

Exhibit No.:

Issue(s): Cost of Capital

Witness: Ann E. Bulkley

Type of Exhibit: Surrebuttal Testimony

Sponsoring Party: Union Electric Company

File No.: GR-2024-0369

Date Testimony Prepared: May 2, 2025

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. GR-2024-0369

SURREBUTTAL TESTIMONY

OF

ANN E. BULKLEY

ON

BEHALF OF

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

St. Louis, Missouri

May 2025

TABLE OF CONTENTS

I. INTRODUCTION	3
II. SUMMARY AND CONCLUSIONS.....	4
III. PROXY GROUP	6
IV. COST OF EQUITY ESTIMATES VERSUS AUTHORIZED ROES	14
V. DCF ANALYSIS	18
VI. CAPM ANALYSIS.....	27
VII. ECAPM ANALYSIS	43
VIII. RISK PREMIUM ANALYSIS	47
IX. BUSINESS RISK FACTORS.....	51

**SURREBUTTAL TESTIMONY
OF
ANN E. BULKLEY
FILE NO. GR-2024-0369**

I. INTRODUCTION

Q: Are you the same Ann E. Bulkley that previously filed direct and rebuttal testimony in this proceeding?

A. Yes. I previously submitted direct and rebuttal testimony before the Missouri Public Service Commission (“Commission”) in this proceeding on behalf of Ameren Missouri (“Company” or “Ameren Missouri”), a wholly-owned subsidiary of Ameren Corporation (“Ameren”), regarding the Company’s gas utility operations.

Q: What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimonies of Dr. Seoung Joun Won on behalf of the Missouri Public Service Commission Staff (“Staff”),¹ and David Murray on behalf of the Missouri Office of the Public Counsel (“OPC”)² regarding their respective proposals for the return on equity for the Company in this proceeding. In addition, my surrebuttal testimony responds to the rebuttal testimony of Mr. Keith Majors on behalf of Staff regarding the regulatory and

¹ Missouri Public Service Commission, Case No. GR-2024-0369, Rebuttal Testimony of Seoung Joun Won, PhD, April 4, 2025 (“Won Rebuttal”).

² Missouri Public Service Commission, Case No. GR-2024-0369, Rebuttal Testimony of David Murray, April 4, 2025 (“Murray Rebuttal”).

business risks of the Company.³ To the extent that I do not address a particular issue raised by these witnesses in my surrebuttal testimony should not be viewed as acceptance of that issue.

Q: Are you sponsoring any exhibits in support of rebuttal direct testimony?

A. Yes. I am sponsoring Schedule AEB-SR1, Attachments 1 through 3, which have been prepared by me or under my direction.

II. SUMMARY AND CONCLUSIONS

Q: Please briefly summarize your surrebuttal testimony and your key conclusions and recommendations regarding the appropriate ROE for Ameren Missouri in this proceeding.

A. Nothing in the rebuttal testimonies of Dr. Won, Mr. Murray, or Mr. Majors has caused me to change my conclusions or recommendations. Based on my review of their respective rebuttal testimonies, my key conclusions regarding a reasonable ROE for the Company in this proceeding are as follows:

- It is not credible for Mr. Murray to suggest that I should have relied on the assumptions used by his cost of equity estimation models when he does not directly rely on the results of those models to support his recommended ROE.
- Neither Dr. Won nor Mr. Murray demonstrate that their suggested changes to my proxy group are supported.
 - It is unreasonable for Dr. Won to exclude NiSource Inc. (“NI”) from the proxy group because of a dividend cut in 2015. Dr. Won has

³ Missouri Public Service Commission, Case No. GR-2024-0369, Rebuttal Testimony of Keith Majors, April 4, 2025 (“Majors Rebuttal”).

1 provided no evidence in either his direct or rebuttal testimonies to
2 show that NI's dividend cut in 2015 affected the recent market data
3 he relies on to develop both his DCF and CAPM analyses. Further,
4 his consideration of 10-year period in the application of his dividend
5 screen is inconsistent his application of the dividend screen in prior
6 proceedings.

- 7 ○ There is no basis for Mr. Murray's exclusion of utilities comparable
8 to Ameren Missouri that have unregulated operations but derive the
9 majority of their operating income from regulated gas operations.
- 10 ○ In addition, there is no discernible trend in the constant growth
11 discounted cash flow ("DCF") results for the companies in my proxy
12 group that would indicate companies with a relatively higher
13 percentage of unregulated operations have a higher cost of equity
14 than companies with a relatively lower percentage of unregulated
15 operations, and Mr. Murray has not conducted any analysis or
16 provided evidence that supports this view.
- 17 • There is no basis to Mr. Murray's claim that regulators, including the
18 Commission, have incorrectly authorized ROEs for years that are
19 substantially higher than the cost of equity.
- 20 • Dr. Won's and Mr. Murray's criticism regarding the use of projected earnings
21 growth rates in the constant growth DCF model is unfounded.
 - 22 ○ While Dr. Won, and Mr. Murray essentially suggest that I should have
23 relied on the multi-stage DCF model using their assumptions, the
24 results of their multi-stage DCF models are below each of their ROE
25 recommendations.
 - 26 ○ Earnings are the fundamental driver of dividend growth rates, and
27 there is significant academic research demonstrating that EPS
28 growth rates are most relevant in stock price valuation.
- 29 • Dr. Won's and Mr. Murray's allegation that the market return, used in my
30 Capital Asset Pricing Model ("CAPM") and Empirical CAPM ("ECAPM")
31 analyses, is too high is contradicted by the fact that the methodology that I
32 use to estimate the market return:
 - 33 ○ Is consistent with historical average returns.
 - 34 ○ Has been accepted by various regulators.
 - 35 ○ Is consistent with the results of a study by the Federal Reserve Bank
36 of New York that evaluated various market risk premium estimates.
 - 37 ○ Furthermore, there are critical errors in Dr. Won's "adjustment" to my
38 CAPM and ECAPM analyses, that when corrected, continues to
39 support an ROE of 10.25 percent and fails to support Dr. Won's
40 conclusion.

- 1 • Neither Dr. Won nor Mr. Murray provide any evidence that the results of my
2 Bond Yield Plus Risk Premium analysis (“BYRP”) are unreliable.
 - 3 ○ The regression analysis that I conducted demonstrates a strong
4 inverse relationship between interest rates and the equity risk
5 premium for utilities.
 - 6 ○ Dr. Won’s concern regarding the data used in my BYRP analysis
7 applies equally to his own analysis and given that his ROE
8 recommendation in this proceeding is equivalent to the result of his
9 BYRP, the concern that he raises in regard to the BYRP could affect
10 his ROE recommendation in this proceeding.
- 11 • Dr. Won, Mr. Majors and Mr. Murray fail to consider the relevant comparison
12 point when evaluating the Company’s business and regulatory risks.
 - 13 ○ Each fail to recognize that the appropriate comparison is the
14 Company’s risk relative to the proxy group companies, not the
15 Company’s risk with or without regulatory mechanisms,
 - 16 ○ All else equal, while I agree that regulatory mechanisms that reduce
17 a utility’s regulatory lag in cost recovery help to mitigate risk, the
18 appropriate analysis for purposes of establishing the Company’s
19 ROE in this proceeding is to evaluate how Ameren Missouri’s
20 regulatory risk compares to the other companies in the proxy group.
 - 21 ■ Dr. Won and Mr. Murray incorrectly dismiss consideration of the
22 small size risk of Ameren Missouri’s natural gas operations because
23 Ameren Missouri also has electric operations and is a subsidiary of
24 Ameren. However, this reasoning violates the stand-alone principle
25 of ratemaking which requires regulated rates to be based on the risks
26 and benefits of the regulated utility, not its investors, parent or
27 affiliates.

28 III. PROXY GROUP

29 **Q: Please summarize the disagreements that Dr. Won and Mr. Murray have with**
30 **the proxy group that you relied on for Ameren Missouri.**

31 A. Dr. Won disagrees with the inclusion NiSource Inc. (“NI”) in my proxy group.⁴ Dr.
32 Won believes that NI should be excluded because NI cut its dividend in 2015 and

⁴ Won Rebuttal, at 8.

1 2016. He believes companies that have cut their dividend should be excluded
2 because: (1) a dividend cut could signal an increase in financial instability; (2) a past
3 dividend cut lowers expected future dividends and could signal lower growth, each
4 of which could result in the DCF model producing an inflated cost of equity estimate;
5 and (3) dividend cuts can signal weaker financial performance and increase price
6 volatility which would increase both the equity risk premium and beta thus also
7 inflating the cost of equity estimate produced by the CAPM.⁵

8 Mr. Murray disagrees with the inclusion of Southwest Gas (“SWX”) and Spire (“SR”) in my proxy group because they both have “significant exposure” (which he defines
9 as greater than 10 percent) to unregulated operations. Mr. Murray suggests that
10 companies with a higher percentage of unregulated operations have greater risk,
11 and therefore, concludes that I do not account for the increased risk of unregulated
12 operations when comparing the business risk of Ameren Missouri to the proxy
13 group.⁶ Further, Mr. Murray also contends that my cost of equity analysis is
14 “incomplete” because I have not considered Ameren in my assessment of Ameren
15 Missouri’s cost of equity.⁷

⁵ *Id.*, at 8-9

⁶ Murray Rebuttal, at 19-20.

⁷ *Id.*, at 20.

Q: Do you agree with Dr. Won that NI should be excluded because of its dividend cuts in 2015 and 2016?

No. First, it is important to note that Dr. Won incorrectly states that NI had a dividend cut in both 2015 and 2016. As I discussed in my rebuttal testimony and shown in Figure 1 below, NI reduced its dividend in 2015 when the company spun—off Columbia Pipeline Partners LP; however, NI did not cut its dividend in 2016. As shown in Figure 1, it appears Dr. Won incorrectly assumes that because the annual dividend for NI is lower in 2016 that it reduced its dividend in 2016, which is clearly not the case. In fact, NI began to increase its dividend again in 2016.

FIGURE 1: NI – DIVIDEND PER SHARE (“DPS”) – 2014-2016⁸

	2014	2015	2016
Quarter 1	\$0.25	\$0.26	\$0.16
Quarter 2	\$0.25	\$0.26	\$0.16
Quarter 3	\$0.26	\$0.16	\$0.17
Quarter 4	\$0.26	\$0.16	\$0.17
Annual	\$1.02	\$0.83	\$0.64

Second, as discussed in my rebuttal testimony, while I agree that companies included in the proxy group must pay a consistent cash dividend that has not been reduced, I disagree with Dr. Won’s use of a ten-year historical review for the following reasons:⁹

⁸ Bloomberg Professional.

⁹ Missouri Public Service Commission, Case No. GR-2024-0369, Rebuttal Testimony of Ann E. Bulkley, April 4, 2025 (“Bulkley Rebuttal”), at 36-39.

- 1 • Dr. Won's use of a ten-year historical review in the current proceeding is not
2 consistent with the review period he relied on in Ameren Missouri's last rate
3 case (six years). Had Dr. Won relied on the most recent six years in the
4 application of the dividend screen, NI would have been included in his proxy
5 group.
- 6 • Dr. Won's use of the ten-year period starting in 2015 is inconsistent with his
7 criteria in recent rate proceedings for both electric (review period started in
8 2019) and water (review period started in 2017) utilities. Dr. Won has
9 provided no evidence to suggest that the market would react differently
10 based on the regulated business (water, natural gas or electric utility), such
11 that it would make sense to change the duration of the dividend screen
12 period. Furthermore, NI would meet the dividend screen that Dr. Won has
13 applied in rate proceedings for electric and water utilities
- 14 • Dr. Won has provided no evidence in either his direct or rebuttal testimonies
15 to show that NI's dividend cut in 2015 affected the recent market data he
16 relies on to develop both his DCF and CAPM analyses.

17 **Q: Do you agree with Mr. Murray that your proxy group includes companies with**
18 **significant unregulated operations that result in greater risk for the proxy**
19 **group companies?**

20 A. No. First, Mr. Murray's characterization of SWX's unregulated operations is
21 incorrect. Mr. Murray's contends that SWX's unregulated operations "include its
22 nonregulated utility infrastructure construction business, Centuri Group, Inc.
23 ("Centuri"), which it is in the process of divesting."¹⁰ However, SWX is no longer "in
24 the process" of divesting Centuri as Centuri was spun-off in April 2024.¹¹ Therefore,
25 SWX divested the unregulated operations Mr. Murray references as the reason for
26 excluding SWX from the proxy group well before Mr. Murray filed his direct testimony
27 in February 2025. Further, while Mr. Murray contends that the transaction caused

¹⁰ Murray Rebuttal, at 19.

¹¹ Manya Saini and David French, "Southwest Gas unit jumps in strong market debut," *Reuters*, April 18, 2024.

1 volatility in SWX's share price, since the transaction closed in April 2024, it is
2 reasonable to assume that the transaction would not have caused volatility in the
3 share prices that Mr. Murray relied on to develop his multi-stage DCF analysis,
4 which reflected the three-month average ending January 1, 2025. As a result, Mr.
5 Murray should have included SWX in his proxy group.

6 Second, as discussed in my direct testimony, I apply a screening criterion that
7 requires a company to derive at least 70.00 percent of its operating income from
8 regulated operations, which ensures that, together with my other screening criteria,
9 the companies in my cost of equity analyses have operating and financial risk
10 characteristics that are substantially comparable to Ameren Missouri, including
11 substantial regulated gas operations.¹² As shown in Schedule AEB-D2, Attachment
12 2 of my direct testimony, SWX and SR derive over 86.00 percent and 83.00 percent,
13 respectively, of operating income from regulated operations over the most recent
14 three-year period of 2021-2023.¹³

15 Third, while I screen the proxy group to limit unregulated operations and will show
16 below that there is no evidence that companies in my proxy group with unregulated
17 operations are perceived to have higher risk, Mr. Murray does not conduct any
18 analysis to support his conclusions that the companies such as either SWX or SR

¹² Missouri Public Service Commission, Case No. GR-2024-0369, Direct Testimony of Ann E. Bulkley, September 30, 2024 ("Bulkley Direct"), at 22.

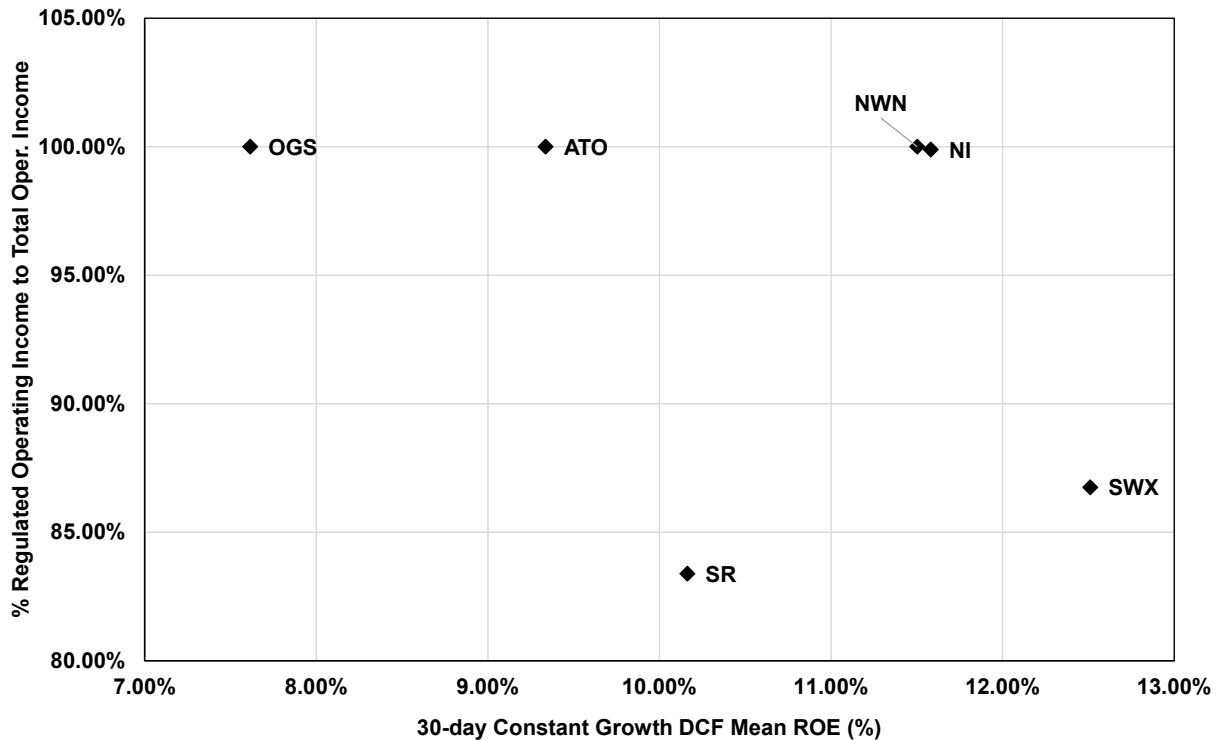
¹³ For SWG, the three-year period of 2021-2023 would include the unregulated operations of Centuri. Therefore, with the recent divestiture of Centuri, SWX's percentage of operating income derived from regulated operations will increase going forward.

1 with a higher percentage of unregulated operations in my proxy group have greater
2 risk than Ameren Missouri.

3 **Q: Do you conduct any analyses to test whether the unregulated operations of**
4 **the proxy companies that you have relied upon have biased the results of your**
5 **analyses?**

6 A. Yes. Figure 2 graphs the percentage of regulated operations, as determined by
7 operating income, and the constant growth DCF results for my proxy group from my
8 rebuttal testimony. As shown, there is no discernible trend in the constant growth
9 DCF results for the companies in my proxy group that would indicate companies
10 with a relatively higher percentage of unregulated operations have a higher cost of
11 equity than companies with a relatively lower percentage of unregulated operations.
12 This further supports that the operating risk of companies with a relatively higher
13 percentage of unregulated operations in the proxy group are not perceived to have
14 greater risk than companies in the proxy group with a relatively lower percentage of
15 unregulated operations.

**FIGURE 2: COMPARISON OF 30-DAY CONSTANT GROWTH DCF RESULTS AS OF
FEBRUARY 28, 2025 AND PERCENTAGE OF REGULATED OPERATING INCOME¹⁴**



Therefore, I disagree with Mr. Murray that my proxy group does not reasonably address unregulated operations for the proxy companies.

Q: Does Dr. Won include SWX and SR in his proxy group?

A. Yes, Dr. Won includes both SWX and SR in his proxy group used to estimate the ROE for Ameren Missouri.¹⁵

¹⁴ Bulkley Rebuttal, Schedule AEB-R1, Attachment 2.

¹⁵ Missouri Public Service Commission, Case No. GR-2024-0369, Direct Testimony of Seoung Joun Won, PhD, February 28, 2025 ("Won Direct"), at 41.

1 **Q: Do you agree with Mr. Murray that the cost of equity for Ameren should be**
2 **used to determine the cost of equity for Ameren Missouri?**¹⁶

3 A. No. First, while Ameren Missouri is a subsidiary of Ameren, it is important to treat
4 Ameren Missouri as a stand-alone entity and evaluate the Company based on its
5 utility operations in Missouri. The *Hope* and *Bluefield* decisions require that the
6 return that is established for a regulated utility be based on the returns for other
7 entities of comparable risk. It does not suggest that the return be based on the
8 return available to the parent company or affiliates.

9 As Dr. Roger Morin states:

10 A utility operating company, segment, division, or line of business
11 must be treated as a separate stand-alone entity, distinct from its
12 parent company because it is the cost of capital for the division that
13 we are attempting to measure and not the cost of capital for the
14 parent company's consolidated activities.¹⁷

15 Second, I exclude Ameren from the proxy group used to estimate the cost of equity
16 for Ameren Missouri because of the circularity that results from the use of the parent
17 company market return to establish the return for the operating utility, which in turn
18 contributes to the ROE of the parent company.

¹⁶ Murray Rebuttal, at 20.

¹⁷ Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 252.

IV. COST OF EQUITY ESTIMATES VERSUS AUTHORIZED ROES

Q: What is Mr. Murray's position regarding the cost of equity for utilities and authorized ROEs?

A. Mr. Murray contends that authorized ROEs have exceeded the cost of equity because the market-to-book ratios for utilities have exceeded 1.0.¹⁸

Q: Do you agree with Mr. Murray that authorized ROEs are above investors' required returns because the market-to-book ratios for utilities are greater than 1.0?

A. No. There are several reasons why the market-to-book ratio for utilities may exceed 1.0 other than the ROE exceeding the cost of equity. First, Mr. Murray's position assumes that the Efficient Market Hypothesis ("EMH") holds true. The EMH theory contends that all information currently known by investors is already reflected in current stock prices.¹⁹ For example, the theory of the DCF model is that the current share price is equal to the present value of all expected future dividends. Therefore, if markets were fully efficient as suggested by Mr. Murray, changes in share prices could only be explained by new information that results in a change to the expected dividends.

¹⁸ Murray Rebuttal, at 34; Murray Direct, at 5, and 20-21.

¹⁹ R. J. Shiller, *Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?*, The American Economic Review, Vol. 71, No. 3, at 421-436 (1981).

1 However, as Dr. Lawrence Kolbe and Dr. Michael Vilbert outlined in their 2016
2 presentation to the California Public Utilities Commission, there is no consensus
3 among economists regarding whether the theory of the efficient market hypothesis
4 holds true and share prices are rationally priced, and even assuming for the sake of
5 argument that the efficient market hypothesis does in fact hold true, there is also no
6 consensus regarding which model produces reasonable estimates of the cost of
7 equity.²⁰ In fact, Nobel Prize-winning economist Dr. Robert Shiller and others have
8 provided compelling evidence against the efficient market hypothesis, concluding
9 that share prices are not rationally priced and that the DCF model does not fully
10 explain changes in share prices and thus will not accurately estimate the required
11 return of investors.²¹ There are numerous practical examples supporting this
12 position (e.g., large sudden declines in the market such as Black Monday in 1987,
13 the Great Recession of 2008/09, the COVID-19 crash in March 2020, and the “tech
14 bubble” of the late 1990s) that cannot be explained by new information regarding
15 dividends).²²

²⁰ A. Lawrence Kolbe, Ph.D. and Michael J. Vilbert, Ph.D., *Moving Toward Value in Utility Compensation Shareholder Value Concept*,” Presented to the California Public Utilities Commission (June 13, 2016). <https://www.brattle.com/insights-events/publications/moving-toward-value-in-utility-compensation-shareholder-value-concept/>

²¹ R. J. Shiller, “Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?,” *The American Economic Review*, 1981, Vol. 71, No. 3, at 42-436.

²² See, also, R. J. Shiller, “From Efficient Markets Theory to Behavioral Finance,” *Journal of Economic Perspectives*, 2003, Vol. 17, No. 1, at 83–104. Dr. Shiller contended that there were “asset bubbles” such as the “tech boom” from 1994 to 2000 that resulted in substantial increases in share prices that could not be explained by market fundamentals.

1 If share prices are not necessarily rationally priced and cannot be explained by the
2 DCF model, then a market-to-book ratio greater than 1.0 cannot be attributed to the
3 ROE exceeding the cost of equity as Mr. Murray suggests (*i.e.*, the DCF model will
4 not necessarily produce an accurate estimate of the return required by investors
5 given the level of prices and, as a result, the resulting cost of equity estimate
6 produced by the DCF model, if set as the authorized ROE, would not produce a
7 market-to-book ratio of 1.0 – meaning prices would not adjust in the way described
8 by Mr. Murray).

9 Second, as Drs. Kolbe and Vilbert also noted, even if one assumes that the theory
10 of the EMH holds, there are several important conditions that must hold before one
11 can assume that the ROE equals the cost of equity at a market-to-book ratio of 1.0
12 for regulated utilities. Those conditions include:

- 13 • A utility has to be regulated on rate base identical to its GAAP book value.
- 14 • A utility has to have 100 percent regulated operations.
- 15 • The regulatory system has to be in full equilibrium (*i.e.*, there cannot be a lag
16 in the adjustment of the authorized ROE to the market cost of equity); and
- 17 • The ROE expected, on average, has to equal the authorized ROE.²³

18 As Drs. Kolbe and Vilbert concluded, it is very unlikely that all of these conditions
19 will be satisfied. For example, changes in cost trends or regulatory lag can cause a
20 utility to earn more or less than the allowed return, and if the expected return

²³ A. Lawrence Kolbe, Ph.D. and Michael J. Vilbert, Ph.D., *Moving Toward Value in Utility Compensation Shareholder Value Concept*,” Presented to the California Public Utilities Commission (June 13, 2016). <https://www.brattle.com/insights-events/publications/moving-toward-value-in-utility-compensation-shareholder-value-concept/>

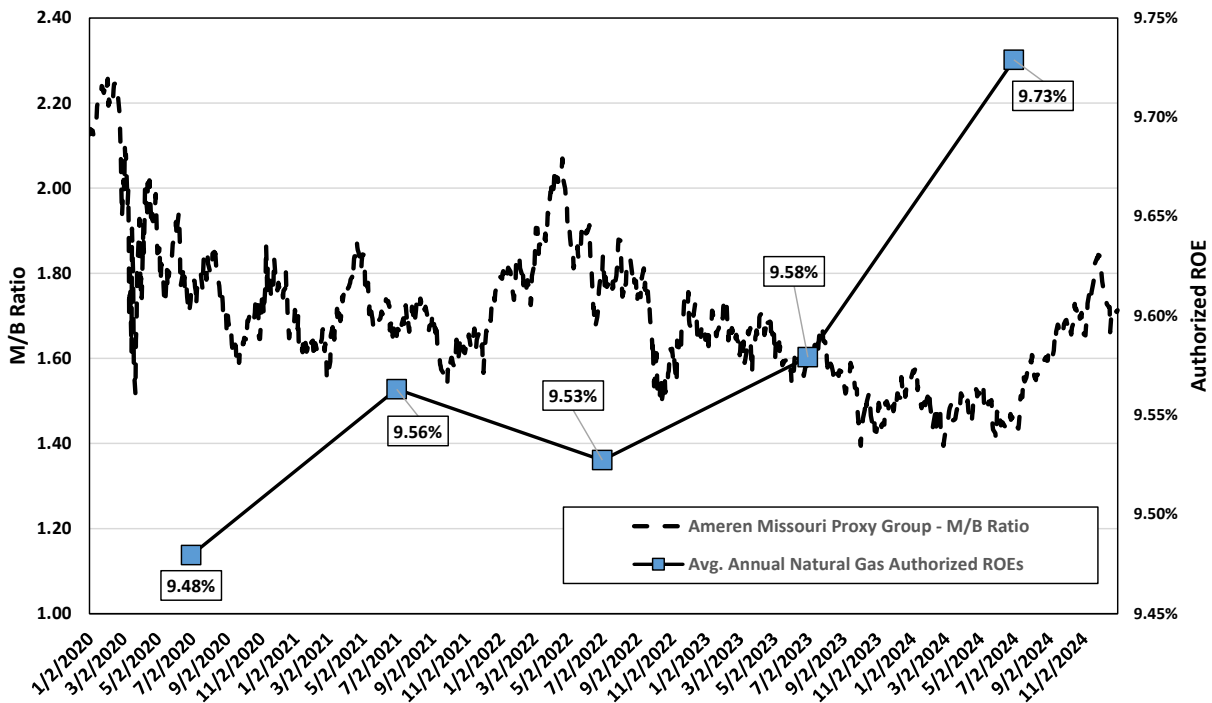
1 deviates from the allowed return, then the allowed return will not equal the cost of
2 equity, and the market-to-book ratio will not equal 1.0.

3 **Q: Do recent trends in authorized ROEs and market-to-book ratios support Mr.**
4 **Murray's claim that authorized ROEs have exceeded the cost of equity?**

5 A. No, they do not. To test Mr. Murray's theory, I compared the average market-to-
6 book ratio for the companies in my proxy group for the period of January 1, 2020
7 through December 31, 2024 to the average annual authorized ROEs for natural gas
8 utilities for 2020 through 2024 shown in Figure 6 of my rebuttal testimony. As shown
9 in Figure 3, the market-to-book ratio for the companies in my proxy group are
10 currently lower than in January 2020; however, the average annual authorized ROE
11 for natural gas utilities has increased.

12 Mr. Murray contends that authorized ROEs have been set higher than the cost of
13 equity, and given that authorized ROEs increased over the period of 2020-2024, Mr.
14 Murray's theory is that the market-to-book ratios for utilities should have also
15 increased. However, the opposite has occurred and the market-to-book ratio for the
16 companies in my proxy group declined over this period. Therefore, Mr. Murray's
17 theory is inconsistent with market evidence and should be disregarded by the
18 Commission.

FIGURE 3: COMPARISON OF THE AVERAGE MARKET-TO-BOOK RATIO FOR MS. BULKLEY'S PROXY GROUP AND THE AVERAGE ANNUAL AUTHORIZED ROES FOR NATURAL GAS UTILITIES – 2020-2024²⁴



V. DCF ANALYSIS

Q: Please summarize the positions of Dr. Won and Mr. Murray regarding your DCF analyses.

A. Both witnesses contend that the use of projected EPS growth rates in the constant growth DCF model overstates the cost of equity.²⁵ Dr. Won suggests that it would be more appropriate to rely on a long-term growth rate that approximates the level

²⁴ S&P Capital IQ Pro.

²⁵ Won Rebuttal, at 10-11; Murray Rebuttal, at 21-22.

1 of long-term gross domestic product (“GDP”) growth.²⁶ Mr. Murray suggests that, by
2 relying on projected EPS growth rates, I have assumed that 59.38 percent of total
3 returns will be in form of capital gains with the remaining portion related to dividends,
4 which he testifies is “illogical” since utility companies pay out approximately two-
5 thirds of their earnings as dividends to investors.²⁷

6 **Q: Do you agree with these assessments of your DCF analyses?**

7 A. No. It is important to recognize that while both witnesses essentially suggest that I
8 should rely on either a two-step DCF (Dr. Won) or a multi-stage DCF model (Mr.
9 Murray) using their assumptions, none of them directly rely on the output of those
10 DCF models for their respective ROE recommendations. Specifically:

- 11 • The result of Dr. Won’s two-step DCF is 8.68 percent, or 96 basis points
12 lower than his ROE recommendation of 9.64 percent.²⁸
- 13 • The results of Mr. Murray’s multi-stage DCF range from 7.68 percent to 8.23
14 percent, or approximately 127 to 182 basis points lower than his ROE
15 recommendation of 9.50 percent.²⁹

16 Since each of these witnesses essentially abandon their cost of equity estimates
17 from their respective DCF analyses for purposes of their ROE recommendation, it

²⁶ Won Rebuttal, at 11-12

²⁷ Murray Rebuttal, at 22

²⁸ Won Direct, at 3, and 43.

²⁹ Missouri Public Service Commission, Case No. GR-2024-0369, Direct Testimony of David Murray, February 28, 2025 (“Murray Direct”), at 2, Schedule DM-D-2 through Schedule DM-D-5.

1 is unreasonable to suggest that the assumptions or methodologies they rely on are
2 superior to the DCF analyses that I have presented in my testimonies.

3 **Q: What is your response to these witnesses regarding the use of projected EPS**
4 **growth rates in the constant growth DCF model?**

5 A. First, as discussed in my rebuttal testimony, there are multiple reasons why earnings
6 growth rates are the appropriate measure of growth in the DCF model including, but
7 not limited to, the fact that earnings are the fundamental driver of dividend growth
8 rates (*i.e.*, over the long-term, dividend growth can only be sustained by earnings
9 growth) and there is significant academic research demonstrating that EPS growth
10 rates are most relevant in stock price valuation.³⁰

11 Second, as discussed in my direct and rebuttal testimonies, I have not relied
12 exclusively on the results of the constant growth DCF model. Rather, I consider the
13 results of multiple cost of equity estimation models in determining the range of ROEs
14 that are appropriate to consider for the Company.³¹

15 Third, considering the empirical studies comparing the total factor productivity
16 (“TFP”) growth of the utility industry relative to the economy, it is reasonable to
17 assume that earnings growth for utilities could exceed GDP growth over the long
18 term. In a study filed as part of the Rate Regulation Initiative of the Alberta Utilities

³⁰ Bulkley Rebuttal, at 44-46.

³¹ Bulkley Direct at 6, and 24-25; Bulkley Rebuttal, at 4.

1 Commission, the authors calculated TFP growth³² for 72 U.S. electric and
2 combination electric and natural gas utilities and for the U.S. economy for the period
3 of 1972 through 2009. For the U.S. utility group, TFP growth averaged 0.96 percent
4 over the period of 1972 to 2009,³³ while TFP growth for the U.S. economy was 0.91
5 percent,³⁴ indicating that electric and combination electric and natural gas utilities
6 were approximately 5 percent more productive than the U.S. economy over the
7 study period. Therefore, the authors showed that utility growth exceeded growth for
8 the U.S. economy for approximately 40 years.

9 Finally, while each of these witnesses criticizes the use of analysts' projected EPS
10 growth rates in the constant growth DCF model, as noted, their preferred
11 specification of the DCF model produces cost of equity estimates for their respective
12 proxy groups that are below any authorized ROE in nearly half of a century for a
13 natural gas utility in a jurisdiction with a comparable regulatory framework to
14 Missouri, and, as I just discussed, are also more than 96 to 182 basis points below
15 their own ROE recommendations for Ameren Missouri.

³² TFP growth is a measure of productivity calculated as the difference between output growth and input growth. Higher TFP growth indicates that a company is converting inputs into higher levels of output growth (*i.e.*, increased productivity).

³³ Jeff Makholm, and Agustin Ros, "Update, Reply and PBR Plan Review for AUC Proceeding 566 – Rate Regulation Initiative", February 22, 2012, at 5.

³⁴ *Id.*, at 19.

