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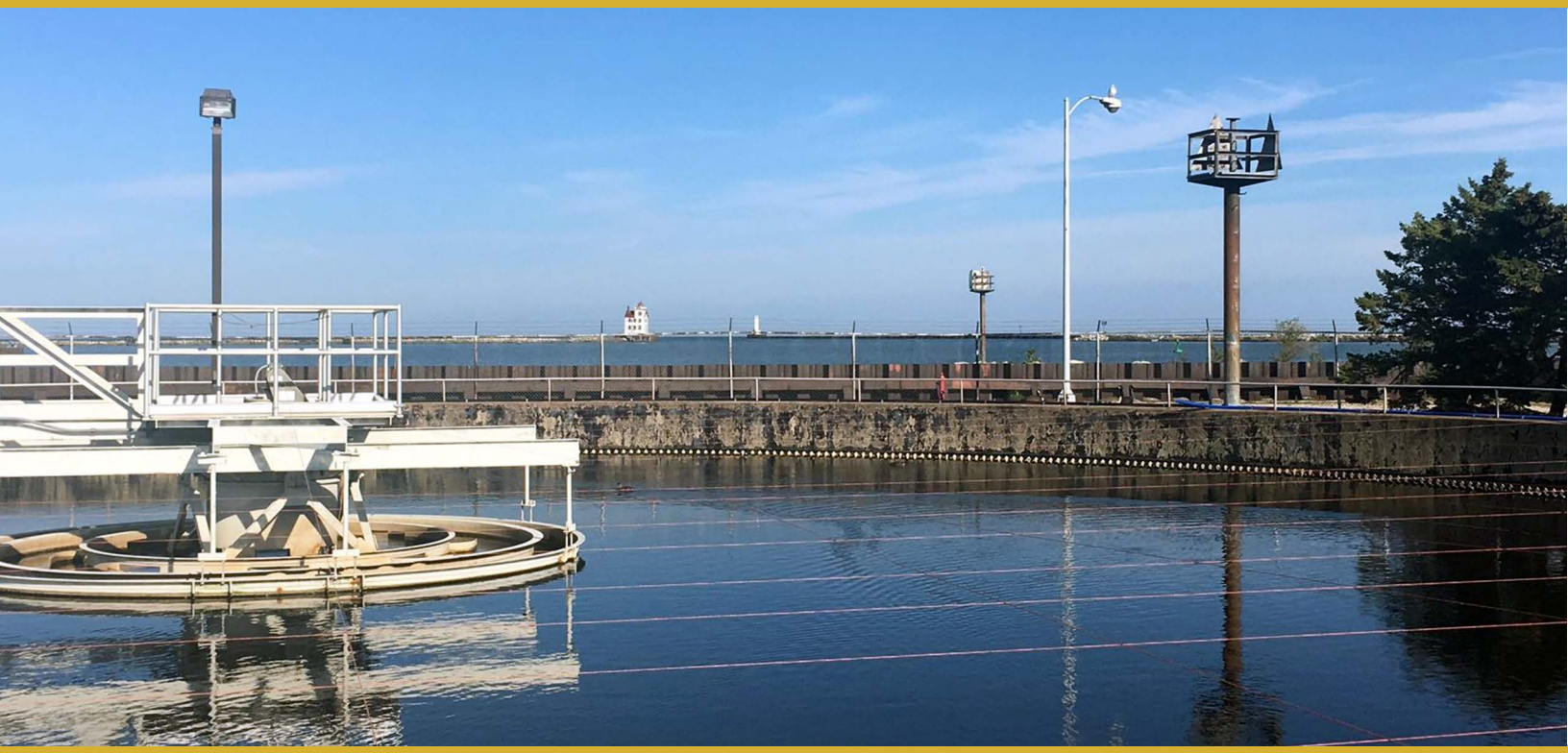
KEITH FABER



City of Lorain

Performance Audit

June 10, 2021

Efficient • Effective • Transparent

OHIO AUDITOR OF STATE
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OHIO AUDITOR OF STATE
KEITH FABER

To the City of Lorain community,

The Auditor of State's Office recently completed a performance audit for the the City of Lorain (the City) at the request of the City Council. This review was conducted by the Ohio Performance Team and provides an independent assessment of operations within select functional areas.

This performance audit report contains recommendations, supported by detailed analysis, to enhance the City's overall economy, efficiency, and/or effectiveness. This report has been provided to the City and its contents have been discussed with the appropriate elected officials and City management. The City has been encouraged to use the recommendations contained in the report and to perform its own assessment of operations and develop alternative management strategies independent of the performance audit report.

This data-driven analysis of operations provides the City valuable information which can be used to make important financial decisions. Additional resources related to performance audits are available on the Ohio Auditor of State's website.

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,

Keith Faber
Auditor of State
Columbus, Ohio

June 10, 2021

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Introduction

Access to clean, safe, and affordable water is a critical component of everyday life. Humans need water to survive; not only for drinking, but also for growing plants, raising animals, or conducting regular cleaning of spaces. Water distribution and the collection and treatment of wastewater is typically done on the local level and is a benefit of living in a populated area. Ohio has several laws which govern water systems in the state, including how clean water is provided to residents and how wastewater is treated so that it is safe for the environment. These laws ensure that Ohioans have access to clean water.

The provision of water and treatment of wastewater can be costly enterprises. Generally, a municipality offering water services fund those services through fees and charges for services, which means that residents or other account holders are charged based on their water usage. These fees and charges are billed on a regular basis and are designed to support the ongoing operations of water departments. As with any government enterprise, municipal water departments can benefit from performance audits in order to assess the efficiency, economy, and effectiveness of its operations.

The City of Lorain requested a performance audit to provide operational guidance and recommendations for its water and wastewater systems.[1] The Ohio Auditor of State's Ohio Performance Team (OPT) conducted the performance audit with a focus on utility operations including water treatment and distribution, wastewater treatment and collections, and utility billing. OPT also reviewed staffing and compensation of utility workers, and the appropriateness of utility rates and fees.

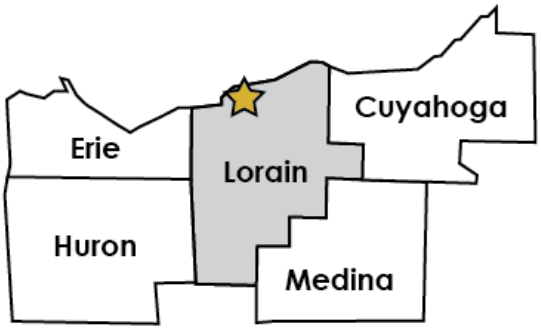
NOTE TO REPORT USERS:

Information in this report is primarily based on data available as of 2019, but the most recently available information was used where available, necessary, and appropriate. The State of Ohio declared a state of emergency in March 2020 due to the COVID-19 pandemic. While the financial impact of the pandemic and ensuing emergency measures has not been fully realized and cannot be estimated, it may have a significant impact on the City's revenues and operations. Our analysis does not fully take into account the potential reduction of revenue due to reductions in billing collections.

[1] Performance audits are conducted in accordance with Generally Accepted Government Auditing Standards, see Appendix A.

City of Lorain

The City of Lorain (the City or Lorain) is located in Northeast Ohio on the southern shore of Lake Erie, 30 miles west of Cleveland. The City covers approximately 23 square miles of Lorain County and has a population of approximately 63,855.



Governance

Lorain has an elected Mayor and City Council President. The President serves as the presiding officer of the elected 11 member City Council. Three members serve at-large while eight members serve individual wards. Lorain's government has multiple departments which are responsible for providing services to residents including fire, police, planning, zoning, street construction, maintenance and repair, water and sewer services, municipal court services, and general administrative services.

Public Services

The City's Utilities Director is responsible for overseeing the water, wastewater, and utility billing operations. Water operations consists of the Water Treatment Department and the Water Distribution Department, while wastewater operations consists of the Wastewater Treatment Department and the Sewer Collections Department. Both the Water and Wastewater utilities have operated with a net revenue since 2014; this means that the Departments are earning enough money to pay for annual operating expenditures and have funds left over at the end of each year.

Finances

A city relies on a variety of revenue sources to provide services to residents including property taxes, income taxes, licensing fees, and charges for services. These revenues allow a city to ensure roads are salted in the winter, police respond promptly to calls, and that green spaces are appropriately maintained. Much like an individual may have a checking, savings, and retirement account, cities operate using multiple types of accounts for various activities related to daily operations and long-term planning. Revenues are allocated to accounts based on a variety of factors including legal authority, and these accounts allow for the transparent use of public dollars.

Fund Types

Government entities can maintain three different types of funds: Governmental, Proprietary, and Fiduciary. Governmental and Proprietary funds can be used for operations whereas a Fiduciary fund contains resources held by a government but belonging to other individuals or entities. While Lorain uses Governmental funds for some city operations, the Water Treatment and Water Pollution Control Departments both operate using a Proprietary Fund.

Proprietary Funds, also known as enterprise funds, are similar to business accounts. They obtain revenue through fees for services or memberships and that revenue is used to pay for the expenses related to the specific business operations. In respect to Water Treatment and Water Pollution Control, account holders are billed on a regular basis according to a rate schedule for the amount of water used and the amount of wastewater produced, as well as fixed charges for capital improvements and individual fees for various other utility related services.

Audit Overview

At the request of the City, we reviewed the Utilities Department's staffing and compensation levels of its major operations, to include water treatment, water distribution, wastewater treatment, wastewater (sewer) collections, and utility billing in order to provide recommendations for improved operational economy, efficiency, and effectiveness. We also reviewed the appropriateness of the City's utility rates and fees in terms of structure, customer affordability, distribution of charges for service revenue, the full cost to provide utility services, and financial policy. Scope areas relating to the operations and rates were analyzed with specific objectives in mind. Where applicable, recommendations are based on industry standards, best practices, or peer comparisons. Our audit resulted in the following recommendations:

- The City should consider making adjustments to water and wastewater operation staffing levels in the Utilities Department;
- The City should consider the financial burden to residents when establishing future utility rates and fees;
- The City should consider the full, long-term costs of providing utility services when evaluating future rates and fees;
- The City should seek to improve the billing data collection system in order to accurately and proportionately assign future utility rates across customer classes;
- The City should consider formalizing financial reserve policies for the Utility Funds; and
- The City should consider formalizing a capital improvement plan for the Utility Funds.

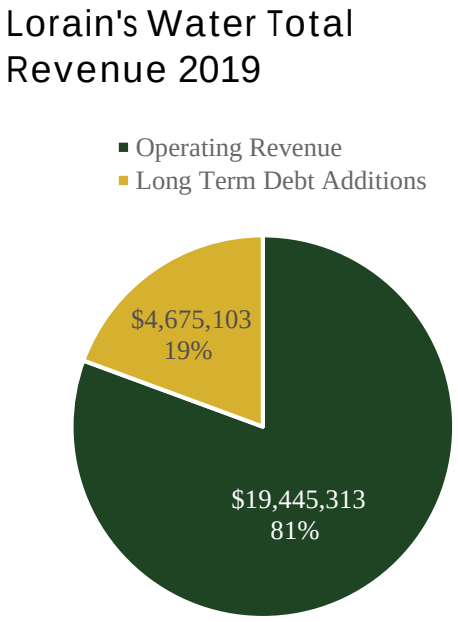
Overall, we found that while Lorain's compensation and overtime levels were lower than the peer averages, significant reductions to operational staff may be warranted based on position specific workload comparisons to the peers. These reductions could result in annual savings of close to $1 million. We also found that rates result in a moderate-high burden to residents due to income levels. We further determined that while rates are high compared to peers, they may not necessarily be inappropriate after accounting for the full cost of service and long-term debt obligations. Finally, we found that future actions should include formalizing financial policies and improving data collection.

Water Operations

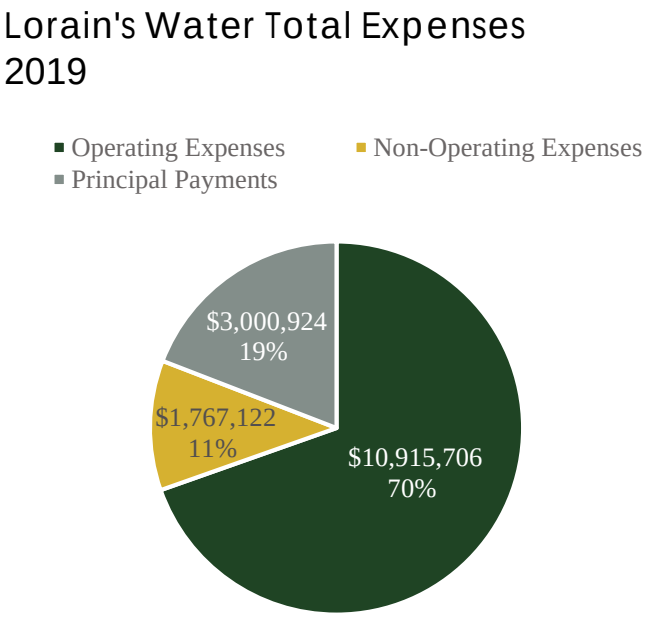
Financial Profile

Lorain's 2019 total water revenues and expenses, as well as its operating revenues and expenses, were compared to the respective peer averages. Financial data used in the analysis is as reported in the respective annual audited financial statements.

Approximately 81 percent of Lorain's total water utility revenue of $24,120,416 in 2019 was comprised of operating revenue, which generally consists of charges for services in the form of rates and fees. The remaining 19 percent of revenue was comprised of long-term debt additions, which are essentially increases to original loans, primarily for capital and infrastructure improvements.



Source: City of Lorain



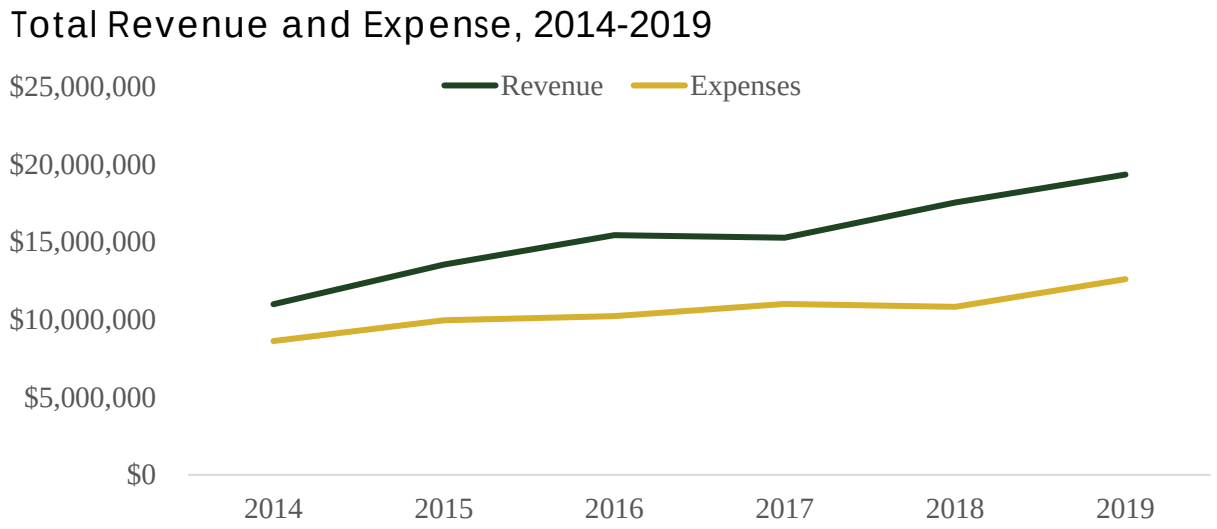
Source: City of Lorain

Approximately 70 percent of Lorain's total water utility expense of $15,683,752 in 2019 was comprised of operating expenditures, which generally consist of the day-to-day expenses incurred during the normal course of business. Examples of operating expenses are salaries, utilities, and materials or supplies.[2] Approximately 19 percent of expenses was comprised of principal payments on long-term debts, which are primarily loans for capital and infrastructure improvements. The remaining 11 percent of expenses were comprised of non-operating

[2] Operating expenses also include depreciation of assets (depreciation expense), and are included in the total shown in the chart above. Depreciation expense represents a GAAP-basis expense and is not recorded in the City's cash-basis financial records.

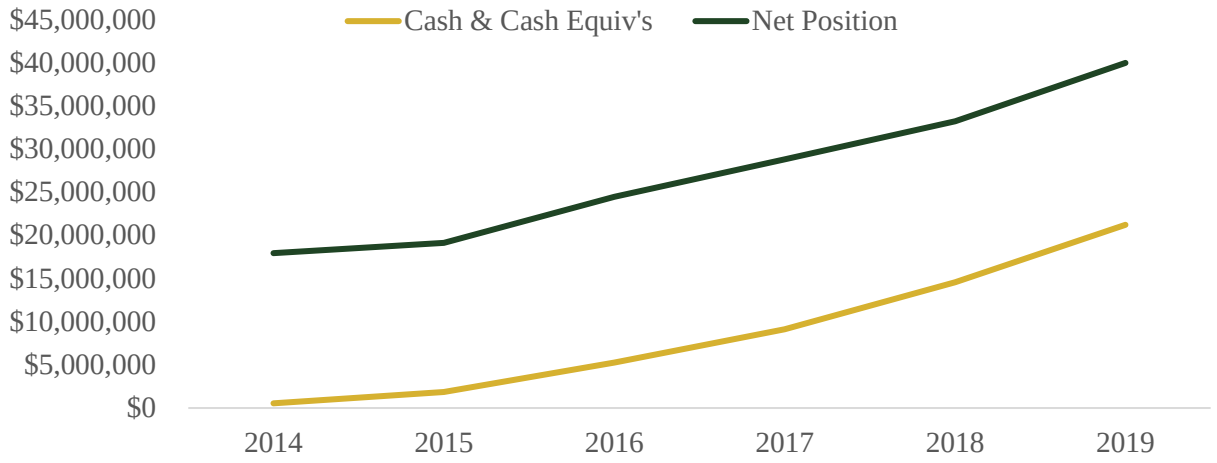
expenses, which are those incurred from activities unrelated to the core operations. Examples of non-operating expenses include losses on sales of capital assets, interest, and fiscal charges.

As shown in the chart below, total revenue has outpaced total expenses in the Water Fund from 2014 to 2019. Total revenue and expenses have increased during that period.



