

PHILADELPHIA WATER DEPARTMENT  
STATEMENT NO. 3

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 2021 - 2022
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**Direct Testimony**

**of**

**Stephen J. Furtek and Thomas Spokas**

**on behalf of**

**The Philadelphia Water Department**

Dated: February 2020

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1                   **I.       INTRODUCTION AND PURPOSE OF TESTIMONY**

2  
3 **Q1.   PLEASE STATE YOUR NAMES AND POSITIONS WITH THE**  
4 **PHILADELPHIA WATER DEPARTMENT.**

5 A1.   My name is Stephen J. Furtek. I am the General Manager of the Engineering and  
6       Construction Division at the Philadelphia Water Department (the “Department” or  
7       “PWD”). Also testifying is Thomas Spokas who is the Program Manager for the  
8       Department’s Facility Planning Program. Mr. Spokas will address the Department’s  
9       recently completed Drinking Water Master Plan in Section III below.

10  
11 **Q2.   PLEASE DESCRIBE YOUR RESPECTIVE EDUCATIONAL BACKGROUND**  
12 **AND RELEVANT WORK EXPERIENCE.**

13 A2.   Mr. Furtek

14       I hold a Bachelor of Science degree in Civil and Urban Engineering from the University  
15       of Pennsylvania and am a registered Professional Engineer licensed in Pennsylvania. I  
16       was appointed as General Manager of Planning and Engineering (now the Engineering  
17       and Construction Division) in March 2005. Since joining the Department in 1982, I have  
18       held several positions with increasing responsibility, including Supervisor of the Water  
19       and Sewer Design Section, Manager of the Design Branch and my current position. A  
20       more detailed overview of my relevant work experience is set forth in my attached  
21       resume which is marked as Schedule SJF-1.

22  
23 Mr. Spokas

24       I hold a Bachelor of Science degree in Civil Engineering from Drexel University  
25       and a Master of Science degree in Community and Regional Planning from Temple

1 University. I am also a registered Professional Engineer licensed in Pennsylvania. I  
2 joined the Department in 2012 working in the Planning and Research Unit of the  
3 Planning and Environmental Services Division. A more detailed overview of my relevant  
4 work experience is set forth in my attached resume which is marked as Schedule TS-1.  
5

6 **Q3. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

7 A3. The purpose of our testimony is to describe: (i) the City’s Capital Program and Capital  
8 Budget Process; (ii) the Department’s current and projected Capital Improvement  
9 Programs; and (iii) costs associated with financing the Capital Improvement Program  
10 which contribute to the revenue requirements for Fiscal Year (“FY”) 2021 and FY 2022  
11 (together, the “Rate Period”).  
12

13 **Q4. PLEASE IDENTIFY THE SCHEDULES ATTACHED TO YOUR TESTIMONY.**

14 A4. The following schedules accompany this testimony.

15	Schedule SJF-1	Resume of Stephen J. Furtek
16	Schedule SJF-2	Capital Program and Budget Process
17	Schedule TS-1	Resume of Thomas Spokas

18  
19 **II. THE CITY’S CAPITAL PROGRAM AND CAPITAL BUDGET PROCESS**  
20

21 **Q5. PLEASE DESCRIBE THE HOME RULE CHARTER REQUIREMENTS**  
22 **RELATED TO THE CITY’S CAPITAL PROGRAM AND CAPITAL BUDGET.**

23 A5. The Philadelphia Home Rule Charter requires that prior to the passage of the annual  
24 operating budget ordinance, Philadelphia City Council (“City Council”) must adopt a  
25 capital program and capital budget. The capital program must show planned capital

1 expenditures to be financed from funds subject to control and appropriation by City  
2 Council for each of the six ensuing fiscal years. The capital budget ordinance must show  
3 the planned capital expenditures to be financed from funds subject to control or  
4 appropriation by City Council during the ensuing fiscal year.

