

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

In the Matter of a Proposed Change                    )  
in Philadelphia Water Department Rates            )            Fiscal Years 2017-2018

Direct Testimony of  
**David F. Russell, P.E.**

on Behalf of  
Citizens for Pennsylvania's Future

PF Statement 1

March 24, 2016

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23

**Introduction**

**Q. Please state your name and business address.**

A. My name is David F. Russell, P.E. My business address is 15 Titcomb Street, Newburyport, Massachusetts 01950.

**Q. By whom are you employed and in what capacity?**

A. I am the founder and President of RUSSELL CONSULTING, LLC, a public and private utility consulting firm. Russell Consulting provides management and financial consulting services to public and private utilities, municipalities, governmental agencies and private companies.

**Q. What is the purpose of your testimony in this case?**

A. I have been asked by Citizens for Pennsylvania’s Future (“PennFuture”) to review proposals of the Philadelphia Water Department (“PWD” or the “Department”) relating to rates and programs for stormwater service.

**Q. What is your understanding of PennFuture’s interests in this case?**

A. I understand that PennFuture is a public interest environmental organization that, among other things, works to promote effective urban stormwater management, which if done properly, can help to minimize pollution from urban run-off and improve the quality of Pennsylvania’s waters. PennFuture strongly supports *Green City Clean Waters* (“GCCW”), PWD’s 25-year stormwater management plan that protects and enhances local waterways with green infrastructure and is committed to ensuring that the Department will be able to fulfill all of its commitments over the full 25-year term of the GCCW program.

**Q. What are your qualifications to provide testimony in this case?**

1 A. I am a professional engineer who has been professionally involved in the management,  
2 control, and regulation of public utilities since the early 1970s. Throughout my career, I  
3 have developed substantial expertise in matters relating to the economic regulation of  
4 public utilities. At Russell Consulting, I have engaged in management consulting,  
5 management reviews and audits, rate design and cost of service studies, utility contracts  
6 and negotiations, utility economics, and the implementation of public-private  
7 partnerships. I have authored several papers published in professional journals, and I  
8 have presented at regional and national conventions. I have provided expert testimony in  
9 numerous quasi-judicial proceedings before several state public utility commissions, city  
10 boards, and legislative committees, including but not limited to: the Massachusetts  
11 Public Utilities Commission; the New Hampshire Public Utilities Commission; the New  
12 Jersey Board of Public Utilities; the Illinois Commerce Commission; The New York  
13 Public Service Commission; the Florida Public Utilities Commission; the South Carolina  
14 Public Utilities Commission; the Delaware Public Service Commission; the Vermont  
15 Public Service Commission; the Rhode Island Public Utilities Commission; the Guam  
16 Public Utilities Commission; the Massachusetts Senate Committee on Government  
17 Regulations; and the City Council of the City of New Orleans.

18 I have also worked on matters specifically related to PWD's financial planning.  
19 In 2011, I was contracted by PennFuture to assist them in their understanding and  
20 evaluation of the Department's long term plans for managing and controlling stormwater  
21 flows in the City of Philadelphia. These plans were set forth in the Department's report  
22 entitled, "Long Term Control Plan Update (LTCPU)." Specifically, I was asked to  
23 review and evaluate Section 11 of that report entitled, "Financial Capability." The

1 purpose of that section was to evaluate the burden of compliance on both ratepayers and  
2 the permittee (the City).

3 Prior to establishing my own consulting practice in 1994, I worked for two  
4 regulatory agencies – as Chief Engineer for the Massachusetts Department of Public  
5 Utilities and as a special consultant to the Chief Economist of the New Jersey Board of  
6 Public Utilities. In addition, I have held senior engineering and management positions  
7 for three electric utilities (Eastern Utilities Associates, Unitol Service Corp., and General  
8 Public Utilities). I have also been a Principal Management Consultant for a major  
9 environmental engineering company (Camp, Dresser & McKee, Inc., now CDM/Smith)  
10 for several years. As I served in these roles, I acquired increasing levels of knowledge  
11 about the financing and operation of public utilities.

12 I hold a master's degree in economics (Resource and Regulatory Economics)  
13 from Rutgers University; a master's degree in engineering management (Operations  
14 Research and Finance) from Northeastern University; and a bachelor's degree in  
15 electrical engineering from Rutgers University. I am a Registered Professional Engineer  
16 in the states of Massachusetts, New Jersey and Florida.

17 A copy of my curriculum vitae is attached as PF-DFR EXHIBIT 1.

### 18 Summary

19 **Q. How is your testimony organized?**

20 A. I have addressed three issues directly related to PWD's stormwater management  
21 programs and recovery of those costs – namely: a general assessment of PWD's GCCW  
22 Program; a discussion of the Enhanced Customer Assistance Program ("Enhanced  
23 CAP"); and recommendations about PWD's incentive programs to encourage property

1 owners to implement stormwater control measures. Each topic is presented in the order  
2 listed above.

