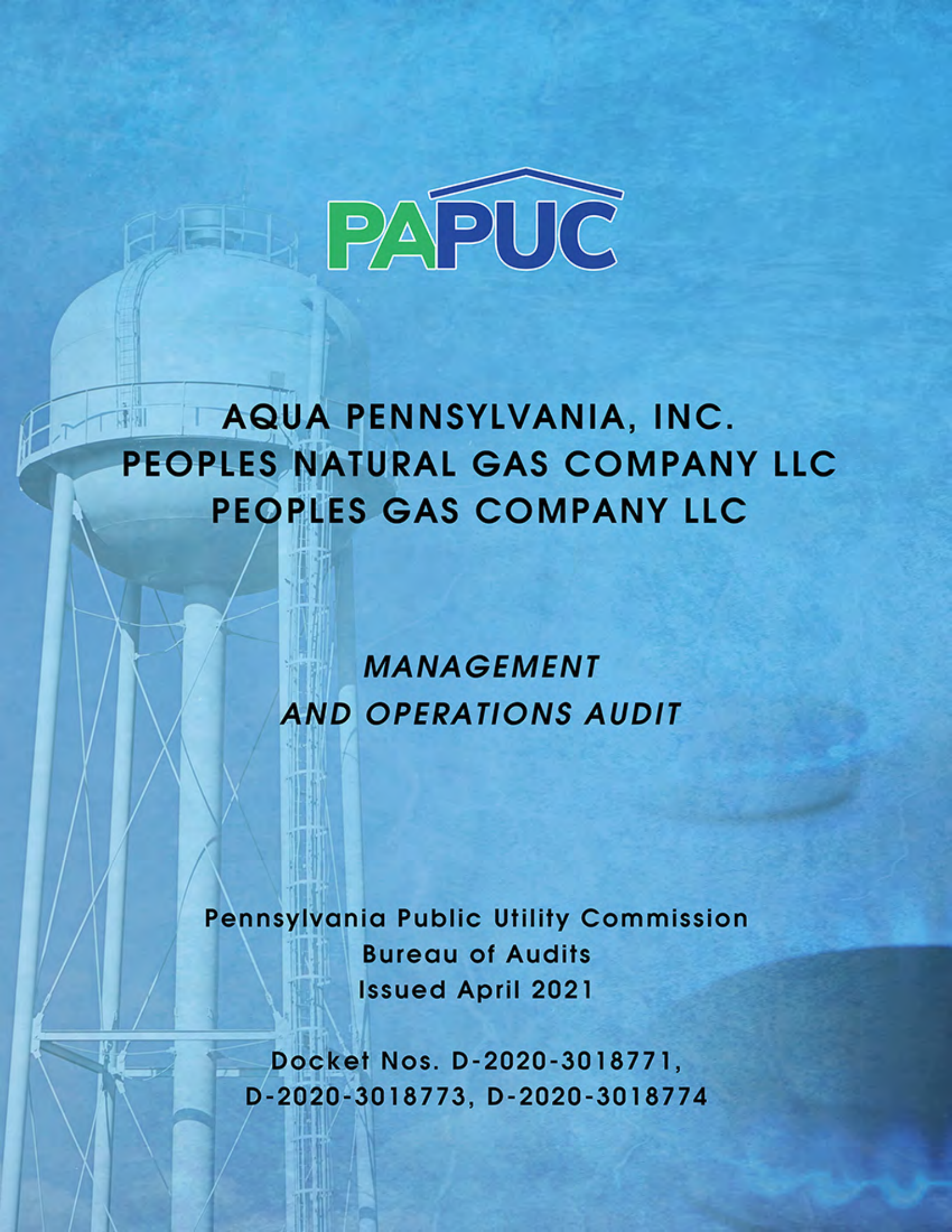


AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS COMPANY LLC
PEOPLES GAS COMPANY LLC

MANAGEMENT
AND OPERATIONS AUDIT

Pennsylvania Public Utility Commission
Bureau of Audits
Issued April 2021

Docket Nos. D-2020-3018771,
D-2020-3018773, D-2020-3018774

AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS CO. LLC AND PEOPLES GAS CO. LLC
MANAGEMENT AND OPERATIONS AUDIT

TABLE OF CONTENTS

Chapter		Page
I.	INTRODUCTION	1
	A. Objectives and Scope	1
	B. Audit Approach	2
	C. Functional Area Ratings	3
	D. Benefits	4
	E. Current Events	6
	F. Recommendation Summary	6
II.	BACKGROUND	12
III.	EXECUTIVE MANAGEMENT AND ORGANIZATIONAL STRUCTURE	21
IV.	CORPORATE GOVERNANCE	33
V.	AFFILIATED INTERESTS AND COST ALLOCATIONS	41
VI.	FINANCIAL MANAGEMENT	65
VII.	WATER OPERATIONS	83
VIII.	GAS OPERATIONS	95
IX.	EMERGENCY PREPAREDNESS	109
X.	MATERIALS MANAGEMENT	117
XI.	CUSTOMER SERVICE	126
XII.	INFORMATION TECHNOLOGY	147
XIII.	FLEET MANAGEMENT	154
XIV.	HUMAN RESOURCES AND DIVERSITY	161
XV.	ACKNOWLEDGEMENTS	177
XVI.	APPENDICES	178
	A. Financial and Operating Data and Statistics of Aqua Pennsylvania, Inc.	
	B. Financial and Operating Data and Statistics of Peoples Natural Gas Company LLC	
	C. Financial and Operating Data and Statistics of Peoples Gas Company LLC	

AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS CO. LLC AND PEOPLES GAS CO. LLC
MANAGEMENT AND OPERATIONS AUDIT

LIST OF EXHIBITS

Exhibit		Page
I-1	Functional Area Rating Summary	4
I-2	Quantifiable Savings Summary	5
I-3	Summary of Recommendations	8
II-1	Essential Utilities, Inc. – Corporate Entity Chart	13
II-2	Aqua PA – Service Territory by County	14
II-3	Aqua PA and Aqua Services – Employee Statistics	15
II-4	Aqua PA – Customer Statistics	16
II-5	Peoples Companies and PNG Companies – Employee Statistics	18
II-6	Peoples Companies – Service Territory	19
II-7	Peoples Companies – Customer Statistics	20
III-1	Essential Utilities – Executive Leadership Team	21
III-2	Essential Utilities – Executive Management of Regulated Operations	22
III-3	Aqua PA – Executive Management Team	23
III-4	Aqua PA – Staffing Levels	24
III-5	Officers of PNG Companies	25
III-6	PNG Companies and the Peoples Companies – Spans of Control by Department Heads	28
III-7	Aqua PA and Aqua Services – Summary of Spans of Control	29
IV-1	Aqua Services – Internal Audit Department Organization	38
V-1	Aqua PA – Summary of Affiliate Charges	44
V-2	Peoples Natural Gas Co. – Summary of Transactions to/from Affiliates	45

AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS CO. LLC AND PEOPLES GAS CO. LLC
MANAGEMENT AND OPERATIONS AUDIT

LIST OF EXHIBITS (continued)

Exhibit		Page
V-3	Peoples Gas Company – Summary of Transactions to/from Affiliates	46
V-4	Peoples Companies – Illustration of the Flow of Charges to and from Peoples Service Company	47
V-5	Peoples Companies – Illustration of the Flow of Charges to/from PNG Companies	49
VI-1	Aqua Services - Finance Department Organization Chart	65
VI-2	Aqua PA – Summary of Capital Structure	66
VI-3	Aqua PA – Dividend Payments to Essential Utilities	67
VI-4	Essential Utilities – Operating and Capital Budget Process	68
VI-5	Essential Utilities – Defined Benefit Plan Funding Status	69
VI-6	PNG Companies – Finance and Accounting Departments	70
VI-7	Peoples Natural Gas Company – Long Term Debt Outstanding	71
VI-8	Peoples Gas Company – Long Term Debt Outstanding	72
VI-9	Peoples Natural Gas Company – Debt to Equity Ratio	72
VI-10	Peoples Gas Company – Debt to Equity Ratio	72
VI-11	Peoples Natural Gas Company, Equitable Gas Company, and Peoples Gas Company – Pension Funding	73
VI-12	Peoples Natural Gas Company – Month End Cash Balances	74
VI-13	Peoples Gas Company – Month End Cash Balances	75
VI-14	Peoples Natural Gas Company – Capital Budget Variance Amounts (in thousands) and Percentages	77
VI-15	Peoples Gas Company – Capital Budget Variance Amounts (in thousands) and Percentages	77

AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS CO. LLC AND PEOPLES GAS CO. LLC
MANAGEMENT AND OPERATIONS AUDIT

LIST OF EXHIBITS (continued)

Exhibit		Page
VI-16	Peoples Natural Gas Company – O&M Budget Variance Amounts (in thousands) and Percentages	78
VI-17	Peoples Gas Company – O&M Budget Variance Amounts (in thousands) and Percentages	78
VII-1	Aqua PA – District Information	83
VII-2	Aqua PA Organizational Chart	84
VII-3	Aqua PA – Miles of Pipe Replaced or Rehabilitated	85
VII-4	Aqua PA – Projected Miles of Pipe to be Replaced	85
VII-5	Aqua PA – Additional Assets Replaced	86
VII-6	Aqua PA – Critical Valves Inspected	87
VII-7	Aqua PA – Locates Received vs. Marked	89
VII-8	Aqua PA – Percentage of Hits Not Marked Correctly	90
VII-9	Aqua PA – Removed Meter Test Results	91
VII-10	Aqua PA – Roaring Creek Water Supplied vs. NRW	92
VII-11	Aqua PA – Greater PA NRW by System	93
VII-12	Aqua PA – NRW by Region	94
VIII-1	Peoples Companies – Service Territory	95
VIII-2	Peoples Natural Gas Company – Gas Operations Functional Organization	96
VIII-3	Peoples Natural Gas Company – Gas Operations Functional Organization Service Center Level	97
VIII-4	Peoples Companies – Field Operations Staffing Levels, Overtime, and Emergency Response Time	98

AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS CO. LLC AND PEOPLES GAS CO. LLC
MANAGEMENT AND OPERATIONS AUDIT

LIST OF EXHIBITS (continued)

Exhibit		Page
VIII-5	Peoples Companies – Unprotected Bare Steel Main – Percent in System	100
VIII-6	Peoples Natural Gas Company – Staffing Increase Needed – LTIIP Replacement Obligations	102
VIII-7	Peoples Companies – Line Damages Measured Against Pennsylvania One Call Tickets	103
VIII-8	Peoples Companies – Third-Party Line Damages by Location	105
VIII-9	Peoples Companies – Third-Party Line Damages Responsible Party	105
VIII-10	Peoples Companies – Second-Party Line Damages by Location	106
VIII-11	Peoples Companies – Second-Party Line Damages Responsible Party	107
IX-1	PA PUC – Public Utility Security Planning and Readiness Self Certification Form	109
IX-2	Peoples Companies – Incident Management Team	111
X-1	Aqua PA – Materials Management Organizational Structure	118
X-2	Aqua PA – Inventory Turnover	119
X-3	PNG Companies – Supply Chain Management Structure	120
X-4	The Peoples Companies – Key Performance Indicators	122
X-5	The Peoples Companies – Dollar Value and Quantity Accuracy	124
XI-1	Aqua Services - Customer Service Organizational Chart	126
XI-2	Aqua PA - Number of Customers and Dollars Enrolled in Payment Arrangements	128
XI-3	PNG Companies - Customer Service Organization	129
XI-4	Peoples Companies – Customer Contact Center Performance	131

AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS CO. LLC AND PEOPLES GAS CO. LLC
MANAGEMENT AND OPERATIONS AUDIT

LIST OF EXHIBITS (continued)

Exhibit		Page
XI-5	Peoples Companies – Theft of Service Department	133
XI-6	Aqua PA – Customer Accounts Receivable Current vs. Greater than 90 Days	135
XI-7	Peoples Natural Gas Co. – Customer Accounts Receivable Current vs. Greater than 90 Days	136
XI-8	Peoples Gas Company – Customer Accounts Receivable Current vs. Greater than 90 Days	136
XI-9	Peoples Natural Gas Co. – Primary and Secondary Collection Performance	141
XI-10	Peoples Gas Co. – Primary and Secondary Collection Performance	142
XI-11	Peoples Companies – Satisfaction with Wait to Speak to a Representative	143
XI-12	Peoples Companies – Ease of Using Automated Telephone System	143
XI-13	Peoples Companies – Satisfaction with Ease of Reaching the Company	144
XI-14	Peoples Natural Gas Co. – Customer Satisfaction Survey Results	144
XI-15	Peoples Companies and PNGC-Equitable – Average Customer Arrearage	145
XII-1	Essential Utilities – Future Functional Structure of the Information Technology Department	147
XII-2	Aqua PA – Information Technology Staffing Levels Prior to Acquisition of the Peoples Companies	148
XII-3	Aqua Services – Information Technology Department Functions	149
XII-4	PNG Companies – Information Technology Department Organization	151
XII-5	PNG Companies – Operations & Maintenance and Capital Expenses	152

AQUA PENNSYLVANIA, INC.
PEOPLES NATURAL GAS CO. LLC AND PEOPLES GAS CO. LLC
MANAGEMENT AND OPERATIONS AUDIT

LIST OF EXHIBITS (continued)

Exhibit		Page
XIII-1	Aqua Services – Fleet Management Organization	154
XIII-2	Aqua Services and Aqua PA – Fleet Management Reporting Structure	155
XIII-3	PNG Companies and the Peoples Companies – Fleet Management Reporting Structure	156
XIII-4	Peoples Natural Gas Company – Vehicle Assignment Distribution	157
XIV-1	Aqua PA – Human Resources Organizational Chart	161
XIV-2	PNG Companies – Human Resources Organization Structure	164
XIV-3	Peoples Natural Gas Company – Staffing Levels	165
XIV-4	PNG Companies – Staffing Levels	166
XIV-5	PNG Companies and Peoples Natural Gas – Retention Rate	166
XIV-6	PNG Companies – Safety Organization	169
XIV-7	Peoples Natural Gas Company – Reported Safety Metrics and Performance	171
XIV-8	Peoples Gas Company – Reported Safety Metrics and Performance	171
XIV-9	Peoples Natural Gas Company – Number of Injuries, Illnesses, and Fatalities	172
XIV-10	Peoples Gas Company – Number of Injuries, Illnesses, and Fatalities	172

I. INTRODUCTION

Pennsylvania law grants the Pennsylvania Public Utility Commission (PUC or Commission) the general administrative power and authority to supervise and regulate public utilities within the Commonwealth of Pennsylvania per 66 Pa. C.S. § 501(b). Management and operational audits are required of certain Pennsylvania-based utility companies pursuant to 66 Pa. C.S. § 516(a). Specifically, the Commission can investigate and examine the condition and management of any public utility, 66 Pa. C.S. § 331(a).

In accordance with the PUC's ongoing program to identify improvements in the management and operations of fixed utilities under its jurisdiction, it was decided that a management and operations audit should be conducted of Aqua Pennsylvania, Inc. (Aqua PA), Peoples Natural Gas Company LLC (PNGC), and Peoples Gas Company LLC (PGC). PNGC and PGC are collectively referred to as the Peoples Companies and are subsidiaries of PNG Companies LLC[1]. As detailed in Chapter II – Background, Essential Utilities, Inc. (Essential) is the holding company who possesses common ownership of all three Pennsylvania PUC regulated utilities.

This report summarizes the work of the PUC's Management Audit Division and outlines its conclusions. The findings presented in the report identify areas and aspects where weaknesses or deficiencies exist. In all cases, recommendations are 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. Objectives and Scope

The objectives of this management and operations audit were:

- To provide the Commission, Aqua PA, the Peoples Companies, and the public with an assessment of the efficiency and effectiveness of the companies' operations, management methods, organization, practices, and procedures;

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

- To provide an information base for future regulatory and other inquiries into Aqua PA's and the Peoples Companies' management and operations.

The scope of this audit was limited to certain functional areas within Aqua PA and the Peoples Companies as explained in Section B, Audit Approach.

[1] PNG Companies, LLC is a subsidiary of LDC Holdings LLC, whose parent company is LDC Funding LLC, a direct subsidiary of Essential Utilities, Inc.

B. Audit Approach

The management and operations audit was performed by the Management Audit Division of the PUC's Bureau of Audits (PUC auditors or audit staff). The process began with a pre-fieldwork analysis as outlined below:

- A five-year internal trend (2015-2019) and ratio analysis was completed using financial and operational data obtained from Aqua PA, the Peoples Companies, the Commission, and other available sources.

- Input was solicited from PUC bureaus and offices, external parties, Aqua PA, and the Peoples Companies regarding any concerns or issues they would like addressed during 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.

This information was used to focus the PUC auditors' work efforts. Specifically, the listed functional areas were selected for in-depth analysis and are included in this report:

- Executive Management and Organizational Structure
- Corporate Governance
- Affiliated Interests and Cost Allocations
- Financial Management
- Water Operations
- Gas Operations
- Emergency Preparedness
- Materials Management
- Customer Service
- Information Technology
- Fleet Management
- Human Resources and Diversity

The pre-fieldwork 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-fieldwork review.

Fieldwork began on April 21, 2020 and continued through October 5, 2020. The principal components of the fact gathering process included:

- Interviews with Aqua PA and the Peoples Companies personnel as well as other Commission bureaus;

- Analysis of records, documents, and reports of a financial and operational nature focused primarily on the period 2015-2019, and the year 2020, as available; and,

- Virtual visits to select company facilities and observation of several work practices.

C. Functional Area Ratings

For the functional areas selected for in-depth examination, the PUC auditors rated the 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 functional area 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 a functional area such that it produces reasonably expected operating results.

Listed below are the evaluative categories used to rate each functional area's operating or performance level:

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

Our ratings for each reviewed functional area can be found in Exhibit I–1 on the next page.

Exhibit I–1
Aqua Pennsylvania, Inc.
The Peoples Companies
Functional Area Rating Summary

Functional Area	Meets Expected Performance Level	Minor Improvement Necessary	Moderate Improvement Necessary	Significant Improvement Necessary	Major Improvement Necessary
Aqua Pennsylvania, Inc.					
Executive Management and Organizational Structure			X		
Corporate Governance		X			
Affiliated Interests and Cost Allocations			X		
Financial Management		X			
Water Operations			X		
Emergency Preparedness			X		
Materials Management		X			
Customer Service		X			
Information Technology	X				
Fleet Management		X			
Human Resources and Diversity	X				
The Peoples Companies					
Executive Management and Organizational Structure	X				
Corporate Governance			X		
Affiliated Interests and Cost Allocations					X
Financial Management			X		
Gas Operations			X		
Emergency Preparedness	X				
Materials Management		X			
Customer Service		X			
Information Technology	X				
Fleet Management		X			
Human Resources and Diversity			X		

D. Benefits

Wherever possible, the audit staff estimated the potential savings expected from implementing the recommendations made in this report. The audit report details potential savings of approximately $417,000 annually with $339,000 and $78,000 attributed to Aqua PA and the Peoples Companies, respectively. We tried to identify, whenever practical, the potential savings, net of the projected costs, for implementation. Some of these savings could be an actual reduction in costs, avoided costs, or increased revenues; whereas, others would result in better deployment and/or use of existing resources. These quantifications require some judgment and may require efforts beyond the scope of the audit for further refinement. Therefore, actual benefits from effective implementation of the recommendations are subject to uncertainty and

could be higher or lower than the estimate. An overall summary of the annual and one-time costs savings quantified in the audit report are shown in Exhibit I-2, below.

Exhibit I–2
Aqua Pennsylvania, Inc. & The Peoples Companies
Quantifiable Savings Summary

Recommendation	Annual Savings	One-Time Savings
Aqua PA		
Document all lease agreements between Aqua PA and its affiliates and submit them to the Commission for approval. (V-2)	$150,000	-
Focus efforts on reducing NRW at the Roaring Creek system. (VII-5)	$189,000	-
Aqua PA Subtotal	$339,000	-
Peoples Companies		
Benchmark with similar utilities to set separate net collection goals for primary and secondary collection agencies at the Peoples Companies and measure each collection agency to the respective collection goal. (XI-4)	PNGC: $51,000 PGC: $27,000	-
Peoples Companies Subtotal	$78,000	-
Total for All Companies	**$417,000**	**-**

For most recommendations, it was impractical to estimate quantitative benefits as the benefits are of a qualitative nature, or insufficient data was 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 nor was not fully functional. Similarly, changes in workflow or implementation of good business practices could result in improved effectiveness and efficiency of a function but cannot be easily quantified.

Aqua PA and/or the Peoples Companies will have options to implement the recommendations and, as a result, the audit staff have not estimated the cost of implementation for recommendations where no savings were quantified. However, it should be noted that the cost of implementing some recommendations could be significant.

E. Current Events

On March 6, 2020, the Governor of Pennsylvania, Tom Wolf, declared a disaster emergency due to the COVID-19 pandemic. This and other state government actions ordered all but essential businesses and their operations closed for the safety of the general public. Although fixed utility operations such as water treatment and gas distribution were considered essential, most of the back-office functions such as corporate management, accounting and government relations were deemed nonessential. Most Pennsylvania utilities closed their business offices and allowed their employees to work remotely. The Pennsylvania Public Utility Commission also closed the main office and allowed employees, including those of the Audit Bureau, to perform their functions remotely. All nonessential travel and in-person meetings were prohibited.

As such, the COVID-19 crisis affected the approach and timeline of the audit. For example, some interviews and data request responses were delayed or modified. In all cases, the audit staff worked with Aqua PA and the Peoples Companies to acquire information needed to issue the findings and recommendations contained within this report. Although some aspects of fieldwork were modified and/or unfeasible, we worked to minimize the impact to the conclusions presented within the report. We believe that our procedures sufficiently mitigate the audit risk associated with altering our standard practices. However, conclusions presented within this report may change if additional information is made available. Furthermore, it is important to note that although COVID-19 affected the companies' operations; this report does not, nor was it intended to reflect any modified operations.

F. Recommendation Summary

Chapters III through XIV 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 overall rankings are not solely based on quantifiable dollars but rather our 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.

Aqua Pennsylvania, Inc.
Peoples Natural Gas Co. LLC and Peoples Gas Co. LLC
Focused Management and Operations Audit
Summary of Recommendations

No.	Recommendation	Page	Initiation Time Frame	Benefits (including $ estimates)
Chapter III – Executive Management and Organizational Structure				
III-1	Periodically review spans of control for management positions, document justification for supervisory position ratios with narrow or wide spans of control and adjust reporting relationships as appropriate.	32	0-12 Months	Medium
III-2	Establish a single repository for all policies and procedures across the Essential Utilities organization and establish a coordinated procedures review process.	32	0-6 Months	Medium
III-3	Reduce or eliminate manual processes within the payroll function.	32	12+ Months	High
Chapter IV – Corporate Governance				
IV-1	Periodically seek competitive bids for external audit services.	40	0-12 Months	High
IV-2	Organize the Internal Audit function to report administratively to the CEO, another non-financial senior officer, or directly to the Board of Directors	40	0-12 Months	Low
IV-3	Establish a foundational understanding of internal audit needs as a result of the Peoples Companies' acquisition, then resource and staff accordingly.	40	0-6 Months	High
IV-4	Conduct a review of completed internal audits to ensure previous recommendations are being properly implemented at the Peoples Companies.	40	0-6 Months	Medium
Chapter V – Affiliated Interests and Cost Allocations				
V-1	Improve internal controls and other practices related to affiliate transactions and cost allocation to ensure the company is following best practices and Commission guidelines. Further, the Peoples Companies should consult with the PUC's Bureau of Technical Utility Services to perform a thorough review of the current AIAs on file to determine if changes to the AIAs are needed and/or if new AIAs need to be filed to ensure compliance with Title 66 Chapter 21.	63	12 Months	High
V-2	Document all lease agreements between Aqua PA and its affiliates and submit them to the Commission for approval.	63	0-6 Months	High Up to $150,000 Annually
V-3	Implement a policy or procedure that requires the approval of Peoples Companies employees' timesheets similar to what exists for Aqua Services employees.	64	3 Months	Medium
V-4	Expand Essential's corporate charges allocation manual to include all transactions between affiliates.	64	0-12 Months	Medium

Aqua Pennsylvania, Inc.
Peoples Natural Gas Co. LLC and Peoples Gas Co. LLC
Focused Management and Operations Audit
Summary of Recommendations

No.	Recommendation	Page	Initiation Time Frame	Benefits (including $ estimates)
Chapter V – Affiliated Interests and Cost Allocations (continued)				
V-5	Conduct periodic market studies to confirm that goods and services provided by affiliates to the utilities are at the lower of cost or market, and goods and services provided by the utilities to affiliates are at the higher of cost or market.	64	0-12 Months	High
Chapter VI – Financial Management				
VI-1	Perform a cost/benefit analysis to determine the feasibility of implementing an Essential Utilities money pool.	82	3 Months	Medium
VI-2	Reduce or eliminate manual processes within the accounts payable function at Aqua PA.	82	0-6 Months	High
VI-3	Develop and implement capital and operations and maintenance (O&M) budget manuals/policies that include requirements for detailed written explanations of budget variances in excess of 10% for the Peoples Companies.	82	3 Months	Medium
VI-4	Develop and implement new accounting/finance policies and procedures at the Peoples Companies where appropriate and ensure the policies have all the key elements, including accountability and a regular review schedule to remain timely.	82	0-6 Months	Medium
VI-5	Update Aqua PA's dividend policy.	82	0-6 Months	Low
Chapter VII – Water Operations				
VII-1	Implement a full-scale valve inspection and exercise program designed to identify what valves have not been operated or inspected in the last ten years.	94	0-12 Months	Medium
VII-2	Update all drought contingency plans annually.	94	0-12 Months	Low
VII-3	Implement measures to reduce company-at-fault hits.	94	0-6 Months	High
VII-4	Increase testing and replacement of meters to improve accuracy rates.	94	0-6 Months	Medium
VII-5	Focus efforts on reducing NRW at the Roaring Creek system.	94	0-12+ Months	Medium Up to $189,000 Annually
Chapter VIII – Gas Operations				
VIII-1	Expedite bare steel replacement efforts in the companies' distribution systems, and conduct ongoing staffing analyses to support any decision-making to fully staff, train, and monitor the workforce needs for all of the engineering, construction, and field operations positions and support positions needed to maintain future accelerated main replacement rates.	108	6-12 Months	Medium
VIII-2	Effectively modify, track, and enforce the damage prevention program and initiate preventative solutions to minimize second- and third-party damages in significant construction areas.	108	6 Months	Medium

Aqua Pennsylvania, Inc.
Peoples Natural Gas Co. LLC and Peoples Gas Co. LLC
Focused Management and Operations Audit
Summary of Recommendations

No.	Recommendation	Page	Initiation Time Frame	Benefits (including $ estimates)
Chapter IX – Emergency Preparedness				
IX-1	Establish a standard frequency for AED inspections across Aqua PA and require inspections to be tracked for all AEDs.	116	0-6 Months	Low
IX-2	Establish a unified Emergency Response Plan for Aqua PA and ensure that localized conditions are captured for individual facilities.	116	0-12 Months	Medium
IX-3	Establish a unified control room security standard for Aqua PA, and upgrade existing facilities to adhere to it.	116	0-6 Months	High
IX-4	Establish a tiered physical security standard for Aqua PA based on criticality of company facilities.	116	0-12 Months	Medium
IX-5	Correct minor deficiencies in physical security and safety at Aqua PA.	116	0-6 Months	Medium
IX-6	Designate responsible parties, review existing security protocols and measures, and address deficiencies with the physical security needs of IT components at Aqua PA and Essential Utilities.	116	0-6 Months	Medium
IX-7	Perform a physical security drill and/or tabletop exercise annually at Aqua PA.	116	0-12 Months	Low
IX-8	Supply rescue hooks at all locations with open topped aerated basins and tanks deep enough to submerge employees at Aqua PA.	116	0-12+ Months	High
Chapter X – Materials Management				
X-1	Fully develop and standardize all policies and procedures at Aqua PA.	125	0-12+ Months	Low
X-2	Incorporate inventory accuracy into key performance indicators at the Peoples Companies and improve accuracy in all storerooms.	125	0-6 Months	High
Chapter XI – Customer Service				
XI-1	Continue outreach efforts to engage payment troubled customers, leverage low-income resources, grants, and programs to mitigate the overall level of unpaid customer balances, and accelerate first contact with customers who miss a payment.	146	0-6 Months	Medium
XI-2	Develop periodic refresher training, including documentation of instances of theft of service, meter tampering, unauthorized tie-ins, etc. to ensure new and existing staff are kept apprised of recent cases, investigation outcomes, and safety precautions for Aqua PA.	146	0-12 Months	Low
XI-3	Improve the functionality and workflow progression provided by Aqua Services' customer information system.	146	12+ Months	High

Aqua Pennsylvania, Inc.
Peoples Natural Gas Co. LLC and Peoples Gas Co. LLC
Focused Management and Operations Audit
Summary of Recommendations

No.	Recommendation	Page	Initiation Time Frame	Benefits (including $ estimates)
Chapter XI – Customer Service (continued)				
XI-4	Benchmark with similar utilities to set separate net collection goals for primary and secondary collection agencies at the Peoples Companies and measure each collection agency to the respective collection goal.	146	6 Months	High PNGC – $51,000 Annually PCG - $27,000 Annually
XI-5	Establish goals to achieve for customer satisfaction performance at the Peoples Companies and complete an analysis at the end of 2021 to evaluate the effectiveness of the IVR redesign, including Chat Bot, in improving customer satisfaction metrics.	146	6 Months	Low
XI-6	Perform an analysis of source data being gathered for arrearage level reports and remove any adjustments or inactive accounts that would adversely affect the integrity of arrearage data for the Peoples Companies.	146	3 Months	Low
Chapter XII – Information Technology				
	None			
Chapter XIII – Fleet Management				
XIII-1	Perform a periodic vehicle lease vs. buy analysis at Aqua Pennsylvania and the Peoples Companies, to ensure Pennsylvania operations is utilizing the least cost option for acquiring vehicles and equipment.	160	0-12 Months	Low
XIII-2	Implement Dossier as PNG Companies' fleet management system.	160	6-9 Months	Low
Chapter XIV – Human Resources and Diversity				
XIV-1	Establish an internal OSHA recordable rate goal for the Peoples Companies based upon industry performance and align safety programs to achieve the OSHA goal(s).	176	3 Months	Low
XIV-2	Measure employee engagement on a regular basis for the Peoples Companies in order to trend employee enthusiasm and motivation and reveal opportunities for improvement.	176	3-6 Months	Low
XIV-3	Implement a safety management system at the Peoples Companies.	176	3-6 Months	Medium
XIV-4	Expedite the succession planning process, alongside with Essential Utilities, to ensure the Peoples Companies develop and recruit key positions.	176	3 Months	Low
XIV-5	Update all job descriptions for the Peoples Companies.	176	3-6 Months	Low

II. BACKGROUND

A. Essential Utilities, Inc.

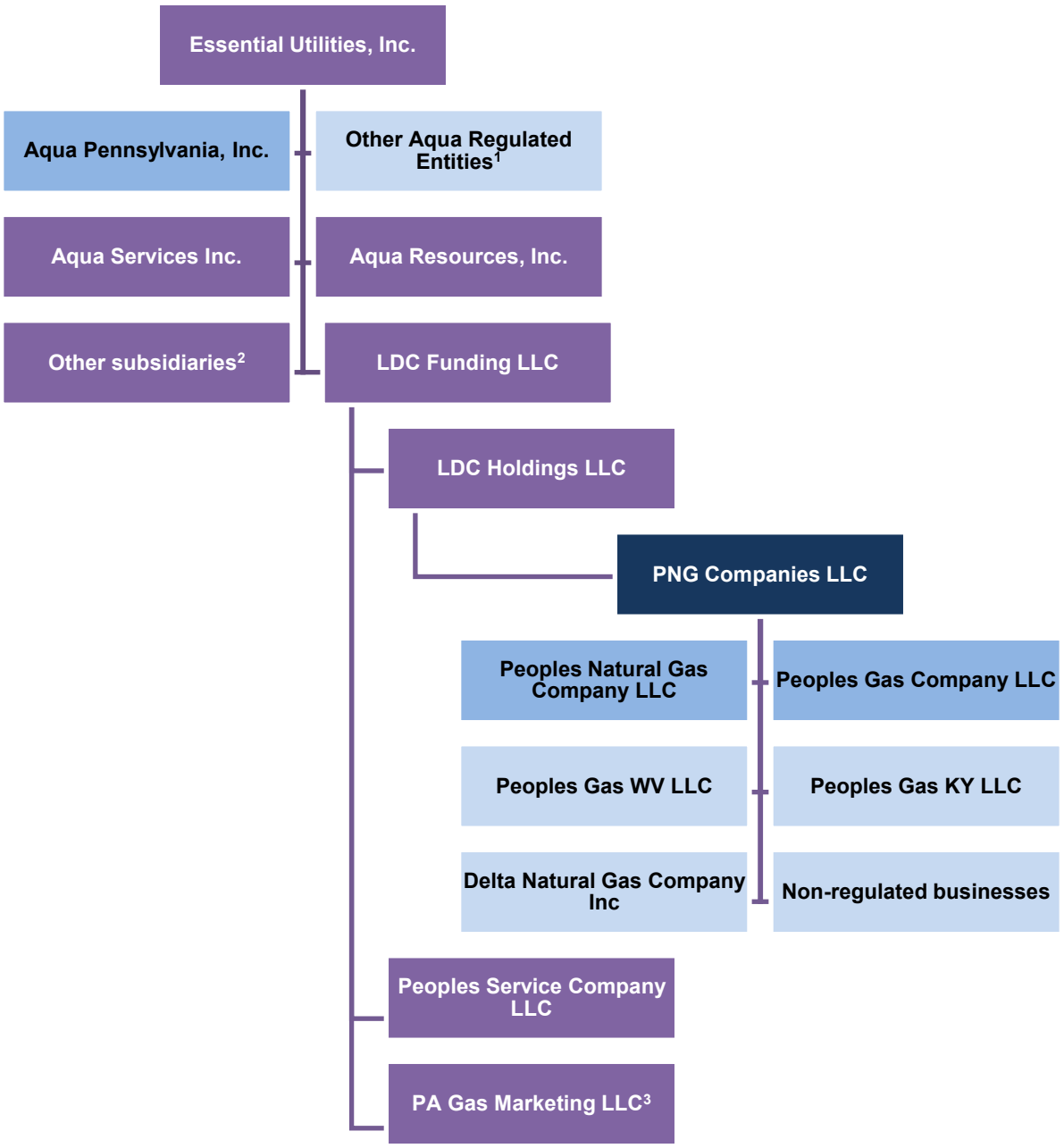
Aqua America, Inc. (Aqua America) was formed in 1968 as a holding company with interests in the water and wastewater industry, including its primary subsidiary, Aqua Pennsylvania, Inc. (Aqua PA). In the 1990s, Aqua America expanded within the US water and wastewater industry through acquisitions. By 2019, Aqua America had interests in water/wastewater utilities in 8 states and is now the second largest investor-owned water utility in the United States.

On January 16, 2020, the PUC approved Aqua America's acquisition of all interests in LDC Funding LLC (LDC Funding) from SteelRiver LDC Ventures LLC.[2] As part of the acquisition, all subsidiaries of LDC Funding were also acquired by Aqua America including LDC Holdings, LLC; Peoples Service Company, LLC; and PA Gas Marketing, LLC, where LDC Holdings LLC is the parent company of PNG Companies, LLC (PNG Companies). PNG Companies is the parent company of both PA regulated natural gas distribution utilities: Peoples Natural Gas Company LLC (PNGC) and Peoples Gas Company LLC (PGC), collectively referred to as the Peoples Companies. Upon the acquisition of LDC Funding, Aqua America expanded its operations into the natural gas industry. Thus, on February 3, 2020, Aqua America officially changed its name to Essential Utilities, Inc. (Essential). The transaction was completed on March 16, 2020, transferring ownership of LDC Funding from SteelRiver LDC Ventures LLC to Essential.

Essential's updated corporate entity organizational structure as of April 2020 is shown in Exhibit II-1. Essential's subsidiaries consist of regulated and unregulated companies that are discussed throughout this chapter and report. Nonetheless, Essential is exclusively a holding company, thus Essential's CEO and other corporate officers are technically employees of Aqua Services Inc. (Aqua Services) which provides common services to other Essential subsidiaries including Aqua PA and the Peoples Companies. Essential's executive management organization is composed of the CEO and all direct reports, including Essential's corporate officers, see Chapter III – Executive Management and Organizational Structure Exhibit III-1. The corporate officers also serve other affiliates like Aqua Resources, Inc., which provides various nonregulated water and wastewater services to municipalities and third parties. (See Chapter IV – Corporate Governance and Chapter V – Affiliated Interests and Cost Allocations for additional information on Aqua Services and Aqua Resources).

[2] SteelRiver LDC Ventures LLC's majority interest is held by SteelRiver Infrastructure Fund North America LP (SRIFNA). SRIFNA is an unlisted infrastructure investment vehicle that is owned and managed by SteelRiver Infrastructure Associates LLC and its affiliated investment entities (collectively referred to as SteelRiver). SteelRiver is owned by SteelRiver Infrastructure Partners, a Delaware limited partnership that invests in North American infrastructure assets.

Exhibit II–1
Essential Utilities, Inc.
Corporate Entity Chart
As April 1, 2020

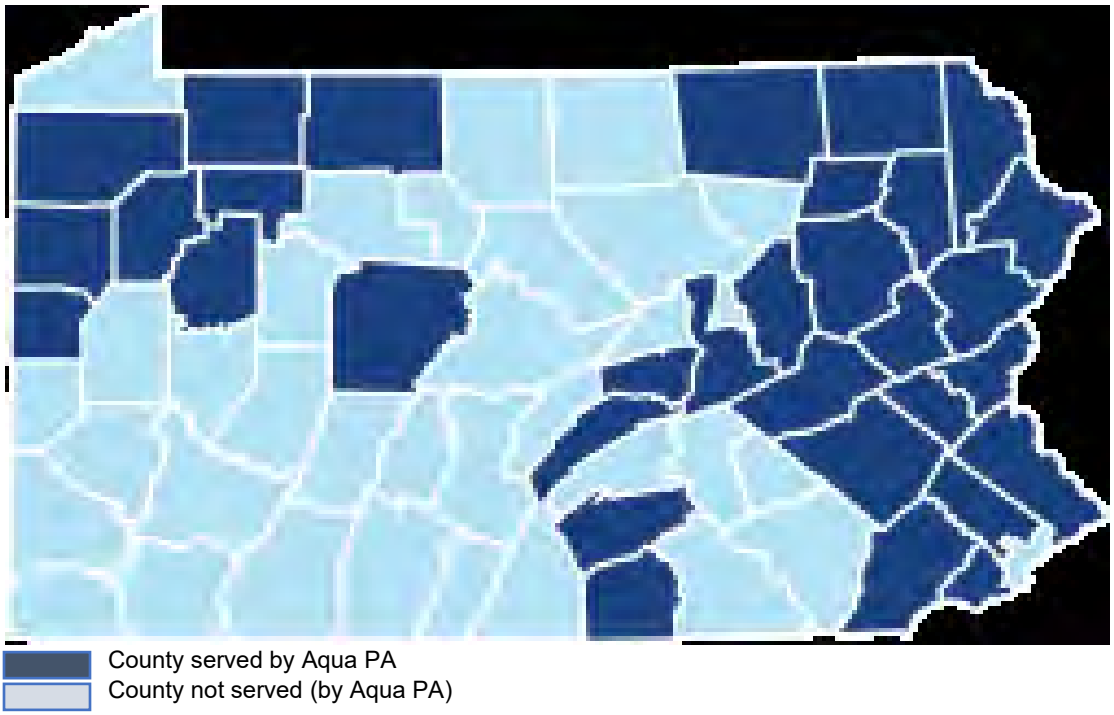


Note 1: Regulated subsidiaries include: Aqua IL, Aqua GA, Aqua Indiana-Western Hancock, Aqua OH, Aqua NJ, Aqua VA, Aqua NC, Aqua TX, and Aqua FL
Note 2: Unregulated subsidiaries include: Utility and Municipal Services, Aqua Utilities, Aqua Operations, Aqua Infrastructure, Aqua Holdings, Aqua Development, Aqua Charitable Trust, Aqua Acquisition Corp., and Essential Assistance Initiatives
Note 3: Although PA Gas Marketing LLC technically still exists as an entity, PA Gas Marketing LLC no longer holds a supplier license at Docket No. A-2010-2216091. Energy Choice supplier related activity ended effective with the date of the Equitable Gas Company transaction on December 16, 2013. PA Gas Marketing LLC surrendered its natural gas supplier license on July 9, 2014 and ended its warranty program contract on September 1, 2015.
Source: Data Request A-EM-1

B. Aqua Pennsylvania

Aqua PA is Essential's largest, wholly-owned regulated water and wastewater utility. In 2019, Aqua PA accounted for approximately 54% of Essential's operating revenue. Aqua PA provides service to approximately 1.4 million residents throughout 32 counties in Pennsylvania with a considerable presence within the suburban areas north and west of the City of Philadelphia. Exhibit II-2 reflects Aqua PA's presence in the dark blue shaded counties.

Exhibit II–2
Aqua Pennsylvania, Inc.
Service Territory by County
As of April 21, 2020



Source: 2020 Management Audit of Essential Utilities Entrance Meeting Presentation

Aqua PA's service area is divided into four divisions (see Chapter VII – Water Operations). They are:

- Southeastern
- Central (Roaring Creek/Susquehanna)
- Northeast (Honesdale/White Haven)
- West (Shenango)

To serve these areas, Aqua PA treats surface water from the Crum, Pickering, Brandywine, Perkiomen, Neshaminy, Ridley and Chester creeks, Schuylkill, Delaware, and Shenango rivers and the Upper Merion Quarry as well as groundwater from

numerous wells. Aqua PA also has a subsidiary, Aqua Pennsylvania Wastewater, Inc., with approximately 43,000 wastewater connections and 40 wastewater treatment facilities across portions of Adams, Bucks, Carbon, Chester, Clarion, Clearfield, Delaware, Lackawanna, Luzerne, Monroe, Montgomery, Pike, Schuylkill, Venango and Wyoming Counties.

Aqua Services and Aqua PA are headquartered in the same office location in Bryn Mawr, PA. As Essential's largest water subsidiary, Aqua PA is the recipient of a significant level of shared services provided by Aqua Services. Thus, Aqua Services staff generally spend a large portion of time dedicated to Aqua PA. To minimize overhead, there are numerous instances where Aqua PA employees report directly to Aqua Services managers. As demonstrated in Exhibit II-3, the Aqua PA employee groups are composed of both bargaining and non-bargaining members, conversely all Aqua Services staff are non-bargaining employees.

Exhibit II–3
Aqua PA and Aqua Services
Employee Statistics
As of May 2020

	Aqua PA	Aqua Services	Total
Bargaining	354	0	354
Non-Bargaining	219	318	537
Total Employees	573	318	891

Note: Employees of the wastewater division are included in the Aqua PA numbers. There are 19 employees (12 bargaining/7 non-bargaining) serving the wastewater division.
Source: Data Request A-EM-5

A summary of Aqua PA's customer statistics for water and wastewater service is shown in Exhibit II-4 (see Chapter XI – Customer Service for additional information). Aqua PA's residential water customers represent 91.46% of total customers; account for 54.97% of total usage; and 62.96% of total revenue. Whereas, Aqua PA's residential wastewater customers comprise 90.71% of total customers; and 72.11% of total revenue.

Exhibit II-4
Aqua Pennsylvania, Inc.
Customer Statistics
As of December 31, 2019

Aqua PA – Water						
Customer Class	**Number of Customers**	**Percentage of Customers**	**Gallons Sold**	**Percentage of Gallons Sold**	**Revenues**	**Percentage of Revenues**
Residential	405,272	91.46%	18,370,131	54.97%	283,776,467	62.96%
Commercial	22,643	5.11%	9,832,221	29.42%	103,695,825	23.01%
Industrial	797	0.18%	3,283,250	9.82%	18,994,069	4.21%
Public	8,144	1.84%	950,836	2.85%	8,888,774	1.97%
Public Fire	87	0.02%	0	0.00%	6,313,029	1.40%
Private Fire	6,195	1.40%	78,126	0.23%	1,997,673	0.44%
Other Sales	NA	NA	906,100	2.71%	27,082,935	6.01%
Totals	**443,138**	**100.00%**	**33,420,664**	**100.00%**	**450,748,772**	**100.00%**

Aqua PA – Wastewater				
Customer Class	**Number of Customers**	**Percentage of Customers**	**Revenues**	**Percentage of Revenues**
Residential	34,660	90.71%	15,069,867	72.11%
Commercial	3,470	9.08%	4,532,746	21.69%
Industrial	9	0.02%	811	0.00%
Public	69	0.18%	1,234,423	5.91%
Other	NA	NA	60,587	0.29%
Totals	**38,208**	**100.00%**	**20,898,434**	**100.00%**

Source: 2019 PUC Annual Reports and PUC Auditor Analysis

C. The Peoples Companies

PNG Companies, a Delaware limited liability corporation, with its main office in Pittsburgh was created in 2011 as a result of SteelRiver Investment Partners LP (prior owner of PNG Companies) purchasing The Peoples Gas Company (2010), T.W. Philips Gas and Oil Co. (2011), Equitable Gas Company (2013) and Delta Gas Company (2017, Kentucky utility). Currently, PNG Companies provides corporate services to its subsidiaries depicted in Exhibit II-1, including PNGC and PGC. These main services include, but are not limited to, executive, customer service, human resources, regulatory affairs, information technology, legal, sales and marketing, reliability, accounting, and internal audit.

Prior to January 2018, PNG Companies was simply a holding company for the entities and did not have employees providing services. The reorganization was

completed to centralize corporate services that historically were being provided by the Peoples Companies and passed through Peoples Service Company LLC.

A brief overview of the recent histories and significant events/changes of PNG and PGC is as follows:

- May 2015 – Customer Service function and employees from PNGC and PGC were restructured into Peoples Service Company LLC

- January 2016 – Peoples Companies consolidated the operations of three separate utilities (at that time were PNGC, PNGC – Equitable Division, and Peoples TWP LLC)
  - Established a single labor agreement with common work rules
  - Offered a voluntary retirement program to employees that met certain requirements
  - Reduced shop locations from 22 to 14

- July 2017 – Peoples TWP filed with the Department of State to change name to Peoples Gas Company LLC.

- September 2017 – PGC filed application for authority and certificates to transfer membership from LDC Holdings II LLC to LDC Holdings LLC; consolidated into a single chain of ownership; as a result, LDC Holdings II LLC no longer exists.

- January 2018 – Corporate services functions from PNGC and PGC were transferred to PNG Companies; field operations employees from PGC were transferred to PNGC, leaving no employees in PGC.

- Created Pipeline Safety Management Program (PSMP) and Damage Prevention Enhancement Plan (DPEP).
  - PSMP according to American Petroleum Institute Recommended Practice 1173 and executed 3Q 2020.
  - DPEP ongoing with Act 50 Training and filed March 2020.

- September 2020 – Peoples Companies filed an updated combined Long-Term Infrastructure Improvement Plan at Docket No. P-2020-3022053

As a result of the acquisition by Essential, the Peoples Companies receive various support services from PNG Companies and Aqua Services. Additional changes to organizational, operational, and strategic planning resulting from the acquisition are further discussed throughout this report.

The combined staffing complement of the Peoples Companies and PNG Companies is displayed in Exhibit II-5. Bargaining unit employees make up 64.9% of the total workforce at the companies; 865 bargaining unit and 466 non-bargaining unit (1,331 total). A more detailed staffing examination is presented in Chapter XIV – Human Resources, Exhibit XIV-4.

Exhibit II–5
Peoples Companies and PNG Companies
Employee Statistics
As of August 2020

	PNG Companies	PNGC	PGC	Total
Bargaining	113	752	0	865
Non-Bargaining	296	170	0	466
Total Employees	409	922	0	1,331

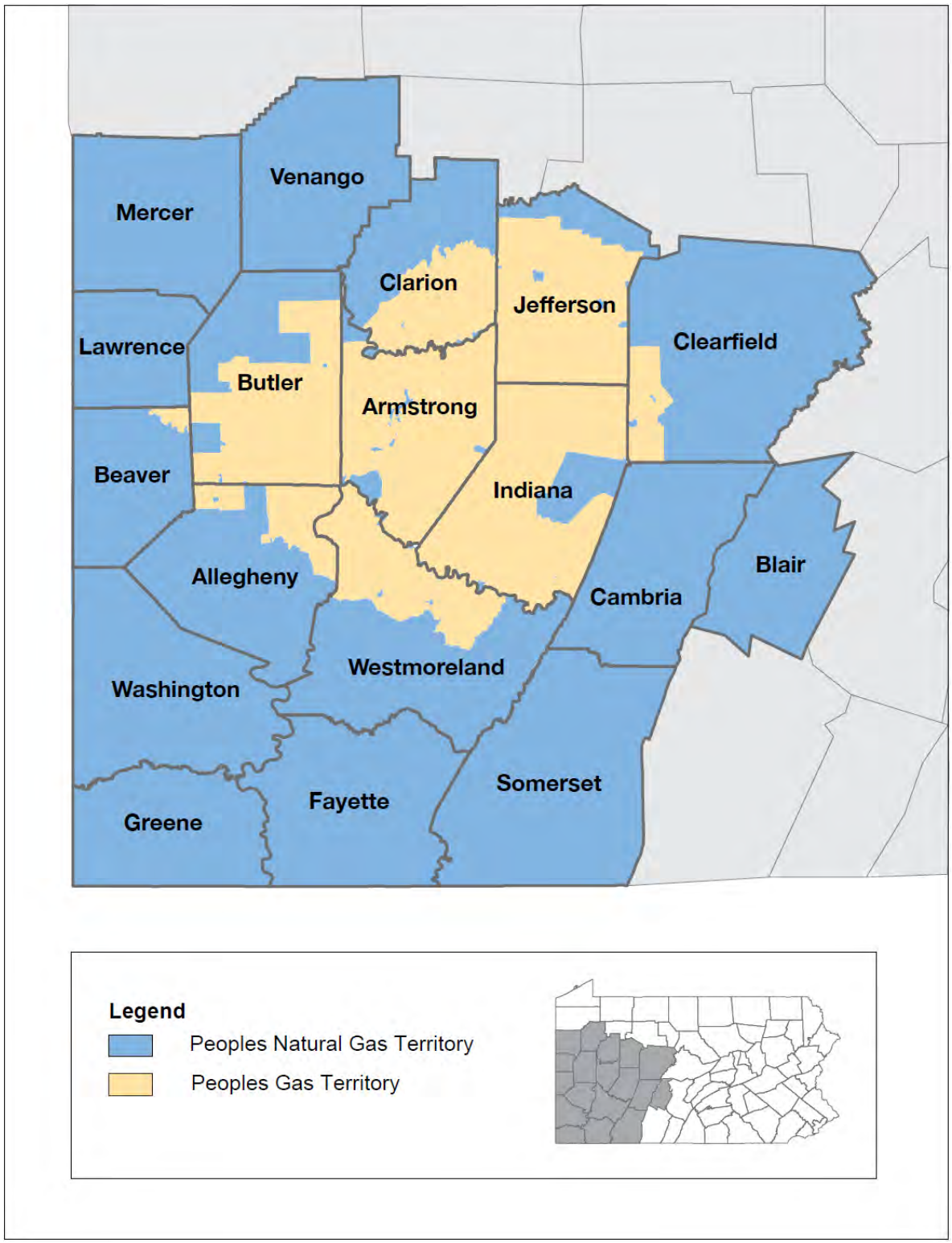
Source: Data Request P-EM-40

The Peoples Companies' service area is displayed in Exhibit II-6. This territory lies within Southwest Pennsylvania with the Peoples Companies' headquarters located in Pittsburgh, Pennsylvania. In some areas, PNGC and PGC service territories may overlap. The service territory for each company is as follows:

- Peoples Natural Gas – the service territory of PNGC serves 629,000 customers in in the following counties: Allegheny, Armstrong, Beaver, Blair, Butler, Cambria, Clarion, Fayette, Greene, Indiana, Jefferson, Lawrence, Mercer, Somerset, Venango, Washington, and Westmoreland.

- Peoples Gas Company – the service territory of PGC serves 62,300 customers in the following counties: Allegheny, Armstrong, Beaver, Butler, Clarion, Clearfield, Indiana, Jefferson, and Westmoreland.

Exhibit II–6
Peoples Companies Service Territory
As of August 18, 2020



Source: Data Request P-EM-38

A summary for each of the Peoples Companies with respect to number of customers, usage, and revenues by customer class as of year-end 2019 is shown in Exhibit II-7. Residential customers comprise 92.2% and 93.1% of total customers; 75.6% and 24.6% of usage; and 74.7% and 71.6% of revenue for PNGC and PGC, respectively.

Exhibit II–7
Peoples Companies' Customer Statistics
As of December 31, 2019

Customer Class	Number of Customers	Percentage of Customers	MCF Sold	Percentage of MCF Sold	Revenues	Percentage of Revenues
Peoples Natural Gas Company						
Residential	579,897	92.2%	52,483,661	43.4%	516,709,023	74.7%
Commercial	48,796	7.8%	29,992,188	24.9%	141,611,622	20.5%
Industrial	402	0.06%	38,309,510	31.7%	33,388,950	4.8%
Totals	**629,095**	**100.00%**	**120,785,359**	**100.00%**	**691,709,595**	**100.00%**
Peoples Gas Company						
Residential	57,985	93.1%	4,999,352	24.6%	65,044,712	71.6%
Commercial	4,282	6.9%	2,675,780	13.2%	20,266,345	22.3%
Industrial	26	0.04%	12,645,716	62.2%	5,530,503	6.1%
Totals	**62,293**	**100%**	**20,320,848**	**100%**	**90,841,560**	**100%**

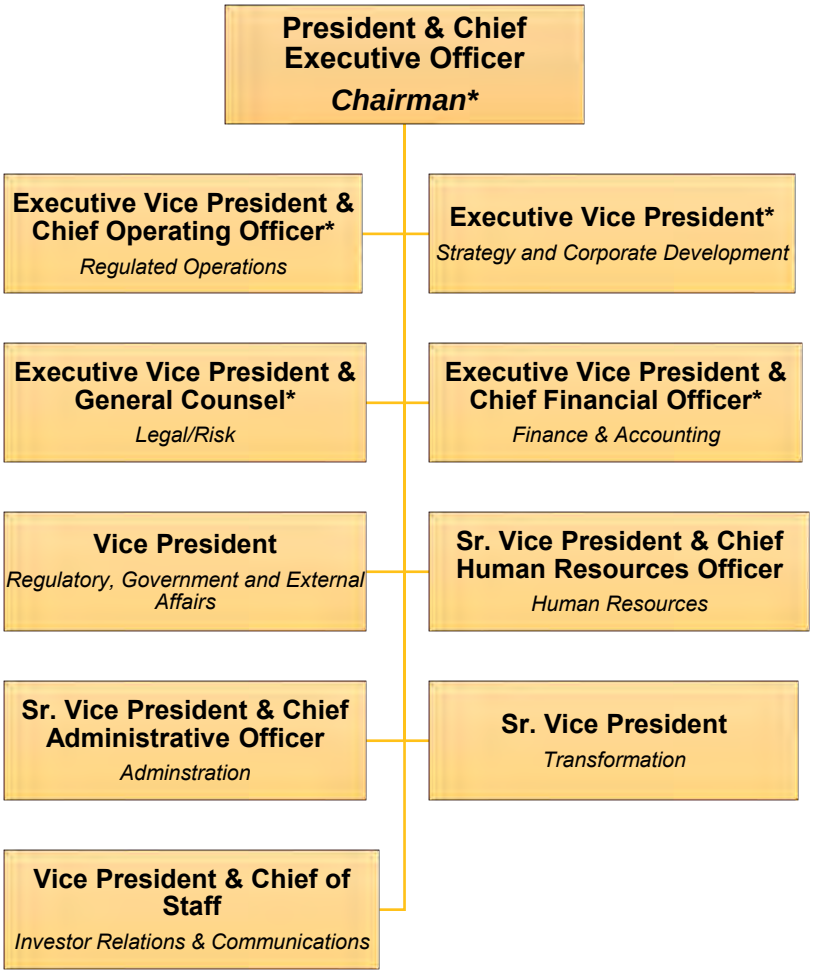
Source: PUC Annual Reports and Auditor's Analysis

III. EXECUTIVE MANAGEMENT AND ORGANIZATIONAL STRUCTURE

Background

On February 3, 2020, Aqua America, Inc. announced its new company name as Essential Utilities, Inc. (Essential), and began announcing the members of the executive leadership team that reports to the Chief Executive Officer (CEO), President and Chairman of Essential. The executive leadership team of Essential, as of April 30, 2020, are shown in Exhibit III-1.

Exhibit III–1
Essential Utilities, Inc.
Executive Leadership Team
As of April 30, 2020



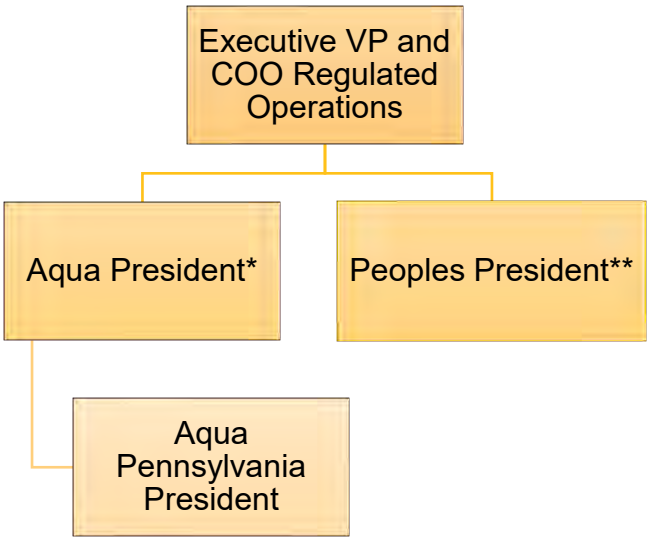
Note: Employees with an asterisk (*) are also Essential Corporate Officers.
Source: Data Request P-EM-2, PUC auditor analysis

As indicated in Chapter II – Background, Essential is a holding company with no employees and is the parent company of Aqua Pennsylvania, Inc. (Aqua PA), Peoples

Natural Gas Company LLC (PNGC) and Peoples Gas Company LLC (PGC), (collectively referred to as the Peoples Companies). Essential's executive leadership, as shown in Exhibit III-1, is provided by Aqua Services' personnel (see Chapter V – Affiliated Interests and Cost Allocations for more information). The current executives were previously employed under Aqua America Inc. with exception of the SVP of Transformation. The SVP of Transformation was the former PNG Companies Chief Information Officer, and now oversees the technology conversion and upgrade of the Essential portfolio (i.e., SAP installation).

