

COLUMBIA WATER COMPANY

MANAGEMENT EFFICIENCY INVESTIGATION

EVALUATING THE IMPLEMENTATION OF SELECT RECOMMENDATIONS FROM THE 2018 MANGEMENT AND OPERATIONS AUDIT REPORT

Prepared By The
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Bureau of Audits
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MANAGEMENT EFFICIENCY INVESTIGATION

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I. INTRODUCTION

A. Background

In 2017, the Management Audit staff of the Pennsylvania Public Utility Commission's (PUC or Commission) Bureau of Audits conducted a Management and Operations Audit (management audit) of Columbia Water Company, a small privately held water utility. In March 2018, the Bureau of Audits issued a final report with 13 recommendations for improvement. Columbia Water Company (CWC or company) submitted its implementation plan indicating acceptance of 12 recommendations and partial acceptance of one recommendation. On May 3, 2018, at D-2017-2606105, the Commission made the audit report and Implementation Plan public and directed the company to:

- Proceed with its May 3, 2018 Implementation Plan; and,
- Submit progress reports on the implementation annually, by May 1, for each of the next three years.

Since May 2018, CWC has submitted one implementation plan update as requested by the Commission to ascertain CWC's progress in implementing the recommendations from the management audit report. Based on a review of these updates, the Management Audit staff conducted a Management Efficiency Investigation (MEI) of CWC's progress in implementing 12 of the original 13 recommendations. The remaining recommendation was not included in the scope of this MEI as it was addressed within CWC's Implementation Plan update. Specific items of management effectiveness and operational efficiency may be investigated pursuant to Title 66 Pa. C.S. § 516(b).

B. Objective and Scope

The objective of this MEI was to review and evaluate the effectiveness of CWC's efforts to implement certain recommendations contained within the management audit report released in May 2018. The scope of this evaluation was limited to CWC's efforts in implementing 12 prior Management Audit Report recommendations in the functional areas of:

- Corporate Governance
- Financial Management
- Water Operations
- Emergency Preparedness
- Customer Service

Additionally, the PUC's auditors deemed it prudent to review CWC's compliance with PUC regulations at 52 Pa. Code Chapter 101 regarding physical security, cybersecurity, emergency response, and business continuity plans.

C. Approach

The Management Audit staff of the PUC's Bureau of Audits (audit staff or auditors) began fieldwork on August 27, 2019 and continued through September 26, 2019. The fact gathering process included:

- Interviews with CWC personnel;
- Analysis of selected CWC records, documents, reports, and other information focused on the period 2017 through September 2019; and,
- Visits to selected company facilities.

II. SUMMARY OF MANAGEMENT EFFECTIVENESS AND OPERATING EFFICIENCY

The PUC auditors found that CWC effectively or substantially implemented 6 of the 12 prior management audit recommendations reviewed and has taken some action on the remaining 6 recommendations. Among the more notable improvements achieved by the management of CWC are:

- Conducted annual tabletop reviews in coordination with local/county emergency management.
- Exercised critical valves in accordance with best practices.
- Established a damage prevention program.
- Successfully reduced overall banking costs by approximately \$1,000 monthly.

Although these accomplishments are commendable, the PUC auditors have identified opportunities for further improvement. Specifically, CWC should:

- Accelerate the replacement of cast iron mains.
- Formally incorporate its documented risk assessments into its strategic planning process.
- Document meter testing policy and procedures.
- Strive to exercise non-critical valves at least every seven to ten years.
- Document CWC's five-year capital planning process and manual adjustment process for customer overpayments.

Exhibit II-1 summarizes the 12 prior recommendations reviewed and the PUC auditors' follow-up findings, conclusions, and recommendations.

**COLUMBIA WATER COMPANY
MANAGEMENT EFFICIENCY INVESTIGATION
SUMMARY OF MAY 2018 MANAGEMENT AUDIT RECOMMENDATIONS
AND STAFF'S FOLLOW-UP FINDINGS, CONCLUSIONS, AND
RECOMMENDATIONS**