1 **Q: Is it reasonable that you did not conduct a two-step or multi-stage DCF such**
2 **as suggested by Dr. Won and Mr. Murray?**

3 A. Yes. I did not conduct a two-step or multi-stage DCF analysis because, as
4 discussed in my rebuttal testimony, there are multiple issues with the multi-stage
5 DCF analysis, and particularly with the specifications of Dr. Won and Mr. Murray,
6 that indicate the constant growth DCF model is the appropriate DCF model to
7 estimate the cost of equity in this proceeding.³⁵

8 **Q: Did you review the academic research Dr. Won references to support the use**
9 **of a GDP growth rate in the DCF model?**

10 A. Yes. Dr. Won references the text *New Regulatory Finance*, in which Dr. Morin notes
11 that all growth rates eventually converge to a level consistent with the growth in
12 GDP.³⁶ However, it is first important to note that Dr. Won's characterization of Dr.
13 Morin's *New Regulatory Finance* is misleading. Dr. Morin stated that:

14 **[s]ome financial economists** are uncomfortable with the
15 assumption that the DCF growth rates are perpetual growth rates,
16 and argue that above average growth can be expected to prevail for
17 a fixed number of years and then the growth rate will settle down to
18 a steady-state long-run level, consistent with that of the economy.³⁷

19 Dr. Morin did not note that "[a]nalysts are of the concurring opinion" that long-term
20 growth rates will converge to GDP. Furthermore, in Dr. Morin's most recent 2021

³⁵ Bulkley Rebuttal, at 42-51, and 81-91.

³⁶ Won Rebuttal, at 11.

³⁷ Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006, at 302; emphasis added.

1 text, he addresses the shortcomings of using GDP growth as proposed by Dr. Won
2 as the long-term growth rate estimate in the multi-stage DCF model:

3 One central assumption in Multi-Stage DCF models, and a potential
4 Achilles' heel, in my view, is that utility growth rates will eventually
5 match the growth of the macroeconomy usually measured by the
6 growth of the Gross Domestic Product (GDP). I am not aware of any
7 financial literature supporting the notion that utility earnings per share
8 are expected to grow at the average growth of the economy, or GDP
9 growth.

10 ***

11 Multi-Stage DCF applications appear somewhat disconnected from
12 the assumptions of the method and the consensus expectations of
13 investors. The investment community does not look to GDP growth
14 over the next several decades when evaluating an investment in
15 utility stocks, nor does it anticipate a series of discrete multi-stage
16 decennial stages. I am not aware of any evidence that investors
17 evaluate the future based on the assumptions and data sources
18 required to apply the two-stage or three stage DCF model.³⁸

19 **Q: Is Dr. Won's GDP growth rate consistent with the growth rate that Dr. Morin**
20 **relies on in the multi-stage DCF analysis?**

21 A. No. While Dr. Won relies on Dr. Morin for as support for the use of GDP growth, he
22 fails to discuss, and chooses not to rely on, the methodology that Dr. Morin *employs*
23 to estimate the long-term growth in GDP in his multi-stage DCF analysis.

³⁸ Roger A. Morin, *Modern Regulatory Finance*, Pubic Utilities Reports, Inc., 2021, at 486.

1 Dr. Morin estimates the long-term growth rate in nominal GDP by first calculating
2 the growth in real GDP and then adding the expected inflation rate.³⁹ In his text, Dr.
3 Morin indicates that the growth rate in real GDP is estimated by calculating the
4 compound annual growth rate in real GDP from 1929 through the present, and the
5 expected inflation rate is estimated as the difference between the yield on the 20-
6 year Treasury bond and the yield on the 20-year Treasury Inflation Protected bond,
7 resulting in a long-term GDP growth rate of 5.50 percent in 2020.⁴⁰

8 **Q: How does Dr. Won's growth rate differ from the approach supported by Dr.**
9 **Morin?**

10 A. Dr. Won relies on the projected GDP growth rate of 3.90 percent projected by the
11 Congressional Budget Office ("CBO") for the period for the 10-year period of 2024
12 through 2034 as the estimate of long-term growth in his two-stage DCF model.⁴¹
13 Thus, Dr. Won is relying on a long-term growth rate using CBO data that only reflects
14 growth for a ten-year forward-looking period. However, Dr. Won applies this growth
15 rate for a long-term period that is inconsistent with the period for which the CBO has
16 established this estimate. Therefore, Dr. Won's long-term growth estimate does not
17 reflect the CBO's views for the entire period for which he relies on this projection.

³⁹ *Id.*, at 388.

⁴⁰ *Id.*

⁴¹ Won Direct, Schedule SJW-d10.

1 **Q: Have you reviewed any additional academic research that supports Dr.**
2 **Morin's methodology for estimating the long-term nominal GDP growth rate?**

3 A. Yes. As discussed in my rebuttal testimony, similar to Dr. Morin's methodology,
4 *Morningstar* recommends estimating the projected long-term nominal GDP growth
5 rate by first calculating the historical growth in real GDP and then adding the
6 expected inflation rate.⁴² As shown on Schedule AEB-R1, Attachment 9 of my
7 rebuttal testimony, when longer-term GDP growth is estimated consistent with the
8 methodology outlined by *Morningstar*, the long-term nominal GDP growth rate is
9 5.50 percent – or significantly higher than the growth rate that Dr. Won relies on.

10 **Q: Have you compared the long-term GDP growth rate that is consistent with the**
11 **methodology outlined by Dr. Morin and *Morningstar* to the EPS growth rates**
12 **you relied on in your constant growth DCF model?**

13 A. Yes. The long-term GDP growth rate consistent with the methodology outlined by
14 Dr. Morin and *Morningstar* is 5.50 percent. The proxy group average EPS growth
15 rate is 5.98 percent in my direct testimony as shown on Schedule AEB-D2,
16 Attachment 3, and 6.74 percent in my rebuttal testimony as shown on Exhibit AEB-
17 R1, Attachment 2. Therefore, the long-term GDP growth rate is more supportive of
18 the average analysts' projected EPS growth rates that I have relied on as opposed
19 to the GDP growth rate assumed by Dr. Won, which is 160 basis points lower than
20 the methodology outlined by *Morningstar* and consistent with Dr. Morin.

⁴² Bulkley Rebuttal, at 47-48.

1 Therefore, while Dr. Won suggests that if I had used his two-step DCF approach the
2 resulting cost of equity would be 9.67 percent,⁴³ there is no basis for his analysis
3 given that his GDP growth rate is inconsistent with the methodology of the source
4 that he cites in his testimony.

5 **Q: Why does Mr. Murray conclude that your reliance on projected EPS growth**
6 **rates is “illogical?”⁴⁴**

7 A. Mr. Murray states that by relying on projected EPS growth rates, I have assumed
8 that approximately 59.38 percent of investors’ returns will be in the form of capital
9 gains (*i.e.*, price appreciation) with the remaining portion attributable to dividends.⁴⁵
10 According to Mr. Murray, this assumption is illogical given that utilities typically have
11 a payout ratio that is approximately two-thirds of their annual EPS, meaning payout
12 approximately 67 percent of earnings as dividends. Mr. Murray contends that if it is
13 assumed that 59.38 percent of an investor’s return is attributable to dividends (*i.e.*,
14 closer to his assumed payout ratio for utilities), the cost of equity would be 6.96
15 percent, which is closer to the investors’ return requirements than a cost of equity
16 of 10.07 percent.⁴⁶

⁴³ Won Rebuttal, at 12.

⁴⁴ Murray Rebuttal, at 22.

⁴⁵ Murray Rebuttal, at 22; Mr. Murray’s referenced 59.38 percent is calculated as the proxy group median projected EPS growth rate of 5.98 percent divided by the result of the proxy group average constant growth DCF result assuming 90-day average stock prices of 10.07 percent.

⁴⁶ Murray Rebuttal, at 22.

1 **Q: Is there any merit to Mr. Murray's contention?**

2 A. No. It is important to note that a cost of equity estimate of 6.96 percent is
3 significantly lower than any authorized return for a natural gas utility since at least
4 1980 in a jurisdiction with a comparable regulatory framework to Missouri. A return
5 of 6.96 percent is clearly unreasonable and over 250 basis points lower than Mr.
6 Murray's own ROE recommendation in this proceeding, and which clearly would not
7 satisfy the comparable return standard of *Hope* and *Bluefield*.

8 **VI. CAPM ANALYSIS**

9 **Q: What are the positions of Dr. Won and Mr. Murray regarding your CAPM**
10 **analyses?**

11 A. Each of these witnesses contend that the market return used in my CAPM analysis
12 is unreasonable. Specifically:

- 13 • Dr. Won suggests that the calculation of the market return should exclude
14 companies that do not pay dividends and should not rely on short-term
15 growth rates.⁴⁷ Dr. Won states that when companies that do not pay
16 dividends are removed from the market return calculation, and his two-step
17 DCF approach is also applied to the derivation of the market return, the
18 result is a market return of 10.02 percent. Dr. Won contends that when this
19 market return of 10.02 percent is applied to my CAPM, the resulting cost of
20 equity would be 8.79 percent.⁴⁸
- 21 • Mr. Murray states that he is unaware of any authoritative sources that
22 calculate the market return such as I have done (*i.e.*, using a constant
23 growth DCF model with projected earnings growth rates as the estimate of

⁴⁷ Won Rebuttal, at 14.

⁴⁸ *Id.*, at 17; see also Dr. Won's workpapers titled "1 Summary," "4 CAPM," and "6 Mkt Return."

1 growth).⁴⁹ Mr. Murray states that the sources he has reviewed recommend
2 using a growth rate no higher than the growth rate of GDP when estimating
3 the long-term return for the market.⁵⁰ Finally, Mr. Murray asserts that the
4 Wilshire 5000, which is an index of the value of all American stocks traded
5 in the United States, would be approximately 40 times the value of GDP in
6 50 years if the index grew at the earnings growth rate that I have relied on
7 to calculate my market return.⁵¹

8 **Q: Do you agree with Dr. Won's proposed adjustment to your market return**
9 **calculation to remove non-dividend paying companies?**

10 A. No. While Dr. Won attempts to recalculate the market return used in my CAPM
11 analysis by excluding non-dividend paying companies, his calculation contains an
12 error. Therefore, neither his adjustment to my market return nor his CAPM result of
13 8.79 percent based on that incorrect market return can be relied upon.

14 **Q: Please explain the error in Dr. Won's re-calculation of your market return**
15 **calculation, excluding non-dividend paying companies.**

16 A. The market return calculation relied upon in my direct testimony, which Dr. Won
17 adjusts and then uses in his modifications to my CAPM and ECAPM analyses, is a
18 market return weighted by the market capitalization of the companies in the S&P
19 500 Index. However, there is an error in Dr. Won's adjustment to remove non-
20 dividend paying companies. Specifically, as shown on Dr. Won's rebuttal testimony
21 workpaper "6 Market Return," his calculation does not properly reflect the weightings
22 of the companies in the market return when he attempts to remove the non-dividend

⁴⁹ Murray Rebuttal, at 23.

⁵⁰ *Id.*

⁵¹ *Id.*, at 24.

1 paying companies. Therefore, his adjusted market return of 10.02 percent is
2 incorrect. In order for this calculation to be performed correctly, it is necessary that
3 the dividend yield and growth rate are weighted by the market capitalization of the
4 companies that are included in the calculation. In other words, when the non-
5 dividend paying companies are removed from the calculation, the market
6 capitalization of the non-dividend paying companies also must be removed from the
7 weighting factor as it affects both the dividend yield and growth rate.

8 **Q: Can you provide a specific example that demonstrates the error in the market**
9 **weightings in Dr. Won's market return calculation?**

10 A. Yes. While I disagree with removing the non-dividend paying companies from the
11 market return calculation, I can provide an example of the error that resulted when
12 Dr. Won attempted to remove these companies from his estimated market return.
13 As shown on his workpaper "6 Market Return," the company AutoZone Inc. ("AZO")
14 does not have an estimated dividend yield. When removing AZO from the
15 calculation, Dr. Won should have also removed AZO from his weighting of the
16 companies by market capitalization. However, as shown on his workpaper, Dr. Won
17 did not remove AZO but rather has incorrectly included the company in the overall
18 index weighting. While AZO is one example, this same error also applies for
19 numerous additional companies in the S&P 500 where Dr. Won has failed to
20 consistently remove non-dividend paying companies consistent with his stated
21 methodology.

1 **Q: Do you agree with Dr. Won's application of the two-step DCF when adjusting**
2 **your calculation of the market return?**

3 A. No. Dr. Won's application of the two-step DCF to his recalculation of my market
4 return is not appropriate for several reasons. First, it is inconsistent with the method
5 that the Federal Energy Regulatory Commission ("FERC") uses to calculate the
6 market return used in the CAPM analysis, even though Dr. Won cites the FERC in
7 his direct testimony to support his use of a two-step DCF analysis to estimate the
8 cost of equity for the Company. Specifically, Dr. Won calculates the dividend yield
9 component of the market return in the same general manner as I have done
10 (although, as noted, he removes only a portion of the non-dividend paying
11 companies), but he applies a two-step DCF for purposes of calculating the growth
12 rate component of the market return. For his two-step DCF, Dr. Won calculates the
13 growth rate by applying a weight of 80.00 percent to his derived growth rate of the
14 S&P 500 Index (which, as just discussed, was derived incorrectly) and applying a
15 weight of 20.00 percent to the GDP growth rate of 3.90 percent that he assumes in
16 his CAPM analysis. Dr. Won does not discuss in his testimony why or how this two-
17 step DCF approach to calculating the growth rate component of the market returns
18 is appropriate, but rather simply states that, "[w]ith more reasonable assumptions,
19 such as a market return of 10.02%," my average CAPM result would be 8.79
20 percent.⁵² Thus, Dr. Won fails to acknowledge that the FERC has continued to rely
21 on the constant growth DCF model to calculate the market return such as I have

⁵² Won Rebuttal, at 14 and 17.

1 done in my CAPM analyses, not the use of a two-step DCF model using GDP growth
2 as suggested by Dr. Won:

3 We also continue to find that the CAPM should use a one-step DCF
4 for its risk premium. This is because the rationale for using a two-
5 step DCF methodology for a specific group of utilities does not apply
6 when conducting a DCF study of the dividend-paying companies in
7 the S&P 500, as the Commission found in Opinion Nos. 531-B and
8 569. A long-term component is unnecessary because of the regular
9 updates to the S&P 500, which allows it to continue to grow at a
10 short-term growth rate and because S&P 500 companies include
11 stocks that are both new and mature, the latter of which have a
12 moderating effect on the short-term growth rates.⁵³

13 In addition, the U.S. Court of Appeals for the District of Columbia addressed this
14 issue in its review of FERC Opinion No. 569-B. In the Court's decision, it
15 acknowledged that the FERC has relied on the use of EPS growth rates in the
16 calculation of the market return on the S&P 500 because the S&P 500 is regularly
17 updated to include companies with high market capitalization and it includes
18 companies at all stages of growth, including lower and higher growth potential. The
19 Court determined that FERC's rationale for using projected EPS growth rates was
20 sufficient and rejected the challenge to this assumption.⁵⁴

21 Second, not only does Dr. Won utilize a two-step DCF to calculate the market return,
22 but he also does so assuming a GDP growth rate of 3.90 percent, which, as

⁵³ *Ass'n. of Businesses Advocating Tariff Equity, et. al. v. Midcontinent Indep. Sys. Operator, Inc., et. al.*, 171 FERC ¶ 61,154 (2020) ("Opinion No. 569-A"), at ¶ 85; emphasis added; footnotes omitted.

⁵⁴ *MISO Transmission Owners v. FERC*, 45 F.4th 248, 259-60, (D.C. Cir. 2022).

1 discussed in my rebuttal testimony, is inconsistent with the approach for determining
2 a long-term growth rate as cited by *Morningstar*⁵⁵ as well as Dr. Morin, who is
3 referenced by Dr. Won as support for the use of a GDP growth rate in the DCF
4 model.

5 **Q: What are your conclusions regarding Dr. Won's adjustments to your CAPM**
6 **and ECAPM analyses?**

7 A. As noted previously, there are fundamental errors with Dr. Won's adjustment to
8 market return that render his recalculation of the results of my CAPM and ECAPM
9 analyses unusable.

10 **Q: Have you corrected Dr. Won's calculation of the market return to properly**
11 **reflect the exclusion of non-dividend paying companies?**

12 A. Yes. Schedule AEB-SR1, Attachment 1, pages 1 through 12 present the market
13 return calculation as filed in my direct testimony of 12.07 percent and Dr. Won's
14 erroneous adjustment to my market return of 10.02 percent, respectively. However,
15 as shown on Schedule AEB-SR1, Attachment 1, pages 13 through 18, while I do
16 not agree with excluding non-dividend paying companies from the calculation of the
17 overall market return, I correct the errors in Dr. Won's market return calculation and
18 remove Dr. Won's application of the two-step DCF so the calculation of the market
19 return is consistent with the methodology relied on by FERC. As shown on

⁵⁵ Bulkley Rebuttal, at 47-48.

1 Schedule AEB-SR1, Attachment 1, page 13, this analysis demonstrates that my
2 market return is not an “extreme outlier” as Dr. Won suggests.

3 Specifically, as shown on Schedule AEB-SR1, Attachment 1, page 13, when Dr.
4 Won’s market return is reasonably adjusted to (1) remove non-dividend paying
5 companies correctly from the market return calculation; and (2) rely on a constant
6 growth DCF analysis instead of a two-step DCF analysis, the market return is 12.05
7 percent, only 2 basis point lower than my calculation of the market return that
8 includes both dividend paying and non-dividend paying companies. Therefore,
9 when the error in Dr. Won’s analysis is corrected and the constant growth DCF
10 model is applied consistent with the methodology relied on by FERC, the resulting
11 projected market return supports my analyses and demonstrates that my market
12 return is not “unreasonably high” as Dr. Won contends.⁵⁶

13 **Q: How would the results of your CAPM analyses change if you relied on this**
14 **adjusted market return calculation?**

15 A. As shown on Schedule AEB-SR1, Attachment 3, when relying on a fully corrected
16 market return of 12.05 percent, the results of the CAPM would be 10.45 percent,
17 which demonstrates that the Company’s requested ROE of 10.25 percent is
18 reasonable.

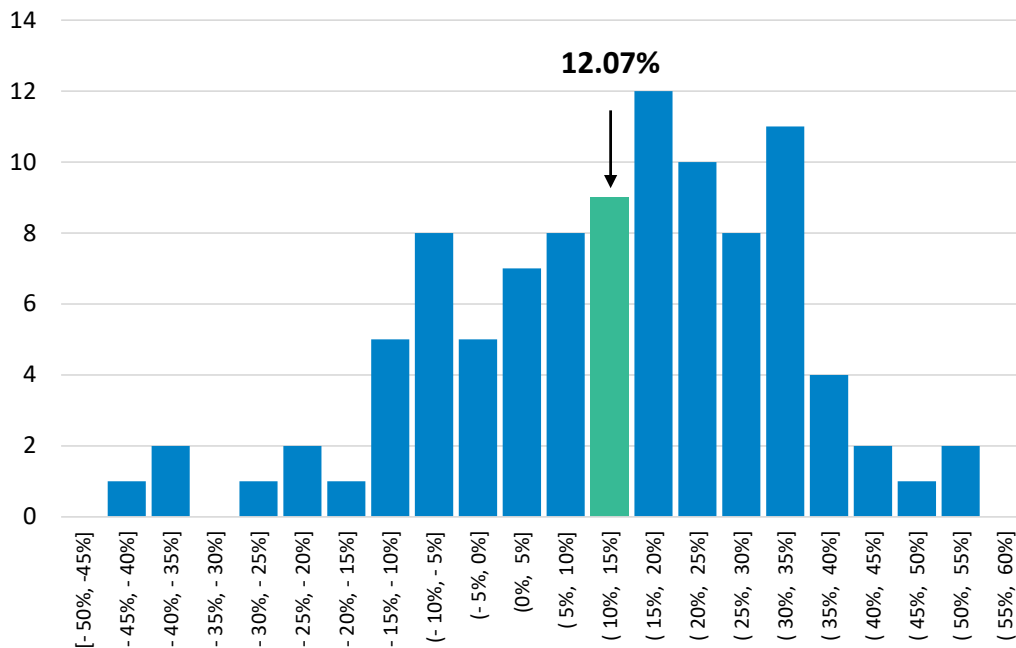
⁵⁶ Won Rebuttal, at 13.

1 **Q: Do you agree with Dr. Won and Mr. Murray that the forward-looking market**
2 **risk premium in your CAPM analysis is overstated?**

3 No. The market risk premium is the difference between the market return and the
4 risk-free rate. As discussed, the market return used in my CAPM analysis is
5 reasonable, consistent with the range established by historical market return data,⁵⁷
6 and has been relied upon in other regulatory jurisdictions. Specifically, Figure 4
7 shows that my market return falls towards the middle of the distribution of historical
8 annual returns.

⁵⁷ Bulkley Direct, at 32-33.

FIGURE 4: ANNUAL MARKET RETURNS DISTRIBUTION 1926-2024



Moreover, the following summarizes the use of methodologies that are consistent with the approach I relied upon to develop the market risk premium in my CAPM:

- In a recent cost of capital proceeding for the electric utilities, the California Public Utilities Commission noted that all parties recognized that historical market returns and economically logical projections fall within the range of 12.00 percent.⁵⁸ This recognition is consistent with the market return utilized in the initial CAPM analyses in my direct testimony (*i.e.*, 12.07 percent) and in the updated CAPM analyses in my rebuttal testimony (*i.e.*, 12.15 percent).
- As just discussed, the FERC has supported the use of a constant growth DCF model to estimate the market return in the CAPM such as I have done, and the U.S. State Court of Appeals for the District of Columbia has addressed the concern regarding the use of projected EPS growth rates in a constant growth DCF model to estimate the market return.

⁵⁸ California Public Utilities Commission, Application 22-04-008, *et al.*, Decision 22-12-031, at 23, December 15, 2022.

- Various state utility regulatory commissions have also supported the use of a constant growth DCF model to estimate the market return in the CAPM. As shown in Figure 5, the Staff of the Illinois Commerce Commission (“ICC”), the Bureau of Investigation and Enforcement (“I&E”) of the Pennsylvania Public Utility Commission (“Pennsylvania PUC”), and the Staff of the Maine Public Utilities Commission (“Maine PUC”) have each supported the forward-looking market risk premium, and the market return estimates using the constant growth DCF model. In each of these cases, the respective regulatory commission relied on the estimated CAPM results by these parties to determine the authorized ROE and did not dispute the use of the constant growth DCF model to calculate the market return.

FIGURE 5: REGULATORY COMMISSIONS – MARKET RETURN ESTIMATED USING THE CONSTANT GROWTH DCF MODEL

Intervening Party	Company	Docket No.	Market Return	Date of Order	Did the Commission Rely on the Party’s CAPM?
Staff of the ICC	North Shore Gas Company	Docket 20-0810	CGDCF of the dividend-paying companies in the S&P 500 (11.95%) ⁵⁹	9/8/21	Yes ⁶⁰
I&E	Aqua Pennsylvania, Inc.	Docket No. R-2021-3027385	CGDCF of the <i>Value Line</i> Universe and S&P 500 (12.14%) ⁶¹	5/12/22	Yes, the PPUC placed primary weight on I&E’s CAPM ⁶²
Staff of the Maine PUC	Northern Utilities, Inc.	Docket No. 2019-00092	CGDCF of the dividend-paying companies in the S&P 500 (11.33% - 13.49%) ⁶³	4/1/20	Yes ⁶⁴

- Finally, given the fact that the expected market return estimated in my direct testimony is consistent with the range of annual equity returns that have been observed over the past century, and the expected market return estimated in my rebuttal testimony is only slightly higher, my market return

⁵⁹ Illinois Commerce Commission, Docket No. 20-0810, Order, September 8, 2021, at 71.

⁶⁰ *Id.*, at 86-87.

⁶¹ Pennsylvania Public Utility Commission, Aqua Pennsylvania, Inc., Opinion and Order, Public Meeting held May 12, 2022, at 147.

⁶² *Id.*, at 178.

⁶³ Maine Public Utilities Commission, Docket No. 2019-00092, Bench Analysis, October 29, 2019, at 21.

⁶⁴ *Id.*, Order Part II, April 1, 2020, at 58.

1 continues to be consistent with the frequency of historical market returns at
2 or above my market return estimate, further demonstrating that it my
3 estimate is a reasonable expectation for the market.

4 All of these factors support the market return and market risk premium used in my
5 CAPM and ECAPM analyses and invalidate the claim made by Dr. Won and Mr.
6 Murray regarding the reasonableness of my market return and thus market risk
7 premium.

8 **Q: What is your response to Mr. Murray's contention that he is not "aware of any**
9 **authoritative sources" that use your approach to estimating the market**
10 **return?⁶⁵**

11 A. I do not believe that is a true statement. I have filed testimony in this jurisdiction in
12 numerous cases in response to Mr. Murray and have discussed the regulatory
13 support for the calculation of the market return that I have relied upon.⁶⁶
14 Accordingly, as just discussed, there are multiple authoritative sources that have
15 relied on the constant growth DCF to estimate the market return in the CAPM of
16 which I am aware and previously have made Mr. Murray aware.

⁶⁵ Murray Rebuttal, at 23.

⁶⁶ See, e.g., Missouri Public Service Commission, Case No. ER-2022-0337, Surrebuttal Testimony of Ann E. Bulkley, March 13, 2023, at 35-36; Missouri Public Service Commission, Case No. WR-2022-0303, Surrebuttal Testimony of Ann E. Bulkley, at 46-48.

1 **Q: How do you respond to Dr. Won's view that your market risk premium is an**
2 **"extreme outlier"?⁶⁷**

3 A. I disagree. The decisions of other regulators that I have just discussed contradict
4 Dr. Won's conclusion that my market return is an outlier. Further, the estimates that
5 Dr. Won summarizes in Figure 2⁶⁸ of his rebuttal testimony have been addressed in
6 my rebuttal testimony since they are used in Dr. Won's CAPM analyses, and in part
7 in Mr. Murray's CAPM analyses.⁶⁹ The additional estimates that he provides in his
8 rebuttal testimony are misleading, in that they were proposed by parties in a FERC
9 proceeding, but not accepted by the FERC. Therefore, Dr. Won has provided no
10 evidence demonstrating that a regulator has relied on these estimates.

11 Specifically, Dr. Won presents forward-looking market risk premium estimates from
12 *Value Line*, Duff & Phelps (now *Kroll*), and American Appraisal in Figure 2 of his
13 rebuttal testimony, and he cites the FERC's Opinion No. 569 as the source for those
14 estimate.⁷⁰ However, Dr. Won fails to acknowledge that the market risk premia that
15 he cites from Opinion No. 569 were not agreed upon by the FERC in that
16 proceeding. Rather, these estimates were raised by a specific intervenor group in
17 that proceeding and summarized as such in Opinion No. 569 as part of the summary

⁶⁷ Won Rebuttal, at 15.

⁶⁸ *Id.*, 16

⁶⁹ Bulkley Rebuttal, at 52-65.

⁷⁰ Won Rebuttal, at 15, footnote 52.

1 of the record.⁷¹ The FERC did not agree with that intervenor's position in calculating
2 the market return and thus market risk premium, and it instead adopted an approach
3 that is similar to the methodology I use to estimate the market risk premium.⁷²
4 Moreover, Opinion No. 569 was issued in November 2019, approximately five years
5 ago, which means that the specific estimates of the market risk premia that he
6 summarizes, while not supported by FERC, are also outdated and not relevant for
7 purposes of determining the cost of equity in the current proceeding.

8 **Q: Dr. Won also references the market risk premium resulting from a 2021 survey**
9 **conducted by the IESE Business School. Is this supportive of Dr. Won's**
10 **position?**

11 A. No. Dr. Won ignores the fact that the authors of this study caution against the use
12 of survey data estimate the market return and market risk premium. Specifically,
13 the survey notes:

14 We can find out the REP [Required Equity Premium] and the EEP
15 [Expected Equity Premium] of an investor by asking him, although
16 for many investors the REP is not an explicit parameter but, rather,
17 it is implicit in the price they are prepared to pay for the shares.
18 However, it is not possible to determine the REP for the market as a
19 whole, because it does not exist: even if we knew the REPs of all the
20 investors in the market, it would be meaningless to talk of a REP for
21 the market as a whole. There is a distribution of REPs and we can
22 only say that some percentage of investors have REPs contained in

⁷¹ *Ass'n. of Businesses Advocating Tariff Equity, et al. v. Midcontinent Indep. Sys. Operator, Inc., et. al.*,
169 FERC ¶ 61,129 (2019) ("Opinion No. 569"), at ¶ 249.

⁷² *Id.*, at ¶ 260-261.

1 a range. The average of that distribution cannot be interpreted as
2 the REP of the market nor as the REP of a representative investor.⁷³

3 **Q: Have you reviewed any studies that have evaluated the reasonableness of**
4 **market risk premium estimates?**

5 A. Yes. As discussed in my rebuttal testimony, I reviewed a study conducted by the
6 Federal Reserve Bank of New York which examined 20 methodologies over the
7 period 1960 through 2013 for estimating the market risk premium and showed that:
8 (1) the 20 methodologies produced a market risk premium range of -1 percent to
9 14.5 percent and (2) the principal component analysis of the 20 models produced a
10 range for the market risk premium of approximately 0 percent to over 10 percent
11 from 1960 through 2013, with the market risk premium consistently exceeding 10
12 percent following the financial crisis of 2008/09 through the end of the study
13 period.⁷⁴ Further, as I also discuss in my rebuttal testimony, the Federal Reserve
14 Bank of New York concluded that the market risk premium is higher during period
15 of increased inflation which is consistent with current market conditions as inflation
16 currently remains above the Federal Reserve's target of 2 percent and inflation is
17 likely to remain elevated over the near-term as a result of the significant tariffs
18 implemented by the Trump Administration.⁷⁵ Therefore, the results of the Federal
19 Reserve Bank of New York study demonstrate that both the market risk premia

⁷³ Pablo Fernandez, Sofia Bañuls and Pablo F. Acin, "Survey: Market Risk Premium and Risk-Free Rate used for 88 countries in 2021," IESE Business School, June 2021, at 10.

⁷⁴ Bulkley Rebuttal, at 97-98; Fernando Duarte and Carla Rosa, "The Equity Risk Premium: A Review of Models," Federal Reserve Bank of New York, 2015.

⁷⁵ *Id.*, at 99-100; Fernando Duarte and Carla Rosa, "The Equity Risk Premium: A Review of Models," Federal Reserve Bank of New York, 2015.

1 estimates in my direct testimony, which range from 7.84 percent to 7.95 percent, as
2 well as the market risk premia estimates in my rebuttal testimony, which range from
3 7.42 percent to 7.85 percent, are reasonable.

4 **Q: Please summarize the analysis that Mr. Murray performed using the Wilshire**
5 **5000 Index.**

6 A. Mr. Murray calculates the market capitalization of the Wilshire 5000 index in 50
7 years using the earnings growth rate that I relied on to calculate my market return,
8 as well as GDP in 50 years using a long-term GDP growth rate of 4.00 percent. Mr.
9 Murray concluded that in 50 years the value of the Wilshire 5000 would be
10 approximately 40 times higher than GDP, which he notes is unreasonable.⁷⁶

11 **Q: Is this analysis meaningful?**

12 A. No. First, Mr. Murray ignores the fact that the annualized ten-year total return on
13 the Wilshire 5000 as of March 31, 2025, was 11.27 percent, which is generally
14 consistent with the market return estimate in both my direct and rebuttal testimonies.

15 Further, Mr. Murray's comparison is entirely dependent on his selection of an
16 assumed GDP growth rate of 4.00 percent.⁷⁷ This analysis has no probative value,
17 as he has not provided any support for his GDP growth rate, which is fundamental
18 to the point of his analysis. It is simply a demonstration in compound annual growth

⁷⁶ Murray Rebuttal at 24.

⁷⁷ *Id.*

1 at two different rates. As shown previously in Schedule AEB-R1, Attachment 9 of
2 my rebuttal testimony, Mr. Murray's assumed growth rate is significantly below a
3 long-term projected GDP growth rate of 5.50 percent.

4 **Q: Are you aware of additional information that addresses Mr. Murray's**
5 **assumption that growth in the overall market is constrained over the long-**
6 **term by the growth rate in U.S. GDP?**

7 A. Yes. A recent Morgan Stanley article challenges the link between GDP and
8 earnings in the context of the Buffett indicator (*i.e.*, ratio of the market value of all
9 publicly-traded equity securities to gross national product ("GNP")). In a modern
10 global economy, as "U.S. companies now get more of their sales from outside the
11 U.S. than they did in the past. GDP does not include those sales."⁷⁸ A recent
12 Wellington Management article provides an intuitive example of this disconnect
13 between GDP and EPS can be observed between the U.S. and China. "China EPS
14 growth has stagnated while U.S. EPS growth has been exceptional, despite China's
15 economy growing at twice the speed of the U.S. ... When EPS is diluted by
16 additional company share issuance, it can further exacerbate this misalignment with
17 GDP growth."⁷⁹ U.S. companies selling goods and services to China and other
18 countries contribute to EPS but not GDP. Both earnings derived from international

⁷⁸ Michael J. Mauboussin and Dand Callahan, "Charts from the Vault," Morgan Stanley Investment Management, Counterpoint Global Insights, December 5, 2024.

⁷⁹ N. Samouihan and A. King, "Chart in focus: The need to differentiate market growth from macro growth," Wellington Management, September 2024.

1 sales and share issuances/buybacks weaken the link between EPS growth and
2 GDP growth.

3 Furthermore, Economist Martin Feldstein observed that with the rise of services in
4 the economy, GDP “official measures provide at best a lower bound on the true real
5 growth rate with no indication of the size of the underestimation.”⁸⁰

6 Accordingly, the referenced articles support my conclusion that it is not appropriate
7 to assume that the long-term growth of the S&P 500 is constrained by U.S. GDP
8 growth.

9 VII. ECAPM ANALYSIS

10 **Q: What are the positions of Dr. Won and Mr. Murray regarding your ECAPM**
11 **analysis?**

12 A. Dr. Won states that my ECAPM analyses rely on a market risk premium that is too
13 high.⁸¹ In addition, Dr. Won disagrees with the adjustment made in the ECAPM to
14 account for the tendency of the CAPM to underestimate the cost of equity for
15 companies with betas less than 1.00.⁸² Specifically, Dr. Won states that there is a
16 fairly wide range of alpha estimates between academic studies primarily due to the
17 methodologies employed and time periods used which means the estimates of

⁸⁰ Martin Feldstien, “Underestimating the real growth of GDP, personal income, and productivity,” *Journal of Economic Perspectives*, 31(2), at 145-164 (2017).

⁸¹ Won Rebuttal, at 17.

