

PETITIONER'S EXHIBIT BEO-1

TENNESSEE-AMERICAN WATER COMPANY, INC

DOCKET NO. 15 - _____

DIRECT TESTIMONY

OF

BRENT E. O'NEILL, P.E.

ON

**CHANGES TO THE QUALIFIED INFRASTRUCTURE INVESTMENT PROGRAM
RIDER, THE ECONOMIC DEVELOPMENT INVESTMENT RIDER, AND THE
SAFETY AND ENVIRONMENTAL COMPLIANCE RIDER**

SPONSORING PETITIONER'S EXHIBITS:

PETITIONER'S EXHIBIT 2016 SCEP – BEO
PETITIONER'S COLLECTIVE EXHIBIT II 2016 EDI LETTERS – BEO

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

2 A. My name is Brent E. O'Neill and my business address is 2300 Richmond Road,
3 Lexington, Kentucky 40502.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by the American Water Works Service Company ("Service Company") as
6 Director of Engineering for Tennessee American Water Company ("TAWC" or
7 "Company") and Kentucky American Water Company ("KAWC").

8 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THIS OR ANY**
9 **OTHER COMMISSION?**

10 A. Yes. I have previously provided written and oral testimony before the Tennessee
11 Regulatory Authority ("TRA" or "Authority").

12 **Q. PLEASE STATE YOUR EDUCATIONAL AND PROFESSIONAL**
13 **BACKGROUND.**

14 A. I received a B.S. degree in Civil Engineering from the University of Illinois in Urbana,
15 Illinois in 1991. I completed a Masters of Business Administration from Eastern Illinois
16 University in Charleston, Illinois in 2002. I am a registered Professional Engineer in the
17 State of Tennessee, Commonwealth of Kentucky, State of Illinois and State of Iowa.

18 I have been employed by American Water Works Company ("AWW") or one of its
19 subsidiaries since 1996. I began as a Staff Engineer for Northern Illinois Water
20 Company ("NIWC") until 1999 when I was promoted to Engineering Manager for
21 Illinois American Water Company ("ILAWC"). In July 2004, I accepted the position of
22 Network Operations Manager for the Champaign County District of ILAWC. In June
23 2005, I accepted the position of Senior Asset Manager with AWW and worked in

1 Reading, England in a joint project with Thames Water. In 2006, I became the ILAWC
2 Project Manager for the construction of a new 15 MGD ground water softening treatment
3 plant, wells, and transmission main in Champaign, Illinois. In March 2008, I became the
4 Engineering Manager Capital Delivery with ILAWC with responsibilities for the delivery
5 of capital projects for the Central and Southern portions of Illinois. In April 2013, I
6 accepted my current position as Director of Engineering for Tennessee American Water
7 Company and Kentucky American Water Company with the Service Company. I am an
8 active member of the American Water Works Association (AWWA) and American
9 Society of Civil Engineers (ASCE).

10 **Q. WHAT ARE YOUR DUTIES AS DIRECTOR OF ENGINEERING?**

11 A. I am responsible for the coordination of the Engineering Departments for both TAWC
12 and KAWC, which includes the planning, development, and implementation of all
13 aspects of construction projects. This includes working with all new main extensions and
14 developers, replacement of mains, water treatment plant upgrades, new construction and
15 network facilities improvements. I coordinate technical assistance to all other company
16 departments as needed and oversee the capital budget development and implementation.
17 I report to the Presidents of TAWC and KAWC. I am located in Kentucky, but work
18 closely with the TAWC staff in Tennessee.

19 **Q. WHAT TOPICS WILL YOUR TESTIMONY ADDRESS?**

20 A. I will present the planned investment for the Qualified Infrastructure Investment Program
21 Rider ("QIIP"), the Economic Development Investment ("EDI") Program Rider and the
22 Safety and Environmental Compliance ("SEC") Program Rider for 2016.

23 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

1 A. Yes I am. I am sponsoring **Petitioner's Exhibit 2016 SCEP – BEO**, which is attached.
2 I will discuss this exhibit in further detail in my testimony below. I am also sponsoring
3 **Petitioner's Collective Exhibit II 2016 EDI Letters – BEO** and will discuss this
4 collective exhibit in my testimony below.

5 **Q. WERE THE PETITIONER'S EXHIBITS LISTED ABOVE PREPARED BY YOU**
6 **OR UNDER YOUR DIRECTION AND SUPERVISION?**

7 A. Yes.

8 **Q. WHAT WERE THE SOURCES OF THE DATA USED TO PREPARE THE**
9 **PETITIONER'S EXHIBITS LISTED ABOVE?**

10 A. The data used to prepare the exhibits was acquired from the books of account and
11 business records of Tennessee American, the officers and associates of Tennessee
12 American with knowledge of the facts based on their job responsibilities and activities,
13 and other internal sources, which I examined in the course of my investigation of the
14 matters addressed in this testimony.

15 **Q. DO YOU CONSIDER THIS DATA TO BE RELIABLE AND OF A TYPE THAT**
16 **IS NORMALLY USED AND RELIED ON IN YOUR BUSINESS FOR SUCH**
17 **PURPOSES?**

18 A. Yes.

19 **Q. DO THE PETITIONER'S EXHIBITS LISTED ABOVE ACCURATELY**
20 **SUMMARIZE SUCH DATA AND THE RESULTS OF ANALYSIS USING SUCH**
21 **DATA?**

22 A. Yes, it does.

1 **Q. CAN YOU DESCRIBE THE FACTORS USED IN THE PREPARATION OF THE**
2 **FORECAST PERIOD DATA AS IT RELATES TO THE QIIP, EDI AND SEC**
3 **PROGRAMS OR THE CAPITAL CONSTRUCTION PROJECTS?**

4 A. Yes. The Company's capital investment plan can be divided into two distinct areas: 1)
5 annual construction work identified as recurring construction ("RPs"), and 2) major
6 projects identified as investment projects ("IPs"). Normal recurring construction includes
7 water main installation for new development, smaller main projects for reinforcement and
8 replacement, service line and meter setting installation, meter purchases and the purchase
9 of tools, furniture, equipment and vehicles.

10 Recurring construction costs are trended from historical and forecasted data. Estimates
11 are prepared for the installation of new mains, service lines, meter settings and the
12 purchase of new meters based on preliminary plats from the appropriate governmental
13 planning agencies and consultations with developers, homebuilders, and engineering
14 firms.

15 Purchase of tools, furniture, equipment, and vehicles are based on needs. Each item is
16 reviewed independently and an itemized list of expenditures is prepared. Estimates are
17 made based on current year pricing.

18 The intent of the planning process is to provide a broad and comprehensive review of
19 facility needs that will allow us to then establish a general guide for needed
20 improvements over a short-term horizon. These improvements will enable TAWC to:
21 provide safe, adequate, and reliable service to its Customers to meet their domestic,
22 commercial, and industrial needs; to provide flows adequate for fire protection; to satisfy
23 all regulatory requirements; to enhance economic growth; and to properly serve the

1 public interest. The plan provides a general scope of each project along with a
2 preliminary design. The criteria for evaluating the various system improvements include
3 engineering requirements; consideration of national, state, and local trends;
4 environmental impact evaluations; and water resource management.

5 The engineering criteria used are accepted engineering standards and practices that
6 provide adequate capacity and appropriate levels of reliability to satisfy residential,
7 commercial, industrial, and public authority needs, and that provide flows for fire
8 protection. The criteria are developed from regulations, professional standards, and
9 company engineering policies and procedures.

10 Pipelines are designed to meet two conditions of service. One, they are expected to
11 deliver projected peak hour Customer demands while maintaining system pressures at 30
12 psi or greater and two, to provide adequate fire flow identified by the ISO while
13 maintaining distribution system pressure at 20 psi or greater.

14 15 **QUALIFIED INFRASTRUCTURE INVESTMENT PROGRAM**

16 **Q. WHAT IS THE QUALIFIED INTRASTRUCTURE INVESTMENT PROGRAM?**

17 A. A substantial portion of Tennessee American Water's distribution infrastructure is
18 between 50 and 100 years old and is nearing the end of its useful service life. The pace
19 of infrastructure replacement is an increasing concern for TAWC. The anticipated level
20 of distribution infrastructure improvement projects is increasing at a rapid pace, in part
21 due to the advanced age of the Company's water facilities. A Qualified Infrastructure
22 Investment Program (QIIP) more accurately reflects the ongoing investments and
23 improvements that are made in the water distribution and production systems versus the

1 less frequent but larger step increases that would result from base rate increase without
2 QIIP. The timely recovery of the fixed costs of infrastructure replacement through the
3 QIIP provides an incentive for increased and continued levels of capital infusion. This
4 results in a stronger and more reliable water distribution and production system for both
5 current and future Customers. The Company is focusing its replacement program on
6 small diameter mains and mains that have shown a chronic level of breaks. These types
7 of mains are responsible for the majority of the distribution system leaks and failures.
8 The need to replace service lines, meters, hydrants, treatment structures, pumps and
9 equipment is critical to maintaining public safety, is continuous and imperative to
10 maintaining a reliable system.