Source: City of Lorain

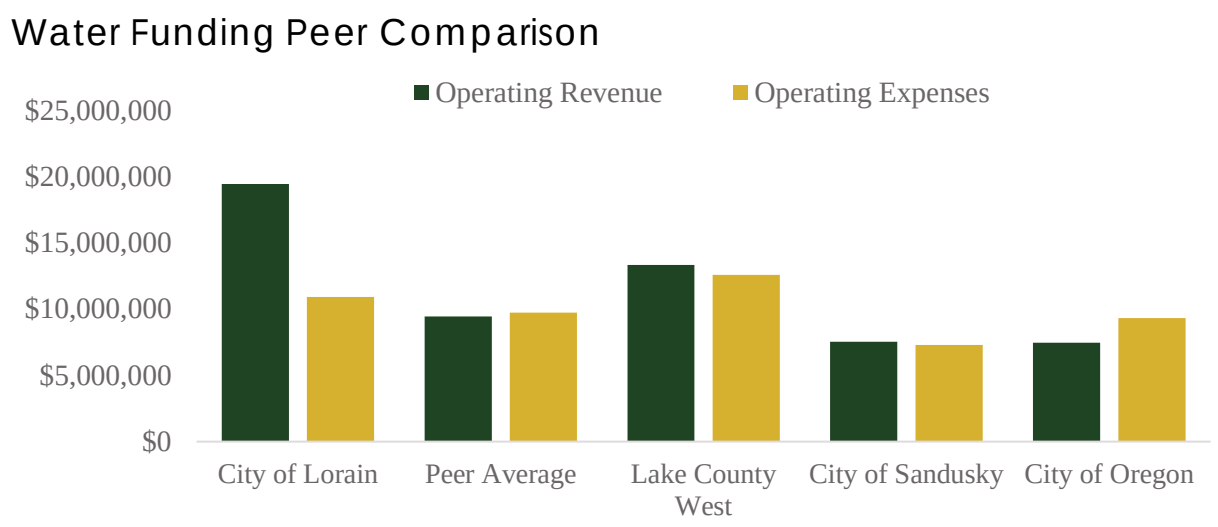
Additionally, the Water Fund's ending cash and fund balances have steadily increased from 2014 to 2019. This is indicative of Lorain's current practice of financing utility operation capital projects primarily using loans, versus paying for projects directly and spending down cash and fund balances.



Source: City of Lorain

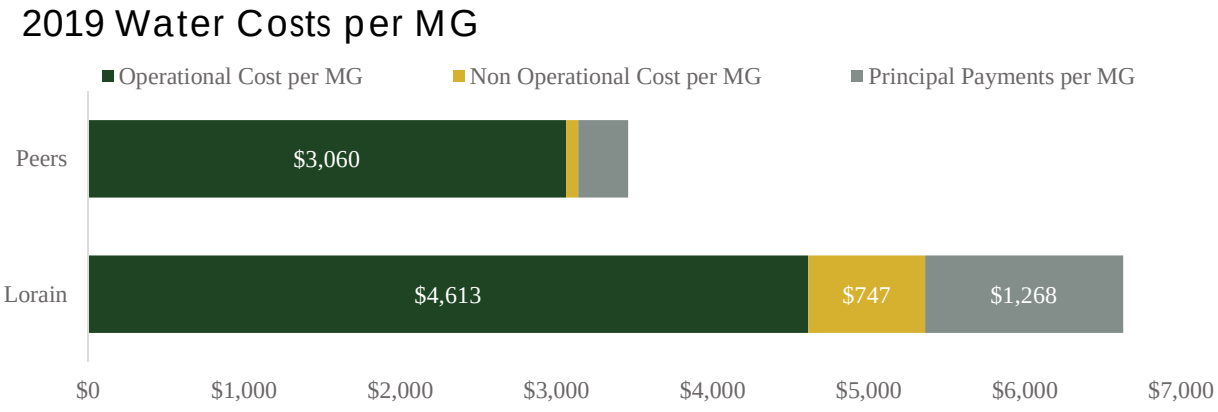
In 2019, Lorain's operational revenue of $19,445,313 exceeded its operational expenditures of $10,915,706, resulting in an operational surplus of $8,529,607, as shown in the following chart.

Lorain's operational revenue as a percent of operational expenditures ratio of 178.1 percent exceeded the peer average of 96.3 percent.[3]



Source: City of Lorain and Peers

Lorain's 2019 water expenditures were higher than their respective peer averages when normalized on a per million gallon (MG) basis.



Source: City of Lorain and Peers

Water Treatment Department

In 2019, the water treatment plant treated approximately 2,366 million gallons (MG). The treatment plant has a designed capacity of 17.2 MGD and in 2019 it operated at roughly 38 percent of capacity.[4] Water is drawn from Lake Erie and is treated by the plant for use. The City

[3] On average, the peers are deficit spending. This is due to the net operating results of the City of Oregon.
[4] The plant has capacity to treat additional water. Any increases to water demand would likely result in increases to revenue with only marginal increases to variable costs.

provides drinking water to residents of Lorain and some surrounding communities. Water is also provided for fire protection. The Department serves over 23,000 water accounts consisting of approximately 64,000 users.

Water Distribution Department

This Department provides a 24-hour, 365 days per year service that maintains 380 miles of water transmission lines from the water treatment plant to the end users. It also maintains 2,811 fire hydrants and 4,037 valves and service connections.

Recommendation 1: Water Operations Staffing

The City should consider making adjustments to water operation staffing levels in the Utilities Department.

Impact

Adjusting staffing levels at the Water Treatment and Water Distribution Departments to the peer levels could save the City approximately $426,300 in compensation and benefits, annually.

Methodology

At the request of the City, we reviewed the City's Utility Department to determine the appropriateness of staffing levels within each Department area. Our analysis showed that the City has a higher number of Utility Department employees compared to the peer average, and there is a potential for staffing reductions.

Staffing data was collected for Lorain and its peers and categorized according to department, job title, and work function. Staffing levels were then compared to the peer averages based on position specific workload metrics, and potential reductions were identified.[5] We also looked at the salary and overtime compensation for Lorain employees and found it to be lower than the peer averages (see **Appendix B**). Lorain's data was compared to designated peer averages for various categories:

- Water Treatment: Operators
- Water Treatment: Maintenance
- Water Distribution: Distribution Workers

Analysis

A reduction of 2.50 water treatment plant operator FTEs could result in annual compensation and benefits savings of $174,870.97. A reduction of 2.50 water treatment plant maintenance FTEs

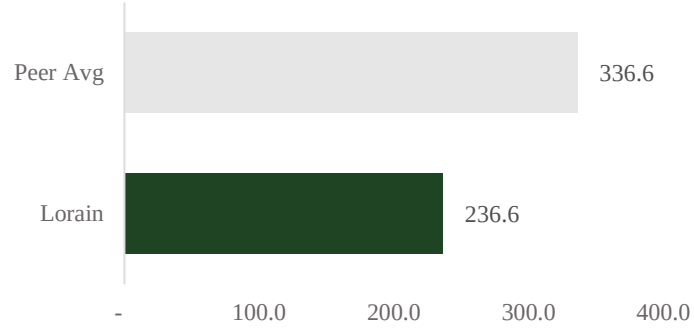
[5] Staffing reduction values for each position are rounded down to the nearest half FTE.

could result in annual compensation and benefits savings of $171,619.86.[6] Lastly, a reduction of 1.50 water distribution worker FTEs could result in annual compensation and benefits savings of $79,820. The following tables display these potential annual savings.

The City's staffing levels are derived from the City's management and Council's decision to employ at the current staffing levels. Higher staffing levels can potentially cause higher City expenditures resulting in lower fund balances.

The following charts provide additional information regarding our water operations staffing analysis.

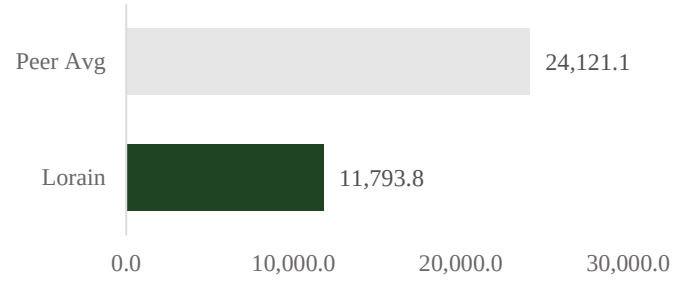
Water Treated per Operator FTE (in millions of gallons)



Lorain treats **2,366 millions of gallons** with 10.0 FTEs. If the City treated that amount of water at the peer average "per FTE" workload rate, it would only require 7.03 FTEs, a difference of 2.97. Rounded down, this equates to 2.50 FTEs.

Source: City of Lorain and Peers

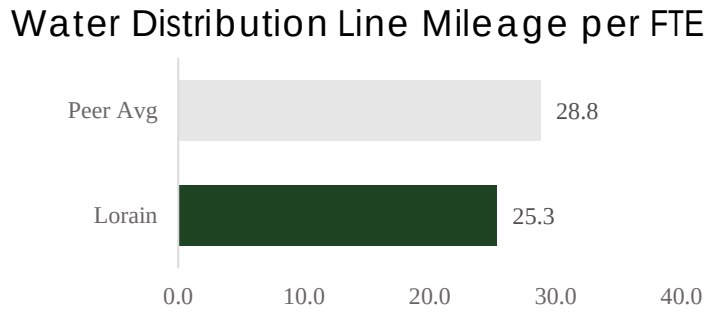
Water Treatment Plant Square Footage Maintained per FTE



Lorain maintains **58,969 treatment plant square feet** with 5.0 FTEs. If the City maintained that amount of area at the peer average "per FTE" workload rate, it would only require 2.44 FTEs, a difference of 2.56. Rounded down, this equates to 2.50 FTEs.

Source: City of Lorain and Peers

[6] This analysis includes only treatment plant square footage for Lorain and the peers. According to Utility Department officials, Lorain's staff maintain a significant amount of additional square footage beyond the treatment plant facility, to include water towers and reservoirs. City officials also noted that the age of the plant and distribution infrastructure, as well as a lack of automation, contribute to the need for its staffing levels.



Lorain maintains **380 line miles** with 15.0 FTEs. If the City maintained that amount of line at the peer average "per FTE" workload rate, it would only require 13.2 FTEs, a difference of 1.80. Rounded down, this equates to 1.50 FTEs.

Source: City of Lorain and Peers

Conclusion

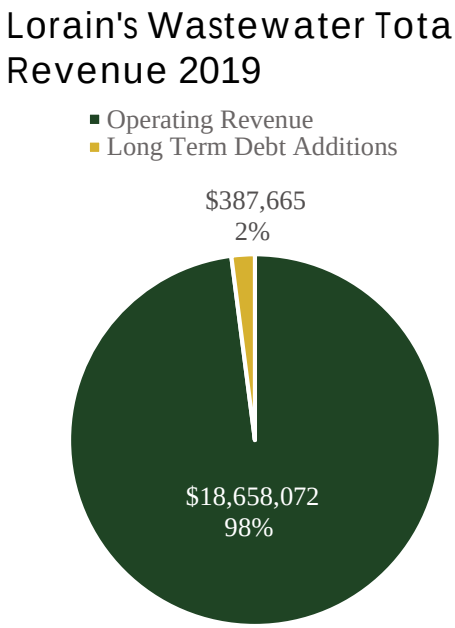
Based on position specific workload comparisons to the respective peer averages, the City of Lorain could make staffing reductions in the water treatment function for plant operators and plant maintenance personnel, as well as in the water distribution function for distribution workers. In total, the City could save approximately $426,300 annually in compensation and benefits by reducing 6.5 FTEs in the Water Treatment and Distribution Departments.

Wastewater Operations

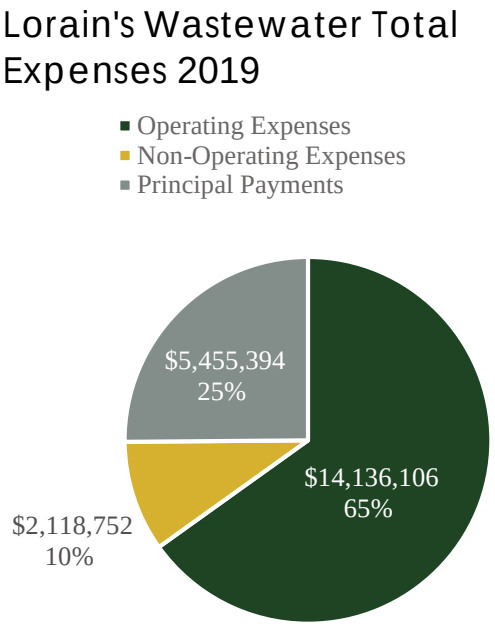
Financial Profile

Lorain's 2019 total wastewater revenues and expenses, as well as its operating revenues and expenses, were compared to the respective peer averages. Financial data used in the analysis is as reported in the respective annual audited financial statements.

In 2019, 98 percent of Lorain's total wastewater utility revenue of $19,045,737 was comprised of operating revenue, which generally consists of charges for services in the form of rates and fees. The remaining two percent of revenue was comprised of long-term debt additions which are essentially increases to original loans, primarily for capital and infrastructure improvements.



Source: City of Lorain



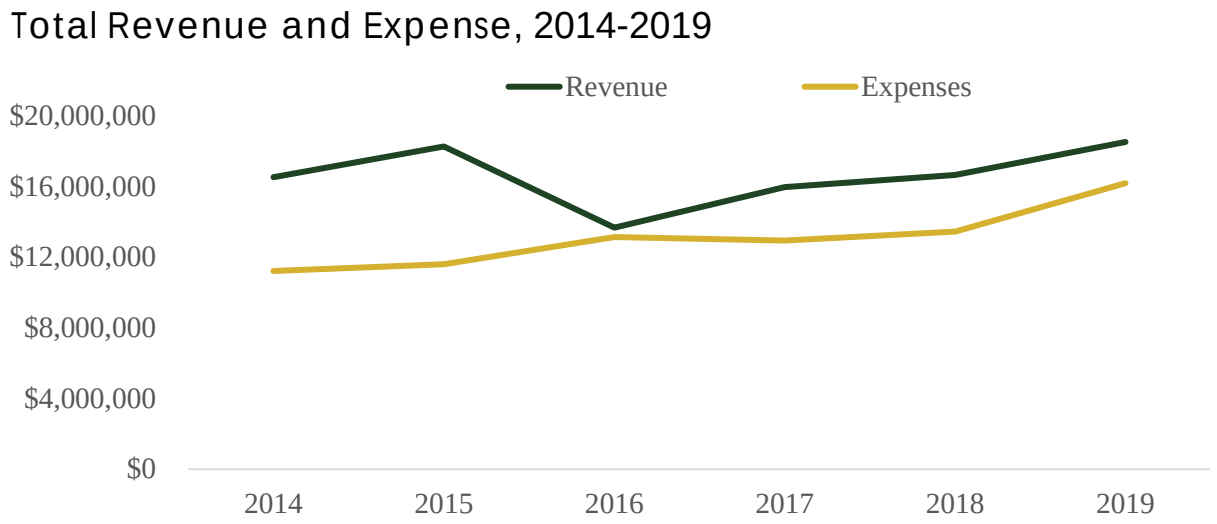
Source: City of Lorain

In 2019, 65 percent of Lorain's total wastewater utility expense of $21,710,252 was comprised of operating expenditures, which generally consist of the day-to-day expenses incurred during the normal course of business. Examples of operating expenses are salaries, utilities, and materials or supplies.[7] Twenty-five percent of expenses was comprised of principal payments on long-term debts, which are primarily loans for capital and infrastructure improvements. The

[7] Operating expenses also include depreciation of assets (depreciation expense), and are included in the total shown in the chart above. Depreciation expense represents a GAAP-basis expense and is not recorded in the City's cash-basis financial records.

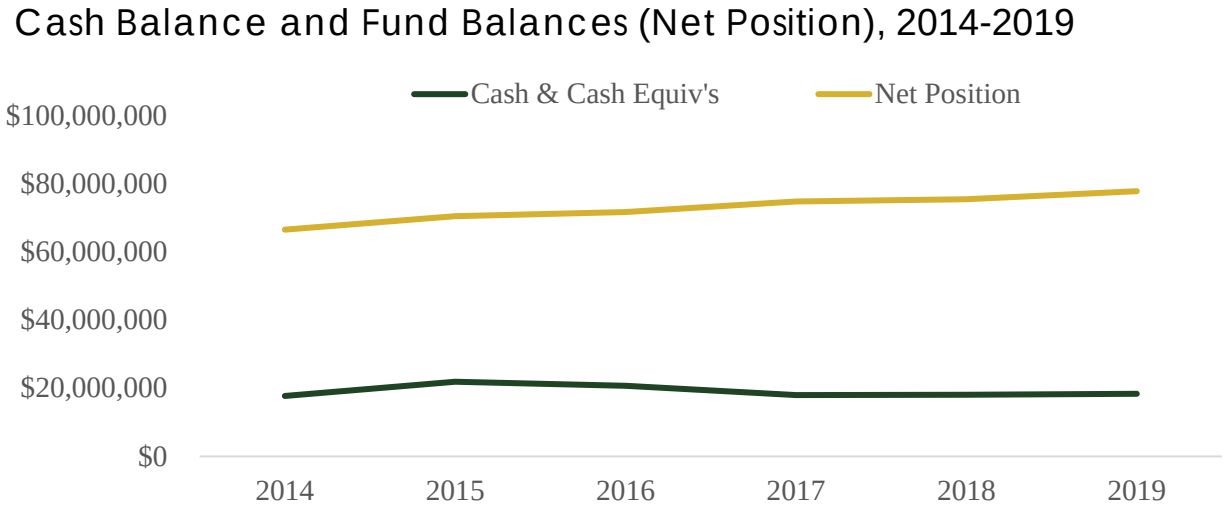
remaining 10 percent of expenses were comprised of non-operating expenses, which are those incurred from activities unrelated to the core operations. Examples of non-operating expenses include losses on sales of capital assets, interest, and fiscal charges.

As shown in the chart below, total revenue has outpaced total expenses in the Wastewater Fund from 2014 to 2019. Total revenue and expenses have increased during that period.