⁸² *Id.*

1 alpha are not strictly comparable.⁸³ Further, Dr. Won contends that Dr. Morin
2 presented other studies that produced returns between -9.61 percent to 13.56
3 percent, which Dr. Won claims means that the CAPM overestimated the return in
4 some instances and that such findings do not lend credibility to the use of the
5 ECAPM.⁸⁴

6 Mr. Murray's response to my ECAPM simply reiterates his concern regarding the
7 market risk premium of my CAPM, which I have already addressed in this testimony;
8 however, he does not specifically discuss the ECAPM.⁸⁵

9 **Q: Do you agree with Dr. Won's conclusions on the ECAPM studies?**

10 A. No, I do not. The concept of the ECAPM and the conclusion that the risk-return
11 relationship is flatter than predicted by the CAPM is generally accepted in financial
12 literature. In *Modern Regulatory Finance*, Dr. Morin provides a list of studies each
13 of which concludes that the CAPM understates the returns for companies with betas
14 less than 1.0 (which is typically utilities) and overstates the return for companies
15 with betas greater than 1.0.⁸⁶ It is these empirical studies that formed the basis of
16 the development of alternative models such as the ECAPM that would better predict
17 the risk return-relationship observed when reviewing actual market data.

⁸³ *Id.*, at 17-18.

⁸⁴ *Id.*, at 18.

⁸⁵ Murray Rebuttal, at 24-25.

⁸⁶ Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 206-208.

Academics and researchers use the equation shown below to determine the value of the constant term (α) or “alpha factor” using historical market data:

$$K_e = r_f + \alpha + \beta (r_m - r_f) - \alpha \quad [1]$$

Where:

K_e = the required market COE;

α = a constant term;

β = beta coefficient of an individual security;

r_f = the risk-free ROR; and

r_m = the required return on the market as a whole.

There have been numerous additional studies published to estimate the value of the constant term or alpha factor in the ECAPM equation. Figure 6 provides the list of studies summarized by Dr. Morin and referenced by Dr. Won as support for his conclusion that the ECAPM is not credible. However, Dr. Won’s conclusion improperly masks the fact that, as shown, six of the eight studies estimated positive values of the constant term, which indicates that the consensus among the studies is that the CAPM understates the observed return. Additionally, among the six studies that estimate only positive values of the constant term, the range of the constant term was 1.63 percent to 13.56 percent. Dr. Morin relied on a constant term in the range of 1 to 2 percent to develop the 0.25 and 0.75 factors included in the ECAPM, and considering the range of the constant term provided in Figure 6, it would appear Dr. Morin’s estimate is conservative.

FIGURE 6: EMPIRICAL EVIDENCE ON THE ALPHA FACTOR (CONSTANT TERM)⁸⁷

Author	Range of Alpha
Fischer (1993)	-3.6% to 3.6%
Fischer, Jensen and Scholes (1972)	-9.61% to 12.24%
Fama and McBeth (1972)	4.08% to 9.36%
Fama and French (1992)	10.08% to 13.56%
Litzenberger and Ramaswamy (1979)	5.32% to 8.17%
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 5.04%
Pettengill, Sundaram and Mathur (1995)	4.6%
Morin (1989)	2.0%

Q: Is Dr. Won's recalculation of your ECAPM analyses reasonable?⁸⁸

A. No. Dr. Won's recalculation relies on the same incorrect market return and market risk premium "adjustment" that he developed in response to my CAPM. As a result, his ECAPM is unusable as an estimate of the cost of equity. Further, as summarized on Schedule AEB-SR1, Attachment 3, when the error in Dr. Won's recalculation of my ECAPM analysis is corrected, and the constant growth DCF model is applied to calculate the market return consistent with the methodology relied on by FERC, the overall resulting cost of equity is 10.85 percent, or higher than the Company's proposed ROE in this proceeding.

⁸⁷ *Id.*, at 222.

⁸⁸ Won Rebuttal, Workpaper "4 CAPM."

VIII. RISK PREMIUM ANALYSIS

Q: What are the positions of Dr. Won and Mr. Murray regarding your Bond Yield Plus Risk Premium (“BYRP” or “Risk Premium”) analysis?

A. These witnesses offer the following positions regarding the Risk Premium approach generally, and my analyses specifically:

- Dr. Won’s primary concerns with the BYRP analysis are that: (1) the analysis is determined based on the yield on the 30-year Treasury bond yield, which is affected by government intervention through the Federal Reserve’s monetary policy and not solely through the financial market; (2) the 30-year Treasury yield increased too much as a result of the COVID-19 pandemic to accurately estimate an ROE; and (3) the relationship between the 30-year Treasury bond yield and the ROE is not constant over time.⁸⁹ In addition, Dr. Won states that he agrees with the FERC that the BYRP is likely to provide a less accurate current cost of equity estimate than the DCF or CAPM models because it relies on previous ROE determinations that may not be directly determined by a market-based methodology.⁹⁰
- Mr. Murray contends that I have concluded from my BYRP analysis that ROEs have not changed as much as interest rates, and thus an adjustment needs to be made to recognize that regulators have been hesitant to adjust authorized ROEs as much as interest rates would suggest. Mr. Murray states that this is circular because the regression coefficient is dependent on regulatory commissions’ decisions and not on market required returns.⁹¹

Q: Is there any merit to Dr. Won’s concerns that your BYRP analysis?

A. No. Regardless of my use of authorized ROE and Treasury bond yield data back to 1980 and the changes in that data over time, the regression analysis that I have conducted nonetheless demonstrates a strong inverse relationship between interest rates and the equity risk premium for utilities. As shown in Schedule AEB-R1,

⁸⁹ Won Rebuttal, at 20-22.

⁹⁰ *Id.*, at 22.

⁹¹ Murray Rebuttal, at 25.

1 Attachment 6 of my rebuttal testimony, the regression in my BYRP analysis has an
2 R^2 of approximately 0.85, which means that 85 percent of the variation in historical
3 implied utility equity risk premia can be explained by changes in interest rates. The
4 regression indicates that there indeed exists a strong negative correlation between
5 utility equity risk premia and interest rates, and that the regression equation is an
6 effective tool for predicting authorized ROEs at specified interest rate levels,
7 whether current or projected interest rates. Although I disagree with his specification
8 of the BYRP, Dr. Won's BYRP analysis also shows a strong negative relationship
9 between interest rates and the equity risk premium for utilities.

10 **Q: Is Dr. Won's criticism of your BYRP analysis inconsistent with his own BYRP**
11 **analysis?**

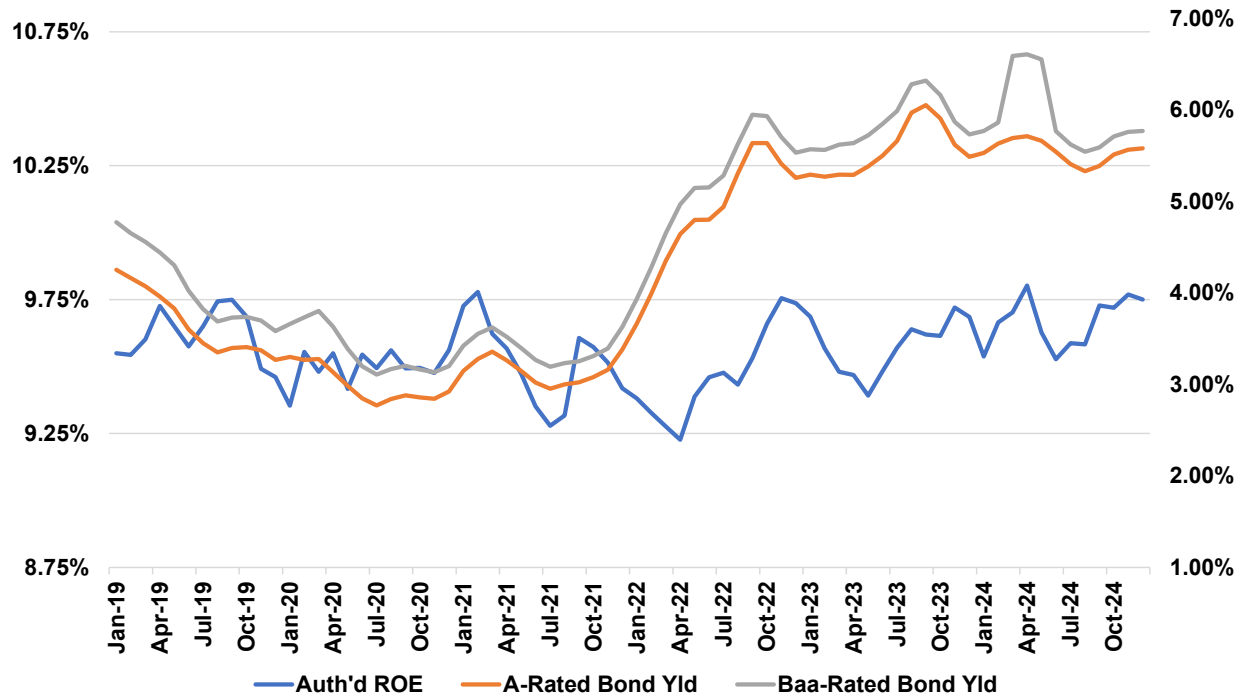
12 A. Yes. In Figure 3 of Dr. Won's rebuttal testimony, he claims that the results of my
13 BYRP analysis are unreliable because of a divergence in the relationship between
14 authorized ROEs and 30-year Treasury bond yields post-COVID.⁹² However, as
15 shown in Figure 7 below, the same divergence is present in the authorized ROE
16 and utility bond yield data that Dr. Won relies on for his BYRP analysis.⁹³ Further,
17 if Dr. Won believes that such a divergence in the authorized ROE and utility bond
18 yield data produces an unreliable result, then he has invalidated the result of his
19 own BYRP analysis. More importantly, given that Dr. Won's ROE recommendation

⁹² Won Rebuttal, at 20-21.

⁹³ Won Direct, at 46-48.

in this proceeding is equivalent to the result of his BYRP analysis, he has also
invalidated his ROE recommendation in this proceeding.

FIGURE 7: DR. WON'S AUTHORIZED ROE AND MOODY'S UTILITY BOND YIELD DATA⁹⁴



Q: Is Mr. Murray's position regarding your BYRP analysis consistent with his own analyses?

A. No. While Mr. Murray suggests that the relationship between authorized ROEs and bond yields does not reflect investor behavior,⁹⁵ he evaluates authorized ROEs and long-term Treasury bond yields as support for his recommended ROE.⁹⁶ Therefore,

⁹⁴ Data sourced from Dr. Won's "BYRP Model.xls" workpaper.

⁹⁵ Murray Rebuttal at 25.

⁹⁶ Murray Direct at 3-6.

1 to the extent that Mr. Murray believes that my BYRP analysis cannot be relied upon,
2 he invalidates his own analyses.

3 It is unquestionable that both credit rating agencies and investors consider the
4 authorized ROE data in their determination of the valuation of utility stocks. As I
5 discussed in my direct and rebuttal testimonies, both credit rating agencies and
6 investors have responded negatively to authorized ROEs deemed to be too low.⁹⁷
7 Therefore, the relationship between recently authorized ROEs and the prevailing
8 interest rates at the time that the ROE was authorized is reasonable to consider
9 when setting the ROE in the context of a rate proceeding.

10 Lastly, while Mr. Murray criticizes my BYRP analysis for not reflecting a market
11 required return, his own “rule of thumb” risk premium analysis is simply that – a rule
12 of thumb – which is certainly not derived based on current or projected market
13 conditions.

14 Therefore, for all of these reasons, there is no basis to Mr. Murray’s criticism
15 regarding my BYRP analysis.

⁹⁷ Bulkley Direct, at 11; Bulkley Rebuttal, at 27-34.

IX. BUSINESS RISK FACTORS

Q: What are the positions of Dr. Won, Mr. Majors, and Mr. Murray regarding the Company's business risks and the effect on the Company's ROE?

A. Dr. Won states that he considers Ameren Missouri's business and regulatory risks when recommending his ROE in this proceeding; however, he alleges that I have a biased approach that inflates the Company's business and regulatory risks.⁹⁸ Furthermore, while acknowledging that the Company does have some regulatory lag and time limits, Dr. Won contends that Ameren Missouri does not have greater risk than the proxy group, stating that the Company takes advantage of several alternative regulatory mechanisms such the Delivery Charge Adjustment ("DCA") and that he finds no evidence that Ameren Missouri has significantly greater risk than the proxy group that requires an upward adjustment to the ROE to be authorized in this proceeding.⁹⁹ Finally, Dr. Won opposes my consideration of small size risk because while Ameren Missouri's natural gas operations may be small, Ameren Missouri's natural gas operations do not operate as a financially independent entity as Ameren Missouri's natural gas and electric operations operate as one entity in terms of financing.¹⁰⁰

Mr. Majors states that Ameren Missouri has several alternative regulatory mechanisms such as a Weather Normalization Adjustment Rider ("WNAR") and a

⁹⁸ Won Rebuttal, at 27.

⁹⁹ *Id.*, at 30.

¹⁰⁰ Won Rebuttal, at 28

1 Infrastructure System Replacement Surcharge (“ISRS”) that mitigate regulatory lag
2 and reduce the business risk for the Company.¹⁰¹ As a result, Mr. Majors
3 recommends that the Commission consider the effect of the Company’s
4 mechanisms when determining the return for Ameren Missouri; however, he
5 acknowledges that he has not evaluated other aspects of Ameren Missouri’s
6 business risk nor has he conducted a comparison of the Company’s business risks
7 relative to “any of its peers.”¹⁰² Rather, he refers to Dr. Won for an assessment of
8 the effect of the Company’s business risk on the cost of equity.¹⁰³

9 Mr. Murray disagrees with my consideration of the small size of Ameren Missouri’s
10 natural gas operations because it is based on the “hypothetical” assumption that
11 Ameren Missouri’s natural gas operations are a stand-alone entity.¹⁰⁴ Further, Mr.
12 Murray contends that my proxy group “contains companies that have smaller market
13 capitalizations than the broader market” and suggests I could have weighted my
14 DCF estimates to account for smaller companies.¹⁰⁵ Finally, Mr. Murray states that
15 in my assessment of business risk, I have failed to recognize that my proxy group
16 contains companies with significant non-regulated business risk exposure.¹⁰⁶

¹⁰¹ Majors Rebuttal, at 3.

¹⁰² *Id.*, at 11.

¹⁰³ *Id.*

¹⁰⁴ Murray Rebuttal, at 26.

¹⁰⁵ *Id.*, at 27.

¹⁰⁶ *Id.*, at 26.

1 **Q: What is your response to these witnesses' positions regarding the Company's**
2 **business and regulatory risks?**

3 A. Dr. Won, Mr. Majors, and Mr. Murray fail to recognize the purpose for the business
4 risk analysis in the estimation of the appropriate ROE for a company from within the
5 range of cost of equity estimates developed. Since the cost of equity estimates are
6 based on market data for the proxy group companies, which reflects the risk profiles
7 of these companies, it is necessary to evaluate the Company's business and
8 regulatory risk *relative to the proxy group*. This analysis allows the analyst to make
9 a more informed determination as to where, within the range of returns established
10 for the proxy group, the return on equity should reasonably be established.

11 Neither Mr. Murray nor Mr. Majors evaluate the Company's business and regulatory
12 risks *relative to the proxy group*. Indeed, Mr. Majors acknowledges that he has not
13 conducted a comparison of the Company's business risks relative to "any of its
14 peers" and instead refers to Dr. Won for an assessment of the effect of the
15 Company's business risk on its cost of equity.¹⁰⁷ However, Dr. Won also largely
16 omits this comparative analysis with the exception of his discussion regarding
17 Ameren Missouri's expected capital expenditures as a percentage of net utility plant
18 relative to the average ratio of the proxy group.¹⁰⁸ Mr. Majors simply claims that the
19 Company's business risk has been reduced in absolute terms because of regulatory

¹⁰⁷ Majors Rebuttal, at 11.

¹⁰⁸ Won Rebuttal, at 29-30.

1 mechanisms such as the ISRS and WNAR¹⁰⁹ while Dr. Won and Mr. Murray
2 reference the ISRS and DCA as support for their conclusion that the Company does
3 not have greater risk relative to the proxy group. However, the simple existence of
4 regulatory mechanisms provides no information as to *where in the range of market*
5 *data* the authorized ROE should be established. In contrast, I evaluate various
6 regulatory and business risks to which Ameren Missouri is subject relative to the
7 proxy group in my direct testimony and conclude that the Company has relatively
8 greater regulatory and business risk than the proxy group.¹¹⁰

9 **Q: Do you agree with Dr. Won and Mr. Murray that the risk of Ameren Missouri's**
10 **natural gas operations should not be considered on a stand-alone basis to**
11 **determine the ROE?**

12 A. No, I do not. Based on the stand-alone principle of ratemaking, regulated rates
13 should be based on the risks and benefits of the regulated utility, not its investors,
14 parent or affiliates.¹¹¹ Many state regulatory commissions have determined that the
15 objective of a rate case is to establish the cost of equity for the jurisdictional utility
16 as if it were a stand-alone entity. In that way, Commissions are able to insulate
17 ratepayers from the risks associated with those higher risk non-jurisdictional
18 activities.

¹⁰⁹ Since Dr. Won himself did not perform the proper comparative analysis to the business risk of the proxy group, Mr. Majors' opinions about risk reduction are completely irrelevant.

¹¹⁰ Bulkley Direct, at 39-58.

¹¹¹ Morin, Dr. Roger A. New Regulatory Finance. Public Utilities Reports, Inc., 2006, at 215-216.

1 As a result, the fact that Ameren Missouri also has electric operations in Missouri
2 and is affiliated with Ameren Corp is not an appropriate consideration in this rate
3 proceeding. Furthermore, even given the fact that Ameren Missouri may have
4 greater access to capital, Ameren Missouri's natural gas operations still need to
5 compete against electric operations in Missouri and other Ameren Corp subsidiaries
6 to have capital allocated to it over another subsidiary, making the size of Ameren
7 Missouri's natural gas operations a relevant determination in capital allocation.

8 **Q: Does Mr. Murray recommend an approach for considering the small size risk**
9 **of a company?**

10 A. Yes. Mr. Murray notes that the proxy group does contain companies that are smaller
11 than the broader and therefore, to recognize the risk of small size, I could have
12 placed greater weight on the DCF results of the smaller companies in my proxy
13 group since the DCF results would reflect "all" of the risks of a company through the
14 price an investor is willing to pay for the stock.¹¹² Although, Mr. Murray contends that
15 the DCF results of the smaller companies in my proxy group do not support a small
16 size premium.¹¹³

¹¹² Murray Rebuttal, at 27.

¹¹³ *Id.*

1 **Q: Do you agree with Mr. Murray's approach of placing greater weight on the DCF**
2 **results of the smaller companies in the proxy group to account for small size**
3 **risk?**

4 A. I do not because as Mr. Murray noted the DCF results would reflect not only a
5 company's risk with respect to small size but also other business and financial risks
6 such that it would not be possible to isolate the specific effect of small size risk.
7 However, as I discussed in my direct testimony, I evaluated the business risks (*i.e.*,
8 small size, regulatory risk, capital expenditures) of the Company relative to the proxy
9 group to determine where amongst the range of results including the DCF the
10 Company's ROE should fall.¹¹⁴ This approach is similar to the approach
11 recommended by Mr. Murray but it is more appropriate because it considers multiple
12 business risks faced by the Company and the proxy companies as opposed to just
13 size. Further, it does not appear as though Mr. Murray oppose such an approach
14 since, he recommended considering the range of DCF results when considering
15 small size. As discussed in my direct testimony, I concluded that the Company has
16 greater business risk relative to the proxy group warranting an ROE towards the
17 high-end of the range of cost of equity results.¹¹⁵

¹¹⁴ Bulkley Direct, at 6-7

¹¹⁵ Bulkley Direct, at 45, 50, 57-58.

1 **Q: Mr. Murray contends that you did not consider small size because your**
2 **recommend ROE for Ameren Missouri's natural gas operations is equivalent**
3 **to your recommended ROE in the recent proceeding for Ameren Missouri's**
4 **electric operations.¹¹⁶ How do you respond?**

5 A. Mr. Murray is incorrect. As I noted in my direct testimony in the current proceeding
6 for Ameren Missouri's natural gas operations¹¹⁷ and my direct testimony in Case No.
7 ER-2024-0319 for Ameren Missouri's electric operations,¹¹⁸ the 10.25 percent ROE
8 is the company's request and not my recommendation. As I further note in my direct
9 testimony, the Company's request of 10.25 percent is conservative considering
10 current and projected market conditions as well as the business and financial risk of
11 the Company as compared to the proxy group.¹¹⁹ Therefore, it is misleading for Mr.
12 Murray to state that I have not considered the risk associated with the small size of
13 Ameren Missouri's natural gas operations in Missouri.

14 **Q: Do you agree with Mr. Murray that you have failed to consider the non-**
15 **regulated business risk exposure of your proxy group?**

16 A. No. As discussed in my proxy group discussion in Section III, Mr. Murray contends
17 that my proxy group contains significant non-regulated business risk exposure with

¹¹⁶ Murray Rebuttal, at 27

¹¹⁷ Bulkley Direct, at 8.

¹¹⁸ Missouri Public Service Commission, Case No. ER-2024-0319, Direct Testimony of Ann E. Bulkley, June 28, 2024, at 9-10.

¹¹⁹ Bulkley Direct, at 8.

1 the inclusion of SWX and SR.¹²⁰ In developing a proxy group, it is essential to
2 balance the relative risk of the companies included in the proxy group with the
3 overall size of the group, and thus it is always the case that the proxy companies do
4 not have exactly the same risk profile as the subject company. However, as stated
5 in my direct testimony, I have developed the proxy group to ensure that all of the
6 companies used in my cost of equity analyses possess a set of operating and
7 financial risk characteristics that are substantially comparable to Ameren Missouri,
8 and, therefore, provide a reasonable basis to estimate the appropriate cost of equity
9 for the Company. This includes a screening criterion that requires a substantial
10 portion of a utility's total operating income to be from regulated operations.¹²¹

11 **Q: What is your conclusion regarding the Company's business and regulatory**
12 **risks and its effect on the ROE to be authorized in this proceeding?**

13 A. The results of the cost of equity analyses alone do not provide an appropriate
14 estimate of the cost of equity, and several additional factors must be considered
15 when determining where the Company's cost of equity falls within the range of
16 analytical results. However, Dr. Won, Mr. Majors and Mr. Murray have not evaluated
17 the Company's business and regulatory risk relative to the proxy group. Absent this
18 comparison, there is no basis for either Dr. Won, Mr. Majors or Mr. Murray to
19 comment on the business risk of Ameren Missouri relative to the proxy group.

¹²⁰ Note that Dr. Won also includes SWX and SR in his proxy group.

¹²¹ Bulkley Direct, at 20-22.

1 All else equal, I agree that regulatory mechanisms that reduce a utility's regulatory
2 lag in cost recovery help to mitigate risk. However, in setting the ROE, the data
3 relied upon is based on the risk profile of a proxy group of companies. Therefore,
4 the appropriate analysis for purposes of establishing the Company's ROE in this
5 proceeding is not to identify whether Ameren Missouri has regulatory mechanisms
6 that mitigate its regulatory lag, but rather how does Ameren Missouri's regulatory
7 risk compare to the other companies in the proxy group. Dr. Won, Mr. Majors and
8 Mr. Murray each highlight the regulatory mechanisms that Ameren Missouri has for
9 cost recovery, yet neither evaluates Ameren Missouri's cost recovery risk relative to
10 the proxy group.

11 **Q: Does this conclude your surrebuttal testimony?**

12 **A.** Yes.

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1] 1.54%

Estimated Weighted Average Long-Term Growth Rate [2] 10.45%

S&P 500 Estimated Required Market Return [3] 12.07%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	325.09	98.70	32,086		5.43%		-8.07%	
American Express Co	AXP	710.91	258.65	183,877	0.50%	1.08%	0.01%	15.74%	0.08%
Verizon Communications Inc	VZ	4,209.52	41.78	175,874	0.48%	6.37%	0.03%	0.86%	0.00%
Broadcom Inc	AVGO	4,654.88	162.82	757,908	2.08%	1.29%	0.03%	15.88%	0.33%
Boeing Co/The	BA	616.17	173.74	107,053				38.60%	
Solventum Corp	SOLV	172.71	64.11	11,073				-2.00%	
Caterpillar Inc	CAT	484.90	356.10	172,672	0.47%	1.58%	0.01%	8.38%	0.04%
JPMorgan Chase & Co	JPM	2,845.17	224.80	639,593	1.75%	2.05%	0.04%	4.05%	0.07%
Chevron Corp	CVX	1,828.92	147.95	270,588	0.74%	4.41%	0.03%	7.00%	0.05%
Coca-Cola Co/The	KO	4,309.87	72.47	312,336	0.86%	2.68%	0.02%	6.36%	0.05%
AbbVie Inc	ABBV	1,766.34	196.31	346,751	0.95%	3.16%	0.03%	8.80%	0.08%
Walt Disney Co/The	DIS	1,813.59	90.38	163,912	0.45%	1.00%	0.00%	18.89%	0.08%
Corpay Inc	CPAY	69.43	315.55	21,910	0.06%			14.87%	0.01%
Extra Space Storage Inc	EXR	211.93	177.00	37,511		3.66%		-0.20%	
Exxon Mobil Corp	XOM	4,442.83	117.94	523,987	1.44%	3.22%	0.05%	5.00%	0.07%
Phillips 66	PSX	418.57	140.31	58,729		3.28%		-9.00%	
General Electric Co	GE	1,084.31	174.62	189,342		0.64%		29.30%	
HP Inc	HPQ	963.72	36.18	34,867	0.10%	3.05%	0.00%	1.42%	0.00%
Home Depot Inc/The	HD	993.29	368.50	366,028	1.00%	2.44%	0.02%	3.87%	0.04%
Monolithic Power Systems Inc	MPWR	48.75	934.68	45,568		0.53%			
International Business Machines Corp	IBM	921.15	202.13	186,192	0.51%	3.30%	0.02%	3.90%	0.02%
Johnson & Johnson	JNJ	2,407.24	165.86	399,265	1.09%	2.99%	0.03%	3.73%	0.04%
Lululemon Athletica Inc	LULU	117.66	259.47	30,529	0.08%			7.00%	0.01%
McDonald's Corp	MCD	717.34	286.99	205,870	0.56%	2.33%	0.01%	5.15%	0.03%
Merck & Co Inc	MRK	2,534.81	118.45	300,248	0.82%	2.60%	0.02%	14.00%	0.12%
3M Co	MMM	549.35	134.69	73,992		2.08%		-5.37%	
American Water Works Co Inc	AWK	194.86	143.12	27,889	0.08%	2.14%	0.00%	8.00%	0.01%
Bank of America Corp	BAC	7,759.58	40.75	316,203		2.55%			
Pfizer Inc	PFE	5,666.70	29.01	164,391	0.45%	5.79%	0.03%	6.39%	0.03%
Procter & Gamble Co/The	PG	2,349.71	171.54	403,069	1.10%	2.35%	0.03%	7.37%	0.08%
AT&T Inc	T	7,170.24	19.90	142,688	0.39%	5.58%	0.02%	1.84%	0.01%
Travelers Cos Inc/The	TRV	227.93	228.07	51,984	0.14%	1.84%	0.00%	18.21%	0.03%
RTX Corp	RTX	1,330.24	123.34	164,072	0.45%	2.04%	0.01%	10.23%	0.05%
Analog Devices Inc	ADI	496.49	233.92	116,140		1.57%		-5.82%	
Walmart Inc	WMT	8,038.25	77.23	620,794	1.70%	1.07%	0.02%	9.24%	0.16%
Cisco Systems Inc	CSCO	4,028.82	50.54	203,616	0.56%	3.17%	0.02%	3.40%	0.02%
Intel Corp	INTC	4,276.00	22.04	94,243	0.26%			4.26%	0.01%
General Motors Co	GM	1,123.92	49.78	55,949	0.15%	0.96%	0.00%	11.02%	0.02%
Microsoft Corp	MSFT	7,433.04	417.14	3,100,617	8.50%	0.72%	0.06%	16.10%	1.37%
Dollar General Corp	DG	219.92	82.97	18,246		2.84%		-3.74%	
Cigna Group/The	CI	279.55	361.81	101,144	0.28%	1.55%	0.00%	11.65%	0.03%
Kinder Morgan Inc	KMI	2,219.46	21.57	47,874	0.13%	5.33%	0.01%	6.52%	0.01%
Citigroup Inc	C	1,907.80	62.64	119,504		3.58%		27.26%	
American International Group Inc	AIG	643.95	77.05	49,616	0.14%	2.08%	0.00%	12.42%	0.02%
Altria Group Inc	MO	1,706.22	53.77	91,744	0.25%	7.59%	0.02%	4.14%	0.01%
HCA Healthcare Inc	HCA	258.07	395.59	102,091	0.28%	0.67%	0.00%	10.81%	0.03%
International Paper Co	IP	347.37	48.42	16,820		3.82%		-2.00%	
Hewlett Packard Enterprise Co	HPE	1,299.67	19.37	25,175	0.07%	2.68%	0.00%	3.73%	0.00%
Abbott Laboratories	ABT	1,739.90	113.27	197,078	0.54%	1.94%	0.01%	8.12%	0.04%
Aflac Inc	AFL	560.03	110.36	61,804	0.17%	1.81%	0.00%	7.55%	0.01%
Air Products and Chemicals Inc	APD	222.32	278.85	61,993	0.17%	2.54%	0.00%	9.52%	0.02%
Super Micro Computer Inc	SMCI	58.56	437.70	25,630				69.00%	
Royal Caribbean Cruises Ltd	RCL	257.42	164.62	42,376		0.97%		30.00%	
Hess Corp	HES	308.12	138.06	42,538	0.12%	1.27%	0.00%	16.00%	0.02%
Archer-Daniels-Midland Co	ADM	478.14	60.99	29,162		3.28%		-3.62%	
Automatic Data Processing Inc	ADP	407.80	275.91	112,515		2.03%			
Verisk Analytics Inc	VRSK	142.42	272.82	38,856	0.11%	0.57%	0.00%	12.54%	0.01%
AutoZone Inc	AZO	17.08	3,181.48	54,349	0.15%			14.66%	0.02%
Linde PLC	LIN	477.50	478.25	228,366	0.63%	1.16%	0.01%	11.76%	0.07%
Avery Dennison Corp	AVY	80.52	221.85	17,863	0.05%	1.59%	0.00%	12.84%	0.01%
Enphase Energy Inc	ENPH	135.42	121.04	16,391	0.04%			7.45%	0.00%
MSCI Inc	MSCI	78.65	580.59	45,663	0.13%	1.10%	0.00%	11.93%	0.01%
Ball Corp	BALL	303.57	63.61	19,310	0.05%	1.26%	0.00%	13.35%	0.01%
Axon Enterprise Inc	AXON	75.57	364.97	27,582				20.81%	
Dayforce Inc	DAY	158.10	57.17	9,039					
Carrier Global Corp	CARR	902.75	72.78	65,702	0.18%	1.04%	0.00%	6.74%	0.01%
Bank of New York Mellon Corp/The	BK	737.96	68.22	50,343	0.14%	2.76%	0.00%	10.55%	0.01%
Otis Worldwide Corp	OTIS	400.56	94.89	37,929	0.10%	1.65%	0.00%	10.00%	0.01%
Baxter International Inc	BAX	510.18	37.94	19,356	0.05%	3.06%	0.00%	6.50%	0.00%
Becton Dickinson & Co	BDX	289.04	242.41	70,067	0.19%	1.57%	0.00%	8.34%	0.02%
Berkshire Hathaway Inc	BRK/B	1,325.19	475.92	630,686					
Best Buy Co Inc	BBY	215.71	100.40	21,658	0.06%	3.75%	0.00%	4.17%	0.00%
Boston Scientific Corp	BSX	1,472.63	81.79	120,446	0.33%			12.58%	0.04%
Bristol-Myers Squibb Co	BMJ	2,027.40	49.95	101,268		4.80%		33.60%	
Brown-Forman Corp	BF/B	303.54	45.37	13,772		1.92%		-2.38%	
Coterra Energy Inc	CTRA	739.27	24.33	17,987	0.05%	3.45%	0.00%	10.06%	0.00%
Hilton Worldwide Holdings Inc	HLT	246.43	219.64	54,125	0.15%	0.27%	0.00%	14.97%	0.02%
Carnival Corp	CCL	1,122.46	16.50	18,521					
Qorvo Inc	QRVO	94.86	115.89	10,993	0.03%			17.09%	0.01%
Builders FirstSource Inc	BLDR	116.45	174.00	20,263	0.06%			1.45%	0.00%
UDR Inc	UDR	329.82	44.51	14,680	0.04%	3.82%	0.00%	1.85%	0.00%
Clorox Co/The	CLX	123.86	158.31	19,609	0.05%	3.08%	0.00%	8.65%	0.00%
Paycom Software Inc	PAYC	57.43	162.78	9,349	0.03%	0.92%	0.00%	9.41%	0.00%
CMS Energy Corp	CMS	298.64	67.86	20,265	0.06%	3.04%	0.00%	7.28%	0.00%
Colgate-Palmolive Co	CL	817.09	106.50	87,020	0.24%	1.88%	0.00%	8.73%	0.02%
EPAM Systems Inc	EPAM	56.94	200.76	11,430	0.03%			5.29%	0.00%
Conagra Brands Inc	CAG	479.05	31.20	14,946	0.04%	4.49%	0.00%	1.81%	0.00%
Airbnb Inc	ABNB	440.00	117.31	51,617	0.14%			19.84%	0.03%
Consolidated Edison Inc	ED	346.15	101.56	35,155	0.10%	3.27%	0.00%	5.58%	0.01%
Corning Inc	GLW	855.70	41.85	35,811	0.10%	2.68%	0.00%	13.41%	0.01%
GoDaddy Inc	GDDY	140.97	167.41	23,600					
Cummins Inc	CMI	137.05	312.85	42,875	0.12%	2.33%	0.00%	8.28%	0.01%
Caesars Entertainment Inc	CZR	216.34	37.64	8,143				-35.64%	
Danaher Corp	DHR	722.21	269.31	194,499	0.53%	0.40%	0.00%	1.89%	0.01%
Target Corp	TGT	460.68	153.62	70,769	0.19%	2.92%	0.01%	14.38%	0.03%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
Estimated Weighted Average Long-Term Growth Rate [2]	10.45%
S&P 500 Estimated Required Market Return [3]	<u>12.07%</u>

