

STATE OF DELAWARE
BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION

In the Matter of the Application of TIDEWATER
UTILITIES, INC. for a General Rate Increase.

Docket No. 13-466

**DIRECT TESTIMONY OF
CHARLES W. KING**

**Submitted on Behalf of the
Staff of the Public Service Commission**

May 20, 2014

1 **DIRECT TESTIMONY OF**
2 **CHARLES W. KING**

3 **QUALIFICATIONS**

4 **Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.**

5 A. My name is Charles W. King. I am President Emeritus of the economic consulting firm
6 of Snavelly King Majoros & Associates Inc. ("Snavelly King"). My business address is
7 Suite 350, 4351 Garden City Drive, Landover, MD 20785.

8 **Q. PLEASE DESCRIBE SNAVELY KING.**

9 A. Snavelly King was founded by the late Carl M. Snavelly and me in 1970 to conduct
10 research on a consulting basis into the rates, revenues, costs and economic performance
11 of regulated firms and industries. The firm has a professional staff of 10 economists,
12 accountants, engineers and cost analysts. Most of its work involves the development,
13 preparation and presentation of expert witness testimony before federal and state
14 regulatory agencies. Over the course of its 44-year history, members of the firm have
15 participated in over 1,000 proceedings before almost all of the state commissions and all
16 Federal commissions that regulate the prices charged by utility and transportation
17 companies.

18 **Q. HAVE YOU PREPARED A SUMMARY OF YOUR QUALIFICATIONS AND**
19 **EXPERIENCE?**

20 A. Yes. Attachment A is a summary of my qualifications and experience.

21 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN REGULATORY**
22 **PROCEEDINGS?**

23 A. Yes. Attachment B is a tabulation of my appearances as an expert witness before state
24 and federal regulatory agencies.

25 **Q. FOR WHOM ARE YOU APPEARING IN THIS PROCEEDING?**

26 A. I am appearing on behalf of the Staff of the Delaware Public Service Commission.

1 **Q. WHAT IS THE OBJECTIVE OF YOUR TESTIMONY?**

2 A. The objective of my testimony is to recommend the rate of return that should be allowed
3 on the rate base of the Tidewater Utilities, Inc. (“Tidewater” or “the Company”).

4 **I. SUMMARY**

5 **Q. WHAT HAVE YOU FOUND TO BE THE APPROPRIATE RATE OF RETURN**
6 **ON TIDEWATER’S RATE BASE?**

7 A. Based on the analyses presented in this testimony, I find that the appropriate after-tax
8 return to Tidewater’s rate base is **7.61 percent**, inclusive of a **9.15 percent** return on
9 equity.

10 **Q. DO YOU HAVE A SCHEDULE THAT DISPLAYS THE DEVELOPMENT OF**
11 **THIS RECOMMENDED RATE OF RETURN?**

12 A. Yes. Exhibit CWK-1 presents the calculation of my recommended rates of return on
13 Tidewater’s total capital. Column A shows the proportion of debt and equity as forecast
14 by the Company for June 30, 2014. Column B shows the cost rates for each component
15 of the capital structure, and column C shows the weighted returns. The bottom line of
16 column C shows the overall return to capital for Tidewater’s rate base.

17 **II. TIDEWATER’S CAPITAL STRUCTURE**

18 **Q. WHAT ARE THE COMPONENTS OF TIDEWATER’S COST OF CAPITAL?**

19 A. Two elements make up Tidewater’s cost of capital: capital structure, the cost of debt and
20 the cost of equity.

21 **Q. WHAT IS MEANT BY “CAPITAL STRUCTURE?”**

22 A. Capital structure refers to the mix of the various forms of investor-supplied capital: long-
23 term debt, short-term debt, preferred stock and common equity.

1 **Q. WHAT IS THE RELEVANCE OF CAPITAL STRUCTURE TO THE OVERALL**
2 **RATE OF RETURN?**

3 A Capital structure is highly relevant to the overall rate of return because the rate of return
4 required by investors is evaluated, in part, based on the respective forms of capital by
5 which a company is financed. The cost of the respective forms of capital varies
6 considerably. In general, debt capital is much less costly than equity capital, not only
7 because it requires a lower return, but also because it is tax-deductible. Equity capital is
8 more costly because it bears more risk. Since the return on equity – dividends and
9 retained earnings – is not tax deductible, equity capital also affects ratemaking by
10 requiring a gross-up for income taxes.

11 Standing alone, these considerations would suggest that debt capital is always preferable
12 to equity, but debt has limits. As the proportion of debt increases, the financial risk that
13 the Company might not be able to honor its debt instruments increases. At some point,
14 that risk overwhelms the benefit of lower debt costs, and the capital structure becomes
15 too “leveraged,” that is, it has too much debt for the earnings to sustain. In theory, there
16 is an ideal mix of debt and equity that minimizes the composite cost of capital. Finding
17 that ideal is a major challenge to most companies, and particularly to companies in
18 capital-intensive industries such as water utilities.

19
20 **Q. WHAT IS TIDEWATER’S CAPITAL STRUCTURE?**

21 A. Tidewater’s capital structure is shown in Columns A of Exhibit CWK-1. I have taken the
22 figures from Schedule 1 of Exhibit No. T-7, sponsored by Tidewater witness Dylan
23 D’Ascendis.

24 **III. COST OF DEBT**

25 **Q. WHAT IS THE COST OF TIDEWATER’S LONG-TERM DEBT?**

26 A. I have accepted Tidewater’s calculation of 6.01 percent as its cost of long-term debt as of
27 June 301, 2014. That percentage is found on page 1 of Schedule 1 of Exhibit T-7 to Mr.
28 D’Ascendis’s testimony

1 **IV. COST OF EQUITY**

2 **Q. WHAT HAVE YOU FOUND TO BE TIDEWATER'S COST OF EQUITY?**

3 A. I recommend a rate of return on Tidewater's equity capital of 9.15 percent.

4 **1. STANDARDS FOR FINDING EQUITY CAPITAL COST**

5
6 **Q. WHAT IS THE BASIS FOR FINDING A RATE OF RETURN TO TIDEWATER'S**
7 **COMMON EQUITY SHAREHOLDERS?**

8 A. In its *Hope Natural Gas* decision, the United States Supreme Court established the
9 following standards for the return on equity that must be allowed a regulated public utility
10 to provide for a "reasonable return":

11 ...the return to the equity owner should be commensurate with the
12 returns on investments in other enterprises having corresponding
13 risks. That return, moreover, should be sufficient to assure
14 confidence in the financial integrity of the enterprise, so as to
15 maintain its credit and to attract capital.¹

16 It can be seen from this excerpt that there are essentially three standards for determining
17 an appropriate return on equity from the standpoint of the equity owners of a regulated
18 utility. The first is the "comparable earnings" standard, i.e., that the earnings must be
19 "commensurate with the returns on investments in other enterprises having corresponding
20 risks." The second is that earnings must be sufficient to assure "confidence in the
21 financial integrity of the enterprise," and the third is that they must allow the utility to
22 attract capital.

23 **Q. HOW CAN THE COMPARABLE EARNINGS STANDARD BE APPLIED IN**
24 **ESTIMATING THE RATE OF RETURN ON EQUITY CAPITAL?**

25 A. There is a certain circularity to the comparable earnings standard because the competitive
26 nature of the capital markets virtually ensures that the returns to all enterprises having
27 corresponding risks are comparable with each other. Investors establish the price of each

¹ *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 603, 64 S.Ct. 281, 88 L.Ed. 333 (1944).

1 traded stock based on that stock's present and prospective earnings in comparison with the
2 present and prospective earnings of all other stocks and other investments available to
3 them. If the earnings of a firm are depressed, then investors will pay only a low price for
4 that firm's stock. As a result, the return on the market value of that stock will be
5 comparable to the return on the market value of the stock of other companies that are
6 highly profitable but which, as a consequence of their profitability, have been bid up to a
7 very high price. Thus, if "return" is defined as the earnings of an equity investment
8 relative to its current market price, then the comparable earnings test becomes a nullity.
9 All returns are comparable with all other returns.

10 In public utility regulation, the conventional procedure for resolving this circularity is to
11 identify the required equity return based on the market value of a utility's stock. That
12 return is combined with the cost of debt, and the blended return to total capital is then
13 applied to a rate base reflective of the book value of the utility's investment. The book
14 value is the accountant's quantification of the depreciated original cost of the utility's
15 assets adjusted for ratepayer contributions such as deposits and deferred taxes. Under this
16 procedure, the market price of a stock is used only to determine the return that investors
17 expect from that stock. That expectation is then applied to the book value of the utility's
18 investment to identify the level of earnings that regulation will allow the utility's common
19 shareholders to recover.

20 **Q. HOW CAN THE FINANCIAL INTEGRITY AND CAPITAL ATTRACTION**
21 **STANDARDS BE APPLIED IN ESTIMATING THE RATE OF RETURN ON**
22 **EQUITY CAPITAL?**

23
24 A. If a utility can earn a return on its investment comparable to that required by enterprises of
25 comparable risk, then it should have no difficulty in attracting capital and maintaining
26 credit. Investors would have no reason to shun such a utility in favor of other investment
27 opportunities. Thus, if the comparable earnings test is met, then the financial integrity and
28 capital attraction standards are met as well.

29 **Q. HOW DO YOU DEFINE "ENTERPRISES OF CORRESPONDING RISK" AS**
30 **REQUIRED BY HOPE NATURAL GAS?**

1 A. Enterprises of corresponding risk are investor owned companies that are engaged in the
2 same activities as Tidewater and, most importantly, are regulated like Tidewater. These
3 would be other regulated water utilities.

4 **Q. WHAT WATER COMPANIES HAVE YOU SELECTED AS COMPARABLE TO**
5 **TIDEWATER’S WATER OPERATIONS?**

6 A. Schedule 1 of Exhibit CWK-2 lists the eight companies that are classified as water
7 utilities in Value Line’s Standard Edition survey of companies. Value Line has recently
8 added another company, Consolidated Water, to the list, but this company is primarily
9 engaged in the desalinization of sea water in the islands of the Caribbean. I do not
10 consider it comparable to Tidewater or to the eight water utilities listed by Value Line.

11 **Q. HOW CAN YOU DETERMINE THE REQUIRED RATE OF RETURN ON THE**
12 **EQUITY INVESTMENT OF YOUR COMPARABLE WATER UTILITIES?**

13 A. There is no direct, observable way to determine the rate of return required by equity
14 investors in any company or group of companies. The best that can be hoped for are
15 indications from market data and analysts’ predictions. The principal methodology for
16 obtaining these indications is the Discounted Cash Flow procedure, and I develop three
17 applications of this approach. Much less reliable procedures are the Capital Asset Pricing
18 Model and the record of recent rate of return awards.

19 **2. DISCOUNTED CASH FLOW PROCEDURE**

20 **Q. PLEASE DESCRIBE THE DISCOUNTED CASH FLOW PROCEDURE.**

21 A. The Discounted Cash Flow procedure is the primary basis for equity return findings by a
22 number of regulatory commissions, including the FCC² and the FERC.³ Other

² *Authorized Rates of Return for the Interstate Services of AT&T Communications and Exchange Telephone Carriers, Memorandum Opinion and Order on Reconsideration*, CC Docket No. 84-800, Phase II, 104 FCC 2d 1404, at 1407 (1986); *Resubscribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers, Order*, CC Docket No. 89-624, 5 FCC 2d 7507, 7512 (1990); *Notice Initiating a Prescription Proceeding and Notice of Proposed Rulemaking*, CC Docket No. 98-166, October 5, 1998.

³ *See, e.g., Southern California Edison Company*, 56 FERC ¶ 61,117 (1991) (Opinion No. 362-A); *Connecticut Light & Power Co.*, 43 FERC ¶ 61,508(1988); *Jersey Central Power & Light Co.*, 77 FERC ¶61,001 (1996).

1 approaches are used principally as a check on the DCF results. That is the approach I will
2 follow in my analysis.

3 The basic premise of the DCF procedure is that the market values each stock at the
4 discounted present value of all expected future flows of cash to the investor. The discount
5 rate that equates those future cash flows with the market value of the stock is the
6 investor's required rate of return.

7 The DCF approach is usually represented by the following formula:

8
$$k = \frac{d}{p} + g$$

9 where

- 10 k = required rate of return
- 11 d = dividend in the immediate period
- 12 p = market price
- 13 g = expected growth rate in dividends

14 While the DCF method is usually presented in mathematical notation format (as above), it
15 can also be described in narrative fashion. The formula says that the return that any
16 investor expects from the purchase of a stock consists of two components. The first is the
17 immediate cash flow in the form of a dividend. The second is the prospect for future
18 growth in dividends. The sum of the rates of these two flows, present and future, equals
19 the return that investors require. Investors adjust the price they are willing to pay for the
20 stock until the sum of the dividend yield and the annual rate of expected future growth in
21 dividends equals the rate of return they expect from other investments of comparable risk.
22 The DCF test thus determines what the investing community requires from the Company
23 in terms of present and future dividends relative to the current market price.

24 **Q. DON'T MOST INVESTORS REGARD CAPITAL APPRECIATION AS A**
25 **PORTION OF THEIR EXPECTED RETURN?**

26 A. Yes. The expectation of capital appreciation is captured in the "g" or growth portion of
27 the DCF formula. If dividends grow, then it follows that the market price of the stock will
28 grow as well. It is this growth that most equity investors seek, at least in part, in
29 purchasing shares in a traded company.

1 **Q. HOW IS THE FIRST TERM “d/p” DEVELOPED FOR PURPOSES OF THE DCF**
2 **PROCEDURE?**

3 A. The “d” is the dividend in the next period, that is, the next year. There is a somewhat
4 mechanical procedure for predicting this value which applies a factor of .5 to the “g” or
5 growth factor, on the assumption that dividends will increase in lock step with earnings
6 growth. Alternatively, there are analysts’ predictions of next year’s dividends that
7 presumably reflect a fairly close scrutiny of the companies’ cash flow requirements and
8 their stated desire (or lack thereof) to increase dividends to their stockholders. Because
9 the latter procedure takes into account company-specific considerations, I believe it is
10 more appropriate. For the “next period,” I have assumed that the investment horizon at
11 this point is the second half of 2014 and the first half of 2015. I have used the average of
12 Value Line’s forecasts of 2014 and 2015 dividends. Those values are shown in columns
13 A, B and C of Schedule 1 of Exhibit CWK-2 for the water comparison group.

14 The “p” or price denominator of the dividend yield fraction requires the exercise of some
15 judgment. Given the volatility of the stock market, it is inappropriate to use any one day’s
16 price, but it is also necessary to reflect the market’s current perception of each stock’s
17 value. For purposes of this analysis, I have used the average of closing prices for the most
18 recent 90 calendar days prior to May 8, 2014 as reported by Yahoo finance. Those
19 averages are shown in column D of Schedule 1 of Exhibit CWK-2.

20 **Q. WHAT IS THE AVERAGE DIVIDEND YIELD OF YOUR COMPARISON**
21 **GROUP?**

22 A. Column E of Schedule 1 of Exhibit CWK-2 reveals that the average dividend yield of the
23 water comparison group companies is 2.93 percent.