### 3 Discussion

#### 4 **1. GENERAL ASSESSMENT OF PWD'S GCCW PROGRAM**

5 **Q. Please summarize your assessment of PWD's *Green City Clean Water Program*.**

6 A. PennFuture's primary interest in this case is to make sure that the Department has the  
7 resources necessary to manage stormwater in the City of Philadelphia. Given PWD's  
8 commitment to its GCCW program as a means to satisfy the requirements of its June 1,  
9 2011 Consent Order and Agreement ("COA") with the Pennsylvania Department of  
10 Environmental Protection ("PaDEP"), it is critical for both environmental and legal  
11 purposes that the Department have sufficient revenues to accomplish the goals set forth in  
12 the GCCW program.

13 In order to assess the Department's ability to successfully implement all parts of  
14 the GCCW program in a timely manner, I reviewed three key metrics: two forward-  
15 looking criteria and a third metric that looks back at PWD's performance to date.  
16 Namely, I considered the Department's Capital Improvement Program ("CIP") for  
17 stormwater management facilities; its budgeted expenses to perform ongoing operation  
18 and maintenance of its stormwater management facilities; and its performance to date in  
19 satisfying all of the requirements of the COA. My findings are summarized below in the  
20 order listed.

21 **Q. Is the Department's level of funding for proposed capital improvements related to**  
22 **stormwater management and control facilities sufficient for the two rate years and**  
23 **through the second 5-year performance review period, ending with FY 2021?**

1 A. The Department's CIP for stormwater management facilities totals \$333 million over the  
2 period encompassing the six years from FY 2016 through FY 2021. (See PWD response  
3 to PennFuture interrogatory PF 1-4.) This represents about 25% of the projected net  
4 value of \$1.2 billion (in 2009 dollars) committed by the Department for the 25-year  
5 GCCW program. (Philadelphia Water Department, Green City Clean Waters: Program  
6 Summary at 4 (June 1, 2011), *available at*  
7 [http://www.phillywatersheds.org/doc/GCCW\\_AmendedJune2011\\_LOWRES-web.pdf](http://www.phillywatersheds.org/doc/GCCW_AmendedJune2011_LOWRES-web.pdf).)  
8 Assuming the Department continues to invest in these facilities at this same rate of  
9 spending over the remainder of the GCCW program, this level of related improvements is  
10 likely to be adequate to satisfy its capital improvement requirements under the COA.  
11 This conclusion is supported by PWD's spending on capital improvements to its  
12 stormwater management and control facilities over the four years prior to FY 2016 (FY  
13 2012 through FY 2015).

14 **Q. Has the PWD provided sufficient funds for Operations and Maintenance of its**  
15 **current and planned Stormwater Management facilities?**

16 A. The Department has allocated about \$153.7 million for these expenses in FY 2017 and  
17 \$161.3 million in FY 2018. (See PWD response to PennFuture Interrogatory PF 1-19.)  
18 Given the Department's performance to date with respect to its COA requirements and  
19 budgeted amounts for these expenses in prior years, these levels should be adequate for  
20 the two rate years. Continued monitoring of the Department's performance in complying  
21 with the COA will indicate whether these levels were adequate after the fact. If the  
22 Department does not fully comply, increased expenditures may be needed beyond FY  
23 2018.

1 **Q. How has the Department performed against the short-term goals or requirements of**  
 2 **the COA?**

3 A. The 5-year requirements of the COA are defined in Appendix I to the COA. (COA  
 4 Appendix I (“2012 NPDES Permits – Part C Addendum”) at 3 of 4.) The first 5-year  
 5 performance period ends on June 30, 2016, just over 3 months from now.

6 A summary of the COA’s 5-year requirements and the Department’s performance  
 7 toward meeting those requirements is included in the following table:

<b>Metric</b>	<b>Expected Department Performance</b>
WPCP Upgrade Design	<p><u>Requirement:</u> “Performance Standards for ‘percent complete’ for the WPCP upgrade design projects were not available at the time of the [COA]. The City shall provide these targets to the [PaDEP] along with the Facility Concept Plan for the WPCP.” (2012 NPDES Permits – Part C Addendum at 3 n.1.)</p> <p><u>PWD Performance:</u> The Facility Concept Plan has been completed and submitted to the PaDEP. (“Green City, Clean Waters,” Philadelphia Water Department (“GCCW Website”), available at <a href="http://www.phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan">http://www.phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan</a> (Last accessed: March 23, 2016).) After PaDEP approves the plan, the targets for “percent complete” will be determined and entered into Table 1 of Appendix I to the COA. Thus, the 5-year target should be available soon, and the PWD expects to be in compliance.</p>
WPCP Upgrade Construction	<p><u>Requirement:</u> “Performance Standards for ‘percent complete’ for the WPCP upgrade design projects were not available at the time of the [COA]. The City shall provide these targets to the [PaDEP] along with the Facility Concept Plan for the WPCP.” (2012 NPDES Permits – Part C Addendum at 3 n.1.)</p> <p><u>PWD Performance:</u> The Facility Concept Plan has been completed and submitted to the PaDEP. (GCCW Website.) After PaDEP approves the</p>

