

# 2024 WATER AND WASTEWATER RATE STUDY WAVERLY, NEBRASKA

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**2024 WATER AND WASTEWATER  
RATE STUDY  
FOR  
CITY OF WAVERLY, NEBRASKA**

**Section 1: Introduction:**

The following report is a rate design review and assessment for the City of Waverly, Nebraska. This report provides supplemental data and updated alternatives for evaluating rate structures and determining probable future rate structures for the water and wastewater utilities in Waverly.

Information utilized in this evaluation was received from the City of Waverly. For this evaluation, the overall financial position of the public water system and sanitary sewer system were evaluated by analyzing the revenue generated by the existing user rate structure compared to the current system expenses. Next, the financial position of each system was evaluated by projecting the revenue and expenses over the next five-year planning period. Included within this planning period were the capital improvement projects as identified by the City of Waverly. Updated rate structures will be evaluated to determine their capability of financing future operation expenses and capital improvements. The capital improvement projects highlighted in the 2019 rate study will also be reviewed to see what was completed in the past 5 years.

It is important to ensure that the cost recovery methods (charges) are compatible with other objectives, including environmental protection and sustainability, and are in compliance with legal and regulatory constraints. It is also important to provide a fair and equitable range of water and wastewater rates and regulations that the City can implement for the community.

A rate study was completed by JEO for the City in 2019, with planned capital improvement projects for both the water & wastewater system. The City of Waverly selected water system rate schedule #3, and wastewater system rate schedule #3. However, the wastewater system's rates have not been raised in the last couple years as outlined by that schedule. Rate schedules #3 consists of paying for as much of the proposed capital improvement costs with cash, while keeping rate increases low and securing a bond for the remainder.

For the water system, the City's cash position grew from \$928,855 in 2019 to \$1,738,923 in 2024, per the City's audit reports. Within the 2019 report, six capital improvement projects were proposed. Three projects were not completed and are not scheduled for the next five years, and three projects were not completed but will be budgeted for in 2024. The 2019 report also proposed seven water system maintenance projects. Three projects were completed, and four projects are ongoing/between engineering and construction. Lastly, one additional capital improvements project and four additional maintenance projects were also completed, though not planned for in the 2019 report.

For the wastewater system, the City's cash position grew from \$1,462,237 in 2019 to \$4,900,412 in 2024, per the City's audit reports. Within the 2019 report four capital improvement projects were proposed. One project was completed, two projects were not completed, and one project completed engineering, with construction planned for 2024. The 2019 report also proposed two wastewater system maintenance projects. One project was completed, and one project is ongoing. Lastly, one additional capital

improvements project and six additional maintenance projects were also completed, though not planned for in the 2019 report.

## WATER SYSTEM

### **Section 2: Existing Rate Schedule and System – Water System:**

The current system of water rate charges utilized by the City of Waverly consists of a flat fee based on the user's meter size and a commodity fee based on the volume of water used each month. This current system, shown below, is considered to be an increasing rate structure since the cost per 1,000 gallons increases as the user consumes more water in a given month. The existing water rates have risen as suggested in the previous rate study and the utility has not been supplemented with general funds.

**Table 1: Existing Water Rate Schedule**

<b>Customer Monthly Charge<sup>1</sup></b>	
<b>Base Charges</b>	<b>\$/Month</b>
5/8"	\$17.42
3/4"	\$17.54
1"	\$17.87
1-1/2"	\$39.48
2"	\$64.58
3"	\$142.17
4"	\$231.53

**Table 1: Existing Water Rate Schedule (cont.)**

<b>Commodity Charges</b>	<b>\$/1,000 Gal</b>
0 to 10,000	\$1.92
10,001 to 20,000	\$2.47
Over 20,001	\$3.09

<sup>1</sup> Fees shown above are for residents of the City of Waverly only. Non-resident fees are double that of resident fees.

An updated 10-year Comprehensive Plan and Community Housing Study were completed in 2023 for the City of Waverly to replace the previous 20-year versions completed in 2013. After reviewing the documents for planned growth of the community, it was determined that a medium annual growth rate for 2020-2033 was 2.2% for population growth of the community over the planning period. This growth rate will match the water consumption and water user growth for the period of 2024-2029.

The City of Waverly currently has approximately 1,601 water users. The following table,

**Table 2: Water System Historical and Projected Number** of Users, shows the projected number of users connected to the water system on an annual basis based on the above growth projections. Per discussion with City Staff, the 2023 number of users was skewed by double counting the number of users, due to a shift of 5/8" meter to 3/4" meter. The 2024 data is the most up to date and correct data.

**Table 2: Water System Historical and Projected Number of Users**

	Actual	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected
Meter Size	2021	2022	2023	2024	2025	2026	2027	2028	2029
5/8"	549	539	514	389	389	389	389	389	389
3/4"	46	63	159	197	201	206	210	215	220
1"	994	1,036	1,043	1,026	1,057	1,089	1,122	1,155	1,189
1.5"	22	22	23	22	22	22	23	23	24
2"	12	12	14	12	12	12	13	13	13
3"	7	6	6	6	6	6	6	6	7
4"	5	5	5	5	5	5	5	5	5
No Charge	0	1	3	3	0	0	0	0	0
<b>Total</b>	<b>1,635</b>	<b>1,684</b>	<b>1,767</b>	<b>1,660</b>	<b>1,692</b>	<b>1,730</b>	<b>1,768</b>	<b>1,807</b>	<b>1,847</b>

<sup>1</sup> Per discussions with City Staff, unbilled "No Charge" users are City operated facilities such as the City Pool, Parks, Fire Hall, and City Offices Building.

Note: It is assumed for the purposes of this report that no large water users or industries will be moving into the community during the planning period.

The following table, **Table 3: Water System Projected Consumption in Units of 1,000 Gallons**, shows the historical and projected yearly water use, which will be used for determining the anticipated revenues later in the report.

**Table 3: Water System Projected Consumption in Units of 1,000 Gallons**

	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
General Commodity Usage	2021	2022	2023	2024	2025	2026	2027	2028	2029
0 to 10,000	160,510	177,358	165,874	171,608	174,698	177,856	181,082	184,381	187,751
10,001 to 20,000	15,170	14,656	13,766	14,850	15,148	15,453	15,764	16,083	16,408
Over 20,001	31,625	31,836	30,183	31,901	32,597	33,308	34,034	34,776	35,534
<b>Total</b>	<b>207,305</b>	<b>223,850</b>	<b>209,823</b>	<b>218,360</b>	<b>222,444</b>	<b>226,617</b>	<b>230,881</b>	<b>235,240</b>	<b>239,694</b>

To determine the projected operating revenue and expenses for the water system, financial records from 2021-2023 were reviewed. Projected budget values are listed in the following table, **Table 4: Water System Operating Revenue Projection, 2024-2029, With No Rate Increase**. For the expenses anticipated to be influenced by inflation, an annual inflation rate of 4.0% was applied. Sales tax and depreciation expense were not included in the analysis.