Source: City of Lorain

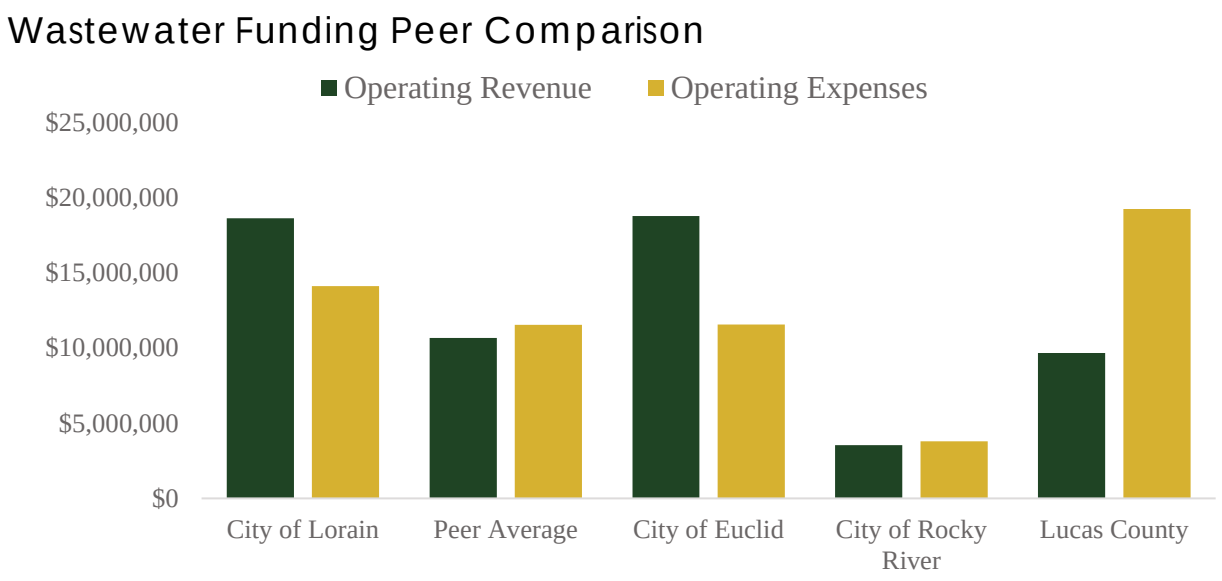
Additionally, the Wastewater Fund has had positive ending cash and fund balances from 2014-2019. The ending fund balance has steadily increased each year.



Source: City of Lorain

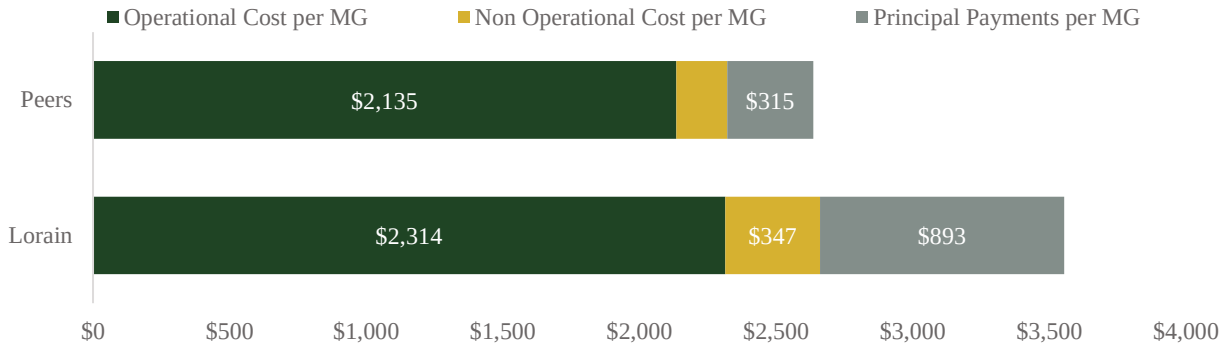
In 2019, Lorain's operational revenue of $18,658,072 exceeded its operational expenditures of $14,136,106, resulting in an operational surplus of $4,521,966, as shown in the following chart.

Lorain's operational revenue as a percent of operational expenditures ratio of 132 percent exceeded the peer average of 102 percent.[8]



Source: City of Lorain and Peers

Lorain's 2019 wastewater expenditures were higher than the respective peer averages when normalized on a per million gallon (MG) basis.



Source: City of Lorain and Peers

While comparing the extent to which Lorain's operational revenue exceeded its expenditures relative to the peer average is somewhat informative, it is only one way to gauge utility fund performance. A more comprehensive assessment of Lorain's utility fund performance is

[8] In terms of net operating results the peers, on average, are deficit spending. This is due to the net operating results of Rocky River and Lucas County. However, based on the average of each individual peers' operating ratio, collectively the peers have a positive operating ratio of 102 percent.

completed in the **Rates and Fees - Full Cost of Service** section, which takes into consideration cost factors beyond those that strictly apply to operations.

Wastewater Treatment Department

Lorain has two wastewater treatment facilities: the Black River Wastewater Treatment Plant and the Philip Q. Maiorana (PQM) Wastewater Treatment Plant. Combined, these two facilities treated approximately 6,109 MG in 2019. The Black River Wastewater Treatment Plant was originally built in 1954 with an addition added in 1972. It is the larger of the two facilities and services approximately 75 percent of Lorain, as well as the neighboring communities of Sheffield Lake, Sheffield Township and Elyria Township. The plant has a design flow of 15 million gallons daily (MGD) and can effectively treat up to 35 MGD during wet weather events. The PQM Wastewater Treatment Plant was built in 1988. The design flow for the plant is 5.4 MGD, but it can handle approximately 18 MGD during wet weather events. Combined, the treatment plants operated at roughly 82 percent of total capacity.[9]

Sewer Collections Department

The sewer collections operation is responsible for the maintenance and repair of the sanitary and storm sewer systems. The sanitary sewer system is comprised of approximately 277 miles of pipe, while the storm sewer system is comprised of approximately 170 miles of pipe. Sewer collections also maintains over 4,000 manholes, and 1,450 catch basins.

Recommendation 2: Wastewater Operations Staffing

The City should consider making adjustments to wastewater operation staffing levels in the Utilities Department.

Impact

Adjusting staffing levels at the Wastewater Treatment Department to the peer averages could save the City approximately $563,800 in compensation and benefits, annually.

Methodology

Staffing data was collected for Lorain and its peers and categorized according to department, job title, and work function. Staffing levels were then compared to the peer averages based on position specific workload metrics, and potential reductions were identified.[10] We also looked at the salary and overtime compensation for Lorain employees and found it to be lower than the peer averages (see **Appendix B**). Lorain's data was compared to designated peer averages for various categories:

[9] The plants have capacity to treat additional wastewater. Any increases to sanitary wastewater flow would likely result in increases to revenue with only marginal increases to variable costs.
[10] Staffing reduction values for each position are rounded down to the nearest half FTE.

- Wastewater Treatment: Operators
- Wastewater Treatment: Maintenance
- Sewer Collections: Collections Worker

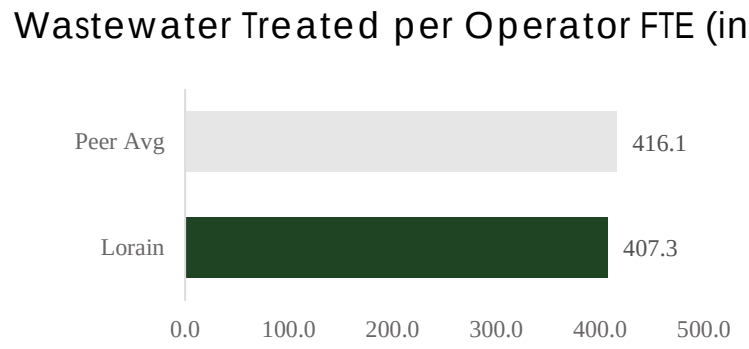
Analysis

Wastewater treatment plant operator staffing levels are in line with the peer average, so a reduction was not recommended. This analysis combined the workload and staffing levels of both wastewater treatment facilities: Black River WWTP and PQM WWTP.

A reduction of 7.50 wastewater treatment plant maintenance FTEs could result in annual compensation and benefits savings of $563,800.[11] This reduction is based upon the combined workload and staffing levels of both wastewater treatment facilities. The potential reduction is displayed in the following table.

Sewer collections staffing levels are significantly below the peer average, so a reduction was not recommended.

The charts below provide additional detail regarding our wastewater operations staffing analysis.

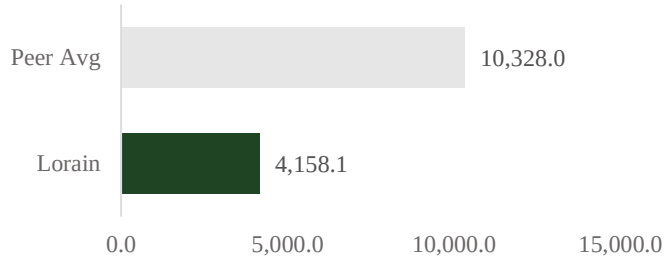


Lorain treats **6,109.5 millions of gallons** with 15.0 FTEs. If the City treated that amount of wastewater at the peer average "per FTE" workload rate, it would still require 14.7 FTEs, a difference of only 0.3 FTEs. No reduction is recommended.

Source: City of Lorain and Peers

[11] This analysis includes only treatment plant square footage for Lorain and the peers. According to Utility Department officials, Lorain's staff maintain a significant amount of additional square footage beyond the treatment plant facilities, to include pump stations and sludge basins.

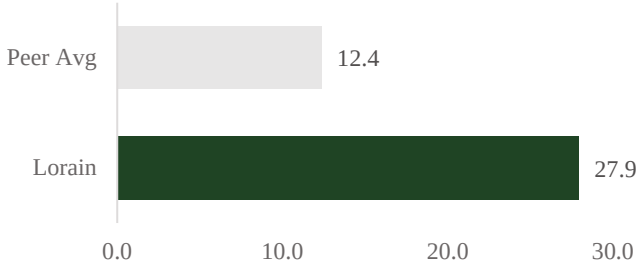
Wastewater Treatment Square Footage Maintained per FTE



Lorain maintains **54,055 treatment plant square feet** with 13.0 FTEs. If the City maintained that amount of area at the peer average "per FTE" workload rate, it would only require 5.23 FTEs, a difference of 7.77. Rounded down, this equates to 7.50 FTEs.

Source: City of Lorain and Peers

Sewer Collections Line Mileage per FTE



Lorain maintains **447 line miles** with 16.0 FTEs. If the City maintained that amount of line at the peer average "per FTE" workload rate, it would require 36.13 FTEs, a difference of 20.13. Rounded down, this equates to 20.0 FTEs. No reduction is recommended.

Source: City of Lorain and Peers

Conclusion

Based on position specific workload comparisons to the respective peer averages, the City of Lorain could make staffing reductions in the wastewater treatment function for plant maintenance, but staffing levels for sewer collections are lower than the peer average.[12] In total, the City could save approximately $563,800 annually in compensation and benefits by reducing 7.5 FTEs in its Wastewater Treatment Department.

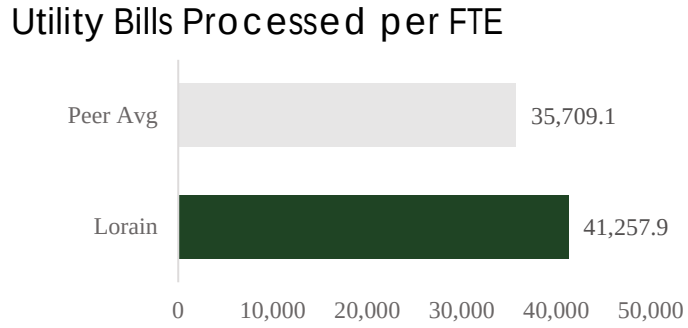
[12] Lorain's comparatively lower sewer collections staffing level is primarily a function of having a separated storm and sanitary sewer system, which results in a greater amount of total sewer line mileage.

Utility Billing

The Utility Billing Office provides billing services for Lorain residents for water, sewer, and trash. It also provides sewer billing services for the neighboring communities of Elyria Township and Amherst Township, and bills for both water and sewer services for Hidden Valley. An upcharge is built into the rates for customers in these communities as a means of cost recovery for Lorain to provide billing services. In total, the Billing Office provides bills for approximately 26,000 accounts on a monthly basis, and processed nearly 289,000 bills in 2019.

Staffing

Utility Billing staffing levels are in line with the peer average, as shown in the following table, so reductions were not recommended. However, it is important to note that there is a potential for achieving utility billing staffing efficiencies by moving from a monthly billing cycle to a quarterly billing cycle. Two billing peers, Lake County West and Rocky River, utilize a quarterly cycle. Adopting a quarterly cycle may adversely affect low income residents though, as a quarterly bill might be considered more difficult to manage financially compared to a monthly bill.



Source: City of Lorain and Peers

Lorain processes **288,805 bills** with 7.0 FTEs. If the City processed that number of bills at the peer average "per FTE" workload rate, it would require 8.09 FTEs, a difference of 1.09. Rounded down, this equates to 1.00 FTE. The City processes more bills per FTE than the peers, and no recommendation is warranted at this time.

Rates and Fees

The City charges fees for services related to water distribution, collection, and treatment. These fees are largely based on identified rates associated with usage by consumers. In addition to usage charges, the City assesses fixed rate fees which are designed to cover the full cost of water and wastewater service. This includes items such as the servicing of long term debt used to finance capital projects. The following recommendations are based on our analyses related to rates and fees charged by the City.

Recommendation 3: Customer Affordability

The City should consider the financial burden to residents when establishing future utility rates and fees.

Impact

While there is no clear financial impact of this recommendation, the manner in which rates are set can significantly affect the degree of financial burden placed on users.

Background

We examined the current rates and fees set in place by the City and the financial burden those fees cause for the City's residents.

In 2018, the City of Lorain's median household income (MHI) was $35,544. In 2020, the City's water rate was $5.57 per 100 cubic feet (CF), plus the monthly Readiness to Serve charge, a flat fee, of $9.00.[13] In 2020, the City's sewer rate was $6.38 plus the monthly Regulatory Compliance charge, a flat fee, of $9.00.

Methodology

The purpose of this analysis is to assess the affordability of Lorain's water and sewer utility rates based on the burden that utility charges represent to City residents. "Rate" includes volumetric charges, or those associated with usage, plus the primary flat fee charged to customers regardless of usage amounts. The City's rates were compared to the peers in terms of the MHI, which is comprised of monthly utility rates and fees. MHI figures are from the 2018 census. The 2020 rates for Lorain and the respective peers were standardized at 7,800 gallons of usage per month, as prescribed by the Ohio Environmental Protection Agency (OEPA) in its *2018 Sewer and Water Rate Survey*, released December 2019 by the Office of Fiscal Administration.

In addition to the MHI burden analysis, the City's 2020 water and sewer rates were compared to the American Water Works Association's (AWWA) metrics of the Household Burden Indicator (HBI) and the Poverty Prevalence Indicator (PPI), in tandem. The HBI is basic water service

[13] At the time of the analysis, the published water rate was $5.57. Subsequent to fieldwork, the published water rate was amended to $5.76.

costs as a percent of the lowest earning 20th percentile of household income. Consumption per person, per household, per day, is assumed at 50 gallons with an assumed household size of 2.65 people. The PPI is the percentage of community households at or below 200 percent of the Federal Poverty Level (FPL).

Analysis

The following two tables display water and wastewater rates as a percentage of the MHI. Charges for both water and wastewater services represent a higher percentage of income in Lorain compared to both peer averages.

Water Rate Analysis

City of Lorain Water	2020 Rates	Peer Average
Monthly water bill at 7,800 gallons/month	$66.93	$36.10
Annual bills at same level of use	$803.14	$433.21
Median Household Income in 2018	$35,544	$52,961
Water as % of MHI	**2.26%**	**0.82%**

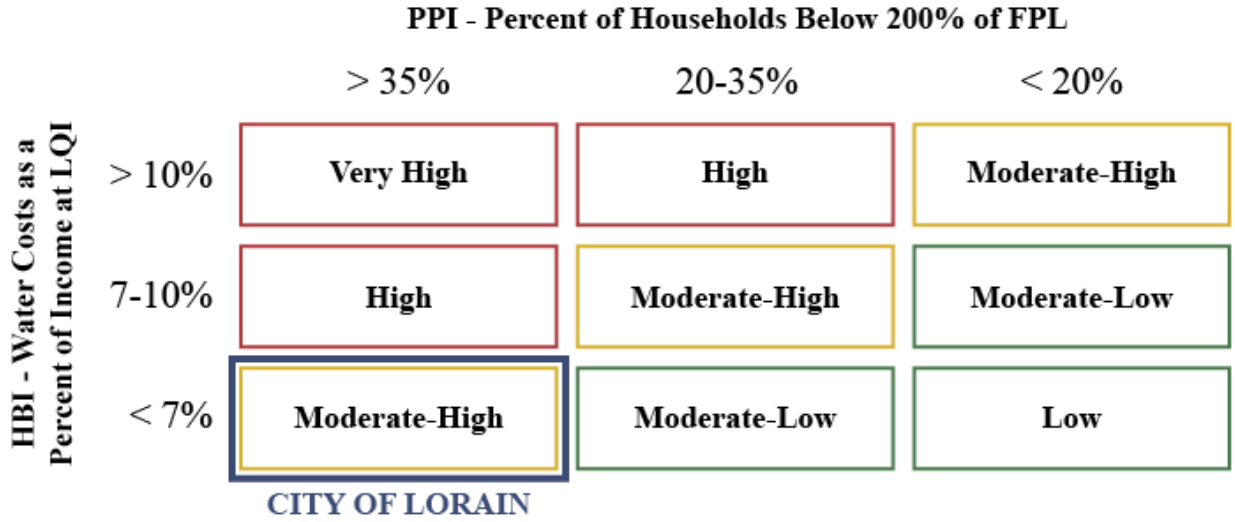
Source: City of Lorain, Peers, and US Census Bureau

Wastewater Rate Analysis

City of Lorain Wastewater	2020 Rates	Peer Average
Monthly wastewater bill at 7800 gallons/month	$75.35	$59.41
Annual bills at same level of use	$904.22	$712.87
Median Household Income in 2018	$35,544	$51,788
Wastewater as % of MHI	**2.54%**	**1.38%**

Source: City of Lorain, Peers, and US Census Bureau

Based upon AWWA recommended metrics, the City of Lorain's HBI using 2020 rates (effective August 1, 2020) is 6.2 percent. The City's PPI is 49 percent. A matrix approach in the following chart was used in order to simultaneously interpret the HBI and PPI.



