

BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

**IN THE MATTER OF)
AQUARION WATER COMPANY OF)
NEW HAMPSHIRE, INC.)**

DW 12-085

**DIRECT TESTIMONY
OF
DAVID C. PARCELL
ON BEHALF OF
TOWN OF HAMPTON, NH**

JANUARY 11, 2013

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1 **I. INTRODUCTION**

2

3 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS ADDRESS.**

4 A. My name is David C. Parcell. I am President and Senior Economist of Technical
5 Associates, Inc. My business address is Suite 580, 9030 Stony Point Parkway,
6 Richmond, Virginia 23235.

7

8 **Q. PLEASE SUMMARIZE YOUR EDUCATION BACKGROUND AND**
9 **PROFESSIONAL EXPERIENCE.**

10 A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic
11 Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia
12 Commonwealth University. I have been a consulting economist with Technical
13 Associates since 1970. I have provided cost of capital testimony in public utility
14 ratemaking proceedings dating back to 1972. In connection with this, I have previously
15 filed testimony and/or testified in about 500 utility proceedings before some 50
16 regulatory agencies in the United States and Canada. Appendix 1 provides a more
17 complete description of my education and relevant work experience.

18

19 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

20 A. I have been retained by the Town of Hampton to evaluate the cost of capital aspects of
21 the current filing of Aquarion Water Company of New Hampshire, Inc. (“AWC-NH” or
22 “Company”). I have performed independent studies and am making recommendations of
23 the current cost of capital for AWC-NH. In addition, because AWC-NH is ultimately a
24 subsidiary of Macquarie Utilities, Inc. (“MUI” or “Parent”), I also have evaluated MUI,
25 as well as several intermediate MUI subsidiary levels, in my analyses.

26

27 **Q. HAVE YOU PREPARED AN EXHIBIT IN SUPPORT OF YOUR TESTIMONY?**

28 A. Yes, I have prepared one exhibit, identified as Schedule 1 through Schedule 12. This
29 exhibit was prepared either by me or under my direction. The information contained in
30 this exhibit is correct to the best of my knowledge and belief.

31

1 **II. RECOMMENDATIONS AND SUMMARY**

2
3 **Q. WHAT ARE YOUR RECOMMENDATIONS IN THIS PROCEEDING?**

4 A. My overall cost of capital recommendations for AWC-NH are:

5

	<u>Percent</u>	<u>Cost</u>	<u>Return</u>
6 Long-Term Debt	58.73%	6.04%	3.55%
7 Preferred Stock	0.01%	6.00%	0.00%
8 Common Equity	<u>41.26%</u>	<u>6.10-9.50%</u>	<u>2.52-3.92%</u>
9 Total	100.00%		6.06-7.47%

6.97% with 8.3% ROE

10 AWC-NH's application requests a return on common equity of 10.25 percent and
11 overall rate of return of 7.85 percent. The primary difference between AWC-NH's
12 request and my recommendation is the cost of equity capital ("COE"), where AWC-NH
13 proposes a 10.25 percent return and I recommend an 8.3 percent return. I also use a
14 slightly different cost of long-term debt, as described below.

15
16 **Q. PLEASE SUMMARIZE YOUR COST OF CAPITAL ANALYSES AND**
17 **RELATED CONCLUSIONS FOR AWC-NH.**

18 A. This proceeding is concerned with AWC-NH's regulated water utility operations in New
19 Hampshire. My analyses are concerned with the Company's total cost of capital. The
20 first step in performing these analyses is the development of the appropriate capital
21 structure. AWC-NH's proposed capital structure is the December 31, 2011 capital
22 structure ratios of the Company. I also use this capital structure in my cost of capital
23 analyses.

24 The second step in a cost of capital calculation is a determination of the embedded
25 cost rate of long-term debt. I have not used the 6.17 percent cost rate for long-term debt
26 contained in AWC-NH's application, which does not include all of the recent debt
27 issuance. Instead, I have used the Company's actual consolidated cost of long-term debt
28 (6.04 percent).

29 The third step in the cost of capital calculation is the estimation of the COE. I
30 have employed three recognized methodologies to estimate the COE for AWC-NH. Each

1 of these methodologies is applied to a group of proxy water utilities and a group of
2 natural gas distribution utilities. These three methodologies and my findings are:

Methodology	Range
Discounted Cash Flow	9.0-9.6% (9.3% mid-point)
Capital Asset Pricing Model	6.1%
Comparable Earnings	9.0-10.0% (9.5% mid-point)

7
8 Based upon these findings, I conclude that the COE for AWC-NH is within a range of 6.1
9 percent to 9.5 percent (8.3 percent average), which reflects the average of the mid-point
10 values for the DCF, CAPM and CE model results.

11 Combining these three steps into a weighted cost of capital results in an overall
12 rate of return range of 6.06 percent to 7.47 percent (6.97 percent average, which
13 incorporates a cost of common equity of 8.3 percent). My specific cost of capital
14 recommendation for AWC-NH is 6.97 percent.

15
16 **III. ECONOMIC/LEGAL PRINCIPLES AND METHODOLOGIES**

17
18 **Q. WHAT ARE THE PRIMARY ECONOMIC AND LEGAL PRINCIPLES THAT**
19 **ESTABLISH THE STANDARDS FOR DETERMINING A FAIR RATE OF**
20 **RETURN FOR A REGULATED UTILITY?**

21 A. Public utility rates are normally established in a manner designed to allow the recovery of
22 their costs, including capital costs. This is frequently referred to as “cost of service”
23 ratemaking. Rates for regulated public utilities traditionally have been primarily
24 established using the “rate base - rate of return” concept. Under this method, utilities are
25 allowed to recover a level of operating expenses, taxes, and depreciation deemed
26 reasonable for rate-setting purposes, and are granted an opportunity to earn a fair rate of
27 return on the assets utilized (*i.e.* rate base) in providing service to their customers.

28 The rate base is derived from the asset side of the utility’s balance sheet as a
29 dollar amount and the rate of return is developed from the liabilities/owners’ equity side
30 of the balance sheet as a percentage. Thus, the revenue impact of the cost of capital is
31 derived by multiplying the rate base by the rate of return, including income taxes.

1 The rate of return is developed from the cost of capital, which is estimated by
2 weighting the capital structure components (*i.e.* debt, preferred stock, and common
3 equity) by their percentages in the capital structure and multiplying these values by their
4 cost rates. This is also known as the weighted cost of capital.

5 Technically, “fair rate of return” is a legal and accounting concept that refers to an
6 ex post (after the fact) earned return on an asset base, while the cost of capital is an
7 economic and financial concept which refers to an ex ante (before the fact) expected, or
8 required, return on a capital base. In regulatory proceedings, however, the two terms are
9 often used interchangeably, and I have equated the two concepts in my testimony.

