BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

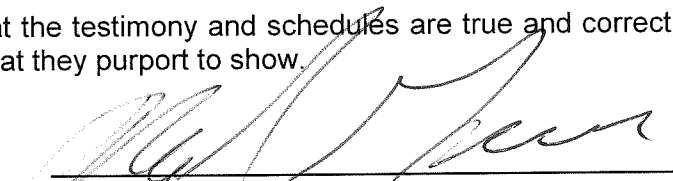|	
In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	))))))) Case Nos. WR-2015-0301 and SR-2015-0302

Surrebuttal Testimony and Schedules of

Michael P. Gorman

On behalf of

The Office of Public Counsel

March 4, 2016

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BRUBAKER & ASSOCIATES, INC.

Project 10136

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water
Company's Request for Authority to
Implement a General Rate Increase for
Water and Sewer Service Provided in
Missouri Service Areas

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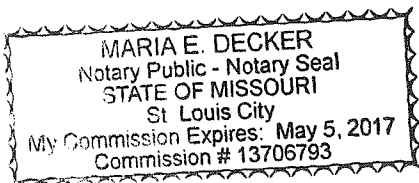   )   SS
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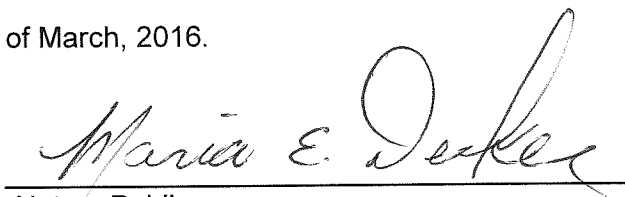
Affidavit of Michael P. Gorman

Michael P. Gorman, being first duly sworn, on his oath states:

1.   My name is Michael P. Gorman. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 16690 Swingley Ridge Road, Suite 140, Chesterfield, Missouri 63017. We have been retained by the Office of Public Counsel in this proceeding on its behalf.

2.   Attached hereto and made a part hereof for all purposes are my surrebuttal testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. WR-2015-0301 and SR-2015-0302.

3.   I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things that they purport to show.

_____
Michael P. Gorman

Subscribed and sworn to before me this 4th day of March, 2016.

_____
Notary Public

BRUBAKER & ASSOCIATES, INC.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

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Michael P. Gorman
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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri-American Water Company's Request for Authority to Implement a General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas	))))))) **Case Nos. WR-2015-0301 and SR-2015-0302**

<u>Surrebuttal Testimony of Michael P. Gorman</u>

1   **Q**   **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2   A   Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140,

3   Chesterfield, MO 63017.

4   **Q**   **WHAT IS YOUR OCCUPATION?**

5   A   I am a consultant in the field of public utility regulation and a Managing Principal of

6   Brubaker & Associates, Inc., energy, economic and regulatory consultants.

7   **Q**   **ARE YOU THE SAME MICHAEL P. GORMAN WHO PREVIOUSLY FILED**

8   **TESTIMONY IN THIS PROCEEDING?**

9   A   Yes, I am.

10   **Q**   **ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

11   A   This testimony is presented on behalf of the Office of Public Counsel ("Public

12   Counsel").

Michael P. Gorman
Page 1

| 1 | Q | WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY? |

2 A   I will respond to the rebuttal testimony of Missouri-American Water Company

3   ("MAWC" or "Company") witness Dr. Roger Morin.

4 Q   **PLEASE SUMMARIZE YOUR COMMENTS CONCERNING DR. MORIN'S**

5   **REBUTTAL TESTIMONY.**

6 A   Dr. Morin outlines the principal factors, which he states he is in disagreement with me

7   on measuring a fair return on equity for MAWC in this proceeding. Those

8   disagreements include the following:

9   1. Absence of flotation cost adjustment;

10   2. Use of sustainable growth discounted cash flow ("DCF") model;

11   3. My risk-free rate proxy used in my capital asset pricing model ("CAPM") and risk
12   premium analyses;

13   4. The use of a historical total return market risk premium in my CAPM study;

14   5. Failure to employ the empirical version of the CAPM;

15   6. Failure to account for the inverse behavior between allowed risk premiums and
16   level of interest rates;

17   7. Failure to account for MAWC's higher risk relative to the proxy group; and

18   8. His assertion that my recommended reduction to return on equity in the event the
19   Commission approves the Revenue Stability Mechanism ("RSM") is based on
20   erroneous factors.

21   Recent Authorized Returns on Equity

22 Q   **DOES DR. MORIN COMMENT ON RECENT AUTHORIZED RETURNS ON EQUITY**

23   **FOR WATER AND GAS UTILITIES?**

24 A   Yes. As noted at page 13 of Dr. Morin's rebuttal testimony, he observes that recent

25   authorized returns on equity for water utilities have averaged around 9.6%. At

1   page 37, he also includes certain authorized returns on equity for several gas utilities.

2   There, he shows that two of the five companies listed have authorized returns on

3   equity of approximately 9.8%, and two (New Jersey Resources Corp., and NiSource)

4   have authorized returns on equity of 10.3% and 10.61%, respectively.

5   **Q   DO THESE AUTHORIZED RETURNS ON EQUITY REFLECT REGULATORY**

6   **COMMISSIONS' CURRENT AUTHORIZED RETURNS ON EQUITY FOR THESE**

7   **WATER COMPANIES?**

8   A   No. These authorized returns on equity reflect the last authorized returns on equity

9   as reported by *AUS Monthly Utility Reports* in January 2016. As shown on my

10   Schedule MPG-SR-1, out of the eight water utilities listed by Dr. Morin, one of the

11   decisions was from 2012, three decisions were in 2013, and four of the decisions

12   were in 2014. The most recent decision was August of 2014.

13   **Q   DO THESE AUTHORIZED RETURNS ON EQUITY PROVIDE INFORMATION TO**

14   **SUPPORT THE COMMISSION'S FINDING ON A FAIR RETURN ON EQUITY FOR**

15   **MAWC IN THIS PROCEEDING?**

16   A   Only limited. It does show authorized returns on equity for water utility companies

17   have averaged around 9.6% over the last three years.

