

**BEFORE THE
PHILADELPHIA WATER, SEWER AND STORM WATER RATE BOARD**

**PHILADELPHIA WATER)
DEPARTMENT)** **FY 2019-2021 RATES**

**DIRECT TESTIMONY
OF
LAFAYETTE K. MORGAN, JR.**

ON BEHALF OF THE PUBLIC ADVOCATE

April 20, 2018

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION.....	1
II. SUMMARY AND RECOMMENDATIONS.....	5
Three-Year Rate Increase Plan.....	6
III. OVERVIEW OF TEST YEAR DATA CONSIDERATIONS.....	7
IV. ACCOUNTING PRACTICES OVERVIEW.....	9
V. HISTORICAL INACCURACY OF PWD RATE MODEL.....	11
VI. SPECIFIC ADJUSTMENTS BASED ON MY ANALYSES.....	15
O&M Expenses.....	15
Additional Staffing Operating Labor Expense.....	19
Collections Factors.....	20
Expense Escalation.....	21
Power Costs.....	22
Gas Costs.....	23
General Costs and Other Class 200 Expenses.....	24
Chemical Costs.....	25
Transfers.....	26
Debt Interest Rate.....	26
Debt Issuance Costs.....	27
Capital Program Actual to Budget Ratio.....	28
Capital Account Deposit Growth.....	29
Rate Case Expenses.....	30
Capacity to Pay Energy Costs.....	31
WRAP/TAP Implementation Costs.....	31
V. Development of Revenue Requirement.....	32
Residual Fund.....	36
Rate Stabilization Fund.....	37
Adequate Reserves.....	39

BEFORE THE
PHILADELPHIA WATER, SEWER AND STORM WATER RATE BOARD

PHILADELPHIA WATER) FY 2019 – 2021 RATES
DEPARTMENT)

Direct Testimony of Lafayette K. Morgan, Jr.

1 **I. INTRODUCTION**

2 Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS
3 ADDRESS?

4 A. My name is Lafayette K. Morgan, Jr. My business address is 10480 Little Patuxent
5 Parkway, Columbia, Maryland, 21044. I am a Public Utilities Consultant working
6 with Exeter Associates, Inc. Exeter is a firm of consulting economists specializing in
7 issues pertaining to public utilities.

8 Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
9 QUALIFICATIONS.

10 A. I received a Master of Business Administration degree from The George Washington
11 University. The major area of concentration for this degree was Finance. I received a
12 Bachelor of Business Administration degree with concentration in Accounting from
13 North Carolina Central University. I was previously a CPA licensed in the state of
14 North Carolina, but, in 2009, I elected to place my license in an inactive status as I
15 focused on start-up activities for other business interests.

16 Q. WOULD YOU PLEASE DESCRIBE YOUR PROFESSIONAL
17 EXPERIENCE?

18 A. From May 1984 until June 1990, I was employed by the North Carolina Utilities
19 Commission - Public Staff in Raleigh, North Carolina. I was responsible for

1 analyzing testimony, exhibits, and other data presented by parties before the North
2 Carolina Utilities Commission. I had the additional responsibility of performing the
3 examinations of books and records of utilities involved in rate proceedings and
4 summarizing the results into testimony and exhibits for presentation before that
5 Commission. I was also involved in numerous special projects, including
6 participating in compliance and prudence audits of a major utility and conducting
7 research on several issues affecting natural gas and electric utilities.

8 From June 1990 until July 1993, I was employed by Potomac Electric Power
9 Company (Pepco) in Washington, D.C. At Pepco, I was involved in the preparation
10 of the cost of service, rate base and ratemaking adjustments supporting the company's
11 requests for revenue increases in the State of Maryland and the District of Columbia.
12 I also conducted research on several issues affecting the electric utility industry for
13 presentation to management.

14 From July 1993 through 2010, I was employed by Exeter Associates, Inc. as a
15 Senior Regulatory Analyst. During that period, I was involved in the analysis of the
16 operations of public utilities, with particular emphasis on utility rate regulation. I
17 reviewed and analyzed utility rate filings, focusing primarily on revenue requirements
18 determination. This work involved natural gas, water, electric and telephone
19 companies.

20 In 2010, I left Exeter to focus on start-up activities for other business interests.
21 In late 2014, I returned to Exeter to continue to work in a similar capacity to my work
22 prior to my hiatus.

23 Q. HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY
24 PROCEEDINGS ON UTILITY RATES?

1 A. Yes. I have previously presented testimony and affidavits on numerous occasions
2 before the North Carolina Utilities Commission, the Pennsylvania Public Utility
3 Commission, the Virginia Corporation Commission, the Louisiana Public Service
4 Commission, the Georgia Public Service Commission, the Maine Public Utilities
5 Commission, the Kentucky Public Service Commission, the Public Utilities
6 Commission of Rhode Island, the Vermont Public Service Board, the Illinois
7 Commerce Commission, the West Virginia Public Service Commission, the
8 Maryland Public Service Commission, the Corporation Commission of Oklahoma
9 and the Federal Energy Regulatory Commission (FERC). In 2016, I testified before
10 the Philadelphia Water, Sewer and Storm Water Rate Board regarding the Water
11 Department's proposed rate increases for FY 2017 and FY 2018.

12 Q. ON WHOSE BEHALF ARE YOU APPEARING?

13 A. I am presenting testimony on behalf of the Public Advocate.

14 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS
15 PROCEEDING?

16 A. Exeter Associates has been retained by the Public Advocate to assist in the evaluation
17 of the Formal Notice of proposed increases in rates and charges submitted by
18 Philadelphia Water Department ("PWD" or "the Department"). In this testimony, I
19 present my findings on behalf of the Public Advocate regarding the overall revenue
20 increase PWD is requesting for its water and wastewater operations for its Rate
21 Period (Fiscal Years 2019, 2020 and 2021). My colleague, Mr. Jerome D. Mierzwa,
22 will present the Public Advocate's recommendations regarding rate design and class
23 cost of service issues. Also, Mr. Roger D. Colton addresses issues related to the
24 legality of shifting public fire protection costs to ratepayers, customer assistance
25 programs, and other issues on behalf of the Public Advocate.

1 Q. IN CONNECTION WITH THIS CASE, HAVE YOU PERFORMED AN
2 EXAMINATION AND REVIEW OF THE COMPANY'S TESTIMONY
3 AND EXHIBITS?

4 A. Yes. I have reviewed PWD's testimonies, exhibits and its rate filing, as well as its
5 responses to data requests.

6 Q. HAVE YOU PREPARED SCHEDULES TO ACCOMPANY YOUR
7 TESTIMONY?

8 A. Yes. I have prepared Schedules LKM-1 and LKM-2. Schedule LKM-1 presents the
9 projected revenues and the revenue requirement, and the covenants metrics. Schedule
10 LKM-2 provides a summary of the effects of the various adjustments to the
11 assumptions used by the Department to derive its requested revenue requirement.

12 Q. PLEASE EXPLAIN HOW YOUR TESTIMONY IS ORGANIZED.

13 A. First, I offer a summary of the rate relief PWD requests and a brief statement of my
14 conclusions. I then provide an overview of the test year data considerations relative
15 to PWD's proposed rate increase. I then briefly describe PWD's accounting
16 practices, and how they impact upon its rate request. My testimony then describes
17 how PWD's rate model has historically understated revenues and overstated expenses
18 and I provide conclusions based on that review. Next, I undertake a more technical
19 review of certain projections and assumptions included in PWD's filing, proposing
20 specific changes where appropriate. Finally, I discuss the development of the revenue
21 requirement, the basis upon which the revenue requirement is derived, and the
22 adequacy of the reserves maintained by PWD.

23

1 **II. SUMMARY AND RECOMMENDATIONS**

2 Q. PLEASE SUMMARIZE THE RATE RELIEF REQUESTED BY PWD IN
3 ITS FILING.

4 A. In this proceeding, PWD is requesting increases in rates for Fiscal Years 2019, 2020
5 and 2021. As shown on EXHIBIT BV-E1, Table C-1, attached to the Testimony of
6 Black & Veatch Corporation (Black & Veatch) which is labelled PWD St.9-A, the
7 Department is seeking a \$9.204 million, or 1.60 percent, rate increase in FY 2019, a
8 second increase in FY 2020 of \$26.133 million or 4.50 percent and a third increase of
9 \$27.107 million or 4.50 percent in FY 2021. The combined effect of the
10 Department's proposal is a total increase in revenues of \$116.4 million. The
11 Department proposes to put the increases in effect on September 1 of each fiscal year
12 beginning with FY 2019. In addition, the Department is projecting withdrawals
13 totaling \$43.7 million from the Rate Stabilization Fund during the 3-year period.
14 According to the Department, under its 3-year rate increase plan, water and
15 wastewater bills for the typical residential customer's monthly bill would increase in
16 FY 2019 from \$66.50 to \$67.24, for an increase of \$0.74 or about 1.1 percent. In FY
17 2020, the typical residential customer's bill will increase to \$70.60, for an increase of
18 \$3.36 or about 5.0 percent over FY 2019 rates. In FY 2021, the water bill will
19 increase to \$73.79, an increase of \$3.19 or about 4.5 percent over FY 2020 rates.
20 PWD St.-9A at 130.

21 Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

22 A. Based upon my review of the Department's filing, I recommend that the Board not
23 approve the three-year annual rate increase proposal sought by the Department.
24 Based on my analysis of the financial performance of PWD since the last rate
25 increase in 2016, and the current financial condition of PWD, I submit that PWD has

1 failed to demonstrate the necessity of a rate increase in FY 2019 or FY 2020. This
2 holds true under the assumptions PWD employs in its rate model, for two reasons: (1)
3 historically, PWD’s financial forecast has consistently overstated PWD’s actual
4 revenue requirements, and (2) under its own projections, PWD demonstrates no
5 necessity of a rate increase in FY 2019 and FY 2020, based on the adjustments we
6 propose and other reasonable assumptions. Additionally, based upon PWD’s history
7 of budgeting, FY 2021 is too far out into the future to reasonably rely on the
8 Department’s ability to forecast its costs and revenues. The Department’s cost of
9 service for that period is purely speculative, and violates well settled principles of rate
10 making, including that rates and charges must be based on known and measurable
11 revenue and expenses.