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Deere & Co	DE	273.60	385.74	105,538		1.52%		-9.99%	
Dominion Energy Inc	D	838.94	55.90	46,897		4.78%		21.59%	
Dover Corp	DOV	137.46	186.03	25,571	0.07%	1.11%	0.00%	7.72%	0.01%
Alliant Energy Corp	LNT	256.50	58.27	14,946	0.04%	3.30%	0.00%	7.34%	0.00%
Steel Dynamics Inc	STLD	154.30	119.51	18,441		1.54%		-4.38%	
Duke Energy Corp	DUK	771.00	113.95	87,855	0.24%	3.67%	0.01%	6.61%	0.02%
Regency Centers Corp	REG	181.50	72.69	13,193	0.04%	3.69%	0.00%	3.79%	0.00%
Eaton Corp PLC	ETN	398.10	306.93	122,189	0.33%	1.23%	0.00%	14.60%	0.05%
Ecolab Inc	ECL	284.54	253.18	72,039	0.20%	0.90%	0.00%	15.76%	0.03%
Revvity Inc	RVTY	123.34	122.54	15,114	0.04%	0.23%	0.00%	9.44%	0.00%
Emerson Electric Co	EMR	572.70	105.39	60,357	0.17%	1.99%	0.00%	15.10%	0.02%
EOG Resources Inc	EOG	568.60	128.82	73,247	0.20%	2.83%	0.01%	3.28%	0.01%
Aon PLC	AON	217.24	343.72	74,670	0.20%	0.79%	0.00%	11.10%	0.02%
Entergy Corp	ETR	213.83	120.69	25,807	0.07%	3.75%	0.00%	7.17%	0.01%
Equifax Inc	EFX	123.74	306.74	37,955		0.51%		21.48%	
EQT Corp	EQT	594.02	33.51	19,906		1.88%			
IQVIA Holdings Inc	IQV	182.30	251.55	45,858	0.13%			10.83%	0.01%
Gartner Inc	IT	77.06	491.96	37,910	0.10%			7.67%	0.01%
FedEx Corp	FDX	244.96	298.77	73,188	0.20%	1.85%	0.00%	13.35%	0.03%
FMC Corp	FMC	124.82	64.58	8,061	0.02%	3.59%	0.00%	15.67%	0.00%
Brown & Brown Inc	BRO	285.26	105.13	29,989	0.08%	0.49%	0.00%	10.85%	0.01%
Ford Motor Co	F	3,904.40	11.19	43,690	0.12%	5.36%	0.01%	1.34%	0.00%
NextEra Energy Inc	NEE	2,055.00	80.51	165,448	0.45%	2.56%	0.01%	8.17%	0.04%
Franklin Resources Inc	BEN	523.00	20.24	10,585		6.13%			
Garmin Ltd	GRMN	192.21	183.29	35,231	0.10%	1.64%	0.00%	9.55%	0.01%
Freeport-McMoRan Inc	FCX	1,436.86	44.28	63,624	0.17%	1.36%	0.00%	17.59%	0.03%
Dexcom Inc	DXCM	400.73	69.34	27,786				21.07%	
General Dynamics Corp	GD	274.78	299.36	82,258	0.23%	1.90%	0.00%	15.55%	0.04%
General Mills Inc	GIS	556.62	72.29	40,238	0.11%	3.32%	0.00%	2.38%	0.00%
Genuine Parts Co	GPC	139.32	143.26	19,959		2.79%			
Atmos Energy Corp	ATO	155.23	130.74	20,295	0.06%	2.46%	0.00%	7.00%	0.00%
WW Grainger Inc	GWV	48.83	984.92	48,090		0.83%			
Halliburton Co	HAL	882.83	31.09	27,447	0.08%	2.19%	0.00%	8.17%	0.01%
L3Harris Technologies Inc	LHX	189.71	236.67	44,897	0.12%	1.96%	0.00%	8.77%	0.01%
Healthpeak Properties Inc	DOC	699.29	22.28	15,580	0.04%	5.39%	0.00%	5.33%	0.00%
Insulet Corp	PODD	70.12	202.77	14,217	0.04%			17.61%	0.01%
Catalent Inc	CTLT	180.98	60.96	11,033					
Fortive Corp	FTV	350.34	74.40	26,065	0.07%	0.43%	0.00%	10.49%	0.01%
Hershey Co/The	HSY	147.67	193.06	28,510	0.08%	2.84%	0.00%	2.21%	0.00%
Synchrony Financial	SYF	395.23	50.26	19,864		1.99%		64.00%	
Hormel Foods Corp	HRL	548.31	32.55	17,847	0.05%	3.47%	0.00%	6.59%	0.00%
Arthur J Gallagher & Co	AJG	219.10	292.57	64,102	0.18%	0.82%	0.00%	12.87%	0.02%
Mondelez International Inc	MDLZ	1,335.80	71.81	95,924	0.26%	2.62%	0.01%	6.93%	0.02%
CenterPoint Energy Inc	CNP	651.72	27.30	17,792	0.05%	2.93%	0.00%	8.00%	0.00%
Humana Inc	HUM	120.40	354.47	42,679		1.00%		-1.30%	
Willis Towers Watson PLC	WTW	101.56	292.11	29,666	0.08%	1.21%	0.00%	11.69%	0.01%
Illinois Tool Works Inc	ITW	296.90	253.18	75,169	0.21%	2.37%	0.00%	6.90%	0.01%
CDW Corp/DE	CDW	133.58	225.64	30,140	0.08%	1.10%	0.00%	7.02%	0.01%
Trane Technologies PLC	TT	225.67	361.66	81,616	0.22%	0.93%	0.00%	15.56%	0.03%
Interpublic Group of Cos Inc/The	IPG	375.59	32.28	12,124	0.03%	4.09%	0.00%	3.20%	0.00%
International Flavors & Fragrances Inc	IFF	255.66	103.99	26,586	0.07%	1.54%	0.00%	2.12%	0.00%
Generac Holdings Inc	GNRC	60.15	156.53	9,416	0.03%			7.00%	0.00%
NXP Semiconductors NV	NXPI	254.73	256.36	65,303	0.18%	1.58%	0.00%	5.89%	0.01%
Kellanova	K	343.95	80.04	27,530	0.08%	2.85%	0.00%	9.29%	0.01%
Broadridge Financial Solutions Inc	BR	116.71	212.86	24,843		1.65%			
Kimberly-Clark Corp	KMB	336.80	144.66	48,722	0.13%	3.37%	0.00%	8.36%	0.01%
Kimco Realty Corp	KIM	674.12	23.26	15,680	0.04%	4.13%	0.00%	3.63%	0.00%
Oracle Corp	ORCL	2,755.86	141.29	389,375	1.07%	1.13%	0.01%	15.06%	0.16%
Kroger Co/The	KR	721.79	53.21	38,406	0.11%	2.41%	0.00%	3.11%	0.00%
Lennar Corp	LEN	241.70	182.06	44,004	0.12%	1.10%	0.00%	4.30%	0.01%
Eli Lilly & Co	LLY	950.43	960.02	912,428		0.54%		33.00%	
Bath & Body Works Inc	BBWI	219.11	30.76	6,740	0.02%	2.60%	0.00%	14.74%	0.00%
Charter Communications Inc	CHTR	142.74	347.54	49,608	0.14%			7.10%	0.01%
Loews Corp	L	219.52	81.94	17,987		0.31%			
Lowe's Cos Inc	LOW	567.29	248.50	140,973		1.85%		-0.19%	
Hubbell Inc	HUBB	53.68	399.92	21,468		1.22%			
IDEX Corp	IEX	75.70	206.48	15,631		1.34%			
Marsh & McLennan Cos Inc	MMC	491.76	227.51	111,879	0.31%	1.43%	0.00%	9.10%	0.03%
Masco Corp	MAS	218.25	79.56	17,364	0.05%	1.46%	0.00%	7.76%	0.00%
S&P Global Inc	SPGI	320.20	513.24	164,339	0.45%	0.71%	0.00%	14.53%	0.07%
Medtronic PLC	MDT	1,282.49	88.58	113,603	0.31%	3.16%	0.01%	5.66%	0.02%
Viatis Inc	VTRS	1,193.52	12.08	14,418		3.97%		-3.41%	
CVS Health Corp	CVS	1,257.98	57.24	72,007	0.20%	4.65%	0.01%	1.82%	0.00%
DuPont de Nemours Inc	DD	417.50	84.25	35,174	0.10%	1.80%	0.00%	2.50%	0.00%
Micron Technology Inc	MU	1,108.84	96.24	106,715		0.48%		31.94%	
Motorola Solutions Inc	MSI	166.84	442.04	73,750	0.20%	0.89%	0.00%	9.36%	0.02%
Cboe Global Markets Inc	CBOE	104.63	205.40	21,492	0.06%	1.23%	0.00%	13.78%	0.01%
Newmont Corp	NEM	1,152.49	53.39	61,531		1.87%		48.45%	
NIKE Inc	NKE	1,201.46	82.95	99,661	0.27%	1.78%	0.00%	4.46%	0.01%
NiSource Inc	NI	448.51	33.06	14,828	0.04%	3.21%	0.00%	7.00%	0.00%
Norfolk Southern Corp	NSC	226.10	256.16	57,917	0.16%	2.11%	0.00%	9.68%	0.02%
Principal Financial Group Inc	PFG	231.58	81.42	18,856	0.05%	3.54%	0.00%	13.00%	0.01%
Eversource Energy	ES	357.39	67.53	24,134	0.07%	4.24%	0.00%	5.46%	0.00%
Northrop Grumman Corp	NOC	146.25	521.15	76,216	0.21%	1.58%	0.00%	8.68%	0.02%
Wells Fargo & Co	WFC	3,403.77	58.47	199,018	0.55%	2.74%	0.01%	7.95%	0.04%
Nucor Corp	NUE	237.34	151.91	36,054		1.42%		-1.48%	
Occidental Petroleum Corp	OXY	916.20	56.98	52,205		1.54%		24.00%	
Omnicom Group Inc	OMC	195.65	100.43	19,649	0.05%	2.79%	0.00%	5.36%	0.00%
ONEOK Inc	OKE	584.07	92.36	53,945		4.29%			
Raymond James Financial Inc	RJF	205.94	119.57	24,625	0.07%	1.51%	0.00%	15.40%	0.01%
PG&E Corp	PCG	2,137.46	19.70	42,108	0.12%	0.20%	0.00%	9.95%	0.01%
Parker-Hannifin Corp	PH	128.60	600.20	77,183	0.21%	1.09%	0.00%	13.44%	0.03%
Rollins Inc	ROL	484.31	50.18	24,303	0.07%	1.20%	0.00%	13.38%	0.01%
PPL Corp	PPL	737.77	31.91	23,542	0.06%	3.23%	0.00%	7.01%	0.00%
ConocoPhillips	COP	1,161.25	113.79	132,139	0.36%	2.74%	0.01%	13.00%	0.05%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
Estimated Weighted Average Long-Term Growth Rate [2]	10.45%
S&P 500 Estimated Required Market Return [3]	<u>12.07%</u>

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
PulteGroup Inc	PHM	207.52	131.65	27,321	0.07%	0.61%	0.00%	8.99%	0.01%
Pinnacle West Capital Corp	PNW	113.61	87.52	9,943	0.03%	4.02%	0.00%	8.22%	0.00%
PNC Financial Services Group Inc/The	PNC	397.50	185.09	73,573	0.20%	3.46%	0.01%	18.04%	0.04%
PPG Industries Inc	PPG	233.30	129.73	30,266	0.08%	2.10%	0.00%	8.33%	0.01%
Progressive Corp/The	PGR	585.67	252.20	147,705		0.16%		36.31%	
Veralto Corp	VLTO	247.11	112.43	27,782		0.32%			
Public Service Enterprise Group Inc	PEG	498.16	80.75	40,227	0.11%	2.97%	0.00%	7.47%	0.01%
Cooper Cos Inc/The	COO	199.16	105.73	21,057	0.06%			12.43%	0.01%
Edison International	EIX	383.93	87.03	33,413	0.09%	3.58%	0.00%	6.00%	0.01%
Schlumberger NV	SLB	1,419.84	43.99	62,459	0.17%	2.50%	0.00%	12.22%	0.02%
Charles Schwab Corp/The	SCHW	1,778.45	65.10	115,777	0.32%	1.54%	0.00%	12.07%	0.04%
Sherwin-Williams Co/The	SHW	252.26	369.37	93,177	0.26%	0.77%	0.00%	9.88%	0.03%
West Pharmaceutical Services Inc	WST	72.54	313.63	22,751	0.06%	0.26%	0.00%	2.89%	0.00%
J M Smucker Co/The	SJM	106.41	114.68	12,203	0.03%	3.77%	0.00%	6.07%	0.00%
Snap-on Inc	SNA	52.68	283.74	14,948	0.04%	2.62%	0.00%	3.83%	0.00%
AMETEK Inc	AME	231.54	171.05	39,604	0.11%	0.65%	0.00%	7.02%	0.01%
Uber Technologies Inc	UBER	2,100.94	73.13	153,642				60.59%	
Southern Co/The	SO	1,094.63	86.40	94,576	0.26%	3.33%	0.01%	7.23%	0.02%
Truist Financial Corp	TFC	1,339.14	44.46	59,538	0.16%	4.68%	0.01%	10.91%	0.02%
Southwest Airlines Co	LUV	599.16	28.92	17,328		2.49%			
W R Berkley Corp	WRB	380.55	59.70	22,719	0.06%	0.54%	0.00%	13.27%	0.01%
Stanley Black & Decker Inc	SWK	153.96	101.54	15,633		3.23%			
Public Storage	PSA	175.83	343.72	60,436	0.17%	3.49%	0.01%	1.23%	0.00%
Arista Networks Inc	ANET	314.15	353.38	111,015	0.30%			18.60%	0.06%
Sysco Corp	SY	491.52	77.97	38,324	0.11%	2.62%	0.00%	7.00%	0.01%
Corteva Inc	CTVA	687.80	57.13	39,294	0.11%	1.19%	0.00%	9.85%	0.01%
Texas Instruments Inc	TXN	913.05	214.34	195,702		2.43%		-2.86%	
Textron Inc	TXT	187.36	91.20	17,088	0.05%	0.09%	0.00%	10.05%	0.00%
Thermo Fisher Scientific Inc	TMO	382.00	615.07	234,954	0.64%	0.25%	0.00%	8.70%	0.06%
TJX Cos Inc/The	TJX	1,127.87	117.27	132,266	0.36%	1.28%	0.00%	8.20%	0.03%
Globe Life Inc	GL	89.82	105.05	9,436	0.03%	0.91%	0.00%	6.00%	0.00%
Johnson Controls International plc	JCI	668.01	72.85	48,665	0.13%	2.03%	0.00%	8.72%	0.01%
Ulta Beauty Inc	ULTA	47.12	352.84	16,624	0.05%			1.64%	0.00%
Union Pacific Corp	UNP	609.20	256.09	156,010	0.43%	2.09%	0.01%	11.33%	0.05%
Keysight Technologies Inc	KEYS	173.54	154.12	26,746				-1.19%	
UnitedHealth Group Inc	UNH	923.42	590.20	545,001	1.49%	1.42%	0.02%	10.44%	0.16%
Blackstone Inc	BX	720.08	142.36	102,510		2.30%		24.48%	
Marathon Oil Corp	MRO	559.38	28.65	16,026		1.54%		-5.00%	
Bio-Rad Laboratories Inc	BIO	22.80	337.32	7,689	0.02%			12.00%	0.00%
Ventas Inc	VTR	413.15	62.11	25,661	0.07%	2.90%	0.00%	8.22%	0.01%
Labcorp Holdings Inc	LH	83.96	229.89	19,302	0.05%	1.25%	0.00%	8.45%	0.00%
Vulcan Materials Co	VMC	132.06	245.21	32,382		0.75%			
Weyerhaeuser Co	WY	727.32	30.49	22,176		2.62%		-13.66%	
Williams Cos Inc/The	WMB	1,218.93	45.77	55,790	0.15%	4.15%	0.01%	4.28%	0.01%
Constellation Energy Corp	CEG	315.12	196.70	61,984		0.72%		20.39%	
WEC Energy Group Inc	WEC	316.08	93.03	29,405	0.08%	3.59%	0.00%	7.82%	0.01%
Adobe Inc	ADBE	443.40	574.41	254,693	0.70%			16.27%	0.11%
Vistra Corp	VST	343.56	85.43	29,350		1.03%			
AES Corp/The	AES	710.92	17.13	12,178		4.03%			
Expeditors International of Washington Inc	EXPD	141.13	123.41	17,417	0.05%	1.18%	0.00%	4.39%	0.00%
Amgen Inc	AMGN	537.33	333.83	179,377	0.49%	2.70%	0.01%	3.52%	0.02%
Apple Inc	AAPL	15,204.14	229.00	3,481,747	9.54%	0.44%	0.04%	8.04%	0.77%
Autodesk Inc	ADSK	215.51	258.40	55,688	0.15%			10.23%	0.02%
Cintas Corp	CTAS	100.77	805.12	81,131	0.22%	0.78%	0.00%	10.59%	0.02%
Comcast Corp	CMCSA	3,863.06	39.57	152,861	0.42%	3.13%	0.01%	7.32%	0.03%
Molson Coors Beverage Co	TAP	192.59	53.97	10,394	0.03%	3.26%	0.00%	5.29%	0.00%
KLA Corp	KLAC	134.43	819.43	110,152	0.30%	0.71%	0.00%	10.00%	0.03%
Marriott International Inc/MD	MAR	281.52	234.69	66,071	0.18%	1.07%	0.00%	4.25%	0.01%
Fiserv Inc	FI	575.73	174.60	100,522	0.28%			11.52%	0.03%
McCormick & Co Inc/MD	MKC	252.02	80.03	20,169	0.06%	2.10%	0.00%	5.83%	0.00%
PACCAR Inc	PCAR	524.22	96.18	50,420	0.14%	1.25%	0.00%	0.48%	0.00%
Costco Wholesale Corp	COST	443.34	892.38	395,623	1.08%	0.52%	0.01%	10.36%	0.11%
Stryker Corp	SYK	381.08	360.42	137,347	0.38%	0.89%	0.00%	8.60%	0.03%
Tyson Foods Inc	TSN	285.82	64.31	18,381		3.05%			
Lamb Weston Holdings Inc	LW	143.67	61.92	8,896	0.02%	2.33%	0.00%	2.16%	0.00%
Applied Materials Inc	AMAT	824.40	197.26	162,622	0.45%	0.81%	0.00%	9.28%	0.04%
American Airlines Group Inc	AAL	653.54	10.62	6,941				-13.42%	
Cardinal Health Inc	CAH	243.85	112.72	27,486	0.08%	1.79%	0.00%	9.84%	0.01%
Cincinnati Financial Corp	CINF	156.24	137.03	21,410	0.06%	2.36%	0.00%	7.83%	0.00%
Paramount Global	PARA	626.01	10.47	6,554		1.91%		49.00%	
DR Horton Inc	DHI	326.04	188.76	61,543	0.17%	0.64%	0.00%	8.27%	0.01%
Electronic Arts Inc	EA	264.20	151.82	40,111	0.11%	0.50%	0.00%	12.85%	0.01%
Fair Isaac Corp	FICO	24.52	1,730.27	42,424				23.00%	
Fastenal Co	FAST	572.65	68.28	39,100		2.28%			
M&T Bank Corp	MTB	167.00	170.76	28,517	0.08%	3.16%	0.00%	3.87%	0.00%
Xcel Energy Inc	XEL	557.50	61.23	34,136	0.09%	3.58%	0.00%	7.10%	0.01%
Fifth Third Bancorp	FITB	676.80	42.69	28,892		3.28%		25.00%	
Gilead Sciences Inc	GILD	1,244.99	79.00	98,354	0.27%	3.90%	0.01%	15.38%	0.04%
Hasbro Inc	HAS	139.41	68.16	9,502		4.11%		33.11%	
Huntington Bancshares Inc/OH	HBAN	1,452.43	14.97	21,743	0.06%	4.14%	0.00%	3.32%	0.00%
Welltower Inc	WELL	609.15	120.68	73,512	0.20%	2.22%	0.00%	15.65%	0.03%
Biogen Inc	BIIB	145.66	204.76	29,826	0.08%			6.10%	0.00%
Northern Trust Corp	NTRS	201.64	91.21	18,391	0.05%	3.29%	0.00%	10.11%	0.01%
Packaging Corp of America	PKG	89.81	209.54	18,819	0.05%	2.39%	0.00%	5.83%	0.00%
Paychex Inc	PAYX	359.74	131.20	47,198	0.13%	2.99%	0.00%	7.54%	0.01%
QUALCOMM Inc	QCOM	1,114.00	175.30	195,284	0.54%	1.94%	0.01%	10.64%	0.06%
Ross Stores Inc	ROST	333.58	150.61	50,240	0.14%	0.98%	0.00%	8.85%	0.01%
IDEXX Laboratories Inc	IDXX	82.31	481.33	39,616	0.11%			11.25%	0.01%
Starbucks Corp	SBUX	1,133.20	94.57	107,167	0.29%	2.41%	0.01%	9.67%	0.03%
KeyCorp	KEY	928.12	17.06	15,834	0.04%	4.81%	0.00%	20.00%	0.01%
Fox Corp	FOXA	224.65	41.37	9,294	0.03%	1.31%	0.00%	5.35%	0.00%
Fox Corp	FOX	235.58	38.43	9,053	0.02%	1.41%	0.00%	5.35%	0.00%
State Street Corp	STT	298.62	87.10	26,010	0.07%	3.49%	0.00%	8.82%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	439.69	17.89	7,866				50.58%	
US Bancorp	USB	1,560.51	47.23	73,703	0.20%	4.15%	0.01%	3.39%	0.01%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
Estimated Weighted Average Long-Term Growth Rate [2]	10.45%
S&P 500 Estimated Required Market Return [3]	<u>12.07%</u>

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
A O Smith Corp	AOS	119.96	83.72	10,043		1.53%			
Gen Digital Inc	GEN	615.53	26.46	16,287	0.04%	1.89%	0.00%	10.49%	0.00%
T Rowe Price Group Inc	TROW	222.60	106.04	23,604	0.06%	4.68%	0.00%	7.30%	0.00%
Waste Management Inc	WM	401.32	212.04	85,095	0.23%	1.41%	0.00%	13.29%	0.03%
Constellation Brands Inc	STZ	182.19	240.71	43,855	0.12%	1.68%	0.00%	11.37%	0.01%
Invesco Ltd	IVZ	450.03	17.09	7,691	0.02%	4.80%	0.00%	9.27%	0.00%
Intuit Inc	INTU	279.55	630.26	176,187	0.48%	0.66%	0.00%	18.79%	0.09%
Morgan Stanley	MS	1,620.89	103.61	167,940	0.46%	3.57%	0.02%	9.60%	0.04%
Microchip Technology Inc	MCHP	536.51	82.16	44,079		2.21%		-10.99%	
Crowdstrike Holdings Inc	CRWD	232.72	277.28	64,528				35.70%	
Chubb Ltd	CB	403.93	284.18	114,790	0.31%	1.28%	0.00%	2.20%	0.01%
Hologic Inc	HOLX	232.27	81.24	18,870	0.05%			8.86%	0.00%
Citizens Financial Group Inc	CFG	448.30	43.05	19,299		3.90%			
Jabil Inc	JBL	113.45	109.28	12,397	0.03%	0.29%	0.00%	7.13%	0.00%
O'Reilly Automotive Inc	ORLY	58.01	1,129.97	65,545	0.18%			10.21%	0.02%
Allstate Corp/The	ALL	264.04	188.94	49,888		1.95%		168.00%	
Equity Residential	EQR	379.14	74.88	28,390	0.08%	3.61%	0.00%	4.23%	0.00%
BorgWarner Inc	BWA	227.77	33.96	7,735	0.02%	1.30%	0.00%	4.40%	0.00%
Keurig Dr Pepper Inc	KDP	1,356.09	36.61	49,646	0.14%	2.35%	0.00%	6.90%	0.01%
Host Hotels & Resorts Inc	HST	702.44	17.70	12,433		4.52%			
Incyte Corp	INCY	192.60	65.66	12,646				33.16%	
Simon Property Group Inc	SPG	326.04	167.35	54,562	0.15%	4.90%	0.01%	1.42%	0.00%
Eastman Chemical Co	EMN	116.86	102.37	11,963	0.03%	3.16%	0.00%	6.10%	0.00%
AvalonBay Communities Inc	AVB	142.22	225.73	32,103	0.09%	3.01%	0.00%	4.93%	0.00%
Prudential Financial Inc	PRU	357.00	121.16	43,254	0.12%	4.29%	0.01%	9.72%	0.01%
United Parcel Service Inc	UPS	732.51	128.55	94,164	0.26%	5.07%	0.01%	0.60%	0.00%
Walgreens Boots Alliance Inc	WBA	863.28	9.25	7,985		10.81%		-14.70%	
STERIS PLC	STE	98.62	241.10	23,777		0.95%			
McKesson Corp	MCK	129.68	561.08	72,759	0.20%	0.51%	0.00%	11.18%	0.02%
Lockheed Martin Corp	LMT	238.36	564.95	134,660	0.37%	2.23%	0.01%	2.11%	0.01%
Cencora Inc	COR	196.01	239.57	46,958	0.13%	0.85%	0.00%	10.67%	0.01%
Campbell Soup Co	CPB	298.55	49.72	14,844	0.04%	2.98%	0.00%	8.36%	0.00%
Capital One Financial Corp	COF	381.86	146.93	56,106	0.15%	1.63%	0.00%	12.32%	0.02%
Waters Corp	WAT	59.36	346.35	20,560	0.06%			7.80%	0.00%
Nordson Corp	NDSN	57.18	256.56	14,671		1.22%			
Dollar Tree Inc	DLTR	214.94	84.49	18,161	0.05%			12.39%	0.01%
Darden Restaurants Inc	DRI	118.46	158.15	18,735	0.05%	3.54%	0.00%	10.59%	0.01%
Evergy Inc	EVER	229.75	59.14	13,587	0.04%	4.35%	0.00%	4.00%	0.00%
Match Group Inc	MTCH	257.90	37.21	9,596				36.15%	
Domino's Pizza Inc	DPZ	34.97	414.21	14,486	0.04%	1.46%	0.00%	12.56%	0.00%
NVR Inc	NVR	3.08	9,172.46	28,233	0.08%			7.60%	0.01%
NetApp Inc	NTAP	204.78	120.72	24,721	0.07%	1.72%	0.00%	5.34%	0.00%
Old Dominion Freight Line Inc	ODFL	214.30	192.80	41,316	0.11%	0.54%	0.00%	3.02%	0.00%
DaVita Inc	DVA	83.90	150.92	12,662	0.03%			20.00%	0.01%
Hartford Financial Services Group Inc/The	HIG	293.01	115.63	33,881	0.09%	1.63%	0.00%	12.37%	0.01%
Iron Mountain Inc	IRM	293.34	113.26	33,223		2.53%			
Estee Lauder Cos Inc/The	EL	233.18	91.66	21,373	0.06%	2.88%	0.00%	14.58%	0.01%
Cadence Design Systems Inc	CDNS	273.82	268.93	73,638	0.20%			16.20%	0.03%
Tyler Technologies Inc	TYL	42.67	587.87	25,086					
Universal Health Services Inc	UHS	59.46	237.77	14,138	0.04%	0.34%	0.00%	15.50%	0.01%
Skyworks Solutions Inc	SKWS	159.72	109.59	17,503		2.55%		-2.57%	
Quest Diagnostics Inc	DGX	111.32	156.97	17,473	0.05%	1.91%	0.00%	6.05%	0.00%
Rockwell Automation Inc	ROK	113.47	272.03	30,866	0.08%	1.84%	0.00%	1.73%	0.00%
Kraft Heinz Co/The	KHC	1,209.08	35.43	42,838	0.12%	4.52%	0.01%	2.51%	0.00%
American Tower Corp	AMT	467.08	224.06	104,654	0.29%	2.89%	0.01%	12.31%	0.04%
Regeneron Pharmaceuticals Inc	REGN	108.42	1,184.69	128,441				52.50%	
Amazon.com Inc	AMZN	10,495.57	178.50	1,873,459				28.99%	
Jack Henry & Associates Inc	JKHY	72.91	173.03	12,615	0.03%	1.27%	0.00%	9.73%	0.00%
Ralph Lauren Corp	RL	40.06	171.26	6,860	0.02%	1.93%	0.00%	11.05%	0.00%
BXP Inc	BXP	157.93	75.22	11,880	0.03%	5.21%	0.00%	0.40%	0.00%
Amphenol Corp	APH	1,204.29	67.45	81,229	0.22%	0.98%	0.00%	16.86%	0.04%
Howmet Aerospace Inc	HWM	408.15	96.66	39,451		0.33%		22.11%	
Valero Energy Corp	VLO	320.38	146.73	47,009		2.92%		-24.00%	
Synopsys Inc	SNPS	153.61	519.58	79,815	0.22%			16.33%	0.04%
Etsy Inc	ETSY	114.75	55.09	6,322	0.02%			4.06%	0.00%
CH Robinson Worldwide Inc	CHRW	117.28	103.51	12,140	0.03%	2.40%	0.00%	17.48%	0.01%
Accenture PLC	ACN	626.38	341.95	214,192	0.59%	1.51%	0.01%	5.80%	0.03%
TransDigm Group Inc	TDG	56.11	1,373.21	77,052	0.21%			19.57%	0.04%
Yum! Brands Inc	YUM	281.17	134.92	37,935	0.10%	1.99%	0.00%	11.41%	0.01%
Prologis Inc	PLD	925.91	127.82	118,350	0.32%	3.00%	0.01%	5.36%	0.02%
FirstEnergy Corp	FE	575.92	43.92	25,294	0.07%	3.87%	0.00%	7.02%	0.00%
VeriSign Inc	VRSN	97.60	183.90	17,949					
Quanta Services Inc	PWR	147.33	275.13	40,535		0.13%			
Henry Schein Inc	HSIC	126.71	70.55	8,939	0.02%			9.01%	0.00%
Ameren Corp	AEE	266.51	82.51	21,990	0.06%	3.25%	0.00%	6.16%	0.00%
ANSYS Inc	ANSS	87.39	321.42	28,088					
FactSet Research Systems Inc	FDS	38.04	422.84	16,085	0.04%	0.98%	0.00%	9.67%	0.00%
NVIDIA Corp	NVDA	24,530.00	119.37	2,928,146		0.03%		44.35%	
Cognizant Technology Solutions Corp	CTSH	495.66	77.77	38,547	0.11%	1.54%	0.00%	6.20%	0.01%
Intuitive Surgical Inc	ISRG	355.35	492.63	175,058	0.48%			17.51%	0.08%
Take-Two Interactive Software Inc	TTWO	175.28	161.71	28,345				60.49%	
Republic Services Inc	RSO	314.07	208.21	65,392	0.18%	1.11%	0.00%	10.33%	0.02%
eBay Inc	EBAY	489.00	59.10	28,900	0.08%	1.83%	0.00%	10.12%	0.01%
Goldman Sachs Group Inc/The	GS	315.80	510.25	161,137	0.44%	2.35%	0.01%	14.20%	0.06%
SBA Communications Corp	SBAC	107.47	226.66	24,360	0.07%	1.73%	0.00%	15.96%	0.01%
Sempra	SRE	633.15	82.18	52,032	0.14%	3.02%	0.00%	5.27%	0.01%
Moody's Corp	MCO	182.10	487.74	88,817	0.24%	0.70%	0.00%	14.41%	0.04%
ON Semiconductor Corp	ON	428.36	77.87	33,356	0.09%			1.28%	0.00%
Booking Holdings Inc	BKNG	33.52	3,909.23	131,053	0.36%	0.90%	0.00%	14.59%	0.05%
F5 Inc	FFIV	58.28	203.15	11,840	0.03%			7.83%	0.00%
Akamai Technologies Inc	AKAM	151.53	101.84	15,431	0.04%			6.12%	0.00%
Charles River Laboratories International Inc	CRL	51.63	197.75	10,210	0.03%			5.20%	0.00%
MarketAxess Holdings Inc	MKTX	37.75	242.39	9,151	0.03%	1.22%	0.00%	4.02%	0.00%
Devon Energy Corp	DVN	626.20	44.78	28,041	0.08%			6.60%	0.01%
Bio-Techne Corp	TECH	158.60	73.99	11,735	0.03%	0.43%	0.00%	6.00%	0.00%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
Estimated Weighted Average Long-Term Growth Rate [2]	10.45%
S&P 500 Estimated Required Market Return [3]	<u>12.07%</u>