The corporate entity structure for Essential and its affiliates is displayed in Exhibit II-1 of Chapter II – Background. Additionally, an overview of the histories, service territories of PNGC and PGC, the Aqua America acquisition of PNG Companies and the creation of Essential are discussed in Chapter II. With the acquisition of the Peoples Companies, the executive management structure of regulated operations changed slightly as presented in Exhibit III-2. Specifically, the EVP & Chief Operating Officer of Regulated Operations directly oversees the Aqua President and the Peoples President. The Aqua President oversees Aqua's eight state water and wastewater utilities including Aqua PA. The Peoples President oversees the six natural gas distribution companies, including PNGC and PGC. The executive management and organizational structure at Aqua PA, the Peoples Companies and PNG Companies are further discussed within this chapter.

Exhibit III–2
Essential Utilities Inc.
Executive Management of Regulated Operations
As of April 30, 2020

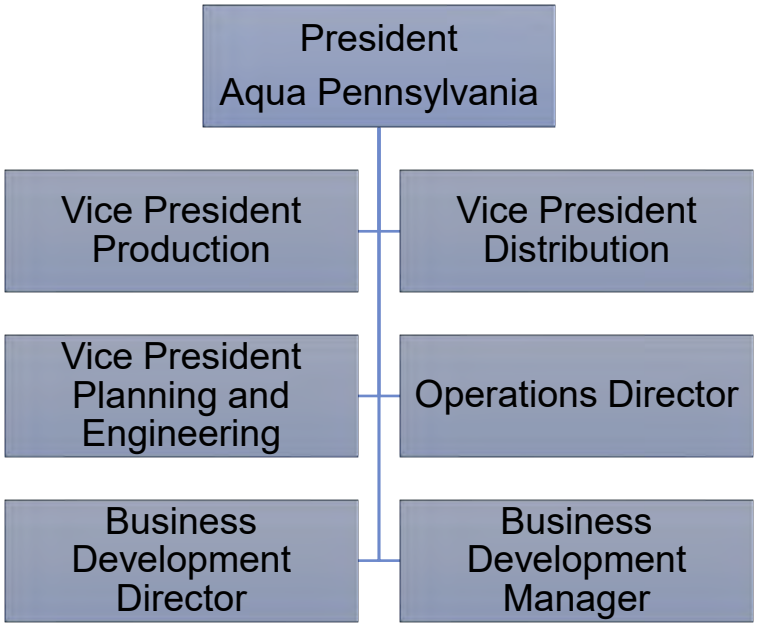


* The Aqua President oversees additional presidents of other regulated water utilities.
** The Peoples President is also the President of PNGC and PGC
Source: Data Request A-EM-2, PUC auditor analysis

A. Aqua Pennsylvania

Beyond the joint executive leadership provided by corporate, Aqua PA's management team is comprised of personnel focused on the operations of Aqua PA's water and wastewater systems. A closer look at Aqua PA's management team is presented in Exhibit III-3 and Chapter VII – Water Operations for additional information about the role of these employees.

Exhibit III–3
Aqua Pennsylvania, Inc.
Executive Management Team
As of April 30, 2020



Source: Data Request A-EM-2

Aqua PA's staffing levels for 2015 through 2020 are shown in Exhibit III-4. As indicated, the number of Aqua PA employees increased by 4%, from 548 in 2015 to 570 in April 2020. Aqua PA's workforce growth is driven primarily by acquisitions of water and wastewater utilities. Since 2015, Aqua PA has acquired seven water and seven wastewater systems with additional acquisitions pending and include Superior Water Company, Phoenixville Water Authority, Emlenton Wastewater, etc.

Exhibit III–4
Aqua Pennsylvania, Inc.
Staffing Levels
For the Years 2015 through 2020

Year	2015	2016	2017	2018	2019	2020
Total Employees	548	557	547	555	572	572

Source: 2015-2019 data is from Aqua PA's annual reports filed in 2016 through 2020 and company provided data

Acquisitions and various other business decisions are part of Aqua PA's strategic planning process. Specifically, Aqua PA's strategic planning process is centered around its annual budgeting process, which is discussed in more detail within Chapter VI – Financial Management. The narrative generated from these processes includes discussion on projected revenues, capital and operating expenses, and customer growth and projected financial statements (balance sheet, income statement, statement of cash flows) for five years.

Succession planning for Aqua PA is a joint effort between Aqua Services' HR department and Aqua PA management. Since 2017, HR has used a 9-box assessment to evaluate the performance and potential of corporate personnel to rise within the organization. HR provides recommendations on development plans for high potential employees to increase skills necessary for advancement. The use of 9-box is not standard across Essential's lower levels of management. However, this tool is being used to assess certain candidates within Aqua PA.

Aqua PA's President is proactively involved in the succession planning process for operations employees. For example, Aqua PA has a rotational superintendent program in southeastern PA, which has expanded to other regions. Employees participating in this program rotate through other treatment plants to gain familiarity with different facilities to develop broad range experience for future senior management position openings.

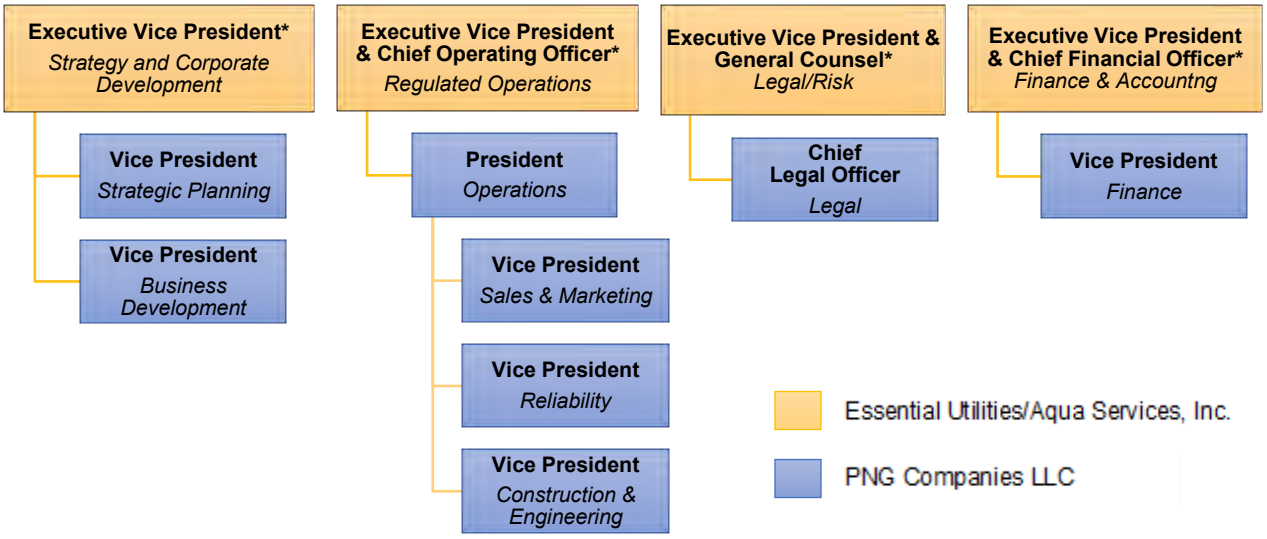
The cadet program for production specialists is another employee development program within Aqua PA. These employees are given three to five years of experience in the production department working at different locations and rotating under different managers. Production specialists learn about the different types of operations that the company has and are well-suited to move into production superintendent or treatment supervisor positions in the future.

A third employee development program within Aqua PA is their management advancement program. This program allows employees, who do not have a formal degree, to be treated as if that employee has a degree when the employee agrees to obtain the degree within five years. There have been six employees who have gone through the management advancement program. Although Aqua PA does not pay for the degree or guarantee a position, it does allow for increased internal mobility within the company.

B. The Peoples Companies

Exhibit III-5 displays the executive reporting structure at PNG Companies as of June 2020. The structures at PNG Companies and the Peoples Companies have changed over the past five years due to movement of employees to PNG Companies from the Peoples Companies and may continue to change with the recent acquisition by Essential. PNG Companies has eight officers; with five reporting directly to various Essential officers (refer to Exhibit III-1). Three officers (Vice Presidents of Sales & Marketing; Reliability; and Construction & Engineering) at PNG Companies report directly to the PNG Companies President of Operations.

Exhibit III–5
Officers of PNG Companies
As of June 30, 2020



Source: Data Requests A-EM-1 and P-EM-31, PUC Auditor Analysis

Before March 2020, PNG Companies' strategic planning had been based significantly on acquisition transitions & merger commitments, replacement of high-risk pipelines, maintaining safety and reliability, and improving efficiencies among other strategic areas. The most recent strategic plan was reviewed by the audit staff to identify key initiatives and values at PNG Companies and the Peoples Companies. The plan was based upon a four-point vision of safety, customer commitment, long-term economic growth and culture. In order to achieve its strategic goals and mission, PNG Companies partakes in, but are not limited to, the following initiatives:

- Long-Term Infrastructure Improvement Plan – dedicating resources to the replacement of high-risk pipe (see Chapter VIII – Gas Operations).

- Innovation – driving efficiencies and cost savings with technology and process improvement; workforce optimization, increased robotics, Idea Hub – employee innovation ideas, etc.

- Environment – strengthening commitment to environment and safety; pipeline replacement, methane mitigation, natural gas vehicles, microgrid studies, etc.

- Customer Relationship – enhancing relationship with increased focus on customer feedback, providing additional services & options, education on available energy and assistance programs, etc.

- Growth – focusing on business expansion with customer growth, gas gathering optimization (markets and capacity), microgrid developments, fuel cell pilot programs, etc.

Moving forward, PNG Companies will provide strategic planning needs on behalf of the Peoples Companies and communicate plans to Essential. Essential will then decide and establish the strategic and operational goals and communicate them to PNG Companies where they are cascaded down through the proper management and departmental employees. The established goals for PNG Companies are monitored and tracked using a corporate scorecard; year-end scorecards are reviewed to ensure the Peoples Companies will have and continue to attain their goals and metrics satisfactorily. Goals are color-coded depending on the status of performance for each strategic area:

- red code - a goal is not on track for the year

- yellow code - the goal is currently being met but not by a comfortable margin or trending in the wrong direction

- green code - the goal is on track

In addition to traditional strategic goals, PNG Companies and the Peoples Companies will also incorporate the obligations required as conditions of the Aqua America purchase as part of its strategic planning process. On January 16, 2020, at Docket Nos. A-2018-3006061, A-2018-3006062, and A-20180-3006063, the Pennsylvania Public Utility Commission (PUC or Commission) approved the Joint Petition for Approval of Settlement of All Issues (Settlement Agreement) pertaining to the merger and acquisition of the Peoples Companies by purchasing LDC Funding LLC, which owned 100% interest in PNG Companies, (see Exhibit II-1).[3] The Settlement Agreement stipulated a number of terms and conditions. Most conditions are either ongoing or only apply if a change occurs to present conditions (e.g., conditions that apply if Essential desires a change in ownership, etc.). Among the more significant conditions of the Peoples Companies acquisition and merger are the following:

- Address the Goodwin/Tombaugh gathering system; begin within three months after closing and complete within a seven-year timeframe (in progress).

[3] Other parties to the Settlement Agreement include the PUC's Bureau of Investigation and Enforcement, Office of Consumer Advocate, Office of Small Business Advocate, the Coalition of Affordable Utility Server and Energy Efficiency in Pennsylvania, Direct Energy Business Marketing LLC and Direct Energy Small Business Marketing.

- File a modified Long-Term Infrastructure Improvement Plan (LTIIP) within six months of closing; see Chapter VIII – Gas Operations for a more detailed overview of the LTIIP.

- Numerous customer service issues, such as quality of service metrics and universal service plan obligations; Peoples Companies' call center must meet performance standards otherwise Essential reserves the right to explore mitigation alternatives (i.e., moving the call center outside of the Peoples Companies service territory); Essential to increase Peoples Companies' emergency repair furnace program by $75,000 (in progress).

- Aqua PA and the Peoples Companies will be ring-fenced from the other affiliates and will establish reasonable accounting controls to govern transactions with affiliates. Additionally, the utilities will maintain their status as separate corporate subsidiaries with their own officers; see Chapter V – Affiliated Relationships and Cost Allocations for more discussion on ring-fencing.

- Various financial stipulations between entities, etc.

- The commitment to protect field operations staffing with a baseline of 825 employees; collective bargaining unit positions shall be no less than 720 employees for a five-year period.

Monitoring of the Peoples Companies performance is accomplished through review of more comprehensive quarterly management reports for PNGC and PGC. The report contains the financial status of combined Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) revenues and expenses in addition to information that would be pertinent to the Peoples Companies strategic goals. Also, the quarterly reports include the following details and information such as financial and operating overview highlights, economic and industry trends, heating degree days, and then specific performance reporting on safety, unaccounted for gas, LTIIP implementation status, capital projects, customer service metrics, EBITDA and financial issues such as incomes, balance sheets, cash flow, and expenses.

The audit staff evaluated staffing levels dating back to 2015 through August 2020 with the new ownership under Essential. A full staffing review for PNG Companies and the Peoples Companies is presented in Chapter XIV – Human Resources, while specific department staffing reviews were conducted for field operations (see Chapter VIII – Gas Operations) and customer service (see Chapter XI – Customer Service).

In addition to staffing levels, the audit staff evaluated the most recent span of control analysis conducted for the management and supervisory positions at PNG Companies and the Peoples Companies based on data from February 2020 as shown in Exhibit III-6. In general, for maximum organizational efficiency and effectiveness, a company should aim for spans of control in the range of 1:4 to 1:9 to control layers of management and maintain effective communications. Spans of control within the normal range are shown in green; with spans of control just outside the normal range are shown in yellow and those further beyond the normal range shown in red. Three

departments had lower spans of control than the typical targeted ratio and had lower than 1:2 ratio; Internal Audit, Government Affairs, and Regulatory Affairs. However, because these departments work in more specialized areas of the companies, the audit staff considered these spans acceptable. Two departments, Customer Experience and Customer Operations, had a higher span of control than the typical targeted ratio and higher than 1:10 ratio. This is due to having a larger group with less of a need of supervision due to repetitive work (this department has employees which typically are engaged in field visits to residences and handling customer service calls). Additionally, the departments in yellow were just outside the targeted range for spans of control but were also deemed satisfactory for the type of work performed. From an overall perspective, the audit staff found all reporting relationships at PNG Companies and the Peoples Companies to be reasonable.

Exhibit III–6
PNG Companies and the Peoples Companies
Spans of Control by Department Heads
As of February 2020

Department	Spans of Control
Internal Audit	1:1
Government Affairs	1:1
Regulatory Affairs	1:2
Controller	1:3
Treasury	1:3
Legal	1:3
Applications	1:3
Human Resources	1:4
Customer Relations	1:4
IT and Cybersecurity	1:4
Sales and Marketing	1:4
Corporate Services	1:5
Reliability	1:5
Executive	1:6
Construction and Engineering	1:8
Gas Operations	1:9
Customer Operations	1:10
Customer Service	1:11

Source: Data Request P-EM-16

Findings and Conclusions

Our examination of the Executive Management and Organizational Structure function included a review of Aqua PA and the Peoples Companies' organizational structure; staffing levels and spans of control; the roles and responsibilities of executive management; strategic planning; and succession planning. Based on our review, Essential should initiate or devote additional efforts to improving the efficiency and/or effectiveness of its Executive Management and Organizational Structure by addressing the following:

1. Spans of control analyses are not performed regularly for Aqua PA.

Span of control refers to the number of subordinates a manager or supervisor directly supervises in an organization and is often used to help maximize organizational efficiency and effectiveness. Ideally, a utility should aim for spans of control in the range of 1:4 to 1:9 to control the layers of management and maintain effective communications. Overly narrow spans of control can result in micromanagement, a larger number of supervisors, and higher than necessary compensation costs. Meanwhile, spans of control that are too wide can result in poor performance due to a lack of management oversight and control.

Although no formal span of control analyses were conducted recently, a summary of Essential's reporting relationships was provided in response to our management audit. In Exhibit III-7, audit staff analyzed the summary to show reporting relationships within Aqua Services and Aqua PA. As shown in this exhibit, there are a significant amount of reporting relationships within the narrow range (1:1 – 1:3) and one third of the narrow spans are 1:1 reporting relationships. During the 2016 Management Efficiency Investigation, PUC auditors recommended reducing the number of 1:1 reporting relationships.

Exhibit III–7
Aqua Pennsylvania, Inc. and Aqua Services, Inc.
Summary of Spans of Control
As of May 2020

Reporting Relationships	Number	Percentage
Narrow (1:1 to 1:3)	71	44%
Ideal (1:4 to 1:9)	65	41%
Wide (1:10 to 1:27)	24	15%

Source: Data Request A-EM-5, PUC auditor analysis

Audit staff contends that the lack of documented justification for reporting relationships outside of the ideal range negates a major component of spans of control analysis (i.e., historical retention of structural justifications). More thorough analyses

conducted every two or three years with written justifications of reporting relationships outside of the ideal range would be beneficial to validate results during subsequent reviews rather than the efforts being duplicated or forgotten. Documentation is especially important during organizational changes like those experienced by Essential Utilities in recent years (i.e., turnover in the Human Resources department, the acquisition of the Peoples Companies, etc.).

2. Essential Utilities lacks a centralized repository for policies and procedures across the organization.

As a result of the acquisition of the Peoples Companies on March 16, 2020, there is an ongoing process throughout Essential to update and merge policies and procedures that affect the organization. Essential Utilities' General Counsel noted that the policies which are the most important or most often handled were given top priority. As such, Essential Utilities' Code of Ethics policy was updated in mid-2020.

During fieldwork, PUC auditors encountered many policies and/or procedures that could benefit from updating. Some of these policies and procedures will be discussed more specifically in their respective chapters (i.e., Financial Management, Materials Management, etc.). Nonetheless, the entire Essential Utilities organization would benefit from developing a template to ensure that all policies and procedures have a consistent format containing the same basic information:

- Scope
- Purpose
- Effective date
- Last revision date
- Related policies
- Owner/responsible manager
- Review and approval guidelines
- Definitions

Not surprisingly, employees of the PNG Companies and its affiliates are using different IT systems than other Essential employees. For example, the Peoples Companies currently use a different intranet than what is in place for Essential Utilities. Therefore, when a policy is updated for the organization it must be uploaded to both entities' intranets to reach its intended audience. The audit staff recognize differences between the IT systems necessitate different procedures. However, Phase 1 of Essential's IT department's Service Improvement Project is underway, which intends to replace Aqua America's existing accounting, financials, supply chain and base HR systems with SAP (currently being used by the Peoples Companies) in 2022. SAP implementation will increase the similarity between systems but may not reconcile the difference in procedures for some time.

Ideally, policies and procedures should be reviewed, and if necessary, updated at least once every five years or whenever major changes occur. The recent merger and impending system implementations are major changes. Therefore, it is an optimal

time for Essential to develop a process to formally document or update existing policies or procedures to reflect current or changing practices. Without ensuring that policies are documented, current and easily accessible, there is an increased risk of employees inconsistently or inaccurately executing procedures as intended by management. This process could also help to drive best practices throughout Essential or lead to consistency between procedures in the future. At a minimum, this process should aid in a coordinated review of all policies and procedures.

3. Essential Utilities' payroll process is overly manual and has notable deficiencies.

Essential Utilities' Senior Vice President of Human Resources noted that top priorities within the HR department include eliminating manual processes and revamping HR's information systems. Towards this goal, Essential implemented a cloud-based HR software to begin automating manual HR processes in 2019. However, additional work is needed as the payroll process continues to rely on paper time sheets that require manual input by personnel within HR's Payroll department.

Many of the issues faced by the Payroll department were also highlighted in an internal audit conducted in 2020. Some observations from the payroll internal audit include:

- Payroll policy and procedures documentation is out of date
- Amount of employee vacation hours in financial system and HR system do not reconcile
- Utilization of payroll personnel is not efficient

In September 2020, Essential began a project to implement a web-based time keeping/reporting software already used by the PNG Companies and its affiliates. This new time keeping software is expected to automate complex pay rules with a simplified user interface for employee time entry and approval process. It is also intended to be the system of record for time worked and time-off reporting and will expedite the elimination of paper time sheets. This change should allow personnel within the Payroll department to perform more value-added tasks such as analyses and reviews.

While these future projects should help eliminate manual processes, new procedures and controls will need to be developed and documented. Additionally, employee training must be a top priority to ensure that the new timekeeping system is fulfilling its intended function. From there, integration with other systems as needed can help reduce related manual processes or leverage data for operational purposes. Ultimately, if done correctly, these changes should lead to reduced manual processes and improved efficiencies within the payroll function.

Recommendations

1. **Periodically review spans of control for management positions, document justification for supervisory position ratios with narrow or wide spans of control and adjust reporting relationships as appropriate.**

2. **Establish a single repository for all policies and procedures across the Essential Utilities organization and establish a coordinated procedures review process.**

3. **Reduce or eliminate manual processes within the payroll function.**

IV. CORPORATE GOVERNANCE

Background

As discussed in Chapter II – Background, Essential Utilities, Inc. (Essential) is the parent company of three regulated utility companies in Pennsylvania: Aqua PA, a water/wastewater treatment and distribution company and two wholly owned, regulated gas distribution utilities: Peoples Natural Gas Company LLC and Peoples Gas Company LLC , collectively referred to as the Peoples Companies. Essential is a publicly traded company listed on the New York Stock Exchange (NYSE) under the symbol, "WTRG." Therefore, Essential is subject to the corporate governance requirements contained in both the Sarbanes-Oxley Act of 2002 (SOX) and the corporate governance rules of the NYSE.

Essential has a nine-member Board of Directors (Board) composed of its Chairman and President/Chief Executive Officer (CEO), its Chairman Emeritus (the former President/CEO), and seven independent Board members. Board member independence is determined by Essential's Corporate Governance Guidelines, which include a review of applicable independence guidelines from the NYSE and Securities and Exchange Commission (SEC) and company standards. In its proxy statement dated March 27, 2020 the Board determined, based on its guidelines, that all board members were independent except for the Chairman and Chairman Emeritus. As of December 31, 2019, the average membership tenure of the Directors was six years.

The Board conducts its business by using the following committees:

- Audit Committee - responsible for assisting the Board in its oversight of financial reporting process, financial statements, and systems of control regarding finance, accounting, regulatory and legal compliance. The Audit Committee is also charged with evaluating the independent auditor's qualifications and independence, including the appointment, compensation, evaluation, retention, and oversight of Essential's independent registered public accounting firm. Additionally, the Audit Committee has direct oversight of Essential's internal audit function, including review and approval of the hiring, termination, and annual performance review for the Director of Internal Audit (Director IA), review and approval of Essential's annual internal audit plan, oversight of completed internal audit reports, management responses, and progress reports. The Audit Committee is comprised of three independent members and met ten times in 2019.

- Corporate Governance Committee - responsible for identifying and considering qualified nominees for directors and for developing and reviewing the Corporate Governance Guidelines. The Corporate Governance Committee also advises the Board on director nominees, executive selections, and succession planning (includes a succession plan for the CEO and other senior executives), and reviews and assesses the performance of the Board, each Committee, and peer review process. The Corporate

Governance Committee is comprised of four independent members and met six times in 2019.

- Risk Mitigation and Investment Policy Committee - responsible for oversight of Essential's process for identifying, managing, and monitoring critical risks, including cyber-related risks, and its compliance with legal and regulatory requirements. The Risk Mitigation and Investment Policy Committee is briefed on all potential transactions over a certain threshold and reviews all acquisitions that meet certain requirements (i.e., dollar amount, involve company stock, etc.). The Risk Mitigation and Investment Policy Committee is comprised of five members (four of which are independent) and met five times during 2019.

- Executive Compensation Committee - responsible for administering compensation plans and determining executive compensation annually, including the review and recommendation of the compensation of Essential's CEO (subject to final approval by the independent members of the Board) and determination of compensation for Essential's other executive officers. The Corporate Governance Committee is comprised of four independent members and met six times in 2019.

- Executive Committee - acts on behalf of the Board if action is required between regular meetings and makes recommendations to the full Board. The Executive Committee is led by the Chairman and includes three independent members. The Executive Committee did not meet in 2019.

The Audit Committee operates in accordance with its written charter, which is reviewed and updated annually, and is consistent with the applicable standards of the NYSE and SEC. As required by the NYSE, the Chairman of the Audit Committee is a financial expert as defined by the applicable law and each member of the Audit Committee is deemed financially literate. The Audit Committee's members are nominated by Essential's Executive Committee and appointed by the Board. A private meeting is held with the Aqua Services, Inc. (Aqua Services)[4] Director IA prior to every audit committee meeting to review and approve the overall scope and plans for each audit. In addition, the Audit Committee meets a minimum of four times during the year with the Director IA and the company's external audit firm (PwC) with and without management, to discuss audit results, their evaluations of internal controls, and the overall quality of Essential's financial reporting.

Essential maintains a Code of Ethical Business Conduct (Code) that applies to all directors, officers, and employees of Essential and its subsidiaries. The Code was updated in August 2020 and reflects the new corporation name as well as Essential's role in providing reliable utility service in both the water and natural gas industries. Waivers for directors or executive officers of Essential may only be granted by the Board, whereas employee waivers may be granted by an Essential's executive officer in

[4] Essential is a holding company without employees, thus all Essential officers and various shared service functions are performed by employees of Aqua Services, Inc. (Aqua Services) a subsidiary of Essential.

consultation with the compliance officer. Essential's compliance officer serves as Aqua Services' EVP General Counsel/Secretary. As of May 2020, no waivers were granted for Essential's Board, officers, or management personnel for the past three years. In addition to the Code, Essential maintains a conflict-of-interest policy that provides guidance for interactions with government officials/employees and for outside business activities.

As previously discussed, Essential acquired the Peoples Companies on March 16, 2020, incorporating them into their existing organizational structure. Prior to their acquisition, the Peoples Companies functioned under a different corporate governance structure, with their own subsidiary Board of Directors and various committees.[5] For example, the Audit and Risk Committee had oversight of the Peoples Companies internal audit plan, which was composed entirely of operational based audits which will now be handled by Essential's Audit Committee. Due to private ownership, the Peoples Companies were not required to comply with SOX. However, due to the acquisition by Essential (a publicly traded company), the Peoples Companies are now subject to SOX requirements. In preparation for this transition, Essential engaged a third party to advise and assist the Peoples Companies in preparing for SOX compliance and integration approximately one year prior to the completion of their March 2020 transaction. Initially, Essential indicated they would not need to exercise the SOX one-year exemption for the Peoples Companies; however, they ultimately did take the first year exemption for internal controls.[6]

Under Essential, both Aqua PA and the Peoples Companies follow a similar corporate governance structure and have a subsidiary-level Board of Directors. Both Boards include Aqua Services' CEO and Executive Vice Presidents (EVP), including Aqua Services': CFO, COO, General Counsel/Secretary, and EVP - Strategy & Corporate Development. In addition to Essential's officers, Aqua PA's Board includes the Aqua PA President/CEO, likewise PNG Companies' Board includes the PNG Companies' President[7] of the Peoples Companies. Corporate governance of both Aqua PA and the Peoples Companies functions as a component of the executive management of the subsidiaries. Thus, the subsidiaries' Boards do not maintain committees.

Findings and Conclusions

Our examination of the Corporate Governance function included a review of Essential and its Boards of Directors' organization including committee structure and charters; director independence; relationship with the external auditor; oversight of Essential internal audits, business conduct and ethics codes; documents related to corporate governance; annual reports; etc. Based on our review, Essential should

[5] For additional details on the Peoples Companies prior corporate governance structure see the October 2016 Focused Management and Operations Audit of Peoples Natural Gas Company LLC, Peoples Natural Gas Company LLC – Equitable Division, and Peoples TWP LLC (Collectively referred to as The Peoples Companies) at Docket Nos. D-2015-2485264, D-2015-2485265, and D-2015-2485266.
[6] Newly acquired companies by public companies are customarily given one year to meet compliance with SOX.
[7] See Chapter III – Executive Management and Organizational Structure

improve the effectiveness and efficiency of its corporate governance oversight function by addressing the following:

1. Essential Utilities does not rotate audit firms and has used the same external audit firm since 2000.

Since 2000, Essential has engaged PwC to perform its annual external audits. In accordance with applicable NYSE and SEC rules, Essential's Audit Committee ensures audit partners are rotated routinely with the next rotation slated for 2021. To facilitate this partner transition, the incoming audit partner is assisting the current audit partner during 2020.

However, Essential has engaged the same external audit firm for 20 years. Periodically, Essential's internal audit department conducts an audit fee benchmark comparison analysis (analysis). The analysis covers a two-year period and compares Essential to three control groups: publicly held water companies, publicly held utilities with comparable assets, and publicly held utilities with comparable revenues. The most recent analysis was completed in 2019 and did not identify any significant findings in the cost comparisons.[8]

Although Essential regularly benchmarks its external audit fees, the results of the comparisons do not provide a true cost comparison specific to Essential. Moreover, since the company's acquisition of the Peoples Companies, the information used to benchmark Essential is no longer accurate. Thus, the PUC auditors contend that a competitive bid process would provide Essential with the most current and relevant cost assessment and would ensure that the company is not overpaying for audit services. Furthermore, use of the same audit firm over an extensive period can lead to complacency and reduce the objectivity provided by the external audit firm.

Although not mandatory in the US, the Public Company Accounting Oversight Board (PCAOB) endorsed in 2011 mandatory audit firm rotation in a Concept Release. Moreover, the European Union requires public interest entities to change external audit firms after 10 years and allows for extension to 20 years if the services are bid out after that time frame. The PUC audit staff agrees with the PCAOB's endorsement and recommends that Essential seek competitive bids from additional audit firms in the future.

2. The administrative reporting relationship of the Director Internal Audit is not optimal for independence.

In November 2019, the Director IA's administrative reporting relationship was transferred from the EVP General Counsel/Secretary to the CFO. This change was at

[8] The analysis results varied by group. Essential's fees were higher than smaller public water utilities, but lower than American Water. Essential's fees were lower in comparison to public utilities with comparable assets, but higher in comparison to public utilities with comparable revenues. The analysis noted that gas and electric utility revenue is inflated due to the pass through of energy costs within revenues and that in the future, Essential's revenues would be more blended with the upcoming acquisition of the Peoples Companies.

least partially influenced by a study performed by a third party for Essential. A single, one-page summary from the study was provided to the audit staff during fieldwork concluding that the CFO-IA Director reporting relationship is typical of other companies. As a result, Aqua Services' Director IA reports administratively to the CFO and functionally to the Chair of the Audit Committee of Essential's Board after the November 2019 change. As such, the Audit Committee reviews and approves the annual IA plan, progress reports, and completed IA reports. Essential's Audit Committee also has oversight of the hiring, termination, and annual performance review of the Director IA. The Director IA's performance review is conducted by the CFO with consultation from the Audit Committee. As the CFO's work is usually examined heavily by internal audit, the current administrative reporting structure for the Director IA creates the potential risk of undue influence and may hinder the independence of the internal audit function.

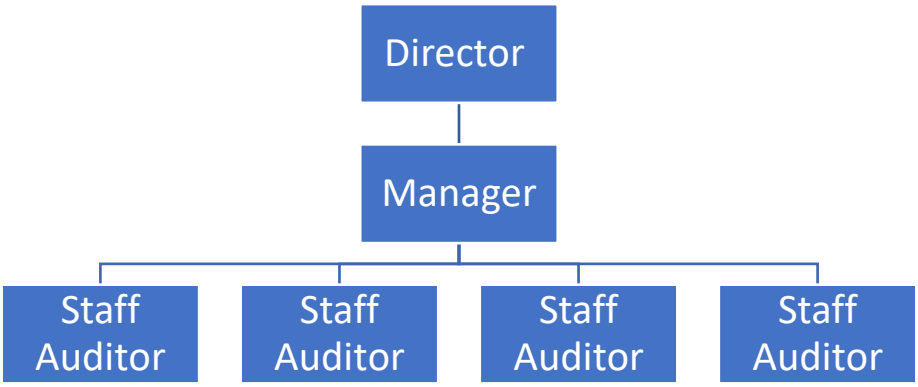
According to a January 2013 Supplemental Policy Statement (Internal Audit Function and its Outsourcing) by the Board of Governors of the Federal Reserve System, the internal audit function should be independent and exists to evaluate the effectiveness of the business' risk management, control, and governance processes. Moreover, according to an article in the February 2013 Journal of Accountancy, the President and CEO of the Institute of Internal Auditors (IIA President) conveyed support of this Policy Statement. According to the IIA President, although Chief Audit Executives (CAEs) in U.S. companies typically report administratively to the CFO, there are inherent risks in this reporting relationship. Moreover, the reporting relationship trend over the past ten years has diminished as more CAEs have begun reporting to the CEO and in some cases administratively to the general counsel, chief risk officer, or chief operating officer. The IIA President also noted that although this administrative reporting relationship is not required by IIA standards, he anticipates the CAE to CEO administrative reporting model to become more widely adopted. In recognition of this trend, the internal audit function should be positioned within the organization such that it is impartial and cannot be influenced by day-to-day operations. Thus, a member of management responsible for the administration of the internal audit function should not have oversight of the organization's operating the system of internal controls.

The PUC auditors agree with the recommendations put forward in the 2013 Journal of Accountancy. Furthermore, the PUC auditors contend that the objectivity of the internal audit function is hindered by the change in administrative reporting relationship of the Director IA. The CFO is also responsible for oversight of Essential's internal controls, whereas the Director IA is charged with the testing of those controls. To assign administrative oversight of the testing of internal controls to the same executive responsible for maintaining and designing those internal controls creates an inherent conflict of interest between the two functions. Therefore, the PUC auditors contend that oversight of the internal audit function be transferred to any officer other than the CFO.

3. A staff reduction for the Internal Audit Department could hinder its ability to mitigate overall Corporate operational risk.

Prior to the acquisition of the Peoples Companies[9], Aqua Services' internal audit department was composed of the IA Director, one manager, and three auditors. As of March 2020, the department combined with the two internal audit positions from the Peoples Companies: one audit manager and one staff auditor. However, in April 2020, the newly acquired audit manager (formerly of PNG Companies) separated from Essential. The updated internal audit department organization is illustrated in Exhibit IV-1.

Exhibit IV–1
Aqua Services, Inc.
Internal Audit Department Organization
As of April 2020



Note: As of April 2020, the staff auditor acquired from PNG Companies remained an employee of PNG Companies. All other members of the Internal Audit department are employees of Aqua Services.
Sources: Data Request EM-2, Interview CG-4

With the acquisition of the Peoples Companies, the scope and responsibilities for the internal audit function has been significantly expanded. As discussed previously, prior to their acquisition, the Peoples Companies were privately held, and thus, not subject to annual SOX audits nor required to maintain SOX controls. The addition of SOX integration from the Peoples' acquisition will require additional effort and significant testing by internal audit to ensure compliance, modify processes, and align functions among the entities.

In addition to SOX compliance, other special projects, such as Aqua Services' planned SAP implementation, would benefit from the expertise and participation of the internal audit department. Inclusion of an internal audit member as part of the SAP transition could provide efficiencies by better aligning internal controls between the newly acquired Peoples Companies and Essential's water and wastewater subsidiaries,

[9] Aqua America acquired all interests in LDC Funding LLC from SteelRiver LDC Ventures LLC on Jan 16, 2020. As part of that acquisition, Aqua America also acquired PNG Companies LLC, or the parent of the Peoples Companies and the corresponding initial audit function for these companies.

ultimately streamlining and reducing the internal controls to meet SOX requirements. Although the addition of staff resulting from the March 2020 acquisition helped to offset the expansion of internal audit duties, the loss of one of those positions reduces the resources available to perform functional and operational audits as well as provide expertise on special projects.

Essential's audit plan for 2020 was similar to the number and mix of projects performed in 2018 and 2019 for the combined companies (i.e., Aqua PA and the Peoples Companies). Due to the Audit Manager's departure, the 2020 audit schedule was altered to accommodate the reduction in staff. In discussion with Essential Management, it was indicated that this vacant position would not be filled. As mentioned previously, the PUC audit staff is concerned that SOX compliance at the Peoples Companies will take considerable time and effort, thereby reducing the number or scope of operational audits for all Essential subsidiaries. Essential's internal audit functions as a virtual department, thus regardless of office assignment, internal auditors may perform projects including any subsidiary. Essential has already modified its audit schedule due to a staff reduction and is hoping to leverage efficiency gains to avoid further future reductions.

According to The Institute of Internal Auditors, an organization is "best served by a fully resourced, professionally competent internal audit staff that can provide value-added services critical to efficient and effective organizational management."[10] Therefore, the PUC audit staff recommends that the resources for the internal audit department be periodically reevaluated to ensure the effectiveness of mitigating corporate and operational risk through the department's internal audits and reviews.

4. The PUC auditors were unable to verify whether the PNG Companies internal audit findings and recommendations were wholly implemented by the respective project owner(s) and/or in a timely manner.

As discussed previously, the PNG Companies' internal audit function was combined with Aqua Services in March 2020. Prior to the acquisition, the PUC auditors recommended a written status report be provided to the PNG Companies' Risk and Audit Committee regularly, updating them on the progress on prior internal audit recommendations. Progress reports were provided in 2015, 2016, and 2019, however, reports for 2017 and 2018 were not provided. The internal audit calendar for 2020 was missing one of the previously identified audit recommendations[11] due for follow-up. Furthermore, review of the PNG Companies' updated operational audit follow-up report did not provide detail on numerous internal audits, including the audit in question. In addition, the PUC audit staff found that the updated report failed to provide enough detail to determine how a recommendation was implemented or completed.

Due to the lack of information, PUC auditors could not verify how many of PNG Co. internal audit recommendations were completed in 2017 and 2018. In addition,

[10] https://na.theiia.org/awareness/PublicDocuments/Internal_Auditing-Adding_Value_Across_the_Board.pdf
[11] Peoples Companies' internal audit recommended a triannual review of transportation and related investment costs, reported by Equitrans as recoverable under the Allegheny Valley Connector Modernization Program.

there are questions whether recommendations from 2015, 2016, and 2019 were completed. Thus, the PUC auditors recommend that the internal audit department conduct a review of all prior recommendations for the Peoples Companies to ensure implementation measures were or will be completed in a timely manner.

Internal Audit should have a process in place to track and monitor the status of recommendations to ensure that project owners are adequately addressing issues. A database should be made available with appropriate tracking data (i.e., audit title, finding(s), recommendations, progress, status, significant dates, support documentation pathways, etc.). Aqua Services' internal audit department has a formalized process for ensuring recommendations are implemented in a timely manner, thus prior operational findings for Peoples Companies should be consolidated into Aqua Services' audit follow-up and tracking process.

Recommendations

1. **Periodically seek competitive bids for external audit services.**

2. **Organize the Internal Audit function to report administratively to the CEO, another non-financial senior officer, or directly to the Board of Directors.**

3. **Establish a foundational understanding of internal audit needs as a result of the Peoples Companies' acquisition, then resource and staff accordingly.**

4. **Conduct a review of completed internal audits to ensure previous recommendations are being properly implemented at the Peoples Companies.**

V. AFFILIATED INTERESTS AND COST ALLOCATIONS

This chapter presents the results of the audit staff's review of the nature and extent of transactions between Peoples Natural Gas Company LLC (PNGC) and Peoples Gas Company LLC (PGC) (collectively referred to as the Peoples Companies), Aqua Pennsylvania, Inc. (Aqua PA), and their affiliates. As stated in Chapter II – Background, Aqua PA is a direct subsidiary and the Peoples Companies are indirect subsidiaries of Essential Utilities, Inc. (Essential). The Peoples Companies were acquired by Essential in March 2020. The Peoples Companies and Aqua PA are public utilities subject to regulation by the Pennsylvania Public Utility Commission (PUC or Commission). Essential also owns several unregulated affiliates, including Aqua Services, Inc. (Aqua Services) and Aqua Resources, Inc. (Aqua Resources). Both Aqua Services and Aqua Resources regularly provided services to Aqua PA.

Meanwhile, the Peoples Companies are 100% owned by PNG Companies LLC (PNG Companies), which is in turn 100% owned by LDC Holdings LLC, which is a wholly-owned direct subsidiary of LDC Funding LLC (LDC Funding). Since the acquisition in March 2020, LDC Funding and all its subsidiaries are owned by Essential. Prior to the acquisition, LDC Funding and its subsidiaries (including the Peoples Companies) were owned by SteelRiver LDC Ventures LLC which was indirectly controlled by SteelRiver Infrastructure Partners LP (SteelRiver). The PUC auditors' review of affiliated transactions and cost allocation practices at the Peoples Companies covers the period of pre- and post-merger with Essential and is discussed in detail in this chapter.

A. Aqua Pennsylvania

Aqua Services was created in January 2004 to provide certain centralized services to Aqua PA and other Essential subsidiaries. These services are covered by an Affiliated Interest Agreement (AIA) between Aqua Services and Aqua PA at G-2009-2138286. The AIA was approved as required by 66 Pa. C.S. § 2102 by the Pennsylvania Public Utility Commission (PUC or Commission) on October 13, 2010. The AIA allows Aqua Services to provide the following services to Aqua PA:

- Accounting and financial
- Administration
- Communications
- Corporate secretarial
- Customer service and billing
- Engineering
- Financial
- Fleet Services
- Human resources
- Information systems
- Operation
- Rates and regulatory
- Risk management
- Water quality
- Legal
- Purchasing, contracts and sales of real estate

When Aqua Services can attribute costs solely to providing goods and/or services to Aqua PA, direct charges are applied. Indirect charges from Aqua Services to Aqua PA are based on the ratio of the affiliate company's customers to the total number of customers in the group. In cases where an unregulated affiliate shares in the allocation of theses service costs, the ratio includes an imputed customer count based on assets of the unregulated affiliate. The hourly labor rates billed for work performed by Aqua Services include the cost of employee salaries/wages, employee benefits, and an allocation of general overhead costs which includes items such as rent, utilities, office furniture and equipment, etc. The overhead rates billed are evaluated annually and adjusted as necessary to reflect actual costs.

Aqua Resources is a non-regulated Essential subsidiary that manages a water system operating and maintenance contract. It also offers, through a third-party, water and sewer line protection solutions and repair services to households throughout Essential's service territory. On December 19, 2012, in accordance with 66 Pa. C.S. § 2102, the Commission approved an AIA between Aqua PA and Aqua Resources at G-2012-2301704. This AIA lists services Aqua Resources may provide and outlines billing and payment terms. Based on the AIA, Aqua Resources agrees to charge Aqua PA at the lower of cost or market rate for services provided. Invoicing is conducted monthly, detailing all charges from the preceding month, with payment due within 30 days of bill receipt. In 2016, Aqua Resources sold business units that provided liquid waste hauling and disposal services, as well as inspection, cleaning and repair of storm and sanitary wastewater lines. Then in 2017, two business units that were part of Aqua Resources were sold, one which installed and tested devices that prevent contamination of potable water and another that constructed, maintained, and repaired water and wastewater systems.

Aqua PA also provides services to several affiliates. In an AIA that was approved by the Commission on January 14, 2014 at G-2013-2350016, in accordance with 66 Pa. C.S. § 2102, Aqua PA is permitted to provide its affiliates with administration, labor, engineering, fleet maintenance, metering services, rates and regulatory, water quality and lab testing services. This AIA specifically lists the following affiliates as recipients of Aqua PA's services:

- Aqua New Jersey
- Aqua Ohio
- Aqua Indiana
- Aqua Illinois
- Aqua Virginia
- Aqua North Carolina
- Aqua Texas
- Aqua Utilities Florida
- Aqua Resources
- Aqua Infrastructure
- Little Washington Wastewater Company, Inc.[12]

[12] Effective January 1, 2014, Little Washington Wastewater Company completed a name change to Aqua Pennsylvania Wastewater, Inc.

Aqua PA invoices its affiliates monthly via intercompany billing, with payment due within 30 days of the receipt of the bill. Each respective company's accounts are settled by equity transfers through Aqua Services' centralized cash management function. The centralized cash function is discussed in greater detail in Chapter VI - Financial Management. Additionally, Aqua PA leases a portion of its office space in Bryn Mawr, PA to its affiliate, Aqua Services but does not have an approved AIA covering office space (see the Finding and Conclusion No. 2 below).

Exhibit V-1 is a summary of all intercompany charges from affiliates to Aqua PA and from Aqua PA to its affiliates for the years 2015 through 2019. Aqua PA also has a wholly-owned wastewater subsidiary, Aqua PA Wastewater (formerly known as Little Washington Wastewater). Due to Essential's recent divestitures from Aqua Resources, fewer services are being exchanged between Aqua PA and Aqua Resources than in the past.

On May 15, 2020, after the merger of the Peoples Companies into Essential, two additional AIAs were submitted to the Commission for approval. At G-2020-3019819, is an AIA between Aqua PA, PNG Companies, LLC, and Aqua Services. At G-2020-3019820, is an AIA between Aqua PA and multiple affiliates (Aqua New Jersey, Aqua Ohio, Aqua Indiana, Aqua Illinois, Aqua Virginia, Aqua North Carolina, Aqua Texas, Aqua Resources, Aqua Infrastructure[13], Aqua Pennsylvania Wastewater, Inc. and PNG Companies). The PUC had not approved these filings at the close of fieldwork in October 2020.

Ring-fencing is the term used to describe efforts which are intended to insulate a regulated utility from the potentially riskier activities of unregulated affiliates. The purpose is to ensure the financial stability of the utility and the reliability of its services. Various ring-fencing features are present throughout Essential that also apply to Aqua PA. For example, each affiliate issues their own set of financial statements, maintains their own corporate officers, and possesses the ability to issue their own long-term debt. Additionally, Aqua PA does not lend cash to affiliates for a term greater than one year nor are any Aqua PA assets pledged or encumbered by the provision of loan guarantees for the benefit of affiliates.

[13] Aqua Infrastructure provides non-utility raw water supply services for firms in the natural gas drilling industry.

Exhibit V–1
Aqua Pennsylvania, Inc.
Summary of Affiliate Charges
For Calendar Years Ended December 31, 2015 - 2019

Affiliate	2015	2016	2017	2018	2019
Charges from Affiliates to Aqua Pennsylvania, Inc.					
Aqua Services	$27,605,673	$31,985,089	$34,169,372	$37,465,224	$40,890,045
Aqua Customer Operations*	6,132,599	6,380,066	6,123,955	6,680,981	6,775,662
Aqua Resources	1,006,139	770,238	581,100	662,255	447,475
Aqua Ohio	109,586	119,404	121,866	18,072	18,125
Aqua New Jersey	4,734	28,916		18,072	4,850
Aqua North Carolina		1,522	717	30	1,006
Aqua Virginia		2,352	740		
Aqua Illinois	1,492				
Totals	**$34,860,222**	**$39,287,587**	**$40,997,750**	**$44,844,634**	**$48,137,163**
Aqua Pennsylvania, Inc. Charges to Affiliates					
Aqua PA Wastewater	$1,486,747	$1,926,687	$7,757,260	$8,077,218	$6,737,613
Aqua Services	1,347,596	1,084,121	797,581	839,912	832,791
Aqua Customer Operations*	373,981	410,518	404,049	425,496	425,496
Aqua Resources	1,046,614	759,977	584,951	669,994	407,069
Aqua Infrastructure	1,834	(46,238)	1,413	3,575	2,996
Aqua Ohio	243,303	261,833	211,062	200,559	231,067
Aqua New Jersey	391,109	324,737	344,974	212,480	174,553
Aqua North Carolina	201,053	93,908	80,726	58,061	48,189
Aqua Texas	159,930	60,398	28,979	23,079	33,087
Aqua Illinois	45,909	(10,895)	10,851	28,509	305,130
Aqua Indiana	28,110	7,297	6,296	3,511	5,151
Aqua Virginia	67,430	88,466	23,404	8,282	10,175
Totals	**$5,393,616**	**$4,960,809**	**$10,251,546**	**$10,550,676**	**$9,213,317**

*Aqua Customer Operations (ACO) is a department of Aqua Services.
Source: Data request response A-CA-22

B. The Peoples Companies

Prior to and after the acquisition by Essential, PNGC and PGC had material transactions with 11 regulated and non-regulated affiliates including PNG Companies, Peoples Service Company (PSC), Peoples Homeworks, LLC (Peoples Homeworks), PNG Gathering, LLC (Gathering), Peoples Gas WV, LLC (PWV), Peoples Gas KY, LLC (PKY), Delta Natural Gas Company, Inc. (Delta), LDC Funding, LLC, (Funding), LDC Holdings, LLC (Holdings), LDC Holdings II, LLC (Holdings II), and LDC Parent, LLC (Parent). All these affiliates were owned by SteelRiver before the acquisition by Essential. Material amounts of charges to and from affiliates for PNGC and PGC are shown in Exhibits V-2 and V-3.

Exhibit V–2
Peoples Natural Gas Company LLC
Summary of Charges to/from Affiliates
For the Years 2017 through August 2020

Affiliate	Charge Type	2017	2018	2019	Aug-20
Charges to Affiliates from PNGC					
Delta Natural Gas	Convenience Payments*			$2,885,000	$1,130,000
LDC Funding	Convenience Payments	$18,000			17,000
LDC Holdings	Convenience Payments	17,000	$16,000		
LDC Holdings II	Services	17,000			
LDC Parent	Convenience Payments	12,000	15,000		
Peoples Gas Company	Convenience Payments	14,292,000	5,606,000	4,800,000	4,685,000
Peoples Gas Company	Services	6,299,000	22,279,000	21,377,000	8,926,000
Peoples Gas KY	Convenience Payments	593,000	429,000	246,000	171,000
Peoples Gas KY	Services	37,000		175,000	
Peoples Gas WV	Convenience Payments	1,375,000	1,468,000	795,000	730,000
Peoples Gas WV	Services	95,000		1,129,000	211,000
Peoples Homeworks	Services	281,000	101,000	80,000	51,000
Peoples Service Company	Convenience Payments	3,245,000			
Peoples Service Company	Services	5,265,000			
PNG Companies	Convenience Payments	71,000	6,020,000	649,000	332,000
PNG Companies	Services	85,000		176,000	48,000
PNG Gathering	Services	653,000	627,000	1,278,000	745,000
Totals		**$32,355,000**	**$36,561,000**	**$33,590,000**	**$17,046,000**
Charges from Affiliates to PNGC					
PNG Companies	Convenience Payments	$27,000	$34,719,000	$27,144,000	$14,588,000
PNG Companies	Interest Expense	31,174,000	35,922,000	36,975,000	22,609,000
PNG Companies	Debt Issuance Costs	3,362,000			101,000
PNG Companies	Services		46,328,000	48,390,000	32,754,000
Peoples Gas Company	Convenience Payments	3,758,000	1,490,000	1,979,000	657,000
Peoples Gas Company	Services	6,736,000	2,404,000	1,888,000	1,401,000
Peoples Gas Company	Gas Transportation	1,139,000	27,000	819,000	686,000
Peoples Service Company	Convenience Payments	92,000			
Peoples Service Company	Services	12,721,000	4,411,000	4,411,000	1,103,000
Totals		**$59,009,000**	**$125,301,000**	**$121,606,000**	**$73,899,000**

* Convenience payments are utilized when a third-party vendor does not separately bill each affiliate and instead provides a consolidated invoice for multiple affiliates. The billed company will pay the invoice but direct charge or allocate costs to the other affiliates who received services from the third-party vendor based on the methodologies approved within the AIAs.
Source: Data Request P-AI-42 and PUC Auditor Analysis

Exhibit V–3
Peoples Gas Company LLC
Summary of Transactions to/from Affiliates
For the Years 2017 through August 2020

Affiliate	Charge Type	2017	2018	2019	Aug-20
Charges to Affiliates from PGC					
Peoples Natural Gas Company	Convenience Payments	$3,758,000	$1,490,000	$1,969,000	$657,000
Peoples Natural Gas Company	Services	6,736,000	2,404,000	1,888,000	1,401,000
Peoples Natural Gas Company	Gas Transportation		27,000	819,000	
Peoples Gas WV	Convenience Payments	40,000			
LDC Funding	Convenience Payments	623,000			
LDC Holdings II	Convenience Payments	324,000			
Peoples Service Company	Services	1,179,000			
PNG Companies	Convenience Payments		395,000		
PNG Companies	Services			10,000	
Delta Natural Gas	Convenience Payments			30,000	
Totals		**$12,660,000**	**$4,316,000**	**$4,716,000**	**$2,058,000**
Charges from Affiliates to PGC					
Peoples Natural Gas Company	Convenience Payments	$14,292,000	$5,606,000	$4,790,000	$4,685,000
Peoples Natural Gas Company	Services	6,299,000	22,279,000	21,377,000	8,926,000
PNG Companies	Interest Expense	66,000	4,720,000	4,305,000	2,201,000
PNG Companies	Debt Issuance Costs	198,000			
PNG Companies	Convenience Payments		1,627,000	996,000	115,000
PNG Companies	Services		6,035,000	5,786,000	3,764,000
LDC Holdings	Convenience Payments	22,000			2,201,000
Peoples Service Company	Services	5,559,000	494,000	494,000	124,000
Totals		**$26,436,000**	**$40,761,000**	**$37,748,000**	**$19,815,000**

Source: Data Request P-AI-42 and PUC Auditor Analysis

Transactions between the Peoples Companies and their affiliates are governed by numerous affiliated interest agreements (AIAs) and securities certificates which have been filed, registered with and either approved or are pending approval by the Commission. A description of each AIA filed with the Commission follows:

- Equitable Gas Company (EGC), including Equitable Homeworks LLC (Equitable Homeworks) – Filed at Docket No. G-0005110 on May 6, 2005 and approved on July 15, 2005, this agreement allowed for the provision of services to/from EGC and its affiliates, including Equitable Homeworks. In December 2013, PNG Companies, an indirect subsidiary of SteelRiver, acquired EGC and some affiliates, including Equitable Homeworks, from EQT Corporation and merged the utility as an operating division of PNGC known as PNGC – Equitable Division. The Equitable Division maintained separate rate and tariffs from PNGC until it was merged into the Peoples Division on October 29, 2019. Peoples Homeworks was formed on September 3, 2013 and Equitable Homeworks was merged into Peoples Homeworks on December 19, 2013. An AIA was never filed with the Commission for approval upon the formation of Peoples Homeworks,

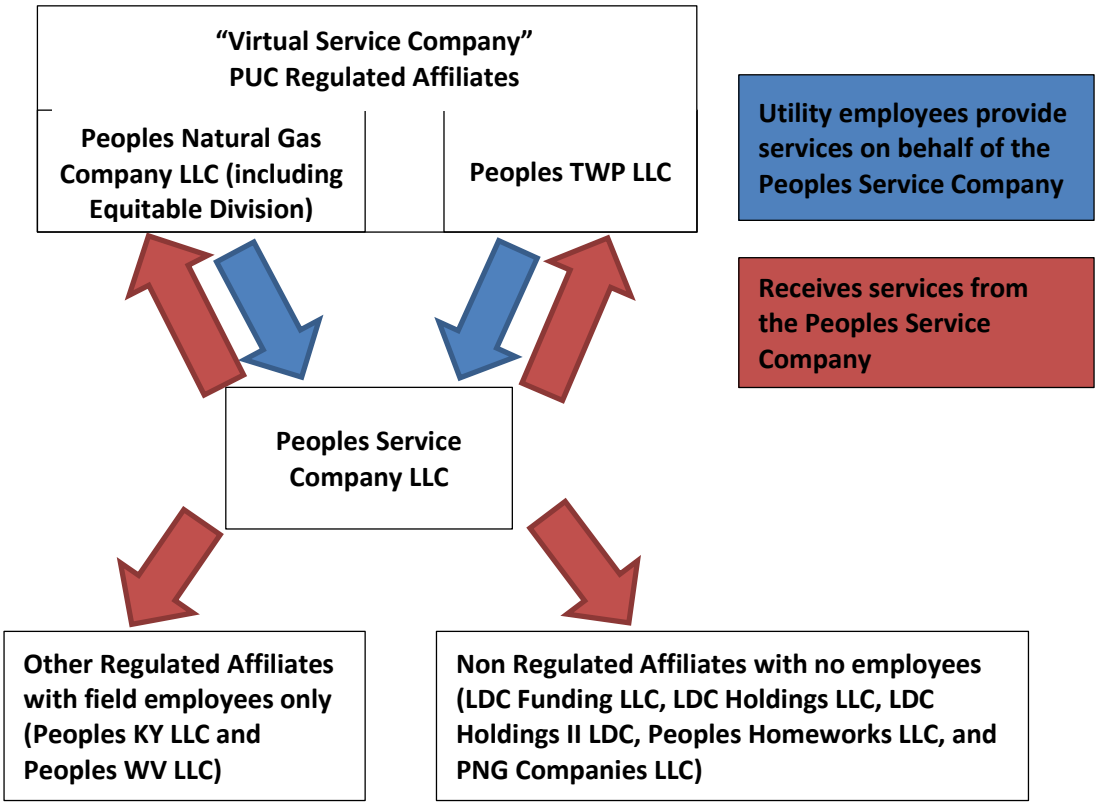
- Peoples Service Company (PSC) – Filed at Docket No. G-2012-2290014 on February 24, 2012 and approved on June 6, 2012, this agreement allowed PSC to provide various administrative and management services to PNGC. In addition, it

provided for PNGC to provide services to PSC and for PSC to act as the counterparty in the provision of such services by PNGC to PGC.

On March 2, 2012, PGC filed an AIA with PSC to the Commission for PSC to provide various administrative and management services to PGC at Docket No. G-2012-2291735. In addition, it provided for PGC to provide services to PSC and for PSC to act as the counterparty in the provision of such services by PGC to PNGC. This agreement was approved on June 5, 2012 by the Commission.

These agreements between the Peoples Companies and PSC included transitional provisions to allow the Peoples Companies to provide services on behalf of PSC to other affiliates thus the use of the term "Virtual Service Company" in Exhibit V-4, which illustrates the flow of charges between PSC and its affiliates since inception to early 2018.

Exhibit V–4
Peoples Companies
Illustration of the Flow of Charges to and from Peoples Service Company LLC
February 2012 to January 2018



Source: Exhibit V-1 from Focused Management and Operations Audit of The Peoples Companies Issued October 2016

- PSC and SteelRiver – On January 1, 2014, PSC entered into a service agreement with the previous parent, SteelRiver Infrastructure Management US LLC. The Peoples Companies did not believe this service agreement needed to be filed with the Commission for approval.[14] The agreement called for SteelRiver to provide strategic, financial, legal, information technology, accounting, and other consulting services to PSC on behalf of and paid for by all regulated utilities.

