

INDIANA-AMERICAN WATER COMPANY, INC.

DIRECT TESTIMONY

OF

ANN E. BULKLEY

SPONSORING ATTACHMENTS AEB-1 THROUGH AEB-12

March 31, 2023

**DIRECT TESTIMONY
OF
ANN E. BULKLEY**

I. INTRODUCTION AND QUALIFICATIONS

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

A. My name is Ann E. Bulkley. I am a Principal at The Brattle Group (“Brattle”). My business address is One Beacon Street, Suite 2600, Boston, Massachusetts 02108.

Q. On whose behalf are you submitting this testimony?

A. I am submitting this testimony on behalf of Indiana-American Water Company (“INAWC” or the “Company”), a wholly-owned subsidiary of American Water Works Company Inc. (“American Water”).

Q. Please describe your education and experience.

A. I hold a Bachelor’s degree in Economics and Finance from Simmons College and a Master’s degree in Economics from Boston University, with over 25 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. My resume and a summary of testimony that I have filed in other proceedings are presented in more detail in Appendix A.

1 **II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY**

2 **Q. Please describe the purpose of your Direct Testimony.**

3 A. The purpose of my Direct Testimony is to present evidence and provide a recommendation
4 regarding the appropriate return on equity (“ROE”) for the Company and to provide an
5 assessment of the reasonableness of INAWC’s proposed capital structure. I will also
6 support INAWC’s fair value rate base.

7 **Q. Are you sponsoring any attachments in support of your Direct Testimony?**

8 A. Yes. I am sponsoring the following attachments, which were prepared by me or under my
9 direction.

Attachment Number	Attachment Description
Attachment AEB-1	Summary of ROE Analyses
Attachment AEB-2	Proxy Group Selection
Attachment AEB-3	Constant Growth DCF Analysis
Attachment AEB-4	CAPM Analysis
Attachment AEB-5	Historical Proxy Group Betas
Attachment AEB-6	S&P 500 Market Return
Attachment AEB-7	Flotation Costs
Attachment AEB-8	Regulatory Risk Analysis
Attachment AEB-9	Capital Structure Analysis
Attachment AEB-10	Fair Value Rate Base Analysis
Attachment AEB-11	Rate of Return Summary
Attachment AEB-12	Inflation Rates

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

11 A. As discussed in more detail below, it is important to consider the results of several
12 analytical approaches in determining a reasonable recommendation for the Company’s

1 ROE. To develop my ROE recommendation, I first developed a proxy group of utility
2 companies. I did not limit the proxy group to water utilities, but included a broader group
3 of utilities that face similar risk as INAWC because a proxy group composed only of water
4 utilities would result in a small group of companies for which data is limited. To that proxy
5 group, I applied the Constant Growth Form of the Discounted Cash Flow (“DCF”) model,
6 the Capital Asset Pricing Model (“CAPM”), and the Empirical Capital Asset Pricing Model
7 (“ECAPM”). My recommendation also takes into consideration the following factors:

8 (1) INAWC’s capital expenditure program relative to the proxy group companies;

9 (2) the test year convention mechanism used to set rates for INAWC;

10 (3) the risk associated with variations in volume/demand and the resulting effect on
11 INAWC’s revenues and cash flows; and

12 (4) INAWC’s proposed capital structure as compared to the capital structures of the
13 proxy group companies.¹

14 While I did not make specific adjustments to my recommended ROE for these factors, I
15 did consider them in the aggregate when determining where my recommended ROE falls
16 within the range of the analytical results.

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

18 A. The remainder of my Direct Testimony is organized as follows:

- 19 • Section III provides a summary of my analyses and conclusions.

¹ The selection and purpose of developing a group of comparable companies will be discussed in detail in Section VI of my Direct Testimony.

- 1 • Section IV reviews the regulatory guidelines pertinent to the development of the
2 cost of capital.
- 3 • Section V discusses current and projected capital market conditions and the effect
4 of those conditions on INAWC’s cost of equity.
- 5 • Section VI explains my selection of the proxy group for INAWC.
- 6 • Section VII describes my analyses and the analytical basis for my recommendation
7 of the appropriate ROE for INAWC.
- 8 • Section VIII provides a discussion of specific regulatory, business, and financial
9 risks that have a direct bearing on the ROE to be authorized for INAWC in this
10 case.
- 11 • Section IX provides an assessment of the reasonableness of INAWC’s proposed
12 capital structure relative to the proxy group.
- 13 • Section X presents my conclusions and recommendations.
- 14 • Section 0 provides an assessment of the fair value rate base and fair value return
15 increment.

16 **III. SUMMARY OF ANALYSIS AND CONCLUSIONS**

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

19 **A.** The key factors that I considered in my cost of equity analyses and recommended ROE for
20 the Company in this proceeding are:

- 21 • The United States Supreme Court’s *Hope* and *Bluefield* decisions² established the
22 standards for determining a fair and reasonable authorized ROE for public utilities,
23 including consistency of the allowed return with the returns of other businesses
24 having similar risk, adequacy of the return to provide access to capital and support
25 credit quality, and the requirement that the result lead to just and reasonable rates.
- 26 • The effect of current and prospective capital market conditions on the cost of equity
27 estimation models and on investors’ return requirements.

² Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944) (“Hope”); Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia, 262 U.S. 679 (1923) (“Bluefield”).

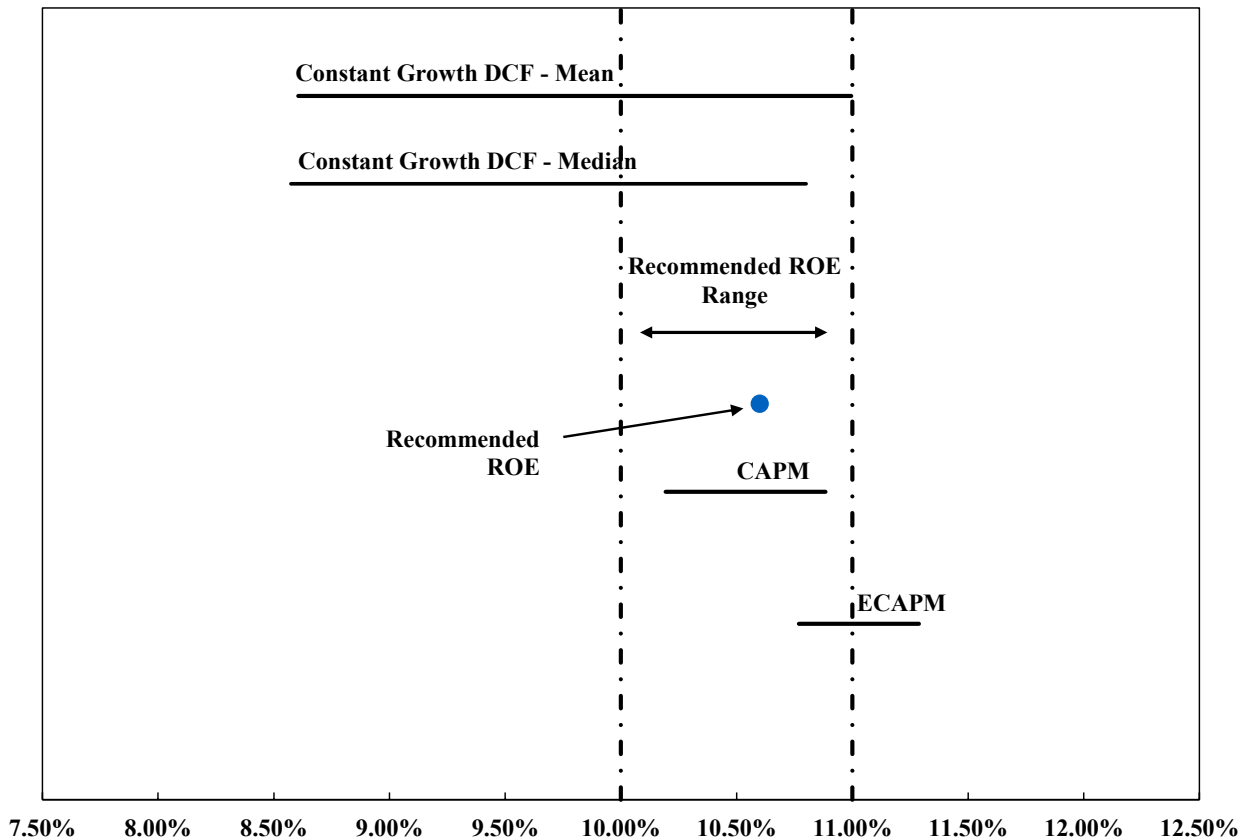
- 1 • The results of several analytical approaches that provide estimates of the
2 Company's cost of equity. Because the Company's authorized ROE should be a
3 forward-looking estimate over the period during which the rates will be in effect,
4 these analyses rely on forward-looking inputs and assumptions (e.g., projected
5 analyst growth rates in the DCF model, forecasted risk-free rate and market risk
6 premium in the CAPM analysis).
- 7 • Although the companies in my proxy group are generally comparable to INAWC,
8 each company is unique, and no two companies have the exact same business and
9 financial risk profiles. Accordingly, I considered the Company's regulatory,
10 business, and financial risks relative to the proxy group of comparable companies
11 in determining where the Company's ROE should fall within the reasonable range
12 of analytical results to appropriately account for any residual differences in risk.

13 **Q. What are the results of the models that you have used to estimate the cost of equity**
14 **for INAWC?**

15 A. Figure 1 (and Attachment AEB-1) summarizes the range of results produced by the
16 Constant Growth DCF, CAPM, and ECAPM analyses.

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Figure 1: Summary of ROE Results



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As shown in Figure 1 (and Attachment AEB-1), the range of results produced by the models used to estimate the cost of equity is wide. While it is common to consider multiple models to estimate the cost of equity, it is particularly important when the range of results varies considerably across methodologies.

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Q. Are prospective capital market conditions expected to affect the results of the cost of equity for INAWC during the period in which the rates established in this proceeding will be in effect?

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11

A. Yes. Capital market conditions are expected to affect the results of the cost of equity estimation models. Specifically:

- 1 • Inflation is expected to persist over the near-term, which increases the operating
2 risk of the utility during the period in which rates will be in effect.
- 3 • Long-term interest rates have increased substantially in the past year and are
4 expected to remain relatively high at least over the next year in response to inflation.
- 5 • Since utility dividend yields are now less attractive than the risk-free rates of
6 government bonds, and interest rates are expected to remain near current levels over
7 the next year, and since utility stock prices are inversely related to changes in
8 interest rates, it is likely that utility share prices will decline.
- 9 • Rating agencies have responded to the risks of the utility sector, with Moody's
10 Investors Service ("Moody's") most recently indicating its outlook for the industry
11 in 2023 is "negative", citing increasing interest rates, inflation and high natural gas
12 prices, all of which create pressures for customer affordability and prompt rate
13 recovery.
- 14 • Similarly, equity analysts have noted the increased risk for the utility sector as a
15 result of rising interest rates and expect the sector to underperform over the near-
16 term.
- 17 • Consequently, the results of the DCF model, which relies on current utility share
18 prices, is likely to understate the cost of equity during the period that the Company's
19 rates will be in effect.

20 It is appropriate to consider all of these factors when estimating a reasonable range of the
21 investor-required cost of equity and the recommended ROE for INAWC.

22 **Q. What is your conclusion regarding the appropriate authorized ROE for INAWC in
23 this proceeding?**

24 A. Considering the analytical results presented in Figure 1, current and prospective capital
25 market conditions, as well as the level of regulatory, business, and financial risk faced by
26 INAWC's water and wastewater operations in Indiana relative to the proxy group, I believe
27 a range from 10.00 percent to 11.00 percent is reasonable. Taking into consideration the

1 results of the analytical models, current market conditions, and the Company's relative
2 risk, an ROE of 10.60 percent is reasonable and appropriate.

3 **Q. Is INAWC's requested capital structure reasonable and appropriate?**

4 A. Yes. The Company's proposed equity ratio as of April 30, 2025 is 56.15 percent excluding
5 the adjustments for zero cost capital items. Comparing that equity ratio to the proxy group
6 demonstrates that the Company's requested equity ratio is well within the range of equity
7 ratios for the proxy group. Further, the Company's proposed equity ratio is reasonable
8 considering that credit rating agencies have identified the outlook for the utility sector as
9 "negative" due to the negative effect on the cash flows and credit metrics associated with
10 increasing interest rates, inflation and commodity costs, and the pressure that those factors
11 place on customer affordability and utilities' prompt rate recovery.

12 **IV. REGULATORY GUIDELINES**

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

15 A. The U.S. Supreme Court's precedent-setting *Hope* and *Bluefield* cases established the
16 standards for determining the fairness or reasonableness of a utility's authorized ROE.
17 Among the standards established by the Court in those cases are: (1) consistency with other
18 businesses having similar or comparable risks; (2) adequacy of the return to support credit
19 quality and access to capital; and (3) the principle that the specific means of arriving at a
20 fair return are not important, only that the end result leads to just and reasonable rates.³

³ *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S. at 603.

1 **Q. Is fixing a fair rate of return just about protecting the utility’s interests?**

2 A. No. As the Court noted in *Bluefield*, a proper rate of return not only assures “confidence
3 in the financial soundness of the utility and should be adequate, under efficient and
4 economical management, to maintain and support its credit [but also] enable[s the utility]
5 to raise the money necessary for the proper discharge of its public duties.” *Bluefield*
6 *Waterworks & Improvements Co. vs. Pub. Serv. Comm’n of W. Va.*, 262 US 679, 693, 43
7 S Ct 675, 679, 67 L Ed 1176 (1923). As the Court went on to explain in *Hope*, “[t]he
8 rate-making process ... involves balancing of the investor and consumer interests.” *Federal*
9 *Power Comm’n v. Hope Natural Gas Co.*, 320 US 591, 603 (1944).

10 **Q. Has the Indiana Utility Regulatory Commission (“Commission”) provided similar**
11 **guidance in establishing the appropriate return on common equity?**

12 A. Yes. The Commission follows the precedents of *Hope* and *Bluefield* and acknowledges
13 that utility investors are entitled to a fair and reasonable return. For example, in a recent
14 decision for Duke Energy Indiana, LLC, the Commission stated:

15 In setting the rate of return for DEI, the Commission’s decision must be
16 framed by *Bluefield Waterworks & Improvements Co. v. Pub. Serv.*
17 *Comm’n*, 262 U.S. 679, 43 S.Ct. 675 (1923) and *Federal Power Comm’n v.*
18 *Hope Natural Gas, Co.*, 320 U.S. 591, 64 S.Ct. 281 (1944). The general
19 standards these cases established require a cost of common equity set by the
20 Commission be sufficient to establish a rate of return that will maintain the
21 utility’s financial integrity, attract capital under reasonable terms, and be
22 commensurate with the returns that could be earned in investments in other
23 enterprises of comparable risk.⁴

24 **Q. Why is it important for a utility to be allowed the opportunity to earn a return that is**
25 **adequate to attract capital at reasonable terms?**

⁴ Duke Energy Indiana, LLC, Cause No. 45253, Order of the Commission issued June 29, 2020, at 57.

