Exhibit No.___(AEB-1)
Docket No. UG-20____
Witness: Ann E. Bulkley

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. CASCADE NATURAL GAS CORPORATION, Respondent.	DOCKET UG-20_____

CASCADE NATURAL GAS CORPORATION

DIRECT TESTIMONY OF ANN E. BULKLEY

June 19, 2020

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I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Ann E. Bulkley. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q. What is your position with Concentric Energy Advisors, Inc. ("Concentric")?

A. I am employed by Concentric as a Senior Vice President.

Q. On whose behalf are you submitting this Direct Testimony?

A. I am submitting this Direct Testimony before the Washington Utilities and Transportation Commission ("Commission") on behalf of Cascade Natural Gas Corporation ("Cascade" or the "Company"), which is a wholly-owned subsidiary of MDU Resources Group, Inc. ("MDU Resources").

Q. Please describe your education and experience.

A. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, with approximately 25 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. I have included my resume and a list of testimony that I have filed in other proceedings as Exhibit No.___(AEB-3) to this testimony.

Q. Please describe Concentric's activities in energy and utility engagements.

A. Concentric provides financial and economic advisory services to many and various energy and utility clients across North America. Our regulatory, economic, and market analysis services include utility ratemaking and regulatory advisory services; energy market assessments; market entry and exit analysis; corporate and business unit strategy development; demand forecasting; resource planning; and energy contract negotiations. Our financial advisory activities include buy and sell-side merger, acquisition and divestiture assignments; due diligence and valuation assignments; project and corporate finance services; and transaction support services. In addition, we provide litigation support services on a wide range of financial and economic issues on behalf of clients throughout North America.

II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the appropriate Return on Equity ("ROE")[1] for the Company's natural gas utility operations in Washington and to provide an assessment of its proposed capital structure to be used for ratemaking purposes. My analyses and recommendations are supported by the data presented in Exhibit No.___(AEB-2), Schedules 1 through 10, which were prepared by me or under my direction.

[1] Throughout my Direct Testimony, I interchangeably use the terms "ROE" and "cost of equity".

Q. Please provide a brief overview of the analyses that led to your ROE recommendation.

A. As discussed in more detail in Section VII, I applied the Constant Growth form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical CAPM, the Risk Premium Approach and the Expected Earnings Analysis. My recommendation also takes into consideration: (1) the Company's small size; (2) flotation costs; (3) the Company's customer concentration; (4) the Company's capital expenditure requirements; (5) the regulatory environment in which the Company operates; and (6) the Company's adjustment mechanisms. Finally, I considered the Company's proposed capital structure as compared to the capital structures of the proxy companies.[2] While I did not make any specific adjustments to my ROE estimates for any of these factors, I did take them into consideration in aggregate when determining where the Company's cost of equity falls within the range of analytical results.

Q. How is the remainder of your Direct Testimony organized?

A. Section III provides a summary of my analyses and conclusions. Section IV reviews the regulatory guidelines pertinent to the development of the cost of capital. Section V discusses current and prospective capital market conditions and the effect of those conditions on Cascade's cost of equity in Washington. Section VI explains my selection of a proxy group of natural gas utilities. Section VII describes my analyses and the analytical basis for the recommendation of the appropriate ROE

[2] The selection and purpose of developing a group of comparable companies will be discussed in detail in Section VI of my Direct Testimony.

for Cascade. Section VIII provides a discussion of specific regulatory, business, and financial risks that have a direct bearing on the ROE to be authorized for Cascade in this case. Section IX assesses the proposed capital structure of Cascade as compared with the capital structures of the utility operating subsidiaries of the proxy group companies. Section X presents my conclusions and recommendations for the market cost of equity.

III. SUMMARY OF ANALYSIS AND CONCLUSIONS

Q. Please summarize the key factors considered in your analyses and upon which you base your recommended ROE.

A. My analyses and recommendations considered the following:

- The *Hope* and *Bluefield* decisions [3] that established the standards for determining a fair and reasonable allowed ROE, including consistency of the allowed return with other businesses having similar risk, adequacy of the return to provide access to capital and support credit quality, and that result must lead to just and reasonable rates.
- The effect of current and prospective capital market conditions on investors' return requirements.
- The Company's regulatory, business, and financial risks relative to the proxy group of comparable companies and the implications of those risks in arriving at the appropriate ROE for Cascade.

[3] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944); Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia, 262 U.S. 679 (1923).

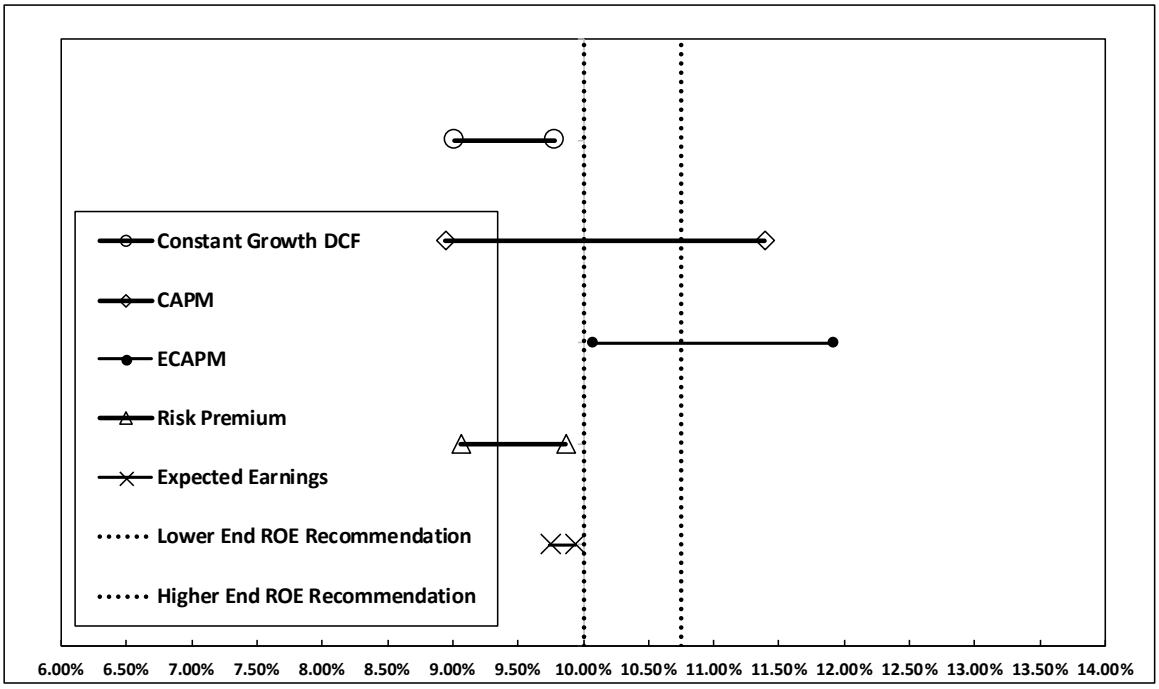
Q. Please explain how you considered those factors.

A. I have relied on several analytical approaches to estimate the Company's cost of equity based on a proxy group of publicly-traded companies. As shown in Figure 1, those ROE estimation models produce a wide range of results. My conclusion as to where, within that range of results, Cascade's ROE falls is based on the Company's business and financial risk relative to the proxy group. Although the companies in my proxy group are generally comparable to Cascade, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, it is reasonable to settle on a proxy group with similar, but not the same risk profiles, and adjust the results of the analysis either upwards or downwards within the reasonable range of results to account for any residual differences in risk.

Q. Please summarize the ROE estimation models that you considered to establish the range of ROEs for Cascade.

A. I considered the results of the Constant Growth DCF model using current dividends, earnings growth rates and stock prices. In addition, I considered three risk premium approaches, the CAPM, the ECAPM and a Bond Yield Plus Risk Premium methodology, as well as an Expected Earnings analysis. Figure 1 summarizes the range of results established using each of these estimation methodologies.

Figure 1: Summary of Cost of Equity Analytical results[4]



As shown in Figure 1 (and in Exhibit No.___(AEB-2), Schedule 1), the median DCF results are low compared to the CAPM results. It is common to consider multiple methodologies to estimate the cost of equity, and it is particularly important when the models are producing such a wide range of results.

The requested ROE is for the future rate period; therefore, the analyses supporting my recommendation rely on forward-looking inputs and assumptions (e.g., projected growth rates in the DCF model, forecasted risk-free rate and Market Risk Premium in the CAPM analysis, etc.) and take into consideration the current high valuations of utility stocks and the market's expectation for interest rates. The use of historical inputs and assumptions would tend to understate the required ROE

[4] The analytical results reflect the results of the Constant Growth DCF analysis excluding the results for individual companies that did not meet the minimum threshold of 7.00 percent.

for Cascade, when considering current and prospective conditions in capital markets.

As discussed in more detail in Sections V and VII, the DCF model is influenced by current market conditions that are not expected to be sustained in the long-term. Those market conditions result in lower estimates of the cost of equity using the DCF model. For example, the median low Constant Growth DCF[5] results (prior to exclusions for outliers) for the proxy group, ranging from 7.80 to 8.15 percent, are below an acceptable range of returns for a natural gas utility and lower than any authorized ROE for an electric utility or natural gas distribution utility in the U.S. since at least 1980.[6] Based on prospective capital market conditions, and the inverse relationship between the market risk premium and interest rates, I conclude that the median low DCF results do not provide a sufficient risk premium to compensate equity investors for the residual risks of ownership, including the risk that they have the lowest claim on the assets and income of Cascade.

Due to these concerns about the results produced by the DCF model, my ROE recommendation considers the median and median-high results of the DCF model, forward-looking CAPM and ECAPM analyses, a Bond Yield plus Risk Premium analysis, and an Expected Earnings analysis. I also consider company-specific risk factors and current and prospective capital market conditions.

[5] My DCF models generated a median low, median, and median high result. The median low result is the median of the proxy group DCF results calculated using the lowest earnings growth rate for each company from Value Line, Yahoo! Finance or Zacks.

[6] Source: Regulatory Research Associates, Rate Case History, January 1, 1980 – April 30, 2020.

Q. What is your recommended ROE for Cascade?

A. In addition to the analytical results presented in Figure 1, I also considered the level of regulatory, business, and financial risk faced by Cascade in Washington relative to the proxy group to establish the range of reasonable returns. Considering these factors, I believe a range from 9.90 percent to 10.40 percent is reasonable. This recommendation reflects the range of results for the proxy group companies, the relative risk of Cascade's natural gas operations in Washington as compared to the proxy group, and current capital market conditions. Within that range, a return of 10.30 percent is reasonable.

Q. Please summarize the analysis you conducted in determining that Cascade's requested capital structure is reasonable and appropriate.

A. Based on the analysis presented in Section IX of my testimony, I conclude that Cascade's proposed 50.40 percent common equity ratio is reasonable. To determine if Cascade's requested capital structure is reasonable, I reviewed the capital structures of the utility subsidiaries of the proxy companies. As shown in Exhibit No.___(AEB-2), Schedule 10, the results of that analysis demonstrate that the average equity ratios for the utility operating companies of the proxy group range from 48.52 percent to 63.05 percent with an average of 56.67 percent. Cascade's proposed common equity ratio of 50.40 percent is at the low end of the range of equity ratios for the utility operating subsidiaries of the proxy group companies and is therefore reasonable. However, it is important to note that the difference between the proposed equity ratio for Cascade and the average equity ratio for the proxy group companies is significant and should be considered in

setting the appropriate ROE for the Company, especially considering that Federal tax reform legislation has had a negative effect on the cash flows and credit metrics of regulated utilities.

Furthermore, a fundamental aspect of the financial regulation of utilities is assuring that the subject utility has a reasonable opportunity to earn a return on capital consistent with the return available on investments of similar risk. While this principle is most often discussed in terms of the allowed ROE, it is equally applicable to all aspects of the overall Rate of Return ("ROR"). The equity return, the product of the ROE and the equity ratio, (i.e., the Weighted Return on Equity ("WROE")), ultimately defines the return to shareholders and the product of the cost of debt and the debt ratio ensures that a company's debt obligations are met. Therefore, it is necessary to consider both the rates that are applied to debt and equity and the composition of the capital structure to determine the reasonableness of the ROR. As discussed in greater detail in Section IX, the Company's proposed common equity ratio of 50.40 percent is near the low end of the range of equity ratios for the companies in my proxy group. Taken together, the Company's proposed common equity ratio of 50.40 percent and requested ROE of 10.30 percent result in a WROE of 5.19 percent. This return reasonably balances the interests of customers and shareholders by enabling Cascade to maintain its financial integrity and therefore its ability to attract capital at reasonable terms and conditions under a variety of economic and financial market conditions.

IV. REGULATORY GUIDELINES

Q. Please describe the guiding principles to be used in establishing the cost of capital for a regulated utility.

A. The United States Supreme Court's precedent-setting Hope and Bluefield cases established the standards for determining the fairness or reasonableness of a utility's allowed ROE. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) that the end result, as opposed to the methodology employed, is the controlling factor in arriving at just and reasonable rates.[7]

Q. Has the Commission provided similar guidance in establishing the appropriate return on common equity?

A. Yes. In Docket Nos. UE-170485 and UG-170486, Avista Corporation's 2017 rate case, the Commission stated:

> The Commission's final determination of an acceptable ROE recognizes fully the guiding principles of regulatory ratemaking that require us to reach an end result that yields fair, just, reasonable, and sufficient rates.[8]

My view accords with this guidance that an allowed ROR must be sufficient to enable regulated companies, like Cascade, the ability to attract capital on reasonable terms.

[7] *Hope,* 320 U.S. 591 (1944); *Bluefield*, 262 U.S. 679 (1923).
[8] *Wash. Utils. & Transp. Comm'n v. Avista Corp.*, Docket Nos. UE-170485 and UG-170486, Order 07, ¶ 59 (April 26,2018) (hereinafter "Avista Order 07").

Q. Why is it important for a utility to be allowed the opportunity to earn an ROE that is adequate to attract capital at reasonable terms?

A. An ROE that is adequate to attract capital at reasonable terms enables the Company to continue to provide safe, reliable natural gas service while maintaining its financial integrity. To the extent the Company is provided the opportunity to earn its market-based cost of capital, neither customers nor shareholders are disadvantaged.

Q. Is a utility's ability to attract capital also affected by the ROEs that are authorized for other utilities?

A. Yes. Utilities compete directly for capital with other investments of similar risk, which include other natural gas and electric utilities. Therefore, the ROE awarded to a utility sends an important signal to investors regarding whether there is regulatory support for financial integrity, dividends, growth, and fair compensation for business and financial risk. The cost of capital represents an opportunity cost to investors. If higher returns are available for other investments of comparable risk, investors have an incentive to direct their capital to those investments. Thus, an authorized ROE significantly below authorized ROEs for other natural gas and electric utilities can inhibit the utility's ability to attract capital for investment in Washington.

Likewise, because Cascade is a subsidiary of MDU Resources, Cascade competes with the other MDU Resources subsidiaries for investment capital. In determining how to allocate its finite capital resources, it would be reasonable for MDU Resources to consider the authorized ROE of each of its subsidiaries.

Q. What are your conclusions regarding regulatory guidelines?

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility services, a utility must have the opportunity to recover the return of, and the market-required return on, its invested capital. Because utility operations are capital-intensive, regulatory decisions should enable the utility to attract capital at reasonable terms under a variety of economic and financial market conditions; doing so balances the long-term interests of the utility and its ratepayers.

The financial community carefully monitors the current and expected financial condition of utility companies, and the regulatory framework in which they operate. In that respect, the regulatory framework is one of the most important factors in both debt and equity investors' assessments of risk. The Commission's order in this proceeding, therefore, should establish rates that provide the Company with the opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable terms under a variety of economic and financial market conditions; (2) sufficient to ensure sound financial management and firm integrity; and (3) commensurate with returns on investments in enterprises with similar risk. To the extent Cascade is authorized the opportunity to earn its market-based cost of capital, the proper balance is achieved between the interests of customers and shareholders.

V. CAPITAL MARKET CONDITIONS

Q. Why is it important to analyze capital market conditions?

A. The ROE estimation models rely on market data that are either specific to the proxy group, in the case of the DCF model, or the expectations of market risk, in the case

of the CAPM. The results of the ROE estimation models can be affected by prevailing market conditions at the time the analysis is performed. While the ROE that is established in a rate proceeding is intended to be forward-looking, the practitioner uses current and projected market data, specifically stock prices, dividends, growth rates and interest rates in the ROE estimation models to estimate the required return for the subject company.

As discussed in the remainder of this section, current market conditions affect the results of the ROE estimation models. As a result, it is important to consider the effect of these conditions on the ROE estimation models when determining the appropriate range and recommended ROE for a future period. If investors do not expect current market conditions to be sustained in the future, it is possible that the ROE estimation models will not provide an accurate estimate of investors' required return during that rate period. Therefore, it is very important to consider projected market data to estimate the return for that forward-looking period.