- Peoples Homeworks LLC (Peoples Homeworks) – Filed at Docket No. G-2015-2464722 on January 29, 2015, this agreement requested approval of a billing services agreement between Peoples Homeworks and PNGC. Under this AIA, PNGC billed Peoples Homeworks' customers for the monthly fee associated with the warranty services provided by Peoples Homeworks. These billing services were not included in the AIA previously approved by the Commission at Docket No. G-0005110. PNGC collected the monthly fee from the customers, deducted a service charge, and remitted the remainder to Peoples Homeworks.

  Prior to approval by the PUC, PNGC withdrew the application on March 26, 2018. Similarly, on January 29, 2015, at Docket No. G-2015-2465135, PGC filed an AIA with the Commission to request approval of a billing services agreement with Peoples Homeworks. Under this agreement, PGC billed Peoples Homeworks' customers for the monthly fee associated with the warranty services provided by Peoples Homeworks. PGC collected the monthly fee from the customers, deducted a service charge, and remitted the remainder to Peoples Homeworks. Prior to approval by the PUC, PGC withdrew the application on March 26, 2018.

- PNG Companies – Filed at Docket No. G-2017-2585971 on January 26, 2017 and approved on February 9, 2017, this agreement gave authorization to issue an intercompany promissory note to PNG Companies in the aggregate principal amount of not more than $99,225,000. This replaced an existing $99,225,000 promissory note, registered with the Commission at Docket No. S-2010-2168479, which was set to expire on February 26, 2017.

- PNG Companies – Filed at Docket No. G-2017-2610097 on June 16, 2017 and approved on October 11, 2017, this agreement gave authorization for PNGC to borrow funds from time to time from PNG Companies on a short-term basis for general corporate purposes and for PNG Companies to finance or support PNGC's capital expenditures and working capital needs. This replaced the existing demand note of $300 million that was approved by the Commission on October 16, 2013 at Docket No. G-2013-2378354.

- PNG Companies – Filed at Docket No. G-2017-2605583 on October 13, 2017 and approved on November 9, 2017, this agreement gave authorization for an intercompany demand note with PNG Companies to provide a $100 million line of credit to PGC. On September 13, 2017, PGC cancelled its existing revolving credit agreement for $100 million with a consortium of financial institutions, which had

[14] Although this service agreement between PSC and SteelRiver was never filed before the Commission for review and approval, the audit staff is listing this agreement in the chronological order as it occurred for reference purposes.

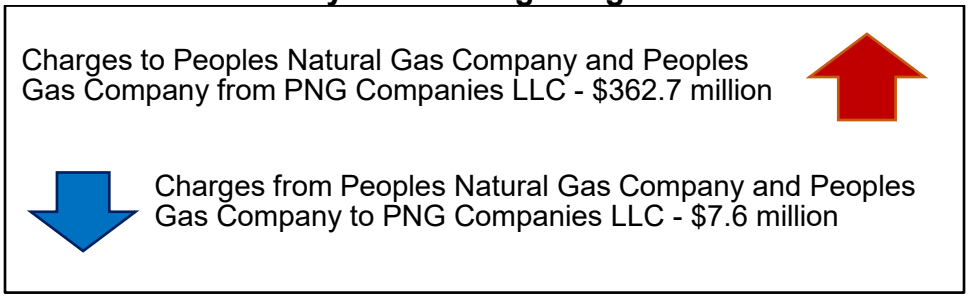
been registered with the PUC on July 12, 2017 at Docket No. S-2017-2605583 and replaced that credit facility with a new credit agreement with PNG Companies.

- PNG Companies – Filed at Docket No. G-2017-2626438 on September 22, 2017 and approved on November 8, 2017, this agreement gave authorization to issue an intercompany promissory note to PNG Companies in the aggregate principal amount of not more than $500,000,000. The funds from the promissory note re-financed portions of PNGC's maturing long-term debt and a portion of the short-term debt used to finance capital expenditures on a temporary basis.

- PNG Companies – Filed at Docket No. G-2017-2629437 on October 13, 2017 and approved on November 8, 2017, this agreement gave authorization to issue an intercompany promissory note to PNG Companies in the aggregate principal amount of not more than $71,909,111. The funds from the intercompany promissory note were to be used to extinguish the privately placed debt of PGC. This resulted from an internal reorganization under which Peoples Gas became a direct subsidiary of PNG Companies. On December 20, 2017, PGC privately placed debt was paid off ($69 million outstanding debt balance) and a $69 million intercompany promissory note was issued to PNG Companies.

- PNG Companies – Filed at Docket No. G-2018-3000126 on February 20, 2018 and approved on December 11, 2018, this agreement allowed for PNG Companies to provide various administrative and management services to PNGC. In its cover letter for the application, PNGC requested retroactive approval of these transactions to January 1, 2018. This AIA was filed to replace the agreement between PNGC and PSC. At the end of 2017, many employees, including those employed in the call center, moved from PSC to PNG Companies. In addition, all PGC field employees moved to PNGC. A similar AIA was filed at Docket No. G-2018-3000130 on February 20, 2018, and approved on December 11, 2018, and this agreement allowed for PNG Companies to provide administrative and management services to PGC. In its cover letter for the application, PGC requested retroactive approval of these transactions to January 1, 2018. This AIA was filed to replace the agreement between PGC and PSC. An illustration of the flow of charges between PNG Companies and its affiliates is displayed in Exhibit V-5.

Exhibit V–5
Peoples Companies
Illustration of the Flow of Charges to/from PNG Companies LLC
January 2018 through August 2020



Source: Data Request P-AI-42

- PNG Gathering and Peoples WV – Filed at Docket No. G-2012-2290018 on February 23, 2018 and approved on October 15, 2018, this agreement allowed for all operational services to be provided by PNGC, which was a result of the consolidation of the PNGC and PGC operational field employees into PNGC. In addition, Peoples WV was added to the AIA.

- PNG Companies – Filed at Docket No. G-2020-3017763 on January 31, 2020, this agreement requested authorization to issue an intercompany promissory note to PNG Companies in the aggregate principal amount of not more than $171,045,000.

- Essential Utilities – Filed at Docket Nos. G-2020-3019811 and G-2020-3019810 on May 15, 2020 these agreements requested approval of intercompany demand note agreements between PNGC, PGC, PNG Companies and Essential. These demand-note agreements would take effect upon the closing of the acquisition of PNGC by Essential and a request for retroactive treatment to March 16, 2020 was included in the agreements. These agreements were approved on August 11, 2020.

- Aqua PA, Aqua Services, Inc. (Aqua Services), and PNG Companies – Filed at Docket No. G-2020-3019819 on May 15, 2020 this agreement requested approval for services to be provided to PNG Companies, PNGC and PGC by Aqua Services and Aqua PA. The consideration period was extended on May 19, 2020 and Aqua Services employees have begun charging PNG Companies.

PNG Companies' VP of Finance has the ultimate responsibility for the accuracy of intercompany charges (she was hired for the position on June 15, 2020). The Director of Finance and Accounting reviews all manual entries, and the creation of invoices and payments for inter-company charges on a monthly basis. See Chapter VI – Financial Management for additional discussion of the Finance and Accounting Departments.

The Peoples Companies provided the audit staff with three detailed training documents given to employees for time and expenses reporting. These included Time Track training, the new system put in place of SAP that employees use for entering their time, slides on how to create an expense report in SAP, and approval procedures for superiors approving these expenses.

As part of the acquisition of PNGC and PGC by Essential, the Peoples Companies committed to appropriate ring-fencing measures to the extent applicable to Essential's structure, and that they are no less protective of the ring-fencing measures currently in effect. The current ring-fencing measures include the following:

- The Peoples Companies maintaining their status as subsidiaries with their own corporate officers

- The Peoples Companies issuing their own sets of financial statements pursuant to Commission requirements

- All transactions among the Peoples Companies and their affiliates taking place pursuant to the terms of AIAs approved by the Commission to avoid cross-subsidization

- The Peoples Companies maintaining the capability to issue their own long-term debt with Commission approval, if required

- A debt ratio measured at an annual level of no more than 50% (inclusive of short-term debt, but exclusive of goodwill) for at least five years post-closing of the acquisition

- No lending by the Peoples Companies to affiliates for a term in excess of one year

- No pledging or encumbering the assets of the Peoples Companies or the provision of loan guarantees for the benefit of affiliates.

Findings and Conclusions

Our examination of the affiliated interests and cost allocations function focused primarily on a review of contracts and agreements governing transactions between affiliates; cost allocation methodologies, polices, and practices; employee training on time and expense reporting; ringfencing efforts; internal audits of cost allocations; etc. Based on our review, Essential and its affiliates should devote additional efforts to improving its affiliated interests and cost allocations functional area by addressing the following:

1. PNG Companies, Peoples Natural Gas Company and Peoples Gas Company do not have a robust governance process for cost allocation and affiliate transactions.

Title 66 Chapter 21 – Relations with Affiliated Interests of the Public Utility Code was enacted on July 1, 1978 and governs public utilities business relationships with affiliates. The Commission's authority to approve contracts between public utilities and their affiliates comes under the general authority to regulate public utilities in the Commonwealth, 66 C.S. § 2102(a) which, in part states:

> *No contract or arrangement providing for the furnishing of management, supervisor, construction, engineering, accounting, legal, financial, or similar services, and no contract or arrangement for the purchase, sale, lease, or exchange of 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.*

In 2013, PNG Companies acquired Equitable Gas Company LLC (EGC) from EQT Corporation. With the acquisition of EGC at Docket No. A-2013-2353649 in 2013, the Settlement Agreement (SA) included the following requirements for the governance of cost allocations and affiliate transactions.

- Peoples shall maintain reasonable accounting controls and pricing protocols to govern transactions with affiliates, and provide the Commission, including the Bureau of Investigation & Enforcement (I&E), Office of Consumer Advocate (OCA) and Office of Small Business Advocate (OSBA) reasonable access to the books, records and personnel of Peoples Companies affiliates where necessary for the Commission to adequately review Peoples Companies purchases of goods or services from those affiliates.

- Upon written request, PNG Companies and its subsidiaries will provide the Commission, I&E, OCA and the OSBA reasonable access to the books and records, officers and staff of PNG Companies and its subsidiaries. However, nothing set forth herein shall constitute or be interpreted as a waiver by PNG Companies or its subsidiaries of its right to raise traditional discovery objections to any such requests, including, but not limited to, objections on the basis of relevance and privilege. In addition, before responding to any such requests, PNG Companies and its subsidiaries shall be permitted to require the imposition of protections they deem necessary to prohibit disclosure of proprietary or confidential information.

- Peoples Companies will seek Commission approval of all new or amended agreements with affiliates consistent with Chapter 21 of the Public Utility Code.

- Peoples Companies cost allocations between its Peoples and Equitable Divisions and affiliates will follow the standards and allocation methodologies that have been previously approved by the Commission, at Docket No. G-2012-2290014, with regard to affiliate charges under the PSC Agreement.

The PUC auditors' review of affiliate transactions for the period 2017 through 2020 YTD and cost allocations processes revealed a number of issues around the propriety of the transactions, allocation practices, and/or the language set forth in the related AIAs, some of which was vague. In addition, our opinion is that the following issues listed under each question do not appear to comply with the SA at Docket No. A-2013-2353649. The issues are as follows:

1. There is uncertainty as to whether an approved AIA was in effect when certain affiliate transactions took place:

    o <u>Peoples Service Company (PSC) transactions</u> – As previously mentioned, the AIAs for PNG Companies was filed on February 20, 2018 and approved on December 11, 2018 to provide services to the Peoples Companies in place of the AIAs with PSC. The AIAs with PSC would be rescinded but PSC would remain as a dormant company for future purposes. However, records show transactions occurring between PSC and the Peoples Companies (i.e., January 2018 to 1st

Quarter 2020) after the AIAs with PSC were rescinded. It is unclear why the transactions (totaling $9.9 million) occurred because the AIAs with PSC were rescinded and replaced. Under 66 Pa. C.S. § 2102, transactions with affiliates should not occur without an approved AIA in effect.

- SteelRiver transactions – Records show the Peoples Companies were charged $1.23 million quarterly by the former parent, SteelRiver, from 2014 until the acquisition by Essential in March 2020 for management fees (totaling $4.92 million a year). The Peoples Companies were charged through PSC for these services by SteelRiver even though PSC was supposed to enter dormancy in 2018 once the AIA with PNG Companies became effective.

  The Peoples Companies management stated these fees began in 2014 after SteelRiver's acquisition of EGC, which led to increasing complexity in the portfolio of three utilities with overlapping service territories owned by SteelRiver. For example, SteelRiver's Chief Investment Officer worked closely with the Peoples Companies' Chief Financial Officer to structure, negotiate and execute all debt financings. It is unclear why a CFO would need assistance in performing core duties. The audit staff requested support for the services associated with these management fees, but the Peoples Companies could not provide any supporting documentation. According to the Peoples Companies, the management fees are for services provided for budgets and financial strategy, corporate governance, executive and administrative support, external affairs, legal, operations, risk management, tax, treasury and finance; however, these are also the services listed under the AIA with PSC. The AIA with PSC did not state that this would include fees from SteelRiver for the same (duplicate) services.

  The Peoples Companies were unable to demonstrate that the fees from SteelRiver were for different services than what was already paid for under the AIA with PSC and could be double charging with a negative impact to ratepayers. Even if the Peoples Companies provided support to prove these were different services than already provided for by PSC under its AIA with the Peoples Companies, there is a question as to whether or not the transactions for the period 2018 through March comply with 66 Pa. C.S. § 2102 because an approved AIA with PSC was not in effect, and PSC was supposedly a dormant company from 2018 to the present.

- PNG Companies LLC (PNG Companies) transactions – The AIAs at Docket Nos. G-2018-3000126 and G-2018-3000130 were meant to replace the AIAs on file and approved by the Commission from June 6, 2012 until December 31, 2017 for the Peoples Companies with Peoples Service Company (PSC). Services previously provided by PSC would now be provided by PNG Companies for the Peoples Companies. The AIA with PSC would be rescinded but PSC would remain as a dormant company for future purposes. Management stated that it was intended for PSC to no longer exist after the merger.

The cover letter dated February 20, 2018 with the filing at Docket No. G-2018-3000126 requested retroactive treatment of transactions between PNG Companies and the Peoples Companies to January 1, 2018; however, the Commission was silent on this request upon approval of AIA. Records provided showed charges to PNGC of about $27,000 from PNG Companies in 2017 prior to when the application for the AIA with PNG Companies was filed on February 20, 2018. It is unclear if the transactions occurring between PNG Companies and the Peoples Companies comply with 66 Pa. C.S. § 2102.

It is the Peoples Companies' position that the request for the PNG Companies AIA to be retroactively approved to January 1, 2018 was implicitly approved as the Commission's Secretarial Letter did not make any mention of it being denied. Regarding the transactions with PNG Companies in 2017, the Peoples Companies claim that the transactions occurring in 2017 before an AIA was filed with the Commission between PNG Companies, PNGC and PGC were covered by the "non-party affiliates" language that exists in both AIAs for PSC and the PNG Companies. It is unclear how transactions with an affiliate that had yet to be approved by the Commission could occur a year in advance, and yet qualify as an approved transaction under 66 Pa. C.S. § 2102.

- Aqua Services transactions – Records show that Aqua Services has been providing services (monthly charges ranged in amounts from $620K to $1.024M) to PNG Companies, PNGC and PGC beginning April 2020. It is unclear if these are duplicate services that are already being provided by PNG Companies employees. Most of the Aqua Services employees that are performing services for PNG Companies reside in departments that exist at PNG Companies as well. When asked for monthly charges with support, the Peoples Companies did not provide adequate responses with enough support to make this assessment.

2. There is uncertainty as to whether certain language in existing AIAs should have been approved based on certain affiliate transactions observed:

   - There are a number of charges to/from affiliates (e.g., Peoples Gas KY, PNG Gathering, PA Gas Marketing, LDC Funding, LDC Holdings I and II, Peoples Homeworks and Delta Natural Gas, etc.) that do not have AIAs on file and approved by the PUC; however, the Peoples Companies claim these transactions fall under transactions for "non-party affiliates" in the AIAs that were filed and approved for PNG Companies and PSC. Here are some examples:

     - Peoples Homeworks transactions – records show transactions between PNGC and Peoples Homeworks for billing on behalf of Peoples Homeworks, as well as for services and convenience payments from 2017 to 2018 when these services were taken over by PNG Companies. The cost for these services totaled $382,000 during this period. The AIA with Peoples Homeworks at Docket No. G-2015-2464722 only specifies services for billings on behalf of Peoples Homeworks customers and does not include coverage for services and convenience payments. In addition, the AIA was rescinded

on March 26, 2018; however, records show transactions are still occurring with PNGC. As such, it is unclear if these transactions with Peoples Homeworks comply with 66 Pa. C.S. § 2102. It is The Peoples Companies' position that the transactions with Peoples Homeworks were covered under its original AIA with Equitable Homeworks and/or the AIAs with PSC and PNG Companies based on the description of services provided by "non-party affiliates" of PNG Companies. Equitable Homeworks was merged into Peoples Homeworks as the new, surviving entity on December 19, 2013; however, a new or amended AIA to recognize Peoples Homeworks as the affiliate in exchange of services with the Peoples Companies was never filed with the Commission, therefore, it is unclear how this complies with 66 Pa. C.S. § 2102. Again, it is the Peoples Companies' position that the AIAs with PSC and PNG Companies based on the description of services provided by "non-party affiliates" of PNG Companies permits these transactions with Peoples Homeworks.

- PNG Gathering transactions - Production payments totaling $155,000 have occurred between the Peoples Companies and PNG Gathering, and the approved AIA does not address production payments. The Peoples Companies state that these payments are similar to convenience payments as these payments are simply the collection of cash by one affiliate and then distributed to another affiliate for simplicity. The Peoples Companies' position is that the "non-party affiliates" language in the PSC and PNG Companies AIAs covers such transactions.

- PNG Companies transactions - Large tax sharing payments of $6.7 million (2017) and $9.9 million (2018) from PNGC to PNG Companies without a tax sharing agreement filed and approved by the Commission. Other utilities whose parent pay taxes on their behalf and then pay their share back to the parent have tax sharing agreements on file and approved by the Commission. The Peoples Companies claim these transactions were covered by the "non-party affiliates" language.

In each of these instances, the Peoples Companies maintain that a number of the transactions with other affiliates fall under transactions for "non-party affiliates" in the AIAs that were filed and approved for PNG Companies and PSC, and therefore, there is no requirement for another AIA to be filed and approved by the PUC.

The "non-party affiliate" language in the prior PSC AIA and current PNG Companies AIA is especially concerning to the PUC auditors, as the term "non-party affiliate" was not defined in the approved AIAs. This language appears to give an existing affiliate the ability to create new affiliates as "non-party affiliates" enabling them to charge the utility for other unknown and unstated services. In effect, this language circumvents the requirement to request the Commission's approval for future transactions with any new affiliates that come into existence. This type of act appears to be in direct contradiction to the intent of 66 Pa. C.S. § 2102.

3. There is uncertainty as to whether various affiliate transactions are appropriate as a sufficient audit trail does not exist between the regulated utility and its affiliates. In March 1998, NARUC developed *Guidelines for Cost Allocations and Affiliate Transactions* (*Guidelines*). The *Guidelines* are intended to provide guidance to jurisdictional regulatory authorities and regulated utilities and affiliates in the development of procedures and recording of affiliate transactions. Some of the key elements of the *Guidelines* include audit requirements such that:

> *An audit trail should exist with respect to all transactions between the regulated entity and its affiliates that relate to regulated services and products. The regulator should have complete access to all affiliate records necessary to ensure that cost allocations and affiliate transactions are conducted in accordance with the guidelines. Regulators should have complete access to affiliate records, consistent with state statutes, to ensure that the regulator has access to all relevant information necessary to evaluate whether subsidization exists. The auditors, not the audited utilities, should determine what information is relevant for a particular audit objective. Limitations on access would compromise the audit process and impair audit independence.*

It is unclear whether various affiliate transactions are appropriate as a sufficient audit trail does not exist between the regulated utility and its affiliates:

- Untimely, inaccurate, and/or incomplete responses to inquiries - The Peoples Companies took three months to provide a summary of annual affiliate charges to/from PNGC and PGC and then later needed to correct the information and provide a second summary. The Peoples Companies were not timely, accurate or complete in their responses in this particular area of audit fieldwork. Some data requests and email correspondences took a substantial amount of time to get information and were either incorrect and/or answered only part of the requests or emails. At times, data requests and emails were the main sources of information as the subject matter experts could not answer the audit staff's questions related to this particular area of audit fieldwork. The Peoples Companies stated that due to multiple competing initiatives and the challenges related to remote work due to a global pandemic (i.e., completion of the acquisition by Essential the same month the audit began, the first quarterly closing under a publicly traded company, and several staff turnovers of key personnel in finance/accounting), the original response for the data request was not reviewed in enough detail prior to submission, and once the errors were discovered the schedule needed to be completely reworked to ensure that all transactions tied to the trial balance and were classified consistently.

- The Peoples Companies do not have a flowchart to show the path of data throughout their accounting system. The absence of an accounting flow chart makes it difficult for an auditor to assess internal controls.

- The Peoples Companies stated that there is no segregation of duties matrix because the Peoples Companies rely on process narratives and controls

established in SAP. The absence of a segregation of duties matrix makes it difficult for an auditor to assess internal controls.

- There are large transactions (in terms of number and dollar amounts of transactions) that have vague explanations in the AIAs with PSC and PNG Companies. The Peoples Companies' explanation was that these large convenience payments are covered by the "counter-party" and "non-party affiliates" language that was described earlier in this chapter. The dollar amounts of these transactions between affiliates and PNGC and PGC were as follows: 2017 - $43 million; 2018 - $59 million; and 2019 - $46 million.[15]

4. There is uncertainty regarding best practices for internal audit, cost allocations and affiliate transactions:

   - The audit staff asked to review the workpapers from an internal audit of cost allocations conducted in 2016. The Peoples Companies stated the auditor who performed the audit is no longer an employee and no one else has access to the electronic workpapers. Furthermore, due to the current pandemic, they cannot see if hard copies are in the office because it is closed to employees. This raises doubt about the quality of the company's internal audit practices. At a minimum, the audit manager should have access to an auditor's electronic workpapers as the workpapers are the property of the company, not the individual auditor. In fact, audit standards require the retention of workpapers for 7 years.

     Later during fieldwork, the Peoples Companies provided an Excel spreadsheet that analyzed four months of employee time reporting in SAP, but the Peoples Companies were unable to provide additional documentation regarding the internal audit of time keeping records other than this spreadsheet that included an analysis of a company-wide survey vs allocation that should've been used. The Peoples Companies' position is that the workpapers for the cost allocations audit were limited to the final audit report dated October 11, 2017. At a minimum, audit standards require workpapers to include basic elements that will allow an experienced auditor, uninvolved with the audit, to understand the nature, extent and timing of the work performed, and allow for independent reproduction/verification of the results.

     This internal audit was conducted to confirm the implementation of the recommendations from a 2016 internal audit related to AIAs. The conclusions reached in the 2016 internal audit were allegedly based upon conversations with employees, review of activity in SAP, and review of the Peoples Companies' AIAs without any documentation. When the audit staff asked for workpapers for the 2016 internal audit, they were given only brief written communications between management and employees, and management and internal audit. (Although limited documentation was provided, it showed that the Peoples

[15] These amounts are the convenience payments each year embedded in the totals shown for PNGC and PGC in Exhibits V-2 and V-3.

Companies' internal auditors determined there were issues with employees charging their time correctly.)

- The NARUC *Guidelines* support the use of a cost allocation manual (CAM) which should be an indexed compilation and documentation of a company's cost allocation policies and related procedures. According to the *Guidelines*, each entity that provides both regulated and non-regulated services or products should maintain a CAM, or its equivalent, and notify the jurisdictional regulatory authorities of the CAM's existence. The Peoples Companies did not use a CAM when PSC and PNGC were providing the services before PNG Companies (pre-2018). The Peoples Companies contend they did not have CAMs because all allocation factors were embedded in the SAP system and were updated on an annual basis.

- The CAM for transactions with PNG Companies does not follow the NARUC *Guidelines* cost allocation principle that affiliate costs should be collected and classified on a direct basis for each asset, service or product provided to the maximum extent practicable. The current PNG Companies AIA states that services "…shall be charged based upon the Direct Charge method where services are provided for capitalized projects, special projects requested by a Client Company or where current allocations are not representative of current efforts. In all other instances the cost of services shall be allocated…" It is unclear why a direct charge mechanism cannot be implemented as much as possible because this was the approach used in the prior AIA with PSC, but an internal memo dated January 1, 2018 instructed employees that no company specific direct time charging for PNG Companies non-field employees was required anymore. It was also discovered late in the audit that some employees at PNGC began allocating their time spent on affiliates beginning on July 1, 2017.

  The explanation given by the Peoples Companies was that in the PSC AIA, costs may be allocated if not practicable to direct assign; therefore, in 2017, the Peoples Companies determined that the direct charge method for certain departments was cumbersome and not practicable, so they began allocating without approval. It is the Peoples Companies' position that using the allocation factors that have been carefully considered to align with the cost drivers of the work effort that is being performed ensures complete cost distribution; however, ample support was not provided to the PUC auditors to make an assessment. In addition, the Peoples Companies claim that the AIA with PSC's primarily direct assignment method was too cumbersome to administer and contributed to the difficultly in tracing cost causation. The Peoples Companies believe the new AIA with PNG Companies remedied this by limiting billing by direct assignment to services that are for capitalized projects, provided for a special project requested by the recipient, or where current allocations are not representative of current efforts. Also, the Peoples Companies claim that under the previous AIA with PSC, all services but accounts payable and the customer service were directly assigned. Because employees could be members of PSC, PNGC or PGC when providing services, charges were flowing in multiple directions. As the charges settled in PNGC or PGC for which the service had been provided, they became

PSC charges of PNGC or PGC. To analyze these charges, all paths had to be followed and charges accumulated and analyzed. Under the new AIA, all charges stem from PNG Companies and flow directly to PNGC and PGC making analysis simpler.

- The affiliate transactions review process is not robust. At the end of the monthly closing process, the Director of Finance and Accounting performs a review of each company's income statement. This is done by comparing actual results for the month to the previous month and for the previous year of the same month, and any variances are investigated, as necessary. This limited review includes only charges from PNG Companies to affiliates (including PNGC and PGC). No review was provided for other affiliates' charges. The audit staff was provided the document used in this process and it showed the most recent month and previous month's trial balance of intercompany receivables/payables for affiliates of PNG Companies, along with sign off sheets for invoices to affiliates (including PNGC and PGC) without additional support. The Peoples Companies provided the Quarterly Earnings Reports filed to the PUC as an example of an affiliate transaction review, but the audit staff is not aware of how this allows for any kind material review of affiliate transactions.

- The Peoples Companies do not periodically review the cost of affiliate services to ensure the costs are at market or lower for services received by an affiliate or at market or higher for services provided to an affiliate (see Finding and Conclusion No. 5).

The issues called into question here demonstrate that the Peoples Companies' governance of cost allocations and affiliate transactions has weaknesses that do not comply with 66 Pa. C.S. § 2102 as well as the Settlement Agreement at Docket No. A-2013-2353649, and do not adhere to NARUC *Guidelines* or follow best practices for cost allocations. The lack of a robust governance process for cost allocations and affiliate transactions increases the risk of:

1. Cross-subsidization, which occurs when an affiliate in an unregulated market can price its product or services below cost due to its relationship with a regulated entity

2. Incorrect cost distribution when allocations are used in place of direct charging

3. Improper entry of data into SAP by employees without a CAM or one that is lacking all the elements described in the NARUC *Guidelines*

4. Lack of internal controls to ensure the propriety of charges and prevent double billing for services

5. Impact to ratepayers in the form of higher rates[16]

The Peoples Companies should improve their governance process by discussing amendments to their existing AIAs or file new AIAs with the Commission to address some of the compliance concerns raised by the audit staff as well as the other weakness that have been discussed.

2. Aqua PA leases office space to affiliates but has not filed lease agreements with the PUC.

Aqua PA leases office space to Aqua Services and Aqua Customer Operations (ACO), which is a department of Aqua Services. Aqua PA set the lease payments based on square footage and overhead expenses. While Aqua PA has received approval from the PUC for multiple affiliated interest agreements (AIA) and recently filed two additional AIAs to update/revise its existing AIAs, office space leasing transactions are not covered by any existing or recently submitted AIAs. In addition, the cost per square footage used in Aqua PA's rent calculation has not changed since 2010, although many overhead charges (i.e., property taxes, facility maintenance, etc.) were added or increased since that time.

As specified at Commonwealth 66 Pa. C.S. § 2102, AIAs are to be filed and approved by the Commission, except in cases where annual transaction totals between affiliates are less than $10,000. The lack of an AIA between Aqua PA and Aqua Services for leased office space was cited during the 2016 MEI because annual transaction totals exceeded $10,000. In 2010, the total rent charged by Aqua PA to Aqua Services and ACO was $923,000 while the total rent expense increased to $1.09 million in 2019. However, the cost per square foot rate (used to calculate a portion of the rent expense) has remained the same since 2010. The unchanged cost per square foot rate and lack of a supporting market study to compare current charges with market (See Finding and Conclusion No. 5 later in this chapter) raises the possibility that the rent charged to Aqua Services and the ACO are resulting in cross-subsidization. As previously mentioned, Aqua PA has adjusted several expenses since 2010; however, simply applying inflation to the square footage charge could result in a combined annual increase in charges to Aqua Services and ACO of up to $150,000[17]. Without the submission of an AIA to the PUC, the Commission cannot determine whether such an arrangement is reasonable, consistent with public interest and free from cross-subsidization of unregulated affiliates.

[16] To clarify, the PUC's Bureau of Audits is not involved in rate case proceedings, and because most rate case proceedings include settlements that only the intervening parties have access to the information resulting in the settlement, the audit staff does not have access to information to confirm if any of the transactions in question were included as part of a rate case proceeding. There is a general concern, however, that the weaknesses identified in the governance process could pose a problem to validate the appropriateness of these types of transactions during a rate case proceeding.

[17] Based upon 2020 data.

3. PNG Companies and Peoples Natural Gas Company do not require timesheet approvals other than for non-exempt field employees.

The Peoples Companies stated that only non-exempt field employees are required to have their timesheets approved by a supervisor through TimeTrack. PNG Companies and PNGC claim they are in the process of reviewing the timesheet approval process for all employees to align with Essential. For comparison, Aqua Services employees are required to have timesheet approval by supervisors. The Peoples Companies did not give a reason why a timesheet approval process does not exist for other employees.

It is a best practice to require employees to have their timesheets approved to prevent improper time entry along with supervisors/managers being able to review what individual employees are working on. In addition, timesheets can help identify poor performing employees that have reduced productivity that leads to additional costs to the Peoples Companies. Without timesheets, supervisors/managers lose a key tool for comparing employee performance by reviewing the amount of time they work on a task/project and the output of a task/project.

4. Essential's Corporate Charges Allocation Manual is not comprehensive.

Historically, Essential's Corporate Charges Allocation Manual (CAM) was the primary document explaining the services provided by Aqua Services with a high-level description of the corresponding methods for charging expenses. While this document does a satisfactory job describing those important tasks, it lacks crucial information needed to make it applicable for all affiliate charges incurred throughout the Essential organization. Moreover, the Corporate CAM does not acknowledge unregulated affiliates nor provide an example of the cost allocation methodology in practice for those entities. According to NARUC guidelines for cost allocations and affiliate transactions:

- a Cost Allocation Manual is defined as an indexed compilation and documentation of a company's cost allocation policies and related procedures

- at a minimum, the CAM should contain the following:

    1. An organization chart of the holding company, depicting all affiliates, and regulated entities.

    2. A description of all assets, services and products provided to and from the regulated entity and each of its affiliates.

    3. A description of all assets, services and products provided by the regulated entity to non-affiliates.

    4. A description of the cost allocators and methods used by the regulated entity and the cost allocators and methods used by its affiliates related to the regulated services and products provided to the regulated entity.

Essential considers the AIAs filed with the Commission as documentation of the transactions occurring between affiliates other than Aqua Services. However, the Corporate CAM does not reference these AIAs, nor does it describe which services beyond those provided by Aqua Services are occurring. As shown in summary of affiliate charges at Exhibit V-1, Aqua PA provides services and/or materials to many of its affiliates. These transactions include fleet services, lab services, materials, labor and office space.

With the recent acquisition of the Peoples Companies, now is an ideal time to ensure that all affiliate transactions are appropriately documented in a manual. Ambiguous, undefined, or undocumented cost allocation processes make the application and verification of intercompany charges unclear for new employees and/or new affiliates. Undocumented processes can change unexpectedly leading to unintended consequences, misapplication of allocation methodologies, inappropriate charges, or cross-subsidization. To expand the scope and improve the functionality of the Corporate CAM, the following items should be added, at a minimum:

- List of or an organizational chart showing the current affiliates beyond Aqua Services and its parent including the newly acquired regulated and unregulated affiliates

- Description of the types of services provided between all affiliate companies

- Example or more detailed description of the cost allocators and methods used for all services provided between affiliates

- References to or copies of existing affiliated interest agreements, the Peoples Companies CAM or similar documents

Audit staff asserts that a single comprehensive CAM can include the necessary information. However, it may be more practical to update the Corporate CAM with relevant information and then add specific addendums covering company or state specific information. For example, the Peoples Companies have additional allocations for services that do not align with the rest of Essentials subsidiaries now. Additionally, Aqua PA provides services to its affiliates and allocates costs to its subsidiary, Aqua PA Wastewater, but these transactions are not covered by a CAM. Therefore, it is prudent to detail these transactions separately.

5. Market studies are not regularly performed to ensure that the goods and services provided by affiliates to the utilities are at the lower of cost or market, and goods and services provided by the utilities to affiliates are at the higher of cost or market.

Generally, the price for services, products and the use of assets provided by a non-regulated affiliate should be at the lower of fully allocated cost or prevailing market prices (LCOM). The PUC auditors were unable to assess whether the services provided by PNG Companies to the Peoples Companies are at LCOM because a

market study has not been performed. The Peoples Companies' asserted that no analyses were performed because all services have been provided at cost; however, the Peoples Companies were unable to provide support to show that the cost of services provided by PNG Companies were at LCOM. The Peoples Companies stated that both PNGC and PGC receive services from PNG Companies at cost without mark-up as specified in their AIAs, which is also market price in their opinion. Furthermore, the Peoples Companies contend that they conduct periodic salary surveys to verify their goal of paying employees at the 50th percentile of market for similar positions. Their position is that the salary surveys demonstrate the charges by PNG Companies to affiliates for services are at LCOM. The PUC auditors contend that this type of salary survey only indicates that employee salaries are paid at the market rate, but it does not differentiate how many hours employees spend on different types of services and to which affiliates; and is therefore not the same as a market study for specific services provided by a third-party firm.

Alternatively, for Aqua PA, Essential has attempted to replicate a market rate analysis by periodically comparing the costs of specific services (accounting, engineering, legal, etc.) to the market rates of other Pennsylvania firms. However, this analysis only compares average hourly rates without considering service levels and in some cases is now outdated. Additionally, there is no analysis of the goods or services that Aqua PA provides to its affiliates. Services provided by Aqua PA should be at the higher of cost or market whereas services provided to Aqua PA follow the LCOM methodology. For example, a real estate market study should be conducted to ensure Aqua PA charges Aqua Services rent for office space at the higher of cost or market to ensure that Aqua PA is not subsidizing the office space rent incurred by Aqua Services (see Finding and Conclusion No. 2).

A market study provides a utility with information on whether the cost of services received by, or provided to, its affiliates are reasonable and fair. This includes services and goods provided by the utilities to affiliates at the higher of cost or market, and services and goods provided by affiliates to the utilities at the lower of cost or market. A market study would compare the cost of the services provided within the organization compared to a benchmark of what third-party firms charge to provide the same services.

Recommendations

1. **Improve internal controls and other practices related to affiliate transactions and cost allocation to ensure the company is following best practices and Commission guidelines. Further, the Peoples Companies should consult with the PUC's Bureau of Technical Utility Services to perform a thorough review of the current AIAs on file to determine if changes to the AIAs are needed and/or if new AIAs need to be filed to ensure compliance with Title 66 Chapter 21.**

2. **Document all lease agreements between Aqua PA and its affiliates and submit them to the Commission for approval.**

3. **Implement a policy or procedure that requires the approval of Peoples Companies employees' timesheets similar to what exists for Aqua Services employees.**

4. **Expand Essential's corporate charges allocation manual to include all transactions between affiliates.**

5. **Conduct periodic market studies to confirm that goods and services provided by affiliates to the utilities are at the lower of cost or market, and goods and services provided by the utilities to affiliates are at the higher of cost or market.**

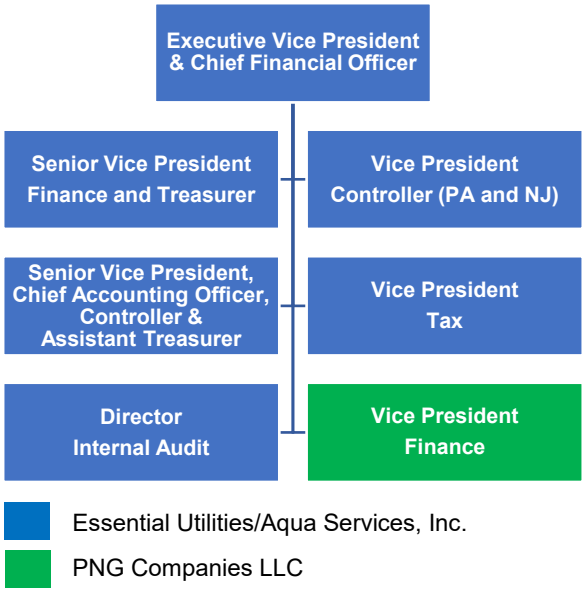
VI. FINANCIAL MANAGEMENT

Background

This chapter discusses the financial management organization structure and respective roles and responsibilities at Aqua Pennsylvania, Inc. (Aqua PA), Aqua Services, Inc. (Aqua Services), Peoples Natural Gas Company LLC (PNGC), Peoples Gas Company LLC (PGC) (collectively referred to as the Peoples Companies) and PNG Companies. Chapter II – Background discussed the details of the acquisition of the Peoples Companies and other related affiliates, including PNG Companies LLC (PNG Companies). Aqua Services is the centralized service company subsidiary of Essential Utilities Inc. (Essential), which provides a variety of services for all subsidiaries of Essential, including Aqua PA and the Peoples Companies.

The financial management functions provided by Aqua Services include rate case services, debt management, tax planning, budgeting, pension fund management, centralized cash management and internal audit services. As shown in Exhibit VI-1, Aqua Services' financial management organization is overseen by the Executive Vice President and Chief Financial Officer (CFO). Employees (such as accountants and financial analysts) whose work directly benefits Aqua PA are classified as Aqua PA employees even though they report directly or indirectly to Aqua Services employees. For the Peoples Companies, most of the services within the accounting, finance and internal audit functions are provided by employees of either Aqua Services or PNG Companies. An overview of the major responsibilities of the finance department are discussed further within this chapter.

Exhibit VI–1
Aqua Services, Inc.
Finance Department Organization Chart
2020



Source: Data Request A-EM-2, PUC auditor analysis

A. Aqua Pennsylvania

Essential's Senior Vice President Finance and Treasurer oversees Aqua Service's treasury, cash management, and financial planning and analysis (FP&A) functions. Treasury actively manages Aqua PA's overall capital structure including acquiring short- and long-term borrowings. As of April 2020, Aqua PA's Standard and Poor's corporate credit rating was A while Aqua PA's secured debt rating was A+. All debt for Aqua PA is secured at the operating company level with the company's long-term debt consisting of first mortgage bonds, tax exempt bonds, Pennvest loans, and unsecured notes. Exhibit VI-2 reflects Aqua PA's capital structure for the years 2015 through 2019.

Exhibit VI–2
Aqua Pennsylvania, Inc.
Summary of Capital Structure
As of December 31, 2015 – 2019

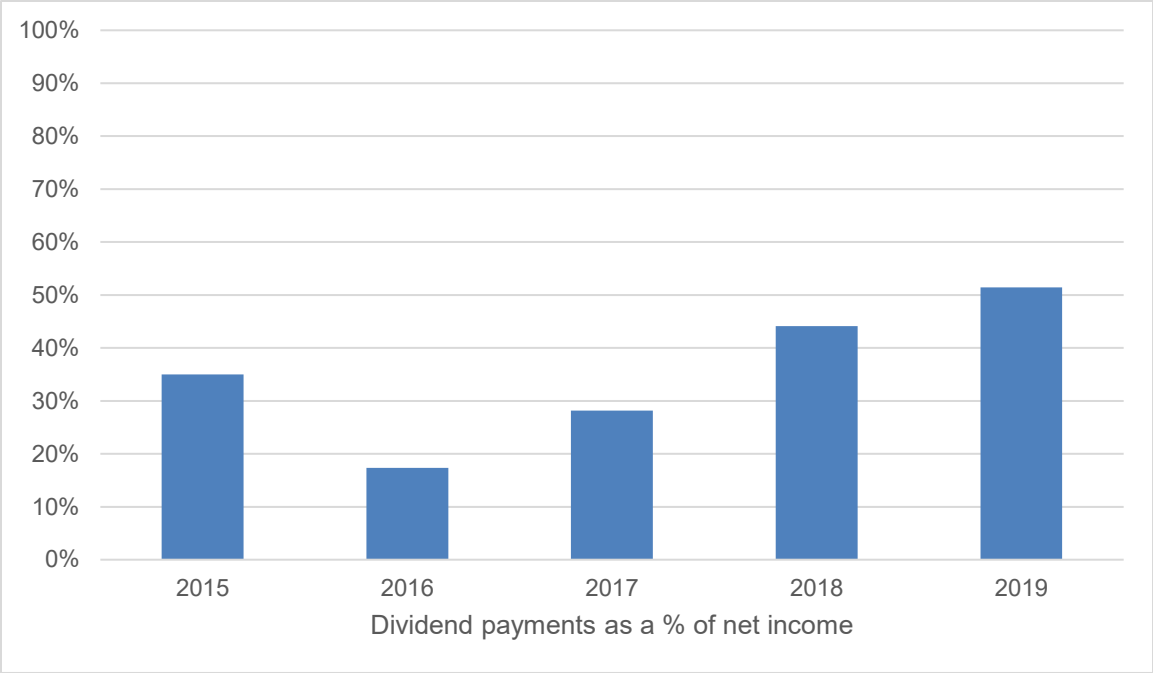
	2015	2016	2017	2018	2019
Long Term Debt	46.2%	46.1%	46.9%	46.7%	49.0%
Equity	53.8%	53.9%	53.1%	53.3%	51.0%
	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Aqua PA annual reports to the PA PUC

Aqua Services actively manages Aqua PA's debt portfolio by evaluating short- and long-term borrowings for opportunities to save on interest expense. For example, Aqua PA's $100 million short term revolving credit line is typically used to finance the company's short-term obligations until it is advantageous to roll the short-term debt into long-term debt. Aqua PA's average long-term debt to equity ratio for the years 2015 through 2019 was 47% to 53% respectively.

From 2015 through 2019, Aqua PA provided annual dividend payments to Aqua America (currently rebranded as Essential Utilities which coincided with the acquisition of the Peoples Companies in March 2020). Exhibit VI-3 shows Aqua PA's dividend payments for the period, expressed as a percentage of its annual net income. Aqua PA's dividend policy states it will maintain an equity ratio in compliance with all financial covenants of its debt agreements. Each quarter, Essential's Treasurer calculates Aqua PA's capital structure and declares a dividend to Essential if warranted. The Aqua PA Board of Directors must approve dividend distributions via unanimous consent prior to Essential's Treasurer taking action. Overall, management indicated that the general strategy of the dividend was to maintain a consistent capital structure. Aqua PA has declared dividends below the PUC's reporting threshold of 75%, with an average of approximately 35% over the last five years.

Exhibit VI–3
Aqua Pennsylvania, Inc.
Dividend Payments to Essential Utilities Inc.
For Years Ended December 31, 2015 – 2019



Source: Data Requests A-FM-16 and A-FM-17, PUC auditor analysis

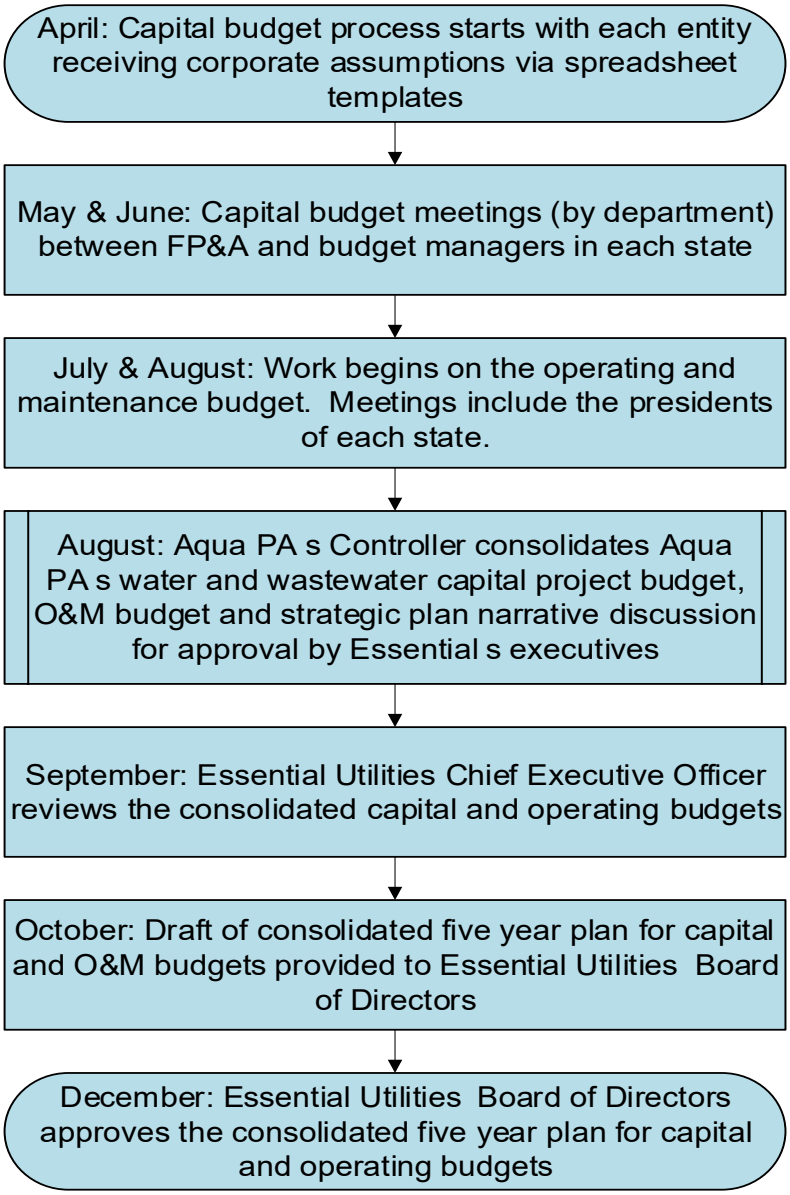
Centralized cash management and forecasting are services provided to Aqua PA by Aqua Services. This group manages incoming and outgoing cash transactions via a centralized bank account for all Essential affiliates except for the Peoples companies, who have their own bank accounts and personnel to oversee them[18]. Customers make payments through the mail, electronically, or at a third-party bill payment center. These transactions are processed through a centralized lockbox. Aqua Services personnel process journal entries to ensure that the customer payments are reflected accurately. Cash disbursements via Essential's accounts payable function are discussed in more detail within the findings and conclusions section of this chapter.

Meanwhile, Aqua Services employees within the FP&A function are responsible for working with Essential's subsidiaries to create five-year plans/budgets and to assist with analyses to enable decisions such as make vs buy[19] or lease vs buy. As shown in Exhibit VI-4, Essential's budgeting process begins annually in the spring and concludes with Essential's Board of Directors approving the consolidated budget in December. Personnel overseen by the VP Controller for Aqua PA monitor Aqua PA's capital and operating budgets throughout the year using updated forecasts to reflect ongoing changes. Monthly variances are reported and discussed during recurring meetings. In

[18] Ultimately, these personnel report up to Essential's SVP Finance and Treasurer.
[19] Make vs buy is a term given to the decision to expand output of water treatment from existing or new Aqua PA facilities versus buying additional treated water from outside entities.

2022, Essential plans to implement SAP as part of the Service Improvement Project, which includes replacing all accounting and financial information systems.

Exhibit VI–4
Essential Utilities Inc.
Operating and Capital Budget Process



Source: Data requests A-FM-2 and A-FM-3 and interviews with company personnel

From a benefit perspective, Essential sponsors a noncontributory qualified defined benefit pension plan covering non-union employees hired prior to April 1, 2003

and select union employees[20]. For employees hired after April 1, 2003 and available to any Aqua PA employee is a 401(k) savings plan, which is a defined contribution plan. Matching contributions are based on a percentage of an employee's contribution, subject to specific limitations.

Essential's Pension Committee, comprised of senior management members appointed by the Essential Board of Directors, has responsibility for oversight and management of all plans sponsored by Essential. An actuarial firm assesses the obligations and funding requirements for the Essential sponsored plans. See Exhibit VI-5 for the funding status of Essential's defined benefit pension plan as of December 31, 2019[21].

Exhibit VI–5
Essential Utilities Inc.
Defined Benefit Pension Plan Funding Status
As of December 31, 2019

Accumulated Benefit Obligation	$	290,522,000
Projected Benefit Obligation	$	310,381,000
Fair Value of Assets	$	266,461,000

Source: Essential Utilities Inc. 2019 Annual Report

B. The Peoples Companies

Since the March 2020 acquisition by Essential, the Peoples Companies have been receiving the same financial management services from Aqua Services as described for Aqua PA. In addition to the services provided by Aqua Services, the Finance and Accounting Departments at PNG Companies are under the direction of the VP of Finance as shown in Exhibit VI-6 and provide the following services to the Peoples Companies:

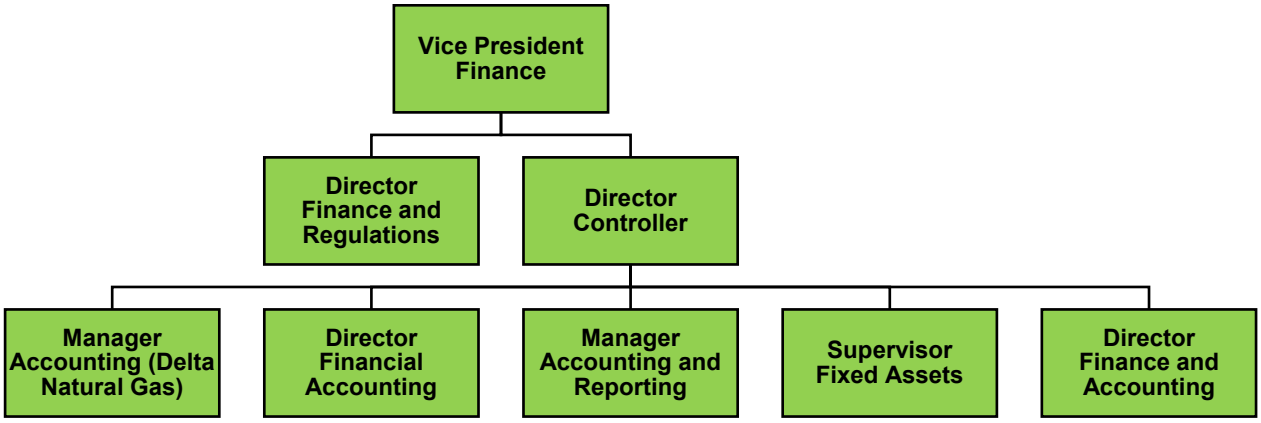
- Provides the organization, direction and resources for the study, planning and reporting of five-year financial business plans and financial strategies, Operations and Maintenance (O&M) and capital expenditures, economic analyses, special projects and benchmarking

- Provide the organization, direction and resources for accounting matters, including the development of accounting practices, procedures and controls, the maintenance of the general ledger and related subsidiary systems such as fixed assets, the preparation and analysis of financial reports, and the processing of certain accounts such as accounts payable and accounts receivable

[20] The eligibility of union employees is determined by the collective bargaining agreements covering those employees.
[21] Information regarding accumulated and projected benefit obligations is not prepared at the subsidiary level.

- Provide direction and services related to managing all administrative activities associated with financing, including management of capital structure; cash, credit and other risk management activities; investment and commercial banking relationships; and general financing activities

Exhibit VI–6
PNG Companies
Finance and Accounting Departments
As of February 13, 2020



Source: Data Request P-EM-2

The Peoples Companies stated they engage in a detailed annual budgeting process each year with the various budget owners to assemble both the O&M and capital budgets. The budgets are shared with senior leadership for approval and ultimately receive board of director approval. The companies contend that the FP&A function regularly generates and evaluates the following monthly and quarterly budgeting/finance reports to support planning, analysis and decision-making processes throughout the companies:

❖ Monthly

- Capital Reporting
  - o Prepare & provide management summary to budget owners
  - o Report actual vs plan results for a Capital Review Committee meeting summary
  - o Review variances and planned commitments with budget owners to adjust forecast
- Expense Reporting
  - o Provide detailed actual vs plan O&M reports to department budget owners
  - o Report actual vs plan results by budgeted expense category with variance explanation as part of income reasonability process with the accounting department
  - o Research variances and evaluate impact

- Revenue Reporting
  - Prepare income reasonability reports to compare actual vs plan volume, gross revenue, gas cost and customer counts
  - Investigate variances to determine causes
  - Meet with the accounting department to review results
- Variance Analysis
  - Analyze month-to-date, quarter-to-date and year-to-date profit and loss variances to prior year and budget

❖ Quarterly

- Quarterly Management Report to Board of Directors/Executives
  - Year-to-date reports on actual to plan and actual to prior year
    - Income Statement
    - Balance Sheet
    - Cash Flow
    - Revenue
    - Expense
    - Capital

At the end of the acquisition closing, the Peoples Companies began obtaining their funds from short-term borrowing through PNG Companies which in turn receives funds through an Essential Utilities Demand Note (Demand Note). A Credit Agreement between Essential and several banks (PNC Bank, National Association is current administrator) provides up to $1 billion in funds for the Demand Note of which up to $400 million and $100 million may be loaned to PNGC and PGC, respectively. As of August 2020, short-term debt outstanding was approximately $91 million at PNGC and $30 million at PGC, respectively. Exhibits VI-7 and VI-8 below show the long-term debt outstanding as of August 2020 at PNGC and PGC, respectively. Funds from long-term borrowing are obtained by the Peoples Companies through PNG Companies which in turn receives its financing by way of Note Purchase Agreements with JPMorgan Chase Bank, N.A.

Exhibit VI–7
Peoples Natural Gas Company LLC
Long-Term Debt Outstanding
As of August 2020

Principal Amount	Interest Rate	Frequency of Interest Payment	Interest Payment Amount	Maturity Date
$144,746,400	4.100%	Semi-Annually	$2,967,301	12/19/2023
$110,007,200	4.250%	Semi-Annually	$2,337,653	12/19/2025
$89,455,500	2.900%	Semi-Annually	$1,297,105	12/18/2022
$178,911,000	3.380%	Semi-Annually	$3,023,596	12/18/2027
$178,911,000	3.630%	Semi-Annually	$3,247,235	12/18/2032
$702,031,100				

Source: Data Request P-FM-37

Exhibit VI–8
Peoples Gas Company LLC
Long-Term Debt Outstanding
As of August 2020

Principal Amount	Interest Rate	Frequency of Interest Payment	Interest Payment Amount	Maturity Date
$21,000,000	4.500%	Semi-Annually	$472,500	11/17/2021
$2,727,278	6.420%	Quarterly	$43,773	12/28/2022
$2,727,272	5.990%	Quarterly	$40,841	10/31/2023
$30,000,000	3.530%	Semi-Annually	$529,500	8/23/2023
$56,454,550				

Source: Data Request P-FM-37

Exhibits VI-9 and VI-10 show the debt to equity ratios for the years 2017 through August 2020 for PNGC and PGC, respectively. PNGC has maintained a debt to equity ratio near or below 50% during this time-period, and PGC has a debt to equity ratio significantly below 50% as of August 2020.

Exhibit VI–9
Peoples Natural Gas Company LLC
Debt to Equity Ratio
For the Years 2017 through August 2020

	2017	2018	2019	August 2020
Debt	$885,017,395	$894,791,396	$973,636,315	$1,019,568,008
Equity	$917,969,561	$1,044,668,950	$1,143,914,422	$952,673,319
Total Capitalization	$1,802,986,956	$1,939,460,346	$2,117,550,737	$1,972,241,327
% Debt	**49.1%**	**46.1%**	**46.0%**	**51.7%**

Source: Data Request P-FM-26

Exhibit VI–10
Peoples Gas Company LLC
Debt to Equity Ratio
For the Years 2017 through August 2020

	2017	2018	2019	August 2020
Debt	$114,284,053	$104,148,285	$95,802,876	$87,582,801
Equity	$110,605,795	$128,374,547	$144,859,789	$149,726,926
Total Capitalization	$224,889,848	$232,522,832	$240,662,665	$237,309,727
% Debt	**50.8%**	**44.8%**	**39.8%**	**36.9%**

Source: Data Request P-FM-26

Exhibit VI-11 shows the pension funding for the three different pension plans that exist at the PNG Companies and the Peoples Companies. Legacy employees from Equitable Gas Company LLC (EGC) and Peoples TWP LLC (prior name of PGC, see Chapter II - Background) have pension funds that differ from employees that started with PNGC.

Exhibit VI–11
Peoples Natural Gas Company LLC, Equitable Gas Company LLC and Peoples Gas Company LLC
Pension Funding
As of December 31, 2019

	PNGC	EGC	PGC
Projected Benefit Obligation	$65,278,199	$25,398,914	$19,721,352
Fair Value of Assets	$55,788,160	21,847,485	$18,602,196
Underfunding	($9,490,039)	($3,551,429)	($1,119,156)
Percent Funded	**85.46%**	**86.02%**	**94.33%**

Source: Data Request P-FM-33

Essential (PNG Companies in January, pre-acquisition) funded the pension and OPEB of PNGC and PGC in amounts consistent with the regulatory commitments that were previously established in base rate cases. Contributions to the pension funds for PNGC, EGC and PGC were as follows:

- January 15, 2020 – PNGC - $0, EGC - $209,000, PGC - $0
- April 15, 2020 – PNGC - $267,000, EGC - $232,000, PGC - $56,052
- September 14, 2020 – PNGC - $1,169,000, EGC - $302,500, PGC - $499,000

Prior to the acquisition by Essential in March 2020, the Peoples Companies were privately owned utilities ultimately by SteelRiver LDC Ventures LLC, which were indirectly controlled by SteelRiver Infrastructure Partners LP (SteelRiver). In 2017, PNGC paid dividends of $12.8M (17.4% of net income), and PGC paid $4.8M (37.6% of net income), respectively, to SteelRiver. There were no dividends paid to Steel River by either of the Peoples Companies for the time-period of 2018 through March 2020.

