

BEFORE THE  
PHILADELPHIA WATER, SEWER AND STORM WATER RATE BOARD

In the Matter of the Philadelphia Water Department's Proposed Change in Water, Wastewater and Stormwater Rates and Related Charges	Fiscal Years 2019-2021
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**Direct Testimony**

**of**

**Stephen J. Furtek**

**on behalf of**

**The Philadelphia Water Department**

Dated: February 12, 2018

1 **DIRECT TESTIMONY OF STEPHEN J. FURTEK**

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3 **Q1. PLEASE STATE YOUR NAME AND WORK ADDRESS FOR THE**  
4 **RECORD.**

5 A1. My name is Stephen J. Furtek. My business address is 1101 Market Street, Fifth  
6 Floor, Philadelphia, Pennsylvania.

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8 **Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

9 A2. I am employed by the City of Philadelphia and serve as the Water Department's  
10 ("Department" or "PWD") General Manager of Engineering & Construction  
11 Division.

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13 **Q3. WHAT ARE YOUR JOB RESPONSIBILITIES?**

14 A3. My responsibilities include implementation of the Department's Capital  
15 Improvement Program including design engineering, projects control, and  
16 construction management services. The capital program consists primarily of  
17 improvements to water and wastewater facilities, water main relay, sewer  
18 reconstruction, flood relief projects, and combined sewer overflow mitigation.

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20 **Q4. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**  
21 **WORK EXPERIENCE.**

22 A4. I hold a Bachelor of Science degree in Civil and Urban Engineering from the  
23 University of Pennsylvania. I am a registered Professional Engineer licensed in  
24 Pennsylvania. I was appointed as General Manager of Planning and Engineering  
25 (now the Engineering & Construction Division) in March 2005. I have held a

1 number of positions with increasing responsibility since joining the Department  
2 in 1982, including Supervisor of the Water and Sewer Design Section and  
3 Manager of the Design Branch. A more detailed overview of my relevant work  
4 experience is set forth in my resume. See Schedule SJF-1.

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6 **Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

7 A5. The purpose of my testimony is to describe the Department’s Capital  
8 Improvement Program and costs associated with the financing of this Program  
9 which contribute to the need for requested rate relief.

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11 **Q6. PLEASE DESCRIBE THE DEPARTMENT’S CAPITAL IMPROVEMENT  
12 PROGRAM.**

13 A6. The major elements of the Capital Improvement Program (FY 2018-2023) are set  
14 forth in the following table, as presented to the City Planning Commission and as  
15 adopted by Philadelphia City Council (“City Council”).

16 **Capital Improvement Program (FY 2018-2023)**

17 (Thousands of Dollars)

18 Engineering, Administration & Material Support	\$ 320,909
19 Improvements to Treatment Plants	720,000
20 Water Conveyance System (new and reconstruction)	420,360
21 Wastewater Collector System/CSO/Flood Relief	<u>739,760</u>
22 Total	\$2,201,029

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24 The Water Conveyance system consists of both the water transmission system  
25 (i.e. water mains with diameters of 16 inches or larger) as well as the distribution

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system (i.e. water mains of less than 16 inches in diameter). The Wastewater Collector system consists of sanitary sewers, stormwater conduits, and combined sewers used to transport sewage and stormwater.

A significant portion of the costs of the Capital Improvement Program are expected to be funded with the proceeds of debt. The City expects most of such debt to be in the form of new money revenue bonds. Please see the testimony of Melissa LaBuda (PWD Statement No. 2) for a discussion on the Financial Plan including debt issuance.

While the vast majority of the Capital Improvement Program is scheduled for the renewal and replacement of existing infrastructure, significant funds must be budgeted to achieve compliance with the regulations promulgated by the United States Environmental Protection Agency (“EPA”) and the Pennsylvania Department of Environmental Protection such as the combined sewer overflow and stormwater management requirements.

**Q7. HOW IS THE CAPITAL IMPROVEMENT PROGRAM DEVELOPED AND APPROVED?**

A7. The Philadelphia Home Rule Charter requires City Council to adopt a balanced capital budget for the year on or before May 31 of each year. The Mayor’s Capital Budget is developed from proposed budgets submitted by the various departments of the City, including the Water Department. Capital spending by all departments is subject to the approval of the City Planning Commission and the Mayor’s

1 Office and the Capital Budget is included with the City budget and Five Year  
2 Financial Plan for approval by City Council.

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4 **Q8. PLEASE DESCRIBE SOME OF THE LARGEST INITIATIVES**  
5 **INCLUDED IN THE CAPITAL IMPROVEMENT PROGRAM.**

6 A8. The *Green City, Clean Waters Program* (alternatively referred to as the Long  
7 Term Control Plan – “LTCP”) is the largest initiative being undertaken by the  
8 Department in its capital program. LTCP will require a significant increase in  
9 capital expenditures over its duration (remaining 19 years). Specifically, the  
10 LTCP addresses combined sewer overflows through large scale implementation  
11 of green stormwater management infrastructure City-wide along with installation  
12 of grey infrastructure improvements (storage and plant capacity increases). This  
13 approach focuses on controlling pollution at its source and improving water  
14 quality by restoring the natural hydrologic cycle in the urban environment and is  
15 consistent with current EPA policy for addressing wet weather impacts. LTCP  
16 expenditures represent 23% of the Capital Improvement Program for the period  
17 FY 2018-2023. This subject is more fully addressed in the Direct Testimony of  
18 Debra McCarty in PWD Statement No. 1.