11 **Q. WHAT ARE THE BUDGET LINES THAT ARE INCLUDED UNDER THE**
12 **QUALIFIED INFRASTRUCTURE INVESTMENT PROGRAM FOR 2016?**

13 A. The budget lines that will be included in the QIIP will be Line B - Mains Replaced, Line
14 C - Mains Unscheduled, Line D - Mains Relocated, Line F - Hydrants and Valves
15 Replaced, Line H - Services Replaced, Line J - Meters Replaced, and Line R -
16 Capitalized Tank Rehabilitation/ Painting. In addition, TAWC has a large capital
17 investment project required to maintain water quality standards at the treatment plant
18 that will come into service during 2016.

19 **Q. WHAT WORK IS ASSOCIATED WITH MAIN REPLACED - LINE B AND WHY**
20 **DOES IT FALL UNDER THE QIIP?**

21 A. This investment plan line includes the scheduled replacement, renewal or improvement of
22 existing water mains, including valves and other appurtenances that are necessary to
23 perform the replacement, renewal or improvement work. Work under this line is the

1 planned and scheduled proactive replacement of water main that has been determined to
2 have reached its useful life or is causing service problems to the adjacent area serviced by
3 the main. Water main replaced under Main Replaced – Line B will result in a stronger
4 and more reliable water distribution system. By replacing the aged water main
5 infrastructure on an accelerated basis and on a proactive, rather than reactive or delayed
6 basis, the distribution system will provide direct Customer benefits in the form of
7 improved and sustained water quality, improved fire protection, fewer service disruptions
8 and lower operating and maintenance costs over time. This type of infrastructure
9 improvement work is appropriate and should be included in the QIIP.

10 **Q. WHAT IS THE PROPOSED REPLACEMENT SCHEDULE FOR WATER MAIN**
11 **REPLACEMENTS ASSOCIATED WITH LINE B?**

12 A. TAWC plans to spend approximately \$830,500 to replace various size water mains
13 within eight (8) projects during 2016. TAWC will replace approximately 8,090 feet of
14 main during the period. These projects are not only important in addressing the aging
15 infrastructure needs of the community, but also allow for the Company to take a
16 leadership role in reducing its carbon footprint. By replacing infrastructure that is leaking
17 or has a high potential for failure, we are able to reduce the amount of water that is
18 produced and reduce the amount of electricity that we use. The overall result is a
19 reduction in the amount of fossil fuel generation required for our facilities.

20 **Q. WHAT IMPACT HAS THE REPLACEMENT OF WATER MAINS HAD ON**
21 **THE OPERATION OF THE DISTRIBUTION SYSTEM?**

22 A. TAWC has experienced 94 fewer main breaks through August of 2015 compared to the
23 10 year average for the same period. Through August 2015, TAWC has had 260 main

breaks compared to the 10 year average of 354. TAWC believes that a portion of the reduction of the number of breaks is due to the concentration of replacing water main infrastructure that had exhibited a high rate of breaks compared with the entire system. Although other factors contribute to the reduction of main breaks, such as temperature and system pressure fluctuations, the replacement of infrastructure has contributed to the reduction of breaks as well. So, the regulatory streamlining permitted under the QIPP has produced meaningful benefits.

Q. HOW DOES THE PROPOSED 2016 SPEND COMPARE TO RECENT YEARS SPEND ASSOCIATED WITH LINE B?

A. TAWC anticipated spending \$1,500,000 during 2015 on water main replacement projects. Due to more work associated with main relocations caused by conflicts with municipal or state agency projects within Line D (mains relocated), TAWC had to reduce the amount of water main replacements and shift resources and budget dollars to the D Line to account for the more work required within the D Line. The proposed 2016 spend is slightly less than the six year average between 2009 and 2014 of \$1,249,325. This is to accommodate additional expenditures in other line items while maintaining only a moderate increase to TAWC Customers in 2016.

Q. WHY ARE CERTAIN MAIN REPLACEMENT PROJECTS SOMETIMES DELAYED AND PLACED IN THE NEXT YEAR?

A. During any given year, unexpected changes in priorities may occur due to outside influences, or recognition of unfavorable trends, that are occurring and affect the infrastructure. The majority of such unexpected changes are caused by conflicts between the company's infrastructure and outside agencies projects that require the water main in

1 the area to be relocated. The other significant driver for unexpected changes in priorities
2 involves the recognition of a trend for increasing main breaks on a section of water main
3 that requires the main to be replaced sooner than anticipated. In both of these cases, a
4 previously unbudgeted new project is initiated to address the need to relocate or replace
5 the water main. Since these projects were not identified during the original budgeting
6 process, the need to offset the new projects' expected cost is required to ensure that the
7 overall company budget is maintained. As a result, projects that were originally
8 identified within the budget are changed or delayed to make room for the new,
9 unexpected projects.

10 **Q. WHAT IS THE PROCESS FOR APPROVING THESE CHANGES?**

11 A. Throughout the year, TAWC actively manages each budget line to ensure that the overall
12 spending is consistent with the approved budget levels. The management of the budget
13 lines is carried out during monthly Capital Investment Management Committee meetings
14 that compare the current capital expenditures to the budgeted levels. If changes in the
15 budgets are required due to changes in priorities or unexpected changes in projects, the
16 committee reviews the need for the changes and approves or disapproves, as the case may
17 be, the movement of available capital from other budget lines to offset the changes in
18 capital spend and maintain the overall projected spend for the year.

19 **Q. WHAT ARE THE PROJECTS THAT ARE SCHEDULED TO BE A PART OF**
20 **THE WATER MAIN REPLACEMENTS ASSOCIATED WITH LINE B IN 2016?**

21 A. TAWC expects to undertake the following projects:

- 22 1) Install 325 linear feet ("lf") of 4-inch ductile iron main along Pine View Lane to
23 replace 2.25-inch galvanized water main at an estimated cost of \$49,000. This project
24 was originally scheduled for 2015 but was delayed until 2016 due to emerging

relocation projects during 2015. The amount budgeted for this work in 2015 was spent in 2015 under Line D (mains relocated).

2) Install 1,520 lf of 6-inch ductile iron main along Center Street to replace 2.25-inch cast iron water mains, at an estimated cost of \$145,000. This project was originally scheduled for 2015 but was delayed until 2016 due to emerging relocation projects during 2015. The amount budgeted for this work in 2015 was spent in 2015 under Line D (mains relocated).

3) Install 1,700 lf of 6-inch ductile iron main along Semi Circle Drive to replace 2-inch cast iron and 1.25-inch galvanized water mains, at an estimated cost of \$195,000. This project was originally scheduled for 2015 but was delayed until 2016 due to emerging relocation projects during 2015. The amount budgeted for this work in 2015 was spent in 2015 under Line D (mains relocated).

4) Install 600 lf of 6-inch ductile iron main along Hanover Street to replace 2-inch galvanized water mains, at an estimated cost of \$73,500. This project was originally scheduled for 2015 but was delayed until 2016 due to emerging relocation projects during 2015. The amount budgeted for this work in 2015 was spent in 2015 under Line D (mains relocated).

5) Install 600 lf of 6-inch ductile iron main along Hancock Road to replace 2.25-inch galvanized main at an estimated cost of \$61,000.

6) Install 1,800 lf of 6-inch PVC main along Osceola Drive to replace 2-inch PVC main at an estimated cost of \$140,000.

7) Install 995 lf of 6-inch ductile iron main along Francis Street to replace 2-inch galvanized main at an estimated cost of \$116,000.

8) Install 550 lf of 8-inch ductile iron main along Pirola Street to replace 2-inch cast iron main at an estimated cost of \$51,000.

Q. WHAT WORK IS ASSOCIATED WITH UNSCHEDULED MAIN REPLACEMENTS - LINE C AND WHY DOES IT FALL UNDER THE QIIP?

A. This investment plan item includes the unscheduled replacement or restoration of existing water mains, including valves and other appurtenances that are necessary to perform the

1 replacement or restoration work. The work associated with the Unscheduled Main
2 Replacements of Line C is similar to that of Main Replaced of Line B and address water
3 mains that have started to experience chronic issues. The majority of work associated
4 with Line C is for water mains that have experienced an unscheduled break or failure and
5 the Company has determined that the replacement of a section of the main will allow the
6 service life of the main to be extended. On the other hand, the work under Line B –
7 Mains Replaced – is “scheduled,” as a weakness or the need for improvement was
8 previously identified. The company believes that this type of replacement work is
9 necessary and should be included in the QIIP.

10 **Q. WHAT IS THE PROPOSED REPLACEMENT LEVEL FOR WATER MAIN**
11 **REPLACEMENTS ASSOCIATED WITH THE UNSCHEDULED MAIN**
12 **REPLACEMENTS OF LINE C?**

13 A. TAWC plans to spend approximately \$920,000 to replace various size water mains
14 during unscheduled events. This is similar to the three year average spend during 2012 to
15 2014 of \$980,400. As we replace sections of main, the existing main will be more stable,
16 and the life of the main will be extended and allow for a more concentrated effort for
17 main replacements on mains that have a larger history of breaks.

18 **Q. WHAT BENEFIT HAS TAWC SEEN WITH THE WATER MAIN**
19 **REPLACEMENTS ASSOCIATED WITH UNSCHEDULED MAIN**
20 **REPLACEMENTS OF LINE C AND MAIN REPLACEMENTS OF LINE B?**

21 A. TAWC experienced a greater than 30% in reduction of water main breaks during 2015
22 when compared to the 10 year average from 2005 to 2014. TAWC attributes this
23 reduction, in part, due to the focus on replacing main with a chronic history of main

1 breaks rather than the historical approach of merely repairing mains. TAWC further
2 believes that the reduction in the average number of main breaks between 2013 and 2015
3 of 288 per year compared to the average number of breaks of 483 per year between 2004
4 to 2012 is directly correlated to the level of spending in the Unscheduled Main
5 Replacement of Line C.