According to the matrix table, the City had a Moderate-High Burden on its residents in 2020. Even though Lorain's HBI is less than seven percent, its PPI of 49 percent indicates at least a Moderate-High Burden designation regardless of rate pricing.

The City is facing an increasing full cost of service, for both water and wastewater, as well as a significantly large amount of long-term debt out to 2039 for capital improvements. Many residents of the City are also below the 200 percent FPL line. Rates are set in a manner that reflects the City's higher full cost of service, which is largely driven by its significant amount of long-term debt relative to the peers (see **Full Cost of Services**). This results in rate charges that are more impactful for Lorain residents based on income levels.

Conclusion

The City of Lorain's rates for both water and sewer are comparatively higher than the peers based on standard usage. In this regard, Lorain's rates could be considered to place a moderate-high financial burden on residential users relative to income. The City should consider the financial burden to residents when establishing future utility rates and fees. However, the City will need to balance the impact that rates may have on its lowest income residents with its need to set rates that are sufficient to cover its costs to provide utility services (see **Full Cost of Services**). These considerations should be a major part of the City's process for formalizing financial reserve policies and developing a formal capital plan (see **Financial Policy**; see **Planning**).

ARP Funding

In response to the COVID-19 pandemic, Congress has passed several pieces of legislation providing significant Federal funding to state and local governments for various new and pre-existing programs. The American Rescue Plan (ARP), passed in March 2021, provided $1.9 trillion in stimulus and relief to the public. Within this legislation, $350 billion in emergency funding was allocated to eligible state, local, territorial and Tribal governments through the Coronavirus State and Local Fiscal Recovery Funds. This funding may be used for a variety of purposes including making necessary investments in water, sewer, and broadband infrastructure projects.

Based on information available from the US Department of Treasury, the City of Lorain was allocated approximately $32.5 million. These funds could be used to finance some of the City's ongoing infrastructure projects as an alternative to securing additional debt. The City should consult with its own legal counsel to identify eligible projects.

Recommendation 4: Full Cost of Services

The City should consider the full, long-term costs of providing utility services when evaluating future rates and fees.

Impact

Although there is no direct financial impact of this recommendation, the degree to which utility rates result in sufficient revenue to cover full costs of service can significantly affect future rate setting.

Background

The appropriateness of Lorain's water and sewer rates and fees were assessed relative to the full costs to provide those services. These are costs beyond operation and maintenance. For example, utility departments hinge on infrastructure, which involves costly and timely improvements and/or investments. When these costs are not considered in conjunction with operational revenues and expenditures, an incomplete picture of the appropriateness of rates and fees may result.

Municipal water and sewer rates have been rising throughout the United States. In 2019 alone, based on the average of the largest 50 cities in a recent annual study by Bluefield Research, water and sewer bills have increased by 3.6 percent and are rising at a rate faster than inflation. In Ohio, average water and sewer rates have been outpacing the Midwest consumer price index (CPI) during the past three decades.

A primary contributing factor of this rise is the cost associated with increasing infrastructure needs. In the United States, much of the water and sewer infrastructure is dated to the early to mid-twentieth century, and has a typical lifespan of 75 to 100 years. According to a 2019 study by the American Society of Civil Engineers, Ohio is estimated to have drinking water infrastructure needs of approximately $13.41 billion and wastewater infrastructure needs of approximately $14.58 billion.

The Ohio EPA's Division of Environmental and Financial Assistance administers a large state loan program with two main funds. According to a recent 2020 annual report, the Division loaned approximately $577 million for wastewater projects and approximately $300 million for water projects across the State. The Division is not regulatory, but offers compliance assistance. Over the last 30 years, Lorain's history with the Division shows projects that can be largely characterized as replacement or improvement projects and not expansive or speculative ones. In 2010, Lorain fell under federal EPA orders to eliminate sewer overflow discharges into Lake Erie. The orders effectively mandated the undertaking of Lorain's largest capital project, the Black River Tunnel project, which had a cost of approximately $68.2 million and was initiated in 2012.

However, while there is an overall increase in rates coinciding with infrastructure needs, there is also annual volatility and varied approaches to rate setting. Overall, utilities are using more complex or tiered rate structures to address swings in customer demand, regulatory enforcement,

and non-revenue usage. To account for declines in revenues, utility rate structures have relied more heavily on fixed charges, which is evident with both Lorain and the peers. Nationally, since 2012, fixed wastewater rates have increased by 60.9 percent while variable rates have increased by 39.1 percent. This increase in fixed charges impacts low volume users the most, often the lowest income households (see **Customer Affordability**).

Lorain's water and sewer rates have risen steadily since 2000, with major increases to the Readiness to Serve fee and Regulatory Capital Improvement Compliance charge in 2017 (see **Appendix C**). These fixed charge increases were the result of recommendations from an independent rate study completed by an outside consulting firm in 2016. The study focused on compensating for the utility operation's large volume of current and planned debt related to capital and infrastructure improvements. It determined that the rate structure at that time was too heavily focused on revenue from usage charges and recommended a heavier reliance on fixed charges. In 2020, the City made the decision to revert back to 2017 levels for the fixed charge amounts in response to the COVID-19 pandemic.

Methodology

Lorain's charges for services exceed operational and maintenance expenditures, but may not result in sufficient revenue to cover all costs associated with providing service. As such, all costs to provide services were considered, for multiple years, in an effort to demonstrate the appropriateness of Lorain's revenue (rates and fees) in the context of the true, comprehensive cost to provide services. Full cost of service was split into three categories: operating expenses, non-operating expenses, and principal payments.

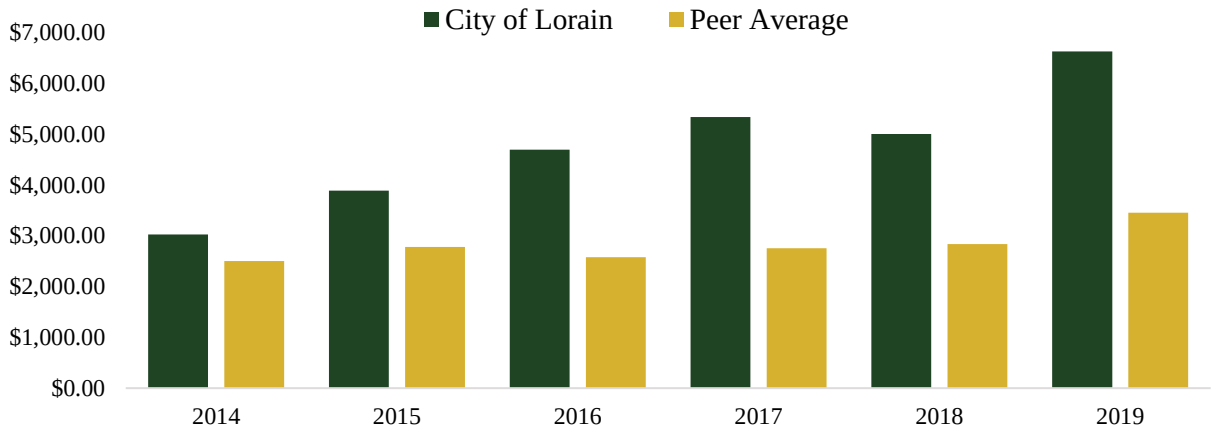
Operating revenue is revenue generated from providing water and sewer services. Operational revenues from 2014 to 2019 were tracked against the full costs of services and compared to the peers to illustrate the relationship between rates and fees and the full cost of service over time, relative to each group. Our analysis also incorporates future long-term debt obligations. Long-term debt obligations for water and sewer to 2039 were compared against the peer average.

Operational expenditures were also projected out to 2039 with three different methods. The first, and least conservative approach, was to fit operational expenditures on an exponential curve based on operational expenditures from 2014 to 2019. The second was to grow expenditures with the Bureau of Labor Statistics' nominal percent increase of total compensation for state and local government workers over the past decade. This method includes inflation plus total compensation, and was used because labor and benefits makes up more than half of the operational expenditures for Lorain. The last, most conservative model for operational expenditures grows only with average inflation from the last decade. Known long-term debt amortization was added to each model in future years to plot future full costs. This was compared against Lorain's 2019 operational revenue and 2016 operational revenue frozen at those levels to 2039 to reflect charges for services for those years. This is meant to model how sufficient the current rates (2019) and rates prior to the 2017 increase are in relation to future debt, holding all else constant.

Analysis

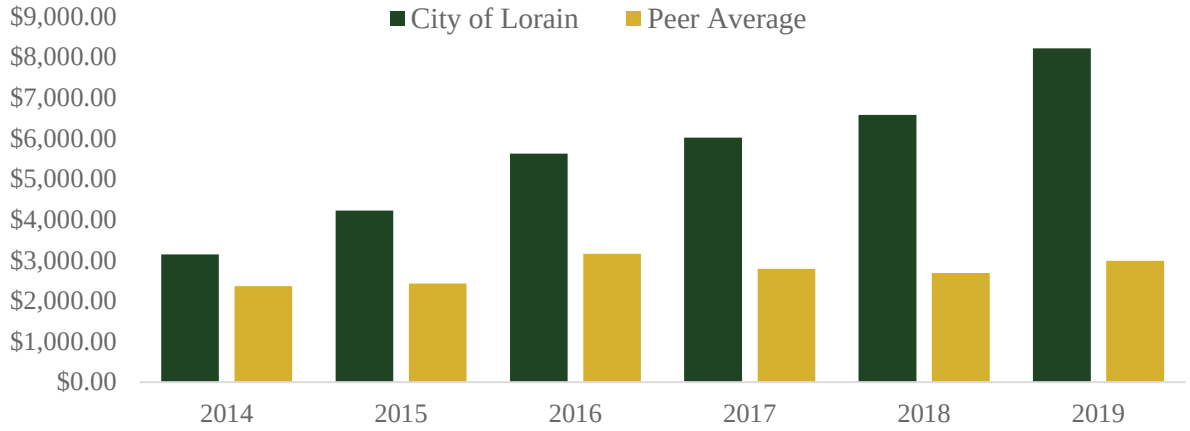
Lorain's 2019 full cost per MG for water exceeded the peer averages, as did its corresponding operational revenue per MG. This would indicate that Lorain's higher operational revenue, or revenue generated from rates and fees, corresponds with higher total costs associated with providing utility services.

Water Full Cost per MG (2014-2019)



Source: City of Lorain and Peers

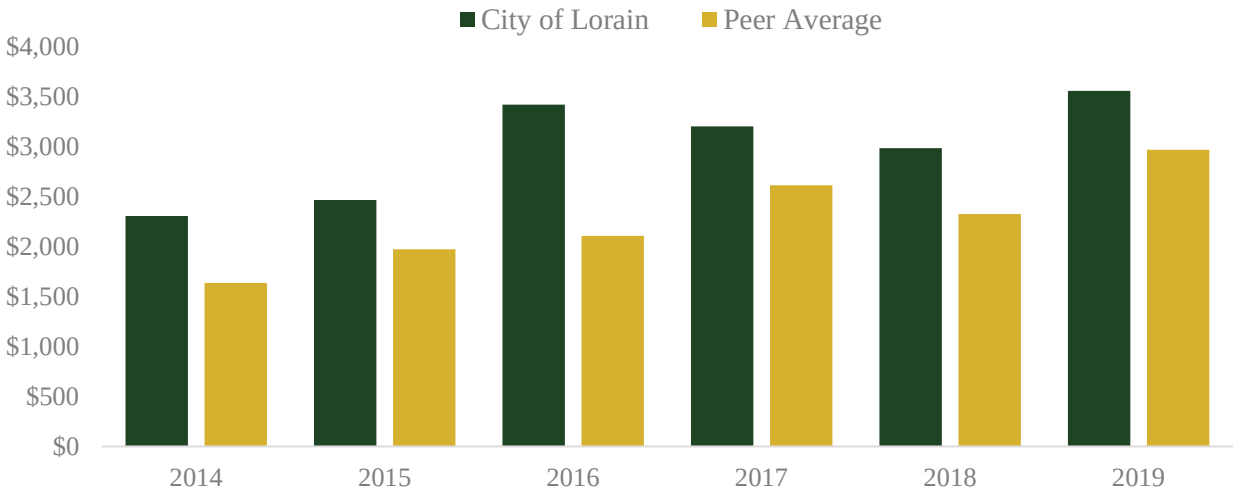
Water Operational Revenue per MG (2014-2019)



Source: City of Lorain and Peers

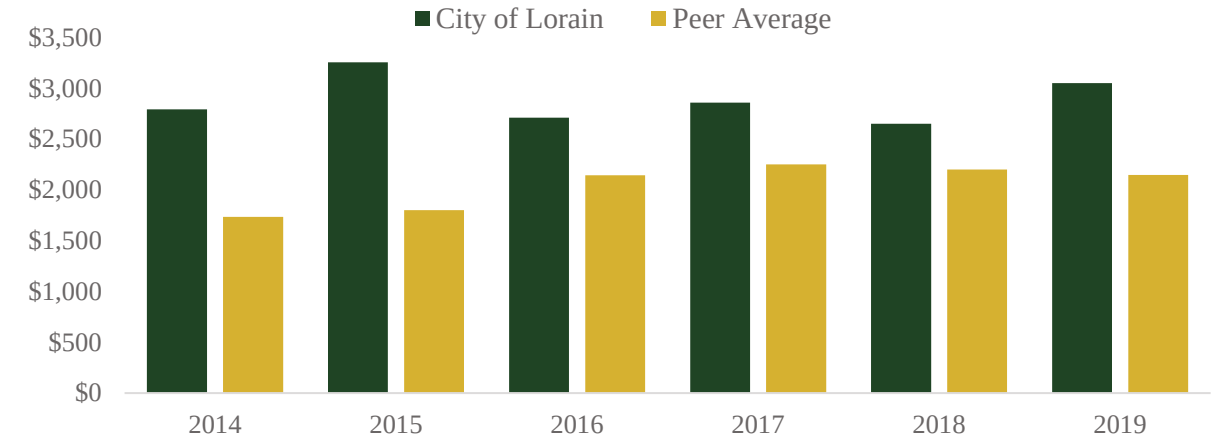
Lorain's 2019 full cost per MG for wastewater also exceeded the peer averages, as did its corresponding operational revenue per MG. As with the water operation, this would indicate that Lorain's higher operational revenue, or revenue generated from rates and fees, corresponds with higher total costs associated with providing utility services.

Sewer Full Cost per MG (2014-2019)



Source: City of Lorain and Peers

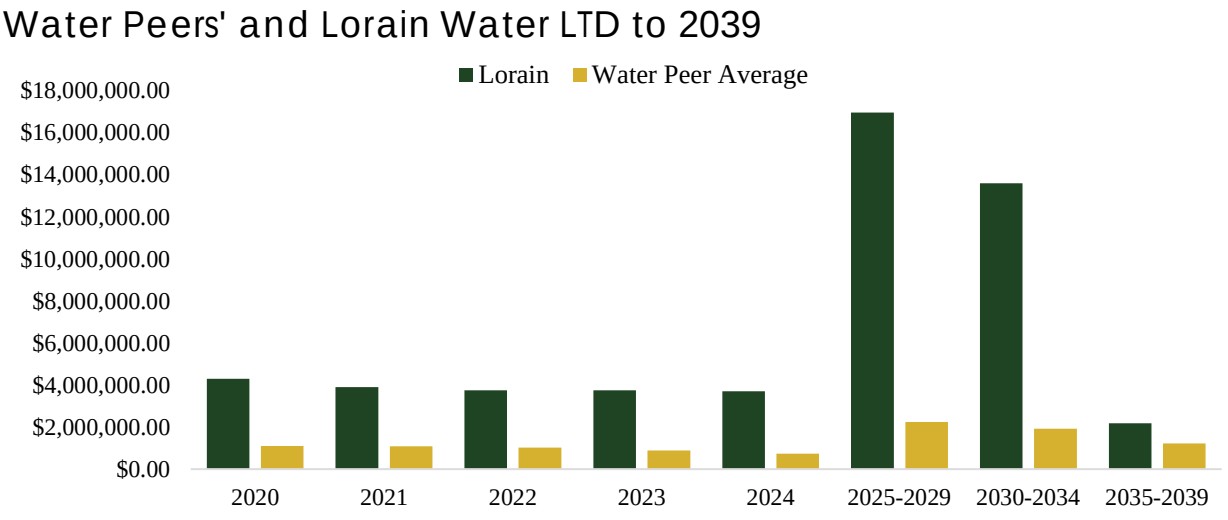
Sewer Operational Revenue per MG (2014-2019)



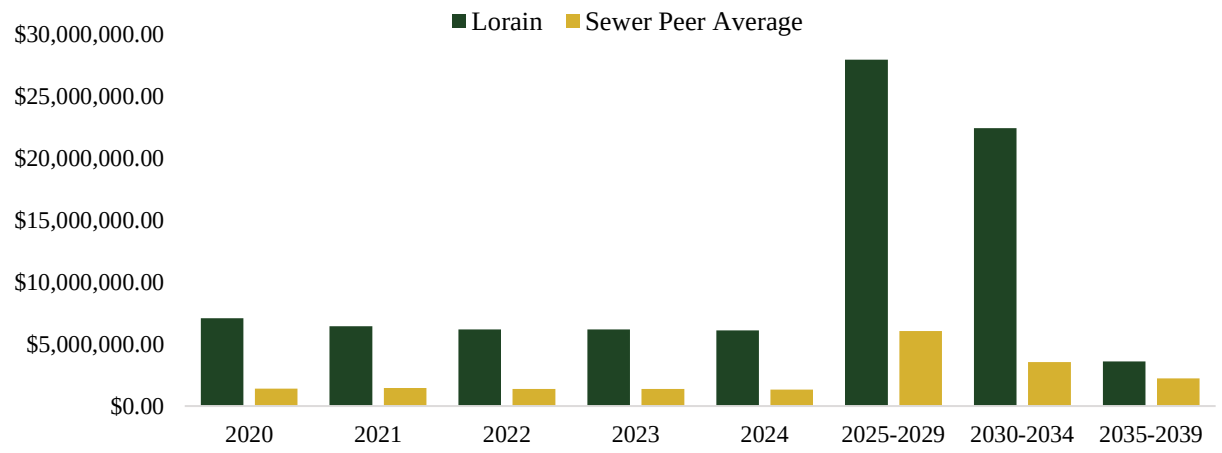
Source: City of Lorain and Peers

The most significant contributing factor in Lorain's higher full costs relative to the peers is its level of long-term debt obligations for capital and infrastructure needs. In total, the City of Lorain's utility department has more long-term debt obligations through 2039 by a factor of 419 percent compared to the peer averages. The estimated water peer averages for principal payment and interest are approximately $8,100,000 and $2,000,000, respectively. The estimated sewer peer averages for principal payment and interest are $16,200,000 and $2,400,000, respectively.