Prior MA Recommendations	MEI Follow-up Findings and Conclusions	MEI Follow-up Recommendations
III. CORPORATE GOVERNANCE (PAGE 6)		
Consider expanding the audit committee to three directors.	III-1 – CWC’s audit committee has three directors.	None
Expand the strategic planning process by developing and monitoring performance metrics that support the overall strategy of the company.	III-2 – CWC has expanded its strategic plan although further enhancements could be beneficial.	Incorporate documented risk assessments into the Board of Directors’ strategic planning process.
IV. FINANCIAL MANAGEMENT (PAGE 8)		
Document the process and procedures used to perform budgeting, variance reporting, and other significant financial management functions.	IV-1 – CWC updated its Accounting Manual to include budgeting and variance reporting processes but is still lacking information.	Document the five-year capital planning process and the manual journal entry adjustment for customer overpayments to ensure consistency and guidance to employees.
Periodically explore banking and financing services through price comparison or competitive bid.	IV-2 – CWC has sought alternative competitive banking services	None
Prepare any necessary adjusting journal entries to accurately account for customer overpayments.	IV-3 – CWC plans to make the manual journal entry for customer overpayments at year end.	Document the manual journal entry process planned for customer overpayments.
V. WATER OPERATIONS (PAGE 12)		
Accelerate the replacement of cast iron mains.	V-1 – CWC has not accelerated the replacement of cast iron mains.	Accelerate the replacement of cast iron mains.
Test a sample of new residential meters in accordance with regulations.	V-2 – New meter testing began in July 2018.	Document meter testing policy and procedures for new meters.

**COLUMBIA WATER COMPANY
MANAGEMENT EFFICIENCY INVESTIGATION
SUMMARY OF MAY 2018 MANAGEMENT AUDIT RECOMMENDATIONS
AND STAFF'S FOLLOW-UP FINDINGS, CONCLUSIONS, AND
RECOMMENDATIONS**

V. WATER OPERATIONS (continued)		
Develop and maintain a damage prevention program to include a damage prevention manual, line damage database, and a pipeline education and awareness program for the company's stakeholders (i.e., customers, contractors, etc.)	V-3 – CWC established a damage prevention manual.	None
Strive to exercise non-critical valves every seven to ten years.	V-4 – CWC began exercising critical valves more frequently but improvements are still needed for non-critical valves.	Strive to exercise non-critical valves every seven to ten years.
VI. EMERGENCY PREPAREDNESS (PAGE 18)		
Strive to annually test all emergency plans on at least a limited basis.	VI-1 – CWC performs tabletop reviews and coordinates with local and county emergency management annually.	None
VII. CUSTOMER SERVICE (PAGE 20)		
Evaluate historical customer delinquent account data and modify collection practices accordingly.	VII-1 – CWC completed an evaluation on its historical customer delinquent accounts.	None
Evaluate the feasibility of offering an automated pay-by-phone payment option.	VII-2 – CWC's study concluded that a pay-by-phone option for customers is not economically feasible.	None

III. CORPORATE GOVERNANCE

Background – CWC is a small privately held water utility. Although CWC is not subject to many of the corporate governance practices required by the SEC, it follows many of the governance practices established by the SEC, SOX, and NYSE. CWC's Board of Directors (Board) is composed of six members, including three directors who are also company officers (i.e., President, Vice President/General Manager, and Treasurer). The CWC Board uses three committees, including the Audit Committee, Executive Committee, and the Pension and Property Committee.

In this chapter, two prior recommendations and prior situations are reviewed, and two follow-up findings and one recommendation are presented. The findings relate to CWC's Audit Committee and the company's strategic planning processes.

Finding No. III-1

Prior Situation – CWC's audit committee charter specified that the audit committee must have a minimum of two financially literate members. Based upon the auditor's review, the company met the requirements of its audit committee charter; however, NYSE required listed companies are to have audit committees with a minimum of three members. While CWC is not required to follow the guidelines for NYSE listed companies, the auditors believe that all Pennsylvania public utilities should follow these practices as they provide benefits to the organization.

Prior Recommendation – Consider expanding the audit committee to three directors.

Follow-up Finding and Conclusion – **CWC's audit committee has three directors.**

Current Review – In response to the audit recommendation, CWC expanded its audit committee to three directors. The third director (added in 2018) has a financial background and is the committee's second independent member. CWC's audit committee charter was updated to reflect the new requirement to have three members. As a result of these changes, the audit committee now meets NYSE guidelines. Three member committees help support an environment with diverse viewpoints, averts deliberations of a hung committee, and enhances the quality of the committee.

Follow-up Recommendation – None

Finding No. III-2

Prior Situation – CWC’s strategic planning process was focused on developing CWC’s five-year capital plans, in which the company considered its regulatory environment, demand/growth/changing demographics in its service territory, state/local road improvement projects, equipment failures/system problems trends, equipment upgrade/replacement, and corresponding financing options. The company lacked performance metrics to support its overall company strategy.