18   **Q   IS THERE ANY INDICATION THAT CURRENT AUTHORIZED RETURNS ON**

19   **EQUITY, IN 2015 AND MORE RECENTLY HAVE BEEN LOWER THAN**

20   **AUTHORIZED RETURNS ON EQUITY IN 2012, 2013 AND 2014?**

21   A   There is information related to gas local distribution companies ("LDC") as reported

22   by *Regulatory Research Associates*. As shown below in Table 1, the authorized

1   returns on equity for these gas companies from the years 2010 through 2015 have

2   shown a decline in the authorized returns on equity.

TABLE 1

Gas Authorized Returns on Equity

Description	Return on Equity
2010	10.15%
2011	9.92%
2012	9.94%
2013	9.68%
2014	9.78%
2015	9.60%

_____

Source: *Regulatory Research
           Associates*, "Major Rate Case
           Decisions – Calendar 2015,"
           January 14, 2016, at 3.

3   The average authorized return for 2012-2014 for gas utilities, as shown in

4   Table 1 above, has been 9.8%. This is 20 basis points higher than the average

5   authorized return in 2015.

6   Dr. Morin's average water utility authorized return on equity of 9.6% for the

7   period 2012-2014 would support a return on equity of about 9.4% in the current

8   capital market environment. Hence, reflecting this clear decline in authorized returns

9   on equity, and stable low capital market environment would set a high-end estimate

10   for MAWC in this case of around 9.4%, using this industry authorized return data as a

11   point of reference.

Flotation Cost

1 **Flotation Cost**

2 **Q   DOES DR. MORIN BELIEVE THAT YOU HAVE UNDERSTATED YOUR DCF**

3 **RETURN BECAUSE YOU DID NOT REFLECT FLOTATION COST IN YOUR**

4 **STUDY?**

5 A   Yes. Dr. Morin argues that my DCF study is understated by approximately 20 basis

6   points because I failed to consider flotation cost in my study.[1]

7 **Q   DID DR. MORIN RESPOND TO YOUR REASONS FOR EXCLUDING A**

8 **FLOTATION COST ADJUSTMENT?**

9 A   Yes. In my direct testimony, I stated that I only include a flotation cost adjustment if

10   common stock issuance expenses are accounted for and can be audited, and the

11   expense is shown to be known and measurable.[2]

12   In response, Dr. Morin argues that my position concerning the inclusion of a

13   flotation cost adjustment in a utility's cost of service is specious. He states that

14   MAWC's common equity capital is raised by its parent company, American Water

15   Works Company, Inc. ("AWW"). He states that the parent-subsidiary relationship

16   does not eliminate the cost of common stock issuances, but rather transfers them to

17   the parent. He argues that ignoring actual flotation cost is unfair and discriminatory to

18   the parent's public shareholders.

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[1]Rebuttal testimony of Dr. Roger Morin at 40 and 41.
[2]Direct testimony of Michael P. Gorman at 70.

1   **Q**   **PLEASE RESPOND TO DR. MORIN'S ARGUMENTS CONCERNING FLOTATION**

2   **COST ADJUSTMENTS.**

3   **A**   I agree with Dr. Morin that MAWC gets its equity capital from its parent company,

4   AWW. However, Dr. Morin has failed to support his implicit suggestion that AWW

5   gets all of its common equity that it invests in MAWC through selling common stock to

6   the public. This is a significant implication. Dr. Morin's proposed flotation cost

7   adjustment to the return on equity for MAWC is overstated because AWW can fund

8   equity infusions into MAWC by use of many sources of capital, not only public stock

9   issuances.

10   **Q**   **HOW CAN AWW FUND EQUITY INFUSIONS IN MAWC?**

11   **A**   AWW can make equity contributions to MAWC by using internal sources of cash

12   (primarily dividend payments from its affiliate companies including MAWC) or issuing

13   debt capital.

14   AWW does not incur common equity stock issuance costs related to its equity

15   contributions in MAWC when the contributions are funded by internal cash or by debt

16   issuances. Therefore, there is no factual basis to support Dr. Morin's assertion that

17   all of the equity contributions AWW has made into MAWC are funded by selling

18   common stock to the public.

19   **Q**   **WHY DO YOU STATE THAT DR. MORIN'S FLOTATION COST IS NOT BASED ON**

20   **KNOWN AND MEASURABLE COST OF SERVICE?**

21   **A**   Dr. Morin proposes to use a statistical analysis to approximate flotation cost based on

22   other utility cost of selling stock to the public. Common stock flotation cost can be

23   accounted for and audited to show that the cost is reasonable, and has properly been

1   allocated by the parent company public stock issuance to MAWC. Without this

2   auditable accounting trail, there is no factual basis to support Dr. Morin's proposed

3   flotation cost adjustment for MAWC in this case.

4   Reflecting only known and measurable cost of service in setting utility rates is

5   a practice that is balanced and reasonable, and protects both investors and

6   ratepayers. Dr. Morin's proposal for a statistical based flotation cost procedure to

7   adjust the return on equity is neither balanced nor reasonable. Therefore, it should

8   be rejected.

9   **Q   DO YOU BELIEVE THAT DR. MORIN'S FLOTATION COST ADJUSTMENT WILL**

10   **REFLECT KNOWN AND MEASURABLE COSTS IN MAWC'S COST OF**

11   **SERVICE?**

12 A   No. Dr. Morin has failed to identify any verifiable flotation cost expenses properly

13   allocated to MAWC that have been shown to be reasonable and prudent cost of

14   AWW issuance of equity capital. Therefore, his proposed flotation cost adjustment is

15   not a known and measurable MAWC expense and is not reasonable to include in

16   MAWC's regulated cost of service.

17 ## Sustainable Growth DCF

18 **Q   WHAT COMMENTS DOES DR. MORIN MAKE ABOUT THE USE OF A**

19   **SUSTAINABLE GROWTH VERSION OF THE DCF MODEL?**

20 A   Dr. Morin argues the sustainable growth DCF model contains a "puzzling logical

21   contradiction." He states that the growth rates used in the model are based on

22   projections *The Value Line Investment Survey* ("*Value Line*") makes of the average

23   expected earned return on common equity for the companies in the proxy group.