Q. What factors are affecting the cost of equity for regulated utilities in the current and prospective capital markets?

A. The cost of equity for regulated utility companies is being affected by several factors in the current and prospective capital markets, including: (1) the current market volatility has created a short-term aberration in the market which must be carefully considered when selecting the inputs for the ROE estimation models; 2) utility stock valuations, which are inversely related to dividend yields, are currently unsustainably high given investors' demand for defensive sectors during the short-

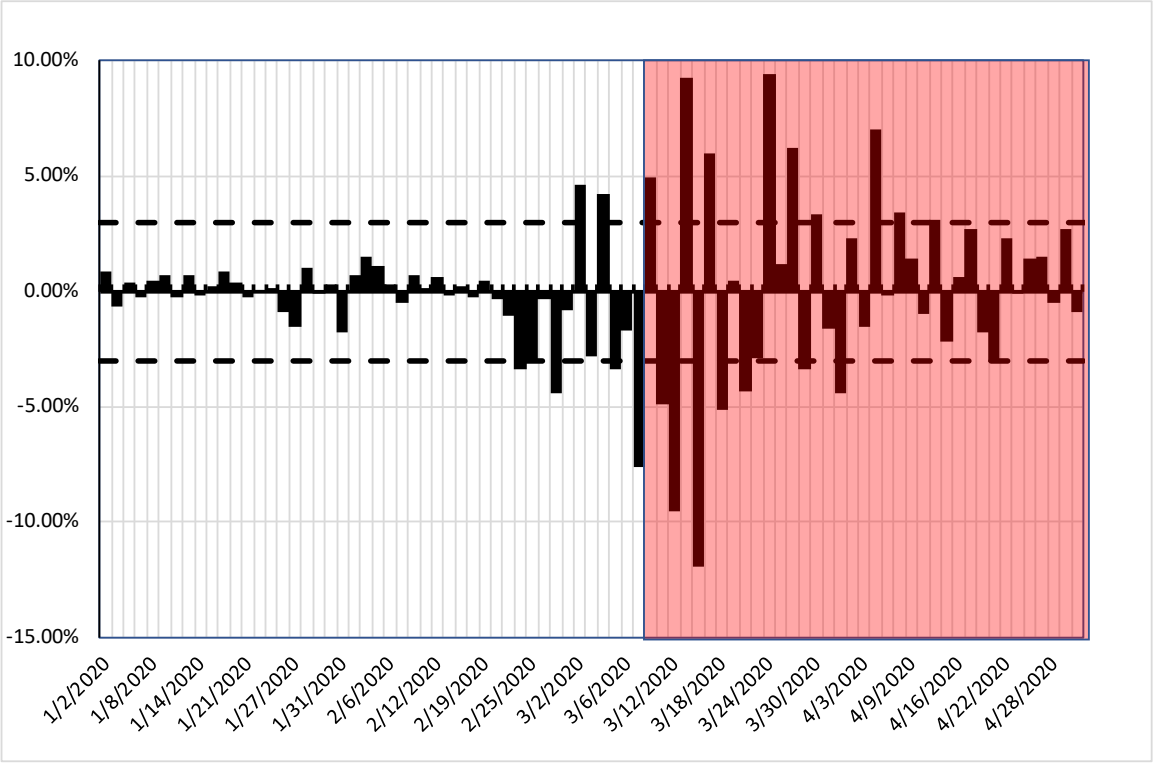
term market dislocation; and (3) recent Federal tax reform. In this section, I discuss each of these factors and how it affects the models used to estimate the cost of equity for regulated utilities.

A. Current Market Conditions

Q. Please summarize current market conditions.

A. In 2020, market conditions have been extremely volatile. In January and early February 2020, major market indices were generally increasing, with many reaching new threshold levels. By mid-February, as the global health crisis became more apparent, market conditions became increasingly more volatile. In mid-February utility stock prices reached an all-time high, followed by a significant decline in the overall market and utility stocks. Market conditions in March 2020 were more volatile than the last half of February. As shown in Figure 2, the S&P 500 Index swung by more than 3 percent in 16 of the 22 trading days in the month of March. As discussed in more detail later in my testimony, on March 23, 2020, the Federal Reserve implemented unprecedented monetary policy measures with the goal of providing liquidity and stabilizing market conditions. The magnitude of these policies identifies the level of risk in the marketplace; however, the result has been that equity prices in April were less volatile than in March.

Figure 2: S&P 500 Index – Daily Price Change – January-April 2020

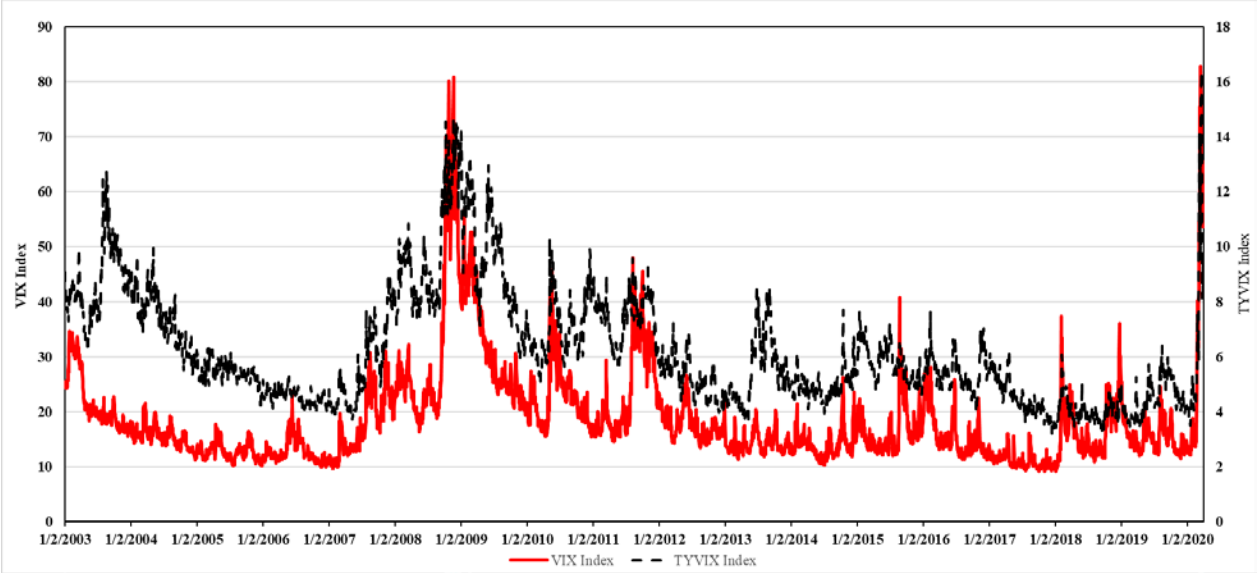


Q. Have you reviewed any other indicators that measure volatility in the financial markets?

A. Yes, I reviewed two other measures of volatility in financial markets: 1) the CBOE Volatility Index ("VIX"), and 2) the U.S. Treasury Note Volatility Index ("TYVIX"). The VIX measures investors' expectation of volatility in the S&P 500 over the next 30 days. The TYVIX, also published by CBOE, measures investors' expectation of volatility in the 10-year Treasury Bond over the next 30 days. As shown in Figure 3, the VIX and TYVIX have recently reached levels not seen since the Great Recession of 2008/09. For example, the VIX was 82.69 on March 16, 2020. The VIX has not reached 80.00 since November 2008; further, it is important to note that the highest level reached during the Great Recession of 2008/09 was 80.86. Similarly, the TYVIX was 16.39 on March 19, 2020. Since at least January

2003, the TYVIX has never exceeded 15.00, including during the Great Recession of 2008/09. These indicators show that COVID-19 has caused an increase in the level of uncertainty and volatility in the market even greater than during the Great Recession of 2008/09.

Figure 3: CBOE VIX and TYVIX – January 2003 – April 2020



Q. What steps have the Federal Reserve and Congress taken to stabilize financial markets and support the economy?

A. On March 23, 2020, the Federal Reserve began expansive programs to support credit to large employers; the Primary Market Corporate Credit Facility ("PMCCF") to provide liquidity for new issuances of corporate bonds, and the Secondary Market Corporate Credit Facility ("SMCCF") to provide liquidity for outstanding corporate debt issuances. Further, the Federal Reserve supported the flow of credit to consumers and businesses through the Term Asset-Backed

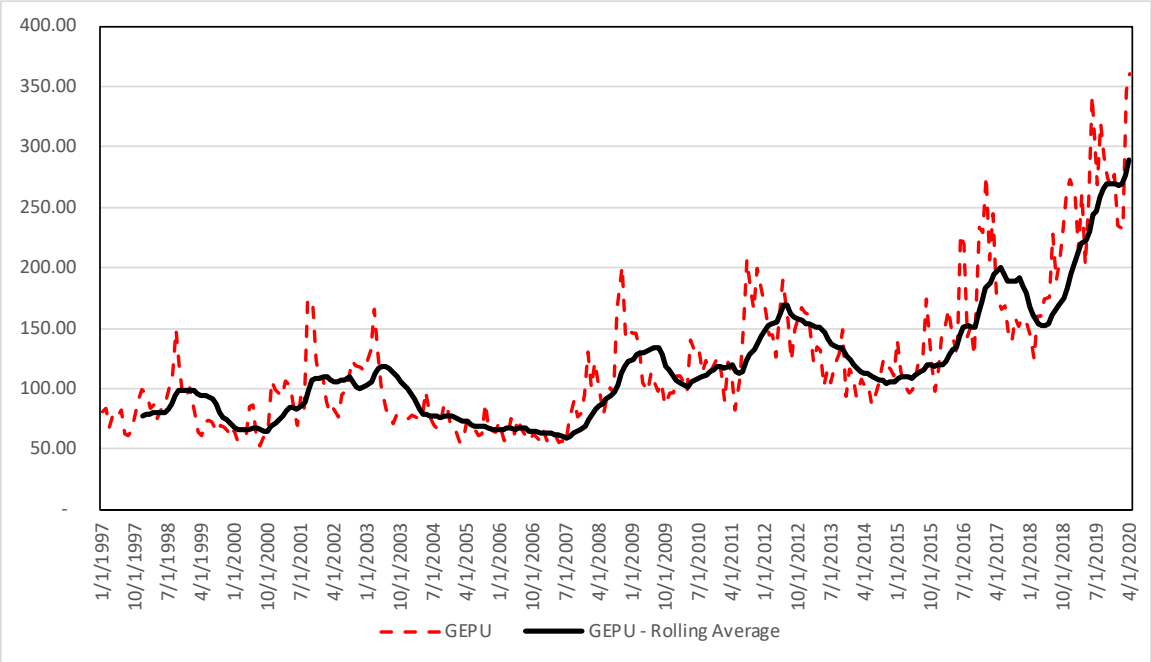
Securities Loan Facility ("TALF").[9] Additionally, on March 27, 2020, the Coronavirus Aid, Relief, and Economic Security ("CARES") Act was signed into law which is a large fiscal stimulus package aimed at also mitigating the economic effects of the coronavirus. While these expansive programs have provided for greater price stability, both the VIX and the TYVIX remained well above long-term historical normal levels.

Q. Have you reviewed any indicators that measure the uncertainty in the global economy related to COVID-19?

A. Yes. I reviewed the global economic policy uncertainty index developed by economists Scott Baker, Nicholas Bloom and Steven Davis. The index is a GDP-weighted average of the economic policy uncertainty index of 21 countries. The economic policy uncertainty index measures the frequency that articles in publications of a country discuss economic policy uncertainty.[10] As shown in Figure 4, uncertainty regarding global economic policy is at its highest level since at least 1997, with the largest increase occurring in the last two years as a result of the escalating trade dispute between the U.S. and China and the spread of COVID-19.

[9] Federal Reserve Board Press Release, "Federal Reserve announces extensive new measures to support the economy", March 23, 2020.
[10] Source: Economic Policy Uncertainty: https://www.policyuncertainty.com/index.html.

Figure 4: Global Economic Policy Uncertainty Index

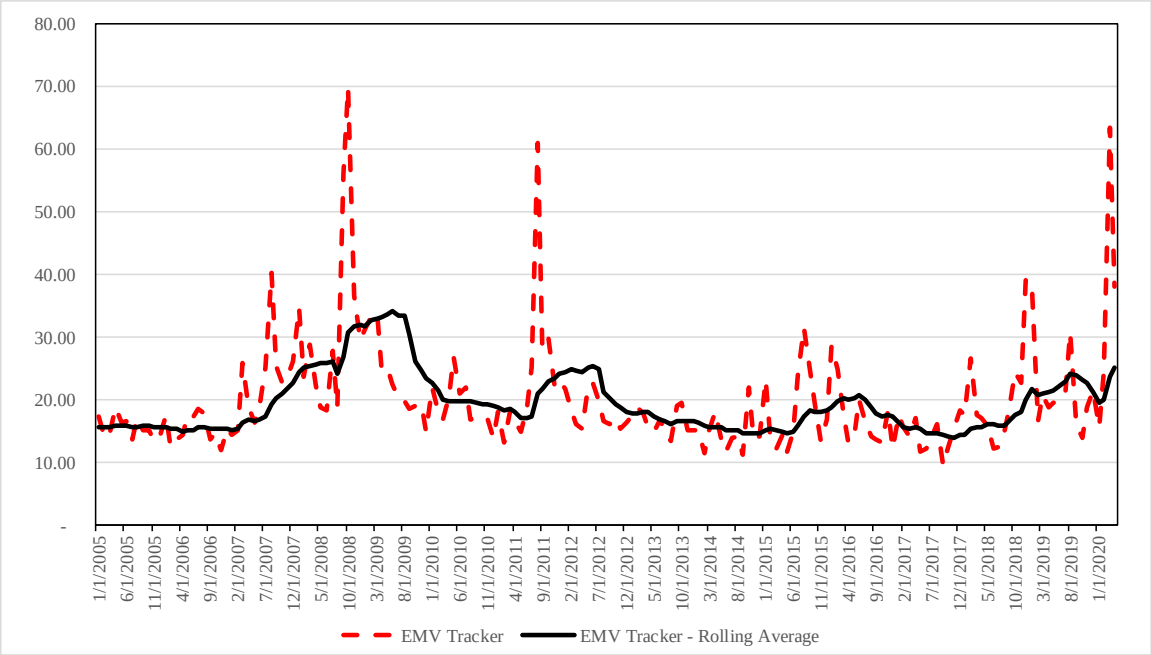


Q. Has the increased global economic uncertainty resulted in increased volatility in financial markets?

A. Yes, it has. As shown in Figure 3 above, the VIX has recently been at levels exceeding those during the Great Recession of 2008/09 and remains well above the long-term historical average. In addition, I also reviewed the U.S. equity market volatility index which, similar to the global economic policy uncertainty index, is an index developed by Scott Baker, Nicholas Bloom and Steven Davis from the National Bureau of Economic Research. The U.S. equity market volatility index measures the frequency that articles in U.S. publications discuss equity market volatility. In addition, this index tracks the VIX and the realized volatility of returns on the S&P 500. As shown in Figure 5, the U.S. equity market volatility index has recently increased to its highest level since at least 2011. The increase in the index between 2017 and 2020 can be attributed to recent external events such as the trade

war between the U.S. and China and COVID-19, as investors have become increasingly concerned regarding the short-term effects that these events may have on the U.S. economy.

Figure 5: US Equity Market Volatility Index



Q. Have rating agencies commented on the effects of current market conditions on regulated utilities?

A. Yes. Standard & Poor's ("S&P") recently downgraded the outlook on the entire North American utilities sector indicating that 25 percent of the industry was previously on a negative outlook or CreditWatch with negative implications and that S&P expected that COVID-19 would create incremental pressure and that a recession would lead to an increasing number of downgrades and negative outlooks for utilities.[11]

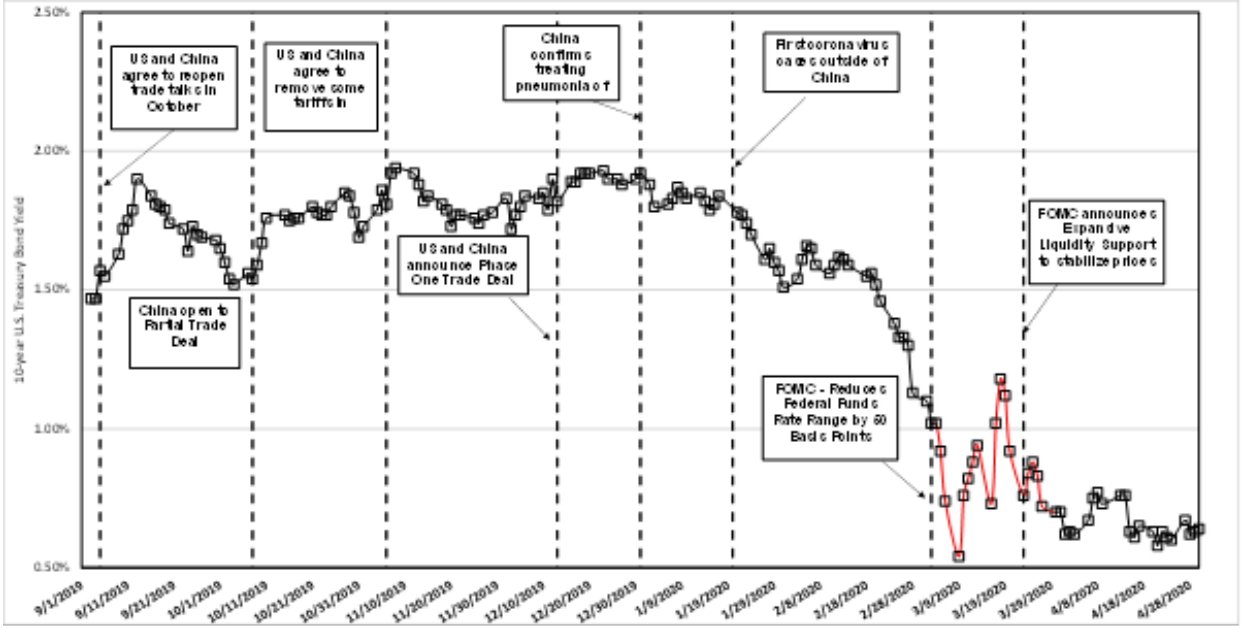
[11] Standard & Poor's Ratings Direct, COVID-19: The Outlook for North American Regulated Utilities Turns Negative, April 2, 2020.