Findings and Conclusions

Our examination of the financial management functional area focused primarily on a review of accounting/finance policies and procedures, the capital and O&M budget processes, budget variance tracking and reporting, long and short-term financing policies and activities, dividend policies, internal audit, and the pension program funding. Based on our review, Essential and its subsidiaries should devote additional efforts to improving its financial management functional area by addressing the following:

1. Essential Utilities does not employ a corporate money pool to allow subsidiaries to either invest excess short-term funds or borrow necessary short-term funds.

A money pool is a financial agreement established and administered by a parent, holding company, or a centralized service company of regulated utilities and its affiliates. Through this pooling of money, regulated utilities may lend or borrow on a short-term basis to or from affiliates and facilitate favorable interest rates. These favorable rates can lead to higher returns (when infusing cash) or lower costs (when borrowing) than are commercially available.

Exhibits VI-12 and VI-13 display the month-end cash balances for PNGC and PGC for the years 2015 through August 2020, respectively. The monthly averages on-hand for PNGC ranged from $107,005 (2017) up to $1.35 million (2018). Also, PNGC at times had monthly balances over $3.0 million (Jan 2018, Feb 2018, April 2018, April 2019, November 2019, and March 2020). PGC consistently had cash on-hand at the end of each month; the average monthly balances ranged from $257,000 (2019) up to $1.6 million (2015).

Exhibit VI–12
Peoples Natural Gas Company LLC
Month End Cash Balances
For the Years 2015 through August 2020

	2015	2016	2017	2018	2019	2020
January	$1,385,813	$0	$0	$3,529,483	$2,451,494	$0
February	$0	$2,119,452	$0	$4,183,008	$2,497,604	$0
March	$0	$1,832,655	$0	$501,052	$0	$4,773,503
April	$0	$0	$0	$3,221,266	$3,834,643	$0
May	$0	$1,973,913	$0	$0	$0	$0
June	$0	$1,122,234	$0	$0	$0	$0
July	$0	$0	$0	$503,311	$0	$0
August	$450,914	$0	$394,123	$0	$0	$1,421,560
September	$0	$0	$0	$0	$0	N/A
October	$0	$1,153,736	$889,939	$1,415,706	$0	N/A
November	$1,154,591	$552,202	$0	$0	$4,768,790	N/A
December	$0	$0	$0	$2,817,544	$778,277	N/A
Average	**$249,277**	**$729,516**	**$107,005**	**$1,347,614**	**$1,194,234**	**$774,383**

Source: Data Request P-FM-2

Exhibit VI–13
Peoples Gas Company LLC
Month End Cash Balances
For the Years 2015 through August 2020

	2015	2016	2017	2018	2019	2020
January	$1,491,164	$1,870,466	$2,382,776	$403,200	$220,031	$51,035
February	$1,191,057	$754,600	$670,575	$520,137	$349,376	$218,022
March	$2,449,551	$1,481,651	$1,132,948	$501,052	$303,396	$554,289
April	$2,126,218	$563,775	$1,227,841	$305,987	$536,614	$94,504
May	$1,877,609	$227,757	$602,502	$112,429	$210,505	$142,238
June	$1,546,835	$475,810	$819,866	$181,722	$196,026	$143,356
July	$742,588	$476,682	$213,280	$276,565	$161,103	$87,503
August	$611,128	1,217,836	$2,079,458	$59,672	$49,610	$44,784
September	$481,242	$1,650,573	2,021,286	$44,728	$163,188	N/A
October	$1,058,507	$1,322,719	$2,015,378	$33,936	$288,759	N/A
November	$2,458,332	$2,368,255	$1,935,171	$226,509	$123,106	N/A
December	$3,607,921	$2,395,163	4,299,262	$323,589	$479,815	N/A
Average	**$1,636,846**	**$1,233,774**	**$1,616,695**	**$249,127**	**$256,794**	**$166,966**

Source: Data Request P-FM-2

The end-of-day cash balances in PNGC and PGC accounts are swept up to the PNG Companies account each night. The companies' position is that given the cyclical flow of excess investable revenue, their minimum daily average balances of $5 million and their seasonal borrowing positions, it was more cost effective to maintain lower account balances and utilize the earnings credit[22] to offset their monthly banking fees.

Presently, Essential's water utilities have a single bank account where customer payments are deposited then credited to the individual subsidiaries via the financial system. Overall, Essential has maintained that its water utilities, particularly Aqua PA, require capital to support their operation with little to no excess cash in hand. Furthermore, Aqua PA's dividend payments help maintain a steady capital structure thereby continuously keeping excess cash close to zero. In fact, at the start of the pandemic, Essential's Senior Vice President of Finance and Treasurer obtained a $500 million credit facility if liquidity became an issue. As previously discussed, Aqua PA has a $100 million short term revolving credit facility. The interest rate on this revolving credit facility changes daily; however, the weighted average interest rate was 3.12% during 2019 and 1.74% for the six-month period ending June 30, 2020.

Now that PNG Companies was acquired by Essential, the corporate family is comprised of eight regulated water/wastewater utilities, four regulated gas utilities, and various unregulated subsidiaries. It may present an opportunity to share potentially higher returns or cost savings associated with a money pool that benefit all parties. Other large, publicly owned utilities utilize money pools that earn a return on excess funds or save on borrowing costs. A cost/benefit analysis for an investment facility was never performed due to PNG Companies' debt position and its end-of-day balances levels. In addition, a cost/benefit analysis has not been conducted to see what could be

[22] An earnings credit is the daily calculation of interest that a bank pays on deposits.

earned as a return and/or possible avoidance of borrowing costs for all Essential-owned utilities from the implementation of a money pool.

2. Aqua PA's accounts payable function is a highly manual process.

The Accounts Payable function within Essential is decentralized so that each state utility processes their own invoices. However, during fieldwork, PUC auditors documented several manual processes within the accounts payable function. For example, when vendor invoices are received, they are manually scanned and matched to a corresponding purchase order (if none, a check request must be submitted) and to a related receipt for a three-way match. In addition, certain purchases require signature approvals per Essential's delegation of authority. These signatures have historically been obtained via interoffice mail[23]. Within Treasury's cash management function there is a centralized process to print and mail checks in batches on behalf of each entity on a predetermined schedule (i.e., Aqua PA's checks are printed Thursday and mailed Friday, etc.) after the required approvals are received.

Additionally, in 2019, an internal audit of Essential's Treasury function recommended improvements surrounding Treasury's process for reviewing and approving wire transfer requests. In its report, IA noted several wire transfer requests lacked evidence of approval and a deficiency within the wire transfer software's controls. As discussed previously, Essential expects to replace its existing financial systems for SAP in 2022. The Treasury department anticipates improved functionality with SAP that should address many of the deficiencies noted above.

Nonetheless, every utility should strive to streamline work processes such that paperwork and manual processes are minimized. Manual processes create an increased likelihood of mistakes, delays, and lapses. While SAP implementation will provide some automation, appropriate controls are required to ensure adequate safeguards. Therefore, Essential should require better documentation and training of the current processes and then build appropriate safeguards while implementing SAP.

3. The Peoples Companies do not have formal capital and operations and maintenance budgeting policies for consistent application of budgeting practices and assessment of budgeting performance.

Throughout the audit, there were numerous instances of significant variances in percentages and dollars for capital budgets for PNGC and PGC. Exhibits VI-14 and VI-15 show the capital budget variances by line item in terms of percentages and dollars for PNGC and PGC. No written explanations were given for any of the variances that resulted. The General line item includes, but is not limited to, facilities projects and tools/ equipment.

[23] During 2020, Aqua began using electronic signatures for approving intercompany journal entries.

Exhibit VI–14
Peoples Natural Gas Company LLC
Capital Budget Variance Amounts (in Thousands) and Percentages
For the Years 2015 through 2019

	2015		2016		2017		2018		2019	
Gathering	$34	1.11%	$2,064	54.33%	$1,338	37.52%	$1,245	30.22%	$3,659	39.68%
Storage	$71	56.46%	$1,975	98.75%	$100	99.85%	$0	NA	($46)	NA
Transmission	$127	2.59%	$4,216	41.95%	($2,393)	-17.39%	$473	9.63%	($1,493)	-19.14%
Distribution	($297)	-0.35%	$1,620	1.58%	$23,019	14.17%	$3,013	1.47%	$7,986	3.89%
IT	($1,098)	-6.10%	$834	7.66%	2,075	16.77%	$2,233	12.08%	$1,645	7.49%
Fleet	$508	11.08%	$8,220	70.68%	($5,395)	-99.00%	$1,266	11.70%	($35)	-0.38%
General	($1,418)	-39.96%	($1,236)	-51.71%	($188)	-5.50%	($472)	-9.36%	$1,350	34.33%
TOTAL	**($2,073)**	**-1.75%**	**$17,693**	**12.36%**	**$18,556**	**9.22%**	**$7,758**	**3.12%**	**$13,064**	**5.08%**

NA – Not Applicable
Source: Data Request P-FM-15

Exhibit VI–15
Peoples Gas Company LLC
Capital Budget Variance Amounts (in Thousands) and Percentages
For the Years 2015 through 2019

	2015		2016		2017		2018		2019	
Gathering	$0	NA	$0	NA	$0	NA	$1,005	100.00%	$1,450	100.00%
Storage	$40	53.96%	($51)	NA	($119)	NA	$103	34.37%	$678	75.39%
Transmission	$1,674	55.35%	($280)	-10.37%	$670	26.81%	($2,679)	-153.08%	($2,917)	-194.47%
Distribution	($792)	-10.07%	$7,265	26.75%	($485)	-2.23%	($3,050)	-34.28%	($3,987)	-51.69%
IT	$246	53.39%	($230)	-20.85%	$667	32.17%	$1,453	47.91%	$616	23.67%
Fleet	$195	32.46%	$1,126	69.94%	($198)	-24.80%	($469)	-42.62%	$885	50.14%
General	$159	79.42%	$528	76.50%	$332	86.67%	$676	59.54%	$144	15.72%
TOTAL	**$1,522**	**12.44%**	**$8,358**	**25.12%**	**$867**	**3.15%**	**($2,961)**	**-17.19%**	**($3,131)**	**-18.57%**

NA – Not Applicable
Source: Data Request P-FM-15

In addition to capital variances, the audit staff identified instances of significant variances in terms of percentages and dollars for O&M budgets for PNGC and PGC. Exhibits VI-16 and VI-17 show the O&M budget variances by line item in terms of percentages and dollars for PNGC and PGC. The provided written explanations were vague for variances that resulted for a few line items. "All Other" includes, but is not limited to, employee related expenses, travel and entertainment, gas & other energy used, dues & subscriptions, royalty expenses, permits & fees, vehicle/fleet costs, Peoples Service Company and PNG Companies billings/intercompany costs, miscellaneous expenses, and construction assessment charges (capitalization of the companies' construction group). The "Other Taxes" line item includes, but not limited to, franchise taxes, property taxes, sales and use tax, and miscellaneous other taxes. "Other" (income)/expenses includes, but not limited to, charitable donations, civic/political activity, and non-utility property rent expense.

Exhibit VI–16
Peoples Natural Gas Company LLC
O&M Budget Variance Amounts (in Thousands) and Percentages
For the Years 2015 through 2019

	2015		2016		2017		2018		2019	
Salaried Labor	$(2,902)	-6.2%	$313	0.8%	$3,355	7.8%	$1,035		$1,209	2.5%
Hourly Labor	$905	1.7%	$(1,196)	-2.2%	$891	1.5%	$(1,455)	-1.8%	$1,614	1.9%
Direct Labor Charging	$3,507	-20.2%	$7,861	-35.1%	$4,460	-16.8%	$(13,657)	34.7%	$(16,711)	42.7%
Employee Benefits	$(2,297)	-8.4%	$(1,745)	-7.1%	$2,574	12.0%	$1,969	6.9%	$467	1.6%
Contractor Services	$1,795	12.2%	$1,133	8.2%	$783	5.1%	$(6,959)	-37.9%	$(279)	-2.3%
Outside Services	$(6,065)	-22.7%	$2,442	10.0%	$(773)	-2.9%	$900	2.2%	$4,068	10.3%
Materials	$361	3.6%	$685	7.0%	$(496)	-4.6%	$199	1.7%	$(510)	-3.9%
Insurance/Claims	$551	9.9%	$(220)	-3.5%	$393	7.1%	$(1,038)	-14.8%	$142	2.2%
Utilities	$(399)	-11.0%	$1,471	43.9%	$257	7.8%	$494	14.9%	$369	11.0%
Rent	$(831)	-25.8%	$(2,246)	-40.5%	$(560)	-11.4%	$(101)	-2.2%	$(60)	-1.3%
Bad Debt	$889	7.0%	$962	8.5%	$872	6.4%	$(5,460)	-33.9%	$(4,119)	-23.3%
Capitalized Overhead	$2,087	-11.2%	$2,025	-9.2%	$(3,124)	12.3%	$(2,042)	7.0%	$(1,695)	5.5%
All Other	$6,011	63.5%	$2,271	11.3%	$(8,467)	-48.1%	$9,524	-88.9%	$5,459	-79.1%
Total O&M Expenses	**$3,610**	**2.0%**	**$13,756**	**8.2%**	**$166**	**0.1%**	**$(16,592)**	**-9.2%**	**$(10,048)**	**-5.6%**
Other Taxes	$(166)	-5.8%	$(28)	-1.2%	$53	2.6%	$100	4.9%	$37	1.8%
Other (Income)/Expense	$(5,856)	-64.6%	$(3,148)	-53.2%	$(4,052)	-58.7%	$(6,378)	-66.0%	$(5,143)	-60.1%
Total Expenses	**$(2,411)**	**-1.3%**	**$10,580**	**6.0%**	**$(3,833)**	**-2.1%**	**$(22,870)**	**-11.9%**	**$ (15,153)**	**-8.0%**

Source: Data Request P-FM-15

Exhibit VI–17
Peoples Gas Company LLC
O&M Budget Variance Amounts (in Thousands) and Percentages
For the Years 2015 through 2019

	2015		2016		2017		2018		2019	
Salaried Labor	$(606)	-11.6%	$(107)	-2.6%	$169	5.3%	$(168)	-3.7%	$357	8.4%
Hourly Labor	$(219)	-2.1%	$(177)	-1.8%	$(472)	-4.6%	$42	9.0%	$14	2.7%
Direct Labor Charging	$(658)	12.9%	$4,441	-61.2%	$3,207	-40.6%	$(1,557)	-16.0%	$(208)	-2.3%
Employee Benefits	$(923)	-14.6%	$20	0.4%	$79	1.9%	$8	1.0%	$1,747	-188.9%
Contractor Services	$(420)	-29.1%	$(128)	-6.5%	$588	33.4%	$(1,250)	-49.7%	$(176)	-10.2%
Outside Services	$(117)	-3.7%	$367	9.8%	$(223)	-5.6%	$976	21.0%	$(283)	-6.3%
Materials	$320	15.5%	$740	56.6%	$141	10.3%	$(269)	-16.9%	$(304)	-18.0%
Insurance/Claims	$39	3.8%	$161	20.3%	$45	5.2%	$(51)	-5.6%	$48	5.6%
Utilities	$224	24.8%	$49	5.7%	$27	3.4%	$166	22.8%	$371	62.6%
Rent	$246	198.1%	$(18)	-16.0%	$(122)	-53.3%	$(260)	-59.5%	$50	11.7%
Bad Debt	$(643)	-30.7%	$(186)	-8.9%	$498	25.7%	$279	19.8%	$(1,102)	-44.8%
Capitalized Overhead	$1,122	-48.2%	$(1,345)	35.0%	$1,887	-48.5%	$(1,717)	63.3%	$1,967	-58.8%
All Other	$1,153	100.1%	$(6,415)	-94.4%	$(5,186)	-61.9%	$(524)	-264.3%	$(457)	-23.7%
Total O&M Expenses	**$(483)**	**-1.8%**	**$(2,599)**	**-10.2%**	**$637**	**2.5%**	**$(4,326)**	**-17.2%**	**$2,024**	**8.6%**
Other Taxes	$443	-236.3%	$96	73.2%	$(25)	-10.1%	$(36)	-13.2%	$42	21.2%
Other (Income)/Expense	$116	52.9%	$(126)	-70.4%	$(212)	-55.0%	$(303)	-49.8%	$(1,989)	-87.7%
Total Expenses	**$76**	**0.3%**	**$(2,629)**	**-10.2%**	**$400**	**1.5%**	**$(4,665)**	**-17.9%**	**$78**	**0.3%**

Source: Data Request P-FM-15

The Peoples Companies do not have formal budgeting policies/manuals for consistency across a complex organization with several departments that work independently of one another. In place of formal budgeting policies/manuals, the companies provided the PUC auditors flowcharts describing the information flow and approval process of the budgeting process along with timelines of all the different key areas of the budgeting process. Materials were not given to the PUC auditors to describe how variances are addressed. The companies did provide audit staff with a spreadsheet of variances, some of which had vague documented variance explanations for O&M line items only. The current directors responsible for the O&M and capital

budgeting have been in their current positions for less than one year and they are not aware of why budget policies/manuals were not previously created and implemented.

Audit staff requested samples of the monthly or quarterly budgeting reports generated by FP&A and none of them had documented variance explanations, except for quarterly reports to the Essential Board in 2020. These quarterly reports had general variance explanations for large amounts of total PNG Companies labor expenses and non-labor expenses at the corporate level.

Communications regarding the 2020 budget process were verbally communicated by FP&A to the leadership of PNG Companies and affiliates during weekly staff meetings. Additional communications occurred during one-on-one meetings with each department and FP&A. FP&A meets weekly to discuss ongoing matters including the budget process; however, during budget creation they may meet more frequently. FP&A distributes budget reports to each department on a monthly basis. These reports include month-to-date and year-to-date actual versus budget variances as well as month-to-date and year-to-date actual versus prior year variances. In 2020, FP&A met more frequently with the departments with the intention to make these meetings a monthly occurrence. Going forward, FP&A has been encouraged to better document these discussions within the budget reports.

The Peoples Companies' position is that although no set amounts are defined for investigation, they review the monthly variances between actual and planned results for reasonableness to ensure accurate financial results. They contend that as part of the variance analysis process, variances of $200,000 or greater are investigated and at times other variances below $200,000 are investigated; however, the PUC auditors could not verify this contention. The variance analysis is completed within about a week of the books being closed and prior to the issuance of SEC reporting, debt compliance reporting and PUC Quarterly Earnings Reports.

Historically, Aqua America, now known as Essential, sent out a budgeting memorandum with guidelines and timelines for the operating budget process in Aqua PA. They also sent out a capital budget preparation slideshow that included capitalization criteria, capital vs. expense, terminology, capital reports, asset management and software system overview, project management, 10-year capital planning overview that included: required project information, project priority guidelines, budget amount, and the tentative schedule. Although the memorandum did not include directions for how to handle variances of a certain level, the PUC auditors did see robust written explanations given in monthly, quarterly and annual variance reports.

Capital and O&M budget manuals and/or policies should be developed and implemented to communicate a set of instructions on how to properly prepare a budget, including the importance of budget variance reporting and documenting the explanations to budget variances that exceed a certain level (e.g., 10% over or under budget is commonly used as the measure for requiring written explanations). Detailed budget policies and reports provide management with a basis for decision making regarding the companies' financial position. Variance reports present results compared

to budget, which allows management to assess the performance standards and the attainment of any financial goals.

4. The accounting and finance departments for the Peoples Companies lack effective policies and procedures that ensure accountability, contain all the necessary elements and reviewed periodically to make updates.

The accounting polices/procedures given to the PUC auditors are listed below. While these are helpful in the areas of fixed assets, software assets, and controlling expenses, there are many areas of accounting that are not addressed. In addition, three of the policies/procedures have not been updated in many years.

- Capitalization Policy for Software
- Classification of Capital Costs
- Disposal of Fixed Assets
- Acquiring and Developing Fixed Assets – created in December 2011
- Convenience Check Policy
- Purchasing Card Policy
- Quarterly Liability Procedure – no date of creation or revision
- Expenditure Control Policy
- Stages of a Capital Project – created in December 2011
- Travel and Entertainment Policy

At a minimum, the following additional areas of accounting should be addressed with policies and procedures:

- Cash and Investments
- Receivables
- Revenues
- Inventory and Cost of Sales
- Regulatory Accounting
- Goodwill and Other Intangibles
- Benefits
- Contingencies
- Accounts Payable and Debt
- Equity
- Tax
- Financial Statement Presentation and Disclosures
- Intercompany Transactions

Most policies/procedures provided to the PUC auditors for accounting and financial management were lacking key elements. Most policies identified generic owners (accounting or cash management department) rather than specific employee(s) for accountability; however, the Expenditure Control Policy had employees listed with responsibility but was never signed off on. All but two of the 21 cash management

policies had very limited intent and steps sections to provide for proper process support. The two that were given with responsibilities had no associated job titles.

When comparing policies, the PUC auditors noted that a standard format was not utilized for conformity, but PNG Companies indicated their intent to begin a process to standardize. The process would include coordinating with Essential to see if additional policies need to be developed, as well as ensuring that all policies are in a central, accessible location. Essential's Chief Accounting Officer holds responsibility for all accounting and financial policies and procedures, but currently there is no regular process for reviewing and updating Essential's policies. Instead, updates to the policies at Essential are discussed as issues are noticed. Thus, several of Essential's accounting and financial policies and procedures have not been updated for several years nor have a standard format containing all pertinent information (see Finding and Conclusion III-2). With the upcoming implementation of SAP at Essential, there are plans to create and implement new corporate-wide Essential policies/procedures. Until then, it is possible that the Peoples companies' accounting department may not be booking transactions properly without the proper guidance in place through the development of relevant policies/procedures. Moreover, cash management employees could be lacking the appropriate direction for effective and efficient short and long-term investing and borrowing.

It is a best practice for policies/procedures to have the following elements to ensure processes within each functional area are carried out efficiently and effectively:

- Scopes
- Purposes
- Responsibilities
- Updates
- Definitions
- Effective dates
- Revision dates
- Related policies
- Review and approval guidelines

Each policy should have only one owner to ensure accountability that the policies have the key elements and are updated on a regular basis (at least annually, or as needed). This includes the need to have a periodic review schedule to ensure the policies are current and maintain all key elements.

5. Aqua PA's dividend policy lacks a key provision.

In response to a 2013 Management Audit recommendation, Aqua PA developed a dividend policy. The dividend policy has not been updated since December 31, 2013 when the policy was issued. However, it contains an adequate description of the procedures undertaken annually to budget Aqua PA's cash flows. The dividend policy

also describes the process the Treasurer uses to determine whether Aqua PA will issue a dividend to its parent company.

Nonetheless, the dividend policy still refers to Aqua America instead of Essential and lacks discussion of advanced notification to the PUC when issuing a dividend payment of 85% of net income or greater to its parent company. As presented earlier in this chapter, Aqua PA has consistently averaged dividend payments of 35% of net income. However, the audit staff recommends Aqua PA's dividend policy be updated to include a provision that states: Aqua PA will notify the PUC with explanation in advance of issuing any dividends that exceed 85% of net income should the situation ever arise.

Recommendations

1. **Perform a cost/benefit analysis to determine the feasibility of implementing an Essential Utilities money pool.**

2. **Reduce or eliminate manual processes within the accounts payable function at Aqua PA.**

3. **Develop and implement capital and operations and maintenance (O&M) budget manuals/policies that include requirements for detailed written explanations of budget variances in excess of 10% for the Peoples Companies.**

4. **Develop and implement new accounting/finance policies and procedures at the Peoples Companies where appropriate and ensure the policies have all the key elements, including accountability and a regular review schedule to remain timely.**

5. **Update Aqua PA's dividend policy.**

VII. WATER OPERATIONS

Background

Aqua Pennsylvania, Inc. (Aqua PA) is a regulated water utility company in Pennsylvania and is a subsidiary of Essential Utilities, Inc. (Essential). Aqua PA provides water service to 443,000 customers in 32 counties in PA, and wastewater service to 43,000 customers. Aqua PA has 11 surface water treatment facilities, 40 wastewater treatment facilities, about 300 wells, and 5,924 miles of main, serving 113 public water systems. Aqua PA employs approximately 570 people and operates in four districts: Southeastern, which includes the Philadelphia area; Roaring Creek/Susquehanna, which is located in central Pennsylvania; Honesdale/White Haven, which is located in northeast Pennsylvania; and Shenango, which is located in western Pennsylvania. Exhibit VII-1 displays information about each district.

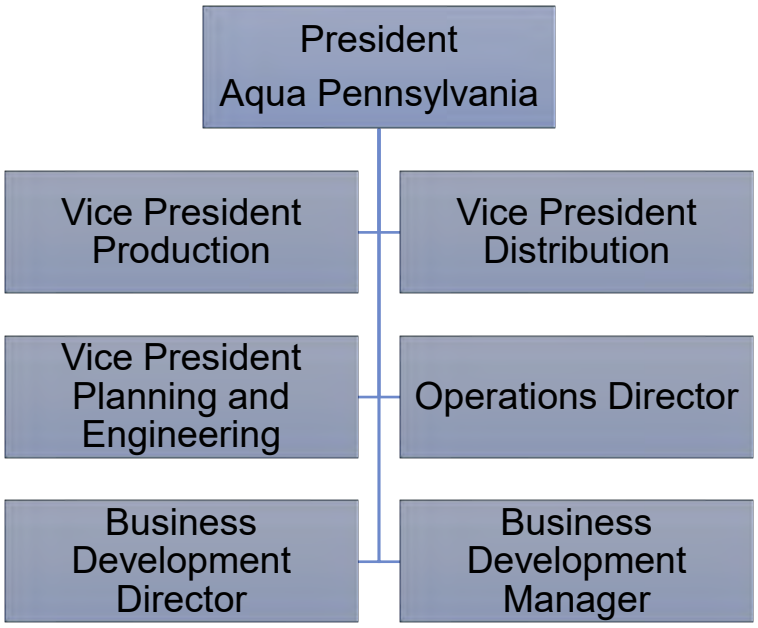
Exhibit VII–1
Aqua Pennsylvania, Inc.
District Information
As of 2020

Division	# of Systems	Miles of Pipe	# of Services	# of Pressure Zones*
Central PA	10	370	22,962	35
Northeast PA	67	456	17,148	127
Southeast PA	27	4,544	365,617	126
West PA	9	466	21,912	25
Total	113	5,836	427,639	313

*Pressure zones can span across systems in SEPA, so the same pressure zone may be counted in multiple systems in SEPA.
Source: Data Request A-WO-25

Reporting to the President of Aqua Pennsylvania are the Vice President (VP) of Planning and Engineering, VP of Distribution, VP of Production, Operations Director, Business Development Director, and Business Development Manager (see Exhibit VII-2 for the organizational chart). The VP of Planning and Engineering has seven project engineers, a design team lead, and a New Business and Senior Principal Engineer, each with their own teams or direct reports. The VP of Planning and Engineering's group oversees planning new infrastructure and construction projects. This group handles planning for new customers, as well as capital improvement projects, revitalizing acquired water and wastewater systems, energy efficiency pilot projects, water quality improvement projects, well development, etc. It also handles surveying, design, estimating, and management of new pipeline installation.

Exhibit VII–2
Aqua Pennsylvania, Inc.
Organizational Chart
As of 2020



Source: Data Request A-EM-2

The VP of Distribution oversees three Area Directors of Maintenance and Construction, located in the Southeast district in the Great Valley, Willow Grove, and Springfield systems; a Meter Operations Manager; a Project Manager; and the Manager of Control Center Operations, who is also in charge of physical security at Aqua PA. The VP of Distribution's group is responsible for running the SCADA control centers for distribution, metrology, maintenance and construction management of the distribution system, and physical security. Aqua PA was planning on moving all metrology to Operations but had not done so as of the end of fieldwork on October 5, 2020. In addition, the Distribution group and Engineering handle planning for LTIIP projects.

Aqua PA uses a program called Maintenance Connection to track and schedule upcoming and ongoing maintenance needs and tasks. Maintenance Connection generates tickets in Service Link, which is the company's work management software. Service Link distributes tickets to maintenance crews and tracks information on each task.

Overall, Aqua PA has replaced 2,538 miles of main since 1997. This represents 41% of the total miles of main in its systems. Aqua PA attributes a portion of this success to its implementation of a DSIC in 1997. Aqua PA is replacing pipe at nearly twice the rate of the generally accepted industry standard of 1% per year. The Company predicts that a slightly reduced level of replacement will continue through the next 5 years, until 2024. Exhibit VII-3 shows the miles of pipe replaced or rehabilitated

each year from 2014 through 2019, and Exhibit VII-4 shows the projected miles of pipe to be replaced from 2020 through 2024.

Exhibit VII–3
Aqua Pennsylvania, Inc.
Miles of Pipe Replaced or Rehabilitated
2014 through 2019

Year	Miles of Pipe Replaced or Rehabilitated
2015	129
2015	160
2016	135
2017	131
2018	152
2019	167

Source: Data Request DR-A-WO-25

Exhibit VII–4
Aqua Pennsylvania, Inc.
Projected Miles of Pipe to be Replaced
2020 through 2024

Year	Projected Miles of Pipe to be Replaced
2020	122
2021	108
2022	108
2023	108
2024	112

Source: Data Request DR-A-WO-25

Aqua PA replaces services, valves, and hydrants as needed during main replacement projects. Exhibit VII-5 shows services, valves, hydrants, and meters replaced from 2014 through 2019.

Exhibit VII–5
Aqua Pennsylvania, Inc.
Additional Assets Replaced
2014 through 2019

Year	Services	Valves	Hydrants	Meters
2014	6,398	1,792	250	19,887
2015	7,935	2,223	310	21,480
2016	6,696	1,876	261	19,042
2017	8,602	4,122	520	41,794
2018	9,188	3,171	454	47,688
2019	9,190	1,631	297	43,900

Source: Data Request DR-A-WO-25

The VP of Production supervises a Plant Engineering Director, a Production Director, a Treatment Director, and two Administrative Assistants. The VP of Production's group manages the production facilities, such as water and wastewater treatment plants, wells, etc. in the Southeast district. Meanwhile, the Operations Director, who reports directly to the President, has two Area Managers, two Field Supervisors, one Operational Team Leader, one Customer Service Specialist, and open positions for an Administrative Assistant and another Area Manager. The Operations Director's Group is responsible for management of water and wastewater operations, employee relations, customer service, compliance, etc. for the Greater PA region, which encompasses all districts except for the Southeast district (i.e., Roaring Creek/Susquehanna, Honesdale/White Haven, and Shenango).

Findings and Conclusions

Our examination of the Water Operations function included a review of policies and procedures, engineering and construction, operations and maintenance, inspection, damage prevention, reliability, budgeting, training, cross-connection control, unaccounted-for water (UFW), and non-revenue water (NRW). Based on our review, Aqua PA should devote additional efforts to improve its distribution operations by addressing the following:

1. While Aqua PA has begun a critical valve testing program, several aspects of a comprehensive critical valve testing program are missing or in progress, and the company should expand the program to track testing and operation of non-critical valves.

Aqua PA has a valve operating procedure, but not a valve inspection manual. The valve operating procedure is a 9-step process for safely operating valves, but does not include information on valve inspection, scheduling, or valve criticality; all of which would be critical components of a valve inspection manual or program. Aqua PA management does not feel that a "full-scale" valve inspection program for all non-critical

valves is a good use of company resources. Instead, Aqua PA's Management has historically focused its efforts on critical valves. The company started recording critical valves inspected in 2017, which are shown in Exhibit VII-6.

Exhibit VII–6
Aqua Pennsylvania, Inc.
Critical Valves Inspected
2017 through 2019

Year	# Critical Valves Inspected	% of Critical Valves Inspected[α]
2017	103	39.2%
2018	43	16.3%
2019	177	67.3%
2020*	78	39.7%
Total	401	38.1% per year

α: Based upon 263 critical valves in the system.
*As of April 30, 2020
Source: Data Request DR-A-WO-26

On average, critical valves are being inspected once every 2.62 years, which is commendable. However, valves deemed critical are a very small percentage of overall valves within the system. With approximately 80,000 valves, critical valves represent 0.3% of the population being inspected routinely. The company claims it operates approximately 8,000 per year during its normal activities. In addition, the company replaces an average of 3.3% of valves each year due to main replacement projects, valve failures, etc. While all this activity is captured within the company mapping system and work management system, Aqua PA does not have the ability to identify valves that have not been inspected or replaced within the last ten years.

While Aqua PA does not have a full-scale valve inspection program, the Honesdale/Whitehaven district in northeast PA does have a full-scale valve inspection and exercise program, which began in 2018. In this district, all identified critical valves are exercised and inspected annually. This is tracked through Maintenance Connection, which auto-generates tickets in Service Link. As mentioned previously, there are approximately 8,000 valves operated during normal business activities. This would be approximately 10% of the roughly 80,000 valves in Aqua PA's systems, if each operation was a unique valve. Due to poor records in newly acquired systems, and because of the age and size of Aqua's infrastructure, many assets are not GPS located or recorded in the Maintenance Connection system, but efforts are ongoing to ensure that all PA system assets will be identified in this system. Adding this functionality statewide to Maintenance Connection is one of Aqua PA's current goals. This is currently in place in Southeast PA and in some Greater PA systems as of October 5, 2020. Additionally, due both to the age of the systems and the historic lack

of records on valves exercised, it is possible that valves exist in Aqua's systems that have never been exercised.

The American Water Works Association (AWWA at G200-09) includes requirements for a valve inspection program:

> *The utility shall have a valve exercising program. This program shall follow AWWA Manual M44 and the manufacturers recommended procedures and include at least the following elements: … a goal for the number of distribution valves to be exercised annually; … Critical valves in the distribution system shall be identified for exercising on a regular basis…The program shall track the annual results and set goals to reduce the percent of inoperable valves…A goal of replacing the inoperable valves identified during the operation and maintenance process shall be established as part of the exercising program.*

Aqua PA has developed a strong base for its valve inspection program by focusing on critical valves. However, the entire company should leverage systems like Maintenance Connection and its mapping software to ensure all non-critical valves are inspected and operated on a routine basis (i.e., every seven to ten years). Without a full valve inspection and exercise program, with goals and scheduled testing to ensure every critical valve is regularly exercised, there are likely to be valves that remain unexercised, and potentially inoperable.

2. Some drought contingency plans are outdated.

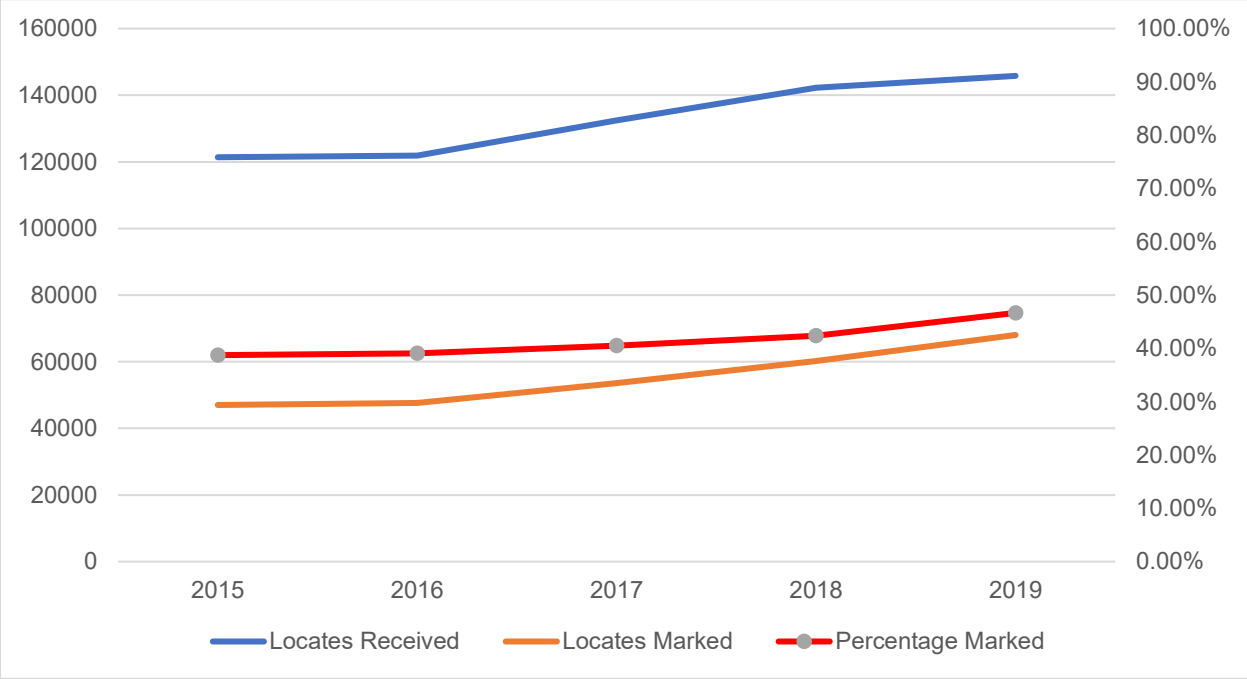
Aqua PA has drought contingency plans for the main division, Roaring Creek, Susquehanna, Waymart, White Haven, the western division/Emlenton, and the Shenango Division. Aqua PA's goal is to update drought contingency plans every three to five years. However, only five out of seven drought contingency plans, those for Roaring Creek, White Haven, the Western Division/Emlenton, the main division and Shenango have been updated within the past five years. The other two drought contingency plans were updated in 2002 and 2012, at Waymart and Susquehanna, respectively and are due to be updated immediately. In fact, the Waymart drought contingency plan is so old that it was not put together by Aqua PA, but by the previous system owner.

Sources, systems, water usage, available resources, agencies, company contacts, and roads all change over time. Without regular updates, these plans do not account for such critical changes. In the event of a drought emergency, decisions will either be made with out-of-date data, or be delayed until updated data can be collected. For this reason, it is a best practice to keep emergency plans, including drought contingency plans, updated on an annual basis.

3. Aqua PA incurs a high rate of at-fault line hit damages.

Aqua PA performs a number of damage prevention activities; however, at-fault line hits account for 60% of damages. Damage prevention efforts include in-person outreach training to contractors; written guidance to contractors on Alleged Violation Reporting (AVR); and tracking line hit damages. This entails ensuring contractors have submitted reports on time, and if the contractor fails to do so, why they have not. Aqua PA is submitting its damage incidents through PA One Call's AVR mechanism online. Aqua PA has partially automated its locating process and deployed that solution across the state in October 2020. The percentage of locates performed has increased from 39% to 47% from 2015 through 2019 as a result. This is shown in Exhibit VII-7.

Exhibit VII–7
Aqua Pennsylvania, Inc.
Locates Received vs. Marked
2015 Through 2019



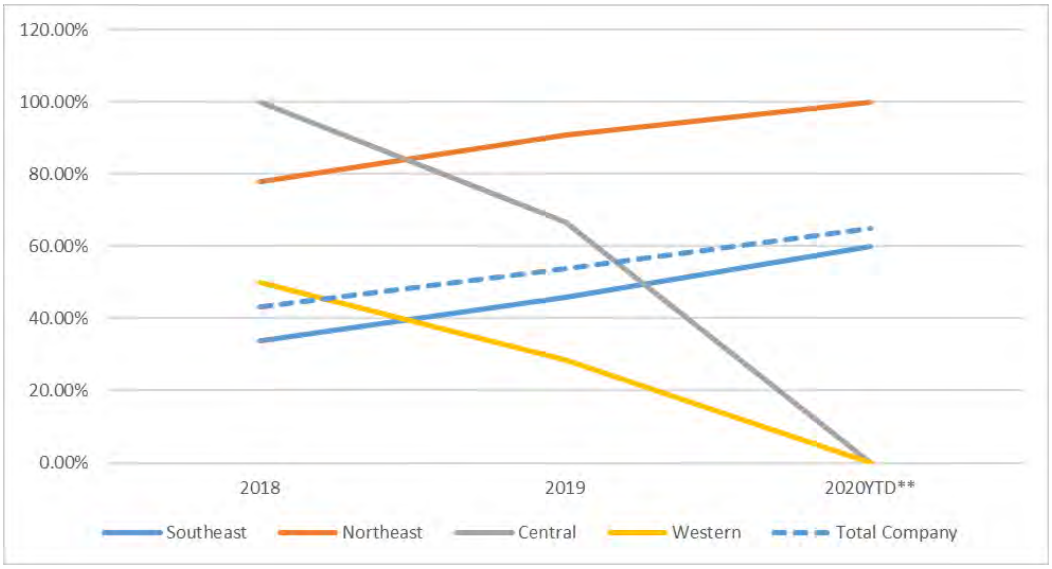
Source: Data Request DR-A-WO-17

The company's GIS data is not fully uploaded to One-Call, which has resulted in a number of locate tickets for areas where Aqua PA has no infrastructure. This partly explains the low percentage of locates marked compared to locate tickets received from PA One Call. As more GIS data is added to the One-Call system, this should reduce the number of requests where no company infrastructure exists and thereby improve percentage marked statistics. In recently acquired systems where poor mapping exists, Aqua PA will continue to receive all tickets in those townships, which explains some of the low percentage of locates marked, but these recently acquired systems represent a small percentage of total tickets received. Aqua PA does not track individuals with multiple damage incidents. Instead, damage is tracked by contractor and by division,

rather than by individual. Nonetheless, Aqua PA does not have a specific policy, remediation, or penalty for repeat offenders, which are handled on a case-by-case basis. Expanding data tracking of damages and implementing a repeat offender policy could help reduce future damages.

A subset of this data focuses on the cause for digging damages. Specifically, the percentage of damages/hits not marked correctly (and therefore company-at-fault) increased from 0% to 46% from 2015 through 2019, for the Southeast region. As of March 2020, 60% of hits were not properly marked in the Southeast region (either marked wrong or not marked). Meanwhile, in the Northeast region, the percentage of hits not marked correctly increased from 78% to 91% from 2018 through 2019. For the company overall, the percentage of hits not marked correctly increased from 43% to 65% from 2018 through 2020 YTD, as shown in Exhibit VII-8. The company claims that the majority of the Aqua PA at-fault hits are related to existing and abandoned facilities where no record exists.

Exhibit VII–8
Aqua Pennsylvania, Inc.
Percentage of Hits Not Marked Correctly
2018 Through 2020 YTD*



*Through March 2020
Source: Data Request DR-A-WO-17

Aqua PA claims that employees are now reporting even minor hits that previously went unreported. Furthermore, the company contends that this data capture is why there are more unmarked hits than in previous years. However, this argument doesn't address the reason why so many of the damages are Aqua PA's failure to mark lines correctly. Specifically, Act 287 states that:

> *It shall be the duty of each facility owner…to mark, stake, locate or otherwise provide the position of the facility owner's underground lines at the work site within eighteen inches horizontally from the outside wall of such line in a manner so as*

to enable the excavator, where appropriate, to employ prudent techniques, which may include hand-dug test holes, to determine the precise position of the underground facility owner's lines…

Failures in Aqua PA's damage prevention program, including the lack of integrated GIS data with PA One Call's ticketing system, response to locate tickets, outreach, and/or damage tracking have likely all contributed to the number of company-at-fault damages. Beginning in 2018, Aqua PA began addressing these issues, including the upload of GIS information to the PA One-Call system; improved processes related to ticket response; multiple annual locate trainings for Aqua employees and contractors; beginning use of the PA One Call AVR system; and in 2020, beginning to implement a ticket management system for PA One-Call tickets. Many water utilities and gas utilities within Pennsylvania have company at-fault damages ranging from 10-30%, as compared to the 65% currently reported by Aqua PA. The audit staff does believe many of the initiatives will aid Aqua PA improve its performance. However, additional work is needed to reduce company at-fault hits to much lower levels.

4. A significant number of meters are failing accuracy tests when they are removed from service.

Aqua PA replaces meters on a 20-year schedule. When meters are replaced, Aqua PA will test a sampling for accuracy on a test bench that is calibrated annually. In 2017, Aqua PA began several new replacement projects; thus, leading to an increase in meter tests starting in 2017. Exhibit VII-9 shows the numbers of meters tested, and the percentage of those that passed their accuracy tests, from 2016 through 2020 YTD.

Exhibit VII–9
Aqua Pennsylvania, Inc.
Removed Meter Test Results
2016 Through 2020 YTD*

Year	2016	2017	2018	2019	2020 YTD*
Out Meters Tested	404	3,502	4,424	3,774	1,715
% Passed**	55%	34%	34%	34%	38.1%

*As of 3/31/2020
**Based on AWWA standards
Source: Data Request DR-A-WO-19

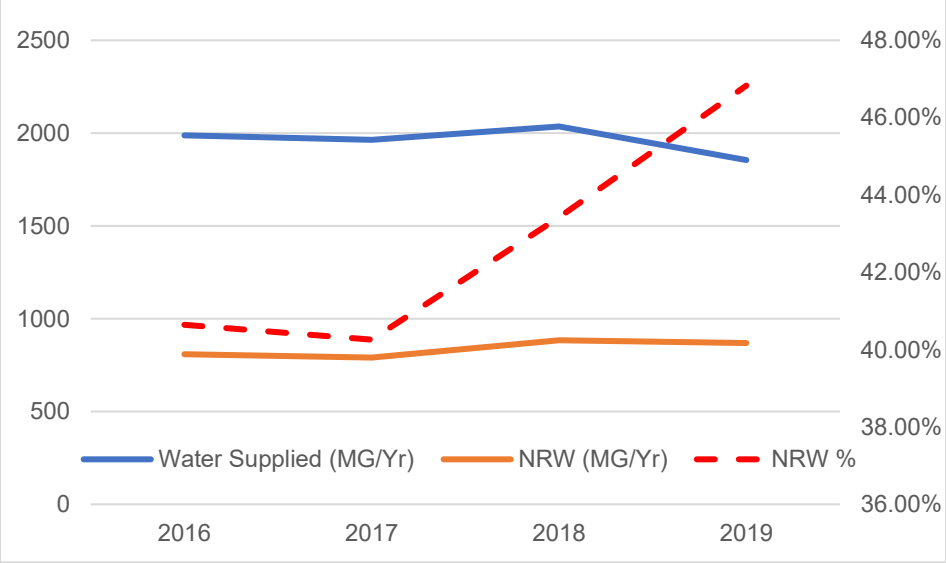
Of the sample test results provided to the audit team, 17 out of 40 distribution meters failed at least one of the three tests administered to each meter. While the sample audit staff pulled was a subset of the testing shown in Exhibit VII-9, it further supports the failure rates shown above. These results also provide a snapshot into active meters of similar size and vintage within the distribution system indicating that as much as 30% of residential meters at the 20-year mark may be inaccurate. This further supports Aqua PA's meter replacement projects and may even indicate that additional acceleration for some meters are needed.

In addition, the White Haven and Honesdale divisions have higher numbers and percentages of production meters failing accuracy tests than the Roaring Creek and Sayre divisions. Evidently, the contractor conducting the calibrations was using an allowable error rate of 5% on AWWA standards accuracy tests, rather than 4% for existing meters and 2% for newly installed ones, per 52 Pa Code § 65.86. The company has corrected the contractor in response to this discovery and is setting its internal accuracy standards to less than 2% in all cases. While Aqua PA has programs aimed at replacing its meter infrastructure, additional testing and/or accelerated replacement is needed until accuracy rates improve.

5. The Roaring Creek division NRW performance is worsening.

Roaring Creek's non-revenue water (NRW) increased from 40.6% to 46.8% from 2016 through 2019. According to Aqua PA, this increase is due to an increase in the percentage of real losses over that period. The total water delivered in Roaring Creek has decreased (as well as the volume of real losses), but the percentage of real losses has increased more than is attributed to falling consumption. A drop in water supplied would result in a higher NRW percentage given the same amount of NRW from year to year, but it would not cause an increase in the raw volume of NRW. In fact, water supplied decreased by 1.9% from 2016 through 2019, while the raw NRW (in volume, not as a percentage of total volume) increased by 4.9% across this same time period as presented in Exhibit VII-10.

Exhibit VII–10
Aqua Pennsylvania, Inc.
Roaring Creek Water Supplied vs. NRW
2016 Through 2019

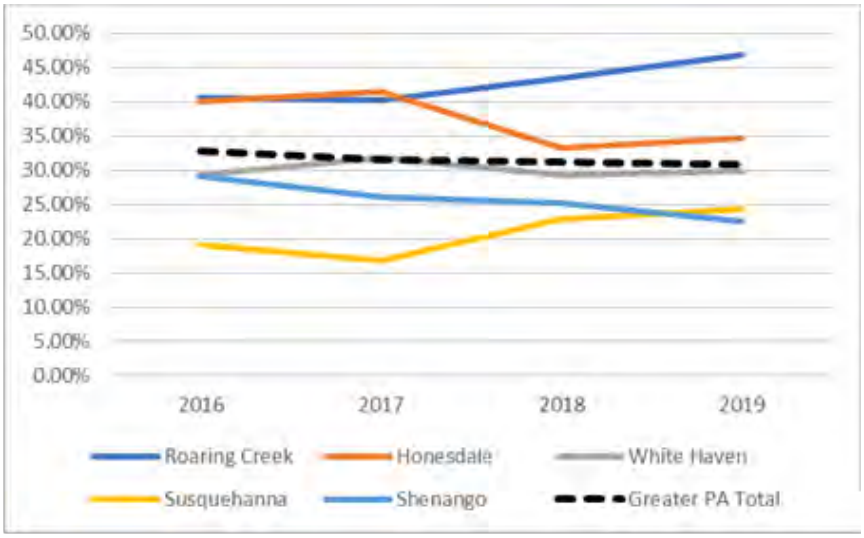


Source: Data Request DR-A-WO-12

Nonetheless, unavoidable annual real losses (UARL)[24] used for NRW calculations at Roaring Creek has increased slightly, and the infrastructure leakage index (ILI)[25] has remained consistently high from 2015 through 2019 despite the increase in NRW. The company indicated that it performed a GIS model analysis to examine the miles of main in the Roaring Creek division.

While Roaring Creek is not the largest system at Aqua PA, its NRW levels of 46.8% in 2019 indicate excess losses as defined by 52 Pa Code § 65.20. In comparison, other systems in the Greater PA region vary between 16% and 40%, averaging around 31%, as is illustrated in Exhibit VII-11, and the other regions in Pennsylvania vary between 16 and 24% NRW, as shown in Exhibit VII-12.

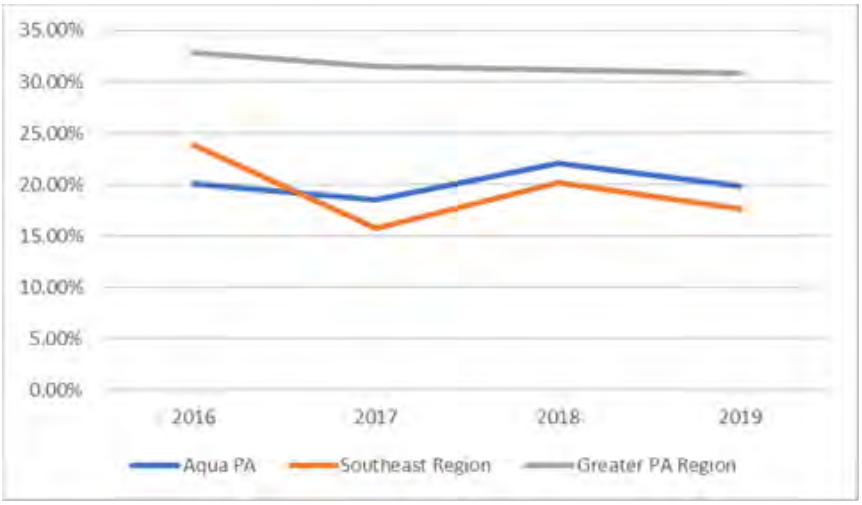
Exhibit VII–11
Aqua Pennsylvania, Inc.
Greater PA NRW by System
2016 through 2019



Source: Data Request DR-A-WO-12

[24] UARL is a number calculated based on length of mains and service lines, number of connections, and pressure, which is used to set a cost-effective goal for minimum NRW. In other words, while improving NRW below this number is technically possible, it is not likely to be cost-effective to do so.
[25] ILI is found by dividing the current annual real losses (CARL) by the UARL, yielding a ratio of losses to the "cost effective ideal loss amount." The closer this ratio is to 1, the better the system is performing.

Exhibit VII–12
Aqua Pennsylvania, Inc.
NRW by Region
2016 through 2019



Source: Data Request DR-A-WO-12

Nonetheless, high NRW in Greater PA, and at Roaring Creek indicates that additional loss mitigation efforts like lead detection, capital investment, system repairs, pressure management, etc. are necessary. Ultimately, the UARL and ILI can be useful in determining the optimal cost-effective level for NRW. However, by reducing NRW at Roaring Creek to 20%, Aqua PA could save $189,114 annually[26].

Recommendations

1. **Implement a full-scale valve inspection and exercise program designed to identify what valves have not been operated or inspected in the last ten years.**

2. **Update all drought contingency plans annually.**

3. **Implement measures to reduce company-at-fault hits.**

4. **Increase testing and replacement of meters to improve accuracy rates.**

5. **Focus efforts on reducing NRW at the Roaring Creek system.**

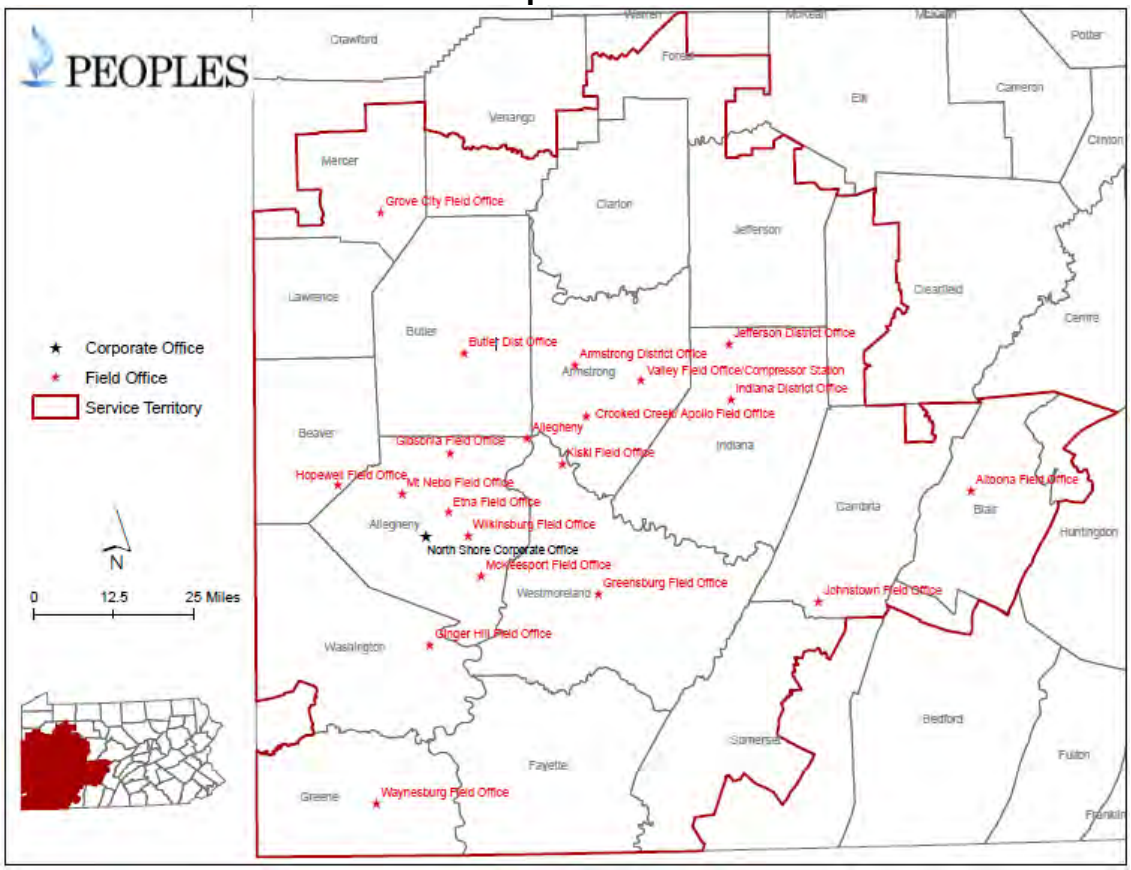
[26]This savings was calculated based on a production cost of $380 per million gallons. An NRW of 20% would likely represent a greater savings than the Commission's recommended UFW of 20%, because the UFW does not account for Apparent losses like NRW does.

VIII. GAS OPERATIONS

Background

Gas operations functions for Peoples Natural Gas Company LLC (PNGC) and Peoples Gas Company LLC (PGC), collectively referred to as the Peoples Companies, include field operations, engineering, construction, metering and regulation, corrosion and leaks, emergency response, and damage prevention. PNGC and PGC are separate companies from a regulatory perspective using separate tariffs. In recent years, efforts have been made to consolidate shop locations for the separate service territories and employee unions. These efforts were finalized in 2016. All field operations employees are now PNGC employees. Additionally, from 2014 to 2018, the companies abandoned 30 miles of duplicate pipeline between the two companies. Exhibit VIII-1 displays the combined operating territory for PNGC and PGC including shop locations. The PNGC and PGC service territories overlap each other in many locations but the PGC service territory is generally in the northern and northeastern portion of the combined service territory (See Chapter II – Background, Exhibit II-2 for more details of each company's service territory).

