



Dave Yost • Auditor of State

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Dave Yost • Auditor of State

To the residents, elected officials, management, and stakeholders of City of Circleville,

At the request of the City of Circleville (Circleville or the City), the Auditor of State's Ohio Performance Team conducted a performance audit of the City to provide an independent assessment of operations. Functional areas selected for operational review were identified with input from City management and were selected due to strategic and financial importance. Where warranted, and supported by detailed analysis, this performance audit report contains recommendations to enhance the City's overall efficiency and effectiveness. This report has been provided to the City and its contents have been discussed with the appropriate governance officials and management.

The City has been encouraged to use the management information and recommendations contained in the performance audit report. However, it is also encouraged to perform its own assessment of operations and develop alternative management strategies independent of the performance audit report. The Auditor of State has developed additional resources to help Ohio governments share ideas and practical approaches to improve accountability, efficiency, and effectiveness.

SkinnyOhio.org: This website, accessible at <http://www.skinnyohio.org/>, is a resource for smarter streamlined government. Included are links to previous performance audit reports, information on leading practice approaches, news on recent shared services examples, the Shared Services Idea Center, and other useful resources such as the Local Government Toolkit. The Shared Services Idea Center is a searchable database that allows users to quickly sort through shared services examples across the State. The Local Government Toolkit provides templates, checklists, sample agreements, and other resources that will help local governments more efficiently develop and implement their own strategies to achieve more accountable, efficient, and effective government.

This performance audit report can be accessed online through the Auditor of State's website at <http://www.ohioauditor.gov> and choosing the "Search" option.

Sincerely,

A handwritten signature in black ink that reads "Dave Yost".

Dave Yost
Auditor of State
September 6, 2016

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Table of Contents

Executive Summary	1
Purpose and Scope of the Audit.....	1
Performance Audit Overview	1
Audit Methodology.....	2
Summary of Recommendations.....	3
Issue for Further Study.....	4
1. General Background.....	5
2. Operational Analysis.....	10
R2.1 Develop a work planning and scheduling system that takes into account the workload needed to run and maintain its water and wastewater plants and associated infrastructure. Such a plan should be data driven and be informed by the needs of its current and future operations and infrastructure maintenance schedules.....	23
3. Utility Rate Analysis.....	24
R3.1 Develop an annual system for evaluating utility rates that considers such factors as the revenues required to support anticipated operations, debt service, and capital improvement expenditures. As rates are assessed and updated, the City should consider the need to implement a customer assistance programs to provide assistance to customers that have demonstrated a limited ability to pay.....	31
4. Wastewater Financial Projections	32
R4.1 Prepare and maintain a comprehensive, multi-year capital plan that assesses the current condition of the infrastructure, future capital project needs, and the funding sources required to complete these projects.....	38
Appendix A: Scope and Objectives	39
Appendix B: Additional Information.....	40
Client Response	42

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Executive Summary

Purpose and Scope of the Audit

Prior to the formal start of the audit, the Ohio Performance Team (OPT) and the City of Circleville (Circleville or the City) engaged in a collaborative planning process which included initial meetings, discussions, and preliminary assessments. Based on these planning activities, AOS and the City entered into a letter of engagement, effective January 21, 2016. Based on the original letter of engagement, OPT planned and scoped the work in consultation with the City, which identified the following distinct scope areas:

- Public Services; and
- Utility Rate Analysis.

These operational areas comprise the scope of the audit as reflected in this report. Based on the established scope, OPT engaged in supplemental planning activities to develop detailed audit objectives for comprehensive analysis. See **Appendix A: Scope and Objectives** for detailed objectives developed to assess operations in each scope area.

Performance Audit Overview

Performance audits provide objective analysis to assist management and those charged with governance and oversight to improve program performance and operations, reduce costs, facilitate decision making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability.

The United States Government Accountability Office develops and promulgates Government Auditing Standards that establish a framework for performing high-quality audit work with competence, integrity, objectivity, and independence to provide accountability and to help improve government operations and services. These standards are commonly referred to as Generally Accepted Government Auditing Standards (GAGAS).

OPT conducted this performance audit in accordance with GAGAS. These standards required that OPT plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for findings and conclusions based on the audit objectives. OPT believes that the evidence obtained provides a reasonable basis for our findings and conclusions based on the audit objectives.

Audit Methodology

To complete this performance audit, auditors gathered data, conducted interviews with numerous individuals associated with the areas of City operations included in the audit scope, and reviewed and assessed available information. Assessments were performed using criteria from a number of sources, including:

- Peer cities;
- Industry standards;
- Leading practices;
- Statutes; and
- Policies and procedures.

In consultation with the City, utility operations of the following municipalities were used for peer comparison, including: City of Dover (Tuscarawas County), City of Englewood (Montgomery County), City of Marietta (Washington County), and City of West Carrollton (Montgomery County). The comparative peer group was selected based on population size and the operation of both water and wastewater treatment facilities. Similar to Circleville, each peer city sources its water from wells and has separate sanitary and storm sewer systems. During the course of the audit, a request to provide operating and personnel data was made to these municipalities, with all providing the requested information.

Where reasonable and appropriate, data from the four peer municipalities were used as a basis of comparison. However, in some operational areas, industry standards or leading practices were used for primary comparison. Sources of industry standards or leading practices used include: the American Water/Wastewater Association (AWWA), the Edward J. Collins, Jr. Center for Public Management at University of Massachusetts at Amherst, United States Department of Housing and Urban Development (HUD), and the United States Environmental Protection Agency (USEPA).

The performance audit involved information sharing with the City, including drafts of findings and recommendations related to the identified audit areas. Periodic status meetings throughout the engagement informed the City of key issues impacting selected areas, and shared proposed recommendations to improve operations. The City provided verbal and written comments in response to various recommendations, which were taken into consideration during the reporting process.

AOS and OPT express their appreciation to the management and employees of City of Circleville for their cooperation and assistance throughout this audit.

Summary of Recommendations

The following table summarizes the performance audit recommendations.

Summary of Recommendations

Recommendations	
Public Services	
R2.1	Develop a work planning and scheduling system that takes into account the workload needed to run and maintain its water and wastewater plants and associated infrastructure. Such a plan should be data driven and be informed by the needs of its current and future operations and infrastructure maintenance schedules.
Utility Rate Analysis	
R3.1	Develop an annual system for evaluating utility rates that considers such factors as the revenues required to support anticipated operations, debt service, and capital improvement expenditures. As rates are assessed and updated, the City should consider the need to implement a customer assistance programs to provide assistance to customers that have demonstrated a limited ability to pay.
R4.1	Prepare and maintain a comprehensive, multi-year capital plan that assesses the current condition of the infrastructure, future capital project needs, and the funding and funding sources required to complete these projects.

Issue for Further Study

Issues are sometimes identified by AOS that are not related to the objectives of the audit but could yield economy, efficiency, and/or operational improvements if examined in more detail. The following issue for further study was identified during the course of the audit.

Budgeting

The City should further study its approach to budgeting within the Sanitary Sewer Operating Fund. In doing so, the City should consider the potential value of budget-to-actual analyses as a tool to understand and monitor financial needs. In addition, the City should consider the potential decision-making and planning value that a more accurate budgeting method could provide with regard to capital planning and budgeting.

Table IFFS-1 shows the City's Sanitary Sewer Operating Fund budget and actuals for 2015, difference in actuals versus budget, and 2016 budget.

Table IFFS-1: Sanitary Sewer Operating Fund Budget Analysis

	2015 Budget	2015 Actual	Actual Over/ (Under) Budget	% of Budget Actually Used	2016 Budget
Operating Expenditures	\$1,881,774	\$1,579,923	(\$301,851)	84.0%	\$1,831,262
Personnel Services	\$736,872	\$642,073	(\$94,799)	87.1%	\$726,588
Fringe Benefits	\$418,113	\$305,866	(\$112,247)	73.2%	\$362,622
Travel/Transportation	\$7,500	\$3,448	(\$4,052)	46.0%	\$8,000
Contractual Services	\$483,239	\$424,824	(\$58,415)	87.9%	\$498,852
Supplies and Materials	\$236,050	\$203,712	(\$32,338)	86.3%	\$235,200
Capital Expenditure	\$257,450	\$75,565	(\$181,885)	29.4%	\$290,700
Total Transfers-Out	\$557,958	\$557,958	\$0	100.00%	\$706,376
Total Expenditures/Transfers	\$2,697,182	\$2,213,446	(\$483,736)	82.1%	\$2,828,338

Source: City of Circleville

As shown in **Table IFFS-1**, budgeted operating, capital, and total expenditures/transfers exceed actuals by nearly \$484,000 for 2015. The largest dollar variance was within the operating expenditures where the City over-budgeted actual expenditures by nearly \$302,000, or 19.1 percent. The City's 2016 budget shows a continuation of the 2015 budgeting approach.

Over-budgeting operating expenditures, to a certain extent, can allow the City to accommodate unforeseen circumstances. However, too large of an appropriation could distort the actual amount of revenue that is truly available at any given time to fund other priorities, such as those that would be contained in a multi-year capital plan (see **R4.1**).

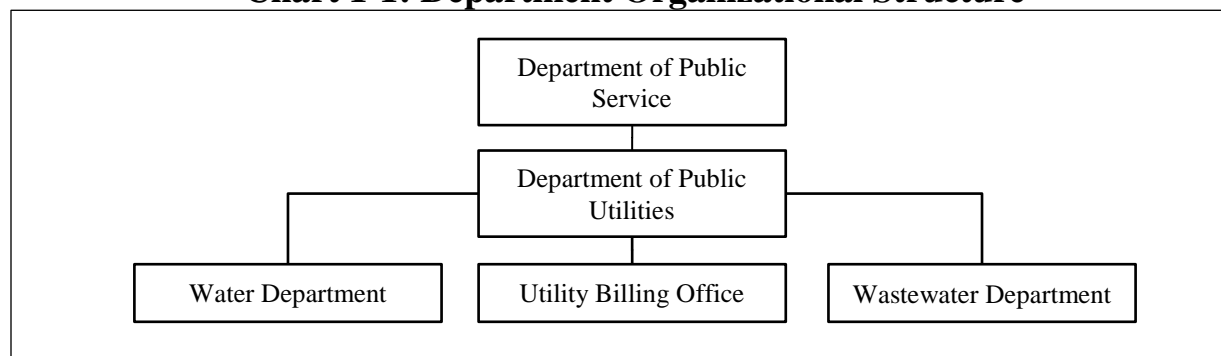
1. General Background

Responsibilities and Organization

The Department of Public Utilities (Public Utilities) is responsible for providing water and sanitary sewer service for the City, including property within the corporation limits as well as select areas of the surrounding townships.

Chart 1-1 shows the high-level organizational structure for Public Utilities.

Chart 1-1: Department Organizational Structure



Source: City of Circleville

As shown in **Chart 1-1**, Public Utilities is a sub-department of the Department of Public Service. Public Utilities is organized into three primary functional areas including the Water and Wastewater departments as well as the Utility Billing Office. Under this structure, the Utilities Director reports to the Service Director. However, during the course of the audit, the City reorganized management of Public Utilities. Although the position of Utilities Director still exists, the Service Director took on the additional responsibilities for the position. The former Utilities Director was moved to a separate Engineer position within the broader Department of Public Service.

Public Utilities Funding and Rate Structure

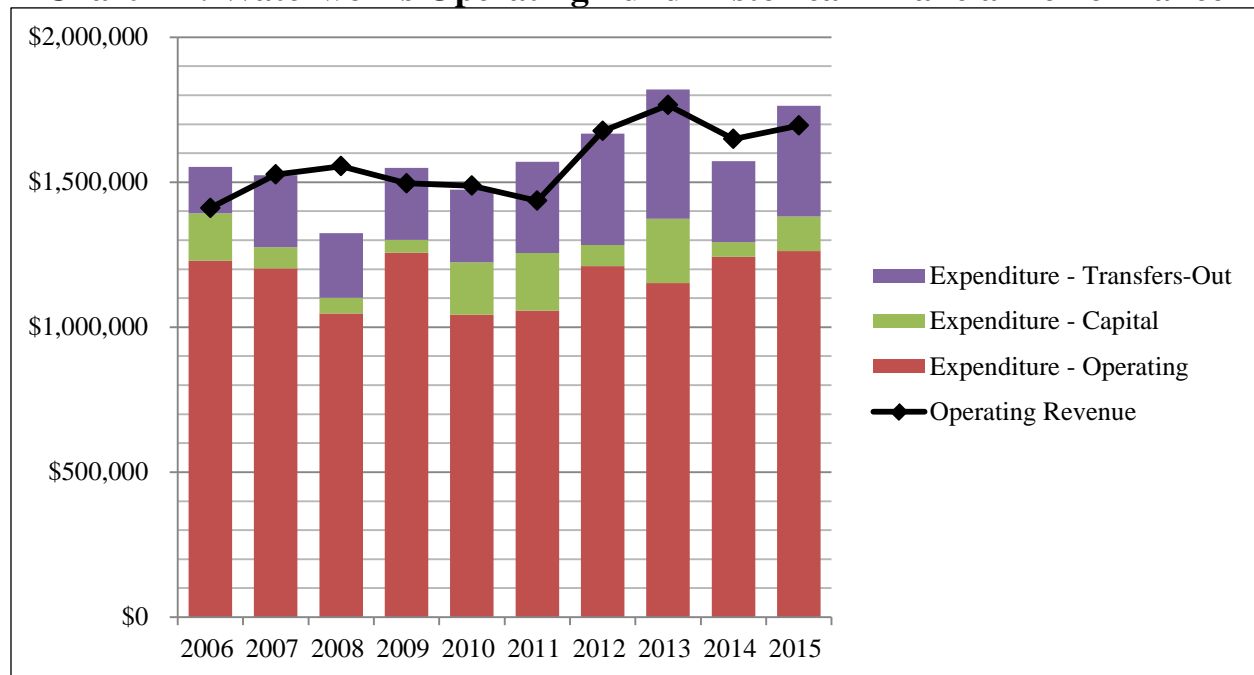
Water and Wastewater departments' operations are funded primarily through charges for water and sewer service. These charges are levied on customers based on rate schedules that are defined in the City's codified ordinances. Circleville Codified Ordinance 927.12 specifies that, "On or before March 1 of each year, the Public Utilities Director shall submit to the Director of Public Service a recommended system of user charges for approval. If approved, the Director of Public Service shall submit the sewer use charge schedule to the first regular meeting of Council in March for ratification and incorporation into the ordinances of the City."

Historical Financial Performance – Waterworks Operating Fund

The Waterworks Operating Fund accounts for revenue from all water sales. Expenditures from the Waterworks Operating Fund pay for a majority of the Water Department’s operating expenditures and also directly pay for a portion of water-related capital expenditures. Indirectly, the Waterworks Operating Fund also pays for water-related debt service and large capital projects expenditures, but these funds are first transferred-out to subsidiary water funds.