	<p>plan, the targets for “percent complete” will be determined and entered into Table 1 of Appendix I to the COA. Thus, the 5-year target should be available soon, and the PWD expects to be in compliance.</p>
Miles of Interceptor Lined	<p><u>Requirement</u>: 2 miles. (2012 NPDES Permits – Part C Addendum at 3.)</p> <p><u>PWD Performance</u>: As of the end of FY 2015, the PWD completed 7.5 miles of interceptor lined. (Philadelphia Water Department, Appendix A: Green City, Clean Waters 2015 Annual Report (“2015 GCCW Annual Report”) (September 30, 2015), <i>available at</i> <a href="http://phillywatersheds.org/doc/FY15CSO_MS4AnnualReport_ForWebsite_ERRATA_2015_01_13.pdf">http://phillywatersheds.org/doc/FY15CSO_MS4AnnualReport_ForWebsite_ERRATA_2015_01_13.pdf</a> at page 20.) An additional 7.6 miles are in construction or contract management. Thus, PWD has already satisfied this requirement and has already made significant progress toward satisfying the 25-year requirement of 14.5 miles.</p>
Overflow Reduction Volume	<p><u>Requirement</u>: 600 million gallons per year. (2012 NPDES Permits – Part C Addendum at 3.)</p> <p><u>PWD Performance</u>: The Department has made significant progress toward meeting the first 5-year milestone and expects to exceed compliance targets in terms of sewage kept out of waterways. (Philadelphia Water Department Statement 4- Direct Testimony of Joanne Dahme and Erin Williams (“PWD Statement 4”) at page 4.)</p>
Total Greened Acres	<p><u>Requirement</u>: 744 greened acres. (2012 NPDES Permits – Part C Addendum at 3.)</p> <p><u>PWD Performance</u>: The Department has made significant progress toward meeting the first 5-year milestone and expects to exceed compliance targets in terms of the number of acres greened. (PWD Statement 4 at page 4.)</p>
Equivalent Mass Capture – TSS	<p><u>Requirement</u>: Over the 25-year duration of the GCCW program, the Department must improve its equivalent mass capture performance from 62% to 85%. For its 5-year report, the Department must simply report the performance it has achieved. (2012 NPDES Permits – Part C Addendum at 3.)</p> <p><u>PWD Performance</u>: A number of studies are underway that will allow</p>



	measurement of this metric when complete. The PWD is confident it will be able to satisfy this 25-year goal.
Equivalent Mass Capture – BOD5	<p><u>Requirement:</u> Over the 25-year duration of the GCCW program, the Department must improve its equivalent mass capture performance from 62% to 85%. For its 5-year report, the Department must simply report the performance it has achieved. (2012 NPDES Permits – Part C Addendum at 3.)</p> <p><u>PWD Performance:</u> A number of studies are underway that will allow measurement of this metric when complete. The PWD is confident it will be able to satisfy this 25-year goal.</p>
Equivalent Mass Capture – Coliform Bacteria	<p><u>Requirement:</u> Over the 25-year duration of the GCCW program, the Department must improve its equivalent mass capture performance from 62% to 85%. For its 5-year report, the Department must simply report the performance it has achieved. (2012 NPDES Permits – Part C Addendum at 3.)</p> <p><u>PWD Performance:</u> A number of studies are underway that will allow measurement of this metric when complete. The PWD is confident it will be able to satisfy this 25-year goal.</p>

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

**Q. Based on the 4<sup>th</sup> year report and other information contained in this docket, what is your opinion as to the likelihood of PWD’s ability to satisfy the COA requirements at the end of the first 5-year performance review?**

**A.** From my review of their performance to date, and the fact that the Department has gone on record as stating that they will comply with all of those requirements (*see* PWD response to PennFuture Interrogatory PF 1-5), I am confident that the Department will be able to satisfy all of those requirements by the end of FY 2016, or shortly thereafter. Furthermore, if the Department is deficient in satisfying any requirements of the COA at the end of the first 5-year period (or any of the other four, 5-year periods) it could be

1 subject to enforcement, which will provide sufficient additional incentives to come into  
2 compliance as soon as possible.