6 **Q. WHY SHOULD THE FUNDING LEVEL OF UNSCHEDULED MAIN**
7 **REPLACEMENTS OF LINE C BE MAINTAINED AT THE THREE YEAR**
8 **AVERAGE SPEND OF 2012 TO 2014?**

9 A. As mentioned above, TAWC has seen a reduction of the number of main breaks in the
10 system during the past several years as compared to the previous nine year period.
11 TAWC has utilized the Unscheduled Main Replacements of Line C to replace sections of
12 mains with chronic breaks to extend the useful life of the distribution system instead of
13 just making repeated repairs on the same main. TAWC believes that the level of funding
14 it has maintained over the past three years for the Unscheduled Main Replacements of
15 Line C is sufficient to allow the company to address chronic mains and allows the
16 company to extend the life of these mains.

17 **Q. WHAT WORK IS ASSOCIATED WITH MAINS RELOCATED - LINE D AND**
18 **WHY DOES IT FALL UNDER THE QIIP?**

19 A. This budget line includes the relocation of existing water mains, including valves and
20 other appurtenances, which are necessary due to ongoing municipal or state agency
21 projects. These costs are not reimbursable. The work associated with the Main
22 Relocated –Line D is a replacement of infrastructure that is impacted by improvements
23 being proposed by municipal or state agency that causes a conflict with the Company's

1 infrastructure. The Customer benefits by work associated with the Main Relocated –
2 Line D since the replacement main that is installed to eliminate the conflict with the
3 municipal or state agency projects is typically a newer main that is stronger and more
4 reliable than the main being replaced. This type of relocation work is appropriate and
5 should be included in QIIP.

6 **Q. WHAT MAINS HAVE BEEN IDENTIFIED FOR RELOCATION THAT IS**
7 **ASSOCIATED WITH LINE D?**

8 A. TAWC plans to spend approximately \$250,000 to replace various size water mains
9 within the distribution system that is required to be relocated due to the work of a
10 municipal or state agency. At this time, TAWC is not aware of any major projects being
11 proposed by municipal or state agencies that would require a large investment in
12 relocated main. TAWC had anticipated spending \$350,000 during 2015, but has seen
13 additional relocation work due to projects by municipal and state agencies that the
14 Company was made aware of during the year. The additional work is expected to result
15 in an approximate spend within the D Line of \$817,860. Similar to the start of 2015,
16 TAWC had not identified many relocation projects. But, based on the substantial amount
17 of relocation work conducted in the past year, the Company does not expect any major
18 relocation during 2016.

19 **Q. WHAT WORK IS ASSOCIATED WITH HYDRANTS AND VALVES**
20 **REPLACED - LINE F AND WHY DOES IT FALL UNDER THE QIIP?**

21 A. This line item includes the replacement of leaking, failed or obsolete hydrants, including
22 hydrant assemblies and valves that are company funded. The replacement of hydrants and
23 valves that have been determined to not function properly during ongoing inspections

1 allows TAWC to maintain public safety and ensure that the distribution system is able to
2 provide adequate and reliable service to the community. Since the work is associated
3 with the replacement of infrastructure to maintain public safety and provide reliable
4 service, it is appropriate and should be included in QIIP.

5 **Q. WHAT IS THE PROPOSED REPLACEMENT SCHEDULE FOR HYDRANTS**
6 **AND VALVES?**

7 A. TAWC plans to spend approximately \$270,000 to replace hydrants and valves. Of this
8 amount, TAWC plans to spend a majority of this amount on replacing 10 broken valves
9 that have been found during inspection. The estimate to replace these valves is \$195,000.
10 Within this line, TAWC expects to replace 26 hydrants that have been found during
11 inspections to be damaged or in need of extensive repair. The amounts proposed for Line
12 F during 2016 is similar to the 5-year average spend between 2010 and 2014 of \$330,100.

13 **Q. WHAT WORK IS ASSOCIATED WITH SERVICES REPLACED - LINE H AND**
14 **WHY DOES IT FALL UNDER THE QIIP?**

15 A. This investment plan item includes the replacement of water services or improvements,
16 including the replacement of corporation stops, or shut-off valves. The replacement of
17 water service that is causing reduction in water service or concerns with water quality are
18 included in the work performed within this spending line. By replacing these services the
19 Company is able to provide better service to a Customer. TAWC believes this type of
20 replacement work is appropriate to maintain reliable service to a Customer and should be
21 included in QIIP.

1 **Q. WHAT DOES THE COMPANY CONSIDER A WATER SERVICE AND WHAT**
2 **IS ITS PURPOSE?**

3 A. TAWC considers the small diameter pipe that starts at the distribution main typically near
4 the street and ends near the property line usually at the meter as a water service line that
5 the company maintains. The water service line makes it possible for a customer to obtain
6 water from the distribution system and is their direct link to the Company's system.

7 **Q. WHAT IS THE PROPOSED REPLACEMENT SCHEDULE FOR SERVICES**
8 **WITHIN LINE H?**

9 A. TAWC plans to spend approximately \$250,000 to replace lead and iron services during
10 this period. Based on the average cost per service replacement of \$2,101, TAWC will
11 replace approximately 119 services. The anticipated spend of \$250,000 during 2016 is
12 similar to the planned spend of \$250,000 during 2015 and to the 5 year average spend of
13 \$258,501 between 2009 and 2013.

14 **Q. WHAT IS THE WORK ASSOCIATED WITH METERS REPLACED - LINE J**
15 **AND WHY DOES IT FALL UNDER THE QIIP?**

16 A. This investment plan item includes the replacement or improvement of existing Customer
17 meters and meter settings with or without technology changes. The work associated with
18 this spending line allows for the replacement of meters and meter settings that are nearing
19 the end of their useful service life and could cause service disruptions or inconveniences
20 to a Customer if they were to fail. The Company believes this type of replacement work
21 is appropriate to maintain reliable service to a Customer and should be included in QIIP.

22 **Q. WHAT IS THE PROPOSED REPLACEMENT SCHEDULE FOR METERS?**

1 A. The total estimated meter replacement cost for the period is \$753,930. Based upon an
2 average cost of meter replacements of approximately \$151 per meter, TAWC will replace
3 approximately 5,000 meters.

4 Q. WHAT IS THE WORK ASSOCIATED WITH CAPITALIZED TANK
5 REHABILITATION/ PAINTING – LINE R AND WHY DOES IT FALL UNDER
6 THE QIIP?

7 A. This investment plan item includes the rehabilitation and painting of water storage tanks
8 within the distribution system. Performing the periodic rehabilitation and painting of
9 these water storage tanks maintains the ability of the water distribution system to provide
10 reliable service and ensure that the system is able to meet the demands during peak
11 Customer demand periods and during firefighting periods. In addition, the rehabilitation
12 work allows the system to provide safe water to its Customers. Through the
13 rehabilitation of the tank, the systems' reliability is maintained and should be included in
14 QIIP.

15 Q. DISCUSS THE WORK ASSOCIATED WITH CAPITALIZED TANK
16 REHABILITATION/ PAINTING INCLUDED WITH LINE R?

17 TAWC plans to perform tank inspections during 2016 but does not plan to rehabilitate or
18 paint a tank during 2016. The company will use the tank inspections conducted during
19 2016 to prioritize and plan the next tank rehabilitation and painting during 2017 and in
20 subsequent years.

1 **Q. ARE THERE ANY CAPITAL INVESTMENT PROJECTS THAT ARE**
2 **INCLUDED UNDER THE QUALIFIED INFRASTRUCTURE INVESTMENT**
3 **PROGRAM?**

4 A. Yes, TAWC has a Capital Investment Project that will be placed in service during 2016.
5 The project is the Citico Plant Improvement Phase 1B Project with an approximate cost
6 of \$8.2 million. The Citico Plant Improvement Phase 1B Project is the completion of the
7 Citico Plant Pretreatment Improvement Projects that was intended to address the
8 pretreatment process of Plant Number 1. Phase 1B will retrofit the existing
9 Sedimentation Basin No. 3 with two clarification trains that will be equipped with three
10 stage flocculation and plate settlers equipped with continuous sludge collection. The
11 project will be in service by May of 2016.

12 **Q. WHAT IS INCLUDED IN THE CITICO PHASE 1B IMPROVEMENT**
13 **PROJECT?**

14 A. The Citico Plant Improvement Phase 1B Project includes the modification of the existing
15 Sedimentation Basin No. 3 that provides pretreatment for Citico Plant No. 1. Currently
16 Sedimentation Basin No. 3 works in conjunction with Basins Nos. 1 and 2 to provide
17 pretreatment to the conventional filters of Plant No. 1. Sedimentation Basin No. 3
18 currently treats 7.5 million gallons per day of the overall rated capacity of 30 million
19 gallons per day of Plant No. 1. Basins No. 1 and 2 provide the remaining 22.5 million of
20 gallons per day. The project will retrofit Basin 3 into two pretreatment trains and
21 increase its capacity from 7.5 million gallons per day to 28 million gallons per day. Each
22 of the two trains will include a three stage flocculation area and plate settlers equipped
23 with continuous sludge collection.