Chart 1-2 shows Waterworks Operating Fund annual revenues and expenditures by type (i.e., transfers-out, capital, or operating) for 2006 through 2015. Examining historical revenues and expenditures provides long-term context for the financial position of the Water Department.

Chart 1-2: Waterworks Operating Fund Historical Financial Performance



Source: City of Circleville

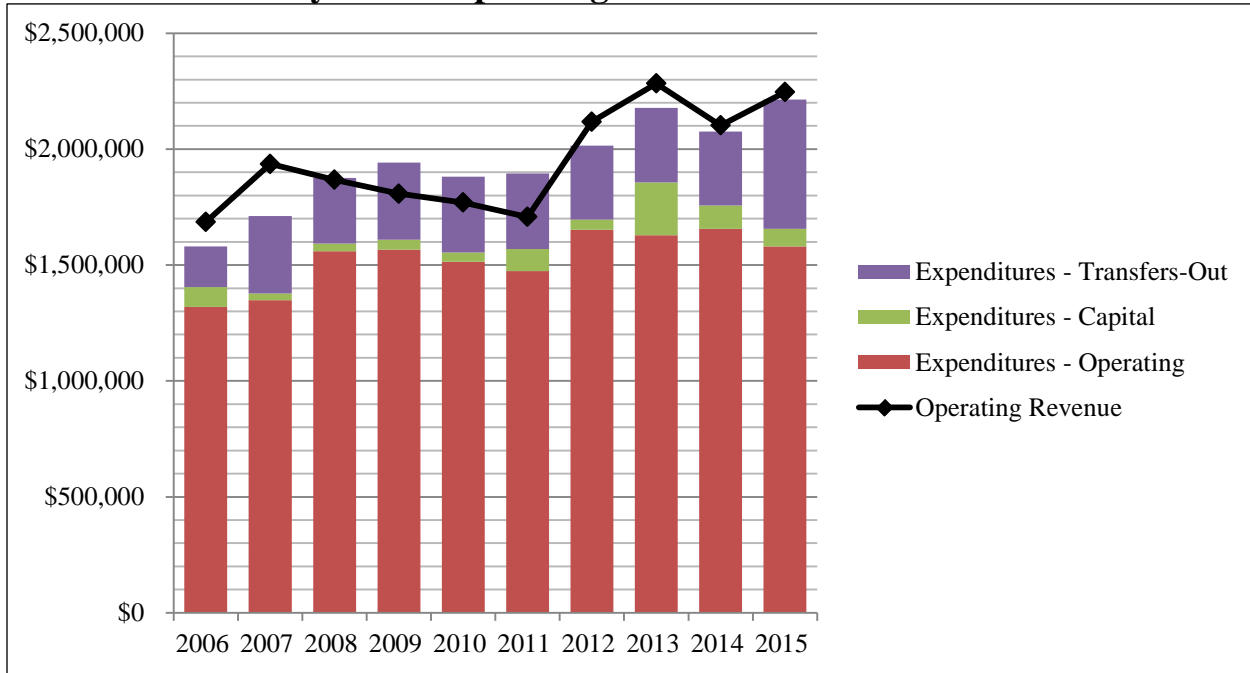
As shown in **Chart 1-2**, Waterworks Operating Fund operating revenues exceeded operating expenditures each year from 2006 through 2015. However, when also accounting for capital expenditures and transfers-out, operating revenues commonly fell short of total expenditures. The resulting annual deficit spending occurred in five of the 10 years shown. From 2007 to 2011, the water utility rates were held steady, which contributed to annual deficits in 2009 and 2011.

Historical Financial Performance – Sanitary Sewer Operating Fund

The Sanitary Sewer Operating Fund accounts for revenue from all wastewater (sewer) sales. Expenditures from the Sanitary Sewer Operating Fund pay for a majority of the Wastewater Department’s operating expenditures and also directly pay for a portion of wastewater-related capital expenditures. Indirectly, the Sanitary Sewer Operating Fund also pays for wastewater-related debt service and large capital projects expenditures, but these funds are first transferred-out to subsidiary wastewater funds.

Chart 1-3 shows the annual revenues and expenditures for the Wastewater Department for 2006 through 2015 from the Sanitary Sewer Operating Fund. Again, examining historical revenues and expenditures provides long-term context for the financial position of the Wastewater Department.

Chart 1-3: Sanitary Sewer Operating Fund Historical Financial Performance



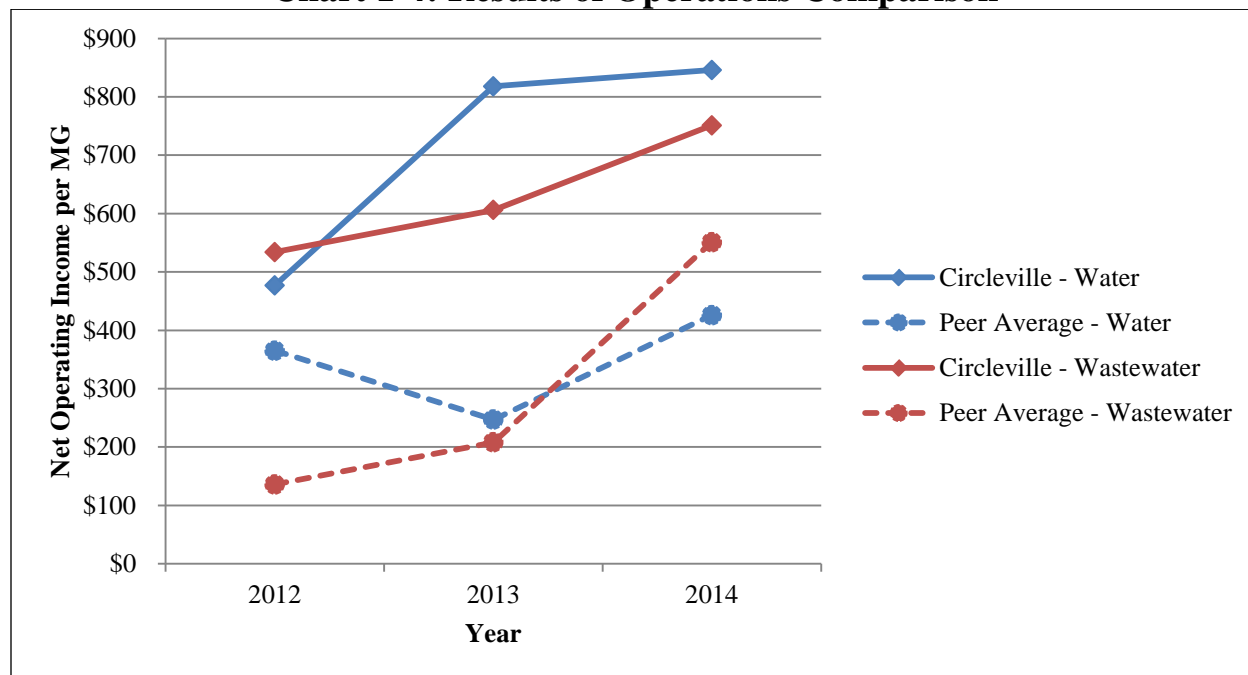
Source: City of Circleville

As shown in **Chart 1-3**, Sanitary Sewer Operating Fund operating revenues exceeded operating expenditures each year from 2006 through 2015. However, when also accounting for capital expenditures and transfers-out, operating revenues commonly fell short of total expenditures. The resulting annual deficit spending occurred in four of the 10 years shown. From 2007 to 2011, water utility rates were held steady, which contributed to annual deficits from 2008 to 2011. While the rate structure provides sufficient funds to cover operating expenses, the City is planning significant capital improvement projects (see **R4.1**). These additional expenditures resulting from capital improvement projects may require additional revenue.

Results of Operations and Comparison to Peers

Net operating income/(loss) is the difference between the operating revenues and operating expenditures. Results of operations are expressed in terms of a ratio of net operating income/(loss) per million gallons (MG) of water produced or wastewater treated; for the Water and Wastewater departments, respectively. This ratio serves to show the normalized results of operations for comparison between different utility operations. **Chart 1-4** shows a comparison of the City's Water and Wastewater results of operations to peer cities for 2012 through 2014.

Chart 1-4: Results of Operations Comparison



Source: City of Circleville and peer cities

As shown in **Chart 1-4**, the City's results of operations significantly exceed the peers for both the Water and Wastewater departments. This shows that relative to the peers, the City is generating more income that can be used to fund non-operating expenditures, such as debt service or capital improvements, or improve cash reserves. See **Wastewater Financial Projection** section for a detailed analysis of debt service, capital improvements, and fund balances.

Recently Proposed Changes to Rate Structure and Performance Audit Initiation

In December 2015, the former Utilities Director submitted a resolution to the City Council to add \$6.00 per month to the fixed service charge that is levied on each sewer service account for 2016 and 2017. The former Utilities Director intended to use the new revenue to pay for capital expenditures and debt service associated with planned improvements to the wastewater treatment plant.

The sewer utility rate schedule consists of two charges, a fixed service charge and a usage fee. The fixed service charge is levied monthly on each account, regardless of the volume of usage billed to the account. The usage fee billed monthly to each account based on the volume of usage recorded on the customer's water meter. Usage is recorded and billed in increments of 100 cubic feet (CCF). High volume users are given a reduced usage fee. **Table 1-1** shows the 2016 sewer utility rate schedules and the proposed increase to the fixed service charge.

Table 1-1: 2016 Sewer Utility Rate Schedules

Rate Year	Monthly Fixed Service Charge	Usage Fee Per CCF		
		1 to 15 CCF	16 to 100,000 CCF	100,00+ CCF
2016	\$6.25	\$4.47	\$4.43	\$4.18
2016 (Proposed)	\$12.25	\$4.47	\$4.43	\$4.18

Source: City of Circleville

As shown in **Table 1-1**, the monthly fixed service charge is the only component of the sewer utility rate schedule that is affected by the proposed ordinance. Based on the proposed increase to the fixed service charge, each customer would see the same dollar increase to their sewer bill.

The City Council decided to postpone a final vote on the ordinance and requested a performance audit of Public Utilities. The purpose of the performance audit was to examine several aspects of Public Utilities, including:

- Operational analysis of staffing levels and workload compared to peer averages and industry benchmarks;
- Utility rate analysis of water and wastewater rates compared to peer average and industry benchmarks; and
- Wastewater financial projections for capital expenditures and debt service compared to revenues.

In summary, City Council as well as other stakeholders were concerned that not enough operating information was available at the time of the proposal to understand if the proposal was absolutely necessary from an operational and financial perspective as well as to understand what impact the proposal would have on rate competitiveness and affordability.

2. Operational Analysis

Section Overview

This section of the performance audit focuses on the operations of Public Utilities, which includes the Water and Wastewater departments as well as the Utility Billing Office. The operations of Public Utilities were assessed through comparisons of staffing levels and workloads to peer and industry benchmarks in the following areas:

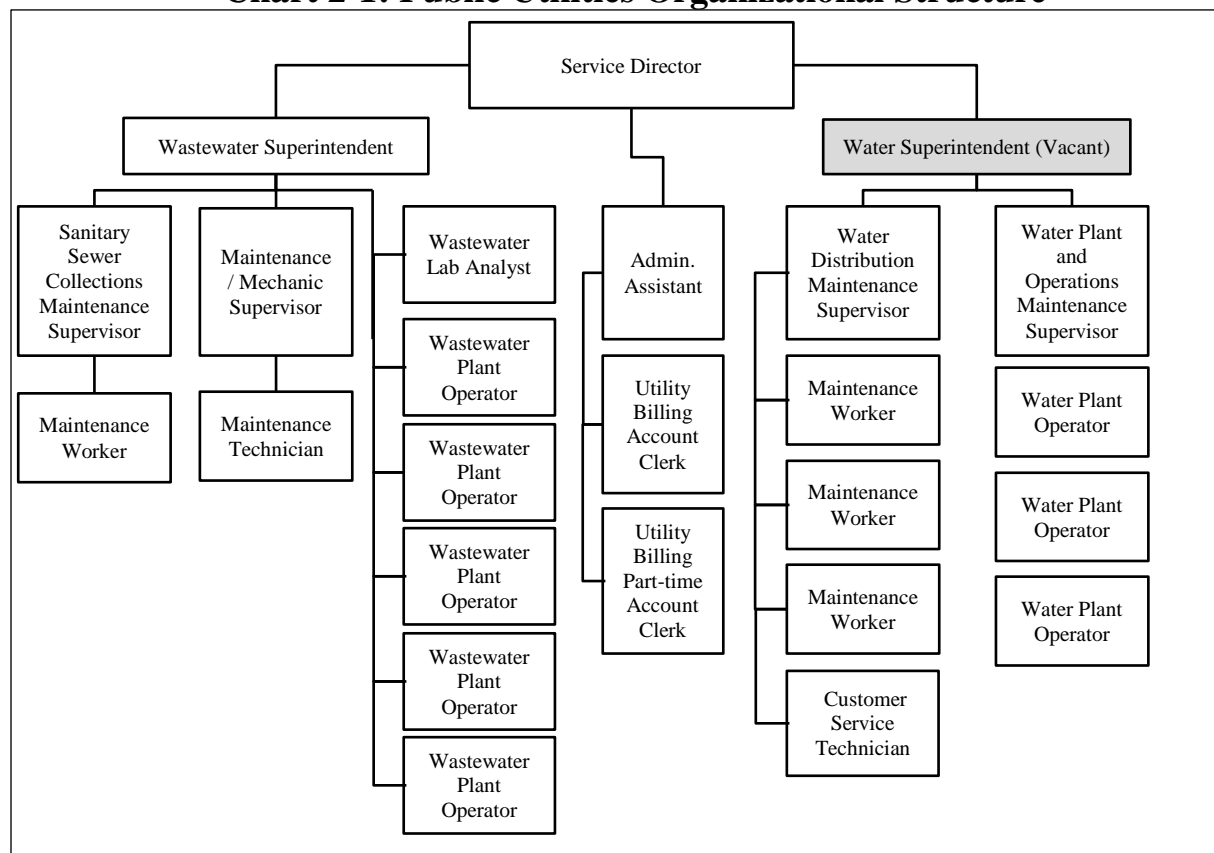
- Overall staff comparison;
- Water treatment plant and wastewater treatment plant;
- Water distribution and wastewater collection; and
- Utility billing.

Recommendation Overview

R2.1 Develop a work planning and scheduling system that takes into account the workload needed to run and maintain the water and wastewater plants and associated infrastructure. Such a plan should be data driven and be informed by the needs of its current and future operations and infrastructure maintenance schedules.

Background

Public Utilities is comprised of 23.5 FTEs (full-time equivalent), with 11.0 FTEs in the Wastewater Department, 9.0 FTEs in the Water Department, and 3.5 FTEs in administration. **Chart 2-1** shows the organizational breakdown of Public Utilities as of May 2016 to provide context to staffing discussions.