24 **Q. HOW DO YOU CALCULATE THE “g” GROWTH COMPONENT OF THE DCF**
25 **FORMULATION?**

26 A. The calculation of the “g” component of the DCF formulation is the most difficult aspect
27 of the model. According to the DCF theory, the relevant measure of “g” should be the
28 growth in dividends. Dividends, however, are largely a function of management
29 discretion, and in the near term they do not necessarily reflect the underlying driver of

1 earnings. In the long run, any rate of dividend growth that differs significantly from
2 earnings growth is unlikely to be sustainable. For this reason, it is generally accepted that
3 the growth rate of earnings per share (“EPS”) is the most reliable indicator of the “g”
4 factor.

5 I have used three alternative approaches to calculating the growth factor in the DCF
6 model. The first is the constant growth approach, which assumes a single growth rate in
7 EPS indefinitely into the future. The second is the variable growth approach in which I
8 have assumed different growth rates in three time periods into the future. The third is the
9 sustainable growth model that calculates the rate at which the book value of a fully
10 regulated company can grow.

11 **Q. PLEASE DESCRIBE YOUR CONSTANT GROWTH MODEL.**

12 A. As noted earlier, EPS growth is the ultimate constraint on dividend growth, so the
13 constant growth model employs predictions of EPS growth, usually in the four to six year
14 time horizon. Investment analysts routinely attempt to forecast the future earnings of
15 traded companies. Value Line provides such forecasts based on the research of its own
16 and other organizations’ analysts. Another commonly cited source is Zacks.com. Zacks
17 does not conduct independent research but surveys investment analysts for their
18 predictions of future earnings growth. Thomson Financial, a division of Reuters, also
19 conducts surveys of analysts, and those results are reported in Yahoo Finance. I have
20 used the forecasts from these three sources for my development of the classic DCF
21 return.

22 **Q. WHAT IS THE AVERAGE LONG-TERM GROWTH RATE FOR YOUR**
23 **COMPARISON GROUP?**

24 A. The long-term earnings growth forecasts for each comparison company are presented in
25 columns F, G and H of Schedule 1 of Exhibit CWK-2. Column I shows the average of
26 these forecasts for each company. The average forecast rate of earnings growth for the
27 water comparison group is 6.16 percent.

28 **Q. WHAT ARE THE EQUITY RETURN INDICATIONS FROM YOUR**
29 **APPLICATION OF THE CONSTANT GROWTH DCF PROCEDURE?**

1 A. Column J on Schedule 1 of Exhibit CWK-2 presents the results of my constant growth
2 DCF analysis for the comparison group. The return indications average to 9.09 percent.
3 However, the 5.87 percent indication for American States Water is unreasonably low, so I
4 eliminate it for purposes of estimating Tidewater's required return. The adjusted average
5 indication is 9.55 percent, as shown in column K.

6 **Q. WHAT IS YOUR ASSESSMENT OF THE QUALITY OF THE CONSTANT**
7 **GROWTH DCF RETURN INDICATIONS?**

8 A. I agree with the FCC⁴, the FERC⁵ and other commissions that this formulation of the
9 DCF model is a reliable basis for estimating returns to equity. That is because this DCF
10 model uses market data for the dividend yield portion of the formula, and it relies on the
11 informed judgment of market analysts for its projection of future growth. The greatest
12 value should be placed on this constant growth DCF approach.

13 The constant growth DCF formulation, however, cannot be considered as providing a
14 hard and fast statement of investors' requirements for an equity return. Other approaches
15 should be applied to offer guidance as to whether the classic DCF results provide
16 appropriate estimates of the rate of return on equity, as per Commission precedent.

17 **Q. PLEASE DESCRIBE YOUR 3-STEP DCF MODEL.**

18 A. An arguable weakness in the constant growth DCF formulation is that it assumes that the
19 rates of earnings growth predicted by investment analysts will continue indefinitely. That
20 is not the prediction of the analysts. They are quite explicit that their forecasts are only to
21 a time horizon of about five years. Beyond that, the companies' earnings growth rates
22 are unknown and unknowable.

⁴ *Authorized Rates of Return for the Interstate Services of AT&T Communications and Exchange Telephone Carriers, Memorandum Opinion and Order on Reconsideration*, CC Docket No. 84-800, Phase II, 104 FCC 2d 1404, at 1407 (1986); *Resubscribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers, Order*, CC Docket No. 89-624, 5 FCC 2d 7507, 7512 (1990); *Notice Initiating a Prescription Proceeding and Notice of Proposed Rulemaking*, CC Docket No. 98-166, October 5, 1998.

⁵ *See, e.g., Southern California PEPCO Company*, 56 FERC ¶ 61,117 (1991) (Opinion No. 362-A); *Connecticut Light & Power Co.*, 43 FERC ¶ 61,508(1988); *Jersey Central Power & Light Co.*, 77 FERC ¶61,001 (1996).

1 It is not realistic to expect that a growth in earnings that departs significantly from the
2 overall growth of the economy can last indefinitely. Sooner or later, any company's
3 earnings growth must be constrained by the performance of the economy in which it
4 operates.

5 Accordingly, I have altered the growth assumption to consider three time periods, the
6 near term being the next five years, the intermediate term being the subsequent five or ten
7 years, and the long term being the more distant future beyond 10 or 15 years. For the
8 near term, I have used Value Line's forecast of dividend growth in the four to six year
9 time frame. For the intermediate period, I have used an average of the analysts' EPS
10 growth forecast, developed in the constant growth model, and estimates of long-term
11 nominal rate of growth in Gross Domestic Product ("GDP"). The final, long-term growth
12 is the prediction of nominal GDP growth into the distant future.

13 This procedure acknowledges that disparities between the short-term rate of growth for
14 any group of companies and the growth in the overall economy cannot last forever.
15 Ultimately, earnings growth will trend toward the rate of increase in the total market.

16 Ideally, I should calculate the discount rate for the three dividend streams separately, but
17 that procedure requires either that the dividends in the third phase be extended
18 hypothetically out to a very, very long horizon, or that some terminal value be assumed
19 for the stock. Either procedure involves an unnecessary exercise in judgment. Instead, I
20 have blended the three growth rates into one composite rate similar to the constant
21 growth model. My experience is that this treatment has very little effect on the result.

22 **Q. WHAT FORECAST RATE OF GDP GROWTH DO YOU PROPOSE TO USE IN**
23 **IMPLEMENTING THE FERC 2-STEP GROWTH PROCEDURE?**

24 A. The Congressional Budget Office ("CBO") produces forecasts of most of the major
25 economic indicators. CBO's current forecast for the years 2019 through 2023 calls for an
26 annual rate of increase of 4.20% in nominal GDP.⁶ The Social Security Administration
27 ("SSA") performs an even longer-range forecast of GDP growth. Its forecast average
28 rate of real GDP growth from 2018 to 2048 is about 2.18 percent, and its forecast of the

1 GDP price deflator is 2.40, which comes to a growth rate in nominal GDP of 4.58
2 percent.⁷ I have used the average of the CBO and the SSA forecasts, 4.39 percent.

3 **Q. WHAT IS THE DCF RETURN INDICATION USING THE FERC TWO-STEP**
4 **GROWTH FORMULATION FOR THE WATER COMPARISON GROUP?**

5 A. The calculation of the DCF return using the three-step growth factor is presented in
6 Schedule 2 of Exhibit CWK-2. The average return indication for the eight companies in
7 the water comparison group is 8.07 percent. The average indication for the eight water
8 companies is 8.09 percent.

9 **Q. WHAT VALUE DO YOU PLACE ON THIS RESULT?**

10 A. It may be overly simplistic to assume that the water utilities' earnings growth will
11 ultimately revert to the growth rate of the overall economy. Historically, the utility
12 industries have grown faster than many other sectors of the economy, and there is reason
13 to believe they may continue to do so beyond the four-to-six year horizon of the analysts'
14 forecasts. For this reason, I place somewhat less reliance on this formulation than on the
15 results of the constant growth DCF approach.

16 **Q. PLEASE DESCRIBE THE SUSTAINABLE GROWTH MODEL.**

17 A. The sustainable growth model examines each company's ability to generate increases in
18 the book value of its stock. While book value and market value rarely match, they do
19 have a relationship, particularly for a company that is subject to rate-base/rate-of-return
20 regulation. As I have discussed earlier, regulation sets the company's allowed earnings
21 based on book value. As long as that is the case, earnings and dividend growth will
22 indirectly be driven by book value growth.

23 There are two ways by which the book value per share of a regulated company can
24 increase. One is through retained earnings, that is, the portion of earnings that is not
25 declared out as dividends. The other is to sell new shares of stock at prices that exceed

⁶<http://www.cbo.gov/sites/default/files/cbofiles/attachments/43907-BudgetOutlook.pdf>, Table 2.1

⁷ Computed from Table IV D1 of the 2008 Annual Report of the SSI Program.

1 book value. The premium on the new shares then increases the book value of the existing
2 shares.

3 These terms can be expressed by the following formula:

4
$$g = (r*b) + (s*v)$$

5 where:

6 r = the fraction of earnings retained by the company, i.e. the retention ratio

7 b = the return on the book value of common equity

8 s = the increase in common shares outstanding that have been sold at market value

9 v = the per-share premium or discount on the shares sold

10 **Q. HOW DO YOU PROPOSE TO ESTIMATE THE VALUES REQUIRED FOR**
11 **THIS DCF CALCULATION?**

12 A. For this calculation, I propose to rely on Value Line, which is the only source that
13 provides five-year forecasts of all the relevant variables. Those forecast variables are
14 shown on the two pages of Schedule 3 of Exhibit CWK-2. The first three columns on
15 page 1 of this schedule develop the earnings retention percentage for each company using
16 the dividends and earnings per share forecasts for the 2017-2019 period. The earnings
17 retention ratio is defined as one less the dividend payout ratio, that is, the ratio of
18 dividend per share to earnings per share.

19 Column D on page 1 of Schedule 3 presents Value Line's forecast of the book value per
20 share of each company during the 2017-2019 period, and column E calculates the return
21 on that book value by dividing the EPS figures in column A by the book values in
22 column D. When the earnings retention ratios are multiplied by the book value returns,
23 the result is an expression of the accretion in book value per share that results from
24 retained earnings.

25 Page 2 of Schedule 3 develops the s*v factor, again using Value Line's forecasts.
26 Columns A through C on that page develop the current market-to-book value. Columns
27 D and E show the number of shares outstanding in 2014 and forecast for the 2017-2019
28 period. Column F shows the annual rate of increase. The s*v factor in column G is the
29 excess of market value over book value times the percentage growth in outstanding
30 shares.

1 On page 1 of Schedule 3, the $s \cdot v$ factor, shown in column G, is added to the retained
2 earnings factor to yield an expression of the sustainable rate of book value growth. These
3 values are used as the “g” factor in the DCF formula.

4 **Q. WHAT IS THE DCF RETURN INDICATION USING THE BOOK VALUE**
5 **GROWTH FORMULATION FOR THE PEER GROUP OF WATER UTILITIES?**

6 A. The DCF indications from the sustainable growth model are presented in column L of
7 page 1 of Schedule 3 of Exhibit CWK-2. The indication of 4.40 for the York Water
8 Company is unreasonably low, so I have eliminated it. The average return indication for
9 the remaining seven water utilities is 7.83 percent.

10 **Q. WHAT VALUE DO YOU PLACE ON THIS RESULT?**

11 A. There are several assumptions underlying this formulation of the DCF calculation that are
12 subject to challenge. The first is that there is a one-for-one correspondence among the
13 growth rates for dividends, earnings and book value per share. Empirically, this
14 correspondence is not observed. We can accept that earnings growth drives dividend
15 growth in the long run, but the further assumption that book value growth determines
16 earnings growth is more questionable.

17 Second, this procedure assumes a fully regulated operation, where the entirety of each
18 utility’s earnings is determined by applying a rate of return to a rate base reflective of the
19 full book value of the company. As a practical matter, most of the firms in the utility
20 comparison groups have some unregulated activities, the earnings of which are not tied to
21 book value.

22 Third, the book value growth model assumes that investors make the same $b \cdot r + s \cdot v$
23 calculation that I have made. That is because the DCF formulation relies on the
24 assumption that investors set the price of a stock in part based on their perceptions of
25 future earnings growth. The book value growth approach is valid only to the extent that
26 investors employ it in formulating their expectations of future earnings growth. Yet, I
27 have never seen any reference to this calculation in the analysts’ reports on public
28 utilities.

1 Fourth, there is a problem of circularity. One of the inputs to the book value growth
2 methodology is the return on book value. Yet, the whole purpose of this exercise is to
3 find the return on book value.

4 Finally, there is the structural weakness that the entire calculation is based on one source:
5 Value Line.

6 For the foregoing reasons, I believe that the book value growth formulation of the DCF
7 model provides useful information, but I must discount its value as a definitive measure
8 of required equity return. Rather, the constant growth DCF model remains the most
9 accurate and widely accepted model for determining equity return.

10 **3. THE CAPITAL ASSET PRICING MODEL**

11 **Q. PLEASE DESCRIBE THE CAPITAL ASSET PRICING MODEL.**

12 A. The Capital Asset Pricing Model (“CAPM”) employs a measure called “beta,” which
13 tests the covariance of the stock at issue with that of the overall market to assess the
14 relative risk of any stock against the market. As conventionally used by rate-of-return
15 analysts, the beta is assumed to measure the cost of the company’s equity on a continuum
16 between the average required return of the overall equity market and a risk-free return.

17 The CAPM formula is as follows:

$$18 \quad k = R_f + \beta(R_m - R_f)$$

19 where

20 k = the prospective market cost of common equity for a specific investment

21 R_f = the “risk-free” rate of return

22 β = the company-specific beta

23 R_m = the overall stock market return on stocks for the prospective period

24 **Q. WHAT IS YOUR ASSESSMENT OF THE CAPM?**

25 A. I believe that CAPM has value in assessing the relative risk of different stocks and
26 portfolios of stocks. It can therefore be useful in checking the results of other, more
27 reliable methods of measuring equity return, such as the DCF procedure. However,
28 because of the dubious underlying assumption of this approach and because of its

1 extensive requirement for judgment in selecting each of the inputs, I question its value in
2 directly estimating a return to equity.

3 **Q. WHAT IS THE DUBIOUS ASSUMPTION OF THE CAPM APPROACH?**

4 A. The CAPM assumes that the relative risk of any company is entirely measured by the
5 beta, that is, the covariance of the stock's price fluctuations with those of the market. It
6 postulates that because investors can avoid all company-specific risks through
7 diversification, the only risk they face is that created by fluctuations in the overall market.
8 According to this theory, the extensive and exhaustive efforts of market analysts to
9 evaluate the prospects of each of the companies traded in the stock markets are a waste of
10 time. Any discussion of Tidewater's relative business or financial risk is totally beside
11 the point. The only risk that investors in Tidewater (or any other company) face is the
12 extent to which the Company's stock price varies with overall market indices.