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20 In addition, the Department continues to invest in its water distribution and  
21 wastewater collector systems as well as treatment, storage and pumping facilities  
22 to ensure reliability of service. PWD is also implementing flood relief projects in  
23 flood prone neighborhoods. A listing of our top Capital Improvement Program  
24 projects by estimated costs as of July 2017 is provided in Table 6 of PWD Exhibit  
25 5. (See PWD Exhibit 5, p. 33).

1 **Q9. DOES THE DEPARTMENT ALSO HAVE ASSET MANAGEMENT**  
2 **RESPONSIBILITIES THAT ARE FUNDED THROUGH THE CAPITAL**  
3 **IMPROVEMENT PROGRAM?**

4 A9. Yes. The Department’s Operations, Planning and Environmental Services and  
5 Engineering & Construction Divisions develop capital initiatives to better  
6 anticipate future needs for infrastructure maintenance and upgrades and to  
7 manage long-term capital expenditures. These initiatives include: (i) a sewer  
8 assessment program; (ii) a geographic information system; (iii) a capital facilities  
9 assessment program; and (iv) a standardized planning process for all large capital  
10 projects.

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12 The Department also has enhanced its planning process for capital projects with  
13 an initial estimated design and construction cost of \$2.0 million or more. The  
14 enhanced process focusses on tracking and documenting the following three  
15 project planning steps: Project Need Identification, Project Alternatives  
16 Identification and Project Alternatives Evaluation. A prioritization system is  
17 utilized to capture the primary driving factors associated with a wide range of  
18 project types. The desired timing of capital projects is also documented through  
19 this process. Moreover, the process informs PWD’s future critical strategic  
20 planning efforts, in addition to improving communication and coordination  
21 among units within the Department. Pivotal programs among the capital planning  
22 initiatives being undertaken during FY 2019-2021 (“Rate Period”) and  
23 succeeding years are the Water Main Replacement Program and Accelerated  
24 Main Replacement Program described below.

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1 **Q.10 PLEASE DESCRIBE THE DEPARTMENT’S HISTORIC WATER MAIN**  
2 **REPLACEMENT PROGRAM.**

3 A10. Over the last 23 years, the Department has replaced 438 miles of water mains at  
4 an average rate of 19 miles per year.

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6 **Q.11 PLEASE DESCRIBE THE DEPARTMENT’S ACCELERATED MAIN**  
7 **REPLACEMENT PROGRAM.**

8 A11. In 2011, the Department launched a renewed effort to accelerate the long-term  
9 Water Pipeline Renewal Program as well as expand the scope of water pipeline  
10 renewal in Philadelphia. The effort is being managed under the Water Linear  
11 Asset Management Program. The long-term goal of the accelerated main  
12 replacement initiative is to replace all of the first generation of piping (installed  
13 prior to 1965) by 2065. This will require the replacement of some 2,092 miles of  
14 piping with higher quality materials together with improved design and  
15 construction methods. In short, the Department will elevate the resilience and  
16 reliability of its piping infrastructure to provide more reliable service to minimize  
17 pipeline failures and related disruptions in service. The Department is increasing  
18 the water main replacement by 2 miles per year over the next six years to reach  
19 an annual replacement rate of 42 miles or 1.5% of the distribution system annually  
20 with commensurate increases in the capital budget.

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22 **Q.12 PLEASE HIGHLIGHT THE KEY OBJECTIVES OF THE**  
23 **ACCELERATED MAIN REPLACEMENT PROGRAM.**

24 A12. Program highlights and objectives are stated below:  
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- 1 • PWD will spend \$1.9 billion over the next 25 years on water main  
2 replacement;
- 3 • Funding levels for water main replacement will increase over the next 6  
4 years to \$77 million annually;
- 5 • 643 miles of pipeline will be renewed by 2040 – representing 22% of all  
6 water pipeline in the City;
- 7 • Pipelines being prioritized for renewal based upon their evaluated level of  
8 risk failure and potential for disruption and damage to property; and
- 9 • Customers will see improved service reliability and an upgraded system  
10 ready for future growth.

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**Q.13 PLEASE DESCRIBE ADDITIONAL CAPITAL PLANNING INITIATIVES RELATED TO THE DEPARTMENT’S ASSET MANAGEMENT RESPONSIBILITIES.**

A13. The following three programs are additional capital planning initiatives which impact planned spending for the Capital Improvement Program.