Exhibit VIII–1
The Peoples Companies
Service Territory
As of September 2020

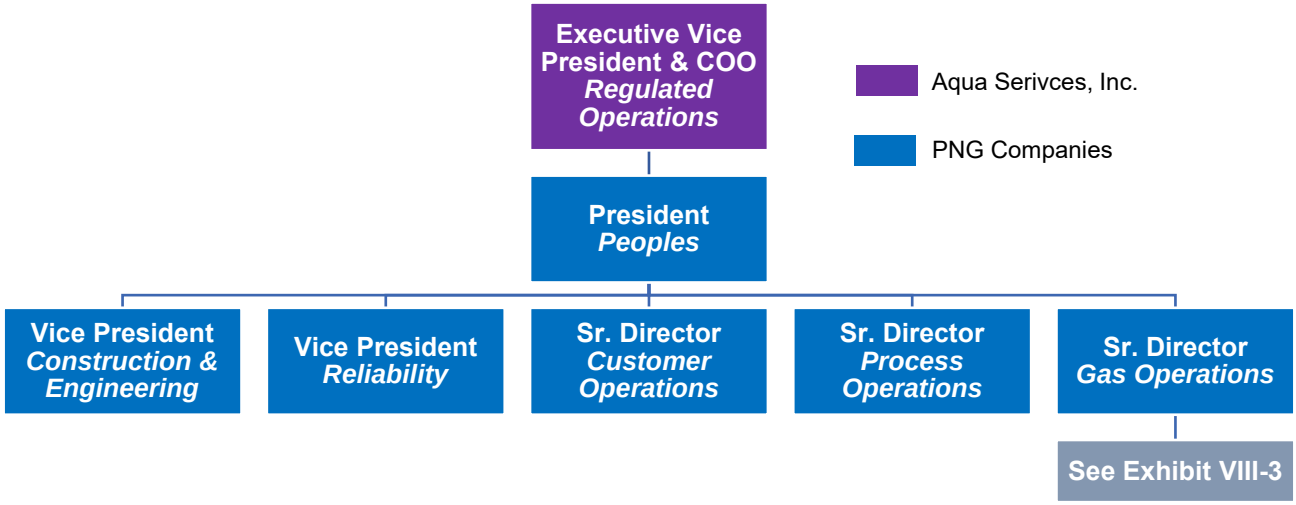


Source: Data Request P-GO-1

Exhibits VIII-2 and VIII-3 display the organizational structure for gas operations functions. The positions which oversee gas operations, and the corresponding responsibilities are as follows:

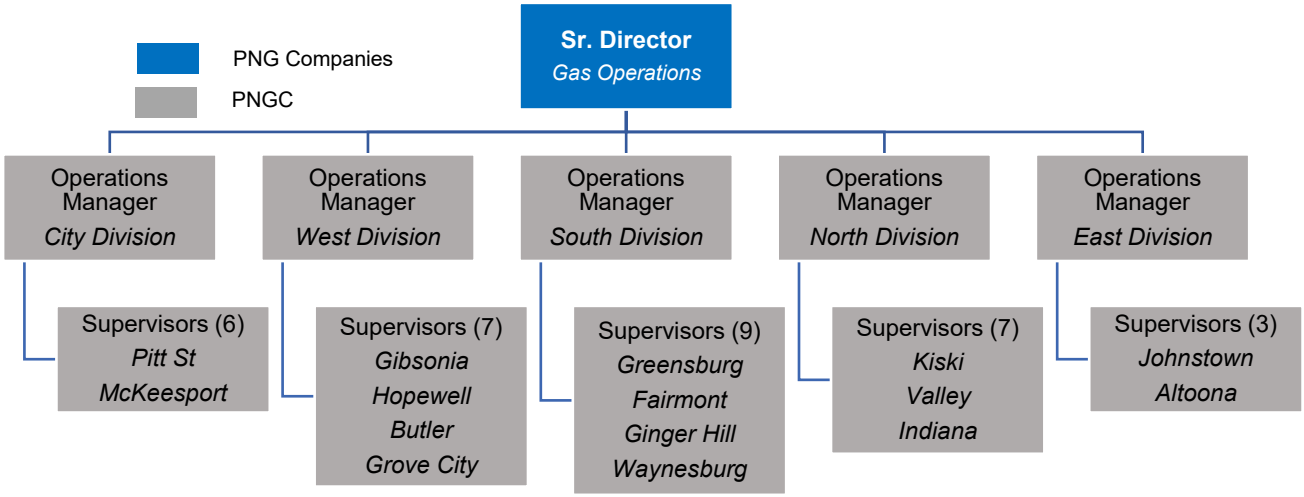
- Senior Director of Customer Operations – Operations Center, meter operations, field customer service.
- Vice President of Reliability – GIS planning, pipeline assessment, gas supply, gas control, compliance and standards.
- Vice President of Construction and Engineering – Asset management, pipeline replacement, pipeline program management, restoration.
- Senior Director of Process Operations – Corrosion, damage prevention, gas system integrity
- Senior Director of Gas Operations – Compression, measurement and regulation, operations service centers (See Exhibit VIII-3).

Exhibit VIII–2
Peoples Natural Gas Company
Gas Operations Functional Organization
As of October 2020



Sources: Data Requests P-EM-2, P-EM-3, and P-GO-38

Exhibit VIII–3
Peoples Natural Gas Company
Gas Operations Functional Organization Service Center Level
As of September 2020



Sources: Data Requests P-EM-2, P-EM-3, and P-GO-38

Employees working out of the service centers are PNGC positions. This includes positions working in the PGC territory such as Butler, Kiski, Valley, and Indiana. At the service center level, typical field positions include, among others, fitters, bridge crewmen, and gas measurement and regulation technicians.

Staffing for field operations from 2015 to 2019 has been stable apart from 2016, when a voluntary retirement program was offered, and a significant number of employees chose to retire. Prior to 2018, this included PGC positions separately, which as previously mentioned are now considered to be PNGC positions. In 2020, PNGC began increasing additional hires to focus on staffing needs. Exhibit VIII-4 displays the staffing for field operations from 2015 to September 2020.

The audit staff tried to determine if the field operations positions were sufficiently staffed by also reviewing overtime and emergency response statistics. High overtime or declining emergency response performance would tend to indicate understaffing. Emergency response statistics were reviewed based on the percent arrival time within 60 minutes for normal business hours and in total which includes second and third shifts, holidays, and weekends. PNGC and PGC territories continue to be monitored separately and in total for emergency response data. The audit staff found no evidence of problematic staffing or emergency response statistics for field operations positions.

Exhibit VIII–4
The Peoples Companies
Field Operations Staffing Levels, Overtime, and Emergency Response Time
For the Years 2015 through September 2020

	2015	2016	2017	2018	2019	Sept 2020
Staffing						
PNGC	741	649	767	890	890	927
PGC	146	122	119	-	-	-
Total	887	771	886	890	890	927
Overtime						
PNGC	8.9%	10.8%	10.8%	12.8%	9.7%	7.6%
PGC	3.8%	7.4%	9.9%	-	-	-
Total	8.1%	10.3%	10.7%	12.8%	9.7%	7.6%
Emergency Response < 60 Minutes						
PNGC-Bus. Hrs.	99.4%	99.7%	99.7%	99.5%	99.8%	99.8%
PGC-Bus. Hrs.	99.5%	99.2%	99.9%	99.5%	99.7%	99.8%
Total-Bus. Hrs.*	99.4%	99.6%	99.7%	99.5%	99.8%	99.8%
PNGC-All Hrs.	97.1%	98.5%	98.2%	97.3%	98.6%	99.1%
PGC-All Hrs.	99.1%	97.7%	98.0%	98.3%	98.8%	99.0%
Total-All Hrs.*	97.3%	98.5%	98.2%	97.4%	98.6%	99.1%

* PNGC's territory is substantially larger than PGC's territory. The total value is different from PNGC value but in some cases rounds to the same percent as PNGC.
Source: Data Request P-GO-4, P-GO-16, P-GO-46, P-GO-48, and PUC auditor analysis

There is continual investment in information technology (see Chapter XII – Information Technology for additional information) to optimize the Peoples Companies' field operations. Within the last five years, the Peoples Companies have reduced a significant amount of paper-based practices which allows field employees to reduce their administrative burden and maximize time in the field. This has especially been beneficial during the COVID-19 pandemic during which the company has altered their activities to accommodate suggested safe practices (only one person per vehicle, minimizing proximity to other people, etc.). Current technologies include vehicle GPS and Wi-Fi (which allows a laptop to be taken outside of the vehicle and still have internet access), mobile mapping / GIS, electronic records, and mobile access to policies, procedures, and operations manuals.

PNG Companies utilize multiple systems to assist in the Peoples Companies' capital investment and pipeline replacement planning. In many cases, these replacements relate to the capital replacements in the Long-Term Infrastructure Improvement Plan (LTIIP) and specifically the replacement of bare steel, but can also be for other materials as well (e.g., plastic, cast iron, wrought iron, coated steel, etc.). Initial analysis begins with the Peoples Companies' Distribution Management Integrity Program (DIMP). Risk factors are assigned to segments of pipeline based on numerous variables (e.g., location, type of pipe, age and condition of pipe, number of

customers, etc.). After segments have been ranked with a score, these segments are then prioritized considering additional factors outside of company control (e.g., other utilities working in the area of the selection segment, city street paving, etc.). Once a priority list is established, PNG Companies uses an in-house created Construction Forecasting Tool system. This system provides estimates for the needed capital, manpower, and tools/vehicles for each job and additionally provides an estimated time frame for the construction completion. The DIMP and the Construction Forecasting Tool are constantly being updated to accommodate new or unforeseen circumstances.

To ensure uniform unaccounted-for gas (UFG) reporting, the Pennsylvania Public Utility Commission (PUC or Commission) adopted standard reporting requirements for UFG calculations in 2013 at 52 Pa. Code § 59.111. The standard reporting requirements distinguish and separate the UFG values for distribution, transmission, storage, and gathering losses. The audit staff evaluated UFG calculations based on the standard reporting requirements and found that the companies were appropriately calculating and including the necessary adjustments as identified in the PA Code. The reported UFG for the combined distribution systems from 2015 to 2019 ranged from 1.8% to 2.8% which is within the acceptable level of performance specified in 52 Pa. Code § 59.111. Additionally, UFG mitigation for the gathering systems was ahead of schedule on file with the PUC as of October 2020.

Findings and Conclusions

Our examination of the gas operations functional area included a review of assigned responsibilities, policies and procedures, capital and operating and maintenance budgets and expenditures, system operations, preventative maintenance, capital planning, workforce management, emergency response, gas control, unaccounted-for-gas, safety, and related operations-based software systems, etc. Based on our review, the Peoples Companies should initiate or devote additional efforts to improving the efficiency and effectiveness of gas operations by addressing the following:

1. The Peoples Companies have a high percentage of unprotected bare steel mains and have not yet hired staffing to meet committed short-term future replacement rates.

Both PNGC and PNG have a significant amount of unprotected bare steel in their respective gas systems when compared to other Pennsylvania natural gas distribution companies (NGDCs). Unprotected bare steel is vulnerable to corrosion which is a potentially significant safety issue and should be targeted with capital replacement. Exhibit VIII-5 displays the amount of unprotected bare steel in the system for PNGC, PGC and a panel of comparable NGDCs from 2015 to 2019, which is the last year available for Department of Transportation annual reports at the time of this audit report.

Exhibit VIII–5
The Peoples Companies
Unprotected Bare Steel Main – Percent in System
For the Years 2015 through 2019

Unprotected Bare Steel Main %						
Company	**2015**	**2016**	**2017**	**2018**	**2019**	**Compound Growth**
Columbia	19.0%	17.7%	16.5%	15.8%	14.5%	-6.5%
National Fuel	19.1%	18.5%	17.8%	16.3%	15.8%	-4.6%
UGI Central	13.5%	12.9%	12.5%	NA*	NA*	NA
UGI Penn	3.8%	3.6%	3.2%	NA*	NA*	NA
UGI Utilities	1.4%	3.4%	3.3%	5.9%	5.3%	41.0%
Panel Average	11.3%	11.2%	10.7%	12.6%	11.9%	1.2%
PNGC	22.8%	22.4%	21.8%	20.7%	19.7%	-3.6%
PGC	27.7%	28.1%	27.4%	27.0%	26.5%	-1.1%

**UGI Utilties includes all three UGI distribution companies as of 2018*
Source: Department of Transportation Annual Reports and PUC auditor analysis.

Historically in each respective company's LTIIPs, bare steel makes up most pipe replacement. However, cast iron and wrought iron are also considered part of what the Peoples Companies deem as "target pipe", which is antiquated pipe in need of replacement. PNGC and PGC had filed separate LTIIPs during our review in the last management audit conducted in 2015. Previously, the Peoples Companies had intended to expand the internal staffing of the construction department to mitigate the use of outside contractors for pipeline replacement activities. The plan did not come to fruition which in part caused the need for a revised LTIIP for PNGC in 2016. As a result, PNGC and PGC filed a combined LTIIP in September 2017 (approved in January 2018). This LTIIP was in effect at the beginning of the current management audit. In September 2020, the companies then filed a new LTIIP with the Commission for the period January 1, 2021 to December 31, 2025. This LTIIP included increased spending of at least $30 million per year to replace approximately 25 additional miles per year over the previous LTIIP.

The previous audit period reviewed included the years 2013 to 2015 during which the Peoples Companies were replacing between 67 and 85 miles per year of target pipe with gas operations field staffing ranging from 625 to 762 for this period (note that the three legacy distribution companies had separate unions and companies during this period but the data is being combined for comparison). For 2016, the year after the last management audit and before the LTIIP was revised, 76 miles of priority pipe was replaced with field operations staffing of 771.

From 2017 to 2019, the years in effect during the LTIIP at the time of the initiation of this management audit, the Peoples Companies replaced between 91 and 134 miles of target pipe annually with field operations staffing steady from 886 to 890. For 2020, the projected amount of 132 miles of priority pipe will be replaced at year end with field operations staffing at 927 (possibly more by the end of 2020). As of September 2020, stated obligations for the 2017 revised LTIIP have been fulfilled since its initiation. However, obligations for replacement of target pipe have significantly increased with the

revised LTIIP on file with the Commission as of September 2020. For the years 2021 to 2025, the new LTIIP details the replacement of 160, 160, 180, 186, and 186 miles of target pipe respectively for the combined systems. The anticipated timeframe of full target pipe replacement ends in 2033.

Future staffing need assessments are commensurate with projected workload measured against available manhours. This assessment lends itself to more accurate short-term planning than long-term planning (i.e., it is much easier to predict staffing for 2021 needs as the anticipated workload outside of pipeline replacement is more precisely known than against 2027 for example). Another factor to be considered is that most of the recent pipe replacement activity has occurred in urban settings due to urban pipelines normally rated a higher risk when measured by DIMP guidelines. A higher percentage of work will be occurring in suburban and rural areas in the future and less manpower will be needed per mile of replacement on average for rural areas as opposed to urban areas. This further complicates field operations staffing projections. Although long-term planning is conducted for a sense of eventual resource needs, the variability of workload is more considerable and subject to change than short-term planning, therefore, the PUC auditors' staffing review was limited to short-term planning only.

Through the PNG Companies Construction Forecasting Tool, the company estimated the number of new hires needed to prepare for the increased target pipe replacement levels for the remainder of 2020 and 2021. This analysis is displayed in Exhibit VIII-6 (the analysis was conducted in June 2020). Additionally, field operations positions for construction and target pipe replacement typically impacts non-construction and non-target replacement jobs as well. This is due to the positions being union bargaining unit jobs and internal company candidates have bidding priority. All field operations positions are routinely reviewed because the job position of which candidate who takes the job will not be known until it is filled and furthermore management must plan for potential retirements. Note that this analysis also includes non-field positions (e.g., construction administration, staff engineering, etc.) so the staffing totals will be higher than Exhibit VIII-4. This analysis concluded that 133 additional hires were needed to complete the remaining 2020 and the full 2021 construction seasons. As of early October 2020, PNGC hired an additional 37 field operations employees in anticipation of this construction. Most of the remaining positions will be hired before the 2021 construction season.

Based on the most recent LTIIP activities and a workforce review (see Exhibit VIII-4), there is no current evidence that the field operations staffing is strained to achieve the current replacement rates. However, the audit staff reviewed the LTIIP and estimates beyond 2025 noting that the Peoples Companies will need to replace on average about 208 miles of target pipe annually in order to meet the 2033 target date pledged to the Commission. These aggressive replacement rates are not only historical with respect to the Peoples Companies but also within the PA EDCs in general; hence, it is critical that staffing needs and analysis be frequently reviewed. If workforce planning is not routinely reviewed in an ongoing and periodic basis, the company can easily fall behind schedule due to the future high rate of replacement and the lead time

needed to fully train staff before being placed on construction jobs (training times vary and depend on an employee's written and physical testing capabilities).

Exhibit VIII–6
Peoples Natural Gas Company LLC
Staffing Increase Needed – LTIIP Replacement Obligations
For the Years 2020 and 2021

Construction & Engineering Positions*			
Group	**June 2020 Existing Level**	**2020-21 Workforce Need**	**Increase Needed**
Design / Track & Trace	47	76	**29**
Program Management	5	9	**4**
Construction Admin	6	6	**0**
Closeout	7	7	**0**
Pipeline Construction - salary	29	32	**3**
Restoration	9	10	**1**
Staff Engineering	8	8	**0**
Pipeline Construction - union	213	274	**61**
Subtotal	324	422	**98**

Non-Construction & Engineering Gas Operations Related Positions*			
Group	**June 2020 Existing Level**	**2020-21 Workforce Need**	**Increase Needed**
Field Customer Service	155	158	**3**
Ops Center	29	31	**2**
Meter Management	2	2	**0**
Compression	31	33	**2**
Demarcation	6	6	**0**
Gas Ops	7	7	**0**
Pipeline Maintenance	193	210	**17**
Pressure	70	70	**0**
Warehouse	8	8	**0**
Corrosion	50	56	**6**
Damage Prevention	63	66	**3**
Leak Survey	34	35	**1**
Pipeline Integrity Staff	4	5	**1**
Subtotal	652	687	**35**

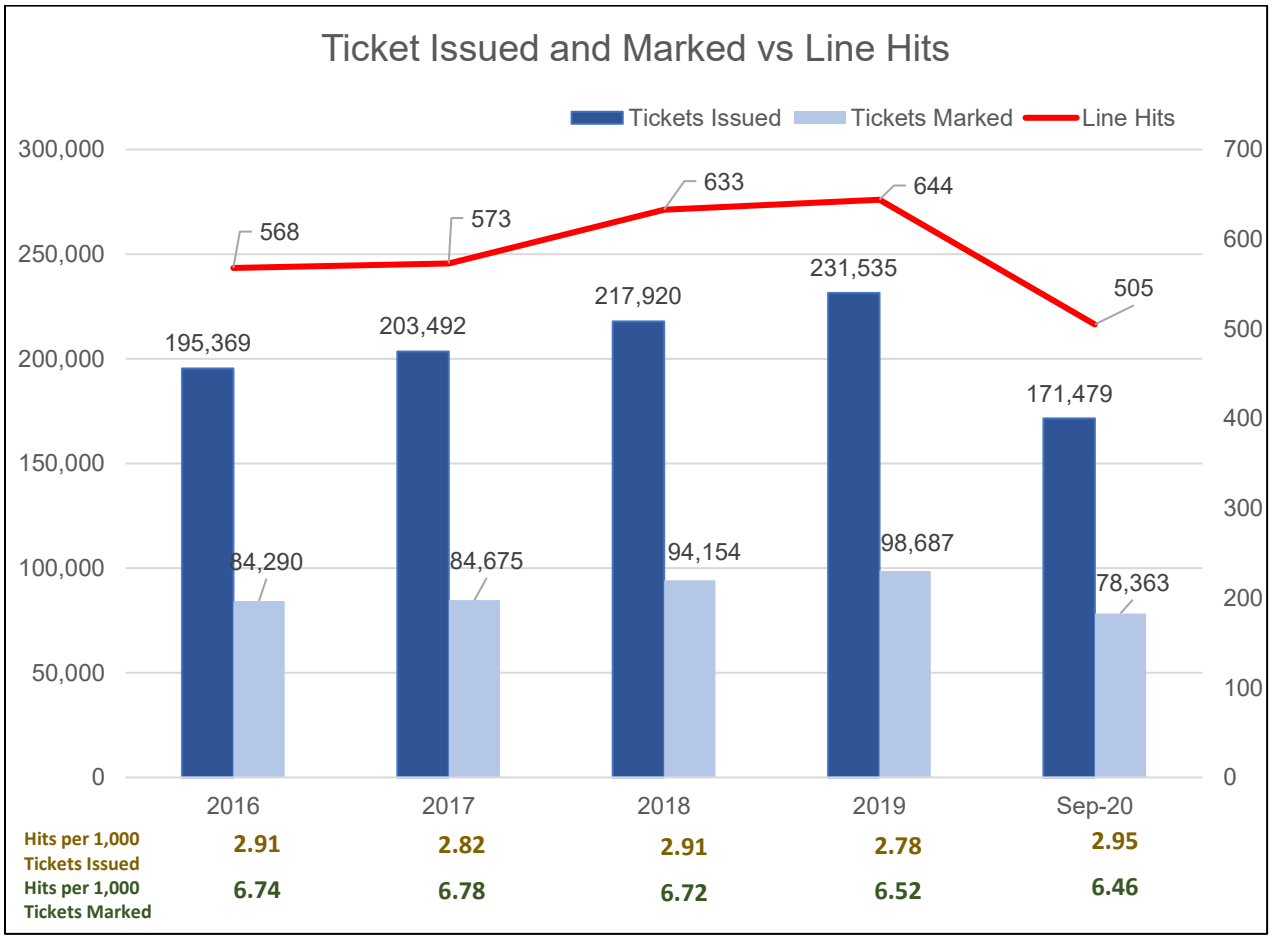
All Positions Impacted By 2020-2021 LTIIP Staffing Needs*			
Group	**June 2020 Existing Level**	**2020-21 Workforce Need**	**Increase Needed**
Total	976	1,109	**133**

* Includes non-field positions in addition to field operations positions.
Source: Data Request P-GO-40

2. PNGC's and PGC's second- and third-party line hits are increasing.

An industry standard measurement for tracking and monitoring damage prevention is to measure the number of third-party line strikes per 1,000 Pennsylvania One Call (POC) tickets. The Peoples Companies provided this data to the audit staff in two different ways. One measure is to use the actual number of ticket requests that are submitted to POC. The Peoples Companies additionally have a secondary service from POC called Phoenix in which tabletop screening is performed. The screening looks for duplicate tickets, overlapping one call areas, and tickets outside of PNGC's and PGC's service territory. The number of POC tickets can therefore be reduced which provides for a more efficient process for line marking. The total number of line hits along with two separate ticket measures, one for tickets issued and one for tickets marked, are displayed in Exhibit VIII-7.

Exhibit VIII–7
The Peoples Companies
Line Damages Measured against Pennsylvania One Call Tickets
For the Years 2016 through September 2020[27]



Source: Data Requests P-GO-34 and P-GO-54

[27] At the time of the audit, the Peoples Companies could not easily and readily provide 2015 data. In 2016, three company legacy damage tracking systems were replaced with a new system. Only PNGC data successfully

Performance with regard to hits per 1,000 tickets (either tickets issued or tickets marked) shows an improvement from 2016 to 2019 (to measure 2020 part way through the year for trending and comparison can be inaccurate as hits per ticket peak during construction season and then reduce during the winter). The number of tickets is increasing at a faster rate than the number of line damages which in return contributes to the Peoples Companies' improvement.

After analysis and discussions with the PNG Companies, the audit staff believe that the increasing tickets rates are due mostly to the increased LTIIP activity in the distribution system. The audit staff agree that hits per 1,000 tickets is an industry standard and by just this measure alone the Peoples Companies performance is improving. However, the audit staff conclude that based on this analysis, without increased damage prevention measures the potential for notable increased damages in the future is highly likely. Construction activity will be significantly increasing in the near future (next five years as outlined in the LTIIP) and then an even higher increase after this in the more distant future. (See Finding and Conclusion No. 1 for planned replacement rates.) The audit staff conducted a review of third-party line hits because of this likelihood.

The audit staff reviewed third-party damage locations. These statistics are displayed in Exhibit VIII-8. The Wilkinsburg and Gibsonia shops alone account for over half of the third-party hits in the service territory since 2016. More specifically, the Wilkinsburg and Gibsonia locations account for 35% and 17% respectively of all third-party hits from 2016 to September 2020. The total service area has increased in damages by 13% from 2016 to 2019 while Gibsonia and Wilkinsburg have increased by 37% and 22% respectively. This is in most part due to the increased construction activity in these two districts (heavily urban districts). In time, it is possible that other districts will have significant increases as construction activities move from urban areas to suburban to rural areas.

Exhibit VIII-9 displays the party at-fault for the third-party hits for the period reviewed. PNGC tracks causes by four general categories: Company, Locator, Contractor, and Other. (These categories are further broken down and can be tracked by a total of 26 subcategories if needed, but for this exhibit the general categories are used). Company at-fault hits include record and map keeping errors in mapping systems. Locator at fault errors can be included as "company at-fault" errors because the locating is done by PNGC employees. However, this is categorized differently to distinguish between a field error (locator) and a record error (company). Contractor errors have many subcategories and include a lack of a notification or providing enough time or information to POC/company, failure to maintain the markings, and various types of digging errors. Most "Other" errors are for abandoned facilities but can also include uncommon occurrences such as POC errors or deteriorated facilities. Contractor errors accounted for approximately 70% of all third-party hits from 2016 to

transferred into the new system while the other two legacy companies' (PNGC-Equitable and Peoples TWP) data did not. The 2015 data was available from the Peoples Companies but would take additional time to extract and compile. The audit staff concluded that the 2015 data would likely not change the nature of the finding and recommendation after discussions with the Peoples Companies. Due to recent employee turnover and the resulting new employees being unfamiliar with the outdated systems and furthermore complications from remote working stemming from the pandemic, 2015 hit data was not requested.

2020. With the location and causal subcategory information combined from this data, trends can be recognized and addressed. For instance, there was a notable increase in company-at-fault hits in 2019. A significant portion of these hits were from tracer wire and mapping related issues in the Wilkinsburg shop which experienced significant construction during this year.

Exhibit VIII–8
The Peoples Companies
Third-Party Line Damages by Location
For the Years 2016 through September 2020

Shop	2016	2017	2018	2019	Sept 2020
Allegheny	8	4	7	9	6
Altoona	15	14	7	10	9
Armstrong	0	0	2	6	0
Butler	15	12	18	18	12
Corliss	0	0	0	0	0
Gibsonia	78	100	129	107	75
Ginger Hill	1	55	44	42	24
Greensburg	42	32	25	29	24
Grove City	4	4	13	16	9
Hopewell	25	19	26	28	27
Indiana	5	8	3	7	5
Jefferson	3	1	1	3	0
Johnstown	88	59	54	28	27
Kiski	25	21	23	28	28
McKeesport	0	39	28	69	23
Monongahela	66	0	0	0	0
Mt. Nebo	0	0	0	0	0
Valley	4	14	6	4	10
Waynesburg	4	22	7	14	11
Wilkinsburg	185	169	240	226	215
Total	**568**	**573**	**633**	**644**	**505**

Source: Data Request P-GO-52

Exhibit VIII–9
The Peoples Companies
Third-Party Line Damages Responsible Party
For the Years 2016 through September 2020

Party at Fault	2016	2017	2018	2019	Sept 2020
Company	68	58	65	157	116
Locator	26	40	51	36	45
Contractor	396	423	457	422	326
Other	78	52	60	29	18
Total	**568**	**573**	**633**	**644**	**505**

Source: Data Request P-GO-27 and P-GO-52

In addition, a review of second-party line hits was conducted as well due to the considerable dependence on contractors for LTIIP related activities. Second-party hits are from contractors hired by the Peoples Companies to work on pipeline replacement projects. Contractors work on the pipeline replacement activities where natural gas is not in service, meanwhile PNGC employees work on the live natural gas work associated with the replacements. Exhibits VIII-10 and VIII-11 display the second-party hits by location and cause, respectively.

A review of the locations and causes of second-party hit locations and causes displays similar results as the third-party hits but with a distinct difference. The Wilkinsburg and Gibsonia districts once again have the highest amount of hits by district. However, in this case, the Wilkinsburg district is significantly higher. Wilkinsburg accounts for 69% of the hits for this period while the Gibsonia district accounts for 5%. The second-party party at fault review mirrors the results of the third-party review, with all categories for party at-fault data being within several percentage points between the two comparisons.

Exhibit VIII–10
The Peoples Companies
Second-Party Line Damages by Location
For the Years 2016 through September 2020

Shop	2016	2017	2018	2019	Sept 2020
Allegheny	0	0	2	1	0
Altoona	0	1	0	2	6
Armstrong	0	0	0	0	0
Butler	0	0	0	0	0
Corliss	0	0	0	0	0
Gibsonia	0	1	8	7	6
Ginger Hill	0	1	3	3	8
Greensburg	0	2	5	8	6
Grove City	0	0	0	0	1
Hopewell	0	3	1	2	0
Indiana	0	0	1	0	1
Jefferson	0	0	0	0	0
Johnstown	0	2	9	1	3
Kiski	1	1	4	2	5
McKeesport	0	1	3	5	9
Monongahela	1	0	0	0	0
Mt. Nebo	0	0	0	0	0
Valley	0	1	2	1	0
Waynesburg	0	0	3	0	0
Wilkinsburg	20	42	76	73	85
Total	**22**	**55**	**117**	**105**	**130**

Source: Data Request P-GO-55

Exhibit VIII–11
The Peoples Companies
Second-Party Line Damages Responsible Party
For the Years 2016 through September 2020

Party at Fault	2016	2017	2018	2019	2020
Company	1	1	13	33	26
Locator	0	3	4	9	8
Contractor	18	41	88	55	91
Other	3	10	12	8	5
Total	**22**	**55**	**117**	**105**	**130**

Source: Data Request P-GO-43 and P-GO-55

PNG Companies is aware of the increasing numbers and continually improving its damage prevention systems, public and contractor education programs, and inspector involvement in projects. Examples include the installation of a new damage prevention system in January 2020 with advanced features including POC ticket management and documentation and enhanced specific incident details including photographic documentation. PNG Companies also has been conducting training with contractors about the changes due to Act 50[28] in early 2019 in addition to the standard operation qualifications training that it has traditionally conducted. This training was done in conjunction with the POC Liaisons who provided their proprietary presentation which highlighted all changes resulting from Act 50 including the changes regarding required reporting for the contractors as the excavator. PNG Companies also conducts monthly meetings with second-party contractors with repeat occurrences. If needed, site meetings are conducted as well. Local field supervisors monitor monthly repeat offender reports, and this information can be provided to field inspectors.

The audit staff believe that the Peoples Companies have many beneficial programs assisting in damage prevention but should determine additional or enhanced ways to specifically address the location and causal drivers of the increasing line hits. Damage prevention programs are important to deter for the sake of efficiency and added costs associated with delays and damages, however the most important aspect of damage prevention program is safety. Line damages are a significant safety issue with potential injuries or fatalities to contractors, company employees, and the public. With increased construction activity for the LTIIP as a current and future reality, any improvements to the damage prevention program can make a substantial impact to future safety.

[28] The 2017 Underground Utility Line Protection Law (Act 50) provides oversight and enforcement for damage prevention to the Pennsylvania Public Utility Commission and additionally defines roles and responsibilities to all parties involved in construction projects in Pennsylvania.

Recommendations

1. **Expedite bare steel replacement efforts in the companies' distribution systems, and conduct ongoing staffing analyses to support any decision-making to fully staff, train, and monitor the workforce needs for all of the engineering, construction, and field operations positions and support positions needed to maintain future accelerated main replacement rates.**

2. **Effectively modify, track, and enforce the damage prevention program and initiate preventative solutions based on root cause analysis to minimize second- and third-party damages in significant construction areas.**

IX. EMERGENCY PREPAREDNESS

Background

On June 11, 2005, Regulations at 52 Pa. Code § 101 (Chapter 101) went into effect that require jurisdictional utilities to develop and maintain written physical security, cyber security, emergency response, and business continuity plans to protect infrastructure within the Commonwealth of Pennsylvania and to ensure safe, continuous, and reliable utility service. A jurisdictional utility is required to maintain these "emergency preparedness" plans and annually file a Self-Certification Form to the Pennsylvania Public Utility Commission (PUC or Commission) documenting compliance with Chapter 101. This form, available on the PUC website, is comprised of 13 questions as shown in Exhibit IX-1.

Exhibit IX–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?	
2	Has your physical security plan been reviewed in the last year and updated as needed?	
3	Is your physical security plan tested annually?	
4	Does your company have a cyber security plan?	
5	Has your cyber security plan been reviewed in the last year and updated as needed?	
6	Is your cyber security plan tested annually?	
7	Does your company have an emergency response plan?	
8	Has your emergency response plan been reviewed in the last year and updated as needed?	
9	Is your emergency response plan tested annually?	
10	Does your company have a business continuity plan?	
11	Does your business continuity plan have a section or annex addressing pandemics?	
12	Has your business continuity plan been reviewed in the last year and updated as needed?	
13	Is your business continuity plan tested annually?	

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.

The PUC audit staff use a NIST (National Institute of Standards and Technology) Cybersecurity Framework-based audit plan, modified to address the needs and capabilities of the PUC and the Pennsylvania utility companies. Ultimately, due to the sensitive nature of the information reviewed, specific information is not revealed in the audit report; instead the generalities of the information reviewed are discussed.

Due to travel restrictions caused by the COVID-19 pandemic, in-person review of confidential security information (CSI) documents was not possible. Instead, the emergency plans were reviewed through alternative means albeit constrained by

limitations with technology and/or security. In addition, as travel for direct inspections was not possible, the audit staff performed remote inspections at a limited sample of company facilities using video conferencing technology when available. For these reasons, certain aspects of the normal review of company security measures could not be completed during fieldwork. Therefore, the findings and conclusions discussed in this report account for the issues discovered during this modified fieldwork and do not preclude additional findings if there had been no restrictions.

A. Aqua Pennsylvania

During fieldwork, the PUC audit staff reviewed the most recent (i.e., 2019) Self Certification Forms submitted by Aqua Pennsylvania, Inc. (Aqua PA). Our examination of Aqua PA's emergency preparedness included a review of physical security plans (PSP), cybersecurity plans (CSP), emergency response plans (ERP), business continuity plans (BCP), and associated security measures. Reviews were conducted via remote videoconference interview, rather than by direct inspection, due to travel restrictions. The audit staff also conducted remote inspections at a limited sample of Aqua PA's facilities, including water treatment plants (WTPs), control centers, offices and storage facilities.

The personnel assigned responsibility for testing, reviewing, and updating the physical security, emergency response, business continuity, and cybersecurity plans for Aqua PA are as follows:

- Physical Security Plan – Director of Operations, Aqua PA
- Cybersecurity Plans – Chief Information Officer, Essential Utilities, Inc.
- Emergency Response Plan – Director of Operations, Aqua PA
- Business Continuity Plan – Chief Administrative Officer, Aqua PA

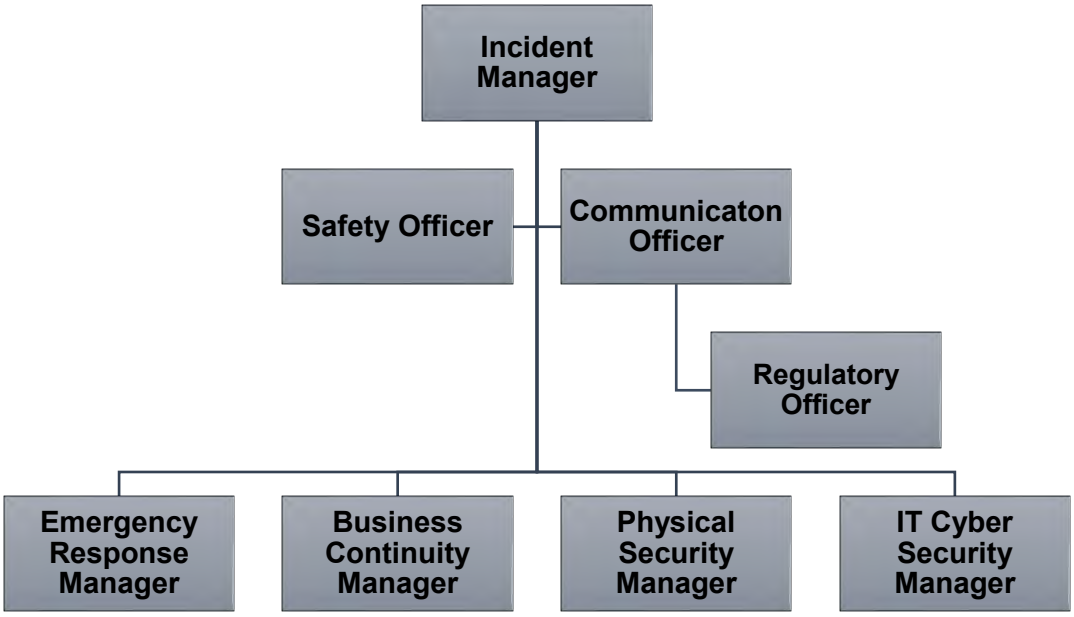
B. The Peoples Companies

Likewise, the audit staff reviewed the most recent (i.e., 2019) Self Certification Forms submitted by Peoples Natural Gas Company LLC (PNGC) and Peoples Gas Company LLC (PGC), collectively referred to as the Peoples Companies, to determine the status of their responses. Our examination of the Peoples Companies' emergency preparedness included a review of PSP, CSP, ERP, BCP, and associated security measures. Reviews were conducted via videoconferencing with company personnel due to current work environments and safety as previously identified.

Each of the plans is governed by an all-encompassing Incident Management Plan "to ensure organized response and recovery for any unplanned major event that disrupts multiple normal business operations and further provides structure for managing and coordinating the Company's four individual incident plans." The purpose of the Incident Management Plan is to identify critical business functions and strategies for response and recovery; identify guidelines for different types of alerts; set activation levels for specific triggers; define team member responsibilities and tasks; and establish

event agendas. The Incident Management Team shown in Exhibit IX-2 includes an Incident Manager, Safety Officer, Communication Officer, Regulatory Officer, Emergency Response Manager, Business Continuity Manager, Physical Security Manager and Information Technology (IT) Cyber Security Manager.

Exhibit IX–2
The Peoples Companies
Incident Management Team
As of July 2020



Source: Data Request P-IT-24 Attachment 1

The individual incident plans are overseen and managed by various PNG Companies LLC (PNG Companies) and PNGC groups and individuals to provide overarching support to the Peoples Companies. These groups are responsible for testing, reviewing, and updating their respective plan(s). The individuals and groups assigned to the PSP, CSP, ERP, and BCP along, with the purpose of each, are as follows:

- PSP – Manager, Facilities and Security (PNG Companies) – to be a guide for all employees in reference to security measures for facilities and employees; as well as designating a Security Team.

- CSP – Chief Cyber Security Director, IT Cyber Security & Infrastructure (PNG Companies) – to respond efficiently and effectively to minimize risks to business and customers by creating a dedicated response team with carefully designed and well-maintain incident response procedures.

- ERP – Manager, Operations – Standards & Compliance (PNGC) – to outline the procedures, guidelines, organizational support and communication that will minimize or prevent hazard to people, property and the environment during an emergency.

- BCP – Chief Cyber Security Director, IT Cyber Security & Infrastructure (PNG Companies) – to ensure organized response and recovery for any unplanned event that disrupts normal business operations, which include loss of utility service, loss of access to any buildings or any catastrophic event.

To continuously protect physical and cyber resources, the designated groups and individuals have developed procedures to ensure that the Peoples Companies operate in a safe, secure, and reliable environment. A major commitment in assuring plans are kept current is by performing various testing on an annual basis. Types of testing performed by the Peoples Companies include vulnerability assessments, penetration tests, system operational testing, tabletop emergency simulations, and real-life events.

Findings and Conclusions

Our examination of the emergency preparedness at Aqua PA and the Peoples Companies included a review of the PSP, CSP, ERP, BCP, vulnerability assessments, and all associated security measures. Based on our review of the companies' emergency preparedness efforts, the companies should initiate or devote additional efforts to improving their security planning and preparedness procedures by addressing the following eight findings and recommendations:

1. Automatic external defibrillator (AED) standards at Aqua PA differ between facilities.

AED inspection frequency differed from facility to facility. At some company facilities, AEDs lacked inspection tracking forms. The lack of a policy at Aqua PA governing AED inspections has resulted in each facility setting its own inspection standards and schedules which could lead to missed inspections or use of faulty equipment. Although no AED was found to have expired, it is a best practice to inspect critical lifesaving equipment on a regular basis and to track these inspections.

2. Aqua PA's Emergency Response Plan is not centralized or consolidated.

Aqua PA has no centralized emergency response plan (ERP); however, local departments have their own emergency operating procedures, which are maintained in the company's Bryn Mawr Operations Center. As of the end of fieldwork, on October 5, 2020, Aqua PA indicated that it plans to use a third-party contractor to create a centralized ERP. However, the company had not established an owner for a centralized ERP and therefore no one was responsible for it. During virtual tours of various Aqua PA facilities, audit staff found that some facilities were using their Process Control Manual, which includes an emergency response section, as the ERP, while other

facilities had dedicated facility ERPs. In addition, each stored and disseminated its copies differently, with some having physical copies only, and others maintaining electronic copies. In all cases, local employees had access to their local plan.

52 PA Code Chapter 101.1 requires jurisdictional utilities, "…to develop and maintain appropriate written physical security, cyber security, emergency response, and business continuity plans to protect this Commonwealth's infrastructure and ensure safe, continuous and reliable utility service." Lack of a unified Emergency Response Plan at Aqua PA has led each facility to have a different plan, with a different format. This variation could hinder responsiveness because similar material is organized differently, impede efficient updating of critical information, etc. Therefore, a standardized template would improve the administration of (i.e., updating critical information) and usability of the various ERPs. However, it is important to retain unique site-specific information for each facility.

3. The security of Aqua PA's control rooms could be improved.

Security of control room facilities across Aqua PA varies widely in implementation and effectiveness. While audit staff was not able to visit many facilities, there were enough deviations noted during site observations to substantiate a need to standardize control room security. For example, control room security at all facilities should include a separate layer of security for the control areas (i.e., generally a locked room with restricted access). Moreover, additional security may be needed based upon risk or criticality of the respective facility (see Finding and Conclusion No. IX-4). Additional standards like access requiring two-factor authentication and cameras recording both the interior of the control room and any entrances to it should also be considered at all surface water treatment facilities. The variety of security measures, or lack thereof, at Aqua PA control rooms exposes the company to increased risk to outside hostile actions. Therefore, Aqua PA should establish minimum security standards for control rooms based upon their criticality.

4. Aqua PA lacks defined tiered security requirements based on criticality.

Security for Aqua PA facilities is addressed on a case-by-case bases, focusing on improving individual facilities where security concerns are identified. The company has been prioritizing upgrades to security for the last 5 years, but there is no centralized policy establishing tiers of security requirements based on criticality.

According to 52 Pa. Code Section 101.3(a), a jurisdictional utility, "…shall develop and maintain written physical and cyber security, emergency response, and business continuity plans." Part of a successful physical security plan involves defining tiers of required security, depending on facility criticality or risk. Aqua PA has not defined tiers of criticality with uniform security requirements for each type of facility. As a result, security varies in quality and coverage from facility to facility. Instead, minimum security features should be based upon criticality with more unique security requirements layered on top based upon the needs of individual facilities.

5. Minor security and safety deficiencies at Aqua PA were discovered during facility tours.

Minor physical security deficiencies were noted during inspection of Aqua PA's facilities. Most of these deficiencies were due to facility age, oversight, weather, or general wear and tear. Issues included fence concerns such as barbed wire problems, gaps and washouts beneath fences, foliage issues, reliance on neighbors' fences, and unlocked or unsecured IT closets, cabinets, and equipment. Some of the items were immediately acknowledged by Aqua PA. For example, Aqua PA was planning a project to address a shared fence by the end of fieldwork.

Physical security should be continuously addressed, and any deficiencies should be remedied in a timely manner. Due to the minor deficiencies in physical security at some of Aqua PA's facilities, conditions could allow for points of entry through individual layers of security at several facilities. Holes in a layer of security can render that layer ineffective, so these issues should be repaired or mitigated in the interest of maintaining multiple, functional layers of security.

6. The physical security of SCADA components and of other critical cyber components at Aqua PA can be improved.

Essential's regulated subsidiaries are responsible for the physical security of SCADA equipment at the state level (i.e., Aqua PA). At Aqua PA, this resides within the Operations division. However, a strategic program has been initiated to centralize the physical security of SCADA equipment under the centralized Essential IT department[29]. This is a multi-year project, progressing state-by-state. The long-term goal is to have one comprehensive cybersecurity program across the corporate Essential umbrella. Aqua PA Operations will retain oversight of physical security of non-SCADA cyber equipment in PA, while the centralized Essential Utilities Cybersecurity Team, will assume oversight of cybersecurity governance and controls of critical cyber equipment. This change will also place physical security of Aqua PA's SCADA equipment with the centralized Essential IT Department. This transition began in 2018 and the transition is ongoing, with facilities being upgraded prior to the change in oversight.

More specifically, the company formed a transition team aimed at integrating security with the operation of this critical equipment. This team is combining, replacing, and upgrading security protocols and technologies in phases for both Aqua PA and the centralized Essential IT department. The transition period for Aqua PA began in 2018 with efforts in progress with many improvements already achieved in Aqua PA's service territory. However, this transition has led to uncertainty as to designated responsibility for the physical security of various types of cyber equipment. As an example, representatives from both companies in charge of security were unable to identify who was responsible for the security of specific equipment identified by audit staff. Furthermore, when asked who was responsible for the security of a specific cabinet of cyber and communications gear, personnel from Aqua PA Operations and the

[29] Technically, this department consists of employees of Aqua Services Company, which provides IT support for all Essential subsidiaries.

centralized Essential IT department were unsure. A discussion ensued which revealed that no one present knew what equipment was in the cabinet, and each party had a different understanding of who would be responsible for it based on the equipment in question. This uncertainty was further supported by facility tours that revealed several instances where the physical security of cyber components could be compromised, bypassed, or ignored by a bad actor.

It is a best practice to protect critical cyber equipment, especially SCADA systems, behind multiple layers of both physical security and cybersecurity. It is also a best practice to clearly designate who is responsible for the security of all critical equipment and facilities and make sure that key stakeholders are aware. A lack of focus on the physical security of cyber equipment, as well as confusion over who is responsible for specific types of equipment, has led to lax physical security of critical cyber equipment and SCADA equipment at multiple Aqua PA facilities. Lax physical security of critical cyber equipment and SCADA equipment leaves fewer intact layers of security between the outside and critical operational components of facilities. Therefore, as part of the transition, all parties should understand who is responsible for the security of critical components and how to best address/prioritize deficiencies until consistent standards are applied.

7. Aqua PA does not conduct any drills or tabletop exercises to test and train on the Physical Security Plan.

Aqua PA was unable to demonstrate when it last performed a drill to test the Physical Security Plan (PSP). While there are routine weather events that test plans like the ERP, these acts of nature rarely test the PSP. Therefore, management indicated that no security drills were performed in the last few years. According to 52 Pa Code § 101.3 (c) "A jurisdictional utility shall maintain and implement an annual testing schedule of these plans (physical and cyber security, emergency response and business continuity plans)." Standard inspections or perimeter walks are not sufficient to test physical security, leaving the company unpracticed for physical security challenges. Instead, live tests of physical security should occur at major facilities, at least once every three years, with tabletop exercises occurring at least annually for other years. Moreover, Aqua PA should consider utilizing an outside party for a vulnerability assessment, physical security penetration test, etc. at least once every seven to ten years. Fortunately, several government agencies are available to provide free help with this, such as free onsite assessments for critical infrastructure provided by the Pennsylvania National Guard; or the Cyber Resilience Review as well as physical security assessments provided for critical infrastructure by the Department of Homeland Security.

8. Aqua PA does not use rescue hooks near aerated tanks.

Life rings are present at all open-topped tanks at Aqua PA and are protected by railings or are covered. However, Aqua PA has not provided rescue hooks near open-topped aerated basins and tanks. Rescue hooks are used to remove working personnel

from aerated tanks, as aerated water is less dense than normal water and humans are not buoyant enough to swim and thus unable to save themselves. In such aerated water, life rings will float out of reach on the surface while the person sinks to the bottom of the tank. While Aqua PA's safety features prevent most accidents from happening, there is still a possibility for accidental entry into a tank. Therefore, it is prudent to ensure a rescue hook is available near these tanks.

Recommendations

1. **Establish a standard frequency for AED inspections across Aqua PA and require inspections to be tracked for all AEDs.**

2. **Establish a unified Emergency Response Plan for Aqua PA and ensure that localized conditions are captured for individual facilities.**

3. **Establish a unified control room security standard for Aqua PA, and upgrade existing facilities to adhere to it.**

4. **Establish a tiered physical security standard for Aqua PA based on criticality of company facilities.**

5. **Correct minor deficiencies in physical security and safety at Aqua PA.**

6. **Designate responsible parties, review existing security protocols and measures, and address deficiencies with the physical security needs of IT components at Aqua PA and Essential Utilities.**

7. **Perform a physical security drill and/or tabletop exercise annually at Aqua PA.**

8. **Supply rescue hooks at all locations with open topped aerated basins and tanks deep enough to submerge employees at Aqua PA.**

X. MATERIALS MANAGEMENT

Background

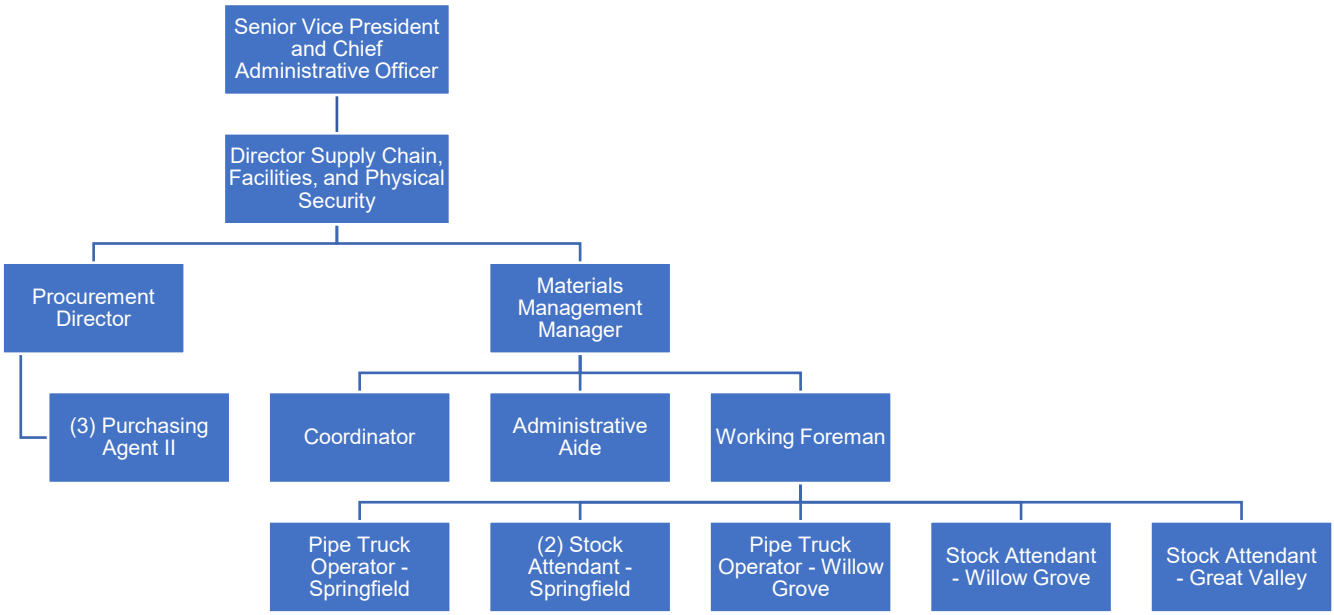
As discussed in Chapter II – Background, Essential Utilities, Inc. (Essential) operates water and wastewater companies including Aqua Pennsylvania, Inc. (Aqua PA). In addition, Essential acquired Peoples Natural Gas Company LLC (PNGC) and Peoples Gas Company LLC (PGC) (collectively referred to as the Peoples Companies) which are regulated natural gas utilities controlled by PNG Companies LLC (PNG Companies) in March 2020. However, the material management (MM) functions are handled independently between Essential's water and wastewater subsidiaries (e.g., Aqua PA) and its newly acquired natural gas interests. This chapter highlights each groups' respective functions at the close of fieldwork in October 2020.

The Director of Supply Chain, Facilities, and Physical Security (Director-Supply Chain) maintains high-level oversight of the procurement and materials management function for both Aqua PA and PNG Companies and reports to the Senior Vice President and Chief Administrative Officer (SVP) (see Chapter III – Executive Management for Essential's Executive Team). Essential Utilities (then Aqua America, Inc.) created the Director position following the acquisition of PNG Companies. Both the Director – Supply Chain and SVP are Aqua services employees.

A. Aqua Pennsylvania

Reporting to the Director – Supply Chain and handling day-to-day procurement and materials management responsibilities for Aqua PA are the Procurement Director (PD) and MM Manager, respectively. Three purchasing agents report to the Procurement Director. A total of nine employees, including seven union positions, report to the Manager. The materials management organizational structure is presented in Exhibit X-1.

Exhibit X–1
Aqua Pennsylvania, Inc.
Materials Management Organizational Structure
As of October 2020



Source: Data Request A-EM-2 and A-MM-10

The Procurement Department is responsible for most purchasing activities at Aqua PA (including Pennsylvania wastewater operations), as well as water and/or wastewater operations in seven other states. The Procurement Department's responsibilities include: negotiating contract terms and bidding for projects, acquisition of major materials for all projects and non-project materials (e.g., hydrants, fittings, valves, meters, etc.), developing master service agreements with certain vendors, and compliance with contract terms. The Procurement Director estimated that roughly 40% of this time is spent on Aqua PA.

The Materials Management Department maintains inventories at eight facilities throughout Aqua PA's four districts (i.e., Southeastern, Roaring Creek/Susquehanna, Honesdale/White Haven, and Shenango). The department is led by the MM Manager, whose duties include determining minimum and maximum inventory levels, requisitioning and maintaining certain types of materials (e.g., personal protective equipment, hand tools, shoring materials, repair sleeves, etc.), developing and maintaining parts of the capital budget, reviewing budgeting reports, and conducting annual physical inventories. Primarily, the MM Manager's group focuses on Aqua PA; however, support is provided to other Essential subsidiaries as needed. A MM Coordinator, as shown on Exhibit X-1, handles the logistics of truck deliveries and material transfers between warehouses, as well as purchasing and receiving various types and sizes of pipe. The Administrative Aide (see Exhibit X-1) is responsible for the daily entry of inventory transactions into the company's inventory management system.

Although inventory is stored throughout the company's service territory, most of the inventory is held at the Springfield, Willow Grove, and Great Valley warehouses, all of which are in the Southeastern District. These three warehouses are staffed by seven union employees. The Working Forman oversees all work schedules of union employees, daily data entry of material issues and credits, pipeline truck daily schedules, and general operation of the Southeast warehouses. The stock attendants are responsible for receiving materials, pulling/issuing material, and all daily activity of the warehouses. In addition, the Springfield and Willow Grove warehouses each have pipe truck operators dedicated to delivering material. Warehouses outside the Southeastern District remain the responsibility of the MM Manager but are operated by personnel within water operations (see Chapter VII – Water Operations).

Aqua PA uses an inventory management system (IMS) within the Lawson System for managing and ordering materials electronically, while project planning is performed through an Asset Information Management System (AIMS). The IMS tracks purchase orders, transactions, material quantity and dollar value, and minimum and maximum inventory levels. It also generates a variety of reports used by the Materials Management Department, including key performance indicators (KPI) such as inventory turnover and cycle count net variance. Aqua PA's inventory turnover is presented in Exhibit X-2. It is important to note that although the company used the Lawson System as of fieldwork's end, it is in the process of converting to the same SAP-based Enterprise Resource Planning (ERP) system used by Peoples Companies. This is a long-term project and is not expected to be completed before the end of 2021.

Exhibit X–2
Aqua Pennsylvania, Inc.
Inventory Turnover
2015 – 2019

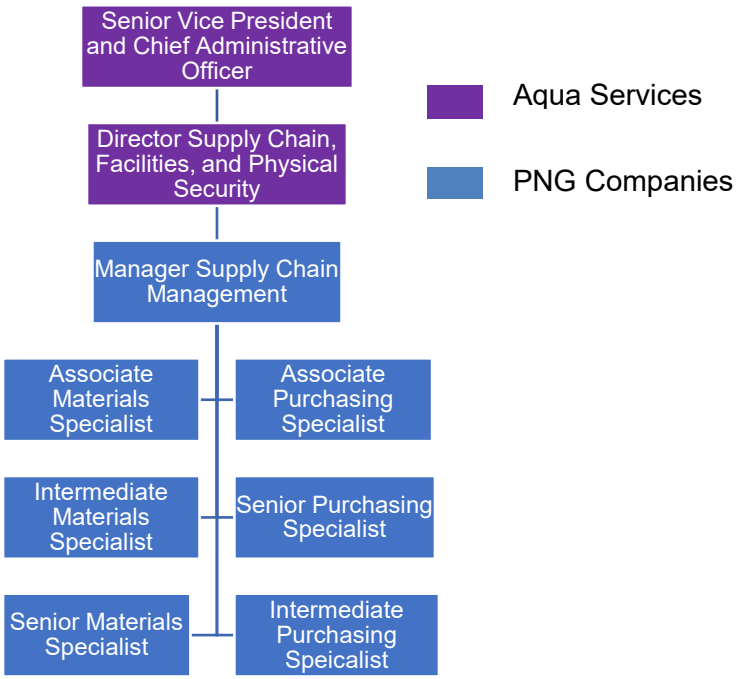
	2015	2016	2017	2018	2019
12-Month Average Inventory Balance	$ 2,896,508	$ 2,543,563	$ 3,133,078	$ 3,864,680	$ 3,489,096
Yearly Issues	$ 21,804,258	$ 19,771,917	$ 20,811,124	$ 28,586,722	$ 19,486,848
Inventory Turnover	7.53	7.77	6.64	7.40	5.59

Source: Data Request A-MM-3 and A-MM-4

B. The Peoples Companies

Exhibit X-3 shows the Supply Chain Management Department (SCM) organization structure as of October 2020 for the Peoples Companies. Reporting to the Senior Vice President and Chief Administrative Officer (SVP) is the Director of Supply Chain, Facilities, and Physical Security, both of which are Aqua Services employees. A Supply Chain Manager reporting to the Director has both purchasing and materials management related reporting positions and is dedicated to the PNG Companies Purchasing responsibilities are covered by a Senior Purchasing Specialist at PGC, and an Intermediate and Associate Purchasing Specialist at PNGC. Materials management related duties are handled by PNGC's Senior, Intermediate, and Associate Materials Management Specialists.