13 This assumption is patently absurd. Obviously, investors do take into consideration
14 company-specific factors, even if they can diversify by holding a portfolio of stocks.
15 That is why Value Line, Thomson, Bloomberg, Zacks and every major brokerage house
16 spend extensive resources analyzing the performance of every major company traded on
17 the exchanges.

18 **Q. WHAT ARE THE JUDGMENTS THAT MUST BE MADE IN APPLYING THE**
19 **CAPM?**

20 A. The analyst must make judgments in his selection of the three inputs to the CAPM, that
21 is, the beta, the risk-free rate, and the total market return.

22 **Q. WHAT JUDGMENT IS REQUIRED FOR THE FIRST INPUT, β , OR BETA?**

23 A. As noted, beta measures the degree of covariance of the stock with that of the market
24 overall. But neither the fluctuations of the stock nor those of the market are constant or
25 even consistent with each other over any extended period of time. As a result, there are
26 as many estimates of beta for a given company as there are analysts making the
27 measurement.

1 **Q. WHAT JUDGMENT IS REQUIRED IN SELECTING THE INPUT R_f , THE RISK-**
2 **FREE RATE OF RETURN?**

3 A. There is general consensus that yields to U.S. government securities are risk-free in the
4 sense that they are free from the risk of default. The difficulty is that there are quite a
5 number of U.S. government securities of differing maturities that have very different
6 yields. Most utility-sponsored rate-of-return witnesses assert that because stocks exist in
7 perpetuity, the yield of long-term government bonds is the appropriate risk-free rate.

8 There are two difficulties with this rationale. The first is that stocks are not held in
9 perpetuity. To the contrary, the New York Stock Exchange has a turnover rate of about
10 100 percent annually, suggesting that the average share of stock is held only about a year.
11 The second difficulty is that long-term bonds are not free from risk. To the contrary, they
12 carry a substantial risk that inflation will erode their eventual value at maturity. Stocks
13 do not bear this inflation risk because generally the stock market rises when inflation
14 increases.

15 **Q. WHAT JUDGMENT IS REQUIRED IN SELECTING THE INPUT R_m , THE**
16 **RETURN TO THE OVERALL MARKET?**

17 A. The complexities and uncertainties associated with measuring the return on equity of an
18 individual company are not reduced when the object of the analysis is expanded to the
19 entire market for equities. Generally, CAPM analysts use one of two procedures.
20 Sometimes, they perform simplistic DCF studies of a wide variety of stocks, which raises
21 the question of whether this method adds any information beyond the straightforward
22 DCF studies of comparable companies. Alternatively, they use the historical return to
23 market equities, which assumes, totally unrealistically, that the investors in the equity
24 markets during the period under study actually realized the return that they were
25 expecting. This approach tells nothing about future expectations from the market.

26 **Q. HAVE YOU APPLIED THE CAPM TO YOUR COMPARISON GROUP OF**
27 **WATER UTILITIES?**

28 A. Yes. My application of the CAPM is found in Schedule 5 of Exhibit CWK-2.

1 **Q. WHAT RISK-FREE RATE HAVE YOU USED IN YOUR CAPM APPLICATION?**

2 A. To be conservative, I have accepted the conventional practice of using the current yield
3 on 30-year Treasury bonds. The Federal Reserve reports that the current yield on these
4 bonds is 3.44 percent.⁸

5 **Q. WHAT MARKET RISK PREMIUM HAVE YOU USED?**

6 I have used two approaches, both of which are conventionally employed by rate of return
7 analysts. The first is to use historical market returns over a very long period of time. I
8 have employed the market return calculated by Morningstar for the period 1929-2013, as
9 found in its 2014 Classic Yearbook, *Stocks, Bond, Bills and Inflation, 1926-2010*. That
10 return has been 11.88 percent. The second is to use a simplified DCF calculation using
11 Value Line's forecast of dividend yields and stock appreciation. Value Line forecasts that
12 next year's average dividend yield will be 2.0 percent. It predicts that stocks will
13 appreciate by 40 percent in the next three to five years. Using the four-year midpoint of
14 this forecast, this translates into an 8.78 percent annual rate of growth. The consequent
15 market return is 10.78 percent. The average of these two market return estimates is 11.33
16 percent. The market risk premium is 7.89 percent.

17 **Q. WHAT BETAS DID YOU USE?**

18 A. I used the average beta developed on Schedule 4 of my Exhibit CWK-2. The average of
19 the Value Line betas for the eight water comparison companies is .72.

20 **Q. WHAT CAPM RATE OF RETURN INDICATION HAVE YOU FOUND?**

21 A. The CAPM return indication is shown on line 6 of Schedule 5 of Exhibit CWK-2. The
22 indication for the water comparison group is 9.11 percent.

23 **Q. WHAT VALUE DO YOU PLACE ON THESE RESULTS?**

1 A. As I have noted, the CAPM calculation rests on a highly dubious underlying assumption
2 and on the considerable judgment required in the selection of critical inputs. The results
3 that I have shown in Schedule 6 can be changed by the use of slightly different inputs for
4 the overall market return, the beta factor or the risk-free return.

5 For the foregoing reasons, I give very little weight to the CAPM indication.

6 **4. EQUITY RETURN OF TIDEWATER**

7 **Q. HOW WILL YOU IDENTIFY TIDEWATER'S RETURN ON EQUITY?**

8 A. I have applied four tests to derive indications of the required equity return of the water
9 utility comparison group. I have provided an assessment of the value of each of these
10 tests. I place most reliance in the constant growth DCF approach, as does the
11 Commission. I place somewhat less reliance on the 3-step DCF and even less reliance on
12 the sustainable book value growth DCF model. I have a very low opinion of the CAPM.

13 In Schedule 6 of Exhibit CWK-2, I have presented the results of each of these tests. They
14 are shown in column A. In column B, I assign weightings to these tests consistent with
15 the foregoing analysis of their relative values in indicating a rate of return. Column C
16 shows the result of multiplying the indication of each of the four tests by its weighting.
17 Column D presents the composite, weighted return. For the water comparison group the
18 weighted indication is 8.70 percent.

19 **Q. IS THIS INDICATION APPROPRIATE FOR TIDEWATER?**

20 A. No. This 8.70 percent is a generalized indication that does not take into account the
21 specific characteristics of Tidewater, which is its small size of its parent company,
22 Middlesex Water. Small size increases the business risk of a company, albeit more so for
23 competitive companies than for public utilities. Still, a small water company is likely to
24 have a limited service territory, dis-economies of support services, little vendor

⁸Federalreserve.gov/releases/h15

1 bargaining power, and the potential to incur “lumpy” investments on a small revenue
2 base.

3 Ms. Ahern adds 35 basis points by comparing the size of Tidewater’s presumed market
4 capitalization with the average capitalization of the proxy group. That is not the
5 appropriate comparison. Tidewater does not sell stock. Its parent, Middlesex Water,
6 sells the stock that constitutes the equity capital of Tidewater. Moreover, the support
7 services and vendor bargaining power for Tidewater are those of Middlesex, not just
8 Tidewater.

9 Column A of Schedule 3, page 2, shows that the current market price of Middlesex’s
10 stock is \$20.72, and column D shows that there are 16.1 million shares of Middlesex
11 stock outstanding. The product of these two numbers is a market capitalization of \$333.6
12 million. This value places Middlesex in the ninth, rather than the tenth decile on page 1
13 of schedule 10 of Ms. Ahern’s exhibit T-6. The difference between the premiums of the
14 ninth (2.70%) and sixth (1.72%) deciles is 0.98 percent. Applied to the 8.70 percent
15 average composite return indication for the comparison group, the size adjustment
16 appropriate for Tidewater is nine basis points.

17 **Q. MS. AHERN ALSO INCLUDES AN ADDER FOR FLOTATION COSTS. IS**
18 **SUCH AN ADDER APPROPRIATE?**

19 A. Yes. Flotation costs should be recovered either as an explicit expense item in the revenue
20 requirement or as an adder to the rate of return.

21 **Q. ASSUMING THAT FLOTATION COSTS ARE RECOVERED AS AN ADDER TO**
22 **THE RATE OF RETURN, WHAT SHOULD BE THE AMOUNT OF THAT**
23 **ADDER?**

24 A. I recommended recovery of flotation costs over a 10-year period. Page 1 of Schedule 11
25 of Ms. Ahern’s Exhibit T-6 shows that Middlesex has incurred \$3,011,500 in flotation
26 costs during the last 10 years. Assuming a ten-year recovery, the annual amount to be
27 recovered should be \$ 301,150. When this value divided by the \$189,345,000 book value

1 of Middlesex's equity as of March 31, 2014, the flotation cost adder is 16 basis points
2 (0.16%)

3 **Q. ARE THERE ANY OTHER ADJUSTMENTS THAT SHOULD BE MADE TO**
4 **THE COMPARISON GROUP EQUITY RETURN INDICATION TO MAKE IT**
5 **APPROPRIATE FOR TIDEWATER?**

6 A. Yes. Schedule 8 of Exhibit CWK-2 shows the debt/equity capital structure mix of each
7 of the comparison companies. The average debt/equity ratio for the group is
8 approximately 46/53. The capital structure we are using for Tidewater is approximately
9 49/51, slightly more "levered" than the group average. This means that Tidewater incurs
10 somewhat more financial risk by reason of having a higher proportion of its capital in the
11 form of debt.

12 The register at the bottom of Schedule 8 shows the development of a financial risk
13 adjustment. There, I have calculated the weighted cost of capital for the comparison
14 group using the average of the capital structures of the eight water companies in my
15 comparison group. I have used the debt cost for Tidewater reported in the testimony of
16 Brian D'Ascendis, and I have inserted the 8.70 percent cost of equity for the comparison
17 group. With these cost rates, I calculate that the cost of capital to comparison group with
18 its debt/equity ratio of 45.89/54.97 is 7.46 percent. I apply this same 7.46 percent to
19 Tidewater's 49.04/50.96 debt/equity mix, and derive an equity return of 8.90 percent.

20 The difference between this derived 8.70 percent and the comparison group's 8.86
21 percent is 0.16 percent, which is the appropriate financial risk adder to Tidewater's return
22 on equity.

23 **Q. WHAT IS YOUR FINAL RECOMMENDATION AS TO THE EQUITY RETURN**
24 **THAT SHOULD BE AUTHORIZED TO TIDEWATER?**

25 A. As shown on Schedule 6 of Exhibit CWK-2, the fully adjusted comparison group equity
26 return indication for Tidewater is 9.11 percent. I recommend that this value be rounded
27 up to **9.15 percent**.

1 **V. TESTIMONY OF PAULINE AHERN**

2 **Q. TIDEWATER WITNESS PAULINE AHERN RECOMMENDS A RETURN ON**
3 **EQUITY OF 10.95 PERCENT. WHAT ACCOUNTS FOR THE VERY LARGE**
4 **DIFFERENCE BETWEEN HIS RECOMMENDATION AND YOURS?**

5 A. There are a number of differences between Ms. Ahern's study and my analysis that do
6 not significantly affect the final outcome, so I will not comment on them. I have
7 identified the following factors as accounting for the difference between my 9.15 percent
8 recommendation and her 10.95 percent proposal:

- 9 • Her discounting of the constant growth DCF model,
- 10 • Her failure to apply other methods for estimating the "g" factor in the DCF model,
- 11 • Her application of the PRPM risk premium approach,
- 12 • Her application of the total market risk premium approach,
- 13 • Her application of the Capital Asset Pricing Model, and
- 14 • Her application of the results of the analytical models to non-regulated companies results.

15 **Q. WHAT EQUITY RETURN INDICATION DOES MS. AHERN DERIVE FROM**
16 **HER APPLICATION OF THE CONSTANT GROWTH DCF FORMULATION?**

17 A. Page 1 of Schedule 5 of Ms. Ahern's Exhibit T-6 shows that her application of the
18 constant growth DCF model yields a mean return of 8.79 percent and a median return of
19 8.72 percent.

20 **Q. WHAT DOES MS. AHERN HAVE TO SAY ABOUT THESE RESULTS?**

21 A. Beginning at page 21 of her testimony, Ms. Ahern goes to some length to try to
22 demonstrate that these results under-compensate investors and therefore should be given
23 little weight. Her main point is that because the stocks of all of the water companies in
24 her proxy group are trading at well above book value, a return of 8.72 percent on book
25 value will yield a considerably lower return on the market value of the stocks. Since
26 market value is the only value that investors can realize, they are unable to earn a return
27 of 8.72 percent when it is applied to the book value of the stock.

1 **Q. WHAT IS YOUR RESPONSE TO MS. AHERN'S ARGUMENT?**

2 A. First of all, any adjustment in the allowed return based on market value immediately
3 becomes circular. If the allowed return is raised because market value exceeds book
4 value, then the market value will in response increase, requiring yet a further inflation in
5 the allowed return. That is why regulators do not consider market value in setting
6 allowed rates of return.

7 But more to the point is the rather obvious reason why market values are well above book
8 values, which is that the returns earned on book value are excessive. In theory, if the
9 stock of a fully regulated utility earns a return on book value that matches exactly the
10 return requirements of investors, then the market value of the stock should approximate
11 its book value. That is not the case. The water utility stocks are all earning more on
12 book value than investors require, with the result that the trading price of every utility
13 exceeds its book value. The simple conclusion is that regulators have been over-
14 compensating investors. That over-compensation is at the expense of ratepayers. **Q.**

15 **WHY DOES MS. AHERN'S FAILURE TO APPLY OTHER DCF**
16 **GROWTH FORMULATION ACCOUNT FOR THE DIFFERENCE BETWEEN**
17 **YOUR RECOMMENDED RETURN AND HERS?**

18 A. As I have demonstrated, two widely used and accepted alternative methods for estimating
19 the growth factor in the DCF formula yield indications even lower than the most
20 commonly used constant growth approach. Had Ms. Ahern applied these procedures,
21 her return indications would have been considerably reduced.

22 **Q. HOW IS MS. AHERN'S APPLICATION OF THE PREDICTIVE RISK**
23 **PREMIUM MODEL RESPONSIBLE FOR THE DIFFERENCE BETWEEN**
24 **YOUR RECOMMENDED RETURN AND HERS?**

25 A. The 11.59 percent result of Ms. Ahern's Predictive Risk Premium Model (PRPM)⁹ is one
26 of the principal reasons why Ms. Ahern is able to derive a 10.95 percent equity.

⁹ Exhibit T-6, Schedule 7, page 1.

1 **Q. WHAT IS YOUR ASSESSMENT OF THIS MODEL?**

2 A. While the PRPM total return estimate is arguably reasonable, some of the constituent
3 return indications are unreasonable on their face. Page 2 of Schedule 7 of Ms. Ahern's
4 exhibit shows a risk premium of the American Water Works Company of 22.38 percent
5 and an indicated return of 26.69 percent. The corresponding values for Aqua America
6 are 13.51 percent and 17.82 percent. These numbers are clearly beyond the range of
7 reasonableness.

8 The explanation for these excessive values is buried in the underlying workpapers. The
9 principal input to the PRPM is the record of the monthly premiums of earned returns on
10 the stock over long-term bond yields. The model assumes that the greater these risk
11 premiums, the greater the required return on equity.