Chart 2-1: Public Utilities Organizational Structure

Source: City of Circleville

As shown in **Chart 2-1**, Public Utilities is organized into three functional areas: water production and distribution, wastewater treatment and collection, and utility billing. The Water Superintendent position was vacated in January 2016, and as a result, staff supervision is divided between the Water Plant and Operations Maintenance Supervisor and the Water Distribution Maintenance Supervisor. The operator of record for the City's water system is the Water Plant and Operations Maintenance Supervisor. The Wastewater Superintendent supervises the plant, maintenance, and collections staff and is the operator of record for the City's wastewater treatment permit.

A breakdown of specific departmental staffing and basic operational information is as follows:

- Water Department:** This Department is staffed with 9.0 FTEs; 4.0 water treatment operator FTEs, and 5.0 maintenance and distribution FTEs. In addition, there is a Water Department Superintendent position which is vacant as of January 2016. Water treatment operators are responsible for the treatment of water and the maintenance of the plant. The treatment plant is operated 12 hours per day, Monday through Friday, and eight hours per day on Saturday and Sunday. There is a limited Supervisory Control and Data Acquisition (SCADA) system in place at the plant which allows operators to monitor plant operations. The operation of the plant is done manually as there are no automated processes. As a result, it is necessary for an operator to be on site during plant operations.

Three days per week, water treatment operators have overlapping schedules to perform maintenance and lab analysis work. Distribution employees are responsible for the maintenance of the distribution pipes throughout the City and provide field customer service.

- **Wastewater Department:** This Department is staffed with 12.0 FTEs; 1.0 Wastewater Superintendent FTE who oversees day-to-day operations, 5.0 wastewater treatment operator FTEs, 2.0 plant maintenance FTEs, 2.0 collections FTEs, and 1.0 lab analyst FTE. The wastewater plant operates daily from 6 AM to 10 PM with at least two operators scheduled to work 10 hour shifts each day. The plant has a SCADA system in place for monitoring and controlling certain aspects of the plant, such as the influent pumps.¹ The wastewater treatment plant is normally staffed with three to five plant operators on-site during first shift. On the first shift, one operator performs the work of monitoring the plant operation, while the rest may perform solid waste processing, lab tests, maintenance duties, plant cleaning, yard care, or other miscellaneous tasks around the plant facility. During the overlap between the first and second shifts, the second shift operator performs minor maintenance and cleaning tasks around the plant. The second shift is scheduled primarily to monitor and manually clean debris from the raw influent bar screen. Major maintenance tasks are scheduled during significant overlap periods, which generally fall on Wednesdays. Plant maintenance personnel are charged with preventative maintenance tasks, such as lubricating pumps, maintaining lift stations, performing vehicle maintenance, and other tasks, as needed. The collection staff is responsible for the maintenance of collection lines throughout the City, including videoing and scoping to identify and correct blockages.
- **Utility Billing Office (Utility Billing):** This office is staffed by a 1.0 administrative assistant FTE (who has supervisory responsibilities) and 1.5 billing clerk FTEs. The main duties of Utility Billing is to manage customer accounts, start and end utility service, customer service, accounts payable, and accounts receivable. The administrative assistant is also responsible for the utility bills at City owned properties, payroll for the public utilities employees, collecting delinquent payments, and providing a second reconciliation of utility accounts at the end of each business day.

Analysis

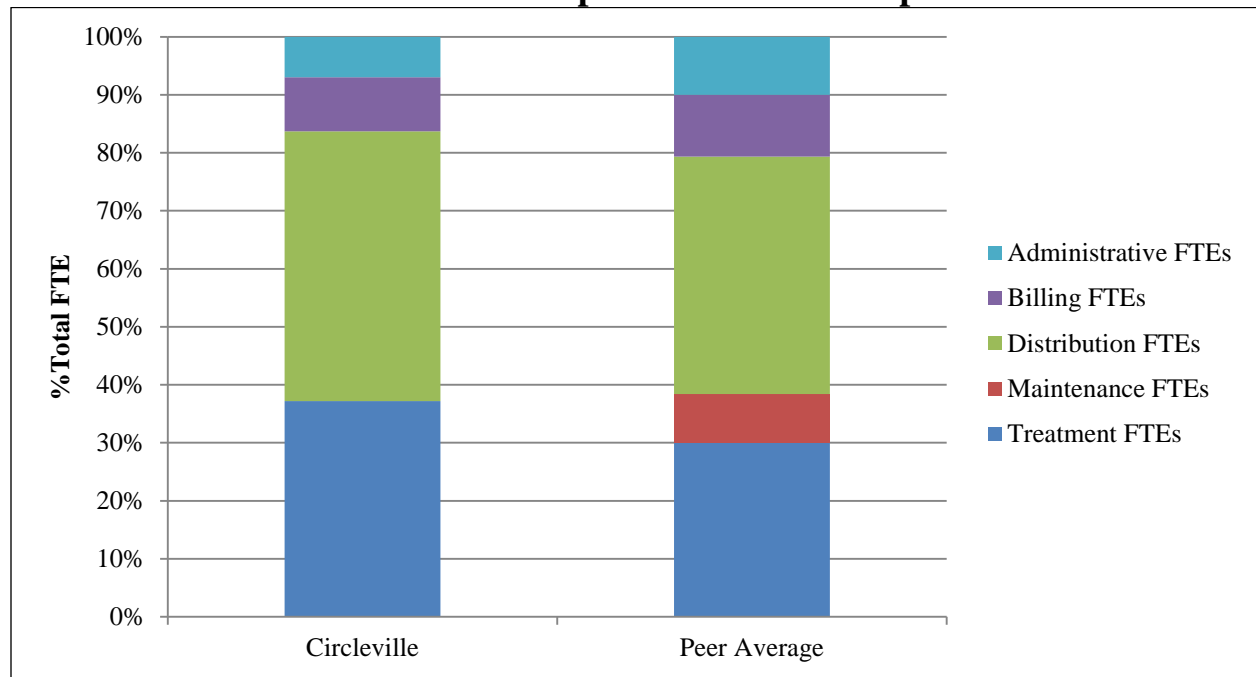
To provide a localized indication on the appropriateness of staffing, the following assessments were made to the peers: a high level comparison of the Department-wide allocation of staff and more targeted assessments of staff by functional area (treatment, distribution, and billing) using workload indicators. In addition, comparisons were made to benchmarks established by the American Water Works Association (AWWA) to provide an indication of how staffing levels compare throughout the industry.

¹ The system can turn on backup pumps during high inflow periods.

Overall Staff Comparison

Chart 2-2 shows a comparison of Water Department staffing between the City and the peer average through a breakdown of the percentage of staff allocated to each job function grouping. This analysis is intended to provide a high level overview of staffing allocation structures.

Chart 2-2: Water Department Staff Comparison



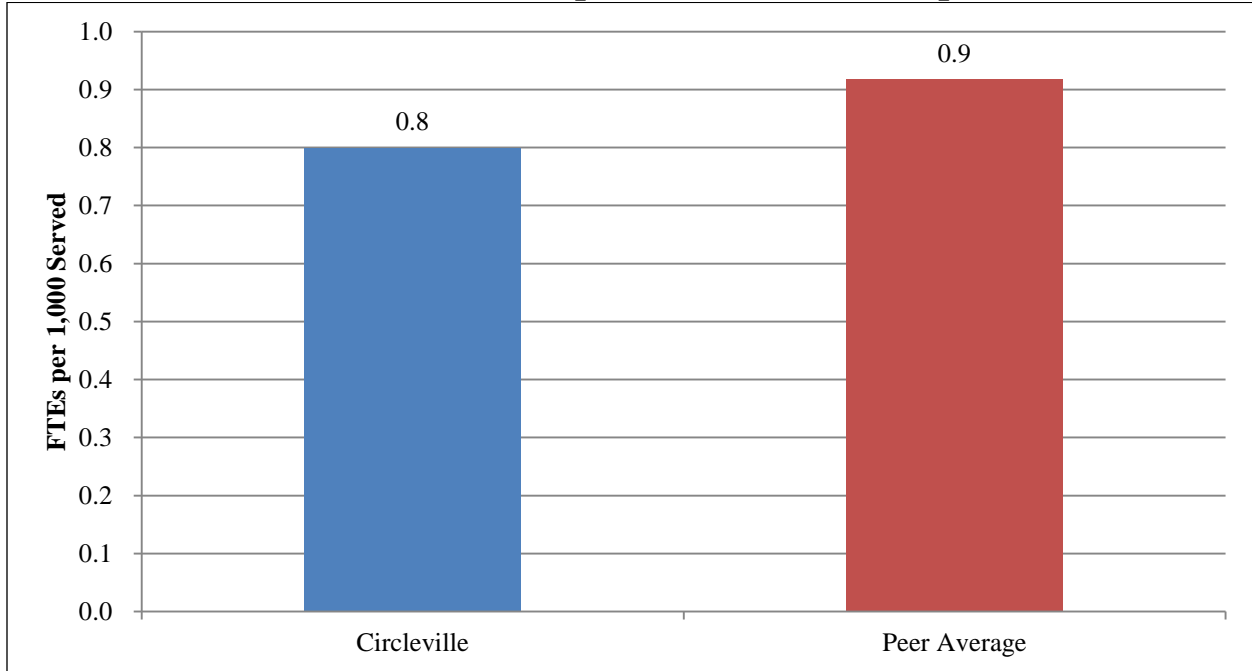
Source: City of Circleville and peer cities

Note: Administrative FTEs include superintendents and directors.

As shown in **Chart 2-2**, the greatest percentage of Circleville staff is allocated to maintaining the water distribution system, similar to the peer average. In contrast, the City has a lower percentage of staff allocated to administration and billing than the peer group, due in part to the vacancy of the water superintendent position. Although the City’s staffing allocation for water treatment operators is higher than the peer average, this group is responsible for maintenance of the equipment in the plant at Circleville, while some peers have dedicated plant maintenance staff.

Chart 2-3 shows a comparison of Water Department staff per 1,000 in service population for Circleville and the peer average. Analyzing staff in this manner serves to provide a staffing comparison while controlling for variations in service population size.

Chart 2-3: Water FTEs per 1,000 in Service Population

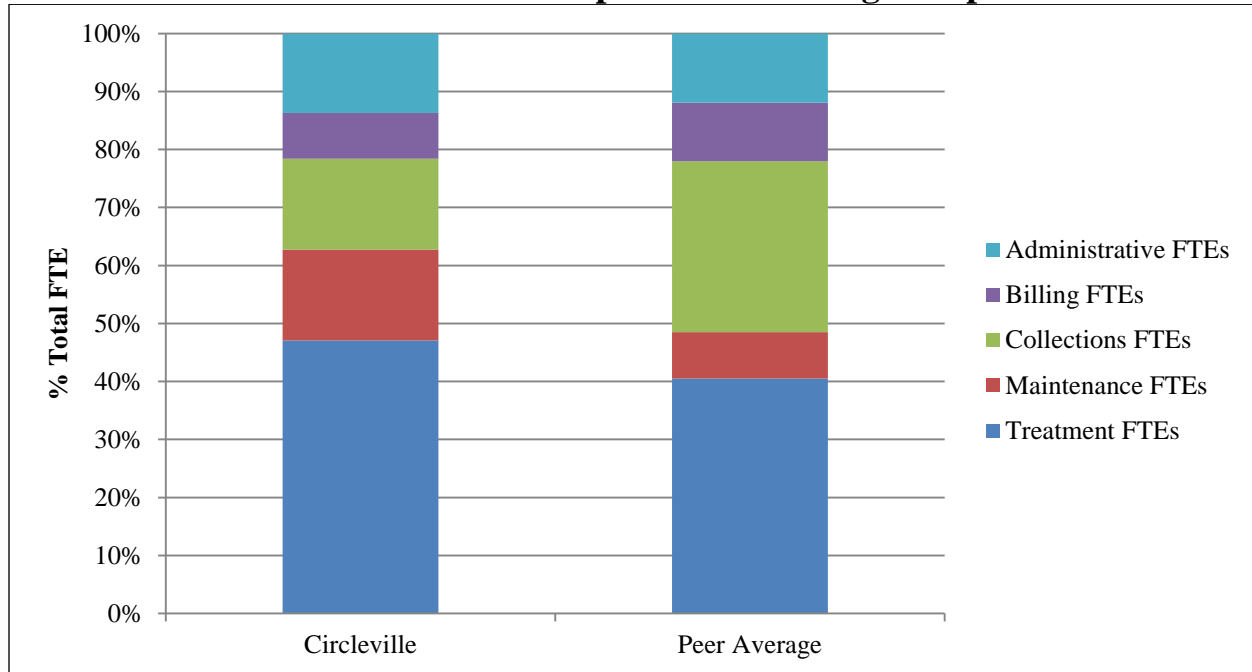


Source: City of Circleville and peer cities

As shown in **Chart 2-3**, Water Department staffing was 0.1 FTEs per 1,000, or 11.1 percent, more efficient relative to service population size than the peer average.

Chart 2-4 shows a comparison of Wastewater Department staffing between the City and the peer average through a breakdown of the percentage of staff allocated to each job function grouping. This analysis is intended to provide a high level overview of staffing allocation structures.

Chart 2-4: Wastewater Department Staffing Comparison



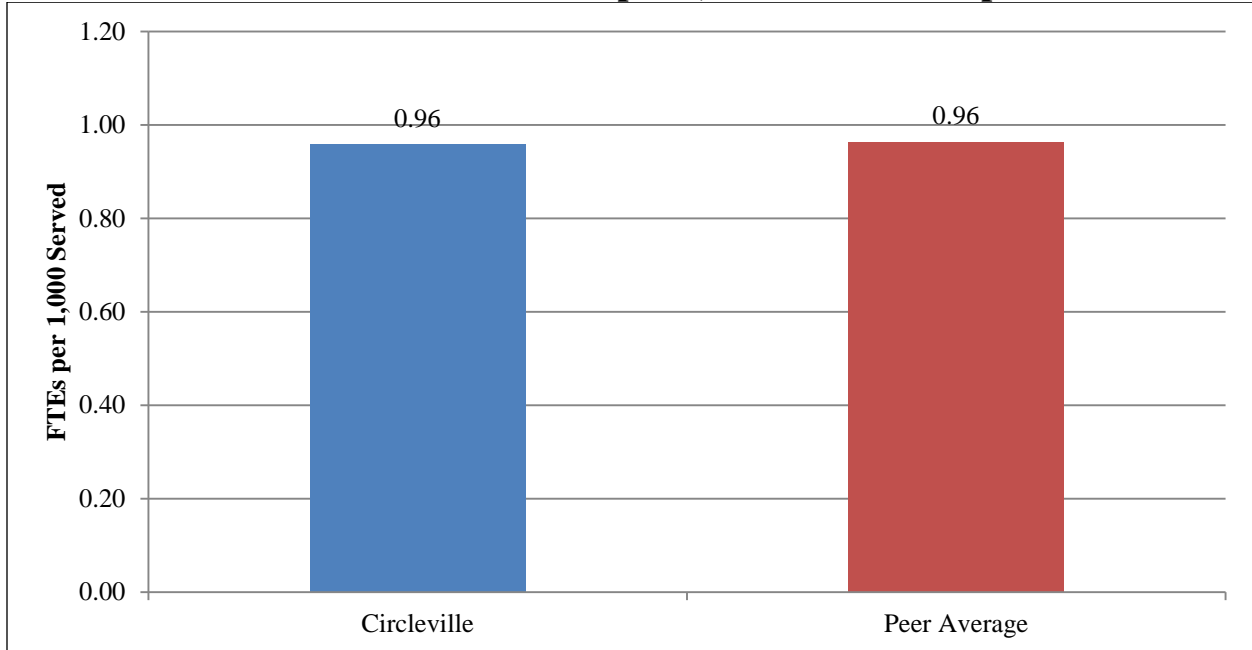
Source: City of Circleville and peer cities

Note: Administrative FTE contains superintendents and directors.