12 **Three-Year Rate Increase Plan**

13 Q. WHY ARE YOU RECOMMENDING THAT THE BOARD NOT
14 APPROVE THE THREE-YEAR RATE INCREASE PLAN?

15 A. The Department has chosen a three-year rate period (FY 2019-FY2021) for the rates
16 it requests to be approved in this proceeding. The reason that the Department
17 provides for the use of the three-year period is that the AWWA’s “Principles of Water
18 Rates, Fees, and Charges Manual of Water Supply M1” (the “AWWA Manual”)
19 acknowledges that government-owned utilities may use multi-year rate periods and
20 may phase in rates over the multi-year rate period. The Department also cites the cost
21 of rate case proceedings and administrative ease as reasons for proposing the three-
22 year rate plan.

23 However, I believe the three-year rate plan is not a reasonable approach to use
24 for determining PWD’s rates because, as I will explain later, PWD has demonstrated
25 an inability to accurately forecast its cost of service for ratemaking purposes. The

1 Department has consistently forecasted revenues on the low side and expenses on the
2 high side. A contributing factor to the inaccurate forecasts is PWD's lack of
3 adherence to accepted ratemaking practices or standards in developing its cost of
4 service. The consequence of this is that ratepayers pay rates that are higher than
5 needed, and those funds do not get refunded.

6 The nature of financial projections and forecasting is that the further out in
7 time one projects the less accurate the forecast. Given that PWD's forecast is
8 consistently inaccurate, the FY 2021 test year is too far out to be reliable for
9 ratemaking purposes. Therefore, if the Board finds that a rate increase is justified, I
10 recommend that the Board limit the rate increase to a two-year rate plan.

11 **III. OVERVIEW OF TEST YEAR DATA CONSIDERATIONS**

12 Q. HOW HAVE YOU APPROACHED REVIEWING PWD'S PROJECTED
13 REVENUE REQUIREMENTS IN THIS PROCEEDING?

14 A. The Department's projected revenue requirement for both water and wastewater
15 services is presented in the testimony provided by Black & Veatch. In Black &
16 Veatch's testimony on behalf of the Department, the witnesses state that the rates
17 proposed by the Department are based upon three successive test years which refers
18 to the fully forecasted fiscal years 2019, 2020 and 2021. PWD St.-9A at 10. I have
19 used the same projection period as PWD in determining the revenue requirements for
20 PWD's rate years. A fundamental difference is that I am recommending a two-year
21 rate period, FY 2019 and FY 2020, instead of the Department's three-year rate period
22 (FY 2019-FY 2021).

23 I have also relied upon Black & Veatch's proprietary computer financial
24 model which I have used for determining the Department's revenue requirement. I

1 have attempted to make the necessary changes to Black & Veatch's assumptions to
2 reflect the Public Advocate's recommended adjustments.

3 Based on our limited use of the model, we have assumed that the changes and
4 inputs we have made properly flowed through the model to produce our revenue
5 requirements recommendation. In an informal discovery conference held April 12,
6 we requested that Black & Veatch make modifications to reflect certain changed
7 assumptions in its proprietary rate model in order to verify their impact on the
8 revenue requirements. We were informed by PWD's counsel during that conference
9 that whether Black & Veatch would do so was a determination PWD would make
10 internally. Ultimately the decision was made to assist us by using a webinar tutorial.
11 We have relied upon the approach explained to us during the webinar tutorial to make
12 the changes in the model that we are proposing. However, the Public Advocate
13 reserves the right to revise its recommendations in the event a discrepancy is
14 discovered by Black & Veatch or PWD.

15 Q. WHAT IS THE PURPOSE OF A TEST YEAR IN A RATEMAKING
16 PROCEEDING?

17 A. A test year or test period consists of 12 or more consecutive months and is assumed to
18 be representative of normal operations. Under standard ratemaking practice, the
19 revenues and expenses that are projected to occur during that twelve-month (or
20 longer) period are used as the basis for determining whether there is a need for
21 incremental revenues. Hence, test period revenues and costs must be adjusted to
22 normalize non-recurring items, to annualize new costs and/or revenues, and to
23 amortize (normalize) costs or revenues that may occur infrequently (i.e., every 2
24 years, every 5 years, etc.).

1 It should be noted that the rates that are derived from the test year remain in
2 effect, not just for the test year, but for all subsequent years until new rates from a
3 future rate case become effective. This is an important distinction between
4 ratemaking and budget setting. Since rates could be in effect for an indefinite period
5 of time, it is extremely important that the test year financial data is representative of
6 the utility's normal operating conditions. It is also important that both adjusted and
7 unadjusted test year data meet the widely-accepted regulatory principle of being
8 "known and measurable". To be considered as "known and measurable", the
9 probability of the revenue or cost and the amount of any change must be known with
10 certainty.

11 **IV. ACCOUNTING PRACTICES OVERVIEW**

12 Q. PLEASE SUMMARIZE HOW THE DEPARTMENT'S ACCOUNTING
13 BOOKS ARE MAINTAINED.

14 A. Similar to all departments of the City of Philadelphia, PWD keeps its books on what
15 is termed a "legally enacted" or "modified accrual" basis. In general, a legally
16 enacted basis is equivalent to a cash basis. Under this basis, revenues are recorded
17 when they are received, rather than when then the customer is billed or service is
18 rendered. Expenses are recorded on an encumbrance basis, which is essentially
19 equivalent to an accrual basis—when the payment obligation is incurred.

20 Q. WHAT IS THE SIGNIFICANCE OF THE DEPARTMENT'S BASIS OF
21 ACCOUNTING?

22 A. From a ratemaking perspective, there are two considerations that come to mind. First,
23 since revenues are recorded when they are received, there is no provision on the
24 Department's books for bad debts or uncollectible accounts from service revenues.
25 Therefore, as will be discussed below, in forecasting future revenues for ratemaking

1 purposes for PWD, a major consideration is the portion of billed revenues that will
2 actually be collected. Second, it is normal accepted ratemaking practice for utilities
3 to amortize or normalize non-recurring or extraordinary expenditures both on their
4 books and for ratemaking purposes. The rationale is to spread cost over the periods
5 that benefit from the expenditure or to prevent over collection of costs. For example,
6 the expenses incurred for presenting a rate case (legal, consultants, etc.) are usually
7 amortized (or normalized) to reflect a reasonable filing period between rate cases.

8 Q. ARE THERE ANY GENERAL CONCERNS YOU HAVE REGARDING
9 THE DATA ON WHICH THE REVENUE REQUIREMENT IS BASED?

10 A. Yes. Since the revenue requirement is based on fully forecasted test years, the budget
11 provides certain data on which the cost of service is based. It is important to
12 understand that there is a difference of perspective between ratemaking purposes and
13 budget purposes, particularly for budgeting in governmental accounting. For
14 governmental accounting, the budgets are recorded. In other words, a journal entry is
15 made in the accounting books and records to adopt the annual budget at the beginning
16 of the Fiscal Year. Hence, the recorded budget acts as a control on revenues and
17 expenditures. As a result, in the governmental accounting setting, one would expect
18 that budget projections are conservative. In other words, within a relevant range,
19 conservative budgets are likely to project expenses that are on the high side and
20 revenues on the low side.

21 The effect of this budgeting methodology on ratemaking is two-fold. First,
22 there is a tendency for revenues to be understated and expenses overstated. The
23 primary concern when adopting a budget in each year is to ensure that revenues are
24 not under collected and expenditures do not exceed the level in the recorded budget.
25 Therefore, the focus of budgeting techniques is to ensure the financial operating

1 results for each specific fiscal year will meet a specific objective. In general, a
2 primary financial objective for PWD is to meet debt service coverage ratios stated in
3 bond indentures. As a result, a booked expense that would normally be amortized for
4 ratemaking purposes is, therefore, overstated in the year that the expense is incurred.
5 Since expenses are overstated, net income (revenues minus expenses) is understated
6 and the income available to meet bond-related debt service coverage ratios is
7 similarly understated. As stated above, this type of accounting has the effect of
8 overstating the revenue requirement for the initial test year and beyond if such
9 expenditures are not adjusted for ratemaking purposes.

10 Second, because the focus of budgeting is one fiscal year at a time, there is no
11 attempt to normalize one-time, non-recurring costs which are often included in the
12 budget. As a result, expenses can be over-stated for ratemaking purposes. Normal
13 ratemaking practice seeks to determine costs on a normal ongoing level, rather than to
14 recover costs in one specific year. Since rates are not collected subject to refund,
15 costs should be established at a level that is more representative of normal operations.

16 **V. HISTORICAL INACCURACY OF PWD RATE MODEL**

17 Q. PLEASE EXPLAIN YOUR OBSERVATIONS ABOUT THE ACCURACY
18 OF THE DEPARTMENT'S PAST PROJECTIONS.

19 A. Part of my analysis in this proceeding was to examine the extent to which the model
20 may have inaccurately projected PWD's actual revenue needs. I conducted an
21 analysis, using PWD-supplied data, which compared the Department's revenues and
22 expenses on which the Department has based its requested revenue increases for this
23 proceeding and previous proceedings. The data show that PWD's rate model
24 significantly and consistently overstated PWD's actual revenue requirements for the
25 six years beginning 2012 through 2017. Below is a table that summarizes my

1 findings. The chart shows that over the six-year period 2012-2017, revenues have
 2 been overstated by a total of \$68.576 million and expenses have been overstated by a
 3 total of \$73.336 million.