5  
6 **Q6. HOW IS THE CITY'S CAPITAL PROGRAM AND CAPITAL BUDGET**  
7 **DEVELOPED AND APPROVED?**

8 A6. The process for developing and approving the Capital Program and Capital Budget is  
9 described in Appendix I of the City's FY 2020-2025 Capital Program Book, a copy of  
10 which is attached to my testimony as Schedule SJF-2.

11  
12 **III. PWD'S CAPITAL IMPROVEMENT PROGRAM**

13  
14 **Q7. PLEASE DESCRIBE PWD'S CAPITAL IMPROVEMENT PROGRAM FOR**  
15 **FISCAL YEARS 2020 THROUGH 2025.**

16 A7. PWD's Capital Improvement Program, as currently adopted by City Council, includes  
17 planned expenditures in the approximate amount of \$3.3 billion over six fiscal years as  
18 summarized below.

19  
20 Capital Improvement Program (FY 2020-2025)

21	Improvements to Water and Wastewater Treatment Facilities	\$ 1,269,768,000
22	Wastewater Collector System/CSO/Flood Relief	1,185,200,000
23	Water Conveyance System (new and reconstruction)	699,660,000
24	Engineering, Administration & Material Support	<u>175,798,000</u>
25	Total	\$3,330,426,000

1 **Q8. HOW DOES THIS COMPARE WITH PWD'S CAPITAL PROGRAM AT THE**  
2 **TIME OF THE 2018 GENERAL RATE PROCEEDING?**

3 A8. At the time of the 2018 Rate Proceeding, approximately \$2.2 billion in capital  
4 expenditures were planned for the ensuing six fiscal years, or approximately \$1.0 billion  
5 less than the program summarized in the table above.  
6

7 **Q9. HAS THE DEPARTMENT PREPARED A PROPOSED CAPITAL**  
8 **IMPROVEMENT PROGRAM FOR FISCAL YEARS 2021 THROUGH 2026?**

9 A9. Yes, the Department has prepared a proposed Capital Improvement Program for Fiscal  
10 Years 2021 through 2026, which will be presented to City Council for approval in March  
11 of 2020. Currently projected expenditures for the Capital Improvement Program for FY  
12 2021 through FY 2026 are summarized below.  
13

14 Proposed Capital Improvement Program (FY 2021-2026)

15	Improvements to Water and Wastewater Treatment Facilities	\$ 1,764,300,000
16	Wastewater Collector System/CSO/Flood Relief	995,760,000
17	Water Conveyance System (new and reconstruction)	729,860,000
18	Engineering, Administration & Material Support	<u>155,190,000</u>
19	Total	\$ 3,645,110,000
20		

21 **Q10. WHY IS THE INCREASED BUDGET FOR THE CAPITAL IMPROVEMENT**  
22 **PROGRAM NECESSARY?**

23 A10. An increased level of capital improvement program budget is needed throughout the  
24 projected period to fund accelerated replacement of aging infrastructure and to meet  
25 regulatory requirements.

1 **Q11. PLEASE EXPLAIN HOW PWD PLANS TO FUND THE CAPITAL**  
2 **IMPROVEMENT PROGRAM FOR THE RATE PERIOD?**

3 A11. PWD expects most of such funding to be in the form of new borrowings financed through  
4 revenue bonds. PWD Statement No. 2 (Direct Testimony of Melissa La Buda) addresses  
5 this issue in greater detail.

6  
7 **Q12. PLEASE DESCRIBE THE LARGEST INITIATIVES INCLUDED IN THE**  
8 **CAPITAL IMPROVEMENT PROGRAM.**

9 A12. The largest initiatives in the Capital Improvement Program include: (i) the Green City,  
10 Clean Waters Program; (ii) the Drinking Water Master Plan; and (iii) the Renewal and  
11 Replacement of Other Older Infrastructure, all of which are discussed below.