12 Exhibit CWK-3 is a copy of the workpaper on which the monthly returns on the stock of
13 the American Water Works Company are presented. As with every risk premium
14 approach I have encountered, the methodology requires knowledge of the return on
15 equity in order to derive the risk premium, which is then added to a bond yield to derive
16 the return on equity – a highly circular process. In this case, Ms. Ahern has assumed that
17 the net earnings accruing to a holder of the stock constitute the required return on equity.
18 She then subtracts the yields on Treasury bonds to derive a risk premium. That risk
19 premium is later added to the Treasury bond yield to derive the return indication.

20 The assumption that realized earnings can be equated to required return is totally
21 unfounded, particularly when applied over a short five-year period. If realized earnings
22 constitute required earnings, then investors in 2008 required a negative return and those
23 same investors in 2013 required a return of close to 40 percent.

24 Ms. Ahern compounds this unsound theory by manipulating the averages. In Exhibit
25 CWK-3, the monthly stock price changes are reported in the column titled "Total
26 Return." The next column reports the quarterly dividends. Monthly bond yields are then
27 subtracted from the total monthly returns, plus or minus, to produce the monthly risk
28 premiums, which are presented in the column labeled "RP." Ms. Ahern then annualized

1 each of these monthly premiums and calculates the average of these annualized risk
2 premiums. Not surprisingly, the inflation of every monthly risk premium by 12 yields a
3 very high average number, 32.87 percent in the case of American Water Works.

4 If, instead of annualizing each monthly return, Ms.Ahern had averaged the monthly
5 returns and then annualized that average, she would have derived a much lower number,
6 specifically 3.61 percent as shown at the bottom of Exhibit CWK-3. Based on the
7 foregoing, I submit that Ms. Ahern's PRPM analysis is both conceptually and
8 computationally so flawed that it should be given no weight whatever in determining
9 Tidewater's required return on equity.

10 **Q. HOW IS MS. AHERN'S APPLICATION OF THE ADJUSTED MARKET**
11 **RETURN RISK PREMIUM MODEL RESPONSIBLE FOR THE DIFFERENCE**
12 **BETWEEN YOUR RECOMMENDED RETURN AND HERS?**

13 A. The 11.07 percent result of the adjusted market return risk premium model ¹⁰also
14 contributes to Ms. Ahern's ability to propose a 10.95 percent return.

15 **Q. WHAT IS YOUR ASSESSMENT OF THIS RESULT?**

16 A. This result is the average of two risk premium estimates. The first is the average of two
17 the risk premiums: (1) the average of historical risk premiums of stock returns over
18 public utility bonds from 1927 to 2013, (2) the risk premium derived from the PRPM.
19 The first of these risk premiums is for the total market and has nothing to do with public
20 utilities, let alone water utilities. I have already noted the deficiencies of the PRPM.

21 The second risk premium is nothing more than an alternative calculation of the Capital
22 Asset Pricing Model (CAPM). It involves identifying a risk-free rate, 5.31 percent¹¹ in
23 this case, estimating a total market return, with the difference being the market's risk
24 premium. The average beta for the water company proxy group is then applied to the risk
25 premium to derive an equity return indication. Part of the equity risk premium is again
26 derived from Ms. Ahern's flawed PRPM model.

¹⁰ Id.

¹¹ Exhibit T-6, Schedule 7, page 3.

1 I have already discussed the conceptual and computational weaknesses of the CAPM, so
2 there is no need to repeat them here.

3 **Q. DO THESE SAME COMMENTS APPLY TO MS. AHERN’S CAPM?**

4 A. As noted in my discussion of the CAPM, a great deal of judgment goes into the selection
5 of inputs to the CAPM. A comparison of Ms. Ahern’s two CAPM applications
6 demonstrates that fact. The Schedule 7 CAPM uses utility bond yield of 5.35 percent¹²
7 and a risk premium 4.70 percent.¹³ The Schedule 8 CAPM application uses a Treasury
8 bond yield of 4.31 percent and a market risk premium of 7.86 percent which, when
9 multiplied by the average beta of .70 results in a risk premium of 5.50. The Treasury
10 bond yield includes a forecast yield of 5.6 percent for the period 2020-2024, which is
11 well beyond the horizon of the current cost of capital for Tidewater.

12 The results of both of these CAPM applications should be given very little weight.

13 **Q. WHAT IS YOUR ASSESSMENT OF MS. AHERN’S ANALYSES OF DOMESTIC**
14 **NON-PRICE REGULATED COMPANIES?**

15 A. In Schedule 9 of her Exhibit, Ms. Ahern conducts DCF, risk premium and CAPM
16 analyses of 36 non-price regulated companies. From these analyses, she derives an equity
17 return indication for Tidewater of 10.77 percent. Notwithstanding her attempts to define
18 comparability, none of these companies is comparable to Tidewater or to any other water
19 utility. Water utilities are capital intensive, so that their profitability is measured by their
20 return on investment. Many of the companies that Ms. Ahern regards as comparable are
21 emphatically not capital intensive. Several, such as Dun & Bradstreet, Capitol Financial
22 and Northwest Bancshares, are in financial services that handle large amounts of money,
23 but have little of it invested in long-term assets. Kroger is a food chain, where
24 profitability is measured by markup over cost of goods. Others, such as Raytheon.
25 Sherwin-Williams and Bristol Myers-Squib are manufacturers, whose profitability is

¹² Exhibit T-6, Schedule 7, page 3, line 6

¹³ Id., page 7, line 5

1 based on the margin between input products, services and research and the sales proceeds
2 of their final products.

3 But most important of all, none of these companies prices its products based on a return
4 on the book value of its investment. For them, book value is a measure of proceeds from
5 stock sales plus accumulated retained earnings that may or may not approximate the
6 value of hard assets in the form of plant and equipment. For utilities, book value is an
7 explicit measure of plant and equipment, and the return on those hard assets determines
8 the profitability of the company.

9 Given these fundamental differences between price regulated and non-price regulated
10 companies, no commission that I know of bases its return allowances even partially on
11 the return indications of non-regulated companies.

12 **Q. DOES THIS COMPLETE YOUR PREPARED DIRECT TESTIMONY?**

13 A. Yes. It does.

Tidewater Utilities
Return on Total Capital

| | A | B | C |
|-----------------|---------|-----------|-----------------------|
| Type of Capital | Ratios | Cost Rate | Weighted Cost Rate |
| | | | |
| Long-term Debt | 49.04% | 6.01% | 2.95% |
| | | | |
| Common Equity | 50.96% | 9.15% | 4.66% |
| | | | |
| Total | 100.00% | | 7.61% |

**Water Utility Comparison Group
Constant Growth DCF Model**

| Company Name | Ticker | A | | B | | C | | D | | E | | F | | G | | H | | I | | J | | K | |
|--------------|-----------------------|----------|------|---------------|-------|----------------|-------|------------|--------|---------------|--------|----------------|---------|------------|----------|--------------------------|--|-------------------|--|----------------|--|----------|--|
| | | Dividend | | 90-Day Price* | | Dividend Yield | | Value Line | | 90-Day Price* | | Dividend Yield | | Value Line | | Earnings Growth Forecast | | Thomson Financial | | DCF Indication | | Adjusted | |
| | | 2014 | 2015 | Average | Yahoo | C/D | Line | Yahoo | C/D | Line | Zacks | Financial | Average | Raw E+I | Adjusted | | | | | | | | |
| 1 | MSEX | 0.76 | 0.77 | 0.77 | 20.72 | 3.69% | 4.0% | 2.70% | 3.35% | 7.04% | 7.04% | 3.35% | 7.04% | 7.04% | | | | | | | | | |
| 2 | American Water Works | 1.18 | 1.30 | 1.24 | 45.03 | 2.75% | 8.0% | 8.2% | 8.16% | 10.92% | 10.92% | 8.16% | 10.92% | 10.92% | | | | | | | | | |
| 3 | American States Water | 0.84 | 0.92 | 0.88 | 30.66 | 2.87% | 7.0% | 1.0% | 3.00% | 5.87% | 5.87% | 3.00% | 5.87% | 5.87% | | | | | | | | | |
| 4 | Aqua America | 0.63 | 0.69 | 0.66 | 24.96 | 2.64% | 10.0% | 6.0% | 6.97% | 9.61% | 9.61% | 6.97% | 9.61% | 9.61% | | | | | | | | | |
| 5 | California Water | 0.65 | 0.68 | 0.67 | 23.11 | 2.88% | 7.0% | 6.0% | 6.33% | 9.21% | 9.21% | 6.33% | 9.21% | 9.21% | | | | | | | | | |
| 6 | Connecticut Water | 1.01 | 1.04 | 1.03 | 33.24 | 3.08% | 6.5% | 5.0% | 5.50% | 8.58% | 8.58% | 5.50% | 8.58% | 8.58% | | | | | | | | | |
| 7 | SJW Corporation | 0.75 | 0.77 | 0.76 | 28.74 | 2.64% | 6.5% | 14.00% | 10.25% | 12.89% | 12.89% | 10.25% | 12.89% | 12.89% | | | | | | | | | |
| 8 | York Water | 0.57 | 0.59 | 0.58 | 20.23 | 2.87% | 6.5% | 4.90% | 5.70% | 8.57% | 8.57% | 5.70% | 8.57% | 8.57% | | | | | | | | | |
| 9 | Average | | | | | 2.93% | | | 6.16% | 9.09% | 9.55% | 6.16% | 9.09% | 9.55% | | | | | | | | | |

*Average closing prices during the period February 11 through May 7, 2014.

**Water Utility Comparison Group
Three-Step Growth DCF Model**

| | Near Term Growth | | | | | | | | | | H | | |
|---|-----------------------|-----------------------------------|------------------|--------------|--------------|-----------------|---------------------|---------------------|-------------------------------------|----------------------|-------|---|---|
| | A | | B | | C | | D | | E | | | F | G |
| | Step 1 | 5 Year Dividend Growth Value Line | EPS Growth Sch 1 | GDP Growth a | GDP Growth a | Average (B+C)/2 | Step 2 GDP Growth a | Step 3 GDP Growth a | Composite Growth Forecast (A+D+E)/3 | Dividend Yield Sch 1 | | | |
| 1 | Middlesex Water | MSEX | 2.0% | 3.35% | 4.39% | 3.87% | 4.39% | 4.39% | 3.42% | 3.69% | 7.11% | | |
| 2 | American Water Works | AWK | 7.5% | 8.16% | 4.39% | 6.28% | 4.39% | 6.06% | 2.75% | 8.81% | | | |
| 3 | American States Water | AWR | 10.0% | 3.00% | 4.39% | 3.70% | 4.39% | 6.03% | 2.87% | 8.90% | | | |
| 4 | Aqua America | WTR | 8.5% | 6.97% | 4.39% | 5.68% | 4.39% | 6.19% | 2.64% | 8.83% | | | |
| 5 | California Water | CWT | 6.5% | 6.33% | 4.39% | 5.36% | 4.39% | 5.42% | 2.88% | 8.29% | | | |
| 6 | Connecticut Water | CTWS | 3.0% | 5.50% | 4.39% | 4.95% | 4.39% | 4.11% | 3.08% | 7.20% | | | |
| 7 | SJW Corporation | SJW | 4.0% | 10.25% | 4.39% | 7.32% | 4.39% | 5.24% | 2.64% | 7.88% | | | |
| 8 | York Water | YORW | 5.0% | 5.70% | 4.39% | 5.05% | 4.39% | 4.81% | 2.87% | 7.68% | | | |
| 9 | Average | | 5.8% | | | 5.27% | 4.39% | 5.16% | 2.93% | 8.09% | | | |

a Long Term Growth

| Source | Rate |
|------------------|-------|
| CBO 2019-2023 /1 | 4.20% |
| SSA 2018-2048 /2 | 4.58% |
| Average | 4.39% |

/1 http://www.cbo.gov/sites/default/files/cbofiles/attachments/45010-Outlook2014_Feb.pdf, Table 2.1

/2 <http://www.ssa.gov/oact/tr/2013/tr2013.pdf>, Tables V.B1 & V.B2

**Water Utility Comparison Group
 Sustainable Growth DCF Model**

| Source | A | B | C | D | E | F | G | H | I | J | K | |
|-------------------------|--|-------------------------------------|---|---|--|-------------------------------------|--------------------------------------|------------------------------|---------------------------------------|------------------------------|----------------------------|-------|
| | 2017-2019 Earnings per Share Value Line | 2017-2019 Dividend Value Line | Earnings Retention "b" 1-(B/A) | 2017-2019 Book Value per share Value Line | 2017-2019 Return on Book Value "r" A/D | %Retained Return "b+r" C+E | "s+v" Factor Page 2, Col. G | Sustainable Growth F+G | Dividend Yield Sch 1, Col. E | DCF Indication Raw H+I | DCF Indication Adjusted | |
| 1 Middlesex Water | MSEX | 1.20 | 0.83 | 30.8% | 13.20 | 9.09% | 2.80% | 0.98% | 3.78% | 3.69% | 7.47% | 7.47% |
| 2 American Water Works | AWK | 3.05 | 1.52 | 50.2% | 28.40 | 10.74% | 5.39% | 0.94% | 6.33% | 2.75% | 9.08% | 9.08% |
| 3 American States Water | AWR | 1.95 | 1.10 | 43.6% | 15.35 | 12.70% | 5.54% | -0.46% | 5.08% | 2.87% | 7.95% | 7.95% |
| 4 Aqua America | WTR | 1.55 | 0.90 | 41.9% | 11.00 | 14.09% | 5.91% | -1.06% | 4.85% | 2.64% | 7.50% | 7.50% |
| 5 California Water | CWT | 1.50 | 0.94 | 37.3% | 15.10 | 9.93% | 3.71% | 0.80% | 4.51% | 2.88% | 7.38% | 7.38% |
| 6 Connecticut Water | CTWS | 1.95 | 1.16 | 40.5% | 23.75 | 8.21% | 3.33% | 1.23% | 4.55% | 3.08% | 7.64% | 7.64% |
| 7 SJW Corporation | SJW | 1.70 | 0.94 | 44.7% | 21.10 | 8.06% | 3.60% | 1.55% | 5.16% | 2.64% | 7.80% | 7.80% |
| 8 York Water | YORW | 1.10 | 0.74 | 32.7% | 8.90 | 12.36% | 4.04% | -2.51% | 1.53% | 2.87% | 4.40% | 4.40% |
| 9 Average | | | | 40.2% | | | | 0.18% | 4.47% | 2.93% | 7.40% | 7.83% |

