FOCUSED MANAGEMENT AND OPERATIONS AUDIT OF SUEZ WATER PENNSYLVANIA INC.

Prepared By The
Pennsylvania Public Utility Commission
Bureau of Audits
Issued February 2017

Docket No. D-2016-2528481

PENNSYLVANIA PUC
PUBLIC UTILITY COMMISSION

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SUEZ WATER PENNSYLVANIA INC.
FOCUSED MANAGEMENT AND OPERATIONS AUDIT

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I. INTRODUCTION

In accordance with the Pennsylvania Public Utility Commission's (PUC or Commission) program to identify improvements in the management and operations of fixed utilities under its jurisdiction, it was determined that a focused management and operations audit should be conducted of SUEZ Water Pennsylvania, Inc. (SWPA or Company). Management and operational reviews, which are required of certain utility companies pursuant to 66 Pa.C.S. §516(a), come under the Commission's general administrative power and authority to supervise and regulate all public utilities in the Commonwealth, under 66 Pa.C.S. §501(b). More specifically, the Commission can investigate and examine the condition and management of any public utility, under 66 Pa.C.S. §331(a).

This report represents the written product of the focused management and operations audit and contains the resultant findings and recommendations for improvement in the management and operations of SWPA. The findings presented in the report identify areas and aspects where weaknesses or deficiencies exist. In all cases, recommendations have been offered to improve, correct, or eliminate these conditions. The final and most important step in the management audit process is to initiate actions toward implementation of the recommendations.

A. <u>Objectives and Scope</u>

The objectives of this focused management and operations audit were threefold:

- To provide the Commission, SWPA, and the public with an assessment of the efficiency and effectiveness of the Company's operations, management methods, organization, practices, and procedures.

- To identify opportunities for improvement and develop recommendations to address those opportunities.

- To provide an information base for future regulatory and other inquiries into the management and operations of SWPA.

The scope of this audit was limited to certain areas of the Company as explained in Section B, Audit Approach.

B. Audit Approach

This focused management and operations audit was performed by the Management Audit Staff of the PUC's Bureau of Audits (Audit Staff). The audit process began with a pre-field work analysis as outlined below:

- A five-year internal trend and ratio analysis (see Appendices I, II, III, and IV) was completed using financial and operational data obtained from the Company, Commission, and other available sources. This analysis, which focused on the period 2011-2015, was supplemented by comparisons to a panel of water utilities for the period 2011-2015 (see Appendices V, VI, and VII).

- Input was solicited from Commission Bureaus and Offices, certain external parties, and the Company regarding any concerns or issues they would like to have addressed during the course of our review.

- Prior management and operations audits, follow-up management efficiency investigations, implementation plans, implementation plan progress reports, other Commission-conducted audits, annual diversity reports, and other available documents were reviewed.

Information from the above steps was used to initially focus the Audit Staff's work efforts in the field. Specifically, the following areas or functions were selected for an in-depth analysis and are included in this report:

- Executive Management and Organizational Structure
- Corporate Governance
- Financial Management
- Affiliated Transactions and Cost Allocations
- Water Operations
- Emergency Preparedness
- Materials Management
- Customer Services
- Human Resources and Diversity

The pre-field work analysis should not be construed as a comprehensive evaluation of the management or operations in the functional areas not selected for in-depth examination. Had we conducted a thorough review of those areas, weaknesses or deficiencies may have come to our attention that were not identified in the limited pre-field work review.

The actual fieldwork began on April 5, 2016 and continued intermittently through September 6, 2016. The principal components of the fact gathering process included:

- Interviews with Company personnel and other Commission Bureaus.

- Analysis of records, documents, and reports of a financial and operational nature. This analysis focused primarily on the period 2011-2015, as well as 2016 as available.

- Visits to the main office building, water production and storage facilities, inventory warehouses, and observation of selected work practices, etc.

C. Functional Area Ratings

For the functions or areas of the Company that were selected for in-depth examination, the Audit Staff rated the actual operating or performance level relative to the expected performance level at the time of the audit. This expected performance level is the state at which each area or function should be operating given the Company's resources and general operating environment. Expected performance is not a "cutting edge" operating condition; rather, it is management of an area or function such that it produces reasonably expected operating results.

Presented below are the evaluative categories utilized to rate each function or area's actual operating or performance level relative to its expected performance level:

- Meets Expected Performance Level
- Minor Improvement Necessary
- Moderate Improvement Necessary
- Significant Improvement Necessary
- Major Improvement Necessary

Our ratings for each function or area reviewed in-depth can be found in Exhibit I-1on the next page.

Exhibit I-1
SUEZ Water Pennsylvania Inc.
Focused Management and Operations Audit
Functional Rating Summary

Functional Area	Meets Expected Performance Level	Minor Improvement Necessary	Moderate Improvement Necessary	Significant Improvement Necessary	Major Improvement Necessary
Executive Management and Organizational Structure	X				
Corporate Governance	X				
Financial Management		X			
Affiliated Transactions and Cost Allocations			X		
Water Operations			X		
Emergency Preparedness				X	
Materials Management			X		
Customer Service		X			
Human Resources and Diversity	X				

D. Benefits

Where possible, the Audit Staff attempts to quantify the potential savings that would be expected from effectively implementing the recommendations made in this report. The audit report contains identifiable potential quantifiable savings of $148,000 to $161,000 in annual savings, which is equivalent to 0.7% of total expenses, and $277,000 in one-time savings from effective implementation of the recommendations. We try to identify, whenever it is reasonably practical, the potential savings net of the projected costs for implementation. Some of these savings could be considered an actual reduction in costs, avoided costs or increased revenue; whereas others would result from better deployment and/or use of existing resources. These quantifications require some judgement and may require efforts beyond the scope of the audit for further refinement. Therefore the actual benefits from effective implementation of the recommendations are subject to some degree of uncertainty, and could be higher or lower than amounts estimated by the Audit Staff. An overall summary of the annual and one-time cost savings quantified in the audit report are shown in Exhibit I-2.

Exhibit I-2
SUEZ Water Pennsylvania Inc.
Focused Management and Operations Audit
Quantifiable Savings Summary

Recommendation	Annual Savings	One-Time Savings
Strive to meet NRW goals and reduce UFW levels below the Commission's guidelines of 20%. (VII-2)	$120,000	
Develop inventory turnover goals and strive to achieve an inventory turnover of at least 2.0 (IX-3)	$28,000 - $41,000	$277,000
Totals	$148,000 - $161,000	$277,000

For the majority of recommendations, it is not possible or practical to estimate quantitative benefits as their benefits are of a qualitative nature or there was insufficient data available to quantify the impact. For example, it is difficult to estimate the actual benefit where new management practices or procedures are recommended where such did not previously exist or was not fully functional. Similarly, changes in work flow processes or to implement good business practices will result in improved effectiveness and efficiency of a specific function but cannot be easily quantified.

The Company will have varying ways to implement the recommendations and as a result the Audit Staff has not estimated the cost of implementation for recommendations where no savings were quantified. However, it should be noted by the reader that the cost of implementing certain recommendations could be significant.

E. Recommendation Summary

Chapters III through XI provide findings, conclusions, and recommendations for each function or area reviewed in-depth during this focused audit. Exhibit I-3 summarizes the recommendations with the following priority assessments for implementation:

- INITIATION TIME FRAME – Estimated time frame on how quickly the Company should be able to initiate its implementation efforts given the Company's resources and general operating environment. The time necessary to complete implementation is expected to vary depending on the nature of the recommendation and the scope of the efforts necessary and resources available to effectively implement the recommendation.

- BENEFITS – Net quantifiable benefits have been provided where they could be estimated as discussed in Section D - Benefits. Our estimated overall level of benefits rankings are not solely based on quantifiable dollars but rather the Audit Staff's assessment of the potential overall impact of the recommendation on the efficiency and/or effectiveness of the Company and/or the services it provides.

- HIGH BENEFITS – Implementation of the recommendation would result in major service improvements, substantial improvements in management practices and performance, and/or significant cost savings.

- MEDIUM BENEFITS – Implementation of the recommendation would result in important service improvements, meaningful improvements in management practices and performance, and/or meaningful cost savings.

- LOW BENEFITS – Implementation of the recommendation is likely to result in service improvements, management practices and performances, and/or enhance cost controls.

SUEZ Water Pennsylvania Inc.
Focused Management and Operations Audit
Summary of Recommendations

Rec. No.	Recommendation	Page No.	Initiation Time Frame	Benefits (including $ estimates)
Chapter III – Executive Management and Organizational Structure				
	None	15		
Chapter IV – Corporate Governance				
	None	18		
Chapter V – Financial Management				
V-1	Conduct periodic internal audits of affiliate transactions including cost allocations for shared services.	30	0-12 Months	Medium
V-2	Update and correct information contained in Accounting and Capital Control policies.	30	0-6 Months	Medium
V-3	Update the dividend policy to submit detailed, written explanations for each dividend payment in excess of 85% of net income and provide advanced notice to the Commission prior to making any future dividend payments in excess of 85% of net income	30	0-6 Months	Low
V-4	Expand features in the new financial asset management system to include monthly forecast variance cost reporting on capital expenditures	31	0-12 Months	Medium
Chapter VI – Affiliated Transactions and Cost Allocations				
VI-1	File a new or amend existing affiliated interest agreements with the Commission for the cash pool agreement, consolidated debt arrangement, and for every affiliate receiving/providing goods and/or services to SUEZ Water Pennsylvania Inc.	41	0-6 Months	Medium
VI-2	Periodically conduct internal or external studies to compare SUEZ Water Pennsylvania Inc.'s intercompany charges for services it provides to or receives from its affiliates.	41	0-6 Months	Medium
VI-3	Work with Suez Water Management & Services to improve the level of detail provided in intercompany invoices and reports.	42	0-12 Months	High

SUEZ Water Pennsylvania Inc.
Focused Management and Operations Audit
Summary of Recommendations

Rec. No.	Recommendation	Page No.	Initiation Time Frame	Benefits (including $ estimates)
Chapter VII – Water Operations				
VII-1	Develop a comprehensive damage prevention program.	61	0-6 Months	High
VII-2	Strive to meet NRW goals and reduce UFW levels below the Commission's guidelines of 20%.	61	12+ Months	High $120,000 Annual savings
VII-3	Accelerate main replacement efforts to achieve main replacement rates of approximately 100 to 120 years.	61	12+ Months	High
VII-4	Establish a critical valve list for each region and strive to exercise critical valves on an annual basis.	61	12+ Months	Medium
VII-5	Develop a comprehensive cross connections control program and update the cross connection control manual	61	0-6 Months	Medium
VII-6	Implement measures to routinely capture various main replacement cost components.	61	0-6 Months	Low
Chapter VIII – Emergency Preparedness				
VIII-1	Correct minor physical security deficiencies and perform on-going physical security reviews of all facilities.	67	0-6 Months	High
VIII-2	Establish uniform physical security standards for each type of facility at SWPA.	67	12+ Months	High
VIII-3	Design and implement a policy of layered physical security for SCADA equipment, controllers, and servers.	67	12+ Months	High
VIII-4	Strive to perform a VA every ten years, and revise physical and cybersecurity plans to address any new threats or vulnerabilities identified.	67	0-12 Months	High
VIII-5	Participate in more frequent interagency tabletop drills and exercises.	67	0-12 Months	Medium
VIII-6	Update the emergency response plan PUC contact information and disseminate it to every SWPA facility.	67	0-6 Months	Medium

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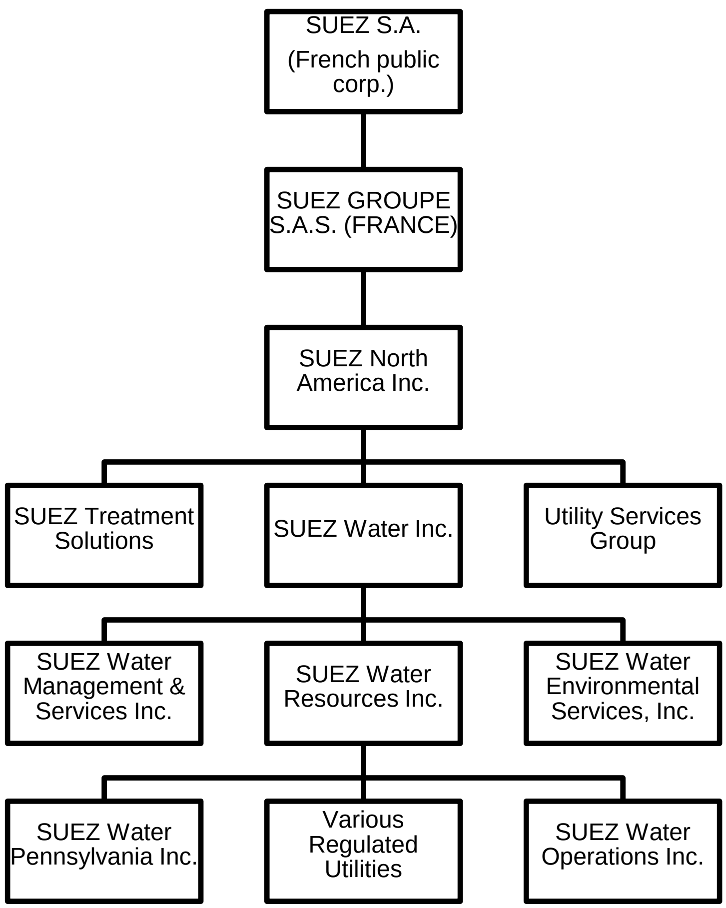
Summary of Recommendations

Rec. No.	Recommendation	Page No.	Initiation Time Frame	Benefits (including $ estimates)
Chapter VIII – Emergency Preparedness (Continued)				
VIII-7	Establish controls to ensure SUEZ Water Management and Services' Legal Department provides regular cybersecurity legal and regulatory updates to SUEZ North America's subsidiary companies, including SWPA.	67	0-6 Months	Low
VIII-8	Update the SDS sheets annually at every SWPA facility	67	0-6 Months	Low
Chapter IX – Materials Management				
IX-1	Establish minimum and maximum levels for inventory items.	74	12+ Months	High
IX-2	Establish a consistent and uniform definition for emergency stock and identify appropriate emergency stock levels for all warehouse locations.	74	0-12 Months	High
IX-3	Develop inventory turnover goals and strive to achieve an inventory turnover of at least 2.0.	74	0-12 Months	High $28,000-$41,000 annual savings $277,000 one-time savings
IX-4	Initiate measures to improve inventory accuracy.	74	0-12 Months	Medium
IX-5	Reduce or eliminate the manual aspects of the current inventory management process.	74	12+ Months	Medium
Chapter X – Customer Service				
X-1	Identify methods to improve call center performance and strive to meet established goals.	79	12+ Months	High
X-2	Utilize existing platforms to proactively engage customers, especially online.	79	0-12 Months	High
Chapter XI – Human Resources and Diversity				
	None	83		

II. BACKGROUND

SUEZ Water Pennsylvania Inc. (SWPA or Company) is a regulated public utility that owns and operates distribution systems, providing potable water for domestic use and fire protection to approximately 59,000 customers within its service territory. SWPA is a wholly owned subsidiary of SUEZ Water Resources Inc. (SWR). An entity organization chart displaying SWPA, SWR, and their affiliates as of June 2016 is shown in Exhibit II-1. As shown in Exhibit II-1, SWR is wholly owned by SUEZ Water Inc. (SWI), which in turn is wholly owned by SUEZ North America Inc. (SNA).

Exhibit II-1
SUEZ Water Pennsylvania Inc.
Corporate Entity Chart
As of June 10, 2016



Note: Exhibit only shows a portion of SWPA's affiliates.
Source: Data Request GD-3 and GD-9

Following are some of the significant events in the history of SWR and its parent companies.

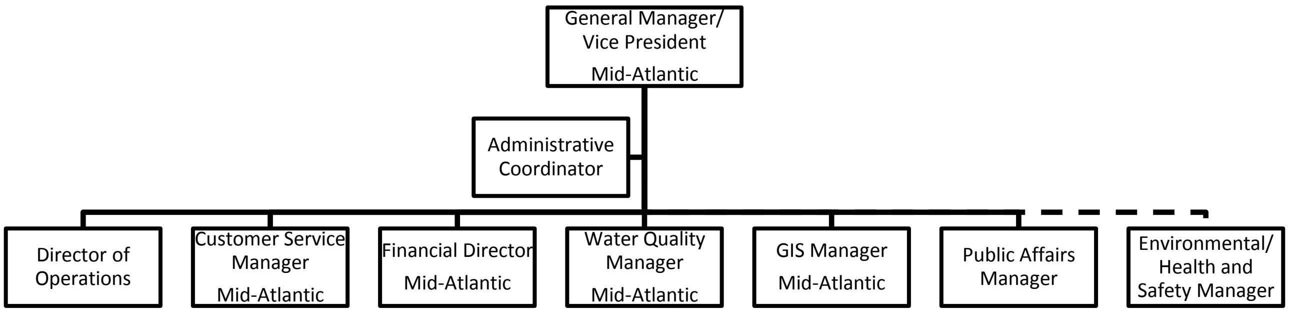
- Prior to 2015, SWPA (formerly known as United Water Pennsylvania, Inc.) had been a wholly owned subsidiary of United Waterworks, Inc. (UWW), which in turn had been wholly owned by United Water Resources, Inc. (UWR). UWR had been wholly owned by United Water, Inc. (UW). During 2015, UWW and UWR merged into a single entity with UWW being the surviving entity. Subsequently, UWW was renamed UWR.
- Throughout 2015 and 2016 a rebranding effort to reflect the SUEZ name throughout the SUEZ-owned organization resulted in name changes for SNA and its subsidiaries:
  - UWR became SUEZ Water Resources Inc. (SWR)
  - United Water Pennsylvania, Inc. became SUEZ Water Pennsylvania Inc. (SWPA)
  - UW became SUEZ Water Inc. (SWI)
  - United Water Management and Services became SUEZ Water Management & Services (SM&S).
- On January 28, 2016 a change to the Company's tariff was filed with the Commission to formally reflect its change in name from United Water Pennsylvania, Inc. to SUEZ Water Pennsylvania Inc.

As of April 5, 2016, SWPA had 94 employees having expertise in areas of water utility operations including engineering, water quality, treatment plant operation and maintenance, distribution system operation and maintenance, customer service and billing, etc. The Company's employee organization chart is shown in Exhibit II-2. In addition to their responsibilities as SWPA employees', three managers (i.e., the Manager of Customer Service, Geographic Information Systems (GIS) and Water Quality), one director (i.e., Financial Director) and the Vice President/General Manager, to whom they report, also have oversight of SWR's Mid-Atlantic division[1]. The Mid-Atlantic division operating companies are comprised of: SWPA, SUEZ Water Delaware, and SUEZ Water Toms River.[2]

[1] SWR's Mid-Atlantic division is comprised of six affiliates. SWPA, SUEZ Water Delaware and SUEZ Water Toms River are operating companies whose employees also provide management and operations support for SUEZ Water Bethel, SUEZ Water Matchaponix and SUEZ Water Princeton Meadows.

[2] While some employees already had dual oversight of SWPA and SUEZ Water Delaware the addition of the southern region operations within New Jersey (SUEZ Water Toms River) culminated in the creation of the Mid-Atlantic division in January 2013.

Exhibit II-2
SUEZ Water Pennsylvania Inc.
Employee Organization Chart
As of April 2016



Note: The dotted line reporting relationship shown in the exhibit illustrates that although this position is employed by SWPA the Environmental/Health and Safety Manager reports directly to the Senior Director of Environmental Health and Safety.
Source: Data Request GD-1

SWPA is headquartered in Harrisburg and its operations are divided into four operating regions (i.e., Harrisburg, Mechanicsburg, Bloomsburg, and Dallas). The Company's water supply is provided principally by surface supplies (i.e., rivers and streams) and supplemented by ground supplies. As such, SWPA produces approximately 6.4 billion gallons each year to support operations and customer demand. A summary of the Company's customer count, usage, and revenues by customer class are shown in Exhibit II-3. Residential customers comprise approximately 90% of its overall customer base, 55% of the usage, and 62% of the revenue. Commercial customers comprise approximately 8% of its customer base, 35% of the usage, and 26% of the revenue. Industrial customers comprise less than one percent of the customer base, 7% of the usage, and 3% of the revenue.

Exhibit II-3
SUEZ Water Pennsylvania Inc.
Customer Base Statistics
As of December 31, 2015

Customer Class	# of Customers	% of Customers	Gallons Sold (1,000)	% of Gallons Sold	Revenues	% of Revenues
Residential	53,493	89.9%	2,322,859	55.4%	$21,371,500	62.2%
Commercial	4,663	7.8%	1,481,746	35.4%	$8,952,792	26.1%
Industrial	51	0.1%	275,647	6.6%	$1,018,794	3.0%
Other	1,289	2.2%	110,848	2.6%	$3,001,333	8.7%
Totals	59,496	100.0%	4,191,100	100.0%	$34,344,419	100.0%

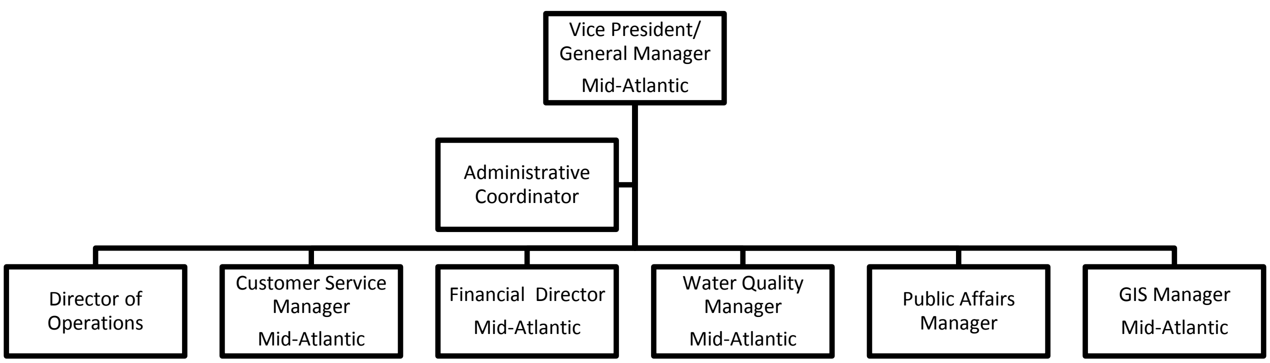
Note: Other includes public and fire protection customers.
Source: 2015 PUC Annual Report

III. EXECUTIVE MANAGEMENT AND ORGANIZATIONAL STRUCTURE

Background

SUEZ Water Pennsylvania Inc.'s (SWPA or Company) Vice President/General Manager (VP-GM) is responsible for oversight of the day to day operations of SWPA. The VP-GM's direct reports within SWPA are shown in Exhibit III-1. SWPA's VP-GM also has oversight of the Mid-Atlantic division within SUEZ Water Resources, Inc. (SWR), which is comprised of: SWPA, SUEZ Water Delaware, and Toms River (the southern region operations within New Jersey). As shown in Exhibit III-1, three managers and a director reporting to the VP-GM also have oversight of the Mid-Atlantic division: Customer Service Manager[3], Financial Director[4], Water Quality Manager, and Geographical Information System (GIS) Manager[5]. In addition to the Company's executive management, SWPA is overseen by its Board of Directors (Board), which is discussed in greater detail in Chapter IV – Corporate Governance.

Exhibit III-1
SUEZ Water Pennsylvania Inc.
Executive Management Organization Chart
As of September 2016



Source: Data Request GD-1

SUEZ Water Management and Services Inc. (SM&S), the shared services company for the SUEZ North America Inc. (SNA) organization (See Chapter II – Background's Exhibit II-I for the SNA Corporate Organization Chart.), employees perform shared services (i.e., engineering, treasury, accounting, human resources, etc.) on behalf of SNA and its subsidiaries. As a result, SM&S employees serve in multiple capacities throughout the SNA organization and on behalf of SWPA. For further

[3] The Customer Service Manager's role and responsibilities are discussed further in Chapter X – Customer Services.
[4] The Financial Director's role and responsibilities are discussed further in Chapter V – Financial Management.
[5] The roles and responsibilities of the GIS Manager and Director of Operations (PA) are discussed in detail within Chapter VII – Water Operations.

discussion of the services provided by affiliates of SWPA see Chapter VI – Affiliated Transactions and Cost Allocations.

The Audit Staff evaluated SWPA's staffing levels for the period 2011 through April 5, 2016. Exhibit III-2 illustrates a relatively stable overall staffing level trend for SWPA during this period.

Exhibit III-2
SUEZ Water Pennsylvania Inc.
Staffing Levels
For the Years 2011 through April 5, 2016

Year	2011	2012	2013	2014	2015	2016	Percent Change
Total Employees	92	91	89	92	94	94	2.2%

Source: Data Request EM-1 and Auditor Analysis

Bi-annually the VP-GM for SWPA, in partnership with SM&S' human resources management, develops a formal succession plan which assesses critical skill needs and future manpower needs for positions in which retirements are expected in the coming years. Additionally, SNA has a Talent Review Committee (TRC) that meets monthly. The TRC was formed to assist in the succession planning process and to identify potential employees for leadership development. These efforts aim to provide training opportunities and overall employee development so that the Company has viable internal candidates for future management positions.

The Company's multi-faceted strategic planning function was reviewed by the Audit Staff. Among some of the more significant items covered in the strategic plan are:

- A five year business plan called the Medium Term Plan. It includes revenue and expense forecasting, plant in service projections, and rate case strategy.
- Annual budgeting for both capital and operating expenses.[6]
- A SWPA scorecard that includes targeted actions related to safety, customer service, compliance, and finances. These strategic objectives are measured periodically throughout the year and are aligned in the Company-wide categories of Grow, Optimize and Collaborate.
- Employee goal development based on SWPA's strategic objectives.
- Training and development of employees in support of the succession plan.

[6] For additional information regarding the budgeting process see Chapter V – Financial Management.

Findings and Conclusions

Our examination of SWPA's executive management and its organizational structure included a review of the overall objectives of the Company and the effectiveness of its present organizational structure to support these objectives, the Company's ongoing strategic and operational planning process, and the Company's succession planning process. Based on our review of the Executive Management and Organizational Structure function, no specific evidence came to our attention that would lead the Audit Staff to believe that the areas reviewed were not being addressed adequately.

Recommendations

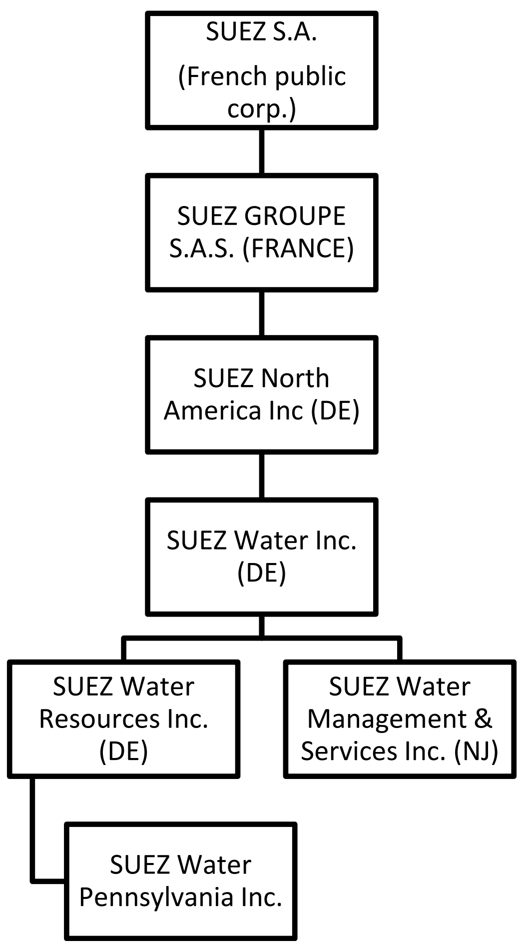
None.

IV. CORPORATE GOVERNANCE

Background

SUEZ Water Pennsylvania, Inc. (SWPA or Company) as shown in the corporate entity chart in Exhibit IV-1 is part of a French-based multi-national company, SUEZ S.A. that provides various services including water, wastewater, electric, and natural gas supply to over 70 countries on five continents. SUEZ S.A. is a publicly traded company, listed on the Paris and Brussels stock exchanges. SUEZ S.A. is not listed on the New York Stock Exchange (NYSE) or NASDAQ Stock Market (NASDAQ) exchanges in the United States, as such; SUEZ S.A. is not subject to the Sarbanes-Oxley Act of 2002 (SOX) corporate governance requirements or the corporate governance rules of the NYSE or NASDAQ.

Exhibit IV-1
SUEZ Water Pennsylvania, Inc.
Corporate Entity Chart
As of June 10, 2016



Note: Exhibit only shows a portion of SWPA’s affiliates and their states of incorporation.
Source: Data Request GD-9

In 2015, several changes were made to the Boards of Directors throughout the SUEZ North America Inc. (SNA) organization. SNA changed the composition of the subsidiary Boards to be comprised entirely of insiders who are often shared executives among the subsidiaries[7].

