

BEFORE THE
PHILADELPHIA WATER, SEWER AND STORMWATER RATE BOARD

Re Application of the Philadelphia Water Department for Increased Rates and Related Charges	Fiscal Years 2017-2018
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DIRECT TESTIMONY OF DEBRA McCARTY

Q. PLEASE STATE YOUR NAME AND WORK ADDRESS FOR THE RECORD.

A. My name is Debra McCarty. My business address is 1101 Market Street, Fifth Floor, Philadelphia, Pennsylvania.

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

A. I am employed by the City of Philadelphia and serve as the Water Department's ("Department" or "PWD") Commissioner. I was appointed as Commissioner in January 2016.

Q. WHAT ARE YOUR JOB RESPONSIBILITIES?

A. I am responsible for oversight of all operations of the Water Department.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I have a Bachelor of Engineering Sciences Degree with a major in Environmental Engineering from Johns Hopkins University. My attached resume provides a more detailed description of my educational background and work experience. See, Exhibit DM-1.

Q. PLEASE DESCRIBE YOUR RELEVANT WORK EXPERIENCE.

A. After serving in a private engineering firm for a few years, I started with the Department in August 1982 as a Sanitary Engineer (Treatment Headquarters Group) at the Northeast Water Pollution Control Plant ("WPCP"). In that position, I was responsible for various plant related projects and outside pumping stations. In May 1984, I transferred to the Plant Operations Group at the Northeast WPCP where I assumed responsibilities for the coordination of eight construction projects and related activities.

In July 1989, I was promoted to Process Manager at the Northeast WPCP where I had direct control of plant processes at that 210 million gallons/day facility. My responsibilities included assuring compliance with NPDES permit requirements, minimizing malodor emissions, implementing operational changes and special projects.

In July 1993, I assumed the post of Plant Manager at the Southwest WPCP. In this position I had overall responsibility for the operation of a 200 million gallons/day plant, managed a staff of 135 employees, and directed and provided technical assistance to

process engineers and operations staff to assure compliance with NPDES permit and Clean Water Act requirements, among other responsibilities.

In October 1999, I was promoted to the position of Chief of Wastewater Treatment. In that capacity I was responsible for the operation of three WPCPs (also referred to as wastewater treatment plants) which, at that time, had a combined average treatment capacity of 522 million gallons per day, a combined annual operating budget of \$34.7 million and approximately 330 employees. This job represented an expansion of duties covering the overall wastewater treatment system including, environmental compliance, capital budgeting and a roster of other duties.

In April 2004, I was appointed as Deputy Water Commissioner in charge of managing the Department's Operations Division. In that capacity, I was responsible for oversight of operation and maintenance of the City's water and wastewater facilities, including three water treatment plants, three wastewater treatment plants and oversight of the contract operation of the biosolids recycling facility. My responsibilities also included managing the operation and maintenance of water mains, sewers, stormwater inlets, water and wastewater pumping stations and fire hydrants throughout the City. I also oversaw the supply of water and wastewater services to suburban contract customers.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe: (i) the mission of the Department, (ii) the infrastructure of the water and wastewater systems, (iii) ongoing and prospective initiatives, (iv) regulatory requirements and attendant costs, and (v) the roster of witnesses presenting testimony on behalf of the Department in this proceeding.

Q. PLEASE DESCRIBE THE MISSION OF THE PHILADELPHIA WATER DEPARTMENT.

A. The Department provides the greater Philadelphia area integrated water, wastewater and stormwater services as a part of its mission to: (i) purvey high quality drinking water, (ii) provide an adequate and reliable water supply, and (iii) sustain and enhance the region's watersheds and quality of life by managing wastewater and stormwater effectively. In fulfilling its mission, the utility seeks to be customer-focused – delivering services in a fair, equitable and cost effective manner with a commitment to public involvement. Having already served the City and region for nearly two centuries, PWD's commitment to the future includes an active role in the economic development of Greater Philadelphia and a legacy of environmental stewardship. PWD is empowered to operate, maintain, repair and improve the water and wastewater systems by the Philadelphia Home Rule Charter.