**Table 4: Water System Operating Revenue Projection, 2024-2029, With No Rate Increase**

Revenue	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
	2021	2022	2023	2024	2025	2026	2027	2028	2029
Charges for Services	\$781,818.51	\$852,868.28	\$876,047.55	\$851,389.84	\$867,767.50	\$885,529.51	\$903,735.88	\$922,202.92	\$941,142.72
City Fines	\$0.00	\$0.00	\$200.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Other Local Rev Receipts	\$250.00	\$1,330.87	\$578.13	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00
Labor & Materials Sold	\$48,410.08	\$60,610.96	\$24,218.71	\$44,500.00	\$44,500.00	\$44,500.00	\$44,500.00	\$44,500.00	\$44,500.00
Sale of Water	\$2,656.43	\$2,163.07	\$3,756.73	\$2,900.00	\$2,900.00	\$2,900.00	\$2,900.00	\$2,900.00	\$2,900.00
Insurance Adjustments	\$3,782.36	\$0.00	\$118,593.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Interest	\$0.00	\$0.00	\$33,119.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contribution Income	\$5,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Interest Income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Infrastructure Fee	\$0.00	\$365.40	\$2,289.24	\$900.00	\$900.00	\$900.00	\$900.00	\$900.00	\$900.00
<b>Total Revenues</b>	<b>\$841,917.38</b>	<b>\$917,338.58</b>	<b>\$1,058,802.76</b>	<b>\$901,089.84</b>	<b>\$917,467.50</b>	<b>\$935,229.51</b>	<b>\$953,435.88</b>	<b>\$971,902.92</b>	<b>\$990,842.72</b>
Expenses	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
	2021	2022	2023	2024	2025	2026	2027	2028	2029
Regular Salaries	\$93,596.08	\$106,761.23	\$153,413.75	\$159,600.00	\$166,000.00	\$172,700.00	\$179,700.00	\$186,900.00	\$194,400.00
Overtime Salaries	\$2,892.51	\$3,163.02	\$5,158.40	\$5,200.00	\$5,500.00	\$5,800.00	\$6,100.00	\$6,400.00	\$6,700.00
Sub or Temp Salaries	\$0.00	\$0.00	\$1,667.83	\$1,700.00	\$1,800.00	\$1,900.00	\$2,000.00	\$2,100.00	\$2,200.00
Social Security	\$7,098.17	\$8,343.01	\$12,106.03	\$9,600.00	\$10,000.00	\$10,400.00	\$10,900.00	\$11,400.00	\$11,900.00
Health Insurance	\$25,350.25	\$23,702.61	\$35,138.02	\$29,200.00	\$30,400.00	\$31,700.00	\$33,000.00	\$34,400.00	\$35,800.00
Work Comp Insurance	\$380.95	\$869.05	\$1,297.49	\$900.00	\$1,000.00	\$1,100.00	\$1,200.00	\$1,300.00	\$1,400.00
Retirement	\$3,960.32	\$5,753.21	\$8,595.87	\$8,600.00	\$9,000.00	\$9,400.00	\$9,800.00	\$10,200.00	\$10,700.00
Clothing	\$517.88	\$218.95	\$455.42	\$500.00	\$600.00	\$700.00	\$800.00	\$900.00	\$1,000.00
Custodial Services	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Laboratory Services	\$0.00	\$178.45	\$2,675.00	\$2,700.00	\$2,900.00	\$3,100.00	\$3,300.00	\$3,500.00	\$3,700.00

**Table 4: Water System Operating Revenue Projection, 2024-2029, With No Rate Increase (cont.)**

<b>Expenses (cont.)</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Contracted or Secured Services	\$0.00	\$3,025.00	\$0.00	\$1,100.00	\$1,200.00	\$1,300.00	\$1,400.00	\$1,500.00	\$1,600.00
Grant Expenditures	\$10,000.00	\$0.00	\$0.00	\$3,500.00	\$3,700.00	\$3,900.00	\$4,100.00	\$4,300.00	\$4,500.00
Other Prof. & Tech Service	\$98,112.68	\$14,520.45	\$34,826.86	\$58,600.00	\$61,000.00	\$63,500.00	\$66,100.00	\$68,800.00	\$71,600.00
Special Prof. & Tech Services	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Natural Gas	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Electricity	\$35,219.03	\$37,854.50	\$37,323.75	\$38,300.00	\$39,900.00	\$41,500.00	\$43,200.00	\$45,000.00	\$46,800.00
Gas and Oil	\$2,006.58	\$4,259.53	\$2,594.68	\$3,100.00	\$3,300.00	\$3,500.00	\$3,700.00	\$3,900.00	\$4,100.00
Garbage Services	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Rentals or Leases	\$1,570.89	\$393.34	\$344.67	\$900.00	\$900.00	\$900.00	\$900.00	\$900.00	\$900.00
Postage	\$2,246.77	\$1,977.98	\$3,400.36	\$2,700.00	\$2,900.00	\$3,100.00	\$3,300.00	\$3,500.00	\$3,700.00
Telephone	\$1,679.52	\$1,710.40	\$1,719.26	\$1,800.00	\$1,900.00	\$2,000.00	\$2,100.00	\$2,200.00	\$2,300.00
Advertising and Printing	\$652.22	\$555.43	\$2,418.49	\$1,300.00	\$1,400.00	\$1,500.00	\$1,600.00	\$1,700.00	\$1,800.00
Supplies	\$43,025.89	\$55,473.72	\$45,723.80	\$50,000.00	\$52,000.00	\$54,100.00	\$56,300.00	\$58,600.00	\$61,000.00
Operation Supplies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Furniture and Equipment	\$4,796.24	\$17,106.37	\$106,125.81	\$44,400.00	\$46,200.00	\$48,100.00	\$50,100.00	\$52,200.00	\$54,300.00
School, Dues and Seminars	\$542.50	\$1,002.50	\$1,518.50	\$1,600.00	\$1,600.00	\$1,600.00	\$1,600.00	\$1,600.00	\$1,600.00
Property Insurance	\$7,228.78	\$7,425.57	\$9,686.24	\$9,700.00	\$10,100.00	\$10,600.00	\$11,100.00	\$11,600.00	\$12,100.00
Travel or Mileage	\$0.00	\$40.20	\$458.47	\$500.00	\$600.00	\$700.00	\$800.00	\$900.00	\$1,000.00
Service Fees	\$0.00	\$21,402.00	\$400.00	\$7,600.00	\$8,000.00	\$8,400.00	\$8,800.00	\$9,200.00	\$9,600.00

**Table 4: Water System Operating Revenue Projection, 2024-2029, With No Rate Increase (cont.)**

<b>Expenses (cont.)</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Repair & Maintenance - Building	\$0.00	\$0.00	\$460.12	\$500.00	\$600.00	\$700.00	\$800.00	\$900.00	\$1,000.00
Repair & Maintenance - Services	\$9,561.13	\$18,932.87	\$42,932.98	\$24,800.00	\$447,400.00	\$447,400.00	\$447,400.00	\$447,400.00	\$447,400.00
Equipment Maintenance	\$14,270.91	\$16,724.51	\$4,407.64	\$12,300.00	\$12,800.00	\$13,400.00	\$14,000.00	\$14,600.00	\$15,200.00
Vehicle Maintenance	\$25.70	\$1,571.78	\$95.62	\$600.00	\$700.00	\$800.00	\$900.00	\$1,000.00	\$1,100.00
Repair & Maintenance	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Refunds	\$0.00	\$1,451.00	\$0.00	\$600.00	\$700.00	\$800.00	\$900.00	\$1,000.00	\$1,100.00
Meter and Readout Purchase	\$65,066.92	\$66,578.98	\$123,556.60	\$88,500.00	\$92,100.00	\$95,800.00	\$99,700.00	\$103,700.00	\$107,900.00
Laboratory Services	\$3,868.00	\$4,892.00	\$2,637.00	\$4,000.00	\$4,200.00	\$4,400.00	\$4,600.00	\$4,800.00	\$5,000.00
<b>Total O&amp;M Expenses</b>	<b>\$433,669.92</b>	<b>\$425,887.66</b>	<b>\$641,138.66</b>	<b>\$574,400.00</b>	<b>\$1,020,400.00</b>	<b>\$1,044,800.00</b>	<b>\$1,070,200.00</b>	<b>\$1,096,400.00</b>	<b>\$1,123,400.00</b>
<b>Net Operating Revenue</b>	<b>\$408,247.46</b>	<b>\$491,450.92</b>	<b>\$417,664.10</b>	<b>\$326,689.84</b>	<b>-\$102,932.50</b>	<b>-\$109,570.49</b>	<b>-\$116,764.12</b>	<b>-\$124,497.08</b>	<b>-\$132,557.28</b>