12  
13 The Green City, Clean Waters Program

14 The Green City, Clean Waters Program (alternatively referred to as the Long-Term  
15 Control Plan – “LTCP”) is the largest initiative being undertaken by the Department in its  
16 capital program. The LTCP will require a significant increase in capital expenditures over  
17 the FY 2021-2026 period referenced above and beyond. Specifically, the LTCP addresses  
18 combined sewer overflows through large scale City-wide implementation of green  
19 stormwater management infrastructure along with installation of “grey” infrastructure  
20 improvements (storage and treatment plant capacity increases). This approach focuses on  
21 controlling pollution at its source and improving water quality by restoring the natural  
22 hydrologic cycle in the urban environment and is consistent with current United States  
23 Environmental Protection Agency policy for addressing wet weather impacts. LTCP  
24 expenditures in the Capital Improvement Program total \$849 million, which represents  
25 23.3% of the Capital Improvement Program for the period FY 2021-2026.

1  
2 Drinking Water Master Plan

3 Another large initiative in the Capital Improvement Program involves the  
4 Drinking Water Master Plan. This 25-year plan provides a comprehensive roadmap for  
5 the Department to upgrade critical facilities and to continue providing safe and reliable  
6 drinking water to Philadelphia residents now and in the future. In devising the plan, the  
7 Department set goals for a resilient and dependable drinking water system. After  
8 establishing these goals, the Department conducted a detailed evaluation of existing water  
9 treatment, pumping and storage facilities to document their current condition and identify  
10 repair, replacement or improvement needs. The Department also considered other  
11 planning drivers including water demand projections, water quality regulations, and  
12 environmental factors. PWD developed and evaluated a wide range of alternatives before  
13 identifying approximately 400 projects to be completed over the next 25 years at a cost of  
14 \$2.5 billion. The projects focus on the rehabilitation of existing facilities, the complete  
15 reconstruction of several existing facilities, and the construction of several new facilities.  
16 The implementation of these projects will result in an increase in capital costs compared  
17 to historical levels. In sequencing and developing a schedule for specific projects, PWD  
18 took into consideration its other planned infrastructure improvements to avoid significant  
19 capital needs from occurring at the same time.

20  
21 Water Master Plan projects that are scheduled to be constructed during Fiscal Years 2021  
22 and 2022 include: (i) the final phase of the replacement of the current clear well basin at  
23 the Baxter Water Treatment plant at an estimated cost of \$110 million; (ii) the  
24 rehabilitation of the Torresdale Finished Water Pump Station to update aging critical  
25 infrastructure and enhance redundancy at an estimated cost of \$53.0 million; and (iii)



1 improvements in transmission piping adjacent to the Somerton water storage tank to  
2 enhance long-term regulatory compliance and water quality at an estimated cost of \$4.0  
3 million. The Water Master Plan also includes many other projects that are beyond the  
4 timeline of the Capital Improvement Program.

5  
6 Replacement and Renewal of Other Aging Infrastructure

7 The Department also continues to invest in its water distribution and wastewater collector  
8 systems to replace aging infrastructure and ensure reliability of service. Flood relief  
9 projects in flood prone neighborhoods also are included as part of the Capital  
10 Improvement Program for collector systems.

11  
12 **Q13. PLEASE DESCRIBE RECENT CHANGES IN THE DEPARTMENT'S WATER**  
13 **MAIN REPLACEMENT PROGRAM.**

14 A13. The Department has embarked on a program of accelerated main replacement which will  
15 significantly exceed historic main replacement. Over the last 25 years, PWD has  
16 replaced, on average, 19 miles of water mains annually. This level of main replacement  
17 has increased in the recent past based on a revised goal of replacing 32 miles of main per  
18 year. This accelerated level of water main replacement is reflected by an increase in  
19 expenditures from approximately \$50 million in Fiscal Year 2018 to \$59 million in Fiscal  
20 Year 2019. The Department further plans to fund an additional increase of two miles of  
21 water main replacement per year with the goal of reaching 42 miles of water main  
22 replacement annually by Fiscal Year 2024. This will require an increase in the capital  
23 budget for water main replacement to approximately \$98 million in Fiscal Year 2021 and  
24 \$106 million in Fiscal Year 2022.