Prior Recommendation – Expand the strategic planning process by developing and monitoring performance metrics that support the overall strategy of the company.

Follow-up Finding and Conclusion – CWC has expanded its strategic plan although further enhancements could be beneficial.

Current Review – In 2018, CWC documented its strategic plan, which outlines the company’s efforts toward developing its workforce, striving for excellence, managing infrastructure, enhancing the customer experience, and assuring safety and financial sustainability. For each of the strategic objectives, action plan items have been identified. Although some of the action plan items have quantifiable metrics, many do not. In many respects, CWC’s strategic plan includes items that are the foundation for a risk assessment. Any business must prioritize its focus to ensure efficient, cost-effective operations while mitigating or avoiding risks.

Currently, business risks are discussed by CWC’s Board throughout the year, although this largely occurs informally and as situations or risks occur. In the company’s defense, due to its smaller size, CWC can react quickly to sudden changes and shifting priorities. However, the company analyzes risk in at least two areas. First, CWC’s business continuity plan (BCP) addresses several operational events that could disrupt its business and highlights remediation steps the company could take. The second naturally occurs as the budget is reviewed with projected revenues, project funding considerations, etc. However, not all risks are communicated or deliberated by the board from these two areas.

Larger companies conduct annual SWOT analyses with dedicated personnel reporting results of risk assessments to the board. CWC lacks the capacity for such formalized studies but could incorporate more risk discussion at the board level, some of which is happening informally. Therefore, CWC’s Board with input from company personnel should at least annually dedicate time to identify major internal (e.g., unexpected employee turnover) and external (e.g., changing customer demand) risks and strategies for mitigating those risks. This should be done in conjunction with an annual review and approval of the company’s strategic plan.

Follow-up Recommendation – Incorporate documented risk assessments into the Board of Director’s strategic planning process.

IV. FINANCIAL MANAGEMENT

Background – The Columbia Water Company (CWC or company) employs an office staff consisting of an office manager and two customer service representatives (CSRs). The office manager is responsible for billing, accounts receivable, accounts payable, payroll, payroll taxes, and bookkeeping. The CSRs are responsible for handling walk-in customer payments, customer billing, the water service shut-off process, telephone inquiries, preparing service orders, and other miscellaneous office duties. The company prepares one-year operating and capital budgets and a rolling five-year capital budget annually.

In this chapter, three prior recommendations and prior situations are reviewed, and three follow-up findings and two recommendations are presented. The findings relate to CWC's financial management policies and procedures, acquisition and evaluation of its banking and financial services, and accounting processes for customer overpayments.

Finding No. IV-1

Prior Situation – CWC maintained documentation of policies and procedures related to its financial and accounting functions; however, operational practices related to budgeting were not documented. Policies and procedures should be documented for budgeting, variance reporting, and similar essential business processes to provide guidance to current and future employees. Ideally, a company's policies and procedures should be reviewed at a minimum of every three to five years to ensure they are current.

Prior Recommendation – Document the process and procedures used to perform budgeting, variance reporting, and other significant financial management functions.

Follow-up Finding and Conclusion – CWC updated its Accounting Manual to include budgeting and variance reporting processes but is still lacking information.

Current Review – CWC supplemented its Accounting Manual to include the general process for creating its annual operating and capital budget. As a small water utility, CWC's employees and Board of Directors are intimately involved in day-to-day operations. Therefore, CWC indicated that this high-level documentation provides an adequate overview to ensure consistency from year-to-year. However, CWC could benefit from additional detail on the budgeting process. For instance, a recent change from the 2018 rate increase resulted in a change in projected revenues. Although the revenue projection step is included, no specific information related to the calculations for the rate increases in projected revenues were documented in the procedure. Including this additional detail, even for non-routine but major budgeting steps, would aid in business continuity and knowledge retention by providing adequate guidance to future employees and ensure all budgeting practices are applied consistently.

Additionally, CWC's Accounting Manual provides oversight for several key processes; however, the auditors noted that the company's five-year capital planning process was not included in the manual. Upon inquiry with CWC's General Manager, this process was not included in the update to the annual budgeting process policy because it follows a separate process. Similarly, Audit Staff found no documentation for the company's manual adjustments to its reported customer accounts receivable balances.¹ While this process has not yet been implemented, it should be documented once the process goes into effect.

The audit staff recognizes that CWC is operating consistently, noting that the missing documentation for CWC practices is likely due to these types of documentation being considered low priority. Small companies, such as CWC, often create new policies and procedures out of necessity and then document at a later timeframe, due to operational constraints. Nonetheless, such documentation provides guidance to current and future employees and helps to maintain consistency. Furthermore, as employees retire/separate from the utility, CWC will benefit by having a method to recapture the extensive knowledge and experience of its current workforce.