	Actual Results					
	Based upon FY 2013 Proceeding				Based upon FY 2017-2018 Proceeding	
	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Water & Wastewater Service Rev.	\$ 568,378	\$ 580,180	\$ 617,225	\$ 646,702	\$ 654,351	\$ 681,634
Other Income	<u>23,303</u>	<u>26,550</u>	<u>25,794</u>	<u>30,144</u>	<u>24,555</u>	<u>39,011</u>
Total Revenues	<u>\$ 591,681</u>	<u>\$ 606,730</u>	<u>\$ 643,019</u>	<u>\$ 676,846</u>	<u>\$ 678,906</u>	<u>\$ 720,645</u>
Total Operating Expense	<u>\$ 375,085</u>	<u>\$ 399,316</u>	<u>\$ 410,797</u>	<u>\$ 426,767</u>	<u>\$ 432,857</u>	<u>\$ 480,257</u>
	Rate Case Estimates					
	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Water & Wastewater Service Rev.	\$ 565,396	\$ 576,239	\$ 615,631	\$ 639,682	\$ 644,102	\$ 675,376
Other Income	<u>18,924</u>	<u>22,293</u>	<u>22,143</u>	<u>22,457</u>	<u>23,829</u>	<u>23,178</u>
Total Revenues	<u>\$ 584,320</u>	<u>\$ 598,532</u>	<u>\$ 637,774</u>	<u>\$ 662,139</u>	<u>\$ 667,931</u>	<u>\$ 698,554</u>
Total Operating Expense	<u>\$ 390,033</u>	<u>\$ 417,619</u>	<u>\$ 427,730</u>	<u>\$ 429,937</u>	<u>\$ 452,179</u>	<u>\$ 480,917</u>
	Actual minus Rate Case					
	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Water & Wastewater Service Rev.	\$ 2,982	\$ 3,941	\$ 1,594	\$ 7,020	\$ 10,249	\$ 6,258
Other Income	<u>4,379</u>	<u>4,257</u>	<u>3,651</u>	<u>7,687</u>	<u>726</u>	<u>15,833</u>
Actual Revenues Over/(Under) Budget	<u>\$ 7,361</u>	<u>\$ 8,198</u>	<u>\$ 5,245</u>	<u>\$ 14,707</u>	<u>\$ 10,975</u>	<u>\$ 22,091</u>
Operating Expense Over/(Under) Budget	<u>\$ (14,948)</u>	<u>\$ (18,303)</u>	<u>\$ (16,933)</u>	<u>\$ (3,170)</u>	<u>\$ (19,322)</u>	<u>\$ (660)</u>

4
 5 Q. DID YOU CONSIDER WHETHER THE REVENUES IN EXCESS OF
 6 PWD'S FORECAST WERE NECESSARY TO PAY FOR ADDITIONAL
 7 UNANTICIPATED EXPENSES?

8 A. Yes, and I concluded that there were no additional unanticipated expenses. To the
 9 contrary, the information supplied by PWD also included data regarding actual
 10 operating expenses compared to projected expenses. Again, the data show that
 11 PWD's model has consistently over estimated expenses in determining the revenue
 12 requirement. PWD's forecast of annual operating expenses for FY 2012 through
 13 2017 was, on average, \$12.223 million overstated.

1 Q. ARE YOU ABLE TO DETERMINE WHY PWD'S FORECAST
2 CONSISTENTLY UNDERSTATES REVENUES AND OVERSTATES
3 EXPENSES?

4 A. No. It is not possible for me to accurately determine which specific assumptions
5 utilized in the last two rate proceedings account for actual revenues in excess of
6 projections and actual expenses being less than projected. There are many variables
7 that are interdependent to produce the projections provided by the model. However,
8 as I will explain later in my testimony, there are certain variables that, if not adjusted,
9 will contribute to the continued overestimation of expenses.

10 Q. WHAT DO YOU CONCLUDE ON THE BASIS OF THIS ANALYSIS?

11 A. I conclude that the forecast produced by this model for FY 2019 and FY 2020
12 utilizing my adjustments does not support the need for a rate increase at this time.
13 When compared to the last rate case, my understanding is that the forecasting
14 methods and the computer model are fundamentally unchanged. The continued use
15 of the Department's approach without utilizing my recommended adjustments will
16 continue to produce revenues in excess of estimates and operating expenses that are
17 less than projected. Given that FY 2018 has not yet ended, and, as I explain below,
18 PWD's estimates for the test years are based upon the FY 2018 budget, I expect that
19 PWD's FY 2018 actual revenues will be in excess of the projected amounts and
20 actual expenses will be less than the projected amounts as well.

21 The combination of under-projected revenues and over-projected expenses
22 during previous rate cases has directly contributed to the accumulation of funds in
23 PWD's Rate Stabilization Fund over the period FY 2012 through FY 2017 well above
24 what was projected. In fact, documentation produced in this proceeding demonstrates
25 that PWD's forecast Rate Stabilization Fund balances have been consistently

1 projected at unrealistically low levels, suggesting the accuracy of PWD's rate model
2 is a longstanding problem.

3 When I combine these clearly documented projection trends and my findings
4 in this case, I conclude that PWD has inadequately supported its request for a rate
5 increase in both FY 2019 and FY 2020. As I show in the schedules attached to this
6 testimony, even if PWD does not receive an additional \$9.2 million in rates from
7 customers for FY 2019, PWD should still be able to maintain a sufficient balance in
8 its Rate Stabilization Fund. The table below compares the Department's rate case
9 projections for the Rate Stabilization Fund and the actual fund balances. However,
10 while I believe PWD can expect to maintain at least \$100 million in the Rate
11 Stabilization Fund based on my adjustments, I do not believe the \$150 million
12 balance recommended by PWD should be established as the minimum level of
13 reserves in this proceeding. This \$150 million goal is an increase of \$40 million
14 above the \$110 million goal stated by PWD in the 2016 rate case. I do not believe
15 PWD's Rate Stabilization Fund, which maintains a significantly higher balance than
16 PWD projected in its last rate case, should target a minimum balance more than 36%
17 higher than PWD indicated was appropriate just two years ago. Instead, I
18 recommend the Board take notice of the sufficiency of reserves based on my
19 estimates and incentivize PWD to continue to outperform its budget and ratemaking
20 estimates and/or to make prudent use of accumulated reserves in order to direct
21 additional revenues, without the necessity of a rate increase, to capital spending and
22 stormwater incentives. As discussed below, these recommendations form the basis of
23 my adjustments to SMIP/GARP and the Capital Account Deposit.

<u>Philadelphia Water Department</u>						
<u>Rate Stabilization Fund</u>						
<u>Rate Case Projections</u>	<u>Based upon FY 2013 Proceeding</u>				<u>Based upon FY 2017-2018 Proceeding</u>	
	<u>FY2012</u>	<u>FY2013</u>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>
Beginning of Year Balance	\$156,563,000	\$142,128,000	\$ 98,513,000	\$ 78,188,000	\$206,206,000	\$ 169,306,000
Deposit From (To) Revenue Fund	(14,435,000)	(43,615,000)	(20,325,000)	(3,675,000)	(36,900,000)	(19,300,000)
End of Year Balance	<u>\$142,128,000</u>	<u>\$ 98,513,000</u>	<u>\$ 78,188,000</u>	<u>\$ 74,513,000</u>	<u>\$169,306,000</u>	<u>\$150,006,000</u>
<u>Actual</u>	<u>FY2012</u>	<u>FY2013</u>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>
Balance at July 1	\$157,050,373	\$165,906,600	\$161,463,768	\$184,795,581	\$206,446,966	\$ 205,760,960
Deposit from Operating Fund	8,525,507	-	22,924,772	21,456,199	(1,629,000)	(4,563,000)
Interest Earnings	438,097	223,120	407,041	195,186	942,994	562,161
Deposit to Operating Fund	-	(4,665,952)	-	-	-	-
Balance at June 30	<u>\$166,013,977</u>	<u>\$161,463,768</u>	<u>\$184,795,581</u>	<u>\$206,446,966</u>	<u>\$205,760,960</u>	<u>\$201,760,121</u>
Over/Under Rate Case Projection	<u>\$ 23,885,977</u>	<u>\$ 62,950,768</u>	<u>\$106,607,581</u>	<u>\$131,933,966</u>	<u>\$ 36,454,960</u>	<u>\$ 51,754,121</u>

VI. SPECIFIC ADJUSTMENTS BASED ON MY ANALYSES

Q. PLEASE EXPLAIN THE SUBJECTS DISCUSSED IN THIS SECTION OF YOUR TESTIMONY.

A. In order to explain the basis for specific adjustments to PWD’s forecast rate increases, it is important to understand the manner in which the Department projects operating expenses. In the sections that follow, I provide a brief explanation of PWD’s development of projected revenues and O&M expenses. I then follow up on each of these explanations with my specific adjustments to both revenues and expenses.

O&M Expenses

Q. BEFORE DESCRIBING THE FORECAST METHODOLOGY FOR EXPENSES, PLEASE DESCRIBE HOW THE WATER DEPARTMENT’S EXPENSES ARE CATEGORIZED.

A. The Water Department’s expenses are categorized into the following expense classes (see, generally, PWD St.-2 at 28-30):

- Class 100 - Personal Services -This category includes employee compensation and related expenses. Included items are the cost of both regular and overtime salaries, compensation for holidays, vacation, jury duty, funeral leave, military time, the cost of employer paid fringe benefits such as health, welfare, and

1 insurance, the cost of employer paid taxes such as social security, Medicare,
2 and unemployment, and the cost of pension contributions made on behalf of
3 past and present employees.

4 • Class 200 - Purchase of Services - This category includes the cost of outside
5 services supplied on behalf of the Water Fund. It includes costs such as
6 electricity, telephone, bio-solids transportation, professionals, rented space,
7 and advertising.

8 • Class 300 - Material and Supplies - This category includes the cost of
9 chemicals, pump parts, supplies, fuel, vehicle parts and lubricants, and other
10 related items.

11 • Class 400 - Equipment - This category includes the cost of heavy equipment,
12 trucks, vehicles, boats, trailers, cranes, sewer cleaning machines, and other
13 related items.

14 • Class 500 – Contributions, Indemnities, Taxes and Awards - This category
15 includes payments made by the Law Department on behalf of the Department
16 for liabilities, claims and property damage, as well as certain taxes and
17 employee awards.