1   Dr. Morin outlines *Value Line*'s projected return on equity for water and gas

2   companies of 10.96% and 10.48%, respectively. He states that if the earned returns

3   on equity for these proxy groups are this high, it is irrational to conclude that the fair

4   return on equity for MAWC in this case is only 9%.

5   The second argument Dr. Morin makes is that the sustainable growth rate

6   model has a "very poor explanatory variable of market value."[3] He concludes the

7   sustainable growth model is not significantly correlated to value such as stock prices

8   and price-to-earnings ratios.

9 **Q   PLEASE COMMENT ON DR. MORIN'S ASSERTION THAT THE SUSTAINABLE**

10   **GROWTH MODEL HAS LOGICAL INCONSISTENCIES.**

11 A   Dr. Morin's arguments concerning the projected earned return on book equity are

12   simply not legitimate. Specifically, the projected earned return on book equity for the

13   water proxy group ranges considerably from company to company. The lowest *Value*

14   *Line* projected earned return on book equity was 7.74%, and the highest is 15.74%.[4]

15   The average is 10.96%, however, the variation from company to company is quite

16   significant. As such, my recommended return on equity of 9.0% is reasonable and

17   within the range of projected book returns on equity for these proxy companies.

18   Moreover, many of the companies with high earned returns on book equity

19   such as Aqua America and American States Water, have deregulated and regulated

20   operations.

21   As such, the projected earned returns on book equity for the public companies

22   are reflective of both the regulated utility operations, and the deregulated operations.

23   Significantly, deregulated operations are not as capital intensive as are the regulated

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[3]Rebuttal testimony of Dr. Roger Morin at 43.
[4]Schedule MPG-6.

1   operations. What this means is by producing earnings on deregulated operations,

2   without making significant capital investments to realize the earnings, can enhance

3   the parent company's return on equity relative to the expected returns on equity of the

4   regulated utility subsidiaries. For this reason, the earned return on book equity for the

5   parent company is not a reasonable proxy for the underlying regulated utility

6   operations, but, nevertheless, is useful in estimating the future growth rate for the

7   publicly traded parent company.

8   The same variation in earned return on book equities for natural gas is evident

9   on my Schedule MPG-6, page 3. For gas companies, the group average return on

10   equity is 10.48%, but that varies from a group low of 5.64%, to a group high of

11   12.77%. Again, my recommended 9.0% return on equity falls within this range.

12   Equally important, all the publicly traded gas companies have deregulated operations

13   which will enhance the earned return on equity for the parent company relative to the

14   expected return on equity for the underlying utility subsidiaries. Because of the

15   substantial variation in capital intensity of investments in regulated operations versus

16   deregulated businesses, the earned return on equity for the parent company is not a

17   reasonable proxy for a fair expectation of an earned return on equity for the

18   underlying utility subsidiary.

19   For these reasons, Dr. Morin's assertion that the sustainable growth has

20   circular and illogical data points is simply without merit.

1 **Q PLEASE COMMENT ON DR. MORIN'S ASSERTION THAT THE SUSTAINABLE**

2 **GROWTH RATE MODEL SHOULD BE REJECTED BECAUSE IT POORLY**

3 **EXPLAINS THE VARIABLE MARKET VALUE OF THE UNDERLYING SECURITY.**

4 A   This allegation made by Dr. Morin simply is not supported and is not relevant. The

5   sustainable growth DCF model is used to estimate what the required return is

6   embodied in the market value of stock. The sustainable growth rate model only

7   produces one factor used by investors to produce stock valuations – the growth rate

8   in dividends.

9   There are multiple other factors used by investors to establish market

10   valuation. Those other factors include market capital costs, uncertainty and risk,

11   alternative investments' valuations, and changes in the Company-specific risks. All of

12   these valuation factors reflect in the market valuation of a stock.

13   Stock prices and price-to-earnings ratios capture these factors because both

14   of those factors explicitly tie into the prevailing stock market price, which reflects all

15   valuation factors. It is not surprising that they correlate with stock price. In contrast,

16   the sustainable growth rate model does not produce the same statistical correlation to

17   stock price because the used model produces only one of several factors used by

18   investors to value stock.

19   Dr. Morin's arguments and recommended rejection of the sustainable growth

20   rate model are simply misplaced and should be set aside.

21 **Q IS IT YOUR POSITION THAT THE SUSTAINABLE GROWTH RATE DCF MODEL**

22 **SHOULD BE USED IN ISOLATION?**

23 A   No. While I agree there are deficiencies in virtually all cost of equity methodologies,

24   including the sustainable growth rate DCF model, this methodology should be ignored

1   or rejected as recommended by Dr. Morin.   However, I have not, and will not,

2   recommend it be used in isolation to measure a utility's cost of equity. I use this

3   methodology, along with other DCF methodologies and risk premium methodologies,

4   to produce more information to provide a better estimate of the current market cost of

5   equity. Dr. Morin's critique of the sustainable growth rate methodology, while failing

6   to provide any critique of the shortcomings of other methods of estimating the current

7   cost of equity, does not support his proposal to reject the use of the sustainable

8   growth DCF method.

9   ## CAPM – Total Return Market Risk Premium ("MRP")

10   **Q   DR. MORIN ASSERTS THAT ONE OF YOUR MRP ESTIMATES USED IN YOUR**

11   **CAPM ANALYSIS SHOULD BE REJECTED. PLEASE COMMENT.**

12   A   In my risk premium analysis, I used a forward-looking MRP of 7.6%, and a historical

13   MRP of 6.0%. Dr. Morin likes my higher MRP estimate of 7.6%, but rejects my

14   low-end MRP of 6.0%. I have based the 6.0% MRP on the actual investment total

15   return differences over the period from 1926 through the end of 2014 of having

16   invested in the Standard & Poor's ("S&P") 500 versus long-term Treasury bond

17   investments. This 6.0% MRP represents the actual differences in arithmetic average

18   annual total investment returns for these two alternative securities.