### **Capital Improvement Projects**

Through discussions with the City, several planned improvement projects were identified for the water system. These projects include a water distribution system improvement, a new public works facility, a test well program, and a new well. The projects considered in this study and their estimated costs are illustrated in the following table. The start dates for these projects have yet to be determined, therefore an annual average cost of the total capital improvements projects was developed to account for any potential project sequencing.

**Table 5: Proposed Water System Capital Improvement Projects During Planning Period**

<b>Proposed Capital Improvement Project</b>	<b>Planning Cost</b>
New Public Works Building	\$1,000,000.00
Water Main Extension #3 (N 148th St from Hwy 6 to Waverly Road)	\$513,300.00
New Well	\$944,000.00
Test Well Program	\$250,000.00
<b>Total Capital Cost</b>	<b>\$2,707,300.00</b>
<b>Average Annual Capital Cost</b>	<b>\$541,460.00</b>

Additionally, the City has identified several projects they would like to incorporate into their repair and maintenance budget. These projects are summarized below in **Table 6: Proposed Water System Maintenance Projects During Planning Period**, and the average annual capital cost is included in the repair and maintenance – services expense item from 2025 through 2029 in **Table 4** above.

**Table 6: Proposed Water System Maintenance Projects During Planning Period**

<b>Proposed Maintenance Project</b>	<b>Planning Cost</b>
Redrill Well #6	\$708,000.00
Touch Up Water Tower Exterior	\$50,000.00
Replace Water Meter Radios & Reading System	\$250,000.00
Water Main Replacement on Oak Lane and Danvers Street	\$1,100,000.00
<b>Total Capital Cost</b>	<b>\$2,108,000.00</b>
<b>Average Annual Capital Cost</b>	<b>\$421,600.00</b>

**Debt Service & Cash Flow Analysis**

The City of Waverly currently has one outstanding debt service for the water supply system from the 2013-2014 Water Improvements Project that primarily included a new well and well building, which is a 20-year note with an annual 2.0% interest rate and 1.0% administrative fee. The debt will be retired in December of 2034, and the debt service during the planning period was previously summarized under a 2014 NDEQ Loan. However, the 2014 NDEQ Loan has been cancelled and the debt has been transferred to a 2021 GO Water Refunding Loan, as shown in **Table 7: Water Amortization Expenses**. In order to evaluate what will be the impact of the proposed capital improvement projects on the existing rate structure, no additional bonding has been proposed.

**Table 7: Water Amortization Expenses**

	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
	2021	2022	2023	2024	2025	2026	2027	2028	2029
<b>Principal Payment</b>									
2021 GO Water Refunding Loan	-	-	\$120,000.00	\$120,000.00	\$115,000.00	\$115,000.00	\$115,000.00	\$115,000.00	\$120,000.00
<b>Total</b>	-	-	<b>\$120,000.00</b>	<b>\$120,000.00</b>	<b>\$115,000.00</b>	<b>\$115,000.00</b>	<b>\$115,000.00</b>	<b>\$115,000.00</b>	<b>\$120,000.00</b>
<b>Interest &amp; Fee Payments</b>									
2021 GO Water Refunding Loan	-	\$8,686.01	\$16,692.50	\$16,212.50	\$15,597.50	\$14,821.25	\$13,872.50	\$12,722.50	\$11,340.00
<b>Total</b>	-	<b>\$8,686.01</b>	<b>\$16,692.50</b>	<b>\$16,212.50</b>	<b>\$15,597.50</b>	<b>\$14,821.25</b>	<b>\$13,872.50</b>	<b>\$12,722.50</b>	<b>\$11,340.00</b>

### Cash Flow Analysis

Using information listed in the previous tables, the projected cash flows for the water department were estimated. Projects completed under the previous rate study were the West Water Main (engineering), Water Main Replacements #1-#3, while Water Main Replacements #4-#6 are ongoing/engineering completed. The City is also implementing an ongoing water meter replacement program, completed well maintenance, completed a 10-year water modeling study update, completed a hydrogeologic siting study, and finished a water system SCADA upgrade. Values listed under capital projects for future years were selected and estimated after discussions with City of Waverly personnel as summarized in **Table 5**. The projected cash flows are shown below in **Table 8: Water Department Projected Cash Flow, With No Rate Increase**.

**Table 8: Water Department Projected Cash Flow, With No Rate Increase**

	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
<b>Projected Cash Flows</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Net Operating Activity	\$408,247	\$491,451	\$417,664	\$326,690	(\$102,933)	(\$109,570)	(\$116,764)	(\$124,497)	(\$132,557)
Add Proposed Bonds	\$0	\$1,480,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add Debt Service (Principal and Interest)	(\$143,641)	(\$1,536,775)	(\$136,693)	(\$136,213)	(\$130,598)	(\$129,821)	(\$128,873)	(\$127,723)	(\$131,340)
Add Capital Projects (Completed and Proposed)	(\$112,354)	(\$188,005)	(\$154,303)	(\$157,700)	(\$541,460)	(\$541,460)	(\$541,460)	(\$541,460)	(\$541,460)
<b>Net Change in Cash</b>	<b>\$152,252</b>	<b>\$246,671</b>	<b>\$126,668</b>	<b>\$32,777</b>	<b>(\$774,990)</b>	<b>(\$780,852)</b>	<b>(\$787,097)</b>	<b>(\$793,680)</b>	<b>(\$805,357)</b>
<b>Beginning Cash Balance</b>	\$1,213,332	\$1,365,584	\$1,612,255	\$1,738,923	\$1,771,700	\$996,710	\$215,859	(\$571,238)	(\$1,364,918)
<b>Ending Cash Balance</b>	\$1,365,584	\$1,612,255	\$1,738,923	\$1,771,700	\$996,710	\$215,859	(\$571,238)	(\$1,364,918)	(\$2,170,275)
<b>Total Cash Available</b>	<b>\$1,365,584</b>	<b>\$1,612,255</b>	<b>\$1,738,923</b>	<b>\$1,771,700</b>	<b>\$996,710</b>	<b>\$215,859</b>	<b>(\$571,238)</b>	<b>(\$1,364,918)</b>	<b>(\$2,170,275)</b>

**Section 3: Cost of Service and Proposed Water Rate Structures:**

For the purposes of this study, the Cost of Service (COS) will be determined by analyzing the fixed and variable expenses and applying them to the fixed and variable types of revenue of a water system. Fixed expenses are the costs that are inherent to the operation of a water system and do not generally increase or decrease with water consumption. Variable expenses are related to the amount of water produced and vary with water usage and season. The following table shows a breakdown of what portion of each expense is considered fixed or variable.