The Black River Tunnel project represents a significant portion of the City's long-term debt. The Ohio Water Development Authority (OWDA) is one main source of the loans and to be approved, rates must be determined sufficient to cover debt. While rates, when standardized, are significantly higher than the peer averages (see **Appendix C: Rates and Fees - Usage and Fixed Charges**), the higher amount of long-term debt out to 2039 may be a factor in the higher set rates. The following charts display Lorain's water and sewer long-term debt compared to the peers.[14]



Source: City of Lorain and Peers



Source: City of Lorain and Peers

[14] It is important to note that the columns to the far-right of the charts represent multiple year groupings of debt amounts, and do not indicate significant debt increases after 2024.This is consistent with how the debt values are presented in the respective financial audits for Lorain and the peers.

In addition to the primary peers, Lorain's long-term debt per capita was compared to the peers chosen for the compensation study in order to provide an alternate assessment of the degree of overall debt relative to geographically similar peers. The following table reflects the City's debt per capita. Lorain's overall debt level is more closely aligned to that of the peers in the surrounding area, as compared to the primary peers.

Debt per Capita

	LTD to 2039	Population	Debt per Capita
City of Lorain	**$138,221,873.00**	**63,801**	**$2,166.45**
Peer Average	$602,530,899.40	294,266	$1,884.12
City of Elyria	$128,746,240.00	53,821	$2,392.12
Avon Lake	$64,572,556.00	50,259	$1,284.80
City of Cleveland	$771,984,000.00	385,282	$2,003.69
NE Ohio Regional Sewer District	$2,007,847,262.00	957,936	$2,096.01
Lakewood	$39,504,439.00	24,030	$1,643.96

Source: City of Lorain and Peers

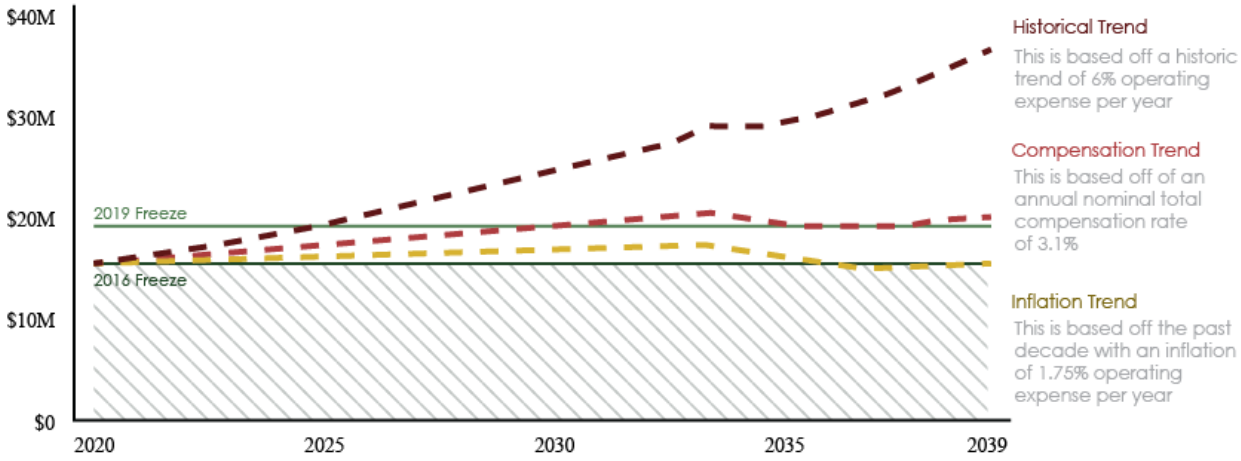
Full Cost Trend Projections

The following charts illustrate the three models (see **Methodology**) of operational revenue and full cost for the City's water and sewer operations out to 2039. Based on these projections, water and sewer rates may need to be reevaluated to cover future full costs. Both 2016 water and sewer operational revenue, as well as 2019 sewer revenue, were surpassed in 2020 by all models. 2019 water operational revenue will be surpassed by full cost in 2025 based on the historical trend model and in 2031 based on the compensation trend model, but will not be surpassed based on the inflation trend model.

The projections also indicate that the rate increase in 2017 was appropriate in regards to covering full costs for water and sewer operations. 2019 water rates, reflected in operational revenue, cover full costs until 2030-2034. While 2019 sewer rates do not cover full costs currently, the gap is lessened compared to the 2016 rate, which was prior to the rate change.

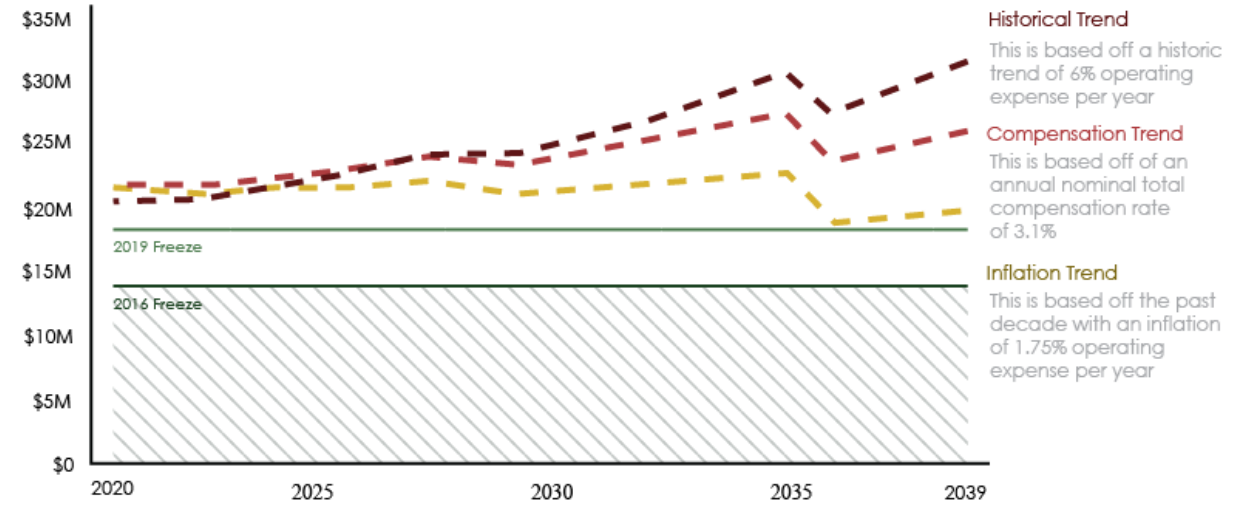
It is important to note that while the full cost projections include known long-term debt obligations, it does not include any costs associated with future capital projects. According to the City, there is over $91 million in planned capital improvements through 2023, but financing has not yet been finalized. As a result, full costs may surpass operational revenue earlier and/or more severely than the models predict. This further illustrates the importance of establishing formal financial reserve policies and a capital plan (see **Financial Policy**; see **Planning**).

Water Full Cost of Service Projections



Source: City of Lorain and Bureau of Labor Statistics

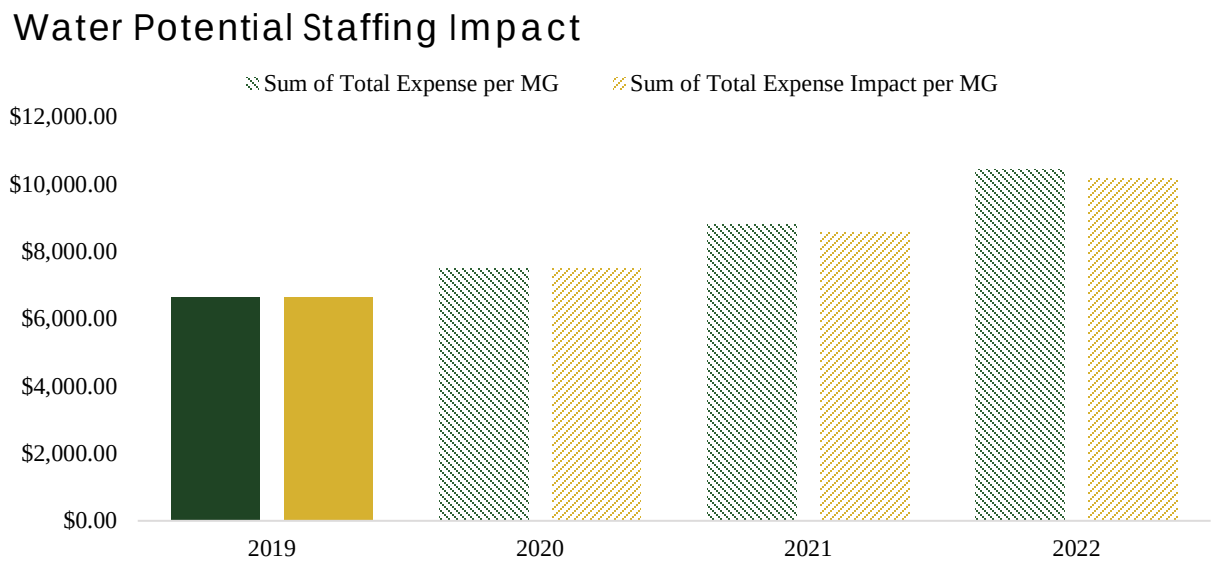
Wastewater Full Cost of Service Projections



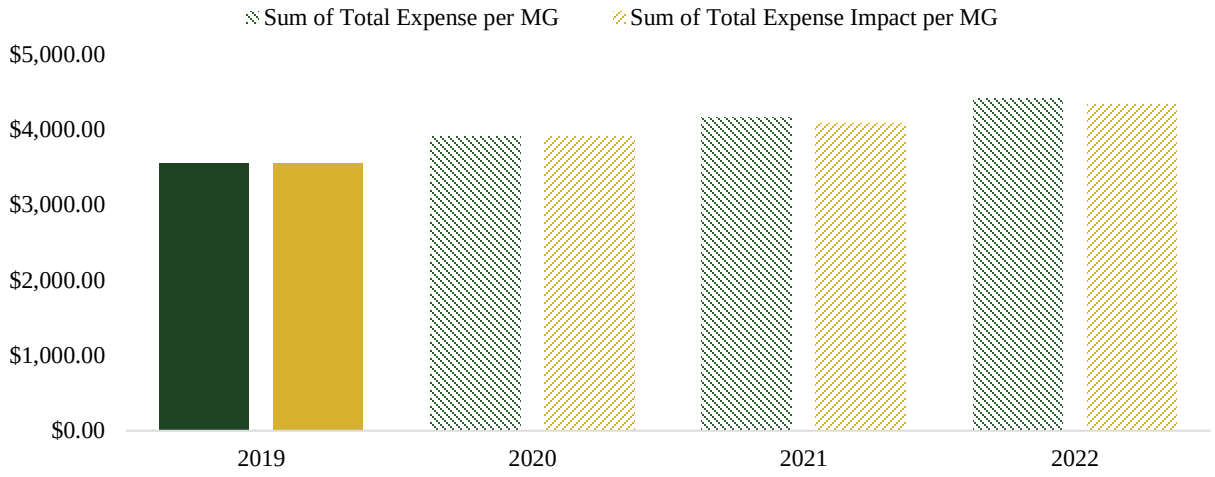
Source: City of Lorain and Bureau of Labor Statistics

Potential Staffing Financial Impact vs. Full Cost per Million Gallons

The following charts display how the cost savings from the potential staffing reductions identified earlier in the report would have minimal impact on the trend of full costs per MG. This provides some degree of affirmation that the City's higher full-costs of service relative to the peers are not likely attributable to over-staffing, but rather to its capital needs and resulting long-term debt levels. In 2022, the full cost per MG savings would be $256.14 for water and $86.64 for sewer.



Source: City of Lorain



Source: City of Lorain

Conclusion

Lorain's operational revenue is sufficiently covering the full cost of water service, but is estimated to be surpassed by full costs by 2025 to 2031. The City's operational revenue may not sufficiently cover the full cost of wastewater service in future years. The extent to which annual operational revenue may not cover annual full cost of service potentially indicates that wastewater rates and fees are lower than what otherwise may be appropriate in order to fully fund the operations, debt service, and future capital projects. Consequently, the City should consider reevaluating its water and sewer rates in order to sufficiently cover the full cost of service in future years.

Recommendation 5: Data Collection

The City should seek to improve the billing data collection system in order to accurately and proportionately assign future utility rates across customer classes.

Impact

While no financial impact can be quantified, the accuracy and usability of the utility department's billing system can significantly affect its ability to make data-driven management decisions regarding future rate setting.

Background

In order to process and provide prompt water and sewer billing services to account holders, the City uses an electronic billing software system. Systems such as these generally allow for automation of billing and data collection which, when functioning properly, can be used as a management tool. We reviewed the City's existing billing system to determine what opportunities existed for increased efficiency or effectiveness.

The City of Lorain has used the software system, New World ERP, for billing since 2016. The system comes with an analysis package intended for grouping accounts into categories, then aggregating or summarizing the data for management purposes. However, the City's Utility Department Administration has determined that the output is not fully reliable and usable. Specifically, the system does not appear to accurately provide usage totals aggregated by customer category. One reason for this inaccuracy is that the data pull includes meters that are not being billed or that no longer exist, which affects the aggregate class average usage.[15] The ability to aggregate and report user data into meaningful groupings would assist in setting future rate schedules and in making other management decisions.[16]

Methodology

We assessed Lorain's billing system's relative ability to provide meaningful data that could assist management with appropriately distributing the overall cost of providing services (i.e. assign rates) among the various customer classes (i.e. residential, commercial, industrial). To carry out the assessment, we obtained Lorain's system-generated reports related to water and wastewater usage and billing, and then compared Lorain's management data capabilities to best practices.

According to the Massachusetts Executive Office of Energy and Environmental Affairs in *Collecting, Managing, and Analyzing Water Usage Data*, "Accounting for all water that enters

[15] Utility Department officials provided AOS with an in-person demonstration of the billing system in operation, and no indication of inaccurate charges billed to customers were apparent at that time. However, it is important to note that the scope of this performance audit did not include an Information Technology (IT) audit of the billing system. Additionally, this performance audit did not include accuracy testing or reconciliation procedures for charges billed to customers.

[16] During the course of this audit, the city was in the process of working with IT vendors on a solution.

and leaves your distribution system is critical for billing customers for water usage first and foremost. However, analyzing customer usage data further can help determine how revenue is distributed and if a disproportionate share of revenue is associated with a particular use class or tier." The publication also states that required data for best practices for data collection and management includes basic customer data such as: customer account number, meter size, customer class (e.g. residential, commercial, municipal), meter read date, water usage, fixed billed amount, and usage billed amount. Being able to view long-term trends of demand and how they impact revenue is useful for any utilities department in terms of overall efficiency and optimization.

In the EPA's guide for *Setting Small Drinking Water System Rates for a Sustainable Future,* considerations for designing rates to cover costs include the number of customers, customer classes, and water use. The cost of servicing a variety of customers, i.e. residential verses industrial, may be different as there may be different patterns of water use. As such, utilities departments may want to consider aligning rates according to different classes of customers and their varying patterns of use.

Analysis

The City's current billing system is not able to provide accurate, aggregated information regarding customer types and corresponding utility usage. The system's limitations may reduce Lorain's ability to make data-driven management decisions regarding future utility rates. Presently, Lorain may not have the necessary visibility into customer type and usage trends needed to identify disproportionate shares of cost associated with a particular user class or tier, and to accurately distribute costs and assign rates accordingly.

Conclusion

The City should seek to improve its data collection system in order to accurately and proportionately distribute the full cost of its water and wastewater services in the future.

Recommendation 6: Financial Policy

The City should consider formalizing financial reserve policies for the Utility Funds.

Impact

The lack of a formal financial reserve policy may contribute to the City's low debt service coverage ratio relative to the AWWA benchmarks, and potentially limit the City's ability to manage its operating surpluses. A lack of a policy may also hinder the City's ability to improve its bond rating, thus limiting additional opportunities for financing capital projects.

Background

Formalized financial policies provide government entities with clear goals and objectives on which to base decisions, and also serve to provide transparency to the public. These types of policies can be especially important for local governments when dealing with multi-million dollar utility operations. We reviewed the City's financial policies as they relate to the Utility Funds and compared them to industry best practices.

The City does not have a formal reserve policy for its utilities funds. Instead, it has established an informal reserve policy that is not regularly reviewed and confirmed by the City Council. The policy goals include having the equivalent of 125 percent of annual debt service due plus six months of operating expenses in reserves. Lorain's operational revenue exceeded its operational expenditures in 2019.

Methodology

Lorain's utilities financial performance was compared to best practices in terms of:

- The amount of time (days or months) in cash amounts in 2019; and
- Its debt service coverage ratio, or its annual debt payment total divided by net operating revenue (operating revenues minus operating expenditures), based on Lorain's historical experience from 2014 to 2019. The EPA's benchmark is 1.25.

The debt service coverage ratio is essentially how many times over an entity can cover its debt obligations with net operating revenue.

Lorain's operating reserve policy and how its operating reserve amounts compare to its stated goals were also examined, in addition to how financial policy is related to a city's bond rating according to AWWA criteria.

Analysis

Based on its informal reserve policy, Lorain's combined water and wastewater fund reserve amount was approximately $16.2 million over its estimated reserve amount goal for 2020, as shown in the following table.[17]

Current Financial Policy on Cash Reserve

2019 Business Type Activities Cash & Cash Equivalences	**$39,571,126**
Debt Service due in 2020	$8,667,325
125% of Debt Service Due	$10,834,156
Six Months of Operating Expenses (2019)	$12,525,906
Policy Reserve Total Utility Amount Needed for 2020	**$23,360,062**
Amount Above Informal Reserve Policy	**$16,211,064**

Source: City of Lorain

According to the AWWA Rates and Charges Committee's 2018 Whitepaper, *Cash Reserve Policy Guidelines*, the level of reserves is an important part of short and long-term financial management and is a key consideration in the rate-setting process. The operational reserve amount is one type of reserve that a utility department can have. According to the Whitepaper, other reserve policy types include capital reserves, debt service reserves, and rate stabilization reserves. Capital reserves generally serve the purpose of providing funds for infrastructure replacements and/or to smooth out rate impacts of fluctuating capital expenses. Debt service reserves are used to pay debt service if revenues are insufficient to satisfy annual debt service requirements. Lastly, rate stabilization reserves can mitigate the impacts of occasional revenue shortfalls and to avoid large rate spikes. Lorain far exceeds the cash reserve amounts for all benchmark criteria.