As shown in **Chart 2-4**, the City allocated a similar percentage of staff to administration and billing as the peer group. In addition, wastewater treatment has similar allocation levels (the largest percentage of staff), though the City has a greater percentage of treatment and maintenance staff than the peer group. The City allocates a significantly smaller percentage of its staff to maintaining the sanitary sewer collection infrastructure than the peer average.

Chart 2-5 shows a comparison of Wastewater Department staff per 1,000 in service population for Circleville and the peer average. This analysis serves to provide a staffing comparison while controlling for variations in service population size.

Chart 2-5: Wastewater FTEs per 1,000 in Service Population



Source: City of Circleville and peer cities

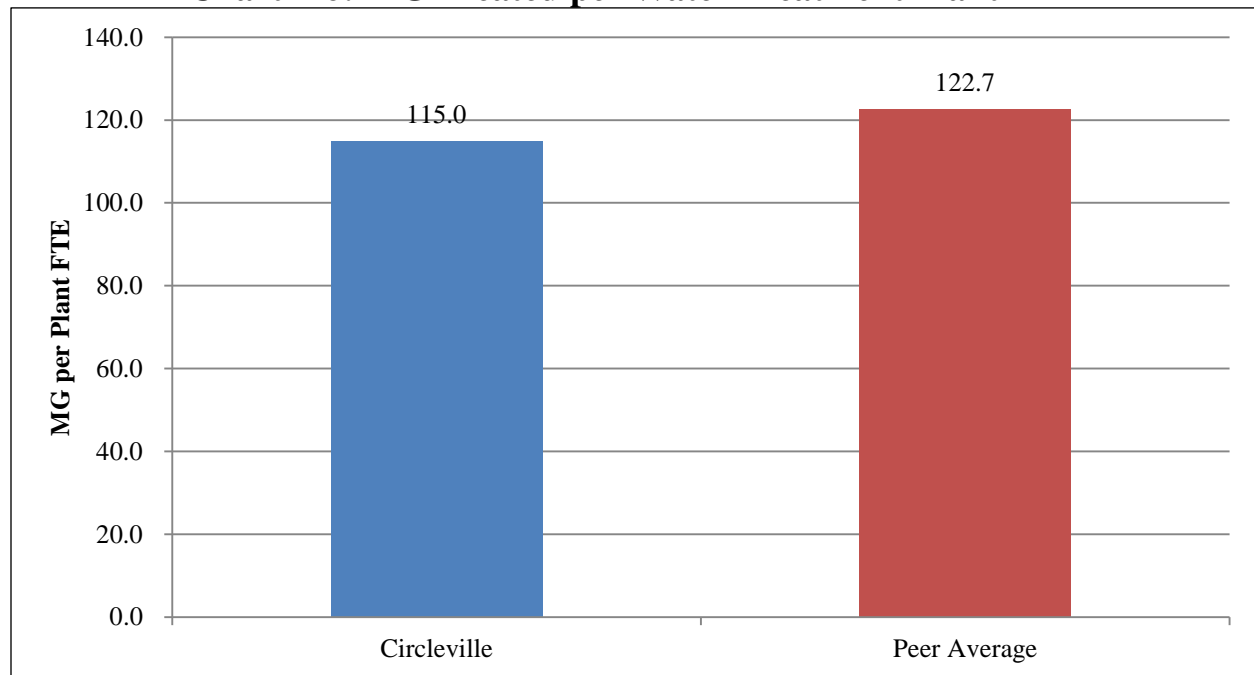
As shown in **Chart 2-5**, the City had similar staffing in relation to population served when compared to the peer average. This comparison indicates the Wastewater Department is operating efficiently relative to the size of the population served.

Treatment Plant Staffing

The City owns, operates, and maintains a water treatment plant and a wastewater treatment plant. The following comparisons serve to analyze staffing of these plants using common workload indicators.

Chart 2-6 shows a comparison of million gallons (MG) of water treated annually per treatment plant FTE for Circleville and the peer average based on 2015 operating data. This analysis provides an indication of staffing in relation to the primary output of the plant (i.e. water treated).

Chart 2-6: MG Treated per Water Treatment Plant FTE

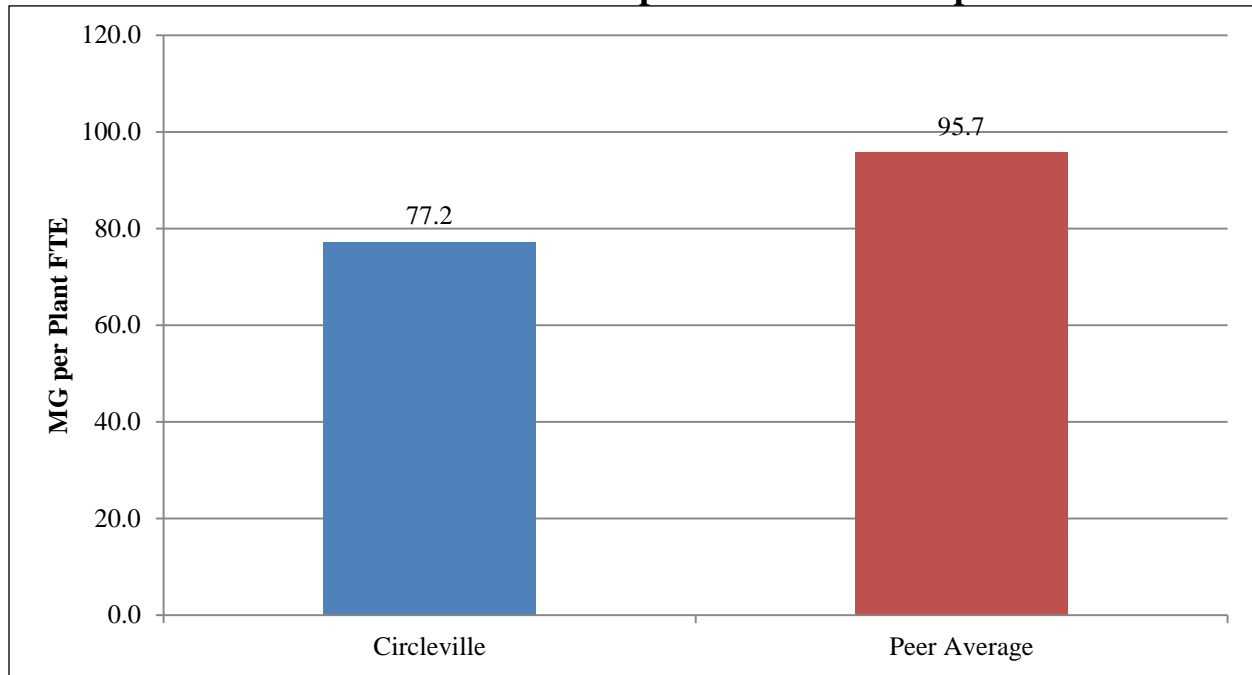


Source: City of Circleville, peer cities, and Ohio Environmental Protection Agency

As shown in **Chart 2-6**, Circleville treated 7.7 MG, or 6.3 percent, less water per FTE than the peer average. The difference between the City and the peer average indicates that there may be efficiencies that can be gained through a detailed analysis of the daily work assignments of the plant staff.

Chart 2-7 shows a comparison of MG of wastewater treated annually per FTE for Circleville and the peer average based on 2015 operating data. Similar to the water treatment comparison, analyzing wastewater staffing in relation to the primary output of the plant (i.e. wastewater treated) serves to provide an indication on the efficiency of staffing levels.

Chart 2-7: MG Wastewater per Plant FTE Comparison



Source: City of Circleville, peer cities, and USEPA

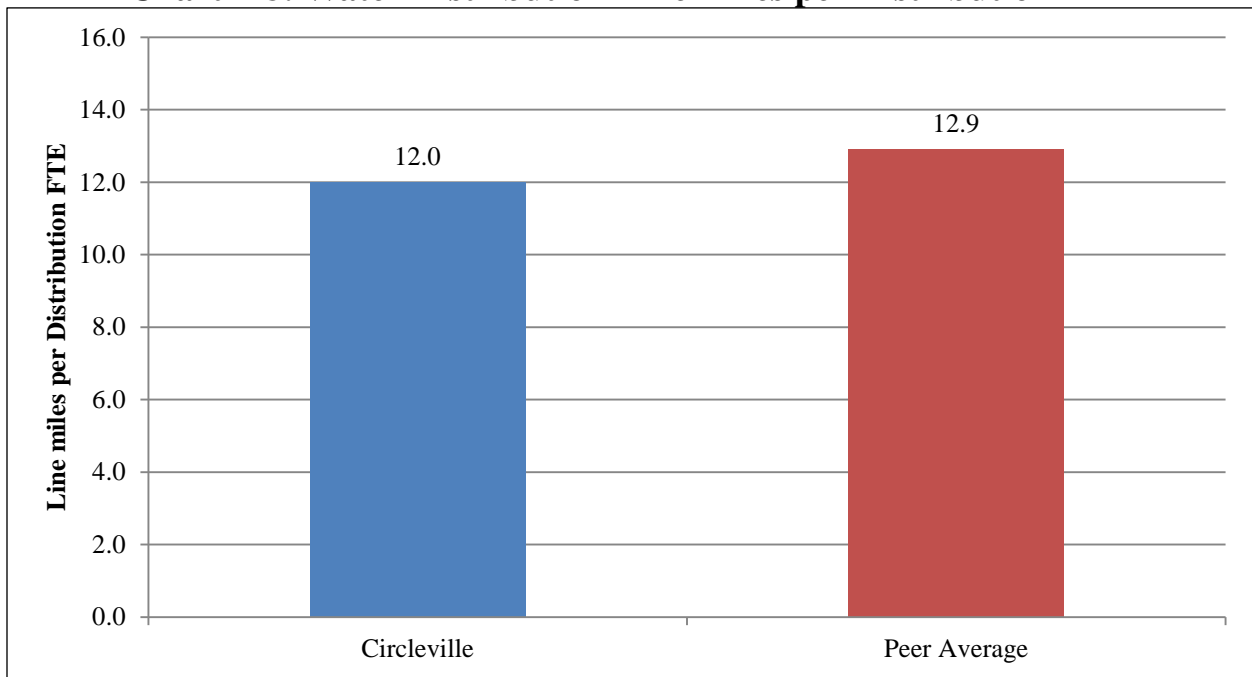
As shown in **Chart 2-7**, the City treated 18.5 MG, or 19.3 percent, less wastewater per FTE than the peer average. This comparison demonstrates that the wastewater treatment plant is staffed less efficiently in terms of the volume of wastewater treated than peer average.

Distribution and Collection Staffing

The City owns and maintains a network of lines to distribute water from the water treatment plant to the customer and a network of lines to transport wastewater to the treatment plant. The peer comparisons in this section provide relative workload indicators for water treatment staff and wastewater collection staff in terms of the number of line miles maintained.

Chart 2-8 shows a comparison of distribution staff per distribution line mile for Circleville and the peer average using 2015 data.

Chart 2-8: Water Distribution Line Miles per Distribution FTE

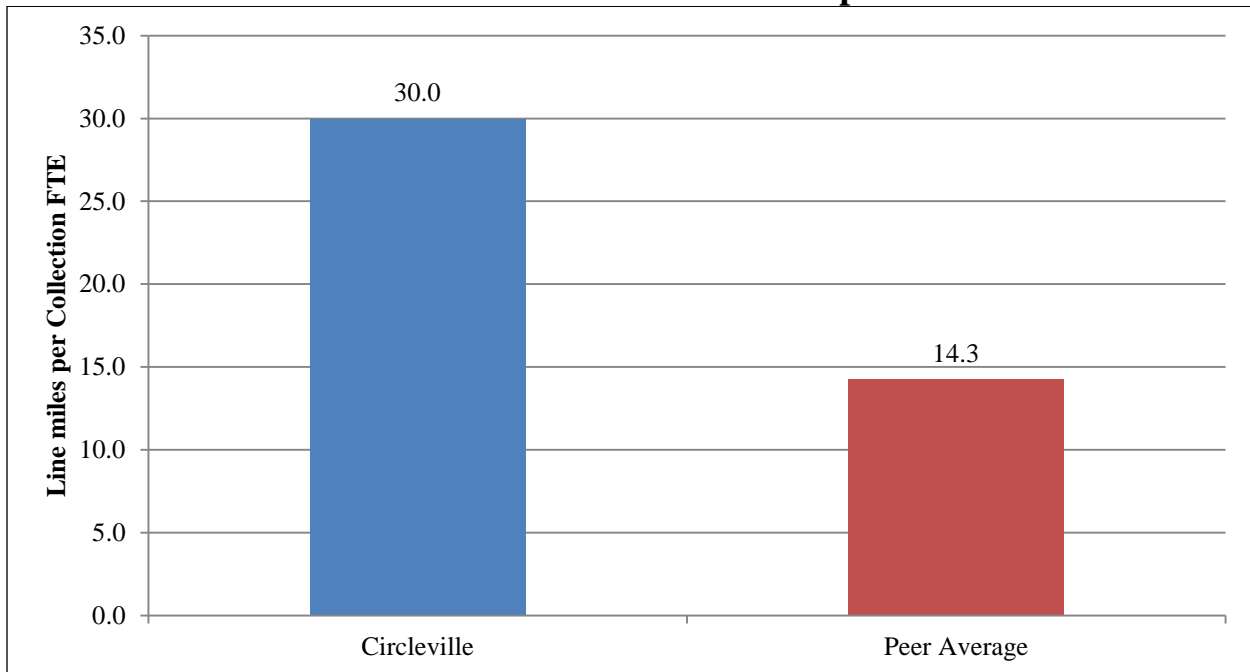


Source: City of Circleville and peer cities

As shown in **Chart 2-8**, the City’s distribution staff maintained 0.9, or 7.0 percent, fewer distribution line miles per distribution FTE than the peer average, indicating that there may be some excess workload capacity that could be utilized in another area.

Chart 2-9 shows a comparison of line maintenance staff per line mile for Circleville and the peer average using 2015 data.