3 **Q. Do you have a recommendation relative to PWD’s Green City Clean Water**  
4 **Program and the associated revenue requirements proposed in this case?**

5 A. Yes, I do. It is my professional opinion that PWD’s proposed revenue requirements that  
6 support the programs and facilities needed to continue the City’s GCCW Program are  
7 necessary and reasonable and should not be reduced in either rate year. Therefore, I  
8 recommend that the Rate Board adopt this position in its Decision and Order in this case.

9

10 **2. ENHANCED CAP PROGRAM**

11 **Q. Please briefly describe PWD’s Enhanced CAP program.**

12 A. The Enhanced Customer Assistance Program (“Enhanced CAP”) is a rate mitigation  
13 program designed to limit rate increases to qualified non-residential customers during the  
14 transition from charging them for stormwater management costs based on their metered  
15 water consumption to a new rate structure (established during past rate proceedings)  
16 based on the total parcel area and impervious surface area of each customer’s property.  
17 These programs allow qualified non-residential customers who would have otherwise  
18 seen a year-over-year increase of more than 10% to receive an account adjustment on  
19 their monthly water bill equivalent to an amount that would make the stormwater charge  
20 10% higher than the fiscal year prior. (PWD Statement 4 at 6; Philadelphia Water  
21 Department Regulations, Chapter 2 § 204.0(B).) The program was closed to new  
22 applicants on September 30, 2013 (although some denied applicants were permitted to re-  
23 apply through June 30, 2014). (PWD Statement 4 at 6.)

24 **Q. Please explain your understanding of the history of the Enhanced CAP program.**

1 A. Although the new parcel-based rate structure is much more equitable than the meter-  
2 based rate structure, Enhanced CAP was implemented during the transition from the  
3 meter-based system to the parcel-based system because the change resulted in some non-  
4 residential customers being assessed rate increases that were much higher than the system  
5 average rate increase. The Department reasonably determined that those customers  
6 should be entitled to some protection from dramatic increases.

7 **Q. Is there a set end date for rate mitigation offered to current enrollees in Enhanced**  
8 **CAP?**

9 A. No. The Enhanced CAP program is expected to continue as long as customers continue  
10 to meet the program requirements found in Philadelphia Water Department Regulations,  
11 Chapter 2 § 204.0(B). (PWD response to PennFuture Interrogatory PF 1-19.)

12 **Q. Do you believe that the Enhanced CAP program should be continued in its current**  
13 **form?**

14 A. No. Although I understand the Department's desire to protect rate payers from  
15 disproportionately steep rate increases during the transition from the meter-based system  
16 to the parcel-based system, I believe the level of mitigation should be fair and reasonable,  
17 and the length of time to which it should apply should be limited.

18 **Q. What do you see as the flaws of the Enhanced CAP program?**

19 A. As it is currently designed, the program does not provide a reasonable limit to the amount  
20 of time that a customer may receive rate mitigation, and it does not provide adequate  
21 incentives for customers to implement stormwater management practices on private  
22 property. Customers who were accepted into the Enhanced CAP program during the  
23 enrollment period may remain in this program for as long as they continue to satisfy the

1 conditions of the program. (PWD response to PennFuture Interrogatory PF 1-19.) Thus,  
2 even though it is closed to new applicants, rate mitigation under the Enhanced CAP  
3 program may continue for many years to come. The Department estimates that the  
4 revenue subsidies associated with the Enhanced CAP program will decrease from its  
5 current projection of \$3.517 million for FY 2016 by approximately \$100,000 per year  
6 through FY 2021. (Philadelphia Water Statement 9B- Supplemental Direct Testimony of  
7 Black & Veatch Corporation (“PWD Statement 9B”) at 8-9.) At that rate, the  
8 Department can expect that the subsidies resulting from the Enhanced CAP program will  
9 continue for the next three decades. This is an unnecessarily long time to continue a  
10 program intended to help customers transition to a new rate system.

11 Further, the eligibility conditions do not contain any requirement that eligible  
12 customers take measures to limit the stormwater run-off from their properties, which  
13 could greatly reduce the stormwater management charges to that customer, and thereby,  
14 reduce or eliminate their eligibility for continued participation in the Enhanced CAP  
15 program.

16 **Q. What changes do you propose that the Department make to the Enhanced CAP**  
17 **program?**

18 A. I propose that the Enhanced CAP program be terminated in three years – by the end of  
19 FY 2019 – and that in anticipation of that termination, PWD promote other ways to  
20 mitigate customers’ financial burdens while at the same time providing stormwater  
21 management benefits.

22 In order to provide adequate notice, all customers that remain eligible for the  
23 Enhanced CAP program should be informed, as soon as possible after this case is

1           decided, that rate caps will no longer be available after June 30, 2019. Customers that  
2           remain eligible for Enhanced CAP should be encouraged to make efforts to minimize  
3           impervious area on their parcels and/or take advantage of another PWD incentive or rate  
4           reduction program as a preferred means of lowering their stormwater charges.