[17] Water and wastewater funds are separate and not interchangeable. The water fund exceeded its reserve goal by approximately $11.6 million, while the wastewater fund exceeded its reserve goal by approximately $4.6 million.

2019 Operational Reserve Comparison

	Organization	Recommended Reserve Level	Time Covered by Cash Available for Lorain	Best Practice Difference Time Covered by Cash Available
Wastewater	Water Environment Federation (WEF)	1-3 Months of Operating Costs[1]	16 months	13 months
	International City/County Management Association (ICMA)	1-2 Months of Expenses[2]	14 months	12 months
	Government Finance Officers Association (GFOA)	No less than 45 days of expenses[3]	416 days	371 days
Water	Water Environment Federation (WEF)	1-3 Months of Operating Costs[1]	21 months	18 months
	International City/County Management Association (ICMA)	1-2 Months of Expenses[2]	19 months	17 months
	Government Finance Officers Association (GFOA)	No less than 45 days of expenses[3]	558 days	513 days

Source: AWWA and City of Lorain

[1] Depending on the instability or unpredictability of revenues and expenses.

[2] Depending on the utility's size, the challenges it faces, and the availability of special reserves for rate stabilization or emergency purposes.

[3] The recommendation is to use annual operating expenses, which include depreciation expenses. If, however, annual depreciation expenses are significantly more or less than the anticipated capital outlays of the next period to be paid from working capital, consideration should be given to adjusting the benchmark. An appropriate adjusted benchmark may be annual operating expenses, annual depreciation expense + capital outlays of the next period paid from working capital.

As shown in the following table, compared to the AWWA's combined utilities for water operations of days of cash on hand, Lorain exceeded the median and was near the 75th percentile nationally in 2019. The City's wastewater days of cash on hand placed them above the national median for wastewater operations in 2019. "Combined utilities" according to the AWWA, refers to entities that have both municipal water and wastewater utilities.

Aggregate Data for Days of Cash on Hand

	City of Lorain	75th Percentile	Median	25th Percentile	Sample Size
Combined Utilities - Water Operations	491	589	320	191	34
Combined Utilities - Wastewater Operations	492	960	432	279	31

Source: City of Lorain and AWWA

While Lorain's cash and operational reserves far exceed benchmarks, they are not incompatible with a potential need to increase future utility rates. This is because the cash and reserve amounts do not take into consideration the full cost of services, which in Lorain's case, is heavily driven

by its debt levels associated with capital improvements (see **Full Cost of Services**). Although it has excess cash and operational reserves in terms of time and operational expense, it does not have sufficient debt service coverage.

In 2019, Lorain's total debt service coverage ratio of both water and wastewater was 1.08, which is below the EPA's minimum benchmark of 1.25. Compared nationally to the AWWA benchmarks, the City's water works debt service coverage ratio in 2019 places them below the national median of 2.16. The City's 2019 wastewater debt service coverage ratio places them well below the 25th percentile. Overall, in terms of debt service ratio compared to benchmarks, the City's utilities department is low. The debt service coverage ratio for Lorain and the AWWA benchmarks are displayed in the following tables.

Debt Service Coverage Ratio

Year	Water Works	Water Pollution	Total
2014	2.33	1.56	1.77
2015	1.72	1.93	1.84
2016	2.07	0.68	1.21
2017	1.49	0.73	1.00
2018	1.91	0.72	1.15
2019	1.88	0.60	1.08

Source: City of Lorain

AWWA Debt Service Coverage Ratio

	City of Lorain	75th Percentile	Median	25th Percentile	Sample Size
Combined Utilities - Water Operations	1.08	2.98	2.16	1.42	32
Combined Utilities - Wastewater Operations	1.08	2.5	1.79	1.49	31

Source: City of Lorain and AWWA

The City of Lorain's Moody's bond rating in 2020 was *Baa2*, which is a lower medium grade bond with a positive outlook. According to the AWWA in *2019 AWWA Utility Benchmarking Performance Management for Water and Wastewater*, 62 out of the 68 combined utilities surveyed nationally had a bond rating of High grade to Prime. According to the AWWA's aforementioned 2018 Whitepaper, in addition to formalized plans and policies, bond rating can play a role in debt financing.

While the City is operating at net positive, the number of days of cash on hand is around the national median, but with its current amount of debt service loans, they are on the lower end nationally regarding their debt service coverage ratio, and are not meeting the minimum benchmark set by the EPA. A low debt service coverage ratio may indicate that the amount of loans or debt for water and wastewater is too high, and other avenues of financing capital projects, such as the issuance of bonds, could be considered if cost effective in funding capital projects.

According to the 2018 Whitepaper, "Reserve policies can be informal, however, formalizing reserve policies that are adopted and regularly confirmed by governing boards can serve as mechanisms to not only protect reserves, but also specify the conditions under which they can and should be used. The use of informal policies that are not formally adopted, but rather just serve as management and planning targets, provide great flexibility; however, they do not provide as much protection and are not externally viewed as strongly as formal reserve policies. Regardless of the structure of a utility's reserve policies, routine monitoring of reserves is essential to ensuring adequate resources to the utility and avoiding excess accumulation of current ratepayer funds."

Conclusion

The City should consider formalizing financial policies for its utility funds and determine which reserve types are appropriate for its circumstances and needs. The City should then establish the desired percentages for each reserve fund and periodically review them at routine intervals. Doing so would improve the City's ability to plan for capital expenses, and may eventually create opportunities for funding capital projects with cash.[18] Additionally, formalizing financial policies and establishing reserve funds may positively affect the City's bond rating, which could be significant to its financial position as bonds could be used as an alternative source of financing large utility capital projects, as opposed to the City's current practice of primarily using loans.[19] Furthermore, formal financial reserve policies would assist the City in managing its utilities operations' surplus operating revenues.

[18] The City's funding mechanism for $26 million in planned capital projects through 2023 is unknown (see **Planning**).
[19] The City does not have any outstanding bonds for utility projects.

Recommendation 7: Planning

The City should consider formalizing a capital improvement plan for the Utility Funds.

Impact

While there is no direct financial implication of this recommendation, if the City does not adopt a formal capital plan to incorporate best practices recommended by the GFOA, including long-term planning tied to funding, it could face difficulties aligning programmatic goals with financial capacity in the future.

Background

A Capital Improvement Plan (CIP) is a tool that can be used to coordinate the timing and financing of capital improvements over a multi-year period. These improvements are major, nonrecurring physical expenditures for items such as equipment, buildings, or infrastructure. A city's capital plan should alleviate acute financial distress when large expenditures are necessary because the expense has already been accounted for and appropriate funds have been set aside or identified.

The City does not have a formal capital improvement plan, but instead has an informal project schedule for the years 2020 through 2023. According to the schedule, the City plans to spend an estimated $91.9 million on utility operation capital improvement projects. Lorain plans to use loans to cover the majority of the total project costs, while water and sewer funds will be used for the remaining project costs.

Methodology

Due to the capital intensive nature of utility departments, the City's capital improvement plan was compared to the Government Finance Officers Association (GFOA) best practices. GFOA best practices are developed by government finance experts for the purposes of governmental financial planning and budgeting.

Analysis

The GFOA identifies nine best practices for capital improvement plans:

- Multi-year capital planning: A multi-year capital plan should project future operating and maintenance costs as well as provide clear prioritization rating for all assets.
- Capital planning policies: policies to assure Lorain's unique needs are considered in totality in the capital planning process.
- Environmental stewardship analysis: This type of analysis reviews the triple bottom line, which is an accounting framework that considers social, environmental, and financial factors.
- Communication of capital improvement strategies: "a communication plan for public participation focused on explaining capital needs, options, and facilitating feedback".

- Presentation of Capital Plan: The most recent informal capital plan for 2020 is maintained in a spreadsheet format and does not contain all of the elements that are identified as best practices. Elements that are lacking in the current capital plan include project monitoring, project summary, project detail, and operating impacts.
- Long-term financial planning: combining financial forecasting and strategizing in tandem with an overall strategic plan.
- Technology in Capital Planning and Management: adoption of software that will assist in managing the capital programs such as supporting and tracking the ongoing costs of capital projects including labor, requirements, supplies, and contract costs.
- Capital Budget Presentation: several best practices incorporated into the presentation of the capital budget. One example being the inclusion of a summary section, project detail on major capital items, and operating impacts.
- Master Plans and Capital Improvement Planning: "Many governments establish long-range strategies focused on community development and sustainability through Master Plans. Regular updates to capital improvement plans should be made to align with Master Plans".

Many of the necessary changes to fully comply with best practices would require approval through a legislative process. Specifically, any long term planning would need to be formally passed by the long term strategic planning committee and the City Council.

Conclusion

Lorain should consider following the best practices suggested by the GFOA in regards to adopting a formal capital plan.

Client Response Letter

Audit standards and AOS policy allow clients to provide a written response to an audit. The letter on the following page is the City of Lorain's official statement in regards to this performance audit. Throughout the audit process, staff met with City officials to ensure substantial agreement on the factual information presented in the report. When the City disagreed with information contained in the report, and provided supporting documentation, revisions were made to the audit report.

The City of Lorain, Ohio
Jack W. Bradley
Mayor

June 4, 2021

Cody E. Koch, MPA
Senior Performance Project Manager
Auditor of the State of Ohio
88 East Broad Street, 5th Floor
Columbus, Ohio 43215

Mr. Koch,

I have fully reviewed the City of Lorain Utilities Department Performance Audit. I appreciate you and your teams' hard work on this report. It has provided the City with excellent information to improve our efficiency and operations moving forward.

We plan to detail the status of each of your recommendations and will assign a lead person responsible for each area while maintaining follow-up and oversight from this office. Should a recommendation not be implemented, we will provide an explanation and documentation as to why it could not. I see this performance audit as a valuable tool that can provide positive benefits to our citizens. This report provides our citizens a transparent view into our Utilities Department functionality and explanation as to why our water and sewer rates are where they are at and where they need to be in the future. This detailed look allows us to continue to ensure we provide a high level of efficient and effective services to our citizens year after year.

Thank you for helping make the City of Lorain a better place.

Very Truly Yours,

Jack W. Bradley, Mayor
City of Lorain

200 West Erie Avenue – 7th Floor , Lorain, Ohio 44052 / Phone: 440-204-2002 / Fax: 440-204-2542
www.cityoflorain.org

Appendix A: Purpose, Methodology, Scope, and Objectives of the Audit

Performance Audit Purpose and 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.

Generally accepted government auditing standards (GAGAS) 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.

We conducted this performance audit in accordance with GAGAS. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Scope and Objectives

In order to provide the City with appropriate, data driven, recommendations, the following questions were assessed within each of the agreed upon scope areas:

Summary of Objectives and Conclusions

Objective	Recommendation
Staffing and Workload	
Are staffing levels for the City's water treatment and distribution operations appropriate in comparison to peers and/or industry benchmarks?	**R.1**
Are staffing levels for the City's wastewater treatment and collection operations appropriate in comparison to peers and/or industry benchmarks?	**R.2**
Are staffing levels for the City's utility billing operations appropriate in comparison to peers and/or industry benchmarks?	**No Recommendation. We compared the City's utility billing workload to the peers and found its staffing level to be in alignment (see Utility Billing).**

Compensation	
Are salaries and wages for the City's water, wastewater, and utility billing personnel appropriate in comparison to peers and/or industry benchmarks?	**No Recommendation. We reviewed average annual salaries, expected career compensation, and overtime levels in the Utilities Department and found the City to be lower than the Local Peer averages (see Appendix B).**
Rates and Fees	
Are water and wastewater utility rates and fees reasonable and appropriate?	**R.3, R.4, R.5, R.6, R.7**

Although assessment of internal controls was not specifically an objective of this performance audit, internal controls were considered and evaluated when applicable to scope areas and objectives. The following internal control components and underlying principles were relevant to our audit objectives[20]:

- Control environment
  - We assessed the City's exercise of oversight responsibilities in regards to detecting improper payroll reporting and benefits administration.
  - We assessed the City's exercise of oversight responsibilities in regards to detecting improper data entry in the utility billing and treatment plant management information systems.
- Risk Assessment
  - We considered the City's activities to assess fraud risks.
- Information and Communication
  - We considered the City's use of quality information in relation to its financial, payroll, staffing, billing, and treatment plant data.
- Control Activities
  - We considered the City's compliance with applicable laws and contracts.

No internal control deficiencies were identified during the course of the audit.

[20] We relied upon standards for internal controls obtained from *Standards for Internal Control in the Federal Government* (2014), the U.S. Government Accountability Office, report GAO-14-704G

Audit Methodology

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

- Peer Utilities;
- Industry Standards;
- Leading Practices;
- Statutes; and
- Policies and Procedures.

In consultation with the City, we selected peer utilities based primarily on operational similarity for comparisons contained in this report. These peers are identified as necessary and appropriate within the section where they were used.

Peer List

Primary Water Peers*

- Sandusky City[1]
- Oregon City[1]
- Lake County West Sub district

Primary Sewer Peers**

- Euclid WWTP (Cuyahoga County)
- Lucas County WRRF
- Rocky River WWTP (Cuyahoga County)

Primary Utilities Billing Peers***

- Lake County West Sub District
- Euclid
- Rocky River

Local Peers (Compensation, Benefits, and Bargaining Agreements)****

- Elyria
- Rocky River
- City of Cleveland
- Northeast Regional
- Lakewood
- Avon Lake

*Water Peers selected are within 33% of total production in million gallons (MG) in last reported year, Class 4 plant, Surface Water Source, and Lake Erie intake.
[1]These peers are Lake Erie intakes, class 4, surface water source type, but are within 50% of total production.
**Sewer Peers selected are within 25% of average daily flow (MGD), population served, and capacity designed, as well as Class 4, major permit type, and Lake Erie Watershed output.
***Utilities billing peers selected are within 25% of Lorain's population from water and sewer primary peers list.
****Local Peers were selected in consultation with the City and are based on geographic vicinity in order to control for differences in regional labor markets.

Appendix B: Compensation

We reviewed salaries and overtime for the City's water, wastewater, and utility billing personnel to determine their appropriateness in comparison to peers. We found that both salaries and overtime are almost universally lower than the peers and did not warrant a recommendation.

Background

The City of Lorain has a collective bargaining agreement (CBA) with the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied-Industrial, and Service Workers International Union which was effective through December 31, 2019. During the course of this performance audit, the 2019 CBA and salary schedules were extended due to ongoing negotiations. Since the City's 2019 salary schedule was still in effect, it was compared to the peers' 2020 salary schedules for the positions identified.

Lorain's CBA has an overtime provision, which states, "An overtime premium rate of one and one-half (1 ½) times the employee's regular rate of pay, shall be paid to all bargaining unit employees for: 1. Hours worked in excess of eight (8) hours in a work day; 2. Hours worked in excess of forty (40) hours in a workweek." In 2019, the City spent over $6.2 million on regular salaries and wages, and $351,600 on overtime expenses for the Utilities Department. Overtime was six percent of regular salaries and wages.

Methodology

Lorain's classified positions selected for our analysis were based on frequency (i.e. positions with the most people in them to get a representative sample of all classified staffing). We identified similar positions between Lorain and peer CBAs to analyze compensation levels, then reviewed salary schedules and compared them to peers. The salary schedules for the following positions were analyzed:

- Lab Technician III Wastewater Treatment;
- Lab Technician III Water Treatment;
- Lead Operator Class III Wastewater Treatment;
- Lead Operator Class III Water Treatment;
- Utility Worker – Sewer Collections;
- Utility Worker – Class I Water Distribution; and
- Account Representative.

Salaries for Superintendents with a Class III and Class IV license within the water and wastewater treatment divisions, water distribution, and sewer collections divisions were calculated and compared to the peer average compensation for the same or similar positions. We also calculated overtime expenditures as a percentage of regular salaries and wages, and compared it to peers for each department.

Analysis

Salaries

Both career compensation and average annual compensation are lower than the peer average for all classified positions analyzed.