**Water Utility Comparison Group
 Sustainable Growth DCF Model**

| Company Name | Ticker | A 2014 Market Value | B 2014 Book Value | C Market/ Book Ratio | D | | E 2017-2019 (millions) Value Line | F Annual % Increase (E/D) ²⁵ -1 | G s*v Factor (C-1)*F |
|-------------------------|--------|------------------------------|----------------------------|-------------------------------|-------------------------------------|-------------------------------------|---|---|----------------------------|
| | | | | | 2014 (millions) Value Line | 2019 (millions) Value Line | | | |
| 1 Middlesex Water | MSEX | 20.72 | 12.10 | 1.71 | 16.1 | 17.0 | 1.37% | 0.98% | 333.592 |
| 2 American Water Works | AWK | 45.03 | 26.65 | 1.69 | 180.0 | 190.0 | 1.36% | 0.94% | 8105.4 |
| 3 American States Water | AWR | 30.66 | 12.90 | 2.38 | 38.0 | 37.5 | -0.33% | -0.46% | 1165.08 |
| 4 Aqua America | WTR | 24.96 | 8.85 | 2.82 | 174.0 | 170.0 | -0.58% | -1.06% | 4343.04 |
| 5 California Water | CWT | 23.11 | 13.00 | 1.78 | 48.0 | 50.0 | 1.03% | 0.80% | 1109.28 |
| 6 Connecticut Water | CTWS | 33.24 | 18.95 | 1.75 | 11.3 | 12.0 | 1.63% | 1.23% | 373.95 |
| 7 SJW Corporation | SJW | 28.74 | 17.15 | 1.68 | 21.0 | 23.0 | 2.30% | 1.55% | 603.54 |
| 8 York Water | YORW | 20.23 | 7.95 | 2.54 | 12.6 | 11.8 | -1.63% | -2.51% | 254.898 |

1.72
 2.70
 0.98

2036.098
 856.41

**Water Utility Comparison Group
Value Line Betas**

| | Company Name | Ticker | Value Line |
|----------------|-----------------------|--------|-------------|
| 1 | Middlesex Water | MSEX | 0.70 |
| 2 | American Water Works | AWK | 0.70 |
| 3 | American States Water | AWR | 0.70 |
| 4 | Aqua America | WTR | 0.65 |
| 5 | California Water | CWT | 0.65 |
| 6 | Connecticut Water | CTWS | 0.75 |
| 7 | SJW Corporation | SJW | 0.85 |
| 8 | York Water | YORW | 0.75 |
| Average | | | 0.72 |

**Water Utility Comparison Group
Capital Asset Pricing Model**

| | A | B |
|---|--|--------|
| 1 | 30-year US Treasury Bond Yield, Week ending May 2, 2013 federalreserve.gov /1 | 3.44% |
| 2 | Market Return | |
| | a. Historical 1926-2013 | 11.88% |
| | b. Prospective Appreciation Potential 3-5 years Value Line | 40.00% |
| | c. Prospective Appreciation Potential Annualized @ 4 yrs $((1+2b)^{.25})-1$ | 8.78% |
| | d. Median of Estimated Dividend Yields Value Line | 2.00% |
| | e. Prospective DCF Return Ln 2c + Ln 2d | 10.78% |
| | Average Avg. Lns 2a and 2e | 11.33% |
| 3 | Market Risk Premium Ln 2 - Ln 1 | 7.89% |
| 4 | Average beta, Comparison Company Group Schedule 4 | 0.72 |
| 5 | Risk Premium for Comparison Company Group Ln 3 * Ln 4 | 5.67% |
| 6 | CAPM Rate of Return Ln 1 + Ln 5 | 9.11% |

/1: <http://www.federalreserve.gov/releases/h15/current/default.htm> Week ending May 2

/2: *Stocks, Bonds, Bills and Inflation*, Morningstar, 2014 Edition, page 36.

Tidewater Utilities, Inc.
Cost of Equity

| | Test | Source | A Indication | B Weighting | C Weighted Indications | D Composite Indication |
|----|-------------------------------------|---------------|-----------------|----------------|------------------------------|------------------------------|
| 1 | Constant Growth DCF | Schedule 1 | 9.55% | 5 | 47.73% | |
| 2 | 3-Step DCF | Schedule 2 | 8.09% | 4 | 32.35% | |
| 3 | Sustainable Growth DCF | Schedule 3 | 7.83% | 3 | 23.50% | |
| 4 | CAPM | Schedule 5 | 9.11% | 2 | 18.22% | |
| 5 | Comparison Group Indication | | | 14 | 121.80% | 8.70% |
| 6 | Small Company Adjustment | Ahern, p49 | | | | 0.09% |
| 7 | Flotation Cost Adjustment | Schedule 7 | | | | 0.16% |
| 8 | Leverage Adjustment | Schedule 8 | | | | 0.16% |
| 9 | Total | Sum Lines 5-8 | | | | 9.11% |
| 10 | Recommended Return on Equity | | | | | 9.15% |

Tidewater Utilities, Inc.
Flotation Cost Adjustment

| | | | | |
|---|----------------------|-----------------------|----|-------------|
| 1 | Flotation Costs | Ex.T-6. Sch. 11, p.1 | \$ | 3,011,500 |
| 2 | Annual Amortization | Line 1/10 | | 301,150 |
| 3 | Book Equity Value | MSEX Form 10Q,QI 2014 | | 189,345,000 |
| 4 | Flotation Cost Adder | Line 2/Line 3 | | 0.16% |

**Value Line Water Companies
Tidewater Leverage Adjustment**

| | | | 2013 Capital Structure | | |
|---|-----------------------|------|------------------------|--------|---------|
| | | | Debt | Equity | Total |
| 1 | Middlesex Water | MSEX | 41.28% | 58.72% | 100.00% |
| 2 | American Water Works | AWK | 52.52% | 47.48% | 100.00% |
| 3 | American States Water | AWR | 39.84% | 60.16% | 100.00% |
| 4 | Aqua America | WTR | 48.89% | 51.11% | 100.00% |
| 5 | California Water | CWT | 41.58% | 58.42% | 100.00% |
| 6 | Connecticut Water | CTWS | 46.86% | 52.94% | 100.00% |
| 7 | SJW Corporation | SJW | 51.05% | 48.95% | 100.00% |
| 8 | York Water | YORW | 45.06% | 54.94% | 100.00% |
| 9 | Average | | 45.89% | 54.09% | 100.00% |

Source: 2013 SEC 10-Ks

Leverage Adjustment

| | Water Companies | | Wgt. Cost | Tidewater | | Wgt. Cost |
|---------------|-----------------|-------|-----------|-------------|--------------|-----------|
| | Percent | Cost | | Percent (1) | Cost | |
| Debt | 45.89% | 6.01% | 2.76% | 49.04% | 6.01% | 2.95% |
| Equity | 54.09% | 8.70% | 4.71% | 50.96% | 8.86% | 4.52% |
| Total Capital | 100.00% | | 7.46% | | | 7.46% |
| Adjustment | | | | | 0.16% | |

(1) Exhibit T-7, Schedule 1

| Trading Date | Company Name | Ticker | Closing Price | Total Return | Dividend Amount | lbbotRf | RP | Trading Date | Annualized RP | | | | |
|--------------|--------------------------------|--------|---------------|--------------|-----------------|----------|---------|--------------|---------------|-------|--------|--------|--|
| Feb-09 | AMERICAN WATER WORKS CO IN AWK | | 18.55 | -0.11473 | 0.2 | 0.0030 | -0.1177 | Feb-09 | -77.76% | FALSE | 24.29% | 28.29% | |
| Mar-09 | AMERICAN WATER WORKS CO IN AWK | | 19.24 | 0.037197 | 0 | 0.0035 | 0.0337 | Mar-09 | 48.84% | FALSE | 24.29% | 28.29% | |
| Apr-09 | AMERICAN WATER WORKS CO IN AWK | | 18 | -0.06445 | 0 | 0.0029 | -0.0673 | Apr-09 | -56.69% | FALSE | 24.29% | 28.29% | |
| May-09 | AMERICAN WATER WORKS CO IN AWK | | 17.28 | -0.02889 | 0.2 | 0.0033 | -0.0322 | May-09 | -32.47% | FALSE | 24.29% | 28.29% | |
| Jun-09 | AMERICAN WATER WORKS CO IN AWK | | 19.11 | 0.105903 | 0 | 0.0038 | 0.1021 | Jun-09 | 221.12% | FALSE | 24.29% | 28.29% | |
| Jul-09 | AMERICAN WATER WORKS CO IN AWK | | 19.71 | 0.031397 | 0 | 0.0036 | 0.0278 | Jul-09 | 38.96% | FALSE | 24.29% | 28.29% | |
| Aug-09 | AMERICAN WATER WORKS CO IN AWK | | 20.1 | 0.030441 | 0.21 | 0.0036 | 0.0268 | Aug-09 | 37.42% | FALSE | 24.29% | 28.29% | |
| Sep-09 | AMERICAN WATER WORKS CO IN AWK | | 19.94 | -0.00796 | 0 | 0.0034 | -0.0114 | Sep-09 | -12.81% | FALSE | 24.29% | 28.29% | |
| Oct-09 | AMERICAN WATER WORKS CO IN AWK | | 18.97 | -0.04865 | 0 | 0.0033 | -0.0519 | Oct-09 | -47.28% | FALSE | 24.29% | 28.29% | |
| Nov-09 | AMERICAN WATER WORKS CO IN AWK | | 22.24 | 0.183448 | 0.21 | 0.0035 | 0.1799 | Nov-09 | 628.37% | FALSE | 24.29% | 28.29% | |
| Dec-09 | AMERICAN WATER WORKS CO IN AWK | | 22.41 | 0.007644 | 0 | 0.0034 | 0.0042 | Dec-09 | 5.21% | FALSE | 24.29% | 28.29% | |
| Jan-10 | AMERICAN WATER WORKS CO IN AWK | | 21.8 | -0.02722 | 0 | 0.0036 | -0.0308 | Jan-10 | -31.32% | FALSE | 24.29% | 28.29% | |
| Feb-10 | AMERICAN WATER WORKS CO IN AWK | | 22.26 | 0.030734 | 0.21 | 0.0033 | 0.0274 | Feb-10 | 38.37% | FALSE | 24.29% | 28.29% | |
| Mar-10 | AMERICAN WATER WORKS CO IN AWK | | 21.76 | -0.02246 | 0 | 0.0040 | -0.0265 | Mar-10 | -27.52% | FALSE | 24.29% | 28.29% | |
| Apr-10 | AMERICAN WATER WORKS CO IN AWK | | 21.78 | 0.000919 | 0 | 0.0038 | -0.0029 | Apr-10 | -3.40% | FALSE | 24.29% | 28.29% | |
| May-10 | AMERICAN WATER WORKS CO IN AWK | | 20.34 | -0.05647 | 0.21 | 0.0034 | -0.0599 | May-10 | -52.33% | FALSE | 24.29% | 28.29% | |
| Jun-10 | AMERICAN WATER WORKS CO IN AWK | | 20.6 | 0.012783 | 0 | 0.0037 | 0.0091 | Jun-10 | 11.46% | FALSE | 24.29% | 28.29% | |
| Jul-10 | AMERICAN WATER WORKS CO IN AWK | | 21.38 | 0.037864 | 0 | 0.0031 | 0.0348 | Jul-10 | 50.69% | FALSE | 24.29% | 28.29% | |
| Aug-10 | AMERICAN WATER WORKS CO IN AWK | | 22.58 | 0.066417 | 0.22 | 0.0032 | 0.0632 | Aug-10 | 108.67% | FALSE | 24.29% | 28.29% | |
| Sep-10 | AMERICAN WATER WORKS CO IN AWK | | 23.27 | 0.030558 | 0 | 0.0026 | 0.0280 | Sep-10 | 39.22% | FALSE | 24.29% | 28.29% | |
| Oct-10 | AMERICAN WATER WORKS CO IN AWK | | 23.88 | 0.026214 | 0 | 0.0027 | 0.0235 | Oct-10 | 32.17% | FALSE | 24.29% | 28.29% | |
| Nov-10 | AMERICAN WATER WORKS CO IN AWK | | 24.51 | 0.035595 | 0.22 | 0.0032 | 0.0324 | Nov-10 | 46.61% | FALSE | 24.29% | 28.29% | |
| Dec-10 | AMERICAN WATER WORKS CO IN AWK | | 25.29 | 0.031824 | 0 | 0.0032 | 0.0286 | Dec-10 | 40.31% | FALSE | 24.29% | 28.29% | |
| Jan-11 | AMERICAN WATER WORKS CO IN AWK | | 25.5 | 0.008304 | 0 | 0.003567 | 0.0047 | Jan-11 | 5.84% | FALSE | 24.29% | 28.29% | |
| Feb-11 | AMERICAN WATER WORKS CO IN AWK | | 27.74 | 0.096471 | 0.22 | 0.003683 | 0.0928 | Feb-11 | 190.02% | FALSE | 24.29% | 28.29% | |
| Mar-11 | AMERICAN WATER WORKS CO IN AWK | | 28.05 | 0.011175 | 0 | 0.003558 | 0.0076 | Mar-11 | 9.53% | FALSE | 24.29% | 28.29% | |
| Apr-11 | AMERICAN WATER WORKS CO IN AWK | | 29.38 | 0.047415 | 0 | 0.003567 | 0.0438 | Apr-11 | 67.36% | FALSE | 24.29% | 28.29% | |
| May-11 | AMERICAN WATER WORKS CO IN AWK | | 30.01 | 0.028931 | 0.22 | 0.003342 | 0.0256 | May-11 | 35.42% | FALSE | 24.29% | 28.29% | |
| Jun-11 | AMERICAN WATER WORKS CO IN AWK | | 29.45 | -0.01866 | 0 | 0.003258 | -0.0219 | Jun-11 | -23.35% | FALSE | 24.29% | 28.29% | |
| Jul-11 | AMERICAN WATER WORKS CO IN AWK | | 28 | -0.04924 | 0 | 0.003292 | -0.0525 | Jul-11 | -47.66% | FALSE | 24.29% | 28.29% | |
| Aug-11 | AMERICAN WATER WORKS CO IN AWK | | 29.78 | 0.071786 | 0.23 | 0.003042 | 0.0687 | Aug-11 | 122.07% | FALSE | 24.29% | 28.29% | |
| Sep-11 | AMERICAN WATER WORKS CO IN AWK | | 30.18 | 0.013432 | 0 | 0.002358 | 0.0111 | Sep-11 | 14.13% | FALSE | 24.29% | 28.29% | |
| Oct-11 | AMERICAN WATER WORKS CO IN AWK | | 30.53 | 0.011597 | 0 | 0.002392 | 0.0092 | Oct-11 | 11.62% | FALSE | 24.29% | 28.29% | |
| Nov-11 | AMERICAN WATER WORKS CO IN AWK | | 31.07 | 0.025221 | 0.23 | 0.002267 | 0.0230 | Nov-11 | 31.30% | FALSE | 24.29% | 28.29% | |
| Dec-11 | AMERICAN WATER WORKS CO IN AWK | | 31.86 | 0.025426 | 0 | 0.002483 | 0.0229 | Dec-11 | 31.29% | FALSE | 24.29% | 28.29% | |
| Jan-12 | AMERICAN WATER WORKS CO IN AWK | | 33.73 | 0.058694 | 0 | 0.0021 | 0.0566 | Jan-12 | 93.60% | FALSE | 24.29% | 28.29% | |
| Feb-12 | AMERICAN WATER WORKS CO IN AWK | | 34.28 | 0.023125 | 0.23 | 0.0022 | 0.0209 | Feb-12 | 28.21% | TRUE | 24.29% | 28.29% | |
| Mar-12 | AMERICAN WATER WORKS CO IN AWK | | 34.03 | -0.00729 | 0 | 0.0025 | -0.0098 | Mar-12 | -11.14% | FALSE | 24.29% | 28.29% | |
| Apr-12 | AMERICAN WATER WORKS CO IN AWK | | 34.24 | 0.01293 | 0.23 | 0.0022 | 0.0107 | Apr-12 | 13.66% | FALSE | 24.29% | 28.29% | |
| May-12 | AMERICAN WATER WORKS CO IN AWK | | 34.21 | -0.00088 | 0 | 0.0022 | -0.0031 | May-12 | -3.63% | FALSE | 24.29% | 28.29% | |
| Jun-12 | AMERICAN WATER WORKS CO IN AWK | | 34.28 | 0.002046 | 0 | 0.0017 | 0.0003 | Jun-12 | 0.42% | FALSE | 24.29% | 28.29% | |
| Jul-12 | AMERICAN WATER WORKS CO IN AWK | | 36.25 | 0.064761 | 0.25 | 0.002 | 0.0628 | Jul-12 | 107.60% | FALSE | 24.29% | 28.29% | |
| Aug-12 | AMERICAN WATER WORKS CO IN AWK | | 36.87 | 0.017103 | 0 | 0.0017 | 0.0154 | Aug-12 | 20.13% | FALSE | 24.29% | 28.29% | |
| Sep-12 | AMERICAN WATER WORKS CO IN AWK | | 37.06 | 0.005153 | 0 | 0.0016 | 0.0036 | Sep-12 | 4.35% | FALSE | 24.29% | 28.29% | |
| Oct-12 | AMERICAN WATER WORKS CO IN AWK | | 36.74 | -0.00863 | 0 | 0.002 | -0.0106 | Oct-12 | -12.04% | FALSE | 24.29% | 28.29% | |
| Nov-12 | AMERICAN WATER WORKS CO IN AWK | | 38.17 | 0.045727 | 0.25 | 0.0019 | 0.0438 | Nov-12 | 67.32% | FALSE | 24.29% | 28.29% | |
| Dec-12 | AMERICAN WATER WORKS CO IN AWK | | 37.13 | -0.0207 | 0.25 | 0.0018 | -0.0225 | Dec-12 | -23.89% | FALSE | 24.29% | 28.29% | |
| Jan-13 | AMERICAN WATER WORKS CO IN AWK | | 38.28 | 0.030972 | 0 | 0.002567 | 0.0284 | Jan-13 | 39.95% | FALSE | 24.29% | 28.29% | |
| Feb-13 | AMERICAN WATER WORKS CO IN AWK | | 39.45 | 0.030564 | 0 | 0.002642 | 0.0279 | Feb-13 | 39.16% | FALSE | 24.29% | 28.29% | |
| Mar-13 | AMERICAN WATER WORKS CO IN AWK | | 41.44 | 0.050444 | 0 | 0.002633 | 0.0478 | Mar-13 | 75.14% | FALSE | 24.29% | 28.29% | |
| Apr-13 | AMERICAN WATER WORKS CO IN AWK | | 41.88 | 0.010618 | 0 | 0.002442 | 0.0082 | Apr-13 | 10.26% | FALSE | 24.29% | 28.29% | |
| May-13 | AMERICAN WATER WORKS CO IN AWK | | 39.94 | -0.03964 | 0.28 | 0.002592 | -0.0422 | May-13 | -40.41% | FALSE | 24.29% | 28.29% | |
| Jun-13 | AMERICAN WATER WORKS CO IN AWK | | 41.23 | 0.032298 | 0 | 0.002833 | 0.0295 | Jun-13 | 41.69% | FALSE | 24.29% | 28.29% | |
| Jul-13 | AMERICAN WATER WORKS CO IN AWK | | 42.68 | 0.035169 | 0 | 0.003008 | 0.0322 | Jul-13 | 46.21% | FALSE | 24.29% | 28.29% | |
| Aug-13 | AMERICAN WATER WORKS CO IN AWK | | 40.74 | -0.03889 | 0.28 | 0.003133 | -0.0420 | Aug-13 | -40.26% | FALSE | 24.29% | 28.29% | |
| Sep-13 | AMERICAN WATER WORKS CO IN AWK | | 41.28 | 0.013255 | 0 | 0.003158 | 0.0101 | Sep-13 | 12.81% | FALSE | 24.29% | 28.29% | |
| Oct-13 | AMERICAN WATER WORKS CO IN AWK | | 42.87 | 0.038517 | 0 | 0.003067 | 0.0355 | Oct-13 | 51.90% | FALSE | 24.29% | 28.29% | |
| Nov-13 | AMERICAN WATER WORKS CO IN AWK | | 42.35 | -0.00556 | 0.28 | 0.003167 | -0.0088 | Nov-13 | -10.03% | FALSE | 24.29% | 28.29% | |
| Dec-13 | AMERICAN WATER WORKS CO IN AWK | | 42.26 | -0.00213 | 0 | 0.003242 | -0.0054 | Dec-13 | -6.25% | FALSE | 24.29% | 28.29% | |
| Jan-14 | AMERICAN WATER WORKS CO IN AWK | | 42.57 | 0.013961 | 0.28 | 0.003142 | 0.0108 | Jan-14 | 13.78% | FALSE | 24.29% | 28.29% | |