Q. PLEASE DESCRIBE PWD INFRASTRUCTURE AND THE SERVICES PROVIDED TO ITS CUSTOMERS.

A. The Department is a municipal utility serving citizens of the Philadelphia region by providing integrated water, wastewater, and stormwater services. The Department employs approximately 2,000 people to operate and support its extensive facilities and infrastructure. The Department's Water and Wastewater systems include: (a) three water treatment plants with the capacity to treat in excess of 500 million gallons per day ("MGD") of water from the Delaware and Schuylkill Rivers, (b) three wastewater

treatment plants with the capacity to process in excess of 500 MGD of wastewater, and (c) a privately managed centralized biosolids handling facility that annually processes and distributes up to 6,570 dry tons of biosolids captured during the wastewater treatment process. The Department also maintains approximately 3,176 miles of water mains, 3,716 miles of sewers (including 1,855 miles of combined sewers, 762 miles of sanitary sewers, 737 miles of stormwater conduits, and 362 miles of force mains, inlets and vent pipes), 71,962 stormwater inlets, 25,364 fire hydrants, multiple finished water storage facilities, and over 30 water, wastewater and stormwater pumping stations. In support of these operations, the Department also operates a sophisticated testing laboratory and a range of technical and administrative support services.

The Water System's service area includes the City of Philadelphia ("City") and the surrounding areas served by the wholesale contract with Aqua Pennsylvania, Inc. Based on the 2013 U.S. Census Bureau estimate, the Water System served approximately 1,610,165 individuals of which 1,553,165 live in the City and approximately 57,000 live in Montgomery and Delaware Counties. The Wastewater System's service area is larger than the Water System and includes the City and several municipalities in the Philadelphia metropolitan area. Based on the 2013 U.S. Census Bureau estimate, the Wastewater System served approximately 2,303,165 individuals, 1,553,165 of which are City residents. The remaining 750,000 live in Bucks, Delaware and Montgomery Counties.

Q. IS THE PROPOSED RATE INCREASE NECESSARY TO FUND THE DEPARTMENT'S EFFORTS TO PROVIDE HIGH QUALITY DRINKING WATER TO ITS CUSTOMERS?

- A.** Yes. The Department is committed to producing and delivering high-quality drinking water to its customers. In fulfilling this commitment, PWD has, in many instances, adopted internal water quality goals that are more stringent than the applicable state and federal regulations. The Department is equally committed to delivering its treated water and maintaining its distribution system with adequate pressure and supply to reliably meet all system needs, including fire protection.

The key objectives and strategies for accomplishing the PWD's water quality and supply goals include: (a) complying with all drinking water standards in the reauthorized Safe Drinking Water Act and achieving the Department's more rigorous performance standards as defined by the Partnership for Safe Water, (b) strengthening the Department's role in protecting the region's source water, (c) optimizing quality and reliability of treatment procedures, (d) implementing best management practices in the distribution system to assure water quality and reliability of supply, and (e) employing advanced monitoring and analysis capabilities to support the Department's water quality objectives.

Q. WHAT INITIATIVES HAS THE DEPARTMENT ALREADY UNDERTAKEN TO IMPROVE WATER QUALITY IN THE LOCAL AREA?

- A.** Among the most noteworthy PWD ongoing initiatives is the Green City, Clean Waters Program (*Green City, Clean Waters*) which is a long-term program being implemented pursuant to the updated Combined Sewer Overflow ("CSO") Long Term Control Plan ("LTCP"). As discussed in Joanne Dahme's testimony, *Green City, Clean Waters* programmatic expenditures allow the Department to meet the requirements of the Consent Order and Agreement dated June 1, 2011 ("COA") negotiated with the

Pennsylvania Department of Environmental Protection (“PaDEP”). *Green City, Clean Waters* is a landmark program that will positively impact stormwater management and water quality issues over the next 25 years.

Many Philadelphians are unaware of the connection between the work of the Water Department and the quality of their local watershed – the creeks, streams, rivers, and surrounding land that provide fresh water both for recreational enjoyment and for drinking water supply. After the tremendous investment and progress in wastewater treatment sparked by the federal Clean Water Act over 30 years ago, the City now enjoys watersheds that are cleaner and healthier than they have been in well over a century. This in turn has resulted in a rejuvenated interest in activities and development on the Delaware River waterfront. Once plagued by federal consent decrees for the failure to operate our wastewater treatment plants in compliance with environmental regulations, these same plants are now winning national industry awards.

