages to arrive at the requested weighted average cost of debt. The ORA witness calculated the effective cost of debt at the end of 2018, 2019 and 2020 using the simple average method, and then averaged the annual results. This calculation ignored the impact of beginning balances on each year and on the three-year average.[209]

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[206] Exhibit SJ-02 (Lynch), at 10.
[207] *Id.*, *citing, Re San Jose Water Co.*, D.10-10-035 and *Re California Water Service Co.*, D.12-07-009.
[208] Exhibit SJ-02 (Lynch), at 11.
[209] *Id.* at 11-12.

Mr. Lynch adjusted Mr. Dawadi's calculations to be consistent with the methodology followed by SJWC with respect to the three items discussed above. With those adjustments, the average cost of debt for the three years recommended by Mr. Dawadi would be the same 6.20% calculated by SJWC. Mr. Lynch testified that these adjustments are necessary to properly determine the weighted average effective interest rate during the forecast period.[210] And with those corrections, no differences remain between SJWC and ORA with respect to the cost of debt.

V.

CONCLUSION

For the reasons stated in the testimony of its expert witnesses Pauline Ahern and James Lynch and in the foregoing brief, San Jose Water Company respectfully urges the Commission to authorize rates consistent with the cost of equity capital, cost of long-term debt and capital structure that its witnesses have proposed and justified, as set forth in the following table, which also appears at page 2 of this opening brief:

Table 1

Summary of the Overall Rate of Return for 2018, 2019, and 2020[211]

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	46.72%	6.20%	2.90%
Common Equity	53.28%	10.75%	5.73%
Totals	100.00%		8.63%

[210] *Id.* at 12-13; *see also*, Exhibit SJ-03 (Lynch), Schedules JPL-2R and JPL-3R, consisting of Mr. Dawadi's workpapers calculating annual costs of debt and Mr. Lynch;s corrections to those workpapers, respectively. Schedule JPL-3 highlights in red the deduction of the Early Redemption Premium from Net Proceeds in each of the three years and the full annual cost of the Series M debt in year 2019.

[211] Exhibit SJ-04 (Ahern), at 3 and Schedule PMA-1; Exhibit SJ-03 (Lynch), Schedule JPL-1R, Schedule 3 (corrected by JPL0.

Respectfully submitted,

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