During field work, SWPA and its parent company, SUEZ Water Resources Inc. (SWR), each had a two-member Board of Directors[8] comprised of:

- The Company's President who is also the President of SWR.

- The Company's Senior Vice President of Finance, who is also the Chief Financial Officer (CFO) of SWR, SUEZ Water Inc. (SWI), and SNA.

Business for each board is conducted through electronic means where a written consent to a decision is required instead of formal board meetings. Each board's responsibilities include: declaring dividends, approving the borrowing of money, electing the respective company's officers and amending the Certificates of Incorporation to reflect name changes, when applicable. The SWR Board of Directors also has authority to approve capital project expenditures that were not previously approved as part of the capital budget. Neither board utilizes any committees.

SWI is a holding company that owns SWR and SUEZ Water Management and Services Inc. (SM&S[9]). SWI's Board of Directors is comprised of:

- The Chief Executive Officer (CEO) and President of SWI and SNA

- The CFO and Senior Vice President, Finance of SWI and CFO of SNA

During audit staff field work, the SNA Board was transitioning to a new structure in which two different Boards were being created: a fiduciary and an advisory board. The composition of the Boards will feature two independent members and three SNA executives on the fiduciary board and the advisory board will feature all five members of the fiduciary board plus at least three SNA executives.

Oversight and administration of SNA's ethics program is the responsibility of SNA's Ethics Committee. The Ethics Committee is comprised of SNA's General Counsel, Director of Internal Audit (IA Director), and Vice President of Human Services. The SNA's ethics program consists of policies and procedures for reporting alleged ethical misconduct, and the investigation of ethics related matters. To assist in the reporting process, a toll-free telephone hotline is available 24 hours a day, seven days a week. In the future, the Ethics Committee will report two times per year to the fiduciary SNA Board.

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[7] All SNA subsidiaries are 100% wholly owned entities.

[8] SWPA and SWR's Boards typically consist of three members. However, during field work there was a vacancy as a result of the recent departure of the Executive Vice President of SUEZ North America, Inc. (SNA). The Executive Vice President of SNA had been on the SWPA and SWR Boards prior to his departure.

[9] SM&S is the shared services company for SNA. Additional information about the services provided by SM&S employees is discussed in Chapter VI – Affiliated Transactions and Cost Allocations.

Annually, all employees of SNA and its subsidiaries are required to sign and submit to the IA Director (Secretary of the Ethics Committee) acknowledgement of compliance with the "Statement Concerning Conflict of Interest and Business Ethics". This statement contains excerpts from SNA's Corporate and Ethics Policies and provides employees guidance for appropriate behavior in situations regarding vendor relations, inside information, and confidential information among other topics. If any changes occur after the statement has been signed by the employee, the employee must bring it to the attention of the IA Director for review.

The internal audit (IA) function, operating pursuant to a written charter, is a service provided by SNA (utilizing employees of SM&S) for all of its subsidiaries. The IA Department is headed by the IA Director, who reports directly to the SNA General Counsel. The IA Director reports indirectly to the CEO of SNA. SNA's General Counsel is responsible for the performance evaluation and compensation level of the IA Director. In the future the IA Director will report twice a year to the fiduciary SNA Board regarding the activities of the IA Department.

SWPA does not hire its own external auditor, but rather the external audit function is performed for all of SNA's subsidiaries by the external auditor utilized by SUEZ S.A. The external auditor is appointed by the SUEZ S.A. Audit Committee, which has oversight of its performance and sets its compensation level. SNA does not have a policy that requires the rebidding of external audit services after a certain time frame. Mazars became the external auditor starting with the 2008 financial statement audit with the lead partner of the audit engagement rotating every five years.

Findings and Conclusions

Our examination of the Corporate Governance function included a review of the Boards of Directors' for SWPA and its direct and indirect parent companies including committee structure and charters; Board fee structure; Director independence; documents related to principles of corporate governance; policies, practices, and procedures related to internal management controls; relationships with the independent auditor, performance of non-audit services by the independent auditor and policies related to rotation of audit firms; internal audit function; ethics codes; etc. Based on our review, it appears that proper controls are in place and that the Corporate Governance related functions are being performed in a satisfactory manner.

Recommendations

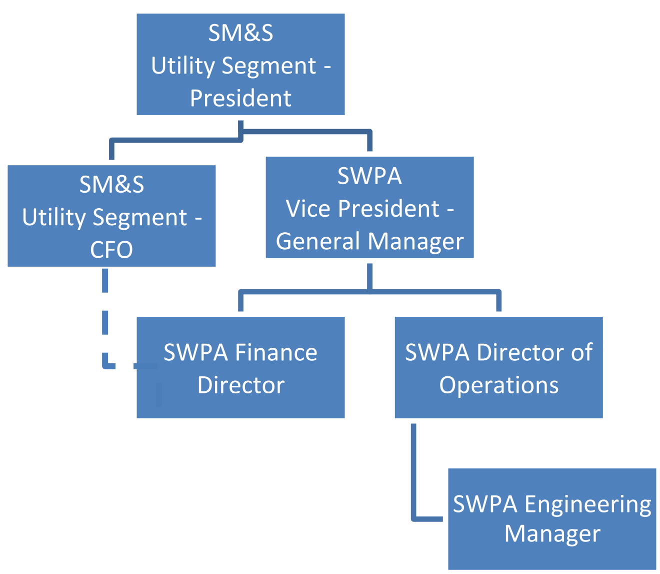
None.

V. FINANCIAL MANAGEMENT

Background

The financial management function is bifurcated between SUEZ Water Pennsylvania Inc.'s (SWPA or Company) finance department and the service company, SUEZ Water Management & Services, Inc. (SM&S or Service Company). SM&S provides centralized financial services such as multi-year budgeting, financial planning and reporting, treasury and auditing, accounting, etc. for all SUEZ subsidiaries including SWPA. SWPA's Finance Director has oversight of the Company's financial management function, including the Company's income statement (OpEx)[10] accounts, whereas the Engineering Manager is responsible for management of SWPA's capital expenditures (CapEx). The Finance Director oversees two SWPA employees and has responsibility for requisition approvals, budgeting and variance reporting on OpEx accounts for all of Suez Water Resources, Inc.'s (SWR or Parent Company) Mid-Atlantic Division[11] (Mid-Atlantic) subsidiaries including SWPA.

Exhibit V-1
SUEZ Water Pennsylvania, Inc.
Financial Management Organization Chart
As of September 2016



Source: Data Request GD-1 & GD-7

[10] Income statement accounts include all operating revenue accounts and operating and maintenance expense accounts.
[11] The Mid-Atlantic Division includes SUEZ Water Resources' subsidiaries: three operating companies, SWPA, SUEZ Water Delaware (SWDE), and SUEZ Water Toms River (SWTR), as well as SUEZ Water Bethel, SUEZ Water Matchaponix and SUEZ Water Princeton Meadows, whose operations are maintained by employees of SWPA, SWDE and SWTR.

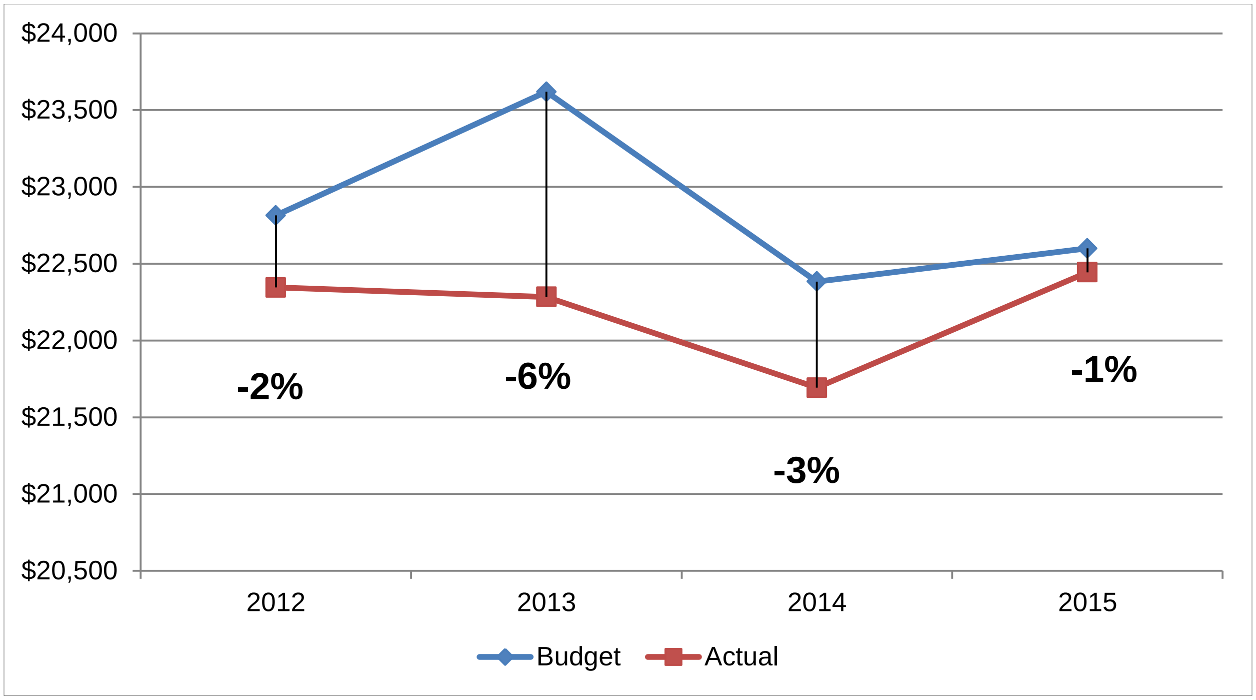
Exhibit V-1 illustrates SWPA's Financial Management organization, which includes both SWPA employees and SM&S staff. SWPA's Vice President/General Manager[12] (VP-GM) and Finance Director have responsibilities and oversight of SWR's Mid-Atlantic subsidiaries. As shown in Exhibit V-1, SWPA's Finance Director has dual reporting responsibilities, reporting directly to SWPA's VP-GM and reporting indirectly to the SM&S Utility Segment Chief Financial Officer (US-CFO).

SWPA's requisitions for all expenditures in excess of $25,000 are required to be approved by SWPA's Finance Director; however, those expenditures in excess of $50,000 also require approval from SWPA's VP-GM. Similarly, expenditures in excess of $100,000 would require approvals from the SWPA's Finance Director, SWPA's VP-GM, and the SM&S US-President. Approval for SWPA's requisitions is executed via SWPA's financial reporting software, PeopleSoft. SWPA utilizes PeopleSoft to control, approve and monitor expenditures. Approval authority levels are preset within PeopleSoft.

The SM&S Financial Planning and Management Reporting Group (FPMRG) is responsible for developing the templates to be utilized during the OpEx budgeting process. SWPA's Finance Director is responsible for SWPA's individual assessment for OpEx accounts, completing the templates and meeting the established timetable. Generally, SWPA's OpEx budget process begins in August and is submitted to the FPMRG by September. Once received by the FPMRG, SWPA's OpEx budget may be adjusted or revised. Revisions and adjustments to SWPA's OpEx budget are executed by SWPA's Finance Director and VP-GM, and are subject to review by the SM&S US-President. A consolidated OpEx budget for all of SUEZ North America[13] (SNA) is approved by the SNA Board of Directors.

[12] As discussed in Chapter III – Executive Management, SWPA's Vice President/General Manger oversees the Mid-Atlantic Division.
[13] SUEZ North America, Inc. is the holding company of SUEZ Water, Inc., which is the holding company of SWPA's Parent Company. See Chapter II – Background for additional information related to the SWPA's legal structure.

Exhibit V-2
SUEZ Water Pennsylvania, Inc.
Budget to Actual Operating and Maintenance Expense Accounts ($ in thousands)
For the Years 2012 through 2015



Note: Data as of year-end, December 31 of each year
Source: Data Request FM-4

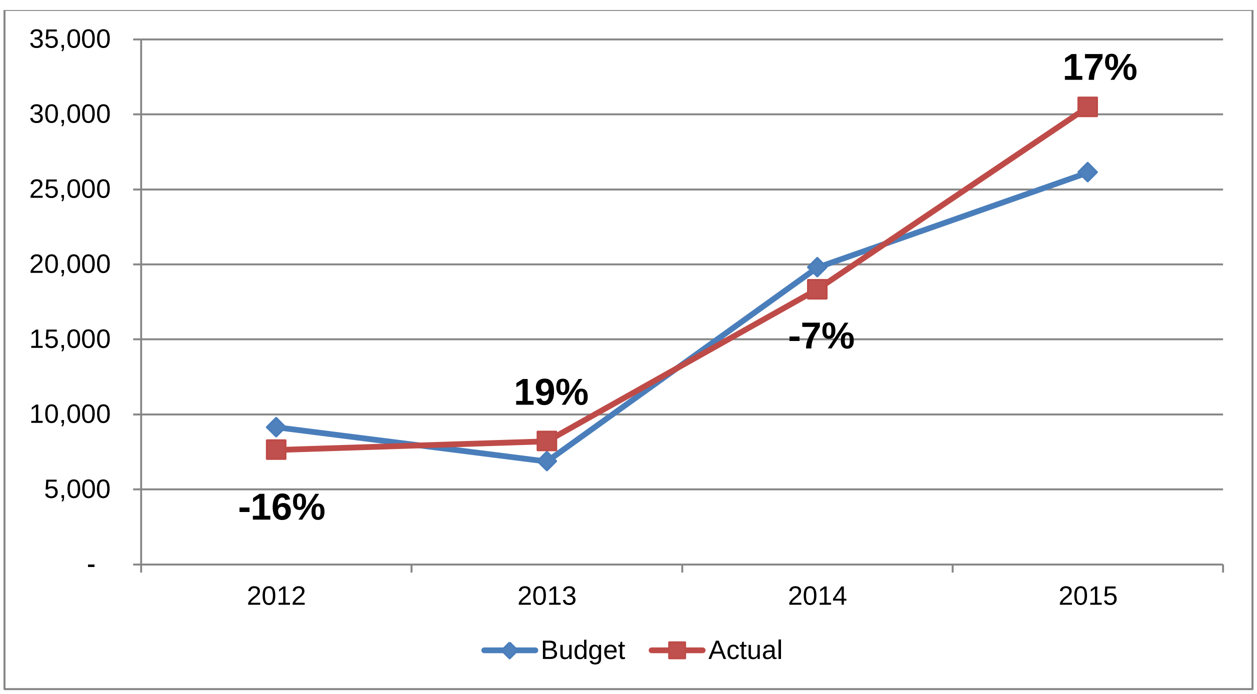
SWPA's revenues and operating expenses are monitored by the SWPA's Finance Director. Monthly variance meetings for all Mid-Atlantic companies, including SWPA, occur between SWPA's Finance Director, SWPA's VP-GM and the SM&S US-CFO. SWPA's Finance Director is responsible for generating the Mid-Atlantic Utility Segment Monthly Business Review Report. The report contains data on non-revenue water, staffing variances, overtime, business development opportunities and OpEx variance reporting. OpEx variance reporting includes data on key financials, with explanations for significant differences in month-to-date or year-to-date actual revenues/expenditures in comparison with budgeted revenues/expenditures. Generally, explanations are required for amounts over/under ten percent of the budgeted amount by line item/account. However, any large swing in an account may be investigated by SWPA's Finance Director, regardless of the variance percentage. As illustrated in Exhibit V–2, SWPA's actual operating and maintenance accounts are well managed and adhere closely with budgeted amounts for 2012 through 2015.

The CapEx Plan is comprised of the upcoming year's CapEx budget and CapEx projections for the following four years. The CapEx Plan is used to establish the necessity and priority of future capital projects by incorporating customer growth, customer demand, and expansions. For each potential project, SWPA's Engineering Department is responsible to conduct a study to determine the available alternatives and associated costs. Based upon these studies, projects may be added, deleted or moved within the CapEx Plan.

The SM&S Director of Capital Investment and Large Project Management (Director - CI & LPM) initiates the annual CapEx budgeting process in April, disseminating a field review schedule to SWR subsidiaries, including SWPA. SWPA begins its CapEx budgeting process in May with discussions on upcoming projects. The budget is subsequently reviewed with multiple SWPA employees and the Director - CI & LPM. The Director - CI & LPM combines the SWR subsidiaries' finalized CapEx Plans and presents the consolidated CapEx Plan to the SNA President-CEO for approval in November. Once approved by the SNA President-CEO, the consolidated CapEx Plan is presented to and receives final approval by the SNA Board of Directors in December.

Exhibit V-3 illustrates SWPA's actual to budgeted CapEx totals for the years 2012 through 2015. The majority of the increases in CapEx amounts reflected in 2014 and 2015 are due to SWPA's construction of a new water treatment facility (for additional details, see Chapter VII – Water Operations).

Exhibit V-3
SUEZ Water Pennsylvania, Inc.
Budget to Actual Capital Expenditure Accounts ($ in thousands)
For the Years 2012 through 2015



Note: Data as of year-end, December 31 of each year
Source: Data Request FM-29

Variances between CapEx actual and budgeted amounts are evaluated on a monthly basis. Monthly meetings are held between the SM&S Director - CI & LPM, SWPA's VP-GM, SWPA's Finance Manager and SWPA's Engineering Manager to discuss CapEx variances. Generally, variances greater than ten percent require explanation; however, large and/or sensitive capital projects may also be included in the review. SWPA's Engineering Department is responsible for compiling the Monthly Forecast Report which evaluates actual to budget variances in CapEx capital project expenditures. The Monthly Forecast Report includes variances on monthly, year-to-date, and total approved capital project costs; see Finding and Conclusion No. 4 for additional information related to the Monthly Forecast Report.

Approval of individual capital projects are conducted via the Company's new finance asset management software. As of October 2015, SWPA migrated from PeopleSoft's work order management module to this new software. Once approved and entered into the asset management software, the Funding Project (FP) becomes active and costs can be charged to a project. Therefore, it allows for projects to be tracked and approved electronically. SNA requires its officers to approve FPs based upon certain expenditures or threshold levels for each project. Approvals are progressive, meaning that as project costs increase, the FP requires the next highest official to give their approval for the project to continue. In addition, a formal change request is required for any capital project revisions which result in a variance in the FPs net total that is equal to or greater than $10,000 and ten percent of the approved capital project's budget. Exhibit V-4 illustrates the approval levels required for each FP per net funding or change request total. Therefore, as an example, a project that incurred $75,000 would require SWPA's Engineering Manager's approval first, but then progress and require SM&S Director, CI & LPM approval before continuing.

Exhibit V-4
SUEZ Water Pennsylvania, Inc.
Funding Project Approval Levels
As of April 5, 2016

Approval Requirement	Funding Project Net Total	Variance from Net Total Planned
Sponsor (SWPA Engineering Manager)	All	All
SM&S Director, CI & LPM	$50,000	$25,000
SWPA VP-GM	$100,000	$50,000
SM&S VP CI & LPM^	$250,000	$150,000
SM&S US President	$250,000	$500,000
SNA Executive Vice President	$500,000	$500,000
SNA CFO	$1,000,000	$1,000,000
Commitment Committee*	$3,000,000	$3,000,000
SNA Board of Directors*	$5,000,000	$5,000,000

Note: All project approval and variance levels are set at thresholds equal to or greater than dollar levels indicated above
^ For Information Technology Funding Projects, approval is made by the SM&S Chief Information Officer
* Funding Projects must be approved by respective requirement level prior to submission
Source: Company Provided Data

SM&S Treasury Department (SM&S Treasury) provides cash and debt management services as a centralized function for SWR's subsidiaries, including SWPA. A centralized cash bank account (money pool) is utilized for SWPA's cash and working capital requirements for operations. SM&S Corporate Accounting Department is responsible for performing monthly and annual reconciliation functions for the money pool. Whereas, SM&S Treasury acts as the administrator of the money pool, monitoring SWR's working capital requirements on a consolidated basis to ensure cash needs are met by the money pool. Similarly, cash forecasting is conducted by SM&S Treasury on a consolidated basis and short term debt balances are maintained at levels commensurate with SWR's working capital requirements.

The goal of the money pool is to optimize cash flow and maintain a near zero cash balance. Bi-annually, the cash position of each SWR subsidiary is evaluated and shifted to a zero balance. Therefore, the reconciliation of the cash balance to zero will result in either an infusion of cash to the subsidiary by SWR or a payment of a dividend from the subsidiary to SWR. In 2012, SWPA paid an $8,041,000 dividend to its parent company.[14] However, from 2013 through February 2016, SWPA did not pay dividends to its parent company, reflecting SWPA's negative cash position during this period. Negative cash positions occur when SWR subsidiaries' operating and capital expenditures exceed operating revenues. As a wholly owned, equity-only subsidiary of SWR, SWPA's dividend payments to SWR and cash infusions from SWR affect its overall total equity value to SWR.

SM&S Treasury also provides debt management services for SWR's subsidiaries, including SWPA. SWPA does not hold any short term or long term debt, instead debt is held on a consolidated basis by SWR for all its subsidiaries. As such, interest and fees are allocated to each SWR subsidiary.[15] SM&S Treasury conducts continuous debt analysis for the potential acquisition, refinance or consolidation of debt. The analyses are based upon bond call opportunities, maturity dates, interest rates, working capital requirements, and CapEx Plan requirements. Prior to October 2015, SWPA's parent company was United Waterworks, Inc. (UWW); however, a merger occurred between UWW and UWW's parent company, United Water Resources, Inc. (UWR). Subsequently, UWR was rebranded as SWR. Exhibit V-5 reflects the capital structure of UWW and SWR for the years 2013 through 2015. SWPA's parent company has consistently maintained an A- credit rating, with stable outlook, from Standard & Poor for the years 2013 through 2015.

[14] For more information related to SWPA's 2012 dividend, see Finding and Conclusion No. 3.

[15] Consolidated debt and financing costs are allocated to SWPA based upon its proportion of total net capitalization less its cash position, e.g., negative cash positon results in an increase in equity (cash infusion), positive cash position represents a decrease in equity (cash dividend). For more information related to SWPA's money pool and SWR's concentrated debt arrangement, see Chapter VI – Affiliated Transactions and Cost Allocations, Finding and Conclusion No. 1.

Exhibit V-5
United Waterworks, Inc. and SUEZ Water Resources, Inc.
Capital Structure Summary ($ in thousands)
For the years 2013 through 2015

	United Waterworks, Inc.				SUEZ Water Resources, Inc.	
	2013		2014		2015	
Long Term Debt	$324,120	45.7%	$324,120	45.7%	$865,977	46.7%
Common Equity	$384,582	54.3%	$384,582	54.3%	$990,021	53.3%
Total	$708,702	100.0%	$708,702	100.0%	$1,855,998	100.0%

Note: Data as of year-end, December 31 of each year
Source: Data Request FM-9

The money pool and consolidated debt allow SWR's subsidiaries, including SWPA, to benefit from economies of scale leading to lower interest rates and fees. Both the money pool and consolidated debt held by the parent company are governed by intercompany agreements and/or policies between SWR and its subsidiaries. For additional information related to the intercompany agreements, consolidated debt related policies and SWPA's parent company see Chapter VI – Affiliated Transactions and Cost Allocations.

In addition, SM&S Treasury is responsible for investment strategies for pension and retiree healthcare funding for SWR and its subsidiaries, including SWPA. SWPA's employees are offered healthcare, prescription, dental, etc. as well as retirement benefits including defined and/or contributory benefit plans and retiree healthcare. SWPA's employee benefit plans are consolidated with other SWR subsidiaries. As demonstrated in Exhibit V–6, SWPA's Defined Benefit Plan is underfunded, while SWPA's Retiree Healthcare Plan's funding status is projected above 100%.

Exhibit V-6
SUEZ Water Pennsylvania, Inc.
Defined Benefit Plan and Retiree Healthcare Plan Funding Status
As of December 31, 2015

Defined Benefit Plan			
	Bargaining Unit	Non-Bargaining Unit	Total
Projected Benefit Obligation	$12,353,227	$12,783,737	$25,136,964
Fair Value of Plan Assets	$7,041,676	$7,942,018	$14,983,694
Funded Percentage	57.0%	62.1%	59.6%
Retiree Healthcare Plan			
	Bargaining Unit	Non-Bargaining Unit	Total
Expected Projected Benefit Obligation	$4,291,144	$3,752,390	$8,043,534
Fair Value of Plan Assets	$5,411,683	$4,470,564	$9,882,247
Funded Percentage	126.1%	119.1%	122.9%

Source: Data Requests FM-16 & FM-30

SWR's subsidiaries, including SWPA, have migrated from the defined benefit plans to contributory benefit plans (Enhanced 401K) for all new employees. SWPA's Enhanced 401K plans include matching employer contributions, based upon a portion of the employee's contributions. Two separate Enhanced 401K plans were established, one for all non-bargaining unit employees hired on January 1, 2010 or thereafter, and a separate bargaining unit employee contributory plan, applicable to all SWPA's bargaining unit employees.[16] SWPA's bargaining unit employees belong to one of two independent collective bargaining agreements (CBA): the Bloomsburg CBA and the Harrisburg CBA. The Bloomsburg CBA employees hired on January 1, 2011 and thereafter and the Harrisburg CBA employees hired April 11, 2012 and thereafter have migrated to the Enhanced 401K.

Furthermore, SWR amended its Retiree Healthcare Plan as of August 1, 2015, transitioning from a self-sponsored plan to a fixed subsidy payment plan. The transition resulted in a regulatory asset of $43.3 million and is amortized to the net periodic postretirement costs over the employees remaining years of service. Under the amended Retiree Healthcare Plan, SWR's annual contributions are limited to a 3% annual increase (not to exceed increases in the Consumer Price Index). SWR's contributions are made under a Health Reimbursement Arrangement (HRA), where participants' eligible medical expenses are reimbursed through the HRA as benefit credits. Benefit credits are determined based upon date of retirement and years of service[17] and are established for each eligible participant[18]. For additional information related to employee benefits, see Chapter XI – Human Resources and Diversity.

Internal auditing for SWPA is provided as a centralized service via SM&S' Internal Audit (IA) Department. The IA Director is responsible for SNA's annual IA plan and has multiple reporting relationships, reporting directly to the SM&S Senior Vice President and General Counsel and indirectly to the President/Chief Executive Officer of SNA. Moreover, the IA Director reports to the Chief Audit Executive (CAE) of SUEZ S.A.[19] and serves as the secretary of the SM&S Ethics Committee. See Chapter IV – Corporate Governance for further information regarding the Ethics Committee.

The IA Department is responsible for planning and conducting all internal audits for SNA and its subsidiaries, including SWPA's Parent Company, SWR. The annual IA Plan is developed through a three-prong risk analysis approach. The risk analysis includes an assessment of recent issues identified by the SM&S Ethics Committee, a review meeting with input from each business segment President and the Executive

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[16] Both Enhanced 401K plans included a temporary provision for additional employer contributions that were limited to employees hired prior to January 1, 2011. The additional employer contribution amounts were based upon a percentage of the employees' compensation, ranging from 1% to 7% dependent upon the employees' age and/or years of service. These additional employer contributions were eliminated as of January 1, 2016.

[17] All retirees who retired prior to January 1, 1995 and those who retired after January 1, 1995 with 20 years of service or greater are entitled to $3,000 annual benefit credit per eligible participant. Whereas, those employees who retired after January 1, 1995 with fewer than 20 years of service have an annual benefit credit of $2,500 per eligible participant.

[18] Eligible participants include retirees, their spouses and/or their dependents who are eligible for disability benefits under Medicare.

[19] SUEZ North America is a wholly owned subsidiary of SUEZ Groupe S.A.S., a multi-national corporation. SUEZ Groupe S.A.S. is a wholly owned subsidiary of SUEZ S.A., a French public corporation. For additional details regarding SUEZ S.A. and its subsidiaries, see Chapter II-Background.

Management Team[20] (EMT), as well as global audits disseminated by SUEZ S.A. The proposed IA plan is submitted to the SNA's CEO, CFO and General Counsel for initial approval, and subsequently submitted to the SUEZ S.A. CAE and SUEZ S.A. Board of Directors for final approval.

The approved IA Plan may be adjusted due to the decrease or the expansion of audit scope, emergent needs and timing. Periodic or cyclical audits may be accelerated or delayed to achieve efficiency in processes (e.g., global audit scope overlaps with periodic audits; changes in procedures may make operational audit obsolete, etc.). See Finding and Conclusion No. 1 for additional information related to periodic internal audits. At the close of field work, the IA Department issues an IA report addressing all findings and conclusions. IA reports include responses from the audited entity's Management staff to the IA Department's recommendations. The IA reports are distributed to the appropriate business segment President, the audited entity(ies) and the IA Director. Follow-up audits occur one year after reports have been issued and are tracked by the IA Department.