1 A. A return that is adequate to attract capital at reasonable terms enables INAWC to continue
2 providing safe, reliable water and wastewater service while maintaining its financial
3 integrity. That return should be commensurate with returns expected elsewhere in the
4 market for investments of equivalent risk. If it is not, debt and equity investors will seek
5 alternative investment opportunities for which the expected return reflects the perceived
6 risks, thereby inhibiting INAWC's ability to attract capital at reasonable cost. To the extent
7 the Company has the opportunity to earn its market-based cost of capital, a reasonable
8 balance will be achieved between customers' and shareholders' interests.

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

11 A. Yes. Utilities compete directly for capital with other investments of similar risk, which
12 include other water, natural gas, and electric utilities. Therefore, the ROE authorized for a
13 utility sends an important signal to investors regarding whether there is regulatory support
14 for financial integrity, dividends, growth, and fair compensation for business and financial
15 risk. The cost of capital represents an opportunity cost to investors. If higher returns are
16 available elsewhere for other investments of comparable risk over the same time-period,
17 investors have an incentive to direct their capital to those alternative investments. Thus,
18 an authorized ROE significantly below authorized ROEs for other water, natural gas, and
19 electric utilities can inhibit the utility's ability to attract capital for investment.

20 **Q. Is the regulatory framework and the authorized ROE and equity ratio important to**
21 **the financial community?**

22 A. Yes. The regulatory framework is one of the most important factors in debt and equity
23 investors' assessments of risk. Specifically regarding debt investors, credit rating agencies

1 consider the authorized ROE and equity ratio for regulated utilities to be very important
2 for two reasons: (1) they help determine the cash flows and credit metrics of the regulated
3 utility; and (2) they provide an indication of the degree of regulatory support for credit
4 quality in the jurisdiction. To the extent that the authorized returns in a jurisdiction are
5 lower than the returns that have been authorized more broadly, credit rating agencies will
6 consider this in the overall risk assessment of the regulatory jurisdiction in which the
7 company operates. Not only do credit ratings affect the overall cost of borrowing, they
8 also act as a signal to equity investors about the risk of investing in the equity of a company.

9 **Q. What are your conclusions regarding regulatory guidelines?**

10 A. The ratemaking process is premised on the principle that, in order for investors and
11 companies to commit the capital needed to provide safe and reliable utility services, a
12 utility must have a reasonable opportunity to recover the return of, and the market-required
13 return on, its invested capital. Accordingly, the Commission's order in this proceeding
14 should establish rates that provide the Company with a reasonable opportunity to earn a
15 ROE that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its
16 financial integrity; and (3) commensurate with returns on investments in enterprises with
17 similar risk. It is important for the ROE authorized in this proceeding to take into
18 consideration current and projected capital market conditions, as well as investors'
19 expectations and requirements for both risks and returns. Because utility operations are
20 capital-intensive, regulatory decisions should enable the utility to attract capital at
21 reasonable terms under a variety of economic and financial market conditions. Providing
22 the opportunity to earn a market-based cost of capital supports the financial integrity of the
23 Company, which is in the interest of both customers and shareholders.

1 **V. CAPITAL MARKET CONDITIONS**

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

3 A. The models used to estimate the cost of equity rely on market data that are either specific
4 to the proxy group, in the case of the DCF model, or to the expectations of market risk, in
5 the case of the CAPM. The results of the cost of equity estimation models can be affected
6 by prevailing market conditions at the time the analysis is performed. While the ROE
7 established in a rate proceeding is intended to be forward-looking, the analyst uses current
8 and projected market data, specifically stock prices, dividends, growth rates and interest
9 rates, in the cost of equity estimation models in order to estimate the investor-required
10 return for the subject company.

11 As a result, it is important to consider the effect of the market conditions on these models
12 when determining an appropriate range for the ROE and the recommended ROE for
13 ratemaking purposes for a future period. If investors do not expect current market
14 conditions to be sustained in the future, it is possible that the cost of equity estimation
15 models will not provide an accurate estimate of investors' required return during that rate
16 period. Therefore, it is very important to consider projected market data to estimate the
17 return for that forward-looking period.

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

20 A. The cost of equity for regulated utility companies is being affected by several factors in the
21 current and prospective capital markets, including: (1) changes in monetary policy; (2) high
22 inflation; and (3) increased interest rates that are expected to remain relatively high over

1 the next few years. These factors affect the assumptions used in the cost of equity
2 estimation models.

3 **Q. What effect do current and prospective market conditions have on the cost of equity**
4 **for the Company?**

5 A. The combination of persistently high inflation, and the Federal Reserve’s changes in
6 monetary policy contribute to an expectation of increased market risk and an increase in
7 the cost of the investor-required return on equity. It is essential that these factors be
8 considered in setting the forward-looking ROE. Inflation has recently been at some of the
9 highest levels seen in approximately 40 years, and while inflation has declined from these
10 recent peaks, it remains relatively high. Interest rates, which have increased significantly
11 from pandemic-related lows seen in 2020, are expected to continue to remain relatively
12 high in direct response to the Federal Reserve’s use of monetary policy to combat inflation.
13 Since there is a strong historical inverse correlation between interest rates and the share
14 prices of utility stocks (*i.e.*, as utility share prices decline, utility dividend yields increase),
15 it is reasonable to expect that investors’ required return for utility companies will also
16 increase. Therefore, cost of equity estimates based solely on current market conditions will
17 understate the cost of equity required by investors during the future period that the
18 Company’s rates determined in this proceeding will be in effect.

19 **V.A. Inflationary Expectations in Current and Projected Capital Market**
20 **Conditions**

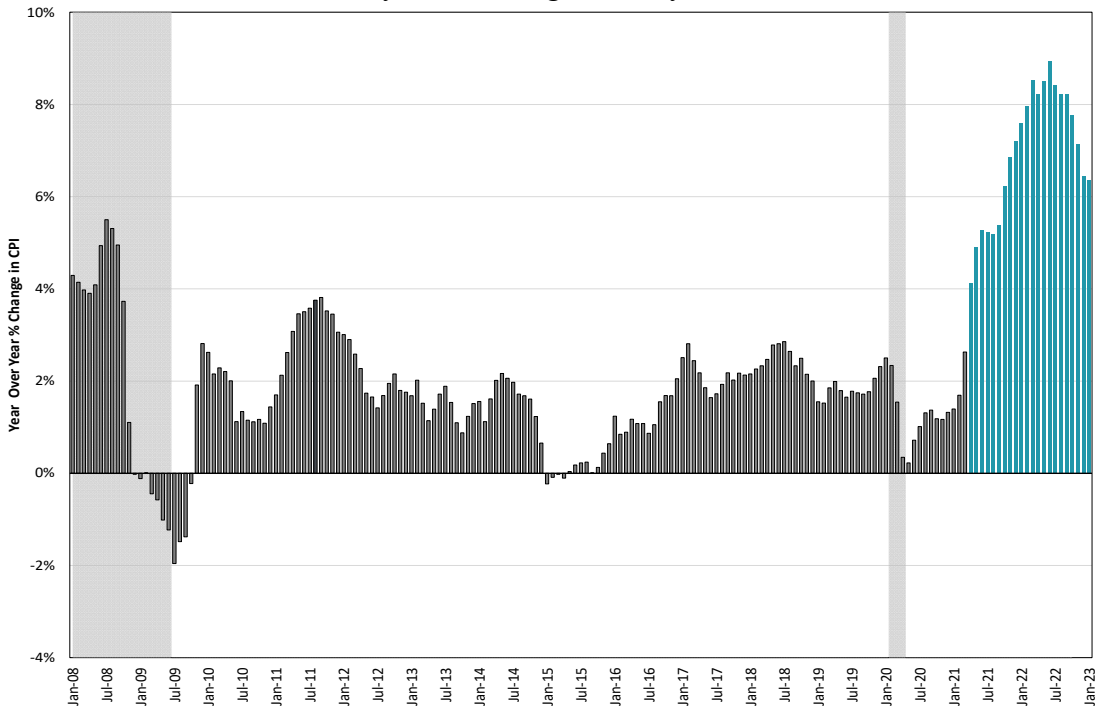
21 **Q. Has inflation increased significantly over the past year?**

22 A. Yes. As shown in Figure 2, the year-over-year (“YOY”) change in the Consumer Price
23 Index (“CPI”) published by the Bureau of Labor statistics has increased steadily since the

beginning of 2021, rising from 1.39 percent in January 2021 to a high of 9.0 percent YOY change in June 2022, which was the largest 12-month increase since 1981 and significantly greater than any level seen since January 2008. Despite the recent decline since that time, inflation continues to remain elevated. In January 2023, the CPI is 6.35 percent, which is still at levels not seen since the 1980s.

Figure 2: Consumer Price Index – YoY Percent Change

January 2008 through January 2023⁵



Q. What are the expectations for inflation over the near-term?

A. The Federal Reserve has indicated that it expects inflation will remain elevated above its target level over at least the next year and that it will continue to increase short-term interest rates to reduce inflation. For example, Federal Reserve Chair Powell at the Federal Open Market Committee (“FOMC”) meeting in February 2023 anticipated further increases in

⁵ Bureau of Labor Statistics, shaded area indicates a recession.

1 the federal funds rate, and observed that while inflation is off of its recent highs, it remains
2 significantly above the Federal Reserve's long-term target:

3 We continue to anticipate that ongoing increases will be appropriate in order
4 to attain a stance of monetary policy that is sufficiently restrictive to return
5 inflation to 2 percent over time.

6

7 Inflation remains well above our longer-run goal of 2 percent. Over the 12
8 months ending in December, total PCE prices rose 5.0 percent; excluding
9 the volatile food and energy categories, core PCE prices rose 4.4 percent.
10 The inflation data received over the past three months show a welcome
11 reduction in the monthly pace of increases. And while recent developments
12 are encouraging, we will need substantially more evidence to be confident
13 that inflation is on a sustained downward path.

14

15 With today's action, we have raised interest rates by 4-1/2 percentage points
16 over the past year. We continue to anticipate that ongoing increases in the
17 target range for the federal funds rate will be appropriate in order to attain
18 a stance of monetary policy that is sufficiently restrictive to return inflation
19 to 2 percent over time.

20

21 At the December meeting, we all wrote down our best estimates of what we
22 thought the ultimate level would be [of the federal funds rate], and that's
23 obviously back in December. And the median for that was between five and
24 five and a quarter percent. At the March meeting, we're going to update
25 those assessments. We did not update them today. We did, however,
26 continue to say that we believe ongoing rate hikes will be appropriate to
27 attain a sufficiently restrictive stance of policy to bring inflation back down
28 to 2 percent. We think we've covered a lot of ground, and financial
29 conditions have certainly tightened. I would say we still think there's work
30 to do there. We haven't made a decision on exactly where that will be. I
31 think, you know, we're going to be looking carefully at the incoming data
32 between now and the March meeting and then the May meeting. I don't feel
33 a lot of certainty about where that will be. It could certainly be higher than
34 we're writing down right now. If we come to the view that we need to write
35 down to -- you know, to move rates up beyond what we said in December
36 we would certainly do that. At the same time, if the data come in, in the

1 other direction then we'll -- you know, we'll make data-dependent decisions
2 at coming meetings, of course.⁶

3 **V.B. The Use of Monetary Policy to Address Inflation**

4 **Q. What policy actions has the Federal Reserve enacted to respond to increased**
5 **inflation?**

6 A. The dramatic increase in inflation has prompted the Federal Reserve to pursue an
7 aggressive normalization of monetary policy, removing the accommodative policy
8 programs used to mitigate the economic effects of COVID-19. Over the period from
9 January 2022 through February 1, 2023, the Federal Reserve has taken the following
10 actions:

- 11 • Completed its taper of Treasury bond and mortgage-backed securities purchases;⁷
- 12 • Increased the target federal funds rate beginning in March 2022 through a series of
13 increases from a target range of 0.00 to 0.25 percent to a target range of 4.50 percent to
14 4.75 percent;⁸
- 15 • Anticipates ongoing increases in the target range will be appropriate to achieve its
16 goals of maximum employment at the inflation rate of 2 percent over the long-run;⁹
- 17 • Began reducing its holdings of Treasury and mortgage-backed securities on June 1,
18 2022.¹⁰ The Federal Reserve is reducing the size of its balance sheet by only
19 reinvesting principal payments on owned securities after the total amount of
20 payments received exceeds a defined cap. For Treasury Securities, the cap is set at
21 \$30 billion per month for the first three months and \$60 billion per month after the

⁶ Transcript, Chair Powell Press Conference, February 1, 2023; clarification added.

⁷ Federal Reserve Bank of New York, <https://www.newyorkfed.org/markets/domestic-market-operations/monetary-policy-implementation/treasury-securities/treasury-securities-operational-details#monthly-details>.

⁸ Federal Reserve. Press Releases, March 16, 2022; Transcript. Chair Powell Press Conference, February 1, 2023.

⁹ Transcript. Chair Powell Press Conference, February 1, 2023.

¹⁰ Federal Reserve, Press Release, May 4, 2022.

1 first three months. The cap for mortgage-backed securities is set at \$17.5 billion
2 per month for the first three months and \$35 billion per month thereafter.¹¹

- 3 • Further, in his testimony before the Senate Banking Committee on March 7, 2023,
4 Chairman Powell acknowledged that inflation remains above target levels and the
5 Federal Reserve Open Market Committee expects additional increases in the
6 federal funds rate.¹²

7 **V.C. The Effect of Inflation and Monetary Policy on Interest Rates and the**
8 **Investor-Required Return**

9 **Q. What effect will inflation and the Federal Reserve’s normalization of monetary policy**
10 **have on long-term interest rates?**

11 A. Inflation and the Federal Reserve’s normalization of monetary policy are expected to result
12 in long-term interest rates remaining relatively high over at least the next year.
13 Specifically, inflation reduces the purchasing power of the future interest payments an
14 investor expects to receive over the duration of the bond. This risk increases the longer the
15 duration of the bond. As a result, if investors expect increased levels of inflation, they will
16 require higher yields to compensate for the increased risk of inflation, which means interest
17 rates will also remain relatively high.

18 **Q. Have the yields on long-term government bonds increased in response to inflation and**
19 **the Federal Reserve’s normalization of monetary policy?**

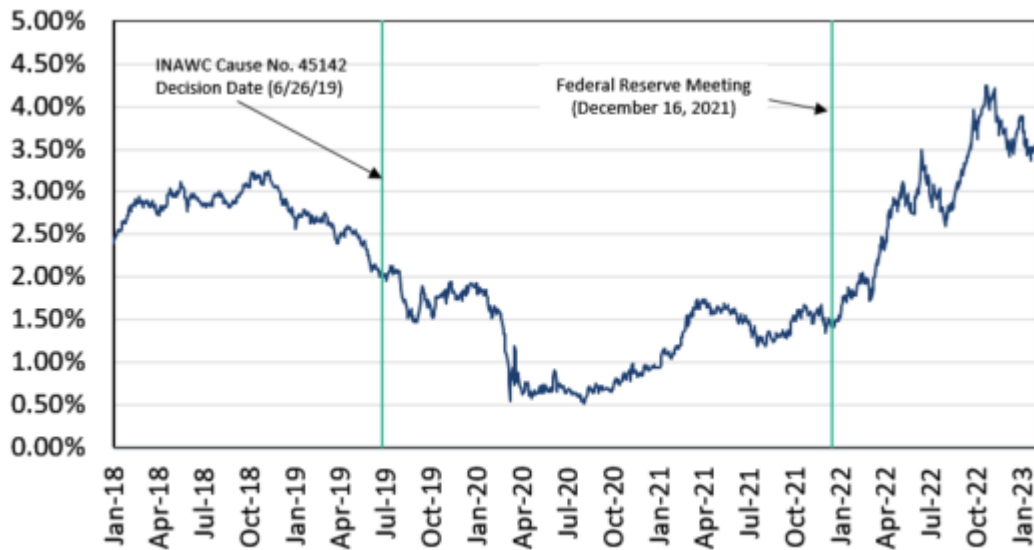
20 A. Yes, they have. At the FOMC meetings throughout 2022 and thus far into 2023, the Federal
21 Reserve has continued to note its concerns over the sustained increased levels of inflation
22 and has continued to accelerate the process of normalizing monetary policy to combat

¹¹ Federal Reserve, Plans for Reducing the Size of the Federal Reserve's Balance Sheet, Press Release, May 4, 2022.