Q. WHAT ARE SOME OF THE OTHER MAJOR INITIATIVES THAT THE DEPARTMENT WILL BE IMPLEMENTING DURING THE RATE PERIOD?

A. In addition to *Green City, Clean Waters*, five other ongoing initiatives are highlighted in the discussion below.

Water Accountability

The Department has been successful in developing and implementing programs to reduce uncaptured revenue and the loss of finished water from the distribution system. PWD has cut its non-revenue water over the past decade, from a typical annual level of 120-140 MGD prior to FY 1995 to 86.9 MGD at the close of FY 2014. The Department has been active in promoting new methods through the American Water Works Association (“AWWA”), and has attained recognition as an industry leader in this regard. The Department was the first water utility in the United States to adopt the best management water audit approach published by the International Water Association and the AWWA in 2000. The method accounts for all water as either consumption or losses. Apparent losses are paper losses due to customer meter inaccuracies, billing errors or unauthorized consumption. These losses cause water utilities to lose a portion of the revenue to which they are entitled. Real losses are physical losses, largely leakage. These losses cause excess production costs for water utilities.

In recent years the Department has implemented a host of programs to reduce and control water and revenue losses. In order to optimize revenue capture, PWD operates a Customer Meter Management Program featuring the nation’s second largest water utility Automatic Meter Reading (“AMR”) system, and a successful Revenue Protection Program which has recouped millions of dollars of uncaptured revenue as shown in the table below.

Revenue Recoveries through the Water Department’s and Water Revenue Bureau’s

Revenue Protection Program and Re-Inspection Program

Water Department's Revenue Protection Program		
Fiscal Year	Water Recovered, MGD	Revenue Recovered
2000	1.39	\$2,493,949
2001	5.81	\$3,398,952
2002	0.69	\$1,705,932
2003	1.14	\$2,386,379
2004	1.67	\$2,449,327
2005	1.74	\$3,084,261
2006	1.01	\$1,622,768
2007	0.36	\$871,780
2008	0.40	\$1,026,920
2009	1.00	\$1,803,272
2010	1.49	\$2,554,261
2011	2.30	\$3,889,675
2012	2.40	\$4,336,492
2013	2.56	\$4,453,107
2014	1.74	\$5,015,532
2015	1.35	\$4,446,222
Total	27.05	\$45,538,829

PWD conducts a variety of activities to proactively contain leakage losses in the water distribution system. The successful Leak Detection Program has been in continuous use for over 30 years and surveys the system for hidden leaks by actively patrolling approximately one-third of the system each year. As part of a research project, in 2007 the Department installed instrumentation to control leakage by advanced pressure management in a District Metered Area. This technology resulted in up to 90% reduction of the leakage rate in this small pilot area. PWD was one of the first water utilities in the United States to employ this technique to inhibit the return of leakage and to lessen the occurrence of water main breaks.

The Department also contracts for in-line leak detection in active large-diameter transmission water piping. In the first seven years of the program, a total of almost 42 miles of piping was scanned and 83 hidden leaks were pinpointed. Some of these leaks were found to exist on inaccessible piping beneath interstate highways and wooded parkland. This service has added another highly effective tool to the battery of methods that PWD is employing to minimize lost water.

In FY 2014, 99.7% of all hydrants were operational. The implementation of a proactive program to track hydrant information and deploy repair crews has resulted in hydrant availability remaining significantly above 99%. The program includes routine inspection, repair and painting.

Wastewater Master Planning

The Department has created a dedicated Wastewater Planning Program within its Planning and Research Unit to facilitate and lead long term strategic planning efforts for the City's Wastewater System. The Wastewater Planning Program is currently developing a long-term Wastewater Master Plan that will incorporate the regulatory requirements contained in the COA and LTCP, connect the collection system and treatment plants holistically, and look beyond current regulatory drivers to envision the future of the utility. The Wastewater Master Plan will not only deliver a system plan based on current information, but also will provide a mechanism for establishing business processes, identifying ongoing data assessments and trend analyses, and updating the Master Plan on a regular basis. These efforts will be used to inform the Capital Improvement Program, prioritization of capital projects, research, studies and related wastewater planning work.