Execution of the IA Plan is based upon the internal audit's criticality with input from SM&S EMT and the SM&S Controller. The balance of internal audit hours varies by audit type in each IA Plan (i.e., operational, financial, compliance, ad-hoc); however, all IA Plans include hours dedicated to the review of internal controls. Internal controls are established in order to ensure Company assets are managed by an appropriate level of segregation of duties. The SM&S Controller is responsible for developing and managing internal controls. Annually, the IA Department assists external auditors in the testing and assessment of internal controls and business processes. The external auditor is responsible for issuing the annual assessment on the Company's internal controls.

Findings and Conclusions

Our examination of the Financial Management function focused primarily on a review of the accounting policies and procedures, the capital and operating budget processes, budget variance tracking and reporting, cash management, dividend policies, short and long term financing activities and the internal audit process. Based on our review, SWPA should initiate or devote additional efforts to improving the efficiency and/or effectiveness of its financial management function by addressing the following:

1. Internal audits of affiliate transactions and cost allocations for shared services are not regularly performed.

[20] SUEZ North America's Executive Management Team is comprised of the President-CEO, CFO, and Presidents of all business segments (Treatment Solutions, Environmental Services and Utility Business) and Senior Vice Presidents (SVP), including: SVP-Chief Information Officer, SVP-Human Resources, SVP-Communications, SVP-General Counsel, SVP-Operations Support, and SVP-Corporate Development.

As discussed in the Background section of this chapter, the IA Department performs internal audits for all SNA affiliates, including SWPA. While the IA Plan includes periodic audits, the list of audits performed and planned for the years ended December 31, 2012 through 2016 did not include an internal audit of affiliated transactions and cost allocations. The most recent internal audit of SWPA's affiliate transactions was completed April 29, 2011. The 2011 internal audit was limited to an evaluation of services provided by the Service Company and included a review of allocated costs to SWPA. Periodic internal audits of cost allocations for shared services and affiliated transactions ensure that procedures utilized to distribute shared costs align with the Company's Commission-approved Affiliated Interest Agreements. However, the limited size of the IA Department and prioritization of IA projects based upon risk has not resulted in the scheduling of another internal audit of affiliated transactions or allocations of shared costs.

Without periodic review of affiliate transactions and costs allocations for shared services, charges may not align with those approved by the Commission. However, as discussed in Chapter VI - Affiliated Transactions and Cost Allocations, SM&S cost allocations methodology and procedures changed in October 2015 and no longer conform to the process approved by the Commission. Due to the change in cost allocation methodology and process in October 2015, the IA Director stated that a minimum of one year's data would be required to perform adequate testing of the new cost allocation process. However, the Audit Staff contends that early testing of the new cost allocation process would provide assurance that the new process was functioning as intended. The Audit Staff recognizes the need for sufficient data to effectively test but contends that the new methodology, although not approved by the Commission, has been in effect for one year. Moreover a more frequent testing and sampling of transactions within the first year or two of the implementation of the new cost allocation process would verify that the necessary controls were in place to execute timely updates to new cost allocation factors.

2. Accounting and capital expenditure control policies are out of date.

As discussed previously in Chapter II - Background, SNA has undergone a rebranding, changing its name and the names of its subsidiary companies to uniformly include "SUEZ" within all company names. SWPA underwent the rebranding in 2015, changing from United Water Pennsylvania to SUEZ Water Pennsylvania. Also in 2015, SNA underwent significant organizational changes to its structure. As mentioned in the Background section of this chapter, SWPA's parent company, UWR merged in 2015 with UWW. UWR was subsequently rebranded as SWR. As a result, the money pool agreement and policies governing the centralized debt practices no longer identify the correct parent company and fail to document any safeguards or provisions in place for SWR's subsidiaries. For additional information related to SWR's money pool agreement and centralized debt, see Chapter VI-Affiliated Transactions and Cost Allocations, Finding and Conclusion No. 1.

Further, in October 2015, SWPA's financial accounting software was upgraded. In tandem with the software upgrade, SM&S updated SWR's Chart of Accounts and implemented a new cost allocation methodology for distribution of shared services to SNA subsidiaries, including SWPA. For additional information related to the updated Chart of Accounts, new cost allocation methodology, and distribution of shared corporate costs to SWPA, see Chapter VI - Affiliated Transactions and Cost Allocations. Moreover, as stated in the Background section of this chapter, SM&S also implemented a new financial asset management system for SWR and its subsidiaries, including SWPA. For additional details related to the financial asset management system, see Finding and Conclusion No. 4.

SWPA's accounting and financial functions rely upon SWR's Accounting Policy Manual. However, the policies within the Accounting Policy Manual were last updated in 2011. As such, the Accounting Policy Manual no longer accurately reflects SNA's organizational structure, does not reference the correct company names, fails to describe the distribution of shared corporate costs within the updated Chart of Accounts, and is inconsistent with the new cost allocation methodology utilized by SM&S for shared service billing. Moreover, SWPA's Capital Expenditure Control Policy is out of date and does not reflect updated procedures and terminology relevant to the new financial asset management system, nor does it accurately reflect the reporting and preset queries utilized by the Company.

Policies provide written support for the processes and activities that support basic business needs and should be updated to reflect significant changes to organizational structure, company names, procedures, and accurate software terminology and reporting. Due to the numerous changes to the Company's organizational structure, use of software, allocation process, and naming conventions, the policies are inaccurate and out of date. Without accurately documented policies, SWPA is at an increased risk of inconsistent or inaccurate execution of processes as intended by Management.

3. SUEZ Water Pennsylvania's dividend policies and procedures lack Commission notification requirements.

As described in the Background section of this chapter, SWPA issues dividends to its parent company based upon its cash position. For the year ended December 31, 2012, SWPA issued a total dividend amount of $8,041,000, approximately 136% of the Company's net income for 2012. The Management Efficiency Investigation conducted by the Audit Staff and issued in July 2013[21] resulted in a recommendation for the Company to provide advance notice to the Commission prior to making any dividend payments in excess of 85% of net income. While dividends greater than the 85% of net income threshold may occur, they raise a greater concern for the financial stability of a regulated utility.

However, SWPA's dividend policy has not been updated since its implementation on February 3, 2011. As noted in Finding and Conclusion No. 2, SWPA's dividend policy is outdated as it no longer reflects SWPA's correct parent company. SWPA's

[21] Found at Docket No. D-2012-2340572.

dividend policy reflects the actual dividend practice in use by the Company to maintain its centralized cash pool account at a zero, or near zero balance. However, SWPA's procedures have not been updated to include a provision to notify the Commission prior to issuing dividends in excess of 85% of net income. As such, SWPA should enhance its existing dividend policies and/or procedures to include a provision to notify the Commission in advance of any dividend exceeding 85% of net income with explanation.

4. SWPA's new financial asset management system lacks budget variance tracking functionality.

As mentioned previously, SWPA's work order management software was upgraded to a new financial asset management system. The system tracks each capital project from its inception through the asset's retirement. Each capital project number acts as the primary driver to transfer data from PeopleSoft accounts on actual capital project expenditures (i.e., inventory, labor, etc.) to the appropriate capital project. However, the new system lacks the capability to track the variance of costs between FP actual expenditures with each capital project's respective budget information.

As discussed in the Background section of this chapter, SWPA utilizes a Monthly Forecast Report to monitor CapEx budget variances. The Monthly Forecast Report is assembled manually by SWPA's Engineering Department via an Excel spreadsheet. The report combines data from the approved CapEx budget with actual expenditures data exported from the financial asset management system for each capital project. However, without automated tracking of variances in capital expenditures, financial reporting on capital projects requires manual processes to be executed by the Company's Engineering Department. Automation of manual processes can improve the productivity of employees and efficiency of processes. As of August 2016, the Company was reviewing the possible expansion of its use of the system to include a budget tracking module. The additional budget tracking module would eliminate the manual process required to track variances and enhance the capabilities of the financial asset management system.

Recommendations

1. Conduct periodic internal audits of affiliate transactions including cost allocations for shared services.

2. Update and correct information contained in Accounting and Capital Expenditure Control policies.

3. Update the dividend policy to submit a detailed, written explanation for each dividend payment in excess of 85% of net income and provide advanced notice to the Commission prior to making any future dividend payments in excess of 85% of net income.

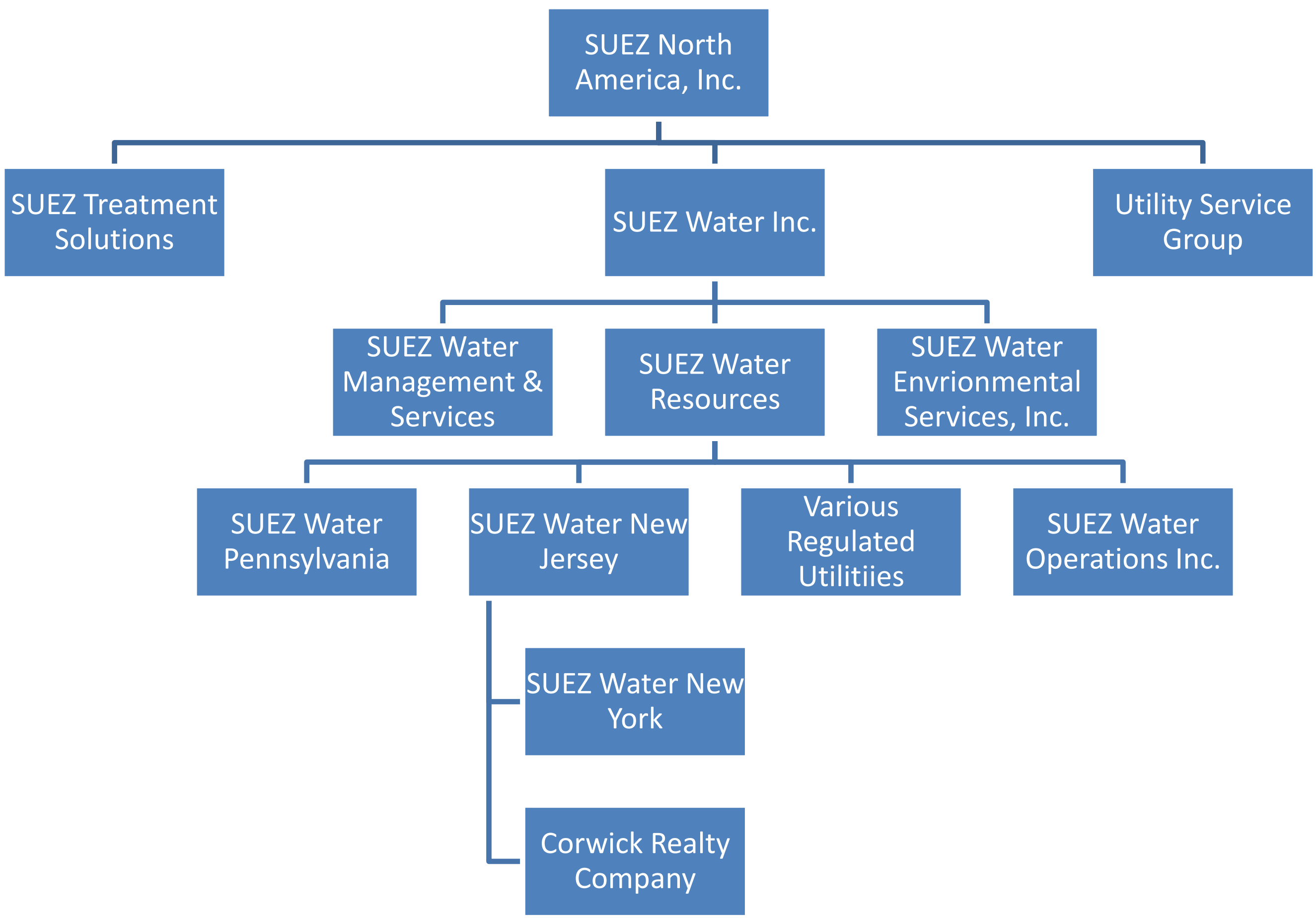
4. Expand features in the new financial asset management system to include monthly forecast variance cost reporting on capital expenditures.

VI. AFFILIATED TRANSACTIONS AND COST ALLOCATIONS

Background

This chapter presents the result of the Audit Staff's review of the nature and extent of transactions between SUEZ Water Pennsylvania Inc. (SWPA or Company) and its affiliates. SWPA has transactions with both regulated and unregulated affiliates. Exhibit VI-1 provides an abbreviated illustration of the legal entity structure of SWPA's affiliate relationships, limited to those affiliates discussed within this chapter.

Exhibit VI-1
SUEZ Water Pennsylvania, Inc.
Legal Entity Structure of Affiliate Relationships
As of May 2016



Source: Data Request GD-3

SWPA has several unregulated affiliates with ongoing, regularly occurring intercompany transactions, including its parent company, SUEZ Water Resources (SWR), SUEZ Water Inc. (SWI) and SUEZ Water Management and Services, Inc.

(SM&S or Service Company). A summary of intercompany transactions between SWPA and its unregulated affiliates is presented in Exhibit VI-2.

Exhibit VI-2
SUEZ Water Pennsylvania, Inc.
Summary of Intercompany Transactions with Unregulated Affiliates
For the Years Ended December 31, 2012 through 2015 and through May 2016

	2012	2013	2014	2015	2016
From Affiliates to SWPA					
United Waterworks, Inc.^	$ 2,817,954	$ 3,184,868	$ 3,259,568	$ 1,711,208	$ NA
SUEZ Water Resources, Inc.^	$ NA	$ NA	$ NA	$ 1,861,961	$ 1,757,063
SUEZ Water Management & Services, Inc.	$ 2,248,722	$ 2,449,887	$ 2,433,828	$ 3,238,101	$ 1,849,559
SUEZ Water, Inc.	$ 1,774,943	$ 3,404,326	$ 2,277,037	$ 1,398,241	$ -
SUEZ Water Environmental Services, Inc.	$ 6,355	$ 433	$ -	$ 2,250	$ 19,893
SUEZ Water Operations, Inc.	$ -	$ -	$ -	$ 150	$ -
SUEZ Treatment Solutions, Inc.	$ -	$ -	$ 135,824	$ 11,253	$ -
Utility Service Group, GA LLC	$ 1,650	$ -	$ 9,261	$ -	$ -
Total Affiliate Charges to SWPA	**$ 6,849,624**	**$ 9,039,514**	**$ 8,115,518**	**$ 8,223,164**	**$ 3,626,515**
From SWPA to Affiliates					
United Waterworks, Inc.	$ 273,921	$ 46,633	$ 14,581	$ -	$ -
SUEZ Water, Inc.	$ -	$ -	$ -	$ -	$ 28,557
SUEZ Water Environmental Services, Inc.	$ 37,078	$ 34,243	$ 39,594	$ 61,274	$ 11,727
US BD-General	$ 4,127	$ 13,119	$ 21,314	$ -	$ -
Total Charges from SWPA to Affiliates	**$ 315,126**	**$ 93,995**	**$ 75,489**	**$ 61,274**	**$ 40,284**

Note: 2016 data included through May 2016
^ In 2015, SWPA's Parent Company transitioned from United Waterworks to SUEZ Water Resources
Source: Data Requests CA-5, CA-13, CA-18, CA-21 and CA-27

As mentioned in Chapter II – Background, SWR is the result of a 2015 merger between SWPA's former parent company, United Waterworks (UWW) and UWW's parent company, United Water Resources. UWW, and subsequently SWR, holds centralized debt and a centralized bank account (money pool) for SWPA and SWPA's regulated affiliates. All debt is recorded at SWR, as such; interest and fees are allocated from SWR to its subsidiaries based upon each participant's ratio of total capitalization. Banking costs and fees related to the money pool are distributed based upon each participating subsidiary's total number of transactions. For additional information related to SWR's centralized debt and money pool, see Finding and Conclusion No. 1. In addition to the centralized debt and money pool, SWR holds the centralized benefit plans for SWPA, including its pension and post-retiree healthcare plans. Total intercompany amounts billed from SWR (formerly UWW) to SWPA represent the Company's total interest and fees and are reflected in Exhibit VI-2. Conversely, total intercompany amounts billed from SWPA to UWW in Exhibit VI-2 represent adjustments to SWPA's total interest, fees and benefit plan administration fee charges.

As SWR is a holding company without employees, the centralized debt and money pool is managed by SM&S. Details related to SM&S' administration and management of SWR's centralized debt, money pool and defined benefit plan funding are included in Chapter V – Financial Management. SM&S provides an array of centralized services for SWPA, including: executive management, financial planning, accounting and tax, treasury, internal audit, information technology, legal, procurement, corporate communications, regulatory business, revenue management, facilities, business development, engineering and technical, environmental, health and safety, customer care, and human resources. Total charges from SM&S to SWPA for the years 2012 through May 2016 are shown in Exhibit VI-2. As reflected in Exhibit VI-2, amounts were not charged from SWPA to its Service Company, as SWPA does not provide goods or services to SM&S.

Both SM&S and SWR are subsidiaries of SUEZ Water Inc. (SWI). Intercompany costs distributed to SWPA are related to Federal tax settlements. SUEZ North America, Inc. (SNA) files a consolidated Federal Income Tax return, including SWI and its subsidiaries. Exhibit VI-2 reflects the amounts billed from SWI to SWPA for Federal taxes. As of May 2016, no intercompany transactions had been reported from SWI to SWPA. However, as shown in Exhibit VI-2, SWPA billed SWI through May of 2016 approximately $28,000 for payroll, benefits and miscellaneous charges.

Also as illustrated in Exhibit VI-2, SWPA had intercompany transactions with other unregulated affiliates, including SUEZ Water Environmental Services (SUEZ ES) and SUEZ Operations (SUEZ Ops). As shown in Exhibit VI-1, SUEZ ES is an unregulated subsidiary of SWI that contracts with municipal and other government-owned water and wastewater facilities to provide management and operations services. SUEZ Ops, an unregulated subsidiary of SWR, contracts with municipal and government-owned water and wastewater facilities in New Jersey. Generally, these transactions include payroll, benefits and miscellaneous charges.

As shown in Exhibit VI-1, SNA's subsidiaries include SWI, SUEZ Treatment Solutions (SUEZ TS), and Utility Service Group (USG). In addition to SWI and its direct subsidiaries, SWPA has two unregulated SNA affiliates with limited related party transactions occurring during the audit period. SWPA contracted with Infilco Degrémont, Inc. (IDI) in 2014 for purchases of equipment and materials for its Rabold Water Treatment Plant. As of 2015, IDI was restructured and became absorbed into a new subsidiary of SNA, SUEZ TS. The affiliate transactions were covered under a Pennsylvania Public Utility Commission (PUC or Commission) approved affiliated interest agreement (AIA) at Docket No. G-2014-2451650. In addition, SWPA engaged USG to provide maintenance services for SWPA's water filtration equipment in 2012 and 2014. Actual amounts charged to SWPA from SUEZ TS (formerly IDI) and USG are shown in Exhibit VI-2.

SWPA also has intercompany transactions with its regulated affiliates. As mentioned previously, SWR is the holding company of all SNA's regulated subsidiaries.

Exhibit VI-3 illustrates intercompany charges between SWPA and its regulated affiliates. Generally, charges to and from SUEZ Water Delaware (SWDE) and SUEZ Water Toms River (SWTR) are attributed to the shared management of the Mid-Atlantic Division (Mid-Atlantic). For example, SWPA's Water Quality Manager and Geographic Information System Manager are employees of SUEZ Water Delaware (SWDE), who charge labor and benefit expenses to SWPA for management services. Similarly, SWPA's Vice President/General Manager, Financial Director and Customer Service Manager have oversight of SWR's Mid-Atlantic subsidiaries and attribute portions of their payroll costs to SWDE and SWTR.

Exhibit VI-3
SUEZ Water Pennsylvania, Inc.
Summary of Intercompany Transactions with Regulated Affiliates
For the Years Ended December 31, 2012 through 2015 and through May 2016

	2012	2013	2014	2015	2016
From Affiliates to SWPA					
SUEZ Water Delaware ^	$ 133,990	$ 207,023	$ 195,181	$ 167,473	$ 22,031
SUEZ Water Toms River ^	$ 83	$ 56	$ 878	$ 4,499	$ 205
SUEZ Water Bethel ^	$ 54	$ -	$ -	$ -	$ -
SUEZ Water Princeton Meadows ^	$ -	$ 104,418	$ -	$ 68	$ -
SUEZ Water New York	$ 168	$ 39,726	$ 129,676	$ 103,583	$ -
SUEZ Water Westchester	$ 156	$ 377	$ -	$ -	$ 160
SUEZ Water New Jersey	$ 9,301	$ 10,077	$ 23,013	$ 45,992	$ 17,838
SUEZ Water Idaho	$ 55	$ -	$ -	$ 107,586	$ -
Total Affiliate Charges to SWPA	**$ 143,807**	**$ 361,677**	**$ 348,748**	**$ 429,201**	**$ 40,234**
From SWPA to Affiliates					
SUEZ Water Delaware ^	$ 196,461	$ 181,427	$ 122,410	$ 90,788	$ 18,261
SUEZ Water Toms River ^	$ -	$ 56,330	$ 93,858	$ 105,215	$ 20,668
SUEZ Water Bethel ^	$ 3,777	$ 3,233	$ 1,292	$ 741	$ -
SUEZ Water New York	$ 23,771	$ 1,643	$ 36	$ 26	$ 38
SUEZ Water Westchester	$ -	$ -	$ -	$ 101	$ -
SUEZ Water Owego	$ -	$ -	$ -	$ 173	$ -
SUEZ Water South County Sewer	$ 1,264	$ -	$ -	$ 138	$ 34
SUEZ Water New Jersey	$ 1,485	$ 4,381	$ -	$ 1,615	$ 7,570
SUEZ Water Idaho	$ 23	$ -	$ -	$ -	$ -
Total Charges from SWPA to Affiliates	**$ 226,781**	**$ 247,014**	**$ 217,596**	**$ 198,797**	**$ 46,571**

^ Mid-Atlantic Division affiliates
Source: Data Requests CA-13, CA-18, CA-21 and CA-27

SWR's Mid-Atlantic operating companies include SWPA, SWDE and SWTR. However, Mid-Atlantic is also comprised of other regulated affiliates which are operated by SWPA, SWDE and SWTR, including: SUEZ Water Bethel (SUEZ Bethel), SUEZ

Water Princeton Meadows (SUEZ PM) and SUEZ Water Matchaponix. Charges occurring from SWPA to SUEZ Bethel represent payroll and benefits for services, whereas, charges from SUEZ Bethel and SUEZ PM to SWPA are attributed to miscellaneous transactions. For example, the $104,418 charge occurring in 2013 from SUEZ PM to SWPA represented an intercompany purchase of a diesel generator.

Also illustrated in Exhibit VI-3 are charges from SWPA's regulated affiliates outside of the Mid-Atlantic Division. These regulated affiliates include SUEZ Water New York (SWNY), SUEZ Westchester, SUEZ Water New Jersey (SWNJ) and SUEZ Water Idaho (SWID). The significant charges from SWID in 2015 were attributed to an intercompany purchase of meter radio frequency units. However, the remaining charges to and from SWPA were generally attributed to payroll, benefits and miscellaneous costs.

Ring-fencing is a term used to describe the actions of the Company intended to financially insulate a regulated utility from the potentially riskier business conditions associated with its unregulated affiliates. Ring-fencing can include structural, legal and operational safeguards that separate the business activities of the regulated utility in order to ensure the reliability of service and financial stability. Many times, ring-fencing efforts are unique to the organization and many at SWR are no different. Although part of a larger organization with operations all over the world, all regulated U.S. affiliates are owned and operated through a single parent company, SWR. Further, SWR is governed by its own Board of Directors that is responsible for approving the dividend policy and capital structure for all SWR subsidiaries, including SWPA. SWR's consolidated balance sheet provides its individual subsidiaries with much greater financial strength, i.e., as of December 31, 2015, SWR's balance sheet reflected approximately $2.8 billion in assets.

Findings and Conclusions

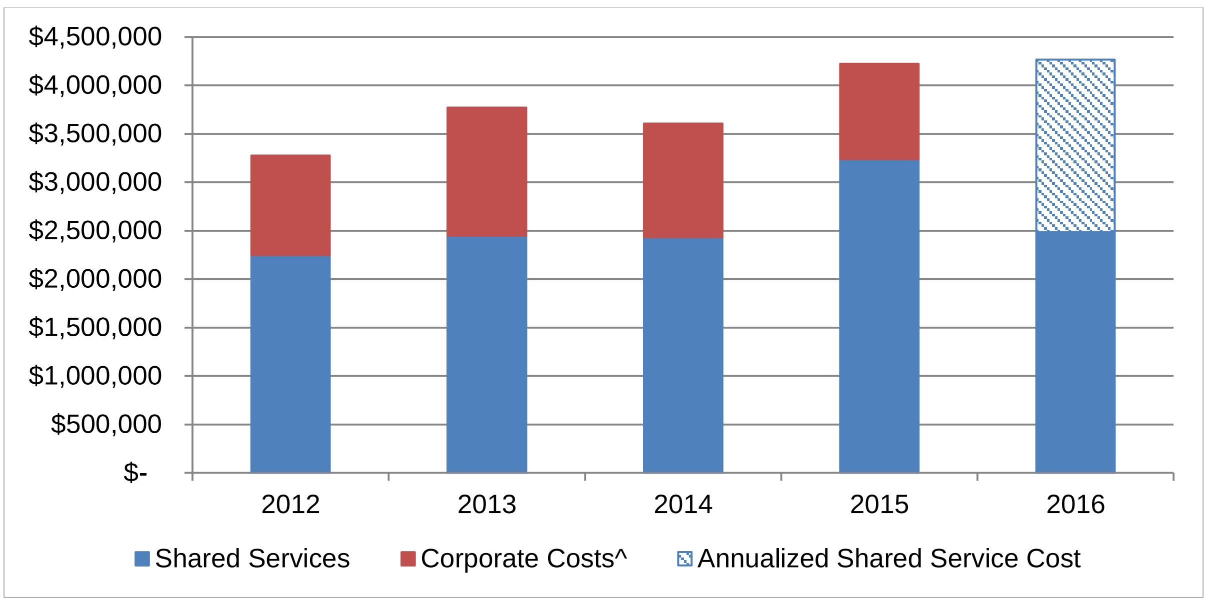
Our examination of the Affiliated Transactions and Cost Allocations functions focused primarily on the review of cost allocation methodologies, cost allocation policies, practices and procedures; and an examination of affiliated interest agreements and intercompany transactions. Based upon our review, the Company should initiate or devote additional efforts to improving the efficiency and/or effectiveness of its affiliated transactions and cost allocation functions by addressing the following:

1. SUEZ Water Pennsylvania, Inc. has not updated and filed all required affiliated interest agreements with the Commission.

On May 16, 2016, the Company filed a proposed AIA with the Commission under Docket No. G-2016-2546454, which included a new cost allocation methodology for the Service Company's distribution of costs to SWPA. However, the new methodology was implemented by SM&S in October 2015, prior to receiving Commission approval. Direct charge is the preferred methodology for the distribution of charges for services; however, SM&S purports the new methodology, which relies more on indirect charges, will provide a cost benefit to SWPA. Nonetheless, SWPA is required under 66 Pa. C.S. Chapter 21 to file an AIA and receive approval from the Commission prior to transitioning from the approved AIA method and practices under Docket No. G-00900230. The Audit Staff recognizes that SWPA has taken appropriate steps to remedy this situation by making the required AIA filing with the Commission; however, during field work SWPA was still operating its new methodology without approval.

Prior to the October 2015 implementation of the new cost allocation methodology, SM&S charges were distributed in accordance with its Commission-approved AIA, at Docket No. G-00900230. Additionally, corporate costs[22] were disseminated to SWPA and its regulated affiliates via a number of outside service providers and subcontractor accounts. However, in tandem with the introduction of the new methodology beginning in October 2015, SWPA's portion of corporate costs were included with affiliate charges for the Company's SM&S shared services. A comparison of SWPA's overall cost of shared services and corporate costs is shown in Exhibit VI-4.

Exhibit VI-4
SUEZ Water Pennsylvania, Inc.
Summary of Shared Service Charges and Corporate Costs
For the Years 2012 through 2016



Note: The 2016 total cost of shared services reflects actual charges from January through July and is annualized for the remaining five months of the year.
^ Corporate Costs[23] include total charges from subaccounts 50405, 90500, 91100, 91250, 91310, 91350, 91400, 91450 and 92150 as reflected in Data Request FM-4 for the full calendar years 2012 through 2014 and in Data Request FM-33 January 1 – September 30, 2015.
Source: Data Requests FM-4, FM-33, CA-5, and CA-20

[22] Corporate costs included: information technology support for the customer service information system, technical services, external audit fees, general, casualty and property insurance, and training and recruiting costs. While these charges originated from third parties to SNA, the corporate costs were distributed by SM&S to SNA's subsidiaries, including SWPA.

[23] Corporate Costs, as calculated by the Audit Staff, are overstated due to the intermingling of bona fide outside service vendor charges and actual Corporate Costs within the identified subaccounts.