¹² Statement by Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System before the Committee on Banking, Housing and Urban Affairs, U.S. Senate, March 7, 2023.

1 inflation. As shown in Figure 3, since the Federal Reserve’s December 2021 meeting, the
2 yield on 10-year Treasury bond has more than doubled, increasing from 1.47 percent on
3 December 15, 2021 to 3.52 percent on January 31, 2023. The increase is due to the Federal
4 Reserve’s announcements at each of the meetings since December 2021 and the continued
5 elevated levels of inflation.

6 **Figure 3: 10-Year Treasury Bond Yield¹³**
7 January 2021 through January 2023



8
9 **Q. What have equity analysts said about long-term government bond yields?**

10 A. Leading equity analysts have noted that they expect the yields on long-term government
11 bonds to remain elevated through at least the end of 2023. According to the most recent
12 *Blue Chip Financial Forecasts* report, the consensus estimate of the average yield on the
13 10-year Treasury Bond is approximately 3.60 percent through Q1/2024.¹⁴

¹³ S&P Capital IQ Pro.

¹⁴ *Blue Chip Financial Forecasts*, Vol. 42, No. 2, February 1, 2023.

1 **Q. Do recent changes in Gross Domestic Product (“GDP”) affect the current outlook for**
2 **inflation and interest rates?**

3 A. No. While FOMC participants have reduced their projections for economic activity for
4 real GDP growth to 0.5 percent in 2023,¹⁵ which is well below the median estimate for the
5 longer-run normal GDP growth rate, the Fed has highlighted that the labor market
6 continues to be extremely tight, and in fact, the unemployment rate reached 3.4 percent in
7 January 2023, the lowest it has been in over 50 years.¹⁶ Therefore, with a tight labor market
8 and persistently high inflation, the Fed has indicated its need to continue a restrictive
9 monetary policy to moderate demand to better align it with supply.¹⁷

10 **Q. How have interest rates and inflation changed since the Company’s last rate case?**

11 A. As shown in Figure 4, when the Commission authorized an ROE of 9.80 percent in the
12 Company’s 2018 rate proceeding, interest rates (as measured by the 30-year Treasury bond
13 yield) were 2.65 percent at the time of the Commission decision, and inflation was 1.69
14 percent. However, since the Company’s last rate proceeding, long-term interest rates have
15 increased over 100 basis points, and, as discussed, inflation is also substantially higher and
16 remains near 40-year highs.

17 **Figure 4: Change in Market Conditions Since Company’s Last Rate Case**

Docket	Decision Date	Federal Funds Rate	30-Day Average of 30-Year Treasury Bond Yield	Inflation Rate	Authorized ROE
Case No. 45142	06/26/2019	2.38%	2.65%	1.69%	9.80%
Current	01/31/2023	4.33%	3.71%	6.42%	

¹⁵ FOMC, Summary of Economic Projections, December 14, 2022.

¹⁶ Mutikani, Lucia. “U.S. reports blowout job growth; unemployment lowest since 1969.” Reuters, February, 3, 2023.

¹⁷ Transcript, Chair Powell, Press Conference, February 1, 2023.

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V.D. Expected Performance of Utility Stocks and the Investor-Required Return on Utility Investments

Q. Are utility share prices correlated to changes in the yields on long-term government bonds?

A. Yes. Interest rates and utility share prices are inversely correlated, which means that increases in interest rates result in declines in the share prices of utilities and vice versa. For example, Goldman Sachs and Deutsche Bank examined the sensitivity of share prices of different industries to changes in interest rates over the past five years. Both Goldman Sachs and Deutsche Bank found that utilities had one of the strongest negative relationships with bond yields (*i.e.*, increases in bond yields resulted in the decline of utility share prices).¹⁸

Q. How do equity analysts expect the utilities sector to perform in an increasing interest rate environment?

A. Equity analysts project that utilities will underperform the broader market given high inflation and the recent increases in interest rates. Fidelity classifies the utility sector as underweight,¹⁹ and Morningstar recently noted that many of the market conditions that supported the premium valuation of utilities over the last decade mainly low inflation, interest rates and energy prices are currently reversing:

¹⁸ Lee, Justina. "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, 11 Mar. 2021, www.bloomberg.com/news/articles/2021-03-11/wall-street-is-rethinking-the-treasury-threat-to-big-tech-stocks.
¹⁹ Fidelity. "First Quarter 2023 Investment Research Update." February 8, 2023.

1 Utilities' relative outperformance in 2022 while the market frets about the
2 economy suggests that utilities remain a defensive haven. Utilities also
3 outperformed ahead of the 2001 and the 2007-09 recessions. However, we
4 think utilities' weak total returns in 2022 should concern investors. For the
5 first time in a decade, the tailwinds supporting utilities' earnings growth and
6 premium valuations (low inflation, low interest rates, and low energy price)
7 are reversing.

8 Utilities' growth prospects are our biggest concern going into 2023. Utilities
9 no longer offer a yield premium as bond yields climbed to their highest level
10 in 15 years. Without that yield premium, the only advantage utilities offer
11 investors is earnings growth. This is why high inflation and rising interest
12 rates loom large for utilities in 2023. Inflation, including higher energy
13 prices, will raise customer bills and could force utilities to re-evaluate their
14 growth plans. Higher interest costs will sap cash flow and make
15 infrastructure investments more expensive.²⁰

16 Additionally, the *Wall Street Journal* recently attributed the 14 percent decline in the S&P
17 Utilities Index between September and October 2022 to the recent increase in long-term
18 treasury yields:

19 A big draw of utility stocks has become less attractive as interest rates have
20 climbed. Utility stocks are known for their sizable dividends, offering
21 investors a regular stream of income. Companies in the S&P 500 utilities
22 sector offer a dividend yield of 3.3%, among the highest payout percentages
23 in the index, according to FactSet.

24 But the outsize dividends of utility stocks are no match for climbing bond
25 yields. The yield on the benchmark 10-year Treasury note finished above
26 4% on Monday for a second consecutive session. Friday marked the 10-year
27 yield's first close above the 4% level since 2008 and 11 straight weeks of
28 gains. Treasuries are viewed as essentially risk-free if held to maturity.

29 "The 10-year is repricing everything. I've got something that's even safer
30 and yields even more," said Kevin Barry, chief investment officer at
31 Summit Financial, comparing Treasuries and utility stocks.²¹

²⁰ Miller, Travis. "Can Utilities Maintain Growth Against Macroeconomic Headwinds?" *Morningstar*, January 3, 2023.

²¹ Miao, Hannah, "Utility Stocks Stumble as Treasury Yields Climb," *The Wall Street Journal*, October 18, 2022.

1 Similarly, Barron’s recently noted that the decline in share prices can be attributed to the
2 relatively high valuations and low dividend yields of utilities as compared to other asset
3 classes such as Treasuries.²² According to Barron’s, even after the recent decline in share
4 prices, the Utilities Select ETF was yielding 2.85 percent, which is a yield that will not
5 “lure in buyers when the ultrasafe 10-year Treasury note yields close to 4%.”²³ Therefore,
6 Barron’s currently recommends not buying utility stocks.

7 **Q. Why do equity analysts expect the utility sector to underperform over the near-term?**

8 A. While interest rates have increased substantially over the past year, the valuations of
9 utilities have remained elevated and have not fully reflected the effect of the recent increase
10 in interest rates. To illustrate this point, I examined the difference between the dividend
11 yields of utility stocks and the yields on long-term government bonds (*i.e.*, the “yield
12 spread”). I selected the dividend yield on the S&P Utilities Index as the measure of the
13 dividend yields for the utility sector and the yield on the 10-year Treasury bond as the
14 estimate of the yield on long-term government bonds. As shown in Figure 5, the yield
15 spread as of January 31, 2022 was negative 0.49 percent, meaning that the yield on the 10-
16 year Treasury bond exceeds the dividend yield for the S&P Utilities Index. Furthermore,
17 the current negative yield spread is well below the long-term average yield spread since
18 2010 of 1.36 percent. Given that the yield spread is currently well below the long-term
19 average, as well as the expectation that interest rates will remain relatively high through at
20 least through the next year, it is reasonable to conclude that the utility sector will most

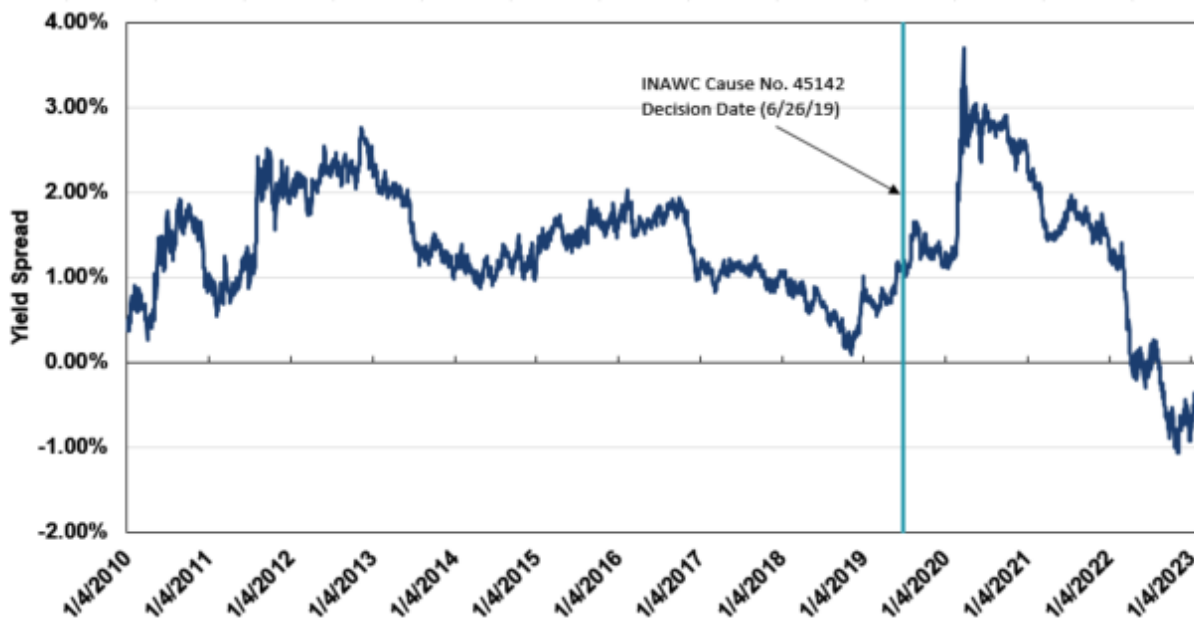
²² Sonenshine, Jacob, “Utilities Stocks Have Fallen off a Cliff. They Just Got Downgraded, Too,” Barron’s, October 17, 2022.

²³ *Id.*

1 likely underperform over the near-term. This is because investors that purchased utility
2 stocks as an alternative to the lower yields on long-term government bonds would
3 otherwise be inclined to rotate back into government bonds, particularly as the yields on
4 long-term government bonds remain elevated, thus resulting in a decrease in the share
5 prices of utilities.

6 **Figure 5: Spread between the S&P Utilities Index Dividend Yield and the 10-Year**
7 **Treasury Bond Yield²⁴**

8 January 2012 through January 2023



11 **Q. Do you have any further context as to how unlikely it is to have a negative yield spread**
12 **of this magnitude?**

13 **A.** Yes. For further context as to how unlikely it is to have a yield spread of -0.49 percent, I
14 calculated the z-score for the current yield spread, which measures the number of standard

²⁴ S&P Capital IQ Pro and Bloomberg Professional.

1 deviations from the mean. The current yield spread of -0.49 percent has a z-score of -2.51,
2 indicating that a yield spread of -0.49 percent is over 2 standard deviations from the mean
3 of 1.36 percent. In other words, 95 percent of the daily yield spread observations from
4 2010 to 2023 fall between -0.11 percent and 2.83 percent, with the current yield spread of
5 -0.49 percent being outside of that range. Thus, the current yield spread is an outlier, which
6 is why equity analysts do not expect this current level to hold.

7 **Q. What is the significance of the inverse relationship between interest rates and utility**
8 **share prices in the current market?**

9 A. If interest rates remain relatively high as expected, then the share prices of utilities, which
10 have been strong in 2022 relative to the market, would be expected to decline. If the prices
11 of utility stocks decline, then the DCF model, which relies on historical averages of share
12 prices to calculate the dividend yield, is likely to understate the dividend yield and thus the
13 cost of equity.

14 **Q. Have regulatory commissions acknowledged that the DCF model might understate**
15 **the cost of equity given the current capital market conditions of high inflation and**
16 **increasing interest rates?**

17 A. Yes. For example, in its May 2022 decision in establishing the cost of equity for Aqua
18 Pennsylvania, Inc., the Pennsylvania Public Utility Commission concluded that the current
19 capital market conditions of high inflation and increasing interest rates has resulted in the
20 DCF model understating the utility cost of equity, and that weight should be placed on risk
21 premium models, such as the CAPM, in the determination of the ROE:

22 To help control rising inflation, the Federal Open Market Committee has
23 signaled that it is ending its policies designed to maintain low interest rates.

1 Aqua Exc. at 9. Because the DCF model does not directly account for
2 interest rates, consequently, it is slow to respond to interest rate changes.
3 However, I&E's CAPM model uses forecasted yields on ten-year Treasury
4 bonds, and accordingly, its methodology captures forward looking changes
5 in interest rates.