Exhibit X–3
PNG Companies LLC
Supply Chain Management Structure
As of October 2020



Source: Data Request A-MM-2 and P-MM-10

The storeroom and warehousing function at PNG Companies is partially embedded in gas operations centers across the Peoples Companies and consists of 15 storage locations. Two of the locations belong to PGC and the other thirteen to PNGC. Materials at these locations are held in storerooms and trucks. Materials are separated into three groupings: inventoried items, project kitting, and expense materials. Inventoried items are materials with established minimum and maximum (min/max) quantity values within the materials management information system (MMIS) and automatically replenished through a third-party vendor discussed later in the

background. This group includes both normal O&M and emergency materials. The project kitting[30] process is for construction material provided directly from the third-party vendor in the form of project-kits. These materials are not debited from a storage location but instead are automatically issued against a work order immediately upon after completion of a goods receipt. Expense materials are small inexpensive items without established min/max values or reorder points (i.e., ordered as needed) that are purchased and used by Operations. Items less than two inches (excluding pipe, valves, regulators, and risers) and certain odd fitting safety stock are expense materials.

PNG Companies contracts with a third-party vendor, MRC Global (MRC), to act as an integrated supplier and distributer of materials. Automatic order fulfillment and inventory replenishment, supply and delivery coordination, and project kitting are some of the services provided by MRC. The company meets with MRC on a weekly basis and is supplied periodic reports detailing the status of critical items, backorders, and KPI (e.g., fill rate percentages, order accuracy, etc.). Due to MRC's integration, all purchasing from other vendors is coordinated through MRC.

The SCM Department uses the SAP Material Management (SAP-MM) module as its purchasing MMIS. SAP-MM is a component of the SAP ERP software used throughout the PNG Companies organization. SAP-MM handles material and vendor data, procurement, inventory management, and materials requirement planning. MRC performs its integrated supplier duties using SAP-MM. The company uses reporting data through the SAP-MM's SCM dashboard (i.e., software user interface) and by generating periodic reports. The SCM dashboard monitors inventory turnover, value and quantity of inventory stored in trucks, material quantities exceeding min/max levels, etc. The periodically generated reports cover surplus inventory, emergency stock, cycle counting, and item duplication.

In addition to tracking MRC's performance (e.g., KPIs), the SCM department benchmarks procurement and materials management using two main benchmarks for each function. Procurement develops goals and tracks cost savings/avoidance and diversity spending. The department quantifies the dollar value savings created through procurement activities and decisions (e.g., bid process, contract negotiation, procured materials, etc.), which are tracked and reviewed by the Manager Supply Chain. The company tracks diversity spending by the SCM directly and through MRC 2nd tier spending (i.e., when MRC procures from MWDBE vendor). Meanwhile, materials management develops goals and tracks inventory turnover and inventory reduction. The inventory turnover goal is company-wide though the company also actively tracks turnover at individual facilities. The inventory reduction goal is aimed at eliminating unneeded materials and was developed after the T.W. Phillips and Equitable Gas Company acquisitions[31], in order to blend the materials management function into a

[30] Process in which individually separate but related items are grouped, packaged, and supplied together as one unit. The supplier then creates a customized kit that is assembled and shipped as one unit.

[31] T.W. Phillips Gas and Oil Co. was acquired in May 2011 and was renamed Peoples TWP LLC. Equitable Gas Company LLC was acquired in December 2013 and was renamed Peoples Natural Gas Company LLC – Equitable Division. As discussed in Chapter II – Background, the Equitable Division was consolidated in January 2016 into what is now Peoples Natural Gas Company LLC. In July 2017, Peoples TWP became what is now Peoples Gas Company LLC. These companies currently operate under a single labor agreement with common work rules and are considered as a combined unit for material handling purposes.

single company. This works in tandem with procurement's cost savings/avoidance goal and SCM analyzes orders to ensure stocked materials are used before purchasing through MRC. The SCM benchmarks and goals are detailed below in Exhibit X-4.

Exhibit X–4
The Peoples' Companies
Key Performance Indicators
For the Years 2015 through 2019

Inventory Turns					
	2015	**2016**	**2017**	**2018**	**2019**
Goal	0.850	0.880	1.000	1.700	1.900
Result	0.853	0.881	1.016	1.860	1.910

Cost Savings / Cost Avoidance					
	2015	**2016**	**2017**	**2018**	**2019**
Goal	$1,000,000	$1,000,000	$1,250,000	$1,400,000	$1,600,000
Result	$1,026,800	$1,522,000	$1,356,227	$1,770,629	$2,200,000

Inventory Reduction					
	2015	**2016**	**2017**	**2018**	**2019**
Goal	$400,000	$300,000	$300,000	$500,000	$1,000,000
Result	$503,663	$488,308	$527,973	$1,295,792	$1,600,000

Diversity Spend					
	2015	**2016**	**2017**	**2018**	**2019**
Goal	$3,500,000	$3,500,000	$15,000,000	$20,000,000	$24,000,000
Result	$4,704,229	$9,250,000	$20,114,000	$24,020,000	$43,000,000

Source: Data Request P-MM-11

Findings and Conclusions

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

1. Some Aqua PA materials management policies and procedures are outdated.

As discussed in the Background section of this chapter, Aqua PA is in the process of converting from Lawson to SAP-based software (see Chapter XII –

Information Technology for SAP implementation). This project which is being led by the Director-Supply Chain includes participation from employees from both the Peoples Companies and Aqua Services. Essential plans to leverage the Peoples Companies prior experience of converting to SAP across a multi-jurisdictional footprint.

Moving forward, unless the software is customized specifically for Aqua Services' water and wastewater affiliates (including Aqua PA), many functions and activities employed by Aqua PA will need to migrate to SAP-based processes and procedures. Detailed and accurate documentation of both the before and after functions and activities become extremely useful in this scenario. This type of documentation enables companies to quickly identify major changes or new procedures necessitated by switching to SAP. However, the PUC audit staff noted certain gaps with existing documentation at Aqua PA.

Aqua PA's procurement and materials management activities and functions are documented through written policies and procedures, flow charts, field manuals, software reference guides, and training presentations. Analysis of these documents revealed many informal and undated documents. Moreover, adequate controls (i.e., version renumerations; author(s), reviewer(s), and approver(s) signoffs, etc.) governing policies and procedures were not used. In addition, only a single date appears on most of the dated documents, making it difficult to determine whether the date represents when the document was written or when it was last changed. Although not determinative, these issues increase the likelihood documentation is missing information, contains unnecessary information, is incongruent with current practices, etc. Aqua PA's documented policies and procedures contrast heavily with the Peoples Companies, which follow standardized formatting, contain creation date and of last revision, identify authors and approvers, and were all updated within the last two years.

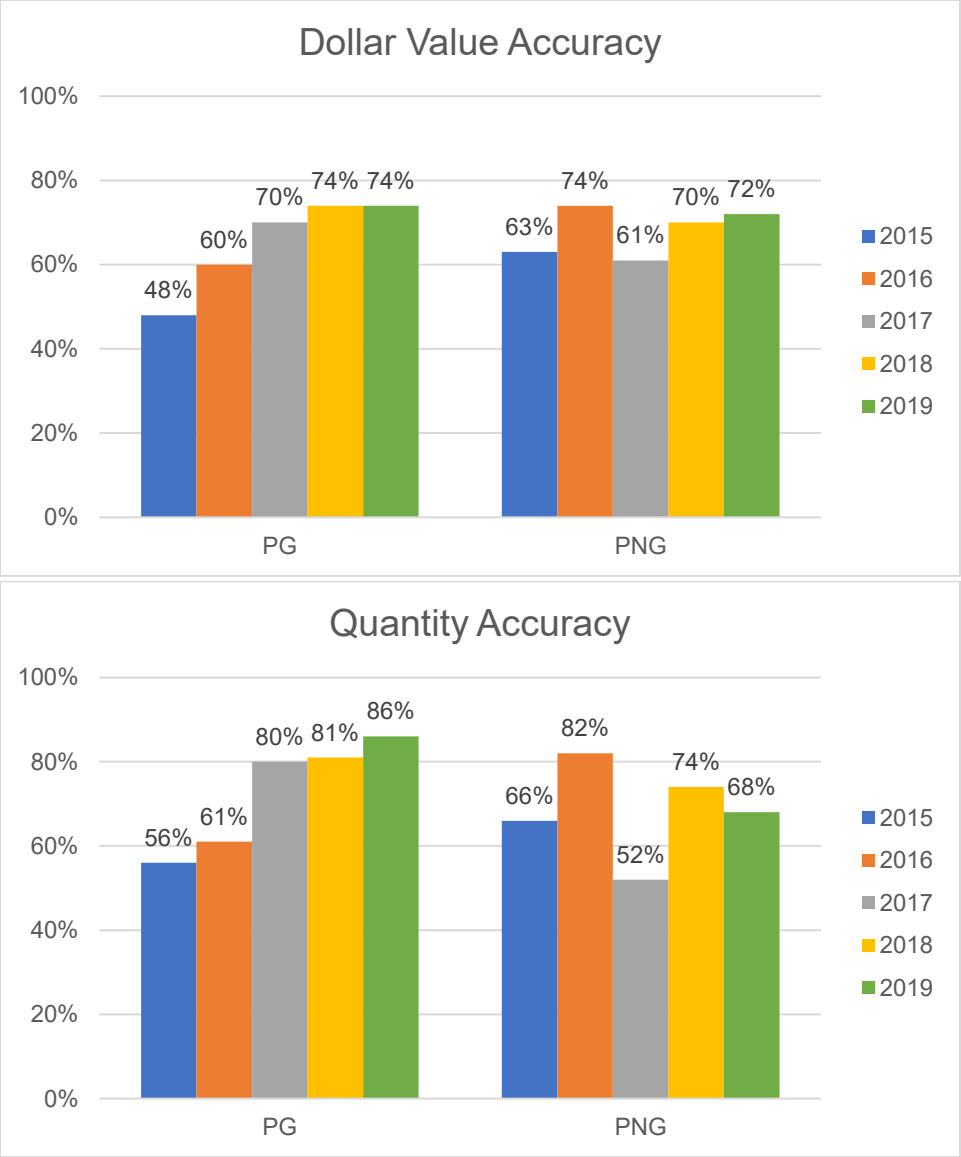
Documented policies and procedures should be reviewed, and if necessary, revised and updated at least every five years, or sooner if structural changes render existing policy inadequate or obsolete, reorganization occurs, or if company policy recommends shorter interval periods. As Aqua PA prepares to implement SAP, it would be beneficial to ensure all existing policies and procedures are up-to-date and inclusive. Therefore, as SAP is being deployed, they can be modified, rewritten, created, etc.

2. Inventory accuracy needs improvement at most storeroom locations at the Peoples Companies.

Auditing of inventory at the Peoples Companies occurs using cycle count techniques and conducting annual physical inventory counts. Cycle counting is a procedure in which a small subset of inventory is counted, whereas physical inventory represents the traditional method of counting all items at a facility and often requires suspending operations to ensure an accurate count. An accurate count would mean all expected items were located within the facility. Dollar value accuracy compares the total value of the items found in the sample to the expected value of the sample. SCM maintains detailed procedures for conducting these activities and documenting the

results; however, SCM was only able to produce a very limited set of data. Exhibit X-5 shows the quantity and dollar value accuracy by percentage for 2015 – 2019.

Exhibit X–5
The Peoples' Companies
Dollar Value and Quantity Accuracy
For the Years 2015 through 2019



Source: Data Request P-MM-14

More concerning is the lack of data provided to the audit staff. Without additional data, audit staff could not determine if the inaccuracies presented in Exhibit X-5 are due to poor controls, stated correctly, calculated incorrectly per our definition of inventory accuracy, a case of mistaken part identity, etc. Fundamentally, SCM's documented procedures of cycle counting describe bi-weekly ABC cycle count activities at all 15

storage locations, analyzing exceptional transactions in an exported Excel file, adjustments in SAP-MM, and filing the report in the appropriate folder to be kept on record. Similarly detailed are the procedures for reporting physical inventory, which include a final analytics spreadsheet, analytics prepared by categories (e.g., warehouse, trucks, emergency, surplus), analytics using different variance calculation methods (e.g., net, absolute, absolute quantity, etc.), and a PowerPoint presentation of the data to be distributed to all responsible parties. None of the data provided approaches the level of detail indicated by either the cycle counting or physical inventory reporting procedures, nor can the data at least confirm the activities described in the procedures are taking place. In addition, SCM does not include any type of inventory accuracy component in its key performance indicator. Had accuracy been a KPI, the audit staff could have verified that the company is actively analyzing and addressing any accuracy issues despite the lack of more detailed records. As can be seen above, inventory accuracy is well-below 80% annually as measured by dollar value and only slightly better by quantity.

As for the available data to review, the company could not provide a reason or cause for the dollar value and quantity accuracy being so low. It is unclear if the cause is lack of focus on accuracy and controls, or some other factor. Based upon the audit staff experience, utilities should maintain cycle count net accuracies of at least 99% and gross accuracies of at least 97%. For comparison, Aqua PA's 2019 cycle counting activities produced a combined net accuracy of 99.85% and gross accuracy of 98.1%. Moreover, other gas utilities within Pennsylvania have maintained accuracies within this range.[32] Accuracy is a crucial component in efficient and effective inventory management. It facilitates proper forecasting for optimal purchasing decisions, reliable access to materials, and appropriate reductions in inventory.

Recommendations

1. **Fully develop and standardize all policies and procedures at Aqua PA.**

2. **Incorporate inventory accuracy into key performance indicators at the Peoples Companies and improve accuracy in all storerooms.**

[32] See the 2016 Management Efficiency Investigation of UGI Utilities, Inc. at Docket Nos. D-2015-2473202; D-2015-2473203; and D-2015-2473204 or the 2013 Focus Management and Operations Audit of PECO Energy Company at Docket No. D-2013-2370921.

XI. CUSTOMER SERVICE

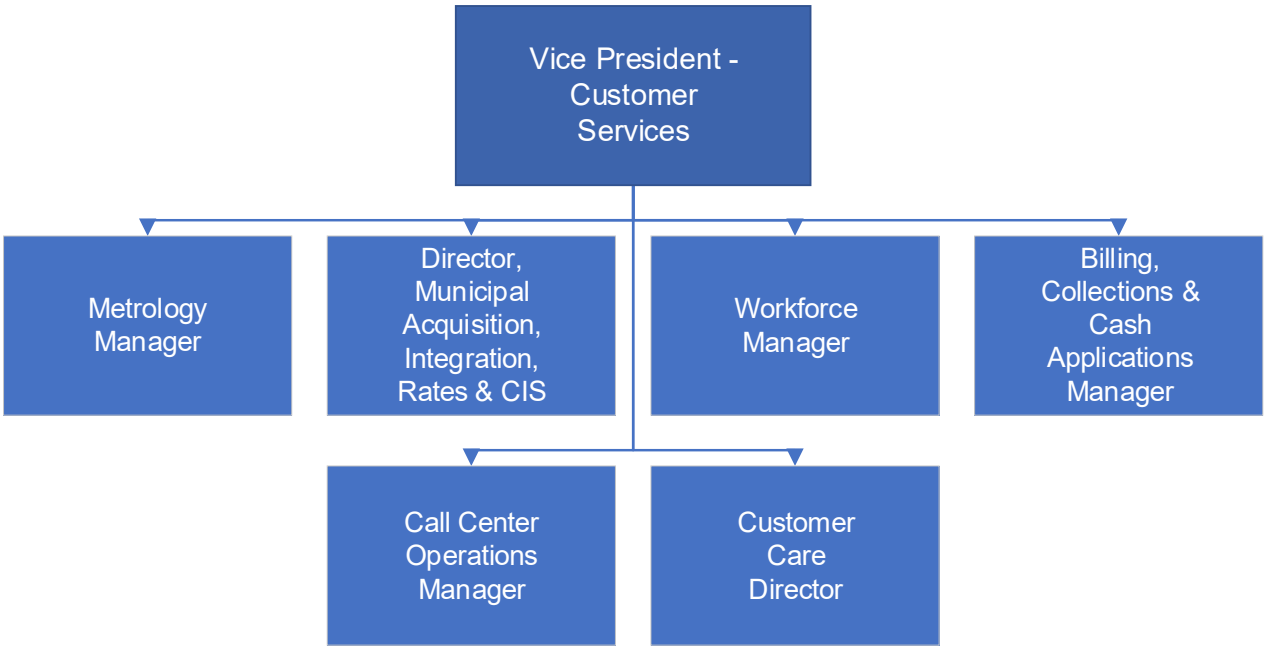
Background

As discussed in Chapter II – Background, Essential is the holding company for three Pennsylvania regulated utilities: Aqua PA, Peoples Natural Gas Company (PNGC) and Peoples Gas Company (PGC). PNGC and PGC are collectively referred to as the Peoples Companies. The customer service functions are handled independently between Essential's water and wastewater subsidiaries (e.g., Aqua PA) and its newly acquired natural gas interests. This chapter highlights each groups' respective customer service functions.

A. Aqua Pennsylvania

Aqua PA provides water utility service to approximately 400,000 residential, 22,000 commercial, 800 industrial, and 14,000 public, fire, and other customers throughout its service territory. Generally, Aqua PA's customer service functions are provided by employees of Aqua Services, Inc. (Aqua Services). Exhibit XI-1 reflects the customer service organization as led by Aqua Services' Vice President – Customer Services (VP-CS).

Exhibit XI–1
Aqua Services, Inc.
Customer Service Organizational Chart
As of April 20, 2020



Source: Data Request A-EM-2, Attachment 6

The Aqua Services Metrology Manager has oversight for meter exchanges, including the management of capital spending associated with meters. According to the VP-CS, Aqua Services plans to transfer this function to the Operations department. However, as of the close of fieldwork, the reorganization had not occurred. Meanwhile, Aqua PA's operations department performs all meter reading activities. As detailed in Chapter II-Background, Aqua PA's service territory is separated into four regions. Each region is further broken down by meter reading routes. Nearly 100%[33] of Aqua PA meters are radio frequency (RF) read enabled, thus nearly all meter reading is conducted through drive-by readings. Meter reading software creates alerts for missed reads throughout the route, which allows meter readers to reattempt to collect the missing reads as they navigate through the route. Typically, less than 0.5% of Aqua PA's meter reads are missed, however any significant number of missed reads (more than 20-30 readings out of five to eight thousand) will be reattempted the following day. Following which, missed reads will result in estimated customer bills.

Aqua Services' Director, Municipal Acquisition, Integration, Rates, and CIS (Director – Rates) oversees changes to the customer information system (CIS) affecting rates. Primarily, this includes ensuring the entry of rate adjustments are accurate and oversees bill accuracy testing. In addition, Aqua Services' Director – Rates is also responsible for ensuring acquired customers from new water and wastewater acquisitions are accurate and integrated. Similarly, the Workforce Manager provides overall support through business analytics to all Aqua Services' customer service functions. Examples of the types of business analytics provided by the Workforce Manager include routine reporting of collections, billing, customer transactions, performance metrics, etc. and other day-to-day operational metrics or information. The Workforce Manager also provides analytics to support emerging customer service needs (e.g., adjustments to staffing levels to meet changes in workload) and rate case requirements.

Aqua Services' Manager for Billing, Collections, and Cash Applications oversees the billing, payment processing, and collections functions for Aqua PA. Customer bills for Aqua PA are processed every business day. Both e-billing and electronic payment options are available, including online, phone, text, and autopay. Additional remittance options include in-person at various third-party locations[34] and U.S. mail payments. Aqua PA's customer collections activities routinely begin 6 days after the billing due date (a late fee is accessed), generally ten-day termination notices are sent out once the amount past due exceeds $110[35], and customers are contacted three days prior to termination. Aqua PA residential customers may qualify for payment arrangements and/or low-income assistance. Exhibit XI-2 shows the number of customers and dollar amounts enrolled in payment arrangements annually. Terminated accounts are retained as inactive for a 30-day period, subsequently after that period, accounts are

[33] The only meters that cannot be read through RF technology are recently acquired customers. These meters are usually manually read via touchpad until they are replaced with RF meters. At the time of fieldwork, only one group of meters in the Southeast region still required manual readings.
[34] Third party locations include various local grocery and convenience stores that offer Western Union services (additional fee required).
[35] This threshold was decided to be a slightly higher amount than the average customers one-month bill for water and wastewater service.

sent to a third-party collection agency. Aqua PA's collections are discussed in greater detail in Finding and Conclusion No. 1.

Exhibit XI–2
Aqua Pennsylvania, Inc.
Number of Customers and Dollars Enrolled in Payment Arrangements
2017 – April 2020

	2017	2018	2019	2020^
PUC Arrangement	260	238	215	33
Company Arrangement	65,261	65,926	65,926	16,712
Total Number of Payment Arrangements	65,521	66,164	66,141	16,745
Total Amount	$37,986,691	$38,865,188	$42,710,573	$11,684,212

^ Through April 2020
Source: Data Request A-CS-12

Aqua Services' Call Center Operations Director oversees Aqua Customer Operations (ACO), quality assurance, and training. The ACO provides centralized call customer call support for all water/wastewater subsidiaries of Essential, including Aqua PA. The ACO is composed of two separate offices (Illinois and North Carolina) that function as an integrated call center. In addition, the ACO's customer service representatives (CSRs) can function remotely. As such, the ACO has been able to provide uninterrupted call center support to all Aqua customers throughout the COVID-19 pandemic. Quality assurance is maintained though call oversight and training. Meanwhile, transactional customer satisfaction surveys are used to help identify opportunities for operational improvement and are conducted on an ongoing basis. In addition to the transactional surveys, Aqua Services performed a relational customer experience survey in 2020 to provide a holistic perspective on the customer experience. This survey was aimed at benchmarking performance and identifying customer needs.[36]

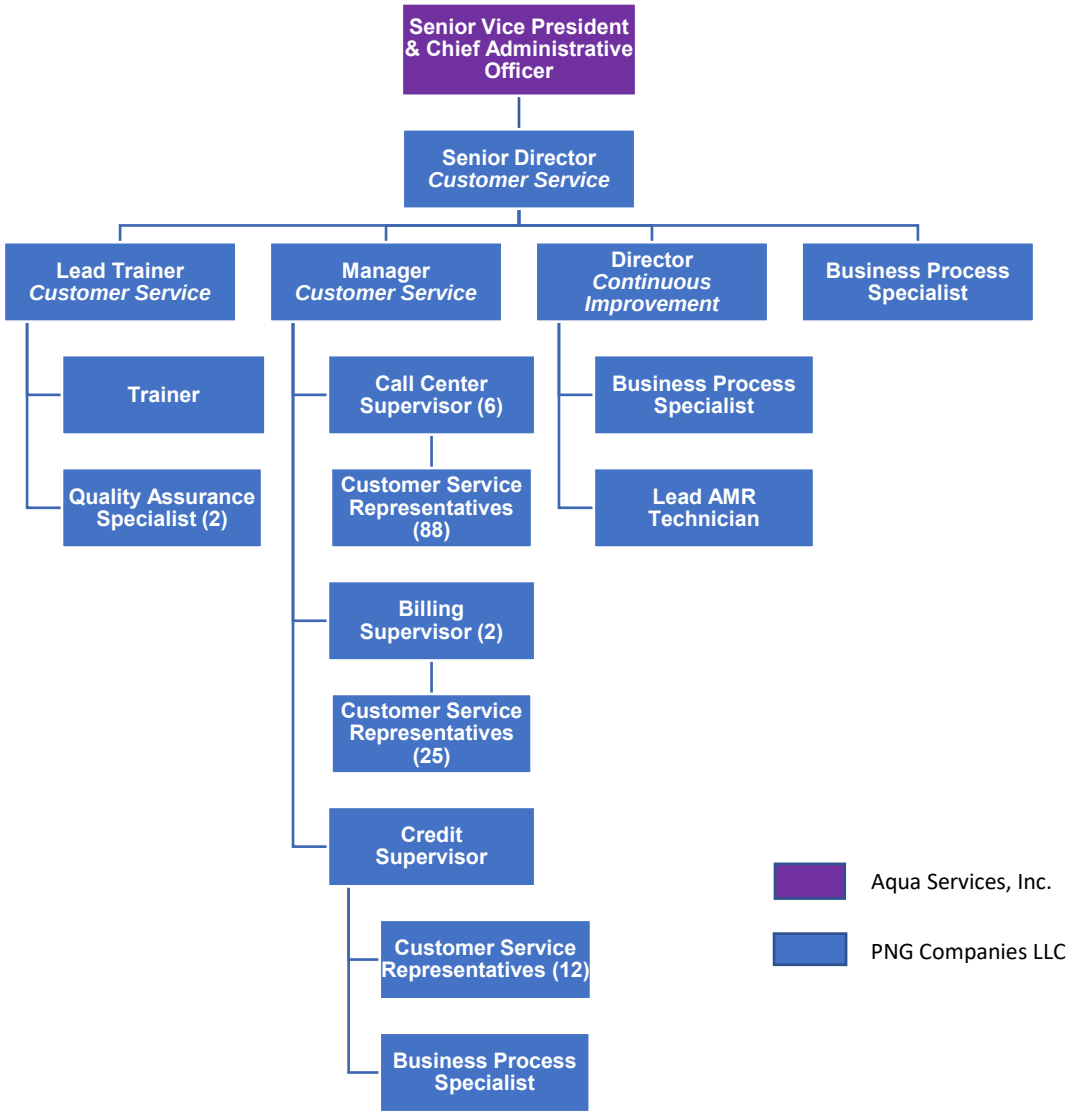
Aqua Services' Customer Care Director is responsible for addressing customer complaints and for providing back office support to ensure transactions within the CIS are completed. The Customer Care department oversees field service orders to verify completion and refers payment-troubled customers to financial assistance agencies. Aqua PA sponsors a monthly credit and grant program, Helping Hand. The Helping Hand program was expanded due to the COVID-19 pandemic and includes tiered credits for customers applied directly by CSRs, relaxed thresholds for income and past-due balance program requirements, and targeted outreach to low income and payment troubled customers. As of June 2020, approximately 300 customers had received proactive assistance.

[36] More than half of all Aqua PA respondents reported they were very satisfied or extremely satisfied overall, only 11% of respondents reported unsatisfactory (not very satisfied, not at all satisfied) overall. The survey addresses customers' ease of access for services, communication preferences, billing, water quality, etc.

B. The Peoples Companies

The combined reporting structure for the Customer Contact; Billing and Metering; and Credit operations positions that perform work for, or on behalf of, the Peoples Companies are displayed in Exhibit XI-3. The Senior Director of Customer Service (CS) of PNG Companies reports directly to the Senior Vice President and Chief Administrative Officer of Aqua Services Inc., whose responsibilities in part encompass the customer service function. The Senior Director of CS directs and oversees the Director of Continuous Improvement (i.e., automated meter reading, CS technology development, process improvement initiatives), the Manager of CS, and the Lead Trainer of CS. Additionally, a Business Process Specialist reports to the Senior Director of CS.

Exhibit XI–3
PNG Companies LLC
Customer Service Organization
As of May 2020



Source: Data Request CS-1

The Manager of CS directly oversees the Billing Department, Credit Department, and Customer Call Center (CCC). The CCC is divided up into three sections: Call Center, Billing Center, and Credit Center. As of May 2020, there were six Call Center Supervisors, two Billing Supervisors, and a Credit Supervisor who oversee 125 total Customer Service Representatives (CSRs) located in the CCC.

The CSRs are trained and able to answer incoming calls for credit, billing, and universal service questions for the Peoples Companies. There are 25 CSRs who report directly to the Billing Supervisor and generally answer billing calls; however, they are trained on all customer related inquiries. Similarly, there are 12 CSRs who report directly to the Credit Supervisor and mostly answer credits calls; however, they are also trained for other customer matters.

When a call comes through the CCC, it is directed to the appropriate center based on the customer's selection on the Interactive Voice Response (IVR), which is an automated caller response system which provides a spoken interface that directs incoming calls based upon the needs of the customer. The CSRs have a quick reference guide made up of commonly asked questions they can refer to when taking calls. Additionally, OpenScape, the voice and digital system used for customer contact, links with the SAP customer relation and billing system to retrieve customer account information based on the phone number used to dial in.

One of the ways call center performance is monitored is by the Pennsylvania Public Utility Commission's Bureau of Consumer Services (BCS). BCS collects and publishes reports on telephone access performance using the following three metrics:

- Busy-Out Rate – number of calls that receive a busy signal divided by the total number of calls received

- Call Abandonment Rate – number of calls that were abandoned (customer disconnects call during a period on hold) divided by the total number of calls received

- Calls Answered Within 30 Seconds – percentage of calls answered within 30 seconds by an IVR system or a CSR ready to render assistance

The CCC performance of these metrics for the years 2017-2019 is shown in Exhibit XI-4.[37] The CCC has maintained an average Busy-Out Rate rounded to 0% for the Peoples Companies throughout the period. The Call Abandonment Rate is historically between 1% and 2% for the Peoples Companies. For the period, the average Percentage of Calls answered within 30 seconds was between 83% and 84% for the Peoples Companies.

[37] Prior to 2017, a number of transitions occurred in the call center function at the Peoples Companies. There were multiple call centers for different utilities, and they reported their performance separately to BCS. By 2017, a singular call center was in place with the same data being reported for all the Peoples Companies. For ease of presentation, the reporting period of 2017-2019 has been used for our audit review.

Exhibit XI–4
The Peoples Companies
Customer Contact Center Performance
For the Years 2017 through 2019

Year	Busy-Out Rate	Call Abandonment Rate	Calls Answered Within 30 Seconds
2017	0%	1%	83%
2018	0%	2%	84%
2019	0%	2%	84%

Source: 2017-2019 BCS Customer Service Performance Reports

The Quality Assurance (QA) Department, overseen by the Lead Trainer, is responsible for observing five calls a month per CSR. The calls are distinguished by categories such as Billing, Credit, Emergency, End Service, and Start Service; the QA Specialist may choose which category call to observe. The scoring templates are shared with the CSR to purvey opportunities for improvement. The QA Specialists are required to do side by side reviews of the CSRs to get immediate feedback. A monitoring software is used to record the audio as well as the CSR's screen activity during each call. The recordings allow a QA specialist to not only hear the conversation, but review if the CSR is using the appropriate resources available to assist customers. The QA specialists can pause, rewind, and replay a segment to allow for a thorough evaluation. Trended performance data may also be shared to improve areas by additional training.

Field Collection System (FCS) is the mobile data collection engine utilized for the Automated Meter Reading (AMR) system. FCS collects data from multiple meter types and provides accurate, reliable meter data to meter data management and customer billing applications. FCS is used in conjunction with Mobile Collection System (MC3), which is used for drive by data collections and command control capabilities. When a meter read falls outside of the range, it will be processed and further investigated by a billing representative. As of April 2020, PNGC and PGC are at 99.1% and 97.3%, respectively, utilizing AMR in their service territories.

The Billing function is responsible for issuing bills in an accurate and timely basis. Customer payments are due 22 days from the date the billing is prepared. Currently, the most common ways that bills are paid is by mail, with the second and third most common way being through the IVR or on the website. Multiple reports are run on a regular basis to make sure reads are acceptable and followed up in cases where there are no uses on accounts or zero consumption reports. Also, annual consumption is reviewed to ensure customers are billed correctly.

The Credit department is responsible for collection processes on accounts in arrears. PNG Companies maintains contracts with multiple third-party collection agencies. The Credit Supervisor is responsible for monitoring the performance of the third-party collection agencies. There is a multi-tiered approach for third-party collection agencies. Accounts are placed with primary collection agencies for a nine-month period in which the agency can accept the full payment or offer a monthly installment plan.

After the nine-month collection period, remaining unpaid accounts not on an installment plan are placed with a secondary collection agency for an additional 12 months. After the 12-month period, accounts unpaid and not on an installment plan are placed with a tertiary placement tier. Tertiary placements have an undefined collection period and will usually remain with the agency until paid or until the age of the debt surpasses four years. If an account balance remains unpaid at this time, there is an option to transition to a warehouse tier where partial payments are accepted to satisfy the debt. Warehouse collections get assigned an account and simply try to reach the customer to collect.

The Peoples Companies offer assistance to low-income customers through the following programs:

- Customer Assistance Program (CAP) – CAP is an income-based payment plan that provides an affordable payment and incentivizes customers to make regular payments. Participants pay the lower of their calculated percentage of income payment or the average bill amount.

- Emergency Repair Program (ERP) – The ERP is an emergency program for those with incomes at or below 200% of the Federal Poverty Level to repair or replace their main heating appliances or leaking gas lines.

- Low-Income Usage Reduction Program (LIURP) – A weatherization program that implements energy saving home improvement measures into homes of qualified customers. To qualify, customers must be high users and must have income at or below 150% of the Federal Poverty Level. Customers with incomes between 151 and 200% of the Federal Poverty Level may receive services if special circumstances warrant assistance.

- Hardship Fund – Administered by Dollar Energy Funds, for customers with incomes at or below 200% of the Federal Poverty Level. The Fund includes shareholder contributions, customer contributions, and funds raised by Dollar Energy Fund.

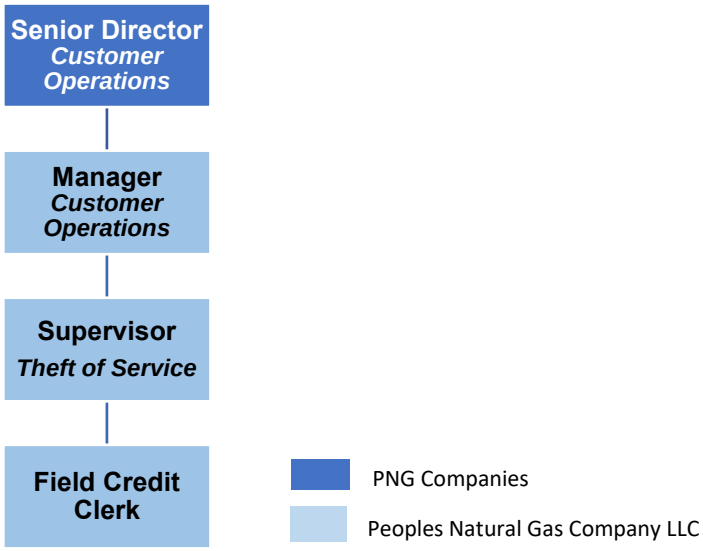
- Customer Assistance and Referral Evaluation Services (CARES) – Individual assistance for customers with special needs and/or protection from abuse orders and outreach efforts to educate and enroll customers in the Company's programs and/or access federal energy assistance.

- Low-Income Home Energy Assistance Program (LIHEAP) – Federally funded grant allocated to the state's Department of Human Services to helps eligible households maintain utility service during winter months.

The Theft of Service Department is responsible for detecting suspected theft of service that may occur. In November 2019, PNGC created a Gas Theft Supervisor position to lead the field efforts. A work order system was employed to schedule employees to investigate potential theft of service cases. Job aids and flowcharts were

developed to outline the investigation process and provide instruction. Additionally, customers can report potential theft by phone or email; information can be found on company communication correspondence. Furthermore, the Peoples Companies Emergency Center is staffed 24/7 and is prepared to take reports of suspected theft. Exhibit XI-5 shows the organization structure for the Theft of Service Department.

Exhibit XI–5
The Peoples Companies
Theft of Service Department
As of July 2020



Source: Data Request CS-52

Help at Peoples Now (HAPN) is a process for field employees to contact a member of the Customer Relations team when they encounter a vulnerable customer situation. The field employee uses the designated telephone number exclusive for HAPN to provide the address of the customer and explain the situation to the Customer Relations staff who can then assist. The Customer Relations team can contact and guide the customer towards energy assistance, CAP, or make referrals for other needs. They can also provide flexible payment arrangements and assist the customer in establishing those flexible payment arrangements if needed.

Findings and Conclusions

Our examination of the Customer Service function included a review of the companies' policies and procedures, staffing levels, management and reporting levels, performance levels, customer outreach and programs, call center statistics, etc. Based on our review, Aqua PA and/or the Peoples Companies should improve the effectiveness and efficiency of its customer service function by addressing the following:

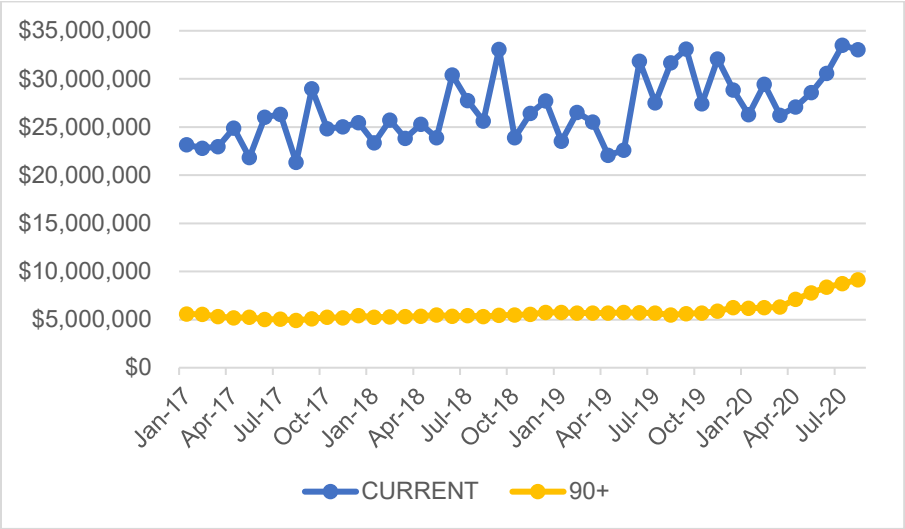
1. Due to the widespread economic effects of the COVID-19 pandemic, Aqua PA's collections have declined, and the Peoples Companies' aged collections are beginning to increase.

On March 13, 2020, the PUC issued an emergency order (see Docket No. M-2020-3019244) in response to the crisis created by the COVID-19 pandemic. The order set forth a moratorium on customer terminations for PA utilities regulated by the Commission (including electric, natural gas, water, wastewater, telecommunications, and steam).[38] Pursuant to the order, all terminations for non-payment were suspended for all PA PUC regulated utilities, including at Aqua PA and the Peoples Companies. This moratorium was later lifted, in part, by the Commission at its Public Meeting on October 8, 2020 but retained some protections for certain customers based on income. Due to the worsening COVID crisis and inability to terminate customers, consequently customer accounts receivable balances degraded, as shown in Exhibits XI-6 through XI-8.

As illustrated in Exhibit XI-6, there is significant degradation in Aqua PA's collections in excess of 90 days past due. Between January 2017 and December 2019, accounts receivable balances in excess of 90 days were less than $6,000,000. However, in the period observed between March and August 2020 that amount has increased by more than 40%. While the current accounts receivable balances have trended higher over the period, these increases have averaged between 5-8% annually. Conversely the marked rise in customer accounts receivable balances aged over 90-days during the COVID moratorium has been exponentially greater, far outpacing the incremental increases reflected in Aqua PA's current accounts receivable balances.

[38] After fieldwork, the Commission modified the moratorium to adopt enhanced consumer protections, which allows for termination to resume on November 9, 2020. The enhanced protections include: prohibiting the termination of service for low-income households (less than 300% of the Federal Poverty Level), special outreach for residential customers at risk of termination, payment arrangements for small businesses, waiver of connection/reconnection fees and late payment charges, two additional medical certifications with extensions, and flexible income verification procedures. The enhanced protections are set to expire March 31, 2021, unless modified by the PUC prior to that date.

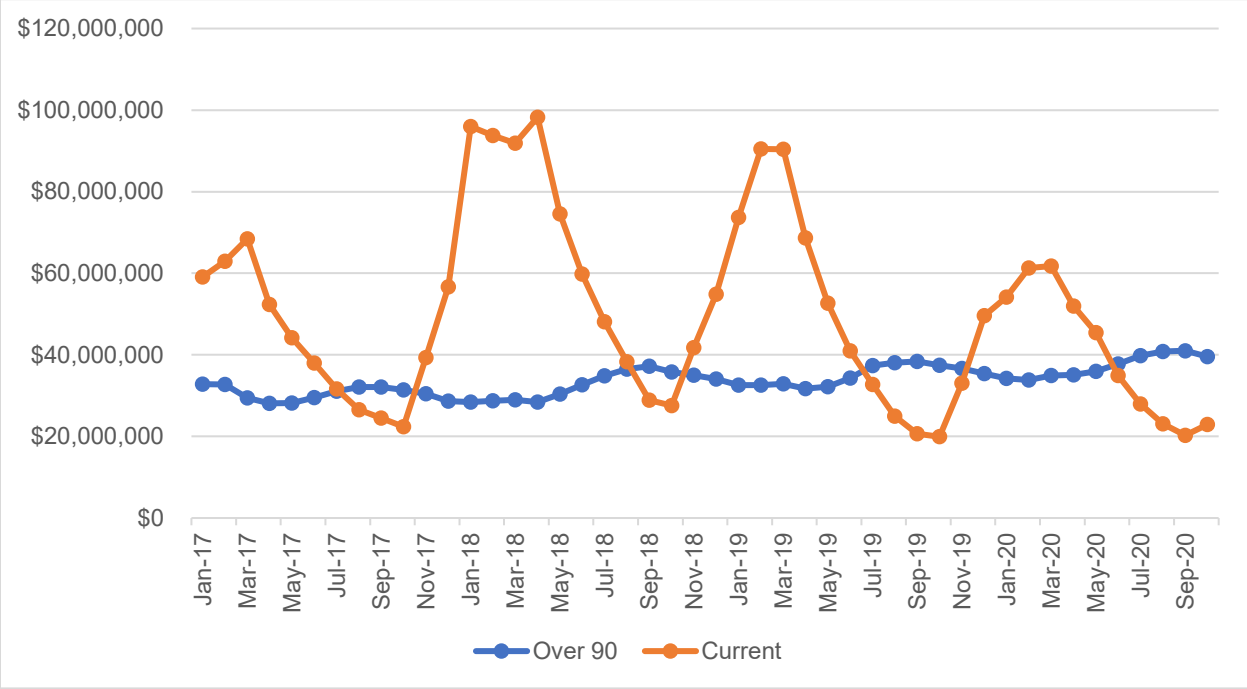
Exhibit XI–6
Aqua PA
Customer Accounts Receivable Current vs. Greater than 90 Days
January 2017 – August 2020



Source: Data Request A-CS-36

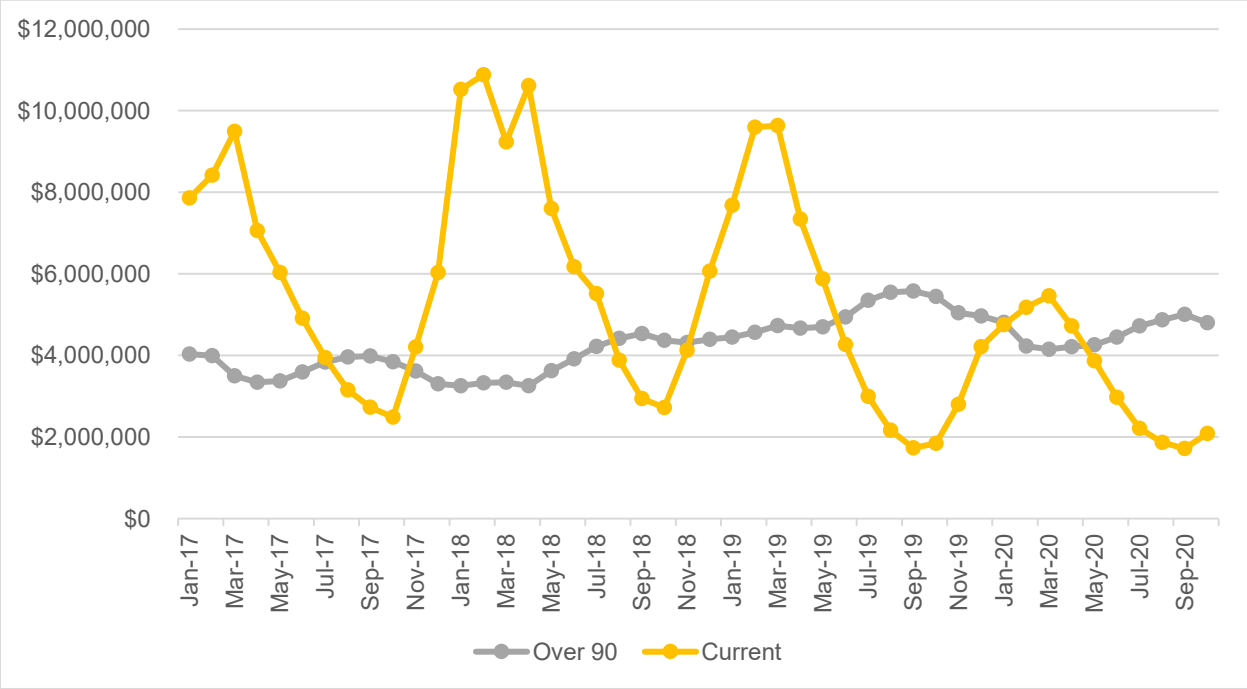
Furthermore, while not as pronounced as Aqua PA, the Peoples Companies have also experienced notable increases in their accounts receivable balances that are greater than 90 days past due, despite trends in lower overall current billings. As shown in Exhibits XI-7 and XI-8, natural gas distribution costs are cyclical, with the lowest current accounts receivable balances occurring in September/October. Partially attributed to warmer winters prior to 2020, lower current accounts receivable balances have resulted in decreasing long-term receivable balances. However, as demonstrated Exhibits XI-7 and XI-8 customer accounts receivable balances aged over 90 days in 2020 have continued to rise despite these lower current balances. While the increase in account receivables for the Peoples Companies is noteworthy, it is not as pronounced as Aqua PA.

Exhibit XI–7
Peoples Natural Gas Company
Customer Accounts Receivable Current vs. Greater than 90 Days
January 2017 – October 2020



Source: Data Request P-CS-29

Exhibit XI–8
Peoples Gas Company
Customer Accounts Receivable Current vs. Greater than 90 Days
January 2017 – October 2020



Source: Data Request P-CS-29

In response to the pervasive economic challenges created by the pandemic, Aqua PA has targeted outreach for low-income customers, posting assistance program information on its blog and website and including a pamphlet on the program as a billing insert. Furthermore, Aqua PA implemented changes to its assistance program to increase its effectiveness. The Helping Hand program has been expanded to maximize assistance for payment troubled customers. CSRs have been authorized to issue a tiered grant per customer (up to $75), in addition to the assistance program which includes ongoing bill credits, arrearage forgiveness, and conservation kits.

Also, in response to the COVID crisis, the Commission issued a secretarial letter dated May 13, 2020 at Docket No. M-2020-3019775 directing utilities to track expenses related to COVID. In this secretarial letter, the Commission recognized its prior emergency action may lead to increase costs and authorized the creation of a regulatory asset. Therefore, Aqua PA is monitoring the additional costs related to the COVID pandemic, which the company has identified approximately $700,000 over normal costs for the same period.[39] However, worsening accounts receivable balances will continue to place a financial burden on Aqua PA. Simply deferring action and seeking recovery from regulatory assets may unduly burden ratepayers. Furthermore, older account receivable balances are at an increased risk for non-collection in the future. Therefore, additional efforts should be taken to aid troubled customers before they are terminated or acquire balances that are unwieldly. The audit staff commends the measures already taken by Aqua PA to communicate aid available to distressed customers.

Nonetheless, due to the changing and uncertain environment brought about by the COVID pandemic, effective and ongoing communication is critical. Customers who have never experienced financial hardship in the past may not be aware of Aqua PA's assistance program. Furthermore, customers who failed to qualify for Helping Hand assistance in the past may now qualify under the expanded program. Increasing Aqua PA's outreach efforts can allow the greatest number of customers to maintain service, while reducing the company's overall risk of loss due to non-payment. For example, Aqua PA could expand its outreach by creating auto-generated mailers and/or phone calls on assistance programs after the first missed payment, streamlining access for assistance (i.e., web-based application for program), and leveraging new/existing relationships with local community based organizations to communicate directly with financially-distressed customers. Thus, Aqua PA should implement additional measures to communicate with distressed customers, consider additional social programs, leverage partnerships to for local, state and federal funding, etc.

2. Aqua PA's theft of service program does not include periodic refresher training for field service and meter reading staff.

As discussed previously, Aqua PA's meter reading function relies almost completely on radio frequency remote reads. Generally, meter readers simply drive by meters to acquire readings and do not interact, inspect, or see the meter. Instead, Aqua

[39] Estimated costs as of July 2020.

PA's theft of service program focuses on data assessment which provides additional oversight of metering.[40] In turn, the data collected is used to establish billing parameters (high/low meter reading thresholds), regular readings for all inactive meters, and investigation for consecutive missed reads. Therefore, physical inspections are limited to and initially prompted by the data collected by Aqua PA. While efficient, the remote meter reading technology has reduced Aqua PA's direct oversight of its physical assets.

Aqua PA's theft of service incidents have been detected infrequently (such as contractors who tie into existing water lines and fail to notify the company) or inadvertent theft of service (for example, connection of a sprinkler system into the service line before the meter). Such identified incidents of theft are shared between Aqua PA's meter operations department staff at monthly meetings. However, no other theft of service training for field service employees is conducted, nor are meters physically inspected, on a regular basis. Aqua PA management indicated that the field service staff is mainly composed of professionals within the plumbing industry who have extensive knowledge and experience. Nonetheless, the fact that theft occurs rarely supports continuing education. Ultimately, Aqua PA's theft of service training program does not include regular training on theft of service which could subject the company to an increased risk of loss. While remote technology is leveraged effectively by Aqua PA, over reliance on data driven metrics could potentially lead to incidents that are left unaddressed for a prolonged timeframe.

A robust theft of service training program should be two-fold, including both automated safeguards and new employee and periodic refresher training for field service and meter reading staff. Unusual circumstances, like those created due to theft of service, may be missed and could allow theft to continue or remain unaddressed. Therefore, Aqua PA should consider expanding their training and support to include routine training for its employees. For example, the Peoples Companies maintain a robust theft of service training program which is conducted annually to keep employees apprised of the changing theft landscape. The annual program includes a presentation with photos of examples of theft and meter tampering, as well as the theft discovery process, termination of service, and documentation. In addition, employees have access to review the gas theft process on demand via the Peoples Companies' webpage. The Peoples Companies' theft of service program includes:

- Dedicated Theft of Service Supervisor with oversight of nine gas theft employees who are responsible to investigate suspected theft and credit orders/investigations

- Monthly review, evaluating the different ways theft occurred and how terminations were performed, including recoup of costs

- Annual training for employees

- Customer education on dangers associated with natural gas theft of service

[40] Data is used to assess unauthorized meter usage and tamper indicators (e.g., cut communication wires) for its meters, which are read monthly and daily. The metrics established by the company are used to prioritize investigations for metering issues, including theft of service.

3. Aqua Services' legacy Customer Information System is cumbersome, lacking intuitive screen progressions and workflows offered by other customer information systems.

During the demonstration of Aqua's CIS, the audit staff observed a serviceable but antiquated platform. Several less than optimal conditions were observed, including:

- Numerous icons requiring operators to memorize the access points for a variety of commands
- Billing histories could be accessed multiple ways
- Customer premise/account searches where information was incomplete required the operator to enter a wildcard command to complete
- All customer payments by phone[41] require use of a third-party transfer to collect

Complex systems, such as the legacy CIS used by Aqua Services' CSRs require sustained focus to navigate and require specific, pertinent information from callers. During the sample call observation conducted during fieldwork, the audit staff noted several occurrences where the system impeded active listening skills of the CSRs. In the opinion of the audit staff, the complexity of navigation within the CIS (i.e., wildcard searches, service addresses not found, work order searches, billing history searches, transfers for pay by phone, etc.) distracted the CSRs from what the customers were attempting to convey and/or extended the overall length of the call.

Aqua Services' CIS is supplemented by a resource program that provides CSRs with the ability to research more complex customer questions. However, it is not integrated with the legacy CIS. Thus, the resource program requires users to access a separate system for support. Research or links layered into the CIS would reduce the effort required by CSRs to access related information quickly and ultimately improve call handling times. However, adding functionality to an already antiquated system may not be prudent.

Meanwhile, scripted system workflows and intuitive CIS platforms allow for company customization to streamline operations and provide improved customer service interactions. Further, user-friendly progressions create consistency in customer service practices and serve to streamline the CSR training process by establishing automated steps to resolve customer inquiries. Therefore, it is our opinion that the current CIS functionality may not provide the company with the most optimal performance for CSRs to navigate and assist customers and should be replaced.

Aqua Services is currently undergoing implementation of SAP to replace its major information systems, except for its legacy CIS. Aqua Services plans to start the process of replacing its legacy CIS in 2023. In reviewing the Peoples Companies' SAP-

[41] Alternatively, Aqua PA has an online portal for customers that have signed up and have an online account, but again, additional action must be taken by the customer to remit payment.

based CIS, audit staff found that SAP could potentially provide improvements over Aqua Services' legacy CIS. While it is still too early to determine how or what system Aqua Services will use, the audit staff contends a new platform is needed. Any new CIS should provide CSRs with seamless integration of resources through scripting and automation. This type of integration will be critical to provide the most optimal customer service experience and performance for Aqua PA customers.

4. Effective net collection goals have not been established for collection agencies at the Peoples Companies.

The Peoples Companies do not bifurcate net collection goals between primary and secondary collection agencies, Currently, a collective 10% gross collection goal has been established for primary and secondary collection agencies. The Credit Supervisor uses reports to monitor the performance of the third-party collection agencies on a regular basis. Additionally, the Customer Service Manager reviews and tracks the monthly performance for each collection agency on an individual basis. The Credit Department stated that collection agencies are expected to collect 10% of the amount that is placed, for primary and secondary efforts; however, they were unable to provide when and how this goal was established. The overall collection performance is compared to the gross collection goal rather than each individual collection agencies performance. Typically, the audit staff have seen the performance of collection agencies monitored against separate goals set for primary collections and secondary collections. This is due to the nature and increased difficulty in collecting the placement of secondary collections.

Collection goals should be based on net collection results to evaluate actual recoveries. Gross collection results include commissions paid to the agencies which can inflate perceived performance. The PUC auditors have seen other natural gas distribution companies with net collection goals of 8% - 10% for primary collections and 1% for secondary collections. Developing and implementing net collection goals for primary and secondary collections provides meaningful criteria with which to evaluate collection results type. In addition, the performance of each collection agency needs to be measured against the respective goals to motivate third-party collection agencies to improve. Any third-party collection agency that continues to not achieve goals should be replaced with another third-party collection agency.

Exhibit XI-9 details PNGC's primary and secondary performance for the period 2015 through June 2020. PNGC has contracted four collections agencies over the period and had mixed collection performance. Primary and secondary net collection performance ranged from 1.75%-10.65% and 0.04%-0.70%, respectively.

Exhibit XI–9
Peoples Natural Gas Company
Primary and Secondary Collection Performance
For the Years 2015 through June 2020

Year	Placed	Gross Collected	Net Collected	Commission	Gross%	Net%
Primary Collections						
Agency 1						
2015	$12,197,158	$1,527,734	$1,298,574	$229,160	12.53%	10.65%
2016	$14,356,204	$1,494,048	$1,269,941	$224,107	10.41%	8.85%
2017	$15,832,326	$1,512,706	$1,285,800	$226,906	9.55%	8.12%
2018	$7,108,639	$454,396	$386,237	$68,159	6.39%	5.43%
Agency 2						
2018	$7,070,638	$490,930	$428,827	$62,103	6.94%	6.06%
2019	$6,649,885	$797,964	$694,847	$103,117	12.00%	10.45%
2020	$1,359,587	$164,445	$143,068	$21,377	12.10%	10.52%
Agency 3						
2018	$1,105,864	$21,782	$19,400	$2,382	1.97%	1.75%
2019	$6,165,988	$631,818	$562,922	$68,896	10.25%	9.13%
2020	$1,220,644	$123,266	$109,670	$13,596	10.10%	8.98%
Agency 4						
2019	$5,841,041	$534,327	$475,613	$58,714	9.15%	8.14%
2020	$1,282,872	$113,966	$101,438	$12,528	8.88%	7.91%
Secondary Collections						
Agency 2						
2018	$49,738,101	$116,647	$101,630	$15,017	0.23%	0.20%
2019	$720,646	$2,347	$2,042	$305	0.33%	0.28%
2020	$2,861,395	$20,659	$17,973	$2,686	0.72%	0.63%
Agency 3						
2018	$4,797,359	$2,291	$1,878	$413	0.05%	0.04%
2019	$2,972,806	$12,397	$10,166	$2,231	0.42%	0.34%
2020	$2,965,599	$25,562	$20,840	$4,722	0.86%	0.70%
Agency 4						
2019	$3,831,089	$13,475	$11,050	$2,425	0.35%	0.29%
2020	$3,056,308	$24,455	$20,053	$4,402	0.80%	0.66%

Source: Data Request P-CS-31 and PUC auditor analysis

Exhibit XI-10 shows PGC's primary and secondary performance for the years 2015 through June 2020. PGC utilizes the same four collection agencies as PNGC. Primary and secondary net collection performance ranged from 0.85%-11.60% and 0.02%-1.07%, respectively.

Exhibit XI–10
Peoples Gas Company
Primary and Secondary Collection Performance
For the Years 2015 through June 2020

Year	Placed	Gross Collected	Net Collected	Commission	Gross%	Net%
Primary Collections						
Agency 1						
2015	$2,357,204	$321,742	$273,481	$48,261	13.65%	11.60%
2016	$2,162,550	$294,824	$250,601	$44,223	13.63%	11.59%
2017	$2,144,670	$280,595	$238,506	$42,089	13.08%	11.12%
2018	$598,600	$48,335	$41,085	$7,250	8.07%	6.86%
Agency 2						
2018	$460,607	$14,928	$13,007	$1,921	3.24%	2.82%
2019	$1,133,040	$123,734	$107,648	$16,086	10.92%	9.50%
2020	$161,894	$23,985	$10,942	$13,043	14.82%	6.76%
Agency 3						
2018	$136,967	$1,308	$1,164	$144	0.95%	0.85%
2019	$925,695	$115,572	$102,890	$12,682	12.48%	11.11%
2020	$117,098	$14,240	$12,674	$1,566	12.16%	10.82%
Agency 4						
2019	$1,126,156	$104,322	$92,846	$11,476	9.26%	8.24%
2020	$157,288	$14,110	$12,558	$1,552	8.97%	7.98%
Secondary Collections						
Agency 2						
2018	$5,657,235	$11,955	$10,401	$1,554	0.21%	0.18%
2019	$60,219	$262	$228	$34	0.44%	0.38%
2020	$484,948	$2,883	$2,508	$375	0.59%	0.52%
Agency 3						
2018	$686,777	$169	$138	$31	0.02%	0.02%
2019	$209,299	$2,742	$2,249	$493	1.31%	1.07%
2020	$613,261	$2,619	$2,148	$471	0.43%	0.35%
Agency 4						
2019	$327,947	$994	$815	$179	0.30%	0.25%
2020	$623,513	$521	$427	$94	0.08%	0.07%

Source: Data Request P-CS-31 and PUC auditor analysis

If PNG Companies had achieved net collections of 1% on its secondary placements, PNGC could have realized an additional $128,000 in secondary net collections for the years 2018, 2019 and 2020 YTD (or approximately $51,000 annually). Likewise, PGC could have realized an additional $67,700 in secondary net collections for the 2018, 2019 and 2020 YTD (or approximately $27,000 annually).