Average Annualized RP 32.87%
Standard Deviation of RP 94.97%

Average Monthly RP 0.29%
Annualized RP 3.51%

Experience

Snavely King Majoros & Associates, Inc., Landover, MD

President Emeritus;
*President (1989 to 2011);
Vice President (1970 - 1989)*

Mr. King, a founder of the firm and acknowledged authority on regulatory economics, brings over forty years of experience in economic consulting to his direction of the firm's work in transportation, utility and telecommunications economics.

Mr. King has appeared as an expert witness on over 300 separate occasions before more than thirty state and nine U.S. and Canadian federal regulatory agencies, presenting testimony on rate base calculations, rate of return, rate design, costing methodology, depreciation market forecasting, and ratemaking principles. Mr. King has also testified before House and Senate Committees on energy and telecommunications legislation pending before the U.S. Congress.

In telecommunications, Mr. King has testified before the Federal Communications Commission on a number of policy issues, service authorization, competitive impacts, video dialtone, and prescription of interstate depreciation rates. Before state regulatory bodies, he has presented testimony in proceedings on intrastate rates, costs earnings and depreciation.

Mr. King has testified in electric, gas and water utility cases on virtually every aspect of regulation, including cost of capital, revenue requirements, depreciation, cost allocation and rate design. Mr. King is one of the nation's leading authorities on utility depreciation practices, having testified on this subject in several dozen cases before state regulatory bodies.

In addition to his appearances as a witness in judicial and administrative proceedings, Mr. King has negotiated settlements among private parties and between private parties and regulatory offices. Mr. King also has directed depreciation studies, investment cost benefit analyses, demand forecasts, cost allocation studies and antitrust damage calculations. Mr. King directed analyses of the prices of services under Federal Government's FTS2000 long distance system.

In Canada, Mr. King designed and directed an extended inquiry into the principles and procedures for regulating the telecommunication carriers subject to the jurisdiction of the Canadian Transport Commission. He also was the principal investigator in the Canadian Transport Commission's comprehensive review of rail costing procedures.

EBS Management Consultants, Inc., Washington, DC

***Director, Economic Development Department
(1968-1970)***

Mr. King organized and directed a five-person staff of economists performing research, evaluation, and planning relating to economic development of depressed areas and communities within the U.S. Most of this work was on behalf of federal, state, and municipal agencies responsible for community or regional economic development.

Principal Consultant (1966-1968)

Mr. King conducted research on a broad range of economic topics, including transportation, regional economic development, communications, and physical distribution.

W.B. Saunders & Company, Inc., Washington, DC

Staff Economist (1962-1966)

For this economic consulting firm, which later merged with EBS Management Consultants, Inc., Mr. King engaged in numerous research efforts relating primarily to economic development and transportation.

U.S. Bureau of the Budget, Office of Statistical Standards

Analytical Statistician (1961-1962)

Mr. King was responsible for the review of all federal statistical and data-gathering programs relating to transportation.

Education

Washington & Lee University, B.A. in Economics

*The George Washington University, M.A. in
Government Economic Policy*

CHARLES W. KING
Snavely King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before State Regulatory Agencies

| State | Electric, Gas, Water Utility Cases | | Date | |
|-------|---|--|--|---|
| | Case Number | Case Utility | | |
| FL | Florida Retail Federation Florida Retail Federation Florida Retail Federation Florida Retail Federation Florida Retail Federation Florida Retail Federation | 790593-EU 810002-EU 820097-EU 820097-EU 830012-EU 830465-EI 830465-EI | All Electric Utilities Florida Power and Light Company Florida Power and Light Company Florida Power and Light Company Tampa Electric Company Florida Power and Light Company Tampa Electric Company | March 5, 1981 July 23, 1981 September 22, 1982 April 11, 1983 August 19, 1983 April 19, 1984 (none) |
| GA | Georgia Retail Federation Georgia Public Service Commission Georgia Public Service Commission | 3270-U 4007-U 4384-U 4755-U 4697-U 9355-U 14000-U 14618-U 14311-U 17066-U 18300-U 18638-U 19758-U 20298-U 25060-U 27163 | Georgia Power Company Georgia Power Company All Electric Utilities Georgia Power Company All Utilities Georgia Power Company Georgia Power Company Savannah Electric & Power Company Atlanta Gas Light Company Georgia Power Company Georgia Power Company Atlanta Gas Light Company Georgia Power Company Savannah Electric & Power Company Atmos Energy Corp. Georgia Power Company Atmos Energy Corp. | September 3, 1981 August 21, 1991 August 1, 1993 January 25, 1994 May 10, 1994 November 4, 1998 October 23, 2001 March 27, 2002 April 8, 2002 July 31, 2003 October 26, 2004 March 14, 2005 March 29, 2005 October 11, 2005 Filed October 22, 2007 August 16, 2008 |
| HI | Public Utilities Department Hawaii Consumer Advocate | 2793 4536 | All Electric Utilities Hawaiian Electric Company | February 14, 1978 February 1, 1983 |
| IL | Illinois Retail Merchants Association ("IRMA"/ Chicago Bldg. Mgrs. Association ("CBMA") IRMA/CBMA IRMA/CBMA IRMA/CBMA IRMA/CBMA IRMA/CBMA City of O'Fallon, IL | 76-0698 76-0568 80-0546 82-0026 83-0537 87-0427 90-0169 02-0690 | Commonwealth Edison All Electric Utilities Commonwealth Edison Commonwealth Edison Commonwealth Edison Commonwealth Edison Commonwealth Edison Illinois-American Water Company | June 22, 1977 (none) March 5, 1981 July 22, 1982 March 19, 1984 March/April 22, 1988 October 29, 1990 Filed Feb.5, Apr.11,2003 |
| IN | Indiana Retail Council Indiana Retail Council Indiana Retail Council | 35780-S2 35780-S1 36318 | N. Ind. Public Service co. Public Service of Indiana Public Service of Indiana | June 1, 1980 October 15, 1980 May 4, 1982 |
| KS | J.C. Penney Company | 115,379-U | All Kansas Utilities | January 22, 1981 |
| KY | Seven Kentucky Retailers Attorney General of Kentucky Attorney General of Kentucky Kentucky Industrial Utility Consumers | 7310 2002-145 2003-252 2004-67 2006-00646 2007-00008 2007-00089 2011-00036 | Louisville Gas & Electric Co. Columbia Gas of Kentucky Union Heat Light & Power Co. Delta Gas Company Atmos Energy Corp. Columbia Gas of Kentucky Delta Gas Company Big Rivers Electric Corp | April 25, 1979 Filed August 8, 2002 September 30, 2003 August 18, 2004 Filed April 27, 2007 Filed June 12, 2007 Filed August 14, 2007 May 24, 2011 |
| MA | Coalition of Municipalities Coalition of Municipalities Coalition of Municipalities Coalition of Municipalities Coalition of Municipalities | 20279 557/558 957 1300 85-270 | Western Massachusetts Electric Western Massachusetts Electric Western Massachusetts Electric Western Massachusetts Electric Western Massachusetts Electric | March 19, 1980 May 14, 1981 March 9, 1982 January 1, 1983 March 26, 1986 |

CHARLES W. KING
Snavelly King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before State Regulatory Agencies