1 **Q14. WHY HAS PWD DETERMINED THAT AN INCREASE IN THE LEVEL OF**  
2 **WATER MAIN REPLACEMENT IS NECESSARY?**

3 A14. The Department assesses its water main break rate against the optimal level of 15 breaks  
4 per 100 miles/year as defined by the Distribution System Optimization Program under the  
5 American Water Works Association Partnership for Safe Water. Currently the  
6 Department's five-year average breaks per 100 miles is 25.7 per year. In order to  
7 decrease the water main break rate, keep up with an aging water system, and increase  
8 system reliability, the Department has determined that an increase in water main  
9 replacement is warranted.

10  
11 **Q15. PLEASE DESCRIBE RECENT CHANGES IN THE DEPARTMENT'S SEWER**  
12 **REPLACEMENT AND REHABILITATION PROGRAM.**

13 A15. Over the last 25 years, the Department has reconstructed and/or rehabilitated, on average,  
14 approximately 8 miles of sewer annually. The Department's Capital Renewal Program  
15 currently reconstructs or relines from six to ten miles of sewers per year based on results  
16 of its Sewer Infrastructure Assessment Program and other condition reports. Some sewers  
17 are scheduled for reconstruction as a result of programmed water main replacement and  
18 the need to update water and sewer infrastructure concurrently. The capital budget for  
19 sewer replacement and/or rehabilitation was \$35 million in Fiscal Year 2018, \$40 million  
20 in Fiscal Year 2019 and \$57 million in Fiscal Year 2020. Annual budget for this purpose  
21 is projected to remain constant at \$57 million in Fiscal Year 2021 and Fiscal Year 2022.

1 **Q16. PLEASE EXPLAIN HOW THE ABOVE CAPITAL PROGRAM BUDGET**  
2 **RELATES TO THE PENDING RATE CASE.**

3 A16. The proposed rates will support the Capital Improvement Program in FY 2021 and FY  
4 2022. As mentioned above, a significant portion of the costs of the Capital Improvement  
5 Program for these years will be funded with the proceeds of debt. Debt service  
6 requirements and contributions from current revenues are integral components of the  
7 revenue requirements for the Rate Period.

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9 **IV. CONCLUSION**

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11 **Q17. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

12 A17. Yes, it does.  
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**Stephen J. Furtek, P.E.**

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**Education:** B.S. degree, Civil & Urban Engineering, University of Pennsylvania (1978-82)

**Experience:** Philadelphia Water Department (August 1982 – present)

**3/2005 to Present**

**General Manager of the Engineering & Construction Division**

Responsible for the administration and management of the Engineering & Construction Division of the Water Department. The Engineering & Construction Division is responsible for the implementation of the Department's capital program. The division is comprised of the following units:

- Design Branch – 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.
- Construction Branch: - Construction Branch is responsible for administration and construction inspection of all capital program projects, including surveying and generation of as-built drawings.
- Projects Control Section – 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 & 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.

**10/1996 to 2/2005**

**Manager of Design Branch**

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.

**1/1988 to 10/1996**

**Engineering Supervisor, Water & Sewer Section, Design Branch**

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.

**8/1982 to 1/1988**

**Civil Engineer, Structural Section, Design Branch**

Prepared contract plans and specifications and performed structural design as required to support various construction and/or rehabilitation projects of Water Department facilities.

**Licensure:**

**Registered Professional Engineer in the Commonwealth of Pennsylvania.**

## APPENDIX I

### Capital Program and Budget Process

Spending and activity on the Capital Budget is managed throughout the fiscal year, but the annual planning and preparation for the proposed Capital Program and Budget begins in the fall.

By the beginning of October, the 'Budget Call' goes out to all departments eligible to request funds in the upcoming capital program and budget. The Budget Call provides instructions to enable departments to begin entering requests into the budget system. It also provides guidelines to ensure that requests are complete and are aligned with City policies.