5           The Department should provide to all customers currently enrolled in the  
6           Enhanced CAP program estimates of what their stormwater charges will increase to in  
7           FY 2020, if they do not reduce their stormwater management service (“SWMS”) fees by  
8           some other means, such as: directly reducing the impervious area of their properties;  
9           participating in the SMIP and/or GARP incentive programs; and/or or managing  
10          stormwater in a way that would qualify for the Department’s SWMS credits under  
11          Philadelphia Water Department Regulations, Chapter 3 § 304.5. Those customers who  
12          take advantage of these opportunities will provide benefits to the Department and City  
13          residents by helping to minimize or control stormwater on their properties in return for  
14          the rate relief that they seek.

15          The goal of this recommendation is to end the Enhanced CAP program in a  
16          reasonable period of time and in a manner that is fair to all rate payers. This  
17          recommendation provides significant benefits to both the Department and its customers.

18          These are summarized below:

- 19           ➤ Increased management of stormwater on private lands;
- 20           ➤ Enhanced participation in the SMIP/GARP incentive programs;
- 21           ➤ For each private greened acre accomplished with private funds, elimination of the  
22           need for the Department to pay for another greened acre that would have cost the

1 Department about three times more than the private greened acre (*see* PWD's  
2 response to PF 1-9);

3 ➤ End of the subsidization of participating customers by non-participating  
4 customers in a reasonable timeframe;

5 ➤ Termination of the administrative and recordkeeping burdens several years before  
6 they would have otherwise.

7 **Q. How would these recommendations impact the Department's projected decreases in**  
8 **rate revenues ("contra revenues") not recovered from participating customers?**

9 A. These recommendations should significantly impact these projections of annual  
10 reductions in associated contra revenues. However, as explained by the Department (*see*  
11 PWD response to PennFuture Interrogatory PF 1-14), any adjustment to the contra  
12 revenues associated with the Enhanced CAP program only changes the level of subsidies  
13 between participants and non-participants; it would not ultimately affect the total amount  
14 of revenue collected by the Department. Because I anticipate that notice of the  
15 termination of the Enhanced CAP program would likely lead to more participants taking  
16 advantage of the incentive and credit programs, the level of these contra revenues would  
17 decrease much faster than the Department projects. (*See* PWD Statement 9B at 8.)  
18 Furthermore, by FY 2020 the level of contra revenues attributed to this program would  
19 by necessity drop to zero. While the exact rate of reduction to contra revenues from the  
20 Extended CAP program between FY 2017 and FY 2019 is uncertain, it would not be  
21 unreasonable for planning purposes to assume that it would be spread uniformly over the  
22 remaining three years. Additionally, the level of contra revenues estimated for FY 2016  
23 (not part of this case) should be lowered because of more recent data to about \$3.3

1 million. (*Compare* PWD Statement 9B at 8 *with* PWD response to PennFuture  
2 Interrogatory PF 1-22.)

3 These changes would impact the level of SWMS charges to participants and non-  
4 participants over the next few years. The rate of change for contra revenues associated  
5 with the Enhanced CAP program for FY 2017 through 2019 (as opposed to the current  
6 estimate of a \$100,000/year decrease) is difficult to predict. However, by the beginning  
7 of FY 2020 the subsidies will be reduced to zero and all non-residential customers will be  
8 charged based on the same rates.

9 **Q. How would these recommendations impact proposed revenue requirements?**

10 A. To the extent there may be an increased demand for the incentive programs (SMIP and  
11 GARP), there could be an increase in costs projected for those programs. However,  
12 unless the actual expense is allowed to exceed the budgeted amount (proposed at a total  
13 of \$15 million in both rate years), the increased demand may only result in shifting costs  
14 between different customers taking advantage of the incentive programs. The analysis is  
15 also complicated by the fact that the proposed revenues for these programs are only  
16 estimates that are likely to be either high or low depending on several factors. As  
17 discussed in Section 3 of my testimony, below, this would be less of an issue if those  
18 revenue requirements were increased.

19  
20 **3. INCENTIVE PROGRAMS**

21 **Q. Please briefly describe the Stormwater Management Incentive Program and the  
22 Greened Acres Retrofit Program.**

23 A. The Department started its incentive programs in 2012 with the Stormwater Management  
24 Incentive Program (“SMIP”). This program provided grants to non-residential property

1 owners to pay for designing and building Stormwater retrofit projects. When completed,  
2 these projects produce greened acres that the PWD can count toward the compliance  
3 requirements specified in the 2011 COA with the PaDEP. In 2015, the Department added  
4 a second program called the Greened Acres Retrofit Program (“GARP”), which has  
5 significantly grown the Department’s incentive programs by providing stormwater grants  
6 directly to project developers or aggregators. These two incentive programs are key  
7 components of the GCCW program, and they help the Department satisfy the  
8 requirements of the COA, which uses greened acres as a metric to determine compliance.  
9 These programs have been very successful and have grown somewhat over the interim  
10 years since 2012. The budgets for both the SMIP and GARP programs were both fully  
11 utilized in FY 2013 through 2015 (PWD Statement 9B at 3), suggesting that there may be  
12 additional demand for these programs that could not be met with available funding.