Follow-up Recommendation – Document the five-year capital planning process and the manual journal entry adjustment process for customer overpayments to ensure consistency and guidance to employees.

¹ See Finding No. IV-3 for more information related to the customer accounts receivable accounting adjustment.

Finding No. IV-2

Prior Situation – CWC had not acquired price quotes or competitive bids for its financial banking services for an extended timeframe. Furthermore, CWC had not established a periodic price comparison or competitive bid process for its banking or financing services to ensure the company is not paying higher banking fees or financing at less advantageous rates than its competitors.

Prior Recommendation – Periodically explore banking and financing services through price comparison or competitive bid.

Follow-up Finding and Conclusion – CWC has sought alternative competitive banking services.

Current Review – Financial services, such as banking fees, refinancing options, and loan requirements should be competitively bid every five to ten years to ensure the utility is not paying higher rates than market. However, the interdependency of these services can also impact rates and the ability to shop all or some services. For instance, CWC's long-term loans have five-year terms, thus, there are limited opportunities to refinance. Based upon auditors' recommendation, in 2019, CWC sought a proposal from an alternative institution. However, that institution was unable to meet all CWC's service needs and countered to provide partial services. As CWC is restricted from separating certain functions between institutions due to its loan covenants, CWC was unable to find more favorable rates from the alternative institution.

In February 2019 CWC successfully negotiated better fees and terms with its existing bank through restructuring certain accounts, revision to its payroll process, and performing in-house check scanning. Although the in-house check scanning increased the work for its employees (ultimately limiting the benefit of its cost reduction), CWC was able to reduce its overall banking costs by approximately \$1,000 every month.

Follow-up Recommendation – None

Finding No. IV-3

Prior Situation – CWC was not performing or recording the required accounting adjustments for customer overpayments in its accounting system. CWC's customer information system (CIS) and accounting systems were not interconnected. Thus, manual journal entries were required to record customer billing and payments into CWC's accounting system, including the appropriate adjustments to accurately classify customer overpayments.

Prior Recommendation – Prepare the necessary adjusting journal entries to accurately account for customer overpayments.

Follow-up Finding and Conclusion – CWC plans to make the manual journal entry for customer overpayments at year end.

Current Review – Under Generally Accepted Accounting Principles (GAAP) and the accrual method of accounting, income is recognized when it is earned, regardless of when it is collected. As such, unearned revenues (e.g., customer overpayments), should be recorded as a liability until services are rendered. CWC uses separate, nonintegrated computer systems to conduct its accounting processes and manage its customer information system. Thus, a manual-based process is required to apply proper GAAP accounting to reflect customer overpayments as a liability within CWC's financial accounting system.

CWC intends to implement a new process at 2019 year-end to address this mismatch between the two systems. This annual process will require a single adjustment at the close of every calendar year. The adjustment is determined by CWC's customer information system's credit balance for customer accounts receivable. By implementing the adjustment, CWC will ensure the proper GAAP standards are followed by accurately reflecting customer overpayments. After the adjustment is made, CWC's external auditors will be responsible for reviewing the transaction. However, as mentioned previously in Finding No. IV-1, CWC's Accounting Manual does not document the process for issuing the annual adjustment. Therefore, the audit staff recommends that CWC establish written documentation for the process to ensure it is applied accurately and consistently.

Follow-up Recommendation – Document the manual journal entry process planned for customer overpayments.

V. WATER OPERATIONS

Background – As of August 2019, CWC employed 15 full-time and 3 part-time personnel to perform production and distribution functions. The General Manager (GM) oversees all water operation activities with support from the Production and Distribution Superintendents, who report directly to the GM. The Production Superintendent manages all water treatment and production activities at the water treatment plant and wells. The Distribution Superintendent is responsible for all distribution work and oversees a staff of ten.

In this chapter, four prior recommendations and prior situations are reviewed, and four follow-up findings and three recommendations are presented. The findings relate to CWC's main replacement program, new meter testing process, damage prevention program, and valve inspection program.

Finding No. V-1

Prior Situation – As of September 2017, CWC had approximately 135 miles of main, which consisted of about 27 miles of cast iron main (including 13.5 miles all predating 1950 installation). From 2012-2016, the company replaced an average of 0.2 miles of main annually while diverting significant capital resources for the construction of a new water treatment plant. The company's 2016 Long-Term Infrastructure Improvement Plan (LTIIP) indicated that main replacement would occur at 0.88 miles of main annually (or on a 150-year replacement schedule) from 2017 through 2021. At that rate, its entire cast iron main inventory would not be replaced for about 30 years.