Starting in November, the staffs of the City Planning Commission and the Budget Office host departmental meetings to review capital needs and new requests.

Following the departmental meetings, staff continues to work with departments to refine information about the prioritization of needs, resources, and implementation capacity.

From December through February, information is compiled to generate a working, overall list of requests and requested amounts. This list goes through several iterations, as new information is developed in discussions with departments and in light of Administration priorities.

In January, the Budget Office prepares 'carry forward' (CT) funding information, and works with the Treasurer's Office to determine the General Obligation (CN) debt capacity for the Capital Budget.

In February, the Budget Office finalizes 'carry forward' (CT) funding amounts and works with the staff of the City Planning Commission to

prepare draft recommendations for review by the Mayor.

At least one hundred and twenty days before the end of the fiscal year, the City Planning Commission submits to the Mayor a Recommended six-year Capital Program and Capital Budget. The Budget Office, working with the Law Department, prepares the required ordinances for submission.

In early March, the Mayor delivers to City Council the proposed Operating Budget, Five Year Financial Plan, and Capital Program and Budget.

As part of City Council budget hearings, a specific hearing is held on the proposed Capital Program and Budget. Capital needs and proposed spending are also addressed in City Council budget hearings with each department. After the Capital Program and Budget is introduced, a separate bond authorization ordinance is introduced a few weeks prior to passage. This ordinance allows the City to place a question on the election ballot that asks the general public for permission to issue bonds for the Capital Budget. The ballot question is organized into five infrastructure categories: transit, streets and sanitation, municipal buildings, recreation, parks, museums and stadia, and economic and community development.

Through May and June, modifications are made to produce a final six-year Capital Program and Capital Budget for adoption by City Council.

**Education:** M.S. Community and Regional Planning, Temple University (2012)  
B.S. Civil Engineering, Drexel University (2003)

**Licensure:** Registered Professional Engineer in Pennsylvania

**Experience:**

**Philadelphia Water Department, Philadelphia PA**

**8/2019 to Present      Facilities Planning Program**

Program Manager for the Philadelphia Water Department's Facilities Planning Program which plans for the future of Philadelphia's drinking water and wastewater facilities to help ensure continued, reliable, and quality services to its customers. Responsibilities include long range master plans, comprehensive system wide analyses, risk assessments, facility asset management.

**11/2015 to 8/2019      Water Facilities Planning Program**

Managed a team of engineers responsible for planning the department's drinking water facilities including water treatment plants, pump stations and reservoirs. Oversaw the completion of a Drinking Water Master Plan that includes a 25-year capital improvement plan for large drinking water infrastructure.

**10/2012 to 3/2017      Capital Planning Program**

Supervised a staff of engineers and a city planner responsible for developing and implementing a standardized planning process for large capital projects. Engaged project stakeholders during the planning phase of capital projects to evaluate planning level alternatives, define project scopes and estimate costs for projects that have cost estimates ranging from \$2M to \$100M.

**Center for Sustainable Communities at Temple University, Ambler PA**

**9/2011 to 5/2012**      Served as a research assistant on various studies conducted by the center including grant application and report writing and editing, watershed hydraulic modeling and data analysis.

**Langan Engineering and Environmental Services, Philadelphia PA**

**9/2006 to 9/2012**      Served as a senior design engineer for various residential, commercial and municipal development projects. Experience includes site analysis and design; stormwater management analysis and design; erosion and sedimentation control design; prepared specifications; environmental and land-use permitting through local municipal, county and state agencies; construction inspection and cost estimating. Representative projects include Race Street Pier, Herron Playground, and MetLife Stadium.

**Bohler Engineering, Chalfont PA**

**7/2003 to 6/2006**      Served as a design engineer on over thirty commercial and residential land development projects ranging from three to sixty acres in size. Responsibilities included site design; creating grading and utility plans; producing earthwork estimations; obtaining permits from local and state agencies; coordinating with traffic consultants, architects and contractors; preparing project feasibility reports and cost estimations.