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Alphabet Inc	GOOGL	5,859.00	163.38	957,243	2.62%	0.49%	0.01%	15.01%	0.39%
Teleflex Inc	TFX	47.12	245.17	11,552	0.03%	0.55%	0.00%	7.95%	0.00%
Allegion plc	ALLE	87.13	138.84	12,097	0.03%	1.38%	0.00%	7.73%	0.00%
Netflix Inc	NFLX	429.17	701.35	300,995				35.72%	
Warner Bros Discovery Inc	WBD	2,451.91	7.84	19,223				28.63%	
Agilent Technologies Inc	A	287.33	142.92	41,065	0.11%	0.66%	0.00%	5.74%	0.01%
Trimble Inc	TRMB	244.21	56.69	13,844					
Elevance Health Inc	ELV	231.89	556.89	129,135	0.35%	1.17%	0.00%	11.79%	0.04%
CME Group Inc	CME	360.09	215.74	77,687	0.21%	2.13%	0.00%	3.82%	0.01%
Juniper Networks Inc	JNPR	329.16	38.88	12,798	0.04%	2.26%	0.00%	6.00%	0.00%
BlackRock Inc	BLK	148.13	901.81	133,583	0.37%	2.26%	0.01%	9.76%	0.04%
DTE Energy Co	DTE	206.93	125.02	25,870	0.07%	3.26%	0.00%	10.27%	0.01%
Celanese Corp	CE	109.26	130.60	14,270	0.04%	2.14%	0.00%	0.56%	0.00%
Nasdaq Inc	NDAQ	575.94	72.08	41,514	0.11%	1.33%	0.00%	10.30%	0.01%
Philip Morris International Inc	PM	1,554.80	123.29	191,692	0.53%	4.22%	0.02%	9.36%	0.05%
Ingersoll Rand Inc	IR	403.48	91.45	36,899		0.09%			
Salesforce Inc	CRM	956.00	252.90	241,772	0.66%	0.63%	0.00%	17.52%	0.12%
Roper Technologies Inc	ROP	107.20	554.41	59,432		0.54%			
Huntington Ingalls Industries Inc	HII	39.22	282.77	11,089	0.03%	1.84%	0.00%	7.62%	0.00%
MetLife Inc	MET	700.33	77.48	54,261	0.15%	2.81%	0.00%	14.38%	0.02%
Tapestry Inc	TPR	230.22	40.97	9,432	0.03%	3.42%	0.00%	5.52%	0.00%
CSX Corp	CSX	1,938.74	34.27	66,441	0.18%	1.40%	0.00%	9.21%	0.02%
Edwards Lifesciences Corp	EW	602.40	69.96	42,144	0.12%			8.56%	0.01%
Ameriprise Financial Inc	AMP	98.19	449.44	44,130	0.12%	1.32%	0.00%	16.59%	0.02%
Zebra Technologies Corp	ZBRA	51.58	345.38	17,815					
Zimmer Biomet Holdings Inc	ZBH	203.65	115.46	23,514	0.06%	0.83%	0.00%	6.96%	0.00%
Camden Property Trust	CPT	106.64	125.20	13,351	0.04%	3.29%	0.00%	1.87%	0.00%
CBRE Group Inc	CBRE	306.43	115.14	35,282					
Mastercard Inc	MA	916.71	483.34	443,083	1.21%	0.55%	0.01%	15.18%	0.18%
CarMax Inc	KMX	156.08	84.55	13,196	0.04%			17.91%	0.01%
Intercontinental Exchange Inc	ICE	574.14	161.55	92,753	0.25%	1.11%	0.00%	9.95%	0.03%
Fidelity National Information Services Inc	FIS	545.57	82.45	44,982		1.75%		22.20%	
Smurfit WestRock PLC	SW	519.36	47.42	24,628	0.07%	2.55%	0.00%	1.00%	0.00%
Chipotle Mexican Grill Inc	CMG	1,369.48	56.08	76,800				22.64%	
Wynn Resorts Ltd	WYNN	110.99	76.88	8,533		1.30%			
Live Nation Entertainment Inc	LYV	232.11	97.67	22,671					
Assurant Inc	AIZ	51.79	195.63	10,132	0.03%	1.47%	0.00%	7.14%	0.00%
NRG Energy Inc	NRG	206.38	85.01	17,544	0.05%	1.92%	0.00%	4.00%	0.00%
Monster Beverage Corp	MNST	979.54	47.13	46,166	0.13%			10.18%	0.01%
Regions Financial Corp	RF	915.13	23.17	21,203	0.06%	4.32%	0.00%	4.68%	0.00%
Baker Hughes Co	BKR	993.42	35.17	34,939		2.39%		69.21%	
Mosaic Co/The	MOS	318.64	28.57	9,103		2.94%		-21.74%	
Expedia Group Inc	EXPE	124.66	139.09	17,338	0.05%			19.59%	0.01%
CF Industries Holdings Inc	CF	180.41	83.09	14,990		2.41%		-9.54%	
APA Corp	APA	369.91	28.49	10,539		3.51%		-5.79%	
Leidos Holdings Inc	LDOS	134.71	158.51	21,354	0.06%	0.96%	0.00%	11.76%	0.01%
Alphabet Inc	GOOG	5,585.00	165.11	922,139	2.53%	0.48%	0.01%	15.01%	0.38%
First Solar Inc	FSLR	107.05	227.37	24,339				41.25%	
TE Connectivity Ltd	TEL	303.92	153.60	46,682	0.13%	1.69%	0.00%	5.41%	0.01%
Discover Financial Services	DFS	251.07	138.71	34,826	0.10%	2.02%	0.00%	11.65%	0.01%
Visa Inc	V	1,670.45	276.37	461,661	1.27%	0.75%	0.01%	12.33%	0.16%
Mid-America Apartment Communities Inc	MAA	116.88	162.37	18,977	0.05%	3.62%	0.00%	0.65%	0.00%
Xylem Inc/NY	XYL	242.89	137.53	33,405		1.05%			
Marathon Petroleum Corp	MPC	334.68	177.12	59,279		1.86%		-13.00%	
Tractor Supply Co	TSCO	107.87	267.55	28,860	0.08%	1.64%	0.00%	5.68%	0.00%
Advanced Micro Devices Inc	AMD	1,618.48	148.56	240,442				25.66%	
ResMed Inc	RMD	146.93	245.02	36,001	0.10%	0.87%	0.00%	9.57%	0.01%
Mettler-Toledo International Inc	MTD	21.36	1,439.08	30,734	0.08%			9.15%	0.01%
VICI Properties Inc	VICI	1,043.14	33.48	34,924	0.10%	4.96%	0.00%	1.83%	0.00%
Copart Inc	CPRT	962.30	52.96	50,963					
Jacobs Solutions Inc	J	124.25	150.88	18,747	0.05%	0.77%	0.00%	10.87%	0.01%
Albemarle Corp	ALB	117.53	90.25	10,607		1.80%		35.42%	
Fortinet Inc	FTNT	764.91	76.71	58,676	0.16%			8.66%	0.01%
Moderna Inc	MRNA	384.40	77.40	29,752	0.08%			17.95%	0.01%
Essex Property Trust Inc	ESS	64.22	301.79	19,380	0.05%	3.25%	0.00%	4.50%	0.00%
CoStar Group Inc	CSGP	409.82	77.30	31,679	0.09%			13.84%	0.01%
Realty Income Corp	O	870.87	61.85	53,861	0.15%	5.10%	0.01%	3.85%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	175.18	169.57	29,706	0.08%	0.47%	0.00%	16.12%	0.01%
Pool Corp	POOL	38.26	351.62	13,452		1.37%		-0.04%	
Western Digital Corp	WDC	343.45	65.59	22,527				-10.00%	
PepsiCo Inc	PEP	1,373.57	172.88	237,463	0.65%	3.14%	0.02%	7.40%	0.05%
Diamondback Energy Inc	FANG	178.39	195.11	34,806	0.10%	4.80%	0.00%	8.34%	0.01%
Palo Alto Networks Inc	PANW	323.80	362.72	117,449	0.32%			11.52%	0.04%
ServiceNow Inc	NOW	206.00	855.00	176,130					
Church & Dwight Co Inc	CHD	244.82	101.88	24,942	0.07%	1.11%	0.00%	7.35%	0.01%
Federal Realty Investment Trust	FRT	83.67	115.00	9,622	0.03%	3.83%	0.00%	4.97%	0.00%
MGM Resorts International	MGM	303.77	37.59	11,419				20.80%	
American Electric Power Co Inc	AEP	532.12	100.28	53,361	0.15%	3.51%	0.01%	6.25%	0.01%
Invitation Homes Inc	INVH	612.59	36.84	22,568	0.06%	3.04%	0.00%	5.19%	0.00%
PTC Inc	PTC	120.14	179.09	21,515	0.06%			14.76%	0.01%
JB Hunt Transport Services Inc	JBHT	101.99	173.20	17,664	0.05%	0.99%	0.00%	9.73%	0.00%
Lam Research Corp	LRCX	129.88	821.01	106,629	0.29%	1.12%	0.00%	16.29%	0.05%
Mohawk Industries Inc	MHK	63.12	155.14	9,792	0.03%			4.45%	0.00%
GE HealthCare Technologies Inc	GEHC	456.66	84.82	38,734	0.11%	0.14%	0.00%	10.92%	0.01%
Pentair PLC	PNR	165.50	88.69	14,678	0.04%	1.04%	0.00%	12.50%	0.01%
Vertex Pharmaceuticals Inc	VRTX	258.10	495.89	127,990	0.35%			11.00%	0.04%
Amcor PLC	AMCOR	1,445.34	11.44	16,535	0.05%	4.37%	0.00%	3.71%	0.00%
Meta Platforms Inc	META	2,184.73	521.31	1,138,921	3.12%	0.38%	0.01%	19.80%	0.62%
T-Mobile US Inc	TMUS	1,166.78	198.72	231,863	0.64%	1.31%	0.01%	5.00%	0.03%
United Rentals Inc	URI	66.14	741.26	49,024	0.13%	0.88%	0.00%	7.45%	0.01%
Alexandria Real Estate Equities Inc	ARE	174.93	119.57	20,916	0.06%	4.35%	0.00%	3.03%	0.00%
Honeywell International Inc	HON	649.67	207.91	135,073	0.37%	2.08%	0.01%	8.65%	0.03%
Delta Air Lines Inc	DAL	645.42	42.49	27,424	0.08%	1.41%	0.00%	6.74%	0.01%
United Airlines Holdings Inc	UAL	328.80	44.04	14,480	0.04%			5.31%	0.00%
Seagate Technology Holdings PLC	STX	210.20	99.55	20,925		2.81%			

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
Estimated Weighted Average Long-Term Growth Rate [2]	10.45%
S&P 500 Estimated Required Market Return [3]	12.07%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
News Corp	NWS	190.68	29.43	5,612		0.68%			
Centene Corp	CNC	526.03	78.83	41,467	0.11%			4.40%	0.01%
Martin Marietta Materials Inc	MLM	61.12	533.37	32,598	0.09%	0.59%	0.00%	7.47%	0.01%
Teradyne Inc	TER	163.18	136.73	22,311	0.06%	0.35%	0.00%	16.14%	0.01%
PayPal Holdings Inc	PYPL	1,022.33	72.43	74,048	0.20%			12.03%	0.02%
Tesla Inc	TSLA	3,194.64	214.11	684,004				-11.00%	
KKR & Co Inc	KKR	887.44	123.77	109,838		0.57%			
Arch Capital Group Ltd	ACGL	376.06	113.09	42,528	0.12%			6.13%	0.01%
Dow Inc	DOW	703.27	53.58	37,681		5.23%		-1.67%	
Everest Group Ltd	EG	43.27	392.24	16,974	0.05%	2.04%	0.00%	2.48%	0.00%
Teledyne Technologies Inc	TDY	46.78	432.80	20,248					
GE Vernova Inc	GEV	274.80	201.00	55,235				70.40%	
News Corp	NWSA	378.33	28.33	10,718		0.71%			
Exelon Corp	EXC	999.74	38.09	38,080	0.10%	3.99%	0.00%	5.31%	0.01%
Global Payments Inc	GPV	254.44	111.01	28,245	0.08%	0.90%	0.00%	9.30%	0.01%
Crown Castle Inc	CCI	434.57	112.02	48,680	0.13%	5.59%	0.01%	1.13%	0.00%
Aptiv PLC	APT	265.76	71.53	19,010	0.05%			16.91%	0.01%
Align Technology Inc	ALGN	74.70	237.22	17,720	0.05%			9.53%	0.00%
Kenvue Inc	KVUE	1,915.17	21.95	42,038	0.12%	3.74%	0.00%	13.58%	0.02%
Targa Resources Corp	TRGP	219.08	146.90	32,183	0.09%	2.04%	0.00%	16.74%	0.01%
Bunge Global SA	BG	141.65	101.38	14,361		2.68%		-8.59%	
LKQ Corp	LKQ	263.26	41.59	10,949		2.89%			
Deckers Outdoor Corp	DECK	25.41	959.29	24,377	0.07%			10.80%	0.01%
Zoetis Inc	ZTS	453.05	183.49	83,130	0.23%	0.94%	0.00%	10.36%	0.02%
Equinix Inc	EQIX	94.95	834.36	79,218	0.22%	2.04%	0.00%	14.03%	0.03%
Digital Realty Trust Inc	DLR	327.41	151.61	49,639	0.14%	3.22%	0.00%	3.21%	0.00%
Molina Healthcare Inc	MOH	58.60	349.79	20,498	0.06%			11.98%	0.01%
Las Vegas Sands Corp	LVS	736.43	38.99	28,713		2.05%			

Notes:

[1] Equals sum of Col. [9]

[2] Equals sum of Col. [11]

[3] Equals (([1] x (1 + (0.5 x [2])))) + [2]

[4] Bloomberg Professional 30-day average as of August 31, 2024

[5] Bloomberg Professional 30-day average as of August 31, 2024

[6] Equals [4] x [5]

[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and ≤20%

[8] Bloomberg Professional 30-day average as of August 31, 2024

[9] Equals [7] x [8]

[10] Bloomberg Professional 30-day average as of August 31, 2024

[11] Equals [7] x [10]

Dr. Won's Incorrect Proposed Adjustment to
Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
	<div>Won Proposed</div> <div>Weighting</div>
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	9.55%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	3.90%
Total [4]	8.42%
S&P 500 Estimated Required Market Return [5]	10.02%

STANDARD AND POOR'S 500 INDEX

		[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares	Price	Market	Weight in	Estimated	Capitalization	Bloomberg	Capitalization
Name	Ticker	Outst'g		Capitalization	Index	Dividend	Weighted	Long-Term	Weighted
						Yield	Dividend	Growth Est.	Long-Term
							Yield		Growth Est.
LyondellBasell Industries NV	LYB	325.09	98.70	32,086		5.43%		-8.07%	
American Express Co	AXP	710.91	258.65	183,877	0.50%	1.08%	0.01%	15.74%	0.08%
Verizon Communications Inc	VZ	4,209.52	41.78	175,874	0.48%	6.37%	0.03%	0.86%	0.00%
Broadcom Inc	AVGO	4,654.88	162.82	757,908	2.08%	1.29%	0.03%	15.88%	0.33%
Boeing Co/The	BA	616.17	173.74	107,053				38.60%	
Solventum Corp	SOLV	172.71	64.11	11,073				-2.00%	
Caterpillar Inc	CAT	484.90	356.10	172,672	0.47%	1.58%	0.01%	8.38%	0.04%
JPMorgan Chase & Co	JPM	2,845.17	224.80	639,593	1.75%	2.05%	0.04%	4.05%	0.07%
Chevron Corp	CVX	1,828.92	147.95	270,588	0.74%	4.41%	0.03%	7.00%	0.05%
Coca-Cola Co/The	KO	4,309.87	72.47	312,336	0.86%	2.68%	0.02%	6.36%	0.05%
AbbVie Inc	ABBV	1,766.34	196.31	346,751	0.95%	3.16%	0.03%	8.80%	0.08%
Walt Disney Co/The	DIS	1,813.59	90.38	163,912	0.45%	1.00%	0.00%	18.89%	0.08%
Corpay Inc	CPAY	69.43	315.55	21,910	0.06%			14.87%	0.00%
Extra Space Storage Inc	EXR	211.93	177.00	37,511		3.66%		-0.20%	
Exxon Mobil Corp	XOM	4,442.83	117.94	523,987	1.44%	3.22%	0.05%	5.00%	0.07%
Phillips 66	PSX	418.57	140.31	58,729		3.28%		-9.00%	
General Electric Co	GE	1,084.31	174.62	189,342		0.64%		29.30%	
HP Inc	HPQ	963.72	36.18	34,867	0.10%	3.05%	0.00%	1.42%	0.00%
Home Depot Inc/The	HD	993.29	368.50	366,028	1.00%	2.44%	0.02%	3.87%	0.04%
Monolithic Power Systems Inc	MPWR	48.75	934.68	45,568		0.53%			
International Business Machines Corp	IBM	921.15	202.13	186,192	0.51%	3.30%	0.02%	3.90%	0.02%
Johnson & Johnson	JNJ	2,407.24	165.86	399,265	1.09%	2.99%	0.03%	3.73%	0.04%
Lululemon Athletica Inc	LULU	117.66	259.47	30,529	0.08%			7.00%	0.00%
McDonald's Corp	MCD	717.34	286.99	205,870	0.56%	2.33%	0.01%	5.15%	0.03%
Merck & Co Inc	MRK	2,534.81	118.45	300,248	0.82%	2.60%	0.02%	14.00%	0.12%
3M Co	MMM	549.35	134.69	73,992		2.08%		-5.37%	
American Water Works Co Inc	AWK	194.86	143.12	27,889	0.08%	2.14%	0.00%	8.00%	0.01%
Bank of America Corp	BAC	7,759.58	40.75	316,203		2.55%			
Pfizer Inc	PFE	5,666.70	29.01	164,391	0.45%	5.79%	0.03%	6.39%	0.03%
Procter & Gamble Co/The	PG	2,349.71	171.54	403,069	1.10%	2.35%	0.03%	7.37%	0.08%
AT&T Inc	T	7,170.24	19.90	142,688	0.39%	5.58%	0.02%	1.84%	0.01%
Travelers Cos Inc/The	TRV	227.93	228.07	51,984	0.14%	1.84%	0.00%	18.21%	0.03%
RTX Corp	RTX	1,330.24	123.34	164,072	0.45%	2.04%	0.01%	10.23%	0.05%
Analog Devices Inc	ADI	496.49	233.92	116,140		1.57%		-5.82%	
Walmart Inc	WMT	8,038.25	77.23	620,794	1.70%	1.07%	0.02%	9.24%	0.16%
Cisco Systems Inc	CSCO	4,028.82	50.54	203,616	0.56%	3.17%	0.02%	3.40%	0.02%
Intel Corp	INTC	4,276.00	22.04	94,243	0.26%			4.26%	0.00%
General Motors Co	GM	1,123.92	49.78	55,949	0.15%	0.96%	0.00%	11.02%	0.02%
Microsoft Corp	MSFT	7,433.04	417.14	3,100,617	8.50%	0.72%	0.06%	16.10%	1.37%
Dollar General Corp	DG	219.92	82.97	18,246		2.84%		-3.74%	
Cigna Group/The	CI	279.55	361.81	101,144	0.28%	1.55%	0.00%	11.65%	0.03%
Kinder Morgan Inc	KMI	2,219.46	21.57	47,874	0.13%	5.33%	0.01%	6.52%	0.01%
Citigroup Inc	C	1,907.80	62.64	119,504		3.58%		27.26%	
American International Group Inc	AIG	643.95	77.05	49,616	0.14%	2.08%	0.00%	12.42%	0.02%
Altria Group Inc	MO	1,706.22	53.77	91,744	0.25%	7.59%	0.02%	4.14%	0.01%
HCA Healthcare Inc	HCA	258.07	395.59	102,091	0.28%	0.67%	0.00%	10.81%	0.03%
International Paper Co	IP	347.37	48.42	16,820		3.82%		-2.00%	
Hewlett Packard Enterprise Co	HPE	1,299.67	19.37	25,175	0.07%	2.68%	0.00%	3.73%	0.00%
Abbott Laboratories	ABT	1,739.90	113.27	197,078	0.54%	1.94%	0.01%	8.12%	0.04%
Aflac Inc	AFL	560.03	110.36	61,804	0.17%	1.81%	0.00%	7.55%	0.01%
Air Products and Chemicals Inc	APD	222.32	278.85	61,993	0.17%	2.54%	0.00%	9.52%	0.02%
Super Micro Computer Inc	SMCI	58.56	437.70	25,630				69.00%	
Royal Caribbean Cruises Ltd	RCL	257.42	164.62	42,376		0.97%		30.00%	
Hess Corp	HES	308.12	138.06	42,538	0.12%	1.27%	0.00%	16.00%	0.02%
Archer-Daniels-Midland Co	ADM	478.14	60.99	29,162		3.28%		-3.62%	
Automatic Data Processing Inc	ADP	407.80	275.91	112,515		2.03%			
Verisk Analytics Inc	VRSK	142.42	272.82	38,856	0.11%	0.57%	0.00%	12.54%	0.01%
AutoZone Inc	AZO	17.08	3,181.48	54,349	0.15%			14.66%	0.00%
Linde PLC	LIN	477.50	478.25	228,366	0.63%	1.16%	0.01%	11.76%	0.07%
Avery Dennison Corp	AVY	80.52	221.85	17,863	0.05%	1.59%	0.00%	12.84%	0.01%
Enphase Energy Inc	ENPH	135.42	121.04	16,391	0.04%			7.45%	0.00%
MSCI Inc	MSCI	78.65	580.59	45,663	0.13%	1.10%	0.00%	11.93%	0.01%
Ball Corp	BALL	303.57	63.61	19,310	0.05%	1.26%	0.00%	13.35%	0.01%
Axon Enterprise Inc	AXON	75.57	364.97	27,582				20.81%	
Dayforce Inc	DAY	158.10	57.17	9,039					
Carrier Global Corp	CARR	902.75	72.78	65,702	0.18%	1.04%	0.00%	6.74%	0.01%
Bank of New York Mellon Corp/The	BK	737.96	68.22	50,343	0.14%	2.76%	0.00%	10.55%	0.01%
Otis Worldwide Corp	OTIS	400.56	94.69	37,929	0.10%	1.65%	0.00%	10.00%	0.01%
Baxter International Inc	BAX	510.18	37.94	19,356	0.05%	3.06%	0.00%	6.50%	0.00%
Becton Dickinson & Co	BDX	289.04	242.41	70,067	0.19%	1.57%	0.00%	8.34%	0.02%
Berkshire Hathaway Inc	BRK/B	1,325.19	475.92	630,686					
Best Buy Co Inc	BBY	215.71	100.40	21,658	0.06%	3.75%	0.00%	4.17%	0.00%
Boston Scientific Corp	BSX	1,472.63	81.79	120,446	0.33%			12.58%	0.00%
Bristol-Myers Squibb Co	BMJ	2,027.40	49.95	101,268		4.80%		33.60%	
Brown-Forman Corp	BF/B	303.54	45.37	13,772		1.92%		-2.38%	
Coterra Energy Inc	CTRA	739.27	24.33	17,987	0.05%	3.45%	0.00%	10.06%	0.00%
Hilton Worldwide Holdings Inc	HLT	246.43	219.64	54,125	0.15%	0.27%	0.00%	14.97%	0.02%
Carnival Corp	CCL	1,122.46	16.50	18,521					
Qorvo Inc	QRVO	94.86	115.89	10,993	0.03%			17.09%	0.00%
Builders FirstSource Inc	BLDR	116.45	174.00	20,263	0.06%			1.45%	0.00%
UDR Inc	UDR	329.82	44.51	14,680	0.04%	3.82%	0.00%	1.85%	0.00%
Clorox Co/The	CLX	123.86	158.31	19,609	0.05%	3.08%	0.00%	8.65%	0.00%
Paycom Software Inc	PAYC	57.43	162.78	9,349	0.03%	0.92%	0.00%	9.41%	0.00%
CMS Energy Corp	CMS	298.64	67.86	20,265	0.06%	3.04%	0.00%	7.28%	0.00%
Colgate-Palmolive Co	CL	817.09	106.50	87,020	0.24%	1.88%	0.00%	8.73%	0.02%
EPAM Systems Inc	EPAM	56.94	200.76	11,430	0.03%			5.29%	0.00%
Conagra Brands Inc	CAG	479.05	31.20	14,946	0.04%	4.49%	0.00%	1.81%	0.00%
Airbnb Inc	ABNB	440.00	117.31	51,617	0.14%			19.84%	0.00%
Consolidated Edison Inc	ED	346.15	101.56	35,155	0.10%	3.27%	0.00%	5.58%	0.01%
Corning Inc	GLW	855.70	41.85	35,811	0.10%	2.68%	0.00%	13.41%	0.01%
GoDaddy Inc	GDDY	140.97	167.41	23,600					
Cummins Inc	CMI	137.05	312.85	42,875	0.12%	2.33%	0.00%	8.28%	0.01%
Caesars Entertainment Inc	CZR	216.34	37.64	8,143				-35.64%	