6 Therefore, our methodology for determining Aqua's ROE shall utilize both
7 I&E's DCF and CAPM methodologies. As noted above, the Commission
8 recognizes the importance of informed judgment and information provided
9 by other ROE models. In the 2012 PPL Order, the Commission considered
10 PPL's CAPM and RP methods, tempered by informed judgment, instead of
11 DCF-only results. We conclude that methodologies other than the DCF can
12 be used as a check upon the reasonableness of the DCF derived ROE
13 calculation. Historically, we have relied primarily upon the DCF
14 methodology in arriving at ROE determinations and have utilized the results
15 of the CAPM as a check upon the reasonableness of the DCF derived equity
16 return. As such, where evidence based on other methods suggests that the
17 DCF-only results may understate the utility's ROE, we will consider those
18 other methods, to some degree, in determining the appropriate range of
19 reasonableness for our equity return determination. In light of the above, we
20 shall determine an appropriate ROE for Aqua using informed judgement
21 based on I&E's DCF and CAPM methodologies.²⁵

22

23 We have previously determined, above, that we shall utilize I&E's DCF and
24 CAPM methodologies. I&E's DCF and CAPM produce a range of
25 reasonableness for the ROE in this proceeding from 8.90% [DCF] to 9.89%
26 [CAPM]. Based upon our informed judgment, which includes consideration
27 of a variety of factors, including increasing inflation leading to increases in
28 interest rates and capital costs since the rate filing, we determine that a base
29 ROE of 9.75% is reasonable and appropriate for Aqua.²⁶

30 V.E. Conclusion

31 **Q. What are your conclusions regarding the effect of current market conditions on the**
32 **cost of equity for the Company?**

²⁵ *Penn. Pub. Util. Comm'n et.al. v. Aqua Penn. Wastewater Inc.*, Pennsylvania Public Utility Commission, Docket Nos. R-2021-3027385 and R-2021-3027386, Opinion and Order, May 12, 2022, pp. 154–155.

²⁶ *Id.*, Opinion and Order, May 12, 2022, pp. 177–178.

1 A. Through 2023, investors expect long-term interest rates to remain relatively high in
2 response to continued elevated levels of inflation and the Federal Reserve’s normalization
3 of monetary policy. Because the share prices of utilities are inversely correlated to interest
4 rates, and government bond yields are already substantially greater than utility stock
5 dividend yields, the share prices of utilities will likely decline, which is the reason a number
6 of equity analysts have classified the utility sector as either underperform or underweight.
7 The expected underperformance of utilities means that DCF models using recent historical
8 data likely underestimate investors’ required return over the period that rates will be in
9 effect. Therefore, this expected change in market conditions supports consideration of the
10 higher end of the range of cost of equity results produced by the DCF models. Moreover,
11 prospective market conditions warrant consideration of forward-looking cost of equity
12 estimation models such as the CAPM and ECAPM, which may better reflect expected
13 market conditions.

14 VI. PROXY GROUP SELECTION

15 **Q. Why have you used a group of proxy companies to estimate the cost of equity for**
16 **INAWC?**

17 A. In this proceeding, I am estimating the cost of equity for INAWC, which is a rate regulated
18 subsidiary of American Water. Since the ROE is a market-based concept, and given the
19 fact that INAWC’s operations do not make up the entirety of a publicly-traded entity, it is
20 necessary to establish a group of companies that is both publicly-traded and comparable to
21 the Company in certain fundamental business and financial respects to serve as its “proxy”
22 for purposes of the ROE estimation process. The proxy companies used in my analyses all
23 possess a set of operating and financial risk characteristics that are substantially

1 comparable to INAWC, and, therefore, provide a reasonable basis for deriving the
2 appropriate ROE.

3 **Q. Please provide a brief profile of INAWC.**

4 A. INAWC, a wholly-owned subsidiary of American Water, provides water distribution
5 service to approximately 328,000 customers and wastewater services to approximately
6 2,400 customers in Indiana.²⁷ The Company can access debt markets through American
7 Water Capital Corp. (“AWCC”) or independently. The current credit ratings for AWCC
8 and American Water are as follows: (1) S&P – A (Outlook: Stable)²⁸; and (2) Moody’s –
9 Baa1 (Outlook: Stable).²⁹

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

11 A. I began with the group of U.S. utilities that Value Line classifies as “Water Utilities” and
12 “Natural Gas Distribution Companies”. That combined group includes 17 domestic U.S.
13 utilities. I simultaneously applied the following screening criteria to select companies that:

- 14 • pay consistent quarterly cash dividends because companies that do not cannot be
15 analyzed using the Constant Growth DCF model;
- 16 • have investment grade long-term issuer ratings from S&P and/or Moody’s;
- 17 • are covered by at least two utility industry analysts;
- 18 • have positive long-term earnings growth forecasts from at least two utility industry
19 equity analysts;
- 20 • derive more than 60.00 percent of their total operating income from regulated
21 operations; and

²⁷ Direct Testimony of Gregory Shimansky.

²⁸ S&P Global Ratings, American Water Works Co. Inc., February 6, 2023.

²⁹ Moody’s Investors Service, accessed March 21, 2023. Moody’s last rating change for American Water Works Company, Inc was as of April 1, 2019. (https://www.moodys.com/research/Moodys-downgrades-American-Water-and-American-Water-Capital-Corp-to--PR_397640)

1 • were not parties to a merger or transformative transaction during the analytical
2 periods relied on.

3 **Q. Did you consider any additional companies for inclusion in your proxy group?**

4 A. Yes. I also considered the group of 36 companies that Value Line classifies as “Electric
5 Utilities”. In determining which electric utilities would qualify for inclusion in my proxy
6 group, I started by relying on the criteria used to screen the water and natural gas utilities.
7 I then applied two additional screening criteria to only include electric utilities that would
8 be considered risk comparable to INAWC:

9 • have owned generation comprising less than 10 percent of the company’s MWh
10 sales to ultimate customers to ensure that the electric utilities included did not own
11 a substantial amount of generation and therefore had operations that were primarily
12 transmission and distribution; and

13 • own water and wastewater operations.

14 **Q. Did you include American Water in your proxy group?**

15 A. No. Consistent with my general practice of excluding the subject company, or its parent
16 holding company, from the proxy group, I have excluded American Water from my proxy
17 group for INAWC.

18 **Q. What is the composition of your proxy group?**

19 A. The screening criteria discussed above resulted in a proxy group consisting of the
20 companies in Figure 6.

1

Figure 6: Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Spire, Inc.	SR
Eversource Energy	ES
American States Water Company	AWR
California Water Service Group	CWT
Middlesex Water Company	MSEX
SJW Group	SJW
Essential Utilities, Inc.	WTRG

2

3 **Q. Why did you include electric utilities and natural gas distribution companies in the**
4 **proxy group?**

5 A. Value Line currently classifies only seven companies as water utilities. Therefore, the
6 universe of water utilities is already small before a set of screening criteria are applied.
7 Additionally, there has been a recent trend towards consolidation in the utility industry,
8 which reduces the number of available proxy companies.³⁰ Because there are a small
9 number of companies that are available for inclusion in the proxy group, I also considered
10 electric utilities and natural gas distribution companies that meet the screening criteria.

11 **Q. Are electric utilities and natural gas distribution companies reasonably comparable**
12 **to water utilities to be included in a proxy group used to estimate the cost of equity**
13 **for a water utility?**

³⁰ Chediak, Mark, et al. "Utility M&A Is So Hot Not Even Berkshire's Billions Won a Bid." Bloomberg.com, Bloomberg, 3 Jan. 2018, www.bloomberg.com/news/articles/2018-01-03/utility-m-a-is-so-hot-not-even-berkshire-s-billions-won-a-bid.

1 A. Yes, I believe that it is reasonable to rely on a combined proxy group. As noted above, due
2 to consolidation in the water utility industry, there is only a small group of water companies
3 that can be included in the proxy group. In addition, the screening criteria relied on for my
4 proxy group require that a company derive more than 60 percent of their operating income
5 from regulated operations. Therefore, the electric utilities and natural gas distribution
6 companies included in my proxy group generate a large portion of their operating income
7 from regulated operations similar to INAWC and the water utilities that will be included
8 in the proxy group. As a result, I believe that it is appropriate to include electric utilities
9 and natural gas distribution companies in my proxy group.

10 **Q. Have other regulators considered the inclusion of other utility industry segments in**
11 **the proxy group used to estimate the cost of equity for a water utility?**

12 A. Yes. The Massachusetts Department of Public Utilities (“MDPU”), the Florida Public
13 Service Commission (“FPUC”), the Kentucky Public Service Commission (“KYPSC”),
14 and the Illinois Commerce Commission (“ICC”) have considered the results of a proxy
15 group that includes natural gas companies when determining the authorized ROE for water
16 and wastewater utilities. In Docket No. 17-90, the MDPU determined that the use of a
17 natural gas utility proxy group was appropriate for the purpose of demonstrating the
18 comparability of the investment risk of the proxy group to Aquarion Water Company.³¹

19 In Docket No. 20180006-WS, the FPUC modified the methodology used to estimate the
20 ROE for water and wastewater utilities in Florida to include a combined proxy group of

³¹ Massachusetts Department of Public Utilities, Docket No. 17-90, Petition of Aquarion Water Company of Massachusetts, Inc., pursuant to G.L. c. 164, § 94, and G.L. c. 165, § 2, for Approval of a General Rate Increase as set forth in M.D.P.U. No. 3., October 31, 2018, p. 286-287.

1 natural gas and water utilities.³² The FPUC has previously relied on a natural gas only
2 proxy group to estimate the ROE for water and wastewater utilities;³³ however, to increase
3 the size of the proxy group, the FPUC decided to rely on a combined proxy group.
4 Specifically, the FPUC noted:

5 The leverage formula methodology shall be modified to include a combined
6 proxy group of natural gas and WAW utilities as proxy companies in
7 calculating the leverage formula. We find that the selected natural gas
8 utilities and WAW utilities that derive at least 50 percent of their revenue
9 from regulated rates. These utilities have market power and are influenced
10 significantly by economic regulation. In Attachment 1, the returns
11 calculated using the proxy group are adjusted to reflect the risks faced by
12 Florida WAW utilities. The updated index consists of five natural gas
13 companies and seven WAW companies that derive at least 50 percent of
14 their total revenue from regulated operations. These companies have a
15 median Standard and Poor's bond rating of "A".³⁴

16 In Case No. 2018-00358 for Kentucky-American Water Company ("Kentucky
17 American"), the KYPSC noted that the authorized ROE for Kentucky-American was
18 within the range of DCF and CAPM results produced by Kentucky-American and the
19 Attorney General.³⁵ To develop the DCF and CAPM models, Kentucky-American and the
20 Attorney General relied on two proxy groups: (1) a water only proxy group; and (2) a
21 combined proxy group which included natural gas utilities.³⁶ Therefore, the KYPSC has

³² Docket No. 20180006-WS, In re. Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f),F.S., Order No. PSC-2018-0327-PAA-WS, at 7.

³³ Docket No. 170006-WS, In re. Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f),F.S., Order No. PSC-17-0249-PAA-WS, at 2.

³⁴ Docket No. 20180006-WS, In re. Water and wastewater industry annual reestablishment of authorized range of return on common equity for water and wastewater utilities pursuant to Section 367.081(4)(f),F.S., Order No. PSC-2018-0327-PAA-WS, at 8.

³⁵ Case No. 2018-00358, In the matter of: Electronic Application of Kentucky-American Water Company for an Adjustment of Rates, Order, June 27, 2019, at 66.

³⁶ *Id.*, at 55-56.

1 also considered, when determining the authorized ROE for a water company, ROE results
2 based on a proxy group that includes both natural gas and water utilities.

3 Finally, in Case No. 22-0210, for Illinois-American Water Company, the ICC agreed that
4 a proxy group of water and public utility companies was a reasonable sample upon which
5 to apply the various COE estimation models.³⁷

6 VII. COST OF EQUITY ESTIMATION

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

8 A. The ROE is the cost of common equity capital in the utility's capital structure for
9 ratemaking purposes. The overall rate of return for a regulated utility is the weighted
10 average cost of capital, in which the cost rates of the individual sources of capital are
11 weighted by their respective book values. While the costs of debt and preferred stock can
12 be directly observed, the cost of equity is market-based and, therefore, must be estimated
13 based on observable market data.

14 **Q. How is the required cost of equity determined?**

15 A. The required cost of equity is estimated by using analytical techniques that rely on market-
16 based data to quantify investor expectations regarding equity returns, adjusted for certain
17 incremental costs and risks. Informed judgment is then applied to determine where the
18 company's cost of equity falls within the range of results produced by multiple analytical
19 techniques. The key consideration in determining the cost of equity is to ensure that the

³⁷ Illinois Commerce Commission, Illinois-American Water Company Proposed Rate increases for Water and Sewer Service (tariffs filed February 10, 2022), Docket No. 22-0210, Order, December 15, 2022, at 102.

1 methodologies employed reasonably reflect investors' views of the financial markets in
2 general, as well as the subject company (in the context of the proxy group), in particular.

3 **Q. What methods did you use to estimate INAWC's cost of equity?**

4 A. I considered the results of the Constant Growth DCF model, the CAPM, and the ECAPM.
5 As discussed in more detail below, a reasonable ROE estimate considers alternative
6 methodologies, observable market data, and the reasonableness of their individual and
7 collective results.

8 **VII.A. Importance of Multiple Analytical Approaches**

9 **Q. Is it important to use more than one analytical approach?**

10 A. Yes. Because the cost of equity is not directly observable, it must be estimated based on
11 both quantitative and qualitative information. When faced with the task of estimating the
12 cost of equity, analysts and investors are inclined to gather and evaluate as much relevant
13 data as reasonably can be analyzed. Several models have been developed to estimate the
14 cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical
15 matter, however, all of the models available for estimating the cost of equity are subject to
16 limiting assumptions or other methodological constraints. Consequently, many well-
17 regarded finance texts recommend using multiple approaches when estimating the cost of
18 equity. For example, Copeland, Koller, and Murrin³⁸ suggest using the CAPM and

³⁸ Tom Copeland, Tim Koller and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.

1 Arbitrage Pricing Theory model, while Brigham and Gapenski³⁹ recommend the CAPM,
2 DCF, and Bond Yield Plus Risk Premium approaches.

3 **Q. Do current market conditions support the reliance on more than one analytical**
4 **approach?**

5 A. Yes. As I discussed above, interest rates have increased substantially over the past year
6 and are expected to remain elevated over at least the next year from the lows seen during
7 the COVID-19 pandemic. The benefit of using multiple models is that each model relies
8 on different assumptions, certain of which may better reflect current and projected market
9 conditions at different times. As discussed previously, the CAPM and the ECAPM
10 analyses offer some balance through the use of projected interest rates since the effect of
11 changes in interest rates, particularly the recent increase in interest rates, may not be
12 captured as well in the DCF model at this time. Therefore, it is important to use multiple
13 analytical approaches to ensure that the cost of equity results reflect market conditions that
14 are expected during the period that the Company's rates will be in effect.

15 **Q. Has the Commission also recognized the benefits of using more than one model to**
16 **estimate the cost of equity?**

17 A. Yes. In a recent decision for Duke Energy Indiana, LLC, the Commission explained that:

18 [t]he Commission is also mindful that “the cost of common equity cannot
19 be precisely calculated and estimating it requires the use of judgment.”
20 Indiana-American Water Co., Cause No. 44022, p. 35 (June 6, 2012). Due
21 to this lack of precision, the use of multiple methods is desirable, in part,
22 because no one method will produce reasonable results under all conditions
23 and in all circumstances. The Commission is also mindful of the strengths
24 and weaknesses of the various models typically used to estimate a utility's

³⁹ Eugene Brigham, Louis Gapenski, *Financial Management: Theory and Practice*, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

1 cost of common equity, and we find that with appropriate and reasonable
2 inputs, models such as the DCF and other methods can produce reasonable
3 estimates of a utility's cost of common equity. Consistent with the standards
4 in *Hope* and *Bluefield*, as well as under Indiana law, DEI's authorized return
5 on equity should be reasonable given the totality of the circumstances.⁴⁰

6 VII.B. Constant Growth DCF Model

7 **Q. Please describe the DCF approach.**

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

$$11 \quad P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

12 Where P_0 represents the current stock price, $D_1 \dots D_\infty$ are all expected future dividends,
13 and k is the discount rate, or required ROE. Equation [1] is a standard present value
14 calculation that can be simplified and rearranged into the following form:

$$15 \quad k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

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

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

19 A. The Constant Growth DCF model requires the following four assumptions: (1) a constant
20 growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant
21 price-to-earnings ratio; and (4) a discount rate greater than the expected growth rate. To

⁴⁰ Duke Energy Indiana, LLC, Cause No. 45253, Order of the Commission issued June 29, 2020, at 57-58.