**Table 9: Fixed and Variable Water Expense Breakdown**

Category	Fixed Expenses	Variable Expenses
Regular Salaries	100%	0%
Overtime Salaries	100%	0%
Sub or Temp Salaries	100%	0%
Social Security	100%	0%
Health Insurance	100%	0%
Work Comp Insurance	100%	0%
Retirement	100%	0%
Clothing	100%	0%
Custodial Services	75%	25%
Laboratory Services	75%	25%
Contracted or Secured Services	50%	50%
Grant Expenditures	25%	75%
Other Prof. & Tech Service	50%	50%
Special Prof. & Tech Services	50%	50%
Natural Gas	25%	75%
Electricity	25%	75%
Gas and Oil	25%	75%
Garbage Services	50%	50%
Rentals or Leases	50%	50%
Postage	75%	25%
Telephone	100%	0%
Advertising and Printing	50%	50%
Supplies	50%	50%
Operation Supplies	50%	50%
Furniture and Equipment	50%	50%
School, Dues and Seminars	100%	0%
Property Insurance	100%	0%
Travel or Mileage	75%	25%
Service Fees	50%	50%
Repair & Maintenance - Building	50%	50%
Repair & Maintenance - Services	50%	50%
Equipment Maintenance	75%	25%
Vehicle Maintenance	100%	0%
Repair & Maintenance	100%	0%

Category	Fixed Expenses	Variable Expenses
Refunds	25%	75%
Meter and Readout Services	100%	0%
Laboratory Services	75%	25%
NDEE Principal Payment	100%	0%
NDEE Interest Payment	100%	0%
2021 GO Water Principal	100%	0%
2021 GO Water Interest	100%	0%
Capital Improvements	100%	0%

The following table shows the total expenses for the last three fiscal years separated into the total fixed and total variable costs. Totals exclude depreciation but include amortization and capital improvement projects.

**Table 10: Fixed and Variable Water Expenses**

Category	2021		2022		2023		Average	
	Qty.	%	Qty.	%	Qty.	%	Qty.	%
Total Fixed Expenses	\$570,290	83%	\$540,211	84%	\$782,185	84%	\$630,895	84%
Total Variable Expenses	\$119,375	17%	\$104,332	16%	\$149,950	16%	\$124,552	16%
<b>Total Expenses</b>	<b>\$689,665</b>	<b>100%</b>	<b>\$644,543</b>	<b>100%</b>	<b>\$932,135</b>	<b>100%</b>	<b>\$755,448</b>	<b>100%</b>

\*Excluded Sale of Bonds & Large NDEE Payment in 2023

From the information in **Table 10**, it can be seen that the average fixed and variable expenses of the water system are 84% and 16%, respectively.

A significant portion of the fixed expenses are from debt service payments and capital improvement projects that do not represent the long-term O&M costs of the wastewater utility. However, as these costs must be paid during the planning period, they were accounted for in the breakdown.

The following table illustrates the determination of the cost of service for the water system. The fixed charge was calculated by dividing the fixed expenses by the average number of users within a given year. In a similar manner, the variable expenses were divided by the average number of users in a given year to determine the average commodity charge.

**Table 11: Cost of Service**

	2021	2022	2023	Average
System Users	1635	1684	1767	1695
Base Charge - Fixed Cost (per month per user)	\$29.07	\$26.73	\$36.89	\$30.90
Total Water Sold (gallons per year)	207,304,723	223,887,051	209,846,155	213,679,310
Average Water Use (gallons/user/month)	10,566	11,079	9,897	10,514
Volume Rate (per 1000 gallons)	\$0.58	\$0.47	\$0.71	\$0.59
Volume Charge (per month per user)	\$6.08	\$5.16	\$7.07	\$6.11
<b>Average Water Expense (per month per user)</b>	<b>\$35.15</b>	<b>\$31.90</b>	<b>\$43.96</b>	<b>\$37.00</b>



#### **Section 4: Proposed Water System Rate Schedules:**

In order to develop proposed rate structures, a set of goals for the new rates was compiled.

- The first goal was to end the study period with a minimum cash reserve of approximately one year's worth of O&M costs and bond payments.
- The second goal was to have relatively steady increases in rates each year.
- The third goal was to end the planning period with a net balance of operations that was slightly positive. This goal allows the system to maintain its rates after 2029 without any further rate increases in the future to meet the current known financial needs of the water system.
- The fourth goal was to limit increases such that the typical water user's rates would be average for the surrounding area. Per a 2023 City of Lincoln Rate Survey, **Waverly currently has the lowest water rate for the typical water user in the surrounding area.**

The three (3) rate schedules proposed in this study attempt to fulfill the previously mentioned goals in different ways and are summarized as follows:

- Rate Schedule 1 consists of forgoing bonds and loans altogether and paying for all expenses, debts, and capital improvement projects with cash funds with the exception of the Oak Lane & Danvers Street water main maintenance project has already been planned to borrow \$1,100,000, regardless of the rate schedules. In order to meet the desired revenue requirements, annual increases to the base rate and commodity fee of 50% in the first year, followed by 6% increases the following years were modeled. These increases effectively bring the revenue of the water system to the necessary level to complete capital improvement projects with cash rather than using bonds or loans while also meeting the previously mentioned rate goals. However, one side effect of raising such a high amount of cash is that the net balance of operations may be unnecessarily high if capital improvements similar in size to those proposed for the planning period are not continually implemented annually after the planning period.
- Rate Schedule 2 consists of securing bonds equal in size to the total capital cost of the capital improvements projects included in the planning period, and rate increases to pay for maintenance projects with the exception of the Oak Lane & Danvers Street water main maintenance project as previously mentioned. It is anticipated that two bonds will be issued. The first bond will be issued in 2025, with the second being issued two (2) years later in 2027. The 2025 bond will be for the Oak Lane & Danvers Street project (\$1,100,000), and the 2027 bond will be for all capital improvement projects (\$2,707,300). The bonds will be on a 15-year repayment schedule with an estimated 3.75% interest rate. While this schedule is able to maintain a reasonable cash reserve, it should be noted that doing so comes at the cost of taking on more long-term debt and total cost to the utility. Additionally, interest rates are subject to change over the planning period and may not be as favorable as have been assumed in this report. Ultimately, this schedule increases the base rate and commodity rate by 7% per year for the planning period.