10 From an economic standpoint, a fair rate of return is normally interpreted to mean
11 that an efficient and economically managed utility will be able to maintain its financial
12 integrity, attract capital, and establish comparable returns for similar risk investments.
13 These concepts are derived from economic and financial theory and are generally
14 implemented using financial models and economic concepts.

15 Although I am not a lawyer and I do not offer a legal opinion, my testimony is
16 based on my understanding that two United States Supreme Court decisions provide the
17 controlling standards for a fair rate of return. The first decision is Bluefield Water Works
18 and Improvement Co. v. Public Serv. Comm’n of West Virginia, 262 U.S. 679 (1923). In
19 this decision, the Court stated:

20 The annual rate that will constitute just compensation depends upon many
21 circumstances and must be determined by the exercise of fair and
22 enlightened judgment, having regard to all relevant facts. A public utility
23 is entitled to such rates as will permit it to earn a return on the value of the
24 property which it employs for the convenience of the public equal to that
25 generally being made at the same time and in the same general part of the
26 country on investments in other business undertakings which are attended
27 by corresponding risks and uncertainties; but it has no constitutional right
28 to profits such as are realized or anticipated in highly profitable enterprises
29 or speculative ventures. The return should be reasonably sufficient to
30 assure confidence in the financial soundness of the utility, and should be
31 adequate, under efficient and economical management, to maintain and
32 support its credit and enable it to raise the money necessary for the proper
33 discharge of its public duties. A rate of return may be reasonable at one
34 time, and become too high or too low by changes affecting opportunities
35 for investment, the money market, and business conditions generally.
36

1 It is generally understood that the Bluefield decision established the following
2 standards for a fair rate of return: comparable earnings, financial integrity, and capital
3 attraction. It also noted that required returns change over time, and there is an underlying
4 assumption that the utility be operated efficiently.

5 The second decision is Federal Power Comm'n v. Hope Natural Gas Co., 320
6 U.S. 591 (1942). In that decision, the Court stated:

7 The rate-making process under the [Natural Gas] Act, i.e., the fixing of
8 'just and reasonable' rates, involves a balancing of the investor and
9 consumer interests From the investor or company point of view it is
10 important that there be enough revenue not only for operating expenses but
11 also for the capital costs of the business. These include service on the debt
12 and dividends on the stock. By that standard the return to the equity owner
13 should be commensurate with returns on investments in other enterprises
14 having corresponding risks. That return, moreover, should be sufficient to
15 assure confidence in the financial integrity of the enterprise, so as to
16 maintain its credit and to attract capital.
17

18 The three economic and financial parameters in the Bluefield and Hope decisions
19 - comparable earnings, financial integrity, and capital attraction - reflect the economic
20 criteria encompassed in the "opportunity cost" principle of economics. The opportunity
21 cost principle provides that a utility and its investors should be afforded an opportunity
22 (not a guarantee) to earn a return commensurate with returns they could expect to achieve
23 on investments of similar risk. The opportunity cost principle is consistent with the
24 fundamental premise on which regulation rests, namely, that it is intended to act as a
25 surrogate for competition.
26

27 **Q. HOW CAN THESE PARAMETERS BE EMPLOYED TO ESTIMATE THE COST**
28 **OF CAPITAL FOR A UTILITY?**

29 A. Neither the courts nor economic/financial theory has developed exact and mechanical
30 procedures for precisely determining the cost of capital. This is the case because the cost
31 of capital is an opportunity cost and is prospective-looking, which dictates that it must be
32 estimated. However, there are several useful models that can be employed to assist in
33 estimating the COE, which is the capital structure item that is the most difficult to
34 determine. These include the DCF, CAPM, CE and risk premium ("RP") methods. I use

1 three methodologies to determine AWC-NH's COE: the DCF, CAPM, and CE methods.
2 I have not directly employed a RP model in my analyses although, as discussed later, my
3 CAPM analysis is a form of the RP methodology. Each of these methodologies will be
4 described in more detail later in my testimony.
5

6 **IV. GENERAL ECONOMIC CONDITIONS**
7

8 **Q. ARE ECONOMIC AND FINANCIAL CONDITIONS IMPORTANT IN**
9 **DETERMINING THE COST OF CAPITAL FOR AWC-NH?**

10 A. Yes. The cost of capital, for both fixed-cost (debt and preferred stock) components and
11 common equity, are determined in part by current and prospective economic and
12 financial conditions. At any given time, each of the following factors has an influence on
13 the cost of capital:

- 14 • The level of economic activity (i.e., growth rate of the economy);
 - 15 • The stage of the business cycle (i.e., recession, expansion, or transition);
 - 16 • The level of inflation;
 - 17 • The level and trend of interest rates; and,
 - 18 • Expected economic conditions.
- 19

20 My understanding is that this position is consistent with the *Bluefield* decision that noted
21 “[a] rate of return may be reasonable at one time, and become too high or too low by
22 changes affecting opportunities for investment, the money market, and business
23 conditions generally.” *Bluefield*, 262 U.S. at 679.
24

25 **Q. WHAT INDICATORS OF ECONOMIC AND FINANCIAL ACTIVITY DID YOU**
26 **EVALUATE IN YOUR ANALYSES?**

27 A. I examined several sets of economic statistics from 1975 to the present. I chose this time
28 period because it permits the evaluation of economic conditions over four full business
29 cycles, allowing for an assessment of changes in long-term trends. This period also
30 approximates the beginning and continuation of active rate case activities by public
31 utilities.

1 A business cycle is commonly defined as a complete period of expansion
2 (recovery and growth) and contraction (recession). A full business cycle is a useful and
3 convenient period over which to measure levels and trends in long-term capital costs
4 because it incorporates the cyclical (i.e., stage of business cycle) influences, and thus,
5 permits a comparison of structural (or long-term) trends.
6

7 **Q. PLEASE DESCRIBE THE TIMEFRAME OF THE FOUR PRIOR BUSINESS**
8 **CYCLES AND THE CURRENT CYCLE.**

9 A. The four prior complete cycles and current cycle cover the following periods:

<u>Business Cycle</u>	<u>Expansion Cycle</u>	<u>Contraction Period</u>
1975-1982	Mar. 1975-July 1981	Aug. 1981-Oct. 1982
1982-1991	Nov. 1982-July 1990	Aug. 1990-Mar. 1991
1991-2001	Apr. 1991-Mar. 2001	Apr. 2001-Nov. 2001
2001-2009	Dec. 2001-Nov. 2007	Dec. 2007-June 2009
Current	July 2009-	

10
11
12
13
14
15 Source: National Bureau of Economic, Research, "Business Cycle Expansions and Contractions."