1 **Q. WHY IS THE PHASE 1B PROJECT IMPORTANT TO THE OPERATION OF**
2 **THE CITICO PLANT?**

3 A. The original pretreatment concept for Plant No. 1 included the repair and retrofit of
4 Basins 1 and 2. However, during the initial investigation it was determined that the un-
5 reinforced concrete walls were in poor condition and would not support the loading from
6 the proposed equipment. Laboratory testing of the concrete in Basin 1 showed the
7 concrete to be highly porous and in poor condition. Based on these findings, Phase 1A
8 project made improvements to the flocculation units to address deficiencies cited in
9 previous sanitary surveys by the Tennessee Department of Environment and
10 Conservation (TDEC) but did not address the need for improved pretreatment. Phase 1B
11 was developed to improve the pretreatment process of Plant 1 and increase capacity of
12 Basin 3 to allow for the retirement of Basin 1, which shows the worst condition of
13 concrete. This project will also allow for a future retrofit of Basin 2 to provide
14 pretreatment redundancy. Without the proposed improvements, the conditions of
15 structural deficiencies and the underperformance of the sedimentation facilities result in
16 short-circuiting of flow and the reduction of the ability to settle out the solids in the raw
17 water ahead of the filters of Plant 1. These conditions hamper the Company's ability to
18 properly condition the water for filtration and reduce the amount of solids that the filters
19 need to remove. With the higher solids amount entering the filters, the efficiency of the
20 filters is affected and the length the filters operate prior to backwash operations is
21 reduced potentially causing higher production costs.

22 **Q. WILL THIS IMPACT OPERATIONAL COSTS FOR THE CITICO FACILITY?**

1 A. Yes. TAWC expects that with the improved pretreatment process provided by the
2 improvements to Basin 3 there will be a reduction in the operational expenses associated
3 with Citico Plant 1. TAWC expects to experience a decrease in coagulant chemical costs
4 for the facility, along with a reduction in the labor cost required to annually clean out the
5 accumulated sediment in Basin 3. Because these costs are not specifically quantifiable,
6 they have not been included as operational expense savings in this filing. However, any
7 savings that result from the construction will be realized by the Customers through the
8 Production Costs and Other Pass-Throughs Rider ("PCOP").

9 **Q. IS THIS PROJECT UNDER CONSTRUCTION?**

10 A. Yes. Due to the amount of construction and the need to construct the improvements
11 during low demand conditions, the project broke ground during September 2015 and is
12 expected to be in service during May 2016 ahead of the increase in water demand for the
13 system.

14 **Q. WAS THE CITICO PHASE 1B PROJECT DISCUSSED IN PREVIOUS**
15 **TESTIMONY?**

16 A. Yes, in Docket No. 10-00189, Tennessee American included an investment project of
17 Citico Phase 1A and Phase 1B that was identified as project 26020503. In the testimony
18 of John Watson, page 5 lines 8 to 20, he identified that Citico Phase 1A as a primary
19 project in the case, and indicated it would be placed in-service in December 2010 for a
20 total cost of \$6.7 million.

1 **Q. DID DOCKET NO. 10-00189 INDICATE A CONSTRUCTION WORK IN**
2 **PROGRESS AMOUNT FOR CITICO PHASE 1B?**

3 A. Yes, referring to the response to Item 13 of TRA's First Data Request, the workpaper
4 showed a prior balance of \$1,387,087.74, construction expenditures in 2010 of
5 \$4,748,344.06, and construction expenditures in 2011 of \$2,490,248.00 for the identified
6 project 26020503, Citico Phase 1A and Phase 1B project. The information in the case
7 does not provide a specific breakdown of the difference between Phase 1A and Phase 1B.
8 Assuming all of the 2011 expenditures are to be considered Phase 1B since Phase 1A was
9 to be placed in service in December 2010, the amount in docket 10-00189 regarding
10 Citico Phase 1B in Construction Work in Progress (CWIP) was \$2,490,248.00.

11 **Q. WAS THERE ANY AMOUNT OF CITICO PHASE 1B THAT WAS INCLUDED**
12 **IN UTILITY PLANT IN SERVICE IN DOCKET NOS. 12-00049 OR 13-000130?**

13 A. No amount of Citico Phase 1B was included in Utility Plant in Service in either Docket
14 Nos. 12-00049 or 13-000130.

15 **Q. WAS THERE A CAPITAL IMPROVEMENT PROJECT THAT WAS PART OF**
16 **LAST YEARS RIDERS?**

17 A. Yes, in the SEC Rider of Docket No. 14-00121, TAWC included the Citico Process
18 Wastewater Improvement Project to address the change in permit requirements from the
19 City of Chattanooga on the allowable level of Zinc to be discharged to the city's
20 wastewater collection system.

1 **Q. WHAT IS INCLUDED IN THE CITICO PROCESS WASTEWATER**
2 **IMPROVEMENT PROJECT?**

3 A. The Process Wastewater Improvement Project included the modification of the existing
4 Thickener No. 1 to receive a portion of the sediment and sludge from a part of the water
5 treatment plant. A thickened sludge transfer pump station was added to transfer material
6 from Thickener No. 1 to the new dewatering facilities. The project added a sludge
7 storage tank to receive thickened sludge from Thickener No. 1 prior to polymer addition
8 and dewatering and reducing the potential operational challenges caused by the new
9 transfer pump station. A second thickener was added to operate in parallel with
10 Thickener No. 1 and serve the sediment and sludge from the remaining portion of the
11 water treatment plant, and provide a measure of redundancy for sludge thickening when
12 maintenance is required on either thickener. A concrete tank structure with a fixed weir
13 and adjustable weir was constructed to split the sedimentation and sludge discharge from
14 the water treatment plant between the two thickeners to ensure optimal operation of the
15 thickeners. A filter backwash equalization and decant tank was constructed with a
16 volume of 200,000 gallons to allow for the handling of backwash activities and to work
17 in parallel with the existing backwash equalization tank. This allows the thickeners to
18 operate efficiently and produce consistent thickened sludge. The major component added
19 with the project was mechanical centrifuge dewatering equipment and a building to house
20 the two (2) centrifuge dewatering units, polymer storage and feed system, dewatered
21 sludge conveyance equipment and a truck loading area. The building also houses the
22 needed electrical and control equipment for dewatering equipment installed with the
23 project.

1 **Q. IS THE CITICO PHASE 1B PROJECT DIFFERENT THAN THE CITICO**
2 **PROCESS WASTEWATER IMPROVEMENT PROJECT THAT WAS PART OF**
3 **DOCKET NO. 14-00121?**

4 A. Yes, the Citico Process Wastewater Improvement Project involved the construction of
5 new infrastructure at the Citico Water Treatment Plant site to meet the change in permit
6 requirements from the City of Chattanooga on the allowable level of Zinc to be
7 discharged to the city's wastewater collection system. A majority of the work included
8 in the project was new facilities to remove the residual products that come from the
9 treatment of water. The Citico Phase 1B project will involve the rehabilitation of the
10 existing basin structures that are directly involved in the treatment of water and will
11 improve on the ability of the Company to properly condition the water for filtration and
12 insure that the plant is able to meet regulatory requirements. Unlike the Process
13 Wastewater Improvement Project that involved the construction of new facilities to
14 support a new process, the Citico Phase 1B project, on the other hand will make
15 improvements to an existing structure and improve the operation and efficiency of an
16 existing treatment process.

17 **Q. WAS THE CITICO PROCESS WASTEWATER IMPROVEMENT PROJECT**
18 **IDENTIFIED IN DOCKET NO. 14-00121 ABLE TO MEET THE PERMIT**
19 **REQUIREMENTS DURING 2015?**

20 A. Yes, the Citico Process Wastewater Improvement Project was placed in service to allow
21 TAWC to meet the new discharge requirements from the city.
22
23

ECONOMIC DEVELOPMENT INVESTMENT PROGRAM

Q. WHAT IS THE ECONOMIC DEVELOPMENT INVESTMENT RIDER?

A. This rider provides a mechanism to recover the operational expenses, capital costs or both related to the expansion of infrastructure for the purpose of economic development. With economic development opportunities being limited and the competition for each development fierce, the rider allows for infrastructure to be expanded or enhanced to respond quickly and equitably to economic development that will benefit all of the consumers.

Q. CAN YOU EXPLAIN HOW TAWC HAS UTILIZED THE EDI RIDER SINCE ITS APPROVAL IN TRA DOCKET NO. 13-00130?

A. Yes, TAWC utilized the EDI rider strategically on several projects in 2015. These projects have been coordinated with the City of Chattanooga, the City of Red Bank, the City of East Ridge and the communities' economic development resources. This rider has been very helpful to the areas' economic development activities. I have attached the letters supporting these opportunities to my testimony in **Petitioner's Collective Exhibit II 2016 EDI Letters – BEO.**

Q. GENERALLY, HOW DOES THE EDI RIDER SUPPORT ECONOMIC DEVELOPMENT?

A. The EDI rider supports economic development through close working relationships and cooperation between TAWC, local community leaders, and local developers. This communication is critical in creating strategies that successfully take advantage of opportunities for substantive growth. While local communities have traditionally promoted economic development to local, and external, developers, the EDI now

1 provides a tool for community water and wastewater systems to assist in and support
2 these potential opportunities. This has been very successful in the TAWC service
3 territory to date, attracting business expansion, redevelopment of struggling areas, and
4 attracting new businesses, along with the accompanying jobs.