1 the extent that any of these assumptions are not objectively valid, considered judgment
2 and/or specific adjustments should be applied to the results.

3 **Q. What market data do you use to calculate the dividend yield in your Constant Growth**
4 **DCF model?**

5 A. The dividend yield in my Constant Growth DCF model is based on the proxy group
6 companies' current annualized dividend and average closing stock prices over the 30-, 90-,
7 and 180-trading days ended January 31, 2023.

8 **Q. Why do you use 30-, 90-, and 180-day averaging periods?**

9 A. I use an average of recent trading days to calculate the term P_0 in the DCF model to reflect
10 current market data while also ensuring that the result of the model is not skewed by
11 anomalous events that may affect stock prices on any given trading day.

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

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

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

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

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

9 A. My Constant Growth DCF model incorporates three sources of long-term earnings growth
10 rates: (1) Zacks Investment Research; (2) Yahoo! Finance; and (3) *Value Line Investment*
11 *Survey* (“*Value Line*”).

12 **Q. How did you calculate the range of results for the Constant Growth DCF Model?**

13 A. I calculated a low-end result for my DCF model using the minimum growth rate of the
14 three sources (*i.e.*, the lowest of the Zacks, Yahoo Finance, and *Value Line* projected
15 earnings growth rates) for each of the proxy group companies. I used a similar approach
16 to calculate a high-end result, using the maximum growth rate of the three sources for each
17 proxy group company. The mean results were calculated using the average growth rate
18 from all three sources for each proxy group company.

19 **Q. What were the results of your DCF analyses?**

20 A. Figure 7 summarizes the results of my DCF analyses. As shown in Figure 7, the mean and
21 median DCF results using the average growth rates range from 9.65 percent to 9.97 percent,
22 and the mean and median results using the maximum growth rates range from 10.76 percent

1 to 11.04 percent. While I also summarize the DCF results using the minimum growth rates,
 2 given the expected underperformance of utility stocks going forward and thus the
 3 likelihood that the DCF model is understating the cost of equity, I do not believe it is
 4 appropriate to consider these DCF results at this time.

5 **Figure 7: Summary of Constant Growth DCF Results**

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Constant Growth DCF			
Mean Results:			
30-Day Average	8.55%	9.65%	10.94%
90-Day Average	8.65%	9.76%	11.04%
180-Day Average	8.62%	9.72%	11.01%
Average	8.61%	9.71%	10.99%
Median Results:			
30-Day Average	8.50%	9.86%	10.76%
90-Day Average	8.62%	9.97%	10.87%
180-Day Average	8.60%	9.88%	10.77%
Average	8.57%	9.90%	10.80%

6
 7 **Q. What are your conclusions about the results of the DCF models?**

8 A. As discussed previously, one primary assumption of the DCF models is a constant price-
 9 to-earnings ratio. That assumption is heavily influenced by the market price of utility
 10 stocks. Since utility stocks are expected to underperform the broader market over the near-
 11 term as interest rates remain elevated and yields on long-term government bonds exceed
 12 utility dividend yields, it is important to consider the results of the DCF models with
 13 caution. Therefore, while I have given weight to the results of the Constant Growth DCF
 14 model, my recommendation also gives weight to the results of other cost of equity
 15 estimation models.

VII.C. CAPM Analysis

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Q. Please briefly describe the CAPM.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable or “systematic” risk of that security. Systematic risk is the risk inherent in the entire market or market segment—which cannot be diversified away using a portfolio of assets. Unsystematic risk is the risk of a specific company that can, theoretically, be mitigated through portfolio diversification.

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

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

Where:

- Ke = the required market ROE;
- β = beta coefficient of an individual security;
- rf = the risk-free rate of return; and
- rm = the required return on the market.

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

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

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

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

7 A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average
8 yield on 30-year U.S. Treasury bonds, which is 3.71 percent;⁴¹ (2) the average projected
9 30-year U.S. Treasury bond yield for the second quarter of 2023 through the second quarter
10 of 2024, which is 3.82 percent;⁴² and (3) the average projected 30-year U.S. Treasury bond
11 yield for 2024 through 2028, which is 3.90 percent.⁴³

12 **Q. What Beta coefficients did you use in your CAPM analyses?**

13 A. As shown in Attachment AEB-4, I used the average Beta coefficients for the proxy group
14 companies as reported by Bloomberg and *Value Line*. The beta coefficients reported by
15 Bloomberg are calculated using ten years of weekly returns relative to the S&P 500 Index.
16 Value Line's calculation of the beta coefficients is based on five years of weekly returns
17 relative to the New York Stock Exchange Composite Index ("NYSE"). Additionally, as
18 shown on Attachment AEB-4 and Attachment AEB-5, I also considered an additional
19 CAPM analysis that relies on the long-term average utility beta coefficient for the

⁴¹ Bloomberg Professional as of January 31, 2023.

⁴² Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 2.

⁴³ Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 14.

1 companies in my proxy group, which is calculated as an average of the *Value Line* beta
2 coefficients for the companies in my proxy group from 2013 through 2022.

3 **Q. How did you estimate the Market Risk Premium in the CAPM?**

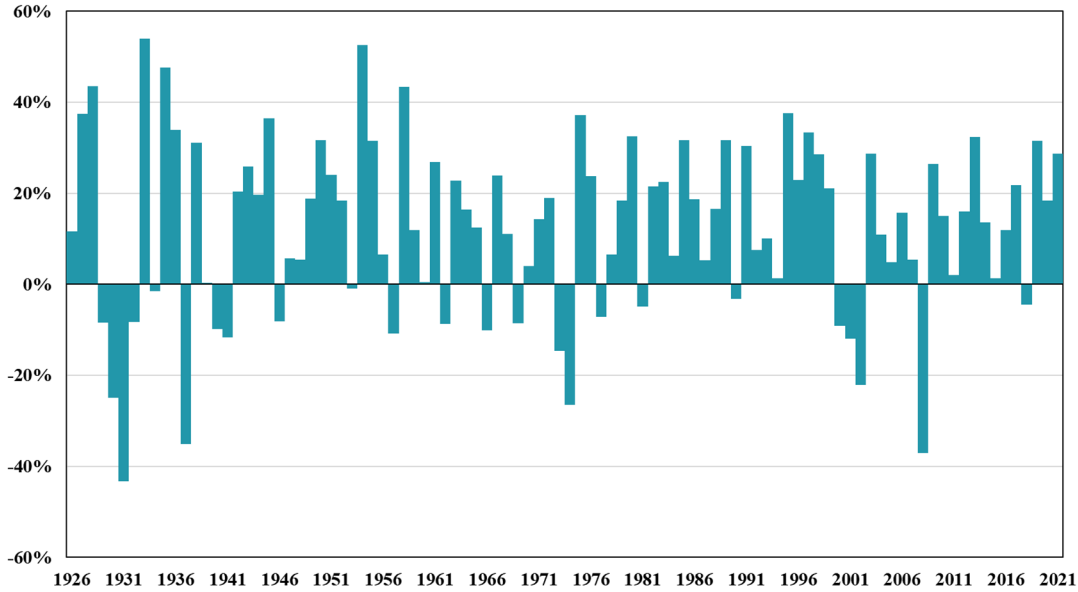
4 A. I estimated the market risk premium as the difference between the implied expected equity
5 market return and the risk-free rate. As shown in Attachment AEB-6, the expected market
6 return is calculated using the Constant Growth DCF model discussed earlier in my
7 testimony for the companies in the S&P 500 Index. Based on an estimated market
8 capitalization-weighted dividend yield of 1.75 percent and a weighted long-term earnings
9 growth rate of 10.65 percent, the estimated required market return for the S&P 500 Index
10 as of January 31, 2023 is 12.50 percent. Based on the three risk-free rates considered, the
11 implied market risk premia ranges from 8.60 percent to 8.79 percent.

12 **Q. How does the current expected market return compare to observed historical market
13 returns?**

14 A. As shown in Figure 8, given the range of annual equity returns that have been observed
15 over the past century, a current expected market return of 12.50 percent is not unreasonable.
16 As shown, in 50 out of the past 96 years (or roughly 52 percent of observations), the
17 realized equity market return was at least 12.50 percent or greater.

1

Figure 8: Realized U.S. Equity Market Returns (1926-2021)⁴⁴



2

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

4 A. Yes. I have also considered the results of an ECAPM in estimating the cost of equity for
 5 INAWC.⁴⁵ The ECAPM calculates the product of the adjusted beta coefficient and the
 6 market risk premium and applies a weight of 75.00 percent to that result. The model then
 7 applies a 25.00 percent weight to the market risk premium without any effect from the beta
 8 coefficient. The results of the two calculations are summed, along with the risk-free rate,
 9 to produce the ECAPM result, as noted in Equation [5] below:

$$10 \quad k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [5]$$

11 Where:

12 k_e = the required market ROE

13 β = Adjusted Beta coefficient of an individual security

14 r_f = the risk-free rate of return

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

⁴⁴ Depicts total annual returns on large company stocks, as reported in the 2022 Kroll SBBI Yearbook.

⁴⁵ See, e.g., Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006, at 189.

1 In essence, the empirical form of the CAPM addresses the tendency of the “traditional”
 2 CAPM to underestimate the cost of equity for companies with low beta coefficients such
 3 as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted
 4 betas in the traditional CAPM; rather, it recognizes the results of academic research
 5 indicating that the risk-return relationship is different (in essence, flatter) than estimated
 6 by the CAPM, and that the CAPM underestimates the “alpha,” or the constant return term.⁴⁶

7 As with the CAPM, my application of the ECAPM uses the forward-looking market risk
 8 premium estimates, the three yields on 30-year Treasury securities noted earlier as the risk-
 9 free rate, and the current Bloomberg and *Value Line* and long-term *Value Line* beta
 10 coefficients.

11 **Q. What are the results of your CAPM analyses?**

12 A. As shown in Figure 9 (*see* also Attachment AEB-4), my traditional CAPM analyses produce
 13 a range of returns from 10.19 percent to 10.88 percent. The ECAPM analysis results range
 14 from 10.77 percent to 11.29 percent.

15 **Figure 9: CAPM Results**

	Current 30-day Average 30- Year Treasury Bond Yield	Near-Term Forecast 30- Year Treasury Yield	Longer-Term Forecast 30- Year Treasury Yield
CAPM:			
Current Value Line Beta	10.85%	10.87%	10.88%
Current Bloomberg Beta	10.47%	10.49%	10.51%
Long-term Avg. Beta	10.19%	10.22%	10.24%
ECAPM:			
Current Value Line Beta	11.26%	11.28%	11.29%
Current Bloomberg Beta	10.98%	10.99%	11.01%

⁴⁶ *Id.*, at 191.

1 **VIII. REGULATORY AND BUSINESS RISKS**

2 **Q. Taken alone, do the results from the cost of equity estimation models for the proxy**
3 **group provide an appropriate estimate of the cost of equity for the Company?**

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

9 **VIII.A. Flotation Costs**

10 **Q. What are flotation costs?**

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

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

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

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

20 A. Flotation costs are part of the invested costs of the utility, which are properly reflected on
21 the balance sheet under "paid in capital." They are not current expenses, and, therefore,

1 are not reflected on the income statement. Rather, like investments in rate base or the
2 issuance costs of long-term debt, flotation costs are incurred over time. As a result, the
3 great majority of a utility's flotation cost is incurred prior to the test year but remains part
4 of the cost structure that exists during the test year and beyond, and as such, should be
5 recognized for ratemaking purposes. Therefore, it is irrelevant whether an issuance occurs
6 during the test year or is planned for the test year because failure to allow recovery of past
7 flotation costs may deny INAWC the opportunity to earn its authorized rate of return in the
8 future.

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

11 A. As shown in Schedule AEB-7 in American Water's most recent stock issuance, the offering
12 price was \$135.5 per share of common stock. After paying flotation costs associated with
13 the equity issuance, which include fees paid to underwriters and attorneys, among others,
14 American Water's net proceeds are only \$133.40 per share invested. American Water
15 invests that \$133.4 per share in plant used to serve its customers, which becomes part of
16 rate base. Absent a flotation cost adjustment, the investor will thereafter earn a return on
17 only the \$133.4 per share invested in rate base, even though the contribution was \$135.5.
18 Making a small flotation cost adjustment gives the investor a reasonable opportunity to
19 earn the authorized return, rather than the lower return that results when the authorized
20 return is applied to an amount less than what the investor contributed.

21 **Q. Is the need to consider flotation costs eliminated because INAWC is a wholly-owned**
22 **subsidiary of American Water?**

1 A. No. Although INAWC is a wholly-owned subsidiary of American Water, it is appropriate
2 to consider flotation costs because wholly-owned subsidiaries receive equity capital from
3 their parent and provide returns on the capital that roll up to the parent, which is designated
4 to attract and raise capital based upon the returns of those subsidiaries. To deny recovery
5 of issuance costs associated with the capital that is invested in the subsidiaries ultimately
6 penalizes the investors that fund the utility operations and inhibits the utility's ability to
7 obtain new equity capital at a reasonable cost. This is important for INAWC because, as I
8 will discuss in more detail below, the Company is planning significant capital expenditures
9 in the near term.

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

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

16 Flotation costs occur when new issues of stock or debt are sold to the public.
17 The firm usually incurs several kinds of flotation or transaction costs, which
18 reduce the actual proceeds received by the firm. Some of these are direct
19 out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and
20 prospectus preparation costs. Because of this reduction in proceeds, the
21 firm's required returns on these proceeds equate to a higher return to
22 compensate for the additional costs. Flotation costs can be accounted for
23 either by amortizing the cost, thus reducing the cash flow to discount, or by
24 incorporating the cost into the cost of capital. Because flotation costs are
25 not typically applied to operating cash flow, one must incorporate them into
26 the cost of capital.⁴⁷

⁴⁷ Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.

1 **Q. How did you calculate the flotation costs for INAWC?**

2 A. My flotation cost calculation is based on the costs incurred by American Water in the
3 company's most recent equity offering as of March 3, 2023. That flotation cost percentage
4 is then applied to the DCF analysis to estimate impact on ROE. As shown in Attachment
5 AEB-7, based on the flotation costs incurred in the most recent American Water issuance,
6 the impact on the proxy group's cost of equity amounts to 4 basis points (i.e., 0.4 percent)
7 based on the median and 4 basis points (i.e., 0.4 percent) based on the mean.

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

9 A. No. While the final ROE results do not incorporate an explicit adjustment for flotation
10 costs, the estimated effect of flotation cost on ROE is considered in identifying a
11 recommended ROE within the range of ROE estimates from the various models.