16
17 **Q. DO YOU HAVE ANY GENERAL OBSERVATIONS CONCERNING THE**
18 **RECENT TRENDS IN ECONOMIC CONDITIONS AND THEIR IMPACT ON**
19 **CAPITAL COSTS OVER THIS BROAD PERIOD?**

20 A. Yes, I do. As I will describe below, until the end of 2007, the United States economy had
21 enjoyed general prosperity and stability since the early 1980s.¹ This period had been
22 characterized by longer economic expansions, relatively tame contractions, low and
23 declining inflation, and declining interest rates and other capital costs.

24 However, in 2008 and 2009, the economy declined significantly, initially as a
25 result of the 2007 collapse of the "sub-prime" mortgage market and the related liquidity
26 crisis in the financial sector of the economy. Subsequently, this financial crisis
27 intensified with a more broad-based decline, initially based on a substantial increase in
28 petroleum prices and a dramatic decline in the U.S. financial sector, culminating with the
29 collapse and/or bailouts of a significant number of well-known institutions such as Bear

¹ There was a "Tech Bubble" in 1999-2000, in which prices of many technology stocks encountered a dramatic run-up that was followed by an equally dramatic decline in 2001-2002.

1 Stearns, Lehman Brothers, Merrill Lynch, Freddie Mac, Fannie Mae, AIG and Wachovia.
2 The recession also witnessed the demise of national companies such as Circuit City and
3 the bankruptcies of automotive manufacturers such as Chrysler and General Motors.

4 This decline has been described as the worst financial crisis since the Great
5 Depression and has been referred to as the “Great Recession.” Since 2008, the U.S. and
6 other governments have implemented and continue to implement unprecedented actions
7 to attempt to correct or minimize the scope and effects of this recession.

8 It appears that the recession reached its low point in mid-2009 and that the
9 economy has since begun to expand again, although at a slow and uneven rate. However,
10 the length and severity of the recession, as well as a relatively slow and uneven recovery,
11 indicates that the impacts of the recession have been and will be felt for an extended
12 period of time. As an example of this, the U.S. unemployment rate still stands at nearly 8
13 percent – close to the highest rate in decades.

14
15 **Q. PLEASE DESCRIBE RECENT AND CURRENT ECONOMIC AND FINANCIAL**
16 **CONDITIONS AND THEIR IMPACT ON THE COST OF CAPITAL.**

17 **A.** Schedule 2 shows several sets of relevant economic data for the cited time periods. Pages
18 1 and 2 contain general macroeconomic statistics; pages 3 and 4 show interest rates; and
19 pages 5 and 6 contain equity market statistics.

20 Pages 1 and 2 show that 2007 was the sixth year of an economic expansion but, as
21 I previously noted, the economy subsequently entered a significant decline, as indicated
22 by the growth in real (i.e., adjusted for inflation) Gross Domestic Product (“GDP”),
23 industrial production, and an increase in the unemployment rate. This recession lasted
24 until mid-2009, making it a longer-than-normal recession, as well as a deeper recession.
25 Since then, economic growth has been erratic and lower than the initial periods of prior
26 expansions.

27 Pages 1 and 2 also show the rate of inflation. As reflected in the Consumer Price
28 Index (“CPI”), for example, inflation rose significantly during the 1975-1982 business
29 cycle and reached double-digit levels in 1979-1980. The rate of inflation declined
30 substantially beginning in 1981, and remained at or below 6.1 percent during the 1983-
31 1991 business cycle. Since 2008, the CPI has been 3 percent or lower. These are the

1 lowest levels of the past 35 years and are indicative of low inflation, which is reflective
2 of lower capital costs.

3
4 **Q. WHAT HAVE BEEN THE TRENDS IN INTEREST RATES OVER THE FOUR**
5 **PRIOR BUSINESS CYCLES AND AT THE CURRENT TIME?**

6 A. Pages 3 and 4 of Schedule 2 show several series of interest rates. Rates rose sharply to
7 record levels in 1975-1981 when the inflation rate was high and generally rising. Interest
8 rates declined substantially in conjunction with inflation rates during the remainder of the
9 1980s and throughout the 1990s. Interest rates declined even further from 2000-2005 and
10 generally recorded their then-lowest levels since the 1960s.

11 Since 2008, the Federal Reserve has lowered the Federal Funds rate (i.e., short-
12 term rate) on several occasions; currently it is 0.25 percent, an all-time low. In 2008 and
13 early 2009, there was a pronounced decline in short-term rates and long-term U.S.
14 Treasury Securities yields, and an increase in corporate bond yields, reflecting the “flight
15 to safety,” wherein there was a reluctance of investors to purchase common stocks and
16 corporate bonds while concomitantly moving their money into very safe government
17 bonds. Since then, as seen on page 4 of Schedule 2, both U.S. and corporate bond yields
18 have declined to their lowest levels in the past four business cycles and in more than 35
19 years, with even corporate lending rates remaining at historically low levels, again
20 reflective of lower capital costs.

21
22 **Q. WHAT TRENDS DOES SCHEDULE 2 SHOW FOR TRENDS OF COMMON**
23 **SHARE PRICES?**

24 A. Pages 5 and 6 show several series of common stock prices and ratios. These indicate that
25 stock prices were essentially stagnant during the high inflation/high interest rate
26 environment of the late 1970s and early 1980s. The 1983-1991 business cycle and the
27 more recent cycles witnessed a significant upward trend in stock prices. The beginning
28 of the recent financial crisis saw stock prices decline precipitously, as stock prices in
29 2008 and early 2009 were down significantly from 2007 levels, reflecting the
30 financial/economic crisis. Beginning in the second quarter of 2009, prices have
31 recovered substantially and have reached the levels achieved prior to the “crash.”

1 **Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR DISCUSSION OF**
2 **ECONOMIC AND FINANCIAL CONDITIONS?**

3 A. It is apparent that recent economic and financial circumstances have been different from
4 any that have prevailed since at least the 1930s. The late 2008-early 2009 deterioration in
5 stock prices, the decline in U.S. Treasury bond yields, and an increase in corporate bond
6 yields were evidenced in the then-evident “flight to safety.” On the other side of this
7 “flight to safety” is the negative perception of the recent declines, which significantly
8 reduced the value of most retirement accounts, investment portfolios and other assets.
9 One significant aspect of this has been a decline in investor expectations of returns,
10 including stock returns. Finally, as noted above, utility interest rates are currently at
11 levels below those prevailing prior to the financial crisis of late 2008 to early 2009 and
12 are near the lowest level in the past 35 years. I also note that the events of the past six
13 years have made public utility stocks, with their consistent and rising dividend rates,
14 relatively more attractive to investors.²

15
16 **V. AWC-NH’S OPERATIONS AND RISKS**

17
18 **Q. PLEASE SUMMARIZE AWC-NH AND ITS OPERATIONS.**

19 A. AWC-NH is a public utility that delivers water and wastewater services through its
20 distribution systems in New Hampshire. AWC-NH provides service to about 25,000
21 people in the towns of Hampton, North Hampton and Rye. AWC-NH is a subsidiary of
22 Aquarion Water Company (“AWC”), having been acquired in 2002.