5 **Q. WHAT WILL BE THE TOTAL INVESTMENT MADE BY TAWC UNDER THE**
6 **EDI RIDER DURING THE JANUARY 1, 2016 TO DECEMBER 31, 2016**
7 **INVESTMENT PERIOD?**

8 A. TAWC will invest \$270,000 under the EDI rider in 2016.

9 **Q. WHAT ARE THE BUDGET LINES THAT ARE INCLUDED UNDER THE**
10 **ECONOMIC DEVELOPMENT INVESTMENT PROGRAM?**

11 A. The budget lines that are included in the Economic Development Investment Program are
12 Line A - Mains New and Line E - Hydrants and Valves New. These budget lines support
13 the economic development of the area and places the distribution system in a position to
14 support new development within the service area.

15 **Q. WHAT WORK IS ASSOCIATED WITH MAINS NEW - LINE A AND WHY IS**
16 **THIS APPROPRIATE FOR THE EDI?**

17 A. This line item includes new water mains, valves, and other appurtenances that are
18 necessary to perform the work that assist with the economic growth of the community.
19 This work includes the installation of new infrastructure to expand or extend the
20 distribution system that supports economic growth in the community and is appropriate to
21 be included within the EDI.

1 **Q. WHAT OTHER WORK IS ASSOCIATED WITH MAIN NEW – LINE A AND**
2 **WHY IS THIS ADDITIONAL WORK APPROPRIATE FOR THE EDI?**

3 A. In addition to the extension or expansion of the distribution system to assist with an
4 economic development project, Line A work can also be related to the extension or
5 expansion of new mains that position the distribution system to be able to support future
6 growth of the community. In addition, Line A work includes new mains that eliminate
7 existing dead ends, provide new transmission capacity, provide reliability, or establish an
8 additional pressure gradient. This work is considered appropriate for the EDI Rider
9 because it enhances the distribution system and allows it to respond quickly to future
10 growth of the community. These types of investments that occur due to proactive
11 management of the distribution system allow the Company to promote future growth
12 rather than on a reactive basis as the need arise. These improvements will position the
13 community as able to accommodate future growth and achieve direct Customer benefits
14 in the form of an improved distribution system.

15 **Q. WHAT IS THE PROPOSED INVESTMENT ANTICIPATED FOR NEW WATER**
16 **MAIN ASSOCIATED WITH LINE A.**

17 TAWC plans to spend approximately \$220,000 on various size water mains within the
18 distribution system that are associated with eliminating dead ends or positioning the
19 distribution system for future development. At this time the company has identified a
20 new main project to install approximately 2,000 lineal feet of 12-inch main along Camp
21 Jordan Parkway at an estimated cost of \$110,000. This new main will support the 50-
22 acre development that encompasses the Bass Pro Shops Project. At this time, the

1 remaining \$110,000 will include the Pratt Storage project, for which the estimate has not
2 been finalized, and any remaining project that may come up during the year.

3 **Q. CAN YOU ELABORATE ON THE BASS PRO SHOPS PROJECT THAT YOU**
4 **MENTIONED?**

5 **A.** Yes. The Bass Pro Shops Project is one example of how one redevelopment has spurred
6 the opportunity for additional growth, including plans for several hotels and restaurants to
7 be built in the area of East Ridge. Based on the developer plans, these investments will
8 bring a host of jobs and additional tax revenue flow to an area of southeastern Tennessee
9 that was struggling just a few years ago.

10 It my understanding that the Bass Pro Shops Project site in the City of East Ridge will
11 have approximately 80,000 square feet of retail space, which would be very similar to the
12 Sevier County Bass Pro Shops site on I-40 East near Knoxville. The Bass Pro Shops site
13 in Sevier County, Tennessee employs 265 people and generates \$108,376 in tax revenue
14 **(Petitioner's Collective Exhibit II 2016 EDI Letters – BEO)**. According to the
15 developers, the East Ridge Bass Pro Shops Project is projected to employ an estimated
16 225-240 full and part-time employees. It will also generate a new revenue stream in
17 taxes and has been, at least in part, responsible for a tremendous amount of growth to that
18 area.

19 As I noted earlier, the overall development project will consist of 50-acres, including the
20 Bass Pro Shops Project, as well as proposed restaurants and hotels. The overall
21 development will represent a capital investment of \$100 million that will attract many
22 shoppers to the Chattanooga region. Projections are that this 50-acre development in the
23 City of East Ridge, including the Bass Pro Shops Project, will bring an estimated \$1.6-

1 \$2.7 million in tax revenue to the County (**Petitioner's Collective Exhibit II 2016 EDI**
2 **Letters – BEO**). According to local officials, this represents the largest development in
3 the East Ridge area in decades.

4 **Q. ARE THERE OTHER SUCH ECONOMIC DEVELOPMENT PROJECTS THAT**
5 **THE COMPANY HAS IDENTIFIED?**

6 A. Yes. Another example is the Pratt & Associates Climate Controlled Storage Project. The
7 developers and the Town of Red Bank are estimating the creation of about 50 new jobs
8 associated with this overall development project (**Petitioner's Collective Exhibit II 2016**
9 **EDI Letters – BEO**). Pratt & Associates is redeveloping an important area in the Town
10 of Red Bank that was previously abandoned. The improvement of water service to the
11 area will lead to increased fire protection and more jobs. The Climate Controlled Storage
12 Project is the first phase of a further planned development. These two projects — the
13 Bass Pro Shops Project and the Pratt & Associates Climate Controlled Storage Project —
14 are proof of the need for, and the success of, the EDI rider.

15 **Q. SO, THE EDI RIDER HAS ASSISTED IN THE IMPROVEMENT OF**
16 **INFRASTRUCTURE THAT HAS SUPPORTED ECONOMIC DEVELOPMENT?**

17 A. Yes. As proposed in our 2015 capital riders petition, which was approved by the
18 Authority, the EDI rider has provided the essential infrastructure for the new Coca Cola
19 facility in Chattanooga. This project consisted of the construction of a 290,000 square
20 foot facility that brought over 40 new jobs to the Chattanooga area. That project also
21 improved the flows in that area, which also improves water quality by moving more
22 water through the area and improving circulation in the distribution system.

1 The same is true for the two new projects that I outlined above, the Bass Pro Shops
2 Project and the Pratt & Associates Climate Controlled Storage Project. The flows will be
3 improved, benefiting all in the area, along with larger mains and better water quality.

4 **Q. WHAT WORK IS ASSOCIATED WITH NEW HYDRANTS AND VALVES -**
5 **LINE E AND WHY IS THIS APPROPRIATE FOR THE EDI?**

6 This investment plan item includes the installation of new hydrants, including hydrant
7 assemblies and valves that are installed on existing mains or installed in conjunction with
8 main extension projects, which are Company funded. This item generally includes all
9 public hydrants. This work is associated with the installation of new infrastructure to
10 foster economic development by providing new fire protection or enhancing fire
11 protection in currently served areas. Improved infrastructure in existing older service
12 areas, including fire protection, is a key to redevelopment in economic growth and is
13 appropriate to be included within the EDI.

14 **Q. WHAT IS THE PROPOSED SCHEDULE FOR NEW HYDRANTS AND**
15 **VALVES?**

16 A. TAWC plans to spend approximately \$50,000 on a combination of 23 new hydrants and
17 valves. This is similar to the budgeted spend during 2015 of \$48,000, and similar to the
18 two year average of \$49,000 experienced between 2013 and 2014. TAWC believes that
19 with the improving economic health of the communities served that the level of
20 investment will increase to serve the growing economic development.

SAFETY AND ENVIRONMENTAL COMPLIANCE RIDER

Q. WHAT IS THE SAFETY AND ENVIRONMENTAL COMPLIANCE RIDER?

A. In addition to the need for capital investment for replacement of aging infrastructure, and the need for investment in infrastructure for economic development, water and wastewater utilities are continually faced with the additional infrastructure investment requirements to meet safety and environmental compliance mandates from state and federal government. The United States Environmental Protection Agency (USEPA) is continually increasing water quality standards for potable drinking water and discharge requirements for wastewater facilities. Other regulatory agencies from time to time change safety and environmental compliance requirements that lead to the need for further infrastructure investment. TAWC believes that environmental compliance investments are specifically related to the safety of the drinking water and in the public interest.

Q. WHAT ARE THE BUDGET LINES THAT ARE INCLUDED UNDER THE SAFETY AND ENVIRONMENTAL COMPLIANCE PROGRAM RIDER?

A. The budget lines that are included in the Safety and Environmental Compliance Program Rider are Line L - SCADA Equipment and Systems, Line M - Security Equipment and Systems and Line Q - Process Plant Facilities and Equipment. These budget lines support the improvement of safety and enhance the environmental compliance of the system.