The Planning and Research Unit initiated the Wastewater Master Plan by assessing existing plant infrastructure, analyzing historic data trends, and mapping timelines for the COA and LTCP and Philadelphia Air Management Services (odor control) regulatory construction timelines. Through 2014, the Department completed a 50-year population and wastewater flow projection study to determine that the existing WPCP infrastructure has sufficient capacity to meet projected dry weather flow through 2065. A wet weather capacity plan to meet the 20-year milestones of the COA and LTCP, and 50-year wet weather study are in progress. PWD expects to complete the Wastewater Master Plan for all three WPCPs and collection systems in 2016. The Department will continue to re-examine city-wide strategies to proactively address any new regulatory issues or changing demographics and maximize resources in wastewater to capture energy and nutrients as part of its ongoing mission of achieving sustainability and cost savings.

Water Master Planning

The Department has also created a dedicated Water Planning Program within its Planning and Research Unit to facilitate and lead long term strategic planning efforts for the City's Water System. The Water Planning Program is currently developing a 25-year Water Master Plan that will document existing conditions, evaluate Water System data and trends, and plan for the future of the utility. The Water Master Plan will not only deliver a system plan based on current information, but also will provide a mechanism for establishing business processes, identifying ongoing data assessments and trend analyses, and updating the Master Plan on a regular basis. These efforts will be used to inform the Capital Improvement Program, prioritization of capital projects, research, studies and related water planning work.

The Planning and Research Unit initiated the 25-year Water Master Plan in 2014 by starting a series of workshops for engaging the Department's experts, collecting existing system information and performing data assessments and trend analyses of system data. PWD expects to complete the Water Master Plan on or about December of 2016. It will continue to re-examine city-wide strategies to address any new regulatory issues,

changing demographics and external drivers such as climate change, water conservation and system expansion.

Investigation and Mitigation of Flooding

Several areas of the City (South Philadelphia, Northern Liberties, lower Kensington, Washington Square West and Germantown) have experienced significant basement flooding during intense rain events. The frequency and intensity of flood producing rain events have increased in recent years. The Department has initiated a hydraulic analysis of the sewer system in the flood prone areas in order to understand the cause of basement flooding as well as to determine possible solutions. PWD will continue to incorporate flood relief capital projects into its capital program. These projects by their complex nature will take many years to plan, design and construct. In order to provide more immediate relief for properties while capital solutions are identified, designed, and constructed, the Department established an assistance program called the Basement Backflow Prevention Program. PWD uses private plumbers to evaluate flood prone properties to determine if they would benefit from the installation of one or more backflow prevention devices. If the determination is positive, then the installation of a backflow prevention device(s) is tailored to that particular property and installed by a private plumber at the Department's cost. The property owner must agree to accept maintenance responsibility for the backflow prevention device. All areas within the City are now eligible.

Cityworks Computerized Maintenance Management System

The Department has utilized computer tracking of its operations and maintenance activities for over 30 years. Historically, PWD created individual databases to track underground asset management, pipeline and sewer repairs and work on other systems. In 2009, PWD began consolidating its analysis of the multiple systems for maintenance and operations through a program called Cityworks. On June 5, 2012, Phase II launched and included simultaneous activation of numerous core field workgroups, including Customer Field Services, Distribution, Sewer Maintenance and Customer Information/Call Center, thereby improving customer service and data handling. Cityworks implementation is currently in the final phase, which involves incorporation of ancillary groups such as Green Stormwater Infrastructure. Future enhancements to Cityworks include the development of reporting and data analysis capabilities that are expected to result in additional improvements to operations and maintenance tracking.

Q. IS THE DEPARTMENT COMMITTED TO CONTINUING PROGRAMS THAT PRESERVE AND IMPROVE LOCAL WATER QUALITY?

A. Yes. Prospectively, the Department is committed to continuing its investments in protecting the region's water environment, including cost-effective operation of our wastewater system at levels in full compliance with regulatory permits. Pursuant to the COA signed by PaDEP and the Department in 2011, the Department will spend approximately \$2.4 billion over 25 years (\$1.2 billion in 2009 dollars) to use green technologies to substantially mitigate CSOs and enhance the quality of local waterways, as well as make certain enhancements to its wastewater treatment plants and sewers. Expenditures are also made in support of innovative planning efforts such as bio-monitoring of fish and insects in the region's waterways and the use of geographic information system technology for watershed management.