- Rate Schedule 3 consists of borrowing for all capital improvement projects and maintenance projects throughout the planning period, which totals approximately \$4,800,000. The intent of this schedule is to increase rates the least amount possible. The first bond will be issued in 2025, with the second being issued three (3) years later in 2028. The 2025 bond will be for all capital improvement projects (\$2,707,300), and the 2028 bond will be for all maintenance projects (\$2,108,000). Ultimately, this schedule increases the base rate and commodity rate by 3% per year for the planning period, but **is not recommended as even if no capital improvements or maintenance projects were pursued in 2030 and beyond, the projected debt service payments would cause the city to run the water system at a deficit.**

**Table 12: Water System Proposed Rate Schedules** displays the three (3) proposed rate schedules for 2024-2029.

**Table 12: Water System Proposed Rate Schedules**

Proposed Water Rates - Schedule 1						
Category	2024	2025	2026	2027	2028	2029
Meter Size	Cost/Month					
3/4" and Under	\$17.54	\$26.31	\$27.89	\$29.56	\$31.34	\$33.22
1"	\$17.87	\$26.81	\$28.41	\$30.12	\$31.93	\$33.84
1 1/2"	\$39.48	\$59.22	\$62.77	\$66.54	\$70.53	\$74.76
2"	\$64.58	\$96.87	\$102.68	\$108.84	\$115.37	\$122.30
3"	\$142.17	\$213.26	\$226.05	\$239.61	\$253.99	\$269.23
4"	\$231.53	\$347.30	\$368.13	\$390.22	\$413.63	\$438.45
Commodity Rate	Cost/1,000 Gal/Month					
0 to 10,000	\$1.92	\$2.88	\$3.05	\$3.24	\$3.43	\$3.64
10,001 to 20,000	\$2.47	\$3.71	\$3.93	\$4.16	\$4.41	\$4.68
Over 20,001	\$3.09	\$4.64	\$4.91	\$5.21	\$5.52	\$5.85
Proposed Water Rates - Schedule 2						
Category	2024	2025	2026	2027	2028	2029
Meter Size	Cost/Month					
3/4" and Under	\$17.54	\$18.77	\$20.08	\$21.49	\$22.99	\$24.60
1"	\$17.87	\$19.12	\$20.46	\$21.89	\$23.42	\$25.06
1 1/2"	\$39.48	\$42.24	\$45.20	\$48.36	\$51.75	\$55.37
2"	\$64.58	\$69.10	\$73.94	\$79.11	\$84.65	\$90.58
3"	\$142.17	\$152.12	\$162.77	\$174.16	\$186.36	\$199.40
4"	\$231.53	\$247.74	\$265.08	\$283.63	\$303.49	\$324.73
Commodity Rate	Cost/1,000 Gal/Month					
0 to 10,000	\$1.92	\$2.05	\$2.20	\$2.35	\$2.52	\$2.69
10,001 to 20,000	\$2.47	\$2.64	\$2.83	\$3.03	\$3.24	\$3.46
Over 20,001	\$3.09	\$3.31	\$3.54	\$3.79	\$4.05	\$4.33

Proposed Water Rates - Schedule 3						
Category	2024	2025	2026	2027	2028	2029
Meter Size	Cost/Month					
3/4" and Under	\$17.54	\$18.07	\$18.61	\$19.17	\$19.74	\$20.33
1"	\$17.87	\$18.41	\$18.96	\$19.53	\$20.11	\$20.72
1 1/2"	\$39.48	\$40.66	\$41.88	\$43.14	\$44.44	\$45.77
2"	\$64.58	\$66.52	\$68.51	\$70.57	\$72.69	\$74.87
3"	\$142.17	\$146.44	\$150.83	\$155.35	\$160.01	\$164.81
4"	\$231.53	\$238.48	\$245.63	\$253.00	\$260.59	\$268.41
Commodity Rate	Cost/1,000 Gal/Month					
0 to 10,000	\$1.92	\$1.98	\$2.04	\$2.10	\$2.16	\$2.23
10,001 to 20,000	\$2.47	\$2.54	\$2.62	\$2.70	\$2.78	\$2.86
Over 20,001	\$3.09	\$3.18	\$3.28	\$3.38	\$3.48	\$3.58

All rate structures assume the rates in 2024 are the same as the current rates since any changes to the ordinance will not take effect until the 2025 fiscal year.

**Table 13** through **Table 16** on the following pages illustrate the projected effects of the current and proposed rate structures on the net income and cash balance of the water system from 2024 through 2029. The rate structure projections include cash and or loan payments from the water system capital improvement projects previously discussed in **Table 5**. It should be noted that at the time this study was written, the 2024 fiscal year had not ended, so financial information was derived from projected revenue and expenses.

The following tables present a line item known as the reserve fund. This item consists of an amount that is calculated as a percentage of the total revenue each year. This percentage of the yearly revenue is intended to be completely spent each year on non-critical system improvements, replacements, and upkeep projects. In the event that additional funds are needed to cover system expenses, or to build a suitable cash reserve, this fund can be used to cover these needs instead of capital improvements. This fund is represented by 5% of the yearly revenue for the five-year planning period included in the report.

**Table 13: Existing Water Rate Schedule Projection**

City of Waverly, Nebraska Utility Rate Study Flow of Future Funds - Water Existing Rate Schedule						
<b>Monthly Water Use Rate Categories:</b>						
	All User Rates					
	2024	2025	2026	2027	2028	2029
<u>Base Charges (Based on Meter Size)</u>						
3/4" and Under	\$17.54	\$17.54	\$17.54	\$17.54	\$17.54	\$17.54
1"	\$17.87	\$17.87	\$17.87	\$17.87	\$17.87	\$17.87
1 1/2"	\$39.48	\$39.48	\$39.48	\$39.48	\$39.48	\$39.48
2"	\$64.58	\$64.58	\$64.58	\$64.58	\$64.58	\$64.58
3"	\$142.17	\$142.17	\$142.17	\$142.17	\$142.17	\$142.17
4"	\$231.53	\$231.53	\$231.53	\$231.53	\$231.53	\$231.53
	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal
<u>Commodity Charges</u>						
0 to 10,000	\$1.92	\$1.92	\$1.92	\$1.92	\$1.92	\$1.92
10,001 to 20,000	\$2.47	\$2.47	\$2.47	\$2.47	\$2.47	\$2.47
Over 20,001	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09	\$3.09
<b>Average Yearly Revenue Increase:</b>	2.0%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
<b>Projected Years</b>						
	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Revenue &amp; Expenses</b>						
Water Revenue	\$851,950	\$868,328	\$886,090	\$904,296	\$922,763	\$941,703
Other Income	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700
<b>Total Operating Revenue</b>	<b>\$901,650</b>	<b>\$918,028</b>	<b>\$935,790</b>	<b>\$953,996</b>	<b>\$972,463</b>	<b>\$991,403</b>
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>	\$574,400	\$1,020,400	\$1,044,800	\$1,070,200	\$1,096,400	\$1,123,400
<b>Net Operating Revenue</b>	<b>\$327,250</b>	<b>(\$102,372)</b>	<b>(\$109,010)</b>	<b>(\$116,204)</b>	<b>(\$123,937)</b>	<b>(\$131,997)</b>
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$0	\$0	\$0	\$0	\$0
Existing Bond and Interest Payments	\$136,213	\$130,598	\$129,821	\$128,873	\$127,723	\$131,340
Proposed Bond and Interest Payments	\$0	\$0	\$0	\$0	\$0	\$0
<b>Other Obligations</b>						
Capital Improvement Projects	\$157,700	\$541,460	\$541,460	\$541,460	\$541,460	\$541,460
Reserve	\$42,598	\$43,416	\$44,304	\$45,215	\$46,138	\$47,085
<b>Total Other Obligations</b>	<b>\$200,298</b>	<b>\$584,876</b>	<b>\$585,764</b>	<b>\$586,675</b>	<b>\$587,598</b>	<b>\$588,545</b>
<b>Total Annual Revenue</b>	<b>\$901,650</b>	<b>\$918,028</b>	<b>\$935,790</b>	<b>\$953,996</b>	<b>\$972,463</b>	<b>\$991,403</b>
<b>Total Annual Expenses</b>	<b>\$910,910</b>	<b>\$1,735,874</b>	<b>\$1,760,386</b>	<b>\$1,785,747</b>	<b>\$1,811,721</b>	<b>\$1,843,285</b>
<b>Deficiency of Water Service Revenue</b>	-1%	-89%	-88%	-87%	-86%	-86%
<b>Beginning Cash Balance</b>	\$1,738,923	\$1,729,663	\$911,817	\$87,221	(\$744,531)	(\$1,583,788)
<b>Ending Cash Balance</b>	\$1,729,663	\$911,817	\$87,221	(\$744,531)	(\$1,583,788)	(\$2,435,670)