Prior Recommendation – Accelerate the replacement of cast iron mains.

Follow-up Finding and Conclusion – CWC has not accelerated the replacement of cast iron mains.

Current Review – After receiving the Commission's approval² to combine the Columbia and Marietta rate districts in 2018, CWC filed a modified LTIIP which included both rate districts. In its 2018 LTIIP, CWC revised the rate it expects to replace mains annually from 0.88 miles to 0.23 miles. CWC listed numerous reasons in its LTIIP filing explaining why the modification was necessary. Those reasons included new DEP water system fees starting in 2019, interest rate increases, changes to DEP's chlorine residual rule, and Susquehanna River Basin Commission fees and aquifer test costs resulting in a decrease in available funds for main replacement. Although the company utilizes a distribution system improvement charge (DSIC)³ to aid in main replacement these expenses are not offset by DSIC. As reflected in Exhibit V-1, CWC has met or exceeded its main replacement goals in 2018 and 2019.

² See docket number R-2017-2598203 for information about CWC's rate filing, approved on March 1, 2018.

³ CWC's DSIC became effective in Nov. 2002.

**Exhibit V-1
Columbia Water Company
Actual and Planned Miles of Main Replacement
January 1, 2017 through December 31, 2022**

	2017	2018	2019 YTD	2020	2021	2022
Planned	1.02	0.21	0.23	0.23	0.23	0.23
Actual	0.81	0.22	0.43	N/A	N/A	N/A

Note: YTD is as of July 31, 2019
Source: Data Request WO-2

Accelerating the replacement of older cast iron main, especially pre-1950 pipe, is critical to ensure reliability of the distribution system. Although age is not the only risk indicator for failure, older pipe has a statistically higher chance of failure. Therefore, to mitigate catastrophic failure, emergency repairs and water quality degradation, it is imperative that the company accelerate the replacement of older cast iron mains, especially those installed prior to 1950. The company’s projected replacement over the next five years does not reflect an acceleration of cast iron main replacement. Consequently, CWC should accelerate its cast iron main projects as opportunities arise.

Follow-up Recommendation – Accelerate the replacement of cast iron mains.

Finding No. V-2

Prior Situation – Historically, CWC replaced 300-500 meters annually. Replacement cycles varied for commercial and industrial meters (i.e., 8-10 years) and residential meters (i.e., 10-15 years). New meters were deployed as old meters broke or exceeded an established service life. No meter testing policies or procedures existed despite having a certified meter test bench. The test bench was used to test residential and commercial meters upon customer requests or to test company repaired or rebuilt meters. The company relied on the meter manufacturer’s test results and did not test a sample of its new residential or commercial meters before placing them into service. The company stated that it was unaware of the PUC’s testing regulations for new meters.

Prior Recommendation – Test a sample of new residential meters in accordance with regulations.

Follow-up Finding and Conclusion – New meter testing began in July 2018.

Current Review – The PUC meter testing regulations at 52 PA. Code § 65.8(d) state, “...in the case of a new meter or a meter reconditioned by a manufacturer, the test results of the manufacturer may be accepted as the installation test if the utility has verified the manufacturer’s reported test results by testing the greater of 10% or ten meters of a shipment of meters.” CWC began to test new meters in July 2018 after becoming aware of the PUC’s testing regulations for new meters. CWC staff have been instructed to test 10% of new meters before placing them in service. The water meters are tested at different rates of flow and compared to the meter manufacturer’s testing data to ensure that any error in registration is not more than 2%. CWC’s test data (from July 2018 through September 2019) showed results within 2% of the meter manufacturer’s test results. Although the company has demonstrated that it is in regulatory compliance with testing new meters, it has not developed procedures to document this practice to ensure consistency and future compliance.

Follow-up Recommendation – Document meter testing policy and procedures for new meters.

Finding No. V-3

Prior Situation – The company had the components of a damage prevention manual including educational material and internal procedures; however, the information was not consolidated or documented within a manual. Additionally, CWC regularly participated in PA One Call System (POCS) sponsored training and as a member provided mapping of its service territory to POCS to reduce the number of locate ticket requests. The company did not use a database for tracking third-party line hits due to the infrequency of line hits (i.e., CWC averaged one minor line hit on service lines annually from 2013 through 2017). In lieu of billing the contractor, the company remediated the damages by allowing the offending contractor to make the necessary repairs.