Q. WILL THE DEPARTMENT EXPERIENCE HIGHER OPERATING COSTS BECAUSE OF REGULATORY REQUIREMENTS DURING THE RATE PERIOD?

A. Yes. In addition to the Long-Term Control Plan, the existing NPDES permits for the three wastewater treatment plants (incorporating total chlorine residual limits for effluent) will continue a trend of higher annual operating costs for the Department. Further, Title V permits (requiring no odors beyond the fence lines at wastewater treatment plants) have caused PWD to incur increased costs for odor control and additional costs may follow for odor abatement. The conversion of Department disinfection facilities from liquid chlorine to sodium hypochlorite has also resulted in increases in operating costs for both water and wastewater treatment plants. Clean Water Act compliance may also produce additional costs for the Department tied to the clean up of polychlorinated biphenyls (PCBs) in the Delaware River, which is being evaluated by the Delaware River Basin Commission. These expenditures are among those projected for the Rate Period and together with other operating and financial costs contribute to the need for requested rate relief.

Q. PLEASE DESCRIBE OTHER SIGNIFICANT PROGRAMS BEING IMPLEMENTED DURING THE RATE PERIOD.

A. The second generation Advanced Metering Infrastructure (“AMI”) System is another significant initiative being launched during the Rate Period. By way of background, the Department began to assess and plan for AMI as a state of the art system to replace the current AMR system in FY 2014. The current system is operated under contract with Itron which expires in September 2017, or September 2019 if the Department avails itself of the contract’s two optional one year extensions. Most water utilities are now deploying AMI Systems in which meter readings are obtained over a fixed radio network. AMI would enable the Department to obtain hourly readings from customers’ meters, and make this data available to customer service employees and customers. AMI also can provide near real time alerts about usage on inactive accounts, zero usage on active accounts, and possible leaks and wastage. This can increase the effectiveness of customer service representatives and reduce the volume of calls to the Department and WRB and the number of field visits while enhancing customer service. Savings from an AMI system would come from reduction in vehicle costs, benefit of the doubt bill adjustments, and theft of service costs.

In addition to the hard direct costs and benefits, AMI can provide soft and indirect benefits associated with improving overall equity among customers by eliminating the extra expense to read, bill and service some customers at the expense of others. AMI based technology can also help detect distribution system losses sooner thereby reducing the inconvenience to customers and the general public related to leak repair, the cost of leak repair, the cost of treating and pumping non-revenue water, and inflow to wastewater collection and treatment systems. Finally, by providing continuous and current information, AMI can increase confidence of customers, staff and other stakeholders in the data relied upon for billing and in answering billing inquiries/disputes together with other efficiencies identified above.

Based on these factors, the Department has decided to launch this initiative with the objective of realizing the following benefits:

- providing PWD with more timely and detailed information about what is taking place at customer meters including usage on “0-bill” accounts and evaluate possible leaks and wastage (e.g., this information is generated close to when it occurs as opposed to weeks later under the current AMR system with once per month readings);
- providing customers easy access to their consumption data through a web portal (e.g., this can reduce the volume of calls to WRB and PWD about meter reading and high bills);
- improving the effectiveness of customer service representatives in responding to customer inquiries by providing them with detailed consumption histories and better analytical tools;
- reducing visits of field service personnel related to the verification readings, requests or investigations and other problems related to meters, meter reading and billing (e.g., with AMI, readings can be obtained without “truck rolls”);
- enabling customer service “best practices” through detection of high consumption that may be due to leaks or wastage and promptly informing customers so that they can take appropriate action (e.g., repairs, conservation steps);
- improving cash flow by reducing arrears, bad debt and collection activities to the degree they are caused by “surprise” high bills;
- reducing high bill adjustments due to unusual or suspect readings given prompt identification of excessive consumption;
- reducing theft of service by providing improved analytical tools to promptly identify theft and monitor accounts that are shut-off to ensure that they stay off;
- supporting more flexibility in meter reading cycles (e.g., customers on fixed incomes or who desire to be billed at the beginning of the month could choose this billing cycle, since meter reading and billing dates would not be constrained by geographic sequence);
- helping monitor backflow using high resolution meters and frequent monitoring to detect small and large backflow events in real time (e.g., small events might indicate marginal pressure problems or even main breaks; large events might indicate problems that could affect distribution system water quality); and
- providing better data for improved forecasting, facilities planning and rate setting.