**Table 14: Proposed Water Rate Schedule 1**

City of Waverly, Nebraska Utility Rate Study Flow of Future Funds - Water <u>W RS-1</u>						
<b>Monthly Water Use Rate Categories:</b>						
	All User Rates					
	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
<u>Base Charges (Based on Meter Size)</u>						
3/4" and Under	\$17.54	\$26.31	\$27.89	\$29.56	\$31.34	\$33.22
1"	\$17.87	\$26.81	\$28.41	\$30.12	\$31.93	\$33.84
1 1/2"	\$39.48	\$59.22	\$62.77	\$66.54	\$70.53	\$74.76
2"	\$64.58	\$96.87	\$102.68	\$108.84	\$115.37	\$122.30
3"	\$142.17	\$213.26	\$226.05	\$239.61	\$253.99	\$269.23
4"	\$231.53	\$347.30	\$368.13	\$390.22	\$413.63	\$438.45
	\$/1,000					
<u>General Commodity Charges</u>	Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal
0 to 10,000	\$1.92	\$2.88	\$3.05	\$3.24	\$3.43	\$3.64
10,001 to 20,000	\$2.47	\$3.71	\$3.93	\$4.16	\$4.41	\$4.68
Over 20,001	\$3.09	\$4.64	\$4.91	\$5.21	\$5.52	\$5.85
<b>Average Yearly Revenue Increase:</b>	17.1%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
<b>Projected Years</b>						
	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Revenue &amp; Expenses</b>						
Water Revenue	\$851,950	\$1,302,491	\$1,408,883	\$1,524,101	\$1,648,538	\$1,783,317
Other Income	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700
<b>Total Operating Revenue</b>	<b>\$901,650</b>	<b>\$1,352,191</b>	<b>\$1,458,583</b>	<b>\$1,573,801</b>	<b>\$1,698,238</b>	<b>\$1,833,017</b>
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>						
	\$574,400	\$1,020,400	\$1,044,800	\$1,070,200	\$1,096,400	\$1,123,400
<b>Net Operating Revenue</b>	<b>\$327,250</b>	<b>\$331,791</b>	<b>\$413,783</b>	<b>\$503,601</b>	<b>\$601,838</b>	<b>\$709,617</b>
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$1,100,000	\$0	\$0	\$0	\$0
Existing Bond and Interest Payments	\$136,213	\$130,598	\$129,821	\$128,873	\$127,723	\$131,340
Proposed Bond and Interest Payments	\$0	\$97,214	\$97,214	\$97,214	\$97,214	\$97,214
<b>Other Obligations</b>						
Capital Improvement Projects	\$157,700	\$541,460	\$541,460	\$541,460	\$541,460	\$541,460
Reserve	\$42,598	\$65,125	\$70,444	\$76,205	\$82,427	\$89,166
<b>Total Other Obligations</b>	<b>\$200,298</b>	<b>\$606,585</b>	<b>\$611,904</b>	<b>\$617,665</b>	<b>\$623,887</b>	<b>\$630,626</b>
<b>Total Annual Revenue</b>	<b>\$901,650</b>	<b>\$2,452,191</b>	<b>\$1,458,583</b>	<b>\$1,573,801</b>	<b>\$1,698,238</b>	<b>\$1,833,017</b>
<b>Total Annual Expenses</b>	<b>\$910,910</b>	<b>\$1,854,796</b>	<b>\$1,883,739</b>	<b>\$1,913,951</b>	<b>\$1,945,223</b>	<b>\$1,982,579</b>
<b>Deficiency of Water Service Revenue</b>	-1%	---	-29%	-22%	-15%	-8%
<b>Beginning Cash Balance</b>	<b>\$1,738,923</b>	<b>\$1,729,663</b>	<b>\$2,327,059</b>	<b>\$1,901,903</b>	<b>\$1,561,752</b>	<b>\$1,314,767</b>
<b>Ending Cash Balance</b>	<b>\$1,729,663</b>	<b>\$2,327,059</b>	<b>\$1,901,903</b>	<b>\$1,561,752</b>	<b>\$1,314,767</b>	<b>\$1,165,205</b>

**Table 15: Proposed Water Rate Schedule 2**

City of Waverly, Nebraska Utility Rate Study Flow of Future Funds - Water <u>W RS-2</u>						
<b>Monthly Water Use Rate Categories:</b>						
	All User Rates					
	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
<u>Base Charges (Based on Meter Size)</u>						
3/4" and Under	\$17.54	\$18.77	\$20.08	\$21.49	\$22.99	\$24.60
1"	\$17.87	\$19.12	\$20.46	\$21.89	\$23.42	\$25.06
1 1/2"	\$39.48	\$42.24	\$45.20	\$48.36	\$51.75	\$55.37
2"	\$64.58	\$69.10	\$73.94	\$79.11	\$84.65	\$90.58
3"	\$142.17	\$152.12	\$162.77	\$174.16	\$186.36	\$199.40
4"	\$231.53	\$247.74	\$265.08	\$283.63	\$303.49	\$324.73
<u>Commodity Charges</u>						
	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal
0 to 10,000	\$1.92	\$2.05	\$2.20	\$2.35	\$2.52	\$2.69
10,001 to 20,000	\$2.47	\$2.64	\$2.83	\$3.03	\$3.24	\$3.46
Over 20,001	\$3.09	\$3.31	\$3.54	\$3.79	\$4.05	\$4.33
<b>Average Yearly Revenue Increase:</b>	9.2%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
<b>Projected Years</b>						
	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Revenue &amp; Expenses</b>						
Water Revenue	\$851,950	\$929,111	\$1,014,484	\$1,107,802	\$1,209,554	\$1,320,787
Other Income	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700
<b>Total Operating Revenue</b>	<b>\$901,650</b>	<b>\$978,811</b>	<b>\$1,064,184</b>	<b>\$1,157,502</b>	<b>\$1,259,254</b>	<b>\$1,370,487</b>
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>	\$574,400	\$1,020,400	\$1,044,800	\$1,070,200	\$1,096,400	\$1,123,400
<b>Net Operating Revenue</b>	<b>\$327,250</b>	<b>(\$41,589)</b>	<b>\$19,384</b>	<b>\$87,302</b>	<b>\$162,854</b>	<b>\$247,087</b>
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$1,100,000	\$0	\$2,707,300	\$0	\$0
Existing Bond and Interest Payments	\$136,213	\$130,598	\$129,821	\$128,873	\$127,723	\$131,340
Proposed Bond and Interest Payments	\$0	\$97,214	\$97,214	\$336,474	\$336,474	\$336,474
<b>Other Obligations</b>						
Capital Improvement Projects	\$157,700	\$541,460	\$541,460	\$541,460	\$541,460	\$541,460
Reserve	\$42,598	\$46,456	\$50,724	\$55,390	\$60,478	\$66,039
<b>Total Other Obligations</b>	<b>\$200,298</b>	<b>\$587,916</b>	<b>\$592,184</b>	<b>\$596,850</b>	<b>\$601,938</b>	<b>\$607,499</b>
<b>Total Annual Revenue</b>	<b>\$901,650</b>	<b>\$2,078,811</b>	<b>\$1,064,184</b>	<b>\$3,864,802</b>	<b>\$1,259,254</b>	<b>\$1,370,487</b>
<b>Total Annual Expenses</b>	<b>\$910,910</b>	<b>\$1,836,127</b>	<b>\$1,864,019</b>	<b>\$2,132,396</b>	<b>\$2,162,534</b>	<b>\$2,198,713</b>
<b>Deficiency of Water Service Revenue</b>	-1%	---	-75%	---	-72%	-60%
<b>Beginning Cash Balance</b>	<b>\$1,738,923</b>	<b>\$1,729,663</b>	<b>\$1,972,347</b>	<b>\$1,172,512</b>	<b>\$2,904,917</b>	<b>\$2,001,638</b>
<b>Ending Cash Balance</b>	<b>\$1,729,663</b>	<b>\$1,972,347</b>	<b>\$1,172,512</b>	<b>\$2,904,917</b>	<b>\$2,001,638</b>	<b>\$1,173,411</b>