| State | Electric, Gas, Water Utility Cases | | Date | |
|---------------------------------|------------------------------------|----------------------------------|----------------------------------|---------------------------------|
| | Case Number | Case Utility | | |
| MD | Maryland People's Counsel | 6977 | Washington Gas & Light Company | September 17, 1976 |
| | Maryland People's Counsel | 6814 | Potomac Electric Power Company | |
| | Maryland People's Counsel | 6807 | All Electric Utilities | September 1, 1977 |
| | Maryland People's Counsel | 6882 | Baltimore Gas & Electric Company | (none) |
| | Maryland People's Counsel | 6985 | Baltimore Gas & Electric Company | September 28, 1976 |
| | Maryland People's Counsel | 7070 | Baltimore Gas & Electric Company | December 20, 1976 |
| | Maryland People's Counsel | 7149 | Potomac Electric Power Company | April 18, 1978 |
| | Maryland People's Counsel | 7163 | All Electric Utilities | January 17, 1979 |
| | Maryland People's Counsel | 7236 | Delmarva Power & Light Company | October 23, 1978 |
| | Retail Merchants of Baltimore | 7397 | Baltimore Gas & Electric Company | June 20, 1980 |
| | Maryland People's Counsel | 7427 | Delmarva Power & Light Company | September 8, 1980 |
| | Maryland People's Counsel | 7574 | Baltimore Gas & Electric Company | December 2, 1981 |
| | Maryland People's Counsel | 7597 | Potomac Electric Power Company | February 18, 1982 |
| | Organization of Consumer Justice | 7604 | Potomac Electric Power Company | April 20, 1982 |
| | Maryland People's Counsel | 7588 | Baltimore Gas & Electric Company | October 19, 1982 |
| | Maryland People's Counsel | 7663 | Potomac Electric Power Company | November 22, 1982 |
| | Retail Merchants of Baltimore | 7685 | Baltimore Gas & Electric Company | April 12, 1983 |
| | Genstar Stone Products, et al. | 7878 | Potomac Electric Power Company | December 9, 1985 |
| | Industrial Intervenors | 7878 | Potomac Electric Power Company | June 28/July 1986 |
| | Maryland People's Counsel | 7983 | Baltimore Gas & Electric Company | March 4, 1987 |
| | Giant Foods, Inc. | 8855 | Baltimore Gas & Electric Company | January 8, 2003 |
| | Maryland People's Counsel | 9036 | Baltimore Gas & Electric Company | September 29, 2005 |
| | Maryland People's Counsel | 9092 | Potomac Electric Power Company | April 16, 2007 |
| | Maryland People's Counsel | 9093 | Delmarva Power & Light Company | April 9, 2007 |
| | Maryland People's Counsel | 9104 | Washington Gas & Light Company | August 23, 2007 |
| | Maryland People's Counsel | 9096 | Baltimore Gas & Electric Company | September 24, 2007 |
| | Maryland People's Counsel | 9103 | Washington Gas & Light Company | filed December 21, 2007 |
| | Maryland People's Counsel | 9159 | Columbia Gas Company | January 6, 2009 |
| | Maryland People's Counsel | 9192 | Delmarva Power & Light Company | September 25, 2009 |
| | Maryland People's Counsel | 9217 | Potomac Electric Power Company | April 8, April 30 May 7, 2010 |
| | Maryland People's Counsel | 9237 | Baltimore Gas & Electric Company | July 10, Aug 30, 2010 |
| | Maryland People's Counsel | 9267 | Washington Gas & Light Company | July 27, Aug. 4, Sep 1, 2011 |
| | Maryland People's Counsel | 9230 | Delmarva Power & Light Company | April 11, May 20, 2011 |
| Maryland People's Counsel | 9285 | Delmarva Power & Light Company | May 1, 2012 | |
| Maryland People's Counsel | 9286 | Potomac Electric Power Company | May 1, 2012 | |
| Maryland People's Counsel | 9299 | Baltimore Gas & Electric Company | Oct 12, Nov 9, Nov 20, 2012 | |
| MI | General Services Administration | U-10102 | Detroit Edison Company | March 22, 1993 |
| | Michigan Attorney General | U-11722 | Detroit Edison Company | November 6, 1998 |
| | Michigan Attorney General | U-11772 | Consumers Energy/Detroit Edison | November 16, 1998 |
| | Michigan Attorney General | U-11495 | Detroit Edison Company | December 8, 1999 |
| | Michigan Attorney General | U-11956 | Consumer Energy/Detroit Edison | December 15, 1999 |
| | Michigan Attorney General | U-12505 | Consumers Energy Company | September 7, 2000 |
| | Michigan Attorney General | U-12478 | Detroit Edison Company | October 5, 2000 |
| | Michigan Attorney General | U-12639 | Consumers Energy/Detroit Edison | July 18, 2001 |
| | Michigan Attorney General | U-13000 | Consumers Energy Company | January 29, 2002 |
| | Michigan Attorney General | U-13380 | Consumers Energy Company | September 9, 2002 |
| | Michigan Attorney General | U-13715 | Consumers Energy Company | April 24, 2003 |
| | Michigan Attorney General | U-13808 | Detroit Edison Company | Dec 12, 2003; Jan 30, Mar 5, 04 |
| | Michigan Attorney General | U-12999 | Consumers Energy Company | March 10, 2004 |
| | Michigan Attorney General | U-13898,9 | Michigan Consolidated Gas Co. | August 23, 2004 |
| | Michigan Attorney General | U-14201 | Detroit Edison Company | Filed December 5, 2004' |
| | Michigan Attorney General | U-14274 | Consumers Energy Company | Filed February 15, 2005 |
| | Michigan Attorney General | U-14148 | Consumers Energy Company | Filed March 2, 25, 2005 |
| | Michigan Attorney General | U-14399 | Detroit Edison Company | July 29, 2005 |
| | Michigan Attorney General | U-14428 | Detroit Edison Company | September 7, 2005 |
| | Michigan Attorney General | U-14292 | All Michigan Utilities | September 27, 2005 |
| | Michigan Attorney General | U-13808-R | Detroit Edison Company | November 7, 2005 |
| | Michigan Attorney General | U-14547 | Consumers Energy Company | Nov. 7, 2005; Mar. 22, 2006 |
| | Michigan Attorney General | U-14701 | Consumers Energy Company | March 21, 2006 |
| | Michigan Attorney General | U-14526 | Consumers Energy Company | April 11, 2006 |
| | Michigan Attorney General | U-14561 | All Gas Distribution Utilities | June 1, 2006 |
| | Michigan Attorney General | U-15002 | Detroit Edison Company | December 8, 2006 |
| | Michigan Attorney General/ABATE | U-15245 | Consumers Energy Company | December 11, 2007 |
| | Michigan Attorney General | U-15417 | Detroit Edison Company | April 2, 2008 |
| | Michigan Attorney General/ABATE | U-15244 | Detroit Edison Company | July 15, 2008 |
| | Michigan Attorney General/ABATE | U-15506 | Consumers Energy Company | September 12, 2008 |
| | Michigan Attorney General | U-15002-R | Detroit Edison Company | October 16, 2008 |
| | Michigan Attorney General | U-15645 | Consumers Energy Company | April 27, July 30, 2009 |
| | Michigan Attorney General | U-15768 | Detroit Edison Company | July 9, July 30, 2009 |
| Louisiana Pacific Corp. | U-15981 | Wisconsin Electric Power Co. | Dec 22, 2009; Jan 22, 2010 | |
| Michigan Attorney General/ABATE | U-16180 | Indiana-Michigan Electric Co. | July 1, 2010 | |

CHARLES W. KING
Snavelly King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before State Regulatory Agencies

| State | Electric, Gas, Water Utility Cases | | | Date |
|-------|--|--|--|--|
| | | Case | | |
| | | Case Number | Utility | |
| MN | Minnesota Retail Federation | EOO2/6R-77-611 | Northern States Power | 1979 |
| MO | Missouri Retailers Association Missouri Public Counsel Missouri Public Counsel Missouri Public Counsel | EO-78-161 ER-2006-0315 GR-2007-0003 ER-2007-0002 | Kansas City Power & Light Company Empire District Electric Company Ameren UE (Gas) Ameren UE (Electric) | February 19, 1981 September 14, 2006 Filed December 15, 2006 March 22, 2007 |
| NC | North Carolina Merchants Association | E-100 | All Electric Utilities | December 18, 1975 |
| ND | North Dakota Public Service Commission North Dakota Public Service Commission | PU-400-00-521 PU-399-01-186 PU-399-02-183 PU-399-02-183 PU-399-03-296 PU-04-97 PU-06-525 PU-07-776 PU-08-862 | Xcel Energy, Inc. Montana-Dakota Utilities (Electric) Montana-Dakota Utilities (Gas) Montana-Dakota Utilities (Gas Depr.) Montana-Dakota Utilities (Electric) Montana-Dakota Utilities (Gas) Northern States Power (Gas) Northern States Power (Electric) Otter Tail Power Company | April 20, 2001 February 25, 2002 October 7, 2002 Filed April 7, 2003 Filed October 15, 2003 Filed July 6, 2004 Filed May 1, 2007 June 25, 2008 April 6, 2009 |
| NH | Business & Industry Association of N.H. Business & Industry Association of N.H. Business & Industry Association of N.H. | 79-187-II 80-260 82-333 | Public Service of N.H. Public Service of N.H. Public Service of N.H. | February 6, 1981 February 5, 1981 November 2, 1983 |
| NJ | N.J. Retail Merchants Association Department of Public Advocate Resorts International Hotel, Inc. Dept. of Public Advocate Dept. of Public Advocate Dover Township Fire Chiefs | 803-151 815-459 8011-827 822-116 355-87 88-080967 | All New Jersey Utilities N.J. Natural Gas Company Atlantic City Sewerage Co. Atlantic City Electric Co. Elizabethtown Gas Tom's River Water Company | March 31, 1981 (none) (none) August 11, 1982 June 9, 1987 February 22, 1989 |
| NY | NY Council of Retail Merchants Metropolitan N.Y. Retail Council Metropolitan N.Y. Retail Council N.Y. Metro. Transit Authority | 26806 27029 27136 27353 | All Electric Utilities Consolidated Edison Company Long Island Lighting Company Consolidated Edison Company | February 3, 1976 (none) July 1, 1977 September 5, 1980 |
| OH | Ohio Council of Retail Association Ohio Council of Retail Association Ohio Energy Group | 88-170-EL 83-1529-EL 08-936-EL-SSO | Cleveland Elec. Illuminating Cincinnati Gas & Electric FirstEnergy Companies | (none) February 15, 1992 Filed September 25, 2008 |
| PA | Pennsylvania Retail Association Southeastern Pa. Transp. Authority Eastern Penn Energy Users Group Eastern Penn Energy Association Penn Business Utility User Group Pennsylvania Office of Consumer Advocate Pennsylvania Office of Public Advocate | 76-PRMD-7 R-811626 R-822169 R-842651 R-850152 R-00016339 R-2008-203269 | All Electric Utilities Philadelphia Electric Company Penn. Power & Light Company Penn. Power & Light Company Philadelphia Electric Company Pennsylvania-American Water Co. Pennsylvania-American Water Co. | September 7, 1977 December 11, 1981 March/April 1983 December 3, 1984 February 19, 1986 September 19, 2001 August 6, 2008; Sept. 15, 2008 |
| TN | Attorney General of Tennessee Attorney General of Tennessee | 07-00105 08-00039 | Atmos Energy Corp. Tennessee-American Water Co. | Filed August 21, 2007 August 26, 2007 |
| TX | Houston Retailers Association Houston Retailers Association Cities for Fair Utility Rates | 5779 6765 8425/8431 | Houston Lighting Company Houston Lighting Company Houston Lighting Company | October 19, 1984 September 25, 1986 April 25, 1989 |
| UT | Div. Of Public Utilities Dept of Commerce Div. Of Public Utilities Dept of Commerce Div. Of Public Utilities Dept of Commerce | 98-2035-33 05-057-T01 07-035-13 | Pacific Corp Questar Gas Company Rocky Mountain Power Co. | Filed August 16, Sept 22, 1999 May 17, 2006 Filed October 15, 2007 |

CHARLES W. KING
Snavelly King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before State Regulatory Agencies

| State | Electric, Gas, Water Utility Cases | | Date | |
|-------|--|---|--|---------|
| | | Case | | |
| | | Case Number | | Utility |
| VA | Consumer Congress of Virginia Consumer Congress of Virginia Va. Business Committee on Energy Virginia Pipe Trades Council | 19426 19960 PUE 7900012 PUE 8900051 | Virginia Electric Power Company Virginia Electric Power Company Virginia Electric Power Company Old Dominion Electric Corp. & | |
| WA | WA Attorney General - Public Counsel WA Attorney General - Public Counsel WA Attorney General - Public Counsel | UE-072300;UG-072301 UE-080220 UE-08416;UG-08417 | Puget Sound Energy PacifiCorp Avista Utilities | |
| WI | Wisconsin Merchants Federation | 6630-ER-2 | Wisconsin Electric Power Company | |

July 1, 1975
September 19, 1978
February 25, 1981
October 31, 1989

Filed May 30, 2008
Filed August 15, 2008
September 19; October 10, 2008

May 15, 1978

CHARLES W. KING
Snavelly King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before State Regulatory Agencies

| State | Telecommunication Cases | | | Date |
|-------|---|---|--|---|
| | | Case | | |
| | | Case Number | Utility | |
| AL | U.S. Department of Defense | 24472 | All Telephone Companies | June 14, 1995 |
| AK | GCI Communications, Inc. GCI Communications, Inc. | U-97-82,U-97-143 U-05-46 | Alaska Communications Systems Matanuska Telephone Association | Filed Feb 25, April 5, 2004 October 28, 2005 |
| AZ | Arizona Burglar & Fire Alarm Association Arizona Burglar & Fire Alarm Association Federal Executive Agencies U.S. Department of Defense U.S. Department of Defense | 9981-E- 1051-80-64 E-1051-88-146 T-01051B-99-0105 T-01051B-10-0194 | Mountain State Telephone Mountain State Telephone Mountain State Telephone US WEST Communications Qwest/CenturyTel | (none) (none) Filed July 26, Sept 8, 2000 September 27, 2010 |
| CA | Western Burglar & Fire Alarm Association Western Burglar & Fire Alarm Association California Cellular Resellers Federal Executive Agencies California Cellular Resellers Cellular Services, Inc. Federal Executive Agencies | 59849 5984cont. A83-01-22 A83-02-02 A82-11-07 A85-01-034 A87-01-02 A88-07-17019 A.88-11-1040 1.87-11-033 1.88-11-040 1.88-11-040 A92-05-004 | Pacific Telephone & Telegraph Pacific Telephone & Telegraph Pacific Telephone & Telegraph General Telephone of California Pacific Telephone & Telegraph Pacific Telephone & Telegraph General Telephone of California Pac. Bell Tel. & GTE of CA. All Cellular Carriers All Telephone Companies All Cellular Carriers All Cellular Carriers All Cellular Carriers Pacific Telephone & Telegraph | March 25, 1981 June 23, 1982 June 29, 1983 January 17, 1984 Jan. 18, Oct. 31, Nov 28, 1984 June 4, 1985, October 2, 1986 October 22, 1987 January 23, 1989 August 11, 1989 March 6-7, 1991 August 19, 1991 October 3, 1991 June 9, 1993 |
| CO | U.S. Department of Defense U.S. Department of Defense U.S. Department of Defense U.S. Department of Defense Colorado Municipal League U.S. Department of Defense U.S. Department of Defense AT&T U.S. Department of Defense | I&S 717 I&S 1700 Appl. I&S 1766 Appl 36883 I&S 891-082T 905-544T 90A-665T 92M-039T 92S-229T 90A-665T 96S-331T 10A-150T | Mountain Bell Telephone Company Mountain Bell Telephone Company Mountain Bell Telephone Company Mountain Bell Telephone Company Mountain Bell Telephone Company U.S. West Communications U.S. West Communications U.S. West Communications U.S. West Communications U.S. West Communications U.S. West Communications U.S. West Communications Qwest/CenturyTel | 1972 (none) September 18, 1986 November 28, 1988 December 13, 1988 February 21, 1990 July 17, 1991 October 23, 1991 February 24-24, 1992 July 30-31, 1992 November 6, 1996 April 17, 1997 September 15, 2010 |
| CT | Connecticut Consumer Counsel CT Cellular Resellers Assn. CT Cellular Resellers Coalition AT&T Connecticut Consumer Counsel Connecticut Consumer Counsel | 770526 89-12-05 94-03-27 AT&T/SNET Arbitration 96-04-07 00-07-17 | Southern New England Telephone Co. Southern New England Telephone Co. Springwich Cellular/Bell Atlantic Southern New England Telephone Co. Southern New England Telephone Co. | November 10, 1977 (none) May 16, June, 1994 Filed October 28, 1996 February 10, 1998 December 5, 2000 |
| DC | D.C. People's Counsel D.C. People's Counsel General Services Administration General Services Administration General Services Administration General Services Administration | 729 798 827 854 850 926 | Chesapeake & Potomac Tel. Co. Chesapeake & Potomac Tel. Co. | May 13, 1980 July 18, 1983 May 7, 1985 April 16, 1987 October 7, 1991 October 7, 1993 |
| DE | Public Service Commission Federal Executive Agencies Public Service Commission | Depr.Repre 86-20 Depr.Repre | Diamond State Telephone Co. Diamond State Telephone Co. Diamond State Telephone Co. | April 1, 1985 July 31, 1987 March 8, 1988 |
| FL | GTE Sprint Communications Company Office of Public Counsel Federal Executive Agencies Federal Executive Agencies Federal Executive Agencies | 720536-TP Depr.Repre 880069-TL 880069-TL 880069-TL | All Telephone Companies Southern Bell Southern Bell Southern Bell Southern Bell | September 12, 1983 July 30, 1986 July 21, 1988 November 30, 1990 February 11, 1992 |