18 • Class 700 – Sinking Fund – This includes the payment of principal and
19 interest due on revenue bonds and other debt and related obligations of the
20 Department. This also includes transfers from the debt service reserve
21 account to refunding escrows.

22 • Class 800 – Interfunds - This category includes payments made to other City
23 departments for services rendered to the PWD. This also include transfers to
24 the Residual Fund for further transfer to the capital account.

25 • Class 900 – Advances and other miscellaneous payments.

26 Q. PLEASE EXPLAIN HOW THE DEPARTMENT DETERMINED THE
27 OPERATING EXPENSES USED IN THE COST OF SERVICE IN THIS
28 PROCEEDING.

29 A. PWD used its Fiscal Year 2018 operating budget as the starting basis for the
30 development of its FY 2019, FY 2020 and FY 2021 Operation and Maintenance
31 (O&M) expense projections. The first step in the process was to calculate what the
32 Department termed to be the “expected expenditure level”. The expected expenditure
33 level is derived by multiplying the FY 2018 budgeted expenditures by historical

1 “actual-to-budget factors”. These “actual-to-budget factors” are also referred to as
2 “budget factors” or “spend factors”. The actual-to-budget factors are calculated by
3 dividing the actual level of expenditures by the budgeted level of expenditure for each
4 category of expenses. Although the workpapers showed 1-year, 2-year, 3-year and 5-
5 year historical average spend factors (Assumptions- 22A), the Department used the 2-
6 year average spend factor for the period FY2015-FY2016 for the majority of the
7 categories. In general, the spend factors are consistently less than 100 percent for
8 various categories of expenses because the Department does not spend the full
9 budgeted amount for many budget categories. After the FY 2018 expected
10 expenditure level was determined by applying the actual to budget factors to the
11 FY2018 budgeted expense, the projected levels of expenses for FY 2019, FY 2020
12 and FY 2021 were determined by applying inflation escalation factors to adjusted FY
13 2018 amounts in order to reflect the expected expenditure levels. In addition, specific
14 adjustments were added to some of the expected expenditure levels such as for
15 SMIP/GARP and additional labor expense.

16 **SMIP/GARP**

17 Q. PLEASE EXPLAIN THE ADJUSTMENT YOU ARE RECOMMENDING
18 TO THE SMIP AND GARP PROGRAMS.

19 A. The Stormwater Management Incentives Program (SMIP) and the Greened Acre
20 Retrofit Program (GARP) are two stormwater management programs that PWD
21 maintains. The SMIP provides grants to non-residential property owners to design
22 and build stormwater retrofit projects resulting in greened acres that the Department
23 can count toward compliance with the performance requirements in the Consent
24 Order and Agreement with PaDEP. The GARP provides grant funding to companies
25 or contractors to construct stormwater projects across multiple properties in the

1 Department's service area. In the first year (2012) of the SMIP, its budget was \$3.35
2 million. By 2015, after the GARP began, the combined budget was \$10 million. In
3 the 2016 rate proceeding, the Board approved an increase in the Department's rates,
4 in part, in order for PWD to spend \$15 million in FY 2017 and \$15 million in FY
5 2018 on those programs. But, in fact, in FY 2017 the Department spent \$16.7 million
6 on the program. In FY 2018, the Department projects spending \$20 million on
7 SMIP/GARP. Accordingly, although the Board increased rates in order for PWD to
8 spend \$15 million in FY 2018, the Department has decided to invest an additional \$5
9 million in this program in the current fiscal year. Those additional funds, if not spent
10 on SMIP/GARP, would otherwise be available to contribute to higher levels of
11 reserves in PWD's Rate Stabilization Fund.

12 In this proceeding, the Department is proposing to increase rates in order to
13 fund \$10 million more than was approved in the 2016 rate case for SMIP/GARP
14 project grants in each year, FY 2019-2021. The Department claims that the increase
15 is necessary to accelerate the greened acres to meet Consent Order and Agreement
16 compliance requirement milestones; and that the cost per greened acre achieved
17 through the SMIP/GARP program is lower than what PWD can achieve by
18 implementing greened acres in public space.

19 Q. SHOULD THE BOARD AUTHORIZE THE \$10 MILLION INCREASE IN
20 SMIP/GARP EXPENDITURES?

21 A. No. The SMIP/GARP expenditures just experienced a two-year 72.9 percent growth
22 rate, not including FY 2018's estimated expenses. Increasing rates and charges by an
23 additional \$10 million places an undue additional burden on ratepayers, given that
24 PWD has consistently failed to utilize existing cash in the reserve accounts as
25 projected in its past rate cases.

1 Q. WHAT IS YOUR RECOMMENDATION FOR THE SMIP/GARP
2 EXPENDITURES?

3 A. I do not believe it is necessary to raise customers' rates to fund the SMIP/GARP.
4 Historically, the Department has shown the ability to outperform its budget, thereby,
5 freeing up additional cash. Hence, I believe the SMIP/GARP can be funded by
6 PWD's ability to control costs from which it has the discretion to direct funds to the
7 SMIP/GARP. During FY 2017, for example, even though the SMIP/GARP budget
8 was \$15 million, the Department was able fund SMIP/GARP by an additional \$1.7
9 million. Similarly, the Department has projected an additional \$5 million in
10 expenditures for SMIP/GARP in FY 2018 for which it required no rate increase, due
11 to its ability to outperform its financial projections. I believe this arrangement
12 provides an incentive for the Department to control costs, utilize available reserves
13 instead of raising rates, and adequately fund the SMIP/GARP grants. This
14 adjustment, determined utilizing the Black & Veatch proprietary model, is shown on
15 Schedule LKM-2, line 1.

16 **Additional Staffing Operating Labor Expense**

17 Q. PLEASE EXPLAIN THE ADJUSTMENT PROPOSED BY THE
18 DEPARTMENT FOR ADDITIONAL STAFFING EXPENSE.

19 A. The Department has included costs for additional employees to be hired for
20 regulatory compliance. For FY 2019, FY 2020 and FY 2021, the Department
21 included \$583,000, \$1,185,000 and \$1,734,000, respectively, in the cost of service for
22 additional staff costs related to regulatory compliance. According to the Department,
23 these costs reflected the inclusion of 11 full-time equivalents (FTEs) in Operations for
24 green stormwater infrastructure (GSI) maintenance and 2 FTEs in Engineering and
25 Environmental Services for regulatory compliance during FY2019, 22 FTEs in

1 Operations for GSI maintenance and 4 FTEs in Engineering and Environmental
2 Services for regulatory compliance during FY 2020 and 33 FTEs in Operations for
3 GSI maintenance and 5 FTEs in Engineering and Environmental Services for
4 regulatory compliance in FY 2021. However, no Actual to Budget Factor (discussed
5 below) is applied to these adjustments which is inconsistent with the approach used
6 for other labor expenses included in the cost of service. Therefore, I am
7 recommending an adjustment to apply the appropriate Actual to Budget factor
8 consistent with the cost classification. This adjustment, determined utilizing the
9 Black & Veatch proprietary model, is shown on Schedule LKM-2, line 2.

10 **Collection Factors**

11 Q. HOW HAS THE DEPARTMENT CALCULATED THE COLLECTION
12 FACTORS?

13 A. Once the Department calculates its operating revenue from each customer type,
14 collection factors are applied to determine the operating retail revenue cash receipts.
15 The collection factors represent the multi-year payment pattern for the billing year
16 (payments received within 12 months) and the two prior fiscal years' billing which
17 are broken down into payments within 13-24 and after 24 months. Essentially the
18 collection factors break down the percent of revenue from a specific billing period
19 that is collected within the three periods – within 12 months, 13 to 24 months and
20 beyond 24 months. The collection factors used in the cost of service by PWD are
21 based upon a five-year historical period (FY 2012 through FY 2016).

22 However, the use of a five-year historical average is not consistent with the
23 two-year average used by the model to derive the growth for the forecast revenue for
24 the test years. Rather it is based upon payment patterns from a period that is stale
25 when compared to the period used to determine the revenue growth. I am

1 recommending the use of collection factors based on the three-year average to derive
2 the collection factors more closely aligned to the period used to determine the
3 revenue growth and to capture the collection beyond 24 months. This adjustment,
4 determined utilizing the Black & Veatch proprietary model, is shown on Schedule
5 LKM-2, line 3.

6 **Expense Escalation**

7 Q. HOW DID THE DEPARTMENT ESCALATE EXPENSES IN ITS COST
8 OF SERVICE?

9 A. As I indicated earlier, after the expected level of expenses were determined by the
10 application of actual-to-budget factors to budgeted FY 2018 expense, those budgeted
11 expense categories or object classes were increased by escalation factors to project
12 the anticipated expenses for FY 2019, FY 2020 and 2021.

13 The following chart summarizes the various cost escalation factors that were
14 used by the Department to derive the FY 2019, FY 2020 and 2021 expense levels.

Philadelphia Water Department O&M Escalation Factors		
Cost Class	Description	Annual Escalation
100	Labor Costs	FY 2019 – 2.5%, FY 2020 – 3.0% FY 2021 – FY 2023 - 3.0%
220	Power	FY 2019 - FY 2020– 0.0% FY 2021 - FY 2023 3.0%
221	Gas	FY 2019 – 4.0%, FY 2020 – 0.0% FY 2021 - FY 2023 – 3.0%
200	Services	FY 2019 – FY 2023 - 3.4%
200	Public Property	FY 2019 – 1.66%, FY 2020 – 1.60%, FY 2021 – 1.56% FY 2022 – 3.44%, FY 2023 – 2.06%
307	Chemical Costs	FY 2019 – 6.7%, FY 2020 – 3.8% FY 2021 - FY 2023 – 1.0%
300	Materials and Supplies	FY 2019 - FY 2023 - 0.5%
400	Equipment	FY 2019 - FY 2023 - 1.3%
500	Indemnities	FY 2019 - FY 2023 – 0.0%
800	Transfers	FY 2019 - FY 2023 – 2.5%

1

2 Q. ARE YOU RECOMMENDING ANY CHANGES TO THE
3 DEPARTMENT’S ESCALATION FACTORS?

4 A. Yes, I am. I am recommending changes to escalation factors applied to the categories
5 of Power, Gas, General Expenses, Chemicals, Transfers and Other Class 200 costs.
6 As discussed below, some of these adjustments are only applicable if the Board
7 approves a three-year, as opposed to two-year, rate period. As discussed above, the
8 Board should not approve a three-year rate period.