19   **Q   WHY IS DR. MORIN OPPOSING THE 6.0% MRP?**

20   A   Dr. Morin argues the actual annual "total" return on Treasury bond investments in

21   measuring an MRP should not be used. Instead, he recommends using only the

22   "income" Treasury bond return. The "income" return ignores year-to-year changes in

23   Treasury bond capital gains/losses over the investment horizon.

1   By measuring an MRP using actual "total" returns on stock, less only the

2   "income" returns on bonds, Dr. Morin argues that the historical MRP is 7.2%.[5]

3 **Q** **DO YOU AGREE WITH DR. MORIN THAT THE HISTORICAL MRP SHOULD BE**

4   **BASED ON THE ACTUAL "TOTAL" RETURN ON STOCK, LESS THE "INCOME"**

5   **RETURN ON BONDS?**

6 A   No. Dr. Morin's proposal to ignore changes in Treasury bond capital gains/losses

7   from year to year ignores the actual arithmetic returns earned on Treasury bond

8   investments during the historical time period. The undisputed fact is that an investor

9   cannot invest in a 30-year Treasury bond without experiencing capital gains and

10   losses from year to year as interest rates change over time. Therefore, Dr. Morin's

11   proposal to measure the MRP based on income Treasury yield only ignores actual

12   and verifiable investment returns on Treasury bonds.

13 **Q** **IN PRODUCING A CAPM RETURN ESTIMATE, DID YOU CONSIDER ONLY AN**

14   **MRP BASED ON THIS 6.0% HISTORICAL ACTUAL ACHIEVED TOTAL RETURN**

15   **RESULT?**

16 A   No. As noted at the outset, and as recognized by Dr. Morin, I used MRPs ranging

17   from the low of 6.0% up to a high of 7.6%. The MRP Dr. Morin proposes to use of

18   7.2% is within this range. Even recognizing the income return on Treasuries, but

19   using alternative methods of measuring the long-run arithmetic average historical

20   returns on the stock market, produces MRPs lower than the 7.2% proposed by

21   Dr. Morin, as I noted in my direct testimony at pages 50-52.

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[5]Rebuttal Testimony of Dr. Roger Morin at 47.

1   There are many variations and many methods providing accurate and reliable

2   estimates of the MRP. Rejecting low-end estimates as proposed by Dr. Morin which

3   reflect actual investment return results, does not produce a viable estimate of the

4   range in MRPs considered by investors in arriving at observable stock market prices.

5   Therefore, Dr. Morin's proposal to ignore the low-end of my MRP estimates is simply

6   imbalanced and should be denied.

7   **Q   DOES DR. MORIN ASSERT THAT MODIFYING YOUR MRP AND YOUR CAPM**

8   **WILL RESULT IN AN INCREASE TO YOUR CAPM RETURN ESTIMATE?**

9   A   Yes. At page 47 of his rebuttal testimony, Dr. Morin argues that use of a MRP of

10   7.4%, rather than the 6% reported by the *Duff & Phelps* (i.e., *Ibbotson*) study, would

11   increase my CAPM return estimate by 44 basis points for the water proxy group, and

12   49 basis points for the gas proxy group. This would increase my CAPM return

13   estimate from 9% up to approximately 9.5%.[6]

14 **Q   PLEASE RESPOND.**

15 A   Dr. Morin bases adjustments to my CAPM return estimates on his flawed and

16   imbalanced proposals to ignore MRPs based on actual achieved investment return

17   differences between the stock market and Treasury bonds.   His proposal

18   accomplishes nothing but to inflate the CAPM return estimate, and does so in an

19   imbalanced and unreasonable manner.   Therefore, these adjustments should be

20   rejected.

---

[6] *Id.*

CAPM Risk-Free Rate Estimate

Q **PLEASE RESPOND TO DR. MORIN'S CLAIM THAT YOUR RISK-FREE RATE USED IN YOUR CAPM AND RISK PREMIUM STUDIES WAS UNDERSTATED.**

A My risk-free rate reflects consensus economists' projections of Treasury bond yields out over the next two years. In contrast, Dr. Morin is proposing to reflect projections from my various sources for long-term GDP growth for changes in Treasury bond yields out 10 to 30 years. Dr. Morin's proposal to reflect Treasury bond yield projections out 30 years simply does not reflect current capital market costs, or changes to capital market costs which could prevail during the period rates determined in this proceeding will be in effect. Indeed, his projected Treasury bond yields reflect the projected market conditions that may or may not actually exist 10 to 30 years in the future.

Dr. Morin simply is not proposing a rate of return which reflects fair compensation during the test year, or during the period the rates determined in this proceeding are likely to be in effect. He is simply using the highest Treasury bond projection available to inflate his return estimate. That is simply not a balanced methodology. Further, it does not result in a fair rate of return for MAWC in the test year, or in the period rates will likely be in effect. Therefore, Dr. Morin's Treasury risk-free rate projections should be rejected.

1 **Q   DR. MORIN ARGUES THAT HIS PROPOSED USE OF A TREASURY BOND**

2 **REFLECTS THE SAME SOURCE YOU RELIED ON IN ORDER TO MAKE GDP**

3 **PROJECTIONS FOR YOUR MULTI-STAGE GROWTH DCF ANALYSIS.   DOES**

4 **THIS ARGUMENT HAVE ANY MERIT?**

5 A   No.   In my multi-stage growth DCF analysis, I attempted to capture investors'

6 long-term growth projections embodied in the current observable stock prices.

7 Current observable stock prices require an estimate of long-term dividend growth

8 rates because that is the cash flow stream purchased by investors by buying the

9 stock price.