23
24 **Q. PLEASE DESCRIBE AWC.**

25 A. AWC is a company whose regulated subsidiaries provide water and wastewater services
26 in three states – New Hampshire, Connecticut and Massachusetts. AWC is the largest
27 investor-owned water and utility company in New England, and is among the ten largest
28 in the United States. AWC also is involved in the rental and sale of real estate properties.
29 This company is headquartered in Bridgeport, Connecticut.

² See, for example, Investment Insights, On Wall Street, “S&P Looks to Utilities ETFs in Downtrodden Equities Market,” August 22, 2011, <http://www.onwallstreet.com/news/utility-stocks-etfs-investments-products-2679728-1.html>.

1 **Q. WHAT IS THE OWNERSHIP STRUCTURE OF AWC?**

2 A. AWC is a subsidiary of Aquarion Company, which is a subsidiary of Aquarion Holdings,
3 LLC, which in turn is a subsidiary of Macquarie Utilities, Inc. (“MUI”). MUI is owned
4 55 percent by Macquarie Utilities Holding, Ltd. (“MUH”) and 45 percent by British
5 Columbia Investment Management Corporation (“bcIMC”). MUH is managed by
6 Macquarie Infrastructure and Real Assets (“MIRA”) which is owned by the Macquarie
7 Group.

8 AWC has been controlled by the Macquarie Group since 2007. The Company
9 was previously owned by United Kingdom-based Kelda Group. In addition to its
10 Aquarion utility subsidiaries, MIRA manages Puget Energy, Duquesne Light, and
11 HAWAII Gas.

12

13 **Q. ARE ANY OF THE ABOVE-CITED ENTITIES PUBLICLY-TRADED**
14 **COMPANIES?**

15 A. No, they are not.

16

17 **VI. CAPITAL STRUCTURE AND COST OF DEBT**

18

19 **Q. WHAT IS THE IMPORTANCE OF DETERMINING A PROPER CAPITAL**
20 **STRUCTURE IN A REGULATORY FRAMEWORK?**

21 A. A utility’s capital structure is important because the concept of rate base – rate of return
22 regulation requires that a utility’s capital structure be determined and utilized in
23 estimating the total cost of capital. Within this framework, it is proper to ascertain
24 whether the utility’s capital structure is appropriate relative to its level of business risk
25 and relative to other utilities.

26 As discussed in Section III of my testimony, the purpose of determining the
27 proper capital structure for a utility is to help ascertain its capital costs. The rate base –
28 rate of return concept recognizes the assets employed in providing utility services and
29 provides for a return on these assets by identifying the liabilities and common equity (and
30 their cost rates) used to finance the assets. In this process, the rate base is derived from
31 the asset side of the balance sheet and the cost of capital is derived from the

1 liabilities/owners' equity side of the balance sheet. The inherent assumption in this
 2 procedure is that the dollar values of the capital structure and the rate base are
 3 approximately equal, and the former is utilized to finance the latter.

4 The common equity ratio (i.e., the percentage of common equity in the capital
 5 structure) is the capital structure item which normally receives the most attention. This is
 6 the case because common equity: (1) usually commands the highest cost rate; (2)
 7 generates associated income tax liabilities; and (3) causes the most controversy since its
 8 cost cannot be precisely determined.

9
 10 **Q. HOW HAVE YOU EVALUATED THE CAPITAL STRUCTURE OF AWC-NH**
 11 **AND AWC?**

12 A. I have first examined the historic (2007-2011) capital structure ratios of AWC-NH.
 13 These are shown on page 1 of Schedule 3. I have summarized below the common equity
 14 ratios for AWC-NH:

	<u>Including S-T Debt</u>	<u>Excluding S-T Debt</u>
2007	44.1%	48.9%
2008	40.2%	49.6%
2009	39.1%	49.0%
2010	40.0%	40.0%
2011	41.3%	41.3%

20
 21 **Q. HOW DO THESE CAPITAL STRUCTURES COMPARE TO THOSE OF**
 22 **INVESTOR-OWNED WATER UTILITIES?**

23 A. Schedule 4 shows the common equity ratios (including short-term debt in capitalization)
 24 for the group of water utilities utilized in my cost of equity analyses. These are:

<u>Year</u>	<u>Value Line Water Group</u>
2007	50%
2008	50%
2009	49%
2010	46%
2011	47%

30
 31 These common equity ratios are generally slightly higher than those of AWC-NH.

1 **Q. HOW DOES AWC-NH OBTAIN THE FUNDS USED TO FINANCE ITS RATE**
2 **BASE?**

3

4 A. According to the Company response to Request No.: Hampton 3-8:

5 Aquarion Water Company of New Hampshire finances its rate base
6 additions through a combination of internally generated funds (i.e., net
7 income) and internal and/or external financing.

8

9 In another response to a discovery request (Request No.: Hampton Tech 1-4), it
10 was indicated that:

11 Aquarion Water Company of New Hampshire borrows on a short term
12 basis from Aquarion Company, which in turn borrows the funds from
13 Aquarion Holdings LLC.

14

15 This indicates that AWC-NH is not financed independently from AWC and/or AWC
16 affiliated companies.³

17

18 **Q. WHAT IS THE SIGNIFICANCE OF THIS INTER-COMPANY BORROWING?**

19 A. The significance of the inter-company borrowing is that the stated capital structure of a
20 particular entity, such as AWC-NH, may not represent the effective capital structure of
21 the Company. Instead, it may be more appropriate to examine the capital structures of
22 AWC and/or other affiliated companies.

23

24 **Q HAVE YOU EXAMINED THE CAPITAL STRUCTURES OF AWC AND OTHER**
25 **AFFILIATED COMPANIES OF AWC-NH?**

26 A. No, I have not. A discovery request was submitted to the Company asking for the
27 historic capital structures of the affiliated entities of AWC-NH (Request No.: 3-6). The
28 Company's response was:

29 The Company objects to this data request on the basis that the request is
30 not reasonably calculated to lead to the discovery of admissible evidence.