5. The Peoples Companies have experienced below average customer satisfaction with contacting the customer contact center when compared to a panel average of Pennsylvania Natural Gas Distribution Companies (NGDCs).

The Pennsylvania Public Utility Commission's (PUC's) Bureau of Consumer Services (BCS) publishes an annual report called the Customer Service Performance Report that includes customer satisfaction metrics for several Pennsylvania NGDCs. Customer satisfaction and customer service metrics are important to measure because

they can increase customer loyalty, retention, and revenues by providing insight into what your customer needs and wants. Exhibit XI-11 compares the Peoples Companies' customer satisfaction for amount of time to wait to speak to a representative to a panel of NGDCs for the years 2017-2019. The performance of the Peoples Companies was slightly below the panel average for 2017 and 2018.

Exhibit XI–11
The Peoples Companies
Satisfaction with Wait to Speak to a Representative
For the Years of 2017 through 2019

	2017	2018	2019
Columbia Gas of PA	86%	87%	86%
UGI Penn Natural	87%	83%	86%
UGI-Gas	88%	87%	89%
NFG	94%	91%	90%
Panel Average	**89%**	**87%**	**88%**
Peoples Companies	**86%**	**85%**	**88%**

Source: 2017-2019 BCS Customer Service Performance Reports and PUC auditor analysis

As shown in Exhibit XI-12, the Peoples Companies customer satisfaction with ease of using the automated telephone system was lower than the panel average of other PA NGDCs for the period 2017 and 2018.

Exhibit XI–12
The Peoples Companies
Ease of Using Automated Telephone System
For the Years 2017 through 2019

	2017	2018	2019
Columbia Gas of PA	83%	85%	81%
UGI Penn Natural	82%	83%	82%
UGI-Gas	84%	83%	83%
Panel Average	**83%**	**84%**	**82%**
Peoples Companies	**80%**	**81%**	**84%**

Source: 2017-2019 BCS Customer Service Performance Reports and PUC auditor analysis

Exhibit XI-13 compares the Peoples Companies customer satisfaction with ease of reaching the company to the panel of other PA NGDCs for the period 2017-2019. The Peoples Companies matched the performance of the panel average in 2017 but was slightly lower in 2018 and 2019.

Exhibit XI–13
The Peoples Companies
Satisfaction with Ease of Reaching the Company
For the Years 2017 through 2019

	2017	2018	2019
Columbia Gas of PA	92%	90%	92%
UGI Penn Natural	90%	88%	89%
UGI-Gas	90%	89%	91%
NFG	93%	93%	92%
Panel Average	**91%**	**90%**	**91%**
Peoples Companies	**91%**	**89%**	**90%**

Source: 2015-2018 BCS Customer Service Performance Reports and PUC auditor analysis

In addition to the customer satisfaction data from the BCS Customer Service Performance Reports, the Peoples Companies conducts their own customer satisfaction surveys. The goal for customer satisfaction performance is to stay "aligned" with a three-year average of other similar companies, but do not establish a specific level to achieve. Additionally, the primary focus is to achieve settlement goals and use those for performance management of the customer service department. Exhibit XI-14 shows the customer satisfaction related to the IVR for customers of PNGC and PGC in terms of IVR choices, IVR Ease, and IVR Overall Satisfaction for the period 2015 through September 2020. The average of the reported customer satisfaction for the period for each category was as follows for PNGC: IVR choices - 82.9%; IVR Ease - 83.0%; and IVR Overall Satisfaction - 84.2%. The average of the reported customer satisfaction for the period for each category was as follows for PGC: IVR Choices - 86.1%; IVR Ease - 83.3%; and IVR Overall Satisfaction – 85.7%.

Exhibit XI–14
Peoples Natural Gas Company
Customer Satisfaction Survey Results
For the Years 2015 through September 2020

	IVR Choices		IVR Ease		IVR Overall Satisfaction	
	PNGC	**PGC**	**PNGC**	**PGC**	**PNGC**	**PGC**
2015	81.6%	83.2%	83.8%	80.8%	83.2%	81.3%
2016	80.1%	84.6%	80.0%	82.8%	81.2%	85.2%
2017	82.0%	83.9%	83.3%	81.9%	84.4%	84.1%
2018	84.3%	82.6%	82.0%	80.8%	84.4%	84.5%
2019	84.0%	95.8%	81.7%	87.8%	84.6%	93.9%
2020 YTD	85.7%	86.4%	87.1%	85.9%	87.4%	85.1%

Source: Data Request CS-13

PNG Companies completed a redesign of the IVR in 2018 which included the following: reducing the number of menu options; introducing an upfront option to be connected to a representative, including an interactive self-service option; and implementing a chat bot, which will be completed by the end of 2020. Chat bot will give customers the availability to text, giving them the ability to self-serve with the ability to

connect with a live agent. This is an alternative way for the customers to interact with Peoples. The redesign appears to have improved customer satisfaction of IVR choices for both PNGC and PGC in 2019 and 2020 YTD compared to prior years, but there appears to be a mixed response for the other metrics between customers of PNGC and PGC.

In general, the Peoples Companies' customer satisfaction levels for contacting a representative or ease of using the IVR tends to be performing slightly below the panel average of other PA NGDCs. In addition, the Peoples Companies survey for customer satisfaction of using the IVR; however, they have not established goals for the desired levels of customer satisfaction. Therefore, it is difficult to determine what needs to be improved and to what degree. At a minimum, the Peoples Companies should establish goals to strive to perform at the same level as the average performance of peers or better.

6. The Peoples Companies improperly reported arrearage amounts to the Bureau of Consumer Services for the Universal Service Program & Collection Performance Report.

Upon review of the BCS Universal Service Program & Collection Performance Report, the audit staff noted that the overall average arrearages for the Peoples Companies increased over the period of 2016-2018. Exhibit XI-15 shows the overall average arrearages for the years 2015 through 2018. The overall average arrearages for Peoples and PNGC-Equitable have increased from 2016 to 2018; Peoples Companies - $198 up to $351 (increase of $153 or 77.1%), and PNGC-Equitable - $189 up to $313 (increase of $124 or 65.6%).

Exhibit XI–15
Peoples Companies and PNGC-Equitable
Average Customer Arrearage
For the Years 2015 through 2018

	2015	2016	2017	2018	2019
Peoples Companies	$359	$198	$270	$351	$243
PNGC-Equitable	$371	$189	$240	$313	$214

Source: 2015-2019 USP & Collections Reports

The audit staff followed up with the Peoples Companies to understand the increase in arrearage amounts from 2016 to 2018. Peoples stated the reporting query used to pull the data for this report was not updated to accommodate the newest Payment Arrangements. Part of the balances fell out of the "Payment Arrangement" grouping causing balances to be incorrectly categorized. Additionally, when a payment arrangement is deactivated to create another arrangement, the old record is not deleted, which caused the reporting to be inaccurate. The Peoples Companies have since fixed this issue when made aware by the audit staff. Also, the Peoples Companies stated the Budget Billing reporting was a factor as actual balances resulting

in a credit were not factored into the reporting. As a result, a customer who overpaid more than their account balance would result in a credit balance. The Peoples Companies believe these two issues influenced the increase in total arrearage amounts.

Additionally, some customers on budget billing pay the actual balance instead of the budget amount. This then places a debit on their account that is considered past due. The accounts are past due from a budget perspective but theoretically have a zero balance. These 'past due' debits inflated the arrearage amounts. The system figures out what the Peoples Companies asked the customer to pay and what the customer did pay so they had a partial unpaid amount on the account, which was being considered arrearages. The Peoples Companies uses multiple reports to manage arrearages; however, each report is used for a different purpose and may not tie directly to the arrearage amounts sent to BCS.

The data used to manage and report arrearage levels should represent accurate arrearage levels based strictly on amounts due per customer per usage. Company provided data should be accurate for BCS customer service and performance reports, in order to properly benchmark the customer service metrics of electric and natural gas distribution companies. The Peoples Companies will need to address any data integrity issues moving forward because this data is relied upon by BCS and other regulators.

Recommendations

1. **Continue outreach efforts to engage payment troubled customers, leverage low-income resources, grants, and programs to mitigate the overall level of unpaid customer balances, and accelerate first contact with customers who miss a payment.**

2. **Develop periodic refresher training, including documentation of instances of theft of service, meter tampering, unauthorized tie-ins, etc. to ensure new and existing staff are kept apprised of recent cases, investigation outcomes, and safety precautions for Aqua PA.**

3. **Improve the functionality and workflow progression provided by Aqua Services' customer information system.**

4. **Benchmark with similar utilities to set separate net collection goals for primary and secondary collection agencies at the Peoples Companies and measure each collection agency to the respective collection goal.**

5. **Establish goals to achieve for customer satisfaction performance at the Peoples Companies and complete an analysis at the end of 2021 to evaluate the effectiveness of the IVR redesign, including Chat Bot, in improving customer satisfaction metrics.**

6. **Perform an analysis of source data being gathered for arrearage level reports and remove any adjustments or inactive accounts that would adversely affect the integrity of arrearage data for the Peoples Companies.**

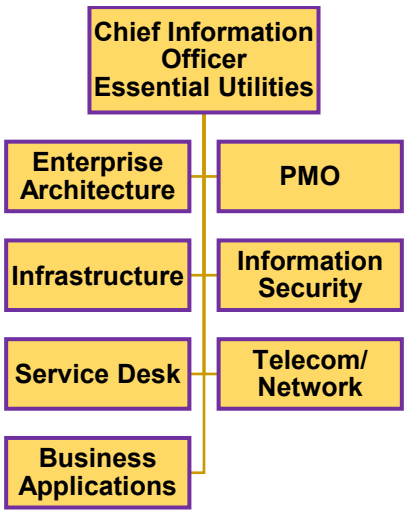
XII. INFORMATION TECHNOLOGY

Background

Peoples Natural Gas Company LLC (PNGC), and Peoples Gas Company LLC (PGC), collectively referred to as the Peoples Companies, are natural gas utility operating companies which are direct subsidiaries by PNG Companies LLC (PNG Companies) and ultimately owned by its parent Essential Utilities (Essential). Essential also operates regulated water and wastewater distribution companies including Aqua Pennsylvania, Inc. (Aqua PA). The corporate entity structure for Essential and its affiliates is displayed in Exhibit II-1 of Chapter II – Background. Additionally, an overview of the histories; service territories of PNG and PGC; the Aqua America acquisition of PNG Companies and creation of Essential are discussed in Chapter II as well.

Essential is in the process of merging and centralizing Information Technology (IT) departments from PNG Companies and Aqua Services Inc. (Aqua Services) into a single consolidated group at Essential within Aqua Services. The IT organizational structure will provide services to both gas and water utilities, and other subsidiaries, in the Essential portfolio. The functional structure is depicted in Exhibit XII-1. The reorganizing of departments and employees (once officially reorganized under Essential) will allow for optimal and efficient services to be provided across utilities. Immediately after the merger, Essential filled a new position, Senior Vice President (SVP) of Transformation (previously the Chief Information Officer (CIO) of PNG Companies), to complement their IT vision. The CIO of Aqua Services, under direct supervision of the SVP, has nine direct reports. Five are focused on water, three are focused on gas companies, and one is shared between water and gas.

Exhibit XII–1
Essential Utilities
Future Functional Structure of the Information Technology Department
Anticipated 2020 – 2021

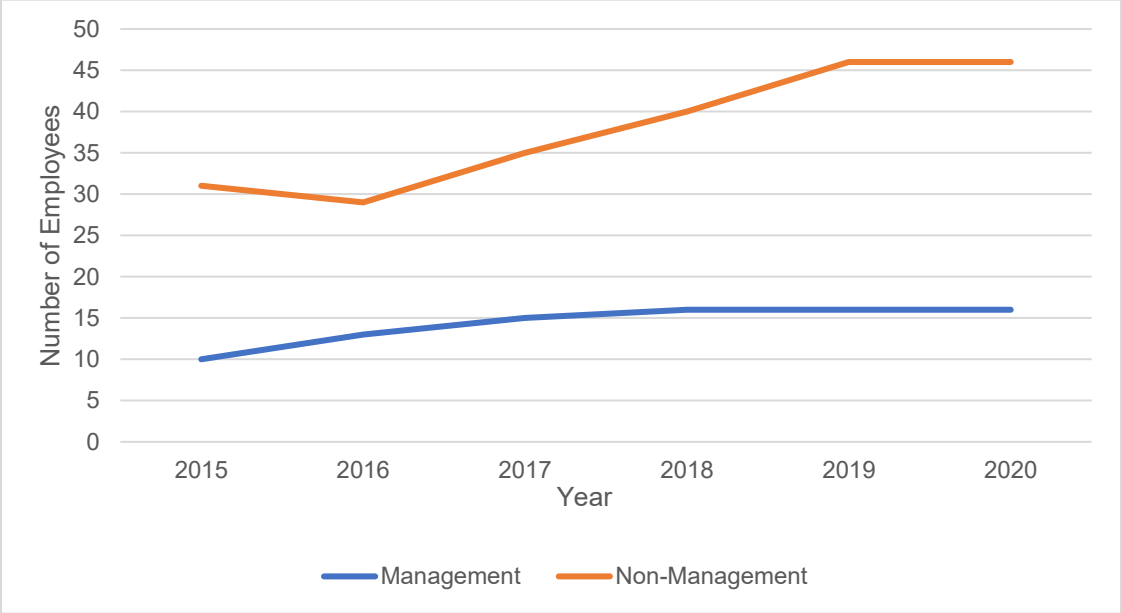


Source: Data Request P-IT-27

A. Aqua Pennsylvania

As mentioned above, Aqua PA receives all IT services from Aqua Services employees. Historically, Essential (then Aqua America) used a combination of full-time employees and long-term contractors to handle production support and strategic project work. In 2016, the balance was measured to be nearly 50/50 or 1 contractor for every IT employee. In 2017, the IT organization began to increase the work performed internally by hiring more employees. This transition allowed Essential's IT to build more in-house system/process knowledge while still leveraging strategic partnerships with contractors. It also allowed the IT department to develop effective succession plans for its management. This increase in staffing is depicted in Exhibit XII-2, which showcases the IT organization prior to the Peoples Companies acquisition.

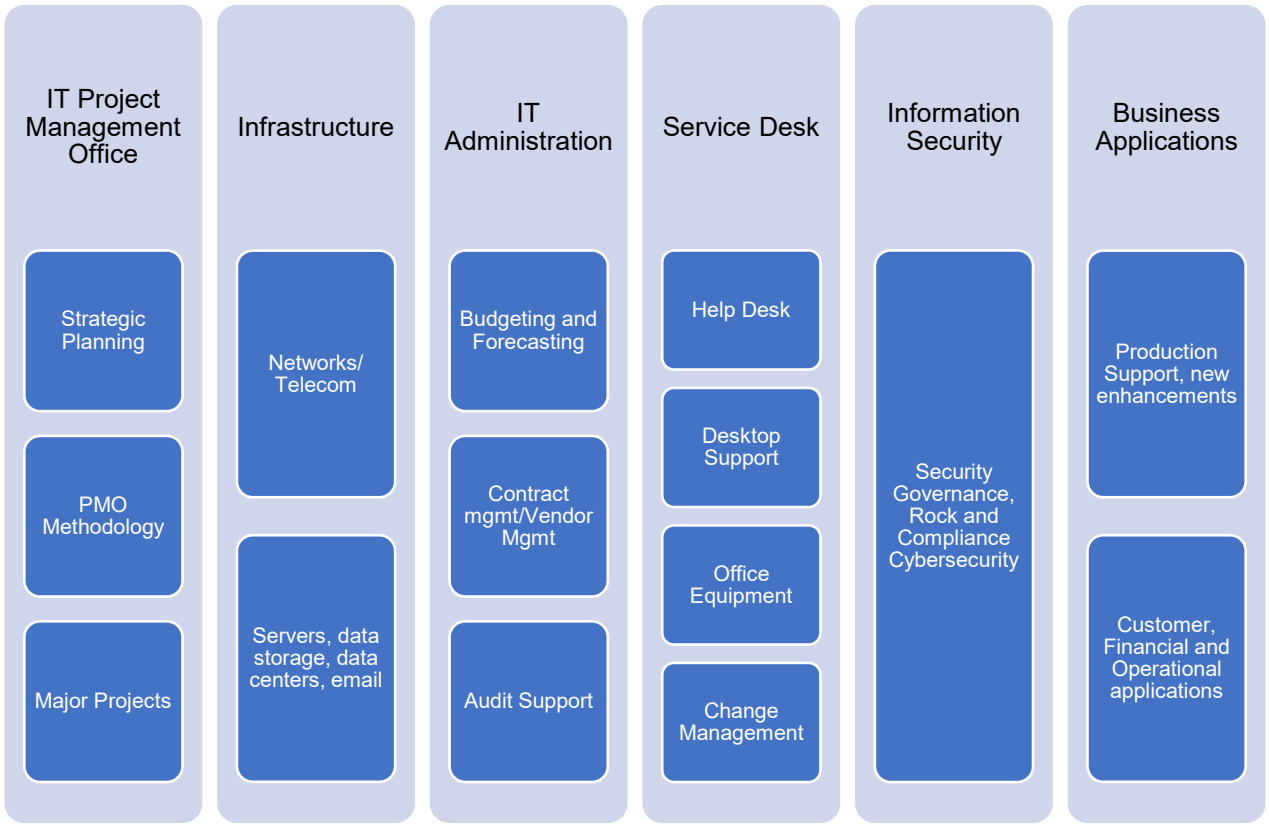
Exhibit XII–2
Aqua Pennsylvania, Inc.
Information Technology Staffing Levels
Prior to Acquisition of the Peoples Companies
For the Years January 1, 2015 through January 1, 2020



Source: Data Request A-IT-9

Reporting to the CIO, six IT groups have responsibilities for IT duties for Aqua PA. An overview of the six groups providing IT service to Aqua PA and their corresponding duties are shown in Exhibit XII-3.

Exhibit XII–3
Aqua Services, Inc.
Information Technology Department Functions
As of January 22, 2020



Source: Data Request A-IT-7

Prior to 2016, Aqua Service's Desk team was divided among three different IT teams – Infrastructure, Applications and PMO/Acquisitions. In 2016, the Service Desk team was reorganized to report directly to the CIO and a new Director position was approved to oversee it. The Service Desk team's efficacy is measured through monthly metric reporting such as the number of calls and emails received, number of new support tickets, and the aging of those tickets, as well as periodic employee surveys. Aqua PA has been proactive in embracing mobility technologies. Beginning in 2017, Aqua PA adopted a three-year refresh cycle for its tablets and laptops, ensuring the latest technology products are available to its employees.

In addition, Aqua PA has made numerous system upgrades over the years. For example, Aqua PA updated an application to allow for electronic time reporting rather than using paper timesheets. In addition, a new tool was added to create dashboards, or real time snapshots, of different service areas' performance such as Field Services operations or Finance operations. Prior to the use of these dashboards, specific information was created on an ad hoc basis and time consuming. This new system allows management to more effectively assess performance on a real-time basis. It is

important to note that these recent updates to Aqua PA were made with the anticipation for deploying a new time tracking system.

In anticipation of the Peoples merger, the companies previously known as Aqua America[42] (including Aqua PA) decided to implement an SAP Enterprise Central Component (ECC) system that would handle its core Finance, Supply Chain, Human Resources, Asset Management, and Plant Maintenance functions. In addition to the SAP ECC, Aqua PA would deploy SAP Customer Relationship Management (CRM), SAP Business Warehouse (BW), and SAP Process Integration (PI) to integrate other key systems. Essential and its subsidiaries began the preparation phase for this transition in March 2020. On September 1, 2020, Essential entered the Explore/Design phase in preparation for its data transition into the SAP environment for the first quarter of 2021. The SAP system will run concurrently with the legacy system while testing and training employees on the new SAP system. The system is scheduled to be deployed by the end of 2021 with Go-Live January 1, 2022. As of the time of this audit, Essential does not expect any significant delays in the transition to the SAP environment.

B. The Peoples Companies

At the Peoples Companies, the IT function had previously resided within PNGC but was subsequently transferred to PNG Companies to start the 2018 calendar year. The intent of the centralized approach is to provide optimal efficiency and the ability for the PNG Companies, Peoples Companies, and other PNG Companies subsidiaries to share network, server infrastructure, phone system and business applications. As shown in Exhibit XII-4, the PNG Companies IT function is under the direction of the Chief Information Officer (CIO) of Essential as of March 2020; previously IT reported to the CIO of PNG Companies. Direct reports of the Essential CIO include the Director(s) of IT Telecommunication (Telecom), IT Applications, and IT Cybersecurity & Infrastructure. Each department consists of infrastructure and application analysts, telecom engineers, and technicians. The duties of the IT Telecom, IT Applications, IT Cyber Security & Infrastructure and subgroups are summarized below:

- ***IT Telecom/Corporate Services*** – responsible for, but not limited to, managing, developing, and maintaining all aspects of telecommunication infrastructure, transport network, data network, voice network, and contact center, Help Desk and all PC Support for the Peoples Companies and other affiliates.

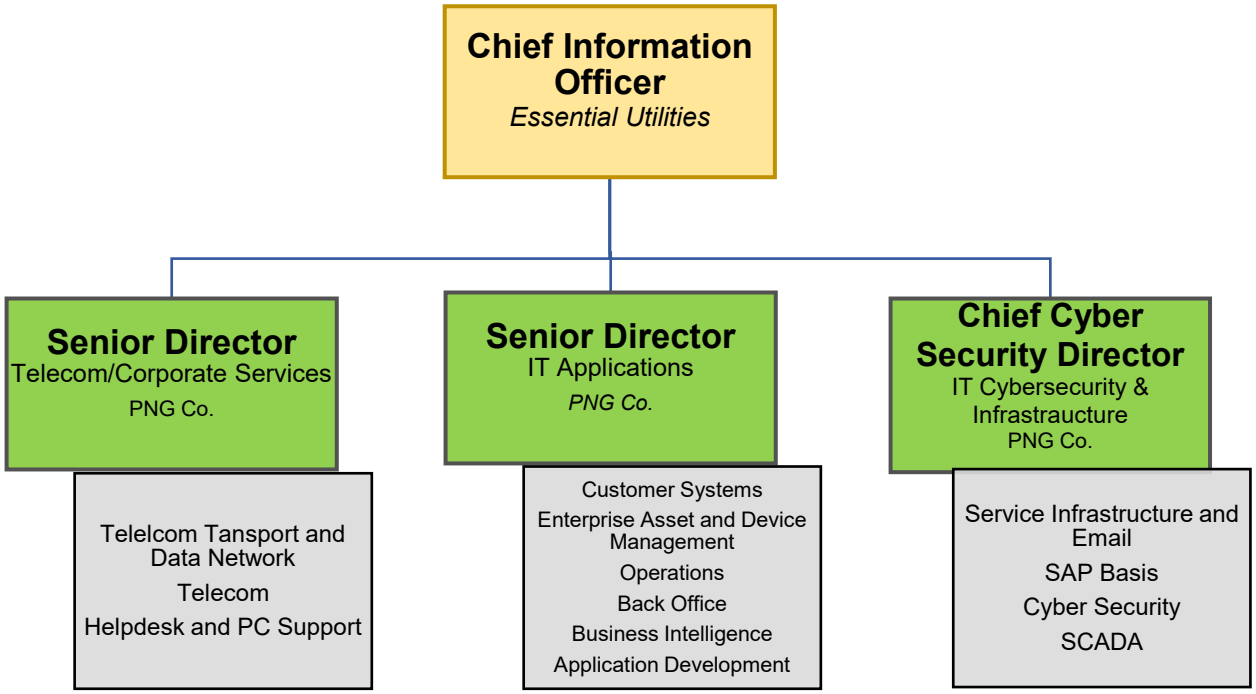
- ***IT Applications*** – responsible for, but not limited to, planning, implementation, maintenance, and support services for all aspects of the wide range of corporate software applications (SAP, Ventyx ServiceSuite, etc.) and ensuring that all strategic and tactical plans for applications and support are achieved.

- ***IT Infrastructure and Cyber Security*** – responsible for, but not limited to, selecting, implementation, management and directing all aspects of IT infrastructure & cyber

[42] After the acquisition of PNG Companies, Aqua America changed its name to Essential. However, PNG Companies already was using SAP and therefore is not included in this deployment.

security, server and data storage, cybersecurity practices, computer and network equipment inventory, and ensuring that all strategic and tactical plans for infrastructure, and support are achieved.

Exhibit XII–4
PNG Companies
Information Technology Department Organization
As of April 1, 2020



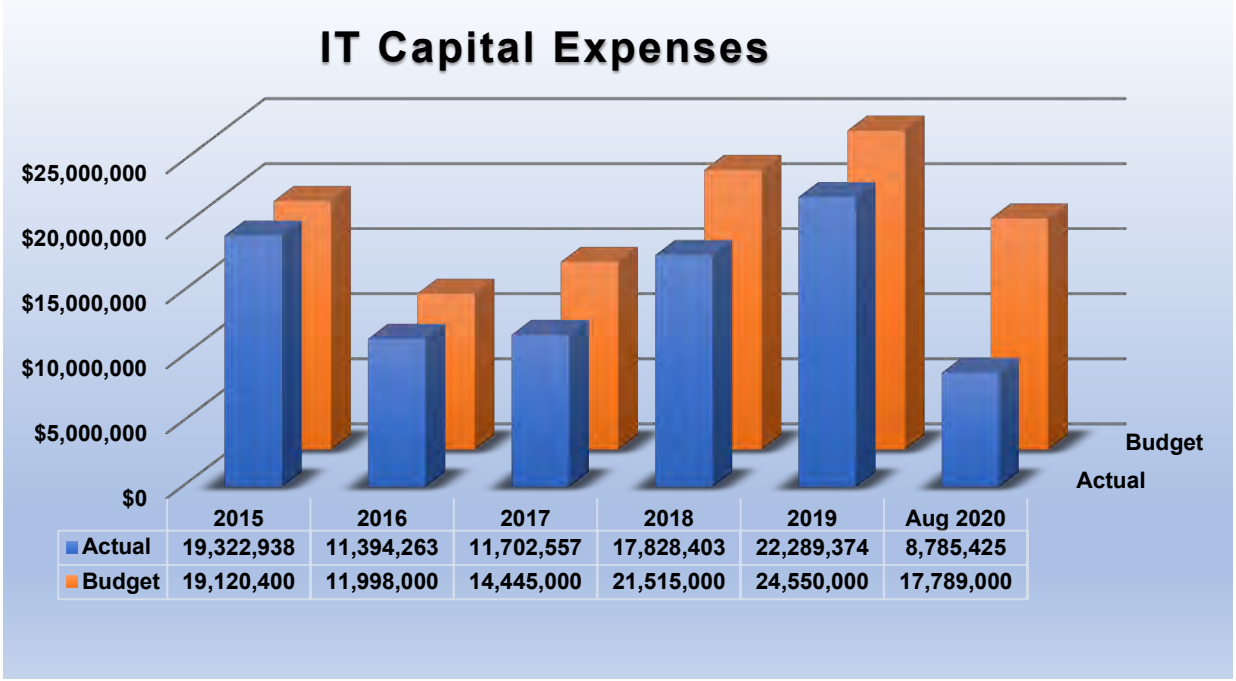
Source: Data Request No. PEM-2

The IT Capital and Operations & Maintenance (O&M) expenditures for PNG Companies for 2015 through August 2020 are displayed in Exhibit XII-5. Annual capital spending ranged from $19.3 million in 2015 to $22.2 million in 2019. Capital expenditures were higher during 2018 and 2019 as a result of initiatives/major projects related to call center upgrades, acquisition and installation of automated meter reading hardware and software upgrades, operational efficiency software implementation, and upgrading its e-account service. Annual O&M expenditures gradually increased from $22.7 million (2015) to $25.0 million (2019) to keep pace with increasing IT and cybersecurity requirements.

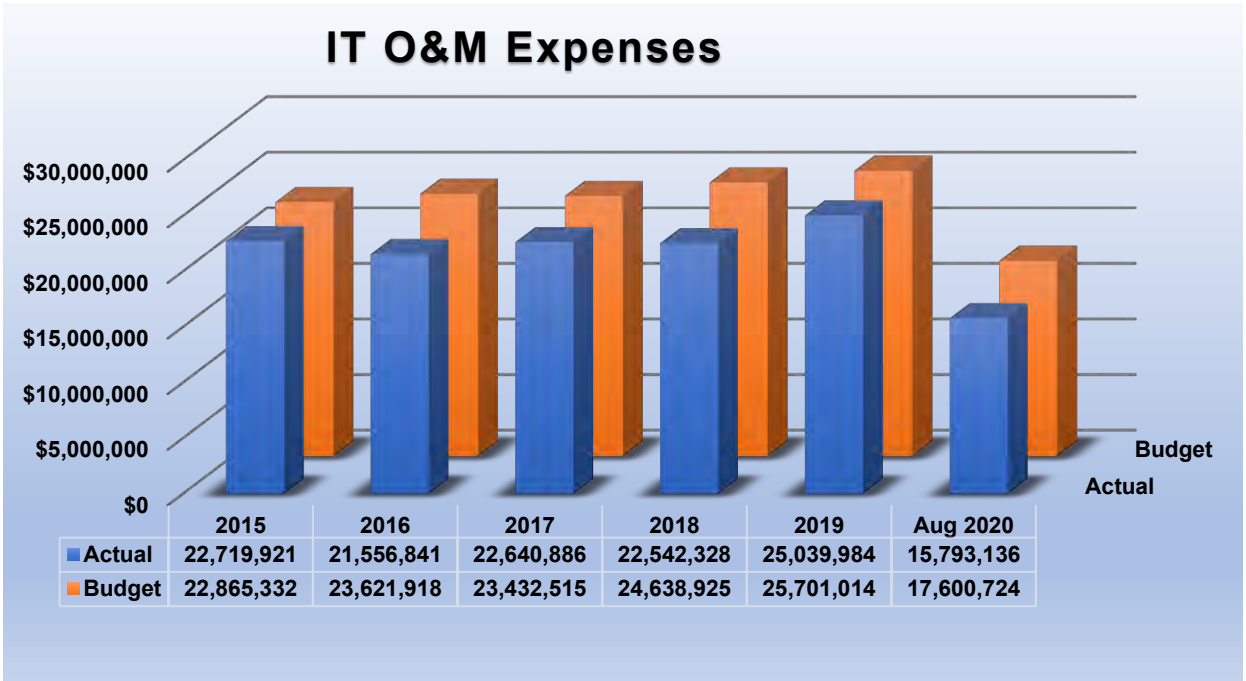
To optimize business system functionalities, existing systems need to be constantly updated and/or upgraded by implementing the newest technologies on the market. PNG Companies, in their efforts to enhance and ensure meeting designated goal(s), has various projects underway to modernize equipment and streamline IT processes, conduct annual IT/cyber security audits, and routinely provide employees with cyber awareness training sessions and materials. Due to their sensitive nature,

projects and audit results were provided to and reviewed by the audit staff but are not disclosed in this audit report.

Exhibit XII–5
PNG Companies
Operations & Maintenance and Capital Expenses
For the Years 2015 through August 2020



	2015	2016	2017	2018	2019	Aug 2020
Actual	19,322,938	11,394,263	11,702,557	17,828,403	22,289,374	8,785,425
Budget	19,120,400	11,998,000	14,445,000	21,515,000	24,550,000	17,789,000



	2015	2016	2017	2018	2019	Aug 2020
Actual	22,719,921	21,556,841	22,640,886	22,542,328	25,039,984	15,793,136
Budget	22,865,332	23,621,918	23,432,515	24,638,925	25,701,014	17,600,724

*Data through August 2020
Source: Data Request No. P-IT-25

Findings and Conclusions

Our examination of Information Technology included a review of the organizational structure, staffing levels, operational expenses, policies and procedures, cyber security measures, employee IT training techniques and all related information. Based on our review of IT efforts, no evidence came to our attention that would lead the audit staff to conclude that areas reviewed were not being addressed adequately.

Recommendations

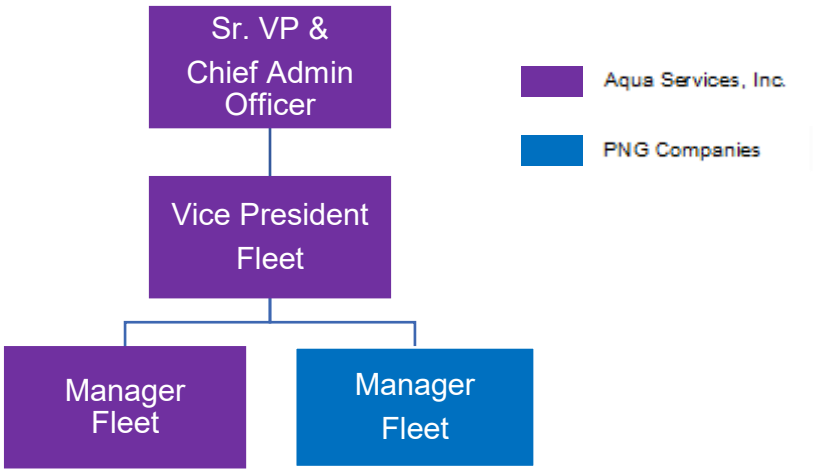
None

XIII. FLEET MANAGEMENT

Background

Peoples Natural Gas Company LLC (PNGC), and Peoples Gas Company LLC (PGC), collectively referred to as the Peoples Companies, are natural gas utility operating companies which are direct subsidiaries of PNG Companies LLC (PNG Companies) and ultimately owned by its parent Essential Utilities (Essential). The corporate entity structure for the Peoples Companies and PNG Companies is displayed in Exhibit II-1 of Chapter II – Background. Additionally, an overview of the histories; service territories of PNG and PGC; the Aqua America acquisition of PNG Companies and creation of Essential are reviewed in Chapter II as well. The Fleet Management function for Aqua PA and the Peoples Companies is under the direction of the Vice President of Fleet for Essential Utilities (Essential)[43] as shown in Exhibit XIII-1. A description of the specific fleet management activities at Aqua Pennsylvania and the Peoples Companies are provided in each of the following sections.

Exhibit XIII–1
Aqua Services, Inc.
Fleet Management Organization
As of September 2020



Source: Data Request P-VE-1, PUC Auditor Analysis

The Fleet Management (Fleet) department at Aqua Services is responsible for assisting/advising in the procurement, maintenance, and decommissioning of vehicles and equipment for Aqua PA and the Peoples Companies. Fleet also develops vehicle and related equipment specifications, policies and procedures, and is responsible for monitoring and administering preventative maintenance and repairs. These responsibilities also extend to items related to the commissioning of vehicles and

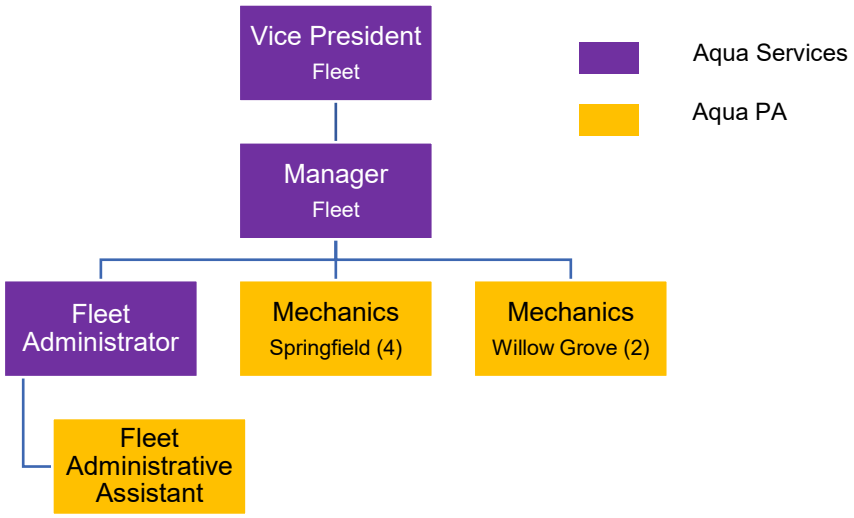
[43] The Sr. VP & Chief Admin Officer is an Aqua Services employee that oversees all fleet activities for Essential.

equipment (i.e., fire extinguishers, first aid kits, fuel cards), and any administrative needs (registrations, logbooks, branding and identification decals, etc.).

A. Aqua Pennsylvania

As shown in Exhibit XIII-2, the Fleet department consists of 10 employees with mechanics and the administrative assistant being Aqua PA employees while all others are Aqua Service employees. In addition to overseeing fleet operations for Aqua PA and the Peoples Companies, the vice president cooperates with the accounting and finance department when deciding which vehicles to acquire. The fleet manager handles fleet for water operations and oversees employees providing in-house repairs and maintenance of vehicles. These technicians are all Class A technicians and are split among two field office locations, four are in Springfield and two are in Willow Grove. Meanwhile, the fleet administrator handles tasks such as setting up new vehicles and scheduling inspections.

Exhibit XIII–2
Aqua Services and Aqua PA
Fleet Management Reporting Structure
As of September 2020



Source: Data Request A-FT-9, PUC Auditor Analysis

Aqua PA owns over 1,500 vehicles and equipment, of which approximately 1,200 are classified as cars or trucks. The remaining 300 are classified as equipment and include items like trailers, backhoes, etc. In order to manage Aqua PA's fleet, Aqua Services uses a fleet management system, *Dossier*. Each vehicle has a maintenance card that is used to track metrics, such as repairs, mileage, fuel usage, etc. *Dossier* uses this information to generate notifications for routine maintenance, such as oil changes. The system also identifies vehicles that incur higher repair, operational, and/or maintenance costs. Aqua PA uses a ranking system for replacement which

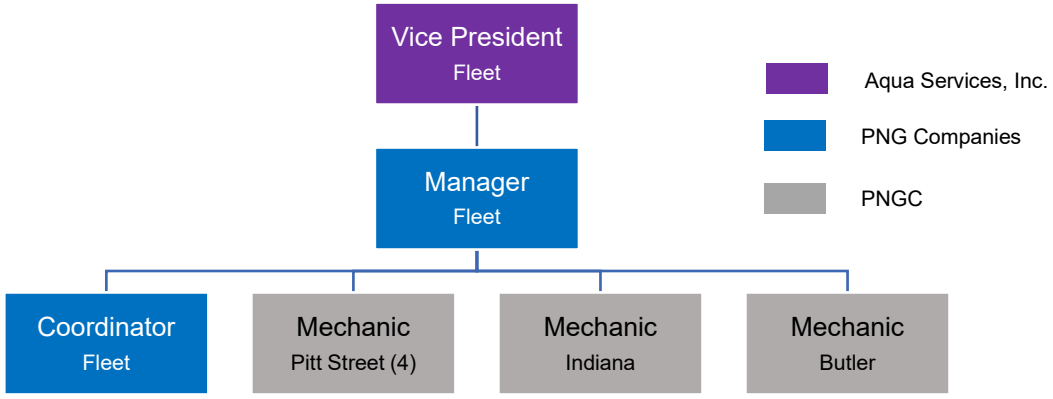
incorporates various factors like the age of the vehicle, mileage, maintenance costs, and condition of the vehicle. These vehicles are then flagged for further analysis to determine if the vehicle should be decommissioned or if it still has a material useful life.

Although Aqua PA has mechanics on staff, some maintenance needs are met using contracted third parties. Aqua PA employees mainly handle routine maintenance such as state inspections and emissions, tire replacement and maintenance, minor body damage etc. Larger, less routine jobs, such as alignments, transmission overhauls, and upholstery tend to be outsourced to third parties using *Element Fleet Management*. In addition to maintenance and repairs, Element also administers the fleet department's fuel cards. All repairs and fuel usage done through Element are then uploaded into the *Dossier* software.

B. The Peoples Companies

Previously the Fleet Management business unit reported to the Senior Director of Corporate Services when PNGC and PGC were owned by SteelRiver LDC Ventures LLC (SteelRiver) as mentioned in Chapter II - Background. As of March 2020, Fleet Management moved under the direction of the Vice President of Fleet for Aqua Services. Therefore, some of the period analyzed for Fleet Management at the Peoples Companies will reflect performance under the prior management. The Fleet Management reporting structure as of September 2020 is displayed in Exhibit XIII-3.

Exhibit XIII–3
PNG Companies and the Peoples Companies
Fleet Management Reporting Structure
As of September 2020



Source: Data Request P-VE-1, PUC Auditor Analysis

The Vice President of Fleet and all positions higher in hierarchy are Aqua Services employees. For the Peoples Companies, the Manager and the Coordinator are PNG Companies employees, and the mechanics are PNGC employees. The Manager of Fleet and all positions reporting to the Manager are responsible for the daily operations for fleet management at PNGC and PGC. The Coordinator assists the

Manager by developing fleet standards, projecting needs, and ensuring regulatory compliance. There are a total of six mechanics reporting to the Manager of Fleet. Four mechanics work at the "Pitt Street" location which is at the Wilkinsburg Service Center (See Chapter VIII – Gas Operations for a complete list of the service center locations for the Peoples Companies). The Indiana and Butler locations each have one mechanic as well.

Fleet is responsible for maintaining approximately 1,200 motor vehicles, 240 trailers, and 280 pieces of equipment (backhoes, skid loaders, excavators, air compressors, etc.). Additionally, Fleet purchases vehicles and equipment related to new projects or capital initiatives, such incremental fleet associated with the Long-Term Infrastructure Improvement Plan or supporting vehicles associated with any the increased approved staffing needs. For example, vacuum trucks were previously rented on behalf of the damage prevention program to assist in finding and marking lines. In the last several years, Fleet determined it was beneficial to purchase nine vacuum trucks rather than continuing to rent.

Exhibit XIII-4 displays the distribution of motor vehicles that PNG Companies maintain. Vehicles defined as field usage include all vehicles used for business purposes. Most vehicles are taken home by field operation crews. Inventory also includes unassigned or shared vehicles such as crew cabs or construction vehicles. Commuting vehicles are typically assigned to positions working in both the field and office (e.g. field supervisors). Additionally, pool cars are distributed throughout the service territory.

Exhibit XIII–4
Peoples Natural Gas Company LLC
Vehicle Assignment Distribution
Analysis as of July 2020

Field Usage	Commuting Usage	Pool Usage	Total
1,005	168	25	1,198

Source: Data Request P-VE-11

Although the Peoples Companies have mechanics on staff, additional maintenance needs are met by an outsourced third party. Generally, service centers with mechanics (e.g., Pitt Street) have most maintenance and repairs performed in-house whereas a service center with no mechanics (e.g., Greensburg) will have the majority of its maintenance and repairs outsourced. PNG Companies outsources this portion of its maintenance work to a third party named Element Fleet Management (Element). The company has retained maintenance support with Element since 2017. Element tracks vehicle usage, alerts the company to needed maintenance work, and provides a network of available vendors which can be used within its system. Various reports can be generated from the data monitored by Element through an interface with the Peoples Companies' SAP system. Quarterly meetings are held to review these reports; sample reports include the following:

- Vehicles in need of maintenance or forecasted for maintenance in the near future

- Maintenance costs for year to date and a comparison to last year's data by category (e.g., tires, oil change, repairs, etc.) and maintenance trends

- Average costs per unit

Additional support for tracking vehicle needs at the Peoples Companies is performed through Wright Express (WEX) as the company's sole fuel card provider and the Track Star GPS system (Track Star), which is a program accessed in vehicles as part of the mobile modem install for the companies' network access. WEX provides the company with rebates and incentives earned via a tiered system of purchased gallons from a specific fuel provider. Each vehicle has its own specific fuel card, and each driver has a unique driver ID that must be used when purchasing fuel. Through the WEX system, the companies can generate exception reports which detail fuel purchases with unusual mileage differential, multiple purchases in a day, irregular time of day purchases, incorrect fuel type, and excessive purchases. Track Star can generate reports which detail driver and vehicle statistics such as driver locations and route times for any given period, speeding violations for the posted speed limit of the road (a speed above the limit can be set such as 10 mph, etc.), and inactivity of the vehicle. Reports can also be generated which show unassigned vehicles or vehicles with low or no usage.

Findings and Conclusions

Our examination of the fleet management functional area focused primarily on a review of the vehicle and equipment acquisition process, including lease versus buy analyses and policies relative to competitive bidding; vehicle and equipment maintenance and repair procedures; and the process for monitoring vehicle and equipment utilization. Based on our review, Aqua PA and the Peoples Companies should initiate or devote additional efforts to improving the efficiency and effectiveness of fleet management by addressing the following:

1. Aqua PA and the Peoples Companies have not performed a recent lease vs. buy analysis for the acquisition of vehicles.

Vehicle purchases at Aqua PA are conducted in coordination with Aqua Services' finance department. Since 2008, Aqua PA has been purchasing all their vehicles and equipment rather than leasing due to its overall fiscal strategy. Reportedly, this strategy is based upon a fiscal analysis to the cost benefit of capitalization and leasing assets (i.e., land, equipment, etc.). Therefore, Aqua PA has not performed a purchase versus lease analysis for purchasing vehicles in the last five years (i.e., no information from the last lease versus buy was provided).

Meanwhile, PNG Companies last performed a lease vs. buy analysis in 2017 for the Peoples Companies. The analysis was for a 12-year outlook. For the vehicles

examined (field crew cabs), the “buy” option was determined to benefit the companies by approximately $840/vehicle. At that time, the companies additionally decided to pursue the previously mentioned enhanced fleet management and maintenance program with Element as a complement to the “buy” option.

PNG Companies has not performed additional lease vs. buy analyses since 2017. It was stated that this was in part due to recent preparations being made for the Essential acquisition. PNG Companies stated its intention to perform a lease vs. buy analysis soon, stating the analysis is likely to occur within the next twelve months. A decision has not yet been made as to what types of vehicles will be assessed (i.e., crew cabs, SUVs, pool cars, etc.). Such a decision will be made based upon preliminary discussions with financing companies or banks who would be advising the companies on the analysis.

The audit staff recognize that current low interest rates create a favorable environment for purchasing vehicles and Aqua Services fiscal department has determined overall fiscal strategy in lease versus buy analyses. However, a lease versus buy should consider other factors than purely financial and should include other operational factors such as reliability, customization, administrative, strategy, etc. to fully consider the best strategy. Therefore, a lease versus buy analysis should be conducted for both Aqua PA and the Peoples Companies routinely.

2. PNG Companies has not transitioned fleet management functions to Dossier (Aqua Services fleet management system).

As previously mentioned, fleet management functions at PNG Companies is performed through SAP. Upon Essential’s acquisition of the Peoples Companies in March 2020, PNG Companies decided to begin to utilize Dossier, which is Aqua Services’ fleet management system. This transition was to originally take place approximately at the end of the third quarter in 2020. At the time fieldwork ended for this management audit (October 2020), this transition had not yet occurred.

Dossier is a comprehensive fleet management database, which is expected to be cloud-based by the time the integration is complete. All aspects of fleet management can be managed through Dossier such as acquisition and budget planning, fuel reports, maintenance, and record keeping. Although SAP has similar capabilities and there have been no apparent deficiencies with this system, it is important that PNG Companies and Aqua utilize the same systems for consistent and efficient reporting and analysis. The use of one system instead of two also allows for reduced system costs and maintenance.

Once Dossier is implemented, the PNG Companies should continue to utilize SAP and run this system parallel to Dossier until it has been determined that all needed functions of Dossier are in place and the system is not producing erroneous reporting or calculations. Once fully implemented, Dossier not only allows for added efficiencies for PNG Companies and Aqua but can also assist the companies with future lease/buy analysis (see Finding and Conclusion No. 1).

Recommendations

1. **Perform a periodic vehicle lease vs. buy analysis at Aqua Pennsylvania and the Peoples Companies, to ensure Pennsylvania operations is utilizing the least cost option for acquiring vehicles and equipment.**

2. **Implement Dossier as PNG Companies' fleet management system.**

XIV. HUMAN RESOURCES AND DIVERSITY

Background

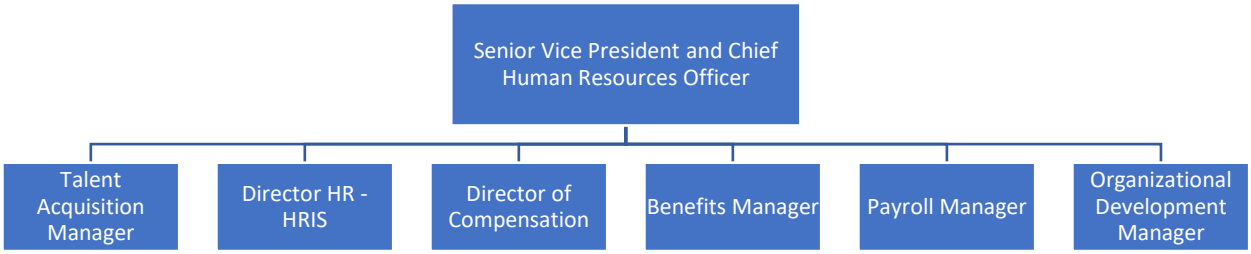
As discussed in Chapter II - Background, Essential Utilities, Inc. (Essential) is the holding company for three Pennsylvania regulated utilities: Aqua Pennsylvania, Inc. (Aqua PA), Peoples Natural Gas Company LLC (PNGC) and Peoples Gas Company LLC (PGC). PNGC and PGC are collectively referred to as the Peoples Companies. This chapter describes the Human Resources function for Aqua PA and the Peoples Companies which are performed by a combination of personnel within Aqua Services, Inc. (Aqua Services) and PNG Companies.

As a result of Essential acquiring the Peoples Companies, the compensation teams from Aqua Services and PNG Companies are partnering with an outside vendor to merge both companies' pay structures into one consistent structure for 2021. Additionally, Essential will be creating a consistent compensation short and long-term incentive program in 2021 for its portfolio of subsidiaries.

A. Aqua Pennsylvania

All human resource functions for Aqua PA are provided by Aqua Services and is overseen by Aqua Services' Senior Vice President and Chief Human Resources Officer (VP-HR). The VP-HR ultimately reports to the Aqua Services Senior Vice President, General Counsel and Secretary (see Chapter III – Executive Management). While there are employees within HR that focus primarily on Aqua PA (i.e., payroll, talent acquisition, etc.), many of the functions are provided across all of Essential's subsidiaries except for the Peoples Companies. Instead, the Peoples' Companies have separate but similar roles as those depicted in Exhibit XIV-1 and will be discussed later in this chapter.

Exhibit XIV–1
Aqua Services, Inc.
Aqua PA Human Resources Organizational Chart
As of April 2020



Source: Data Request A-EM-2

Many of the positions in Exhibit XII-1 align with traditional HR functions. More specifically, Aqua Services' HR Department provides support for recruitment and hiring, employee benefits, compensation, affirmative action, labor relations, general training and development services, etc. to Aqua PA. A major focus of HR is to ensure consistency across all Essential subsidiaries including the recently acquired Peoples companies. To this end, Essential added a Director of Compensation position in 2019 to mainly focus on ensuring compensation is benchmarked, reviewed, and competitive with the market. However, as mentioned earlier, the Director of Compensation is also focused on aligning all Essential subsidiaries compensation with the aid of an outside consultant.

Another major focus of HR is to improve the functionality of its systems. In September of 2018, Aqua PA implemented a new Human Resources information system (HRIS) called Workday to update an older more manual system. Common functions of the HRIS include employee self-service, manager self-service, organizational charts, benefits, certification, development and affirmative action tracking, absence and performance management, etc. In addition, this new HRIS improved the payroll, recruiting, employee benefits, talent acquisitions and new hires processes. Previously, Aqua PA's payroll function was a paper intensive process and the previous HRIS could only leverage data that was manually inputted. The new HRIS system is intended to provide a more streamlined and efficient process but is not yet optimized (see Chapter III – Executive Management Finding and Conclusion No. 3).

Nonetheless, the new HRIS has allowed Essential to improve the onboarding process. More specifically, the HRIS has many built in functionalities that track, manage, and analyze data for not only prospective candidates but retirees as well. These features have been credited, at least partially with reducing recruitment time from over 100 days on average to 50-70 days.

Although the new HRIS has enabled Aqua PA to make meaningful changes, a number of these initiatives were identified through employee engagement surveys as problem areas. Historically, employee engagement surveys were done every two years but with the implementation of the HRIS, the HR department plans to conduct employee engagement surveys on a quarterly basis. In addition, the employee engagement surveys indicated that HR needed to do more outreach and engagement activities. In response, Aqua PA implemented employee engagement activities and trainings in 2019 and 2020. For example, training on unconscious bias garnered approximately 80% participation by Aqua PA. This instructor-led workshop improved diversity and inclusion by raising awareness about employees personal, sometimes subconscious biases. It addressed how people see and subconsciously make assumptions about others and how that affects communication.

DIVERSITY

While Essential's President/Chief Executive Officer has the ultimate responsibility for Equal Employment Opportunity (EEO) and the Affirmative Action Plan (AAP), the Aqua Services VP – HR is designated as the Affirmative Action Officer for Aqua PA. The Affirmative Action Officer's responsibilities include: developing and implementing

affirmative action policies and procedures; identifying problem areas and developing strategies to eliminate them; monitoring and reporting on the efficacy of the Aqua PA's placement goals and objectives; and serving as a liaison between the Aqua PA and enforcement agencies, appropriate minority and women's organizations, and community action groups concerned with employment opportunities of minorities and women.

The Public Utility Commission (PUC or Commission) has encouraged utilities to proactively improve diversity in their workforces and purchasing efforts for approximately 20 years. More specifically, on February 13, 1992, the Commission approved a motion to make diversity an integral part of the management audit process and to direct utilities to file quarterly status reports. On March 16, 1992, a Secretarial Letter was issued by the Commission directing all jurisdictional utilities affected by Section 516 of the Public Utility Code (i.e., utilities whose plant-in-service exceeds $10,000,000) to file certain diversity information to the Commission quarterly. On May 18, 1994, the Commission issued an order directing these utilities to file diversity status reports on a semi-annual rather than a quarterly basis, to submit EEO plans annually, and to file certain diversity procurement data. Additionally, in February 1995, the Commission adopted a "Policy Statement Regarding Diversity at Major Jurisdictional Utility Companies" (entered into the regulations at 52 Pa. Code § 69.801-69.809), which encourages the utilities to include diversity efforts as a component of their business strategy. In March 1997, the Commission's Affirmative Action Officer issued diversity filing format clarifications and revisions, which most significantly involved a change to the filing requirements from semi-annual to annual and the inclusion of multi-year data. The Commission is currently reviewing its diversity requirements by a notice of proposed rulemaking order at Docket L-2020-3017284 at its December 17, 2020 Public Meeting.

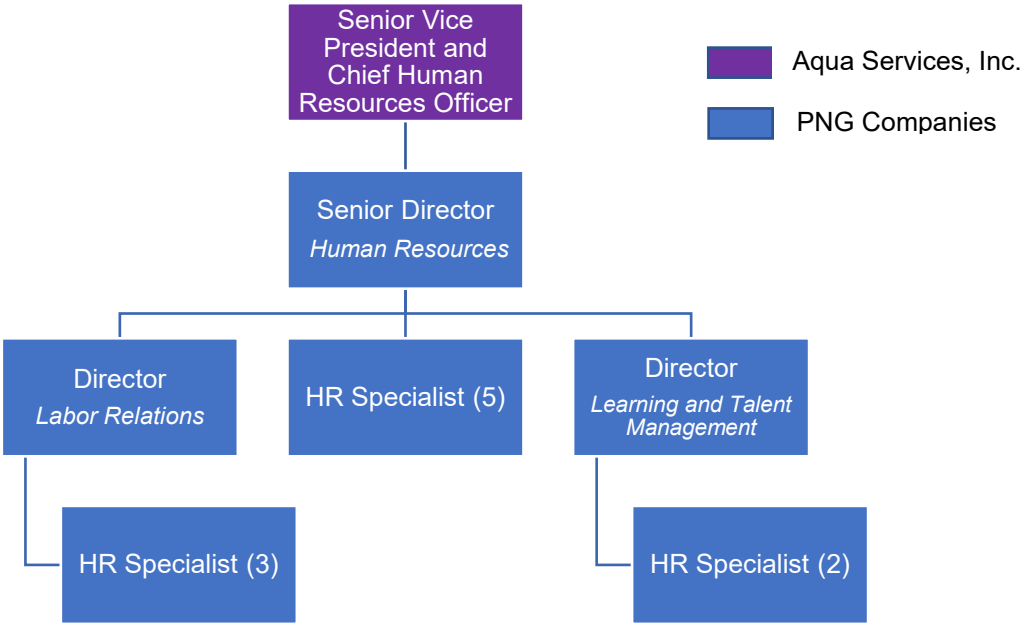
Aqua PA is currently in compliance with the PUC's ongoing annual diversity filing requirements, included in its diversity report are sections related to Aqua PA's diversity policies on both procurement and human resources. In 2006, an OFCCP recommendation prompted a change in Aqua PA's reporting format. Instead of a single filing for the entire Company, the Southeastern Region of Aqua PA is reported separately from a second report, which includes all other regions (Other PA Region) of Aqua PA. The current reporting method allows for a more specific availability analysis and reflects a more accurate assessment of regional underutilization.

B. The Peoples Companies

In the case of the Human Resources (HR) function, PNG Companies performs HR related work on behalf of the Peoples Companies. Exhibit XIV-2 displays the HR organization structure at PNG Companies. Reporting to the Senior Vice President and Chief Human Resources Officer of Aqua Services is the Senior Director of Human Resources, who is responsible for providing strategic direction, leadership and oversight in the area of Human Resources Management and community relations. The Senior Director has seven direct reports: Director of Labor Relations; Director Learning and Talent Management; and five Human Resources Specialists. The Director of Labor Relations is responsible for policy administration, employee development, and labor and

employee relations. The Director of Learning and Talent Management is responsible for planning, designing, and delivering talent management and benefits processes to ensure alignment with organizational objectives. The Human Resources Specialists are responsible for assisting the HR department in all aspects of Human Resources.