13 **Q. What is PennFuture’s interest in the incentive programs you just described?**

14 A. A key objective of PennFuture’s involvement in this case is to make sure that property  
15 owners are properly incentivized to take reasonable, cost-effective actions to control  
16 stormwater from their properties. The SMIP and GARP programs were instituted to  
17 incentivize customers to take these actions. Therefore, part of my scope of work included  
18 a review and evaluation of those programs.

19 **Q. What are the advantages to PWD’s use of these incentive programs?**

20 A. By satisfying a significant portion of its COA requirements with private stormwater  
21 management projects that would not have taken place but for the SMIP and GARP  
22 incentives, PWD is able to obtain three greened acres for about the same amount as it  
23 would cost the Department to directly create one greened acre on its own. (*See PWD*



1 response to PennFuture Interrogatory PF 1-9.) Clearly, the advantage to both the  
2 landowner and the Department are very significant. The Department avoids much higher  
3 compliance costs, while the landowners save on installation costs and also receive very  
4 sizable reductions in their SWMS charges for many years going forward. It is a  
5 proverbial win-win situation.

6 **Q. Given the success of these programs, what do you recommend from the**  
7 **Department?**

8 A. Because of these advantages and the strong possibility that the demand for these  
9 programs will exceed the Department's projections, I recommend that at least a modest  
10 expansion of both programs be factored into this case. Furthermore, to ensure these  
11 programs receive greater use going forward, I further recommend that PWD significantly  
12 expand its public relations and consumer education efforts to encourage greater use of  
13 these programs. This, combined with the increased demand in the short run that would  
14 likely result from the recommended changes to the Enhanced CAP program proposed  
15 herein, will effectively ensure that the demand will increase significantly. To be  
16 conservative, I recommend that funding for these programs be increased by 10% in FY  
17 2017 (to \$16.5 million from \$15.0 million), and by 20% in FY 2018 (to \$18.0 million  
18 from \$15.0 million).

19 **Q. How would these recommendations impact proposed revenue requirements?**

20 A. If the full increases were to be funded on a pay as you go basis, the total revenue  
21 requirement ("RR") would increase by \$1.5 million in FY 2017 and \$3.0 million in FY  
22 2018. On a percentage basis, the FY 2017 RR would be about 0.19% (19 one-hundredths  
23 of 1% – or 0.0019) higher, and the FY 2018 RR would be about 0.38% (38 one-

1 hundredths of 1% – or 0.0038) higher. The impact to the non-residential class would be  
2 greater (although still a small percentage) because the increase should be allocated  
3 primarily to the non-residential class as that class receives almost all of the benefit.  
4 Conversely, the residential class's RR would not be increased significantly – if at all, nor  
5 would their rates be much higher due to these recommendations.

6 If all or part of the increased RRs were to be funded with borrowed funds, then  
7 the annual RR increases during the two rate years would be much lower. Of course,  
8 those impacts would continue beyond the rate years due to repayment of the debt. A  
9 third possibility exists that could result in much lower RR increases or no increases at all.  
10 This possibility relates to the negotiated contracts with aggregators that would factor in at  
11 least part of the design and build costs being absorbed by the aggregator.

### 12 Conclusion

13 **Q. Please summarize your recommendations.**

14 **A.** In summary, I recommend the following:

- 15 • PWD's proposed revenue requirements that support the programs and facilities needed to  
16 continue the City's GCCW Program are necessary and reasonable and should not be  
17 reduced in either rate year. Therefore, I recommend that the Rate Board adopt this  
18 position in their Decision and Order in this case.
- 19 • I recommend that the Enhanced CAP program be terminated in three years – by the end  
20 of FY 2019 – and that in anticipation of that termination, PWD promote other ways to  
21 mitigate customers' financial burdens while at the same time providing stormwater  
22 management benefits.

- 1       • I recommend that funding for PWD’s SMIP and GARP programs be increased by 10%  
2       in FY 2017 (to \$16.5 million from \$15.0 million), and by 20% in FY 2018 (to \$18.0  
3       million from \$15.0 million).

4

5   **Q. Does this conclude your direct testimony?**

6   A. Yes, it does, but I reserve the right to supplement this testimony as other information  
7       becomes available.