Q. WHAT WORK IS ASSOCIATED WITH SCADA EQUIPMENT AND SYSTEMS - LINE L AND HOW IS IT RELATED TO THE SEC?

1 A. This investment item is for the installation or replacement of existing SCADA Equipment
2 and Systems. The acronym SCADA can be defined in several slightly different ways.
3 But, TAWC generally prefers the definition as System Control and Data Acquisition,
4 which is the computerized system for monitoring and operating the treatment plants and
5 network facilities. By making investment in the monitoring and control system for the
6 treatment plants and the network facilities, TAWC is able to ensure that the operation of
7 the system is meeting the USEPA and Tennessee environmental requirements and
8 meeting the Homeland Security Directive 9 to *“develop robust, comprehensive, and fully*
9 *coordinated surveillance and monitoring systems.”* TWAC believes this type of invest to
10 ensure proper monitoring and operation of the system is appropriate to be included in the
11 SEC.

12 **Q. WHAT IS THE PROPOSED INVESTMENT ANTICIPATED TO SCADA**
13 **ASSOCIATED WITH LINE L?**

14 A. TAWC plans to spend approximately \$260,000 on various SCADA improvements
15 throughout the system. A majority of the spending will be associated with the
16 replacement of Remote Terminal Units (“RTUs”) for various booster stations within the
17 distribution system. A RTU is a microprocessor-controlled electronic device that
18 provides an interface between the physical objects in the pump station and the SCADA
19 (supervisory control and data acquisition) system. The interface allows the pump station
20 to be controlled by the SCADA master supervisory system used by the operators. This
21 improvement is approximately \$225,000 of the total expected spend for this line.

22 **Q. WHAT WORK IS ASSOCIATED WITH SECURITY EQUIPMENT AND**
23 **SYSTEMS - LINE M AND HOW IS IT RELATED TO THE SEC?**

1 A. This investment item is a division for Security Equipment and Systems that is separate
2 from generally office and Operation Center expenses. This may include fencing, alarm
3 systems, cameras, barricades, electronic detection or locking systems, software, or other
4 assets related directly to security. These improvements allow TAWC to maintain its
5 security system and follow the Homeland Security Directive 9 to “*develop robust,*
6 *comprehensive, and fully coordinated surveillance and monitoring systems.*” TAWC
7 believes it is paramount to ensure that its facilities are monitored actively and these
8 improvements will maintain the equipment and ensure current technology is employed to
9 provide safe drinking water and protect its infrastructure and are appropriate to be
10 included in the SEC Rider.

11 **Q. WHAT IS THE PROPOSED SCHEDULE FOR SECURITY EQUIPMENT AND**
12 **SYSTEMS?**

13 A. TAWC plans to spend approximately \$200,000 on a combination of upgrades to existing
14 security systems to improve the security of the existing facilities. The proposed spend in
15 2016 similar to the planned spend in 2015 of \$190,000. TAWC believes this level of
16 spend on the installation and enhancement of the facility security systems will ensure a
17 minimum level of health and safety risk reduction for the Company’s employees.

18 **Q. WHAT WORK IS ASSOCIATED WITH PROCESS PLANT FACILITIES AND**
19 **EQUIPMENT – LINE Q AND HOW IS IT RELATED TO THE SEC?**

20 A. This investment line item is for the new purchase or replacement of existing components
21 of water supply, water treatment, water pumping, water storage, and water pressure
22 regulation facilities, including associated building components and equipment.
23 Replacements may be planned or made because of failure, or may include improvements.

1 Through the investment in the improvements associated with this spending line, TAWC
2 able to ensure compliance with federal and state safety and environmental compliance
3 requirements that will ensure safe drinking water. By ensuring compliance with federal
4 and state requirements these investments are appropriate to be included in the SEC Rider.

5 **Q. WHAT IS THE PROPOSED SCHEDULE FOR PROCESS PLANT FACILITIES**
6 **AND EQUIPMENT IMPROVEMENTS WITHIN LINE Q?**

7 A. TAWC plans to spend approximately \$955,000 within the Process Plant Facilities and
8 Equipment Improvements within Line Q. This level of investment is a decrease in Line
9 Q compared with the average spending of \$1,306,011 over the period of 2010 to 2014.
10 The decrease in the investment level is based on the impact of resources due to two large
11 improvement projects taking place at the Citico Water Treatment Plant. In addition, the
12 Company has completed the replacement of all of the conventional filter under-drain
13 systems to ensure continued environmental compliance that was a significant driver over
14 the past few years. A portion of the investment in the Q line is a \$350,000 investment for
15 the Citico High Service Bypass Project that will ensure reliability of the Citico Water
16 Treatment Plant. TAWC will replace a chemical feed vault within the Citico facility at
17 an approximate cost of \$200,000 to address safety concerns and ensure continued
18 environmental compliance at the facility. Other work, such as replacement of the caustic
19 soda day tank, work regarding the high service pump #12, and other improvements at the
20 Citico facility are expected to be completed during this period as well.

21 **Q. BESIDES THE REPLACEMENT OF PROCESS PLANT FACILITIES AND**
22 **EQUIPMENT DUE TO A FACILITY OR PIECE OF EQUIPEMENT BEING AT**

1 **THE END OF ITS USEFUL LIFE, WHAT BENEFIT DOES WORK**
2 **PERFORMED UNDER LINE Q PROVIDES?**

3 A. A majority of the work performed by TAWC within Line Q is the replacement of older
4 equipment with new equipment that is far more efficient than the original equipment.
5 This allows TAWC to produce water more efficiently and use less electricity and allows
6 for the Company to take a leadership role in reducing its carbon footprint. TAWC has
7 elected to include both replacement and new items in this line specifically that are
8 critically necessary to continue to meet water quality regulations.

9 **Q. ARE THE QIIP RIDER, THE EDI RIDER AND THE SEC RIDER STILL IN THE**
10 **PUBLIC INTEREST?**

11 Yes. The QIIP, the EDI and the SEC riders are mutually beneficial to the
12 ratepayers, the public, and TAWC. Among other things, the capital riders support the
13 maintenance and improvement of essential infrastructure, support opportunities for
14 successful economic development, growth and job creation, ensure safety and reliability,
15 allow for more efficient, streamlined regulation, and reduce the need for general rate
16 cases which lessen the occurrence of consumer “rate shock.”. The ratepayers and the
17 public benefit from timely capital investment in infrastructure that allows TAWC to
18 address its infrastructure that in most cases is between 50 and 100 years old. TAWC’s
19 continued timely investment in replacing its infrastructure allows the Company to meet
20 its obligation of providing safe, reliable drinking water to its customers, coupled with the
21 related support to economic development, growth and job creation. The Company
22 benefits from a more efficient, streamlined regulatory process that presents TAWC with
23 the opportunity to timely recover its expenses and earn a fair rate of return on its

1 investments. The investments associated with the QIIP, the EDI and the SEC riders, has
2 allowed TAWC to address infrastructure replacement needs, meet environmental
3 compliance needs, and partner with the community to promote economic development,
4 which we believe to in the public interest

5 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

6 **A. Yes.**

STRATEGIC CAPITAL EXPENDITURE PLAN
PROGRAM

Business Unit Tennessee
Revision Date May 21, 2015
Description TN BP 2016-2020 SCEP

			Year: 2016					
Business Unit	Business Unit No.	Project Title	1	2	3	4	5	6
RECURRING PROJECTS								
Tennessee	DV	Projects Funded by Others	\$ 5,000	\$ 5,000	\$ 30,000	\$ 70,000	\$ 150,000	\$ 100,000
Tennessee	A	Mains - New	-	-	-	10,000	30,000	40,000
Tennessee	B	Mains - Replaced / Restored	-	-	50,000	100,000	150,000	175,000
Tennessee	C	Mains - Unscheduled	65,000	60,000	90,000	35,000	40,000	70,000
Tennessee	D	Mains - Relocated	-	-	30,000	40,000	100,000	50,000
Tennessee	E	Hydrants, Valves, and Manholes - New	-	2,000	5,000	3,000	5,000	4,000
Tennessee	F	Hydrants, Valves, and Manholes - Replaced	-	-	5,000	15,000	20,000	30,000
Tennessee	G	Services and Laterals - New	25,000	30,000	36,000	50,000	56,000	65,000
Tennessee	H	Services and Laterals - Replaced	-	10,000	20,000	18,000	25,000	35,000
Tennessee	I	Meters - New	-	10,000	15,000	22,000	22,000	32,000
Tennessee	J	Meters - Replaced	50,000	35,000	60,000	55,000	35,000	35,000
Tennessee	K	ITS Equipment and Systems	31,446	45,747	68,246	142,076	65,518	80,102
Tennessee	L	SCADA Equipment and Systems	-	-	-	-	35,000	100,000
Tennessee	M	Security Equipment and Systems	-	-	10,000	10,000	20,000	45,000
Tennessee	N	Offices and Operations Centers	-	-	-	40,000	-	-
Tennessee	O	Vehicles	-	-	-	-	83,250	83,250
Tennessee	P	Tools and Equipment	5,000	5,000	5,000	10,000	5,000	10,000
Tennessee	Q	Process Plant Facilities and Equipment	-	80,000	100,000	150,000	160,000	90,000
Tennessee	R	Capitalized Tank Rehabilitation/Painting	-	-	-	-	-	-
Tennessee	S	Engineering Studies	-	-	-	-	-	-
Total Recurring Projects			\$ 176,446	\$ 277,747	\$ 494,246	\$ 700,076	\$ 851,768	\$ 944,352
ACQUISITIONS								
Tennessee		Total Acquisitions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CENTRALLY SPONSORED PROJECTS								
Tennessee	T26-0202	Business Transformation 2010 - 2014						
Tennessee	T26-0203	Business Transformation 2010 - 2014						
Total Centrally Sponsored Projects			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
INVESTMENT PROJECTS								
		Total						
Tennessee	I26-020017	Electrical Motor Efficiency Enhancement	2,900,000					
Tennessee	I26-020027	Construct 1.0MG Tank & 2500-16" ER	3,500,000					
Tennessee	I26-020028	Citico Plant Improvements Phase 1B	6,649,997					
Tennessee	I26-020032	Wastewater Treatm't & Handling Impr	-					
Tennessee	I26-020034	3000'-24" Tennessee River Crossing						
Tennessee	I26-020038	Retire Basin 1	300,000					
Tennessee	I26-020039	Basin 2 Tube Settlers	3,500,000					
Tennessee	I26-020040	Chlorine Gas Conversion	4,500,000					
Tennessee	I26-000002	Post Acquisition BD Capex	120,000					
Total Investment Projects			\$ 1,605,850	\$ 1,554,821	\$ 1,527,550	\$ 751,377	\$ 1,032,489	\$ 82,986
Total Investment and Centrally Sponsored Projects			\$ 1,605,850	\$ 1,554,821	\$ 1,527,550	\$ 751,377	\$ 1,032,489	\$ 82,986
Contributions			\$ (20,000)	\$ (20,000)	\$ (20,000)	\$ (20,000)	\$ (20,000)	\$ (20,000)
Advances			(58,333)	(58,333)	(58,333)	(58,333)	(58,333)	(58,333)
Total Refunds			29,167	29,167	29,167	29,167	29,167	29,167
Gross minus BT			\$ 1,787,296	\$ 1,837,568	\$ 2,051,796	\$ 1,521,454	\$ 2,034,257	\$ 1,127,338
Net minus BT			\$ 1,738,130	\$ 1,788,401	\$ 2,002,630	\$ 1,472,287	\$ 1,985,090	\$ 1,078,171
Gross plus BT			\$ 1,787,296	\$ 1,837,568	\$ 2,051,796	\$ 1,521,454	\$ 2,034,257	\$ 1,127,338
Net plus BT			\$ 1,738,130	\$ 1,788,401	\$ 2,002,630	\$ 1,472,287	\$ 1,985,090	\$ 1,078,171