Exhibit XIV–2
PNG Companies
Human Resources Organization Structure
As of May 2020



Source: Data Request P-HR-29

Year-end staffing levels at PNGC and PNG Companies are displayed in Exhibit XIV-3 and Exhibit XIV-4. PNGC's staffing level decreased in 2016 due to the volunteer retirement program (as briefly mentioned in Chapter II – Background). Likewise, efforts to consolidate shop locations and union coverage for those employees occurred in 2016 as well, which transferred PGC employees to PNGC. Despite this consolidation, PNGC and PGC are treated as separate companies from a regulatory perspective using separate tariffs. Due to organizational restructuring in February 2018, PNG Companies became the company to provide administrative and management services to the Peoples Companies. Almost half of all PNGC employees transferred to PNG Companies in the following departments: Applications, Controller, Government Affairs, Human Resources, Internal Audit, IT & Cyber Security, Legal, Regulatory Affairs, Reliability, Sales & Marketing, and Treasury. Since 2018, the total staffing levels at PNG Companies and PNGC have remained stable.

Exhibit XIV–3
Peoples Natural Gas Company
Staffing Levels
For the Years 2015 through August 2020

Department	2015	2016	2017	2018	2019	2020 YTD
Applications	19	21	19	0	0	0
Business Development		1	1	0	0	0
Construction & Engineering	148	154	220	293	284	291
Controller	16	17	19			
Corporate				2	2	2
Corporate Services	34	31	36	7	7	7
Customer Operations	170	142	157	145	147	148
Customer Relations	6	8	9	1	1	1
Customer Service	17	16	16	15	14	13
Executive	9	8	11	0	0	0
Gas Operations	423	353	390	452	457	460
Government Affairs	1	1	1	0	0	0
Human Resources	15	12	13	0	0	0
Internal Audit	2	2	2	0	0	0
IT & Cyber Security	13	14	14	0	0	0
Legal	5	3	5	0	0	0
Regulatory Affairs	11	11	9	0	0	0
Reliability	29	36	41	0	0	0
Sales & Marketing	20	22	21	0	0	0
Treasury	11	11	10	0	0	0
Total	**949**	**863**	**994**	**915**	**912**	**922**

Source: Data Request P-EM-40

Exhibit XIV–4
PNG Companies
Staffing Levels
For the Years 2018 through August 2020

Department	2018	2019	2020 YTD
Applications	22	22	21
Construction & Engineering	27	29	28
Controller	19	19	19
Corporate Services	34	34	36
Customer Operations	29	28	29
Customer Relations	9	9	9
Customer Service	133	132	135
Executive	9	9	7
Gas Operations	4	3	2
Government Affairs	1	1	1
Human Resources	13	13	13
Internal Audit	2	2	1
IT & Cyber Security	14	14	14
Legal	6	5	5
Regulatory Affairs	8	10	10
Reliability	49	49	48
Sales & Marketing	21	20	23
Treasury	13	8	8
Total	**413**	**407**	**409**

Source: Data Request P-EM-40

The retention rate for PNG Companies and PNGC are displayed in Exhibit XIV-5. Both PNG Companies and PNGC pride themselves on having many tenured employees. PNG Companies has also increased its investment in pre-employment testing by $5,000 in 2017 and up to $10,000 for the proceeding years, which has in return increased their overall retention.

Exhibit XIV–5
PNG Companies and Peoples Natural Gas Company
Retention Rate
For the Years 2015 through March 2020

Year	Retention Rate
2015	92.6%
2016	84.7%
2017	96.3%
2018	96.5%
2019	95.3%
2020 Q1	98.6%

Source: Data Request P-HR-9

There are various training programs offered to employees each year. The new hire orientation training includes an overview of the company, safety program, HR policies, diversity initiatives, benefits, and payroll processing. The General Leadership training program provides the leader's role curriculum, financial management for leaders, legal aspects of employment for leaders, Department of Transportation (DOT) refresher training for supervisors, and new leader orientation. The general training includes collision avoidance, lifesaving rules review, ethics and code of conduct training, and business continuity training. The Learning Management System (LMS) houses all computer-based trainings. The LMS tracks when trainings are taken, sends email reminders for upcoming trainings, and has a library in which employees can search for courses by category and department.

The Human Resources Information System (HRIS) is part of the SAP enterprise resource system, which was upgraded to S/4HANA on November 11, 2019. The functionality currently used is as follows:

- Personnel Administration - used to collect data specific to an employee
- Organization Management - used for the departmental structure and holds the data in object types, such as organizational unit and position
- Benefits Integration - collects information related to Health and Welfare Plans, Insurance Plans, Savings Plans, and miscellaneous plans
- Time Management - used to collect and interpret time for Payroll and Financial Costing
- Compensation Management - used to collect compensation data for Comp Analysis, Merit Processing, and Annual Performance Incentive Plan (APIP) determination

A monthly transaction report and a quarterly board report are provided via the HRIS to upper management. The purpose of the monthly transaction report is to provide combined company data to report on new hires, terminations, retirements, and positions changes. The quarterly board report provides combined company data to measure headcount and turnover.

PNG Companies utilizes a consistent set of HR policies and procedures to help guide their efforts. In addition, the Peoples Companies have the following incentive programs offered to employees:

- APIP Bonus Plan – to keep all employees actively aligned with and engaged in corporate and department performance and objectives through a shared incentive model
- Leadership Award Program – to reward and recognize top performers where individual performance results are easily observed, measured, and makes a

difference in leadership, organizational growth, innovation/change management, customer service/external relations, the environment, and/or operating efficiency

- Spot Award Program – to provide real-time recognition for outstanding individual or small team performance through a monetary reward
-

In 2017, a compensation assessment was conducted to assess the competitiveness of the Operations Managers' and Supervisors' compensation. Additionally, in 2017, a much broader compensation study was performed on base salaries and incentives. Annually, the HR Compensation Consultant participates in market salary surveys to measure salary and incentive market competitiveness. As previously mentioned, an intercompany compensation team has been formed to review Essential, including PNG Companies and the Peoples Companies, compensation.

PNG Companies Diversity and Inclusion Program (DIP) is an employee resource group made up of 21 employees at different levels of the organization and from several departments. The mission of the DIP is to promote a positive and inclusive work environment for employees and to be an advocate for diversity and inclusion within PNG Companies and the Peoples Companies. The employees have diverse backgrounds, possess diverse skills/talents, and have a passion to improve the lives of the people they work with. The DIP group educates employees through several trainings, company website and exercises, volunteer opportunities, integrating diversity and inclusion strategies in recruitment, and celebrating differences throughout the workforce.

PNGC and PGC filed their most recent annual diversity reports to the Public Utility Commission on February 28, 2020 for the year ended December 31, 2019 and continues to be timely with annual diversity report filings. PNG Companies, on behalf of PNGC and PGC, has annually filed the diversity reports for the years 2015 through 2019. Additionally, PNG Companies has a dedicated employee responsible for assisting the diversity and inclusion council with hiring individuals with disabilities.

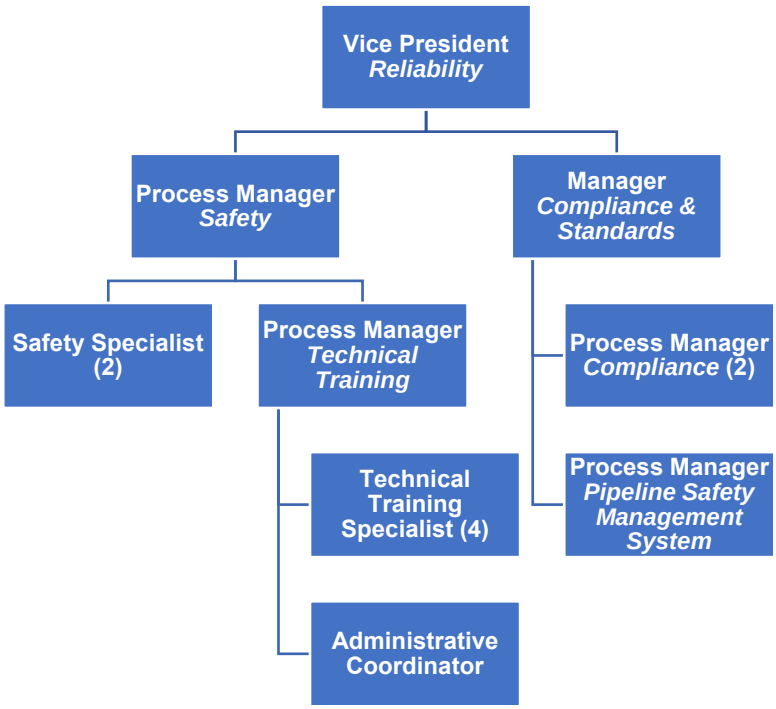
PNG Companies uses various recruitment materials for internal and external recruiting efforts. A multi-page recruitment flyer lists the types of employment within PNG Companies and PNGC, and whether these opportunities are currently available or not. There is a newsletter that provides detailed information of the benefits for working at PNG Companies and PNGC. Additionally, there is a flyer that explains where to search for career opportunities. Recruiting is performed at job fairs, community boards, and local career and employment offices. Furthermore, there is an added focus geared toward veteran job seekers and job seekers with diverse backgrounds.

The following employee benefits are offered to the PNG Companies employees:

- Medical, Dental, and Vision Coverage Options
- Health Savings Account
- Flexible Spending Account
- Sick Leave and Long-Term Disability
- Life Insurance
- 401K Savings Plan
- Employee Assistance Program
- Adoption Assistance
- Transportation Savings
- Tuition Assistance
- Gas Appliance Reimbursement
- Employee Resource Groups

At PNG Companies, the Vice President (VP) of Reliability is responsible for safety, compliance, gas supply and transportation, and pipeline safety. Exhibit XIV-6 displays the organization structure for the safety department. The VP of Reliability is responsible for monitoring growth opportunities and capacity restraints to ensure the continuation of reliable service. The Manager of Compliance & Standards is responsible for compliance with all required regulations and standards and oversees the two Process Managers of Compliance and Process Manager, Pipeline Safety Management System. The Process Manager of Safety is responsible for the processes and training for safety matters and oversees two Safety Specialists and the Process Manager of Technical Training.

Exhibit XIV–6
PNG Companies
Safety Organization
As of August 2020



Source: Data Request P-HR-36

There are various safety committees within PNG Companies as well as local safety committees at each service center location where local safety related items are discussed on a monthly basis. The Safety Committee meets on a quarterly basis to address company-wide systematic safety issues pushed up from Local Combined Accident Reduction Effort (CARE) Safety Committees. The committee also addresses current and future safety initiatives, policies, and programs. The CARE Union Management Safety Steering Committee consists of senior union leadership and management. Its objective is to maintain open lines of communication, review recent injuries and accidents, and to plan future initiatives. The committee meets on a quarterly basis and the team composition is reviewed annually. Additionally, weekly safety meetings, led by supervisors, are held to review safety meeting topics with their teams and safety specialists to discuss monthly safety topics.

Representive samples of additonal safety programs and proccesses include, but are not limited to:

- DOT Pre-Employment, Random, Post-Accident, Reasonable Cause, Return-to-Duty, and Follow-up Testing
- DOT Annual Supervisor Refresher Training
- DOT Annual Commercial Driver's License Physicals
- DOT Annual Motor Vehicle License Checks
- DOT Flagger Training
- 4 Life Saving Rules and Take 5 Steps to Safety
- Personal Protective Equipment/Fire-Resistant Clothing Program
- Excavation/Shoring
- Hazard Communications
- Respirator Protection Program
- OSHA Occupation Noise – Hearing Protection
- Fire Extinguisher Training

Findings and Conclusions

Our examination of the HR functional area included a review of assigned responsibilities, policies and procedures, the HRIS capabilities, training and employee development, compensation and benefits, diversity programs, and safety initiatives. Based on our review, PNG Companies and PNGC should initiate or devote additional effort to improving the efficiency and/or effectiveness of the HR functional area by addressing the following:

1. The Peoples Companies do not establish goals for Occupational Safety and Health Administration (OSHA) recordable rates to measure the success of their safety programs.

Exhibits XIV-7 and XIV-8 show the reported safety metrics and performance of PNGC and PGC, respectively, for the period of 2015-2018. OSHA recordable incidents

are any work-related injury or illness that results in loss of consciousness, days away from work, restricted work, or transfer to another job. Typically, it is any work-related injury or illness requiring medical treatment beyond first aid. The OSHA rate is calculated by multiplying the number of recordable cases by 200,000, then dividing that number by the number of labor hours. LD/RD designate days away from work and/or days of restricted work activity beyond the date of occupational injury or onset of illness. The LD/RD rate is calculated by the total number of workdays lost and/or restricted multiplied by 200,000, then divided by the total number of labor hours. PNG Companies stated they set an internal goal of 1.24 in 2020 for the LD/RD rate, but did not set an internal goal for the OSHA recordable rate. As such, the audit staff compared PNGC's and PGC's OSHA Rates to the average incident rate for the natural gas distribution industry recorded by the U.S. Bureau of Labor Statistics (BLS).

Exhibit XIV–7
Peoples Natural Gas Company
Reported Safety Metrics and Performance
For the Year 2015 through July 2020

Year	Hours Worked	LD/RD	LD/RD Rate	LD/RD Rate Goal	OSHA Recordable Incidents	OSHA Recordable Incident Rate	Industry Average OSHA Recordable Incident Rate
2015	1,951,992	6	0.56	1.22	16	1.64	2.3
2016	1,728,990	13	1.50	1.25	23	2.66	2.5
2017	2,077,824	11	1.06	1.25	23	2.21	1.7
2018	2,369,563	15	1.27	1.19	25	2.11	1.5
2019	2,280,610	18	1.58	1.18	25	2.19	N/A
July2020	1,440,375	6	0.83	1.24	10	1.39	N/A

Source: P-HR-25, https://www.bls.gov/iif/soii-data.htm, and PUC auditor analysis

Exhibit XIV–8
Peoples Gas Company
Reported Safety Metrics and Performance
For the Years 2015 through July 2020

Year	Hours Worked	LD/RD	LD/RD Rate	LD/RD Rate Goal	OSHA Recordable Incidents	OSHA Recordable Incident Rate	Industry Average OSHA Recordable Incident Rate
2015	368,333	9	4.89	1.22	11	5.97	2.3
2016	316,465	2	1.26	1.25	4	2.53	2.5
2017	281,896	1	0.71	1.25	1	0.71	1.7
2018	275,884	2	1.45	1.19	3	2.17	1.5
2019	267,868	0	0.00	1.18	0	0.00	N/A
July2020	148,630	0	0.00	1.24	1	1.35	N/A

Source: P-HR-25, https://www.bls.gov/iif/soii-data.htm, and PUC auditor analysis

The LD/RD rate goal is based on a three-year rolling average of incidents with a 5% improvement and targeting the top quartile of regional peer gas utilities in the Northeast. PNGC's LD/RD rate fluctuated over the period, and only achieved the LD/RD rate goal in 2015 and 2017. PGC's LD/RD rate has varied but improved over the period; however, PGC achieved its LD/RD rate goal only for 2017 and 2019. The Peoples Companies OSHA rates were higher than that for the natural gas distribution industry for the period 2015-2018. Additionally, PNGC's and PGC's OSHA recordable incident rates have fluctuated over the period, whereas, the industry average has dropped over 34% according to U.S. BLS.

Exhibits XIV-9 and XIV-10 show the causes related to the OSHA Recordable Incidents at PNGC and PGC for the period of 2015 to 2020 YTD. Most recordable incidents are sprains or animal bites/stings, which account for more than half of all incidents. The "Other" column includes eye, hearing loss, cumulative trauma, and unknowns. Additionally, because PGC does not have any employees, incidents occur when PNGC or contractors are assigned to PGC work orders.

Exhibit XIV–9
Peoples Natural Gas Company
Number of Injuries, Illnesses, and Fatalities
For the Years 2015 to July 2020

Year	Sprain	Fractures	Cuts, lacerations, punctures	Abrasions, scrapes	Bruises, contusions	Animal bites, stings	Skin irritation	Motor vehicle accident	Other	Total
2015	7	1	0	0	3	1	2	2	0	16
2016	13	1	2	1	1	3	0	0	2	23
2017	7	2	2	4	1	6	0	1	0	23
2018	7	4	1	3	1	5	0	0	4	25
2019	9	3	4	0	3	2	0	1	2	25
July 2020	6	0	2	0	0	1	0	0	1	10

Source: Data Request P-HR-24

Exhibit XIV–10
Peoples Gas Company
Number of Injuries, Illnesses, and Fatalities
For the Years 2015 to July 2020

Year	Sprain	Fractures	Cuts, lacerations, punctures	Bruises, contusions	Animal bites, stings	Eye	Motor vehicle accident	Other	Total
2015	5	1	1	0	2	1	1	0	**11**
2016	1	0	0	1	1	0	0	1	**4**
2017	1	0	0	0	0	0	0	0	**1**
2018	2	0	0	0	0	0	0	1	**3**
2019	0	0	0	0	0	0	0	0	**0**
July 2020	0	0	1	0	0	0	0	0	**1**

Source: Data Request P-HR-24

Safety goals should be established based upon reasonable performance expectations from a peer group. BLS tracks and publishes OSHA incident rates by industry, which in this case, is NAICS Code 2212 – Natural Gas Distribution. Goals should be consistent and have a sound basis. When the goals do change, there should be a logical reason based on either improved performance followed by a stricter goal or based on changes in organization, methodologies, performance of the industry, or other related circumstances.

2. PNG Companies and PNGC have not performed an employee engagement survey since 2017.

PNG Companies, and on behalf of PNGC, conducted an employee engagement survey in 2017; however, a survey was not conducted in 2018 due to the pending acquisition/merger. When PNG Companies conduct employee engagement surveys, a breakdown of results is provided to the manager level employees. They are transparent in the results and disseminate to all employees. The results are used to help find solutions in different areas.

Employee engagement relates to the level of an employee's commitment and connection to an organization. Employee engagement is an important factor in determining overall employee enthusiasm, management/leadership effectiveness, and work environment. Employee engagement surveys give employees a venue for open feedback. It is an opportunity to establish two-way communication and involve employees in the development process by giving them a direct voice to the management team. Performing employee engagement surveys also allow companies to benchmark with other industry data to see how the company performs with similar organizations, which will help to identify strengths and opportunities for improving employee engagement.

There are beneficial outcomes to performing employee engagement surveys. Employees who are connected to their organization work harder, stay longer, and impact employee and business outcomes including, but not limited to:

- Increased productivity
- Increased profitability and revenue
- Better customer service
- Lower employee turnover
- Better recruitment and talent acquisition
- Greater brand presence and reputation
- Increased market share and stock price
- Increased workplace safety

Not conducting employee engagement surveys regularly precludes PNG Companies from effectively trending employment satisfaction amongst its employees and for PNGC, and as a result, may overlook key factors that impact organizational

success. Also, there is the chance of losing the ability/option to identify strengths and opportunities for employee engagement.

3. The Peoples Companies do not have a safety management system in place.

A safety management system (SMS) increases the potential to minimize the risk of injury and illness. The system also identifies, assesses, and controls risks to workers in all workplace operations. An SMS will help to comply with all the standards and regulations for safety in the industry and increase a company's overall productivity. Other possible benefits to implementing an SMS are a reduction in cost, both administrative and insurance/liability, creating positive employee impacts (performance and well-being), and eliminating human error when recording injury information. Adversely, the lack of a safety management system can increase the risk of injury and illness in a workplace, which can increase operating costs (i.e., worker compensation payments, administrative, etc.) and introduces the possibility of human error that could create inaccurate OSHA data.

PNG Companies does not utilize a SMS to help mitigate and manage workplace risk. There are developed processes in place; however, no system is utilized to assist in identifying and controlling risks. A gap analysis was recently completed by PNG Companies to see what elements they currently have, what minor gaps there are, and what processes need to be developed. PNG Companies hired a process safety manager in May 2020 to validate that all processes will be properly documented.

PNG Companies indicated its intention to implement a SMS by 2021. The plan is to utilize the same, or similar, SMS currently used at Aqua Services. The intent is to be consistent in the processes and safety measures of other Essential owned subsidiaries.

4. The Peoples Companies' succession plan is outdated.

PNG Companies and PNGC has a list of senior leadership positions (see Chapter III – Executive Management) and respective incumbents; however, the list does not identify potential successor candidates for replacement and development. PNGC had developed a plan for conducting a succession planning process in 2018, but with the late year announcement of the acquisition, leadership decided to postpone the succession planning process.

It is a standard business practice to use formal succession planning to document the identification and development of candidates for future openings in key positions that may become vacant. The three basic goals of succession planning are the identification of critical management positions within the organization, the identification of future vacancies in those positions, and the identification of employees (if any) who would potentially fit into these vacancies. Internal candidates for key positions are, therefore, known in advance of actual need. Prior identification permits opportunities for mentoring and developmental activities to improve an employee's readiness to succeed in specific positions. Formal succession planning enables continuity in leadership and

helps to avoid extended and costly vacancies in key positions. The succession plan and actions taken to implement the plan should be documented to ensure that the original intentions of succession planning were accomplished, particularly in the event of an untimely departure of those involved with the succession planning process. Moreover, a formal succession process is also a key factor in good corporate governance.

The Peoples Companies may not be adequately prepared to fill a vacancy of key management positions with a qualified candidate from within the organization due to potential lack of preparation of an internal candidate with the requisite training and development. This can result in a longer and costlier search for a qualified candidate to fill the vacancy outside of the organization.

5. The Peoples Companies have outdated job descriptions.

PNG Companies and the Peoples Companies provided the audit staff with samples of job descriptions for various departments. The samples included job descriptions that either lacked approvals, job titles, responsibilities and other pertinent information or were still defined as Equitable Gas Company and Peoples TWP (names of previous entities of Peoples Companies that do not currently exist) employees whereas all other job descriptions are defined as PNGC positions.

According to the PNGC, the positions listed below will be corrected for any deficiencies by the end of 2020, unless otherwise noted:

- Gas Operations – Bridge Crew Leader, Bridge Crewman, Field Collection Clerk, and Machine Operation (position to be eliminated after current employees retire or vacate)
- Accounting and Finance – Director of Planning and Rates, Controller and Director of Treasury
- Human Resources – Director of Learning and Talent Management
- Customer Service – Senior Director of Customer Service

In addition to having deficient job descriptions, the audit staff were provided samples of the following positions that are no longer depicted in company organizational charts:

- Consultant of Human Resources
- Director of Benefits and Compensation
- Director of Organizational Development
- Manager of Billing and Credit
- Senior Director of Customer Contact
- Manager of Call Center

Since 2011, there have been multiple acquisitions and transitional periods. The acquisitions of the Equitable Gas Company and T.W. Philips Gas Company, and the merging of separate unions into a single union has created the necessity to review and revise job descriptions. Once again, with the Aqua America acquisition in March of 2020, the Peoples Companies are still in a transitional mode and have not updated the job descriptions. PNG Companies stated that compensation teams for Aqua Services and the Peoples Companies are currently working to obtain consistent titles and responsibilities for all positions.

Uniform job descriptions can prevent potential contract difficulties, particularly union related grievances and assigning company duties. Current job descriptions are also necessary to conduct effective compensation studies and ensure fair and equitable pay amongst employees based upon their job duties and responsibilities.

Recommendations

1. **Establish an internal OSHA recordable rate goal for the Peoples Companies based upon industry performance and align safety programs to achieve the OSHA goal(s).**

2. **Measure employee engagement on a regular basis for the Peoples Companies in order to trend employee enthusiasm and motivation and reveal opportunities for improvement.**

3. **Implement a safety management system at the Peoples Companies.**

4. **Expedite the succession planning process, alongside with Essential Utilities, to ensure the Peoples Companies develop and recruit key positions.**

5. **Update all job descriptions for the Peoples Companies.**

IX. ACKNOWLEDGEMENTS

We wish to express our appreciation to the officers and staff of Aqua PA and the Peoples Companies for their cooperation and assistance.

This audit was conducted by Eric McKeever, Krystle Daugherty, Jennie Banzhof, Timothy Kerestes, Craig Bilecki, Susannah Ellis, Barry Keener, Michael Flynn, and Michael Savage of the Management Audit Division of the PUC Bureau of Audits.

XVI. APPENDICES

Appendix A	Aqua Pennsylvania, Inc. – Financial and Operating Data and Statistics
Appendix B	Peoples Natural Gas Company LLC – Financial and Operating Data and Statistics
Appendix C	Peoples Gas Company LLC. – Financial and Operating Data and Statistics

Aqua Pennsylvania, Inc.
Financial and Operating Data and Statistics

Operating Statistics	2015	2016	2017	2018	2019	Compound Growth
Gross Utility Plant	$3,602,958,080	$3,844,977,326	$4,128,090,534	$4,417,865,982	$4,717,421,401	7.0%
Depreciation & Amortization	697,251,486	758,875,606	818,126,553	877,570,387	953,555,140	8.1%
Net Utility Plant	$2,905,706,594	$3,086,101,720	$3,309,963,981	$3,540,295,595	$3,763,866,261	6.7%
Total Water Sales & Other Revenue						
Residential	$262,227,095	$260,284,087	$255,169,289	$252,795,654	$283,776,467	2.0%
Commercial	93,195,112	94,387,395	92,306,727	92,785,243	103,695,825	2.7%
Industrial	17,948,110	17,701,887	17,510,038	17,544,946	18,994,069	1.4%
Public	8,208,973	8,346,358	8,164,634	7,965,002	8,888,774	2.0%
Other	10,419,115	10,449,919	10,694,210	11,246,956	12,073,063	3.8%
Public Fire Protection	5,860,227	5,919,365	5,970,624	5,960,095	6,313,029	1.9%
Private Fire Protection	2,000,409	2,078,668	2,104,705	2,100,942	1,997,673	0.0%
Other Sales to Public	2,474,697	2,495,240	2,515,467	2,423,241	2,616,849	1.4%
Total Water Sales	$402,333,738	$401,662,919	$394,435,694	$392,822,079	$438,355,749	2.2%
Other Water Revenues	$1,322,186	$1,245,394	$3,489,153	$27,385,878	$12,393,023	75.0%
Total Water Sales & Other Revenues	$403,655,924	$402,908,313	$397,924,847	$420,207,957	$450,748,772	2.8%
Gallons Sold						
Residential	19,246,599	19,172,437	18,495,637	18,266,835	18,370,131	-1.2%
Commercial	9,980,085	10,227,668	9,808,694	9,828,586	9,832,221	-0.4%
Industrial	3,509,106	3,499,209	3,436,216	3,397,472	3,283,250	-1.6%
Public	972,299	1,003,004	972,280	951,749	950,836	-0.6%
Other	1,894	1,781	1,333	1,633	5,326	29.5%
Public Fire	972,299	1,003,004	972,280	951,749	950,836	-0.6%
Sales for Resale	949,570	976,383	948,621	885,814	900,774	-1.3%
Total Water Sales	35,631,852	35,883,486	34,635,061	34,283,838	34,293,374	-1.0%
Total Water Delivered	44,854,883	43,927,563	42,258,456	42,277,778	42,074,000	-1.6%
Total Sales	34,718,750	34,935,461	33,710,006	33,422,835	33,420,664	-0.9%
Unaccounted for Water	10,136,133	8,992,102	8,548,450	8,854,943	8,653,336	-3.9%
Percentage of Unaccounted for Water	22.6%	20.5%	20.2%	20.9%	20.6%	-2.3%
Customers (Average):						
Unmetered Sales						
Public Fire	77	80	82	85	87	3.1%
Private Fire	499	488	477	468	695	8.7%
Metered Sales						
Residential	390,383	392,340	394,559	397,124	405,272	0.9%
Commercial	21,971	22,129	22,262	22,362	22,643	0.8%
Industrial	808	800	796	797	797	-0.3%
Public	7,413	7,961	8,698	8,694	8,144	2.4%
Private Fire	5,002	5,123	5,234	5,344	5,500	2.4%
Sales for Resale	14	15	15	14	14	0.9%
Total customers	426,165	428,934	432,121	434,886	443,152	1.0%
Employees (Average)	548	553	552	551	564	0.7%

Source: PUC Annual Reports

Water Operation & Maintenance Expen	2015 $	2016 $	2017 $	2018 $	2019 $	Compound Growth
Salaries and Wages	30,721,231	30,761,631	30,234,795	31,469,339	32,534,779	1.4%
Employee Pensions & Benefits	16,297,105	21,993,613	19,032,268	16,808,361	20,387,788	5.8%
Purchased Water	11,782,318	12,122,443	7,126,427	4,440,446	4,944,013	-19.5%
Purchased Power	11,499,735	10,252,219	10,379,705	10,459,055	10,064,793	-3.3%
Fuel for Power Production	54,047	229,965	256,188	358,560	251,861	46.9%
Chemicals	4,712,462	4,627,810	4,804,072	4,867,427	5,140,566	2.2%
Materials & Supplies	2,388,390	2,346,565	1,966,386	1,969,896	2,284,653	-1.1%
Contractual Services	37,105,667	38,297,369	42,165,780	43,319,183	44,966,275	4.9%
Rent & Transportation Expenses	1,681,564	1,416,951	1,669,690	1,646,261	1,686,877	0.1%
Insurance	5,477,973	4,838,514	5,015,661	5,657,444	5,365,162	-0.5%
Advertising Expenses	97,075	77,718	58,448	184,443	103,075	1.5%
Bad Debt Expenses	2,310,130	2,150,067	1,871,944	2,118,789	2,191,868	-1.3%
Miscellaneous Expenses	-7,539,864	-9,337,337	-9,904,457	-9,707,790	-9,038,469	4.6%
Total Water Operation & Maintenance Ex	$116,587,833	$119,777,528	$114,676,907	$113,591,414	$121,161,173	1.0%

Source: PUC Annual Reports

PEOPLES NATURAL GAS COMPANY LLC
Financial and Operating Data Statistics

DATA AND STATISTICS	2015	2016	2017	2018	2019	Compound Growth
OPERATING REVENUE ($)						
Residential	$ 479,893,496	$ 410,068,570	$ 479,429,654	$ 531,099,823	$ 516,709,023	1.9%
Commercial	133,969,042	112,044,530	126,747,641	139,105,762	141,611,622	1.4%
Industrial	24,347,137	24,353,453	25,922,648	28,959,374	33,388,950	8.2%
Other	77,915,435	41,862,727	35,770,059	25,072,059	14,931,818	-33.8%
Total Operating Revenue	**$ 716,125,110**	**$ 588,329,280**	**$ 667,870,002**	**$ 724,237,018**	**$ 706,641,413**	**-0.3%**
OPERATION & MAINTENANCE (O&M) EXPENSES ($)						
Production Maps and Records	$ 14,151	$ 5,012	$ 6,412	-	-	NM
Gas Well Expenses	70	51	$ 1,420	-	-	NM
Field Line Expenses	375,671	253,024	$ 1,236,038	$ 1,211,987	$ 1,328,154	37.1%
Field Compressor Station Expenses	2,336,240	2,017,563	$ 2,158,731	$ 2,150,121	$ 2,099,359	-2.6%
Field Compressor Fuel and Power	1,833,512	1,622,455	$ 1,729,660	$ 2,089,286	$ 1,931,472	1.3%
Field Measuring and Regulating Station Expenses	45,663	34,055	$ 213,710	$ 192,540	$ 255,374	53.8%
Other Expenses	157,920	41,794	$ 49,535	$ 78,878	$ 58,881	-21.9%
Rents	13,246	13,262	$ 13,728	$ 13,979	$ 14,185	1.7%
Maintenance of Structures and Improvements	8,584	-	$ 16,889	$ 10,981	$ 17,141	18.9%
Maintenance of Producing Gas Wells	34,069	34,513	$ 31,029	$ 2,132	$ 29,134	-3.8%
Maintenance of Field Lines	1,017,971	492,662	$ 2,927,838	$ 3,152,604	$ 3,225,099	33.4%
Maintenance of Field Compressor Station Equip.	1,518,287	1,833,264	$ 1,758,806	$ 1,482,671	$ 1,636,042	1.9%
Maintenance of Field Measuring and Reg. Equip	145,448	120,360	$ 204,231	$ 159,287	$ 153,954	1.4%
Maintenance of Other	-	-	$ 34,977	$ 41,105	$ 39,537	NM
Total Gas Production Operation Expenses	**$ 7,500,832**	**$ 6,468,015**	**$ 10,383,004**	**$ 10,585,571**	**$ 10,788,332**	**9.5%**
Natural Gas Well Head Purch., Segment - Interco.	$ 16,282,264	$ 15,030,579	$ 22,758,274	$ 18,870,350	$ 10,027,201	-11.4%
Natural Gas Transmission Line Purchases	142,268,398	119,060,002	148,175,554	216,630,291	158,878,693	2.8%
Natural Gas City Gate Purchases	1,507,354	1,911,428	2,819,560	1,678,349	3,395,434	22.5%
Other Gas Purchases	39,789,276	(31,872,688)	7,729,040	(15,650,600)	27,679,163	-8.7%
Exchange Gas	519,262	(214,893)	(480,101)	1,969,575	(1,710,699)	NM
Gas Withdrawn from Storage	50,965,318	29,538,299	39,371,322	46,631,738	42,992,557	-4.2%
Gas Delivered to Storage - Credit	(30,967,769)	(29,286,933)	(44,668,143)	(52,079,716)	(41,527,246)	7.6%
Gas Used for Compressor Station Fuel - Credit	(1,952,833)	(1,730,298)	(1,828,148)	(2,178,512)	(2,004,609)	0.7%
Gas Used for Other Utility Operations - Credit	(305,658)	(284,094)	(472,546)	(482,591)	(1,060,456)	36.5%
Other Gas Supply Expenses	504,894	669,581	779,568	800,126	848,176	13.8%
Total Gas Supply Operation Expenses	**$ 218,610,506**	**$ 102,820,983**	**$ 174,184,380**	**$ 216,189,010**	**$ 197,518,214**	**-2.5%**
Wells Expense	$ 7,250	$ 8,476	$ 5,892	$ 4,928	$ 6,827	-1.5%
Lines Expense	11,255	-	1,483	1,455	1,598	-38.6%
Compressor Station Expense	412,808	631,031	556,559	538,946	531,057	6.5%
Compressor Station Fuel and Power	119,321	108,153	98,487	89,226	73,137	-11.5%
Measuring and Regulating Station Expenses	258,368	(306)	371	558	513	-78.9%
Gas Losses	168,916	99,758	172,883	282,910	330,013	18.2%
Storage Well Royalties	31,680	7,595	7,309	7,309	9,487	-26.0%
Other Expenses	6,752	(2,289)	12	224	224	-57.3%
Maintenance of Structures and Improvements	-	-	-	137	165	NM
Maintenance of Reservoirs and Wells	6,547	2,546	1,958	1,642	2,276	-23.2%
Maintenance of Lines	14,281	3,532	5,662	25,780	24,123	14.0%
Maintenance of Compressor Station Equipment	191,273	243,536	194,928	371,900	378,726	18.6%
Maintenance of Other	93,071	-	223	166	176	-79.1%
Total Underground Storage Expenses	**$ 1,321,522**	**$ 1,102,032**	**$ 1,045,767**	**$ 1,325,181**	**$ 1,358,322**	**0.7%**
Operating Supervision and Engineering	$ 129,211	$ 43,264	$ 21,777	$ 411	$ 569	-74.2%
Compressor Station Labor and Expenses	$ 299,745	$ 14,736	$ -	$ -	$ -	-100.0%
Mains Expenses	589,762	202,217	550,990	745,646	646,496	2.3%
Measuring and Regulating Station Expenses	29,975	30,736	65,559	187,408	149,055	49.3%
Transmission and Compression of gas by Others	88,728,476	89,740,976	96,147,856	96,668,386	98,057,042	2.5%
Other Expenses	-	-	578	11,520	10,668	NM
Rents	27,463	27,876	34,394	29,995	28,464	0.9%
Maintenance of Structures and Improvements	3,081	-	1,130	11,198	15,588	50.0%
Maintenance of Mains	694,092	313,364	1,119,251	1,808,083	2,182,072	33.2%
Maintenance of Compressor Station Equipment	110,577	412	9,510	648	205	-79.2%
Maintenance of Measuring and Reg Station Equip.	774,821	872,532	954,858	1,170,954	1,293,814	13.7%
Maintenance of Communication Equipment	55,038	127,709	153,770	159,544	170,925	32.8%
Maintenance of Other Equipment	-	-	3,890	9,569	9,152	NM
Total Transmission O&M Expenses	**$ 91,442,241**	**$ 91,373,822**	**$ 99,063,563**	**$ 100,803,362**	**$ 102,564,050**	**2.9%**

NM = Not Meaningful
Source: Annual Reports to the Pennsylvania Public Utility Commission (2015 through 2019)

DATA AND STATISTICS	2015	2016	2017	2018	2019	Compound Growth
Operation Supervision and Engineering	$ 59,265	$ (416,638)	$ (703,853)	$ (1,149,793)	$ (2,440,906)	NM
Distribution Load Dispatching	1,676	3,049	3,488	25	-	-100.0%
Mains and Services Expenses	11,692,261	12,028,683	11,807,208	10,705,533	11,799,088	0.2%
Measuring and Reg. Station Expenses - General	3,002,715	2,954,766	2,711,942	2,862,399	2,893,585	-0.9%
Measuring and Reg. Station Expenses - City Gate	87,400	167,956	190,026	-	-	NM
Meter and House Regulator Expenses	5,496,371	4,274,172	4,892,868	5,256,581	5,318,391	-0.8%
Customer Installations Expenses	3,705,135	3,660,664	3,759,896	4,938,597	4,483,591	4.9%
Other Expenses	4,800,474	2,534,355	2,331,062	2,435,412	2,545,062	-14.7%
Rents	387,828	415,700	374,000	379,907	354,141	-2.2%
Maintenance of Structures and Improvements	4,513,265	4,624,362	3,162,389	4,105,432	4,805,122	1.6%
Maintenance of Mains	25,505,361	25,384,766	23,899,449	27,930,974	29,007,870	3.3%
Maintenance of Compressor Station Equip.	177,839	129,844	97,593	114,076	119,682	-9.4%
Maint. of Measuring & Reg. Station Equip. - Gen.	1,629,453	1,610,148	1,422,875	1,204,893	1,372,106	-4.2%
Maint. of Measuring & Reg. Station Equip. - Ind.	2,025	2,487	4,165	25	-	NM
Maintenance of Services	4,614,675	1,068,835	1,177,682	849,079	1,167,517	-29.1%
Maintenance of Meters & House Regulators	103,625	444,802	354,738	360,395	333,845	34.0%
Maintenance of Other Equipment	683,818	601,786	630,058	478,661	469,831	-9.0%
Total Distribution O&M Expenses	**$ 66,463,186**	**$ 59,489,737**	**$ 56,115,586**	**$ 60,472,196**	**$ 62,228,925**	**-1.6%**
Supervision	$ 121,113	$ -	$ -	$ -	$ -	NM
Meter Reading Expenses	4,070,273	4,792,331	4,899,063	4,227,942	3,574,041	-3.2%
Customer Records & Collection Expenses	15,535,508	13,691,324	15,290,002	13,150,436	13,880,408	-2.8%
Uncollectable Accounts	12,697,361	11,324,524	13,581,615	16,108,692	17,679,052	8.6%
Total Customer Account Operations Expenses	**$ 32,424,255**	**$ 29,808,179**	**$ 33,770,680**	**$ 33,487,070**	**$ 35,133,501**	**2.0%**
Supervision	$ 727,876	$ 359,928	$ 341,247	$ 362,760	$ 358,907	-16.2%
Customer Assistance Expenses	(3,005,282)	7,173,638	9,070,198	8,094,645	4,496,511	NM
Inform. & Instructional Advertising Expenses	783,607	406,950	320,134	667,101	405,802	-15.2%
Misc. Customer Service & Inform. Expenses	43,649	2,127	5,858,388	3,236	6,771	-37.2%
Total Cust. Ser. & Inform. Operations Exp	**$ (1,450,150)**	**$ 7,942,643**	**$ 15,589,967**	**$ 9,127,742**	**$ 5,267,991**	**NM**
Demonstrating and Selling Expenses	$ 1,126,911	$ 1,502,825	$ 1,342,746	$ 1,013,170	$ 981,909	-3.4%
Advertising Expenses	169,470	-	-	-	-	NM
Total Operation Sales Expenses	**$ 1,296,381**	**$ 1,502,825**	**$ 1,342,746**	**$ 1,013,170**	**$ 981,909**	**-6.7%**
Administrative and General Salaries	$ 32,255,039	$ 18,510,429	$ 20,801,649	$ 20,962,008	$ 20,315,180	-10.9%
Office Supplies and Expenses	8,481,402	8,424,346	8,350,374	9,295,781	10,888,292	6.4%
Administrative Expenses Transferred-Credit	(19,926,137)	(18,340,202)	(22,246,181)	(24,422,795)	(26,272,124)	7.2%
Outside Service Employed	16,195,857	14,367,508	14,309,430	13,926,566	13,161,542	-5.1%
Property Insurance	289,478	275,803	273,078	291,018	292,450	0.3%
Injuries and Damages	6,722,414	7,651,963	7,408,217	8,658,273	8,193,184	5.1%
Employee Pensions and Benefits	20,519,414	16,195,522	12,126,358	15,545,165	16,176,849	-5.8%
Regulatory Commission Expenses	47,652	49,764	73,814	85,831	266,521	53.8%
General Advertising Expenses	2,495,387	3,527,067	4,195,372	3,486,908	3,934,728	12.1%
Miscellaneous General Expenses	1,048,542	1,108,779	3,001,238	1,264,820	1,349,583	6.5%
Rents	1,152,530	3,487,017	4,026,006	3,587,223	3,173,355	28.8%
Total Admin. and General O&M Expenses	**$ 69,281,578**	**$ 55,257,996**	**$ 52,319,355**	**$ 52,680,798**	**$ 51,479,560**	**-7.2%**
Maintenance of General Plant	412,236	194,116	213,359	171,311	131,486	
Total Gas O&M Expenses	**$ 487,302,587**	**$ 355,960,348**	**$ 444,028,407**	**$ 485,855,411**	**$ 467,452,290**	**-1.0%**

NM = Not Meaningful
Source: Annual Reports to the Pennsylvania Public Utility Commission (2015 through 2019)

PEOPLES NATURAL GAS COMPANY LLC
Financial and Operating Data Statistics

DATA AND STATISTICS	2015	2016	2017	2018	2019	Compound Growth
RECEIPTS BY VOLUME (MCF)						
Purchased Gas	60,645,527	58,560,224	54,548,056	61,369,637	58,087,470	-1.1%
Gas of Others Received for Transportation	62,032,377	61,342,299	60,532,142	65,587,615	69,308,221	2.8%
Exchange Gas Received	2,490,375	3,039,822	1,381,616	1,163,957	1,036,155	-19.7%
Gas from Storage	1,592,593	1,451,262	1,641,773	1,295,808	1,221,775	-6.4%
Other Receipts	-	2,277,592	2,893,569	4,484,623	3,824,790	NM
Total Receipts	**126,760,872**	**126,671,199**	**120,997,156**	**133,901,640**	**133,478,411**	**1.3%**
DELIVERIES BY VOLUME (MCF)						
Residential	52,498,422	49,596,168	49,620,004	56,276,200	52,483,661	0.0%
Commercial	29,495,284	28,010,111	27,926,502	31,267,769	29,992,188	0.4%
Industrial	32,068,720	33,090,451	32,257,858	34,477,431	38,309,510	4.5%
Other	812,245	864,831	2,115,212	4,008,260	854,001	1.3%
Total Sales	**114,874,671**	**111,561,561**	**111,919,576**	**126,029,660**	**121,639,360**	**1.4%**
Injected into Storage	1,544,219	1,514,309	1,450,909	1,245,433	1,248,686	-5.2%
Exchange Gas	2,367,477	2,908,039	1,029,565	1,153,097	763,009	-24.7%
Other Deliveries	2,520,750	2,666,598	2,340,282	1,656,515	1,250,089	-16.1%
Gas Used by Company	1,036,913	832,548	884,614	846,953	804,144	-6.2%
Other Deliveries	**7,469,359**	**7,921,494**	**5,705,370**	**4,901,998**	**4,065,928**	**-14.1%**
Total Deliveries (Sales & Other Deliveries)	**122,344,030**	**119,483,055**	**117,624,946**	**130,931,658**	**125,705,288**	**0.7%**
UNACCOUNTED FOR GAS (MCF)						
Total Receipts	126,760,872	126,671,199	120,997,156	133,901,640	133,478,411	1.3%
Less: Total Deliveries	122,344,030	119,483,055	117,624,946	130,931,658	125,705,288	0.7%
Unaccounted For Gas	4,416,842	7,188,144	3,372,210	2,969,982	7,773,123	15.2%
UFG AS A % OF TOTAL RECEIPTS						
Unaccounted For Gas	4,416,842	7,188,144	3,372,210	2,969,982	7,773,123	15.2%
Total Receipts	126,760,872	126,671,199	120,997,156	133,901,640	133,478,411	1.3%
% Unaccounted For Gas	3.5%	5.7%	2.8%	2.2%	5.8%	13.7%
AVERAGE CUSTOMERS						
Residential	576,694	576,548	578,031	582,198	579,897	0.1%
Commercial	45,448	48,782	49,176	43,559	48,796	1.8%
Industrial	352	377	405	400	402	3.4%
Other	30	33	37	45	43	NM
Totals	**622,524**	**625,740**	**627,649**	**626,202**	**629,138**	**0.3%**
AVERAGE EMPLOYEES*						
Totals	**948**	**863**	**944**	**1166**	**1171**	**5.4%**
GAS LINES						
Lines/Mains (M. Ft.)	66,220	66,266	66,331	66,292	66,203	0.0%
Lines/Mains (Miles)	12,550	12,550	12,563	12,555	12,538	0.0%
Services	608,393	610,803	614,489	616,792	621,616	0.5%

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PEOPLES GAS COMPANY LLC
Financial and Operating Data Statistics

DATA AND STATISTICS	2015	2016	2017	2018	2019	Compound Growth
OPERATING REVENUE ($)						
Residential	$ 58,014,136	$ 54,430,146	$ 63,173,962	$ 68,940,941	$ 65,044,712	2.9%
Commercial	18,788,932	16,975,962	20,783,448	21,981,826	20,266,345	1.9%
Industrial	7,145,492	6,136,942	6,157,540	6,073,875	5,530,503	-6.2%
Other	1,001,924	313,039	1,139,737	(1,521,622)	476,309	-17.0%
Total Operating Revenue	**$ 84,950,484**	**$ 77,856,089**	**$ 91,254,687**	**$ 95,475,020**	**$ 91,317,869**	**1.8%**
OPERATION & MAINTENANCE (O&M) EXPENSES ($)						
Natural Gas Well Head Purch., Interco. Trans.	$ 7,082,623	$ 6,845,301	$ 9,983,023	$ 10,669,257	$ 6,953,275	-0.5%
Natural Gas Transmission Line Purchases	13,360,673	9,951,057	14,502,823	17,162,303	13,095,986	-0.5%
Natural Gas City Gate Purchases	17,158	123,917	24,629	165,804	154,757	73.3%
Exchange Gas	(133,560)	(57,451)	(122,825)	525,526	2,073,263	NM
Purchased Gas Cost Adjustments	(2,096,491)	(3,845,558)	1,018,487	68,522	140,101	NM
Gas Withdrawn from Storage	8,329,381	7,609,619	5,794,639	7,133,874	8,978,153	1.9%
Gas Delivered to Storage - Credit	(6,549,812)	(4,724,699)	(6,492,360)	(8,405,390)	(7,858,094)	4.7%
Other Gas Supply Expenses	243,521	216,944	299,482	214,428	221,828	-2.3%
Total Gas Supply Operation Expenses	**$ 20,253,493**	**$ 16,119,130**	**$ 25,007,898**	**$ 27,534,324**	**$ 23,759,269**	**4.1%**
Operation Supervision and Engineering	$ 7,537	$ 3,243	$ 41,260	$ 41,024	$ 37,576	49.4%
Wells Expense	4,171	4,323	2,274	-	-	NM
Lines Expense	13,391	3,430	2,366	5,238	4,852	-22.4%
Compressor Station Expense	459,142	610,355	587,764	622,813	778,509	14.1%
Measuring and Regulating Station Expenses	1,911	-	-	1,278	1,194	-11.1%
Other Expenses	-	-	-	179	170	NM
Storage Well Royalties	17,514	15,233	16,884	17,386	17,753	0.3%
Maintenance of Reservoirs and Wells	-	-	3,244	2,715	13,440	NM
Maintenance of Lines	8,084	-	-	15,279	14,253	15.2%
Maintenance of Compressor Station Equipment	131,249	153,333	116,473	133,036	267,377	19.5%
Maintenance of Other	61,861	-	-	806	785	-66.4%
Total Underground Storage Expenses	**$ 704,860**	**$ 789,917**	**$ 770,265**	**$ 839,754**	**$ 1,135,909**	**12.7%**
Operating Supervision and Engineering	$ 52,760	$ 22,701	$ 288,823	$ 287,166	$ 263,029	49.4%
Compressor Station Labor and Expenses	$ 293,096	$ 228,642	$ 345,119	$ 466,215	$ 261,611	-2.8%
Mains Expenses	279,439	327,335	265,543	379,623	286,104	0.6%
Measuring and Regulating Station Expenses	145,796	65,459	59,216	77,293	112,744	-6.2%
Transmission and Compression of gas by Others	3,167,598	3,885,073	4,304,844	4,012,116	4,074,992	6.5%
Other Expenses	-	-	-	9,644	9,181	NM
Rents	28,044	26,312	29,626	33,680	30,278	1.9%
Maintenance of Mains	744,117	253,698	312,125	552,533	605,336	-5.0%
Maintenance of Compressor Station Equipment	140,412	154,130	92,755	155,902	112,970	-5.3%
Maintenance of Measuring and Reg Station Equip.	327,321	110,932	177,369	195,648	202,793	-11.3%
Maintenance of Communication Equipment	46,762	147,990	66,570	19,184	13,098	-27.3%
Maintenance of Other Equipment	1,423	-	-	6,836	4,850	35.9%
Total Transmission O&M Expenses	**$ 5,226,768**	**$ 5,222,272**	**$ 5,941,990**	**$ 6,195,840**	**$ 5,976,986**	**3.4%**
Operation Supervision and Engineering	$ 65,322	$ 412,834	$ 1,012,711	$ 132,678	$ 223,375	36.0%
Distribution Load Dispatching	-	-	412	-	-	NM
Mains and Services Expenses	3,375,558	3,100,351	2,334,496	1,372,313	1,513,214	-18.2%
Measuring and Reg. Station Expenses - General	948,526	768,521	514,153	569,253	514,112	-14.2%
Measuring and Reg. Station Expenses - City Gate	44,490	87,890	72,492	-	-	-100.0%
Meter and House Regulator Expenses	644,920	441,892	463,243	435,178	434,729	-9.4%
Customer Installations Expenses	447,427	286,487	283,779	340,817	344,353	-6.3%
Other Expenses	675,023	340,283	389,911	383,087	466,264	-8.8%
Rents	11,124	10,335	11,700	14,128	14,564	7.0%
Maintenance of Structures and Improvements	241,173	329,159	157,697	337,548	360,148	10.5%
Maintenance of Mains	2,155,848	2,510,941	2,772,772	3,262,745	3,128,378	9.8%
Maint. of Measuring & Reg. Station Equip. - Gen.	277,523	223,437	192,917	224,613	235,315	-4.0%
Maintenance of Services	617,424	159,871	108,950	53,158	76,544	-40.7%
Maintenance of Meters & House Regulators	144,511	166,354	84,195	54,213	46,445	-24.7%
Maintenance of Other Equipment	180,345	132,372	115,252	59,614	51,653	-26.8%
Total Distribution O&M Expenses	**$ 9,829,214**	**$ 8,970,727**	**$ 8,514,680**	**$ 7,239,345**	**$ 7,409,094**	**-6.8%**

NM = Not Meaningful
Source: Annual Reports to the Pennsylvania Public Utility Commission (2015 through 2019)

PEOPLES GAS COMPANY LLC
Financial and Operating Data Statistics

DATA AND STATISTICS	2015	2016	2017	2018	2019	Compound Growth
Supervision	$ 2,328	$ -	$ (673)	$ -	$ -	NM
Meter Reading Expenses	$ 1,098,368	758,497	685,545	591,672	541,798	-16.2%
Customer Records & Collection Expenses	1,748,232	1,541,812	1,634,571	1,264,193	1,321,944	-6.7%
Uncollectable Accounts	2,090,630	2,090,710	1,939,178	1,411,685	2,461,599	4.2%
Total Customer Account Operations Expenses	**$ 4,939,558**	**$ 4,391,019**	**$ 4,258,621**	**$ 3,267,550**	**$ 4,325,341**	**-3.3%**
Supervision	$ 91,048	$ 19,902	$ 9,342	$ (12,770)	$ (9,102)	NM
Customer Assistance Expenses	$ (1,271,231)	$ 759,317	$ 1,389,118	$ 2,022,561	$ 1,164,081	NM
Inform. & Instructional Advertising Expenses	131,740	144,587	135,764	153,364	91,299	-8.8%
Total Cust. Ser. & Inform. Operations Exp	**$ (1,048,443)**	**$ 923,806**	**$ 1,534,224**	**$ 2,163,155**	**$ 1,246,278**	**0.0%**
Supervision	$ 7,893	$ 8,389	$ 112,267	$ 97,156	$ 81,904	79.5%
Demonstrating and Selling Expenses	-	-	87,716	187,103	29,208	NM
Total Operation Sales Expenses	**$ 7,893**	**$ 8,389**	**$ 199,983**	**$ 284,259**	**$ 111,112**	**93.7%**
Administrative and General Salaries	$ 3,970,172	$ 1,058,627	$ 702,880	$ 2,975,519	$ 2,623,763	-9.8%
Office Supplies and Expenses	1,075,088	1,795,712	1,389,049	1,188,370	1,316,319	5.2%
Administrative Expenses Transferred-Credit	(3,138,745)	(3,136,999)	(3,190,600)	(2,350,572)	(2,933,288)	-1.7%
Outside Service Employed	3,235,719	5,205,140	5,697,564	2,003,663	1,964,809	-11.7%
Property Insurance	77,571	68,945	57,078	57,316	55,086	-8.2%
Injuries and Damages	1,146,487	921,219	892,319	1,075,709	1,001,498	-3.3%
Employee Pensions and Benefits	4,033,587	1,722,574	1,284,739	2,126,193	2,015,976	-15.9%
Regulatory Commission Expenses	3,266	3,331	16,334	40,713	52,655	100.4%
General Advertising Expenses	199	227,438	277,230	295,246	314,039	530.3%
Miscellaneous General Expenses	94,521	114,807	324,551	161,635	1,127,389	85.8%
Rents	-	-	113,497	298,626	292,669	NM
Total Admin. and General O&M Expenses	**$ 10,497,865**	**$ 7,980,794**	**$ 7,564,641**	**$ 7,872,418**	**$ 7,830,915**	**-7.1%**
Maintenance of General Plant	173,542	100,052	119,416	18,775	10,307	-50.6%
Total Gas O&M Expenses	**$ 50,584,750**	**$ 44,506,106**	**$ 53,911,718**	**$ 55,415,420**	**$ 51,805,211**	**0.6%**
RECEIPTS BY VOLUME (MCF)						
Purchased Gas	8,761,800	7,789,875	7,888,281	8,258,627	6,915,726	-5.7%
Gas of Others Received for Transportation	19,343,690	15,792,603	14,862,371	14,073,511	13,932,364	-7.9%
Exchange Gas Received	1,841,651	2,750,168	888,694	998,975	627,913	-23.6%
Gas from Storage	2,837,213	678,215	526,758	434,742	539,533	-34.0%
Other Receipts	-	366,819	1,064,795	819,093	1,104,796	NM
Total Receipts	**32,784,354**	**27,377,680**	**25,230,899**	**24,584,948**	**23,120,332**	**-8.4%**
DELIVERIES BY VOLUME (MCF)						
Residential	4,975,761	4,595,933	4,671,197	5,283,457	4,996,352	0.1%
Commercial	2,768,643	2,593,025	2,649,265	2,928,793	2,675,780	-0.8%
Industrial	17,475,487	14,720,545	13,755,849	12,900,131	12,645,716	-7.8%
Other	15,958	412,410	1,162,501	552,917	242,843	NM
Total Sales	**25,235,849**	**22,321,913**	**22,238,812**	**21,665,298**	**20,560,691**	**-5.0%**
Injected into Storage	3,941,899	605,561	463,310	550,904	528,510	NM
Exchange Gas	1,780,113	2,354,483	704,088	377,853	386,949	-31.7%
Other Deliveries	-	480,026	1,050,378	931,787	329,227	NM
Gas Used by Company	103,475	89,187	113,414	106,981	88,457	-3.8%
Other Deliveries	**5,825,487**	**3,529,257**	**2,331,190**	**1,967,525**	**1,333,143**	**-30.8%**
Total Deliveries (Sales & Other Deliveries)	**31,061,336**	**25,851,170**	**24,570,002**	**23,632,823**	**21,893,834**	**-8.4%**
UNACCOUNTED FOR GAS (MCF)						
Total Receipts	32,784,354	27,377,680	25,230,899	24,584,948	23,120,332	-8.4%
Less: Total Deliveries	31,061,336	25,851,170	24,570,002	23,632,823	21,893,834	-8.4%
Unaccounted For Gas	1,723,018	1,526,510	660,897	952,125	1,226,498	-8.1%
UFG AS A % OF TOTAL RECEIPTS						
Unaccounted For Gas	1,723,018	1,526,510	660,897	952,125	1,226,498	-8.1%
Total Receipts	32,784,354	27,377,680	25,230,899	24,584,948	23,120,332	-8.4%
% Unaccounted For Gas	5.3%	5.6%	2.6%	3.9%	5.3%	0.2%

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PEOPLES GAS COMPANY LLC
Financial and Operating Data Statistics

DATA AND STATISTICS	2015	2016	2017	2018	2019	Compound Growth
AVERAGE CUSTOMERS						
Residential	56,621	56,638	57,021	57,645	57,985	0.6%
Commercial	4,306	4,244	4,283	4,276	4,282	-0.1%
Industrial	27	22	27	27	26	-0.9%
Other	4	5	5	9	4	0.0%
Totals	**60,958**	**60,909**	**61,336**	**61,957**	**62,297**	**0.5%**
AVERAGE EMPLOYEES						
Totals	**168**	**141**	**134**	**146**	**133**	**-5.7%**
GAS LINES						
Field/Main Lines (M. Ft.)	14,188	14,348	14,511	14,490	14,539	0.6%
Field/Main Lines (Miles)	2,687	2,717	2,748	2,744	2,754	0.6%
Services	58,900	59,523	60,379	60,635	66,945	3.3%

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Pennsylvania Public Utility Commission

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