Prior Recommendation – Develop and maintain a damage prevention manual, line damage database, and a pipeline education and awareness program for the company's stakeholders (i.e., customers, contractors, etc.).

Follow-up Finding and Conclusion – CWC established a damage prevention manual.

Current Review – A damage prevention program, which is more prevalent in the gas industry due to the inherent safety issues, also plays a significant role in the water industry. These programs typically utilize a database to track POCS information such as locate requests, number of line hits, billing information, etc. Additionally, damage prevention programs should include a damage prevention manual and pipeline education and awareness information for employees, contractors, customers, etc. regarding the POCS, safe digging techniques, general marking requirements for various groups, etc. CWC enhanced their damage prevention program by establishing a manual in June 2018 that includes each of these elements. Examples of the education and awareness program for CWC customers includes educational information on the company's website and annually sending safe digging pamphlets to its customers and local borough offices.

CWC has not experienced any line hits since 2017, nonetheless the General Manager and Distribution Superintendent ensure line hits would be tracked. CWC utilizes the POCS database to track locates and damage. By creating a damage prevention manual, utilizing a database to track line hits and educating its stakeholders, CWC has formalized its damage prevention program.

Follow-up Recommendation – None

Finding No. V-4

Prior Situation – CWC’s distribution valve inspection manual included a clear purpose for the program, background information, and a well-documented procedure including goals and a critical valve exercise schedule. In accordance with the valve inspection manual, the company’s goal was to inspect and exercise all critical valves in the distribution system on a five-year cycle. The company prepared a list of critical valves that are vital to minimizing severe water loss and the number of customers out of service during a major main break. From 2013 through 2017, CWC exercised on average 2% of its non-critical valves annually.

Prior Recommendation – Strive to exercise non-critical valves every seven to ten years.

Follow-up Finding and Conclusion – CWC began exercising critical valves more frequently but improvements are still needed for non-critical valves.

Current Review – The American Water Works Association (AWWA) recommends “inspections should be made of each valve on a regularly scheduled basis (annually if possible) and more frequent intervals for valves with a 16-inch diameter and larger.” Industry best practices state that utilities strive to exercise its critical valves on a 1-3 year cycle and the remaining non-critical valves on a 7-10 year cycle. In response to the 2018 MA recommendation, CWC updated its valve inspection manual to state that critical valves will be exercised on a three-year cycle. The manual is silent on a schedule for inspecting and exercising non-critical valves.

As shown in Exhibit V-2, CWC has exercised on average 48 critical valves per year which meets its goal and the industry best practice for a three-year cycle. Additionally, from 2017 through 2019 CWC exercised on average 5%, or 147, of its non-critical valves, which is an improvement from the 2% average during the prior management audit. To reach a 10-year cycle, CWC would need to exercise an average of 275 non-critical valves per year while maintaining an average of 45 critical valves.

**Exhibit V-2
Columbia Water Company
Total Valves and Number of Valves Exercised by Type
January 1, 2017 through July 31, 2019**

	Non-critical Valves Exercised	Critical Valves Exercised
2017	236	53
2018	122	8
2019 YTD	83	83
3-year average	147	48
Total Valves	2,746	131

Source: Data Request WO-7 and auditor analysis

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The key benefits of a valve exercise program are to identify and ensure all system valves are accessible and operate correctly prior to an emergency. Effectively isolating a main break translates to reduced water loss, faster repairs, and reduced property damage. The company's efforts in exercising its critical valves on a three-year schedule is commendable. Additionally, the company's improvements with exercising their non-critical valves are encouraging, though improvements could be made to meet industry best practices. The auditors recognize that operating non-critical valves can be resource intensive yet incorporating valve operations when completing other work may help the company to expand testing of non-critical valves.

Follow-up Recommendation – Strive to exercise non-critical valves every seven to ten years.

VI. EMERGENCY PREPAREDNESS

Background – The 2018 Focused Management and Operations Audit, contained one recommendation within the Emergency Preparedness functional area. The auditors rated this area as needing minor improvement. In this chapter, one prior recommendation and prior situation is reviewed. In addition, the PUC audit staff deemed it prudent to perform an updated review of the company’s compliance with PUC regulations at 52 Pa. Code § 101 (Chapter 101) regarding physical security, cybersecurity, emergency response and business continuity plans as part of this audit. No follow-up recommendations are presented in this section.