Q. How has the recent uncertainty in the market affected the yields on long-term government bonds?

A. The uncertainty surrounding the trade dispute between the U.S. and China and the spread of COVID-19 has resulted in a flight-to-quality as investors have purchased safer assets such as U.S. Treasuries due to increased fears of a recession. This has been increasingly evident over the past few months, as investors responded to news of increases in tariffs by both China and the U.S. and the number of coronavirus cases outside of China, as the effects of the virus spread globally.

Figure 6 highlights significant macroeconomic and global events and the reactions of investors, as shown through the yield on the 10-year U.S. Treasury bond between September 1, 2019, and April 30, 2020. As shown in Figure 6, investors responded to both positive and negative developments regarding the trade dispute with China as well as policy announcements from the Federal Reserve. As shown in this Figure, the yield on the 10-year Treasury Bond fluctuated between 1.50 percent and 2.00 percent between September and December 2019. In 2020, the economic effects of the spread of COVID-19 and the intervention of the Federal Reserve and the Federal Government have resulted in a marked decline in the yield on the 10-year Treasury bond. Furthermore, since March 9th, the 10-year Treasury Bond yield has experienced extreme volatility, ranging from 0.54 percent to 1.18 percent, as investors have responded to both positive and negative news regarding the spread of COVID-19 and its economic effects. In summary, the emergence of COVID-19 in China and its subsequent spread across the globe has resulted in unprecedented volatility in the financial markets.

Figure 6: 10-year U.S. Treasury Yield



Q. What are your conclusions regarding the recent market volatility and its effect on the cost of equity for Cascade?

A. As discussed above, investors responded to the trade war between the U.S. and China and more recently the spread of COVID-19 by divesting higher-risk assets and purchasing lower-risk assets such as U.S. Treasury bonds or defensive sector equites such as utilities. Furthermore, the constant news regarding the spread of COVID-19 and its economic effects have resulted in an abundance of information for investors to consider. This has resulted in unprecedented volatility in financial markets as investors have rotated in and out of various assets classes responding to both positive and negative developments. Therefore, ROE estimation models which rely on recent historical market data must be interpreted with extreme caution. For example, the Constant Growth DCF model relies on the average share prices for the proxy companies, which have been extremely volatile in the last

several months and are not likely representative of what should be expected during the period that Cascade's rates will be in effect. This highlights two key factors that must be considered when determining the ROE for Cascade: 1) current and prospective market conditions should be considered when determining where within the range of results Cascade's ROE should be set, and 2) where possible, it is necessary to consider projected market data in each of the models, which reflect economists' expectations for the market conditions that will prevail during the period that Cascade's rates will be in effect.

B. The Effect of Market Conditions on Valuations

Q. Please provide a brief summary of the recent monetary policy actions of the Federal Reserve.

A. The Federal Reserve met on March 15, 2020 and acknowledged that the recent spread of COVID-19 poses increased risks to economic activity in the U.S. and therefore lowered the federal funds rate by 100 basis points, which resulted in a target range of 0.00 percent to 0.25 percent.[12] This was the second unscheduled meeting in March, with the first occurring on March 3rd when the Federal Reserve reduced the federal funds rate by 50 basis points. In addition to the reduction in the federal funds rate, the Federal Reserve also announced plans to increase its holdings of both Treasury and mortgage-backed securities.[13] As discussed previously, on March 23, 2020, the Federal Reserve also implemented an expansive credit

[12] FOMC, Federal Reserve Press Release, March 15, 2020, at 1.
[13] *Id.*, at 2.

program designed to provide liquidity to corporations, large employers, consumers, businesses and municipalities.[14] This program initially targeted investment grade corporations, but in April 2020 was expanded to include corporations that were investment grade rated as of March 22, 2020. The PMCF and SCCF programs were initially funded at $75 billion, but the combined size of these programs, including the addition of below investment grade corporate debt is proposed to be up to $850 billion.[15]

It is important to view the recent Fed policy decisions in the context of the reactions to global exogenous events, in particular COVID-19. The recent spread of COVID-19 has affected the global economy and caused a rise in volatility in the financial markets; thus, the Federal Reserve reacted by reducing the federal funds rate to minimize the effect of COVID-19 on the U.S. economy. At his press conference following the Federal Reserve meeting on April 29, 2020 at which the Fed decided to maintain the level of the federal funds rate from the March 15th meeting, Chairman Powell noted the following regarding the expected duration of the effects COVID-19:

> So, then we will enter this new phase, and we're just beginning to maybe do that, where we will, formal measures that require social distancing will be rolled back gradually and at different paces in different parts of the country. And, in time, during this period, the economy will begin to recover. People will come out of their homes, start to spend again. We'll see unemployment go down; we'll see economic activity pick up. And, you know, when will that be? It's very hard to say. But let's just say, for this purpose, that it's in the third quarter. So, as I mentioned earlier, that could be a fairly, you know, a large increase. Given the size of the fall, the increase could also be

[14] Federal Reserve Board Press Release, "Federal Reserve announces extensive new measures to support the economy", March 23, 2020.
[15] FOMC Term Sheet, Primary and Secondary Corporate Credit Facilities, April 9, 2020.

> substantially large, although it's unlikely that it would bring us quickly all the way back to pre-crisis levels. Of course, this is the period as well, that carries the risk of new outbreaks of the virus, something we really want to avoid. I think then, after that period, at some point, you will have, you know, the kind of formal social distancing measures will be gone, but you'll still be left with, probably, a level of caution on the part of people who will worry and probably keep worrying for some time. You would think that behavior will change as people gain confidence, so that the sooner we get the virus under control, the sooner people can regain that confidence and regain their economic activity. I think trying to be really precise about when that might happen and what the numbers might look like is, I think it's very tough to do that.[16]

Q. How has the Federal Reserve's monetary policy affected capital markets in recent years?

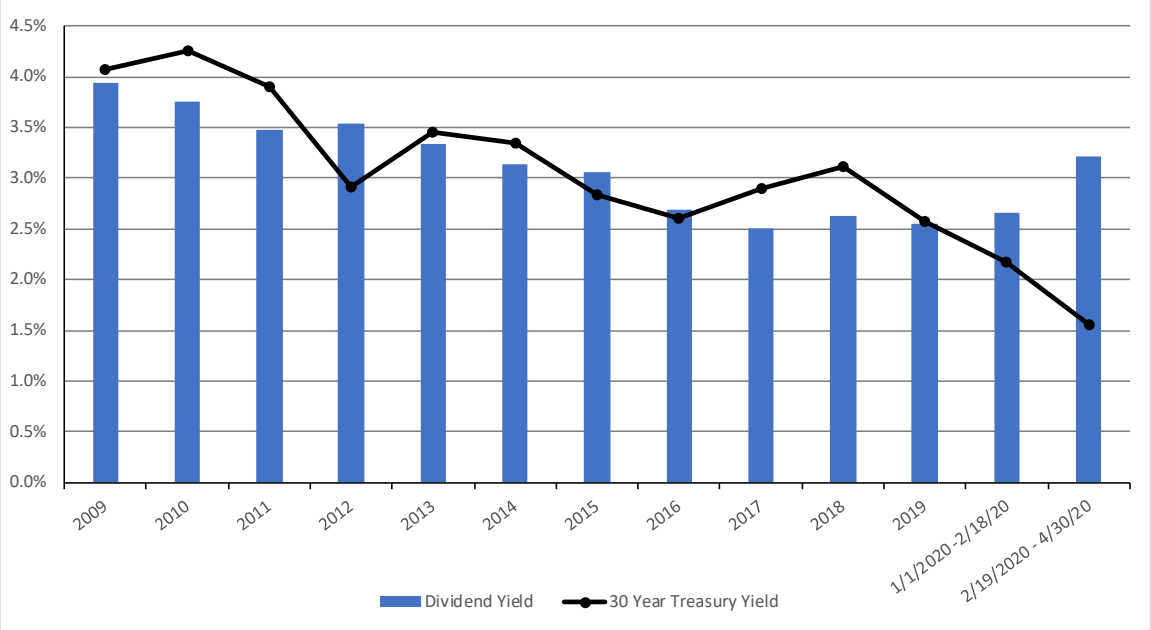
A. Extraordinary and persistent federal intervention in capital markets artificially lowered government bond yields after the Great Recession of 2008-2009, as the Federal Open Market Committee ("FOMC") used monetary policy (both reductions in short-term interest rates and purchases of Treasury bonds and mortgage-backed securities) to stimulate the U.S. economy. As a result of very low or zero returns on short-term government bonds, yield-seeking investors have been forced into longer-term instruments, bidding up prices and reducing yields on those investments. As investors have moved along the risk spectrum in search of yields that meet their return requirements, there has been increased demand for dividend-paying equities, such as natural gas and electric utility stocks.

[16] FOMC, Transcript of Chair Powell's Press Conference, April 29, 2020, at 12-13.

Q. How have recent market conditions affected the valuations and dividend yields of utility shares?

A. The Federal Reserve's accommodative monetary policy has caused investors to seek alternatives to the historically low interest rates available on Treasury bonds. A result of this search for higher yield is that share prices for many common stocks, especially dividend-paying stocks such as utilities, have been driven higher while the dividend yields (which are computed by dividing the dividend payment by the stock price) have decreased to levels well below the historical average. As shown in Figure 7, over the period from 2009 through February 18, 2020 (i.e., the peak of the market prior to the recent decline resulting from the effects of COVID-19), Treasury bond yields and utility dividend yields had declined. While investors have responded to the economic effects of COVID-19, resulting in heightened volatility and a recent decline in the market, it is important to highlight the relative performance of natural gas utilities during this time period. As shown in Figure 7, while the stock prices of natural gas utilities have declined, which has resulted in an increase in dividend yields, the average dividend yield for natural gas utilities over the period from February 19, 2020 through April 30, 2020 was 3.21 percent, which remains low compared to historical dividend yields.

Figure 7: Dividend Yields for Natural Gas Utility Stocks[17]



Q. Have equity analysts commented on the valuations of utility stocks?

A. Yes. Several equity analysts have recognized that utility stock valuations are very high relative to historical levels even after the decline in share prices that occurred as a result of the economic effects of COVID-19. In the electric utilities industry report, Value Line noted:

> Utilities are usually seen as a safe haven when the markets are in turmoil. Most of these stocks have declined far less than the broader market averages, but have been much more volatile than their high Price Stability Indexes suggest. Even a Safety rank of 1 (Highest) does not necessarily mean that a sharp decline cannot occur. Additionally, there has been a wide variance in the performance of these equities. The stock of Xcel Energy has advanced modestly in price this year, but the stock of Edison International has fallen more than 20% in price. The average dividend yield of stocks in this industry has risen to 3.55% after having fallen below 3% before the market tumbled in late February. Because the broader market has declined far more than the Electric Utility Industry, the median

[17] Source: Bloomberg Professional. Figure 7 includes 2020 data through April 30, 2020.

> yield of dividend-paying stocks in The Value Line Investment Survey is not considerably lower than the median of the equities in this group.[18]

This is further supported by a recent Edward Jones report on the utility sector:

> Utility valuations have become more attractive as shares have fallen from recent highs. On a price-to-earnings basis, shares are now trading closer to their historical averages, after trading near all-time highs. Until early this year, we have seen utility valuations moving with interest rate movements, although there have been exceptions to this. Overall, however, we believe the low-interest-rate environment has been the biggest factor in pushing utilities higher since many investors buy them for their dividend yield.[19]

As noted by equity analysts, utility stocks have experienced high valuations and low dividend yields, driven by investors moving into dividend paying stocks. This has occurred as a result of a) the low interest rates in the bond market, and b) as discussed above, the increased economic uncertainty in the market which has caused equity investors to rotate into defensive sectors such as utilities from cyclical sectors, which are more likely to be affected by economic downturns. Conversely, if economic conditions improve and interest rates increase, bonds become a substitute for utility stocks and equity investors are more likely to rotate back to cyclical sectors, which results in an increase in dividend yields for defensive sectors such as utilities. As noted in the prior section of my testimony, this change in market conditions that is expected over the long-term implies that the ROE

[18] Value Line Investment Survey, Electric Utility (West) Industry, April 24, 2020, at 2214.
[19] Andy Smith. Edward Jones, Utilities Sector Outlook (March 24, 2020), at 2.

calculated using historical market data in the DCF model may understate the forward-looking cost of equity.

Q. What is the effect of high valuations on utility stocks on the DCF model?

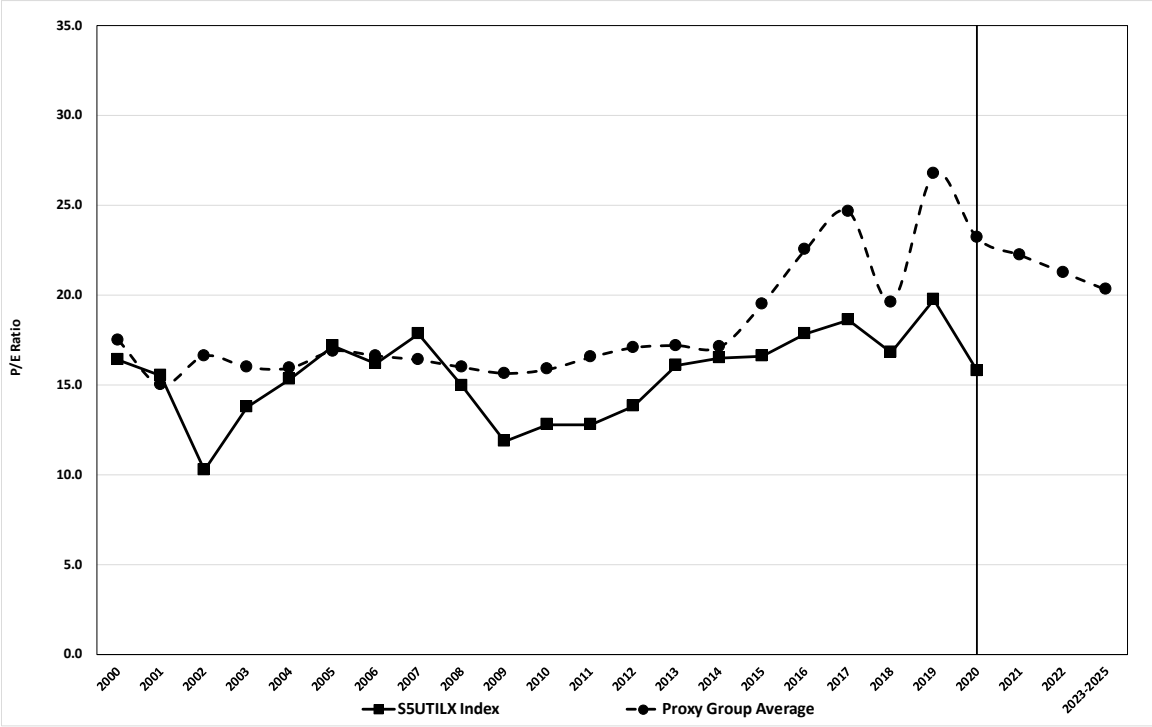
A. High valuations have the effect of depressing the dividend yields, which results in overall lower estimates of the cost of equity from the DCF model.

Q. How do the valuations of public utilities compare to the historical average?

A. Figure 8 summarizes the average historical and projected Price-to-Earnings ("P/E") ratios for the proxy companies calculated using data from Bloomberg Professional and Value Line. As shown in Figure 8, the average P/E ratio for the proxy companies increased from 2018 to 2020 as a result of uncertainty in capital markets surrounding the trade dispute between the U.S. and China and the spread of COVID-19. The uncertainty resulted in investors shifting to defensive sectors such as utilities and consumer staples. However, the P/E ratios for the proxy companies have declined slightly in 2020 as investors have rotated from utilities to Treasury Bonds due to the economic effects of COVID-19. Although, as of April 30, 2020, the valuations of utility stocks and thus the P/E ratios are still at unsustainable levels. For example, the average P/E ratio for the proxy group from February 19, 2020 through April 30, 2020 (i.e., the period since the decline in the market as a result of COVID-19) was 21.86 which is well above the historical average for the period of 2000-2020 of 18.05. It is not reasonable to expect the proxy companies to maintain P/E ratios that are well above long-term averages. As shown in Figure 8, Value Line is projecting that P/E ratios will decline over the period of 2023 through 2025. All else equal, if P/E ratios for the proxy companies decline, as

Value Line projects, the ROE results from the DCF model would be higher. Therefore, the DCF model using historical market data is likely understating the forward-looking cost of equity for the proxy group companies.