31

32 In its response, only the historic capital structures of AWC-NH were provided.

³ AWC-NH has, on occasion, also borrowed from Co-Bank. These loans are apparently not affiliated with AWC and/or AWC affiliated companies.

1 **Q. BASED UPON THE INFORMATION PROVIDED BY AWC-NH, IS IT**
2 **POSSIBLE TO CONCLUDE THAT THE COMPANY’S RELATIVELY LOW**
3 **COMMON EQUITY RATIO IS A FACTOR THAT SHOULD BE CONSIDERED**
4 **IN DETERMINING THE COST OF EQUITY?**

5 A. No, it is not. Without a comparison of the Company’s capital structures with its affiliated
6 companies, which are frequently inter-twined for financing, it is not feasible to conclude
7 that AWC-NH’s capital structure has less equity, and thus more financial risk, than other
8 water utilities.

9
10 **Q. WHAT CAPITAL STRUCTURE RATIOS HAS AWC-NH REQUESTED IN THIS**
11 **PROCEEDING?**

12 A. The Company requests use of the following capital structure:

13	Short-Term Debt	0.00%
14	Long-Term Debt	57.83%
15	Preferred Stock	0.01%
16	Common Equity	41.25%

17
18 According to the Application, this is the capital structure of AWC-NH at December 31,
19 2011.

20
21 **Q. WHAT CAPITAL STRUCTURE DO YOU PROPOSE TO USE IN THIS**
22 **PROCEEDING?**

23 A. I also use the actual consolidated capital structure ratios of AWC-NH as of December 31,
24 2011.

25
26 **Q. WHAT ARE THE COST RATES OF DEBT AND PREFERRED STOCK IN THE**
27 **COMPANY’S FILING?**

28 A. The Company’s filing cites a cost of long-term debt of 6.17 percent and a cost of
29 preferred stock of 6.00 percent.

30
31 **Q. DO YOU USE THESE COSTS RATES IN YOUR ANALYSES?**

1 A. I use the cost of preferred stock rate proposed by the Company, although the impact of
2 preferred stock is not significant. I do not use the 6.17 percent cost of long-term debt
3 proposed by AWC-NH. As is indicated in the Company’s response to Request No.:
4 Hampton 3-1, its actual cost of long-term debt is 6.04 percent. The Company’s requested
5 6.17 percent cost of debt excludes \$1 million of the proceeds from a \$5 million debt
6 issuance in 2011. AWC-NH maintains “Because this \$1 million of borrowings was not
7 invested in rate base to be recovered in this case, it can similarly not be included in the
8 proposed capitalization”.

9 I disagree with this rationalization. The actual cost of debt that AWC-NH incurs
10 is 6.04 percent. This is the rate that should be included in the cost of capital. It was the
11 Company’s decision to issue \$5 million of new debt, whether it was required to finance
12 rate base additions or not. Presumably the “excess” \$1 million is being loaned to
13 affiliated companies, which reinforces my earlier statement that the financing of AWC-
14 NH is inter-twined with other AWC affiliated companies.

15
16 **Q. CAN THE COST OF COMMON EQUITY BE DETERMINED WITH THE SAME**
17 **DEGREE OF PRECISION AS THE COSTS OF DEBT AND PREFERRED**
18 **STOCK?**

19 A. No. The cost rates of debt and preferred stock are largely determined by interest
20 payments, issue prices, and related expenses. The COE, on the other hand, cannot be
21 precisely quantified, primarily because this cost is an opportunity cost. There are,
22 however, several models that can be employed to estimate the COE. Three of the
23 primary methods – DCF, CAPM, and CE – are developed in the following sections of my
24 testimony.

25
26 **VII. SELECTION OF PROXY GROUPS**

27
28 **Q. HOW HAVE YOU ESTIMATED THE COST OF COMMON EQUITY FOR**
29 **AWC-NH?**

30 A. AWC-NH is not a publicly-traded company. Its parent companies also are not publicly-
31 traded. Consequently, it is not possible to directly apply cost of equity models to these

1 entities. However, in cost of capital analyses, it is customary to analyze groups of
2 comparison, or "proxy," companies as a substitute for AWC-NH to determine their COE.

3 I have accordingly selected such a group for comparison to AWC-NH. This
4 proxy group is selected from the group of nine water utilities included in Value Line
5 Investment Survey.

6 I have also utilized, as a secondary proxy group, a group of natural gas
7 distribution companies. Schedule 5 shows the companies I consider, along with the
8 criteria I utilized for selecting each proxy natural gas distribution utility. As shown, my
9 proxy group of natural gas distributions companies contains seven companies.

10
11 **VIII. DCF ANALYSIS**

12
13 **Q. WHAT IS THE THEORY AND METHODOLOGICAL BASIS OF THE DCF**
14 **MODEL?**

15 A. The DCF model is one of the oldest and most commonly-used models for estimating the
16 COE for public utilities. The DCF model is based on the "dividend discount model" of
17 financial theory, which maintains that the value (price) of any security or commodity is
18 the discounted present value of all future cash flows.

19 The most common variant of the DCF model assumes that dividends are expected
20 to grow at a constant rate (the "constant growth" or "Gordon DCF model"). In this
21 framework, the cost of capital is derived from the following formula:

22
23
$$K = \frac{D}{P} + g$$

24 where: P = current price
25 D = current dividend rate
26 K = discount rate (cost of capital)
27 g = constant rate of expected growth
28

1 This formula essentially recognizes that the return expected or required by investors is
2 comprised of two factors: the dividend yield (current income) and expected growth in
3 dividends (future income).
4

5 **Q. PLEASE EXPLAIN HOW YOU EMPLOY THE DCF MODEL.**

6 A. I use the constant growth DCF model. In doing so, I combine the current dividend yield
7 for each group of proxy utility stocks described in the previous section with several
8 indicators of expected dividend growth.
9

10 **Q. HOW DID YOU DERIVE THE DIVIDEND YIELD COMPONENT OF THE DCF
11 EQUATION?**

12 A. Several methods can be used to calculate the dividend yield component. These methods
13 generally differ in the manner in which the dividend rate is employed (*i.e.* current versus
14 future dividends or annual versus quarterly compounding of dividends). I believe the
15 most appropriate dividend yield component is a quarterly compounding variant, which is
16 expressed as follows:

$$Yield = \frac{D_0(1 + 0.5g)}{P_0}$$

17
18 This dividend yield component recognizes the timing of dividend payments and dividend
19 increases.