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
	Won Proposed Weighting
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	9.55%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	3.90%
Total [4]	8.42%
S&P 500 Estimated Required Market Return [5]	10.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Danaher Corp	DHR	722.21	269.31	194,499	0.53%	0.40%	0.00%	1.89%	0.01%
Target Corp	TGT	460.68	153.62	70,769	0.19%	2.92%	0.01%	14.38%	0.03%
Deere & Co	DE	273.60	385.74	105,538		1.52%		-9.99%	
Dominion Energy Inc	D	838.94	55.90	46,897		4.78%		21.59%	
Dover Corp	DOV	137.46	186.03	25,571	0.07%	1.11%	0.00%	7.72%	0.01%
Alliant Energy Corp	LNT	256.50	58.27	14,946	0.04%	3.30%	0.00%	7.34%	0.00%
Steel Dynamics Inc	STLD	154.30	119.51	18,441		1.54%		-4.38%	
Duke Energy Corp	DUK	771.00	113.95	87,855	0.24%	3.67%	0.01%	6.61%	0.02%
Regency Centers Corp	REG	181.50	72.69	13,193	0.04%	3.69%	0.00%	3.79%	0.00%
Eaton Corp PLC	ETN	398.10	306.93	122,189	0.33%	1.23%	0.00%	14.60%	0.05%
Ecolab Inc	ECL	284.54	253.18	72,039	0.20%	0.90%	0.00%	15.76%	0.03%
Revvity Inc	RVTY	123.34	122.54	15,114	0.04%	0.23%	0.00%	9.44%	0.00%
Emerson Electric Co	EMR	572.70	105.39	60,357	0.17%	1.99%	0.00%	15.10%	0.02%
EOG Resources Inc	EOG	568.60	128.82	73,247	0.20%	2.83%	0.01%	3.28%	0.01%
Aon PLC	AON	217.24	343.72	74,670	0.20%	0.79%	0.00%	11.10%	0.02%
Entergy Corp	ETR	213.83	120.69	25,807	0.07%	3.75%	0.00%	7.17%	0.01%
Equifax Inc	EFX	123.74	306.74	37,955		0.51%		21.48%	
EQT Corp	EQT	594.02	33.51	19,906		1.88%			
IQVIA Holdings Inc	IQV	182.30	251.55	45,858	0.13%			10.83%	0.00%
Gartner Inc	IT	77.06	491.96	37,910	0.10%			7.67%	0.00%
FedEx Corp	FDX	244.96	298.77	73,188	0.20%	1.85%	0.00%	13.35%	0.03%
FMC Corp	FMC	124.82	64.58	8,061	0.02%	3.59%	0.00%	15.67%	0.00%
Brown & Brown Inc	BRO	285.26	105.13	29,989	0.08%	0.49%	0.00%	10.85%	0.01%
Ford Motor Co	F	3,904.40	11.19	43,690	0.12%	5.36%	0.01%	1.34%	0.00%
NextEra Energy Inc	NEE	2,055.00	80.51	165,448	0.45%	2.56%	0.01%	8.17%	0.04%
Franklin Resources Inc	BEN	523.00	20.24	10,585		6.13%			
Garmin Ltd	GRMN	192.21	183.29	35,231	0.10%	1.64%	0.00%	9.55%	0.01%
Freeport-McMoRan Inc	FCX	1,436.86	44.28	63,624	0.17%	1.36%	0.00%	17.59%	0.03%
Dexcom Inc	DXCM	400.73	69.34	27,786				21.07%	
General Dynamics Corp	GD	274.78	299.36	82,258	0.23%	1.90%	0.00%	15.55%	0.04%
General Mills Inc	GIS	556.62	72.29	40,238	0.11%	3.32%	0.00%	2.38%	0.00%
Genuine Parts Co	GPC	139.32	143.26	19,959		2.79%			
Atmos Energy Corp	ATO	155.23	130.74	20,295	0.06%	2.46%	0.00%	7.00%	0.00%
WW Grainger Inc	GWV	48.83	984.92	48,090		0.83%			
Halliburton Co	HAL	882.83	31.09	27,447	0.08%	2.19%	0.00%	8.17%	0.01%
L3Harris Technologies Inc	LHX	189.71	236.67	44,897	0.12%	1.96%	0.00%	8.77%	0.01%
Healthpeak Properties Inc	DOC	699.29	22.28	15,580	0.04%	5.39%	0.00%	5.33%	0.00%
Insulet Corp	PODD	70.12	202.77	14,217	0.04%			17.61%	0.00%
Catalent Inc	CTLT	180.98	60.96	11,033					
Fortive Corp	FTV	350.34	74.40	26,065	0.07%	0.43%	0.00%	10.49%	0.01%
Hershey Co/The	HSY	147.67	193.06	28,510	0.08%	2.84%	0.00%	2.21%	0.00%
Synchrony Financial	SYF	395.23	50.26	19,864		1.99%		64.00%	
Hormel Foods Corp	HRL	548.31	32.55	17,847	0.05%	3.47%	0.00%	6.59%	0.00%
Arthur J Gallagher & Co	AJG	219.10	292.57	64,102	0.18%	0.82%	0.00%	12.87%	0.02%
Mondelez International Inc	MDLZ	1,335.80	71.81	95,924	0.26%	2.62%	0.01%	6.93%	0.02%
CenterPoint Energy Inc	CNP	651.72	27.30	17,792	0.05%	2.93%	0.00%	8.00%	0.00%
Humana Inc	HUM	120.40	354.47	42,679		1.00%		-1.30%	
Willis Towers Watson PLC	WTW	101.56	292.11	29,666	0.08%	1.21%	0.00%	11.69%	0.01%
Illinois Tool Works Inc	ITW	296.90	253.18	75,169	0.21%	2.37%	0.00%	6.90%	0.01%
CDW Corp/DE	CDW	133.58	225.64	30,140	0.08%	1.10%	0.00%	7.02%	0.01%
Trane Technologies PLC	TT	225.67	361.66	81,616	0.22%	0.93%	0.00%	15.56%	0.03%
Interpublic Group of Cos Inc/The	IPG	375.59	32.28	12,124	0.03%	4.09%	0.00%	3.20%	0.00%
International Flavors & Fragrances Inc	IFF	255.66	103.99	26,586	0.07%	1.54%	0.00%	2.12%	0.00%
Generac Holdings Inc	GNRC	60.15	156.53	9,416	0.03%			7.00%	0.00%
NXP Semiconductors NV	NXPI	254.73	256.36	65,303	0.18%	1.58%	0.00%	5.89%	0.01%
Kellanova	K	343.95	80.04	27,530	0.08%	2.85%	0.00%	9.29%	0.01%
Broadridge Financial Solutions Inc	BR	116.71	212.86	24,843		1.65%			
Kimberly-Clark Corp	KMB	336.80	144.66	48,722	0.13%	3.37%	0.00%	8.36%	0.01%
Kimco Realty Corp	KIM	674.12	23.26	15,680	0.04%	4.13%	0.00%	3.63%	0.00%
Oracle Corp	ORCL	2,755.86	141.29	389,375	1.07%	1.13%	0.01%	15.06%	0.16%
Kroger Co/The	KR	721.79	53.21	38,406	0.11%	2.41%	0.00%	3.11%	0.00%
Lennar Corp	LEN	241.70	182.06	44,004	0.12%	1.10%	0.00%	4.30%	0.01%
Eli Lilly & Co	LLY	950.43	960.02	912,428		0.54%		33.00%	
Bath & Body Works Inc	BBWI	219.11	30.76	6,740	0.02%	2.60%	0.00%	14.74%	0.00%
Charter Communications Inc	CHTR	142.74	347.54	49,608	0.14%			7.10%	0.00%
Loews Corp	L	219.52	81.94	17,987		0.31%			
Low's Cos Inc	LOW	567.29	248.50	140,973		1.85%		-0.19%	
Hubbell Inc	HUBB	53.68	399.92	21,468		1.22%			
IDEX Corp	IEX	75.70	206.48	15,631		1.34%			
Marsh & McLennan Cos Inc	MMC	491.76	227.51	111,879	0.31%	1.43%	0.00%	9.10%	0.03%
Masco Corp	MAS	218.25	79.56	17,364	0.05%	1.46%	0.00%	7.76%	0.00%
S&P Global Inc	SPGI	320.20	513.24	164,339	0.45%	0.71%	0.00%	14.53%	0.07%
Medtronic PLC	MDT	1,282.49	88.58	113,603	0.31%	3.16%	0.01%	5.66%	0.02%
Viatris Inc	VTRS	1,193.52	12.08	14,418		3.97%		-3.41%	
CVS Health Corp	CVS	1,257.98	57.24	72,007	0.20%	4.65%	0.01%	1.82%	0.00%
DuPont de Nemours Inc	DD	417.50	84.25	35,174	0.10%	1.80%	0.00%	2.50%	0.00%
Micron Technology Inc	MU	1,108.84	96.24	106,715		0.48%		31.94%	
Motorola Solutions Inc	MSI	166.84	442.04	73,750	0.20%	0.89%	0.00%	9.36%	0.02%
Cboe Global Markets Inc	CBOE	104.63	205.40	21,492	0.06%	1.23%	0.00%	13.78%	0.01%
Newmont Corp	NEM	1,152.49	53.39	61,531		1.87%		48.45%	
NIKE Inc	NKE	1,201.46	82.95	99,661	0.27%	1.78%	0.00%	4.46%	0.01%
NiSource Inc	NI	448.51	33.06	14,828	0.04%	3.21%	0.00%	7.00%	0.00%
Norfolk Southern Corp	NSC	226.10	256.16	57,917	0.16%	2.11%	0.00%	9.68%	0.02%
Principal Financial Group Inc	PFG	231.58	81.42	18,856	0.05%	3.54%	0.00%	13.00%	0.01%
Eversource Energy	ES	357.39	67.53	24,134	0.07%	4.24%	0.00%	5.46%	0.00%
Northrop Grumman Corp	NOC	146.25	521.15	76,216	0.21%	1.58%	0.00%	8.68%	0.02%
Wells Fargo & Co	WFC	3,403.77	58.47	199,018	0.55%	2.74%	0.01%	7.95%	0.04%
Nucor Corp	NUE	237.34	151.91	36,054		1.42%		-1.48%	
Occidental Petroleum Corp	OXY	916.20	56.98	52,205		1.54%		24.00%	
Omnicom Group Inc	OMC	195.65	100.43	19,649	0.05%	2.79%	0.00%	5.36%	0.00%
ONEOK Inc	OKE	584.07	92.36	53,945		4.29%			
Raymond James Financial Inc	RJF	205.94	119.57	24,625	0.07%	1.51%	0.00%	15.40%	0.01%
PG&E Corp	PCG	2,137.46	19.70	42,108	0.12%	0.20%	0.00%	9.95%	0.01%
Parker-Hannifin Corp	PH	128.60	600.20	77,183	0.21%	1.09%	0.00%	13.44%	0.03%
Rollins Inc	ROL	484.31	50.18	24,303	0.07%	1.20%	0.00%	13.38%	0.01%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
	Won Proposed
	Weighting
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	9.55%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	3.90%
Total [4]	8.42%
S&P 500 Estimated Required Market Return [5]	10.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
PPL Corp	PPL	737.77	31.91	23,542	0.06%	3.23%	0.00%	7.01%	0.00%
ConocoPhillips	COP	1,161.25	113.79	132,139	0.36%	2.74%	0.01%	13.00%	0.05%
PulteGroup Inc	PHM	207.52	131.65	27,321	0.07%	0.61%	0.00%	8.99%	0.01%
Pinnacle West Capital Corp	PNW	113.61	87.52	9,943	0.03%	4.02%	0.00%	8.22%	0.00%
PNC Financial Services Group Inc/The	PNC	397.50	185.09	73,573	0.20%	3.46%	0.01%	18.04%	0.04%
PPG Industries Inc	PPG	233.30	129.73	30,266	0.08%	2.10%	0.00%	8.33%	0.01%
Progressive Corp/The	PGR	585.67	252.20	147,705		0.16%		36.31%	
Verato Corp	VLTO	247.11	112.43	27,782		0.32%			
Public Service Enterprise Group Inc	PEG	498.16	80.75	40,227	0.11%	2.97%	0.00%	7.47%	0.01%
Cooper Cos Inc/The	COO	199.16	105.73	21,057	0.06%			12.43%	0.00%
Edison International	EIX	383.93	87.03	33,413	0.09%	3.58%	0.00%	6.00%	0.01%
Schlumberger NV	SLB	1,419.84	43.99	62,459	0.17%	2.50%	0.00%	12.22%	0.02%
Charles Schwab Corp/The	SCHW	1,778.45	65.10	115,777	0.32%	1.54%	0.00%	12.07%	0.04%
Sherwin-Williams Co/The	SHW	252.26	369.37	93,177	0.26%	0.77%	0.00%	9.88%	0.03%
West Pharmaceutical Services Inc	WST	72.54	313.63	22,751	0.06%	0.26%	0.00%	2.89%	0.00%
J M Smucker Co/The	SJM	106.41	114.68	12,203	0.03%	3.77%	0.00%	6.07%	0.00%
Snap-on Inc	SNA	52.68	283.74	14,948	0.04%	2.62%	0.00%	3.83%	0.00%
AMETEK Inc	AME	231.54	171.05	39,604	0.11%	0.65%	0.00%	7.02%	0.01%
Uber Technologies Inc	UBER	2,100.94	73.13	153,642				60.59%	
Southern Co/The	SO	1,094.63	86.40	94,576	0.26%	3.33%	0.01%	7.23%	0.02%
Truist Financial Corp	TFC	1,339.14	44.46	59,538	0.16%	4.68%	0.01%	10.91%	0.02%
Southwest Airlines Co	LUV	599.16	28.92	17,328		2.49%			
W R Berkley Corp	WRB	380.55	59.70	22,719	0.06%	0.54%	0.00%	13.27%	0.01%
Stanley Black & Decker Inc	SWK	153.96	101.54	15,633		3.23%			
Public Storage	PSA	175.83	343.72	60,436	0.17%	3.49%	0.01%	1.23%	0.00%
Arista Networks Inc	ANET	314.15	353.38	111,015	0.30%			18.60%	0.00%
Sysco Corp	SY	491.52	77.97	38,324	0.11%	2.62%	0.00%	7.00%	0.01%
Corteva Inc	CTVA	687.80	57.13	39,294	0.11%	1.19%	0.00%	9.85%	0.01%
Texas Instruments Inc	TXN	913.05	214.34	195,702		2.43%		-2.86%	
Textron Inc	TXT	187.36	91.20	17,088	0.05%	0.09%	0.00%	10.05%	0.00%
Thermo Fisher Scientific Inc	TMO	382.00	615.07	234,954	0.64%	0.25%	0.00%	8.70%	0.06%
TJX Cos Inc/The	TJX	1,127.87	117.27	132,266	0.36%	1.28%	0.00%	8.20%	0.03%
Globe Life Inc	GL	89.82	105.05	9,436	0.03%	0.91%	0.00%	6.00%	0.00%
Johnson Controls International plc	JCI	668.01	72.85	48,665	0.13%	2.03%	0.00%	8.72%	0.01%
Ulta Beauty Inc	ULTA	47.12	352.84	16,624	0.05%			1.64%	0.00%
Union Pacific Corp	UNP	609.20	256.09	156,010	0.43%	2.09%	0.01%	11.33%	0.05%
Keysight Technologies Inc	KEYS	173.54	154.12	26,746				-1.19%	
UnitedHealth Group Inc	UNH	923.42	590.20	545,001	1.49%	1.42%	0.02%	10.44%	0.16%
Blackstone Inc	BX	720.08	142.36	102,510		2.30%		24.48%	
Marathon Oil Corp	MRO	559.38	28.65	16,026		1.54%		-5.00%	
Bio-Rad Laboratories Inc	BIO	22.80	337.32	7,689	0.02%			12.00%	0.00%
Ventas Inc	VTR	413.15	62.11	25,661	0.07%	2.90%	0.00%	8.22%	0.01%
Labcorp Holdings Inc	LH	83.96	229.89	19,302	0.05%	1.25%	0.00%	8.45%	0.00%
Vulcan Materials Co	VMC	132.06	245.21	32,382		0.75%			
Weyerhaeuser Co	WY	727.32	30.49	22,176		2.62%		-13.66%	
Williams Cos Inc/The	WMB	1,218.93	45.77	55,790	0.15%	4.15%	0.01%	4.28%	0.01%
Constellation Energy Corp	CEG	315.12	196.70	61,984		0.72%		20.39%	
WEC Energy Group Inc	WEC	316.08	93.03	29,405	0.08%	3.59%	0.00%	7.82%	0.01%
Adobe Inc	ADBE	443.40	574.41	254,693	0.70%			16.27%	0.00%
Vistra Corp	VST	343.56	85.43	29,350		1.03%			
AES Corp/The	AES	710.92	17.13	12,178		4.03%			
Expeditors International of Washington Inc	EXPD	141.13	123.41	17,417	0.05%	1.18%	0.00%	4.39%	0.00%
Amgen Inc	AMGN	537.33	333.83	179,377	0.49%	2.70%	0.01%	3.52%	0.02%
Apple Inc	AAPL	15,204.14	229.00	3,481,747	9.54%	0.44%	0.04%	8.04%	0.77%
Autodesk Inc	ADSK	215.51	258.40	55,688	0.15%			10.23%	0.00%
Cintas Corp	CTAS	100.77	805.12	81,131	0.22%	0.78%	0.00%	10.59%	0.02%
Comcast Corp	CMCSA	3,863.06	39.57	152,861	0.42%	3.13%	0.01%	7.32%	0.03%
Molson Coors Beverage Co	TAP	192.59	53.97	10,394	0.03%	3.26%	0.00%	5.29%	0.00%
KLA Corp	KLAC	134.43	819.43	110,152	0.30%	0.71%	0.00%	10.00%	0.03%
Marriott International Inc/MD	MAR	281.52	234.69	66,071	0.18%	1.07%	0.00%	4.25%	0.01%
Fiserv Inc	FI	575.73	174.60	100,522	0.28%			11.52%	0.00%
McCormick & Co Inc/MD	MKC	252.02	80.03	20,169	0.06%	2.10%	0.00%	5.83%	0.00%
PACCAR Inc	PCAR	524.22	96.18	50,420	0.14%	1.25%	0.00%	0.48%	0.00%
Costco Wholesale Corp	COST	443.34	892.38	395,623	1.08%	0.52%	0.01%	10.36%	0.11%
Stryker Corp	SYK	381.08	360.42	137,347	0.38%	0.89%	0.00%	8.60%	0.03%
Tyson Foods Inc	TSN	285.82	64.31	18,381		3.05%			
Lamb Weston Holdings Inc	LW	143.67	61.92	8,896	0.02%	2.33%	0.00%	2.16%	0.00%
Applied Materials Inc	AMAT	824.40	197.26	162,622	0.45%	0.81%	0.00%	9.28%	0.04%
American Airlines Group Inc	AAL	653.54	10.62	6,941				-13.42%	
Cardinal Health Inc	CAH	243.85	112.72	27,486	0.08%	1.79%	0.00%	9.84%	0.01%
Cincinnati Financial Corp	CINF	156.24	137.03	21,410	0.06%	2.36%	0.00%	7.83%	0.00%
Paramount Global	PARA	626.01	10.47	6,554		1.91%		49.00%	
DR Horton Inc	DHI	326.04	188.76	61,543	0.17%	0.64%	0.00%	8.27%	0.01%
Electronic Arts Inc	EA	264.20	151.82	40,111	0.11%	0.50%	0.00%	12.85%	0.01%
Fair Isaac Corp	FICO	24.52	1,730.27	42,424				23.00%	
Fastenal Co	FAST	572.65	68.28	39,100		2.28%			
M&T Bank Corp	MTB	167.00	170.76	28,517	0.08%	3.16%	0.00%	3.87%	0.00%
Xcel Energy Inc	XEL	557.50	61.23	34,136	0.09%	3.58%	0.00%	7.10%	0.01%
Fifth Third Bancorp	FITB	676.80	42.69	28,892		3.28%		25.00%	
Gilead Sciences Inc	GILD	1,244.99	79.00	98,354	0.27%	3.90%	0.01%	15.38%	0.04%
Hasbro Inc	HAS	139.41	68.16	9,502		4.11%		33.11%	
Huntington Bancshares Inc/OH	HBAN	1,452.43	14.97	21,743	0.06%	4.14%	0.00%	3.32%	0.00%
Welltower Inc	WELL	609.15	120.68	73,512	0.20%	2.22%	0.00%	15.65%	0.03%
Biogen Inc	BIIB	145.66	204.76	29,826	0.08%			6.10%	0.00%
Northern Trust Corp	NTRS	201.64	91.21	18,391	0.05%	3.29%	0.00%	10.11%	0.01%
Packaging Corp of America	PKG	89.81	209.54	18,819	0.05%	2.39%	0.00%	5.83%	0.00%
Paychex Inc	PAYX	359.74	131.20	47,198	0.13%	2.99%	0.00%	7.54%	0.01%
QUALCOMM Inc	QCOM	1,114.00	175.30	195,284	0.54%	1.94%	0.01%	10.64%	0.06%
Ross Stores Inc	ROST	333.58	150.61	50,240	0.14%	0.98%	0.00%	8.85%	0.01%
IDEXX Laboratories Inc	IDXX	82.31	481.33	39,616	0.11%			11.25%	0.00%
Starbucks Corp	SBUX	1,133.20	94.57	107,167	0.29%	2.41%	0.01%	9.67%	0.03%
KeyCorp	KEY	928.12	17.06	15,834	0.04%	4.81%	0.00%	20.00%	0.01%
Fox Corp	FOXA	224.65	41.37	9,294	0.03%	1.31%	0.00%	5.35%	0.00%
Fox Corp	FOX	235.58	38.43	9,053	0.02%	1.41%	0.00%	5.35%	0.00%
State Street Corp	STT	298.62	87.10	26,010	0.07%	3.49%	0.00%	8.82%	0.01%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
	Won Proposed
	Weighting
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	9.55%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	3.90%
Total [4]	8.42%
S&P 500 Estimated Required Market Return [5]	10.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Norwegian Cruise Line Holdings Ltd	NCLH	439.69	17.89	7,866				50.58%	
US Bancorp	USB	1,560.51	47.23	73,703	0.20%	4.15%	0.01%	3.39%	0.01%
A O Smith Corp	AOS	119.96	83.72	10,043		1.53%			
Gen Digital Inc	GEN	615.53	26.46	16,287	0.04%	1.89%	0.00%	10.49%	0.00%
T Rowe Price Group Inc	TROW	222.60	106.04	23,604	0.06%	4.68%	0.00%	7.30%	0.00%
Waste Management Inc	WM	401.32	212.04	85,095	0.23%	1.41%	0.00%	13.29%	0.03%
Constellation Brands Inc	STZ	182.19	240.71	43,855	0.12%	1.68%	0.00%	11.37%	0.01%
Invesco Ltd	IVZ	450.03	17.09	7,691	0.02%	4.80%	0.00%	9.27%	0.00%
Intuit Inc	INTU	279.55	630.26	176,187	0.48%	0.66%	0.00%	18.79%	0.09%
Morgan Stanley	MS	1,620.89	103.61	167,940	0.46%	3.57%	0.02%	9.60%	0.04%
Microchip Technology Inc	MCHP	536.51	82.16	44,079		2.21%		-10.99%	
Crowdstrike Holdings Inc	CRWD	232.72	277.28	64,528				35.70%	
Chubb Ltd	CB	403.93	284.18	114,790	0.31%	1.28%	0.00%	2.20%	0.01%
Hologic Inc	HOLX	232.27	81.24	18,870	0.05%			8.86%	0.00%
Citizens Financial Group Inc	CFG	448.30	43.05	19,299		3.90%			
Jabil Inc	JBL	113.45	109.28	12,397	0.03%	0.29%	0.00%	7.13%	0.00%
O'Reilly Automotive Inc	ORLY	58.01	1,129.97	65,545	0.18%			10.21%	0.00%
Allstate Corp/The	ALL	264.04	188.94	49,888		1.95%		168.00%	
Equity Residential	EQR	379.14	74.88	28,390	0.08%	3.61%	0.00%	4.23%	0.00%
BorgWarner Inc	BWA	227.77	33.96	7,735	0.02%	1.30%	0.00%	4.40%	0.00%
Keurig Dr Pepper Inc	KDP	1,356.09	36.61	49,646	0.14%	2.35%	0.00%	6.90%	0.01%
Host Hotels & Resorts Inc	HST	702.44	17.70	12,433		4.52%			
Incyte Corp	INCY	192.60	65.66	12,646				33.16%	
Simon Property Group Inc	SPG	326.04	167.35	54,562	0.15%	4.90%	0.01%	1.42%	0.00%
Eastman Chemical Co	EMN	116.86	102.37	11,963	0.03%	3.16%	0.00%	6.10%	0.00%
AvalonBay Communities Inc	AVB	142.22	225.73	32,103	0.09%	3.01%	0.00%	4.93%	0.00%
Prudential Financial Inc	PRU	357.00	121.16	43,254	0.12%	4.29%	0.01%	9.72%	0.01%
United Parcel Service Inc	UPS	732.51	128.55	94,164	0.26%	5.07%	0.01%	0.60%	0.00%
Walgreens Boots Alliance Inc	WBA	863.28	9.25	7,985		10.81%		-14.70%	
STERIS PLC	STE	98.62	241.10	23,777		0.95%			
McKesson Corp	MCK	129.68	561.08	72,759	0.20%	0.51%	0.00%	11.18%	0.02%
Lockheed Martin Corp	LMT	238.36	564.95	134,660	0.37%	2.23%	0.01%	2.11%	0.01%
Cencora Inc	COR	196.01	239.57	46,958	0.13%	0.85%	0.00%	10.67%	0.01%
Campbell Soup Co	CPB	298.55	49.72	14,844	0.04%	2.98%	0.00%	8.36%	0.00%
Capital One Financial Corp	COF	381.86	146.93	56,106	0.15%	1.63%	0.00%	12.32%	0.02%
Waters Corp	WAT	59.36	346.35	20,560	0.06%			7.80%	0.00%
Nordson Corp	NDSN	57.18	256.56	14,671		1.22%			
Dollar Tree Inc	DLTR	214.94	84.49	18,161	0.05%			12.39%	0.00%
Darden Restaurants Inc	DRI	118.46	158.15	18,735	0.05%	3.54%	0.00%	10.59%	0.01%
Evergy Inc	EVERG	229.75	59.14	13,587	0.04%	4.35%	0.00%	4.00%	0.00%
Match Group Inc	MTCH	257.90	37.21	9,596				36.15%	
Domino's Pizza Inc	DPZ	34.97	414.21	14,486	0.04%	1.46%	0.00%	12.56%	0.00%
NVR Inc	NVR	3.08	9,172.46	28,233	0.08%			7.60%	0.00%
NetApp Inc	NTAP	204.78	120.72	24,721	0.07%	1.72%	0.00%	5.34%	0.00%
Old Dominion Freight Line Inc	ODFL	214.30	192.80	41,316	0.11%	0.54%	0.00%	3.02%	0.00%
DaVita Inc	DVA	83.90	150.92	12,662	0.03%			20.00%	0.00%
Hartford Financial Services Group Inc/The	HIG	293.01	115.63	33,881	0.09%	1.63%	0.00%	12.37%	0.01%
Iron Mountain Inc	IRM	293.34	113.26	33,223		2.53%			
Estee Lauder Cos Inc/The	EL	233.18	91.66	21,373	0.06%	2.88%	0.00%	14.58%	0.01%
Cadence Design Systems Inc	CDNS	273.82	268.93	73,638	0.20%			16.20%	0.00%
Tyler Technologies Inc	TYL	42.67	587.87	25,086					
Universal Health Services Inc	UHS	59.46	237.77	14,138	0.04%	0.34%	0.00%	15.50%	0.01%
Skyworks Solutions Inc	SWKS	159.72	109.59	17,503		2.55%		-2.57%	
Quest Diagnostics Inc	DGX	111.32	156.97	17,473	0.05%	1.91%	0.00%	6.05%	0.00%
Rockwell Automation Inc	ROK	113.47	272.03	30,866	0.08%	1.84%	0.00%	1.73%	0.00%
Kraft Heinz Co/The	KHC	1,209.08	35.43	42,838	0.12%	4.52%	0.01%	2.51%	0.00%
American Tower Corp	AMT	467.08	224.06	104,654	0.29%	2.89%	0.01%	12.31%	0.04%
Regeneron Pharmaceuticals Inc	REGN	108.42	1,184.69	128,441				52.50%	
Amazon.com Inc	AMZN	10,495.57	178.50	1,873,459				28.99%	
Jack Henry & Associates Inc	JKHY	72.91	173.03	12,615	0.03%	1.27%	0.00%	9.73%	0.00%
Ralph Lauren Corp	RL	40.06	171.26	6,860	0.02%	1.93%	0.00%	11.05%	0.00%
BXP Inc	BXP	157.93	75.22	11,880	0.03%	5.21%	0.00%	0.40%	0.00%
Amphenol Corp	APH	1,204.29	67.45	81,229	0.22%	0.98%	0.00%	16.86%	0.04%
Howmet Aerospace Inc	HWM	408.15	96.66	39,451		0.33%		22.11%	
Valero Energy Corp	VLO	320.38	146.73	47,009		2.92%		-24.00%	
Synopsys Inc	SNPS	153.61	519.58	79,815	0.22%			16.33%	0.00%
Etsy Inc	ETSY	114.75	55.09	6,322	0.02%			4.06%	0.00%
CH Robinson Worldwide Inc	CHRW	117.28	103.51	12,140	0.03%	2.40%	0.00%	17.48%	0.01%
Accenture PLC	ACN	626.38	341.95	214,192	0.59%	1.51%	0.01%	5.80%	0.03%
TransDigm Group Inc	TDG	56.11	1,373.21	77,052	0.21%			19.57%	0.00%
Yum! Brands Inc	YUM	281.17	134.92	37,935	0.10%	1.99%	0.00%	11.41%	0.01%
Prologis Inc	PLD	925.91	127.82	118,350	0.32%	3.00%	0.01%	5.36%	0.02%
FirstEnergy Corp	FE	575.92	43.92	25,294	0.07%	3.87%	0.00%	7.02%	0.00%
VeriSign Inc	VRSN	97.60	183.90	17,949					
Quanta Services Inc	PWR	147.33	275.13	40,535		0.13%			
Henry Schein Inc	HSIC	126.71	70.55	8,939	0.02%			9.01%	0.00%
Ameren Corp	AEE	266.51	82.51	21,990	0.06%	3.25%	0.00%	6.16%	0.00%
ANSYS Inc	ANSS	87.39	321.42	28,088					
FactSet Research Systems Inc	FDS	38.04	422.84	16,085	0.04%	0.98%	0.00%	9.67%	0.00%
NVIDIA Corp	NVDA	24,530.00	119.37	2,928,146		0.03%		44.35%	
Cognizant Technology Solutions Corp	CTSH	495.66	77.77	38,547	0.11%	1.54%	0.00%	6.20%	0.01%
Intuitive Surgical Inc	ISRG	355.35	492.63	175,058	0.48%			17.51%	0.00%
Take-Two Interactive Software Inc	TTWO	175.28	161.71	28,345				60.49%	
Republic Services Inc	RSG	314.07	208.21	65,392	0.18%	1.11%	0.00%	10.33%	0.02%
eBay Inc	EBAY	489.00	59.10	28,900	0.08%	1.83%	0.00%	10.12%	0.01%
Goldman Sachs Group Inc/The	GS	315.80	510.25	161,137	0.44%	2.35%	0.01%	14.20%	0.06%
SBA Communications Corp	SBAC	107.47	226.66	24,360	0.07%	1.73%	0.00%	15.96%	0.01%
Sempra	SRE	633.15	82.18	52,032	0.14%	3.02%	0.00%	5.27%	0.01%
Moody's Corp	MCO	182.10	487.74	88,817	0.24%	0.70%	0.00%	14.41%	0.04%
ON Semiconductor Corp	ON	428.36	77.87	33,356	0.09%			1.28%	0.00%
Booking Holdings Inc	BKNG	33.52	3,909.23	131,053	0.36%	0.90%	0.00%	14.59%	0.05%
F5 Inc	FFIV	58.28	203.15	11,840	0.03%			7.83%	0.00%
Akamai Technologies Inc	AKAM	151.53	101.84	15,431	0.04%			6.12%	0.00%
Charles River Laboratories International Inc	CRL	51.63	197.75	10,210	0.03%			5.20%	0.00%
MarketAxess Holdings Inc	MKTX	37.75	242.39	9,151	0.03%	1.22%	0.00%	4.02%	0.00%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
	Won Proposed
	Weighting
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	9.55%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	3.90%
Total [4]	8.42%
S&P 500 Estimated Required Market Return [5]	10.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Devon Energy Corp	DVN	626.20	44.78	28,041	0.08%	3.93%	0.00%	6.60%	0.01%
Bio-Techne Corp	TECH	158.60	73.99	11,735	0.03%	0.43%	0.00%	6.00%	0.00%
Alphabet Inc	GOOGL	5,859.00	163.38	957,243	2.62%	0.49%	0.01%	15.01%	0.39%
Teleflex Inc	TFX	47.12	245.17	11,552	0.03%	0.55%	0.00%	7.95%	0.00%
Allegion plc	ALLE	87.13	138.84	12,097	0.03%	1.38%	0.00%	7.73%	0.00%
Netflix Inc	NFLX	429.17	701.35	300,995				35.72%	
Warner Bros Discovery Inc	WBD	2,451.91	7.84	19,223				28.63%	
Agilent Technologies Inc	A	287.33	142.92	41,065	0.11%	0.66%	0.00%	5.74%	0.01%
Trimble Inc	TRMB	244.21	56.69	13,844					
Elevance Health Inc	ELV	231.89	556.89	129,135	0.35%	1.17%	0.00%	11.79%	0.04%
CME Group Inc	CME	360.09	215.74	77,687	0.21%	2.13%	0.00%	3.82%	0.01%
Juniper Networks Inc	JNPR	329.16	38.88	12,798	0.04%	2.26%	0.00%	6.00%	0.00%
BlackRock Inc	BLK	148.13	901.81	133,583	0.37%	2.26%	0.01%	9.76%	0.04%
DTE Energy Co	DTE	206.93	125.02	25,870	0.07%	3.26%	0.00%	10.27%	0.01%
Celanese Corp	CE	109.26	130.60	14,270	0.04%	2.14%	0.00%	0.56%	0.00%
Nasdaq Inc	NDAQ	575.94	72.08	41,514	0.11%	1.33%	0.00%	10.30%	0.01%
Philip Morris International Inc	PM	1,554.80	123.29	191,692	0.53%	4.22%	0.02%	9.36%	0.05%
Ingersoll Rand Inc	IR	403.48	91.45	36,899		0.09%			
Salesforce Inc	CRM	956.00	252.90	241,772	0.66%	0.63%	0.00%	17.52%	0.12%
Roper Technologies Inc	ROP	107.20	554.41	59,432		0.54%			
Huntington Ingalls Industries Inc	HII	39.22	282.77	11,089	0.03%	1.84%	0.00%	7.62%	0.00%
MetLife Inc	MET	700.33	77.48	54,261	0.15%	2.81%	0.00%	14.38%	0.02%
Tapestry Inc	TPR	230.22	40.97	9,432	0.03%	3.42%	0.00%	5.52%	0.00%
CSX Corp	CSX	1,938.74	34.27	66,441	0.18%	1.40%	0.00%	9.21%	0.02%
Edwards Lifesciences Corp	EW	602.40	69.96	42,144	0.12%			8.56%	0.00%
Ameriprise Financial Inc	AMP	98.19	449.44	44,130	0.12%	1.32%	0.00%	16.59%	0.02%
Zebra Technologies Corp	ZBRA	51.58	345.38	17,815					
Zimmer Biomet Holdings Inc	ZBH	203.65	115.46	23,514	0.06%	0.83%	0.00%	6.96%	0.00%
Camden Property Trust	CPT	106.64	125.20	13,351	0.04%	3.29%	0.00%	1.87%	0.00%
CBRE Group Inc	CBRE	306.43	115.14	35,282					
Mastercard Inc	MA	916.71	483.34	443,083	1.21%	0.55%	0.01%	15.18%	0.18%
CarMax Inc	KMX	156.08	84.55	13,196	0.04%			17.91%	0.00%
Intercontinental Exchange Inc	ICE	574.14	161.55	92,753	0.25%	1.11%	0.00%	9.95%	0.03%
Fidelity National Information Services Inc	FIS	545.57	82.45	44,982		1.75%		22.20%	
Smurfit WestRock PLC	SW	519.36	47.42	24,628	0.07%	2.55%	0.00%	1.00%	0.00%
Chipotle Mexican Grill Inc	CMG	1,369.48	56.08	76,800				22.64%	
Wynn Resorts Ltd	WYNN	110.99	76.88	8,533		1.30%			
Live Nation Entertainment Inc	LYV	232.11	97.67	22,671					
Assurant Inc	AIZ	51.79	195.63	10,132	0.03%	1.47%	0.00%	7.14%	0.00%
NRG Energy Inc	NRG	206.38	85.01	17,544	0.05%	1.92%	0.00%	4.00%	0.00%
Monster Beverage Corp	MNST	979.54	47.13	46,166	0.13%			10.18%	0.00%
Regions Financial Corp	RF	915.13	23.17	21,203	0.06%	4.32%	0.00%	4.68%	0.00%
Baker Hughes Co	BKR	993.42	35.17	34,939		2.39%		69.21%	
Mosaic Co/The	MOS	318.64	28.57	9,103		2.94%		-21.74%	
Expedia Group Inc	EXPE	124.66	139.09	17,338	0.05%			19.59%	0.00%
CF Industries Holdings Inc	CF	180.41	83.09	14,990		2.41%		-9.54%	
APA Corp	APA	369.91	28.49	10,539		3.51%		-5.79%	
Leidos Holdings Inc	LDOS	134.71	158.51	21,354	0.06%	0.96%	0.00%	11.76%	0.01%
Alphabet Inc	GOOG	5,585.00	165.11	922,139	2.53%	0.48%	0.01%	15.01%	0.38%
First Solar Inc	FSLR	107.05	227.37	24,339				41.25%	
TE Connectivity Ltd	TEL	303.92	153.60	46,682	0.13%	1.69%	0.00%	5.41%	0.01%
Discover Financial Services	DFS	251.07	138.71	34,826	0.10%	2.02%	0.00%	11.65%	0.01%
Visa Inc	V	1,670.45	276.37	461,661	1.27%	0.75%	0.01%	12.33%	0.16%
Mid-America Apartment Communities Inc	MAA	116.88	162.37	18,977	0.05%	3.62%	0.00%	0.65%	0.00%
Xylem Inc/NY	XYL	242.89	137.53	33,405		1.05%			
Marathon Petroleum Corp	MPC	334.68	177.12	59,279		1.86%		-13.00%	
Tractor Supply Co	TSCO	107.87	267.55	28,860	0.08%	1.64%	0.00%	5.68%	0.00%
Advanced Micro Devices Inc	AMD	1,618.48	148.56	240,442				25.66%	
ResMed Inc	RMD	146.93	245.02	36,001	0.10%	0.87%	0.00%	9.57%	0.01%
Mettler-Toledo International Inc	MTD	21.36	1,439.08	30,734	0.08%			9.15%	0.00%
VICI Properties Inc	VICI	1,043.14	33.48	34,924	0.10%	4.96%	0.00%	1.83%	0.00%
Copart Inc	CPRT	962.30	52.96	50,963					
Jacobs Solutions Inc	J	124.25	150.88	18,747	0.05%	0.77%	0.00%	10.87%	0.01%
Albemarle Corp	ALB	117.53	90.25	10,607		1.80%		35.42%	
Fortinet Inc	FTNT	764.91	76.71	58,676	0.16%			8.66%	0.00%
Moderna Inc	MRNA	384.40	77.40	29,752	0.08%			17.95%	0.00%
Essex Property Trust Inc	ESS	64.22	301.79	19,380	0.05%	3.25%	0.00%	4.50%	0.00%
CoStar Group Inc	CSGP	409.82	77.30	31,679	0.09%			13.84%	0.00%
Realty Income Corp	O	870.87	61.85	53,861	0.15%	5.10%	0.01%	3.85%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	175.18	169.57	29,706	0.08%	0.47%	0.00%	16.12%	0.01%
Pool Corp	POOL	38.26	351.62	13,452		1.37%		-0.04%	
Western Digital Corp	WDC	343.45	65.59	22,527				-10.00%	
PepsiCo Inc	PEP	1,373.57	172.88	237,463	0.65%	3.14%	0.02%	7.40%	0.05%
Diamondback Energy Inc	FANG	178.39	195.11	34,806	0.10%	4.80%	0.00%	8.34%	0.01%
Palo Alto Networks Inc	PANW	323.80	362.72	117,449	0.32%			11.52%	0.00%
ServiceNow Inc	NOW	206.00	855.00	176,130					
Church & Dwight Co Inc	CHD	244.82	101.88	24,942	0.07%	1.11%	0.00%	7.35%	0.01%
Federal Realty Investment Trust	FRT	83.67	115.00	9,622	0.03%	3.83%	0.00%	4.97%	0.00%
MGM Resorts International	MGM	303.77	37.59	11,419				20.80%	
American Electric Power Co Inc	AEP	532.12	100.28	53,361	0.15%	3.51%	0.01%	6.25%	0.01%
Invitation Homes Inc	INVH	612.59	36.84	22,568	0.06%	3.04%	0.00%	5.19%	0.00%
PTC Inc	PTC	120.14	179.09	21,515	0.06%			14.76%	0.00%
JB Hunt Transport Services Inc	JBHT	101.99	173.20	17,664	0.05%	0.99%	0.00%	9.73%	0.00%
Lam Research Corp	LRCX	129.88	821.01	106,629	0.29%	1.12%	0.00%	16.29%	0.05%
Mohawk Industries Inc	MHK	63.12	155.14	9,792	0.03%			4.45%	0.00%
GE HealthCare Technologies Inc	GEHC	456.66	84.82	38,734	0.11%	0.14%	0.00%	10.92%	0.01%
Pentair PLC	PNR	165.50	88.69	14,678	0.04%	1.04%	0.00%	12.50%	0.01%
Vertex Pharmaceuticals Inc	VRTX	258.10	495.89	127,990	0.35%			11.00%	0.00%
Amcor PLC	AMCR	1,445.34	11.44	16,535	0.05%	4.37%	0.00%	3.71%	0.00%
Meta Platforms Inc	META	2,184.73	521.31	1,138,921	3.12%	0.38%	0.01%	19.80%	0.62%
T-Mobile US Inc	TMUS	1,166.78	198.72	231,863	0.64%	1.31%	0.01%	5.00%	0.03%
United Rentals Inc	URI	66.14	741.26	49,024	0.13%	0.88%	0.00%	7.45%	0.01%
Alexandria Real Estate Equities Inc	ARE	174.93	119.57	20,916	0.06%	4.35%	0.00%	3.03%	0.00%
Honeywell International Inc	HON	649.67	207.91	135,073	0.37%	2.08%	0.01%	8.65%	0.03%
Delta Air Lines Inc	DAL	645.42	42.49	27,424	0.08%	1.41%	0.00%	6.74%	0.01%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.54%
	Won Proposed
	Weighting
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	9.55%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	3.90%
Total [4]	8.42%
S&P 500 Estimated Required Market Return [5]	10.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
United Airlines Holdings Inc	UAL	328.80	44.04	14,480	0.04%			5.31%	0.00%
Seagate Technology Holdings PLC	STX	210.20	99.55	20,925		2.81%			
News Corp	NWS	190.68	29.43	5,612		0.68%			
Centene Corp	CNC	526.03	78.83	41,467	0.11%			4.40%	0.00%
Martin Marietta Materials Inc	MLM	61.12	533.37	32,598	0.09%	0.59%	0.00%	7.47%	0.01%
Teradyne Inc	TER	163.18	136.73	22,311	0.06%	0.35%	0.00%	16.14%	0.01%
PayPal Holdings Inc	PYPL	1,022.33	72.43	74,048	0.20%			12.03%	0.00%
Tesla Inc	TSLA	3,194.64	214.11	684,004				-11.00%	
KKR & Co Inc	KKR	887.44	123.77	109,838		0.57%			
Arch Capital Group Ltd	ACGL	376.06	113.09	42,528	0.12%			6.13%	0.00%
Dow Inc	DOW	703.27	53.58	37,681		5.23%		-1.67%	
Everest Group Ltd	EG	43.27	392.24	16,974	0.05%	2.04%	0.00%	2.48%	0.00%
Teledyne Technologies Inc	TDY	46.78	432.80	20,248					
GE Vernova Inc	GEV	274.80	201.00	55,235				70.40%	
News Corp	NWSA	378.33	28.33	10,718		0.71%			
Exelon Corp	EXC	999.74	38.09	38,080	0.10%	3.99%	0.00%	5.31%	0.01%
Global Payments Inc	GPV	254.44	111.01	28,245	0.08%	0.90%	0.00%	9.30%	0.01%
Crown Castle Inc	CCI	434.57	112.02	48,680	0.13%	5.59%	0.01%	1.13%	0.00%
Aptiv PLC	APT	265.76	71.53	19,010	0.05%			16.91%	0.00%
Align Technology Inc	ALGN	74.70	237.22	17,720	0.05%			9.53%	0.00%
Kenvue Inc	KVUE	1,915.17	21.95	42,038	0.12%	3.74%	0.00%	13.58%	0.02%
Targa Resources Corp	TRGP	219.08	146.90	32,183	0.09%	2.04%	0.00%	16.74%	0.01%
Bunge Global SA	BG	141.65	101.38	14,361		2.68%		-8.59%	
LKQ Corp	LKQ	263.26	41.59	10,949		2.89%			
Deckers Outdoor Corp	DECK	25.41	959.29	24,377	0.07%			10.80%	0.00%
Zoetis Inc	ZTS	453.05	183.49	83,130	0.23%	0.94%	0.00%	10.36%	0.02%
Equinix Inc	EQIX	94.95	834.36	79,218	0.22%	2.04%	0.00%	14.03%	0.03%
Digital Realty Trust Inc	DLR	327.41	151.61	49,639	0.14%	3.22%	0.00%	3.21%	0.00%
Molina Healthcare Inc	MOH	58.60	349.79	20,498	0.06%			11.98%	0.00%
Las Vegas Sands Corp	LVS	736.43	38.99	28,713		2.05%			