Water and Wastewater Master Planning Initiative

The Water and Wastewater Master Planning Initiative holistically looks at all aspects impacting the utility over the 25-year planning horizon. As part of that effort, the plans look at asset condition and adequacy, regulatory requirements current and future, climate change impacts, among others. This planning effort is and will continue to inform the Capital Improvement Program, both on a macro financial level as well as on a micro individual project planning and scheduling



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level. This effort will ensure that the capital program is budgeting appropriate funding and investing in the right projects.

Sewer Replacement and Renewal Program

Over the last 23 years, the Department has reconstructed and/or rehabilitated, on average, approximately 8 miles of sewer annually. The Department’s Capital Renewal Program currently reconstructs or relines from six to ten miles of sewers per year based on results of the Sewer Infrastructure Assessment Program and other condition reports. Some sewers are scheduled for reconstruction as a result of programmed water main replacement and the need to update infrastructure concurrently. The current annual budget for sewer replacement and rehabilitation is \$35 million per year, which generally yields 8 to 10 miles of sewers per year depending on their size and location.

Sewer Infrastructure Assessment Program

The Department has incorporated the sewer assessment program into its operation as a means of evaluating the condition of its sewer system, inspecting over 40 miles of sewer annually. Trained PWD personnel continue to prepare surveys using data collected through the sewer assessment program to reflect necessary repairs in the capital and operating budgets. This program has helped to identify sewers that were in immediate need of repair, and it is anticipated that over time this effort will result in a reduction of costly and disruptive emergency sewer repairs. In addition to informing the sewer maintenance unit of locations in need of repair, the sewer assessment program is used to schedule repairs for sewers that

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have reached the end of their useful life, to be reconstructed as part of the Capital Improvement Program.

**Q.14 IS THE PROPOSED RATE INCREASE NECESSARY TO SUPPORT THE DEPARTMENT’S CAPITAL PROGRAM INITIATIVES?**

A14. Yes. The Department expects to finance its Capital Improvement Program using revenue bonds, contributions from current revenue, and possibly alternate sources of funding, including loans or grants. A significant portion of the costs of the Capital Improvement Program are expected to be funded with the proceeds of debt to be incurred during FY 2019 through 2024. To be sure, debt service requirements and contribution from current revenues are integral components of the revenue requirement for FY 2019-2021. The plan of finance for the Capital Improvement Program is described in the testimony of Melissa LaBuda.

**Q.15 DOES THIS CONCLUDE YOUR PREPARED TESTIMONY?**

A15. Yes, it does.

## Schedule SJF-1: Resume of Stephen J. Furtek

**Stephen J. Furtek, P.E.**

<b><u>Education:</u></b>	<b>B.S. degree, Civil &amp; Urban Engineering, University of Pennsylvania (1978-82)</b>
<b><u>Experience:</u></b>	<b>Philadelphia Water Department (August 1982 – present)</b>
<b>3/2005 to Present</b>	<p><b><u>General Manager of the Engineering &amp; Construction Division</u></b>          Responsible for the administration and management of the Engineering &amp; Construction Division of the Water Department. The Engineering &amp; Construction Division is responsible for the implementation of the Department’s capital program. The division is comprised of the following units:</p> <ul style="list-style-type: none"> <li>• <u>Design Branch</u> – Responsible for providing in-house design services, as well as managing outsourced design services, for the capital program. In addition, Design provides technical support to the Department at large regarding water and wastewater issues.</li> <li>• <u>Construction Branch:</u> - Construction Branch is responsible for administration and construction inspection of all capital program projects, including surveying and generation of as-built drawings.</li> <li>• <u>Projects Control Section</u> – The Projects Control Section is responsible for developing, maintaining, and tracking the capital improvement program. This section is charged with maintaining the Department’s as-built drawings &amp; system maps as well as developing, implementing, and maintaining the Department’s Geographic Information System (GIS). This Section is also home to the One-Call Unit, which is responsible for implementing the State’s requirement that buried infrastructure, be field marked prior to excavation.</li> </ul>
<b>10/1996 to 2/2005</b>	<p><b><u>Manager of Design Branch</u></b>          Responsible for managing a multidiscipline design-engineering unit for the Water Department consisting of architectural, civil, structural, electrical, and mechanical personnel. This unit is responsible for the design of the Water Department’s capital program, including the generation of biddable plans and specifications. In addition, this unit is responsible for managing numerous professional engineering services contracts. These firms provide engineering services to supplement the Water Department’s in-house staff in designing the annual capital program.</p>
<b>1/1988 to 10/1996</b>	<p><b><u>Engineering Supervisor, Water &amp; Sewer Section, Design Branch</u></b>          Supervised a group of design engineers and drafting technicians. Responsible for the oversight of the preparation of contract plans and specifications for the Water Department’s water main relay and sewer reconstruction capital program, using both in-house staff and engineering consulting firms.</p>
<b>8/1982 to 1/1988</b>	<p><b><u>Civil Engineer, Structural Section, Design Branch</u></b>          Prepared contract plans and specifications and performed structural design as required to support various construction and/or rehabilitation projects of Water Department facilities.</p>
<b><u>Licensure:</u></b>	<b>Registered Professional Engineer in the Commonwealth of Pennsylvania.</b>