20 The P_0 in my yield calculation is the average of the high and low stock price for
21 each proxy company for the most recent three month period (October-December 2012).
22 The D_0 is the current annualized dividend rate for each proxy company.
23

24 **Q. HOW DO YOU ESTIMATE THE DIVIDEND GROWTH COMPONENT OF THE
25 DCF EQUATION?**

26 A. The DCF model's dividend growth rate component is usually the most crucial and
27 controversial element involved in using this methodology. The objective of estimating
28 the dividend growth component is to reflect the growth expected by investors that is
29 embodied in the price (and yield) of a company's stock. As such, it is important to
30 recognize that individual investors have different expectations and consider alternative

1 indicators in deriving their expectations. This is evidenced by the fact that every
2 investment decision resulting in the purchase of a particular stock is matched by another
3 investment decision to sell that stock.

4 A wide array of indicators exists for estimating investors' growth expectations.
5 As a result, it is evident that investors do not always use one single indicator of growth.
6 It therefore, is necessary to consider alternative dividend growth indicators in deriving
7 the growth component of the DCF model. I have considered five indicators of growth in
8 my DCF analyses. These are:

- 9 1. Years 2007-2011 (5-year average) earnings retention, or fundamental
10 growth;
- 11 2. Five-year average of historic growth in earnings per share (EPS),
12 dividends per share (DPS), and book value per share (BVPS);
- 13 3. Years 2012, 2013, and 2015-2017 projections of earnings retention growth
14 (per Value Line);
- 15 4. Years 2009-2011 to 2015-2017 projections of EPS, DPS, and BVPS (per
16 Value Line); and ,
- 17 5. Five-year projections of EPS growth (per First Call).

18 I believe this combination of growth indicators is a representative and appropriate
19 set with which to begin the process of estimating investor expectations of dividend
20 growth for the groups of proxy companies. I also believe that these growth indicators
21 reflect the types of information that investors consider in making their investment
22 decisions. As I indicated previously, investors have an array of information available to
23 them, all of which should be expected to have some impact on their decision-making
24 process.

25 **Q. PLEASE DESCRIBE YOUR DCF CALCULATIONS.**

26 A. Schedule 6 presents my DCF analysis. Page 1 shows the calculation of the "raw" (*i.e.*
27 prior to adjustment for growth) dividend yield for each proxy company. Pages 2 and 3
28 show the growth rates for the groups of proxy companies. Page 4 shows the "raw" DCF
29 calculations, which are presented on several bases: mean, median, and high values.
30 These results can be summarized as follows:

	<u>Mean</u>	<u>Median</u>	<u>Mean High¹</u>	<u>Median High¹</u>
Value Line Water Group	7.6%	7.5%	9.6%	8.3%
Natural Gas Group	8.7%	8.2%	9.2%	9.3%

¹ Using only the highest growth rate.

I note that the individual DCF calculations shown on Schedule 6 should not be interpreted to reflect the expected cost of capital for individual companies in the proxy groups; rather, the individual values shown should be interpreted as alternative information considered by investors.

Q. WHAT DO YOU CONCLUDE FROM YOUR DCF ANALYSES?

A. The DCF rates resulting from the analysis of the proxy groups falls into a wide range between 7.6 percent and 9.6 percent. The highest DCF rates are in a range of 8.3 percent to 9.6 percent. I believe a range of 8.3 percent to 9.6 percent represents the current DCF-derived COE for the proxy groups. I recommend a cost of equity of 9.0 percent to 9.6 percent (9.3 percent mid-point) for AWC-NH, which focuses on the upper portion of the broad DCF range.

IX. CAPM ANALYSIS

Q. PLEASE DESCRIBE THE THEORY AND METHODOLOGICAL BASIS OF THE CAPM.

A. CAPM, was developed in the 1960s and 1970s as an extension of modern portfolio theory (MPT), which studies the relationships among risk, diversification, and expected returns. The CAPM describes and measures the relationship between a security's investment risk and its market rate of return.

Q. HOW IS THE CAPM DERIVED?

A. The general form of the CAPM is:

$$K = R_f + \beta(R_m - R_f)$$

1 where: K = cost of equity

2 R_f = risk free rate

3 R_m = return on market

4 β = beta

5 $R_m - R_f$ = market risk premium

6
7 The CAPM is a variant of the RP method. I believe the CAPM is generally superior to
8 the simple RP method because the CAPM specifically recognizes the risk of a particular
9 company or industry (*i.e.*, beta), whereas the simple RP method assumes the same COE
10 for all companies exhibiting similar bond ratings or other characteristics.

11
12 **Q. WHAT DO YOU USE FOR THE RISK-FREE RATE?**

13 A. The first input of the CAPM is the risk-free rate (R_f). The risk-free rate reflects the level
14 of return that can be achieved without accepting any risk.

15 In CAPM applications, the risk-free rate is generally recognized by use of U.S.
16 Treasury securities. Two general types of U.S. Treasury securities are often utilized as
17 the R_f component, short-term U.S. Treasury bills and long-term U.S. Treasury bonds.

18 I have performed CAPM calculations using the three-month average yield
19 (October-December 2012) for 20-year U.S. Treasury bonds. I use the yields on long-term
20 Treasury bonds since this matches the long-term perspective of COE analyses. Over this
21 three-month period, these bonds had an average yield of 2.46 percent.

22
23 **Q. WHAT IS BETA AND WHAT BETAS DO YOU EMPLOY IN YOUR CAPM?**

24 A. Beta is a measure of the relative volatility (and thus risk) of a particular stock in relation
25 to the overall market. Betas less than 1 are considered less risky than the market,
26 whereas betas greater than 1 are more risky. Utility stocks traditionally have had betas
27 below 1. I utilize the most recent Value Line betas for each company in my proxy
28 groups.

29
30 **Q. HOW DO YOU ESTIMATE THE MARKET RISK PREMIUM COMPONENT?**

1 A. The market risk premium component ($R_m - R_f$) represents the investor-expected premium
 2 of common stocks over the risk-free rate, or government bonds. For the purpose of
 3 estimating the market risk premium, I considered alternative measures of returns of the
 4 S&P 500 (a broad-based group of large U.S. companies) and 20-year U.S. Treasury
 5 bonds.

6 First, I compared the actual annual returns on equity of the S&P 500 with the
 7 actual annual yields of U.S. Treasury bonds. Schedule 7 shows the return on equity for
 8 the S&P 500 group for the period 1978-2011 (all available years reported by S&P). This
 9 schedule also indicates the annual yields on 20-year U.S. Treasury bonds and the annual
 10 differentials (*i.e.* risk premiums) between the S&P 500 and U.S. Treasury 20-year bonds.
 11 Based upon these returns, I conclude that the risk premium from this analysis is 6.5
 12 percent.