Figure 8: Average Historical Proxy Group P/E Ratios[20]



Q. Have you reviewed any other market indicators that compare the current valuation of utilities to the historical average?

A. Yes. To further assess how the currently low interest rate environment has affected the valuations of the companies in my proxy group, I reviewed the price/earnings to growth ("PEG") ratio for the S&P Utilities Index. The PEG ratio is commonly used by investors to determine if a company is considered over- or under-valued. The ratio compares the P/E ratio of a company to the expected growth rate of future

[20] Bloomberg Professional, Data through April 30, 2020 and Value Line Investment Survey, February 28, 2020.

earnings. This allows investors to compare companies with similar P/E ratios but different earnings growth projections. If two companies have a P/E ratio of 20, but Company A is growing at a rate of 6 percent and Company B is growing at a rate of 15 percent, then on a relative valuation basis Company B is the better investment.

As shown in a report published by Yardeni Research, Inc., the PEG ratio for the S&P Utilities Index is significantly higher than it has historically been because of the accommodative monetary policy pursued by the Federal Reserve following the Great Recession of 2008/09. [21] In general, stocks with lower long-term PEG ratios are considered better values. As the PEG ratio increases above the long-term historical average, as has been the case with the S&P Utilities Index, the stocks are considered relatively over-valued unless the growth rate increases to support the higher valuation. As of April 2020, the PEG ratio for the S&P Utilities Index is close to 4.0, which indicates that many of the stocks in the index are currently trading at levels well above the historical average. This analysis supports the P/E ratio projections from Value Line for utilities, which as shown in Figure 8, are expected to decline.

C. Effect of Tax Reform on the ROE and Capital Structure

Q. Are there other factors that should be considered in determining the cost of equity for Cascade?

A. Yes. The effect of the TCJA should also be considered in the determination of the cost of equity. It is also relevant to setting the equity ratio in the capital structure,

[21] Yardeni Research, Inc. "S&P 500 Industry Briefing: Utilities." May 7, 2020, at 5.

which I address in Section IX of my testimony. The credit rating agencies have commented on the effect of the TCJA on regulated utilities. In summary, the TCJA is expected to reduce utility revenues due to the lower federal income taxes, the end of bonus depreciation, and the requirement to return excess Accumulated Deferred Income Taxes ("ADIT"). This change in revenue reduces Funds From Operations ("FFO") metrics across the sector, and absent regulatory mitigation strategies, has led to weaker credit metrics and negative ratings actions for some utilities.[22]

Q. Have credit or equity analysts commented on the effect of the TCJA on utilities?

A. Yes. Each of the credit rating agencies has indicated that the TCJA would have an overall negative credit impact on regulated operating companies of utilities and their holding companies due to the reduction in cash flow that results from the change in the federal tax rate and the loss of bonus depreciation.[23,24]

Q. Has the Commission recognized that the TCJA has had an adverse impact on utility cash flows?

A. Yes. In Avista's 2017 rate case, the Commission "note[d] the TCJA will increase stress on the Company's balance sheet and credit metrics as short-term cash flows are impacted by customer refunds."[25]

[22] FitchRatings, Special Report, What Investors Want to Know, "Tax Reform Impact on the U.S. Utilities, Power & Gas Sector," January 24, 2018.
[23] Standard & Poor's Ratings, "Industry Top Trends 2019, North America Regulated Utilities", November 8, 2018.
[24] FitchRatings, Special Report, What Investors Want to Know, "Tax Reform Impact on the U.S. Utilities, Power & Gas Sector", January 24, 2018.
[25] Avista Order 07, ¶ 72.

Q. Has Moody's responded to the increased risk for utilities resulting from the TCJA?

A. Yes. Moody's downgraded the outlook for the entire regulated utility industry from Stable to Negative for the first time ever, citing ongoing concerns about the negative effect of the TCJA on cash flows of regulated utilities. Since mid-2018, Moody's has downgraded the credit ratings of several utilities based in part on the effects of tax reform on financial metrics. As shown in Figure 9, the downgrades have continued in recent months.

Figure 9: Credit Rating Downgrades Resulting from TCJA

Utility	Rating Agency	Credit Rating before TCJA	Credit Rating after TCJA	Downgrade Date
Consolidated Edison Company of New York	Moody's	A3	Baa1	3/17/2020
Consolidated Edison, Inc.	Moody's	Baa1	Baa2	3/17/2020
Washington Gas Light Company	Moody's	A2	A3	1/30/2020
Public Service Co. of North Carolina, Inc.	Moody's	A3	Baa1	1/30/2020
Wisconsin Power and Light Company	Moody's	A2	A3	12/11/2019
Wisconsin Gas LLC	Moody's	A2	A3	11/20/2019
Vectren Utility Holdings	Moody's	A2	A3	10/25/2019
Southern Indiana Gas & Electric Company	Moody's	A2	A3	10/25/2019
Indiana Gas Company	Moody's	A2	A3	10/25/2019
El Paso Electric Company	Moody's	Baa1	Baa2	9/17/2019
Questar Gas Company	Moody's	A2	A3	8/15/2019
DTE Gas Company	Moody's	A2	A3	7/22/2019
South Jersey Gas Company	Moody's	A2	A3	7/17/2019
Central Hudson Gas & Electric	Moody's	A2	A3	7/12/2019
Oklahoma Gas & Electric Company	Moody's	A2	A3	5/31/2019
American Water Works	Moody's	A3	Baa1	4/1/2019
Niagara Mohawk Power Corporation	Moody's	A2	A3	3/29/2019
KeySpan Gas East Corporation (KEDLI)	Moody's	A2	A3	3/29/2019
Xcel Energy	Moody's	A3	Baa1	3/28/2019
ALLETE, Inc.	Moody's	A3	Baa1	3/26/2019
Brooklyn Union Gas Company (KEDNY)	Moody's	A2	A3	2/22/2019
Avista Corp.	Moody's	Baa1	Baa2	12/30/2018
Consolidated Edison Company of New York	Moody's	A2	A3	10/30/2018

Utility	Rating Agency	Credit Rating before TCJA	Credit Rating after TCJA	Downgrade Date
Consolidated Edison, Inc.	Moody's	A3	Baa1	10/30/2018
Orange and Rockland Utilities	Moody's	A3	Baa1	10/30/2018
Southwestern Public Service Company	Moody's	Baa1	Baa2	10/19/2018
Dominion Energy Gas Holdings	Moody's	A2	A3	9/20/2018
Piedmont Natural Gas Company, Inc.	Moody's	A2	A3	8/1/2018
WEC Energy Group, Inc.	Moody's	A3	Baa1	7/12/2018
Wisconsin Energy Capital	Moody's	A3	Baa1	7/12/2018
Integrys Holdings Inc.	Moody's	A3	Baa1	7/12/2018
OGE Energy Corp.	Moody's	A3	Baa1	7/5/2018
Oklahoma Gas & Electric Company	Moody's	A1	A2	7/5/2018

Q. Has Cascade's credit rating been downgraded recently?

A. Yes. In August 2018, Fitch downgraded Cascade from A- to BBB+ due to a much weaker financial profile that resulted from the rate case decision in the Company's Washington rate case and an elevated capital expenditure program that is expected to increase leverage over the near-term.[26] With respect to the rate case decision in Washington, Fitch viewed unfavorably "the below-average 9.4% authorized ROE and 49% equity ratio" and the Commission's decision to prevent Cascade from retaining the excess taxes collected between the period that the TCJA went into effect (January 1, 2018) and the date that Cascade's new rates would go in effect (August 1, 2018).[27] According to Fitch, the Commission's decision was expected to impact Cascade's ability to earn its authorized ROE, and Fitch noted that the Company has been underearning its authorized return for a few years.[28] Fitch's downgrade of Cascade highlights the importance of authorizing an ROE in this

[26] FitchRatings, Fitch Affirms MDU Resources, Centennial Energy; Downgrades Cascade; Outlook Stable, August 1, 2018.
[27] *Ibid.*
[28] *Ibid.*

proceeding that is sufficient to maintain the credit quality of the Company while continuing to allow Cascade the ability to attract capital at reasonable terms. This is particularly important over the near term given the Company's significant capital expenditure plan.

Q. Have other utility commissions recognized that the TCJA has had an adverse impact on utility cash flows?

A. Yes. The Public Utility Commission of Oregon ("OPUC"), the Wyoming Public Service Commission ("Wyoming PSC") and the Utah Public Service Commission ("Utah PSC") have acknowledged the negative effect of the TCJA on the cash flow of utilities. In February 2019, the OPUC adopted OPUC Staff's memo recommending approval of an application by Avista Corp. ("Avista") to issue stock. OPUC Staff's memo included the following statements about the TCJA and the importance of maintaining strong credit ratings:

> Staff finds that the Tax Cuts and Jobs Act of 2017 created unanticipated stresses on the Company's credit ratings. The requested authorization signals to rating agencies that the Company is committed to the equity portion of its capital structure. However, it is Staff's finding that restoring a notch in credit ratings involves more than just remedying the cause for the downgrade. On December 21, 2018, Moody's stated, "Avista's credit profile reflects its low-risk vertically integrated electric and gas utility business, regulatory uncertainty in WA and the expected negative cash flow impact of tax reform." Authorization herein as recommended by Staff starts the process of addressing rating agency concerns and restoring a positive credit outlook.[29]

[29] In the Matter of Avista Corporation, dba Avista Utilities, Application for Authorization to Issue 3,500,000 Shares of Common Stock, Docket UF 4308, Order No. 19-067 (Feb. 23, 2019).

In July 2019, the OPUC approved Avista's application to issue debt securities, adopting OPUC Staff's memo stating that "Raising the Company's credit ratings back up a notch will require hard work and persistence on the part of Avista's finance group as well as a supportive regulatory environment and achieving target metrics."[30]

In January 2019, the OPUC adopted OPUC Staff's memo recommending approval of Portland General Electric Company's ("PGE") application to refresh a revolving credit facility. Staff's memo contained similar observations about the TCJA and credit ratings:

> Of concern to Staff is Moody's approach to the impacts of the Tax Reform and Jobs Act of 2017. While one might expect lower taxes would be inherently positive news for utilities, Moody's has focused in on cash flow metrics that are stressed by the recent tax reform. Timely refreshment of this credit facility while PGE is under no heavy time or market pressure is consistent with provision for ongoing liquidity in support of current credit ratings. While approval of this Application does not by itself answer all of Moody's concerns regarding tax reform impacts on the utility sector, the proposed replacement credit facility is consistent with prudent financial management by the Company and will likely be seen as credit positive by both Standard and Poor's and Moody's. As the spreads over benchmark interest rates applicable to PGE depend on the level of the Company's credit ratings, this will be an area for the Commission to continue to monitor.[31]

Additionally, in a recent decision involving Questar Gas Company dba Dominion Energy Wyoming ("DEW"), the Wyoming PSC approved a modification

[30] In the Matter of Avista Corporation, dba Avista Utilities, Application for Authorization to Issue and Sell $600,000,000 of Debt Securities, UF 4313, Order No. 19-249 (July 30, 2019).

[31] In the Matter of Portland General Electric Company, Request for Authority to Extend the Maturity of an Existing $500 Million Revolving Credit Agreement, Docket UF 4272(3), Order No. 19-025 (Jan. 23, 2019).

to the stipulation in the Questar-Dominion merger case.[32] The original stipulation required DEW to maintain an equity ratio in the range of 50-55 percent, and the modification partially lifted the 55 percent cap on the equity ratio. In approving the modification, the Wyoming PSC found that an "unintended consequence of the [TCJA] is that it has put pressure on Dominion's credit metrics," by reducing cash flow and negatively affecting the Funds From Operations (FFO) metric. The Wyoming PSC explained that "a deterioration of the Company's credit metrics could result in a downgrade in Dominion's credit rating, which would in turn result in a higher cost of debt for the Company and its customers." The Wyoming PSC also noted that, to improve its credit metrics in response to the TCJA and avoid a downgrade, DEW believed it was necessary to issue additional equity to replace debt potentially exceeding the 55 percent equity cap. The Wyoming PSC approved the requested modification, finding it to be in the public interest.

Finally, in a recent decision involving Dominion Energy Utah ("DEU", formerly Questar Gas Company), the Utah PSC considered factors that had changed since DEU's prior rate case to determine if the Company's authorized ROE should be increased or decreased. One of the issues considered by the Utah PSC was the TCJA. Specifically, the Utah PSC stated that:

> Issues that can be viewed as "credit negative" for DEU, potentially leading to an increase in its authorized ROE, include the federal tax reform enacted in late 2017 and the

[32] In the Matter of Questar Gas Company dba Dominion Energy Wyoming's Application for Approval of Amended Stipulation Previously Approved in Docket No. 30010-150-GA-16, Docket No. 30010-180-GA-18 (Record No. 15138) (Aug. 20, 2019).

> Federal Reserve's cessation of injecting capital into the market.[33]

Q. Have state regulatory commissions considered market events and the utility's ability to attract capital in determining the equity return?

A. Yes. In a recent rate case for Consumers Energy Company in Michigan, the Michigan Public Service Commission ("Michigan PSC") Staff recommended a 9.80 percent ROE based on the results of the DCF, CAPM and Risk Premium approaches, which was supported by the Administrative Law Judge ("ALJ").[34] However, in its Order issued on March 29, 2018, the Michigan PSC partly disagreed with the ALJ and Staff regarding expected market conditions and authorized a 10.00 percent ROE for Consumers Energy Company. The Michigan PSC noted that:

> [i]n setting the ROE at 10.00%, the Commission believes there is an opportunity for the company to earn a fair return during this period of atypical market conditions. This decision also reinforces the Commission's belief that customers do not benefit from a lower ROE if it means the utility has difficulty accessing capital at attractive terms and in a timely manner. The fact that other utilities have been able to access capital despite lower ROEs, as argued by many intervenors, is also a relevant consideration. It is also important to consider how extreme market reactions to singular events, as have occurred in the recent past, may impact how easily capital will be able to be accessed during the future test period should an unforeseen market shock occur. The Commission will continue to monitor a variety of market factors in future rate cases to gauge whether volatility and uncertainty continue to be prevalent issues that merit more consideration in setting the ROE.[35]

[33] Report and Order, Docket No. 19-057-02, Dominion Energy Utah, February 25, 2020, at 6.
[34] Michigan Public Service Commission Order, Cause No. U-18322, Consumers Energy Company, March 29, 2018, at 37.
[35] *Id.,* at 43.

The Michigan PSC references "singular events" and the overall effect the events could have on the ability of a utility to access capital. Consistent with the Michigan PSC's views, it is important to consider a) that the TCJA has had a negative effect on the cash flows of utilities, and b) the effects of the increased volatility associated with the uncertainty surrounding the economic effects of COVID-19.

Q. What conclusions do you draw from your analysis of capital market conditions?

A. The important conclusions regarding capital market conditions are:

- The assumptions used in the ROE estimation models have been affected by recent, historically atypical market conditions.
- Recent market conditions reflect short-term exogenous shocks that are not expected to persist over the long-term. As a result, the recent atypical market conditions do not reflect the market conditions that should be expected to be present when the rates for Cascade will be in effect.
- Recent market conditions demonstrate significant volatility and risk to equity that would be reflected as higher expected returns for investors to take on incremental equity risk. As a result, it is critical to consider the results of a variety of ROE estimation models, using forward-looking assumptions to estimate the cost of equity.
- Without adequate regulatory support, the TCJA has had a negative effect on utility cash flows, which increases investor risk expectations for utilities. Therefore, it is increasingly important to consider a rate of return and capital structure that support the Company's cash flow metrics to enable Cascade

the ability to attract capital at reasonable terms during the period that rates will be in effect.

VI. PROXY GROUP SELECTION

Q. Why have you used a group of proxy companies to estimate the cost of equity for Cascade?

A. In this proceeding, we are focused on estimating the cost of equity for a natural gas utility company that is not itself publicly traded. Because the cost of equity is a market-based concept and given that Cascade's natural gas operations in Washington do not make up the entirety of a publicly-traded entity, it is necessary to establish a group of companies that is both publicly traded and comparable to Cascade in certain fundamental business and financial respects to serve as its "proxy" in the ROE estimation process.

Even if Cascade were a publicly-traded entity, it is possible that transitory events could bias its market value over a given period. A significant benefit of using a proxy group is that it moderates the effects of unusual events that may be associated with any one company. The proxy companies used in my analyses all possess a set of operating and risk characteristics that are substantially comparable to the Company, and thus provide a reasonable basis to derive and estimate the appropriate ROE for Cascade.