**Table 16: Proposed Water Rate Schedule 3**

City of Waverly, Nebraska Utility Rate Study Flow of Future Funds - Water W RS-3						
<b>Monthly Water Use Rate Categories:</b>						
	All User Rates					
	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
<u>Base Charges (Based on Meter Size)</u>						
3/4" and Under	\$17.54	\$18.07	\$18.61	\$19.17	\$19.74	\$20.33
1"	\$17.87	\$18.41	\$18.96	\$19.53	\$20.11	\$20.72
1 1/2"	\$39.48	\$40.66	\$41.88	\$43.14	\$44.44	\$45.77
2"	\$64.58	\$66.52	\$68.51	\$70.57	\$72.69	\$74.87
3"	\$142.17	\$146.44	\$150.83	\$155.35	\$160.01	\$164.81
4"	\$231.53	\$238.48	\$245.63	\$253.00	\$260.59	\$268.41
<u>Commodity Charges</u>						
0 to 10,000	\$1.92	\$1.98	\$2.04	\$2.10	\$2.16	\$2.23
10,001 to 20,000	\$2.47	\$2.54	\$2.62	\$2.70	\$2.78	\$2.86
Over 20,001	\$3.09	\$3.18	\$3.28	\$3.38	\$3.48	\$3.58
<b>Average Yearly Revenue Increase:</b>	5.1%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
<b>Projected Years</b>						
	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Revenue &amp; Expenses</b>						
Water Revenue	\$851,950	\$894,377	\$940,053	\$988,149	\$1,038,578	\$1,091,692
Other Income	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700	\$49,700
<b>Total Operating Revenue</b>	<b>\$901,650</b>	<b>\$944,077</b>	<b>\$989,753</b>	<b>\$1,037,849</b>	<b>\$1,088,278</b>	<b>\$1,141,392</b>
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>	\$574,400	\$1,020,400	\$1,044,800	\$1,070,200	\$1,096,400	\$1,123,400
<b>Net Operating Revenue</b>	<b>\$327,250</b>	<b>(\$76,323)</b>	<b>(\$55,047)</b>	<b>(\$32,351)</b>	<b>(\$8,122)</b>	<b>\$17,992</b>
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$2,707,300	\$0	\$0	\$2,108,000	\$0
Existing Bond and Interest Payments	\$136,213	\$130,598	\$129,821	\$128,873	\$127,723	\$131,340
Proposed Bond and Interest Payments	\$0	\$239,260	\$239,260	\$239,260	\$425,557	\$425,557
<b>Other Obligations</b>						
Capital Improvement Projects	\$157,700	\$541,460	\$541,460	\$541,460	\$541,460	\$541,460
Reserve	\$42,598	\$44,719	\$47,003	\$49,407	\$51,929	\$54,585
<b>Total Other Obligations</b>	<b>\$200,298</b>	<b>\$586,179</b>	<b>\$588,463</b>	<b>\$590,867</b>	<b>\$593,389</b>	<b>\$596,045</b>
<b>Total Annual Revenue</b>	<b>\$901,650</b>	<b>\$3,651,377</b>	<b>\$989,753</b>	<b>\$1,037,849</b>	<b>\$3,196,278</b>	<b>\$1,141,392</b>
<b>Total Annual Expenses</b>	<b>\$910,910</b>	<b>\$1,976,437</b>	<b>\$2,002,344</b>	<b>\$2,029,200</b>	<b>\$2,243,068</b>	<b>\$2,276,341</b>
<b>Deficiency of Water Service Revenue</b>	<b>-1%</b>	<b>---</b>	<b>-102%</b>	<b>-96%</b>	<b>---</b>	<b>-99%</b>
<b>Beginning Cash Balance</b>	<b>\$1,738,923</b>	<b>\$1,729,663</b>	<b>\$3,404,604</b>	<b>\$2,392,012</b>	<b>\$1,400,661</b>	<b>\$2,353,871</b>
<b>Ending Cash Balance</b>	<b>\$1,729,663</b>	<b>\$3,404,604</b>	<b>\$2,392,012</b>	<b>\$1,400,661</b>	<b>\$2,353,871</b>	<b>\$1,218,921</b>

The following table shows the resulting percentage of fixed and variable revenue for each year in the existing and proposed rate structures. Revenue from the base charge is considered fixed and revenue from the commodity charge is considered variable.

**Table 17: Fixed vs. Variable Water Revenue**

<b>Proposed Water Rate Schedule 1</b>						
Revenue Type	2024	2025	2026	2027	2028	2029
Fixed	45%	45%	46%	46%	46%	46%
Variable	55%	55%	54%	54%	54%	54%
<b>Proposed Water Rate Schedule 2</b>						
Revenue Type	2024	2025	2026	2027	2028	2029
Fixed	45%	45%	46%	46%	46%	46%
Variable	55%	55%	54%	54%	54%	54%
<b>Proposed Water Rate Schedule 3</b>						
Revenue Type	2024	2025	2026	2027	2028	2029
Fixed	45%	45%	46%	46%	46%	46%
Variable	55%	55%	54%	54%	54%	54%

In order to more accurately determine the impacts of the proposed rate structures on individual users, six (6) hypothetical users were analyzed in regard to their monthly bill for each year of the study period.