13 I next considered the total returns (*i.e.* dividends/interest plus capital gains/losses)
 14 for the S&P 500 group as well as for long-term government bonds, as tabulated by
 15 Morningstar (formerly Ibbotson Associates), using both arithmetic and geometric means.
 16 I considered the total returns for the entire 1926-2011 period, which are as follows:

	<u>S&P 500</u>	<u>L-T Gov't Bonds</u>	<u>Risk Premium</u>
18 Arithmetic	11.8%	6.1%	5.7%
19 Geometric	9.8%	5.7%	4.1%

20
 21 I conclude from this analysis that the expected risk premium is about 5.43 percent (*i.e.*
 22 average of all three risk premiums: 6.5 percent from Schedule 7; 5.7 percent arithmetic
 23 and 4.1 percent geometric from Morningstar). I believe that a combination of arithmetic
 24 and geometric means is appropriate since investors have access to both types of means
 25 and presumably, both types are reflected in investment decisions and thus, stock prices
 26 and the cost of capital.

27
 28 **Q. WHAT ARE YOUR CAPM RESULTS?**

29 A. Schedule 8 shows my CAPM calculations. The results are:
 30
 31

1		<u>Mean</u>	<u>Median</u>
2	Value Line Water Group	6.1%	6.0%
3	Natural Gas Group	6.0%	6.0%
4			

5 **Q. WHAT IS YOUR CONCLUSION CONCERNING THE CAPM COE?**

6 A. The CAPM results collectively indicate a COE of 6.0 percent to 6.1 percent for the
7 groups of proxy utilities. I conclude that an appropriate COE estimation for AWC-NH is
8 6.1 percent.

10 **X. CE ANALYSIS**

12 **Q. PLEASE DESCRIBE THE BASIS OF THE CE METHODOLOGY.**

13 A. The CE method is derived from the "corresponding risk" concept discussed in the
14 Bluefield and Hope cases. This method is thus based upon the economic concept of
15 opportunity cost. As previously noted, the cost of capital is an opportunity cost: the
16 prospective return available to investors from alternative investments of similar risk.

17 The CE method is designed to measure the returns expected to be earned on the
18 original cost book value of similar risk enterprises. Thus, it provides a direct measure of
19 the fair return, since it translates into practice the competitive principle upon which
20 regulation rests.

21 The CE method normally examines the experienced and/or projected returns on
22 book common equity. The logic for examining returns on book equity follows from the
23 use of original cost rate base regulation for public utilities, which uses a utility's book
24 common equity to determine the cost of capital. This cost of capital is, in turn, used as
25 the fair rate of return which is then applied (multiplied) to the book value of rate base to
26 establish the dollar level of capital costs to be recovered by the utility. This technique is
27 thus consistent with the rate base-rate of return methodology used to set utility rates.

29 **Q. HOW DO YOU APPLY THE CE METHODOLOGY IN YOUR ANALYSIS OF
30 AWC-NH'S COMMON EQUITY COST?**

1 A. I apply the CE methodology by examining realized returns on equity for two groups of
2 proxy companies, as well as unregulated companies, and evaluating investor acceptance
3 of these returns by reference to the resulting market-to-book ratios. In this manner it is
4 possible to assess the degree to which a given level of return equates to the cost of
5 capital. It is generally recognized for utilities that market-to-book ratios of greater than
6 one (*i.e.* 100 percent) reflect a situation where a company is able to attract new equity
7 capital without dilution (*i.e.* above book value). As a result, one objective of a fair cost
8 of equity is the maintenance of stock prices at or above book value. There is no
9 regulatory obligation to set rates designed to maintain a market-to-book ratio
10 significantly above one.

11 I further note that my CE analysis is based upon market data (through the use of
12 market-to-book ratios) and is thus essentially a market test. As a result, my CE analysis
13 is not subject to the criticisms occasionally made by some who maintain that past earned
14 returns do not represent the cost of capital. In addition, my CE analysis also uses
15 prospective returns and thus is not backward looking.

16
17 **Q. WHAT TIME PERIODS DO YOU EXAMINE IN YOUR CE ANALYSIS?**

18 A. My CE analysis considers the experienced equity returns of the proxy groups of utilities
19 for the period 1992-2011 (*i.e.* the last twenty years). The CE analysis requires that I
20 examine a relatively long period of time in order to determine trends in earnings over at
21 least a full business cycle. Further, in estimating a fair level of return for a future period,
22 it is important to examine earnings over a diverse period of time in order to avoid any
23 undue influence from unusual or abnormal conditions that may occur in a single year or
24 shorter period. Therefore, in forming my judgment of the current cost of equity, I
25 focused on two periods: 2002-2011 (the most recent business cycle) and 1992-2001 (the
26 previous business cycle).

27
28 **Q. PLEASE DESCRIBE YOUR CE ANALYSIS.**

29 A. Schedules 9 and 10 contain summaries of experienced returns on equity for three groups
30 of companies, while Schedule 11 presents a risk comparison of utilities versus
31 unregulated firms.

1 Schedule 9 shows the earned returns on average common equity and market-to-
2 book ratios for the groups of proxy utilities. These can be summarized as follows:

	<u>Value Line</u> <u>Water Group</u>	<u>Natural</u> <u>Gas Group</u>
Historic ROE		
Mean	9.6-11.3%	10.8-11.2%
Median	9.5-10.9%	11.3-11.4%
Historic M/B		
Mean	176-215%	170-172%
Median	174-202%	171-173%
Prospective ROE		
Mean	8.8-10.0%	9.3-10.6%
Median	8.5-9.8%	9.5-10.5%

11
12 These results indicate that historic returns of 9.5 percent to 11.4 percent have been
13 adequate to produce market-to-book ratios of 170 percent to 215 percent for the groups of
14 utilities. Furthermore, projected returns on equity for 2012, 2013 and 2015-2017 are
15 within a range of 8.5 percent to 10.6 percent for the utility groups. These relate to 2011
16 market-to-book ratios of 150 percent or greater.

17
18 **Q. DO YOU ALSO REVIEW THE EARNINGS OF UNREGULATED FIRMS?**

19 A. Yes. As an alternative, I also examine the Standard & Poor's 500 Composite group. This
20 is a well recognized group of firms that is widely utilized in the investment community
21 and is indicative of the competitive sector of the economy. Schedule 10 presents the
22 earned returns on equity and market-to-book ratios for the S&P 500 group over the past
23 twenty years (i.e., 1992-2011). As this schedule indicates, over the two business cycle
24 periods, this group's average earned returns ranged from 12.6 percent to 14.7 percent,
25 with average market-to-book ratios ranging between 253 percent and 341 percent.