**Resume**

**DAVID F. RUSSELL, P.E.**

**CAREER SUMMARY:**

Since the early 1970s Mr. Russell has been professionally involved in the management, control and regulation of public utilities in the Northeast. He has also successfully completed many related projects throughout the United States and Internationally. He has worked for two regulatory agencies; in MA. – the Department of Public Utilities – as its Chief Engineer; and in NJ. – the Board of Public Utilities – as a special consultant to the Chief Economist. He has held senior engineering and management positions for two New England electric utilities (Eastern Utilities Associates and Unitil Service Corp.), and one in NJ./PA.(General Public Utilities). He has also been a Principal Management Consultant for a major engineering company (Camp, Dresser & McKee, Inc.) at its headquarters in Boston/Cambridge, MA. for several years. Over the past 20 years he founded and developed a successful consulting business (***RUSSELL CONSULTING, LLC***) with an office centrally located in New England, about 30 minutes north of Boston, in Newburyport, MA. A second office was recently opened in Venice, Florida to serve clients in the southeast.

He is an Engineer and Economist by training (BSEE from Rutgers College), and has advanced degrees in Engineering Management (MS. from Northeastern Univ.) and Economics (MA. from Rutgers Univ.) specializing in resource and regulatory economics. He has testified before three of the six Public Utility Commissions in New England (and several others nationally) on many occasions as an expert on utility management, finance, rate design and cost of service studies, and related industry issues. He is a Registered Professional Engineer in MA. (License No. 28324) and NJ. (License No. 26512) and the State of Florida (License No. 75247). He has authored several papers published in professional journals, and has presented his work at many professional seminars and industry conferences.

Mr. Russell has been a lead technical negotiator for several municipal clients in negotiating multi-million dollar contracts with private utilities and energy customers. He has prepared numerous reports and technical presentations for utility CEO's; and municipal, regional and state governments. He has been responsible for the planning, review and feasibility analysis of numerous utility capital improvement projects, totaling many billions of dollars. This included a broad spectrum of utility facilities (electric, gas, water, sewer and solid waste facilities) - production plants, transmission facilities, and distribution systems. He has also led teams of consultants in the appraisal of utility system components and entire systems (all assets). He has considerable international experience having worked for many other countries, including Mexico, Columbia, Egypt, Sri Lanka, Guam and the Bahamas. For the Government of Egypt he has worked on several projects each of which involved the feasibility and implementation of public-private partnerships in both the water and wastewater sectors.

**PROFESSIONAL EXPERIENCE:**

**RUSSELL CONSULTING, LLC**

**Public and Private Utility Consultant, 1994-Present**

Provides management and financial consulting services to public and private utilities, municipalities, governmental agencies and private companies. Areas of expertise include management consulting, management reviews and audits, rate design and cost of service studies, expert witness services, appraisals of utility plant and equipment, assistance to owners of large residential developments in obtaining utility services at least costs (initial costs of extensions and long term rates for service), utility contracts and negotiations, performance enhancement and benchmarking, utility economics, power markets and deregulation, and the feasibility and implementation of public-private partnerships. **RUSSELL CONSULTING,LLC** has teamed with other firms to successfully complete multi-disciplinary projects for International clients.

Unitil Service Corp.

**Director of Regulatory Services, 1993-1994**

Managed the staff and resources of the Regulatory Services Department for this regional utility holding company. Areas of functional responsibility included sales and load forecasting, customer and load research, rate research and analysis, rate design, rate and tariff administration, revenue requirements and cost of service studies, economic analysis, demand side management (DSM) planning, program design and evaluation, and related analytical services. Responsible for insuring that rates and cost recovery for the retail companies contributed positively to the continued financial strength of the corporation and that positive regulatory relations were maintained. Successfully developed and maintained expanded DSM programs in Massachusetts and New Hampshire. Also responsible for preparing and filing each retail company's Least Cost Integrated Resource Plans, covering a 10 year planning horizon, including the first Integrated Gas Resource Plan. Successfully managed and coordinated an external (PUC) audit of the accounting and control of all DSM expenditures by the affiliated retail companies in New Hampshire.

Camp, Dresser and McKee, Inc.

**Principal Management Consultant, 1985-1993**

Took a lead role in many projects including management audits, financial feasibility reports, privatization studies and rate/cost of service studies for a wide range of municipal and private utilities. Gained international experience as a financial advisor to the World Bank, the Governments of Egypt and Mexico, and the Water and Sewerage Authority of the Bahamas. Served as project manager for management audits. As Assistant Team Leader for the Management and Financial Services Group helped to expand its size and capabilities from four professional consultants to nearly 20 over a two year period.

Eastern Utilities Associates

**Section Manager, 1982-1985**

Responsible in the Rate Department for the development and implementation of several pass-through rate clauses designed to recover specific capital and operating costs based on customer demands and/or total use. These cost recovery mechanisms included fuel, purchased power and oil-conservation adjustment clauses. Was lead engineer for cost of service and rate design studies prepared for rate cases involving affiliated retail electric companies. Also played a key role in rate filings before the Federal Energy Regulatory Commission for the Company's wholesale affiliate. Responsible for all PURPA-related programs for the Company's retail affiliates in Massachusetts and Rhode Island.