While a portion of the increase reflected in Exhibit VI-4 is directly attributable to SWPA's recent rebranding[24], the sheer number of accounting and allocation methodology changes that coincided with the methodology change makes it difficult to fully assess the new methodology's impact on SWPA's costs. In addition, as highlighted in Finding and Conclusion No. VI-3, the Audit Staff contends that there is insufficient detail in invoices from SM&S to substantiate a true comparison between the old and new allocation methods. Therefore, the new methodology and its impact to SWPA's ratepayers should be continued to be monitored in future Commission proceedings.

In addition to SWPA's Service Company AIA, the Audit Staff found other areas where SWPA could benefit from revising various cost allocation policies and procedures. SWPA's centralized cash management process is executed through a money pool held by SWR. However, the Audit Staff found SWPA's Money Pool Agreement to be outdated, despite a May 15, 2015 date.[25] More specifically, due to the merger of UWW and UWR, SWPA's Parent Company is no longer comprised exclusively of regulated entities. As shown in Exhibit VI-1, SWR's subsidiaries include SUEZ Ops. and Corwick Realty Company, both unregulated companies. The centralized debt arrangement is governed by the Company's policies and practices; however, as noted in Chapter V – Financial Management chapter, the Company's policies are outdated.[26] The new organizational structure needs to be included within SWPA's Money Pool Agreement. In addition, the Audit Staff recommends the exploration of additional ring fencing protections (i.e., money pool restrictions, separation of regulated and unregulated cash pools, borrowing caps for unregulated entities, etc.) that could bolster the Money Pool Agreement and provide protection for regulated entities. It is important to note that these unregulated subsidiaries are very small compared to SWR's regulated operations but could grow in the future.

Audit Staff also found numerous instances where other AIAs were incomplete or missing. No Commission approved AIA was provided by SWPA to the Audit Staff covering the intercompany transactions occurring between SWR and SWPA. Similarly, SWPA's benefit plans are held by SWR. The benefit plans reviewed by the Audit Staff identified accurate company names and organizational structure; however, the Audit Staff did not find any record of SWPA filing any related agreements, contracts, etc. with its Parent Company for approval by the Commission. Further, as discussed in the Background section and presented in Exhibit VI-2 and Exhibit VI-3, SWPA had numerous material intercompany transactions with both unregulated and regulated affiliates that are not covered by Commission-approved AIAs. Therefore, the Audit Staff recommends SWPA should file additional AIAs to address the ongoing transactions between SWPA and the following affiliates:

[24] Costs incurred by SWPA due to rebranding are separated as non-recoverable costs by the Company, to be excluded from rate recovery.

[25] The Money Pool Agreement contains provisions which exclude all non-UWR entities from intermingling funds with UWR's Money Pool. However, due to the merger between SWPA's parent companies later that year, the 2015 Money Pool Agreement fails to identify the accurate company names and organizational structure.

[26] The cost of centralized debt is allocated to SWR's subsidiaries based upon their respective total net capitalization less cash position. Pre-merger, legacy debt is allocated exclusively to UWW subsidiaries and UWR subsidiaries, respectively. Conversely, debt acquired after the merger is allocated to all SWR subsidiaries.

- SUEZ Water Resources, Inc.
- SUEZ Water, Inc.
- SUEZ Water Environmental Services, Inc.
- Utility Service Group, GA LLC
- SUEZ Water Toms River
- SUEZ Water New York
- SUEZ Water New Jersey

Pennsylvania public utilities, such as SWPA, engaging in arrangements or contracts with affiliated companies for goods and services are required to obtain Commission approval prior to engaging in intercompany transactions for goods and services. 66 Pa. C.S. §2102 states, in part:

> No contract or arrangement providing for the furnishing of management, supervisory, construction, engineering, accounting, legal, financial, or similar services, and no contract or arrangement for the purchase, sale, lease, or exchange of any property, right, or thing or for the furnishing of any service, property, right or thing other than those above enumerated, made or entered into after the effective date of this section between a public utility and any affiliated interest shall be valid or effective unless and until such contract or arrangement has received the written approval of the commission.

As described in Chapter II – Background, SWPA underwent numerous changes in 2015, including changes to its organizational structure and rebranding of its name. Following these recent changes, SWPA has not updated and/or filed new AIAs as required by the Commission. However, failure to file AIAs when required circumvents the Commission's authority to pre-approve affiliated interest transactions prior to their execution, which could potentially result in any such charges being disallowed in rates by the Commission. 66 Pa. C.S. §2102(d) provides an exception for affiliate transactions under a certain annual threshold (e.g., under $10,000 or 5% of the par value of outstanding common stock, whichever is less). For SWPA, the $10,000 annual threshold would apply for certain affiliates, but many of SWPA's affiliate charges are in excess of $10,000 annually and should be covered in an AIA.[27] As such, SWPA should file AIAs with the Commission prior to the intercompany sale or purchase of goods, or intercompany provision/receipt of services which may reasonably meet or exceed the $10,000 annual threshold, including occasional or one-time transactions.

2. SWPA has not conducted any internal or external studies to compare market rates with the rates charged to or by its affiliates for intercompany transactions.

[27] As of December 31, 2015, SWPA's Annual Report to the PUC listed its total equity capital balance as $145,352,950 without any long term debt. Thus, the five percent par value of SWPA's common stock far exceeds the $10,000 minimum.

As discussed previously, SWPA participates in intercompany transactions with its affiliates. However, the most recent market study conducted for SWPA was a review of Service Company charges for the 12 month period ended September 30, 2004. The 2004 market study found that SWPA benefited in both cost savings and in specialized expertise provided by the Service Company.

In 2016, SWPA filed a proposed AIA with the Commission at Docket No. G-2016-2546454, which described the new SM&S' methodology for distributing the cost of shared services. The proposed AIA stipulates that charges for services will be billed at the lower of cost or market. It is noteworthy to mention that a third party performed a comprehensive review of the new methodology and charges SM&S shared services provided to SWNY.[28] The report, dated April 24, 2015, included economic analyses of a wide range of SM&S provided services[29]. The consultant benchmarked SWNY's cost of SM&S services with the normalized median cost of SWNY's peer panel[30]. The report found that total costs to be approximately 20% below the normalized median cost to SWNY's peer panel. Many of the services provided by the Service Company to SWNY may be similar in Pennsylvania, but not necessarily identical.

In addition to market analyses, competitive bids can also be used as an effective mechanism to benchmark actual market costs specific to the unique service requirements of each Company. Competitive bids can be tailored to a select service or group of services and provide the Company with actionable alternatives which may result in cost savings or provide proof of service company competitiveness. Nonetheless, neither SM&S nor SWPA has sought competitive bids, or conducted any internal or external analysis, or study, comparing the cost of any SM&S shared services specific to SWPA since 2004.

SWPA's Commission-approved AIAs govern its intercompany transactions, all of which specify that all services will be provided between the affiliated companies at cost. However, in order to ensure that rates for intercompany transactions are appropriate, regulated utilities must periodically evaluate the market rates of services it provides to, or receives from, affiliates. In order to insulate its ratepayers from cross-subsidization, a regulated utility's charge for services should be equal to or higher than market rates; conversely, charges from the regulated utility's affiliates to the regulated utility should be equal to or less than market rates. Therefore, in absence of the periodic assessment of market rates for services, SWPA could be overpaying for services it receives or undercharging for services it provides to affiliates.

[28] A 2014 SWNY rate case resulted in an order by the New York Public Service Commission (NYPSC Case 13-W-0295, Order No. 6) for an independent study which included a comprehensive review of the new MMF methodology and its equitability to SWNY.

[29] The following SM&S provided services were included in the review: Financial Planning, Accounting, Treasury, Internal Audit, Procurement, Legal, Information Technology, Human Resources, Corporate Communications and Regulatory Business.

[30] The third-party consultant did not identify the 14 utilities included within the peer panel, due to its confidentiality agreements with each of the utilities.

3. Intercompany invoicing and reports from SUEZ Water Management & Services lack adequate detail.

As discussed in Chapter V – Financial Management, SWPA's accounting software was upgraded in October 2015. As a result of the upgrade, SWPA can no longer access a report that was provided prior to its transition to the new version of PeopleSoft. Prior to October 2015, SWPA could access the SM&S Fees Billing Detail Report (Detail Report). The Detail Report included the names of the SM&S employees providing services to SWPA, the allocation factor used and the total amount billed by month.

While SM&S changed to a new uniform cost allocation methodology in 2016, the allocation produces three separate allocators for SM&S distributed charges to SWPA. Although the new SM&S Fees Report allows for SWPA to differentiate between the three allocators, it does not provide sufficient detail for SWPA to determine the appropriate level of detail charged for services by individual staff members as provided within each SM&S Department. However, with the change in allocation methodology, the Service Company does not see added value in recreating the Detail Report.

As prescribed by the Company's MS&S policy, the Service Company billing should, at a minimum, contain the time period covered by the bill, list the SM&S Department by name and number, indicate the names of SM&S personnel providing service, the allocation level, and the amount charged. By indicating the SM&S staff members and their respective labor costs billed, an essential level of transparency is made available to the affiliates, including SWPA. However, the less detailed, new SM&S Fees Report does not provide adequate detail to determine the respective labor rates and hours associated with the performance of intercompany services. Thus, without supporting details for intercompany costs, SWPA cannot verify the appropriateness of intercompany costs with the level of services received.

Intercompany billing and reporting on affiliated transactions should provide adequate detail to verify the accuracy of charges, such as hours, rates, etc. and identify the personnel included within the department's applied charges. By identifying the employees included in the charges, a necessary level of detail for the verification of the first step in the Service Company's allocation process would be available to its affiliates to validate charges.

Recommendations

1. File a new or amend existing affiliated interest agreements with the Commission for the cash pool agreement, consolidated debt arrangement, and for every affiliate receiving/providing goods and/or services to SUEZ Water Pennsylvania Inc.

2. Periodically conduct internal or external studies to compare SUEZ Water Pennsylvania Inc.'s intercompany charges for services it provides to or receives from its affiliates.

3. Work with SUEZ Water Management & Services to improve the level of detail provided in intercompany invoices and reports.

VII. WATER OPERATIONS

Background

SUEZ Water Pennsylvania Inc. (SWPA or Company) serves approximately 59,000 customers across eight counties[31] and 40 municipalities. Its customer base is comprised of approximately 92% residential, 7% commercial and 1% industrial/other customers. The Company's distribution system is comprised of four primary regions: Harrisburg, Mechanicsburg, Bloomsburg and Dallas with each region further divided into 13 individual systems as depicted in Exhibit VII-1. SWPA's water facilities include five water treatment plants (WTP), 31 well houses, 40 distribution finished water storage facilities, 17 production finished water storage tanks, 30 booster stations and over 850 miles of main ranging in diameter from 2 inches to 24 inches.

Exhibit VII-1
SUEZ Water Pennsylvania, Inc.
Individual Water System Characteristics
As of March 31, 2016

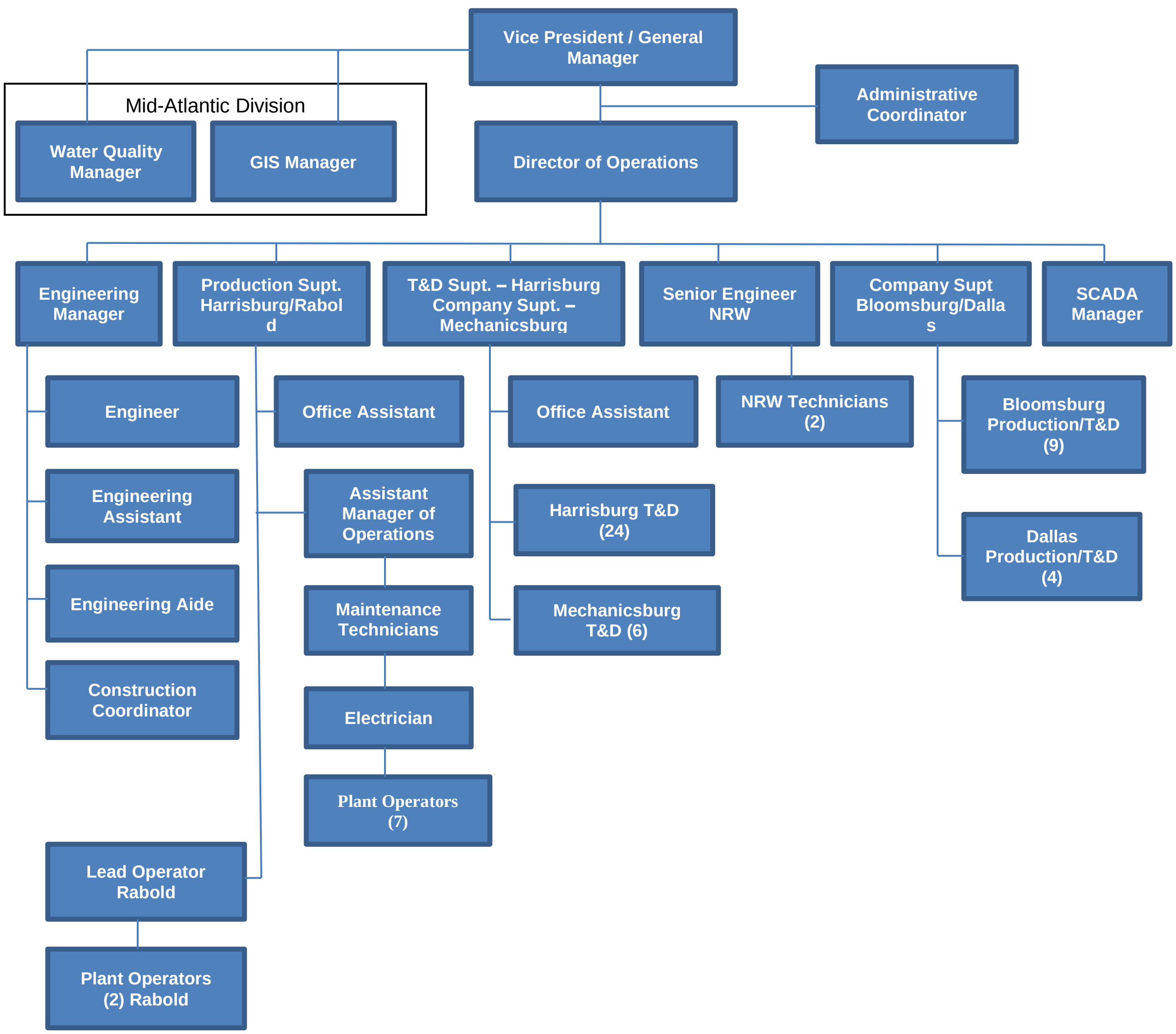
System	Miles of Main	Number of Services	Number of Treatment Plants	Number of Wells	Capacity (MGD)
Harrisburg	513.0	35,409	2	1	16.00
Newberry	37.0	2,264	0	10	0.65
Mechanicsburg	148.3	11,823	2	0	3.750
Grantham	11.5	311	0	2	0.74
Center Square	8.0	630	0	2	1.21
Bloomsburg	79.0	5,407	1	0	4.00
Nuremberg	2.4	142	0	3	0.12
CCIP*	2.7	57	0	1	0.29
Dallas	38.1	2,368	0	6	0.93
Shavertown	13.6	725	0	2	0.23
Harvey's lake	1.0	94	0	2	0.08
Brown Manor	0.6	28	0	1	0.14
Noxen	1.8	93	0	1	0.06
Total	857.0	59,351	5	31	28.2

***** Columbia County Industrial Park
Source: Data Request WO-4

[31] The eight counties served by SWPA include Dauphin, Cumberland, Perry, York, Columbia, Luzerne, Wyoming and Schuylkill.

As indicated in Chapter II - Background, SWPA's Vice President/General Manager is responsible for managing the day to day operations of the Company. Additionally, as of January 2013, this position also became responsible for the Mid-Atlantic Division (Mid-Atlantic) within Suez Water Resources Inc. The Mid-Atlantic is comprised of SWPA, SUEZ Water Delaware, SUEZ Water Bethel and Toms River (southern operations in New Jersey). The Company's organizational chart for water operations is presented in Exhibit VII-2.

Exhibit VII-2
SUEZ Water Pennsylvania, Inc.
Water Operations Organizational Chart
As of March 31, 2016



Source: Data Request GD-1

As depicted in Exhibit VII-2, the Water Quality Manager and the Geographic Information System (GIS) Manager also dedicate time to the Mid-Atlantic Division. There are Water Quality Specialists that report to the Water Quality Manager that sample and monitor water quality, with one specialist dedicated to SWPA. The Water Quality Specialist performs rudimentary water quality tests in-house (i.e., bacteria sampling, etc.) with the more complex and involved tests (i.e., disinfection byproducts, organic compounds, etc.) outsourced. Similarly, the GIS Manager has a direct report that performs GIS work for SWPA (i.e., updating maps, performing GIS queries, training and working with field personnel to capture and map asset information).

The Director of Operations oversees all day to day water operations activities which include the engineering function, transmission and distribution (T&D), production, non-revenue water (NRW), Supervisory Control and Data Acquisition (SCADA) and asset management. The Engineering Department led by the Engineering Manager is responsible for all engineering related tasks such as permitting, bidding, design, main replacement, large and small company projects, developer projects, construction work, etc. Furthermore, the Engineering Department assists with GIS mapping, AutoCAD work, etc. The Construction Coordinator in the Engineering Department is also responsible for overseeing construction, coordinating new construction activities and large main replacements, ordering material for new projects, performing inspections and testing of new mains.

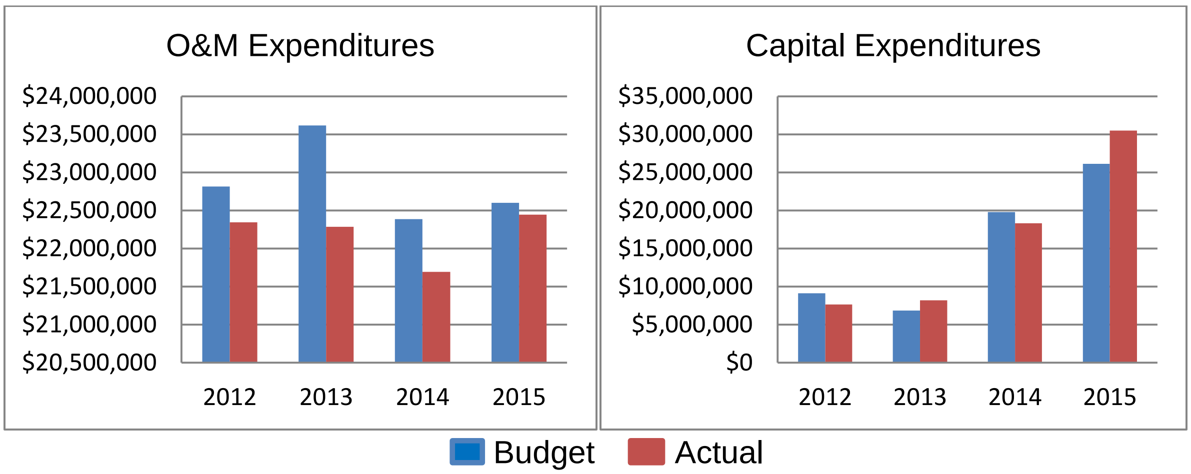
The Production Superintendent of Harrisburg/Rabold is responsible for all day to day production related activities for the Harrisburg and Mechanicsburg Regions which includes the four water treatment plants: Sixth Street WTP in Harrisburg, membrane WTP in Hummelstown, Rabold WTP in Mechanicsburg and the Market Street WTP. In addition to the four WTPs, the Production Superintendent is also responsible for the well houses in the two regions, booster stations, finished water storage tanks and pump houses. The Harrisburg T&D/Company Superintendent is responsible for all field activities in the Harrisburg and Mechanicsburg regions such as valve and hydrant maintenance, small main replacement, locating, leak repair, meter reading, new service installations, preventative maintenance on equipment, etc. The Senior Engineer Non-Revenue Water is primarily responsible for monitoring, reporting and reducing NRW at SWPA. In addition to the NRW Technician that has been with the Company since 2010, the department added an additional NRW Technician in 2015 to help with leak detection and other NRW initiatives. The NRW function is covered in more detail in Finding and Conclusion No. 2. The Company Superintendent for Bloomsburg and Dallas is responsible for T&D and production activities in both of the regions.

SWPA's operations & maintenance (O&M) and capital expenditures for the last four years are shown in Exhibit VII-3. SWPA's O&M expenditures primarily include labor, energy, fees paid to the service company, and other costs[32] comprising about 90% of the total expenditures. Purchased water, chemicals and subcontractors make up the other 10% of the O&M expenditures. Capital expenditures at SWPA increased considerably in 2014 and 2015 primarily due to the new WTP being constructed in Bloomsburg and construction of the manganese removal plant in Shavertown. The

[32] Other costs include expenditures for insurance, taxes, leases, rents, materials, regulatory fees, etc.

Shavertown manganese removal plant was placed in service in April 2016 while the Bloomsburg WTP was placed in service in August 2016.

Exhibit VII-3
SUEZ Water Pennsylvania Inc.
O&M and Capital Expenditures
For the years 2012 through 2015



Source: Data Requests WO-1 and WO-2

SWPA uses several Information Technology (IT) systems in its T&D operations. The Company uses a GIS system and, as of September 2016, was in the process of expanding the system in order for field employees to use tablets to update maps in real time with the GIS Lead checking the updates regularly. The Harrisburg and Mechanicsburg Regions have begun using this online mapping tool on a regular basis but the northern regions (i.e., Bloomsburg and Dallas) still rely heavily on paper maps. SWPA also implemented the use of Global Positioning System (GPS) in May 2016. SWPA purchased a number of GPS devices that interface with the tablets. Location data is collected in the field using these GPS devices and subsequently overlaid onto GIS maps.

The Company operates two Enterprise Asset Management (EAM) systems. The first EAM system implemented in March 2016 is dedicated to monitor and maintain above ground assets (i.e., pumps, booster stations, etc.). In addition, SWPA uses a separate EAM system for underground assets (i.e., mains, services, valves, etc.) that was implemented in December 2014; however, the Company is looking to replace it with another system that offers more functionality. The new underground EAM is planned to be completed in 2017 and will allow field personnel to perform maintenance on an asset such as a valve or hydrant and enter information into GIS while in the field. This last step will create a link between assets and work orders with all relevant work history accessible.

Meter testing for all residential and small commercial meters are performed in-house. In contrast, meter testing for the Company's industrial and large commercial accounts, including its production and sector meters, are contracted out to a third-party. The Company's Production Meter and Sector Meter Management standard operating procedure (SOP) was created in 2014. The SOP created a requirement that the Company calibrate production and sector meter transmitters at least every two years. As a result, SWPA is still scheduling calibrations of production meters and expects to have all booster meters calibrated by the end of 2016. In 2012, SWPA commenced and completed a pilot Automated Meter Infrastructure (AMI) project installing 5,150 AMI units. In addition, the entire Dallas Region had Automated Meter Reading (AMR) devices deployed prior to 2012 while the Harrisburg Region is primarily AMR/AMI as of June 30, 2016. The Bloomsburg Region has approximately 1,500 touchpads (i.e., encoders) and the Mechanicsburg Region has about 2,000 touchpads that the Company expects to convert to AMR by the end of 2016 at which times these regions will be fully deployed with AMR. Exhibit VII-4 lists the meters by type within SWPA's system for 2013 through 2015.

Exhibit VII-4
SUEZ Water Pennsylvania Inc.
Meters Installed by Type
For the years 2013 through 2015

Meter Type	2013	2014	2015
AMI	5,150	5,150	5,150
AMR	35,495	41,931	45,236
Touchpad	18,159	11,923	9,103
Total	58,804	59,004	59,489

Source: Data Request WO-46

Each region's T&D Department performs leak detection as time and resources permit but a vast majority of leak detection activities are performed by the two NRW Technicians, especially in the Harrisburg and Mechanicsburg regions. This increasing trend in leak detection activities can be seen in Exhibit VII-5. Various leak detection techniques are utilized at SWPA that include using acoustic equipment on valves and hydrants, listening at curb valves and over water mains using ground microphones, deploying acoustical loggers, utilizing district metering areas (DMAs), etc. DMAs have been established in key distribution system locations to closely monitor flowrates, particularly during the nighttime allowing SWPA to identify NRW problems. In addition, systems that are determined to require more detailed review are surveyed with ground microphones, acoustical loggers and correlating loggers. These and other advanced leak detection technologies have enabled the Company to detect and fix more leaks in its distribution system.

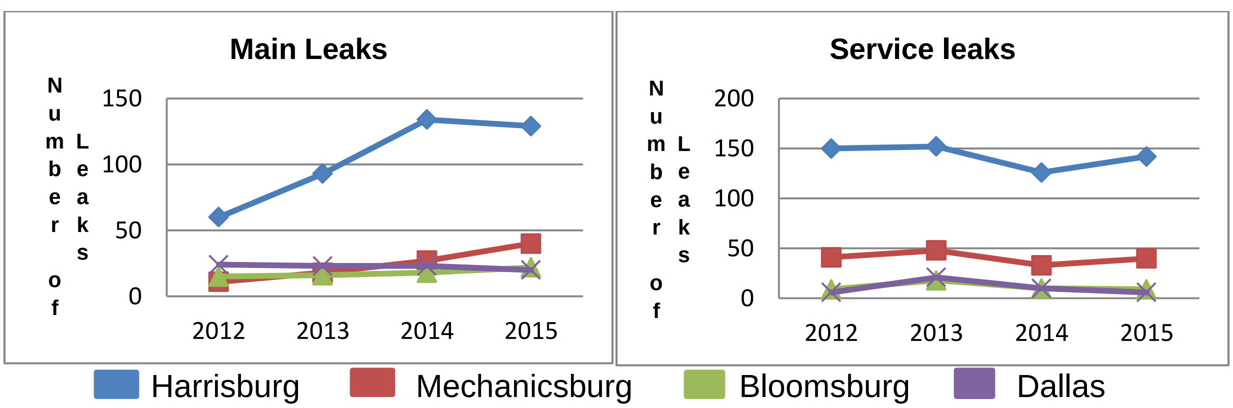
Exhibit VII-5
SUEZ Water Pennsylvania Inc.
Miles of Main Surveyed
For the years 2012 through 2015

Region/Personnel	2012	2013	2014	2015
Harrisburg	40	113	124	37
Mechanicsburg	98	92	45	156
Bloomsburg	9	141	209	184
Dallas	76	92	62	97
NRW Technician	644	720	700	738
Total	867	1158	1140	1212

Source: Data Request WO-6

The Company strives to repair leaks on mains promptly reporting a zero backlog in leaks. Most main leaks are repaired the same day or within a short period of time from when SWPA discovers the leak. The Company also indicated that it strives to repair service leaks within 72 hours unless there are extenuating circumstances. SWPA reported no backlog in service break repairs. The numbers of main and service leak repairs for each of the regions are shown in Exhibit VII-6. Over the 2013 through 2016 time period, SWPA main break rates ranged from 17 to 24 breaks per 100 miles which ranks them as a second quartile performer based on 2011 American Water Works Association (AWWA) data.

Exhibit VII-6
SUEZ Water Pennsylvania Inc.
Number of Main and Service Leak Repairs
For the years 2012 through 2015



Source: Data Request WO-12, WO-14, and WO-40.

The number of main leaks repaired by region has been increasing, particularly in the Harrisburg Region but Audit Staff notes that, a significant portion[33] of this increase is because the Company has been aggressively targeting leaks within the last few years. Company-side service leaks[34] have been relatively steady or shown a decreasing trend in the Harrisburg, Bloomsburg and Dallas Regions. The Harrisburg Region had 39 service leaks as of June 30, 2016 compared to 150 service leaks in 2012. The number of service leaks in the Mechanicsburg Region has revealed an increasing trend primarily due to the change in the approach towards leak detection over the last few years such as dedicating more resources at night to track leaks when demand in the system is low and requiring field personnel to listen on every customer curb stop during a service call.

The miles of main in each of the regions broken down by material type are shown in Exhibit VII-7. The Company was able to derive this information from its GIS model. As evident from the exhibit, approximately 43% of the company's mains are plastic, 26% are asbestos concrete, 19% are cast iron, and the remaining 12% are ductile iron and galvanized pipe. In 2016, SWPA began replacing its small diameter galvanized steel and asbestos concrete main aggressively due to leak data. The majority of the Company's services are either copper or plastic with about 5-10% of galvanized services still remaining. The Company does not have any known lead services in its service territory.

Exhibit VII-7
SUEZ Water Pennsylvania Inc.
Miles of Main by Material Type
As of June 30, 2016

Region	Asbestos Concrete	Cast Iron	Ductile Iron	Galvanized[a]	Plastic[b]	Total
Harrisburg	173.3	83.9	51.5	9.6	244.3	562.6
Mechanicsburg	57.1	14.5	18.5	2.0	77.7	169.8
Bloomsburg	0.0	53.9	7.3	1.9	23.3	86.4
Dallas	0.6	13.2	5.3	6.0	31.6	56.7
Total	231.0	165.5	82.6	19.5	376.9	875.5

[a]Galvanized group consists of copper, galvanized, steel and wrought iron materials.
[b]Plastic group contains polyvinyl chloride (PVC), polyethylene pipe (PEP) and polyethylene tubing (PET).
Source: Data Request WO-38

[33] Another reason for increased leaks could be due to aging infrastructure as presented in Finding and Conclusion VII-3. However, there is no way to distinguish how much of the increase is due to better leak surveying or from an increased failure rate of mains.