Q. PLEASE IDENTIFY THE WITNESSES TESTIFYING ON BEHALF OF THE DEPARTMENT IN THIS PROCEEDING AND THE SUBJECT MATTERS TO BE ADDRESSED.

A. In addition to my testimony (PWD Statement 1), witnesses filing testimony on behalf of PWD and the subject matter to be addressed by each witness are summarized below:

Melissa LaBuda (PWD Statement 2) – Ms. LaBuda is the Deputy Water Commissioner for Finance. Her testimony: (i) provides an overview of the rate filing, including the reasons why the Department is seeking rate relief, (ii) summarizes the Department’s efforts to control its operating costs and minimize the need for rate relief since the last rate case, (iii) describes the requirements of the Philadelphia Home Rule Charter, the Philadelphia Code and the bond covenants related to rates, (iv) summarizes the Department’s financial challenges and risk factors, (v) explains the reasons for the proposed rate period, (vi) describes the budgeting process, accounting practices and financial policies of the City and the Department and (vii) discusses the Department’s budget, accounting, and financial exhibits.

Stephen Furtek (PWD Statement 3) – Mr. Furtek is the General Manager of Engineering and Construction whose testimony describes (i) the Department’s Capital Improvement Program and (ii) costs associated with financing same.

Joanne Dahme and Erin Williams (PWD Statement 4) – Ms. Dahme is the General Manager of Public Affairs. Ms. Williams is Manager of the Stormwater Billing Program. Their testimony describes (i) the Department’s stormwater facilities, (ii) regulatory requirements and permits associated with the operation of stormwater facilities, (iii) stormwater management policies and (iv) stormwater management “best practices” incentive programs.

James Palladino (PWD Statement 5) – Mr. Palladino is an independent consultant. His testimony provides (i) an overview of proposed changes in the Department’s regulations on rates and charges for retail service; (ii) a comparison of PWD retail rates and charges with those of other large urban water and wastewater utilities; and (iii) an overview of wholesale service contracts.

Michelle Bethel and Mark D. Harvey (PWD Statement 6) – Ms. Bethel is the Deputy Revenue Commissioner. Mr. Harvey is a senior Revenue Collections Officer. Their testimony describes the Water Revenue Bureau, administration of customer service and assistance programs, and pending changes to the informal dispute and hearing process.

Katherine Clupper (PWD Statement 7) - Ms. Clupper is a Managing Director at Public Financial Management, Inc. (PFM). Her testimony describes certain financial strategies and policy changes necessary to meet funding requirements associated with the Department’s expanding capital program on a least cost basis.

Raftelis Financial Consultants (PWD Statement 8) - Mr. Jon Davis (Vice President), Mr. Bart Kreps (Senior Manager) and Ms. Henrietta Locklear (Senior Manager) of Raftelis Financial Consultants, Inc., will present testimony addressing affordable rate program and related costs as well as public utility regulatory structures and the Management Audit undertaken as a part of the settlement of the last rate case.

Black & Veatch (PWD Statement 9) – Ms. Ann Bui (Managing Director), Ms. Prabha Kumar (Director) and Mr. David Jagt (Manager) of Black & Veatch, will present testimony addressing projected revenues, revenue requirements, and cost of service, cost allocation and rate design among other issues.

Q. DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

A. Yes, it does.

Debra Anita McCarty

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Philadelphia, Pennsylvania 19107
Office Phone: 215-685-6102

Education:

The Johns Hopkins University, Baltimore, Maryland. Received Bachelor of Engineering Sciences in May, 1979 with a major in Environmental Engineering

Experience:

April 2004 to Present

Philadelphia Water Department, Deputy Commissioner/Director of Operations. Responsibilities include oversight of the operation and maintenance of the water and wastewater utilities including three water plants, three wastewater plants and a biosolids recycling facility. Also included in my responsibilities is the operation and maintenance of 3,100 miles of water mains, 3,500 miles of sewers, 79,000 stormwater inlets, 25,000 fire hydrants and water and wastewater pumping stations, throughout the City. I also oversee the supply of water and wastewater services to suburban contract customers.