10 In significant contrast, Dr. Morin is proposing to use Treasury bond yield

11 projections up to 30 years in the future as a proxy for the current market's risk-free

12 rate. A projected Treasury bond yield does not correlate to any observable security

13 valuation in the test year or at any point in time when the rates in this case will likely

14 be in effect. It is simply a long-term Treasury bond yield forecast with no direct tie to

15 observable security valuations or current investor required market returns. Further,

16 the accuracy of a 30-year projection is dubious at best.

17 For these reasons, Dr. Morin's argument that relying on the same sources for

18 Treasury bond yields is comparable to my GDP growth outlook is simply not accurate

19 and misleading.

20 Dr. Morin's long-term projected Treasury bond yield for use in estimating a fair

21 return on equity for MAWC in this proceeding should be rejected.

Risk Premium Study

1

2 **Q** **PLEASE DESCRIBE DR. MORIN'S CLAIM THAT YOUR RISK PREMIUM STUDY**

3 **FAILS TO ACCOUNT FOR THE INVERSE BEHAVIOR BETWEEN ALLOWED**

4 **RISK PREMIUMS AND THE LEVEL OF INTEREST RATES.**

5 A Dr. Morin's testimony in this regard is simply unreliable. He very carefully constructs

6 his words by referring to allowed risk premiums versus interest rates rather than to

7 reflect the actual market characteristics that determine required investment return

8 differences between utility stock and bond investments.

9 While allowed risk premiums have declined much slower than market interest

10 rates, Dr. Morin has not shown that this relationship is caused by market valuation

11 factors. Rather, most likely, the expanding risk premium is due to the conservative

12 actions taken by regulatory commissions in awarding utilities' authorized returns on

13 equity that have declined slower than the decline in market interest rates.

14 **Q** **ACCEPTING *ARGUENDO* THAT THERE IS AN INVERSE RELATIONSHIP**

15 **BETWEEN INTEREST RATES AND EQUITY RISK PREMIUMS, IS THERE A WAY**

16 **OF PRODUCING A MORE BALANCED METHODOLOGY TO GAUGE A FAIR**

17 **RETURN ON EQUITY IN THE CURRENT MARKETPLACE?**

18 A Yes. One method of gauging a fair return on equity is to reflect market factors which

19 will impact equity and debt required returns in a similar manner. One such factor is

20 forward-looking outlooks for inflation. Both equity returns and bond returns are based

21 on a nominal yield, which is composed of an inflation outlook and a real return.

22 If current inflation outlooks are different than historical inflation outlooks, then

23 the changed inflation outlook will have a corresponding and comparable impact on

24 both equity required returns and bond required returns. Hence, in assessing how

1 much lower interest rates are today, than they have been in the past, one must

2 accurately reflect the decline in interest rates caused by reduced inflation outlooks.

3 In other words, if declining interest rates are largely explained by much lower

4 inflation rates, then both debt and equity returns should have a corresponding

5 reduction in required returns – i.e., the real return component of both securities will be

6 the same but the nominal return will be reduced by the lower inflation return

7 component.

8 **Q HAVE YOU MODIFIED THE RISK PREMIUM ANALYSIS TO REFLECT REAL**

9 **BOND YIELDS VERSUS EQUITY RISK PREMIUMS?**

10 A Yes. One way of doing this is to gauge an equity risk premium considering historic

11 "real" bond yield in relationship to prospective real bond yield. See Schedules MPG-

12 SR-2 and MPG-SR-3. In developing these schedules, I performed two regression

13 analyses using real Treasury yields and real "A" rated utility bond yields.

14 **Q PLEASE DESCRIBE YOUR REAL TREASURY BOND YIELD RISK PREMIUM**

15 **STUDY.**

16 A In developing my regression analysis using real Treasury yields, I performed the

17 following:

18 1. I measured historical real Treasury bond yields using Treasury Inflation Protected
19 Securities ("TIPS").

20 2. I estimate the real yield on Treasury bonds over that study period.

21 3. I then regressed the risk premiums against the contemporaneous real Treasury
22 bond yields. This produced a regression equation of

23 RP = 0.071 – 0.524x, where "x" is the real bond yield.[7]

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[7]Schedule MPG-SR-2, page 1.

1   4. I next estimated the current real Treasury bond yield by subtracting the 13-week
2   average market inflation outlook for the period ending February 26, 2016 from the
3   current Treasury yield during the same 13-week time period. The market inflation
4   outlook was based on the difference between prevailing nominal Treasury bond
5   yields, and TIPS yields for the same 13-week period. As shown on Schedule
6   MPG-SR-4, column 7, this produced a contemporary current real Treasury bond
7   yield of 1.38%.

8   5. I then inputted the current real Treasury bond yield into the regression formula
9   described in 2 above, to estimate a current equity risk premium. This produced a
10   result of 6.35%.[8]

11 **Q**   **PLEASE DESCRIBE YOUR REAL "A" RATED UTILITY BOND YIELD RISK**

12   **PREMIUM STUDY.**

13 A   In developing my regression analysis using real "A" rated utility bond yields, I

14   performed the following:

15   1. I subtracted from the historical nominal utility bond yield rate, a contemporary
16   forward-looking inflation rate. This converted the nominal historical utility bond
17   yield to a historical real bond yield.

18   2. Contemporary historical inflation outlooks were estimated by the difference
19   between historic long-term Treasury bond yields, and historical TIPS.

20   3. I converted the historic "A" yield into real yields using the contemporary inflation
21   outlook.

22   4. I then regressed my equity risk premiums against the real "A" utility bond yields
23   which produced a regression equation of

24          $RP = 0.067 - 0.589x$, where "x" is the real utility bond yield.[9]

25   5. I estimated the current 13-week average real yield on an "A" rated utility bond
26   yield over the period ending February 26, 2016 by subtracting from it the market
27   inflation outlook based on nominal Treasuries and TIPS during the same time
28   period.[10] This produced a real "A" rated utility bond yield for the 13-week period
29   ending February 26, 2016 of 2.80%.

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[8] *Id.*
[9] *Id.*, page 2.
[10] *Id.*, page 4.