9 **Power Costs**

10 Q. WHAT CHANGES ARE YOU PROPOSING TO THE DEPARTMENT’S
11 POWER COSTS ESCALATION FACTOR?

1 A. According to Black & Veatch’s testimony, Power Costs were based upon estimates
2 provided by the City Energy Office. Based on information supplied by the City
3 Energy Office, no escalation was applied for FY 2019 and FY 2020. However, for
4 2021, a three percent escalation rate was applied to determine the power cost.
5 According to the Department, the three percent rate is based upon the City’s five-year
6 plan.

7 If the Board approves a three-year rate period, I am recommending an
8 adjustment that removes the three percent escalation for power cost for FY 2021
9 because it is not known and measurable. The City’s five-year plan is a planning tool.
10 While it may be reasonable to use the three percent escalation rate for planning
11 purposes, for ratemaking purposes, the costs must meet the standard of known and
12 measurable. Therefore, the three percent escalation of power costs should be
13 removed. Because this adjustment would only apply in FY 2021, it is not shown on
14 Schedule LKM-2.

15 **Gas Costs**

16 Q. WHAT CHANGES ARE YOU PROPOSING TO THE DEPARTMENT’S
17 GAS COSTS ESCALATION FACTOR?

18 A. In projecting PWD’s gas costs, the City’s Energy Office estimated an increase in gas
19 cost during FY 2019 of 4% based upon the Settlement of the PGW rate case. No
20 increase is projected for FY 2020. For FY 2021, a three percent escalation rate was
21 applied to derive the gas cost. Similar to the Power cost adjustment, the basis of the
22 three percent escalation is the rate used in the City’s five-year plan. As I have
23 explained above, the three percent escalation rate may be appropriate as a planning
24 tool, however, it does not meet the standard of known and measurable. Therefore, if
25 the Board approves a three-year rate period, I am recommending an adjustment to

1 remove the three percent escalation from gas costs for FY 2021. Because this
2 adjustment would only apply in FY 2021, it is not shown on Schedule LKM-2.

3 **General Costs and Other Class 200 Expenses**

4 Q. WHAT CHANGES ARE YOU PROPOSING TO THE GENERAL COSTS
5 ESCALATION FACTOR?

6 A. PWD escalated general costs in the cost of service by three percent. When asked to
7 explain the basis of the escalation factor used for the general costs, PWD explained
8 that the escalation factor was based upon historical actual O&M costs and an analysis
9 of the relevant cost indices. The documents identified to support PWD's claim were
10 Appendices 4 and 5 of Schedule BV-E5:WP-1. My analysis of these two appendices
11 leads to the conclusion that they do not support the three percent escalation factor.

12 On Appendix 4, the Department calculates a 3.15 percent average two-year
13 increase in expenses for the period 2014-2016. However, SMIP/GARP costs, which
14 experience significant growth of 72.86% during the same period were included in the
15 determination of the growth rate. When the SMIP/GARP costs are removed, the
16 growth in the expenses is only 1.98 percent. Therefore, I believe it is appropriate to
17 remove the SMIP and GARP costs from the derivation of the historical growth rate
18 because the SMIP/GARP costs are costs over which the Department has the ability to
19 exercise discretion.¹ The purpose of using the historical growth rate is to estimate the
20 growth in expenses that occur over time from external factors. Therefore, I
21 recommend that the escalation rate for general expenses should be 1.98 percent. This
22 adjustment, determined utilizing the Black & Veatch proprietary model, is shown on
23 Schedule LKM-2, line 6.

¹ The Department has exercised this discretion, increasing expenditures for SMIP/GARP above the levels included in its 2016 rate case, as discussed above.

1 **Chemical Costs**

2 Q. WHAT CHANGES ARE YOU PROPOSING TO THE DEPARTMENT'S
3 CHEMICAL COSTS ESCALATION FACTOR?

4 A. According to PWD, the escalation factors for chemicals cost of 6.7 percent for FY
5 2019 and 3.8% for FY 2020 are based on PWD's recent experience. A 1.0 percent
6 escalation factor is assumed for 2021. When asked to provide support for the 6.7
7 percent and the 3.7 percent escalation factors, the Department provided an analysis
8 comparing budgeted data. In my opinion budgeted data are not indicative of the
9 actual experience as claimed by the Department. Moreover, the total cost of
10 chemicals is not only affected by the unit cost of the chemical but also by the actual
11 quantities of the various chemicals that are utilized. The comparison of the budgeted
12 data does not bear this out. The burden of proof is on PWD to support its cost, and
13 the budgeted data provided in the response to the Public Advocate's data request fails
14 to provide adequate support.

15 In order to assess the Department's recent experience with chemical costs, I
16 reviewed the historical chemical expense trend. According to information contained
17 in the Department's filing, it experienced a 0.62 percent and 7.15 percent decrease in
18 chemical expense in FY 2015 and 2016. Hence, the Department's recent experience
19 with chemical cost is not consistent with the increase it has projected in its filing.
20 Therefore, I believe the chemical cost escalation proposed by the Department is
21 unreasonable.

22 Q. WHAT IS YOUR RECOMMENDATION FOR THE CHEMICAL COSTS
23 ESCALATION FACTOR?

24 A. I am recommending that the escalation factor for chemical cost be 0 percent. In other
25 words, for ratemaking purposes, I am recommending that the Chemical expenses

1 remain flat rather than artificially escalating those costs. This adjustment, determined
2 utilizing the Black & Veatch proprietary model, is shown on Schedule LKM-2, line 7.

3 **Transfers**

4 Q. WHAT CHANGES ARE YOU PROPOSING TO THE DEPARTMENT'S
5 TRANSFERS ESCALATION FACTOR?

6 A. According to PWD, the 2.5 percent escalation factor applied to Transfers is based on
7 the historical actual O&M costs and an analysis of the relevant cost indices. The
8 Department identified Appendices 4 and 5 of Schedule BV-E5:WP-1 as the
9 documents to support its claim. Transfers are also classified as Class 800 –
10 Interfunds. This category includes payments to other City departments for services
11 rendered to the Water Department, and also includes transfers to the Residual Fund
12 for further transfer to the capital account.

13 My approach to determining a reasonable escalation factor for Transfers is
14 similar to the approach taken for general expenses, that is, I calculated an escalation
15 factor based upon the average historical change in these costs after removing those
16 costs that are specifically adjusted elsewhere in the cost of service. The resulting
17 escalation factor is 2.18 percent. Consequently, I am recommending the 2.18 percent
18 as the escalation rate to be applied to Transfers. This adjustment, determined
19 utilizing the Black & Veatch proprietary model, is shown on Schedule LKM-2, line 8.

20 **Debt Interest Rate**

21 Q. WHAT ADJUSTMENTS HAVE YOU MADE TO THE INTEREST RATES
22 FOR FUTURE DEBT ISSUANCES?

23 A. The interest rates the Department has used to derive interest expense is based on 5.25
24 percent for FY 2017, 5.25 percent for FY 2018, 5.50 for FY 2019, 5.75 for FY 2020
25 and 6.0 percent for FY 2021. The information supplied in the response to PA-ADV-

1 16 showed that the actual interest rate for the 2017 debt issuance is 5.0 percent, rather
2 than the 5.25 percent used in the cost of service. Therefore, I am recommending that
3 the model reflect an adjustment to reduce the interest rate on the 2017 debt issuance
4 to 5.0 percent.

5 Regarding the interest rates for the future periods, the Department's approach
6 of increasing the interest rate each year by 25 basis points is speculative. Again, this
7 approach may be appropriate for budgeting concerns, however for ratemaking
8 purposes it is not reasonable. As I have indicated elsewhere in this testimony, one of
9 the major principles of ratemaking is the known and measurable standard. In the last
10 rate case, the Department projected increasing interest rates in a similar manner.
11 Documents reviewed in that proceeding show the actual interest rates on the City
12 bonds was 5.0 percent in 2017. PWD did not issue new debt in 2018, even though a
13 FY 2018 debt issue was included in its last rate proceeding.

14 The adjustment I am recommending for the future periods is to reflect a
15 modest increase in interest rates of 25 basis points to include a 5.25 percent interest
16 rate for the debt issuances reflected in FY 2019 and 2020. This adjustment,
17 determined utilizing the Black & Veatch proprietary model, is shown on Schedule
18 LKM-2, line 9.

19 **Debt Issuance Costs**

20 Q. WHAT ADJUSTMENT HAVE YOU MADE TO DEBT ISSUANCE
21 COSTS?

22 A. In projecting the test year cost of debt, the Department increased the debt issuance
23 cost from 0.56 percent for the 2017 debt issuance to 1.0 percent for all fiscal years
24 beyond 2017. The 1.0 percent used by the Department is an estimate. However, data
25 from the previous rate case and the 2017 debt issuance presented in this proceeding

1 suggest that a reasonable issuance cost is in the range of 0.5 percent. Therefore, I
2 recommend that the issuance cost for FY 2019, 2020 and 2021 be adjusted to reflect
3 the actual issuance cost of 0.56 percent. I have not been able to determine where this
4 adjustment would be made in the Black & Veatch proprietary model, and so have
5 reserved a placeholder on Schedule LKM-2, line 10.