Chart 2-9: Wastewater Collection Line Miles per Collection FTE



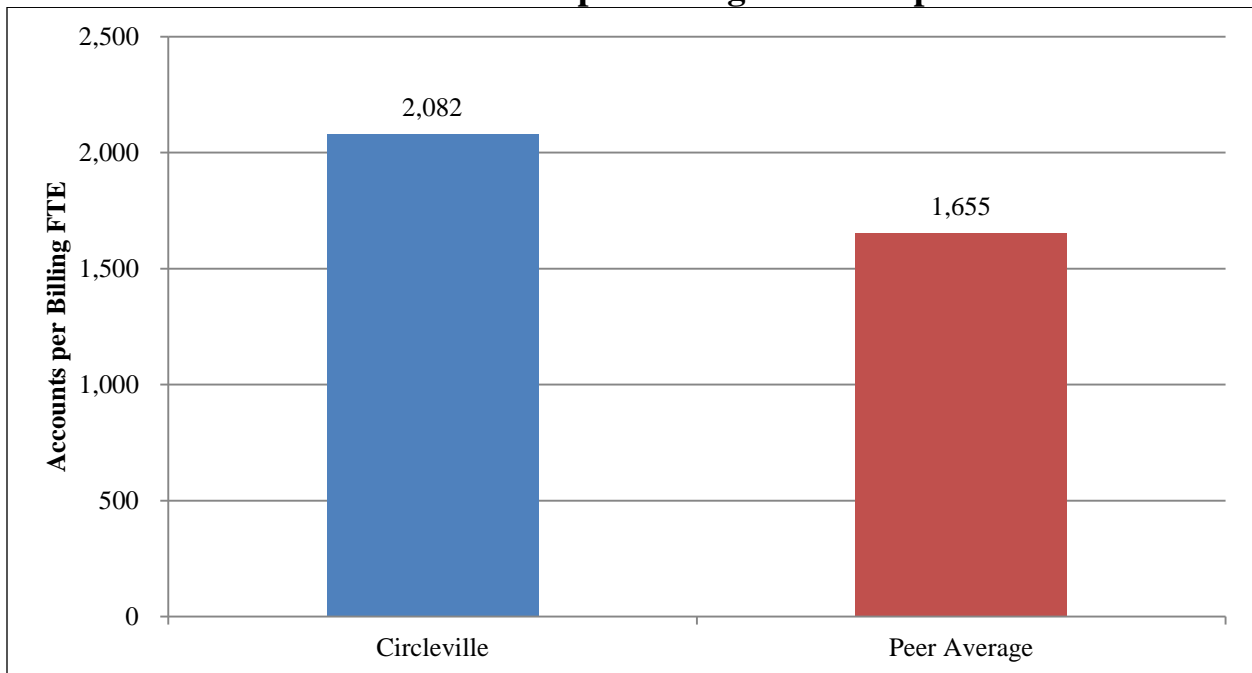
Source: City of Circleville and peer cities

As shown in **Chart 2-9**, the City’s collection staff maintained 15.7, or 109.7 percent, more collection line miles per collections FTE than the peer group. The comparatively low workload ratio for distribution employees shown in **Chart 2-8**, coupled with the high workload ratio of collections employees indicates that the City is not allocating its line maintenance workforce in an efficient manner.

Utility Billing

Circleville is a statutory city wherein the financial functions of the City are split between the Auditor and Treasurer; the Utility Billing comparisons were limited to the two peer cities that are also statutory cities and have similar structure (i.e. Dover and Marietta). **Chart 2-10** shows a comparison of utility billing accounts per FTE for Circleville and the peer average for 2015. This analysis provides an indication of relative efficiency, using accounts as a workload measure.

Chart 2-10: Accounts per Billing FTE Comparison



Source: City of Circleville, and the peer cities of Dover and Marietta

As shown in **Chart 2-10**, Circleville FTEs were responsible for 427, or 25.8 percent, more accounts per FTE than the peer average. Compared to the peer average, the Utility Billing Office is staffed efficiently.

Industry Benchmarks

In order to provide an indication of the efficiency of staffing on a broader scale than the comparisons limited to the peers, Circleville operations were compared to *Benchmarking Performance Indicators for Water and Wastewater: 2013 Survey Data and Analyses Report* (AWWA, 2015). **Table 2-1** compares the City's water operating data from 2015 to the AWWA benchmarks.

Table 2-1: Water Benchmarks Comparison

	Circleville	AWWA ¹	Difference	% Difference
Customer Accounts per Employee ²	436	505	(69)	(13.7%)
MGD of Water Processed per Employee ²	0.11	0.21	(0.10)	(47.6%)
Total Daily Per Capita Consumption (gal)	93.72	117.50	(23.78)	(20.2%)

Source: City of Circleville and AWWA

¹ Median of cities between 10,000-50,000 in population.

² Includes all employees associated with the Water Department, including a prorated amount of time for administration.

As shown in **Table 2-1**, the Water Department serviced fewer accounts per employee and treated a lower volume of water than the national benchmarks. In part, the lower volume of water treated per employee is due to low consumer demand, as witnessed by the total daily water consumption per capita for Circleville being significantly lower than the benchmark.

Table 2-2 compares the City's wastewater operations to select AWWA benchmarks. Like water, comparisons to industry benchmarks provide an indication of the efficiency of staffing on a broader scale than the comparisons limited to the peers.

Table 2-2: Wastewater Benchmarks Comparison

	Circleville	AWWA Benchmark ¹	Difference	% Difference
Customer Accounts per Employee ² (2015)	396	397	(1)	(0.3%)
MGD Wastewater Processed per Employee ² (2015)	0.13	0.18	(0.05)	(27.8%)

Source: City of Circleville and AWWA

¹ Median of cities between 10,000-50,000 citizens

² Include all employees associated with the Wastewater Department, including a prorated amount of time for administration.

As shown in **Table 2-2**, the Wastewater Department handled a similar number of customer accounts per employee compared to the AWWA benchmark, while processing a lower volume of wastewater per employee. The City bills customers based on the volume of water recorded on the water meter during a billing cycle. This low water demand contributes to the relatively low amount of wastewater processed per employee.

The low use of the total capacity of the City's water and wastewater treatment plants are the result of these facilities being built to accommodate the needs of industrial users that have since left the City. The majority of the City's water and wastewater customers are now residential users who purchase low volumes of water. In addition, both plants require manual operation due

to the lack of automated operating systems. These conditions result in low capacity use of the plant, but high staffing requirements.

The City plans to complete capital improvement projects to upgrade the wastewater treatment plant. The completion of these projects would result in a drastic change in the workload needs at the plant, possibly resulting in a reduction in the hours needed for shift coverage.

Staffing & Operational Assessment of the Public Works Department, Watertown, MA (Edward J. Collins, Jr. Center for Public Management 2013) recommends that public works departments:

- Develop formal work planning and scheduling systems in order to ensure proper staffing is available to accomplish necessary work throughout the year;
- Develop a maintenance schedule, a system that tracks labor hours, materials, and equipment used to complete the work, and set goals for the work that needs to be accomplished;
- Develop an inventory of work activities it performs in the maintenance of its infrastructure in order to ensure the proper crew and materials are available for the task at hand;
- Define the levels of service to be provided to avoid staffing in a reactive manner and allow for the development of performance standards; and
- Develop performance reports that show the planned versus actual performance and cost.

A work planning and scheduling system will ensure all work is completed in a timely and effective manner while providing quality service to its citizens. The City should take the steps to formalize its staffing and work scheduling planning to ensure proper coverage and completion of essential tasks. While developing a work planning and scheduling system, the City should take into account the effect that plant upgrades will have on its staffing needs and update it accordingly. Doing so will allow the City to proactively ensure that all required work is completed while maximizing the effectiveness of its employees. In addition, the work plan should apply workload measures to ensure the departments are right sized to operations. Identifying inefficient workloads can direct the City to move employees from overstaffed areas to those that could more efficiently utilize additional staffing.

Conclusion

The City does not have an effective work planning and scheduling system for the Water and Wastewater departments. As a result, staffing decisions are not decided using data driven methods that correspond to workload needs or infrastructure maintenance schedules. The lack of a work planning and scheduling system leads to an inefficient allocation of staff resources.

R2.1 Develop a work planning and scheduling system that takes into account the workload needed to run and maintain its water and wastewater plants and associated infrastructure. Such a plan should be data driven and be informed by the needs of its current and future operations and infrastructure maintenance schedules.

3. Utility Rate Analysis

Section Overview

This section of the performance audit focuses on the City's utility rate structures. The appropriateness of rates was assessed through a comparison of the City's utility rates to other publicly-owned water and sanitary sewer system as well as a comparison of their affordability relative to industry benchmarks.

Recommendation Overview

R3.1: Develop an annual system for evaluating utility rates that considers such factors as the revenues required to support anticipated operations, debt service, and capital improvement expenditures. As rates are assessed and updated, the City should consider the need to implement a customer assistance programs to provide assistance to customers that have demonstrated a limited ability to pay.

Background

Circleville Codified Ordinance 921.09 establishes that the City's system of water user charges is determined by the Utilities Director with the consent of City Council. The water user charges may be changed from time to time as circumstances require. Furthermore, Circleville Codified Ordinance 927.12 requires that the Utilities Director annually submit to the Service Director and to City Council a system of sewer user charges that should meet the following requirements:

- “The system shall result in the distribution of the costs of operation and maintenance of the treatment works within the Department's jurisdiction to each user class in proportion to such user's contribution to the total wastewater loading of the treatment works. Factors such as strength, volume and delivery flow rate characteristics shall be considered and included as the basis for the user's contribution to ensure a proportional distribution of operation and maintenance (including replacement) costs to each user's class.
- The system of charges shall be reviewed annually and revised periodically to reflect actual sewage disposal works operation and maintenance costs.
- The system of charges shall generate sufficient revenue to offset the costs of all sewage disposal works operation and maintenance provided by the Department and such other expenditures that may be authorized.”

From 2007 to 2011, water and sewer rates were held steady. Beginning in 2012, the City's practice has been to pass an ordinance every three years that incrementally increases the utility rates each year for the subsequent three years. Effectively, utility rates are increased annually, but are only reviewed every three years.

Table 3-1 shows the water utility rate schedules, including the monthly fixed service charge and scaled usage fees per CCF based on consumption tiers, for 2012 through 2017. Examining past and future service charges and usage fees provides context of approved changes to the rate structure.

Table 3-1: Circleville Water Utility Rate Schedules

Date Ordinance Passed	Rate Year	Monthly Fixed Service Charge	Usage Fee Per 100 CCF		
			1 to 15 CCF	16 to 100,000 CCF	100,000+ CCF
12/20/2011	2012	\$2.75	\$2.73	\$2.50	\$2.35
	2013	\$2.75	\$2.82	\$2.58	\$2.44
	2014	\$2.75	\$2.89	\$2.65	\$2.50
01/20/2015	2015	\$3.00	\$3.09	\$2.84	\$2.66
	2016	\$3.25	\$3.31	\$3.03	\$2.86
	2017	\$3.50	\$3.54	\$3.25	\$3.06

Source: City of Circleville

As shown in **Table 3-1**, from 2012 to 2017, the City has increased water rates each year. The usage fees have increase at a greater rate than the fixed service charge. The monthly fixed service charge was held steady for the first three years shown, before increasing \$0.25 per year starting in 2015 while the usage fee has increased between 2.3 and 6.5 percent each year since 2012.

Table 3-2 shows the sewer utility rate schedules, including the monthly fixed service charge and scaled usage fees per CCF based on consumption tiers, for 2012 through 2017. Like water, examining past and future sewer service charges and usage fees provides context of approved changes to the rate structure.

Table 3-2: Circleville Sewer Utility Rate Schedules

Date Ordinance Passed	Rate Year	Monthly Fixed Service Charge	Usage Fee Per CCF		
			1 to 15 CCF	16 to 100,000 CCF	100,00+ CCF
12/20/2011	2012	\$5.75	\$3.57	\$3.54	\$3.34
	2013	\$5.75	\$3.75	\$3.72	\$3.51
	2014	\$5.75	\$3.90	\$3.87	\$3.65
01/20/2015	2015	\$6.00	\$4.17	\$4.14	\$3.91
	2016	\$6.25	\$4.47	\$4.43	\$4.18
	2017	\$6.50	\$4.78	\$4.74	\$4.47

Source: City of Circleville

As shown in **Table 3-2**, from 2012 to 2017, the City has increased sewer rates each year. The usage fees have increase at a greater rate than the fixed service charge. The monthly fixed service charge was held steady for the first three years shown, before increasing \$0.25 per year starting in 2015. In addition, usage fees increased between 4.0 and 7.2 percent each year since 2012.

Analysis

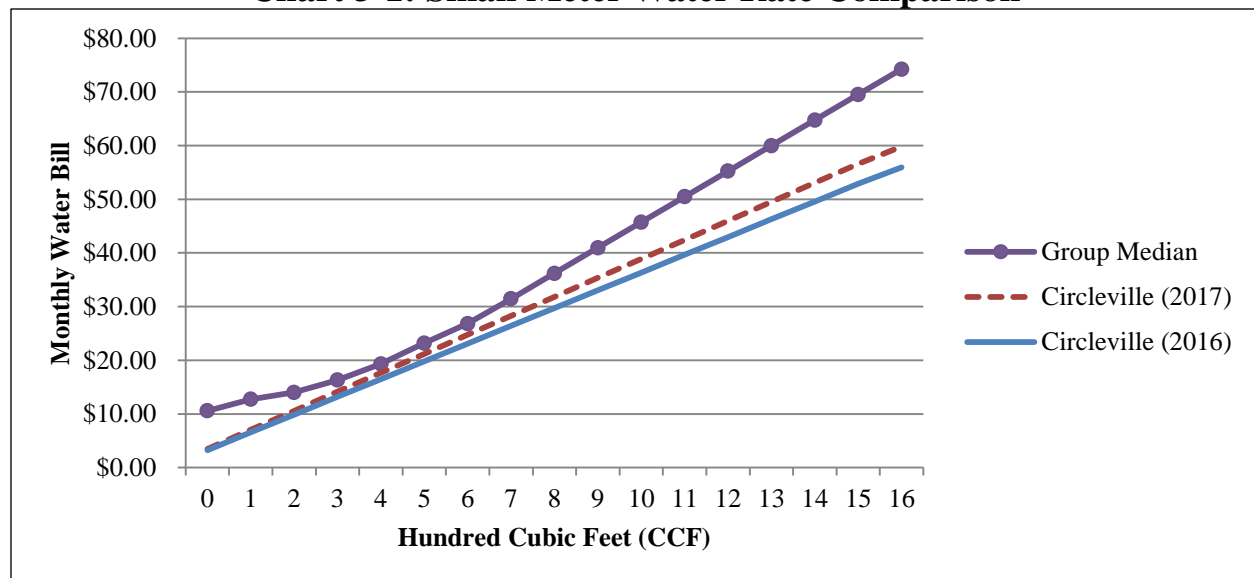
In order to provide an indication on the appropriateness of the City’s water and sewer rates, a municipal rate study was conducted in addition to a comparison to industry affordability standards.