1   6. I then inputted the real utility bond yield into the regression equation described in
2   3 above. This produced a risk premium based on contemporary real utility bond
3   yield outlooks of 5.00%.[11]

4 **Q**   **WHAT ARE THE RESULTS OF YOUR REAL YIELD RISK PREMIUM STUDIES?**

5 A   The results of these two analyses (Treasury bond and utility bond) are shown in my

6   Schedules MPG-SR-2 and MPG-SR-3, respectively. As shown in this analysis, this

7   regression equation produced the following.

8   The real yield for current Treasury bonds was measured by the 13-week

9   average Treasury yield less the market inflation outlook over the same 13-week

10   period. The average Treasury yield for the 13-week period ending February 26, 2016

11   is 2.81%. This resulting forward-looking inflation rate of 1.41% is then removed from

12   the current nominal Treasury yield of 2.81% which produced a real Treasury bond

13   yield of 1.38%.

14   Based on a real Treasury bond yield of 1.38% and the regression equation

15   described above, produces a current equity risk premium of 6.35%. As developed in

16   Table 2 below, this equity risk premium in combination with current Treasury bond

17   yield of 2.81% produces a return on equity of 9.16%.

---

[11] *Id.*, page 2.

```
                              TABLE 2

                 Real Treasury Yield Risk Premium

          Description          Amount              Source

I.  Risk Premium
    A.  Intercept               7.08%     Schedule MPG-SR-2, page 1


    B.  Adjust                (0.725%)     a x b
        a. Current Real Yield    1.38%     Schedule MPG-SR-2, page 1
        b. Factor             (0.5235)     Schedule MPG-SR-2, page 1


    C.  Risk Premium            6.35%     Sum A + B
II. Current Treasury Yield      2.81%     Schedule MPG-SR-4
III. Return on Equity           9.16%     Sum Risk Premium (C) + Treasury Yield
                                          (II)
```

1   The current real "A" rated utility yield was developed by subtracting the current

2   market inflation outlook of 1.41% described above from the current nominal "A" rated

3   utility bond yield of 4.24%. This produced a real utility bond yield of 2.80%. Using

4   the current utility real bond yield of 2.80% in the regression equation described

5   above, produces an equity risk premium of 5.00%. As developed in Table 3 below,

6   this in combination with an "A" rated utility bond yield of 4.24% produces a return on

7   equity of 9.25%.

```
┌─────────────────────────────────────────────────────────────────────┐
│                              TABLE 3                                  │
│                                                                       │
│                 Real Utility Bond Yield Risk Premium                  │
│                                                                       │
│        Description          Amount              Source                │
│       ─────────────        ────────    ──────────────────────────    │
│                                                                       │
│   II. Risk Premium                                                    │
│      A.  Intercept           6.65%      Schedule MPG-SR-3, page 1     │
│                                                                       │
│      B.  Adjust            (1.648%)     a x b                         │
│          a. Current Real Yield  2.80%   Schedule MPG-SR-3, page 1     │
│          b. Factor         (0.5894)     Schedule MPG-SR-3, page 1     │
│                                                                       │
│      C.  Risk Premium        5.00%      Sum A + B                     │
│   II. "A" Utility Bond Yield  4.24%     Schedule MPG-SR-4             │
│   III. Return on Equity      9.25%      Sum Risk Premium (C) + Bond Yield (II) │
│      Note:  May not add due to rounding.                              │
└─────────────────────────────────────────────────────────────────────┘
```

1   Using this inverse relationship between equity risk premiums and real interest

2 rates supports a return on equity for MAWC in the current marketplace in the range of

3 9.16% to 9.25 %, with a midpoint of 9.21%.

4 **Q   DID YOU USE THE SAME TIME PERIOD IN THIS RISK PREMIUM BASED ON**

5 **REAL BOND YIELDS, AS YOU DID IN YOUR DIRECT TESTIMONY?**

6 A   No. The TIPS data was only available back to 2003. Hence, I could not derive the

7 market-based inflation outlooks before that time period. Hence, I shortened my study

8 period to reflect the time period where all the data necessary to do a real bond yield

9 risk premium study was available. That time period includes 2003 through year-end

10 2015.

MAWC Investment Risk

1

Q   DID DR. MORIN ALSO CRITICIZE YOU FOR NOT INCREASING YOUR RETURN
2
ON EQUITY TO REFLECT DIFFERENCES IN MAWC'S LEVERAGE RELATIVE TO
3
THE PROXY GROUP COMPANIES?
4

5   A   Yes.

Q   DO YOU BELIEVE AN ADJUSTMENT TO MAWC'S AUTHORIZED RETURN ON
6
EQUITY SHOULD BE MADE BASED ON DIFFERENCES IN LEVERAGE?
7

8   A   No. Leverage risk is a component of MAWC's total investment risk. Hence, to the

9   extent MAWC has lower or higher financial risk, it may have higher or lower business

10   risk relative to the proxy group companies. What is relevant is if the proxy group

11   reasonably reflects the total investment risk of MAWC. It is not relevant that there

12   may be some single risk factor which may be different for MAWC relative to the proxy

13   group. The differences should be based on total investment risk. Indeed, Dr. Morin

14   appears to recognize this at page 58 of his testimony, where he asserts:

15   [I]nvestors tend to look at the totality of risk-mitigating mechanisms in
16   place relative to those in place at comparable companies when
17   assessing risk.

18   This is a significant omission on Dr. Morin's part. In assessing MAWC's

19   investment risk related to capital investment, and regulatory mechanisms, he failed to

20   consider comparable risk of other water utilities. That is, while MAWC may,

21   *arguendo*, have higher capital investment risk, there may be other risk factors which

22   reduce MAWC's risk relative to these other companies. Based on total investment

23   risk, MAWC has comparable investment risk to that of the proxy group companies.

RSM and Return on Equity

1   **RSM and Return on Equity**

2   **Q**   **PLEASE RESPOND TO DR. MORIN'S ARGUMENTS THAT A RETURN ON**

3   **EQUITY ADJUSTMENT TO REFLECT THE RSM IS NOT APPROPRIATE OR**

4   **REASONABLE.**

5   A   Dr. Morin argues that RSM is a risk factor that is largely reflected in utility stock

6   valuations, and is therefore reflected in measurements of return on equity for the

7   proxy group. He believes that the RSM will not significantly impact MAWC's

8   investment risk, and therefore a return on equity adjustment is not justified.