6 **Capital Program Actual to Budget Ratio**

7 Q. HOW HAS THE DEPARTMENT PROJECTED ITS CAPITAL ACCOUNT
8 DEPOSIT?

9 A. The total projected Capital Program budget for FY 2019 to FY 2021 reflects an
10 annual inflation rate of 2.5% based on industry construction cost indices. The
11 projected capital program total annual expenditures for the projection period were
12 determined by applying a factor of 90% to the annual inflated capital program budget.
13 However, in the response to PA-VI-27, the data shows that the actual to budget ratios
14 for capital spending to be well below the 90% claimed by the Department. Therefore,
15 I believe the 90 percent claimed by the department is not reasonable for ratemaking
16 purposes.

17 Based upon the data provided in the response to PA-VI-27, I have calculated a
18 76 percent actual to budget ratio for the most recent three-year period. Therefore, I
19 am recommending an adjustment to reduce the 90 percent actual to budget ratio
20 claimed by the Department. This adjustment, entered into the Black & Veatch
21 proprietary rate model, projects PWD's net funding requirement for capital projects to
22 be approximately \$100 million less than what PWD estimated over FY 2019 and
23 2020. As a result, the Capital Account Deposit and available Residual Fund transfers
24 to the Construction Fund represent a larger percentage contribution toward capital
25 projects from current revenues during the FY 2019 and FY 2020 rate period. Because

1 the amount that may actually be available for such purposes is, to an extent,
2 determined by PWD's operational choices during the fiscal year, I believe current
3 revenues can fund reasonable and appropriate contributions toward capital
4 expenditures, including as a result of PWD's likely "outperforming" of its projections
5 and utilization of accumulated reserves. I have reflected an appropriate 76% actual to
6 budget ratio on Schedule LKM-2, line 11.

7 **Capital Account Deposit Growth**

8 Q. HOW HAS THE DEPARTMENT PROJECTED ITS CAPITAL ACCOUNT
9 DEPOSIT?

10 A. In prior rate proceedings, the Capital Account Deposit was calculated using 1 percent
11 of the depreciated value of water and wastewater systems net capital assets, consistent
12 with the requirements of the 1989 General Ordinance. However, in this rate
13 proceeding, the Water Department proposes to calculate the capital account deposit
14 based upon 1.5 percent of the net assets. The Department argues that its annual
15 capital expenditures have increased since 2010. Therefore, the Department is seeking
16 to increase the Capital Account Deposit based upon the increase in the levels of
17 annual capital expenditure. It is my understanding that legislation was proposed in
18 Philadelphia that would increase the Capital Account Deposit to 1.5 percent from 1.0
19 percent. However, I have been advised by counsel that such legislation was amended
20 to eliminate the increase in the Capital Account Deposit, and that the amended
21 legislation was passed by City Council without such increase.

22 Therefore, I am recommending an adjustment to remove the 0.5 percent
23 increase to the Capital Account Deposit. I have also been advised by counsel that
24 there is no legal requirement that the Capital Account Deposit increase. This
25 modification supports the policy rationale of utilizing available funds, including

1 accumulated reserves, and funding appropriate customer capital contributions from
2 the existing Capital Account Deposit and the Residual Fund. This adjustment is
3 shown on Schedule LKM-2, line 12.

4
5 Q. DOES YOUR RECOMMENDATION MEAN THAT THERE MAY NOT
6 BE FUNDS IN THE CAPITAL ACCOUNT FOR CERTAIN CAPITAL
7 EXPENDITURES?

8 A. No. There are excess funds that are held in the Department's other reserves that can
9 be used to meet these obligations. I will discuss this more fully later in the
10 "Development of Revenue Requirement" section of my testimony.

11 **Rate Case Expenses**

12 Q. WHAT CHANGES ARE YOU RECOMMENDING TO BUDGETED RATE
13 CASE EXPENSE?

14 A. PWD has estimated the total cost of this proceeding to be \$3,188,000 which is
15 included in the FY 2018 budget (PA-IX-23). I am recommending that rate case
16 expenses be normalized over 2 years. Rate case expenses are incurred as a result of
17 the Department filing to increase rates and not a normal cost that is incurred annually.
18 It is standard ratemaking procedure that since these costs are not incurred every year,
19 they should be normalized over the benefit period to avoid an overcollection of the
20 cost. Also, given that I am recommending a two-year rate increase, this approach is
21 consistent with the period over which the rates from this proceeding will be in effect.
22 This adjustment, determined utilizing the Black & Veatch proprietary model, is
23 shown on Schedule LKM-2, line 13.

1 **Capacity to Pay Energy Costs**

2 Q. PLEASE EXPLAIN THE CAPACITY TO PAY ENERGY COST
3 ADJUSTMENT THAT YOU ARE RECOMMENDING.

4 A. The FY 2018 budget includes \$1,493,250 which is described as cost to reflect the
5 “capacity to pay for energy cost due to weather related events and also to account for
6 energy not purchased in advance”. The Department describes this budget item as
7 representing the required budgetary appropriation needed for fluctuations in demand
8 charges not related to energy consumption and spot market purchases. As described,
9 this budget item is essentially an approval for contingency expenditures related to
10 energy costs. Clearly, weather related events that are severe enough to impact energy
11 prices are not an everyday occurrence. Here again is a cost that may be prudent to
12 identify and set aside funds in the budgeting process, but not eligible for recovery for
13 ratemaking purposes because the cost is not known and certain. Therefore, I am
14 recommending an adjustment to remove these costs from the FY 2018 cost of service.
15 This adjustment, determined utilizing the Black & Veatch proprietary model, is
16 shown on Schedule LKM-2, line 14.

17 **WRAP/TAP Implementation Costs**

18 Q. WHAT ADJUSTMENT ARE YOU RECOMMENDING FOR WRAP/TAP
19 IMPLEMENTATION COSTS?

20 A. The FY 2018 budget includes an increase of \$1,569,366 in contracted services related
21 to the Tiered Assistance Program (TAP) and other regulatory matters. The
22 Department explains that \$1,100,000 of this total represents costs related to the
23 WRAP/TAP implementation cost, bond engineering, affordable rate studies and
24 reporting. I am recommending an adjustment to normalize the \$1,100,000 over a 2-
25 year period. The implementation of the TAP program is a non-recurring event.

1 Therefore, the inclusion of the full costs in rates as a normal recurring cost would
2 result in an overstatement of expenses. This adjustment, determined utilizing the
3 Black & Veatch proprietary model, is shown on Schedule LKM-2, line 15.

4 **V. Development of Revenue Requirement**

5 Q. PLEASE PROVIDE YOUR UNDERSTANDING OF HOW THE
6 DEPARTMENT'S PROPOSED REVENUE REQUIREMENT WAS
7 DEVELOPED.

8 A. Although the model that is used to determine the proposed revenue requirement is
9 primarily driven by the revenues and expenses as I have discussed earlier, three
10 additional factors must be considered according to Black and Veatch testimony,
11 beginning on page 43.

12 First, the 1989 General Ordinance Requirement must be met. In addition to
13 meeting the operation and maintenance expenses and annual capital costs, the 1989
14 General Ordinance stipulates that, during any given fiscal year, the Water
15 Department's combined revenues for water and wastewater services must be
16 sufficient to satisfy the following debt service coverage obligations:

- 17 1. The net revenues for any fiscal year shall be equal to at least 1.20² times
18 the debt service requirements for such fiscal year (excluding the
19 principal and interest payments in respect of Subordinated Bonds).
- 20 2. In each fiscal year, water and wastewater rents, rates, fees, and charges
21 shall yield net revenues which shall be at least equal to 1.00 times the
22 sum of the following:
 - 23 a. The debt service requirements for such fiscal year (including debt
24 service requirements in respect of Subordinated Bonds);
 - 25 b. Amounts required to be deposited into the Debt Reserve Account
26 during such fiscal year;

² To clarify, throughout the discussion of the Debt Service Coverage, the coverage is expressed either as 1.xx times or 1xx percent (e.g., 1.20 or 120%). The arithmetic result is the same. Hence, these factors are used interchangeably.

- 1 c. The principal or redemption price of and interest on General
2 Obligation Bonds payable during such fiscal year;
- 3 d. Debt service requirements on interim debt payable during such
4 fiscal year; and
- 5 e. The Capital Account Deposit to the Construction Fund for such
6 fiscal year (less any amounts transferred from the Residual Fund to
7 the Capital Account during such fiscal year).

8 Second, the AGM Insurance Requirement must be met. That is, in addition to
9 the rate covenant of the 1989 General Ordinance described above, the City has agreed
10 with Assured Guaranty Municipal Corporation (AGM) that for as long as the Series
11 2005A Bonds, the Series 2005B Bonds, and the portion of the Series 2010A Bonds
12 insured by AGM are outstanding, the established rates and charges for use by the
13 Water and Wastewater systems shall be sufficient to yield Net Revenues (excluding
14 amounts transferred from the Rate Stabilization Fund into the Revenue Fund during,
15 or as of the end of, such fiscal year) at least equal to 90 percent of the Debt Service
16 Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal
17 year.³ Furthermore, any calculation by a consulting engineer of projected rate
18 covenant compliance in connection with the proposed issuance of additional Bonds
19 for each fiscal year ending on or after June 30, 2000, must state that Net Revenues
20 (excluding amounts transferred from the Rate Stabilization Fund into the Revenue
21 Fund during, or as of the end of, such fiscal year) in each fiscal year included in the
22 projection period are projected to be at least 90 percent of the Debt Service
23 Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal
24 year.

³ I have been advised that recently passed Philadelphia legislation would incorporate this requirement into PWD's General Bond Ordinance. At the time of writing this testimony, that legislation has not yet been signed by the Mayor.

1 Third, the Water Rate Board Ordinance Requirement: Section 13-101(4)(a) of
2 the City Code sets the floor for the amounts that rates and charges must generate to
3 support the System. The rates and charges must yield to the City at least an amount
4 equal to the sum of:

- 5 1. Operating expenses of the City in respect of the water, sewer, storm water
6 systems;⁴
- 7 2. Debt service on all obligations of the City in respect of the water, sewer,
8 stormwater systems;
- 9 3. In respect of water, sewer and storm water revenue obligations of the City,
10 such additional amounts as will be required to comply with any rate
11 covenant and sinking fund reserve requirements approved by ordinance of
12 Council in connection with the authorization or issuance of water, sewer
13 and storm water revenue bonds; and
- 14 4. Proportionate charges for all services performed for the Water Department
15 by all officers, departments, boards or commissions of the City.