Q. Please provide a brief profile of Cascade.

A. Cascade is a natural gas distribution company that is a wholly-owned subsidiary of MDU Resources. The Company distributes natural gas to approximately 294,000

residential, commercial and industrial customers in Washington and Oregon.[36] As of March 31, 2020, Cascade distributed natural gas to 222,352 residential, commercial and industrial customers in several non-contiguous service territories in western and central Washington.[37] Cascade serves 68 communities in Washington, the largest of which are Yakima, Bellingham, the Tri-Cities, Marysville, Bremerton, Longview, and Mt. Vernon.[38] Washington accounted for 28.00 percent of the natural gas distribution operating sales revenues for Cascade's parent, MDU Resources, in 2019, while Idaho (29.00 percent), North Dakota (15.00 percent), Montana (9.00 percent), Oregon (8.00 percent), South Dakota (6.00 percent), Minnesota (3.00 percent) and Wyoming (2.00 percent) accounted for the other 72.00 percent of retail gas distribution operating sales revenues.[39] Cascade currently has an investment grade long-term rating of BBB+ from both S&P and Fitch, with Stable outlooks from both rating agencies.[40]

Q. How did you select the companies included in your proxy group?

A. I began with the group of 10 companies that Value Line classifies as Natural Gas Distribution Utilities and applied the following screening criteria to select companies that:

- pay consistent quarterly cash dividends, with no reductions in the last three years, because companies that do not pay dividends cannot be analyzed using the Constant Growth DCF model;

[36] Cascade Natural Gas Corporation website, accessed April 22, 2020.
[37] Data provided by Cascade Natural Gas Corporation.
[38] Cascade Natural Gas Corporation website, accessed April 22, 2020.
[39] MDU Resources Group, 2019 SEC Form 10-K, at 13.
[40] Source: Credit reports from Standard and Poor's and FitchRatings.

- have investment grade long-term issuer ratings from S&P and/or Moody's;
- are covered by at least two utility industry analysts;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- derive more than 70.00 percent of their total operating income from regulated operations;
- derive more than 60.00 percent of regulated operating income from gas distribution operations; and
- were not parties to a merger or other transformative transaction during the analytical periods relied on.

Q. What is the composition of your proxy group?

A. These screening criteria are shown in Exhibit No.___(AEB-2), Schedule 2 and resulted in a proxy group consisting of the companies shown in Figure 10.

Figure 10: Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Corporation	SWX
Spire, Inc.	SR

VII. COST OF EQUITY ESTIMATION

Q. Please briefly discuss the ROE in the context of the regulated rate of return.

A. The ROE is the cost rate applied to the equity capital in the ROR. The ROR for a regulated utility is based on its weighted average cost of capital, in which the cost rates of the individual sources of capital are weighted by their respective book values. While the costs of debt and preferred stock can be directly observed, the cost of common equity is market-based and, therefore, must be estimated based on observable market data.

Q. How is the required ROE determined?

A. The required ROE is estimated by using one or more analytical techniques that rely on market-based data to quantify investor expectations regarding required equity returns, adjusted for certain incremental costs and risks. Informed judgment is then applied to determine where the company's cost of equity falls within the range of analytical results. The key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company (in the context of the proxy group), in particular.

Q. What methods did you use to determine Cascade's ROE?

A. I considered the results of the Constant Growth DCF model, the CAPM, the ECAPM, the Bond Yield Plus Risk Premium methodology and an Expected Earnings analysis. As discussed in more detail below, a reasonable ROE estimate

appropriately considers alternative methodologies and the reasonableness of their individual and collective results.

A. Importance of Multiple Analytical Approaches

Q. Why is it important to use more than one analytical approach?

A. Because the cost of common equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, however, all of the models available for estimating the cost of equity are subject to certain limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of equity. For example, Copeland, Koller, and Murrin[41] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[42] recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches.

Q. Is it important given current market conditions to use more than one analytical approach?

A. Yes. Low interest rates and the effects of the investor "flight to quality" are evident in high utility share valuations, relative to historical levels and relative to the

[41] Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.
[42] Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

broader market. Higher utility stock valuations produce lower dividend yields and result in lower cost of equity estimates from a DCF analysis. Low interest rates also affect the CAPM in two ways: (1) the risk-free rate is lower, and (2) because the market risk premium is a function of interest rates, (i.e., it is the return on the broad stock market less the risk-free interest rate), the risk premium should move higher when interest rates are lower. Therefore, it is important to use multiple analytical approaches to moderate the impact that the current low interest rate environment is having on the ROE estimates for the proxy group and, where possible, consider using projected market data in the models to estimate the return for the forward-looking period.

Q. Has the Commission made similar findings regarding the reliance on multiple models?

A. Yes. It is my understanding that the Commission has repeatedly emphasized that it " places value on each of the methodologies used to calculate the cost of equity and does not find it appropriate to select a single method as being the most accurate or instructive."[43] The Commission has explained that "[f]inancial circumstances are constantly shifting and changing, and we welcome a robust and diverse record of evidence based on a variety of analytics and cost of capital methodologies."[44]

Q. What are your conclusions about the results of the DCF and CAPM models?

A. Recent market data that is used as the basis for the assumptions for both models have been affected by market conditions. As a result, relying exclusively on

[43] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013).
[44] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-100749, Order 06, ¶ 91 (March 25, 2011).

historical assumptions in these models, without considering whether these assumptions are consistent with investors' future expectations, will underestimate the cost of equity that investors would require over the period that the rates in this case are to be in effect. In this instance, relying on the historically low dividend yields that are not expected to continue over the period that the new rates will be in effect will underestimate the ROE for Cascade.

Furthermore, as discussed in Section IV above, Treasury bond yields have experienced unprecedented volatility in recent months due to the economic effects of COVID-19 and the subsequent intervention into the Treasury bond market by the Federal Reserve. Therefore, the use of current averages of Treasury bond yields as the estimate of the risk-free rate in the CAPM is not appropriate since recent market conditions are not expected to continue over the long-term. Instead, it is reasonable to rely on projected yields of Treasury Bonds in the CAPM. The projected Treasury Bond yields result in CAPM estimates that are more reflective of the market conditions that investors expect during the period that the Company's rates will be in effect.

B. Constant Growth DCF Model

Q. Please describe the DCF approach.

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where P_0 represents the current stock price, D1…D∞ are all expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \qquad [2]$$

Equation [2] is often referred to as the Constant Growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

Q. What assumptions are required for the Constant Growth DCF model?

A. The Constant Growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions is violated, considered judgment and/or specific adjustments should be applied to the results.

Q. What market data did you use to calculate the dividend yield in your Constant Growth DCF model?

A. The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annualized dividend and average closing stock prices over the 30-, 90-, and 180-trading days ended April 30, 2020.

Q. Why did you use 30-, 90-, and 180-day averaging periods?

A. In my Constant Growth DCF model, I use an average of recent trading days to calculate the term P0 in the DCF model to ensure that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day. The averaging period should also be reasonably representative of expected capital market conditions over the long-term. However, the averaging periods that I use rely on historical data that is not consistent with the forward-looking expectation that interest rates will increase. Therefore, the results of my Constant Growth DCF model using historical data may underestimate the forward-looking cost of equity. As a result, I place more weight on the median to median-high results from my Constant Growth DCF model.

Q. Did you make any adjustments to the dividend yield to account for periodic growth in dividends?

A. Yes. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected first year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

Q. Why is it important to select appropriate measures of long-term growth in applying the DCF model?

A. In its Constant Growth form, the DCF model (i.e., Equation [2]) assumes a single growth rate estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume a constant payout ratio, and that earnings per share, dividends per share and book value per share all grow at the same constant rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to incorporate a variety of sources of long-term earnings growth rates into the Constant Growth DCF model.

Q. Which sources of long-term earnings growth rates did you use?

A. My Constant Growth DCF model incorporates three sources of long-term earnings growth rates: (1) Zacks Investment Research; (2) Thomson First Call (provided by Yahoo! Finance); and (3) Value Line Investment Survey.

C. Discounted Cash Flow Model Results

Q. What were the results of your DCF analyses?

A. Figure 11 summarizes the results of my DCF analyses. As shown in Figure 11, the median DCF results range from 9.42 percent to 9.62 percent, and the median high results are in the range of 9.69 percent to 9.97 percent. While I also present the median low DCF results, I do not believe that the low DCF results provide a reasonable spread over the expected yields on Treasury bonds to compensate investors for the incremental risk related to an equity investment.

Figure 11: Constant Growth Discounted Cash Flow Results[45]

	Median Low	Median	Median High
30-Day Average	9.13%	9.62%	9.97%
90-Day Average	9.08%	9.43%	9.70%
180-Day Average	8.84%	9.42%	9.69%

Q. How did you calculate the range of results for the Constant Growth DCF model?

A. I calculated the low result for my DCF models using the minimum growth rate (*i.e.*, the lowest of the First Call, Zacks, and Value Line earnings growth rates) for each of the proxy group companies. Thus, the low result reflects the minimum DCF result for the proxy group. I used a similar approach to calculate the high results, using the highest growth rate for each proxy group company. The median results were calculated using the average growth rates from all sources.

Q. Have you excluded any of the Constant Growth DCF results for individual companies in your proxy group?

A. Yes. It is appropriate to exclude Constant Growth DCF results below a specified threshold at which equity investors would consider such returns to provide an insufficient return increment above long-term debt costs. The average credit rating for the companies in my proxy group is A-/A3. The average yield on Moody's A-rated utility bonds for the 30 trading days ending April 30, 2020, was 3.44 percent.[46] As shown in Exhibit No.___(AEB-2), Schedule 3, I have eliminated Constant Growth DCF results lower than 7.00 percent because such returns would provide equity investors a risk premium only 356 basis points above A-rated utility bonds.

[45] *See* Exhibit No.___(AEB-2), Schedule 3.
[46] Source: Bloomberg Professional.

Q. What are your conclusions about the results of the DCF model?

A. As discussed previously, one primary assumption of the DCF model is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. To the extent that utility valuations are high and may not be sustainable, it is important to consider the results of the DCF model with caution. As I indicated previously, this is due to the high utility equity valuations that have occurred in the lower interest rate environment as investors have sought higher returns. With the expectation of rising interest rates, such valuation levels are not expected to be sustained in the coming years. Because the low dividend yields may result in the DCF model understating investors' expected return, I have given primary weight to the median and high-end DCF results. My overall recommendation also relies on the results of other ROE estimation models.

D. CAPM Analysis

Q. Please briefly describe the Capital Asset Pricing Model.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or "systematic" risk of that security. This second component is the product of the market risk premium and the Beta coefficient, which measures the relative riskiness of the security being evaluated.

The CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta\left(r_m - r_f\right) \quad [3]$$

Where:

K_e = the required market ROE;

β = Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market.

In this specification, the term (rm – rf) represents the market risk premium. According to the theory underlying the CAPM, because unsystematic risk can be diversified away, investors should only be concerned with systematic or non-diversifiable risk. Non-diversifiable risk is measured by Beta, which is defined as:

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \quad [4]$$

The variance of the market return (i.e., Variance (r_m)) is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the general market (i.e., Covariance (r_e, r_m)) reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, Beta represents the risk of the security relative to the general market.

Q. What risk-free rate did you use in your CAPM analysis?

A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds of 1.31 percent;[47] (2) the average projected 30-year U.S. Treasury bond yield for Q3 2020 through Q3 2021 of 1.60

[47] Bloomberg Professional, as of April 30, 2020.

percent;[48] and (3) the average projected 30-year U.S. Treasury bond yield for 2021 through 2025 of 3.20 percent.[49]

Q. Did you place more weight on one of these scenarios?

A. Yes. Based on current market conditions, I place more weight on the results of the projected yields on the 30-year Treasury bonds. As discussed previously, the estimation of the cost of equity in this case should be forward looking because it is the return that investors would receive over the future rate period. Therefore, the inputs and assumptions used in the CAPM analysis should reflect the expectations of the market at that time. As discussed in Section V of my Direct Testimony, leading economists surveyed by Blue Chip are expecting an increase in long-term interest rates over the next five years. This is an important consideration for equity investors as they assess their return requirements. While I have included the results of a CAPM analysis that relies on the current average risk-free rate, this analysis fails to take into consideration the effect of the market's expectations for interest rate increases on the cost of equity.

Q. What Beta coefficients did you use in your CAPM analysis?

A. As shown in Exhibit No.___(AEB-2), Schedule 4 CAPM 1, I used the average Beta coefficients for the proxy group companies as reported by Value Line and Bloomberg. Value Line's calculation is based on five years of weekly returns

[48] Blue Chip Financial Forecasts, Vol. 39, No. 5, May 1, 2020, at 2.
[49] Blue Chip Financial Forecasts, Vol. 38, No. 12, December 1, 2019, at 14.

relative to the New York Stock Exchange Composite Index. The Bloomberg betas are based on ten years of weekly returns relative to the S&P 500 Index.

Q. How did you estimate the market risk premium in the CAPM?

A. I estimated the Market Risk Premium based on the expected return on the S&P 500 Index less the 30-year Treasury bond yield. I calculated the expected return on the S&P 500 Index using S&P's published dividend yield and five-year projected growth rate for the entire S&P 500 Index. Based on an estimated dividend yield of 2.01 percent and a long-term growth rate of 11.33 percent, the estimated required market return for the S&P 500 Index is 13.45 percent. As shown in Exhibit No.___(AEB-2), Schedule 4 CAPM 2, the implied market risk premium over the current 30-day average of the 30-year U.S. Treasury bond yield, and projected yields on the 30-year U.S. Treasury bond, ranges from 10.25 percent to 12.14 percent.

Q. Have other regulators endorsed the use of a forward-looking market risk premium?

A. Yes. The Staff of the Maine Public Utilities Commission ("Maine PUC") has endorsed the use of a forward-looking market risk premium. In the Bench Analysis in for Emera Maine and for Northern Utilities, Staff accepted the approach proposed by the companies for calculating the market return.[50] In each case, the

[50] Emera Maine, Request for Approval of a Proposed Rate Increase, Docket No. 2017-00198, Bench Analysis at 71-72 (December 21, 2017); Northern Utilities, Inc. d/b/a UNITIL, Request for Approval of Rate Change Pursuant to Section 307, Docket No. 2017-00065, Bench Analysis, at 15-16 (October 6, 2017).

market return was the expected return for the S&P 500, which was calculated using a Constant Growth DCF model. In Docket No. 2017-00198, Staff noted:

> Staff has no issue with the methodology used by Mr. Perkins in calculating market parameters based on the S&P 500 and used the model provided by Mr. Perkins with the revised risk free rate to re-calculate the market risk premiums.[51]

Furthermore, the Maine PUC used the CAPM results calculated by Staff and Emera Maine as a check on the reasonableness of the DCF results in the case and did not dispute the use of the forward-looking market risk premium by the parties (i.e., Staff and Emera Maine).[52]

Q. Did you consider another form of the CAPM in your analysis?

A. Yes. I have also considered the results of an Empirical CAPM ("ECAPM" or alternatively referred to as the Zero-Beta CAPM)[53] in estimating the cost of equity for Cascade. The ECAPM calculates the product of the adjusted Beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium, without any effect from the Beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \qquad [5]$$

Where:

[51] Emera Maine, Request for Approval of a Proposed Rate Increase, Docket No. 2017-00198, Bench Analysis, at 71-72 (December 21, 2017).
[52] Emera Maine, Request for Approval of Proposed Rate Increase, Docket No. 2017-00198, June 28, 2018, at 41.
[53] *See e.g.*, Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 189.

k_e = the required market ROE

β = Adjusted Beta coefficient of an individual security

r_f = the risk-free rate of return

r_m = the required return on the market as a whole

In essence, the ECAPM addresses the tendency of the "traditional" CAPM to underestimate the cost of equity for companies with low Beta coefficients such as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted Betas; rather, it recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term.[54]

As with the CAPM, my application of the ECAPM uses the forward-looking market risk premium estimates, the three yields on 30-year Treasury securities noted earlier as the risk-free rate, and the Bloomberg and Value Line Beta coefficients.

Q. What are the results of your CAPM analyses?

A. As shown in Figure 12 (*see* also Exhibit No.___(AEB-2), Schedule 4, CAPM 1), my CAPM analysis produces a range of returns from 8.94 percent to 11.39 percent, depending on the source of the Beta coefficients, while my ECAPM analysis produces a range of returns from 10.07 percent to 11.90 percent, also depending on the source of Beta.

[54] *Id*., at 191.

Figure 12: CAPM and ECAPM Results

	CAPM Results	ECAPM Results
Value Line Beta		
Current Risk-Free Rate (1.31%)	8.94%	10.07%
Q3 2020-Q3 2021 Projected Risk-Free Rate (1.60%)	9.05%	10.15%
2021-2025 Projected Risk-Free Rate (3.20%)	9.64%	10.60%
Mean	**9.21%**	**10.27%**
Bloomberg Beta		
Current Risk-Free Rate (1.31%)	11.01%	11.62%
Q3 2020-Q3 2021 Projected Risk-Free Rate (1.60%)	11.07%	11.66%
2021-2025 Projected Risk-Free Rate (3.20%)	11.39%	11.90%
Mean	**11.15%**	**11.73%**

E. Bond Yield Plus Risk Premium Analysis

Q. Please describe the Bond Yield Plus Risk Premium approach.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for natural gas distribution companies as the historical measure of the cost of equity to determine the risk premium.