12 **VIII.B. Capital Expenditures**

13 **Q. How is INAWC's risk profile affected by its substantial capital expenditure program?**

14 A. INAWC projects that the Company will spend approximately \$802 million on capital
15 investments for the period from 2023-2028, which includes approximately \$507 million of
16 net capital investment through 2025. This includes significant investment to replace aging
17 infrastructure necessary to continue to meet the needs of its customers and to comply with
18 various regulations.⁴⁸

⁴⁸ Data provided by INAWC.

1 From a credit perspective, the additional pressure on cash flows associated with high levels
2 of capital expenditures exerts corresponding pressure on credit metrics and, therefore,
3 credit ratings. An S&P report explains:

4 [T]here is little doubt that the U.S. electric industry needs to make record
5 capital expenditures to comply with the proposed carbon pollution rules
6 over the next several years, while maintaining safety standards and grid
7 stability. We believe the higher capital spending and subsequent rise in debt
8 levels could strain these companies' financial measures, resulting in an
9 almost consistent negative discretionary cash flow throughout this higher
10 construction period. To meet the higher capital spending requirements,
11 companies will require ongoing and steady access to the capital markets,
12 necessitating that the industry maintains its high credit quality. We expect
13 that utilities will continue to effectively manage their regulatory risk by
14 using various creative means to recover their costs and to finance their
15 necessary higher spending.⁴⁹

16 While this S&P report refers to electric utilities, the same applies to water utilities. In an
17 August 2016 report, S&P explained the importance of regulatory support for large capital
18 projects:

19 When applicable, a jurisdiction's willingness to support large capital
20 projects with cash during construction is an important aspect of our analysis.
21 This is especially true when the project represents a major addition to rate
22 base and entails long lead times and technological risks that make it
23 susceptible to construction delays. Broad support for all capital spending is
24 the most credit-sustaining. Support for only specific types of capital
25 spending, such as specific environmental projects or system integrity plans,
26 is less so, but still favorable for creditors. Allowance of a cash return on
27 construction work-in-progress or similar ratemaking methods historically
28 were extraordinary measures for use in unusual circumstances, but when
29 construction costs are rising, cash flow support could be crucial to maintain
30 credit quality through the spending program. Even more favorable are those
31 jurisdictions that present an opportunity for a higher return on capital
32 projects as an incentive to investors.⁵⁰

⁴⁹ S&P, Ratings Direct, "U.S. Regulated Electric Utilities' Annual Capital Spending is Poised to Eclipse \$100 Billion," July 2014.

⁵⁰ S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

1 **Q. Does INAWC have a mechanism for timely recovery of infrastructure replacements?**

2 A. Yes. INAWC has a Distribution System Improvement Charge (“DSIC”) that allows the
3 Company to recover costs associated with replacing aging infrastructure as well as to
4 recover a return on and return of costs to replace customer-owned lead service lines.
5 Additionally, the Company has a Service Enhancement Improvement Charge (“SEI”) that
6 allows INAWC to recover 80 percent of the depreciation, property taxes and pretax return
7 on eligible investments that are considered “service enhancement improvements” with the
8 remaining 20 percent deferred for recovery in a future rate proceeding. While some portion
9 of INAWC’s capital program is expected to be recovered through the DSIC and SEI, there
10 is additional capital investment planned beyond that, which can be recovered through the
11 surcharges that would not be included in rates until the rate proceeding following the in-
12 service date of the investment.

13 **Q. Do the proxy group companies also have the ability to recover capital investments**
14 **through a capital tracking mechanism?**

15 A. Yes. As shown in Attachment AEB-8 approximately 82 percent of the companies in the
16 proxy group have implemented infrastructure replacement recovery mechanisms.
17 Consequently, the presence of the DSIC and SEI while positive regulatory mechanisms, do
18 not reduce the Company’s risk vis-à-vis that of the proxy group.

19 **Q. What are your conclusions regarding the effect of INAWC’s capital spending**
20 **program on its risk profile and cost of capital?**

21 A. The Company’s capital expenditure requirements as a percentage of net utility plant are
22 significant and will continue over the next few years. Additionally, similar to a number of

1 the operating subsidiaries of the proxy group, INAWC does have a capital tracking
2 mechanism to recover some of the Company's projected capital expenditures.

3 IX. CAPITAL STRUCTURE

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

6 A. Yes, it is. The equity ratio is the primary indicator of financial risk for a regulated utility
7 such as INAWC. Assuming other factors equal, a higher debt ratio increases the risk to
8 equity investors. For debt holders, higher debt ratios result in a greater portion of the
9 available cash flow being required to meet debt service, thereby increasing the risk
10 associated with the payments on debt. The result of increased risk is a higher interest rate.
11 The incremental risk of a higher debt ratio is more significant for common equity
12 shareholders, whose claim on the cash flow of the Company is secondary to debt holders.
13 Therefore, the greater the debt service requirement, the less cash flow is available for
14 common equity holders. To the extent the equity ratio is reduced, it is necessary to increase
15 the authorized ROE to compensate investors for the greater financial risk associated with
16 a lower equity ratio.

17 **Q. What is the INAWC's proposed capital structure?**

18 A. As Company Witness Nicholas Furia discusses in his Direct Testimony, as of April 30,
19 2025, INAWC is projecting a rate-making capital structure composed of 56.16 percent
20 common equity and 43.85 percent long-term debt, excluding adjustments for zero cost
21 capital items.

1 **Q. Have you conducted any analysis to determine a reasonable equity ratio for INAWC?**

2 A. Yes, I reviewed the capital structures of the proxy companies.

3 **Q. Why is it appropriate to consider the equity ratio for the proxy companies?**

4 A. The determination of the ROE is based on the expected return for a proxy group of
5 companies that are comparable in risk to INAWC. The equity ratio is a measure of the
6 financial risk of the company, and the authorized ROE is the return to compensate investors
7 for that risk. If the Commission is going to rely on the ROE estimates for the proxy
8 companies to establish the authorized ROE for INAWC, it is important that the financial
9 risk of INAWC be similar to the financial risk of the proxy group. This is accomplished
10 when the equity ratio of the subject company (in this case INAWC) is within the range
11 established by the proxy group.

12 **Q. How did you conduct your analysis of the proxy group capital structures?**

13 A. Specifically, I calculated the mean proportions of common equity and long-term debt over
14 the past three years for each of the companies in the proxy group at the operating subsidiary
15 level. Attachment AEB-9 summarizes the actual capital structures of the operating
16 subsidiaries. As shown, the average equity ratios for the operating subsidiaries of the proxy
17 group range from 48.73 percent to 61.47 percent, with a mean of 56.09 percent. INAWC's
18 proposed equity ratio of 56.15 percent is well within the equity ratio range established by
19 the utility operating subsidiaries of the proxy group.

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

21 A. Yes, namely the challenges that the credit rating agencies have highlighted as placing
22 pressure on the outlook for utilities in 2023.

1 For example, Moody’s recently revised its 2023 outlook for the regulated gas and electric
2 utilities sector to “negative” based on ongoing challenges of inflation, increasing interest
3 rates and higher natural gas prices. Moody’s noted that these challenges increase the
4 pressure on customer affordability, and thus face heightened public scrutiny and the ability
5 of utilities to promptly recover their costs. Moody’s concluded that regulated utilities’
6 financial metrics are already under pressure with little cushion, and that sustained capital
7 spending is likely as utilities continue progress towards emissions reductions and net-zero
8 goals. Moody’s noted that the outlook could return to stable if regulatory support remains
9 intact, natural gas prices are at a level where utilities are able to recover their fuel and
10 purchased power costs without delay beyond 12 months, overall inflation moderates,
11 interest rates stabilize and/or utilities’ aggregate funds from operations-to-debt ratio
12 remains between 14% and 15%.⁵¹

13 Fitch Ratings (“Fitch”) also highlights similar factors identified by Moody’s as challenging
14 utilities’ outlook for 2023, stating that the sector faces mounting cost pressures due to
15 “elevated commodity prices, inflationary headwinds and rising interest costs,” and that
16 some offsets in managing these headwinds include “higher authorized ROEs and the use
17 of tools such as securitization of under-recovered fuel balances.”⁵²

18 Likewise, S&P also continues to maintain a negative outlook for the utility industry, noting
19 that downgrades have outpaced upgrades for the third consecutive year in 2022 with a

⁵¹ Moody’s Investors Service, Outlook. “2023 outlook negative due to higher natural gas prices, inflation and rising interest rates.” November 10, 2022; Moody’s Investors Service. Outlook, Sector In-Depth. “Inflation, high natural gas prices complicate prospects for supportive rate increases.” November 11, 2022.

⁵² Fitch Ratings. “North American Utilities, Power & Gas Outlook 2023.” December 7, 2022, at 1-2.

1 median investor-owned utility credit rating of “BBB+”.⁵³ Further, S&P expects the
2 industry to have negative discretionary cash flow as a result of significant capital spending
3 and consistent dividends.⁵⁴ Therefore, the utility industry will need ongoing access to
4 capital markets to fund the capital expenditures. However, S&P notes that inflation, rising
5 interests rates and decreasing equity prices may “hamper” consistent access to capital
6 markets and result in additional pressure on cash flows.⁵⁵ Moreover, S&P indicates that if
7 inflation risks persist over the near-term and customer bills increase, regulatory credit
8 support could decrease resulting in weaker financial metrics for the industry:

9 Over the past decade the industry’s financial measures have weakened from
10 a combination of rising capital spending, regulatory lag, and lower
11 authorized return on equity (ROE). The industry’s return on capital was
12 about 6% a decade ago and today is closer to 4%. More recently, we have
13 seen instances where not only is the authorized ROE lowered but also the
14 equity ratio is lowered. These results have weakened the industry’s financial
15 measures, pressuring credit quality. Under our base case of moderating
16 inflationary risks during 2023, we expect the industry's credit measures to
17 generally remain flat. However, if inflationary risks persist, it may further
18 pressure the customer bill, potentially decreasing the level of regulatory
19 credit support, weakening the industry's financial performance.⁵⁶

20 The credit ratings agencies’ continued concerns over the negative effects of inflation and
21 increased capital expenditures underscore the importance of maintaining adequate cash
22 flow metrics for the industry as a whole, and INAWC in particular in the context of this
23 proceeding.

⁵³ S&P Global Ratings. Industry Top Trends, “North American Regulated Utilities: The industry’s outlook remains negative.” January 23, 2023.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

1 **Q. What is your conclusion with regard to INAWC's projected capital structure?**

2 A. Considering the actual capital structures of the proxy group operating companies, I believe
3 that INAWC's proposed common equity ratio of 56.15 percent is reasonable. The
4 projected equity ratio is well within the range established by the capital structures of the
5 utility operating subsidiaries of the proxy companies.

6 **X. CONCLUSION AND RECOMMENDATIONS**

7 **Q. What is your conclusion regarding a fair ROE for INAWC?**

8 A. Based on the various quantitative analyses summarized in Figure 10 and the qualitative
9 analyses presented in my Direct Testimony, a reasonable range of ROE results for INAWC
10 is from 10.00 percent to 11.00 percent. Within that range, I believe that an ROE of 10.60
11 percent is reasonable and appropriate. The recommended ROE takes into consideration
12 the current conditions in capital markets including the high interest rates, and elevated
13 inflationary pressures, both of which increase the cost of capital as well as the need to
14 recover flotation costs and the relative business and financial risk of INAWC as compared
15 to the proxy group. This ROE would enable the Company to attract capital at reasonable
16 terms under a variety of economic and financial market conditions, while continuing to
17 provide safe, reliable and affordable water and wastewater service to customers in Indiana.

18

1

Figure 10: Summary of Analytical Results

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Constant Growth DCF			
Mean Results:			
30-Day Average	8.55%	9.65%	10.94%
90-Day Average	8.65%	9.76%	11.04%
180-Day Average	8.62%	9.72%	11.01%
Average	8.61%	9.71%	10.99%
Median Results:			
30-Day Average	8.50%	9.86%	10.76%
90-Day Average	8.62%	9.97%	10.87%
180-Day Average	8.60%	9.88%	10.77%
Average	8.57%	9.90%	10.80%
	Current 30-day Average 30-Year Treasury Bond Yield	Near-Term Forecast 30-Year Treasury Yield	Longer-Term Forecast 30-Year Treasury Yield
CAPM:			
Current Value Line Beta	10.85%	10.87%	10.88%
Current Bloomberg Beta	10.47%	10.49%	10.51%
Long-term Avg. Beta	10.19%	10.22%	10.24%
ECAPM:			
Current Value Line Beta	11.26%	11.28%	11.29%
Current Bloomberg Beta	10.98%	10.99%	11.01%
Long-term Avg. Beta	10.77%	10.79%	10.81%

2 **Q. What is your conclusion regarding INAWC's projected capital structure?**

3 A. My conclusion is that INAWC's projected rate-making capital structure consisting of 56.15
4 percent common equity and 43.85 percent long-term debt is reasonable as compared to the
5 proxy group companies and should be used for setting rates in this case.

6

1 **XI. FAIR VALUE RATE BASE**

2 **Q. What is the purpose of this section of your testimony?**

3 A. In this section of my testimony, I summarize the analysis I developed to estimate the fair
4 value of INAWC’s rate base.

5 **Q. Why is the fair value relevant in this proceeding?**

6 A. Indiana Code § 8-1-2-6, discusses the valuation of public utility property.

7 The commission shall value all property of every public utility actually used
8 and useful for the convenience of the public at its fair value, giving such
9 consideration as it deems appropriate in each case to all bases of valuation
10 which may be presented or which the commission is authorized to consider
11 by the following provisions of this section. As one of the elements in such
12 valuation the commission shall give weight to the reasonable cost of
13 bringing the property to its then state of efficiency. . . .

14 **Q. Please summarize the methodology that you relied on to develop the fair value of**
15 **INAWC’s assets.**

16 A. The methodology that I relied on is generally consistent with the methodology that has
17 been used by the Commission to establish the fair value of INAWC’s assets in prior rate
18 proceedings (the “IURC Methodology”). The IURC Methodology begins with the Fair
19 Value Rate Base (“FVRB”) that was established in the last rate proceeding. The historical
20 FVRB is trended to current dollars using an inflation index, CPI-U, to establish the current
21 value of the FVRB from the prior case.

22 **Q. How was the historical fair value determined?**

23 A. Cause No. 45142, which was INAWC’s prior rate proceeding, resulted in a settlement on
24 June 26, 2019 that did not specify a fair value rate base. Therefore, I relied on the fair

1 value rate base that was estimated as of the conclusion of the test year in Cause No. 44450
2 of \$1,222,819,707.⁵⁷

3 **Q. How did you escalate the historical FVRB to the end of the test period?**

4 A. The fair value rate base that was established by the Company based on Cause No. 44450
5 was based on a test year ended January 28, 2015. In the current rate proceeding, INAWC
6 is relying on a future test year, with a three-step implementation of new rates. The first
7 period will be based on a rate base ending July 31, 2023. The second step is projected as
8 of April 30, 2024 and the third period is projected as of April 30, 2025. I escalated the fair
9 value rate base from January 28, 2015 to the end of each of the projected periods using the
10 average inflation factor for the period from January 2015 through the end of each of the
11 periods referenced previously. This methodology is consistent with the methodology that
12 was relied upon by the IURC in Cause No. 44022, the most recent fair value determination
13 made by the IURC for the Company. For the valuation as of July 31, 2023, the average
14 inflation was determined for the period from 2015-2023. This average includes historical
15 inflation for the period from 2015-2022 and projected inflation for 2023. The source of
16 historical inflation was the Bureau of Labor Statistics. For the 2015-2022 period, the
17 historical inflation rate was 3.0 percent. Projected inflation rates are based on data from
18 Blue Chip Economic Indicators averaging 3.1 percent over the forecast period.⁵⁸ The
19 resulting average annual inflation factor that was applied to the FVRB that was estimated
20 in Cause No. 44450 was 3.01 percent. The inflation factors for each of the subsequent

⁵⁷ INAWC Cause No. 45142, Bulkley Direct Testimony Attachment AEB-13.