26
27 **Q. HOW CAN THE ABOVE INFORMATION BE USED TO ESTIMATE AWC-NH'S**
28 **COE?**

29 A. The recent earnings of the proxy utilities and S&P 500 groups can be viewed as an
30 indication of the level of return realized and expected in the regulated and competitive
31 sectors of the economy. In order to apply these returns to the COE for the proxy utilities,

1 however, it is necessary to compare the risk levels of the water utilities and the
2 competitive companies. I do this in Schedule 11, which compares several risk indicators
3 for the S&P 500 group and the water utility group. The information in Schedule 11
4 indicates that the S&P 500 group is more risky than the water utility proxy group.
5

6 **Q. WHAT COE IS INDICATED BY YOUR CE ANALYSIS?**

7 A. Based on recent earnings and market-to-book ratios, my CE analysis indicates that the
8 COE for the proxy utilities is no more than 9.0 percent to 10.0 percent. Recent returns of
9 9.5 percent to 11.4 percent have resulted in market-to-book ratios more than 170 percent.
10 Prospective returns of 8.5 percent to 10.6 percent have been accompanied by market-to-
11 book ratios over 150 percent. As a result, it is apparent that authorized returns below this
12 level would continue to result in market-to-book ratios of well above 100 percent. An
13 earned return of 9.0 percent to 10.0 percent should thus result in a market-to-book ratio
14 well above 100 percent. As I indicated earlier, the fact that market-to-book ratios
15 substantially exceed 100 percent indicates that historic and prospective returns of over
16 10.0 percent reflect earnings levels that are well above the actual cost of equity for those
17 regulated companies. I also note that a company whose stock sells above book value can
18 attract capital in a way that enhances the book value of existing stockholders, thus
19 creating a favorable environment for financial integrity.
20

21 **XI. RETURN ON EQUITY RECOMMENDATION**

22
23 **Q. PLEASE SUMMARIZE THE RESULTS OF YOUR THREE COE ANALYSES.**

24 A. My three COE analyses produce the following:

25	DCF	9.0-9.6%	(9.3% midpoint)
26	CAPM	6.1%	
27	CE	9.0-10.0%	(9.5% mid-point)

28
29 These results indicate an overall broad range of 6.1 percent to 10.0 percent, which
30 focuses on the respective ranges of my individual model results. Focusing on the
31 respective midpoints, the range is 6.1 percent to 9.5 percent. I recommend a COE range
32 of 6.1 percent to 9.5 percent for AWC-NH. This range includes the mid-point values of

1 my DCF range (9.3 percent), CAPM (6.1 percent) and my CE range (9.5 percent). For
2 the purposes of this proceeding, I recommend the average of mid-point values, which is
3 8.3 percent.
4

5 **Q. IT APPEARS THAT YOUR CAPM RESULTS ARE LESS THAN YOUR DCF**
6 **AND CE RESULTS. DOES THIS IMPLY THAT THE CAPM RESULTS**
7 **SHOULD NOT BE CONSIDERED IN DETERMINING THE COST OF EQUITY**
8 **FOR AWC-NH?**

9 A. No. It is apparent that the CAPM results are less than the DCF and CE results. There are
10 two reasons for the lower CAPM results. First, risk premiums are lower currently than
11 was the case in prior years. This is the result of lower equity returns that have been
12 experienced over the past several years. This is also reflective of a decline in investor
13 expectations of equity returns and risk premiums. Second, the level of interest rates on
14 U.S. Treasury bonds (i.e., the risk free rate) has been lower in recent years. This is
15 partially the result of the actions of the Federal Reserve System to stimulate the economy.
16 This also impacts investor expectations of returns in a negative fashion. I note that,
17 initially, investors may have believed that the decline in Treasury yields was a temporary
18 factor that would soon be replaced by a rise in interest rates. However, this has not been
19 the case as interest rates have remained low and continued to decline for the past four-
20 plus years. The Federal Reserve has further announced its intention to continue stimulus
21 (and maintain low interest rates) through at least 2014. As a result, it cannot be
22 maintained that low interest rates (and low CAPM results) are temporary and do not
23 reflect investor expectations. Consequently, the CAPM results should be considered as
24 one factor in determining the cost of equity for AWC-NH. Accordingly, I have given the
25 CAPM results one-third weight in my recommendation.
26

27 **Q. HOW DOES YOUR 6.1 PERCENT TO 9.5 PERCENT COE**
28 **RECOMMENDATION COMPARE TO THE CURRENTLY-AUTHORIZED COE**
29 **FOR AWC-NH?**

30 A. AWC-NH has an authorized COE of 9.75 percent, which resulted from a settlement in its
31 last rate proceeding (Docket No. 08-098) in 2009.

1 **Q. WHAT HAS BEEN THE TREND IN CAPITAL COSTS SINCE 2008?**

2 A. Capital costs have declined since 2008. For example, my Schedule 2 indicates that triple-
3 B rated utility bond yields have declined from 7.25 percent in 2008 (i.e., year prior to
4 case) to about 4.5 percent in late 2012. In addition, the average authorized COEs for
5 electric and natural gas utilities have declined since 2008:

6

	<u>Year</u>	<u>Electric</u>	<u>Natural Gas</u>
7	2008	10.46%	10.37%
8	2009	10.48%	10.19%
9	2010	10.34%	10.08%
	2011	10.22%	9.92%

10

11 Source: Regulatory Research Associates, “Regulatory Focus”.

12

13 It is thus apparent that capital costs have declined since 2008. This demonstrates
14 two points: (1) AWC-NH’s request to increase the COE to 10.25 percent is unjustified;
15 and, (2) my proposal to decrease the COE to 8.3 percent is justified.

16

17 **XII. TOTAL COST OF CAPITAL**

18

19 **Q. WHAT IS THE TOTAL COST OF CAPITAL FOR AWC-NH?**

20 A. Schedule 1 reflects the total cost of capital for AWC-NH using my proposed capital
21 structure and embedded costs of debt and preferred stock, as well as my COE
22 recommendations. The resulting total cost of capital is a range of 6.06 percent to 7.47
23 percent. I recommend a 6.97 percent total cost of capital for AWC-NH.

24

25 **Q. DOES YOUR COST OF CAPITAL RECOMMENDATION PROVIDE AWC-NH
26 WITH A SUFFICIENT LEVEL OF EARNINGS TO MAINTAIN ITS FINANCIAL
27 INTEGRITY?**

28 A. Yes, it does. Schedule 12 shows the pre-tax coverage that would result if AWC-NH
29 earned my cost of capital recommendation. As the results indicate, my recommendations
30 produce a coverage level near the benchmark range for an A-rated utility. In addition, the
31 debt ratio is within the benchmark level for a BBB-rated utility.

1 **Q. DOES THIS COMPLETE YOUR TESTIMONY?**

2 **A. Yes, it does.**