Q. Are there other considerations that should be addressed in conducting this analysis?

A. Yes. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates. That is, as interest rates increase (decrease), the equity risk premium decreases (increases). Consequently, it is important to develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on recent and expected market conditions. Such an analysis can be developed based on a regression of the risk premium as a function of U.S. Treasury bond yields. If we let authorized ROEs for natural gas utilities serve as the measure of required equity returns and define the yield on the long-term U.S. Treasury bond as the relevant measure of interest rates, the risk premium simply would be the difference between those two points.[55]

Q. Is the Bond Yield Plus Risk Premium analysis relevant to investors?

A. Yes. Investors are aware of ROE awards in other jurisdictions, and they consider those awards as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk Premium analysis is based on authorized ROEs for utility companies relative to

[55] *See e.g.*, S. Keith Berry, *Interest Rate Risk and Utility Risk Premia during 1982-93*, Managerial and Decision Economics, Vol. 19, No. 2 (March, 1998), in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates. *See also* Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return*, Financial Management, Spring 1986, at 66.

corresponding Treasury yields, it provides relevant information to assess the return expectations of investors.

Q. What did your Bond Yield Plus Risk Premium analysis reveal?

A. As shown in Figure 13, from 1992 through April 2020, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I conducted a regression analysis using the following equation:

$$RP = a + b(T) \text{ [5]}$$

Where:

RP = Risk Premium (difference between allowed ROEs and the yield on 30-year U.S. Treasury bonds)

a = intercept term

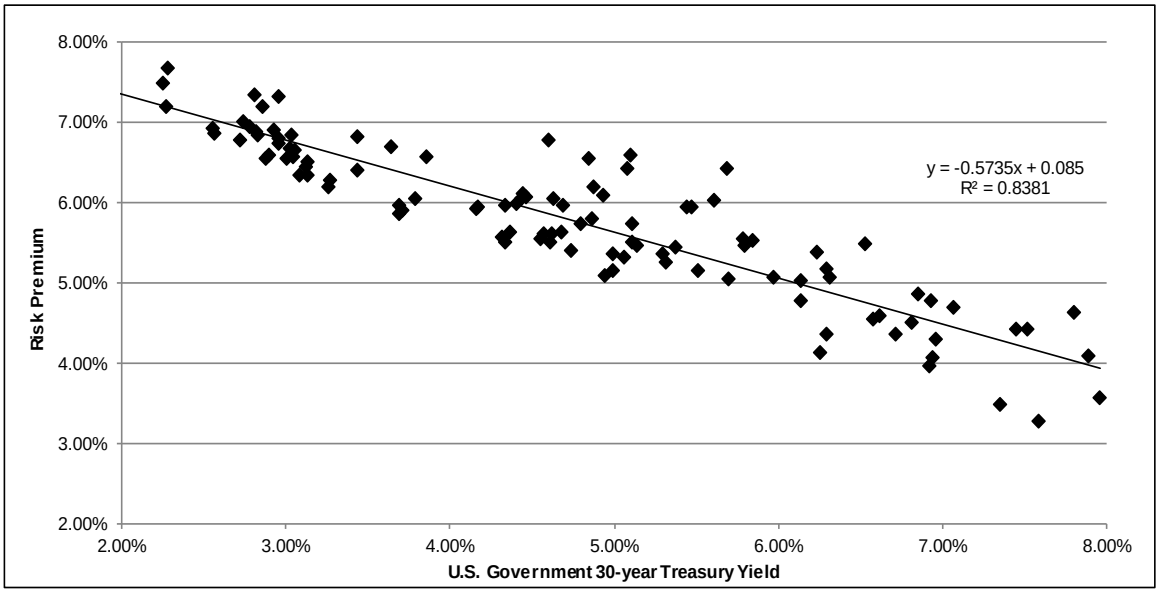
b = slope term

T = 30-year U.S. Treasury bond yield

Data regarding allowed ROEs were derived from 648 natural gas utility rate cases from 1992 through April 2020 as reported by Regulatory Research Associates ("RRA").[56] This equation's coefficients were statistically significant at the 99.00 percent level.

[56] This analysis excludes limited issue rider cases, transmission-only cases, and cases that were silent with respect to the authorized ROE.

Figure 13: Risk Premium Results



As shown in Exhibit No.___(AEB-2), Schedule 5, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 1.31 percent), the risk premium would be 7.74 percent, resulting in an estimated ROE of 9.06 percent. Based on the near-term (Q3 2020 – Q3 2021) projection of the 30-year U.S. Treasury bond yield (i.e., 1.60 percent), the risk premium would be 7.58 percent, resulting in an estimated ROE of 9.18 percent. Based on longer-term (2021-2025) projections of the 30-year U.S. Treasury bond yield (i.e., 3.20 percent), the risk premium would be 6.66 percent, resulting in an estimated ROE of 9.86 percent.

Q. How do the results of the Bond Yield plus Risk Premium analysis inform your recommended ROE for Cascade?

A. I have considered the results of the Bond Yield plus Risk Premium analysis in setting my recommended ROE for Cascade. The results of my CAPM, ECAPM and Bond Yield plus Risk Premium analyses provide support for my view that the DCF model is understating investors' future return requirements under current

market conditions. Also, as noted above, investors will consider the ROE award of a company when assessing the risk of that company as compared to utilities of comparable risk operating in other jurisdictions. The Risk Premium analysis takes into account this comparison by estimating the return expectations of investors based on current and past ROE awards of gas distribution utilities across the US.

F. Expected Earnings Analysis

Q. Have you considered any additional analysis to estimate the cost of equity for Cascade?

A. Yes. I have considered an Expected Earnings analysis based on the projected ROEs for each of the proxy group companies.

Q. What is an Expected Earnings Analysis?

A. The Expected Earnings methodology is a comparable earnings analysis that calculates the future earnings that an investor expects to receive on the book value of a stock. The Expected Earnings analysis is a forward-looking estimate of investors' expected returns. The use of an Expected Earnings approach based on the proxy companies provides a range of the expected returns on a group of risk comparable companies to the subject company. This range is useful in helping to determine the opportunity cost of investing in the subject company, which is relevant in determining a company's ROE.

Q. Has the Commission considered the use of an Expected Earnings Analysis?

A. Yes. In its order in Dockets UE-170485 and UG-170486, the Commission considered the results of the Comparable Earnings analysis[57] in establishing the authorized ROE for Avista Corporation. The Commission noted that it tends to place more weight on the results of the DCF, CAPM and Risk Premium analyses; however, given the wide range of CAPM results presented by the ROE witnesses in that case, the Commission decided to apply weight to the results of the Comparable Earnings analysis.[58] Specifically, the Commission stated:

> Finally, as additional data points for our consideration of establishing Avista's ROE, we note that two witness, Mr. McKenzie for Avista and Mr. Parcell for Staff, employ the CE approach to two proxy groups of companies. The respective mid-points of each witnesses' CE analysis are 10.5 and 9.5 percent, respectively, with an average of 10.0 percent. Although we generally do not apply material weight to the CE method, having stronger reliance on the DCF, CAPM and RP methods, we are inclined to include the CE method here given the anomalous CAPM results described previously.[59]

Q. How did you develop the Expected Earnings Approach?

A. I relied on the projected ROEs for the proxy companies as reported by Value Line for the period from 2023-2025. I then adjusted those projected ROEs to account for the fact that the ROEs reported by Value Line are calculated on the basis of common shares outstanding at the end of the period, as opposed to average shares outstanding over the period. As shown in Exhibit No.___(AEB-2), Schedule 6, the

[57] The Expected Earnings analysis is a form of the Comparable Earnings analysis that relies exclusively on forward-looking projections.
[58] Avista Order 07, ¶ 65.
[59] *Ibid.*

Expected Earnings analysis results in a mean of 9.94 percent and a median of 9.74 percent.

VIII. REGULATORY AND BUSINESS RISKS

Q. Do the median DCF and mean CAPM, ECAPM, Risk Premium and Expected Earnings results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for Cascade?

A. No. These results provide only a range of the appropriate estimate of the Company's cost of equity. There are several additional factors that must be taken into consideration when determining where the Company's cost of equity falls within the range of analytical results. These factors, which are discussed below, should be considered with respect to their overall effect on the Company's risk profile.

A. Small Size Risk

Q. Please explain the risk associated with small size.

A. Both the financial and academic communities have long accepted the proposition that the cost of equity for small firms is subject to a "size effect." While empirical evidence of the size effect often is based on studies of industries other than regulated utilities, utility analysts also have noted the risk associated with small market capitalizations. Specifically, an analyst for Ibbotson Associates noted:

> For small utilities, investors face additional obstacles, such as a smaller customer base, limited financial resources, and a lack

> of diversification across customers, energy sources, and geography. These obstacles imply a higher investor return.[60]

Q. How does the smaller size of a utility affect its business risk?

A. In general, smaller companies are less able to withstand adverse events that affect their revenues and expenses. The impact of weather variability, the loss of large customers to bypass opportunities, or the destruction of demand as a result of general macroeconomic conditions or fuel price volatility will have a proportionately greater impact on the earnings and cash flow volatility of smaller utilities. Similarly, capital expenditures for non-revenue producing investments, such as system maintenance and replacements, will put proportionately greater pressure on customer costs, potentially leading to customer attrition or demand reduction. Taken together, these risks affect the return required by investors for smaller companies.

Q. How do Cascade's natural gas distribution operations in Washington compare in size to the proxy group companies?

A. Cascade's natural gas distribution operations in Washington are substantially smaller than the median for the proxy group companies in terms of market capitalization. Exhibit No.___(AEB-2), Schedule 7 provides the actual market capitalization for the proxy group companies and estimates the implied market capitalization for Cascade (i.e., the implied market capitalization if Cascade's natural gas distribution operations in Washington were a stand-alone publicly-traded entity). To estimate the size of the Company's market capitalization relative

[60] Michael Annin, Equity and the Small-Stock Effect, Public Utilities Fortnightly, October 15, 1995.

to the proxy group, I calculated Cascade's proposed capital structure equity component of $213.60 million by multiplying Cascade's test year rate base of $427.20 million by Cascade's test year common equity ratio of 50.40 percent. I then applied the median market-to-book ratio for the proxy group of 1.70 to Cascade's implied common equity balance and arrived at an implied market capitalization of approximately $365.05 million, or 9.81 percent of the median market capitalization for the proxy group.

Q. How did you estimate the size premium for Cascade?

A. Given this relative size information, it is possible to estimate the impact of size on the ROE for Cascade using Duff and Phelps data that estimates the stock risk premia based on a company's market capitalization. As shown in Exhibit No.___(AEB-2), Schedule 7, the median market capitalization of the proxy group of approximately $3.72 billion corresponds to the fifth decile of the Duff and Phelps market capitalization data. Based on Duff and Phelps' analysis, that decile corresponds to a size premium of 1.08 percent (i.e., 108 basis points). Cascade's implied market capitalization of approximately $365.05 million falls within the ninth decile, which comprises market capitalization levels up to $515.60 million and corresponds to a size premium of 2.26 percent (i.e., 226 basis points). The difference between those size premia is 118 basis points (i.e., 2.26 percent minus 1.08 percent).

Q. Have regulators in other jurisdictions made a specific risk adjustment to the ROE results based on a company's small size?

A. Yes, other regulators have accepted the importance of small size in setting the risk premium for regulated utilities. For example, the British Columbia Utilities Commission's ("BCUC") Generic Cost of Capital decision for Stage 2 stated that small size relative to the benchmark utility was a business risk factor considered when awarding an equity risk premium to the following utilities:

- FortisBC Electric - awarded a total equity risk premium of 40 basis points;[61]
- FortisBC Whistler - awarded an additional 25 basis points (for a total of 75 basis points above the benchmark) "in recognition of risks related to its small size;"[62] and
- PNG-Tumbler Ridge- awarded an additional 25 basis points above the 50 basis point risk premium given to PNG-West due to "greater weight on factors related to size" among other things.[63]

In addition, the Yukon Utilities Board, in Board Order 2017-01, concluded "that small size is the most significant factor to be considered in determining a risk premium for ATCO Electric Yukon ("AEY")."[64] The Board noted the 25 basis point premium awarded for small size in the BCUC decision, which the Board deemed an acceptable premium for the additional risk associated with AEY's small size. Therefore, the Board awarded AEY an ROE that was equal to the ROE

[61] BCUC Generic Cost of Capital Proceeding (Stage 2) Decision, March 25, 2014, at iv.
[62] *Id.*, at iii.
[63] *Id.*, at iv.
[64] YUB Appendix A to Board Order 2017-01: Reasons for Decision, April 27, 2017, at 44.

determined for the BCUC benchmark utility plus a 25-basis point premium for size.[65]

In Order No. 15, the Regulatory Commission of Alaska ("RCA") concluded that Alaska Electric Light and Power Company ("AEL&P") was riskier than the proxy group companies due to small size as well as other business risks. The RCA did "not believe that adopting the upper end of the range of ROE analyses in this case, without an explicit adjustment, would adequately compensate AEL&P for its greater risk."[66] Thus, the RCA awarded AEL&P an ROE of 12.875 percent which was 108 basis points above the highest return on equity estimate from any model presented in the case.[67] Similarly, in Order No. 19, the RCA noted that small size as well as other business risks such as structural regulatory lag, weather risk, alternative rate mechanisms, gas supply risk, geographic isolation and economic conditions increased the risk of ENSTAR Natural Gas Company.[68] Ultimately, the RCA concluded that:

> Although we agree that the risk factors identified by ENSTAR increase its risk, we do not attempt to quantify the amount of that increase. Rather, we take the factors into consideration when evaluating the remainder of the record and the recommendations presented by the parties. After applying our reasoned judgment to the record, we find that 11.875% represents a fair ROE for ENSTAR.[69]

[65] *Ibid*.
[66] Docket No. U-10-29, In the Matter of the Revenue Requirement and Cost of Service Study Designated as TA381-1 Filed by Alaska Electric Light and Power Company, Order entered September 2, 2011 (Order No. 15), at 37.
[67] *Id*., at 32 and 37.
[68] Docket No. U-16-066, In the Matter of the Tariff Revision Designated as TA285-4 Filed by ENSTAR Natural Gas Company, A Division of Semco Energy, Inc., Order entered September 22, 2017 (Order No. 19), at 50-52.
[69] *Ibid*.

Q. How have you considered the smaller size of Cascade in your recommendation?

A. While I have estimated the effect of Cascade's small size on the ROE, I am not proposing a specific adjustment for this risk factor. Rather, I believe it is important to consider the small size of Cascade's natural gas distribution operations in Washington in the determination of where, within the range of analytical results, the Company's required ROE falls. The additional risk associated with small size indicates that the Company's ROE should be set above the mean results for the proxy group companies.

B. Flotation Costs

Q. What are flotation costs?

A. Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other issuance costs.

Q. Why is it important to consider flotation costs in the allowed ROE?

A. A regulated utility must have the opportunity to earn an ROE that is both competitive and compensatory to attract and retain new investors. To the extent a company is denied the opportunity to recover prudently-incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diluting equity share value.

Q. Are flotation costs part of the utility's invested costs or part of the utility's expenses?

A. Flotation costs are part of the invested costs of the utility, which are properly reflected on the balance sheet under "paid in capital." They are not current expenses, and, therefore, are not reflected on the income statement. Rather, like investments in rate base or the issuance costs of long-term debt, flotation costs are incurred over time. As a result, the great majority of a utility's flotation cost is incurred prior to the test year but remains part of the cost structure that exists during the test year and beyond, and as such, should be recognized for ratemaking purposes. Whether an issuance occurs during the test year, or is planned for the test year, is irrelevant, because failure to allow recovery of past flotation costs may deny Cascade the opportunity to earn its required ROR in the future.

Q. Please provide an example of why a flotation cost adjustment is necessary to compensate investors for the capital they have invested.

A. Suppose MDU Resources issues stock with a value of $100, and an equity investor invests $100 in MDU Resources in exchange for that stock. Further suppose that, after paying the flotation costs associated with the equity issuance, which include fees paid to underwriters and attorneys, among others, MDU Resources ends up with only $97 of issuance proceeds, rather than the $100 the investor contributed. MDU Resources invests that $97 in plant used to serve its customers, which becomes part of rate base. Absent a flotation cost adjustment, the investor will thereafter earn a return on only the $97 invested in rate base, even though she contributed $100. Making a small flotation cost adjustment gives the investor a

reasonable opportunity to earn the authorized return, rather than the lower return that results when the authorized return is applied to an amount less than what the investor contributed.

Q. Is the date of MDU Resources last issued common equity important in the determination of flotation costs?

A. No. As shown in Exhibit No.___(AEB-2), Schedule 8, MDU Resources closed on equity issuances of approximately $58 million and $54 million (for a total of 4.7 million shares of common stock) in November 2002 and February 2004, respectively. The vintage of the issuance, however, is not particularly important because the investor suffers a shortfall in every year that he should have a reasonable opportunity to earn a return on the full amount of capital that has been contributed. Returning to my earlier example, the investor who contributed $100 is entitled to a reasonable opportunity to earn a return on $100 not only in the first year after the investment, but in every subsequent year in which he has the $100 invested. Leaving aside depreciation, which is dealt with separately, there is no basis to conclude that the investor is entitled to earn a return on $100 in the first year after issuance, but thereafter is entitled to earn a return on only $97. As long as the $100 is invested, the investor should have a reasonable opportunity to earn a return on the entire amount.