[34] SWPA is responsible for detecting and fixing leaks on services from the Company's distribution main to the inlet connection of the customer's service line at the curb or property line. A service from the curb or property line to the customer's house is the responsibility of the customer. Therefore, service leaks are the responsibility of the customer whereas main leaks are the Company's responsibility.

Findings and Conclusions

Our examination of the Water Operations function included a review of policies and procedures, capacity planning, drought contingency planning, engineering and construction, maintenance, production, main replacement, non-revenue water, damage prevention, the cross-connection program, etc. Based on our review, SUEZ Water Pennsylvania Inc. should devote additional efforts to improve the effectiveness of its water production, transmission and distribution operations by addressing the following:

1. The Company does not have a comprehensive damage prevention program.

As shown in Exhibit VII-8, the Company screens or eliminates any Pennsylvania One Call System (POCS) tickets not in its service territory.

Exhibit VII-8
SUEZ Water Pennsylvania Inc.
Number of Locates Received and Marked
For the years 2012 through 2015

	2012	2013	2014	2015
Number of locates received	13,726	13,557	14,128	14,299
Number of locates marked	7,309	6,881	6,886	6,741
% not marked or screened	47%	49%	51%	53%

Source: Data Request WO-17

The T&D Department tracks main leaks/breaks on leak sheets which include information such as date of reported leak, date of leak repair, pipe characteristics, leak duration, estimated volume of water lost, cause, and responsible party, etc. As shown in Exhibit VII-9, the Company has not incurred many third party or billable line hits over the four year period (although 2015 data reflects number of incidents more than double the prior three year average[35]). Consequently, the Company has not developed a comprehensive damage prevention manual.

[35] The spike in 2015 was primarily due to the initiation of a sewer project in SWPA's service territory.

Exhibit VII-9
SUEZ Water Pennsylvania Inc.
Line Hit Statistics
For the years 2012 through 2015

	2012	2013	2014	2015
Hits on Mains	8	6	5	7
Hits on services	0	1	1	11
Hits per 1000 locates marked	1.09	1.02	0.87	2.67
Number billable	8	7	6	18
Number non-billable	0	0	0	0
Amount Billed	$16,616	$33,203	$8,252	$0
Amount Collected	$11,241*	$14,792*	$5,512*	$0

*Remainder sent to collections.
Source: Data Request WO-17 and WO-39.

Prior to 2016, the Company did not have a formal process to track the number or cost of Company at-fault third party line hits (i.e., mismarked, not marked, etc.) otherwise referred to as non-billable hits. In 2016, SWPA started tracking non-billable hits in the Harrisburg Region; however, a formal process or procedure has not been established to track non-billable hits in the Mechanicsburg, Bloomsburg or Dallas regions. Furthermore, SWPA did not bill for third party damages in 2015 because both T&D Superintendents (i.e., Harrisburg/Mechanicsburg and Bloomsburg/Dallas) were hired in the last two years and unaware of Company policy of billing for third party damages. In addition, the Company was not filing incident reports to the Department of Labor & Industry (L&I), in accordance with the Underground Utility Line Protection Act (Act 287 of 1974 as amended).

While employee changes or oversights led to the above mentioned shortcomings, the Audit Staff contends that the absence of a damage prevention manual is the root cause. In addition, the lack of a damage prevention manual could result in undocumented safe dig procedures, inconsistent contractor and public education, training, etc. Ideally, a damage prevention manual should include, among other things, guidelines for pre and post locate activities, internal procedures to comply with PA One Call, incident report documentation such as pictures, detailed notes, etc., locator training documentation, excavation process to include tolerance zone identification, situations for notifying 911, etc. Furthermore, employee and contractor responsibilities should be clearly documented in the damage prevention manual along with the reporting and evaluation process such as filing incident reports with L&I.

Damage prevention manuals are required for gas utilities in accordance with 49 CFR 192.614 due to the explosive nature of natural gas and the risks associated with it. Although water utilities are not required by state law to create or maintain damage prevention programs, Audit Staff believes it is a sound business practice.

2. SWPA's NRW/UFW levels have improved significantly but UFW levels are still higher than the PUC's threshold.

From 1997 to 2000, the International Water Association's (IWA) Water Loss Task Force developed the Water Audit Methodology which was adopted by the AWWA's Water Loss Control Committee as industry best management practice in 2003. The foundation of this methodology was based on a top-down approach to account for all water losses referred to as non-revenue water (NRW). NRW has three components: real losses, apparent losses and unbilled authorized consumption. Real losses include water lost through transmission and distribution main leaks, leakage and overflows at storage tanks and leakage on services up to the point of customer metering. Apparent losses consist of unauthorized consumption, customer meter inaccuracies and systematic data handling errors. Furthermore, unbilled authorized consumption consists of water used for main flushing, firefighting, street cleaning, construction sites, etc. Conversely, unaccounted-for-water (UFW) is the straight percentage of water that cannot be accounted for and allows for several exclusions such as main flushing, blow-off use, unauthorized use and any adjustments such as water lost through main and service breaks, etc.

SWPA has adopted AWWA's NRW methodology and monitors NRW and UFW for internal tracking and reporting purposes. The Company tracks NRW and UFW data for each of its 13 systems and has set short term and long term goals, as illustrated in Exhibit VII-10. SWPA's short term (one year) goal is to reduce the NRW percentage to less than 31.3% and the NRW volume to approximately two billion gallons and its long term goal is to reduce the NRW percentage by one percent every year for the next five years.

Exhibit VII-10
SUEZ Water Pennsylvania Inc.
NRW Volumes and Goals
As of December 31, 2015

System	2015			Short term Goal 2016		Long term Goal 2020	
	Water Supplied	NRW Volume	NRW	NRW Volume	NRW	NRW Volume	NRW
Harrisburg	4,013.9	1,302	32.4%	1,260.4	31.4%	1,099.8	27.4%
Mechanicsburg	1,044.8	332.5	31.8%	321.8	30.8%	280.0	26.8%
Bloomsburg	811.6	277.3	34.2%	269.4	33.2%	237.0	29.2%
Newberry	186.7	74.7	40.0%	72.8	39.0%	65.3	35.0%
Dallas	162.9	41.1	25.2%	39.4	24.2%	32.9	20.2%
Grantham	90.4	32.1	35.5%	31.2	34.5%	27.6	30.5%
Shavertown	63.0	8.9	14.2%	8.9	14.2%	8.9	14.2%
Center Square	36.2	5.7	15.8%	5.4	15.0%	5.4	15.0%
CCIP	22.3	3.1	14.1%	3.1	14.1%	3.1	14.1%
Nuremberg	7.0	2.0	29.1%	2.0	28.1%	1.7	24.1%
Noxen	4.8	1.4	29.2%	1.3	28.2%	1.2	24.2%
Harvey's Lake	4.2	0.3	6.5%	0.3	6.5%	0.3	6.5%
Brown Manor	2.2	0.9	42.0%	0.9	41.0%	0.9	38.0%
Suez PA Total	6,450	2,082	32.3%	2,017	31.3%	1,764	27.4%

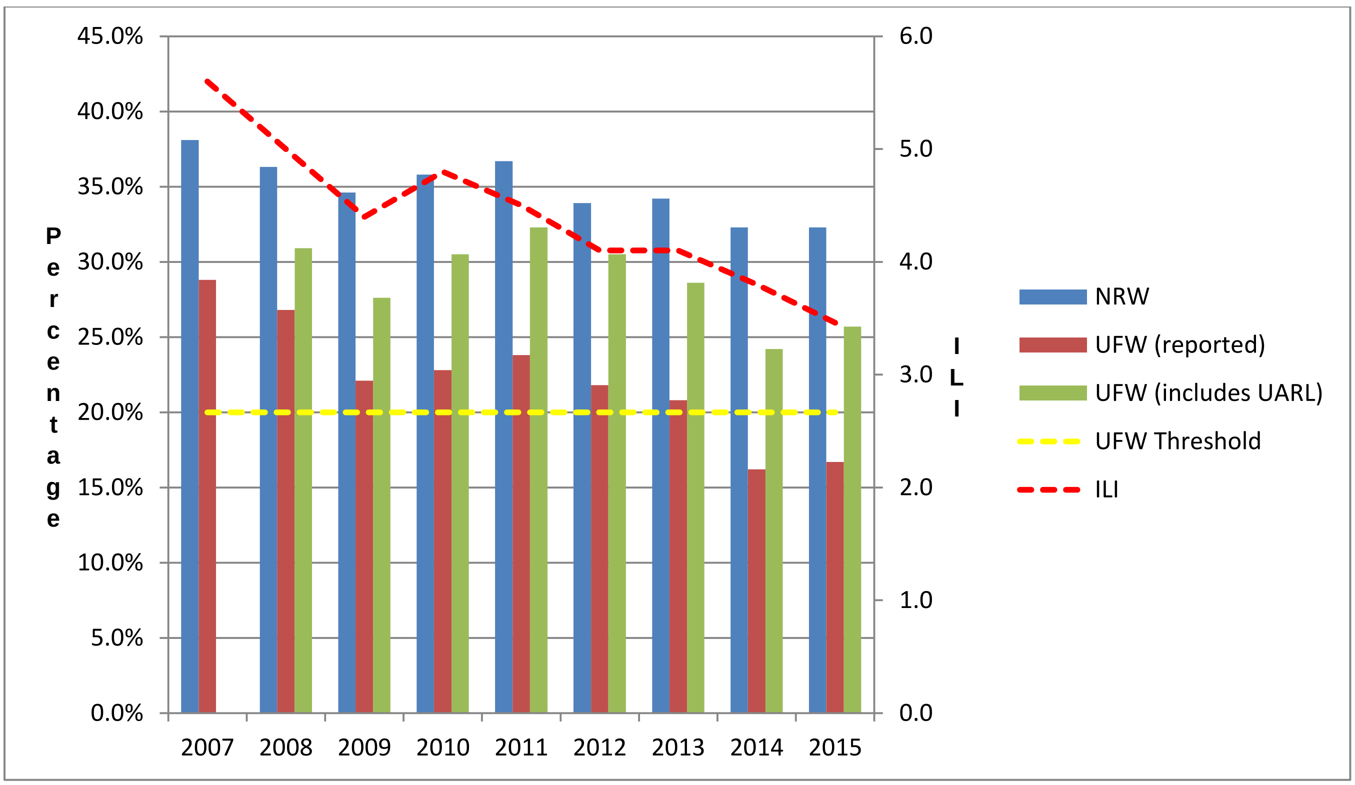
Note: All volumes are in million gallons
Source: Data Request WO-8 and WO-43

The Company's UFW levels reported on Schedule 500 of the PUC Annual Reports includes an exclusion allowance of unavoidable annual real losses (i.e., UARL). UARL is a theoretical reference value representing the inherent leakage of a given distribution system based on factors including length of water mains, number of service connections, average system pressure, etc. Consequently, UARL should not be reported as an exclusion allowance from the UFW calculation as further supported in prior PUC audit reports[36]. For example, the Company effectively reduced its UFW levels by approximately 8% by taking the exclusion allowance in 2014 and 2015 reporting UFW levels of 16.9% and 16.7% in contrast to UFW levels 24.2% and 25.7% when removing the allowance. The Audit Staff commends the Company on the efforts that it has made in reducing its NRW/UFW levels but notes that the Company's practice of excluding unavoidable real losses (UARL) (i.e., unavoidable leakage) from its UFW data is misleading.

[36] See the Focused Management Audits of PA American Water Company and United Water Pennsylvania at Docket No. D-2014-2430603 and D-2010-2150875, respectively or the Management Efficiency Investigations of United Water Pennsylvania at D-2012-2340572.

Exhibit VII-11 illustrates the improvement that the Company has made from 2007 to 2015 in reducing its NRW, UFW, and infrastructure leakage index (ILI). The ILI is a key operational performance indicator in the AWWA Water Audit Methodology and is the ratio of current annual real losses to unavoidable annual real losses. The ILI basically is an indicator of how effectively a water utility controls the level of real losses by utilizing leakage management methods. Well managed systems are expected to have low ILI values (i.e., close to 1 in ideal cases) whereas systems with infrastructure management deficiencies tend to have much higher values. Therefore, SWPA's ILI decreasing from 5.50 in 2007 to 3.46 in 2015 is noteworthy and represents the Company's significant progress in reducing its NRW volume.

Exhibit VII-11
SUEZ Water Pennsylvania Inc.
NRW, UFW and ILI
For the years 2007 through 2015



Source: Data Request WO-8 and WO-41.

Reductions in NRW can be attributed to various Company NRW initiatives such as replacing its strategic turbine meters with single jet meters outfitted with new cellular data reporting, implementing a pressure reduction strategy, installing flow meters on fire line accounts, expanding the use of DMA meter pits, etc. Additionally, real losses primarily consist of three types of leakage: surface leaks, underground leakage and background leakage. Background leaks are extremely small leaks that do not surface with any visible water and are difficult to detect using traditional leak detection methods.

In order to reduce the background leakage and lessen its real losses, the Company is working on replacing underground pipe that has been prone to background leaks in recent years such as galvanized steel and asbestos cement. Furthermore, the Company has reduced over 470 million gallons in NRW lost over the 2011 to 2015 time period resulting in cost savings of approximately $153,000.

Despite these improvement trends, the Audit Staff believes the Company still has not achieved UFW levels in accordance with 52 Pa. Code §65.20 (4) in which the PUC considers UFW levels to be excessive when they exceed 20%. Audit Staff acknowledges that replacing current PUC UFW regulations with NRW would clarify this issue as was intended with the PUC's Advance Notice of Proposed Rulemaking Order at Docket No. L-2012-2319361. Until the PUC formally addresses NRW, SWPA should strive to reduce UFW below PUC's 20% threshold by including UARL in its UFW calculations. The Audit Staff estimates that by reducing the UFW to below 20%, the Company could save approximately $120,000[37] per year.

3. SWPA is not replacing mains consistent with its long-term goals.

The Engineering Department with input from the T&D department evaluates and prioritizes mains as part of its water main asset management replacement program based on a scorecard which considers a number of criteria such as water quality, size adequacy, history of repairs, age, material type, number of customers affected, etc. SWPA's main replacement budgeted and actual capital expenditures from 2012 through 2015 are shown in Exhibit VII-12.

Exhibit VII-12
SUEZ Water Pennsylvania Inc.
Budget to Actual Main Replacement Capital Expenditures
For the years 2012 through 2015

	2012	2013	2014	2015
Budget	$4,802,800	$3,443,900	$3,189,300	$6,130,400
Actual	$4,508,100	$3,050,500	$3,480,100	$5,927,600
Variance	-6.1%	-11.4%	9.1%	3.3%

Source: Data Request WO-10.

As cited during the 2010 PUC Focused Management and Operations Audit, SWPA replaced during the 2006 to 2009 time period on average 3.5 miles of main annually or at a replacement rate of 240 years. During the 2012 to 2015 time period, SWPA replaced on average 4.5 miles of main annually which reflected a replacement rate of 195 years. The miles of main replaced by region are shown in Exhibit VII-13.

[37] Calculated using UFW volume of 1,655 MG and UFW percentage of 25.7% as of December 31, 2015 and production cost of $325/MG.

Except for the Dallas Region which is a fairly new system, three of the four regions have replacement rates over 130 years.

Exhibit VII-13
SUEZ Water Pennsylvania Inc.
Main Replacement Activity (miles of main) by Region
For the years 2012 through 2015

Region	2012	2013	2014	2015	Average	Miles of Main	Replacement Rate (years)
Harrisburg	2.58	1.89	1.18	2.91	2.14	563	263
Mechanicsburg	0.64	0.44	0.65	0.35	0.52	170	327
Bloomsburg	0.41	0.54	1.08	0.5	0.63	86	136
Dallas	1.21	0.86	0.94	1.72	1.18	57	48
Total	4.84	3.73	3.85	5.48	4.48	876	196

Source: Data Request WO-10

Moreover, the Company plans to replace approximately five miles of main on average for the five year period 2016 to 2020 or at a replacement rate of 175 years as shown in Exhibit VII-14. Additionally, management indicated that the Company has a short term replacement goal of approximately 0.5% (or 200 years) to 0.75% (or 150 years) of its total distribution system main with a long term goal of 1% (or 100 years) which conforms to industry standards. The Company also indicated that the actual amount of main replaced would be dependent on available budget and cost of installation.

Exhibit VII-14
SUEZ Water Pennsylvania Inc.
Main Replacement Projections
For the years 2016 through 2020

	2016	2017	2018	2019	2020	Average
DSIC Budget	$4,344,600	$5,500,000	$5,500,000	$5,500,000	$5,500,000	$5,268,920
Miles	4.16	3.97	5.3	5.68	6.06	5.03

Source: Data Request WO-35.

Currently, the Company funds its main replacement program entirely through its Distribution System Improvement Charge (DSIC). The Audit Staff contends the intent of DSIC was to accelerate main replacement and supplement main replacement funding provided through base rates.

Although average annual main replacement activity has increased by 28% since 2006, the Company has not materially increased replacement rates (4.8 miles) since 2010. Consequently, by deferring main replacement without adequate justification can expose SWPA to increased main breaks as presented in Exhibit VII-6, inflation driven replacement costs, deteriorating water quality or customer satisfaction, increased outages, higher UFW levels, etc.

4. The Company does not exercise its valves on a prescribed schedule and has not established a critical valve list.

SWPA developed standard operating procedures (SOP) for the Valve Maintenance Program in April 2002, which was last updated in April 2016. The SOP includes safety considerations, valve exercising procedures, procedures for uncovering, raising, realigning valve boxes, etc. Daily valve tracking is currently done manually (i.e., paper sheets) but the Company is in the process of transitioning to a new underground asset management system to maintain valve data. The number of valves segregated by valve size and region as of February 29, 2016 is shown in Exhibit VII-15. The Company indicated that it exercises or turns valves on an as needed basis (i.e., during main replacements, main breaks, new installations, etc.).

Exhibit VII-15
SUEZ Water Pennsylvania Inc.
Number of Valves by Region
As of February 29, 2016

Size	Harrisburg	Mechanicsburg	Bloomsburg	Dallas	Total
0.75"	4	0	0	0	4
1"	27	12	4	1	44
1.25"	1	0	0	0	1
1.5"	8	0	1	2	11
2"	380	74	35	65	554
3"	4	0	3	4	11
4"	326	113	122	136	697
6"	1,641	502	309	148	2,600
8"	3,272	1,212	304	226	5,014
10"	49	50	29	0	128
12"	1,217	343	148	3	1,711
14"	4	0	3	0	7
16"	86	26	17	0	129
20"	14	2	0	0	16
24"	45	0	0	0	45
Total	7,078	2,334	975	585	10,972

Source: Data Request WO-24.

As shown in Exhibit VII-16, the percentage of valves exercised annually for the years 2012 through 2015 ranges from 10.0% to 12.7% or on an approximate 10 year cycle with the exception of the Dallas Region which operates closer to a six year cycle.

Therefore, three of the four regions are maintaining or exercising its valves on a 10 year cycle.

Exhibit VII-16
SUEZ Water Pennsylvania Inc.
Number and Percentage of Valves Exercised
For the years 2012 through 2015

Year	Harrisburg	Mechanicsburg	Bloomsburg	Dallas	Total	Percentage Operated
2012	650	365	80	100	1,195	10.9%
2013	845	350	103	100	1,398	12.7%
2014	634	239	120	100	1,093	10.0%
2015	732	304	30	100	1,166	10.6%

Source: Data Request WO-25.

Valve exercise programs are essential to improving customer service, ensuring distribution system reliability, aiding in the development of predictive maintenance programs, ensuring water quality control, etc. Furthermore, an effective valve maintenance program with prescribed inspection intervals has several safety and revenue benefits such as facilitating emergency response actions through improved valve reliability, operations and maintenance personnel safety, reducing revenue loss, avoiding costly liability and property losses by immediately isolating main breaks, extended valve life, etc. The AWWA recommends that all water utilities should initiate a valve exercise program that requires all transmission and distribution valves to be inspected and operated on a regular basis. The AWWA further recommends that valve inspections should be performed on a regularly scheduled basis (annually if possible) and at more frequent intervals for valves that are 16” or larger.

Currently the Valve Maintenance Program SOP does not include a prescribed schedule to operate valves nor does it specifically address critical valves. The Company acknowledges that more work needs to be done in valve maintenance. The Audit Staff believes that SWPA should focus its immediate efforts on identifying and inspecting critical valves annually and subsequently developing a periodic schedule to inspect its remaining valves. Establishing a critical valve list would help identify valves that are critical to the Company’s operations and ensure that the valves are in working condition, particularly during emergencies such as main breaks, emergency main repair, etc. A valve exercise program should be aimed at four components: locating the valve, fully exercising the valve, maintaining detailed valve records and scheduling and performing needed repairs. In conjunction with the implementation of the Company’s new underground EAM in 2017, the Company should strive to implement a valve maintenance program specifically for critical valves and attempt to exercise its critical valves on an annual basis.

5. The Company does not have a comprehensive cross connection control program and its cross connection manual is outdated and incomplete.

In accordance with 25 Pa. Code §109.709 and at the direction of the Department of Environmental Protection (DEP), public water suppliers should develop and implement a comprehensive program for the elimination of existing cross connections and prevention of future cross connections. The program should include:

- A description of the methods and procedures to be used.
- Legal authority for implementation of the program.
- A time schedule for inspection of commercial and industrial customers.
- A public education program for residential customers.
- A description of the methods and devices to be used.
- A program for the review of plans for new users to assure that no new cross-connections are developed.
- Provisions for discontinuance of water service, after reasonable notice, to premises where cross-connections exist.

Moreover, in accordance with this section, if the customer fails to eliminate cross connections within a reasonable period of time, the water supplier can discontinue service after reasonable notice has been made to the customer.

SWPA's cross-connection control manual titled "Policy and Procedures for Backflow Prevention by Containment" includes responsibilities of the Company and the customer, implementation and enforcement actions, inspection of facilities, etc. The Company indicated that the manual was updated in August 2015, but Audit Staff found several discrepancies such as missing sections/pages, incomplete or no procedures for mailing notification to customers, incomplete or no information on education of residential customers, etc. Moreover, the manual did not include any language under the enforcement section on termination of customers not complying with the Company's policies. The Company did indicate that it is the customers' responsibility where applicable to test the backflow devices but Audit Staff could not verify any instances where this was being enforced.

New commercial and industrial service connections are reviewed by the Engineering Department which is responsible for ensuring the proper design and installation of new backflow devices. Moreover, all new residential services are installed with an external meter pit which includes a dual check valve that serves as a backflow device. In the past, SWPA used a software program to send annual notifications to commercial and industrial customers regarding annual backflow device testing requirements but as of 2013 the Company had discontinued its use. Instead management explored other ways of tracking and testing backflow prevention devices. This decision to discontinue use of a dedicated software program coupled with organizational changes, reassignment of responsibilities, and other priorities resulted in backflow device testing results not being collected, tracked and documented. Recognizing some of these challenges, SWPA is in the process of evaluating vendors to inspect and monitor the Company's cross-connection control program.

A comprehensive cross-connection control program would allow the Company to prevent or at least significantly reduce the threat of contamination of its potable water system. The cross-connection program should include, among other things, a record of all backflow prevention devices at commercial and industrial customer locations, inspection notices and warning letters being mailed to customers, local certified tester lists being provided to customers, and public education material being provided to residential customers on the dangers of cross-connection. Backflow or backsiphonage of non-potable water into the Company's distribution system could lead to severe health issues if the backflow device is not installed or if it fails. In order to avoid such health risks and other contamination issues, it is imperative that backflow prevention devices, especially at industrial and commercial connections, be tested annually.

6. The Company has not historically tracked main replacement costs on a component level basis.

The Company performs main replacement project work in 40 municipalities within its service territory and must adhere to local municipal ordinances including repaving requirements. SWPA typically coordinates with townships for restoration work, sharing costs for paving and trench restoration but certain municipalities require partial or complete road restoration and sometimes includes a "no dig" timeframe from when a road was repaved. In addition to paving and restoration, various factors can influence main replacement costs such as location, soil type, other underground facilities, etc.

While the Company has developed an average replacement cost for all main replacement projects and tracks actual costs for an entire project, the Company does not routinely identify projects costs on a component level (i.e., excavating, paving, etc.) basis. The Company has developed reasonable averages in order to estimate repaving costs and permit fees which constitute approximately 30% and 1% of overall main replacement costs, respectively. However, these estimates do not specifically account for municipal imposed incremental costs.

Averages and estimates generally serve as a good platform to base future decisions; however, more specific data could aid the Company in refining its planning and cost estimating process. In addition, the Audit Staff believes that recording and tracking the breakdown of main replacement/installation costs by its various components would help the Company and municipalities work towards efficient infrastructure replacement. These historical records could be used to meet with township officials during preconstruction meetings on future projects and identify potential cost savings or best practices. Such a strategy would be ideal for SWPA and township officials by creating a communication forum and strengthen working relationships with township personnel. In response, the Company indicated that it initiated measures in June 2016 to begin tracking line item cost components for certain main replacement projects.

Recommendations

1. Develop a comprehensive damage prevention program.

2. Strive to meet NRW goals and reduce UFW levels below the Commission's guidelines of 20%.

3. Accelerate main replacement efforts to achieve main replacement rates of approximately 100 to 120 years.

4. Establish a critical valve list for each region and strive to exercise critical valves on an annual basis.

5. Develop a comprehensive cross connection control program and update the cross connection control manual.

6. Implement measures to routinely capture various main replacement cost components.

VIII. EMERGENCY PREPAREDNESS

Background

Effective June 2005, Public Utility Commission (PUC or Commission) regulations at 52 Pa. Code § 101 (Chapter 101) require jurisdictional utilities to develop and maintain written physical security, cyber security, emergency response, and business continuity plans in order to protect the infrastructure within the Commonwealth of Pennsylvania and ensure safe, continuous and reliable utility service. Along with the requirement to establish these "emergency preparedness" plans, a utility is required to annually file a Self-Certification Form with the Commission documenting compliance with Chapter 101. This form, available on the PUC website, is comprised of 13 questions as shown in Exhibit VIII-1.

Exhibit VIII-1
Pennsylvania Public Utility Commission
Public Utility Security Planning and Readiness Self Certification Form

Item No.	Classification	Response (Yes–No–N/A*)
1	Does your company have a physical security plan?	1.
2	Has your physical security plan been reviewed in the last year and updated as needed?	2.
3	Is your physical security plan tested annually?	3.
4	Does your company have a cyber security plan?	4.
5	Has your cyber security plan been reviewed in the last year and updated as needed?	5.
6	Is your cyber security plan tested annually?	6.
7	Does your company have an emergency response plan?	7.
8	Has your emergency response plan been reviewed in the last year and updated as needed?	8.
9	Is your emergency response plan tested annually?	9.
10	Does your company have a business continuity plan?	10.
11	Does your business continuity plan have a section or annex addressing pandemics?	11.
12	Has your business continuity plan been reviewed in the last year and updated as needed?	12.
13	Is your business continuity plan tested annually?	13.

* Attach a sheet with a brief explanation if N/A is supplied as a response to a question.
Source: Public Utility Security Planning and Readiness Self-Certification Form, as available on the PUC website at http://www.puc.state.pa.us/general/onlineforms/pdf/Physical_Cyber_Security_Form.pdf.

During the course of fieldwork, the Audit Staff reviewed the most recent (i.e., 2015 Self Certification Form submitted by SUEZ Water Pennsylvania, Inc. (SWPA or Company) to determine the status of its responses. The Audit Staff's examination of SWPA's emergency preparedness included a review of its physical security plans (PCP), cybersecurity plans (CSP), emergency response plans (ERP), business continuity plans (BCP), and associated security measures. Furthermore, the Audit Staff performed inspections at a sample of SWPA's facilities including wells, water storage facilities, water treatment plants, pump stations, workshops and service centers. Due to the sensitive nature of the information reviewed, specific information is not revealed in this report but rather the generalities of the information reviewed are summarized.

Each of the plans are overseen and managed by various SWPA or Suez North America, Inc. (SNA) groups and individuals. These groups are responsible for testing, reviewing, and updating their respective plan(s). The departments assigned to each of the emergency preparedness plans are as follows:

- Physical Security Plan – SWPA Leadership (i.e., consisting of the General Manager/Vice President, Director of Operations, Engineering Manager, Customer Service Manager, and the Administrative Coordinator of SWPA), with input and advice on implementation from SNA.
- Cyber Security Plan – Business Technical Services (SNA)
- Emergency Response Plan – SWPA Leadership
- Business Continuity Plan – SWPA Leadership

To constantly protect physical and cyber resources, the designated groups and individuals have developed procedures to ensure that SWPA operates in a safe, secure, and reliable environment. Testing is performed to ensure that employees are familiar with current plans and policies. More in-depth testing and evaluation of the CSP by a third party contractor was underway as of September 2016. Types of testing performed by SNA and SWPA included vulnerability assessments, system operational testing, emergency drills, media backups, and real-life events.