⁵⁸ Blue Chip Economic Indicators, Vol. 41, No. 12, December 2, 2022, at 2.

1 periods was estimated using the same methodology, relying on historical data beginning in
 2 2015 through the forecast period. As of April 30, 2024, the inflation factor relied upon was
 3 2.96 percent. As of April 30, 2025, the inflation factor relied upon was 2.88 percent. Figure
 4 11 below summarizes the FVRB adjusted to the price levels as of each of the relevant
 5 measurement dates for the three-step rate implementations proposed in this Cause.

6 **Figure 11: Net Investor Supplied Plant Additions since Cause No. 44450**

Date	Fair Value Rate Base adjusted to corresponding price level
July 31, 2023	\$1,573,926,347
April 30, 2024	\$1,601,831,200
April 30, 2025	\$1,636,446,992

7 **Q. How are net investor supplied additions calculated?**

8 A. Net investor supplied additions used in the fair value analysis are the difference between
 9 the original cost rate base in Cause No. 44450 and the pro forma net investor supplied
 10 additions through the periods ending July 31, 2023, April 30, 2024 and April 30, 2025. Net
 11 investor supplied capital additions are calculated as Net Utility Plant in Service less
 12 Contributions in Aid of Construction (“CIAC”) and less Customer Advances for
 13 Construction (“CAFC”).

14 **Q. What value was used for net investor supplied capital?**

15 A. Net investor supplied capital additions were calculated by the Company as included in my
 16 workpapers. Figure 12 below summarized the Net Investor Supplied Plant Additions for

1 each of the relevant measurement periods for the three-step rate implementation proposed
2 in this Cause.

3 **Figure 12: Net Investor Supplied Plant Additions since Cause No. 44450**

Date	Net Investor Supplied Plant Additions
July 31, 2023	\$798,437,097
April 30, 2024	\$872,270,630
April 30, 2025	\$1,030,818,974

4

5 **Q. What is the resulting FVRB?**

6 A. The resulting FVRB is summarized in Figure 13 below.

7 **Figure 13: Fair Value Rate Base**

Date	Fair Value Rate Base
July 31, 2023	\$2,372,363,444
April 30, 2024	\$2,474,101,830
April 30, 2025	\$2,667,265,966

8 I compared the FVRB for each of the periods to a reproduction cost new less depreciation
9 (“RCNLD”) study that was prepared by the Company using the Handy-Whitman Index
10 and which is in my workpapers. After comparing to the RCNLD, the IURC Methodology
11 continues to be a reasonable method for determining fair value.

1 **Q. Did you also calculate the return on the FV increment?**

2 A. Yes, I did. As shown in Attachment AEB-10, I calculated the return on FVRB using the
3 approaches that were applied in INAWC’s 2011 rate case.⁵⁹ Recognizing that the FVRB
4 includes inflation, each of these approaches makes an adjustment to the Weighted Average
5 Cost of Capital (“WACC”) to remove inflation from the FVRB where inflation has been
6 applied.

- 7 • Methodology #1: Removes inflation from the debt component of the capital
8 structure. The inflation rate that is used in this calculation is based on the historical
9 inflation over the period from 2015 through 2022 and takes into consideration the
10 projected inflation as of each of the relevant measurement dates for the three-step
11 rate implementation proposed in this Cause: July 31, 2023, April 30, 2024 and April
12 30, 2025. The resulting inflation factors are as shown in Figure 14 below:

13 **Figure 14: Methodology #1- WACC (inflation adjusted debt only)**

Date	Inflation Rate	WACC less inflation adjusted debt
July 31, 2023	3.01%	5.66%
April 30, 2024	2.96%	5.66%
April 30, 2025	2.88%	5.80%

- 14 • Methodology #2: Removes the full amount of inflation from the WACC. The inflation
15 used in this calculation is consistent with the inflation factor used in Methodology #1.
16 The resulting inflation adjusted WACC for each of the relevant measurement dates for
17 the three-step rate implementation proposed in this Cause Figure 15 below:

⁵⁹ Indiana-American Water Company, Inc., Cause No. 44022, Order issued by the Commission dated June 6, 2012, at 11.

1 **Figure 15: Methodology #2- WACC (full inflation adjustment)**

Date	WACC less inflation
July 31, 2023	3.76%
April 30, 2024	3.79%
April 30, 2025	4.00%

- 2 • Methodology #3: I relied on the rate of return of 4.897 percent that was established by
3 the Commission in Cause No. 44022. This return was applied to the fair value rate base
4 that is inflated to each of the relevant measurement dates for the three-step rate
5 implementation proposed in this Cause. Consistent with each of the other
6 methodologies, the full WACC is applied to the net investor supplied plant additions
7 because these investments are based on original cost and therefore do not include an
8 inflation factor.

9 **Q. How is inflation included in the FVRB?**

10 A. As discussed previously, inflation is applied to the previously determined FVRB to trend
11 the costs from the last determination to the end of the test period in the current rate
12 proceeding. The current FVRB is the sum of the trended historical FVRB, which includes
13 inflation and net investor supplied capital that has been added since the last rate case.
14 While the trended historical FVRB includes inflation, the second component, net investor
15 supplied capital, is not a trended cost and therefore does not include inflation. Since the
16 investor supplied capital has been contributed since 2015, the fact that inflation is not
17 applied to the investor supplied capital likely understates the fair value rate base.

1 **Q. Should the fair value rate of return be applied to the entire FVRB?**

2 A. No. The three methodologies for estimating the fair value return above are all adjustment
3 methodologies that have been relied on by the IURC to recognize inflation that exists in
4 the FVRB. However, as mentioned previously, there are two components to the FVRB.
5 The first component of the fair value rate base is the fair value rate base as estimated in
6 Cause No. 44450. That component is escalated by inflation. The second component is net
7 investor supplied capital since the last rate proceeding. This portion of the FVRB is the
8 actual investments made since the last rate proceeding and therefore does not include
9 inflation.

10 Therefore, in order to establish the Fair Value Operating Income, it is appropriate to apply
11 the fair value rate of return, which removes inflation, to escalated FVRB. It is not
12 appropriate to apply an inflation adjusted WACC to the net investor supplied capital
13 additions because this portion of the FVRB is not inflation adjusted. I relied on the three
14 methodologies for estimating the fair value return, discussed previously, and applied those
15 estimates of the Fair Value Return to the trended fair value rate base.

16 **Q. Please explain how you applied each of the estimates of the fair value return that you**
17 **discussed previously in order to estimate the fair value operating income for each of**
18 **the relevant measurement dates for the three-step rate implementation proposed in**
19 **this Cause: July 31, 2023, April 30, 2024 and April 30, 2025.**

20 A. As shown in Attachment AEB-10, I calculated the fair value operating income using each
21 of the estimates of fair value return discussed previously. In developing the fair value
22 return, I applied the fair value return to the fair value from the prior case, adjusted to the

1 price level for the corresponding measurement date.⁶⁰ In addition, the Fair Value operating
2 income includes a return on net investor supplied capital. Because the net investor supplied
3 capital has not been inflated, I calculated the return on this increment using the original
4 cost rate base return.

5 **Q. What is the fair value increment that results from applying these methodologies?**

6 A. Attachment AEB-10 compares the operating income from the fair value rate base
7 to the operating income derived by applying the original cost return to the original cost rate
8 base for each period, ending July 31, 2023, April 30, 2024 and April 30, 2025. The fair
9 value increment for each period is shown in Attachment AEB-10 and summarized in Figure
10 16, Figure 17 and Figure 18 below.

11 **Figure 16: Methodology #1 Fair Value Increment**

Date	Fair Value Operating Income	Original Cost Operating Income	Fair Value Increment
July 31, 2023	\$143,138,423	\$109,155,057	\$33,861,953
April 30, 2024	\$149,541,913	\$113,868,236	\$35,673,678
April 30, 2025	\$165,834,271	\$126,844,142	\$38,990,129

12
13

⁶⁰ See Attachment AEB-10, line 16.

Figure 17: Methodology #2 Fair Value Increment

Date	Fair Value Operating Income	Original Cost Operating Income	Fair Value Increment
July 31, 2023	\$113,216,334	\$109,155,057	\$3,939,864
April 30, 2024	\$119,587,670	\$113,868,236	\$5,719,434
April 30, 2025	\$136,348,471	\$126,844,142	\$9,504,330

Figure 18: Methodology #3 Fair Value Increment

Date	Fair Value Operating Income	Original Cost Operating Income	Fair Value Increment
July 31, 2023	\$131,129,365	109,155,057	\$21,852,895
April 30, 2024	\$137,319,941	113,868,236	\$23,451,706
April 30, 2025	\$151,057,155	126,844,142	\$24,213,013

Q. Is INAWC proposing the fair value increment as calculated using any of these methodologies be included in its revenue requirement?

A. No. While each of these methodologies is a reasonable approach to estimating the fair value operating income for INAWC, the Company is not proposing to rely on the fair value increment that results from the methodologies described above. Rather, INAWC is proposing to include only the return on the Indiana Cities acquisition adjustment that has been authorized by the IURC in other proceedings through informed fair value ratemaking. Figure 19 below, and Attachment AEB-10 summarize the return on the Indiana Cities acquisition adjustment.

1

Figure 19: Return on Indiana Cities Acquisition Adjustment

Date	Indiana Cities Acquisition Adjustment	Return on Indiana Cities Acquisition Adjustment
July 31, 2023	\$4,713,294	\$319,090
April 30, 2024	\$4,401,669	\$297,113
April 30, 2025	\$3,934,233	\$270,675

2 Q. Does this conclude your Direct Testimony?

3 A. Yes.

VERIFICATION

I, Ann E. Bulkley, Principal at The Brattle Group, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.



Ann E. Bulkley

Date: 3/27/22

**ATTACHMENTS AEB-1 THROUGH AEB-12
ARE FILED AS EXCEL DOCUMENTS**

Ann E. Bulkley

PRINCIPAL

Boston

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Ann.Bulkley@brattle.com

With more than 25 years of experience in the energy industry, Ms. Bulkley specializes in regulatory economics for the electric and natural gas sectors, including rate of return, cost of equity, and capital structure issues.

Ms. Bulkley has extensive state and federal regulatory experience, and she has provided expert testimony on the cost of capital in nearly 100 regulatory proceedings before 32 state regulatory commissions and the Federal Energy Regulatory Commission (FERC).

In addition to her regulatory experience, Ms. Bulkley has provided valuation and appraisal services for a variety of purposes, including the sale or acquisition of utility assets, regulated ratemaking, ad valorem tax disputes, and other litigation purposes. In addition, she has experience in the areas of contract and business unit valuation, strategic alliances, market restructuring, and regulatory and litigation support.

Ms. Bulkley is a Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

Prior to joining Brattle, Ms. Bulkley was a Senior Vice President at an economic consultancy and held senior positions at several other consulting firms.

AREAS OF EXPERTISE

- Regulatory Economics, Finance & Rates
- Regulatory Investigations & Enforcement
- Tax Controversy & Transfer Pricing
- Electricity Litigation & Regulatory Disputes
- M&A Litigation

EDUCATION

- **Boston University**
MA in Economics
- **Simmons College**
BA in Economics and Finance

PROFESSIONAL EXPERIENCE

- **The Brattle Group (2022–Present)**
Principal
- **Concentric Energy Advisors, Inc. (2002–2021)**
Senior Vice President
Vice President
Assistant Vice President
Project Manager
- **Navigant Consulting, Inc. (1997–2002)**
Project Manager
- **Reed Consulting Group (1995-1997)**
Consultant- Project Manager
- **Cahners Publishing Company (1995)**
Economist

SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

REGULATORY ANALYSIS AND RATEMAKING

Have provided a range of advisory services relating to regulatory policy analysis and many aspects of utility ratemaking, with specific services including:

- Cost of capital and return on equity testimony, cost of service and rate design analysis and testimony, development of ratemaking strategies
- Development of merchant function exit strategies

- Analysis and program development to address residual energy supply and/or provider of last resort obligations
- Stranded costs assessment and recovery
Performance-based ratemaking analysis and design
- Many aspects of traditional utility ratemaking (e.g., rate design, rate base valuation)

COST OF CAPITAL

Have provided expert testimony on the cost of capital and capital structure in nearly 100 regulatory proceedings before state and federal regulatory commissions in the United States.

RATEMAKING

Have assisted several clients with analysis to support investor-owned and municipal utility clients in the preparation of rate cases. Sample engagements include:

- Assisted several investor-owned and municipal clients on cost allocation and rate design issues including the development of expert testimony supporting recommended rate alternatives.
- Worked with Canadian regulatory staff to establish filing requirements for a rate review of a newly regulated electric utility. Along with analyzing and evaluating rate application, attended hearings and conducted investigation of rate application for regulatory staff. And prepared, supported, and defended recommendations for revenue requirements and rates for the company. Additionally, developed rates for gas utility for transportation program and ancillary services.

VALUATION

Have provided valuation services to utility clients, unregulated generators, and private equity clients for a variety of purposes, including ratemaking, fair value, ad valorem tax, litigation and damages, and acquisition. Appraisal practices are consistent with the national standards established by the Uniform Standards of Professional Appraisal Practice.

Representative projects/clients have included:

- Prepared appraisals of electric utility transmission and distribution assets for ad valorem tax purposes.
- Prepared appraisals of several hydroelectric generating facilities for ad valorem tax purposes.
- Conducted appraisals of fossil fuel generating facilities for ad valorem tax purposes.
- Conducted appraisals of generating assets for the purposes of unwinding sale-leaseback agreements.
- For a confidential utility client, prepared valuation of fossil and nuclear generation assets for financing purposes for regulated utility client.