16 In addition, Section 13-101(4)(b) of the City Code states that the rates and
17 charges must not exceed the total appropriations from the Water Fund.

18 Q. HOW IS THE SENIOR DEBT COVERAGE DETERMINED?

19 A. As shown on Table C-1 of Black & Veatch's Exhibit BV-E1, Total Senior Debt
20 Service Coverage (line 23) equals Net Revenues After Operations (line 18) divided
21 by Total Senior Debt Service (line 22).

22 Q. IN PREVIOUS PWD RATE PROCEEDINGS, HAS THE REVENUE
23 REQUIREMENT BEEN BASED UPON ATTAINING A 1.20X
24 COVERAGE?

25 A. Yes, my understanding is that this has been the case in past PWD rate proceedings.

26 Q. DO YOU AGREE WITH THE DEPARTMENT'S CLAIM THAT IT HAS
27 BEEN DETERMINED THAT THE WATER FUND SHOULD

⁴ I do not believe this language prohibits the normalization of nonrecurring costs.

1 TRANSITION FROM THE MINIMUM 1.2 SENIOR DEBT SERVICE
2 COVERAGE REQUIREMENT TO A HIGHER COVERAGE LEVEL OF
3 1.28 BEGINNING FY 2019 AND 1.30 BEGINNING FY 2020?

4 A. No. In the last rate case, the Department proposed to increase its Debt Service
5 Coverage from 1.20 times to 1.35 times. To my knowledge, the Board did not make a
6 specific finding regarding a targeted level of senior debt service coverage in excess of
7 1.20x. Instead, the Board's determination in 2016 approved certain adjustments to
8 assumptions proposed in PWD's rate proceeding, and the result of inputting those
9 adjustments into Black & Veatch's proprietary rate model generated anticipated
10 coverage levels of 1.25x and 1.26x in FY 2017 and 2018, respectively.

11 Q. BASED UPON THE DISCUSSION ABOVE, WHAT DO YOU
12 RECOMMEND?

13 A. I recommend that the Board should not approve higher rates and charges solely for
14 the purpose of targeting debt service coverage in excess of the legally mandated
15 coverage level of 1.20x. There are many variables that must be considered when
16 deriving the revenue requirement. In the end, one must ensure that all metrics are
17 satisfied to avoid breaching bond covenants. Through my limited operation of PWD's
18 confidential rate model, I have determined that the manipulation of various
19 assumptions within the model can all contribute to a depiction of coverage in excess
20 of the 1.20x senior debt coverage requirement. As with much of PWD's finances, the
21 ability to obtain higher coverage is, at least in part, the result of choices made
22 regarding expenditures versus the accumulation of reserves. However, the
23 accumulation of excess reserves is an issue that must be considered given that every
24 dollar in higher rates means ratepayers have less money to spend for personal needs.
25 Consequently, the Public Advocate's recommendation that a rate increase is not

1 justified, at this time for either FY 2019 or FY 2020, is a recognition that there are
2 other sources of funds available to meet the Department’s obligation rather than
3 increasing rates.

4 **Residual Fund**

5 Q. WHAT BALANCE IS THE DEPARTMENT SEEKING FOR ITS
6 RESIDUAL FUND BALANCE?

7 A. PWD has established a goal of maintaining a minimum of \$15M in the Residual
8 Fund.

9 Q. WHAT IS THE STATED PURPOSE OF THE RESIDUAL FUND, AS
10 SHOWN ON LINES 29 THROUGH 36 EXHIBIT BV-E1, TABLE C-1?

11 A. According to Memorandum from Bond Counsel (provided as Schedule ML-3),
12 “the Residual Fund is the last Fund into which Project Revenues are transferred from
13 the Revenue Fund. Money in the Residual Fund may be used to pay Operating
14 Expenses or debt service, or for almost any other purpose in support of the
15 System...In addition, money in the Residual Fund may be used to fund a transfer to
16 the City’s General Fund limited to the ‘Net Reserve Earnings’ up to a maximum of
17 \$4,994,000. This annual transfer is often referred to as the ‘scoop’ by the City”.

18 Q. WHAT BALANCE SHOULD BE USED FOR ESTABLISHING RATES IN
19 THIS PROCEEDING?

20 A. In the last rate case \$15 million was used by the Department for the target Residual
21 Fund balance. The Department has not provided any additional information that
22 demonstrates that the \$15 million balance is inadequate. The Public Advocate is not
23 opposing PWD’s projections of maintaining a target of \$15 million. However, it
24 should be noted that the \$15 million is not a requirement by any bond covenant and

1 the ability to maintain this amount is, like Rate Stabilization Fund reserves, driven in
2 part by operational choices to be made by PWD.

3 **Rate Stabilization Fund**

4 Q. WHAT IS THE STATED PURPOSE OF THE RATE STABILIZATION
5 FUND (RSF)?

6 A. The Rate Stabilization Fund is intended to provide liquidity to PWD to comply with
7 financial covenants and maintain cash flow stability and lessen the need for rate
8 increases.

9 Q. FOR PURPOSES OF SATISFYING MINIMUM SENIOR DEBT SERVICE
10 COVERAGE REQUIREMENTS, IS THERE A STATED REQUIREMENT
11 REGARDING THE MAXIMUM AMOUNT THAT CAN BE
12 WITHDRAWN FROM THE RATE STABILIZATION FUND IN ANY ONE
13 YEAR?

14 A. Yes. The requirement states that there is a cap on the amount to be utilized for debt
15 service coverage from the Rate Stabilization Fund based upon net revenues being
16 90% of debt service, that is, the maximum amount that can be withdrawn from the
17 RSF to substitute for revenues in any one year is equal to the amount of senior debt
18 service times 30%.

19 Q. FOR THE TEST YEARS, DID PWD REFLECT ANY AMOUNTS TO BE
20 WITHDRAWN (OR ADDED) TO THE RSF ON EXHIBIT BV-E1, TABLE
21 C-1?

22 A. Yes. As shown on Line 38, the Department is projecting withdrawals totaling \$43.7
23 million from the Rate Stabilization Fund during the 3-year proposed rate period to
24 cover its projected cost increases.

1 Q. HOW ACCURATE HAS THE DEPARTMENT BEEN WITH ITS
2 PROJECTIONS OF THE RSF YEAR END BALANCE?

3 A. The table below Provides a summary of the rate case projection and the actual
4 balances for the past three fiscal years.

Philadelphia Water Department Rate Stabilization Fund Comparison		
<u>Fiscal Year</u>	<u>Rate Case Projection</u>	<u>Actual Year End Balance</u>
2015	\$ 205,206,000	\$ 206,446,966
2016	169,306,000	205,760,628
2017	153,706,000	201,759,397

Note: FY 2017 balance is Preliminary
Source: Response to PA-ADV-19

5 The chart on page 15, above, shows the summary of rate case projection and actual
6 Rate Stabilization Fund balances for FY 2012-2017. In the response to PA-ADV-19,
7 the Department noted that “the variance of the fund balance represents the cumulative
8 impact of variances in revenues, operating expenses, debt service payments, transfers,
9 etc. With each subsequent fiscal year, any variance from the previous periods will
10 contribute to the variance in the current period. In addition, interest earnings
11 associated with the Rate Stabilization Fund (RSF) further contribute to the difference
12 between projected and actual year-end balances”. Clearly, as noted by the
13 Department, there is excess income that is contributing to the RSF balance that
14 exceeds its own target (which is not a legally required target) of \$110 million, which
15 was the target in the last rate case.

16 Q. IS IT APPROPRIATE TO USE FUNDS FROM THE RATE
17 STABILIZATION FUND TO ACHIEVE DEBT SERVICE COVERAGES
18 WHICH ARE HIGHER THAN WHAT IS LEGALLY REQUIRED?

1 A. No. I do not believe it is reasonable to use the rate stabilization funds purely to
2 achieve a target that is not legally required of the Department. However, given the
3 extent to which PWD consistently underestimates its actual reserves, I believe it is
4 appropriate to incentivize PWD to utilize (i.e., spend) its reserves in lieu of increasing
5 customer rates and charges. I do not believe this objective will be served without
6 significant adjustments to assumptions in PWD's rate case, as I propose in this
7 testimony. Still, because of the thousands of assumptions PWD utilizes in the model,
8 it is impossible to identify each and every overly conservative assumption utilized by
9 PWD, and so I believe the Board should continue to expect PWD to outperform its
10 projections. This outperformance serves as PWD's incentive to prudently direct
11 additional revenues to SMIP/GARP and the Residual Fund for construction purposes.
12 To the extent PWD outperforms or actually draws down on its existing reserves in FY
13 2019 and FY 2020, I recognize that may result in PWD achieving coverages in excess
14 of 1.20x.

15 Q. DO YOU HAVE OTHER CONCERNS REGARDING THE RATE
16 STABILIZATION FUND?

17 A. Yes. In past rate cases, the PWD has projected that by the end of the multi-year Rate
18 Period, the Rate Stabilization Fund balances would be reduced to a much lower level
19 than at the beginning of the Rate Period, thereby, fulfilling its purpose of mitigating
20 rate increases. In fact, as shown above, these projected reductions in RSF balances
21 have not occurred.

22 **Adequate Reserves**

23 Q. PLEASE COMMENT ON THE ADEQUACY OF PWD'S RESERVES.

24 A. As shown on Schedule LKM-1, even after reflecting the adjustments I am
25 recommending, there are sufficient excess funds in the Residual Fund and the RSF. I

1 recommend that these excess funds be used to fulfill some of the Department's
2 proposed expenditures. The excess funds represent ratepayer supplied money that
3 should be used for the benefit of the system.