Findings and Conclusions

Our examination of SWPA's Emergency Preparedness included a review of the physical security plan, cyber security plan, emergency response plan(s), business continuity plan, vulnerability assessment and all associated security measures. Based on our review of SWPA's emergency preparedness efforts, the Company should initiate or devote additional efforts to improving its security planning and preparedness procedures by addressing the following:

1. Minor deficiencies in physical security were noted during inspections of SWPA's facilities.

Physical security should be continuously reviewed and inspected and any deficiencies should be addressed as soon as possible. Ideally, risk should be incorporated into physical security requirements with critical facilities warranting additional security measures. The Audit Staff randomly inspected several facilities at SWPA, including office, storage, and operations facilities while focusing on compliance with SWPA's PSP as well as identification of vulnerabilities.

As inspections were conducted, the Audit Staff noted several minor vulnerabilities or deficiencies in physical security. Most of the deficiencies were due to facility age, oversight, weather, or general wear and tear. In addition, the Audit Staff noted a few instances where additional physical security measures should be considered within SWPA activities. For instance, SWPA offers tours of its facilities to various groups but the Audit Staff contends that additional security measures should be considered during these events.

In order to reduce risks, SWPA should correct the minor physical security deficiencies discovered by the Audit Staff and perform ongoing physical security reviews of all facilities.

2. Physical security is not governed by uniform sets of standards across all SWPA facilities.

While SWPA does maintain a set of suggested physical security measures with input provided by SNA, facility managers are responsible for implementing physical security measures at their own discretion. Therefore, physical security measures deployed vary for each facility.

In order to standardize the approach to physical security, a set of uniform physical security requirements should be established for all SWPA facilities with standards defined by type of facility. In order to provide flexibility where needed, the standards should reflect a minimum set of requirements for each type of facility with individual improvements encouraged based on specific facilities. It would benefit SWPA, and perhaps more appropriately all of SNA, to establish a centralized position or team responsible for developing, maintaining, and enforcing company-wide physical security measures. This would help create and enforce physical security requirements, improve overall security, minimize risk, etc.

3. Physical security of Supervisory Control And Data Acquisition (SCADA) control stations at SWPA's facilities could be improved.

Many SCADA control stations were protected by insufficient layers of physical security at SWPA's facilities. It is an industry best practice for a utility to protect its SCADA control stations, servers, and equipment with multiple redundant layers of security; both physical and cyber. A good way to accomplish this is to place SCADA servers and controllers such that there are multiple locked doors between the equipment and the shortest path to the facility exterior. Placing the SCADA controllers and servers in a separate locked room is a good step towards accomplishing this. Further improvements to physical security can be realized by placing the locked door to the SCADA controller or equipment room in a place where it is likely to be observed as continuously as possible by personnel working at the facility. Additional measures include monitoring the room and room entrance with a closed circuit television camera, requiring at least two-factor authentication to pass through secured doors, and/or using a monitored alarm system for the SCADA room. While SWPA does have security around its SCADA control stations, the Company should consider expanding or improving these layers at select facilities.

4. SWPA has not updated its security vulnerability assessment.

On June 12, 2002, the Public Health Security and Bioterrorism Preparedness Act of 2002 (Act) was signed into law. This Act added Section 1433 to the Safe Drinking Water Act, which requires community water systems serving more than 3,300 people to conduct vulnerability assessments (VA), certify to the Environmental Protection Agency (EPA) that the VAs were conducted, and submit a copy to the EPA. Section 1433 of the Safe Drinking Water Act also requires a water utility to submit a new or updated emergency response plan, tailored to account for the findings of the VA. VAs are a useful tool for understanding current weaknesses in a utility's security and emergency planning.

SWPA should be commended for undergoing an independent Vulnerability Assessment as required by this law. However, SWPA's most recent company-wide vulnerability assessment was performed over a decade ago. Also, most of the opportunities for improvement identified in the original 2004 VA were not acted upon or are no longer applicable. Since 2004, the nature of many of the threats facing utilities has changed due to evolving technology and threat trends. Therefore, some of SWPA's security policies and standards may not be designed optimally. While the Safe Drinking Water Act does not require subsequent VAs, the Audit Staff suggests that it is a prudent practice to perform one every ten years and use the findings to improve current security practices.

5. SWPA could benefit from more extensive testing of its emergency response plans, including annual drills and tabletop exercises with emergency management agencies.

SWPA has conducted emergency drills such as fire and chemical spill exercises. Some local facility managers have reached out to local emergency response groups, such as firefighters and police, in order to familiarize the emergency responders with the unique risks and appropriate responses at SWPA's facilities. However, SWPA has not taken part in many interagency drills or exercises, and none of SWPA's drills have simulated a widespread or regional problem at more than one facility.

It is an industry best practice for utilities to take part in interagency emergency drills and tabletop exercises. This provides opportunities to learn new techniques to manage emergencies, to discover existing weaknesses, and to establish working relationships with emergency responders, emergency management agencies, and potential stakeholders or partners. Tabletop exercises and full scale drills are hosted by the Pennsylvania Emergency Management Agency (PEMA), the Federal Emergency Management Agency (FEMA) and other emergency response agencies and groups, and often involve the National Guard, Pennsylvania State Police, utilities, emergency management agencies, local emergency responders, and other stakeholders.

6. SWPA's site specific Emergency Response Plans contained outdated PUC contact information.

According to 52 Pa. Code § 101.3(a)(4) an emergency response plan should, at a minimum, contain the following:

- Identification and assessment of the problem;
- Mitigation of the problem in a coordinated, timely and effective manner; and
- Notification of the appropriate emergency services and emergency support agencies and organizations.

During the course of fieldwork, the Audit Staff conducted site visits to several SWPA storage facilities, pump stations, and water treatment plants. As part of the visits, site specific emergency response plans were reviewed for completeness and accuracy. The ERPs contained all necessary information for the Company to respond to numerous disruptions of water service. ERP sections included information on the emergency planning process, response plan policies, emergency action procedures, incident specific action procedures, references, etc. However, it was discovered that in several site specific ERPs, PUC contact information was not up-to-date. Maintaining current PUC contact information will help to ensure that the PUC is made aware of any water/wastewater emergency activities that may occur within SWPA's operating districts, as required by PA Code § 67.1(b). Company Management recognized the deficiency and all of the deficiencies noted by the Audit Staff were resolved before fieldwork ended.

7. SUEZ Water Management and Services' Legal Department, acting on behalf of SNA, is not tracking changes in legislative requirements as required per SUEZ Environment's Cyber Security Plan.

SUEZ Water Management and Services (SM&S) provides various shared services to its affiliates, which includes SWPA. For instance, per SNA's cybersecurity plan, SM&S's Legal Department is required to carry out regulatory surveillance on applicable laws and regulations which impact the cybersecurity needs of the Information System Security (ISS) network, operating under the Group ISS Security Officer (G-ISSO) and tasked with identification and control of ISS risks. The Legal Department was unfamiliar with this requirement, and consequently has not been tracking or notifying the ISS network about any such changes. While the Business Technical Services team has been monitoring changes in legal and regulatory requirements on an ad-hoc basis, it is not officially tasked with doing so. In order to keep SWPA operating in compliance with current regulations and laws as well as operate consistently with its cybersecurity plan, SM&S's legal department should continuously monitor and provide regular cybersecurity legal and regulatory updates to all SNA's subsidiaries, including SWPA.

8. Safety Data Sheets are not being updated annually at all locations.

All of SWPA's facilities with chemicals onsite had the required Safety Data Sheets (SDS). At most locations, however, the SDS sheets had not been updated within the last year or were undated. It is an industry best practice for utilities to update its SDS sheets at least annually. This reduces the possibility of utility personnel or emergency responders lacking the most up-to-date information on exposure treatment or associated risks in the case of a spill or other emergency.

Recommendations

1. Correct minor physical security deficiencies and perform on-going physical security reviews of all facilities.

2. Establish uniform physical security standards for each type of facility at SWPA.

3. Design and implement a policy of layered physical security for SCADA equipment, controllers, and servers.

4. Strive to perform a VA every ten years, and revise physical and cybersecurity plans to address any new threats or vulnerabilities identified.

5. Participate in more frequent interagency tabletop drills and exercises.

6. Update the emergency response plan PUC contact information and disseminate it to every SWPA facility.

7. Establish controls to ensure SUEZ Water Management and Services' Legal Department provides regular cybersecurity legal and regulatory updates to SUEZ North America's subsidiary companies, including SWPA.

8. Update the SDS sheets annually at every SWPA facility.

IX. MATERIALS MANAGEMENT

Background

SUEZ Water Pennsylvania Inc.'s (SWPA or Company) materials management function is overseen by the Financial Director of the Mid-Atlantic Division (MAD). The Financial Director with assistance from the Accounting Representative (AR) is responsible for all inventory functions at SWPA such as requisition entry, performing physical counts, calculating inventory turnover, etc. In order to support production and distribution operations, SWPA maintains inventory at five locations throughout its service territory: two locations in the Harrisburg Region and one each in the Mechanicsburg, Bloomsburg and Dallas Regions. SWPA uses PeopleSoft as its inventory management system.

Transmission and Distribution (T&D) Superintendents and/or Supervisors in each of the regions are responsible for managing and ordering inventory at the warehouses in those regions. Moreover, the Construction Coordinator in the Engineering Department is responsible for managing inventory used during engineering projects and will order material for larger projects such as main extensions, large main replacement projects, etc.

SWPA relies upon the Supply Chain Management (SCM) department in the SUEZ Management & Services Company (SM&S) to procure all of its goods and services. The SCM department provides inventory services to each of its business units including SWPA. A few of these services include management of procurement processes, inventory management and supply chain system and process administration. The Systems and Reporting (S&R) Manager in the SCM department is the primary point of contact for inventory and procurement matters between SM&S and SWPA.

Company policy is to competitively procure goods and services for its operations, requiring a minimum of two quotes or bids with a preference of three or more. The policy encourages competitive bidding for all purchases but requires bidding for all purchases greater than $25,000. Competitive bidding may be performed by SCM or by SWPA; however, for any purchases between $25,000 and $50,000, early consultation[38] with SCM is recommended and for purchases between $50,000 and $500,000, early consultation is required. Furthermore, SWPA has required management approvals based upon the level of spend as highlighted in Exhibit V-4 and discussed earlier in the Financial Management Chapter of this report. In situations where competitive procurement is not feasible such as emergency purchases made to avoid work stoppage, etc., SWPA employees must obtain written endorsement from senior management and SCM prior to placing a purchase order.

[38] Consultation means that SWPA may process the bid locally but must share particulars of the project and bid process with SCM.

The procurement process typically begins with the submission of a material requisition by the T&D Superintendents to the AR. The inventory management module of PeopleSoft allows for two types of requests: REQ (Requisitions) and Payment Requests. REQ's are required for production and operational purchases such as chemicals, pipes, valves, motors, pumps, etc. Payment Requests typically pay for items not ordered on a Purchase Order (PO). Once the requisition is entered into PeopleSoft and approved, it is sent to the SCM department as a PO. The material is then ordered by the SCM department and delivered either to the SWPA warehouse or directly to the job site, depending on the request. The T&D Department verifies accuracy of the inventory that is received and forwards the bill of lading to the AR.

To remove or issue material from inventory to a specific job or project, T&D personnel fill out a material stock request (MSR) and send it to the AR. The AR is responsible for entering the MSR into PeopleSoft which reduces the inventory level accordingly. For inventory items that are not used on a project, T&D personnel complete a "Return" which returns the item into inventory, thus increasing the inventory level in PeopleSoft.

<u>Findings and Conclusions</u>

Our examination of the Materials Management function included a review of assigned responsibilities, policies and procedures, information systems, reporting capabilities, inventory control, inventory levels, inventory turnover, and warehouse operations. Based on our review, SUEZ Water Pennsylvania Inc. should devote additional efforts to improve the efficiency and/or effectiveness of its materials management function by addressing the following:

1. SWPA has not established minimum and maximum levels to optimize its inventory management system.

As discussed previously in the background section, SWPA uses Oracle's PeopleSoft as its inventory management system. PeopleSoft is comprised of several modules including General Ledger, Accounts Payable, Purchasing, Inventory, Accounts Receivable, Billing, etc. Using the Inventory module, the Company can record inventory receipts and issues, document physical inventory counts, set up auto-replenishment parameters, etc. PeopleSoft also has the capability to set minimum (min) and maximum (max) inventory item levels, but SWPA currently does not use this function reportedly because multiple warehouse locations render implementation of this functionality arduous according to the Company.

T&D personnel are responsible for maintaining adequate inventory levels to respond to emergencies, perform regular maintenance and complete upcoming projects. Inventory is typically monitored and ordered when T&D personnel observe low stock levels. The Company has historically relied upon its field personnel to maintain appropriate inventory levels. Furthermore, additional inventory is ordered or maintained based on special operational circumstances or seasonal requirements. For example, SWPA experienced several breaks in its asbestos cement pipe due to a township sewer project in 2016 hence a decision was made to maintain in stock additional repair clamps. This example highlights proactive inventory planning; however, this type of planning is not practical to extend to its entire inventory. Moreover, a pilot project on min/max functionality was performed in SUEZ New York (S-NY) and is currently being performed in SUEZ New Jersey (S-NJ). A review of these pilot results should be used to justify or explore making greater use of system functionality at SWPA.

Consequently, the Audit Staff believes that the Company should strive to fully utilize system capabilities in order to effectively manage its inventory levels. Min and max inventory level set points should be designed to ensure operational continuity in the most economical manner (i.e., avoidance of stockouts, excessive inventory and associated carrying costs, obsolete inventory, etc.) while balancing operational needs.

2. SWPA has not designated emergency stock items or emergency stock levels in a consistent or uniform manner across its operational footprint.

During the 2013 Management Efficiency Investigation conducted by the Audit Staff, the Company had only designated a limited number of items as emergency stock such as large diameter sleeves, repair clamps, couplings, etc. Upon inquiry from Audit Staff during our fieldwork, the Company provided inconsistencies with respect to items designated as emergency stock including those items previously deemed emergency stock during the 2013 Management Efficiency Investigation. Management indicated that People Soft system limitations make it difficult to separate material into emergency stock designations. Furthermore, management contends that the fragmented service territory and smaller warehouses make it harder to identify emergency stock items from those items used for routine maintenance.

SWPA has not established a consistent definition of emergency stock across its service territory. Company Management generally considers emergency stock items to be items not used to perform routine maintenance but rather items required to repair or replace critical assets. However, T&D personnel emergency stock item designations are not consistent with these definitions. Furthermore, Audit Staff noted numerous items during its warehouse fieldwork inspections that were not designated as emergency stock

Emergency stock levels should typically be between 5%-10% of the average inventory value and should be clearly defined. Despite some of SWPA’s unique limitations, the Company should establish a definition of emergency stock. After which, SWPA should perform an inventory analysis of each warehouse in order to appropriately designate emergency inventory. Additionally, SWPA could explore technical solutions to system limitations or roll this information in a minimum level established for those items.

3. SWPA's inventory turnover is low.

Inventory turnover is calculated by dividing the annual net inventory issues by the 12 month average inventory balance. Inventory turnover, therefore, typically demonstrates the rate at which inventory is used. An inventory turnover of 4.0 would indicate that the entire inventory is being issued four times a year and the Company maintains an average three month inventory supply on-hand.

SWPA classifies its inventory into exempt and non-exempt materials. Exempt inventory as of December 31, 2015 totaled $79,713 or 18% of overall inventory are slow moving items or items that are smaller than two inches. Exempt inventory consequently is not tracked in the Company's inventory management system and therefore excluded from the inventory turnover calculations. Company management indicated that they are unaware of when the separate exempt and non-exempt categories were established and did not provide a reason for the distinction. Exhibit IX-1 illustrates the Company's non-exempt inventory turnover data for the years 2011 through 2015. As of July 31, 2016, the Company's non-exempt inventory turnover using annualized average inventory levels and net inventory issues was at 0.35 turns. Furthermore, the Company does not have any goals for inventory turnover.

Exhibit IX-1
SUEZ Water Pennsylvania, Inc.
Non-exempt Inventory Turnover
For the years 2011 through 2015

	2011	2012	2013	2014	2015
Average Inventory Levels	$326,388	$401,030	$330,282	$310,768	$443,439
Annual Issues	$604,470	$535,699	$218,149	$256,624	$333,537
Inventory Turnover	1.85	1.34	0.66	0.83	0.75

Source: Data Request MM-4

From 2011 through 2015, SWPA's inventory turnover had dropped substantially from 1.85 turns (or approximately 6.5 months of supply on-hand) to 0.75 turns (or approximately 16 months of supply on-hand). The Audit Staff has noted inventory turnover ratios of over 2.0 at other similar-sized utilities and believes that SWPA should strive to maintain its inventory turnover at those levels by establishing inventory goals and measuring performance with respect to those goals.

Using 2015 data, the Audit Staff calculated that by increasing inventory turnover to 2.0 turns per year, SWPA could realize a one-time inventory reduction savings up to $277,000 and associated annual carrying costs savings of $28,000 to $41,000 based on carrying cost percentages of 10% to 15%.

4. SWPA's inventory tracking is inaccurate.

Physical inventory counts are typically employed to reconcile differences between the actual count and the records in the inventory management system. Since SWPA categorizes its inventory into exempt and non-exempt materials, the Company performs physical counts of both types of inventory at least once per year. Exempt inventory is not recorded in the inventory management system. Therefore, exempt inventory does not have any form of checks and balances between the physical count and the actual count in PeopleSoft.

Physical counts of non-exempt inventory are typically performed by field personnel that are responsible for handling inventory at the respective location. For example, the Harrisburg T&D Superintendent performs physical counts at the Harrisburg location while the Mechanicsburg T&D Supervisor performs physical counts at the Market Street location in Mechanicsburg. The physical count sheets are then sent to the Accounting Representative who compares the physical counts with the recorded balances in PeopleSoft. If there are major discrepancies between the physical count and the balance in PeopleSoft, the Account Representative will perform a second count with the field personnel and to eliminate any counting errors.

Exhibit IX-2 illustrates the inventory accuracy between the physical count and the system recorded balances for the years 2012 through June 30, 2016. The net variance represents the difference between the total dollar value of inventory recorded in PeopleSoft and the physical count. The gross variance is the cumulative line by line absolute difference between the physical count and the inventory balance in PeopleSoft. The Audit Staff would like to note that SWPA was in the process of upgrading its inventory management system, PeopleSoft, in September/October 2015. Therefore, the inventory management module in PeopleSoft was not accessible or did not work for the Company and physical count data may be inaccurate in 2015.

Exhibit IX-2
SUEZ Water Pennsylvania, Inc.
Inventory Accuracy
For the years 2011 through June 30, 2016

	2012	2013	2014	2015	2016*
PeopleSoft ($)	$331,282	$351,694	$305,391	$487,400	$322,151
Physical Count ($)	$320,419	$214,201	$285,858	$303,832	$311,600
Net Variance	-$10,863	-$137,493	-$19,533	-$183,568	-$10,551
Gross Variance	$74,883	$190,981	$131,713	$222,542	$93,480
Percent Net Variance	3.3%	39.1%	6.4%	37.7%	3.3%

* Through June 30
Source: Data Request MM-12.

Typically, a one to two percent net variance is accepted as efficient operation but SWPA's net variance of 39.1% in 2013 is much higher. Furthermore, the Company's gross variances have been in the range of 40% to 55% from 2013 to 2015. Large net and gross variances demonstrate that the Company is not maintaining its inventory accurately and that the large variances are likely impacting SWPA's inventory turnover ultimately resulting in inefficient inventory management. For instance, inaccurate inventory could lead to misrepresentation of item availability resulting in potential stockouts.

Inaccurate inventory can also affect other aspects of materials management such as inventory turnover, carrying costs, emergency stock levels, etc. The Company has a goal to adjust inventory less than 25% of the value of total inventory on a yearly basis. The Audit Staff contends that a goal of 25% is too lax and a more realistic net variance goal should be 1-2%. However, this large variance coupled with the Company's low inventory turnover clearly indicates that the Company should explore why deviations are occurring. For instance, the Company's practice of not "counting" materials that are directly shipped to a worksite as inventory, could impact both of these metrics if project material is returned to warehouses for temporary storage. While this type of situation represents a procedural issue, it highlights just one area to investigate. Furthermore, additional counts, such as performing two physical counts every year with one being conducted before construction season begins (i.e., in the April/May timeframe) and the other at the end of summer (i.e., in the September/October timeframe), could help to identify the drivers for inaccurate inventory.

5. SWPA's inventory management process is overly manual.

As indicated in Finding and Conclusion No.1, PeopleSoft has an auto-replenishment feature not currently utilized due to the Company's physical warehouse configuration in which inventory is stored at five separate warehouse locations. Reportedly, the PeopleSoft system has inherent limitations in tracking the desired information by warehouse location.

To address this concern and other system limitations/manual processes, SWPA in 2014 interfaced with the Information Technology (IT) Department to resolve these issues. Despite these efforts SWPA continues to use an overly manual process in lieu of the PeopleSoft system as occurred during the 2010 Focused Management and Operations Audit and the subsequent 2013 Management Efficiency Investigation. Aside from the overly manual processes relied upon by the Company to manage its inventory, the functionality of PeopleSoft has not been optimized in terms of generating reports pertaining to inventory management control such as obsolete material, inventory turnover, auto-replenishment, etc. The Company should evaluate the cost benefits of bar-coding all items in inventory to facilitate eliminating most of the manual aspects of the inventory management system by creating real time data to track inventory receipts and issues and establish routine reporting. Many utilities are moving towards automating inventory processes. Moreover, the Audit Staff was informed that SUEZ Environment Inc. initiated a project in July 2016 to build guidelines for the inventory management process for all business units in SUEZ North America including SWPA.

One of the objectives for the project is to help design the correct IT setup for parts and materials. The Audit Staff believes that with the proper approach and planning, SWPA will be able to take advantage of this opportunity to improve the automation of its inventory management processes.

Recommendations

1. Establish minimum and maximum levels for inventory items.

2. Establish a consistent and uniform definition for emergency stock and identify appropriate emergency stock levels for all warehouse locations.

3. Develop inventory turnover goals and strive to achieve an inventory turnover of at least 2.0.

4. Initiate measures to improve inventory accuracy.

5. Reduce or eliminate the manual aspects of the current inventory management process.

X. CUSTOMER SERVICE

Background

SUEZ Water Pennsylvania (SWPA or Company) provides water service to approximately 59,350 customers throughout Pennsylvania as of March 31, 2016. SWPA's Customer Service Department which includes its call center handles all customer inquiries, complaints for SWPA's service territory, payment processing, work order management, etc. The Customer Service Department is comprised of the Mid-Atlantic Customer Service Manager (CS Manager), Customer Service Supervisor (Supervisor), and nine Customer Service Representatives (CSRs). The Supervisor and CSRs are SWPA employees. The Manager has oversight responsibilities for the Mid-Atlantic Division of Suez Water Resources, Inc. which includes Pennsylvania, Delaware, and Toms River (the southern region operations within New Jersey).

The SWPA customer call center located in Harrisburg shares a building with the Field Technicians, Meter Readers, and transmission & distribution (T&D) personnel for the Harrisburg region. The Meter Department was part of the Customer Service Department, but in May 2015 the Company transferred oversight to the Harrisburg T&D Superintendent in Operations (See Chapter VII – Water Operations for more information on the Meter Department). The call center's normal operating hours are from 8:00 am to 4:30 pm Monday through Friday, except holidays. The customer service function is supported by Oracle Utilities' Customer Care & Billing (CC&B) customer information system (CIS), which provides customer account management, customer billing, and field service orders.

SWPA CSRs handle all customer telephone calls, verify customer bills and processes customer payments for Pennsylvania. In addition, SWPA CSR's handle calls and processes customer payments for Orange Water Service[39]. Since CSRs handle all customer phone calls, they are trained in both Pennsylvania and New Jersey regulations. CSRs are also trained in and assigned support functions such as responding to customer email inquiries, handling field service activity orders, and cash processing. Cross training is conducted to ensure all duties are completed in the event of a vacation, extended illness, or temporary vacancy.

A 3rd party answering service handles customer telephone inquiries during non-business hours. Representatives from the answering service are on-duty to respond and triage service outages and other emergency calls to the appropriate on-call SWPA employee. An automated attendant handles non-emergency inquiries after hours.

Customers can remit payment by mail, autopay (i.e., customer bank account direct debit), over the phone, or via the Company's website. Payment can also be left at drop-box locations outside both SWPA's main office and SWPA's call center. Additionally, payments through Western Union can be made at local grocers and other

[39] SWPA provides service to Orange Water Service, located in Orange, New Jersey, through a Water Management and Services contract that serves approximately 5,000 customers.

retailers. With one exception, convenience fees for 3rd party processing are charged on all one-time payments via the internet or over the phone. Customers receiving and making one-time payments through electronic billing can avoid the convenience fee when paying by electronic check.

Customer complaints are managed and resolved by the CSRs and CS Manager with guidance for proper procedure and work flow included in the CC&B Customer Service Manual. Complaints made directly to the SWPA customer service department are initially handled by CSRs. Calls are elevated to the CS Manager or Supervisor when the CSR is unable to reach resolution. In addition, the Company tracks and classifies all incoming call and complaints via the CIS. Pennsylvania Public Utility Commission (PUC) Informal Complaints are handled by the Supervisor. The Company's internal goal is to respond to PUC Informal Complaints within 10 days, and data from 2014 and 2015 indicates SWPA met this goal.

Findings and Conclusions

Our examination of the Customer Services function included a review of the Company's policies and procedures, staffing levels, management and reporting systems, performance levels, customer outreach efforts and programs, call center statistics, etc. Based on our review, the Company should devote additional efforts to improving the efficiency and/or effectiveness of its customer service function by addressing the following:

1. SUEZ Water Pennsylvania's call center performance relative to its goals has generally declined since 2013

SWPA Customer Service tracks two quality of service measurements to assess call center performance. Exhibit X-1 shows the annual call abandonment rate and average speed to answer at the SWPA call center from 2012 to June 30, 2016.

Exhibit X-1
SUEZ Water Pennsylvania
Call Center Performance
2012 – June 30, 2016

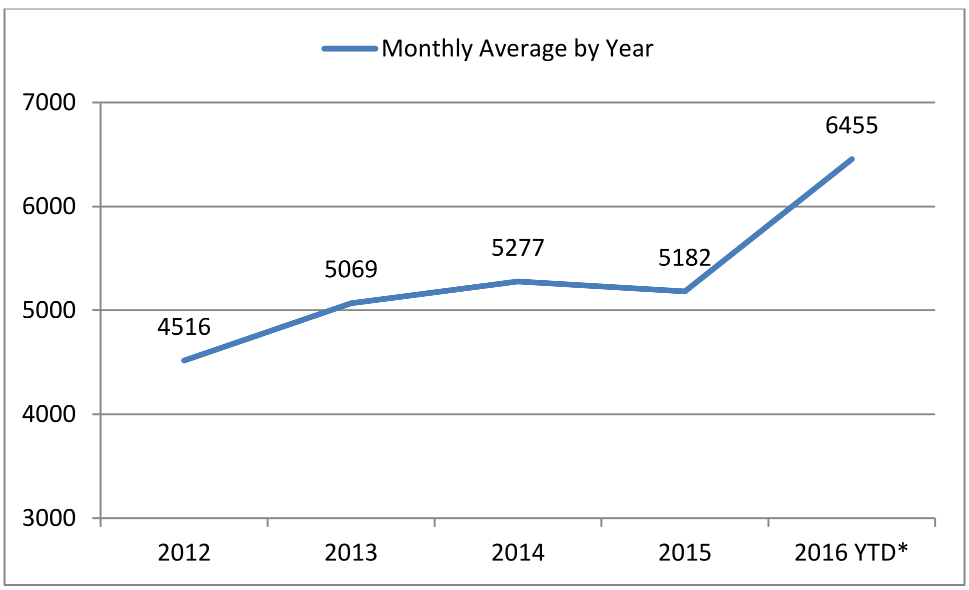
Measurement	Goal	2012	2013	2014	2015	2016*
Abandoned Phone Rate	**< 3%**	3.7%	3.3%	4.4%	4.7%	5.3%
Average Speed to Answer	**30 sec**	30	32	51	56	57

* As of June 30, 2016
Source: Data Request CS-2 and CS-29

Established goals for the call center target an abandoned phone rate of less than three percent and an average speed to answer of fewer than 30 seconds. The average speed to answer goal was increased to 44 seconds in June 2016. Historically, SWPA has exceeded its call center performance goals; however, as evident from Exhibit X-1 the call center failed to achieve similar results during the audit period. Both the abandoned phone rate and average speed to answer performance levels have generally worsened since 2012. Moreover, performance levels during the audit period relative to the Company's historical performance (i.e., abandoned phone rate of 2.2% and average annual speed to answer of 22 seconds) during the 2006 to 2009 timeframe have declined significantly.