October 1999 to April 2004

Philadelphia Water Department, Chief of Wastewater Treatment. Responsible for Philadelphia's three wastewater treatment plants with a combined average daily treatment capacity of 522 million gallons/day, a combined operating budget of \$34.7 Million and approximately 330 employees. Set overall goals and objectives for facilities; insured compliance with NPDES permits under the Clean Water Act administered by Pa DEP; insured compliance with Title V and Synthetic Minor permits under the Clean Air Act Amendments administered by Air Management Services; oversaw capital and operating budgetary issues; coordinated efforts between plants and PWD units, other city agencies and regulators; various administrative tasks.

July 1993 to October 1999

Philadelphia Water Department, Southwest Water Pollution Control Plant, Plant Manager. Overall responsibility for this 200 million gallon/day wastewater treatment plant with a full staffing level of 135 employees. Responsibilities entailed directing and providing technical guidance to process engineers and operations staff to insure compliance with NPDES permit and Clean Air Act Amendment requirements; directed and provided technical guidance to maintenance staff to insure facility was properly maintained and in a cost effective manner (This included selecting and implementing a computerized maintenance management system and initiation of predictive maintenance practices to prolong equipment life and minimize downtime); directed an administrative staff whose responsibilities included payroll, procurement of parts and services, processing payments for purchase orders, developing annual budgets, tracking expenditures to remain within budget and coordination of training of plant staff;

successfully led plant efforts to satisfy various obligations under an EPA Consent Decree; developed and implemented a facility budget which was competitive with contract operations and resulted in significant savings for the rate payers; worked with AFSCME DC #33 to achieve many of these goals.

May 1989 to July 1993

Philadelphia Water Department, Northeast Water Pollution Control Plant, Process Manager. Had direct responsibility for control of plant processes at this 210 million gallon/day facility. This included insuring compliance with NPDES permit requirements, minimizing malodor emissions, implementing operational changes and special projects. Assisted in preparation of budget; recommended capital projects then assisted designers with preparation and review of plans and specifications; performed plant manager duties in his absence; supervised a staff of two sanitary engineers and two water quality technicians.

May 1984 to May 1989

Philadelphia Water Department, Northeast Water Pollution Control Plant, Sanitary Engineer for Plant Operations Group. Responsible for coordination of eight construction projects and related activities to minimize impact to plant processes; startup, operation and troubleshooting of facilities after construction completion; implementation of an odor control program to address court ordered mandates (this effort contributed to the successful settlement of the Federal lawsuit filed by the community).

August, 1982 – May 1984

Philadelphia Water Department, Northeast Water Pollution Control Plant, Sanitary Engineer in Treatment Headquarters Group. Responsible for various plant related projects and outside pumping stations. Responsibilities included interfacing with the Operations, Maintenance and Construction Groups to start-up and operate new facilities. (Primary and Final Sedimentation Tanks, Preliminary Treatment Building and Chlorination Facilities); writing and administration of several requirements contracts; providing assistance to Department's training consultant for training coordination and preparation of system operating manuals; administration of plant dust control program; primary community contact including responding to their problems and concerns; Plant Standby Engineer every six weeks.

November, 1979 to March, 1982

Huth Engineers, Inc., Lancaster, Pennsylvania, Project Engineer in the Environmental Group. Assisted in, and responsible for various water and wastewater related projects. Responsibilities included preparation of Operation and Maintenance manuals for sewer systems; evaluation of water storage alternatives; responsible for preliminary development of sludge composting facility for a major plant; participated in preparation of major components of several "201" Facilities Plans; dealt with federal, state and local agencies on behalf of various municipalities; Engineer for Jackson Township for various projects. Also attended conferences relative to sludge composting.

Activities and

Serve as Secretary on the Board of Directors for The Philadelphia Singers. Active in Powelton Village Civic Association and recently elected President-Elect. Organized

Interests:

annual 4 Block neighborhood Porch Sale for 16 years. Enjoy gardening (particularly native & wildlife friendly habitats), fishing, cooking, listening to various music genres & attending concerts, bicycling and competitive swimming.

**Professional
Affiliations:**

Water Environment Federation; Eastern Pennsylvania Water Pollution Control Operators Association, Inc.