Q. Is the need to consider flotation costs recognized by the academic and financial communities?

A. Yes. The need to reimburse shareholders for the lost returns associated with equity issuance costs is recognized by the academic and financial communities in the same spirit that investors are reimbursed for the costs of issuing debt. This treatment is consistent with the philosophy of a fair ROR. According to Dr. Shannon Pratt:

> Flotation costs occur when new issues of stock or debt are sold to the public. The firm usually incurs several kinds of flotation or transaction costs, which reduce the actual proceeds received by the firm. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and prospectus preparation costs. Because of this reduction in proceeds, the firm's required returns on these proceeds equate to a higher return to compensate for the additional costs. Flotation costs can be accounted for either by amortizing the cost, thus reducing the cash flow to discount, or by incorporating the cost into the cost of capital. Because flotation costs are not typically applied to operating cash flow, one must incorporate them into the cost of capital.[70]

Q. How did you calculate the flotation costs for Cascade?

A. My flotation cost calculation is based on the costs of issuing equity that were incurred by MDU Resources in its two most recent common equity issuances. Those issuance costs were applied to my proxy group. Based on the issuance costs provided in Exhibit No.___(AEB-2), Schedule 8, flotation costs for Cascade are approximately 0.09 percent (i.e., 9 basis points) for the proxy group.

[70] Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.

Q. Do your final results include an adjustment for flotation cost recovery?

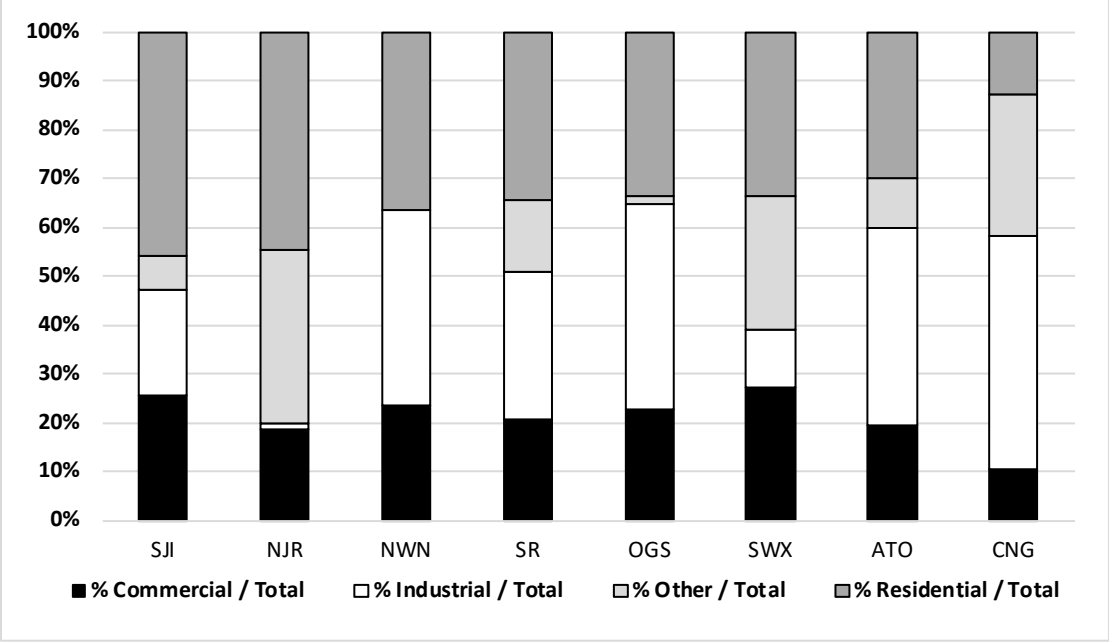
A. No. I did not make an explicit adjustment for flotation costs to any of my quantitative analyses. Rather, I provide the above result for consideration in my recommended ROE.

C. Customer Concentration

Q. Please summarize Cascade's customer concentration risk.

A. Approximately 48.00 percent of Cascade's 2018 total company utility gas sales in Washington were derived from industrial customers. As shown in Figure 14, Cascade's industrial and electric power[71] sales volume as a percentage of total utility gas sales was 77.00 percent, higher than each of the proxy group companies.

Figure 14: Customer Concentration[72]



[71] Labeled as other sales in Figure 12.

[72] EIA FORM 176 - Other sales includes Electric Power (i.e., Gas used as fuel in the electric power sector) and Vehicle Fuel Volume (i.e., The quantity of fuel used by vehicles).

Q. How does customer concentration affect business risk?

A. A relatively high concentration of commercial and industrial customers results in higher business risk. Because the customers are large, they can represent a significant portion of a company's sales which could be lost if a customer goes out of business or switches suppliers. As noted by Dhaliwal, Judd, Serfling and Shaikh in their article, *Customer Concentration Risk and the Cost of Equity Capital*:

> Depending on a major customer for a large portion of sales can be risky for a supplier for two primary reasons. First, a supplier faces the risk of losing substantial future sales if a major customer becomes financially distressed or declares bankruptcy, switches to a different supplier, or decides to develop products internally. Consistent with this notion, Hertzel et al. (2008) and Kolay et al. (2015) document negative supplier abnormal stock returns to the announcement that a major customer declares bankruptcy. Further, a customer's weak financial condition or actions could signal inherent problems about the supplier's viability to its remaining customers and lead to compounding losses in sales. Second, a supplier faces the risk of losing anticipated cash flows from being unable to collect outstanding receivables if the customer goes bankrupt. This assertion is consistent with the finding that suppliers offering customers more trade credit experience larger negative abnormal stock returns around the announcement of a customer filing for Chapter 11 bankruptcy (Jorion and Zhang, 2009; Kolay et al., 2015).[73]

A company that has a high degree of customer concentration is inherently riskier than a company that derived income from a larger, more diversified customer base. Furthermore, as detailed in the article, the increased risk associated with a more concentrated customer base has the effect of increasing a company's cost of equity.[74]

[73] Dhaliwal, Dan S., J. Scott Judd, Matthew A. Serfling, and Sarah Shaikh. "Customer Concentration Risk and the Cost of Equity Capital." SSRN Electronic Journal (2016): 1-2. Web.
[74] *Id.,* at 4.

Q. Please describe how changes in economic conditions and Cascade's high degree of customer concentration can affect its business risks.

A. While Cascade does not depend on any one major customer, the Company has a high concentration of industrial customers in Washington. Cascade's major industrial customers are engaged in manufacturing products for industries such as food processing, primary metals, stone/clay/glass, petroleum, paper and printing, and wood and lumber products.[75] The manufacturing industry is dependent on economic conditions and the business cycle.

Q. Is Cascade's natural gas delivery volume dependent on the manufacturing industry?

A. Yes. As discussed above, 48.00 percent of Cascade's 2018 total company utility gas sales in Washington was derived from industrial customers, a large portion of which are engaged in manufacturing. Therefore, fluctuations in the business cycle can have a large impact on Cascade's natural gas sales.

Q. Are you aware of any recent examples that might affect Cascade's natural gas sales?

A. Yes. My understanding is that Cascade's natural gas sales to manufacturing and transport customers have been affected by the current economic downturn, as shown by the following examples:

- Lamb Weston ("LW"), which provides processed potatoes for the restaurant and grocery markets, unexpectedly shut down both of its plants in Richland,

[75] Cascade Natural Gas Corporation, 2018 Integrated Resource Plan, December 14, 2018, at 7-15.

Washington about a month ago. LW advised Cascade that they were cancelling their nominations for about three weeks just as they were about to ramp up for the spring processing season. Cascade has not heard directly from LW since about the reason they cancelled their natural gas orders.

- McCain Foods notified Cascade that they were going to "pause" construction for at least 6 months on their new $400,000,000 potato processing plant under construction in Othello, Washington. McCain indicated that the "pause" is directly related to the restaurant industry shutdown. McCain will reassess the market in October prior to deciding whether to complete construction of this new facility. The facility was scheduled to begin processing potatoes November 1, 2020.

- A material number of Cascade's large volume transport customers in the Central Region of Eastern Washington are related to agriculture. Cascade expects that many of those customers sales have been or will be affected by the pandemic.

- Cascade is seeing a mix of usage from three co-generation plants on its system. Mint Farm is showing steady usage; Fredonia's usage has been variable; and Whitehorn has been down since March. It is unclear whether the changes in usage from the co-gen plants is due to the economic conditions surrounding the COVID-19 virus, current weather conditions, snowpack, runoff, or wind generation.

- Gasoline prices are at their lowest level in many years, but all the oil refineries are still producing. It is too early to predict how long this will continue or if their operations will change.

Q. Have credit rating agencies commented on the risk of customer concentration for utilities during the economic downturn caused by the coronavirus pandemic?

A. Yes, in an April 2020 report, S&P indicated that the outlook for North American regulated utilities has turned negative. Regarding customer concentration, S&P notes:

> For the North American utility industry, we expect that COVID-19 will reduce the commercial and industrial (C&I) usage. While some utilities will be able to offset some of the lower C&I usage through various regulatory mechanisms that include decoupling of revenues mechanisms and formula rates, many others will see a weakening of sales. Furthermore, as the recession continues to take hold, we expect bad debt expense will increase as it becomes increasingly more difficult for customers to pay their bills. While many utilities can defer these costs for future recovery, as these balances grow, historically we have seen incidents where utilities negotiate with their commissions to write off some of these costs as part of a larger agreement. Overall, we expect that these effects will result in a weakening of credit measures.[76]

Q. Are you aware of other risk factors that could affect Cascade's business operations?

A. Yes. Cascade is also in direct competition with other sources of energy such as electricity, diesel, solar and wind, among others. Depending on how competitive the price of natural gas is to other sources of energy, there is the risk that customers in the commercial and industrial classes could switch to an alternative energy source. Furthermore, as discussed above, a large portion of Cascade's distribution

[76] S&P Global Ratings, "COVID-19: The Outlook for North American Regulated Utilities Turns Negative," April 2, 2020, at 6-7.

load is derived from electric power sales. Natural gas generation in Washington has historically been in direct competition with hydroelectric power, which is the state's largest source of electricity.[77] However, natural gas generation could now also face increased competition in the near and long-term from renewable generation such as wind and solar due to various subsidies and mandates for renewable generating technologies. For example, in 2006, Initiative 937 passed, which requires electric utilities who serve more than 25,000 customers to obtain 15.00 percent of their electric load from new renewable resources by 2020.[78] Additionally, the Clean Energy Transformation Act, passed in 2019, expanded Washington's decarbonization mandates and requires that 100 percent of electric load be met from carbon-neutral resources by 2030,[79] and that 100 percent of electric load be served with carbon-free (renewable or non-emitting) resources in 2045.[80] Thus, Cascade's reliance on a large percentage of industrial and electric power load results in an increased risk of volatility with respect to sales, earnings, and cash flow.

Q. How does Cascade's revenue decoupling mechanism affect the Company's customer concentration risk?

A. In July 2016, the Commission approved a revenue decoupling mechanism ("RDM") for Cascade.[81] The RDM is a revenue per customer mechanism with a

[77] Source: EIA – Annual Generation by State.
[78] RCW 19.285.040(2)(a)(iii); *See also*: Database of State Incentives for Renewables and Efficiency ("DSIRE"). http://programs.dsireusa.org/system/program/detail/2350.
[79] The 2030 "carbon neutral" target recognizes some continuing reliance on electricity generated from natural gas with certain offsets (e.g., purchase of renewable energy credits). RCW 19.285.040(2)(m).
[80] RCW 19.405.010(2).
[81] Wash. Utils. & Transp. Comm'n v. Cascade Natural Gas Corporation, Docket No. UG-152286, Order 04, ¶ 8 (July 7, 2016).

deferral account established to track the difference between the authorized margin revenue per customer and the actual margin revenue per customer. The Company is then able to file rates each year that will either collect or refund the amount in the deferral account from the prior year. The authorized margin revenue per customer is determined by rate class for the residential, commercial and industrial sales customers.[82] Transportation customers are not included in the RDM. Cascade is allowed to recover any under-collection subject to an annual rate adjustment cap of 3.00 percent. Any amount that exceeds the 3.00 percent cap is deferred for recovery in a subsequent year. Over-collections are refunded to customers, and there is no cap on the amount that can be refunded in a given year. Additionally, the RDM is subject to an earnings test that adjusts the amount collected or refunded if earnings were to exceed a given level.[83]

The RDM for Cascade has the effect of mitigating the financial impact of customer concentration risk by providing the Company the opportunity to recover the authorized margin revenue per customer for each rate class included in the RDM. Therefore, the under-recovery of revenue as a result of a large customer switching to an alternative energy source or reducing output due to economic conditions can be recovered by the Company in a subsequent year. However, the RDM does not entirely eliminate the effect of customer concentration risk. For example, the RDM does not include transportation customers. If a large transportation customer were to switch to an alternative energy source or reduce

[82] *Ibid.*
[83] *Ibid.*

output due to economic conditions, the Company would not be able to recover the revenue reduction associated with that customer. Furthermore, if the under-collected amount is significantly above the 3.00 percent cap, there could be a long lag between when the revenue shortfall occurred and when it is recovered by the Company.

Q. Does the Company's RDM reduce the customer concentration risk of the Company as compared to the proxy group?

A. No. While Cascade has an RDM to mitigate the impact of customer concentration risk, this does not imply that the Company has less customer concentration risk than the proxy group. As shown in Exhibit No.___(AEB-2), Schedule 9 and discussed in more detail below, 89.00 percent of the operating companies held by the proxy group have some form of decoupling mechanism. Since the proxy group companies have already implemented similar risk mitigation measures, Cascade would not have less risk than the peer group as a result of its RDM.

Q. What is your conclusion regarding the Company's customer concentration risk and its effect on the cost of equity for Cascade?

A. Cascade is heavily reliant on sales to industrial and electric power customers in Washington. As noted above, 77.00 percent of Cascade's total natural gas sales were to industrial and electric power customers, and 48.00 percent of sales were to industrial customers. This industrial concentration is higher than any of the proxy group companies. A high degree of customer concentration increases the Company's risk related to customer migration, economic conditions or competition. Increased customer diversity decreases the effect that any one

customer can have on a company's sales. Furthermore, while Cascade has an RDM, the RDM does not entirely eliminate the risk posed by customer concentration. In addition, similar to the Company, most of the companies in the proxy group have some form of RDM. Thus, the Company's heavy customer concentration in a small number of industrial and electric power customers implies that Cascade has above average risk when compared to the companies in the proxy group.

D. Capital Expenditures

Q. Please summarize Cascade's projected capital expenditures.

A. Cascade's projected capital expenditures for 2020-2024 are approximately $329.8 million.[84] Although this amount is somewhat lower than at the time of Cascade's previous rate case filing, it continues to represent a substantial amount of capital investment relative to the Company's current net utility plant in service.

Q. How is the Company's risk profile affected by its substantial capital expenditure requirements?

A. As with any utility faced with substantial capital expenditure requirements, the Company's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under-recovery or delayed recovery of the invested capital; and (2) an inadequate return would put downward pressure on key credit metrics.

[84] Company provided data.

Q. Do credit rating agencies recognize the risks associated with elevated levels of capital expenditures?

A. Yes. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for large capital projects:

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[85]

To the extent that Cascade's rates do not permit the opportunity to recover its full cost of doing business, the Company will face increased recovery risk and thus increased pressure on its credit metrics.

[85] S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

Q. Have credit rating agencies commented on the size of Cascade's capital spending program?

A. Yes. Fitch has noted the sizeable capital spending program at Cascade and has indicated that the Company's credit metrics are expected to weaken through 2020. Specifically, Fitch writes: "Cascade's credit measures are expected to weaken through 2020 as a result of the negative effects of tax reform and a large capex program focused on accelerated pipe replacement."[86]

Q Does Cascade have a capital tracking mechanism to recover a portion of the costs associated with its capital expenditures plan between rate cases?

A. Yes. Currently, Cascade has an annual pipeline Cost Recovery Mechanism ("CRM"), which allows Cascade to recover the costs associated with qualifying gas infrastructure investments that improve safety and reliability. However, it is important to note that the majority of the costs included in Cascade's capital expenditures plan do not qualify for cost recovery through the CRM. In fact, the CRM represents only approximately 12 percent of projected Washington capital expenditures for 2020. As a result, Cascade still depends on rate case filings for the majority of its capital cost recovery.

Additionally, as shown in Exhibit No.___(AEB-2), Schedule 9, 68.00 percent of the proxy group utilities recover costs through capital tracking mechanisms. While Cascade does recover a portion of its capital expenditures

[86] FitchRatings, "Fitch Affirms Ratings of MDU, Montana-Dakota, Cascade, and Centennial Energy; Outlooks Stable," January 3, 2020, at 4.

through the CRM, the Company still relies on rate case filings for a large portion of its capital costs.

Q. What are your conclusions regarding the effect of the Company's capital spending requirements on its risk profile and cost of capital?

A. The Company's capital expenditure requirements as a percentage of net utility plant are significant and will continue over the next few years. Although Cascade has a CRM to recover a portion of these expenditures, the majority of operating subsidiaries held by the proxy group also have a capital tracking mechanism, meaning that this risk mitigation is already reflected in the proxy group companies. Further, a large portion of Cascade's capital expenditures do not qualify for recovery through the CRM; as such, the Company is still dependent on rate case filings to recover the majority of its capital expenditures. My conclusion is that Cascade's significant capital expenditure plan, only part of which qualifies for timely cost recovery, results in a risk profile that is greater than that of the proxy group and supports an ROE toward the higher end of the reasonable range of ROEs.