STRATEGIC CAPITAL EXPENDITURE PLAN
PROGRAM

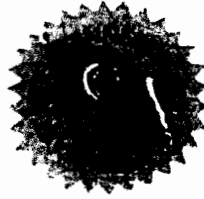
Business Unit Tennessee
Revision Date May 21, 2015
Description TN BP 2016-2020 SCEP

										U.S. \$		
Business Unit	Business Unit No.	Project Title	7	8	9	10	11	12	Total	2016	Surcharge Category	
RECURRING PROJECTS												
Tennessee	DV	Projects Funded by Others	\$ 55,000	\$ 55,000	\$ 50,000	\$ 60,000	\$ 120,000	\$ 100,000	\$ 800,000			
Tennessee	A	Mains - New	50,000	40,000	30,000	20,000	-	-	220,000		EDI	
Tennessee	B	Mains - Replaced / Restored	155,000	130,000	50,000	20,500	-	-	830,500		QIIP	
Tennessee	C	Mains - Unscheduled	70,000	100,000	95,000	95,000	80,000	120,000	920,000		QIIP	
Tennessee	D	Mains - Relocated	30,000	-	-	-	-	-	250,000		QIIP	
Tennessee	E	Hydrants, Valves, and Manholes - New	5,000	8,500	8,500	6,000	3,000	-	50,000		EDI	
Tennessee	F	Hydrants, Valves, and Manholes - Replaced	30,000	60,000	30,000	50,000	20,000	10,000	270,000		QIIP	
Tennessee	G	Services and Laterals - New	55,000	56,000	46,000	41,000	35,000	26,800	521,800			
Tennessee	H	Services and Laterals - Replaced	33,000	23,000	21,000	25,000	20,000	20,000	250,000		QIIP	
Tennessee	I	Meters - New	31,400	20,000	15,000	15,000	10,000	2,500	194,900			
Tennessee	J	Meters - Replaced	75,000	73,930	80,000	120,000	85,000	50,000	753,930		QIIP	
Tennessee	K	ITS Equipment and Systems	153,588	95,843	102,398	86,528	92,404	74,728	1,038,624			
Tennessee	L	SCADA Equipment and Systems	125,000	-	-	-	-	-	260,000		SEC	
Tennessee	M	Security Equipment and Systems	10,000	20,000	20,000	25,000	20,000	20,000	200,000		SEC	
Tennessee	N	Offices and Operations Centers	-	-	-	-	-	-	40,000			
Tennessee	O	Vehicles	83,250	83,250	-	-	-	-	333,000			
Tennessee	P	Tools and Equipment	5,000	6,000	1,000	4,000	2,000	2,000	60,000			
Tennessee	Q	Process Plant Facilities and Equipment	60,000	80,000	100,000	100,000	55,000	-	975,000		SEC	
Tennessee	R	Capitalized Tank Rehabilitation/Painting	-	-	-	-	-	-	-		QIIP	
Tennessee	S	Engineering Studies	-	-	-	-	-	-	-			
Total Recurring Projects			\$ 971,238	\$ 796,523	\$ 598,898	\$ 608,028	\$ 422,404	\$ 326,028	\$ 7,167,754			
ACQUISITIONS												
Tennessee		Total Acquisitions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
CENTRALLY SPONSORED PROJECTS												
Tennessee	T26-0202	Business Transformation 2010 - 2014					\$ -	\$ -	\$ -			
Tennessee	T26-0203	Business Transformation 2010 - 2014										
Total Centrally Sponsored Projects			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
INVESTMENT PROJECTS												
Tennessee	I26-020017	Electrical Motor Efficiency Enhancement							\$ -		SEC	
Tennessee	I26-020027	Construct 1.0MG Tank & 2500-16" ER							-		EDI	
Tennessee	I26-020028	Citico Plant Improvements Phase 1B	68,477	26,446					6,649,997		QIIP	
Tennessee	I26-020032	Wastewater Treatm't & Handling Impr							-		SEC	
Tennessee	I26-020034	3000'-24" Tennessee River Crossing							-		EDI	
Tennessee	I26-020038	Retire Basin 1			50,000	100,000	100,000	50,000	300,000		SEC	
Tennessee	I26-020039	Basin 2 Tube Settlers							-		SEC	
Tennessee	I26-020040	Chlorine Gas Conversion							-		SEC	
Tennessee	I26-000002	Post Acquisition BD Capex			20,000	20,000	20,000		60,000			
									-			
Total Investment Projects			\$ 68,477	\$ 26,446	\$ 70,000	\$ 120,000	\$ 120,000	\$ 50,000	\$ 7,009,997			
Total Investment and Centrally Sponsored Projects			\$ 68,477	\$ 26,446	\$ 70,000	\$ 120,000	\$ 120,000	\$ 50,000	\$ 7,009,997			
Contributions			\$ (20,000)	\$ (20,000)	\$ (20,000)	\$ (20,000)	\$ (20,000)	\$ (20,000)	\$ (240,000)			
Advances			(58,333)	(58,333)	(58,333)	(58,333)	(58,333)	(58,333)	(700,000)			
Total Refunds			29,167	29,167	29,167	29,167	29,167	29,167	350,000			
									-			
Gross minus BT			\$ 1,094,715	\$ 877,969	\$ 718,898	\$ 788,028	\$ 662,404	\$ 476,028	\$ 14,977,751			
			(49,167)	(49,167)	(49,167)	(49,167)	(49,167)	(49,167)	(590,000)			
Net minus BT			\$ 1,045,549	\$ 828,802	\$ 669,731	\$ 738,861	\$ 613,237	\$ 426,861	\$ 14,387,751			
									-			
Gross plus BT			\$ 1,094,715	\$ 877,969	\$ 718,898	\$ 788,028	\$ 662,404	\$ 476,028	\$ 14,977,751			
			(49,167)	(49,167)	(49,167)	(49,167)	(49,167)	(49,167)	(590,000)			
Net plus BT			\$ 1,045,549	\$ 828,802	\$ 669,731	\$ 738,861	\$ 613,237	\$ 426,861	\$ 14,387,751			

Brent Lambert
Mayor

Denny Manning
Councilmember

Jacky Cagle
Councilmember



Marc Gravitt
Vice Mayor

Larry Sewell
Councilmember

Michael Williams
Interim City Manager

City of East Ridge

*1517 Tombras Avenue
East Ridge, Tennessee 37412*

July 30, 2015

Mr. Deron Allen
President, Tennessee American Water
109 Wiehl St.
Chattanooga, TN 37403

Dear Mr. Allen,

The City of East Ridge is excited to welcome outdoor retailer Bass Pro Shops to southeast Tennessee. We are always pleased to see economic development taking place in our city, but when it's a company with the superior reputation and potential impact of Bass Pro Shops it is especially significant.