Classified Career Compensation Comparison

	Client	Local Peer Average	Difference	% Difference
LabTech III Wastewater Treatment	$1,568,340	$1,846,911	($278,571)	(15.1%)
LabTech III Water Treatment	$1,568,340	$1,784,666	($216,326)	(12.1%)
Lead Operators - WW	$1,782,134	$1,832,380	($50,245)	(2.7%)
Lead Operators - WS	$1,782,134	$1,800,849	($18,715)	(1.0%)
Utility Worker - Sewer	$1,353,810	$1,542,222	($188,412)	(12.2%)
Utility Worker - Class I WD	$1,393,291	$1,556,032	($162,741)	(10.5%)
Account Rep	$1,282,298	$1,442,992	($160,693)	(11.1%)

Source: City of Lorain and Peers

Average Yearly Salary Comparison

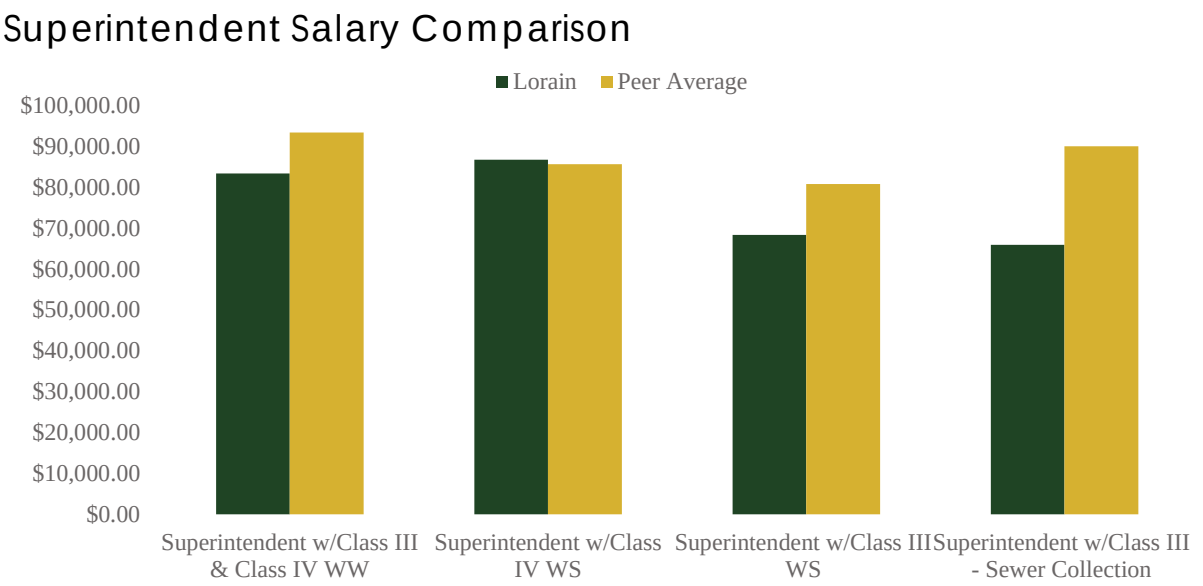
	Client	Local Peer Average	Difference	% Difference
LabTech III Wastewater Treatment	$52,278	$61,564	($9,286)	(15.1%)
LabTech III Water Treatment	$52,278	$59,489	($7,211)	(12.1%)
Lead Operators - WW	$59,404	$61,079	($1,675)	(2.7%)
Lead Operators - WS	$59,404	$60,028	($624)	(1.0%)
Utility Worker - Sewer	$45,127	$51,407	($6,280)	(12.2%)
Utility Worker - Class I WD	$46,443	$51,868	($5,425)	(10.5%)
Account Rep	$42,743	$48,100	($5,356)	(11.1%)

Source: City of Lorain and Peers

Superintendent Salary Comparison

Position	Lorain	Peer Average	% Difference
Superintendent w/Class III & Class IV WW	$83,428.85	$93,439.18	-12%
Superintendent w/Class IV WS	$86,762.24	$85,702.38	1.2%
Superintendent w/Class III WS	$68,347.66	$80,830.60	-18%
Superintendent w/Class III - Sewer Collection	$65,969.84	$90,086.52	-37%

Source: City of Lorain and Peers

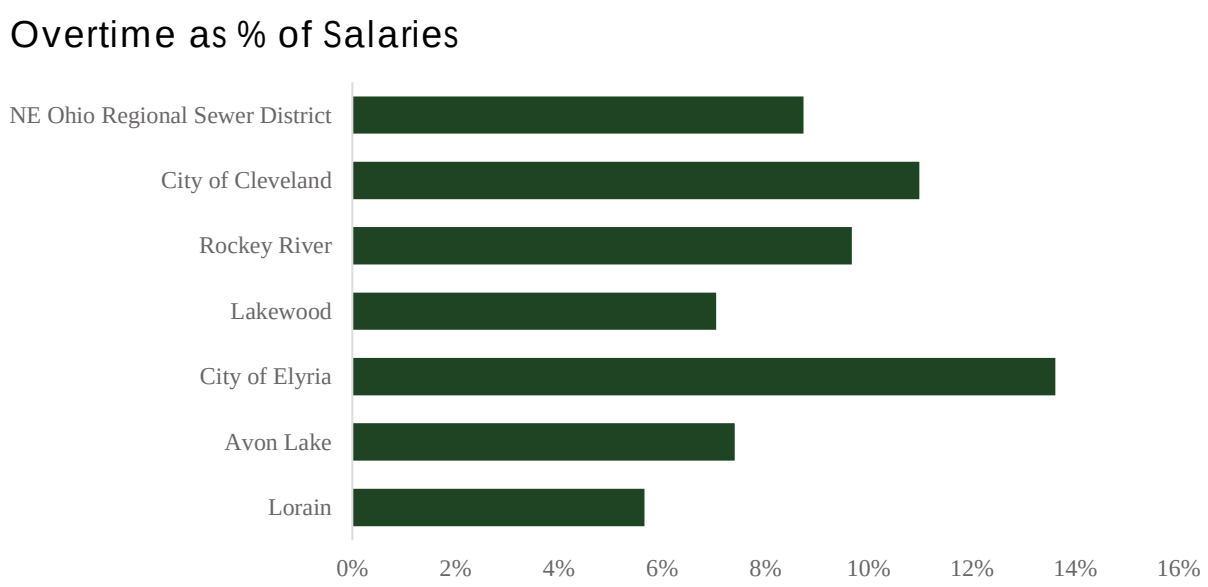


Source: City of Lorain and Peers

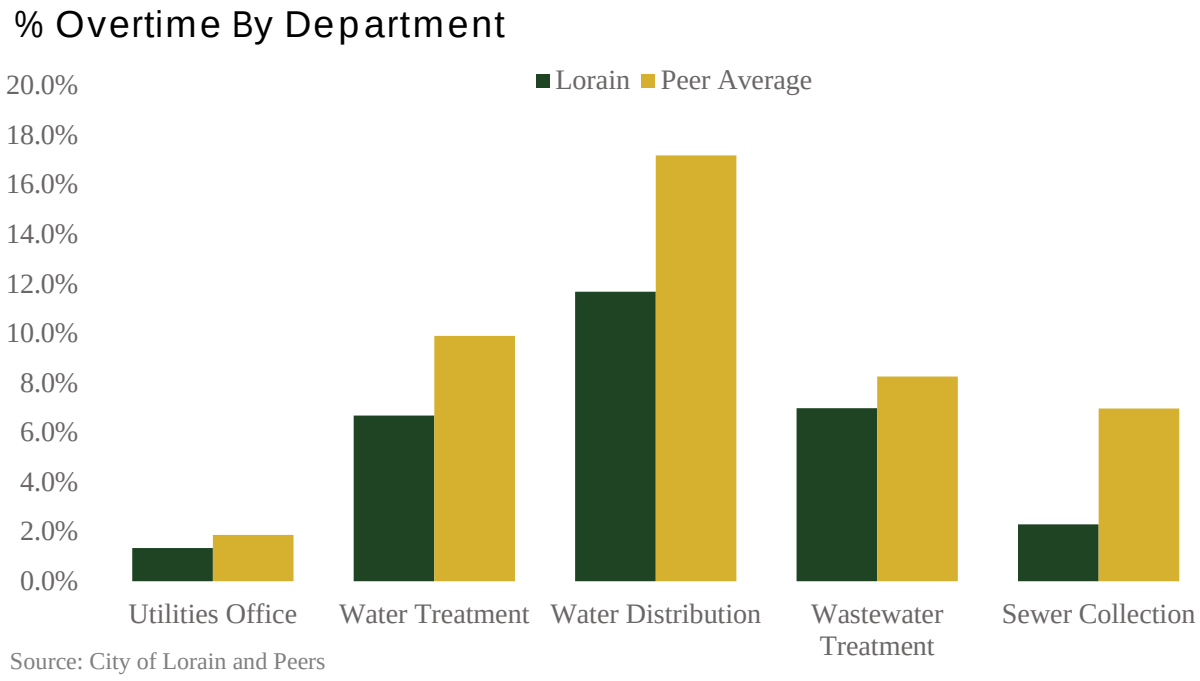
Lorain's superintendent salary amounts are lower than the respective peer averages, with the exception of the Superintendent with Class IV Water Treatment, which is immaterially higher than (or in line with) the peer average by 1.2%.

Overtime

Lorain's 2019 overtime expenditures as a percent of a salaries and wages of six percent was lower than the peer average of 10 percent. Overtime expenditures were also lower than the peer averages for each individual department.



Source: City of Lorain and Peers



Source: City of Lorain and Peers

Conclusion

Lorain's compensation is almost universally lower than the peers in terms of both salaries and overtime. Salaries are lower than the peer averages for all of the categories analyzed, with the exception of the Superintendent with Class IV Water Treatment. Lorain's overtime expenditures as a percent of salaries and wages are lower than the peer averages in terms of the Utility Department as a whole, and on an individual department basis. Therefore, this assessment does not yield a recommendation.

Appendix C: Rates and Fees - Usage and Fixed Charges

This section examines the appropriateness of water and wastewater utility rates and fees, but did not result in a recommendation.

Impact

There is no direct financial implication of this assessment; however, we are noting the following:

- Overall, Lorain's 2020 water and sewer usage rates for residents are higher than the respective peer averages;
- Adjustments to the peer averages could result in annual revenue reductions of approximately $4,011,796 in the Water Fund and $4,921,168 in the Sewer Fund, based on Lorain's average revenue per account in 2019;
- Similarly, the City's monthly fixed charges are also higher than the peer average for both services; and
- Annualized, differences range from approximately $831 to $2,572 in the Water Fund, and $2,254 to $2,546 in the Sewer fund.

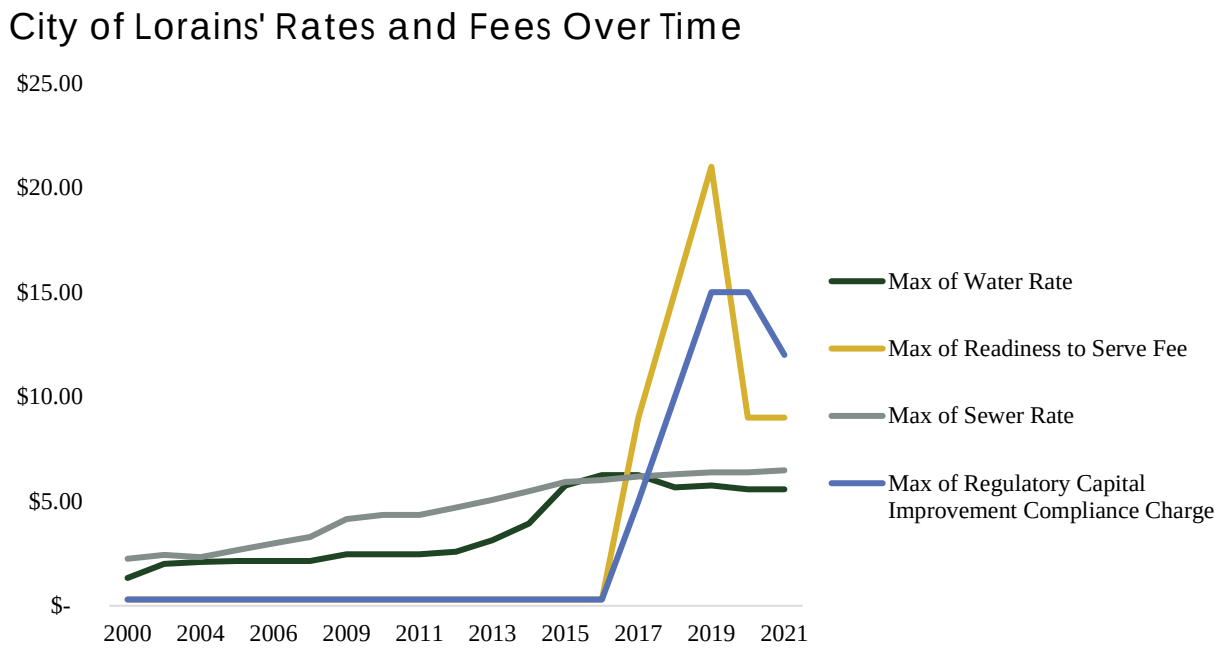
Background

Lorain's monthly water and sewer rates are generally comprised of two main components. The first is the usage or volumetric charge, which is based on the actual amount of water used. For water, usage charges increase according to cost category groupings as defined in its schedule of rates, regardless of the meter size. The second is a fixed amount charge for water service, regardless of the amount used, and is referred to as the Readiness to Serve Fee. It varies according to meter size.

In 2020, Lorain's water rate for a residential account with a 5/8 inch meter at the lowest usage category was $5.57 per 100 cubic feet (CF) plus the Readiness to Serve charge of $9.00. For sewer (or wastewater), usage charges increase only according to actual use, regardless of meter size. Unlike the water usage charges, sewer usage charges do not increase according to category groupings, but are billed at a level rate instead. Similar to water, customers are also charged a fixed amount for sewer service in addition to the usage charges, regardless of usage amount. That fixed charge is referred to as the Regulatory Capital Improvement Compliance charge, and varies according to meter size. In 2020, the City's sewer rate for a residential account with a 5/8 meter at the lowest usage category was $6.38 per 100 CF plus the Regulatory Capital Improvement Compliance charge of $9.00.[21]

[21] At the time of the analysis, the published rate was $15.00 from January 1, 2020 through September 1, 2020. For the remainder of 2020, the rate was $9.00. The chart below shows the rates at their highest point in each year.

Historically, water and sewer rates have been increasing steadily since 2000, with major increases to the Readiness to Serve fee and Regulatory Capital Improvement Compliance charge as a result of recommendations from the independent rate study (see **Full Cost of Services**).



Source: City of Lorain

Methodology

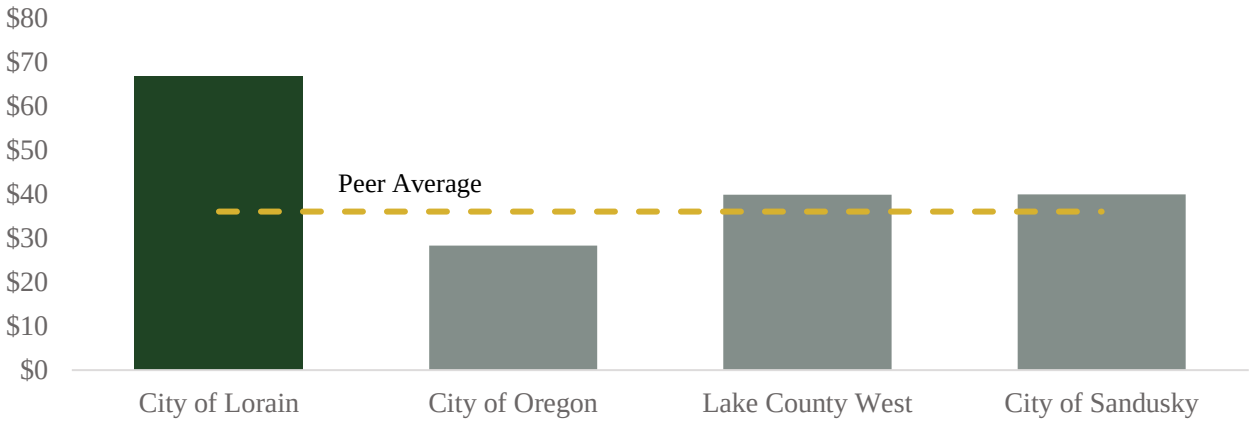
The City of Lorain's 2020 water and sewer rates were compared to the peer averages in two ways:

1. Usage charges plus fixed rate charge based on a standardized usage amount assumed at 7,800 gallons per residential account.
    a. This amount is standard for the Ohio Environmental Protection Agency (OEPA) in their annual survey of rates – *2018 Sewer and Water Rate Survey (OEPA, December 2019)*.
    b. Due to the multiple types of meter sizes and corresponding pricing differences, the analysis was narrowed to 5/8 inches meter sizing, as this is the most common meter size representing over 91 percent of all account types in Lorain.
    c. For all the peers the rate amount includes the volumetric charge for services as well as any reoccurring monthly fee that is synonymous with the Readiness to Serve fee (for water) or Regulatory Compliance charge (for sewer).
    d. Calculated monthly rates were then annualized and compared.
2. The "minimum" monthly charges or fixed charges were isolated and analyzed separately.
    a. The purpose of the analysis is to show how much higher or lower Lorain's fixed charge, by meter size, is compared to each individual peer.

Analysis

Lorain's monthly water rate is $66.93 compared to the peer average of $36.10. Annualized, this is a difference of approximately $370 per year. Based on the differences in charges for service revenue in the 2019 financial audit actuals, Lorain would stand to lose approximately $4 million in revenue if it reduced rates to align with the peers.

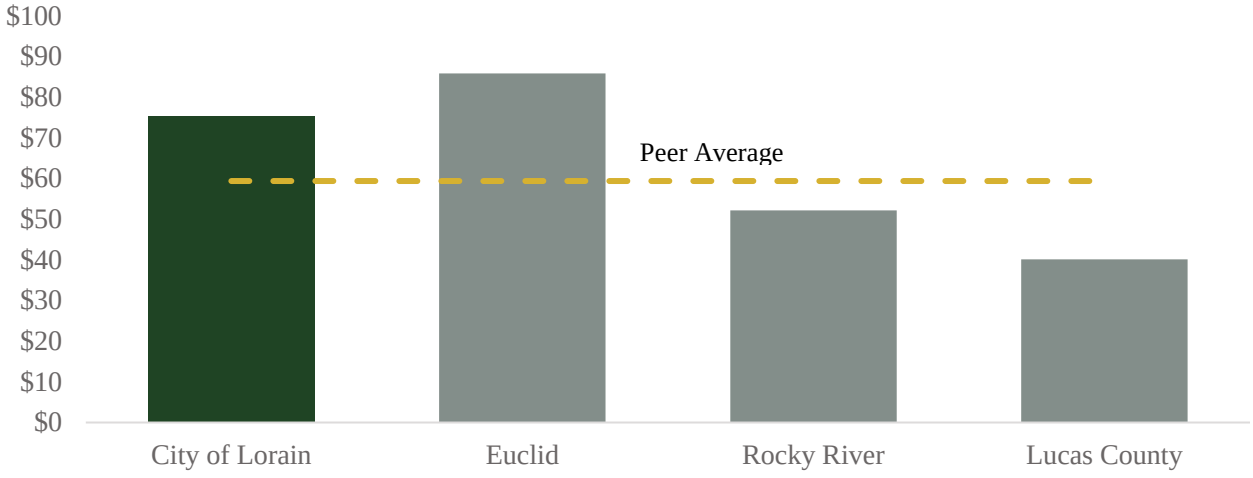
2020 Water Rates (7800 Gallons/Month)



Source: City of Lorain and Peers

Lorain's monthly sewer rate is $75.35 compared to the peer average of $59.41. Annualized, this is a difference of approximately $191 per year. Based on the differences in charges for service revenue in the 2019 financial audit actuals, Lorain would stand to lose approximately $4.9 million in revenue if it reduced rates to align with the peers.