E. Regulatory Risk

Q. Please explain how the regulatory environment affects investors' risk assessments.

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory authorities recognize that because utility operations are capital intensive, regulatory decisions should enable

the utility to attract capital at reasonable terms; doing so balances the long-term interests of investors and customers. Cascade is no exception. The Company must finance its operations and requires the opportunity to earn a reasonable return on its invested capital to maintain its financial profile. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the Company to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its systems, and maintain the necessary levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the Company's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

Equity investors require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the Company's capital investments. Because equity investors are the residual claimants on the Company's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with the strength of regulatory support and its effect on future cash flows.

Q. Please explain how credit rating agencies consider regulatory risk in establishing a company's credit rating.

A. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity and key financial metrics. Of these criteria, regulatory framework and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[87]

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."[88] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[89]

[87] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.
[88] Standard & Poor's Global Ratings, Ratings Direct, U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others, June 25, 2018, at 2.
[89] *Id*., at 1.

Q. How does the regulatory environment in which a utility operates affect its access to and cost of capital?

A. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations." [90] Moody's further highlighted the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[91]

Q. Have you conducted any analysis of the regulatory framework in Washington relative to the jurisdictions in which the companies in your proxy group operate?

A. Yes. I have evaluated the regulatory framework in Washington on four factors that are important in terms of providing a regulated utility an opportunity to earn its authorized ROE. These are: 1) test year convention (i.e., forecast vs. historical); 2) method for determining rate base (i.e., average vs. year-end); 3) use of revenue decoupling mechanisms or other clauses that mitigate volumetric risk; and 4)

[90] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.
[91] *Ibid*.

prevalence of capital cost recovery between rate cases. The results of this regulatory risk assessment are shown in Exhibit No.___(AEB-2), Schedule 9 and are summarized below.

Test year convention: Cascade uses a modified historical test year adjusted for known and measurable changes in Washington, while 42.00 percent of the operating companies held by the proxy group provide service in jurisdictions that use a fully or partially forecast test year.

Rate Base: The Company's rate base in Washington is determined based on average rate base. The majority (i.e., 63.00 percent) of the operating subsidiaries held by the proxy group are allowed to use year-end rate base, meaning that the rate base includes capital additions that occurred in the second half of the test year and is more reflective of net utility plant going forward.

Volumetric Risk: Cascade has protection against volumetric risk in Washington, through a revenue decoupling mechanism that was approved in 2016. This is consistent with the proxy group where 89.00 percent of the operating companies held by the proxy group have some form of protection against volumetric risk.

Capital Cost Recovery: Cascade has a capital tracking mechanism to recover a limited range of capital investment costs (approximately 12 percent of projected Washington capital expenditures for 2020) between rate cases. As discussed above, 68.00 percent of the operating companies held by the proxy group have some form of capital cost recovery mechanism in place.

Q. Has RRA provided recent commentary regarding its regulatory ranking for Washington?

A. Yes. RRA has evaluated the regulatory environment in Washington as follows:

> The regulatory environment in Washington is, on balance, somewhat more restrictive than average from an investor viewpoint. The state's electric utilities remain vertically integrated and are regulated under a traditional regulatory paradigm. Rate case activity has been fairly robust, and authorized equity returns, some of which were approved following settlements, have been below prevailing industry averages when established. In addition, while there have been limited exceptions, the commission has primarily relied upon average rate base valuations and historical test years, each of which can exacerbate regulatory lag and render it difficult for the utility to earn the authorized return. On a more constructive note, the WUTC has approved the implementation of revenue decoupling mechanisms for most of the state's electric and gas utilities, and for one utility, has adopted a rate plan that provides for annual increases in allowed revenue per customer for the duration of the rate-plan period. Power-cost adjustment mechanisms, in effect for all of the state's electric utilities, contain dead-bands and sharing mechanisms that, while allowing the company an opportunity to retain a benefit, also limit the costs that may be recovered from ratepayers. In addition, for one utility operating in the state, recent rulings have disallowed purchased power costs from qualifying facilities located outside the state. In May 2017, RRA performed a comprehensive audit of its regulatory rankings. The ranking accorded Washington did not change as a result of this process. RRA continues to accord Washington an Average/3 ranking.[92]

[92] Regulatory Research Associates, Profile of Washington Utilities and Transportation Commission, accessed April 21, 2020.

Q. Have any credit rating agencies commented on the regulatory environment in Washington and how that affects Cascade's regulatory lag?

A. Yes. Fitch has observed that the regulatory environment in Washington has caused regulatory lag for Cascade and limited the Company's ability to earn its allowed ROE. Specifically, Fitch comments:

> Fitch believes the Washington regulatory compact remains somewhat challenging; authorized ROEs tend to be below prevailing industry averages and the use of average rate base valuations and historical test years exacerbates regulator lag, hindering Cascade's ability to materially improve its earned ROE. Fitch notes that the utility has been under earning its authorized return for several years.[93]

Q. How do the returns that have been authorized in Washington since May 2017 compare with the authorized returns in other jurisdictions?

A. As noted in RRA's evaluation above, the authorized ROEs for electric and natural gas utilities in Washington, while partially the result of settlement agreements approved by the Commission, have been below the average authorized ROEs for electric and natural gas utilities across the U.S. As shown in Figure 15, the Commission has issued orders in several natural gas utility rate cases since RRA completed its evaluation of the regulatory jurisdiction in Washington in May 2017. In each rate case, the ROE authorized was below the average authorized ROE for natural gas utilities for May 2017 through April 2020 of 9.69 percent by a range of

[93] FitchRatings, "Fitch Affirms Ratings of MDU, Montana-Dakota, Cascade, and Centennial Energy; Outlooks Stable," January 3, 2020, at 4.

approximately 20 to 30 basis points.[94] Therefore, the ROEs authorized in Washington continue to be below the prevailing national average.

Figure 15: Washington Authorized Returns – 2017– 2020[95]

Company	Docket	Service	Commission Decision	
			Date	Authorized ROE
Avista Corp.	UG-190335	Natural Gas	3/25/2020	9.40%
Cascade Natural Gas Corp.	UG-190210	Natural Gas	2/3/2020	9.40%
Northwest Natural Gas	UG-181053	Natural Gas	10/21/2019	9.40%
Cascade Natural Gas Corp.	UG-170929	Natural Gas	7/20/2018	9.40%
Avista Corp.	UG-170486	Natural Gas	4/26/2018	9.50%
Puget Sound Energy Inc.	UG-170034	Natural Gas	12/5/2017	9.50%

Q. What are your conclusions regarding the perceived risks related to the Washington regulatory environment?

A. As discussed throughout this section of my testimony, Moody's, S&P and Fitch have identified the supportiveness of the regulatory environment as an important consideration in developing their overall credit ratings for regulated utilities. Considering the regulatory adjustment mechanisms, many of the companies in the proxy group have timely cost recovery through forecasted test years, year-end rate base, cost recovery trackers and revenue stabilization mechanisms. While Cascade has a decoupling mechanism, the Company has higher than average regulatory risk due to the use of a historical test year adjusted for known and measurable changes, an average rate base, and the fact that a large portion of the Company's capital expenditure plan is not recovered through Cascade's capital cost tracker.

[94] The average authorized ROE of 9.70 percent excludes rate cases in New York since the ROE determinations are based on a formulaic approach that has generally resulted in the lowest returns for any state regulatory jurisdiction for both electric and natural gas distribution companies.

[95] Figure 15 excludes the expedited rate filing of Puget Sound Energy Inc. in 2018 (Docket Nos. UE-180899 and UG-180900) as the case was settled and reflected the equity ratio and return on equity established in Docket Nos. UE-170033 and UG-170034.

Additionally, authorized ROEs in Washington have been below the national average for electric and gas utilities across the U.S. For these reasons, I conclude that the authorized ROE for Cascade should be higher than the proxy group mean.

IX. CAPITAL STRUCTURE

Q. Is the capital structure of the Company an important consideration in the determination of the appropriate ROE?

A. Yes. Assuming other factors equal, a higher debt ratio increases the risk to equity investors. For debt holders, higher debt ratios result in a greater portion of the available cash flow being required to meet debt service, thereby increasing the risk associated with the payments on debt. The result of increased risk is a higher interest rate. The incremental risk of a higher debt ratio is more significant for common equity shareholders because they are the residual claimants on the cash flow of the Company. Therefore, the greater the debt service requirement, the less cash flow available for common equity holders.

Q. What is Cascade's proposed capital structure?

A. The Company's proposal is to establish a capital structure consisting of 50.40 percent common equity and 49.60 percent long-term debt.

Q. Did you conduct any analysis to determine if this requested equity ratio is reasonable?

A. Yes, I did. I reviewed the Company's proposed capital structure against the capital structures of the utility operating subsidiaries of the proxy companies. Because the ROE is set based on the return that is derived from the risk-comparable proxy

group, it is reasonable to look to the proxy group average capital structure to benchmark the equity ratio for the Company.

Q. Please discuss your analysis of the capital structures of the proxy group companies.

A. I calculated the mean proportions of common equity, long-term debt, and preferred equity for the most recent year for each of the companies in the proxy group at the operating subsidiary level.[96] My analysis of the capital structures of the proxy group companies is provided in Exhibit No.___(AEB-2), Schedule 10. As shown in that schedule, the equity ratios for the proxy group at the operating utility company level ranged from 48.52 percent to 63.05 percent with an average of 56.67 percent. Cascade's proposed common equity ratio of 50.40 percent is at the low end of the range of equity ratios for the utility operating subsidiaries of the proxy group companies and is therefore reasonable.

Q. Are there other factors to be considered in setting the Company's capital structure?

A. Yes. The credit rating agencies' response to the TCJA must also be considered when determining the equity ratio. As discussed previously in my testimony, all three rating agencies have noted that the TCJA has negative implications for utility cash flows. S&P and Fitch have specifically identified increasing the equity ratio as one approach to ensure that utilities have sufficient cash flows. Further, Moody's downgrade of the rating outlook for the entire utilities sector in June 2018 stressed

[96] Source: SNL Financial and FERC Form 1 and FERC Form 2 annual reports.

the importance of maintaining adequate cash flow metrics for the industry as a whole and Cascade in the context of this proceeding.

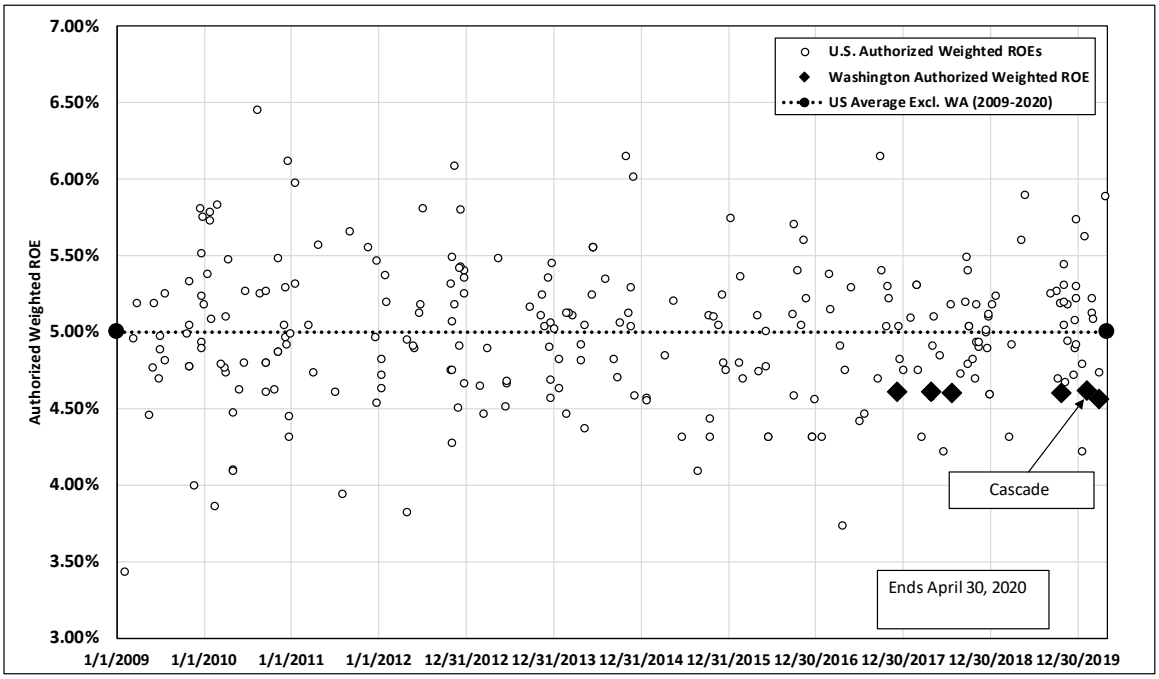
Q. Is there a relationship between the equity ratio and the authorized ROE?

A. Yes. The equity ratio is the primary indicator of financial risk for a regulated utility such as Cascade. To the extent the equity ratio is lower than the proxy group average, it is reasonable to authorize an ROE above the proxy group mean in order to compensate investors for the greater financial risk associated with a lower equity ratio.

Q. Have you conducted an analysis to examine how the Commission's recent authorized equity ratios and authorized ROEs compare to those authorized in other jurisdictions?

A. Yes. I compared the authorized WROEs (i.e., authorized ROE times the authorized equity ratio) for natural gas utilities in Washington to the authorized WROEs in other jurisdictions since January 2009. As shown in Figure 16, the authorized WROEs for natural gas utilities in Washington have been near the bottom of the range of WROEs authorized by state jurisdictions.

Figure 16: Comparison of Washington and U.S. Authorized Weighted Equity Returns for Natural Gas Utilities[97]



Q. Is it appropriate to consider the WROE that has been authorized in other jurisdictions when considering the appropriate equity ratio for Washington?

A. Yes. One of the most important principles in determining the ROE for a company is to ensure the company has the opportunity to earn a reasonable return on capital that is consistent with the returns available on investments of comparable risk. While it is referenced most often in the discussion of the appropriate ROE, it is equally important to consider the equity ratio. It is the combination of the equity ratio and the authorized ROE that defines the return to investors. Therefore, as

[97] Rate cases in Arkansas, Florida, Indiana, and Michigan have been excluded from Figure 16 since the authorized capital structure approved in the cases includes deferred taxes and other credits at zero or low cost. The additional items have the effect of reducing both the equity and debt ratios used to establish the rate of return which, in turn, produces results that are not comparable to allowed equity ratios in other states.

discussed above, the Commission must consider the equity ratio as well as the authorized ROE in establishing a risk-comparable return.

Q. What is your conclusion regarding an appropriate capital structure for Cascade?

A. Considering the actual capital structures of the operating companies in the proxy group, Cascade's proposed common equity ratio of 50.40 percent is at the low end of the range established by the capital structures of the utility operating subsidiaries held by the proxy group companies and well below the average of 56.67 percent. This difference in capitalization is significant, especially considering the cash flow concerns raised by credit rating agencies as a result of the TCJA, and thus should be considered in setting the appropriate ROE at the higher end of the range of reasonable equity returns. My conclusion is that the proposed equity ratio in combination with my recommended ROE are reasonable and would be adequate to support capital attraction on reasonable terms.

X. CONCLUSIONS AND RECOMMENDATION

Q. What is your conclusion regarding a fair ROE for Cascade?

A. Based on the quantitative and qualitative analyses presented in my Direct Testimony, and in light of the business and financial risks of Cascade compared to the proxy group, and the effects of Federal tax reform on the cash flow metrics of utilities, it is my view that an ROE of 10.30 percent is reasonable and would fairly balance the interests of customers and shareholders. This ROE would enable the Company to maintain its financial integrity and therefore its ability to attract capital

at reasonable rates under a variety of economic and financial market conditions, while continuing to provide safe, reliable and affordable natural gas utility service to customers in Washington.

Figure 17: Summary of Analytical Results[98]

Constant Growth DCF			
	Median Low	Median	Median High
30-Day Average Price	9.13%	9.62%	9.97%
90-Day Average Price	9.08%	9.43%	9.70%
180-Day Average Price	8.84%	9.42%	9.69%
Capital Asset Pricing Model			
	Current Risk-Free Rate (1.31%)	Q3 2020 – Q3 2021 Projected Risk-Free Rate (1.60%)	2021-2025 Projected Risk-Free Rate (3.20%)
Bloomberg Betas	11.01%	11.07%	11.39%
Value Line Betas	8.94%	9.05%	9.64%
Empirical CAPM			
Bloomberg Betas	11.62%	11.66%	11.90%
Value Line Betas	10.07%	10.15%	10.60%
Bond Yield Plus Risk Premium			
Risk Premium Results	9.06%	9.18%	9.86%
Expected Earnings Analysis			
	Mean		Median
Expected Earnings Results	9.94%		9.74%

Q. What is your conclusion with respect to Cascade's proposed capital structure?

A. My conclusion is that Cascade's proposed capital structure consisting of 50.40 percent common equity and 49.60 percent long-term debt is reasonable when compared to the capital structures of the companies in the proxy group and taking

[98] The results of the Constant Growth DCF analysis exclude the results for individual companies that did not meet the minimum threshold of 7.00 percent.

into consideration the impact of the TCJA on the cash flows and therefore should be adopted.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.