CHARLES W. KING
Snavely King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before State Regulatory Agencies

| State | Telecommunication Cases | | | Date |
|-------|--|--|---|---|
| | | Case | | |
| | | Case Number | Utility | |
| GA | Georgia Attorney General Federal Executive Agencies Federal Executive Agencies Georgia Public Service Commission | 3893-U 3905-U 3987-U 4018-U | Southern Bell Telephone Co. Southern Bell Telephone Co. Southern Bell Telephone Co. Southern Bell Telephone Co. | January 8, 1990 June 12, 1990 February 13, 1992 Jan 14, Feb 10, 1993 |
| HI | Hawaii Public Utility Commission Four Hawaii Counties Department of Defense Department of Defense Department of Defense Department of Defense Department of Defense | 1871 4588 7579 94-0093 7702 94-0298 7720 | Hawaiian Telephone Company Hawaiian Telephone Company Hawaiian Telephone Company Oceanic Communications All Communications Carriers GTE Hawaiian Telephone Company Verizon-Hawaii | July 8, 1971 December 15, 1983 April 26, 1994 March 13, 1995 June 2, 1995 May 7, 1996 November 15, 2000 |
| ID | U.S. Department of Energy U.S. Department of Energy | U-1000-63 U-1000-70 | Mountain Bell Telephone Co. Mountain Bell Telephone Co. | May 16, 1983 March 6, 1984 |
| IL | Illinois Alarm Companies Attorney General of Illinois GTE Sprint Communications Co. Federal Executive Agencies Federal Executive Agencies | 79-0143 81-0478 83-0142 89-0033 09-0268 | Illinois Bell Telephone Illinois Bell Telephone All Telephone Companies Illinois Bell Telephone Verizon-Frontier Sale | September 26, 1979 December 28, 1981 August 4, 1983 June 12, 1989 Oct.20, Dec.14, 2009 |
| KS | State Corporation Commission Federal Executive Agencies Federal Executive Agencies | Depr. Repr. 166.856-U 190, 492 | Southwestern Bell Southwestern Bell All Telephone Companies | May 12-14, 1986 November 7, 1989 November 4, 1994 |
| KY | Kentucky Cable Telecommunications Assn. Kentucky Cable Telecommunications Assn. | 2000-414 2000-39 | Blue Grass Energy Cooperative Cumberland Valley Electric, Inc. | January 11, 2001 January 11, 2001 |
| MD | Maryland People's Counsel Maryland People's Counsel Maryland People's Counsel Maryland People's Counsel Federal Executive Agencies Federal Executive Agencies Federal Executive Agencies | 6813 6881 7025 7467 7851 8106 8274 | C&P Telephone Company C&P Telephone Company C&P Telephone Company C&P Telephone Company C&P Telephone Company C&P Telephone Company C&P Telephone Company | 1975 December 17, 1975 March 15, 1975 October 20, 1981 March 20, 1985 May 9, 1988 August 2, 1990 |
| MI | Michigan Attorney General Michigan Attorney General | U-8911 U-9553 | Michigan Bell Telephone Co. AT&T Communications/MCI | November 7, 1988 December 4, 1990 |
| MN | GTE Sprint Communications Co. U.S. Department of Defense | 83-102-HC 87-021-BC | All Telephone Companies Northwest Bell Telephone Co. | August 5, 1983 (none) |
| MO | GTE Sprint Communications Co. Federal Executive Agencies Federal Executive Agencies | TR83-253 TC-89-14 TO-89-56 | Southwestern Bell Tel. Co. Southwestern Bell Tel. Co. Southwestern Bell Tel. Co. | September 5, 1983 (none) November 7, 1990 |
| MS | Federal Executive Agencies | U-5453 | South Central Bell Tel. Co. | May 15, 1990 |
| NJ | Department of Public Advocate Department of Public Advocate | Depr.Repr. 815-458 Depr.Repr. Depr.Repr. T092030358 TMO05080739 | N.J. Bell Telephone Company N.J. Bell Telephone Company N.J. Bell Telephone Company N.J. Bell Telephone Company N.J. Bell Telephone Company United Telephone Co. of New Jersey | Mar-79 October 15, 1981 March 1, 1982 February 1, 1985 September 30, 1992 January 5, 2006 |
| NM | New Mexico Corporation Commission New Mexico Corporation Commission | 1032 86-151-TC | Mountain Bell Telephone Co. General Telephone of Southwest | November 14, 1983 February 5, 1987 |

CHARLES W. KING
Snively King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before State Regulatory Agencies

| State | Telecommunication Cases | | | Date |
|-------|---|--|---|---|
| | | Case | | |
| | | Case Number | Utility | |
| NV | Prime Cable of Las Vegas Prime Cable of Las Vegas | 95-8034/8035 96-9035 | Central Telephone - NV Sprint/Centel, Nevada Bell | Filed November 22, 1995 June 2, 1997 |
| NY | Holmes Protection, Inc. Holmes Protection, Inc. 5 Alarm Companies GTE Sprint Communications Co. | 27350 27469 27710 28425 | New York Telephone Company New York Telephone Company New York Telephone Company All Telephone Companies | October 17, 1978 May 17, 1979 July 24, 1980 July 8, 1983 |
| PA | City of Philadelphia | R-832316 | Pennsylvania Bell Telephone | September 20, 1983 |
| SC | Office of Consumer Advocate Office of Consumer Advocate Office of Consumer Advocate Office of Consumer Advocate Office of Consumer Advocate U.S. Department of Defense | Depr.Repr. 86-511-C 86-541-C Depr.Repr. 89-180-C 2009-220-C | Southern Bell Southern Bell General Telephone of South Southern Bell ALLTEL of South Carolina Verizon/Frontier Communications | July 1, 1986 December 11, 1986 April 8, 1987 July 10, 1989 September 26, 1989 August 27, 2009 |
| TX | U.S. Department of Defense | 8585/8218 | Southwestern Bell Telephone Co. | (none) |
| UT | U.S. Department of Defense | 10-049-16 | Qwest/CenturyTel | August 30, 2010 |
| VA | U.S. Dept. Of Defense, GSA, et Federal Executive Agencies | 19696 PUC 890014 | C&P Telephone Company All Telephone Companies | October 6, 1976 February 13, 1989 |
| VI | V.I. Department of Commerce V.I. Public Service Commission | 205 341 | Virgin Islands Telephone Co. Virgin Islands Telephone Co. | April 29, 1980 March 20, 1991 |
| WA | U.S. Department of Defense U.S. Department of Defense U.S. Department of Defense U.S. Department of Defense WA Attorney General/TRACER U.S. Department of Defense U.S. Department of Defense WA Attorney General/TRACER WA Attorney General/TRACER U.S. Department of Defense WA Attorney General/WeBTEC/AARP WA Attorney General WA Attorney General U.S. Department of Defense U.S. Department of Defense | U-72-39 U-87-796-T U-88-20524 U-89-2698-F UT-940641 UT-941464 UT-951425 UT-961632 UT-021120 UT-040788 UT-040520 UT-050814 UT-090842 UT-100820 | Pacific Northwest Bell Pacific Northwest Bell Pacific Northwest Bell US West Communications US West Communications US West Communications US West Communications US West Communications GTE Northwest, Inc Qwest Communications Verizon Northwest, Inc. Verizon Northwest, Inc. Verizon - MCI Merger Verizon-Frontier Sale | 1973 December 20, 1983 November 8, 1988 November 28, 1989 Filed October 14, 1994 June 22, 1995 January 22, 1996 Filed June 23, 1997 July 29, 1997 May 22, 2003 August 12, 2004 February 2, 2005 November 2, 2005 Nov.3,2009;Jan 28, 2010 September 27, 2010 |
| WV | U.S. Department of Defense | 09-0871-T-PC | Verizon-Frontier Sale | November 16, 2009 |
| WI | GTE Sprint Wisconsin Consumers Utility Board Wisconsin Consumers Utility Board | 6720-TR-38 2055-TR-102 5846-TR-102 | All Telephone Companies CenturyTel of Central Wisconsin Telephone USA, LCC | October 20, 1983 June 26, 2002 June 26, 2002 |

CHARLES W. KING
Snavelly King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before Federal Regulatory Agencies

| Federal Cases | | | Date |
|---------------|---------|------|------|
| | | Case | |
| Case Number | Utility | | |

| Federal Communication Commission | | | |
|------------------------------------|---------------|------------------------|---------------------------------|
| Department of Defense | 16020 | Consat Rate of Return | 1973 |
| Airline Parties | 16258 | Bell System Rates | July 22, 1968 |
| Airline Parties | 18128 | TELPAC | 3/22, 10/15 1971, Feb. 22, 1972 |
| National Data Corporation | 19989 | WATS | (none) |
| Press Wire Services | 19919 | Private Line Rates | (none) |
| Aeronautical Radio | 20814 | Private Line Rates | October 5, 1978 |
| Department of Defense | 20690 | 1,544 Mbps Service | January 30, 1979 |
| State of Hawaii | 21263 | Interstate Separation | February 7, 1979 |
| International Record Carriers | CC78-97 | Telex/TWX Rates | March 6, 1980 |
| ITT World Communications | CC84-633 | Rate of Return | (none) |
| Aeronautical Radio | CC78-72 | Access Line Charges | (none) |
| MCI | CC84-800 | Rate of Return | (none) |
| Ind. Data Com. Mfg. Assn. | CC85-26 | AT&T Accounting Plan | (none) |
| Tymnet, Inc. | ENF84-22 | Packet Switching Costs | (none) |
| Adelphia Jones Intercable, et. al. | Bell Atlantic | Video Dialtone | Filed 7/29/94 |
| Adelphia Jones Intercable, et. al. | Bell Atlantic | Video Dialtone | Filed 8/23/94 |
| Adelphia Jones Intercable, et. al. | Bell Atlantic | Video Dialtone | Filed 2/21/95 |

| Nuclear Regulatory Commission | | | |
|--|------------------|------------------------|------|
| Fauquier League for Environment Protection | 50-328 50-329 | Va. Electric Power Co. | 1976 |

| Postal Rate Commission | | | |
|---------------------------------------|--------|-------------------------|-----------------------|
| Association of Third Class Mail Users | R71-1 | Rates | 1970 |
| Dow Jones & Company | R72-1 | Rates | 1972 |
| Dow Jones & Company | R74-1 | Rates | September 13, 1974 |
| Dow Jones & Company | MC76-2 | Rate Structure | January 6, 1979 |
| Dow Jones & Company | MC79-3 | Rate Structure | September 12, 1979 |
| Dow Jones & Company | R80-1 | Rates | November 25, 1980 |
| Warshawsky & Company | C82-1 | Rate Structure | (none) |
| Dow Jones & Company | R84-1 | Postal Costs | June 14, 1984 |
| Dow Jones & Company | R87-1 | Rate Structure Costs | November 2, 1987 |
| Dow Jones & Company | R90-1 | Rate Structure Costs | Sept 12, Oct 10, 1990 |
| Dow Jones & Company | MC91-1 | Pre-barcoding Discounts | November 19, 1991 |
| Dow Jones & Company | MC91-3 | Palletization Discounts | March 2, 1992 |

| U.S. Congress | | | |
|---|--------------------------|---|-------------------|
| National Retail Merchants Association | House/Senate Hearings | Electric Rate Reform Legislation | 1976, 1977 & 1979 |
| National Wireless Resellers Association | House Commerce Committee | Interconnection & Resale of Wireless Services | October 12, 1995 |

| Federal Maritime Commission | | | |
|-----------------------------------|-------|-------------------------|------------------|
| State of Hawaii | 71-18 | Ocean Shipping Rates | October-71 |
| Foss Alaska Line | 79-54 | Barge Rate Increase | July 1979 |
| Palmetto Shipping and Stevedoring | 85-20 | Vessel Charge Liability | October 27, 1986 |

CHARLES W. KING
Snavely King Majoros & Associates, Inc.
4351 Garden City Drive, Suite 350
Landover, MD
(202) 371-1111
Appearances before Federal Regulatory Agencies

| Federal Cases | | | Date |
|--|---------------------|------------------------|------------------|
| | Case Number | Case Utility | |
| Interstate Commerce Commission - Surface Transportation Board | | | |
| Western Coal Traffic League | Ex Parte 349 | R.R. Rate Increase | May-76 |
| Western Coal Traffic League | Ex Parte 357 | R.R. Rate Increase | Oct-78 |
| Western Coal Traffic League | Ex Parte 375 (Sub1) | R.R. Rate Increase | June 1, 1980 |
| Arkansas Power & Light Co. | 37276 | Cost of Capital | (none) |
| Central Illinois Light Co. | 37450 | Cost of Capital | March 10, 1981 |
| Western Coal Traffic League | Ex Parte 347 | Costing Methods | (none) |
| Snavely King Majoros O'Connor & Lee, Inc. | Ex Parte 664 | Cost of Capital | December 8, 2006 |
| Williams Energy Services, Inc | Ex Parte 582, Sub 1 | Rail Merger Guidelines | April 5, 2001 |

| Civil Aeronautics Board | | | |
|-------------------------|-------|-----------------------|--------|
| Thomas Cook, Inc. | 36595 | Air Fare Deregulation | (none) |

| Copyright Royalty Tribunal | | | |
|-----------------------------|-----------|----------------------|--------|
| Public Broadcasting Service | 88-2-86CD | Television Valuation | (none) |

| Federal Energy Regulatory Commission | | | |
|---|--------------|--------------------------------------|------------------------------|
| Exxon USA | OR89-2-000 | Pipeline Quality Bank | October 18, 1990 |
| Consumer Advocates of DE,DC,OH,MD,NJ,PA,WV,VA | ER08-386-000 | Electric Transmission Cost of Equity | March 26, 2008 |
| Consumer Advocates of DE,DC,OH,MD,NJ,PA,WV | ER08-23-000 | Electric Transmission Cost of Equity | May 21, 2008 |
| Maryland Office of People's Counsel | ER08-686-01 | Electric Transmission Cost of Equity | April 7, 2008; July 8, 2008, |
| Maryland Office of People's Counsel | ER08-23-000 | Electric Transmission Cost of Equity | May 21, 2008 |
| Maryland Office of People's Counsel | ER08-1329 | Electric Transmission Cost of Equity | August, 2008 |
| Louisiana Public Service Commission | ER09-1224 | Depreciation | March 2010 |
| Maryland Office of People's Counsel | ER10-355 | Electric Transmission Cost of Equity | December 22, 2010 |
| Louisiana Public Service Commission | ER10-2001 | Depreciation | March 8, 2011 |
| Louisiana Public Service Commission | ER 11-2161 | Depreciation | July 18, 2011 |

| Canadian Transport Commission | | | |
|--|--|--|--|
| Rail Costing Inquiry, 1967-1969 Telecommunications Costing Inquiry, 1972-1975 | | | |