2020 Sewer Rates (7800 Gallons/Month)



Source: City of Lorain and Peers

The following analysis compares reoccurring monthly flat rate fees among Lorain and the peers for each meter size. The difference columns show how much higher or lower Lorain's fixed charge is, by meter size, compared to each individual peer; values in parentheses indicate where Lorain's fixed charge is lower than the corresponding peer charge. As shown, the Readiness to Serve fee on the most common meter (5/8) is lower than two of the three peers. The City has a higher monthly fixed charge on the larger meters across the different sizes. The weighted monthly difference annualized ranges from ($56.36) to $54.81.

Fixed Charge Comparison- Water

		Lorain (Current) Difference			
Meter Size	**Lorain**	**Lorain**	**Sandusky**	**Oregon**	**Lake County**
5/8"	$9.00	-	$3.83	($4.90)	($2.52)
3/4"	$13.50	-	$5.74	($7.37)	$1.98
1"	$22.50	-	$9.57	($12.26)	$10.98
1.5"	$45.00	-	$19.15	($38.42)	$33.48
2"	$72.00	-	$30.64	($11.42)	$60.48
3"	$117.00	-	$39.50	$33.58	$105.48
4"	$180.00	-	$50.75	$96.58	$168.48
6"	$297.00	-	$38.50	$213.58	$285.48
8"	$603.00	-	$189.40	$519.58	$591.48
10"	$900.00	-	$305.45	$816.58	$888.48
	Average Difference	**-**	**$4.57**	**($4.70)**	**($0.47)**
	Range of Weighted Average Difference Annualized	**($56.36)**	**$54.81**		

Source: City of Lorain and Peers

The following analysis compares reoccurring monthly flat rate fees among Lorain and the peers for each meter size. The difference columns show how much higher or lower Lorain's fixed charge is, by meter size, compared to each individual peer. The Regulatory Compliance charge on the most common meter (5/8) is lower than all three peers. Lorain has a higher monthly fixed charge on the large meters across the different sizes. The weighted average monthly difference annualized ranges from ($323.46) to ($31.86).

Fixed Charge Comparison- Sewer

		Lorain (Current) Difference		
Meter Size	**Lorain (Current)**	**Euclid**	**Lucas County**	**Rocky River**
5/8"	$9.00	($18.49)	($4.70)	($3.67)
3/4"	$13.50	($13.99)	($0.20)	$0.83
1"	$22.50	($4.99)	$8.80	$9.83
1.5"	$45.00	$17.51	$31.30	$32.33
2"	$72.00	$44.51	$58.30	$59.33
3"	$117.00	$89.51	$103.30	$104.33

4"	$180.00	$152.51	$166.30	$167.33
6"	$297.00	$269.51	$283.30	$284.33
8"	$603.00	$575.51	$589.30	$590.33
10"	$900.00	$872.51	$886.30	$887.33
	Average Difference	**($16.45)**	**($2.65)**	**($1.62)**
	Range of Weighted Average Difference Annualized	**($31.86)**	**($19.46)**	

Source: City of Lorain and Peers

Conclusion

Overall, the City's water and sewer volumetric rates for residents are higher than the respective peer averages. The City's monthly fixed charges for several meter sizes are higher than the peer averages for both services, but are lower for the most common meter size. However, while usage rates and some fixed charges are higher than the peers, the full cost of service for each utility, to include capital needs and appropriate financial reserves, should be considered before adjusting rates. Therefore, this is an assessment not yielding recommendation. See the **Full Cost of Service** and **Financial Policy** sections of the report for additional information.

Appendix D: Additional Analysis

Staffing and Workload

The following tables show select staffing comparisons using secondary benchmarks, in addition to those presented in the Staffing and Workload section of the report. While informative, they serve as supplemental and informational comparisons only, as the staffing conclusions were based on the primary workload benchmarks.[22]

Water Treatment Staffing Comparison: Maintenance

	Lorain	Peer Average	Difference
Plant Maintenance (FTEs)	5.0	3.0	2.0
Value of Equipment/Assets Maintained	$6,180,331	$2,834,861	$3,345,470
Value of Equipment/Assets Maintained per FTE	**$1,236,066**	**$944,954**	**$291,112**
Number of Lift Stations	2.0	8.7	(6.7)
Number of Lift Stations per FTE	0.4	3.6	(3.2)

Wastewater Treatment Staffing Comparison: Maintenance

	Lorain	Peer Average	Difference
Plant Maintenance (FTEs)	13.0	6.3	6.7
Value of Equipment/Assets Maintained	$19,289,463	$28,858,379	($9,568,916)
Value of Equipment/Assets Maintained per FTE	**$1,483,805**	**$4,556,586**	**($3,072,781)**
Number of Lift Stations	14.0	19.3	(5.3)
Number of Lift Stations per FTE	1.1	2.6	(1.5)

Utility Billing Staffing Comparison: Billing Representatives

	Lorain	Peer Average	Difference
Billing Representative (FTEs)	7.0	4.3	2.7
Number of Accounts	25,937.0	31,590.0	(5,653.0)
Number of Accounts per FTE	**3,705.3**	**7,176.1**	**(3,470.8)**

[22] According to Utility Department officials, the aging treatment plant facilities contribute to the need for its maintenance staffing levels. The Black River and PQM wastewater treatment plants were originally constructed in 1954 and 1988, respectively, while the water treatment plant was originally constructed in 1906.

AWWA Comparisons

AWWA comparisons are not as targeted as our peer comparisons. Generally, these comparisons are only intended to offer additional, supplemental information. The AWWA metric is for all utility employees, not just by specific function or position type. These are national benchmarks based on survey responses and are not controlled for geographical region.

Water/Wastewater Utility AWWA Comparisons

		Water		Wastewater
Volume Treated (MGD)		6.48		16.74
Lorain Utility FTEs	÷	41.00	÷	54.00
Volume per Utility FTE (MGD)		**0.16**		**0.31**
AWWA Recommended Benchmark	-	0.22	-	0.19
Difference		-0.06		0.12
Lorain Utility (FTEs)		41.00		54.00
Benchmark Staffing Needs (FTEs)	-	29.47	-	88.10
Difference (FTEs)		**11.53**		**-34.10**

Source: City of Lorain and AWWA

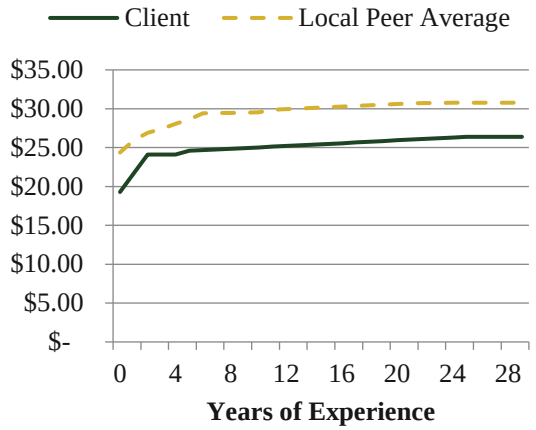
Utility Billing Staffing Comparison

Number of Accounts		25,937.0
Billing FTEs	÷	10.0
Number of Accounts per FTE		**2,593.7**
AWWA Recommended Benchmark	-	500.0
Difference		**2,093.7**

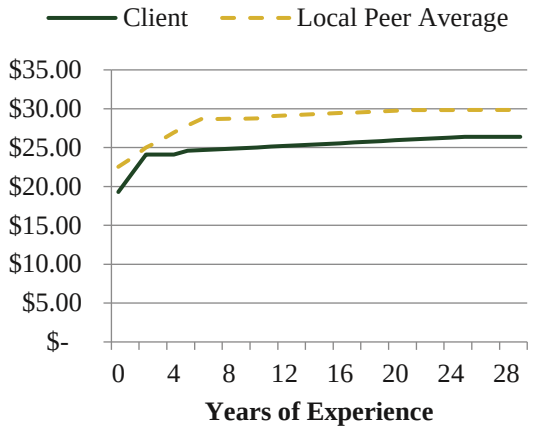
Compensation

Classified step schedules of select City employee positions were compared to the peer average.

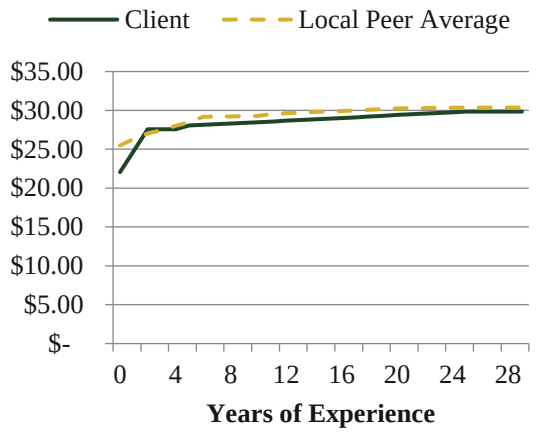
Lab Tech III, Wastewater



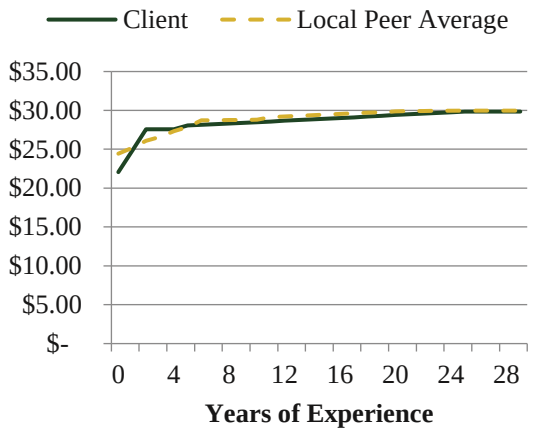
Lab Tech III, Water



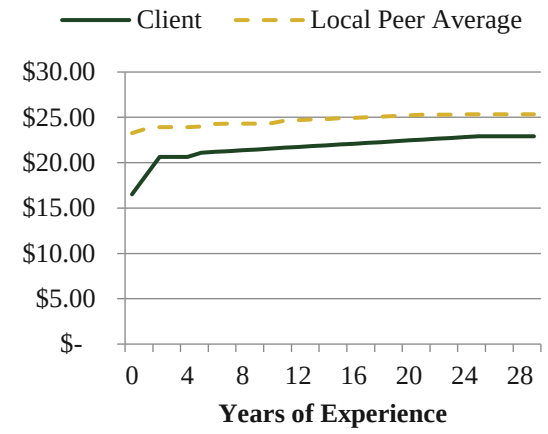
Lead Operator, Wastewater



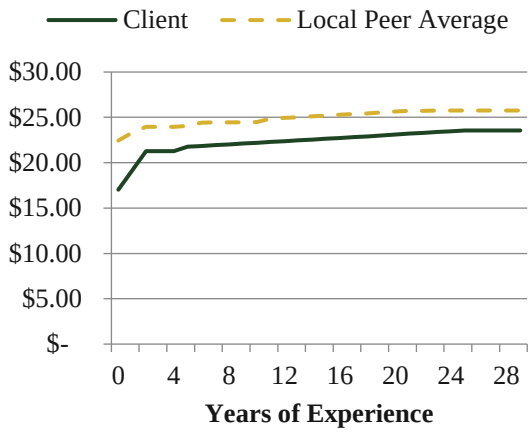
Lead Operator, Water



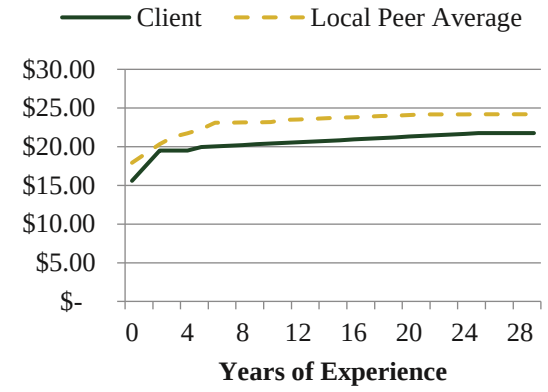
Utility Worker, Collections



Utility Worker, Distribution



Account Representative, UB



Source: City of Lorain and Peers

Lorain had 9,731 overtime hours FY 2019. Total overtime hours, calculated in terms of an FTE, would equate to 4.7 total FTEs (using 2,080 annual work hours). Additionally, overtime in terms of an FTE was calculated for each individual department.

Overtime Hours as FTE Value

Department	OT Hours	FTE Calculation
Admin	267.75	0.1
Utilities Billing	335.25	0.2
Water Treatment	2,070.58	1.0
Water Distribution	2,865.77	1.4
Wastewater Treatment	3,497.307	1.7
Sewer Collection	694.4	0.3
Total	**9,731.057**	**4.7**

Source: City of Lorain

The following analysis looks at the FTEs that could theoretically be hired at base salary to cover overtime. This is primarily for context to illustrate the value of the overtime the City is currently carrying, since this is not likely to be a practical solution to reducing overtime costs. Cost-effectiveness would decline in out years as full-time personnel costs would increase. Additionally, the City would not likely find qualified employees to effectively be on call 24/7 with no set schedule.

Overtime Analysis- Supplanting OT with Hiring

Position	Starting Hourly	Annual Hours	Annual Salary	Benefits	Total
Lead Operator Class III (Water)	22.06	2,080	$45,884.80	1.345	$61,715.06
# FTEs to cover OT costs	1.23				

Position	Starting Hourly	Annual Hours	Annual Salary	Benefits	Total
Lead Operator Class III (Wastewater)	22.06	2,080	$45,884.80	1.345	$61,715.06
# FTEs to cover OT costs	2.08				

Position	Starting Hourly	Annual Hours	Annual Salary	Benefits	Total
Utility Worker Class I WD	17.03	2,080	$35,422.40	1.345	$47,643.13
# FTEs to cover OT costs	2.18				

Position	Starting Hourly	Annual Hours	Annual Salary	Benefits	Total
Utility Worker - Sewer	16.51	2,080	$34,340.80	1.345	$46,188.38

Source: City of Lorain

The annual cost for salaries and benefits were calculated for positions within each water and wastewater department. The positions used were the same positions that were analyzed in the compensation analysis. The results of the overtime cost versus potential cost of hiring additional staff resulted in the following:

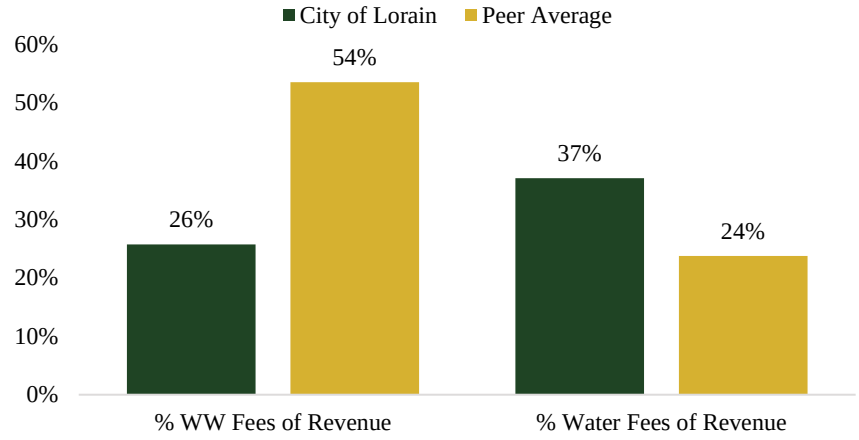
- Utility Billing Department: 0.24 FTE Account Representatives could be hired at the current base rate to cover the Department's overtime.
- Water Treatment: Either 1.23 FTE Lead Operators with Class III WS could be hired at the current base rate, or 1.41 FTE Lab Tech III could be hired at the current base rate to cover the Department's overtime.
- Water Distribution: 2.18 FTE Utility Worker Class I WD could be hired at the base rate to cover the Department's overtime.

- Wastewater Treatment: Either 2.08 FTE Lead Operators Class III WW could be hired at the current base rate, or 2.38 FTE Lab Tech III could be hired at the current base rate to cover the Department's overtime.
- Sewer Collections: 0.54 FTE Utility Worker-Sewer could be hired at the current base rate.

Rates and Fees

As shown in the following chart, Lorain's split of water and sewer sales and fees is similar to the peer average. This is indicative of implementing the recommendation of the independent water study to possibly stabilize revenues while undertaking capital projects within the water and sewer departments.

Water and Sewer Fee Portion of Revenue



Source: City of Lorain and Peers

In 2019, Lorain's water department was less efficient (i.e. spent more) than the AWWA median in regards to operational cost per MG by $2,145, per 100 line miles by $467,679, and per account by $43, as shown below. The AWWA 25th percentile represents the quartile with the highest ratios. Lorain was also less efficient than the AWWA 25th percentile of highest cost entities for cost per MG by $1,049, but was more efficient than the AWWA 25th percentile of highest cost entities for operational cost per 100 line miles and per account by $704,146 and $147, respectively.

Operational and Maintenance Cost Metrics

Water Works	Per MG	Per 100 miles of line	Per Account
City of Lorain	$4,613	$3,358,679	$471
AWWA Median	$2,468	$2,891,000	$428
Difference	**$2,145**	**$467,679**	**$43**
AWWA 25th Percentile	$3,519	$4,062,825	$618
Difference	**$1,094**	**-$704,146**	**-$147**

Source: City of Lorain and AWWA

Lorain's wastewater department was slightly more efficient than the AWWA median in terms of operational expense per MG by $175, but was less efficient than the AWWA median in terms of cost per 100 line miles and cost per account by $293,490 and $218, respectively.

Lorain was more efficient than the AWWA 25th percentile of highest cost entities benchmark by $1,639 per MG and $672,161 per 100 miles, but it was less efficient by $69 per account, as shown below.

Operational and Maintenance Cost Metrics

Water Pollution Control	Per MG	Per 100 miles of Line	Per Account
City of Lorain	$2,314	$3,162,440	$596
AWWA Median	$2,489	$2,868,950	$378
Difference	**-$175**	**$293,490**	**$218**
AWWA 25th Percentile	$3,953	$3,834,601	$527
Difference	**-$1,639**	**-$672,161**	**$69**

Source: City of Lorain and AWWA

OHIO AUDITOR OF STATE
KEITH FABER

CITY OF LORAIN

LORAIN COUNTY

AUDITOR OF STATE OF OHIO CERTIFICATION

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

Certified for Release 6/10/2021

88 East Broad Street, Columbus, Ohio 43215
Phone: 614-466-4514 or 800-282-0370

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