4 Q. ARE THERE SPECIFIC EXPENDITURES TO WHICH YOU ARE
5 REFERRING?

6 A. Yes. Earlier in this testimony, I explained adjustments to remove the additional
7 funding PWD requested for SMIP/GARP and the 0.5 percent increase for the Capital
8 Account Deposit. The excess funds, together with funds PWD can reasonably be
9 expected to have as a result of its likely "outperformance," provide an opportunity to
10 carry out those expenditures without increasing customers rates. Hence, the Board
11 now has an opportunity to provide an incentive to PWD to spend down excess
12 reserves to the direct benefit of ratepayers. As shown on Schedule LKM-1, after
13 reflecting the adjustments I am recommending, there will be a balance of \$29.4
14 million in the Residual Fund and \$177.5 million in the RSF. Using the Department's
15 target balances of \$15.0 million for the Residual Fund and \$110 million for the RSF,
16 there would be an excess of \$14.4 million in the Residual Fund and \$67.5 million in
17 the RSF at the end of FY 2019. These excess funds provide sources of funding for
18 additional SMIP/GARP project financing and additional potential funding of capital
19 work.

20 Q. DO YOU BELIEVE THAT EXHIBIT BV-E1, TABLE C-1 PROVIDES A
21 FORECAST WHICH IS REASONABLY ACCURATE FOR
22 RATEMAKING PURPOSES WITH RESPECT TO YEAR-END
23 BALANCES WHICH WOULD OCCUR IF THE DEPARTMENT'S RATE
24 PROPOSAL WAS ACCEPTED?

1 A. No. On the basis of past history, I believe that the Department's estimates of
2 revenues on which the model is based result in an overstatement of its forecast
3 revenue requirements. This indicates a strong likelihood that either Residual Fund or
4 Rate Stabilization Fund balances will again exceed what PWD forecasts.

5 Q. SCHEDULE LKM-1 SHOWS EXCESS FUNDS IN THE RESIDUAL FUND
6 AND THE RSF. ARE YOU RECOMMENDING RATES BE
7 ESTABLISHED TO PRODUCE EXCESS FUNDS EVEN AS YOU ARE
8 CRITICAL OF PWD'S MODEL?

9 A. No. The Model is very complex, and with my limited knowledge of the model, it
10 would be difficult to fully modify the model given the limited time. However, as I
11 explained above, the proposals I have made with regard to SMIP/GARP and the
12 Capital Account Deposit would have the impact of reducing the excess balances in
13 the reserve accounts. Therefore, it is not my recommendation that the rates be
14 changed to achieve the reserve balances reflected on Schedule LKM-1.

15 Q. SCHEDULE LKM-1 ALSO SHOWS SENIOR DEBT SERVICE
16 COVERAGE OF 1.20X FOR FY 2020. DOESN'T THAT IMPERIL THE
17 DEPARTMENT WITH NOT BEING ABLE TO MEET ITS DEBT
18 COVENANT?

19 A. No. The implementation of the TAP removes \$13.7 million from General Service
20 Revenues in FY 2020 and collects those Revenues through a rider. The rider revenues
21 are not shown as revenues in this rate model because this model is designed to
22 determine general service revenues. However, for purposes of determining the
23 coverage ratios and reserve account balances, those revenues should be considered
24 because the rider revenues are collected from general service customers as part of the

1 regular monthly bills. Hence, those revenues are utility revenues and should not be
2 excluded when evaluating the coverage ratios and reserve balances.

3 Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

4 A. Yes, it does.

**BEFORE THE
PHILADELPHIA WATER, SEWER AND STORM WATER RATE BOARD**

**PHILADELPHIA WATER)
DEPARTMENT)** **FY 2019-2021 RATES**

SCHEDULES ACCOMPANYING

DIRECT TESTIMONY

OF

LAFAYETTE K. MORGAN, JR.

ON BEHALF OF THE PUBLIC ADVOCATE

April 20, 2018

EXETER

ASSOCIATES, INC.

10480 Little Patuxent Parkway, Suite 300
Columbia, Maryland 21044

PHILADELPHIA WATER DEPARTMENT
PROJECTED COMBINED REVENUE AND REVENUE REQUIREMENTS
(in thousands of dollars)

Line No.	Description	2019	2020
OPERATING REVENUE			
1	Water Service - Existing Rates	271,286	269,183
2	Wastewater Service - Existing Rates	<u>429,475</u>	<u>426,975</u>
3	Total Service Revenue - Existing Rates	700,761	696,158
4	Additional Service Revenue Required		
5	Percent Months		
6	<u>Year</u> <u>Increase</u> <u>Effective</u>		
7	FY 2017 0.00% 6	-	-
8	FY 2018 0.00% 10	-	-
9	FY 2019 0.00% 10	-	-
10	FY 2020 0.00% 10	-	-
11	Total Additional Service Revenue Required	-	-
12	Total Water & Wastewater Service Revenue	700,761	696,158
13	Other Income (b)		
14	Other Operating Revenue	16,187	14,404
15	Build America Bond Reimbursement	-	-
16	Construction Fund Interest Income	-	-
17	Debt Reserve Fund Interest Income	-	-
18	Operating Fund Interest Income	371	320
19	Rate Stabilization Interest Income	<u>660</u>	<u>601</u>
20	Total Revenues	717,979	711,484
OPERATING EXPENSES			
21	Total Operating Expenses	(470,156)	(484,191)
NET REVENUES			
22	Transfer From/(To) Rate Stabilization Fund	<u>11,400</u>	<u>21,200</u>
23	NET REVENUES AFTER OPERATIONS	259,224	248,492
DEBT SERVICE			
24	Senior Debt Service	-	-
25	Revenue Bonds	-	-
26	Outstanding Bonds	(133,964)	(123,040)
27	Pennvest Parity Bonds	(11,682)	(11,636)
28	Projected Future Bonds	<u>(53,398)</u>	<u>(72,142)</u>
29	Total Senior Debt Service	(199,044)	(206,818)
30	TOTAL SENIOR DEBT SERVICE COVERAGE (L18/	1.30 x	1.20 x
31	Subordinate Debt Service		
32	Outstanding General Obligation Bonds	-	-
33	Pennvest Subordinate Bonds	-	-
34	Subordinate Debt Service	-	-
35	Transfer to Escrow	-	(1,396)
36	Total Debt Service on Bonds	(199,044)	(208,215)
37	CAPITAL ACCOUNT DEPOSIT	(23,845)	(24,655)
38	TOTAL COVERAGE	1.16 x	1.07 x
RESIDUAL FUND			
39	Beginning of Year Balance	13,216	29,427
40	Interest Income	77	88
41	Plus:		
42	End of Year Revenue Fund Balance	36,335	15,622
43	Deposit for Transfer to City General Fund (c)	722	731
44	Less:		
45	Transfer to Construction Fund	(20,200)	(25,700)
46	Transfer to City General Fund	(722)	(731)
47	Transfer to Debt Service Reserve Fund	-	-
48	End of Year Balance	29,427	19,437
RATE STABILIZATION FUND			
49	Beginning of Year Balance	188,998	177,598
50	Deposit From/(To) Revenue Fund	<u>(11,400)</u>	<u>(21,200)</u>
51	End of Year Balance	177,598	156,398

**PHILADELPHIA WATER DEPARTMENT
COMBINED UTILITY: PROJECTED RATE STABILIZATION FUND
AND COVENANTS METRICS PERFORMANCE**

Line No.	Description	2019	2020
1	Beginning Balance: Rate Stabilization Fund	188,998	177,598
2	Transfers From (To) Revenue Fund (b)	(11,400)	(21,200)
3	Rate	177,598	156,398
4	Senior Debt Coverage (c)	1.30	1.20
5	Total Debt Coverage (d)	1.16	1.07
	Insurance Covenants		
6	Coverage	1.24	1.09
	O&M Actual to Budget Ratio		
7	Projected O&M Budget (f)	550,362	565,796
8	O&M Actual to Budget Ratio	85.4%	85.6%
	Rate Board Ordinance Requirements		
9	Projected Total Revenues	717,979	711,484
10	Total	809,585	814,288
11	Ordinance Requirement Compliance (h)	Yes	Yes
	Cash Funding		
12	Funded	13.4%	14.9%

(a) FY 2017 is projected and subject to change.

(b) See Line 30 in Table C-1.

(c) Senior Debt Coverage = (Total Revenues - Operating Expenses + Transfer

(d) Total Debt Coverage = (Total Revenues - Operating Expenses + Rate

(e) Senior Debt Coverage from Current Revenues = (Total Revenues -

(f) FY 2017 and FY 2018 budget reflects the PWD adopted budget; FY 2019

(g) Total Revenues includes service to the City as required by the 1989 General

(g) Total Appropriation = Total O&M Budget + Senior Debt + Subordinate Debt

(h) Rate Board Ordinance requires that Total Revenues not exceed Total

(i) Cash Funded Capital Ratio = (Capital Account Deposit + Residual Transfer to

PHILADELPHIA WATER DEPARTMENT
Summary of the Public Advocate's Adjustments

Line No.	Description	Fiscal Year Ending June 30,	
		2019	2020
1	SMIP/GARP	\$ (10,000,000)	\$ (10,000,000)
2	Additional Employees	(18,706)	(18,706)
3	Collection Factors	8,000	4,000
4	Power Costs	-	-
5	Gas Costs	-	-
6	Other 200 Escalation	(1,281,000)	(2,633,000)
7	Chemicals	(1,180,000)	(1,895,000)
8	Transfers	(21,000)	(42,000)
9	Debt Interest Rate	(534,000)	(244,000)
10	Debt Issuance Costs	TBD	TBD
11	Capital Program Actual to Budget Ratio	76%	76%
12	Capital Account Deposit	1%	1%
13	Rate Case	(1,413,080)	(1,413,080)
14	Capacity to Pay	(1,493,250)	(1,493,250)
15	Implementaion of TAP/WRAP	<u>(550,000)</u>	<u>(550,000)</u>
	Total	<u>\$ (16,483,036)</u>	<u>\$ (18,285,036)</u>