The Jordan Crossing development, where Bass Pro Shops will be the anchor retailer, is a 50-acre project proposed to consist of retail, restaurants and hotels. This development would not be possible without water main infrastructure. Therefore, the City is requesting that Tennessee American, under the Economic Development Incentive riders of the Qualified Infrastructure investment Program, install water infrastructure to the Jordan Crossing development. Tennessee American Water's estimated investment of \$115,000 in 1960 ft. of water main infrastructure not only allows Bass Pro Shops and other retailers to become a reality, but will lead to future growth for the region.

We appreciate Tennessee American Water's investment in the East Ridge community. This investment will help spur extra sales and property taxes generated by this development. The city of East Ridge tax collections are expected to increase by more than 50 percent once the new facilities are built and opened in the next couple of years. Early projections estimate that East Ridge alone will benefit anywhere from \$1.6 - \$2.7 million in sales tax revenue. Therefore, Tennessee American Water's vital role in the revitalization of this part of our city is paramount.

Sincerely,

A handwritten signature in black ink, appearing to read "Brent Lambert", is written over a horizontal line.

Mayor Brent Lambert
City of East Ridge

Enclosures

cc: Michael Williams, Interim City Manager



City of Red Bank

3117 Dayton Boulevard
Chattanooga, TN 37415
423.877.1103
www.redbanktn.gov

July 31, 2015

Mr. Deron Allen
President, Tennessee American Water
109 Wiehl St.
Chattanooga, Tn. 37403

RE: Water Main Extension on the South end of Red Bank

Dear Mr. Allen:

As Mayor of Red Bank, I feel one of my responsibilities is to always help promote economic growth of the Red Bank commercial area.

On the South end of Red Bank we have discovered we only have a 2" main serving that area. That is not enough water volume to service the business in that area with adequate fire protection.

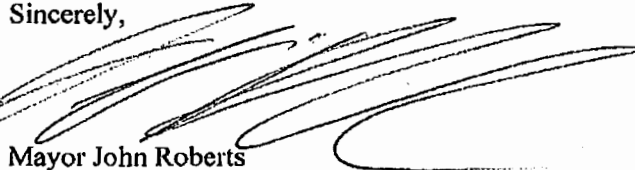
In 2014, someone purchased the old Stovall Lawn Mower building and did a great job of remodeling that property. It now serves as a beautiful entrance to our city from the South. There have been two other properties purchased in that same area. It is my understanding that both parcels have re-development plans in the near future.

It is also, my understanding, that the property that they remodeled presently has inadequate fire service and additional fire service will be needed for any future development in this area. The owner of the remodeled building is now employing 25-30 people at that location and prior to the re-development of that building; the employment in that area was zero. The future developments to the north and south of this remodeled building could employ up to an additional 25-30 people, assuming this fire protection issue can be solved.

As Mayor of Red Bank, it is our request that through its economic development program, Tennessee American Water fund this much needed water line and fire hydrant extension program.

I very much look forward to working together with Tennessee American Water to help the businesses in the Red Bank area continue to grow.

Sincerely,



Mayor John Roberts

John Roberts
Mayor

Eddie Pierce
Vice-Mayor

Rick Causer
Commissioner

Ed LeCompte
Commissioner

Terry Pope
Commissioner

Randall G. Smith
City Manager



HAMILTON COUNTY, TENNESSEE

OFFICE OF THE COUNTY MAYOR

JIM M. COPPINGER

August 20, 2015

Mr. Deron Allen
President, Tennessee American Water
109 Wiehl St.
Chattanooga, TN 37403

Dear Mr. Allen.

Hamilton County Government recognizes the importance of infrastructure investment in economic development projects throughout the county. Viable water infrastructure assistance helps attract businesses by supplying a crucial need to developments and as a result boost the economy. Tennessee American Water Company's installation of water infrastructure at the Jordan Crossing development, which will be home to a new 85,000 square foot Bass Pro Shops Outpost store, not only allows the development to come to fruition, but benefits the City of East Ridge and Hamilton County as a whole.

This retail development is a tremendous positive for Hamilton County, and will be the largest development to take place in the East Ridge area in decades. The investment of water infrastructure by Tennessee American is a great partnership between business and community. This investment will be advantageous to Hamilton County in numerous ways both now and for many years to come.

Sincerely,

A handwritten signature in black ink that reads "Jim M. Coppinger". The signature is written in a cursive style.

Jim M. Coppinger
County Mayor



Mr. Deron Allen
President, Tennessee American Water
109 Wiehl Street
Chattanooga, Tn. 37403

October 19, 2015

Ref: Community Development

Dear Mr. Allen:

Over the last two and a half years we have bought several parcels of property on the South end of Dayton Blvd. The property consist of all the property from 1724 to 1738 Dayton Blvd. This property is located on the east side of Dayton Blvd just as you come off the off ramp from 27 North coming into Red Bank going North. In other words, it is the "Gateway into Red Bank". The Village Green Apartments are directly across the street from our property.

This property consisted of an abandoned service station, an abandoned 12,000 square foot warehouse, and two other abandoned buildings that have been vacant for several years. In other words, this property leading into Red Bank was neglected and unsightly and had been for several years.

We have since refurbished the old Snapper Lawn Mower building and made it our corporate offices and we employee about 35 people. After getting the building completed and now looking at refurbishing the 12,000 square foot building to our south, we have come to realize there is only a 4" water line serving all of this property. The closest fire hydrant is at the corner of Spring and Dayton Blvd., therefore these plans cannot be completed without the extension of the larger water main and additional fire hydrants.

Our long term plans are to develop the property to our south into climate controlled storage and the property to our north, to some type upscale commercial rental space. The storage facility will not employee many people, but the commercial space will provide for appx. 25 - 30 parking spaces, so we anticipate that property employing 25- 30 people. When you put all the properties together we think the net result of this will be that appx 50 people will be employed as a result of this revitalization of these parcels of property.

It is our request that Tennessee American Water, through its economic development assistance program, fund this water line extension and fire hydrant additions.

We are thanking you in advance for your assistance in this matter.

A handwritten signature in black ink, appearing to read "James E. Pratt, Jr.", with a long horizontal flourish extending to the right.

James E. Pratt, Jr.
CFO - Pratt & Associates, LLC.

Mr. Deron Allen
President, Tennessee American Water
109 Wiehl St.
Chattanooga, Tn. 37403

RE: Extension of water main on Dayton Blvd to provide better fire service

Dear Mr. Allen:

As President of the Red Bank Council of the Chattanooga Area Chamber of Commerce, one of our goals is to help promote economic growth and re-development of commercial areas in the Red Bank, Tennessee area. It is my understanding that at the present time there is inadequate water supply on the north end of Red Bank for adequate fire protection in that area.

In 2014, Pratt & Associates purchased the old Stovall Lawn Mower building and did a wonderful job of remodeling that building. The building was dilapidated and an eye sore at the entrance of Red Bank. Since they purchased that building they have purchased two other properties. One is just north of the Stovall Building and the other is just south, and Pratt intends to redevelop both buildings.

It is my understanding that the property they remodeled has inadequate fire service and additional fire service will be needed for any future development in this area. They have taken a dilapidated building and turned it into a beautiful commercial building, now employing more than 25 people. The future developments to the north and south of this remodeled building could employ up to an additional 25 - 30 people, assuming this fire protection issue is resolved.

It is our request that Tennessee American Water, through its economic development assistance program, fund this water line and fire hydrant extension.

We look forward to working together with Tennessee American Water to help the businesses in the Red Bank continue to grow and thrive.

We are thanking you in advance,


Pete Phillips



August 5, 2015

Mr. Deron Allen
President, Tennessee American Water
109 Wiehl St.
Chattanooga, TN 37403

Re: Improvements to Water Service at Camp Jordan Parkway

Mr. Allen,

Wolftever Development formally requests Tennessee American Water to install the necessary water infrastructure for the Jordan Crossing/Bass Pro Shops development on Camp Jordan Parkway in East Ridge, Tennessee. The 50-acre development is a capital investment in excess of \$75 million and will annually attract masses of people to the Chattanooga region as it is set to house retail shops, restaurants and hotels all while positioned at the entrance to one of the largest recreation parks in Tennessee. All such businesses cannot function without water.

With the logistics of a project of this magnitude, not having to worry about handling the water infrastructure on our own and relying on Tennessee American's cadre of water professionals will help tremendously. This type of cooperation of utilities with developers is what makes, and will continue to attract, Tennessee a compelling place for new industry and economic development.

We look forward to working with Tennessee American Water on future projects.

Thank you,

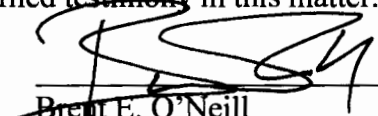
A handwritten signature in black ink, appearing to read 'John R. Healy'.

John R. Healy
Principal, Wolftever Development

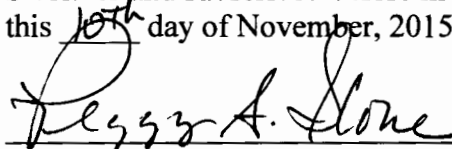
STATE OF Kentucky)
COUNTY OF Fayette)

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Brent E. O'Neill, being by me first duly sworn deposed and said that:

He is appearing as a witness on behalf of Tennessee-American Water Company before the Tennessee Regulatory Authority, and if present before the Authority and duly sworn, his testimony would be as set forth in his pre-filed testimony in this matter.


Brent E. O'Neill

Sworn to and subscribed before me
this 10th day of November, 2015.


Notary Public

My Commission Expires: 10/3/2016