Municipal Rate Study

Utility customers are billed for usage based on readings taken from customer water meters, which vary in size based on the needs of the customer. Low volume users, such as residential customers, will typically have 0.75” meters. Customers that require larger volumes of water may opt to install a larger water meter. The City does not bill customers based on the size of the water meter, only for the volume of water that is recorded by the meter.

The City’s approved 2016 and 2017 water and sewer utility rates were compared to the rates of a study group comprised of 21 entities.² **Chart 3-1** shows the water rate schedule comparison for small meters, including 0.625” and 0.75” meter sizes.³ at usage levels ranging from zero to 16 CCF per month. This comparison is important as it examines the rates of the most commonly used meter sizes and usage levels.

Chart 3-1: Small Meter Water Rate Comparison



Source: City of Circleville and rate study group

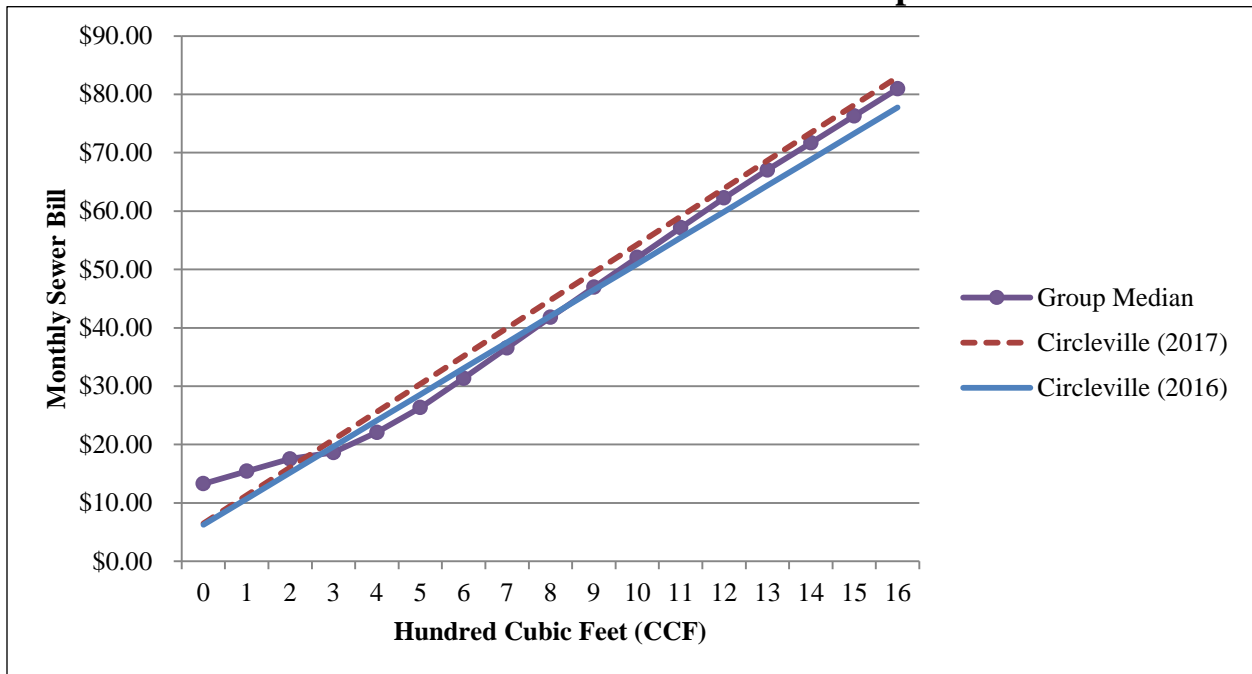
² Asheville (Pickaway), Bellefontaine (Logan), Cambridge (Guernsey), Canal Winchester (Fairfield), Chillicothe (Ross), Coshocton (Coshocton), Dover (Tuscarawas), Earnhart Hill Regional Water and Sewer District (Pickaway), Englewood (Montgomery), Fostoria (Seneca), Hillsboro (Highland), Jackson (Jackson), Lancaster (Fairfield), London (Madison), Marietta (Washington), Pickerington (Fairfield), Urbana (Champaign), Van Wert (Van Wert), West Carrollton (Montgomery), Wilmington (Clinton), and Xenia (Greene)

³ These are meter sizes that are commonly used for residential and small commercial customers.

As shown in **Chart 3-1**, the City’s 2016 and 2017 water rates are lower than the group median. Specifically, the City’s fixed service charge (zero CCF usage) is significantly lower than the group median. Coupling this with comparatively low costs per CCF has yielded rates that are significantly lower than the median for very low and high volume water customers.

Chart 3-2 shows a similar comparison between Circleville’s sewer rate schedule and the rate study group for small meters, including 0.625” and 0.75” meter sizes. Like the water rate analysis, this comparison is important as it examines the rates of the most commonly used meter sizes and usage levels.

Chart 3-2: Small Meter Sewer Rate Comparison



Source: City of Circleville and rate study group

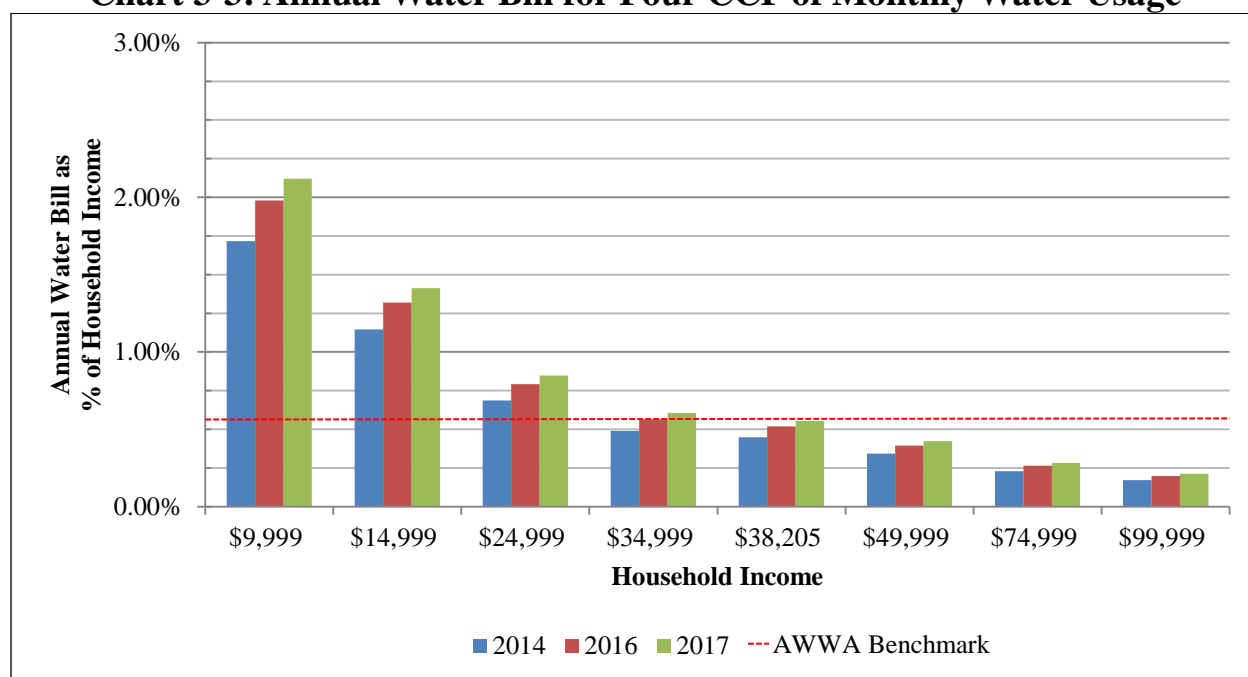
As shown in **Chart 3-2**, the City’s 2016 sewer rates are similar to the group median at usages above two CCF of sewer usage, however, the 2017 sewer rate structure will result in rates that exceed the group median for usages above two CCF.

Rate Affordability

The affordability of utility charges was evaluated by examining the City’s rates and demographics in comparison to industry benchmarks. The AWWA determines affordability by calculating the average residential water bill for 12 months of service, divided by the median household income.⁴ For 2013, the median response for the average residential water bill was 0.58 percent of median household income.

Chart 3-3 shows the annual water bill for four CCF of billed water usage per month as a percent of household income.⁵ This analysis provides an indication of the affordability of the 2014 rate schedule and impact on the affordability of rate increases on various income levels for the 2016 and 2017 rate schedules.

Chart 3-3: Annual Water Bill for Four CCF of Monthly Water Usage



Source: City of Circleville, U.S. Census Bureau, and AWWA

As shown in **Chart 3-3**, the City’s average water bill is affordable compared to the AWWA benchmark as witnessed by the cost of water service for a household at the median income level was lower than the AWWA benchmark. Planned increases in water rates, however, will have a

⁴ Circleville’s median household income for 2015 was \$38,205 (*U.S. Census Bureau 2014 5-Year American Community Survey, 2015*).

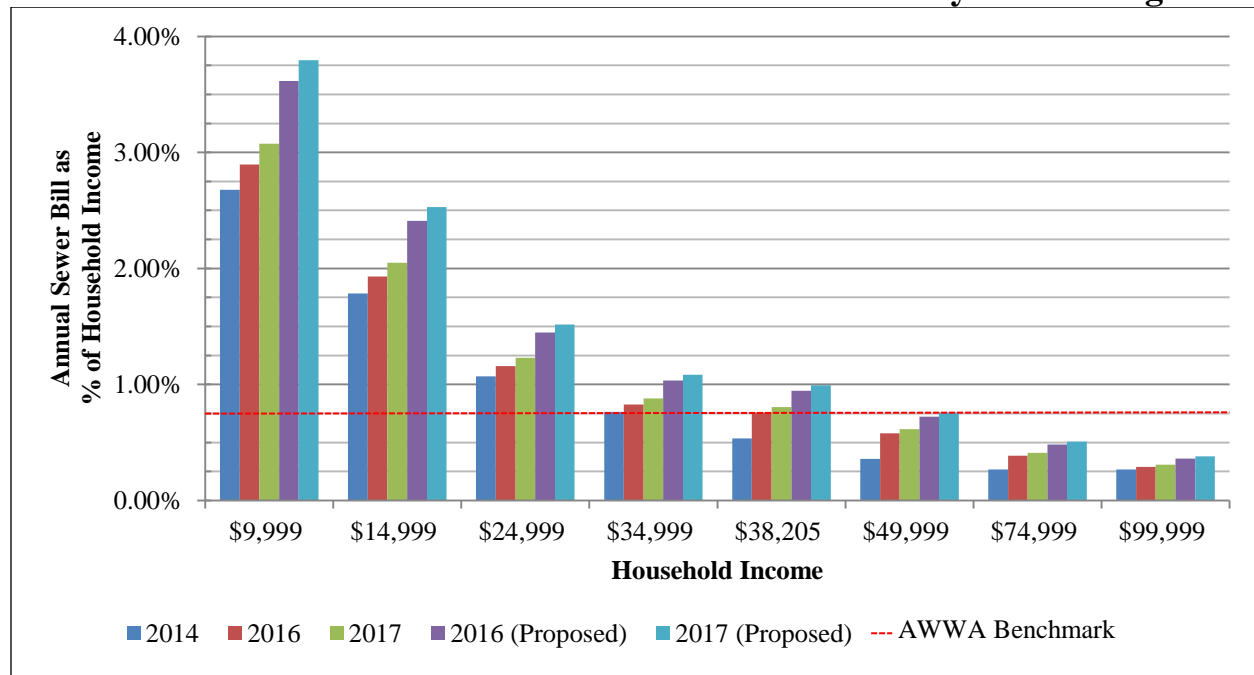
⁵ In 2015 the average water and sewer usage for Circleville residential and small commercial customers was four CCF per month.

significant impact on households with incomes below the median household income as water service becomes less affordable at the low end of the income spectrum.

The AWWA also benchmarks affordability of sewer service based on survey data obtained from sewer utilities. Similar to water service, the AWWA benchmark for sewer service affordability is determined by calculating the average residential sewer bill for 12 months of service, divided by the median household income. For 2013, the AWWA determined the average residential sewer bill was 0.76 percent of median household income for sewer service, nationwide.

Chart 3-4 shows the annual sewer bill for four CCF of billed water usage as a percent of household income. This analysis provides an indication of the affordability of the 2014 rate schedule and impact on the affordability of future (approved and proposed) rate increases on various income levels for the 2016 and 2017 rate schedules.

Chart 3-4: Annual Sewer Bill for Four CCF of Monthly Sewer Usage

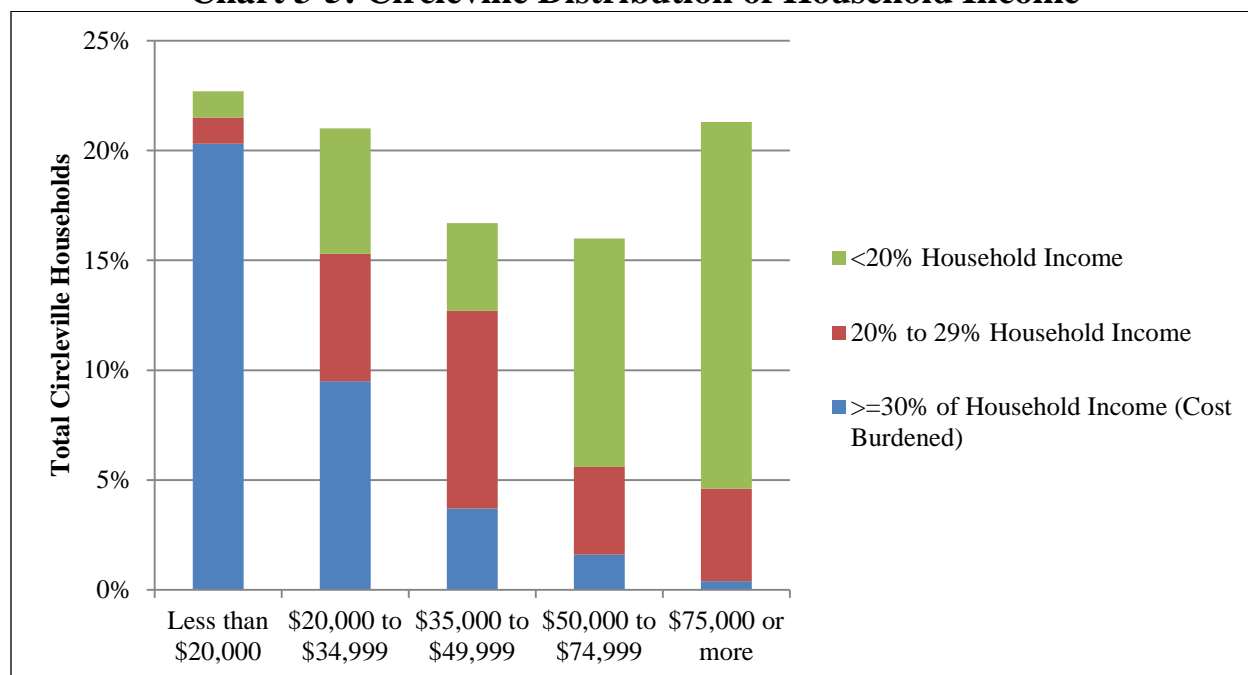


Source: City of Circleville, U.S. Census Bureau, AWWA

As shown in **Chart 3-4**, the average 2016 sewer bill for Circleville residents aligns with the benchmark median of 0.76 percent of median household income. Increases to 2017 rates, however, will result in charges that exceed this benchmark. In terms of affordability, the most significant impact of this rate increase would occur to low income households, while households at the top end of the income spectrum would see a minimal impact.