Notes:

[1] Equals sum of Col. [11]

[2] Equals sum of Col. [13]

[3] Dr. Won's proposed GDP growth rate

[4] Equals ([2] x 80%) + ([3] x 20%)

[5] Equals ([1] x (1 + (0.5 x [4]))) + [4]

[6] Bloomberg Professional as of August 31, 2024

[7] Bloomberg Professional as of August 31, 2024

[8] Equals [6] x [7]

[9] Equals weight in S&P 500 based on market capitalization [6] if growth rate >0% and ≤20% and dividend yield > 0%

[10] Bloomberg Professional, as of August 31, 2024

[11] Equals [10] x [9]

[12] Bloomberg Professional, as of August 31, 2024

[13] Equals [9] x [12]

Correction to Dr. Won's Adjustment to the
Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.66%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	10.31%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	n/a
Total [4]	10.31%
S&P 500 Estimated Required Market Return [5]	12.05%

STANDARD AND POOR'S 500 INDEX

		[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares		Market	Weight in	Estimated	Capitalization	Bloomberg	Capitalization
Name	Ticker	Outst'g	Price	Capitalization	Index	Dividend Yield	Weighted Dividend Yield	Long-Term Growth Est.	Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	325.09	98.70	32,086		5.43%		-8.07%	
American Express Co	AXP	710.91	258.65	183,877	0.54%	1.08%	0.01%	15.74%	0.09%
Verizon Communications Inc	VZ	4,209.52	41.78	175,874	0.52%	6.37%	0.03%	0.86%	0.00%
Broadcom Inc	AVGO	4,654.88	162.82	757,908	2.24%	1.29%	0.03%	15.88%	0.36%
Boeing Co/The	BA	616.17	173.74	107,053				38.60%	
Solventum Corp	SOLV	172.71	64.11	11,073				-2.00%	
Caterpillar Inc	CAT	484.90	356.10	172,672	0.51%	1.58%	0.01%	8.38%	0.04%
JPMorgan Chase & Co	JPM	2,845.17	224.80	639,593	1.89%	2.05%		4.05%	0.08%
Chevron Corp	CVX	1,828.92	147.95	270,588	0.80%	4.41%	0.04%	7.00%	0.06%
Coca-Cola Co/The	KO	4,309.87	72.47	312,336	0.92%	2.68%	0.02%	6.36%	0.06%
AbbVie Inc	ABBV	1,766.34	196.31	346,751	1.03%	3.16%	0.03%	8.80%	0.09%
Walt Disney Co/The	DIS	1,813.59	90.38	163,912	0.48%	1.00%	0.00%	18.89%	0.09%
Corpay Inc	CPAY	69.43	315.55	21,910				14.87%	
Extra Space Storage Inc	EXR	211.93	177.00	37,511		3.66%		-0.20%	
Exxon Mobil Corp	XOM	4,442.83	117.94	523,987	1.55%	3.22%	0.05%	5.00%	0.08%
Phillips 66	PSX	418.57	140.31	58,729		3.28%		-9.00%	
General Electric Co	GE	1,084.31	174.62	189,342		0.64%		29.30%	
HP Inc	HPQ	963.72	36.18	34,867	0.10%	3.05%	0.00%	1.42%	0.00%
Home Depot Inc/The	HD	993.29	368.50	366,028	1.08%	2.44%	0.03%	3.87%	0.04%
Monolithic Power Systems Inc	MPWR	48.75	934.68	45,568		0.53%			
International Business Machines Corp	IBM	921.15	202.13	186,192	0.55%	3.30%	0.02%	3.90%	0.02%
Johnson & Johnson	JNJ	2,407.24	165.86	399,265	1.18%	2.99%	0.04%	3.73%	0.04%
Lululemon Athletica Inc	LULU	117.66	259.47	30,529				7.00%	
McDonald's Corp	MCD	717.34	286.99	205,870	0.61%	2.33%	0.01%	5.15%	0.03%
Merck & Co Inc	MRK	2,534.81	118.45	300,248	0.89%	2.60%	0.02%	14.00%	0.12%
3M Co	MMM	549.35	134.69	73,992		2.08%		-5.37%	
American Water Works Co Inc	AWK	194.86	143.12	27,889	0.08%	2.14%	0.00%	8.00%	0.01%
Bank of America Corp	BAC	7,759.58	40.75	316,203		2.55%			
Pfizer Inc	PFE	5,666.70	29.01	164,391	0.49%	5.79%	0.03%	6.39%	0.03%
Procter & Gamble Co/The	PG	2,349.71	171.54	403,069	1.19%	2.35%	0.03%	7.37%	0.09%
AT&T Inc	T	7,170.24	19.90	142,688	0.42%	5.58%	0.02%	1.84%	0.01%
Travelers Cos Inc/The	TRV	227.93	228.07	51,984	0.15%	1.84%	0.00%	18.21%	0.03%
RTX Corp	RTX	1,330.24	123.34	164,072	0.49%	2.04%	0.01%	10.23%	0.05%
Analog Devices Inc	ADI	496.49	233.92	116,140		1.57%		-5.82%	
Walmart Inc	WMT	8,038.25	77.23	620,794	1.84%	1.07%	0.02%	9.24%	0.17%
Cisco Systems Inc	CSCO	4,028.82	50.54	203,616	0.60%	3.17%	0.02%	3.40%	0.02%
Intel Corp	INTC	4,276.00	22.04	94,243				4.26%	
General Motors Co	GM	1,123.92	49.78	55,949	0.17%	0.96%	0.00%	11.02%	0.02%
Microsoft Corp	MSFT	7,433.04	417.14	3,100,617	9.17%	0.72%	0.07%	16.10%	1.48%
Dollar General Corp	DG	219.92	82.97	18,246		2.84%		-3.74%	
Cigna Group/The	CI	279.55	361.81	101,144	0.30%	1.55%	0.00%	11.65%	0.03%
Kinder Morgan Inc	KMI	2,219.46	21.57	47,874	0.14%	5.33%	0.01%	6.52%	0.01%
Citigroup Inc	C	1,907.80	62.64	119,504		3.58%		27.26%	
American International Group Inc	AIG	643.95	77.05	49,616	0.15%	2.08%	0.00%	12.42%	0.02%
Altria Group Inc	MO	1,706.22	53.77	91,744	0.27%	7.59%	0.02%	4.14%	0.01%
HCA Healthcare Inc	HCA	258.07	395.59	102,091	0.30%	0.67%	0.00%	10.81%	0.03%
International Paper Co	IP	347.37	48.42	16,820		3.82%		-2.00%	
Hewlett Packard Enterprise Co	HPE	1,299.67	19.37	25,175	0.07%	2.68%	0.00%	3.73%	0.00%
Abbott Laboratories	ABT	1,739.90	113.27	197,078	0.58%	1.94%	0.01%	8.12%	0.05%
Aflac Inc	AFL	560.03	110.36	61,804	0.18%	1.81%	0.00%	7.55%	0.01%
Air Products and Chemicals Inc	APD	222.32	278.85	61,993	0.18%	2.54%	0.00%	9.52%	0.02%
Super Micro Computer Inc	SMCI	58.56	437.70	25,630				69.00%	
Royal Caribbean Cruises Ltd	RCL	257.42	164.62	42,376		0.97%		30.00%	
Hess Corp	HES	308.12	138.06	42,538	0.13%	1.27%	0.00%	16.00%	0.02%
Archer-Daniels-Midland Co	ADM	478.14	60.99	29,162		3.28%		-3.62%	
Automatic Data Processing Inc	ADP	407.80	275.91	112,515		2.03%			
Verisk Analytics Inc	VRSK	142.42	272.82	38,856	0.11%	0.57%	0.00%	12.54%	0.01%
AutoZone Inc	AZO	17.08	3,181.48	54,349				14.66%	
Linde PLC	LIN	477.50	478.25	228,366	0.68%	1.16%	0.01%	11.76%	0.08%
Avery Dennison Corp	AVY	80.52	221.85	17,863	0.05%	1.59%	0.00%	12.84%	0.01%
Enphase Energy Inc	ENPH	135.42	121.04	16,391				7.45%	
MSCI Inc	MSCI	78.65	580.59	45,663	0.14%	1.10%	0.00%	11.93%	0.02%
Ball Corp	BALL	303.57	63.61	19,310	0.06%	1.26%	0.00%	13.35%	0.01%
Axon Enterprise Inc	AXON	75.57	364.97	27,582				20.81%	
Dayforce Inc	DAY	158.10	57.17	9,039					
Carrier Global Corp	CARR	902.75	72.78	65,702	0.19%	1.04%	0.00%	6.74%	0.01%
Bank of New York Mellon Corp/The	BK	737.96	68.22	50,343	0.15%	2.76%	0.00%	10.55%	0.02%
Otis Worldwide Corp	OTIS	400.56	94.69	37,929	0.11%	1.65%	0.00%	10.00%	0.01%
Baxter International Inc	BAX	510.18	37.94	19,356	0.06%	3.06%	0.00%	6.50%	0.00%
Becton Dickinson & Co	BDX	289.04	242.41	70,067	0.21%	1.57%	0.00%	8.34%	0.02%
Berkshire Hathaway Inc	BRK/B	1,325.19	475.92	630,686					
Best Buy Co Inc	BBY	215.71	100.40	21,658	0.06%	3.75%	0.00%	4.17%	0.00%
Boston Scientific Corp	BSX	1,472.63	81.79	120,446				12.58%	
Bristol-Myers Squibb Co	BMJ	2,027.40	49.95	101,268		4.80%		33.60%	
Brown-Forman Corp	BF/B	303.54	45.37	13,772		1.92%		-2.38%	
Coterra Energy Inc	CTRA	739.27	24.33	17,987	0.05%	3.45%	0.00%	10.06%	0.01%
Hilton Worldwide Holdings Inc	HLT	246.43	219.64	54,125	0.16%	0.27%	0.00%	14.97%	0.02%
Carnival Corp	CCL	1,122.46	16.50	18,521					
Qorvo Inc	QRVO	94.86	115.89	10,993				17.09%	
Builders FirstSource Inc	BLDR	116.45	174.00	20,263				1.45%	
UDR Inc	UDR	329.82	44.51	14,680	0.04%	3.82%	0.00%	1.85%	0.00%
Clorox Co/The	CLX	123.86	158.31	19,609	0.06%	3.08%	0.00%	8.65%	0.01%
Paycom Software Inc	PAYC	57.43	162.78	9,349	0.03%	0.92%	0.00%	9.41%	0.00%
CMS Energy Corp	CMS	298.64	67.86	20,265	0.06%	3.04%	0.00%	7.28%	0.00%
Colgate-Palmolive Co	CL	817.09	106.50	87,020	0.26%	1.88%	0.00%	8.73%	0.02%
EPAM Systems Inc	EPAM	56.94	200.76	11,430				5.29%	
Conagra Brands Inc	CAG	479.05	31.20	14,946	0.04%	4.49%	0.00%	1.81%	0.00%
Airbnb Inc	ABNB	440.00	117.31	51,617				19.84%	
Consolidated Edison Inc	ED	346.15	101.56	35,155	0.10%	3.27%	0.00%	5.58%	0.01%
Corning Inc	GLW	855.70	41.85	35,811	0.11%	2.68%	0.00%	13.41%	0.01%
GoDaddy Inc	GDDY	140.97	167.41	23,600					
Cummins Inc	CMJ	137.05	312.85	42,875	0.13%	2.33%	0.00%	8.28%	0.01%
Caesars Entertainment Inc	CZR	216.34	37.64	8,143				-35.64%	

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.66%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 1 [2]	10.31%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 2 [3]	n/a
Total [4]	10.31%
S&P 500 Estimated Required Market Return [5]	12.05%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Danaher Corp	DHR	722.21	269.31	194,499	0.58%	0.40%	0.00%	1.89%	0.01%
Target Corp	TGT	460.68	153.62	70,769	0.21%	2.92%	0.01%	14.38%	0.03%
Deere & Co	DE	273.60	385.74	105,538		1.52%		-9.99%	
Dominion Energy Inc	D	838.94	55.90	46,897		4.78%		21.59%	
Dover Corp	DOV	137.46	186.03	25,571	0.08%	1.11%	0.00%	7.72%	0.01%
Alliant Energy Corp	LNT	256.50	58.27	14,946	0.04%	3.30%	0.00%	7.34%	0.00%
Steel Dynamics Inc	STLD	154.30	119.51	18,441		1.54%		-4.38%	
Duke Energy Corp	DUK	771.00	113.95	87,855	0.26%	3.67%	0.01%	6.61%	0.02%
Regency Centers Corp	REG	181.50	72.69	13,193	0.04%	3.69%	0.00%	3.79%	0.00%
Eaton Corp PLC	ETN	398.10	306.93	122,189	0.36%	1.23%	0.00%	14.60%	0.05%
Ecolab Inc	ECL	284.54	253.18	72,039	0.21%	0.90%	0.00%	15.76%	0.03%
Revvity Inc	RVTY	123.34	122.54	15,114	0.04%	0.23%	0.00%	9.44%	0.00%
Emerson Electric Co	EMR	572.70	105.39	60,357	0.18%	1.99%	0.00%	15.10%	0.03%
EOG Resources Inc	EOG	568.60	128.82	73,247	0.22%	2.83%	0.01%	3.28%	0.01%
Aon PLC	AON	217.24	343.72	74,670	0.22%	0.79%	0.00%	11.10%	0.02%
Entergy Corp	ETR	213.83	120.69	25,807	0.08%	3.75%	0.00%	7.17%	0.01%
Equifax Inc	EFX	123.74	306.74	37,955		0.51%		21.48%	
EQT Corp	EQT	594.02	33.51	19,906		1.88%			
IQVIA Holdings Inc	IQV	182.30	251.55	45,858				10.83%	
Gartner Inc	IT	77.06	491.96	37,910				7.67%	
FedEx Corp	FDX	244.96	298.77	73,188	0.22%	1.85%	0.00%	13.35%	0.03%
FMC Corp	FMC	124.82	64.58	8,061	0.02%	3.59%	0.00%	15.67%	0.00%
Brown & Brown Inc	BRO	285.26	105.13	29,989	0.09%	0.49%	0.00%	10.85%	0.01%
Ford Motor Co	F	3,904.40	11.19	43,690	0.13%	5.36%	0.01%	1.34%	0.00%
NextEra Energy Inc	NEE	2,055.00	80.51	165,448	0.49%	2.56%	0.01%	8.17%	0.04%
Franklin Resources Inc	BEN	523.00	20.24	10,585		6.13%			
Garmin Ltd	GRMN	192.21	183.29	35,231	0.10%	1.64%	0.00%	9.55%	0.01%
Freepoint-McMoRan Inc	FCX	1,436.86	44.28	63,624	0.19%	1.36%	0.00%	17.59%	0.03%
Dexcom Inc	DXCM	400.73	69.34	27,786				21.07%	
General Dynamics Corp	GD	274.78	299.36	82,258	0.24%	1.90%	0.00%	15.55%	0.04%
General Mills Inc	GIS	556.62	72.29	40,238	0.12%	3.32%	0.00%	2.38%	0.00%
Genuine Parts Co	GPC	139.32	143.26	19,959		2.79%			
Atmos Energy Corp	ATO	155.23	130.74	20,295	0.06%	2.46%	0.00%	7.00%	0.00%
WW Grainger Inc	GWV	48.83	984.92	48,090		0.83%			
Halliburton Co	HAL	882.83	31.09	27,447	0.08%	2.19%	0.00%	8.17%	0.01%
L3Harris Technologies Inc	LHX	189.71	236.67	44,897	0.13%	1.96%	0.00%	8.77%	0.01%
Healthpeak Properties Inc	DOC	699.29	22.28	15,580	0.05%	5.39%	0.00%	5.33%	0.00%
Insulet Corp	PODD	70.12	202.77	14,217				17.61%	
Catalent Inc	CTLT	180.98	60.96	11,033					
Fortive Corp	FTV	350.34	74.40	26,065	0.08%	0.43%	0.00%	10.49%	0.01%
Hershey Co/The	HSY	147.67	193.06	28,510	0.08%	2.84%	0.00%	2.21%	0.00%
Synchrony Financial	SYF	395.23	50.26	19,864		1.99%		64.00%	
Hormel Foods Corp	HRL	548.31	32.55	17,847	0.05%	3.47%	0.00%	6.59%	0.00%
Arthur J Gallagher & Co	AJG	219.10	292.57	64,102	0.19%	0.82%	0.00%	12.87%	0.02%
Mondelez International Inc	MDLZ	1,335.80	71.81	95,924	0.28%	2.62%	0.01%	6.93%	0.02%
CenterPoint Energy Inc	CNP	651.72	27.30	17,792	0.05%	2.93%	0.00%	8.00%	0.00%
Humana Inc	HUM	120.40	354.47	42,679		1.00%		-1.30%	
Willis Towers Watson PLC	WTW	101.56	292.11	29,666	0.09%	1.21%	0.00%	11.69%	0.01%
Illinois Tool Works Inc	ITW	296.90	253.18	75,169	0.22%	2.37%	0.01%	6.90%	0.02%
CDW Corp/DE	CDW	133.58	225.64	30,140	0.09%	1.10%	0.00%	7.02%	0.01%
Trane Technologies PLC	TT	225.67	361.66	81,616	0.24%	0.93%	0.00%	15.56%	0.04%
Interpublic Group of Cos Inc/The	IPG	375.59	32.28	12,124	0.04%	4.09%	0.00%	3.20%	0.00%
International Flavors & Fragrances Inc	IFF	255.66	103.99	26,586	0.08%	1.54%	0.00%	2.12%	0.00%
Generac Holdings Inc	GNRC	60.15	156.53	9,416				7.00%	
NXP Semiconductors NV	NXPI	254.73	256.36	65,303	0.19%	1.58%	0.00%	5.89%	0.01%
Kellanova	K	343.95	80.04	27,530	0.08%	2.85%	0.00%	9.29%	0.01%
Broadridge Financial Solutions Inc	BR	116.71	212.86	24,843		1.65%			
Kimberly-Clark Corp	KMB	336.80	144.66	48,722	0.14%	3.37%	0.00%	8.36%	0.01%
Kimco Realty Corp	KIM	674.12	23.26	15,680	0.05%	4.13%	0.00%	3.63%	0.00%
Oracle Corp	ORCL	2,755.86	141.29	389,375	1.15%	1.13%	0.01%	15.06%	0.17%
Kroger Co/The	KR	721.79	53.21	38,406	0.11%	2.41%	0.00%	3.11%	0.00%
Lennar Corp	LEN	241.70	182.06	44,004	0.13%	1.10%	0.00%	4.30%	0.01%
Eli Lilly & Co	LLY	950.43	960.02	912,428		0.54%		33.00%	
Bath & Body Works Inc	BBWI	219.11	30.76	6,740	0.02%	2.60%	0.00%	14.74%	0.00%
Charter Communications Inc	CHTR	142.74	347.54	49,608				7.10%	
Loews Corp	L	219.52	81.94	17,987		0.31%			
Lowe's Cos Inc	LOW	567.29	248.50	140,973		1.85%		-0.19%	
Hubbell Inc	HUBB	53.68	399.92	21,468		1.22%			
IDEX Corp	IEX	75.70	206.48	15,631		1.34%			
Marsh & McLennan Cos Inc	MMC	491.76	227.51	111,879	0.33%	1.43%	0.00%	9.10%	0.03%
Masco Corp	MAS	218.25	79.56	17,364	0.05%	1.46%	0.00%	7.76%	0.00%
S&P Global Inc	SPGI	320.20	513.24	164,339	0.49%	0.71%	0.00%	14.53%	0.07%
Medtronic PLC	MDT	1,282.49	88.58	113,603	0.34%	3.16%	0.01%	5.66%	0.02%
Viatis Inc	VTRS	1,193.52	12.08	14,418		3.97%		-3.41%	
CVS Health Corp	CVS	1,257.98	57.24	72,007	0.21%	4.65%	0.01%	1.82%	0.00%
DuPont de Nemours Inc	DD	417.50	84.25	35,174	0.10%	1.80%	0.00%	2.50%	0.00%
Micron Technology Inc	MU	1,108.84	96.24	106,715		0.48%		31.94%	
Motorola Solutions Inc	MSI	166.84	442.04	73,750	0.22%	0.89%	0.00%	9.36%	0.02%
Cboe Global Markets Inc	CBOE	104.63	205.40	21,492	0.06%	1.23%	0.00%	13.78%	0.01%
Newmont Corp	NEM	1,152.49	53.39	61,531		1.87%		48.45%	
NIKE Inc	NKE	1,201.46	82.95	99,661	0.29%	1.78%	0.01%	4.46%	0.01%
NiSource Inc	NI	448.51	33.06	14,828	0.04%	3.21%	0.00%	7.00%	0.00%
Norfolk Southern Corp	NSC	226.10	256.16	57,917	0.17%	2.11%	0.00%	9.68%	0.02%
Principal Financial Group Inc	PFG	231.58	81.42	18,856	0.06%	3.54%	0.00%	13.00%	0.01%
Eversource Energy	ES	357.39	67.53	24,134	0.07%	4.24%	0.00%	5.46%	0.00%
Northrop Grumman Corp	NOC	146.25	521.15	76,216	0.23%	1.58%	0.00%	8.68%	0.02%
Wells Fargo & Co	WFC	3,403.77	58.47	199,018	0.59%	2.74%	0.02%	7.95%	0.05%
Nucor Corp	NUE	237.34	151.91	36,054		1.42%		-1.48%	
Occidental Petroleum Corp	OXY	916.20	56.98	52,205		1.54%		24.00%	
Omnicom Group Inc	OMC	195.65	100.43	19,649	0.06%	2.79%	0.00%	5.36%	0.00%
ONEOK Inc	OKE	584.07	92.36	53,945		4.29%			
Raymond James Financial Inc	RJF	205.94	119.57	24,625	0.07%	1.51%	0.00%	15.40%	0.01%
PG&E Corp	PCG	2,137.46	19.70	42,108	0.12%	0.20%	0.00%	9.95%	0.01%
Parker-Hannifin Corp	PH	128.60	600.20	77,183	0.23%	1.09%	0.00%	13.44%	0.03%
Rollins Inc	ROL	484.31	50.18	24,303	0.07%	1.20%	0.00%	13.38%	0.01%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.66%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 1 [2]	10.31%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 2 [3]	n/a
Total [4]	10.31%
S&P 500 Estimated Required Market Return [5]	12.05%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
PPL Corp	PPL	737.77	31.91	23,542	0.07%	3.23%	0.00%	7.01%	0.00%
ConocoPhillips	COP	1,161.25	113.79	132,139	0.39%	2.74%	0.01%	13.00%	0.05%
PulteGroup Inc	PHM	207.52	131.65	27,321	0.08%	0.61%	0.00%	8.99%	0.01%
Pinnacle West Capital Corp	PNW	113.61	87.52	9,943	0.03%	4.02%	0.00%	8.22%	0.00%
PNC Financial Services Group Inc/The	PNC	397.50	185.09	73,573	0.22%	3.46%	0.01%	18.04%	0.04%
PPG Industries Inc	PPG	233.30	129.73	30,266	0.09%	2.10%	0.00%	8.33%	0.01%
Progressive Corp/The	PGR	585.67	252.20	147,705		0.16%		36.31%	
Veralto Corp	VLTO	247.11	112.43	27,782		0.32%			
Public Service Enterprise Group Inc	PEG	498.16	80.75	40,227	0.12%	2.97%	0.00%	7.47%	0.01%
Cooper Cos Inc/The	COO	199.16	105.73	21,057				12.43%	
Edison International	EIX	383.93	87.03	33,413	0.10%	3.58%	0.00%	6.00%	0.01%
Schlumberger NV	SLB	1,419.84	43.99	62,459	0.18%	2.50%	0.00%	12.22%	0.02%
Charles Schwab Corp/The	SCHW	1,778.45	65.10	115,777	0.34%	1.54%	0.01%	12.07%	0.04%
Sherwin-Williams Co/The	SHW	252.26	369.37	93,177	0.28%	0.77%	0.00%	9.88%	0.03%
West Pharmaceutical Services Inc	WST	72.54	313.63	22,751	0.07%	0.26%	0.00%	2.89%	0.00%
J M Smucker Co/The	SJM	106.41	114.68	12,203	0.04%	3.77%	0.00%	6.07%	0.00%
Snap-on Inc	SNA	52.68	283.74	14,948	0.04%	2.62%	0.00%	3.83%	0.00%
AMETEK Inc	AME	231.54	171.05	39,604	0.12%	0.65%	0.00%	7.02%	0.01%
Uber Technologies Inc	UBER	2,100.94	73.13	153,642				60.59%	
Southern Co/The	SO	1,094.63	86.40	94,576	0.28%	3.33%	0.01%	7.23%	0.02%
Truist Financial Corp	TFC	1,339.14	44.46	59,538	0.18%	4.68%	0.01%	10.91%	0.02%
Southwest Airlines Co	LUV	599.16	28.92	17,328		2.49%			
W R Berkley Corp	WRB	380.55	59.70	22,719	0.07%	0.54%	0.00%	13.27%	0.01%
Stanley Black & Decker Inc	SWK	153.96	101.54	15,633		3.23%			
Public Storage	PSA	175.83	343.72	60,436	0.18%	3.49%	0.01%	1.23%	0.00%
Arista Networks Inc	ANET	314.15	353.38	111,015				18.60%	
Sysco Corp	SYU	491.52	77.97	38,324	0.11%	2.62%	0.00%	7.00%	0.01%
Corteva Inc	CTVA	687.80	57.13	39,294	0.12%	1.19%	0.00%	9.85%	0.01%
Texas Instruments Inc	TXN	913.05	214.34	195,702		2.43%		-2.86%	
Textron Inc	TXT	187.36	91.20	17,088	0.05%	0.09%	0.00%	10.05%	0.01%
Thermo Fisher Scientific Inc	TMO	382.00	615.07	234,954	0.70%	0.25%	0.00%	8.70%	0.06%
TJX Cos Inc/The	TJX	1,127.87	117.27	132,266	0.39%	1.28%	0.01%	8.20%	0.03%
Globe Life Inc	GL	89.82	105.05	9,436	0.03%	0.91%	0.00%	6.00%	0.00%
Johnson Controls International plc	JCI	668.01	72.85	48,665	0.14%	2.03%	0.00%	8.72%	0.01%
Ulta Beauty Inc	ULTA	47.12	352.84	16,624				1.64%	
Union Pacific Corp	UNP	609.20	256.09	156,010	0.46%	2.09%	0.01%	11.33%	0.05%
Keysight Technologies Inc	KEYS	173.54	154.12	26,746				-1.19%	
UnitedHealth Group Inc	UNH	923.42	590.20	545,001	1.61%	1.42%	0.02%	10.44%	0.17%
Blackstone Inc	BX	720.08	142.36	102,510		2.30%		24.48%	
Marathon Oil Corp	MRO	559.38	28.65	16,026		1.54%		-5.00%	
Bio-Rad Laboratories Inc	BIO	22.80	337.32	7,689				12.00%	
Ventas Inc	VTR	413.15	62.11	25,661	0.08%	2.90%	0.00%	8.22%	0.01%
Labcorp Holdings Inc	LH	83.96	229.89	19,302	0.06%	1.25%	0.00%	8.45%	0.00%
Vulcan Materials Co	VMC	132.06	245.21	32,382		0.75%			
Weyerhaeuser Co	WY	727.32	30.49	22,176		2.62%		-13.66%	
Williams Cos Inc/The	WMB	1,218.93	45.77	55,790	0.17%	4.15%	0.01%	4.28%	0.01%
Constellation Energy Corp	CEG	315.12	196.70	61,984		0.72%		20.39%	
WEC Energy Group Inc	WEC	316.08	93.03	29,405	0.09%	3.59%	0.00%	7.82%	0.01%
Adobe Inc	ADBE	443.40	574.41	254,693				16.27%	
Vistra Corp	VST	343.56	85.43	29,350		1.03%			
AES Corp/The	AES	710.92	17.13	12,178		4.03%			
Expeditors International of Washington Inc	EXPD	141.13	123.41	17,417	0.05%	1.18%	0.00%	4.39%	0.00%
Amgen Inc	AMGN	537.33	333.83	179,377	0.53%	2.70%	0.01%	3.52%	0.02%
Apple Inc	AAPL	15,204.14	229.00	3,481,747	10.30%	0.44%	0.04%	8.04%	0.83%
Autodesk Inc	ADSK	215.51	258.40	55,688				10.23%	
Cintas Corp	CTAS	100.77	805.12	81,131	0.24%	0.78%	0.00%	10.59%	0.03%
Comcast Corp	CMCSA	3,863.06	39.57	152,861	0.45%	3.13%	0.01%	7.32%	0.03%
Molson Coors Beverage Co	TAP	192.59	53.97	10,394	0.03%	3.26%	0.00%	5.29%	0.00%
KLA Corp	KLAC	134.43	819.43	110,152	0.33%	0.71%	0.00%	10.00%	0.03%
Marriott International Inc/MD	MAR	281.52	234.69	66,071	0.20%	1.07%	0.00%	4.25%	0.01%
Fiserv Inc	FI	575.73	174.60	100,522				11.52%	
McCormick & Co Inc/MD	MKC	252.02	80.03	20,169	0.06%	2.10%	0.00%	5.83%	0.00%
PACCAR Inc	PCAR	524.22	96.18	50,420	0.15%	1.25%	0.00%	0.48%	0.00%
Costco Wholesale Corp	COST	443.34	892.38	395,623	1.17%	0.52%	0.01%	10.36%	0.12%
Stryker Corp	SYK	381.08	360.42	137,347	0.41%	0.89%	0.00%	8.60%	0.03%
Tyson Foods Inc	TSN	285.82	64.31	18,381		3.05%			
Lamb Weston Holdings Inc	LW	143.67	61.92	8,896	0.03%	2.33%	0.00%	2.16%	0.00%
Applied Materials Inc	AMAT	824.40	197.26	162,622	0.48%	0.81%	0.00%	9.28%	0.04%
American Airlines Group Inc	AAL	653.54	10.62	6,941				-13.42%	
Cardinal Health Inc	CAH	243.85	112.72	27,486	0.08%	1.79%	0.00%	9.84%	0.01%
Cincinnati Financial Corp	CINF	156.24	137.03	21,410	0.06%	2.36%	0.00%	7.83%	0.00%
Paramount Global	PARA	626.01	10.47	6,554		1.91%		49.00%	
DR Horton Inc	DHI	326.04	188.76	61,543	0.18%	0.64%	0.00%	8.27%	0.02%
Electronic Arts Inc	EA	264.20	151.82	40,111	0.12%	0.50%	0.00%	12.85%	0.02%
Fair Isaac Corp	FICO	24.52	1,730.27	42,424				23.00%	
Fastenal Co	FAST	572.65	68.28	39,100		2.28%			
M&T Bank Corp	MTB	167.00	170.76	28,517	0.08%	3.16%	0.00%	3.87%	0.00%
Xcel Energy Inc	XEL	557.50	61.23	34,136	0.10%	3.58%	0.00%	7.10%	0.01%
Fifth Third Bancorp	FITB	676.80	42.69	28,892		3.28%		25.00%	
Gilead Sciences Inc	GILD	1,244.99	79.00	98,354	0.29%	3.90%	0.01%	15.38%	0.04%
Hasbro Inc	HAS	139.41	68.16	9,502		4.11%		33.11%	
Huntington Bancshares Inc/OH	HBAN	1,452.43	14.97	21,743	0.06%	4.14%	0.00%	3.32%	0.00%
Welltower Inc	WELL	609.15	120.68	73,512	0.22%	2.22%	0.00%	15.65%	0.03%
Biogen Inc	BIIB	145.66	204.76	29,826				6.10%	
Northern Trust Corp	NTRS	201.64	91.21	18,391	0.05%	3.29%	0.00%	10.11%	0.01%
Packaging Corp of America	PKG	89.81	209.54	18,819	0.06%	2.39%	0.00%	5.83%	0.00%
Paychex Inc	PAYX	359.74	131.20	47,198	0.14%	2.99%	0.00%	7.54%	0.01%
QUALCOMM Inc	QCOM	1,114.00	175.30	195,284	0.58%	1.94%	0.01%	10.64%	0.06%
Ross Stores Inc	ROST	333.58	150.61	50,240	0.15%	0.98%	0.00%	8.85%	0.01%
IDEXX Laboratories Inc	IDXX	82.31	481.33	39,616				11.25%	
Starbucks Corp	SBUX	1,133.20	94.57	107,167	0.32%	2.41%	0.01%	9.67%	0.03%
KeyCorp	KEY	928.12	17.06	15,834	0.05%	4.81%	0.00%	20.00%	0.01%
Fox Corp	FOXA	224.65	41.37	9,294	0.03%	1.31%	0.00%	5.35%	0.00%
Fox Corp	FOX	235.58	38.43	9,053	0.03%	1.41%	0.00%	5.35%	0.00%
State Street Corp	STT	298.62	87.10	26,010	0.08%	3.49%	0.00%	8.82%	0.01%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.66%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 1 [2]	10.31%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 2 [3]	n/a
Total [4]	10.31%
S&P 500 Estimated Required Market Return [5]	12.05%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Norwegian Cruise Line Holdings Ltd	NCLH	439.69	17.89	7,866				50.58%	
US Bancorp	USB	1,560.51	47.23	73,703	0.22%	4.15%	0.01%	3.39%	0.01%
A O Smith Corp	AOS	119.96	83.72	10,043		1.53%			
Gen Digital Inc	GEN	615.53	26.46	16,287	0.05%	1.89%	0.00%	10.49%	0.01%
T Rowe Price Group Inc	TROW	222.60	106.04	23,604	0.07%	4.68%	0.00%	7.30%	0.01%
Waste Management Inc	WM	401.32	212.04	85,095	0.25%	1.41%	0.00%	13.29%	0.03%
Constellation Brands Inc	STZ	182.19	240.71	43,855	0.13%	1.68%	0.00%	11.37%	0.01%
Invesco Ltd	IVZ	450.03	17.09	7,691	0.02%	4.80%	0.00%	9.27%	0.00%
Intuit Inc	INTU	279.55	630.26	176,187	0.52%	0.66%	0.00%	18.79%	0.10%
Morgan Stanley	MS	1,620.89	103.61	167,940	0.50%	3.57%	0.02%	9.60%	0.05%
Microchip Technology Inc	MCHP	536.51	82.16	44,079		2.21%		-10.99%	
Crowdstrike Holdings Inc	CRWD	232.72	277.28	64,528				35.70%	
Chubb Ltd	CB	403.93	284.18	114,790	0.34%	1.28%	0.00%	2.20%	0.01%
Hologic Inc	HOLX	232.27	81.24	18,870				8.86%	
Citizens Financial Group Inc	CFG	448.30	43.05	19,299		3.90%			
Jabil Inc	JBL	113.45	109.28	12,397	0.04%	0.29%	0.00%	7.13%	0.00%
O'Reilly Automotive Inc	ORLY	58.01	1,129.97	65,545				10.21%	
Allstate Corp/The	ALL	264.04	188.94	49,888		1.95%		168.00%	
Equity Residential	EQR	379.14	74.88	28,390	0.08%	3.61%	0.00%	4.23%	0.00%
BorgWarner Inc	BWA	227.77	33.96	7,735	0.02%	1.30%	0.00%	4.40%	0.00%
Keurig Dr Pepper Inc	KDP	1,356.09	36.61	49,646	0.15%	2.35%	0.00%	6.90%	0.01%
Host Hotels & Resorts Inc	HST	702.44	17.70	12,433		4.52%			
Incyte Corp	INCY	192.60	65.66	12,646				33.16%	
Simon Property Group Inc	SPG	326.04	167.35	54,562	0.16%	4.90%	0.01%	1.42%	0.00%
Eastman Chemical Co	EMN	116.86	102.37	11,963	0.04%	3.16%	0.00%	6.10%	0.00%
AvalonBay Communities Inc	AVB	142.22	225.73	32,103	0.09%	3.01%	0.00%	4.93%	0.00%
Prudential Financial Inc	PRU	357.00	121.16	43,254	0.13%	4.29%	0.01%	9.72%	0.01%
United Parcel Service Inc	UPS	732.51	128.55	94,164	0.28%	5.07%	0.01%	0.60%	0.00%
Walgreens Boots Alliance Inc	WBA	863.28	9.25	7,985		10.81%		-14.70%	
STERIS PLC	STE	98.62	241.10	23,777		0.95%			
McKesson Corp	MCK	129.68	561.08	72,759	0.22%	0.51%	0.00%	11.18%	0.02%
Lockheed Martin Corp	LMT	238.36	564.95	134,660	0.40%	2.23%	0.01%	2.11%	0.01%
Cencora Inc	COR	196.01	239.57	46,958	0.14%	0.85%	0.00%	10.67%	0.01%
Campbell Soup Co	CPB	298.55	49.72	14,844	0.04%	2.98%	0.00%	8.36%	0.00%
Capital One Financial Corp	COF	381.86	146.93	56,106	0.17%	1.63%	0.00%	12.32%	0.02%
Waters Corp	WAT	59.36	346.35	20,560				7.80%	
Nordson Corp	NDSN	57.18	256.56	14,671		1.22%			
Dollar Tree Inc	DLTR	214.94	84.49	18,161				12.39%	
Darden Restaurants Inc	DRI	118.46	158.15	18,735	0.06%	3.54%	0.00%	10.59%	0.01%
Evergy Inc	EVRG	229.75	59.14	13,587	0.04%	4.35%	0.00%	4.00%	0.00%
Match Group Inc	MTCH	257.90	37.21	9,596				36.15%	
Dominio's Pizza Inc	DPZ	34.97	414.21	14,486	0.04%	1.46%	0.00%	12.56%	0.01%
NVR Inc	NVR	3.08	9,172.46	28,233				7.60%	
NetApp Inc	NTAP	204.78	120.72	24,721	0.07%	1.72%	0.00%	5.34%	0.00%
Old Dominion Freight Line Inc	ODFL	214.30	192.80	41,316	0.12%	0.54%	0.00%	3.02%	0.00%
DaVita Inc	DVA	83.90	150.92	12,662				20.00%	
Hartford Financial Services Group Inc/The	HIG	293.01	115.63	33,881	0.10%	1.63%	0.00%	12.37%	0.01%
Iron Mountain Inc	IRM	293.34	113.26	33,223		2.53%			
Estee Lauder Cos Inc/The	EL	233.18	91.66	21,373	0.06%	2.88%	0.00%	14.58%	0.01%
Cadence Design Systems Inc	CDNS	273.82	268.93	73,638				16.20%	
Tyler Technologies Inc	TYL	42.67	587.87	25,086					
Universal Health Services Inc	UHS	59.46	237.77	14,138	0.04%	0.34%	0.00%	15.50%	0.01%
Skyworks Solutions Inc	SWKS	159.72	109.59	17,503		2.55%		-2.57%	
Quest Diagnostics Inc	DGX	111.32	156.97	17,473	0.05%	1.91%	0.00%	6.05%	0.00%
Rockwell Automation Inc	ROK	113.47	272.03	30,866	0.09%	1.84%	0.00%	1.73%	0.00%
Kraft Heinz Co/The	KHC	1,209.08	35.43	42,838	0.13%	4.52%	0.01%	2.51%	0.00%
American Tower Corp	AMT	467.08	224.06	104,654	0.31%	2.89%	0.01%	12.31%	0.04%
Regeneron Pharmaceuticals Inc	REGN	108.42	1,184.69	128,441				52.50%	
Amazon.com Inc	AMZN	10,495.57	178.50	1,873,459				28.99%	
Jack Henry & Associates Inc	JKHY	72.91	173.03	12,615	0.04%	1.27%	0.00%	9.73%	0.00%
Ralph Lauren Corp	RL	40.06	171.26	6,860	0.02%	1.93%	0.00%	11.05%	0.00%
BXP Inc	BXP	157.93	75.22	11,880	0.04%	5.21%	0.00%	0.40%	0.00%
Amphenol Corp	APH	1,204.29	67.45	81,229	0.24%	0.98%	0.00%	16.86%	0.04%
Howmet Aerospace Inc	HWM	408.15	96.66	39,451		0.33%		22.11%	
Valero Energy Corp	VLO	320.38	146.73	47,009		2.92%		-24.00%	
Synopsys Inc	SNPS	153.61	519.58	79,815				16.33%	
Etsy Inc	ETSY	114.75	55.09	6,322				4.06%	
CH Robinson Worldwide Inc	CHRW	117.28	103.51	12,140	0.04%	2.40%	0.00%	17.48%	0.01%
Accenture PLC	ACN	626.38	341.95	214,192	0.63%	1.51%	0.01%	5.80%	0.04%
TransDigm Group Inc	TDG	56.11	1,373.21	77,052				19.57%	
Yum! Brands Inc	YUM	281.17	134.92	37,935	0.11%	1.99%	0.00%	11.41%	0.01%
Prologis Inc	PLD	925.91	127.82	118,350	0.35%	3.00%	0.01%	5.36%	0.02%
FirstEnergy Corp	FE	575.92	43.92	25,294	0.07%	3.87%	0.00%	7.02%	0.01%
VeriSign Inc	VRSN	97.60	183.90	17,949					
Quanta Services Inc	PWR	147.33	275.13	40,535		0.13%			
Henry Schein Inc	HSIC	126.71	70.55	8,939				9.01%	
Ameren Corp	AEE	266.51	82.51	21,990	0.07%	3.25%	0.00%	6.16%	0.00%
ANSYS Inc	ANSS	87.39	321.42	28,088					
FactSet Research Systems Inc	FDS	38.04	422.84	16,085	0.05%	0.98%	0.00%	9.67%	0.00%
NVIDIA Corp	NVDA	24,530.00	119.37	2,928,146		0.03%		44.35%	
Cognizant Technology Solutions Corp	CTSH	495.66	77.77	38,547	0.11%	1.54%	0.00%	6.20%	0.01%
Intuitive Surgical Inc	ISRG	355.35	492.63	175,058				17.51%	
Take-Two Interactive Software Inc	TTWO	175.28	161.71	28,345				60.49%	
Republic Services Inc	RSG	314.07	208.21	65,392	0.19%	1.11%	0.00%	10.33%	0.02%
eBay Inc	EBAY	489.00	59.10	28,900	0.09%	1.83%	0.00%	10.12%	0.01%
Goldman Sachs Group Inc/The	GS	315.80	510.25	161,137	0.48%	2.35%	0.01%	14.20%	0.07%
SBA Communications Corp	SBAC	107.47	226.66	24,360	0.07%	1.73%	0.00%	15.96%	0.01%
Sempra	SRE	633.15	82.18	52,032	0.15%	3.02%	0.00%	5.27%	0.01%
Moody's Corp	MCO	182.10	487.74	88,817	0.26%	0.70%	0.00%	14.41%	0.04%
ON Semiconductor Corp	ON	428.36	77.87	33,356				1.28%	
Booking Holdings Inc	BKNG	33.52	3,909.23	131,053	0.39%	0.90%	0.00%	14.59%	0.06%
F5 Inc	FFIV	58.28	203.15	11,840				7.83%	
Akamai Technologies Inc	AKAM	151.53	101.84	15,431				6.12%	
Charles River Laboratories International Inc	CRL	51.63	197.75	10,210				5.20%	
MarketAxess Holdings Inc	MKTX	37.75	242.39	9,151	0.03%	1.22%	0.00%	4.02%	0.00%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.66%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 1 [2]	10.31%
Estimated Wgt'd. Avg Long-Term Gwth Rate - Step 2 [3]	n/a
Total [4]	10.31%
S&P 500 Estimated Required Market Return [5]	12.05%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
Devon Energy Corp	DVN	626.20	44.78	28,041	0.08%	3.93%	0.00%	6.60%	0.01%
Bio-Techne Corp	TECH	158.60	73.99	11,735	0.03%	0.43%	0.00%	6.00%	0.00%
Alphabet Inc	GOOGL	5,859.00	163.38	957,243	2.83%	0.49%	0.01%	15.01%	0.43%
Teleflex Inc	TFX	47.12	245.17	11,552	0.03%	0.55%	0.00%	7.95%	0.00%
Allegion plc	ALLE	87.13	138.84	12,097	0.04%	1.38%	0.00%	7.73%	0.00%
Netflix Inc	NFLX	429.17	701.35	300,995				35.72%	
Warner Bros Discovery Inc	WBD	2,451.91	7.84	19,223				28.63%	
Agilent Technologies Inc	A	287.33	142.92	41,065	0.12%	0.66%	0.00%	5.74%	0.01%
Trimble Inc	TRMB	244.21	56.69	13,844					
Elevance Health Inc	ELV	231.89	556.89	129,135	0.38%	1.17%	0.00%	11.79%	0.05%
CME Group Inc	CME	360.09	215.74	77,687	0.23%	2.13%	0.00%	3.82%	0.01%
Juniper Networks Inc	JNPR	329.16	38.88	12,798	0.04%	2.26%	0.00%	6.00%	0.00%
BlackRock Inc	BLK	148.13	901.81	133,583	0.40%	2.26%	0.01%	9.76%	0.04%
DTE Energy Co	DTE	206.93	125.02	25,870	0.08%	3.26%	0.00%	10.27%	0.01%
Celanese Corp	CE	109.26	130.60	14,270	0.04%	2.14%	0.00%	0.56%	0.00%
Nasdaq Inc	NDAQ	575.94	72.08	41,514	0.12%	1.33%	0.00%	10.30%	0.01%
Philip Morris International Inc	PM	1,554.80	123.29	191,692	0.57%	4.22%	0.02%	9.36%	0.05%
Ingersoll Rand Inc	IR	403.48	91.45	36,899		0.09%			
Salesforce Inc	CRM	956.00	252.90	241,772	0.72%	0.63%	0.00%	17.52%	0.13%
Roper Technologies Inc	ROP	107.20	554.41	59,432		0.54%			
Huntington Ingalls Industries Inc	HII	39.22	282.77	11,089	0.03%	1.84%	0.00%	7.62%	0.00%
MetLife Inc	MET	700.33	77.48	54,261	0.16%	2.81%	0.00%	14.38%	0.02%
Tapestry Inc	TPR	230.22	40.97	9,432	0.03%	3.42%	0.00%	5.52%	0.00%
CSX Corp	CSX	1,938.74	34.27	66,441	0.20%	1.40%	0.00%	9.21%	0.02%
Edwards Lifesciences Corp	EW	602.40	69.96	42,144				8.56%	
Ameriprise Financial Inc	AMP	98.19	449.44	44,130	0.13%	1.32%	0.00%	16.59%	0.02%
Zebra Technologies Corp	ZBRA	51.58	345.38	17,815					
Zimmer Biomet Holdings Inc	ZBH	203.65	115.46	23,514	0.07%	0.83%	0.00%	6.96%	0.00%
Camden Property Trust	CPT	106.64	125.20	13,351	0.04%	3.29%	0.00%	1.87%	0.00%
CBRE Group Inc	CBRE	306.43	115.14	35,282					
Mastercard Inc	MA	916.71	483.34	443,083	1.31%	0.55%	0.01%	15.18%	0.20%
CarMax Inc	KMX	156.08	84.55	13,196				17.91%	
Intercontinental Exchange Inc	ICE	574.14	161.55	92,753	0.27%	1.11%	0.00%	9.95%	0.03%
Fidelity National Information Services Inc	FIS	545.57	82.45	44,982		1.75%		22.20%	
Smurfit WestRock PLC	SW	519.36	47.42	24,628	0.07%	2.55%	0.00%	1.00%	0.00%
Chipotle Mexican Grill Inc	CMG	1,369.48	56.08	76,800				22.64%	
Wynn Resorts Ltd	WYNN	110.99	76.88	8,533		1.30%			
Live Nation Entertainment Inc	LYV	232.11	97.67	22,671					
Assurant Inc	AIZ	51.79	195.63	10,132	0.03%	1.47%	0.00%	7.14%	0.00%
NRG Energy Inc	NRG	206.38	85.01	17,544	0.05%	1.92%	0.00%	4.00%	0.00%
Monster Beverage Corp	MNST	979.54	47.13	46,166				10.18%	
Regions Financial Corp	RF	915.13	23.17	21,203	0.06%	4.32%	0.00%	4.68%	0.00%
Baker Hughes Co	BKR	993.42	35.17	34,939		2.39%		69.21%	
Mosaic Co/The	MOS	318.64	28.57	9,103		2.94%		-21.74%	
Expedia Group Inc	EXPE	124.66	139.09	17,338				19.59%	
CF Industries Holdings Inc	CF	180.41	83.09	14,990		2.41%		-9.54%	
APA Corp	APA	369.91	28.49	10,539		3.51%		-5.79%	
Leidos Holdings Inc	LDOS	134.71	158.51	21,354	0.06%	0.96%	0.00%	11.76%	0.01%
Alphabet Inc	GOOG	5,585.00	165.11	922,139	2.73%	0.48%	0.01%	15.01%	0.41%
First Solar Inc	FSLR	107.05	227.37	24,339				41.25%	
TE Connectivity Ltd	TEL	303.92	153.60	46,682	0.14%	1.69%	0.00%	5.41%	0.01%
Discover Financial Services	DFS	251.07	138.71	34,826	0.10%	2.02%	0.00%	11.65%	0.01%
Visa Inc	V	1,670.45	276.37	461,661	1.37%	0.75%	0.01%	12.33%	0.17%
Mid-America Apartment Communities Inc	MAA	116.88	162.37	18,977	0.06%	3.62%	0.00%	0.65%	0.00%
Xylem Inc/NY	XYL	242.89	137.53	33,405		1.05%			
Marathon Petroleum Corp	MPC	334.68	177.12	59,279		1.86%		-13.00%	
Tractor Supply Co	TSCO	107.87	267.55	28,860	0.09%	1.64%	0.00%	5.68%	0.00%
Advanced Micro Devices Inc	AMD	1,618.48	148.56	240,442				25.66%	
ResMed Inc	RMD	146.93	245.02	36,001	0.11%	0.87%	0.00%	9.57%	0.01%
Mettler-Toledo International Inc	MTD	21.36	1,439.08	30,734				9.15%	
VICI Properties Inc	VICI	1,043.14	33.48	34,924	0.10%	4.96%	0.01%	1.83%	0.00%
Copart Inc	CPRT	962.30	52.96	50,963					
Jacobs Solutions Inc	J	124.25	150.88	18,747	0.06%	0.77%	0.00%	10.87%	0.01%
Albemarle Corp	ALB	117.53	90.25	10,607		1.80%		35.42%	
Fortinet Inc	FTNT	764.91	76.71	58,676				8.66%	
Moderna Inc	MRNA	384.40	77.40	29,752				17.95%	
Essex Property Trust Inc	ESS	64.22	301.79	19,380	0.06%	3.25%	0.00%	4.50%	0.00%
CoStar Group Inc	CSGP	409.82	77.30	31,679				13.84%	
Realty Income Corp	O	870.87	61.85	53,861	0.16%	5.10%	0.01%	3.85%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	175.18	169.57	29,706	0.09%	0.47%	0.00%	16.12%	0.01%
Pool Corp	POOL	38.26	351.62	13,452		1.37%		-0.04%	
Western Digital Corp	WDC	343.45	65.59	22,527				-10.00%	
PepsiCo Inc	PEP	1,373.57	172.88	237,463	0.70%	3.14%	0.02%	7.40%	0.05%
Diamondback Energy Inc	FANG	178.39	195.11	34,806	0.10%	4.80%	0.00%	8.34%	0.01%
Palo Alto Networks Inc	PANW	323.80	362.72	117,449				11.52%	
ServiceNow Inc	NOW	206.00	855.00	176,130					
Church & Dwight Co Inc	CHD	244.82	101.88	24,942	0.07%	1.11%	0.00%	7.35%	0.01%
Federal Realty Investment Trust	FRT	83.67	115.00	9,622	0.03%	3.83%	0.00%	4.97%	0.00%
MGM Resorts International	MGM	303.77	37.59	11,419				20.80%	
American Electric Power Co Inc	AEP	532.12	100.28	53,361	0.16%	3.51%	0.01%	6.25%	0.01%
Invitation Homes Inc	INVH	612.59	36.84	22,568	0.07%	3.04%	0.00%	5.19%	0.00%
PTC Inc	PTC	120.14	179.09	21,515				14.76%	
JB Hunt Transport Services Inc	JBHT	101.99	173.20	17,664	0.05%	0.99%	0.00%	9.73%	0.01%
Lam Research Corp	LRCX	129.88	821.01	106,629	0.32%	1.12%	0.00%	16.29%	0.05%
Mohawk Industries Inc	MHK	63.12	155.14	9,792				4.45%	
GE HealthCare Technologies Inc	GEHC	456.66	84.82	38,734	0.11%	0.14%	0.00%	10.92%	0.01%
Pentair PLC	PNR	165.50	88.69	14,678	0.04%	1.04%	0.00%	12.50%	0.01%
Vertex Pharmaceuticals Inc	VRTX	258.10	495.89	127,990				11.00%	
Amcor PLC	AMCR	1,445.34	11.44	16,535	0.05%	4.37%	0.00%	3.71%	0.00%
Meta Platforms Inc	META	2,184.73	521.31	1,138,921	3.37%	0.38%	0.01%	19.80%	0.67%
T-Mobile US Inc	TMUS	1,166.78	198.72	231,863	0.69%	1.31%	0.01%	5.00%	0.03%
United Rentals Inc	URI	66.14	741.26	49,024	0.15%	0.88%	0.00%	7.45%	0.01%
Alexandria Real Estate Equities Inc	ARE	174.93	119.57	20,916	0.06%	4.35%	0.00%	3.03%	0.00%
Honeywell International Inc	HON	649.67	207.91	135,073	0.40%	2.08%	0.01%	8.65%	0.03%
Delta Air Lines Inc	DAL	645.42	42.49	27,424	0.08%	1.41%	0.00%	6.74%	0.01%