To protect infrastructure within the Commonwealth of Pennsylvania and ensure safe, continuous and reliable utility service, effective June 2005, Chapter 101 requires all jurisdictional utilities to develop and maintain written physical security, cybersecurity, emergency response and business continuity plans. Furthermore, in accordance with 52 Pa. Code § 101.1, all jurisdictional utilities are to annually submit a Self-Certification Form to the Commission documenting compliance with Chapter 101. This form, available on the PUC website, is comprised of 13 questions as shown in Exhibit VI-1.

**Exhibit VI-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?	

* Attach a sheet with a brief explanation if N/A is supplied as a response to a question.

Source: Public Utility Security Planning and Readiness Self-Certification Form, as available on the PUC website at http://www.puc.state.pa.us/general/onlineforms/pdf/Physical_Cyber_Security_Form.pdf

While conducting our Management Efficiency Investigation, the PUC’s auditors reviewed the most recent Self Certification form submitted by CWC. Our examination of the company’s emergency preparedness included a review of the physical security plan, cybersecurity plan, emergency response plan, business continuity plan, and associated security measures. In addition, the PUC’s auditors performed inspections at a sampling

of CWC's facilities. Due to the sensitive nature of the information reviewed, specific information has not been provided within this section.

Finding No. VI-1

Prior Situation – CWC performed activities that could have qualified as a plan testing (i.e., ensuring doors/hatches are locked, critical systems are operable, etc.) but the auditors could not find evidence that live or tabletop testing for its emergency plans was being performed. It was recommended that the company coordinate with its local and county emergency responders and its Emergency Task Force by either hosting or participating in annual tabletop exercises.

Prior Recommendation – Strive to annually test all emergency plans on at least a limited basis.

Follow-up Finding and Conclusion – CWC performs tabletop reviews and coordinates with local and county emergency management annually.

Current Review – In accordance with PUC regulations at Chapter 101.3 (b), CWC reviews and updates its physical security, cybersecurity, emergency response and business continuity plans annually. Beginning in 2014-2015, CWC began inviting first responders to its facilities to familiarize them with its operations. In addition, CWC meets with local and county emergency management to discuss relevant threats, security issues, safety concerns, etc. and coordinate any type of response that may be required in case of an emergency.

Annually, between January and March, CWC management reviews and updates its emergency plans. During this review, the staff re-evaluates each emergency scenario to make sure that the response is still applicable and that the information such as emergency contacts, backup location, emergency services, etc. is still current. This serves as a tabletop exercise with all relevant employees participating in this walkthrough. The audit staff believes that by annually reviewing/updating its plans, performing a tabletop review of each scenario, and coordinating emergency response activities with local and county emergency management, CWC is meeting the requirements of Chapter 101.

Follow-Up Recommendation – None

VII. CUSTOMER SERVICE

Background – CWC provides water service to over 10,000 customers in Lancaster and York County, Pennsylvania. CWC’s customer service function is performed by the CWC office manager and two customer service representatives (CSRs). CSR responsibilities include answering customer calls, processing payments, processing customer requests (e.g., scheduling service calls, handling settlements for property sales, opening/closing accounts, etc.), preparing customer bills, and processing customer complaints. They also are responsible for setting up payment agreements, conducting collection efforts via telephone, and processing shut-off notices.

In this chapter, two prior recommendations and prior situations are reviewed, and two follow-up findings are presented. The findings relate to CWC’s customer collection practices and review of the feasibility to expand payment methods for customers.

Finding No. VII-1

Prior Situation – CWC was not proactively contacting delinquent customers to resolve outstanding balances prior to termination. Instead, CWC’s collections practices began after two consecutive bills were unpaid (and the outstanding balance was \$25 or more). Once delinquency reached the CWC collection threshold, CWC began termination processes. However, terminated outstanding balances remained in CWC’s customer information system for four years. Balances aged over four years were forwarded to a third-party debt collector.

Prior Recommendation – Evaluate historical customer delinquent account data and modify collections practices accordingly.

Follow-up Finding and Conclusion – CWC completed an evaluation on its historical customer delinquent accounts.

Current Review – Average CWC residential bills range between \$28 – 32 each month.⁴ Thus, two consecutive missed payments generally meet the \$25 threshold and activate CWC’s termination and collections processes. In response to the 2018 management audit recommendation, CWC conducted a historical study on its customer delinquencies. A summary of the results of the study is presented in Exhibit VII-1.