The U.S. Department of Housing and Urban Development (HUD) has defined families who pay more than 30 percent of their income for housing as “cost burdened” (HUD, 2016). Cost burdened households may have difficulty affording necessities such as food, clothing, transportation, and medical care. **Chart 3-5** shows the 2014 distribution of annual household income for Circleville and the percentage of income that is spent for housing. The distribution of household incomes will assist in identifying the number of households that may be burdened by the cost of utility services.

Chart 3-5: Circleville Distribution of Household Income



Source: U.S. Census Bureau

As shown in **Chart 3-5**, more than 40 percent of Circleville households have incomes that are below \$35,000 with a majority of these being cost burdened based on HUD standards. Across all household income brackets, 35.5 percent of Circleville households are considered to be cost burdened. As such, additional utility charges may be unaffordable for those households.

While the City’s has below average rates for very low volumes of water and sewer usage, there is no program to assist customers who have low incomes and an average volume of water and sewer usage. In *Drinking Water and Wastewater Utility Customer Assistance Programs* (U.S. Environmental Protection Agency (USEPA), 2016) the USEPA has identified five varieties of customer assistance programs (CAP) to help utilities meet customer needs:

- Bill Discount – long-term reductions to a customer’s bill occur through adjustments to the rate structure;
- Flexible Terms –customers are assisted in affording services and paying bills through arrearage forgiveness, bill timing adjustment, or levelized billing;
- Lifeline Rate – customers are afforded the opportunity to pay a subsidized rate for a fixed amount of water, which is expected to cover that customer’s basic water needs (rates then increase when water use exceeds the initial fixed amount of water the rates increase);

- Temporary Assistance –help is provided to customers on a short-term or one-time basis to prevent disconnection of service or restore service after disconnection;
- Water Efficiency – water efficiency measures are subsidized by providing financial assistance for leak repairs and rebates are offered for WaterSense-certified fixtures, toilets, and appliances.

The USEPA surveyed 795 utilities and found that, of this group, 228 offer one or more CAPs. The most appropriate program will depend on the needs of the customer base. Some examples of customers that may be targeted for assistance include low-income, hardship, senior citizen, disabled, and military customers.

The City should evaluate its utilities rates structure on an annual basis. This evaluation should take into consideration such factors as the revenues required to support anticipated operations, debt service, and capital improvement expenditures. When evaluating a plan to increase rates, the City should consider implementing a CAP to help the public utilities meet the needs of the customer base. Doing so will ensure rates accurately reflect operating and capital expenditures without placing a burden on lower-income customers. In addition, the risk of delinquent accounts may be reduced, potentially saving the associated administrative costs of collecting on those accounts.

Conclusion

The City's practice has been to evaluate rates every three years, though Circleville Codified Ordinance 927.12 requires an annual review of the sewer rate structure.

The City's utility rates are similar to or lower than the median rates for other municipalities. The proposed increase in the fixed sewer service charge would lead to sewer rates that exceed the median rates for other municipalities.

The City's rates are affordable by comparison to industry benchmarks, however, a significant portion of households are cost-burdened and may have difficulty affording the cost of utility service. The proposed increase in the fixed sewer service charge would lead to sewer rates that exceed the industry benchmark for affordability.

R3.1 Develop an annual system for evaluating utility rates that considers such factors as the revenues required to support anticipated operations, debt service, and capital improvement expenditures. As rates are assessed and updated, the City should consider the need to implement a customer assistance programs to provide assistance to customers that have demonstrated a limited ability to pay.

4. Wastewater Financial Projections

Section Overview

This section of the performance audit focuses on projecting the revenues and the operating costs of the Wastewater Department and proposed sewer plant improvements.

Recommendation Overview

R4.1: Prepare and maintain a comprehensive, multi-year capital plan that assesses the current condition of the infrastructure, future capital project needs, and the funding sources required to complete these projects.

Background

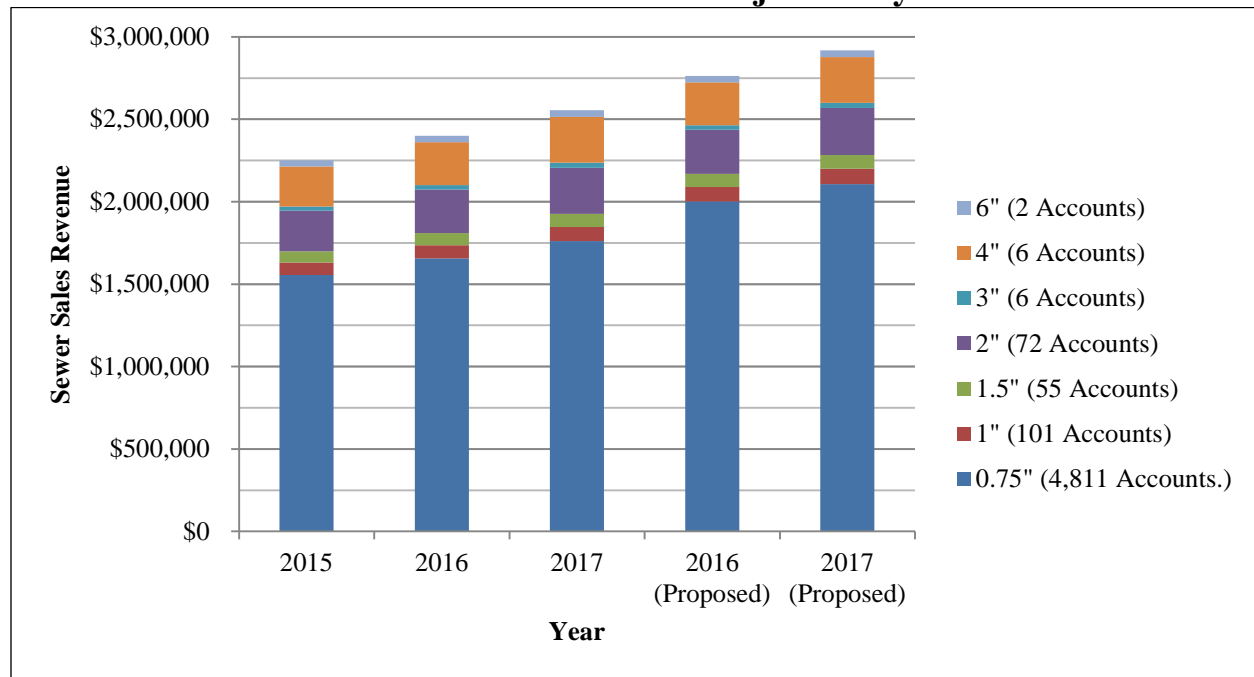
The City has identified the need for long-term capital improvements to the wastewater treatment plant which will require significant financial resources. There is currently no effective mechanism in place to link the projected cost of capital improvements with rate and service charge levels, annual results of operations, and fund balances. Projections of revenues and expenditures will assist in developing a multi-year plan that identifies the effects of the implementation of capital improvements.

The Wastewater Department generates operating revenue from the sale of sewer services to its customers, which is used to fund operating expenses, debt service, and capital improvements. The Sanitary Sewer Operating Fund has been established to account for these revenues and expenditures, with several other ancillary funds created for capital improvements. The cash balances, revenues, and expenditures of all these funds are critical to determining the ability of Circleville to fund current and future operations, debt service, and capital improvements.

Revenue Projection

Chart 4-1 shows sewer sales revenue projections by meter size for 2015 through 2017 using customer usage data from 2015 with annual increases approved by City Council factored in. This projection serves to provide an indication of the effect of changes to the rate structure on total revenues generated by future sewer sales.

Chart 4-1: Sewer Sales Revenue Projection by Meter Size



Source: City of Circleville

As shown in **Chart 4-1**, total revenue is projected to increase by approximately \$150,000 each year with 69 percent of 2016 and 2017 revenue coming from low volume users with 0.75" meters. The proposed increase would provide approximately \$360,000 of additional revenue above the approved rate structures.

Revenue from sewer sales is recorded in the Sanitary Sewer Operating Fund and is used to cover wastewater expenditures and for transfers-out to subsidiary wastewater funds. Any net revenues after expenditures and transfers-out increase the cash balance of the Sanitary Sewer Operating Fund. Unencumbered cash balances represent resources that the City has available to fund operations, debt service, and improvements to the sanitary sewer system and wastewater treatment plant. **Table 4-1** shows the unencumbered cash balances for the wastewater operating and subsidiary funds as of year-end 2015. This analysis provides an indication of the financial condition of each fund.

Table 4-1: Wastewater Funds Balance and Budget

Wastewater Funds	2015 Year-end Unencumbered Cash Balance	2015 Budget Expenditures	2015 Actual Expenditures	2016 Budget Expenditures
Sanitary Sewer Operating Fund ¹	\$1,168,801	\$2,139,224	\$1,655,488	\$2,121,962
Sanitary Sewer Improvement and Extension Fund	\$505,067	\$687,147	\$295,501	\$70,000
Sewage Disposal Works Debt Service Fund ²	\$39,680	\$147,958	\$139,379	\$196,376
Sewer Replacement Fund	\$197,384	\$250,000	\$254,252	\$545,000
Total	\$1,910,932	\$3,224,329	\$2,344,620	\$2,933,338

Source: City of Circleville

¹ Excludes inter-fund transfers from the operating fund to subsidiary wastewater funds.

² Includes resources budgeted for existing debt service and an approved capital project.

As shown in **Table 4-1**, the City has significant unencumbered resources in the Sanitary Sewer Replacement Fund and the Sewer Replacement Fund. These resources are available to fund debt service and improvements to the sanitary sewer system and the wastewater treatment plant, respectively. There are no requirements to maintain a minimum balance in any particular fund, so balances are completely within the discretion of City officials.

Analysis

The wastewater treatment plant was constructed in 1974 with no major improvements occurring since the plant was constructed. The City contracted with a third-party vendor in November 2014 to provide a preliminary engineering assessment to evaluate the condition of the plant and the needs of the community as well as to make recommendations for improvements that will allow the plant to continue to operate in compliance with federal law. The assessment identified numerous improvements to all areas of the plant that were organized into five bid packages along with cost estimates of the total project cost of each bid package. The assessment identified potential sources of loans for each project, including the Ohio Public Works Commission (OPWC), the Ohio Water Development Authority (OWDA), and the Water Pollution Control Loan Fund (WPCLF). **Table 4-2** shows the description the bid packages, estimated project costs, potential funding sources, and the local shares of each project. This information serves to provide a comparison of the cost and timeframe between projects as well as an indication of the total cost of completing all projects.

Table 4-2: Bid Package Descriptions

Bid Package	Project Description	Estimated Project Cost	Timeframe	Potential Funding Source	Local Cost Share
1	Includes the majority of influent pumping improvements. These improvements are necessary due to the age and condition of the existing influent pumping facilities.	\$1,556,500	Mid-2016	OPWC	\$405,000
2	Includes the rehabilitation of the existing primary clarifiers, final clarifiers, and gravity thickener. These improvements are necessary due to the age and condition of existing equipment and assets.	\$2,551,876	Unknown	OWDA	Unknown
3	Includes the septage receiving, headworks and high priority, miscellaneous wastewater treatment plant improvements not included as part of Bid Package Two. These improvements are necessary due to the age and condition of existing equipment and assets.	\$6,995,608	Unknown	WPCLF	Unknown
4	Includes aeration system improvements. These improvements will improve the energy efficiency of the existing operations.	\$2,159,523	Unknown	WPCLF	Unknown
5	Includes solids handling improvements and other miscellaneous wastewater treatment plant improvements that were identified as improvements that could wait for funding to become available.	\$10,119,000	Unknown	Unknown	Unknown

Source: City of Circleville, OPWC, OWDA, and WPCLF

As shown in **Table 4-2**, bid packages One, Two, and Three contain the improvements that the engineering assessment deemed to be the highest priority in order to ensure that the plant continues to operate in compliance of federal law. Bid Package One has been approved. Within the remaining high priority projects, however, there is no consensus on when each project should be funded and completed.

Several different financing sources exist for wastewater plant improvements, with each requiring the City to pay debt service on any funds that are borrowed. The City has been approved to receive funds for Bid Package One; the terms of the loan include a local share of the project cost coupled with a 0.0 percent, 20 year loan from the OPWC. The City is permitted to begin bidding for the project in mid-2016.

Table 4-3 provides projections for debt service for bid packages One through Four. Bid Package Five is not being considered by the City as it does not address high priority needs and has a very high estimated cost. This information is important as it provides an indication of actual project cost as the cost of borrowing is included.

Table 4-3: Estimated Debt Service for Bid Packages 1 - 4

	BP1	BP2	BP3	BP4¹	Total
Estimated Total Project Cost	\$1,556,500	\$2,551,876	\$6,995,608	\$2,159,523	\$13,263,507
Local Share	\$405,000	N/A	N/A	N/A	\$405,000
External Fund Source	OPWC	OWDA	WPCLF	WPCLF	N/A
Loan Amount	\$1,151,500	\$2,500,000	\$7,000,000	\$2,200,000	\$12,851,500
Term (Years)	20	20	20	20	N/A
Interest Rate	0.00%	2.83%	1.58%	1.48%	N/A
Annual Cash Outflow	(\$57,575)	(\$163,838)	(\$408,436)	(\$127,149)	(\$756,998)

Source: City of Circleville, OPWC, OWDA, and WPCLF

Note: Interest rates are as of June 2016, the most current information as of the completion of this analysis.

¹ Bid Package Four is anticipated to qualify for a 0.1 percent rate discount for implementing Green Project Reserve energy benefits that use energy in a more efficient way.

As shown in **Table 4-3**, the City will need to generate approximately \$757,000 in annual cash flow to service the debt for bid packages One through Four. This estimate assumes that the City will finance the costs of bid packages Two through Four.

Once debt service requirements for the bid packages were determined, cash flow projections were developed. **Table 4-4** shows these projections, which are based on customer usage data from 2015 (with annual increases approved by City Council factored in), in addition to the projected debt service for bid packages One through Four and existing debt service. This projection assumes that the City will incur new debt service for a new bid package each year from 2016 through 2019. This analysis is important as it assists in determining the impact of the capital projects outlined in the bid packages on the cash balance of the Sewer Operating Fund.