Calculation of Market Return from Analysts' Long-Term Growth Estimates
in Bulkley Direct Testimony

Estimated Weighted Average Dividend Yield [1]	1.66%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 1 [2]	10.31%
Estimated Wgtd. Avg Long-Term Gwth Rate - Step 2 [3]	n/a
Total [4]	10.31%
S&P 500 Estimated Required Market Return [5]	12.05%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Capitalization Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Capitalization Weighted Long-Term Growth Est.
United Airlines Holdings Inc	UAL	328.80	44.04	14,480				5.31%	
Seagate Technology Holdings PLC	STX	210.20	99.55	20,925		2.81%			
News Corp	NWS	190.68	29.43	5,612		0.68%			
Centene Corp	CNC	526.03	78.83	41,467				4.40%	
Martin Marietta Materials Inc	MLM	61.12	533.37	32,598	0.10%	0.59%	0.00%	7.47%	0.01%
Teradyne Inc	TER	163.18	136.73	22,311	0.07%	0.35%	0.00%	16.14%	0.01%
PayPal Holdings Inc	PYPL	1,022.33	72.43	74,048				12.03%	
Tesla Inc	TSLA	3,194.64	214.11	684,004				-11.00%	
KKR & Co Inc	KKR	887.44	123.77	109,838		0.57%			
Arch Capital Group Ltd	ACGL	376.06	113.09	42,528				6.13%	
Dow Inc	DOW	703.27	53.58	37,681		5.23%		-1.67%	
Everest Group Ltd	EG	43.27	392.24	16,974	0.05%	2.04%	0.00%	2.48%	0.00%
Teledyne Technologies Inc	TDY	46.78	432.80	20,248					
GE Vernova Inc	GEV	274.80	201.00	55,235				70.40%	
News Corp	NWSA	378.33	28.33	10,718		0.71%			
Exelon Corp	EXC	999.74	38.09	38,080	0.11%	3.99%	0.00%	5.31%	0.01%
Global Payments Inc	GPX	254.44	111.01	28,245	0.08%	0.90%	0.00%	9.30%	0.01%
Crown Castle Inc	CCI	434.57	112.02	48,680	0.14%	5.59%	0.01%	1.13%	0.00%
Aptiv PLC	APT	265.76	71.53	19,010				16.91%	
Align Technology Inc	ALGN	74.70	237.22	17,720				9.53%	
Kenvue Inc	KVUE	1,915.17	21.95	42,038	0.12%	3.74%	0.00%	13.58%	0.02%
Targa Resources Corp	TRGP	219.08	146.90	32,183	0.10%	2.04%	0.00%	16.74%	0.02%
Bunge Global SA	BG	141.65	101.38	14,361		2.68%		-8.59%	
LKQ Corp	LKQ	263.26	41.59	10,949		2.89%			
Deckers Outdoor Corp	DECK	25.41	959.29	24,377				10.80%	
Zoetis Inc	ZTS	453.05	183.49	83,130	0.25%	0.94%	0.00%	10.36%	0.03%
Equinix Inc	EQIX	94.95	834.36	79,218	0.23%	2.04%	0.00%	14.03%	0.03%
Digital Realty Trust Inc	DLR	327.41	151.61	49,639	0.15%	3.22%	0.00%	3.21%	0.00%
Molina Healthcare Inc	MOH	58.60	349.79	20,498				11.98%	
Las Vegas Sands Corp	LVS	736.43	38.99	28,713		2.05%			

Notes:

[1] Equals sum of Col. [11]

[2] Equals sum of Col. [13]

[3] No GDP growth rate per FERC approach

[4] Equals ([2] x 100%) + ([3] x 0%)

[5] Equals ([1] x (1 + (0.5 x [4]))) + [4]

[6] Bloomberg Professional as of August 31, 2024

[7] Bloomberg Professional as of August 31, 2024

[8] Equals [6] x [7]

[9] Equals weight in S&P 500 based on market capitalization [6] if growth rate >0% and ≤20%and dividend yield > 0

[10] Bloomberg Professional, as of August 31, 2024

[11] Equals [10] x [9]

[12] Bloomberg Professional, as of August 31, 2024

[13] Equals [9] x [12]

**CAPITAL ASSET PRICING MODEL
CURRENT RISK FREE RATE AND VALUE LINE BETA**

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.23%	0.85	12.05%	7.82%	10.88%	11.17%
NiSource Inc.	NI	4.23%	0.95	12.05%	7.82%	11.66%	11.76%
Northwest Natural Gas Company	NWN	4.23%	0.85	12.05%	7.82%	10.88%	11.17%
ONE Gas, Inc.	OGS	4.23%	0.85	12.05%	7.82%	10.88%	11.17%
Southwest Gas Corporation	SWX	4.23%	0.90	12.05%	7.82%	11.27%	11.47%
Spire, Inc.	SR	4.23%	0.85	12.05%	7.82%	10.88%	11.17%
Mean						11.07%	11.32%
Median						10.88%	11.17%

Notes:

[1] Bloomberg Professional 30-day average as of August 31, 2024

[2] Value Line

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3]-[1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30- year U.S. Treasury bond yield (Q4 2024 - Q4 2025)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.12%	0.85	12.05%	7.93%	10.86%	11.16%
NiSource Inc.	NI	4.12%	0.95	12.05%	7.93%	11.66%	11.75%
Northwest Natural Gas Company	NWN	4.12%	0.85	12.05%	7.93%	10.86%	11.16%
ONE Gas, Inc.	OGS	4.12%	0.85	12.05%	7.93%	10.86%	11.16%
Southwest Gas Corporation	SWX	4.12%	0.90	12.05%	7.93%	11.26%	11.46%
Spire, Inc.	SR	4.12%	0.85	12.05%	7.93%	10.86%	11.16%
Mean						11.06%	11.31%
Median						10.86%	11.16%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 9, August 30, 2024, at 2

[2] Value Line

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA**

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2026 - 2030)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.30%	0.85	12.05%	7.75%	10.89%	11.18%
NiSource Inc.	NI	4.30%	0.95	12.05%	7.75%	11.66%	11.76%
Northwest Natural Gas Company	NWN	4.30%	0.85	12.05%	7.75%	10.89%	11.18%
ONE Gas, Inc.	OGS	4.30%	0.85	12.05%	7.75%	10.89%	11.18%
Southwest Gas Corporation	SWX	4.30%	0.90	12.05%	7.75%	11.28%	11.47%
Spire, Inc.	SR	4.30%	0.85	12.05%	7.75%	10.89%	11.18%
Mean						11.08%	11.33%
Median						10.89%	11.18%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14

[2] Value Line

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL
CURRENT RISK FREE RATE AND BLOOMBERG BETA**

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.23%	0.74	12.05%	7.82%	10.02%	10.53%
NiSource Inc.	NI	4.23%	0.79	12.05%	7.82%	10.44%	10.84%
Northwest Natural Gas Company	NWN	4.23%	0.69	12.05%	7.82%	9.62%	10.23%
ONE Gas, Inc.	OGS	4.23%	0.76	12.05%	7.82%	10.20%	10.66%
Southwest Gas Corporation	SWX	4.23%	0.81	12.05%	7.82%	10.57%	10.94%
Spire, Inc.	SR	4.23%	0.76	12.05%	7.82%	10.17%	10.64%
Mean						10.17%	10.64%
Median						10.18%	10.65%

Notes:

[1] Bloomberg Professional 30-day average as of August 31, 2024

[2] Bloomberg Professional, based on 10-year weekly returns, as of August 31, 2024

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q4 2024 - Q4 2025)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.12%	0.74	12.05%	7.93%	9.99%	10.51%
NiSource Inc.	NI	4.12%	0.79	12.05%	7.93%	10.42%	10.83%
Northwest Natural Gas Company	NWN	4.12%	0.69	12.05%	7.93%	9.59%	10.20%
ONE Gas, Inc.	OGS	4.12%	0.76	12.05%	7.93%	10.17%	10.64%
Southwest Gas Corporation	SWX	4.12%	0.81	12.05%	7.93%	10.55%	10.93%
Spire, Inc.	SR	4.12%	0.76	12.05%	7.93%	10.14%	10.62%
Mean						10.14%	10.62%
Median						10.16%	10.63%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 9, August 30, 2024, at 2

[2] Bloomberg Professional, based on 10-year weekly returns, as of August 31, 2024

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2026 - 2030)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.30%	0.74	12.05%	7.75%	10.04%	10.54%
NiSource Inc.	NI	4.30%	0.79	12.05%	7.75%	10.46%	10.85%
Northwest Natural Gas Company	NWN	4.30%	0.69	12.05%	7.75%	9.64%	10.25%
ONE Gas, Inc.	OGS	4.30%	0.76	12.05%	7.75%	10.21%	10.67%
Southwest Gas Corporation	SWX	4.30%	0.81	12.05%	7.75%	10.59%	10.95%
Spire, Inc.	SR	4.30%	0.76	12.05%	7.75%	10.18%	10.65%
Mean						10.19%	10.65%
Median						10.20%	10.66%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14

[2] Bloomberg Professional, based on 10-year weekly returns, as of August 31, 2024

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

**CAPITAL ASSET PRICING MODEL
CURRENT RISK FREE RATE AND LONG-TERM VALUE LINE BETA**

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.23%	0.75	12.05%	7.82%	10.10%	10.59%
NiSource Inc.	NI	4.23%	0.76	12.05%	7.82%	10.14%	10.62%
Northwest Natural Gas Company	NWN	4.23%	0.71	12.05%	7.82%	9.78%	10.35%
ONE Gas, Inc.	OGS	4.23%	0.74	12.05%	7.82%	10.00%	10.51%
Southwest Gas Corporation	SWX	4.23%	0.83	12.05%	7.82%	10.70%	11.04%
Spire, Inc.	SR	4.23%	0.74	12.05%	7.82%	10.03%	10.53%
Mean						10.12%	10.61%
Median						10.06%	10.56%

Notes:

[1] Bloomberg Professional 30-day average as of August 31, 2024

[2] Schedule AEB-D2, Attachment 5

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30- year U.S. Treasury bond yield (Q4 2024 - Q4 2025)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.12%	0.75	12.05%	7.93%	10.07%	10.56%
NiSource Inc.	NI	4.12%	0.76	12.05%	7.93%	10.11%	10.60%
Northwest Natural Gas Company	NWN	4.12%	0.71	12.05%	7.93%	9.74%	10.32%
ONE Gas, Inc.	OGS	4.12%	0.74	12.05%	7.93%	9.97%	10.49%
Southwest Gas Corporation	SWX	4.12%	0.83	12.05%	7.93%	10.68%	11.02%
Spire, Inc.	SR	4.12%	0.74	12.05%	7.93%	10.00%	10.51%
Mean						10.10%	10.59%
Median						10.03%	10.54%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 9, August 30, 2024, at 2

[2] Schedule AEB-D2, Attachment 5

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2026 - 2030)	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Atmos Energy Corporation	ATO	4.30%	0.75	12.05%	7.75%	10.11%	10.60%
NiSource Inc.	NI	4.30%	0.76	12.05%	7.75%	10.16%	10.63%
Northwest Natural Gas Company	NWN	4.30%	0.71	12.05%	7.75%	9.80%	10.36%
ONE Gas, Inc.	OGS	4.30%	0.74	12.05%	7.75%	10.02%	10.53%
Southwest Gas Corporation	SWX	4.30%	0.83	12.05%	7.75%	10.71%	11.05%
Spire, Inc.	SR	4.30%	0.74	12.05%	7.75%	10.04%	10.55%
Mean						10.14%	10.62%
Median						10.08%	10.57%

Notes:

[1] Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14

[2] Schedule AEB-D2, Attachment 5

[3] Schedule AEB-SR1, Attachment 1 (Cor. Excl. of Non-Dividend Paying Companies, CGDCF)

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

Summary of CAPM Results Based on Correction of Dr. Won's Adjustment to My Forward-Looking Market Return

Assumed Market Return of: 12.05% (Schedule SR1, Attachment 1)

Assumes:

- Correction to Dr. Won's adjustment to my market return
- Constant growth DCF approach to calculating market return consistent with FERC approach

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Current Value Line Beta	11.07%	11.06%	11.08%
Current Bloomberg Beta	10.17%	10.14%	10.19%
Long-term Avg. Value Line Beta	10.12%	10.10%	10.14%
Average Cost of Equity		10.45%	
ECAPM:			
Current Value Line Beta	11.32%	11.31%	11.33%
Current Bloomberg Beta	10.64%	10.62%	10.65%
Long-term Avg. Value Line Beta	10.61%	10.59%	10.62%
Average Cost of Equity		10.85%	

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Union Electric Company)
d/b/a Ameren Missouri's Tariffs to Adjust)
Its Revenues for its Natural Gas Service.)

Case No. GR-2024-0369

AFFIDAVIT OF ANN E. BULKLEY

COMMONWEALTH OF MASSACHUSETTS)
) ss
CITY OF BOSTON)

Ann E. Bulkley, being first duly sworn states:

My name is Ann E. Bulkley, and on my oath declare that I am of sound mind and lawful age; that I have prepared the foregoing *Rebuttal Testimony*; and further, under the penalty of perjury, that the same is true and correct to the best of my knowledge and belief.

/s/ Ann E. Bulkley
Ann E. Bulkley

Sworn to me this 29th day of April, 2025.