⁴ Average monthly bills determined by applying the USGS average usage per US household (3,000 gallons) and information provided by CWC’s current tariff rates for its Columbia and Marietta divisions, effective March 2018. <https://water.usgs.gov/edu/qa-home-percapita.html>

**Exhibit VII-1
Columbia Water Company
Summary of Results
Historical Customer Delinquencies
August 2019**

Year	Write-off	Outstanding as of 7/31/19	Collected by CWC	Collected by Third-Party Collections
2015	\$14,423.00	\$12,874.83	\$1,548.17	\$30.45
2016	\$16,152.29	\$14,887.15	\$1,265.14	\$25.68
2017	\$16,663.91	\$13,620.06	\$3,043.85	\$0.00

Note: Outstanding balances on closed accounts are written-off December 31st of the following calendar year
Source: Data Request CS-5

As reflected in the study, CWC is significantly more successful at recapturing outstanding amounts than its third-party collections company. Generally, CWC finds that many delinquencies are generated from transient customers with leased residences. Upon new application for water service, CWC requests to review the lease for the new account. CWC is then able to identify outstanding balances (within four years of termination) and successfully collect from delinquent customers with prior balances on closed accounts before new service is initiated.

CWC also sought a proposal from a third-party collection company to identify opportunities to increase its collections efforts on closed accounts with outstanding balances. However, CWC found the terms of the agreement unfavorable, with significant upfront costs and no guarantee of performance from the vendor. Since the 2018 management audit, CWC was able to establish increased communications with the Lancaster County Sheriff’s Office and HUD to recapture outstanding debts on vacated properties that fall under auction. In cases where auctions result in excess proceeds, outstanding obligations are satisfied. CWC has been able to collect on several cases since 2018 but does not track the actual amounts collected from this initiative separately.

Actively working to timely collect overdue balances reduces the risk of lost revenue; thus, delinquent balances should be sent for active collections within a reasonable amount of time to increase the chance of collection. However, due to its size, CWC cannot obtain more favorable agreements with outside vendors to leverage more sophisticated collections activities than are currently in place. Nonetheless, CWC has increased its communications with external organizations (i.e., Sheriff’s Office, HUD) to increase the success of its existing collections activities.

Follow-up Recommendation – None

Finding No. VII-2

Prior Situation – CWC’s customers were offered five different payment methods. These options included U.S. mail, in-person at the CWC office, drop off at Union Community Bank⁵, ACH by the customer’s financial/banking institution, and online through the CWC electronic billing system. However, the available electronic/low cost processing methods did not include the commonly offered automated pay-by-phone method for receipt of customer payments.

Prior Recommendation – Evaluate the feasibility of offering an automated pay-by-phone payment option.

Follow-up Finding and Conclusion – CWC’s study concluded that a pay-by-phone option for customers is not economically feasible.

Current Review – As mentioned in the chapter background, CWC has approximately 10,000 water utility customers. CWC receives payments through both traditional (mail, walk-in) and electronic (online, ACH, etc.) methods. Although CWC receives credit card payments from in-person customers at its office, CWC cannot take credit card payments over the phone (customers are required to present their cards). Meanwhile, utilities should promote billing and payment methods which result in ease of processing, low processing costs, and a high level of automation. One such payment option is credit card payment by phone.

In response to the 2018 management audit recommendation, CWC requested an estimate from its existing bank for implementing pay-by-phone services. Based on the estimate, CWC conducted an internal study concluding that CWC would need to require a higher than optimal convenience fee⁶ to implement the service. Due to the high convenience fee and sizable upfront costs of implementation, CWC determined that the large convenience fee would deter customer usage and increase the risk for stranded costs associated with implementing the option. Without a critical mass of customers using the service, pay-by-phone appears uneconomical for CWC’s existing customer base. Should conditions change, pay-by-phone could be reconsidered but for now, it is not prudent or cost-effective.

Follow-up Recommendation – None

⁵ As of January 1, 2019, CWC customer payments are no longer accepted at Union Community Bank.

⁶ CWC estimated that 50 customers (more than twice the average monthly inquiries for the option) would use the pay-by-phone credit card option. Under the proposal, monthly costs were approximately \$380 for the pay-by-phone service and credit card processing fees were estimated to be \$85 per month. As such, a \$9 convenience fee would cover the total ongoing costs for implementing the pay-by-phone credit card option.

VIII. ACKNOWLEDGEMENTS

We wish to express our appreciation to the officers and staff of CWC for their cooperation and assistance.

This audit was conducted by Jennie Banzhof, Krystle Daugherty, and Porus Irani of the Management Audit Division of the PUC Bureau of Audits.