Table 4-4: Sanitary Sewer Operating Fund Cash Flow Projection

	2015 Actual	2016 Projected	2017 Projected	2018 Projected	2019 Projected
Cash Inflows					
Charges for Service and Assessments ¹	\$2,215,512	\$2,399,149	\$2,554,878	\$2,719,676	\$2,896,400
Other Revenue	\$30,440	\$0	\$0	\$0	\$0
Total Inflows	\$2,245,952	\$2,399,149	\$2,554,878	\$2,719,676	\$2,896,400
Cash Outflows					
Operating ²	(\$1,579,923)	(\$1,627,621)	(\$1,676,450)	(\$1,726,744)	(\$1,778,546)
Sewer System Capital Improvements ³	(\$64,311)	(\$198,000)	\$0	\$0	\$0
Sewer Plant Capital Improvements ⁴	(\$7,095)	(\$73,000)	\$0	\$0	\$0
Sewer Admin. Capital Improvements ⁵	(\$4,159)	(\$19,700)	(\$4,500)	(\$4,500)	(\$4,500)
Transfer to Sanitary Sewer Improvement and Extension. Fund ⁵	(\$200,000)	\$0	(\$200,000)	(\$200,000)	(\$200,000)
Transfer to Sewer Replacement Fund ⁴	(\$200,000)	(\$500,000)	\$0	\$0	\$0
Transfer to Sewage Disposal Debt Fund	(\$147,958)	(\$196,376)	(\$358,638)	(\$771,492)	(\$907,771)
Transfer to Retirement Sick Leave Fund ⁵	(\$10,000)	(\$10,000)	(\$10,000)	(\$10,000)	(\$10,000)
Total Outflows	(\$2,213,446)	(\$2,624,697)	(\$2,249,588)	(\$2,712,736)	(\$2,900,817)
Net Cash	\$32,506	(\$225,548)	\$305,290	\$6,940	(\$4,417)

Source: City of Circleville

¹ Projected based on 2015 customer usage and a continued rate increase methodology of a \$0.25 fixed service charge increase and a 7.0 percent usage fee increase per year.

² Projected 3.0 percent annual increase in operating expenditures.

³ Assumed capital expenditures are paid from the Sanitary Sewer Improvement and Extension Fund

⁴ No capital expenditures were projected due to the significant proposed debt-funded capital improvements.

⁵ Budgeted 2016 amount; 2017-2019 were projected at 2015 levels.

As shown in **Table 4-4**, there will be a deficit in the Sanitary Sewer Operating Fund for 2016 due to a large transfer-out to the Sewer Replacement Fund. This transfer provides funds for the local cost share for Bid Package One. In 2017, the approved rate structure is projected to generate an approximately \$305,000 surplus. The approved rate structure will provide sufficient revenue to support the debt service for bid packages One and Two with an approximate \$80,000 surplus over both years.

A rate structure for 2018 and 2019 has not been approved; the City should annually evaluate the sewer rate structure based on anticipated revenue needs each year (see **R3.1**). The cash flow projection assumed the City will continue to follow the incremental rate increase methodology that was approved for 2015-2017. Based on this assumption, the Sanitary Sewer Operating Fund will approximately break even in 2018, including debt service for bid packages One through Three. The Sanitary Sewer Operating Fund will also approximately break even in 2019, including debt service for bid packages One through Four.

The proposed increase to the fixed service charge is intended to pay for capital improvements and would generate approximately \$360,000 more annual revenue in 2016 and 2017. This additional revenue would result in significant annual surpluses. However, the timing of debt service payments has the potential to significantly alter cash flow projections. For example, if bid

package projects were financed simultaneously, the projected surplus for 2017 would be reduced and the debt service in subsequent years would be higher than projected. Conversely, if the bid packages were delayed, the Sanitary Sewer Operating Fund may experience greater surpluses in subsequent years.

Multi-Year Capital Planning (Government Finance Officers Association, 2006) recommends that local governments prepare and adopt multi-year capital plans. An effective plan should identify needs, determine and, prioritize capital requests, and develop financing strategies. In addition, cash flow projections should be prepared that establishes the amount and timing of capital financing. Revenue and expenditure trends should be anticipated and related to the multi-year capital plan.

The City should prepare and maintain a comprehensive, multi-year capital plan. The lack of an effective plan could result in difficulty anticipating and funding improvements to infrastructure, buildings, technology, and major equipment. Creating an effective plan will take on added importance as the City navigates through expected capital improvements to its utilities infrastructure; projects that could result in over \$750,000 in additional debt service. Developing an effective plan would enable the City to link funding needed for capital improvements with rate and service charge levels to help ensure that improvements are made without interruption and without a large scale effect on other City provided services.

Conclusion

The City has approved increases in the sewer rate schedule that are projected to result in year over year increases in sewer sales revenues through 2017. The existing sewer rate structure is considered to be affordable and is similar to other municipal rate sewer rate structures (see **Utility Rate Analysis**).

The City has existing financial resources that are available to fund capital improvements. The approved rate structure for 2016 and 2017 is more than sufficient to support operations, capital expenditures, and debt service for the approved Bid Package One. An increase to the fixed service charge in 2016 and 2017 would provide significant additional revenue, but there is no multi-year capital plan that identifies a specific use or need for the additional revenue in those years. The City does not have an adequate multi-year capital plan. As a result, funding needs for capital improvements are difficult to predict over multi-year periods.

R4.1 Prepare and maintain a comprehensive, multi-year capital plan that assesses the current condition of the infrastructure, future capital project needs, and the funding sources required to complete these projects.

Appendix A: Scope and Objectives

Generally accepted government auditing standards require that a performance audit be planned and performed so as to obtain sufficient, appropriate evidence to provide a reasonable basis for findings and conclusions based on audit objectives. Objectives are what the audit is intended to accomplish and can be thought of as questions about the program that the auditors seek to answer based on evidence obtained and assessed against criteria.

In consultation with the City, OPT identified the following scope areas for detailed review:

- Public Services; and
- Utility Rate Analysis.

Based on the agreed upon scope, OPT developed objectives designed to identify improvements to economy, efficiency, and/or effectiveness. **Table A-1** illustrates the objectives assessed in this performance audit and references the corresponding recommendation when applicable.

Table A-1: Audit Objectives and Recommendations

Objective	Recommendation
Public Services	
How do historical operating expenditures compare to industry benchmarks and peer averages?	N/A
How do staffing levels compare to industry benchmarks and/or peer averages?	R2.1
Utility Rate Analysis	
Is the utility rate structure appropriate to recover the operating costs of the Water Department?	R3.1
Is the proposed utility rate structure appropriate to recover the operating costs of the Wastewater Department and proposed sewer plant improvements?	R3.1, R4.1

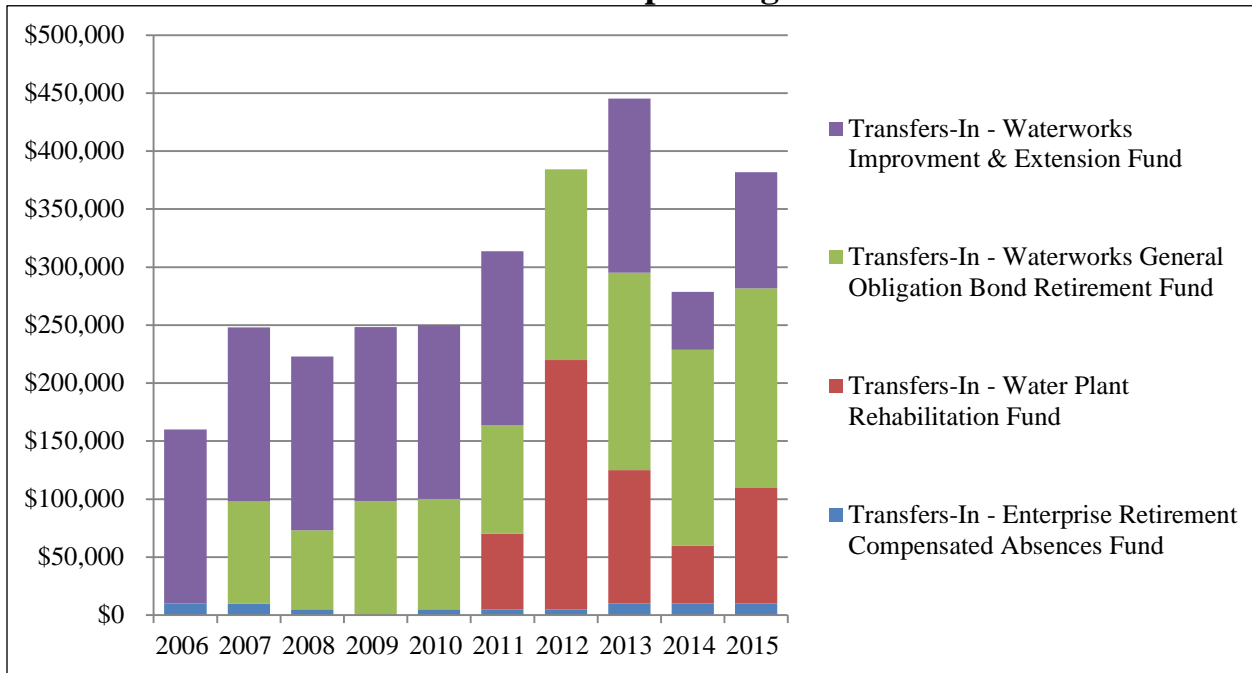
Note: Although assessment of internal controls was not specifically an objective of this performance audit, they were considered and evaluated when applicable to scope areas and objective.

Appendix B: Additional Information

Inter-fund Transfers

The total of transfers-out from the Waterworks Operating Fund is shown in **Chart 1-2**. **Chart B-1** shows the resulting transfers-in to the subsidiary water funds between 2006 and 2015.

Chart B-1: Waterworks Operating Fund Transfers

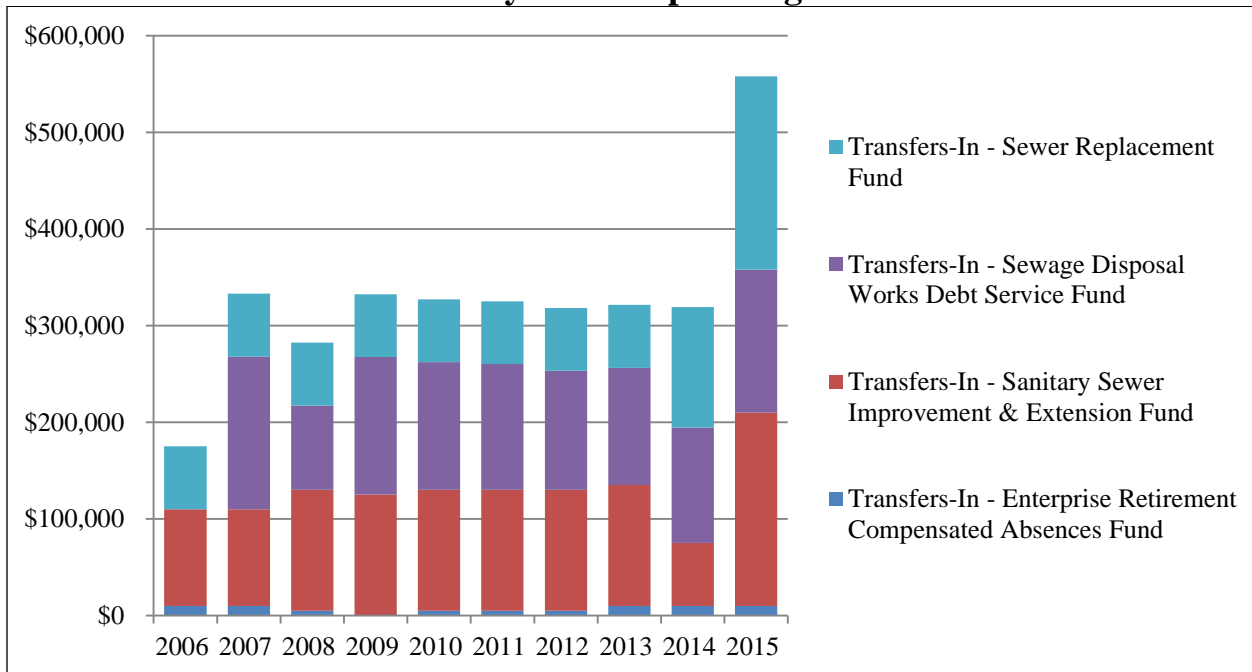


Source: City of Circleville

As shown in **Chart B-1**, the majority of transfers-out from the Waterworks Operating Fund were to provide funds for debt service (Waterworks General Obligation Bond Retirement Fund) and capital improvements to the water plant (Water Plant Rehabilitation Fund) and distribution infrastructure (Waterworks Improvement and Extension Fund).

The total of transfers-out from the Sanitary Sewer Operating Fund is shown in **Chart 1-3**. **Chart B-2** shows the resulting transfers-in to the subsidiary water funds between 2006 and 2015.

Chart B-2: Sanitary Sewer Operating Fund Transfers



Source: City of Circleville

As shown in **Chart B-2**, the majority of transfers-out from the Sanitary Sewer Operating Fund were to provide funds for debt service (Sewage Disposal Works Debt Service Fund) and capital improvements to the wastewater treatment plant (Sewer Replacement Fund) and collections infrastructure (Sanitary Sewer Improvement and Extension Fund).

Client Response

The letter that follows is the City's official response to the performance audit. Throughout the audit process, staff met with the City management to ensure substantial agreement on the factual information presented in the report. When management disagreed with information contained in the report, and provided supporting documentation, revisions were made to the audit report.

City of Circleville



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Donald R. McIlroy
Mayor

August 24, 2016

David Yost
Auditor of State
88 East Broad Street, 5th Floor
Columbus, OH 43215

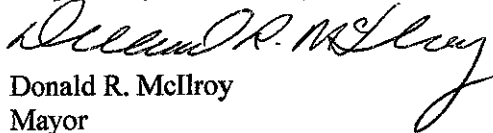
Dear Auditor Yost:

The City of Circleville would like to thank you and your staff for identifying opportunities for improvement. I greatly appreciate your willingness to focus on areas the City is looking to improve.

The depth of review and effort your staff put in to this audit and statistical data that was created to support your recommendations is impressive. It is the kind of data I was looking for to guide decisions on potential changes we are seeking to make within the City.

We've reviewed your recommendations and have identified valuable opportunities for the City of Circleville to do business more efficiently in the future. We will continue to review and study your recommendations with a view toward making improvements in the department that will improve our performance.

Respectfully,


Donald R. McIlroy
Mayor

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Dave Yost • Auditor of State

CITY OF CIRCLEVILLE

PICKAWAY COUNTY

CLERK'S CERTIFICATION

This is a true and correct copy of the report which is required to be filed in the Office of the Auditor of State pursuant to Section 117.26, Revised Code, and which is filed in Columbus, Ohio.

Susan Babbitt

CLERK OF THE BUREAU

**CERTIFIED
SEPTEMBER 6, 2016**