9   **Q**   **PLEASE RESPOND.**

10   A   An RSM will increase rate instability to customers. Therefore, from a customer

11   standpoint, customers would be better off without an RSM mechanism. To the extent

12   the RSM mechanism does not improve MAWC's cost recovery uncertainty and

13   reduce its operating risk, then there is little to no justification for implementing the

14   RSM. On the other hand, if the RSM does improve MAWC's cost recovery risk,

15   mitigate its regulatory lag, and improve its ability to earn its authorized return on

16   equity, then it will reduce its operating risk. In this instance, a reduced return on

17   equity is justified.

18   The Company simply cannot have it both ways. Argue that an RSM will not

19   change its investment risk, and therefore not impact the return on equity, while at the

20   same time recommend the implementation of an RSM which will increase rate

21   instability for its retail customers. This rate instability is created because cost

22   recovery risk is shifted from investors to customers. This risk shift is not insignificant.

23   For these reasons, if the RSM is implemented, then a reduced return on equity

24   should be made.

1 **Q   BUT DR. MORIN ARGUES THAT THE RSM WOULD ONLY BE ONE RISK**

2   **FACTOR, WHICH SHOULD NOT BE CONSIDERED IN ISOLATION. PLEASE**

3   **RESPOND.**

4 A   What is significant is the risk factor is based on the rate case in this proceeding.

5   Hence, to the extent the RSM can reduce MAWC's risk, that is not yet reflected in the

6   risk factors used to compare MAWC's current investment risk to those of the proxy

7   companies. If MAWC's risk is reduced relative to the risk factors used to produce a

8   comparable risk proxy group, then the proxy group may become more risky than

9   MAWC after the RSM's implementation. In other words, the RSM has a prospective

10   impact on MAWC's risk. All the other factors, including MAWC's capital investment,

11   are considered by the market participants and are reflected in the current risk factors.

12   As such, a change in regulatory mechanism should be considered in adopting a fair

13   return on equity for MAWC.

14 **Q   DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

15 A   Yes.

Missouri-American Water Company

Authorized Returns On Equity

Water Utilities

Line	Company	Allowed ROE	Order Date
1	American States Water Co.	9.43	1/1/2013
2	American Water Works Co., Inc.	9.75	12/12/2012
3	Aqua America, Inc.	9.79	5/2/2014
4	California Water Service Group	9.43	1/1/2013
5	Connecticut Water Service, Inc.	9.63	3/25/2014
6	Middlesex Water Company	9.75	8/19/2014
7	SJW Corporation	9.43	1/1/2013
8	York Water Company	N/A	2/28/2014
9	**Average**	9.60	

Gas Utilities

Line	Company	Allowed ROE	Order Date
10	Atmos Energy Corporation	9.81	9/9/2014
11	Laclede Group, Inc	N/A	6/26/2013
12	New Jersey Resources Corp.	10.3	10/1/2008
13	NISource	10.61	10/28/2014
14	Northwest Natural Gas Co.	9.80	11/1/2012
15	Piedmont Natural Gas Co., Inc	10.40	1/23/2012
16	South Jersey Industries	9.75	10/1/2014
17	Southwest Gas Corporation	9.98	6/12/2014
18	UGI Corporation	11.60	8/11/2011
19	WGL Holdings, Inc.	9.58	11/22/2013
20	**Average**	10.20	

Source: AUS Monthly Utility Reports, January 2016;
Water-Pg 18, Gas- Pgs 10, 14

Missouri-American Water Company

Real Treasury Yield Regression Analysis

	Regression Statistics	
1	Multiple R	0.8031
2	R Square	0.6450
3	Adjusted R Square	0.6127
4	Standard Error	0.0029
5	Observations	13

ANOVA

		df	SS	MS	F	Significance F
6	Regression	1	0.0002	0.0002	19.9846	0.0009
7	Residual	11	0.0001	0.0000		
8	Total	12	0.0003			

		Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
8	Intercept	**0.0708**	0.0024	29.0599	0.0000	0.0654	0.0761	0.0654	0.0761
9	RealYield	**-0.5235**	0.1171	-4.4704	0.0009	-0.7813	-0.2658	-0.7813	-0.2658

		Cost of Equity	Reference
	Risk Premium Calculation		
10	Intercept Factor	0.0708	Ln. 8
11	Real Yield Factor	-0.5235	Ln. 9
12	Real Yield	1.38%	Schedule MPG-SR-4, Col. 7.
13	**Calculated Risk Premium**	**6.35%**	Ln. 10 + (Ln. 11 x Ln. 12)
14	Current Treasury Yield	2.81%	Schedule MPG-SR-4, Col. 6.
15	**Cost of Equity**	**9.16%**	Ln. 13 + Ln. 14

Missouri-American Water Company

Treasury Bond Yield Implied Inflation and Risk Premium

Line	Ending Date	10-Year Treasury Notes Yield[1] (1)	10-Year TIPS Yield[1] (2)	Implied Inflation[2] (3)	Authorized Gas Returns (4)	30-Year Treasury Notes Yield[3] (5)	Implied Real 30-Year Treasury Notes Yield[4] (6)	Risk Premium (7)
1	2003	4.01%	2.06%	1.92%	10.99%	4.96%	2.98%	6.03%
2	2004	4.27%	1.83%	2.40%	10.59%	5.05%	2.59%	5.54%
3	2005	4.29%	1.81%	2.43%	10.46%	4.65%	2.16%	5.81%
4	2006	4.80%	2.31%	2.43%	10.43%	4.99%	2.50%	5.44%
5	2007	4.63%	2.29%	2.30%	10.24%	4.83%	2.48%	5.41%
6	2008	3.66%	1.77%	1.86%	10.37%	4.28%	2.37%	6.09%
7	2009	3.26%	1.66%	1.58%	10.19%	4.07%	2.45%	6.12%
8	2010	3.22%	1.15%	2.04%	10.08%	4.25%	2.17%	5.83%
9	2011	2.78%	0.55%	2.22%	9.92%	3.91%	1.65%	6.01%
10	2012	1.80%	-0.48%	2.29%	9.94%	2.92%	0.62%	7.02%
11	2013	2.35%	0.07%	2.27%	9.68%	3.45%	1.15%	6.23%
12	2014	2.54%	0.44%	2.09%	9.78%	3.34%	1.23%	6.44%
13	2015	2.14%	0.45%	1.68%	9.49%	2.80%	1.10%	6.69%
14	**Average**	3.37%	1.22%	2.12%	10.17%	4.12%	1.96%	6.05%