The Company indicated that factors related to staffing levels, employee turnover, and lag time in filling vacancies have contributed to this negative trend The Audit Staff contends that a significant rise in call volume as shown in Exhibit X-2 could be a contributing factor as well with call volume increasing by almost 25% through June of 2016 alone.

Exhibit X-2
SUEZ Water Pennsylvania
Annual Average of Monthly Call Volume
2012 – June 30, 2016



* Monthly average from January through June 2016
Source: Data Request CS-19

In addition to call center duties, CSRs respond to email inquiries, process customer payments and service orders, review meter readings, etc. Unfortunately, these other CSR functions are more difficult to benchmark. However, SWPA has maintained the same number of CSRs (i.e., nine) since at least 2009. Consequently, the Company should periodically evaluate CSR staffing levels and conduct process reviews relative to changing workloads.

2. SUEZ Water Pennsylvania's online presence is not optimal and customer outreach efforts could be improved.

In the early morning hours of August 3, 2016, a water main break in a 24 inch transmission main occurred resulting in service outages to approximately 18,700 (or 53%) customers in the service territory of its Harrisburg Operations. In total, customers in the Borough of Marysville, Lower Paxton and Susquehanna Townships, and portions of Penbrook Borough were without service for between one and five hours. The main was repaired and system pressure restored during the early afternoon hours. Due to the atypical number of customers affected by this outage event, the Company utilized all of its outreach methods and tools to notify impacted customers.

SWPA utilizes a combination or all of its communication methods and tools to engage customers, and issue emergency and maintenance alerts depending on the type of event and the number of customers impacted, including:

- Telephone – automated system designed to contact designated customers and deliver a prerecorded message;
- Door postings – SWPA employees often post notice at customer's residence when notifying less than 50 customers;
- Local news media – local radio stations, television networks, and both print and web-based news media;
- SUEZ website (www.mysuezwater.com) –All alerts and notifications are posted to its website:
  - A map of its service territory reflects all outages real time
  - Ability to sign up for email notifications affecting the customer
- Social Media – alerts and notifications are posted to the Company's social media accounts

During large wide scale events, the Company utilizes its automated voice messaging system to deliver prerecorded alerts and notifications directly to customers. The Company requests customers to update/validate their contact information when contacting the Company; however, a process has not been established to sequence alternative contact attempts in the event of a failed contact (i.e., calls with busy signal, failed connections, no answer after three attempts, etc.). During the August 3, 2016 main break event, the automated voice messaging system recorded approximately 9% of its attempts as unsuccessful. No root cause analysis has been performed on these failures in order for the Company to properly identify the cause and take appropriate corrective action to improve the effectiveness of its automated voice messaging system. For instance, SWPA attempts to verify customer contact information when a customer contacts the Company; however, its web platform does not allow or prompt a customer to perform the same verification electronically. Ideally, any contact with the Company should enable the customer to update and/or verify their contact information. Furthermore, any failed attempts to contact customers by the automated voice messaging system could generate a letter to customers asking for positive confirmation that their contact information is correct.

SWPA transitioned to www.mysuezwater.com in December 2015. This website is intended to be more customer-centric than the previous United Water website, with a focus catered to the customer's location (i.e., providing information, alerts, and notifications customized to the user's location). Customers can also view a map of the service territory and sign-up for email notifications, both tools introduced as part of the website. Entering a location into the notifications map reveals the location's surrounding area and the accompanying legend has symbols for the following events and notices: do not drink, boil water/alert, unplanned outage, planned outage, and fire hydrant/water main flushing. The tool appears fully functional and is even promoted on the website as being able to, "Pinpoint system improvements or service interruptions in your area." However, the Audit Staff noted inconsistencies with alerts and notifications listed on the website and social media accounts and corresponding events not always shown on the notifications map. Customers can also sign-up for email emergency alerts, but according to SWPA management this tool is not fully functional. Conversely, upon further inquiry by Audit Staff, SUEZ Management & Services (SM&S), the affiliate service company of SWPA responsible for the website, indicated both of these tools are functional and available to the regulated affiliates. While the Audit Staff recognizes that SUEZ is working to improve the outage map and email notification tools, the unfinished products are not working as intended, providing in some cases conflicting information to customers, and may be negatively impacting the customer experience.

To further support this contention, customer satisfaction surveys conducted in 2014 and 2015 reflected online service satisfaction ratings of 46% in 2014 and 54% in 2015 while the Company's overall rating was 76% and 88% respectively. The summary in both surveys identified online services as a category with opportunities for improvement. It is worthwhile to note that the Company recognizes its online deficiencies and is taking actions to improve the customer's online experience including the performance of its automated voice messaging system by performing outreach to customers in an attempt to ensure contact information is correct. Leveraging technology to achieve more direct communication with customers is necessary in today's environment since customers are generally demanding additional avenues than traditional media.

Recommendations

1. Identify methods to improve call center performance and strive to meet established goals.

2. Utilize existing platforms to proactively engage customers, especially online.

XI. HUMAN RESOURCES AND DIVERSITY

Background

Human Resources

As discussed in Chapter II – Background, SUEZ Management & Services (SM&S) is an affiliate company of SUEZ Water Pennsylvania (SWPA or Company) that provides centralized or shared services including Human Resources to SWPA and its affiliates. SM&S's Senior Vice President – Human Resources, who reports to the SM&S President, has overall responsibility for SWPA's human resource functions. Among the functions administered by the Human Resources Department are recruitment and hiring, affirmative action, compensation, employee benefits, training, and employee relations. Day-to-day duties generated by these functions are handled by the SM&S New York and Mid-Atlantic (i.e., Pennsylvania, Delaware, and Toms River) HR Manager (HR Manager) and Director HR Utility Operations.

The human resource information system (HRIS) utilizes Automatic Data Processing, Inc.'s (ADP's) Enterprise Human Resources software platform. The HRIS's primary modules include: Applicant Tracking, Full Employee Data, and Training. The HRIS generates a number of standard reports (e.g., employee training history, years of service, federal new hire report, etc.) and has the capability to create ad hoc reports. In addition to the previously mentioned, the Company also utilizes this software to manage and execute payroll functions. SM&S has controls in place limiting access to a small group of HR/Payroll professionals.

General and specific safety policies and procedures are established, issued and reviewed by the Emergency Health & Safety Division (EHS) within SM&S. These policies and procedures outline the responsible parties, recordkeeping, training, and any qualifications necessary to operate safely in executing specific workplace tasks (e.g., rigging and hoisting, heavy equipment, welding, etc.), working in and reacting to potentially harmful or hazardous environments (e.g., confined spaces, excess noise, chemical spills, respiratory and eye protection, etc.), and general everyday environments (e.g., driving, working alone, office safety, etc.). SWPA oversight for compliance with these policies and procedures, as well as any additional safety regulations, is assigned to the Pennsylvania EHS Manager. The Pennsylvania EHS Manager, operating primarily out of the SWPA Main Office in Harrisburg, designs and implements safety training, conducts safety trainings, meets with new employees to discuss high level emergency and safety expectations, and responds to and investigates incidents and emergencies as necessary. All safety training is administered through a 3rd party safety management system capable of scheduling, coordinating, and tracking training programs and employee certifications. The system allows employees online access to personal training data at any time and generates exception reports for the Pennsylvania EHS Manager and Department Supervisors every two weeks.

The Pennsylvania EHS Manager serves as Chair of two SWPA safety committees. The first is an EHS Steering Committee which discusses higher level business decisions and environmental concerns such as necessary safety equipment required for certain working conditions. The second is a Voluntary Employee Committee that discusses employee risks, best practices, and initiatives. Employees in this committee can discuss safety concerns related to working conditions and Company policy. These committees meet quarterly and are usually staggered to prevent overlap.

A comparison of SWPA's total recordable cases, DART (days away from work, restricted work, or job transfer), and lost time incidence rates, within the respective OSHA industry and employment size specific rates as reported by the U.S. Department of Labor's Bureau of Labor Statistics (BLS), is shown on Exhibit XI-1. Our review of the period 2011 through 2015 revealed that, outside of 2013, the Company reported injuries and illnesses at a lower rate than comparably sized water utilities. Injuries and illnesses are reported in incidence rates as the number of cases or events per 100 full-time employees. One common corollary gleaned from presenting incidence rates of smaller companies (i.e., those with 50-249 full-time employees) is that as few as one or two injuries can greatly impact performance metrics. For example, the Audit Staff's supplementary analysis of the Company's injury and illness records revealed that a single event would be enough to change whether or not SWPA met internal safety goals in 2011, 2012, and 2014. In fact, SWPA's performance in 2013 exceeded its goals with only five total reported cases.

Exhibit XI-1
SUEZ Water Pennsylvania
Comparison of SUEZ Water Pennsylvania Incidence Rates/Goals to Industry

Total Recordable Cases	2011	2012	2013	2014	2015
SWPA - Actual	3.52	2.47	6.19	3.75	1.26
SWPA - Goal	4.00	3.70	4.30	4.30	3.50
BLS Benchmark^	6.10	6.00	2.90	4.70	3.20
Lost Time					
SWPA - Actual	2.35	0.00	2.47	1.25	0.00
SWPA - Goal	1.35	1.20	1.20	1.20	1.00
BLS Benchmark^	1.80	1.30	1.00	2.10	1.50
DART					
SWPA - Actual	2.35	1.24	3.71	2.50	0.00
SWPA - Goal	N/A	N/A	N/A	N/A	N/A
BLS Benchmark^	4.10	3.90	1.60	3.40	2.40

N/A – Not Available
^ Average (mean) incidence rate for Water Supply and Irrigation Systems of 50 – 249 employees
Source: Data Request HR-13, HR-14, and U.S. Bureau of Labor Statistics

SWPA offers an industry competitive compensation and benefits package. As stated previously, SM&S administers compensation and benefits on a corporate-wide basis including SWPA. SM&S utilizes data from salary surveys and studies conducted by independent consultants in order to determine baseline market salaries and incentive-based compensation. Base salary ranges for non-union employees are generally targeted at the 50th percentile of market, while incentive-based compensation is set at slightly higher than the 50th percentile. Salaries are benchmarked and adjusted annually.

Wages and benefits for union employees are determined through the collective bargaining agreement (CBA) process. The Utility Workers Union of America AFL-CIO (AFL-CIO) represents workers in both Bloomsburg and Harrisburg. Bloomsburg Operations are part of Local 516 and recently agreed to a new CBA that runs from January 1, 2016 through December 31, 2020. Harrisburg Operations', including Customer Service Representatives, current CBA runs through May 31, 2017, and SWPA and AFL-CIO Local 489 are in the process of negotiating a new CBA.

All full-time exempt employees are eligible to participate in compensation incentive plans which consist of short-term and long-term plans. The Short-Term Incentive Plan is an annual incentive plan that puts a portion of salary at risk based on performance relative to corporate, business segment, business unit and individual goals. The Long-Term Incentive Plan is for executives and focuses on meeting growth targets in support of long-term business strategies over a three-year cycle. Meanwhile, non-exempt employees are eligible for the Non-Exempt Bonus Program, which is a program that supports SWPA business goals and objectives by recognizing employee efforts to support safety initiatives and compliance. While these bonus programs are specific to an employee's classification, they are all generally dependent on the employee's individual participation and the Company's yearly performance.

SWPA hiring and recruitment involves the HR Manager and SM&S Talent Acquisition Department, with the SWPA supervisor or manager of the vacant position acting as the client. The HR Manager is the lead in this process and works with SWPA to identify candidates, develop job postings, conduct job interviews, file necessary paperwork, and approve selections. The Talent Acquisition Department posts the positions, gathers and recruits potential candidates, and processes paperwork. The HR Manager has discretion to adjust base compensation within a position's salary range for selected candidates based on credentials. The Director HR Utility Operations conducts interviews for management level positions and approves base compensation that exceeds a position's salary range or any other pre-established thresholds.

Diversity

The Pennsylvania Public Utility Commission (PUC or Commission) has encouraged utilities to proactively improve diversity in their workforce and purchasing efforts for more than two decades. In March of 1992, the Commission issued a Secretarial letter directing all jurisdictional utilities affected by Section 516 of the Public Utility Code (i.e., utilities whose plant-in-service exceeds \$10 million) to file quarterly diversity status reports with the Commission. In May of 1994, the Commission issued an Order directing Section 516 utilities to file diversity status reports semi-annually rather than quarterly, to submit EEO plans annually, and to file certain diversity procurement data. In February 1995, the Commission adopted Chapter 69 regulations which encouraged utilities to include diversity efforts as a component of their business strategy. Later, in March of 1997, the Commission's diversity filing requirements changed from semi-annual to annual.

SWPA participates in corporate-wide diversity and inclusion programs and initiatives as part of SUEZ North America (SUEZ NA). SM&S is responsible for coordinating and administering these programs across SUEZ NA and all subsidiaries. Due in part to this structure, SM&S structures activities and evaluates effectiveness through a corporate-wide prism, and does not focus on SWPA specifically. SWPA routinely complies with 52 Pa. Code §69.809 by filing annual reports on diversity.

Findings and Conclusions

Our examination of the Human Resource and Safety Program function included a review of the Company's HRIS, compensation, safety programs, PUC diversity filings, hiring and recruiting, and employee training. Based on our review, it appears that proper controls are in place and that the Human Resources management related functions are being performed in a satisfactory manner.

Recommendation

None.

XII. ACKNOWLEDGEMENTS

We wish to express our appreciation for the cooperation and assistance given to us during the course of this Focus Management and Operations Audit by the officers and staff of SUEZ Water Pennsylvania Inc.

This audit was conducted by Porus Irani, Krystle Daugherty, Jennie Banzhof, Barry Keener, and Michael Flynn of the Management Audit Staff of the Bureau of Audits.

XIII. APPENDICES

Appendix I	SUEZ Water Pennsylvania Inc. Income Statement
Appendix II	SUEZ Water Pennsylvania Inc. Balance Sheet
Appendix III	SUEZ Water Pennsylvania Inc. Utility Plant Data
Appendix IV	SUEZ Water Pennsylvania Inc. Customer Related Data by Classification
Appendix V	Comparison Panel Income Statement
Appendix VI	Comparison Panel Balance Sheet
Appendix VII	Comparative Operating Data and Ratios

Appendix I

SUEZ WATER PENNSYLVANIA, INC.
INCOME STATEMENT DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Category	2011	2012	2013	2014	2015	Compound Growth
WATER REVENUES						
Residential	$20,843,784	$21,877,862	$20,777,832	$20,422,690	$21,371,500	0.6%
Commercial	$7,230,187	$7,287,611	$8,529,350	$8,710,361	$8,952,792	5.5%
Industrial	$926,556	$1,313,771	$1,282,822	$1,125,967	$1,018,794	2.4%
Public	$1,088,245	$1,358,733	$1,409,178	$1,537,039	$723,647	-9.7%
Fire Protection	$2,168,681	$2,177,169	$2,201,507	$2,298,111	$2,277,686	1.2%
Other	$936,018	$729,392	$1,527,200	$2,275,285	$2,976,109	33.5%
Total Water Revenues	$33,193,471	$34,744,538	$35,727,889	$36,369,453	$37,320,528	3.0%
WATER OPERATING EXPENSES						
Salaries and Wages	$4,541,009	$4,819,360	$4,638,942	$4,684,876	$4,686,136	0.8%
Pension & Benefits	$2,428,147	$2,632,222	$2,782,178	$2,255,510	$2,514,211	0.9%
Purchased Water	$113,622	$138,834	$161,753	$127,433	$84,246	-7.2%
Purchased Power	$1,569,426	$1,567,111	$1,420,443	$1,416,601	$1,368,121	-3.4%
Fuel For Power Production	$54,343	$64,508	$43,024	$55,963	$118,514	21.5%
Chemicals	$748,622	$704,715	$692,969	$629,186	$609,051	-5.0%
Materials and Supplies	$443,875	$424,172	$392,030	$297,793	$324,181	-7.6%
Contractural Services	$3,941,030	$3,816,012	$3,902,348	$4,071,263	$4,921,037	5.7%
Rental of Building/Real Property	$108,606	$114,001	$121,389	$72,844	$0	-100.0%
Rental Equipment	$16,946	$12,649	$12,925	$25,247	$91,883	52.6%
Transportation	$628,705	$621,520	$609,155	$469,926	$416,220	-9.8%
Insurance	$421,640	$307,198	$561,316	$377,008	$371,057	-3.1%
Advertising	$126,278	$117,918	$118,776	$25,203	$0	-100.0%
Regulatory	$133,082	$441,319	$343,021	$301,360	$219,130	13.3%
Water Resource Conservation	$0	$0	$0	$0	$0	n/a
Bad Debt	$85,100	$250,617	$132,445	$164,603	$228,050	27.9%
Miscellaneous	$327,216	$334,015	$308,788	$268,763	-$246,429	n/a
Total Water Operating Expenses	$15,687,647	$16,366,171	$16,241,502	$15,243,579	$15,705,408	0.0%
OPERATING INCOME	$17,505,824	$18,378,367	$19,486,387	$21,125,874	$21,615,120	5.4%

Source: Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA, INC.
BALANCE SHEET DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Category	2011	2012	2013	2014	2015	Compound Growth
UTILITY PLANT						
Total Utility Plant	$223,416,983	$233,029,038	$240,710,173	$254,253,485	$263,753,714	4.2%
Construction Work in Progress	$2,378,082	$2,430,279	$3,837,161	$9,777,117	$25,854,233	81.6%
Plant Acquisition Adjustments	$877,654	$819,910	$762,166	$704,422	$646,678	-7.4%
Less: Accumulated Depreciation	($49,580,323)	($53,726,863)	($58,368,807)	($62,425,595)	($62,130,496)	5.8%
Net Utility Plant	$177,092,396	$182,552,364	$186,940,693	$202,309,429	$228,124,129	6.5%
INVESTMENT AND FUND ACCOUNTS						
Other Physical Property	$217,115	$217,115	$217,115	$217,115	$217,115	0.0%
Investments in Affiliated Companies	$0	$0	$0	$0	$0	n/a
Other Investments	$0	$0	$0	$0	$0	n/a
Sinking Funds	$0	$0	$0	$0	$0	n/a
Total Investment and Fund Accounts	$217,115	$217,115	$217,115	$217,115	$217,115	0.0%
CURRENT AND ACCRUED ASSETS						
Cash	$187,570	$202,086	$2,000	$2,000	$1,500	-70.1%
Special Deposits	$0	$0	$0	$0	$0	n/a
Working Funds	$9,350	$9,350	$9,350	$8,750	$8,000	-3.8%
Temporary Cash Investments	$0	$0	$0	$0	$0	n/a
Notes Receivable	$0	$0	$0	$0	$0	n/a
Accounts Receivable	$1,727,905	$1,084,783	$1,079,650	$1,253,681	$1,350,443	-6.0%
Accumuluated Provision for Uncollectible Accounts Credit	($13,000)	($86,110)	($86,110)	($86,110)	($156,000)	86.1%
Receivable from Affiliated Companies	$0	$0	$2,003,830	$6,546,146	$1,760,606	n/a
Accrued Utility Revenues	$2,231,728	$2,388,193	$2,612,887	$2,680,126	$3,104,508	8.6%
Materials and Supplies	$376,759	$493,385	$466,901	$416,558	$417,841	2.6%
Prepayments	$110,975	$113,862	$105,432	$123,142	$117,102	1.4%
Other Current & Accrued Assets	$0	$0	$0	$0	$0	n/a
Total Current and Accrued Assets	$4,631,287	$4,205,549	$6,193,940	$10,944,293	$6,604,000	9.3%
DEFERRED DEBITS	$10,033,413	$13,031,299	$8,921,484	$13,756,103	$10,354,488	0.8%
Total Assets and Other Debits	$191,974,211	$200,006,327	$202,273,232	$227,226,940	$245,299,732	6.3%
EQUITY CAPITAL	$111,566,079	$109,418,584	$119,051,831	$131,831,734	$145,352,950	6.8%
LONG-TERM DEBT						
Other Long-term Debt	$0	$0	$0	$0	$0	n/a
CURRENT AND ACCRUED LIABILITIES						
Accounts Payable	$2,866,270	$2,134,873	$2,015,816	$6,278,004	$11,445,505	41.4%
Notes Payable	$0	$0	$0	$0	$0	n/a
Customers' Deposits	$0	$0	$200	$3,350	$2,700	n/a
Taxes Accrued	($2,816,784)	$1,793,998	$1,855,283	$1,977,006	$3,589,265	n/a
Interest Accrued	$0	$0	$0	$0	$0	n/a
Accrued Dividends	$0	$0	$0	$0	$0	n/a
Other Current and Accrued Liabilities	$684,652	$704,466	$775,508	$797,660	$889,205	6.8%
Total Current and Accrued Liabilities	$734,138	$4,633,337	$4,646,807	$9,056,020	$15,926,675	115.8%
DEFERRED CREDITS	$25,584,153	$29,014,109	$22,250,422	$22,186,889	$14,260,018	-13.6%
OPERATING RESERVES	$9,062,377	$11,183,594	$8,459,707	$10,531,915	$10,153,282	2.9%
CONTRIBUTIONS IN AID OF CONSTRUCTION	$29,022,207	$30,514,660	$32,465,540	$36,091,317	$40,047,357	8.4%
ACCUMULATED DEFERRED INCOME TAXES	$14,270,992	$15,295,007	$15,451,890	$17,582,030	$19,612,404	8.3%
Total Liabilities and Other Credits	$190,239,946	$200,059,291	$202,326,197	$227,279,905	$245,352,686	6.6%

Source: Schedule 200, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA, INC.
UTILITY PLANT DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Category	2011	2012	2013	2014	2015	Compound Growth
INTANGIBLE PLANT						
Organization	$13,435	$13,435	$13,435	$13,435	$13,435	0.0%
Franchises and Consents	$64,266	$64,266	$64,266	$64,266	$64,266	0.0%
Miscellaneous	$0	$0	$0	$0	$0	n/a
Total Intangible Plant	$77,701	$77,701	$77,701	$77,701	$77,701	0.0%
SOURCE OF SUPPLY & PUMPING PLANT						
Land and Land Rights	$363,698	$363,698	$363,698	$363,698	$363,698	0.0%
Structures and Improvements	$2,753,037	$2,790,166	$3,300,032	$3,302,160	$3,466,051	5.9%
Collection and Impounding Reservoirs	$121,801	$121,801	$121,801	$121,801	$434,633	37.4%
Lakes, Rivers and Other Intakes	$3,019,170	$3,022,115	$3,026,117	$3,024,977	$3,013,585	0.0%
Wells and Springs	$930,464	$927,805	$936,555	$1,021,597	$1,001,914	1.9%
Infiltration Galleries and Tunnels	$3,046	$3,046	$3,046	$3,046	$3,046	0.0%
Power Generation Equipment	$0	$0	$0	$0	$0	n/a
Pumping Equipment	$7,355,528	$7,364,045	$7,316,850	$7,412,510	$7,393,348	0.1%
Other Plant & Miscellaneous Equipment	$93,000	$93,000	$93,000	$93,000	$93,000	0.0%
Total Sources of Supply and Pumping Plant	$14,639,744	$14,685,676	$15,161,099	$15,342,789	$15,769,275	1.9%
WATER TREATMENT EQUIPMENT						
Land and Land Rights	$469,257	$469,257	$469,257	$1,199,369	$1,149,369	25.1%
Structures and Improvements	$12,763,876	$12,750,744	$12,876,892	$12,851,771	$12,890,724	0.2%
Water Treatment Equipment	$29,070,915	$29,108,823	$29,216,872	$29,394,298	$29,307,508	0.2%
Total Structures and Improvements	$42,304,048	$42,328,824	$42,563,021	$43,445,438	$43,347,601	0.6%
TRANSMISSION AND DISTRIBUTION						
Land and Land Rights	$469,177	$469,177	$469,177	$469,177	$469,177	0.0%
Structures and Improvements	$40,847	$43,423	$46,888	$51,286	$47,439	3.8%
Power Generation Equipment	$0	$0	$0	$0	$0	n/a
Pumping Equipment	$0	$0	$0	$0	$0	n/a
Distribution Reservoirs and Standpipes	$9,416,363	$9,416,363	$9,416,363	$9,475,242	$9,727,701	0.8%
Transmission and Distribution Mains	$96,423,386	$102,333,454	$105,128,125	$112,360,870	$119,137,007	5.4%
Services	$26,647,527	$27,740,893	$31,082,560	$33,238,086	$32,663,585	5.2%
Meters and Meter Installations	$9,891,430	$11,252,272	$11,002,082	$12,766,789	$17,733,716	15.7%
Hydrants	$6,012,990	$6,163,147	$6,300,425	$6,650,713	$6,857,655	3.3%
Other Plant & Miscellaneous Equipment	$437,444	$437,444	$437,444	$435,760	$455,802	1.0%
Total Transmission and Distribution	$149,339,164	$157,856,173	$163,883,064	$175,447,923	$187,092,082	5.8%
GENERAL PLANT						
Land and Land Rights	$935,351	$934,351	$934,351	$934,351	$934,351	0.0%
Structures and Improvements	$2,467,036	$2,502,803	$2,511,816	$2,547,301	$2,504,509	0.4%
Office Furniture and Equipment	$7,774,939	$8,360,520	$9,113,212	$9,332,979	$7,156,919	-2.0%
Transportation Equipment	$32,629	$32,629	$32,629	$32,629	$1,058	-57.6%
Stores Equipment	$0	$0	$0	$0	$0	n/a
Tools, Shop and Garage Equipment	$1,765,940	$1,850,034	$1,945,232	$2,335,909	$2,654,529	10.7%
Laboratory Furniture and Equipment	$145,888	$149,006	$149,814	$151,091	$150,796	0.8%
Powered Operated Equipment	$0	$0	$0	$0	$0	n/a
Communication Equipment	$3,920,052	$4,236,789	$4,323,701	$4,588,825	$3,855,913	-0.4%
Miscellaneous Equipment	$5,523	$5,523	$5,523	$5,523	$13,768	25.7%
Other Tangible Plant	$0	$0	$0	$0	$0	n/a
Total General Plant	$17,047,358	$18,071,655	$19,016,278	$19,928,608	$17,271,843	0.3%
Total Water Plant in Service	$223,408,015	$233,020,029	$240,701,163	$254,242,459	$263,558,502	4.2%

Source: PUC Form 244, Annual Report to the PA PUC.