New Jersey Board of Public Utilities

**Consultant, 1981-1982**

Participated in the development of standard purchase and sale rates for cogeneration facilities and small powerplants as required by PURPA. Presented the staff's case on rate-of-return issues involving proposed rate increases by major electric and gas utilities. Assisted the Board's Chief Economist in the evaluation of mergers and acquisitions, and a major financing proposed by the State's largest electric utility needed to fund its capital improvement program.

General Public Utilities

**Senior Engineer, 1978-1980**

Provided in-house consulting services to the Corporate Planning Division. Instrumental in implementing the system-wide strategic planning process. Also assisted the Forecasting, Load Research and Supply Planning Groups in determining the need for new power plants and least-cost alternatives. This work included the development of the firm's conservation and load-management programs (the first in the industry).

Commonwealth of Massachusetts, Department of Public Utilities

**Chief Engineer, 1971-1978**

Reviewed, conducted public hearings and reported on the need for and costs of major construction projects proposed by electric and gas utilities including power plants, substations, transmission lines and gas storage facilities (LNG, SNG and Propane) and gas pipelines. Was instrumental in developing the State's gas-pipeline safety code and was responsible for the gas-pipeline safety program funded by the U.S. Department of Transportation. Also helped to design and implement the Cost of Gas Adjustment clause for all retail gas utilities. Managed the environmental review process, which included writing internal procedures, the Scope of Work for major facilities, and Statewide rules and regulations. Was appointed by the Governor to the Cogeneration Commission and the Public Power Commission.

**RELATED PROFESSIONAL EXPERIENCE:**

- Registered Professional Engineer in Massachusetts (28342) and New Jersey (26512) and Florida (75247).
- Author of several papers published in professional journals.
- Numerous presentations at regional and national meetings of professional organizations.
- Provided expert testimony in numerous quasi-judicial proceedings before several state public utility commissions, state legislative committees and a state Superior Court.
- Part-time instructor at Boston University teaching undergraduate and graduate courses in Economics, Management Science and Finance.

**PROFESSIONAL MEMBERSHIPS:**

- American Public Power Association
- American Water Works Association, Member of the Rates and Charges Committee (responsible for 3 Chapters. of the revised M1, "Rates" Manual), also a member of the

- Florida Section.
- City of Newburyport Chamber of Commerce
- International Water Resources Association (Peer Review Editor)
- Inst. of Electrical and Electronics Engineers (Power Engr. & Engr. Management Sections)
- National Society of Professional Engineers
- New England Water Works Association, Assistant Treasurer (Assoc. Officer) - Member of the Executive Committee and the Board of Directors; Member of the Financial Mngt. (Co-Chairman) Comm., the Conservation (Chairman) Comm., and the Investment Comm.
- Rutgers Engineering Society
- Water Environment Federation (Member of the Management & Admin. Committee)

**EDUCATION:**

- Rutgers University, MA in Economics (Resource and Regulatory Economics), Research Assistantship with Full Scholarship, 1984
- Northeastern University, MS in Engineering Management (Operations Research and Finance), 1977
- Rutgers College, BS in Electrical Engineering, Alumni Scholarship (full tuition and expenses), 1971

**PUBLICATIONS\PRESENTATIONS:** Author of several papers published in professional journals and presentations given at regional and national conventions.

**EXPERT WITNESS SERVICES:** Provided expert testimony in numerous quasi-judicial proceedings before several State Public Utility Commissions, and Legislative Committees. Also, presented expert testimony in litigated proceedings before the New Hampshire Superior Court and the Massachusetts Superior Court. Areas of expertise include many of the issues and topics outlined above.

**COMMUNITY SERVICE:** Chairman of the Planning Board, City of Newburyport, Ma.; Commissioner – Newburyport Harbor Commission; Chairman of the Mayor's Special Task Force on Police Facilities (rebuilt and doubled the size of the City's 70 year old Police Station); Member of the Merrimack Valley Planning Commission; I.C. Parish Council; Member of American Legion - Post 150; Treasurer for the City Committee (Major Political Party); and Treas. for a State Representative.

**ADJUNCT PROFESSOR:** Part-time instructor at Boston University teaching Undergraduate and Graduate courses in Economics, Management Science and Finance.

**WHO'S WHO IN AMERICA:** His biography was included in the Millennium and subsequent Editions of Marquis' Who's Who in the America.

**PERSONAL:** U.S. Citizen - Married, three children - Golfer/Runner/Coach (youth athletics)  
1st Lt., U.S Army NG (Inactive Res.)