Source:

[1] St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org

[2] (1 + Col. 1) / (1 + Col 2) - 1

[3] Schedule MPG-10

[4] (1 + Col. 5) / (1 + Col 3) - 1

Missouri-American Water Company

Real Utility Bond Yield Regression Analysis

	Regression Statistics	
1	Multiple R	0.9392
2	R Square	0.8821
3	Adjusted R Square	0.8713
4	Standard Error	0.0022
5	Observations	13

ANOVA

		df	SS	MS	F	Significance F
6	Regression	1	0.0004	0.0004	82.2628	0.0000
7	Residual	11	0.0001	0.0000		
8	Total	12	0.0004			

		Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
8	Intercept	**0.0665**	0.0022	30.3829	0.0000	0.0617	0.0713	0.0617	0.0713
9	A_Real	**-0.5894**	0.0650	-9.0699	0.0000	-0.7324	-0.4464	-0.7324	-0.4464

		Cost of Equity	Reference
	Risk Premium Calculation		
10	Intercept Factor	0.067	Ln. 8
11	Real Yield Factor	-0.5894	Ln. 9
12	Real Yield	2.80%	Schedule MPG-SR-4, Col. 5.
13	**Calculated Risk Premium**	**5.00%**	Ln. 10 + (Ln. 11 x Ln. 12)
14	Current A-Utility Yield	4.24%	Schedule MPG-SR-4, Col. 4.
15	**Cost of Equity**	**9.25%**	Ln. 13 + Ln. 14

Missouri-American Water Company

Implied Real Yields and Risk Premium for A-Rated Utility Bonds

Line	Six Month Avg. Ending Date	"A" Rated Utility Bond Nominal Yield[1] (1)	Implied Inflation[2] (2)	"A" Rated Utility Bond Real Yield[3] (3)	Authorized Gas Returns[1] (4)	Risk Premium (5)
1	2003	6.58%	1.92%	4.58%	10.99%	4.41%
2	2004	6.16%	2.40%	3.68%	10.59%	4.43%
3	2005	5.65%	2.43%	3.14%	10.46%	4.81%
4	2006	6.07%	2.43%	3.55%	10.43%	4.36%
5	2007	6.07%	2.30%	3.69%	10.24%	4.17%
6	2008	6.53%	1.86%	4.58%	10.37%	3.84%
7	2009	6.04%	1.58%	4.39%	10.19%	4.15%
8	2010	5.46%	2.04%	3.35%	10.08%	4.62%
9	2011	5.04%	2.22%	2.76%	9.92%	4.88%
10	2012	4.13%	2.29%	1.80%	9.94%	5.81%
11	2013	4.48%	2.27%	2.15%	9.68%	5.20%
12	2014	4.28%	2.09%	2.14%	9.78%	5.50%
13	2015	4.04%	1.68%	2.32%	9.49%	5.45%
14	**Average**	5.42%	2.12%	3.24%	10.17%	4.74%

Source:

[1] Schedule MPG-11

[2] Schedule MPG-SR-2, Page 2, Col. 3.

[3] $(1 + \text{Col. 1}) / (1 + \text{Col 2}) - 1$

Missouri-American Water Company

13-Week Average Real Bond Yields

Date	Nominal 10-Yr Treasury Yield (1)	Real 10-Yr TIPS Yield (2)	Implied Inflation (3)	Nominal "A" Rated Utility Bond Yield (4)	Implied Real "A" Rated Utility Bond Yield (5)	Nominal 30-Yr Treasury Yield (6)	Implied Real 30-Year Treasury Yield (7)
2/26/2016	1.76%	0.35%	1.41%	4.15%	2.71%	2.63%	1.21%
2/19/2016	1.76%	0.50%	1.25%	4.10%	2.81%	2.61%	1.34%
2/12/2016	1.74%	0.49%	1.24%	4.09%	2.81%	2.60%	1.34%
2/5/2016	1.86%	0.53%	1.32%	4.15%	2.79%	2.68%	1.34%
1/29/2016	1.94%	0.53%	1.40%	4.19%	2.75%	2.75%	1.33%
1/22/2016	2.07%	0.72%	1.34%	4.25%	2.87%	2.83%	1.47%
1/15/2016	2.03%	0.67%	1.35%	4.23%	2.84%	2.81%	1.44%
1/8/2016	2.13%	0.65%	1.47%	4.32%	2.81%	2.91%	1.42%
12/31/2015	2.27%	0.73%	1.53%	4.41%	2.84%	3.01%	1.46%
12/24/2015	2.25%	0.73%	1.51%	4.35%	2.80%	2.96%	1.43%
12/18/2015	2.19%	0.73%	1.45%	4.30%	2.81%	2.90%	1.43%
12/11/2015	2.13%	0.67%	1.45%	4.26%	2.77%	2.87%	1.40%
12/4/2015	2.28%	0.68%	1.59%	4.38%	2.75%	3.01%	1.40%
Average	**2.03%**	**0.61%**	**1.41%**	**4.24%**	**2.80%**	**2.81%**	**1.38%**

Col. (3) = (1 + Col. (1)) / (1 + Col. (2)) - 1.
Col. (5) = (1 + Col. (4)) / (1 + Col. (3)) - 1.
Col. (7) = (1 + Col. (6)) / (1 + Col. (3)) - 1.