SUEZ WATER PENNSYLVANIA, INC.
CUSTOMER RELATED DATA BY CLASSIFICATION
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Classification	2011	2012	2013	2014	2015	Compound Growth
Average No. of Customers:						
Residential	51,596	51,967	52,190	53,092	53,493	0.9%
Commercial	4,686	4,638	4,697	4,690	4,663	-0.1%
Industrial	75	74	73	52	51	-9.2%
Public	221	244	258	239	243	2.4%
Fire Protection	985	991	1,007	1,037	1,046	1.5%
Other	0	0	0	0	0	n/a
Total	57,563	57,914	58,225	59,110	59,496	0.8%
Gallons of Water Sold (000):						
Residential	2,362,953	2,330,292	2,342,376	2,279,741	2,322,859	-0.4%
Commercial	1,530,621	1,460,733	1,444,614	1,475,431	1,481,746	-0.8%
Industrial	269,387	355,886	348,230	317,583	275,647	0.6%
Public	235,361	284,355	280,154	305,920	110,848	-17.2%
Fire Protection	0	0	0	0	0	n/a
Other	0	0	0	0	0	n/a
Total	4,398,322	4,431,266	4,415,374	4,378,675	4,191,100	-1.2%
Operating Revenue:						
Residential	$20,843,784	$21,877,862	$20,777,832	$20,422,690	$21,371,500	0.6%
Commercial	$7,230,187	$7,287,611	$8,529,350	$8,710,361	$8,952,792	5.5%
Industrial	$926,556	$1,313,771	$1,282,822	$1,125,967	$1,018,794	2.4%
Public	$1,088,245	$1,358,733	$1,409,178	$1,537,039	$723,647	-9.7%
Fire Protection	$2,168,681	$2,177,169	$2,201,507	$2,298,111	$2,277,686	1.2%
Other*	$936,018	$729,392	$1,527,200	$2,275,285	$2,976,109	33.5%
Total	$33,193,471	$34,744,538	$35,727,889	$36,369,453	$37,320,528	3.0%
Revenue per Customer:						
Residential	$404	$421	$398	$385	$400	-0.3%
Commercial	$1,543	$1,571	$1,816	$1,857	$1,920	5.6%
Industrial	$12,354	$17,754	$17,573	$21,653	$19,976	12.8%
Public	$4,924	$5,569	$5,462	$6,431	$2,978	-11.8%
Fire Protection	$2,202	$2,197	$2,186	$2,216	$2,178	-0.3%
Other	$0	$0	$0	$0	$0	n/a
Total	$21,427	$27,511	$27,435	$32,542	$27,451	6.4%

Source: Form PUC 244, Annual Report to the PA PUC
*consists primarily of Distribution System Improvement Charge Surcharge Revenues

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Operating Revenues

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$385,858,823	$407,348,539	$400,786,997	$400,988,760	$403,655,923	1.1%
PA American	$502,829,566	$542,802,603	$553,926,887	$589,018,122	$596,449,938	4.4%
Columbia Water	$4,400,319	$4,238,670	$4,218,171	$4,689,532	$5,810,940	7.2%
York Water	$40,629,477	$41,399,996	$42,273,543	$45,539,646	$46,698,898	3.5%
Panel Average	$233,429,546	$248,947,452	$250,301,400	$260,059,015	$263,153,925	3.0%
Suez Water Pa.	$33,193,471	$34,744,539	$35,727,889	$36,369,452	$37,320,528	3.0%

Operating Revenues/Million Gallons

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$10,753	$11,363	$11,722	$11,650	$11,626	2.0%
PA American	$10,327	$11,126	$11,799	$12,321	$12,543	5.0%
Columbia Water	$7,421	$7,339	$7,201	$7,647	$9,660	6.8%
York Water	$6,933	$7,143	$7,339	$7,848	$8,023	3.7%
Panel Average	$8,858	$9,243	$9,515	$9,867	$10,463	4.3%
Suez Water Pa.	$7,547	$7,841	$8,092	$8,306	$8,905	4.2%

Source of Supply Expense

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$1,051,127	$1,284,129	$1,200,069	$1,091,445	$868,297	-4.7%
PA American	$1,361,550	$1,228,689	$1,537,171	$1,477,396	$2,204,466	12.8%
Columbia Water	$158,430	$168,890	$169,022	$163,799	$174,923	2.5%
York Water	$346,751	$413,515	$409,156	$431,434	$498,430	9.5%
Panel Average	$729,465	$773,806	$828,855	$791,019	$936,529	6.4%
Suez Water Pa.	$701,652	$642,117	$601,175	$776,929	$539,598	-6.4%

Source of Supply Expense/Million Gallons

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$29	$36	$35	$32	$25	-3.9%
PA American	$28	$25	$33	$31	$46	13.5%
Columbia Water	$267	$292	$289	$267	$291	2.1%
York Water	$59	$71	$71	$74	$86	9.7%
Panel Average	$96	$106	$107	$101	$112	3.9%
Suez Water Pa.	$160	$145	$136	$177	$129	-5.2%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Water Treatment Expense

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$12,198,152	$12,677,608	$12,000,216	$11,944,928	$12,511,734	0.6%
PA American	$18,031,874	$17,312,419	$16,671,861	$18,937,115	$16,715,328	-1.9%
Columbia Water	$156,922	$163,286	$162,481	$163,976	$167,263	1.6%
York Water	$1,124,010	$1,167,396	$1,080,641	$1,249,486	$1,396,649	5.6%
Panel Average	$7,877,740	$7,830,177	$7,478,800	$8,073,876	$7,697,744	-0.6%
Suez Water Pa.	$1,319,701	$1,439,159	$1,410,675	$1,461,727	$1,557,781	4.2%

Water Treatment Expense/Million Gallons

Company	2011	2013	2013	2014	2015	Compound Growth
Aqua PA	$340	$354	$351	$347	$360	1.5%
PA American	$370	$355	$355	$396	$352	-1.3%
Columbia Water	$265	$283	$277	$267	$278	1.2%
York Water	$192	$201	$188	$215	$240	5.8%
Panel Average	$292	$298	$293	$306	$307	1.3%
Suez Water Pa.	$300	$325	$319	$334	$372	5.5%

Transmission and Distribution Expense

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$10,353,333	$10,600,123	$12,022,200	$11,705,632	$10,391,630	0.1%
PA American	$26,343,236	$22,702,761	$20,290,734	$20,957,006	$20,000,647	-6.7%
Columbia Water	$236,238	$231,493	$247,170	$280,115	$280,001	4.3%
York Water	$2,972,456	$2,992,163	$2,996,403	$3,211,204	$3,067,631	0.8%
Panel Average	$9,976,316	$9,131,635	$8,889,127	$9,038,489	$8,434,977	-4.1%
Suez Water Pa.	$1,424,816	$1,442,337	$1,283,646	$1,204,150	$1,247,032	-3.3%

Transmission and Distribution Expense/Customer

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$25	$25	$28	$28	$24	-0.5%
PA American	$41	$35	$31	$32	$31	-7.1%
Columbia Water	$27	$26	$28	$32	$32	3.9%
York Water	$47	$47	$47	$50	$47	-0.3%
Panel Average	$35	$34	$34	$35	$33	-1.3%
Suez Water Pa.	$25	$25	$22	$21	$21	-4.1%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Customer Account Expense

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$9,865,328	$10,084,200	$9,917,482	$9,807,282	$9,255,794	-1.6%
PA American	$9,439,617	$7,454,759	$6,057,716	$5,594,470	$5,540,984	-12.5%
Columbia Water	$128,030	$141,288	$145,382	$141,737	$133,446	1.0%
York Water	$970,656	$964,140	$955,432	$978,191	$991,845	0.5%
Panel Average	$5,100,908	$4,661,097	$4,269,003	$4,130,420	$3,980,517	-6.0%
Suez Water Pa.	$1,695,164	$1,483,596	$1,423,054	$1,398,890	$1,550,453	-2.2%

Customer Account Expense/Customer

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$24	$24	$23	$23	$22	-2.2%
PA American	$15	$12	$9	$9	$9	-12.9%
Columbia Water	$15	$16	$17	$16	$15	0.6%
York Water	$15	$15	$15	$15	$15	-0.5%
Panel Average	$17	$17	$16	$16	$15	-3.1%
Suez Water Pa.	$30	$26	$25	$24	$27	-3.0%

Administration and General Expense

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$26,222,639	$28,721,942	$29,268,513	$31,923,028	$36,571,001	8.7%
PA American	$51,643,463	$61,319,934	$64,750,115	$61,546,650	$60,193,695	3.9%
Columbia Water	$418,229	$401,723	$455,898	$476,892	$507,000	4.9%
York Water	$1,800,894	$1,807,142	$1,915,464	$2,178,186	$2,230,523	5.5%
Panel Average	$20,021,306	$23,062,685	$24,097,498	$24,031,189	$24,875,555	5.6%
Suez Water Pa.	$3,551,950	$3,859,635	$4,058,185	$4,140,825	$4,712,309	7.3%

Administration and General Expense/Customer

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$63	$68	$69	$75	$86	8.0%
PA American	$81	$96	$100	$95	$92	3.4%
Columbia Water	$48	$46	$52	$54	$57	4.5%
York Water	$29	$28	$30	$34	$34	4.4%
Panel Average	$55	$60	$63	$64	$67	5.1%
Suez Water Pa.	$63	$68	$71	$71	$81	6.5%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Total Operating and Maintenance Expense

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$114,311,275	$115,329,000	$117,173,411	$120,555,722	$116,587,834	0.5%
PA American	$218,109,488	$206,824,585	$195,603,486	$194,894,925	$194,075,529	-2.9%
Columbia Water	$2,016,303	$1,947,648	$2,113,389	$2,395,343	$2,469,865	5.2%
York Water	$14,642,604	$14,482,121	$14,657,566	$16,393,049	$16,747,921	3.4%
Panel Average	$87,269,918	$84,645,839	$82,386,963	$83,559,760	$82,470,287	-1.4%
Suez Water Pa.	$15,687,646	$16,366,168	$16,241,503	$15,243,577	$15,705,388	0.0%

Total Operating and Maintenance Expense/Customer

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$274	$275	$277	$284	$273	-0.1%
PA American	$342	$323	$301	$300	$298	-3.4%
Columbia Water	$231	$222	$241	$272	$278	4.8%
York Water	$233	$228	$229	$254	$256	2.3%
Panel Average	$270	$262	$262	$278	$276	0.6%
Suez Water Pa.	$277	$288	$284	$262	$269	-0.8%

Depreciation and Amortization

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$61,911,932	$66,292,471	$70,826,197	$74,882,373	$71,058,592	3.5%
PA American	$64,645,600	$74,539,084	$83,296,147	$86,044,149	$90,555,793	8.8%
Columbia Water	$997,887	$1,030,142	$1,037,913	$1,160,308	$1,299,280	6.8%
York Water	$4,905,034	$5,170,277	$5,714,947	$5,885,721	$6,088,214	5.6%
Panel Average	$33,115,113	$36,757,994	$40,218,801	$41,993,138	$42,250,470	6.3%
Suez Water Pa.	$4,442,185	$4,979,398	$5,263,852	$5,514,799	$5,808,335	6.9%

Taxes & Other Operating Expenses

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$60,327,885	$49,122,801	$7,822,323	$4,402,494	$6,499,103	-42.7%
PA American	$71,685,142	$91,463,888	$98,163,951	$107,953,525	$109,176,840	11.1%
Columbia Water	$549,464	$492,325	$488,983	$500,175	$713,242	6.7%
York Water	$6,205,029	$6,821,017	$6,978,212	$6,048,120	$5,929,744	-1.1%
Panel Average	$34,691,880	$36,975,008	$28,363,367	$29,726,079	$30,579,732	-3.1%
Suez Water Pa.	$5,205,650	$4,998,131	$5,486,146	$6,094,858	$6,567,890	6.0%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Total Operating Expenses

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$236,356,618	$230,490,861	$195,568,521	$199,584,828	$193,894,457	-4.8%
PA American	$354,206,638	$372,593,965	$376,829,992	$388,826,287	$393,574,570	2.7%
Columbia Water	$3,563,654	$3,470,116	$3,640,285	$4,055,826	$4,482,387	5.9%
York Water	$25,713,465	$26,434,361	$27,312,084	$28,288,014	$28,727,743	2.8%
Panel Average	$154,960,094	$158,247,326	$150,837,721	$155,188,739	$155,169,789	0.0%
Suez Water Pa.	$25,303,492	$26,315,012	$26,962,821	$26,824,554	$28,052,933	2.6%

Total Operating Expenses/Customer

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$567	$549	$462	$470	$454	-5.4%
PA American	$555	$581	$581	$599	$605	2.2%
Columbia Water	$408	$395	$414	$461	$505	5.5%
York Water	$410	$416	$427	$439	$439	1.7%
Panel Average	$485	$486	$471	$492	$501	0.8%
Suez Water Pa.	$447	$462	$471	$462	$480	1.8%

Utility Operating Income

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$149,502,205	$176,857,677	$205,218,476	$201,403,932	$209,761,466	8.8%
PA American	$148,622,928	$170,208,638	$177,096,895	$200,191,835	$202,875,368	8.1%
Columbia Water	$836,665	$768,554	$577,886	$633,706	$1,328,553	12.3%
York Water	$14,916,012	$14,965,635	$14,961,459	$17,251,632	$17,971,155	4.8%
Panel Average	$78,469,453	$90,700,126	$99,463,679	$104,870,276	$107,984,136	8.3%
Suez Water Pa.	$7,889,979	$8,429,527	$8,765,068	$9,544,898	$9,267,595	4.1%

Utility Non-Operating Income

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$10,573,994	$7,852,438	$6,086,748	$8,360,877	$9,551,309	-2.5%
PA American	$4,440,117	$1,257,107	$2,870,369	$1,133,039	$1,463,786	-24.2%
Columbia Water	$15,644	$20,071	$23,366	$24,514	$15,394	-0.4%
York Water	$220,762	$230,922	$210,624	$656,289	$341,803	11.5%
Panel Average	$3,812,629	$2,340,135	$2,297,777	$2,543,680	$2,843,073	-7.1%
Suez Water Pa.	$642,317	$445,486	$616,550	$588,852	$2,104,822	34.5%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Source of Supply Expense/ Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	0.27%	0.32%	0.30%	0.27%	0.22%	-5.7%
PA American	0.27%	0.23%	0.28%	0.25%	0.37%	8.1%
Columbia Water	3.60%	3.98%	4.01%	3.49%	3.01%	-4.4%
York Water	0.85%	1.00%	0.97%	0.95%	1.07%	5.7%
Panel Average	1.25%	1.38%	1.39%	1.24%	1.17%	-1.7%
Suez Water Pa.	2.11%	1.85%	1.68%	2.14%	1.45%	-9.1%

Water Treatment Expense/Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	3.2%	3.1%	3.0%	3.0%	3.1%	-0.5%
PA American	3.6%	3.2%	3.0%	3.2%	2.8%	-6.0%
Columbia Water	3.6%	3.9%	3.9%	3.5%	2.9%	-5.2%
York Water	2.8%	2.8%	2.6%	2.7%	3.0%	2.0%
Panel Average	3.3%	3.2%	3.1%	3.1%	2.9%	-2.6%
Suez Water Pa.	4.0%	4.1%	3.9%	4.0%	4.2%	1.2%

Transmission & Distribution Expense/Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	2.7%	2.6%	3.0%	2.9%	2.6%	-1.0%
PA American	5.2%	4.2%	3.7%	3.6%	3.4%	-10.6%
Columbia Water	5.4%	5.5%	5.9%	6.0%	4.8%	-2.7%
York Water	7.3%	7.2%	7.1%	7.1%	6.6%	-2.7%
Panel Average	5.2%	4.9%	4.9%	4.9%	4.3%	-4.3%
Suez Water Pa.	4.3%	4.2%	3.6%	3.3%	3.3%	-6.1%

Customer Accounts Expense/Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	2.6%	2.5%	2.5%	2.4%	2.3%	-2.7%
PA American	1.9%	1.4%	1.1%	0.9%	0.9%	-16.1%
Columbia Water	2.9%	3.3%	3.4%	3.0%	2.3%	-5.7%
York Water	2.4%	2.3%	2.3%	2.1%	2.1%	-2.9%
Panel Average	2.4%	2.4%	2.3%	2.1%	1.9%	-5.9%
Suez Water Pa.	5.1%	4.3%	4.0%	3.8%	4.2%	-5.0%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Administration & General Expense/Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	6.8%	7.1%	7.3%	8.0%	9.1%	7.5%
PA American	10.3%	11.3%	11.7%	10.4%	10.1%	-0.4%
Columbia Water	9.5%	9.5%	10.8%	10.2%	8.7%	-2.1%
York Water	4.4%	4.4%	4.5%	4.8%	4.8%	1.9%
Panel Average	7.8%	8.0%	8.6%	8.3%	8.2%	1.3%
Suez Water Pa.	10.7%	11.1%	11.4%	11.4%	12.6%	4.2%

Total Operating Expense/Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	61.3%	56.6%	48.8%	49.8%	48.0%	-5.9%
PA American	70.4%	68.6%	68.0%	66.0%	66.0%	-1.6%
Columbia Water	81.0%	81.9%	86.3%	86.5%	77.1%	-1.2%
York Water	63.3%	63.9%	64.6%	62.1%	61.5%	-0.7%
Panel Average	69.0%	67.7%	66.9%	66.1%	63.2%	-2.2%
Suez Water Pa.	76.2%	75.7%	75.5%	73.8%	75.2%	-0.4%

Utility Operating Income/Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	38.7%	43.4%	51.2%	50.2%	52.0%	7.6%
PA American	29.6%	31.4%	32.0%	34.0%	34.0%	3.6%
Columbia Water	19.0%	18.1%	13.7%	13.5%	22.9%	4.7%
York Water	36.7%	36.1%	35.4%	37.9%	38.5%	1.2%
Panel Average	31.0%	32.3%	33.1%	33.9%	36.8%	4.4%
Suez Water Pa.	23.8%	24.3%	24.5%	26.2%	24.8%	1.1%

Net Income/Revenue

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	28.0%	33.0%	40.4%	39.6%	42.0%	10.7%
PA American	18.5%	19.8%	20.7%	22.7%	23.0%	5.6%
Columbia Water	12.7%	11.9%	8.2%	9.3%	13.0%	0.6%
York Water	22.4%	22.5%	22.9%	25.3%	26.8%	4.7%
Panel Average	20.4%	21.8%	23.0%	24.2%	26.2%	6.5%
Suez Water Pa.	16.5%	17.0%	17.3%	18.9%	20.8%	5.9%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
INCOME STATEMENT COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Total Operating Expenses/Thousand Gallons

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$6.59	$6.43	$5.72	$5.80	$5.58	-4.0%
PA American	$7.27	$7.64	$8.03	$8.13	$8.28	3.3%
Columbia Water	$6.01	$6.01	$6.21	$6.61	$7.45	5.5%
York Water	$4.39	$4.56	$4.74	$4.87	$4.94	3.0%
Panel Average	$6.06	$6.16	$6.18	$6.36	$6.56	2.0%
Suez Water Pa.	$5.75	$5.94	$6.11	$6.13	$6.69	3.9%

Utility Operating Income/Thousand Gallons

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$4.17	$4.93	$6.00	$5.85	$6.04	9.7%
PA American	$3.05	$3.49	$3.77	$4.19	$4.27	8.7%
Columbia Water	$1.41	$1.33	$0.99	$1.03	$2.21	11.8%
York Water	$2.55	$2.58	$2.60	$2.97	$3.09	4.9%
Panel Average	$2.79	$3.08	$3.34	$3.51	$3.90	8.7%
Suez Water Pa.	$1.79	$1.90	$1.99	$2.18	$2.21	5.4%

Net Income/Thousand Gallons

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$3.01	$3.75	$4.73	$4.62	$4.89	12.9%
PA American	$1.91	$2.20	$2.44	$2.79	$2.89	10.8%
Columbia Water	$0.94	$0.88	$0.59	$0.71	$1.26	7.5%
York Water	$1.55	$1.60	$1.68	$1.99	$2.15	8.6%
Panel Average	$1.85	$2.11	$2.36	$2.53	$2.80	10.8%
Suez Water Pa.	$1.25	$1.33	$1.40	$1.57	$1.85	10.4%

Water Sold - Gallons

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	35,885,117,000	35,849,595,000	34,192,335,000	34,419,158,000	34,718,750,000	-0.8%
PA American	48,691,795,000	48,785,279,000	46,947,471,000	47,804,985,000	47,551,335,000	-0.6%
Columbia Water	592,927,798	577,535,500	585,779,000	613,255,350	601,577,400	0.4%
York Water	5,860,366,067	5,795,849,878	5,760,160,000	5,802,720,000	5,820,500,000	-0.2%
Panel Average	22,757,551,466	22,752,064,845	21,871,436,250	22,160,029,588	22,173,040,600	-0.6%
Suez Water Pa.	4,398,322,000	4,431,266,000	4,415,374,000	4,378,675,000	4,191,100,000	-1.2%

NM: Not Meaningful
Source: Schedule 400, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
BALANCE SHEET COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Net Utility Plant

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$2,205,542,762	$2,421,377,842	$2,582,277,925	$2,725,000,840	$2,905,706,594	7.1%
PA American	$2,663,426,513	$2,869,070,837	$3,050,126,247	$3,216,293,672	$3,405,438,725	6.3%
Columbia Water	$25,917,248	$28,778,024	$36,925,353	$39,560,272	$41,410,126	12.4%
York Water	$232,276,261	$239,062,722	$243,556,873	$252,031,246	$260,151,618	2.9%
Panel Average	$1,281,790,696	$1,389,572,356	$1,478,221,600	$1,558,221,508	$1,653,176,766	6.6%
Suez Water Pa.	$177,145,360	$182,605,328	$186,993,656	$202,362,393	$228,177,082	6.5%

Net Utility Plant/Million Gallons

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$61,461	$67,543	$75,522	$79,171	$83,693	8.0%
PA American	$54,700	$58,810	$64,969	$67,279	$71,616	7.0%
Columbia Water	$43,711	$49,829	$63,036	$64,509	$68,836	12.0%
York Water	$39,635	$41,247	$42,283	$43,433	$44,696	3.0%
Panel Average	$49,877	$54,357	$61,453	$63,598	$67,210	7.7%
Suez Water Pa.	$40,276	$41,208	$42,351	$46,215	$54,443	7.8%

Investments and Other Property

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$95,950,255	$31,008,684	$9,647,508	$11,118,761	$13,040,525	-39.3%
PA American	$38,942,024	$38,889,522	$38,857,609	$39,127,505	$38,963,042	0.0%
Columbia Water	$60,189	$60,189	$60,189	$60,189	$60,189	0.0%
York Water	$761,669	$747,644	$742,582	$752,803	$762,584	0.0%
Panel Average	$33,928,534	$17,676,510	$12,326,972	$12,764,815	$13,206,585	-21.0%
Suez Water Pa.	$217,115	$217,115	$217,115	$217,115	$217,115	0.0%

Current and Accrued Assets

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$58,873,687	$82,598,357	$109,031,312	$72,801,138	$101,330,954	14.5%
PA American	$76,616,764	$80,324,524	$91,672,037	$99,370,497	$92,237,170	4.7%
Columbia Water	$583,369	$597,851	$855,921	$875,311	$1,122,949	17.8%
York Water	$11,365,202	$12,346,647	$16,036,345	$11,059,012	$12,420,484	2.2%
Panel Average	$36,859,756	$43,966,845	$54,398,904	$46,026,490	$51,777,889	8.9%
Suez Water Pa.	$4,631,287	$4,205,548	$6,193,940	$10,944,292	$6,604,000	9.3%

NM: Not Meaningful
Source: Schedule 200, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
BALANCE SHEET COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Total Deferred Debits

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$156,423,833	$402,004,064	$569,669,908	$659,195,927	$765,324,823	48.7%
PA American	$154,334,476	$155,057,400	$156,676,625	$165,069,165	$173,840,081	3.0%
Columbia Water	$0	$0	$359,052	$211,041	$105,521	NM
York Water	$29,717,035	$30,413,100	$22,212,535	$38,800,662	$39,402,971	7.3%
Panel Average	$85,118,836	$146,868,641	$187,229,530	$215,819,199	$244,668,349	30.2%
Suez Water Pa.	$10,033,413	$13,031,299	$8,921,484	$13,756,103	$10,354,488	0.8%

Total Equity Capital

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$872,638,689	$1,028,679,501	$1,167,617,023	$1,247,776,024	$1,307,134,551	10.6%
PA American	$1,046,666,601	$1,149,312,642	$1,180,641,801	$1,292,342,706	$1,401,638,006	7.6%
Columbia Water	$7,739,108	$7,942,541	$8,634,476	$8,769,661	$9,222,661	4.5%
York Water	$95,256,233	$99,818,775	$103,522,167	$104,620,578	$109,172,415	3.5%
Panel Average	$505,575,158	$571,438,365	$615,103,867	$663,377,242	$706,791,908	8.7%
Suez Water Pa.	$111,566,079	$109,418,584	$119,051,831	$131,831,734	$145,352,950	6.8%

Total Long-Term Debt

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$910,218,855	$905,755,075	$948,779,771	$1,000,777,893	$1,124,732,864	5.4%
PA American	$1,030,815,319	$1,086,134,390	$1,151,786,840	$1,148,064,084	$1,159,584,812	3.0%
Columbia Water	$4,637,962	$6,383,997	$12,774,593	$16,964,346	$18,486,506	41.3%
York Water	$84,975,008	$84,932,729	$84,885,026	$84,841,893	$87,498,327	0.7%
Panel Average	$507,661,786	$520,801,548	$549,556,558	$562,662,054	$597,575,627	4.2%
Suez Water Pa.	$0	$0	$0	$0	$0	NM

Total Current and Accrued Liabilities

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$579,600,519	$634,707,937	$68,762,644	$51,558,454	$53,192,700	-45.0%
PA American	$171,032,519	$147,733,617	$174,222,049	$205,271,334	$205,121,869	4.6%
Columbia Water	$1,030,886	$2,097,023	$4,125,002	$2,042,669	$1,741,940	14.0%
York Water	$5,118,914	$5,506,155	$7,824,178	$5,015,654	$5,188,776	0.3%
Panel Average	$189,195,710	$197,511,183	$63,733,468	$65,972,028	$66,311,321	-23.1%
Suez Water Pa.	$734,138	$4,633,337	$4,646,806	$9,056,019	$15,926,675	115.8%

NM: Not Meaningful
Source: Schedule 200, Form PUC 244, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
BALANCE SHEET COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Total Deferred Credits

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$75,474,509	$275,808,739	$309,708,176	$302,664,251	$287,527,787	39.7%
PA American	$115,388,358	$116,841,869	$118,278,222	$113,062,507	$102,434,253	-2.9%
Columbia Water	$0	$0	$0	$0	$0	NM
York Water	$32,760,103	$32,421,361	$22,542,568	$32,662,236	$26,234,381	-5.4%
Panel Average	$55,905,743	$106,267,992	$112,632,242	$112,097,249	$104,049,105	16.8%
Suez Water Pa.	$25,942,092	$29,014,109	$22,250,422	$22,186,889	$14,260,018	-13.9%

Total Operating Reserves

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$0	$0	$0	$0	$0	NM
PA American	$28,402,748	$37,801,660	$28,496,679	$31,388,950	$51,904,334	16.3%
Columbia Water	$0	$0	$0	$0	$0	NM
York Water	$0	$0	$0	$0	$0	NM
Panel Average	$7,100,687	$9,450,415	$7,124,170	$7,847,238	$12,976,084	16.3%
Suez Water Pa.	$10,491,667	$11,183,594	$8,459,707	$10,531,915	$10,153,282	-0.8%

Total Net CIAC

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$78,857,965	$92,037,695	$99,127,821	$100,382,983	$102,943,365	6.9%
PA American	$98,214,246	$102,939,526	$108,761,179	$124,249,876	$137,057,740	8.7%
Columbia Water	$8,218,967	$8,042,958	$7,873,845	$7,765,079	$7,587,489	-2.0%
York Water	$26,976,966	$28,222,732	$29,925,670	$31,052,542	$34,929,825	6.7%
Panel Average	$53,067,036	$57,810,728	$61,422,129	$65,862,620	$70,629,605	7.4%
Suez Water Pa.	$29,022,207	$30,514,660	$32,465,540	$36,091,317	$40,047,357	8.4%

Total Acc. Deferred Income Taxes

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$0	$0	$676,631,218	$764,957,061	$909,871,629	NM
PA American	$553,042,477	$611,641,218	$699,187,260	$752,676,417	$827,082,434	10.6%
Columbia Water	$4,933,884	$4,969,544	$4,792,600	$5,165,059	$5,660,190	3.5%
York Water	$29,023,943	$31,668,361	$33,848,726	$44,450,820	$49,713,933	14.4%
Panel Average	$146,750,076	$162,069,781	$353,614,951	$391,812,339	$448,082,047	32.2%
Suez Water Pa.	$14,270,992	$15,295,007	$15,451,890	$17,582,030	$19,612,404	8.3%

NM: Not Meaningful
Source: Schedule 200, Form PUC 200, Annual Report to the PA PUC

SUEZ WATER PENNSYLVANIA INC.
BALANCE SHEET COMPARATIVE PANEL DATA
FOR THE YEARS ENDED DECEMBER 31, 2011-2015

Total Liabilities and Other Credits

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$2,516,790,537	$2,936,988,947	$3,270,626,653	$3,468,116,666	$3,785,402,896	10.7%
PA American	$3,043,562,268	$3,252,404,922	$3,461,374,030	$3,667,055,874	$3,884,823,448	6.3%
Columbia Water	$26,560,807	$29,436,064	$38,200,516	$40,706,814	$42,698,786	12.6%
York Water	$274,120,167	$282,570,113	$282,548,335	$302,643,723	$312,737,657	3.3%
Panel Average	$1,465,258,445	$1,625,350,012	$1,763,187,384	$1,869,630,769	$2,006,415,697	8.2%
Suez Water Pa.	$192,027,175	$200,059,291	$202,326,195	$227,279,903	$245,352,685	6.3%

Total Assets/Customer

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	$6,036	$6,998	$7,727	$8,171	$8,871	10.1%
PA American	$4,597	$4,906	$5,143	$5,423	$5,700	5.5%
Columbia Water	$3,041	$3,354	$4,348	$4,623	$4,812	12.2%
York Water	$4,369	$4,447	$4,422	$4,695	$4,778	2.3%
Panel Average	$4,511	$4,926	$5,410	$5,728	$6,040	7.6%
Suez Water Pa.	$3,394	$3,515	$3,536	$3,914	$4,198	5.5%

M&S as % of Net Plant

Company	2011	2012	2013	2014	2015	Compound Growth
Aqua PA	0.30%	0.23%	0.23%	0.22%	0.19%	-10.7%
PA American	0.19%	0.21%	0.23%	0.27%	0.26%	8.1%
Columbia Water	0.24%	0.26%	0.22%	0.18%	0.16%	-9.1%
York Water	0.30%	0.30%	0.30%	0.31%	0.30%	-0.1%
Panel Average	0.26%	0.25%	0.24%	0.24%	0.23%	-2.9%
Suez Water Pa.	0.21%	0.27%	0.25%	0.21%	0.18%	-3.7%

NM: Not Meaningful
Source: Schedule 200, Form PUC 244, Annual Report to the PA PUC.

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