- Prepared a valuation of a portfolio of generation assets for a large energy utility to be used for strategic planning purposes. Valuation approach included an income approach, a real options analysis, and a risk analysis.
- Assisted clients in the restructuring of NUG contracts through the valuation of the underlying assets. Performed analysis to determine the option value of a plant in a competitively priced electricity market following the settlement of the NUG contract.
- Prepared market valuations of several purchase power contracts for large electric utilities in the sale of purchase power contracts. Assignment included an assessment of the regional power market, analysis of the underlying purchase power contracts, and a traditional discounted cash flow valuation approach, as well as a risk analysis. Analyzed bids from potential acquirers using income and risk analysis approaches. Prepared an assessment of the credit issues and value at risk for the selling utility.
- Prepared appraisal of a portfolio of generating facilities for a large electric utility to be used for financing purposes.
- Prepared fair value rate base analyses for Northern Indiana Public Service Company for several electric rate proceedings. Valuation approaches used in this project included income, cost, and comparable sales approaches.
- Prepared an appraisal of a fleet of fossil generating assets for a large electric utility to establish the value of assets transferred from utility property.
- Conducted due diligence on an electric transmission and distribution system as part of a buy-side due diligence team.
- Provided analytical support for and prepared appraisal reports of generation assets to be used in ad valorem tax disputes.
- Provided analytical support and prepared testimony regarding the valuation of electric distribution system assets in five communities in a condemnation proceeding.
- Prepared feasibility reports analyzing the expected net benefits resulting from municipal ownership of investor-owned utility operations.
- Prepared independent analyses of proposal for the proposed government condemnation of the investor-owned utilities in Maine and the formation of a public power district.
- Valued purchase power agreements in the transfer of assets to a deregulated electric market.

STRATEGIC AND FINANCIAL ADVISORY SERVICES

Have assisted several clients across North America with analytically-based strategic planning, due diligence, and financial advisory services.

Representative projects include:

- Preparation of feasibility studies for bond issuances for municipal and district steam clients.
- Assisted in the development of a generation strategy for an electric utility. Analyzed various NERC regions to identify potential market entry points. Evaluated potential competitors and alliance partners. Assisted in the development of gas and electric price forecasts. Developed a framework for the implementation of a risk management program.
- Assisted clients in identifying potential joint venture opportunities and alliance partners. Contacted interviewed and evaluated potential alliance candidates based on company-established criteria for several LDCs and marketing companies. Worked with several LDCs and unregulated marketing companies to establish alliances to enter into the retail energy market. Prepared testimony in support of several merger cases and participated in the regulatory process to obtain approval for these mergers.
- Assisted clients in several buy-side due diligence efforts, providing regulatory insight and developing valuation recommendations for acquisitions of both electric and gas properties.

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Commission				
UNS Electric	11/22	UNS Electric	Docket No. E-04204A-15-0251	Return on Equity
Tucson Electric Power Company	6/22	Tucson Electric Power Company	Docket No. G-01933A-22-0107	Return on Equity
Southwest Gas Corporation	12/21	Southwest Gas Corporation	Docket No. G-01551A-21-0368	Return on Equity
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E-01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E-01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E-01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E-04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E-04204A-12-0504	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arkansas Public Service Commission				
Oklahoma Gas and Electric Co	10/21	Oklahoma Gas and Electric Co	Docket No. D-18-046-FR	Return on Equity
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
California Public Utilities Commission				
PacifiCorp, d/b/a Pacific Power	5/22	PacifiCorp, d/b/a Pacific Power	Docket No. A-22-05-006	Return on Equity
San Jose Water Company	05/21	San Jose Water Company	A2105004	Return on Equity
Colorado Public Utilities Commission				
Public Service Company of Colorado	11/22	Public Service Company of Colorado	Docket No. 22AL-0530E	Return on Equity
Public Service Company of Colorado	01/22	Public Service Company of Colorado	Docket No. 22AL-0046G	Return on Equity
Public Service Company of Colorado	07/21	Public Service Company of Colorado	21AL-0317E	Return on Equity
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL-0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL-0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL-0496G	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Connecticut Public Utilities Regulatory Authority				
United Illuminating	09/22	United Illuminating	Docket No. 22-08-08	Return on Equity
United Illuminating	05/21	United Illuminating	Docket No. 17-12-03RE11	Return on Equity
Connecticut Water Company	01/21	Connecticut Water Company	Docket No. 20-12-30	Return on Equity
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity
Federal Energy Regulatory Commission				
Sea Robin Pipeline	12/22	Sea Robin Pipeline	Docket No. RP22-___	Return on Equity
Northern Natural Gas Company	07/22	Northern Natural Gas Company	Docket No. RP22-___	Return on Equity
Transwestern Pipeline Company, LLC	07/22	Transwestern Pipeline Company, LLC	Docket No. RP22-___	Return on Equity
Florida Gas Transmission	02/21	Florida Gas Transmission	Docket No. RP21-441	Return on Equity
TransCanyon	01/21	TransCanyon	Docket No. ER21-1065	Return on Equity
Duke Energy	12/20	Duke Energy	Docket No. EL21-9-000	Return on Equity
Wisconsin Electric Power Company	08/20	Wisconsin Electric Power Company	Docket No. EL20-57-000	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Panhandle Eastern Pipe Line Company, LP	10/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-78-000 RP19-78-001	Return on Equity
Panhandle Eastern Pipe Line Company, LP	08/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-1523	Return on Equity
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352-000	Return on Equity
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity
Idaho Public Utilities Commission				
Intermountain Gas Co	12/22	Intermountain Gas Co	C-INT-G-22-07	Return on Equity
PacifiCorp d/b/a Rocky Mountain Power	05/21	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-21-07	Return on Equity
Illinois Commerce Commission				
Peoples Gas Light & Coke Company	01/23	Peoples Gas Light & Coke Company	D-23-0069	Return on Equity
North Shore Gas Company	01/23	North Shore Gas Company	D-23-0068	Return on Equity
Illinois American Water	02/22	Illinois American Water	Docket No. 22-0210	Return on Equity
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory Commission				
Indiana Michigan Power Co.	07/21	Indiana Michigan Power Co.	IURC Cause No. 45576	Return on Equity
Indiana Gas Company Inc.	12/20	Indiana Gas Company Inc.	IURC Cause No. 45468	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Southern Indiana Gas and Electric Company	10/20	Southern Indiana Gas and Electric Company	IURC Cause No. 45447	Return on Equity
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Indianapolis Power and Light Company	12/17	Indianapolis Power and Light Company	Cause No. 45029	Fair Value
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Iowa Department of Commerce Utilities Board				
MidAmerican Energy Company	01/22	MidAmerican Energy Company	Docket No. RPU-2022-0001	Return on Equity
Iowa-American Water Company	08/20	Iowa-American Water Company	Docket No. RPU-2020-0001	Return on Equity
Kansas Corporation Commission				
Atmos Energy Corporation	08/15	Atmos Energy Corporation	Docket No. 16-ATMG-079-RTS	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Kentucky Public Service Commission				
Kentucky American Water Company	11/18	Kentucky American Water Company	Docket No. 2018-00358	Return on Equity
Maine Public Utilities Commission				
Central Maine Power	08/22	Central Maine Power	Docket No. 2022-00152	Return on Equity
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-194	Return on Equity
Maryland Public Service Commission				
Maryland American Water Company	06/18	Maryland American Water Company	Case No. 9487	Return on Equity
Massachusetts Appellate Tax Board				
Hopkinton LNG Corporation	03/20	Hopkinton LNG Corporation	Docket No.	Valuation of LNG Facility
FirstLight Hydro Generating Company	06/17	FirstLight Hydro Generating Company	Docket No. F-325471 Docket No. F-325472 Docket No. F-325473 Docket No. F-325474	Valuation of Electric Generation Assets
Massachusetts Department of Public Utilities				
National Grid USA	11/20	Boston Gas Company	DPU 20-120	Return on Equity
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Commission				
Michigan Gas Utilities Corporation	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16-001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities Commission				
Minnesota Energy Resources Corporation	11/22	Minnesota Energy Resources Corporation	Docket No. G011/GR-22-504	Return on Equity
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/21	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-21-630	Return on Equity
Otter Tail Power Company	11/20	Otter Tail Power Company	E017/GR-20-719	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR-19-511	Return on Equity
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR-17-563	Return on Equity
Missouri Public Service Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Ameren Missouri	08/22	Ameren Missouri	File No. ER-2022-0337	Return on Equity
Missouri American Water Company	07/22	Missouri American Water Company	Case No. WR-2022-0303 Case No. SR-2022-0304	Return on Equity
Evergy Missouri West	1/22	Evergy Missouri West	File No. ER-2022-0130	Return on Equity
Evergy Missouri Metro	1/22	Evergy Missouri Metro	File No. ER-2022-0129	Return on Equity
Ameren Missouri	03/21	Ameren Missouri	Docket No. ER-2021-0240 Docket No. GR-2021-0241	Return on Equity
Missouri American Water Company	06/20	Missouri American Water Company	Case No. WR-2020-0344 Case No. SR-2020-0345	Return on Equity
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity
Montana Public Service Commission				
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2022.11.099	Return on Equity
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2020.06.076	Return on Equity
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity
New Hampshire - Board of Tax and Land Appeals				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 12/19	Public Service Company of New Hampshire d/b/a Eversource Energy	Master Docket No. 28873-14-15-16-17PT	Valuation of Utility Property and Generating Assets
New Hampshire Public Utilities Commission				
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity
New Hampshire-Merrimack County Superior Court				
Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	04/18	Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	220-2012-CV-1100	Valuation of Utility Property
New Hampshire-Rockingham Superior Court				
Eversource Energy	05/18	Public Service Commission of New Hampshire	218-2016-CV-00899 218-2017-CV-00917	Valuation of Utility Property
New Jersey Board of Public Utilities				
New Jersey American Water Company, Inc.	01/22	New Jersey American Water Company, Inc.	WR22010019	Return on Equity
Public Service Electric and Gas Company	10/20	Public Service Electric and Gas Company	EO18101115	Return on Equity
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	EO18060629 GO18060630	Return on Equity
Public Service Electric and Gas Company	02/18	Public Service Electric and Gas Company	GR17070776	Return on Equity
Public Service Electric and Gas Company	01/18	Public Service Electric and Gas Company	ER18010029 GR18010030	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
New Mexico Public Regulation Commission				
Southwestern Public Service Company	07/19	Southwestern Public Service Company	19-00170-UT	Return on Equity
Southwestern Public Service Company	10/17	Southwestern Public Service Company	Case No. 17-00255-UT	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Case No. 16-00269-UT	Return on Equity
Southwestern Public Service Company	10/15	Southwestern Public Service Company	Case No. 15-00296-UT	Return on Equity
Southwestern Public Service Company	06/15	Southwestern Public Service Company	Case No. 15-00139-UT	Return on Equity
New York State Department of Public Service				
New York State Electric and Gas Company Rochester Gas and Electric	05/22	New York State Electric and Gas Company Rochester Gas and Electric	22-E-0317 22-G-0318 22-E-0319 22-G-0320	Return on Equity
Corning Natural Gas Corporation	07/21	Corning Natural Gas Corporation	Case No. 21-G-0394	Return on Equity
Central Hudson Gas and Electric Corporation	08/20	Central Hudson Gas and Electric Corporation	Electric 20-E-0428 Gas 20-G-0429	Return on Equity
Niagara Mohawk Power Corporation	07/20	National Grid USA	Case No. 20-E-0380 20-G-0381	Return on Equity
Corning Natural Gas Corporation	02/20	Corning Natural Gas Corporation	Case No. 20-G-0101	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/19	New York State Electric and Gas Company Rochester Gas and Electric	19-E-0378 19-G-0379 19-E-0380 19-G-0381	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	04/19	Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	19-G-0309 19-G-0310	Return on Equity
Central Hudson Gas and Electric Corporation	07/17	Central Hudson Gas and Electric Corporation	Electric 17-E-0459 Gas 17-G-0460	Return on Equity
Niagara Mohawk Power Corporation	04/17	National Grid USA	Case No. 17-E-0238 17-G-0239	Return on Equity
Corning Natural Gas Corporation	06/16	Corning Natural Gas Corporation	Case No. 16-G-0369	Return on Equity
National Fuel Gas Company	04/16	National Fuel Gas Company	Case No. 16-G-0257	Return on Equity
KeySpan Energy Delivery	01/16	KeySpan Energy Delivery	Case No. 15-G-0058 Case No. 15-G-0059	Return on Equity
New York State Electric and Gas Company Rochester Gas and Electric	05/15	New York State Electric and Gas Company Rochester Gas and Electric	Case No. 15-E-0283 Case No. 15-G-0284 Case No. 15-E-0285 Case No. 15-G-0286	Return on Equity
North Dakota Public Service Commission				
Montana-Dakota Utilities Co.	05/22	Montana-Dakota Utilities Co.	C-PU-22-194	Return on Equity
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-379	Return on Equity
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity
Oklahoma Corporation Commission				

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Oklahoma Gas & Electric	12/21	Oklahoma Gas & Electric	Cause No. PUD 202100164	Return on Equity
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity
Oregon Public Service Commission				
PacifiCorp d/b/a Pacific Power & Light	03/22	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-399	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	02/20	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-374	Return on Equity
Pennsylvania Public Utility Commission				
American Water Works Company Inc.	04/22	Pennsylvania-American Water Company	Docket No. R-2020-3031672 (water) Docket No. R-2020-3031673 (wastewater)	Return on Equity
American Water Works Company Inc.	04/20	Pennsylvania-American Water Company	Docket No. R-2020-3019369 (water) Docket No. R-2020-3019371 (wastewater)	Return on Equity
American Water Works Company Inc.	04/17	Pennsylvania-American Water Company	Docket No. R-2017-2595853	Return on Equity
South Dakota Public Utilities Commission				
MidAmerican Energy Company	05/22	MidAmerican Energy Company	D-NG22-005	Return on Equity
Northern States Power Company	06/14	Northern States Power Company	Docket No. EL14-058	Return on Equity
Texas Public Utility Commission				
Entergy Texas, Inc.	07/22	Entergy Texas, Inc.	D-53719	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Southwestern Public Service Commission	08/19	Southwestern Public Service Commission	Docket No. D-49831	Return on Equity
Southwestern Public Service Company	01/14	Southwestern Public Service Company	Docket No. 42004	Return on Equity
Utah Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	05/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20-035-04	Return on Equity
Virginia State Corporation Commission				
Virginia American Water Company, Inc.	11/21	Virginia American Water Company, Inc.	Docket No. PUR-2021-00255	Return on Equity
Virginia American Water Company, Inc.	11/18	Virginia American Water Company, Inc.	Docket No. PUR-2018-00175	Return on Equity
Washington Utilities Transportation Commission				
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG-200568	Return on Equity
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-191024	Return on Equity
Cascade Natural Gas Corporation	04/19	Cascade Natural Gas Corporation	Docket No. UG-190210	Return on Equity
West Virginia Public Service Commission				
West Virginia American Water Company	04/21	West Virginia American Water Company	Case No. 21-02369-W-42T	Return on Equity
West Virginia American Water Company	04/18	West Virginia American Water Company	Case No. 18-0573-W-42T Case No. 18-0576-S-42T	Return on Equity
Wisconsin Public Service Commission				
Wisconsin Electric Power Company and Wisconsin Gas LLC	04/22	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-110	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Wisconsin Public Service Corp.	04/22	Wisconsin Public Service Corp.	6690-UR-127	Return on Equity
Alliant Energy		Alliant Energy		Return on Equity
Wisconsin Electric Power Company and Wisconsin Gas LLC	03/19	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR-109	Return on Equity
Wisconsin Public Service Corp.	03/19	Wisconsin Public Service Corp.	6690-UR-126	Return on Equity
Wyoming Public Service Commission				
PacifiCorp d/b/a Rocky Mountain Power	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000-578-ER-20	Return on Equity
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

CERTIFICATIONS/ACCREDITATIONS

Certified General Appraiser, licensed in the Commonwealth of Massachusetts and the State of New Hampshire