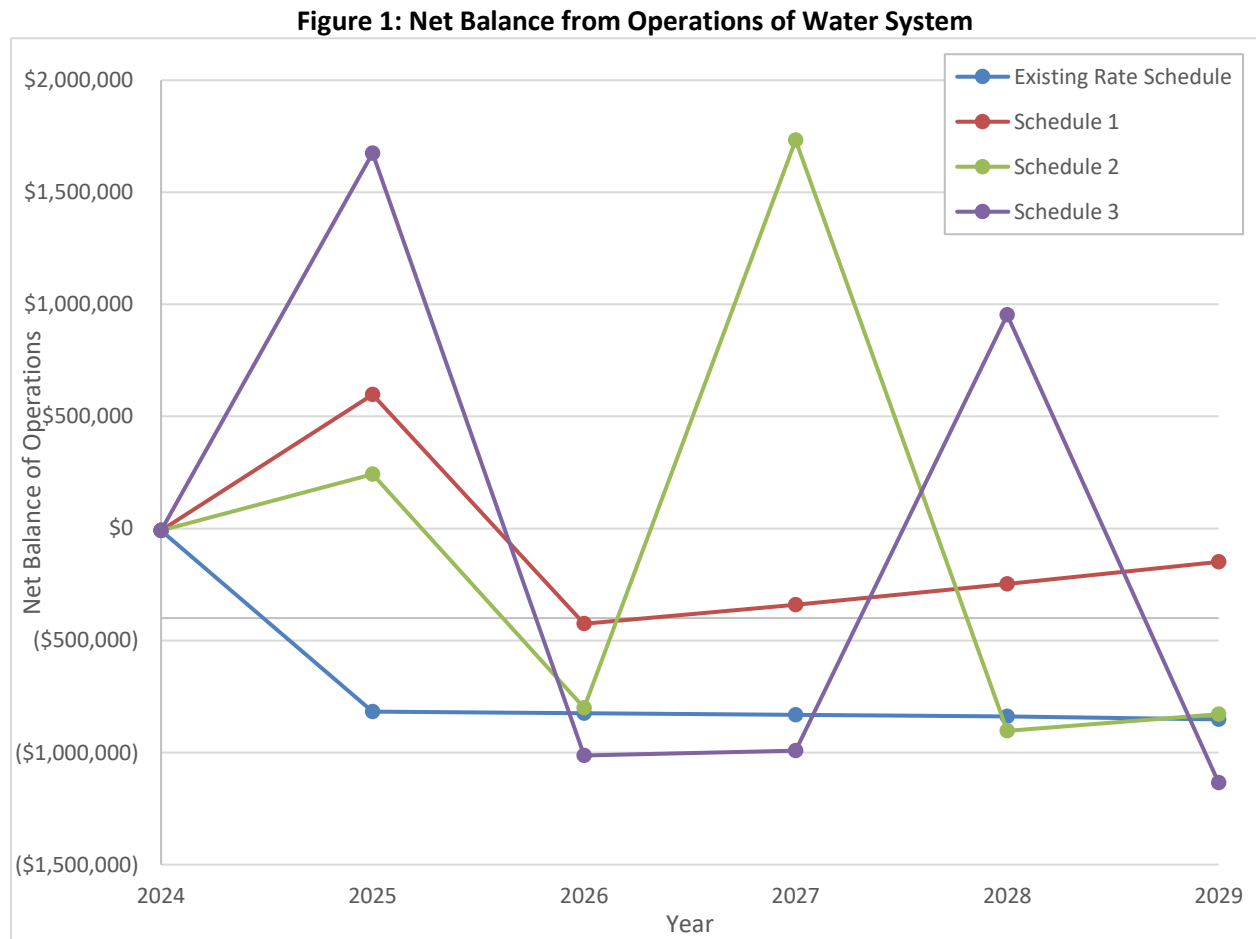
The table on the following page shows the projected monthly bill for each user type.



**Table 18: User Impacts**

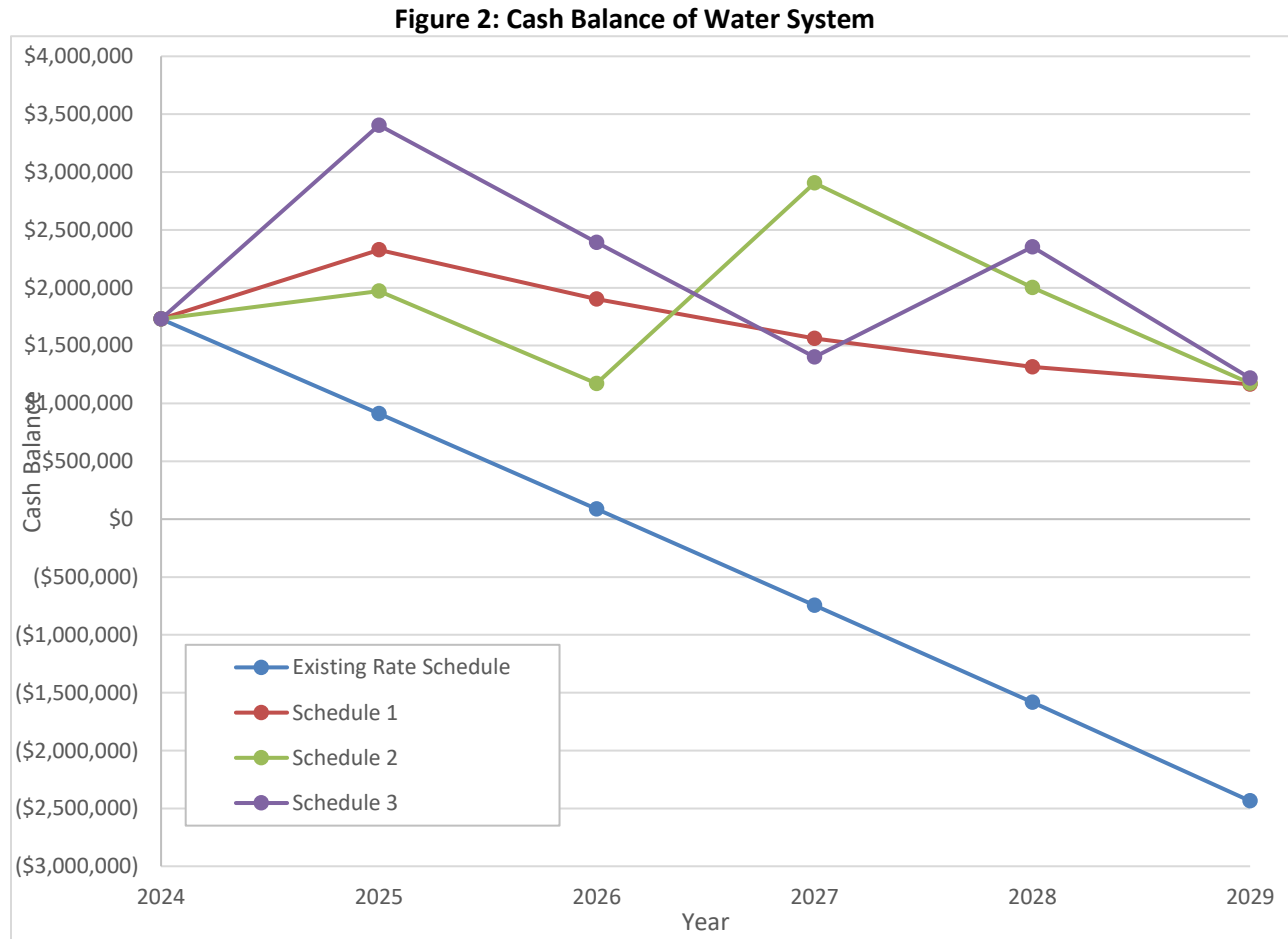
<b>Proposed Water Rate Structure 1</b>							
<b>Monthly Bill</b>	<b>Usage/Month (gal)</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Low User - 1" Meter	2,500	\$22.67	\$34.01	\$36.05	\$38.21	\$40.50	\$42.93
Average User - 1" Meter	7,500	\$32.27	\$48.41	\$51.31	\$54.39	\$57.65	\$61.11
High User - 1" Meter	15,000	\$49.42	\$74.13	\$78.58	\$83.29	\$88.29	\$93.59
High User - 2" Meter	235,000	\$788.28	\$1,182.42	\$1,253.37	\$1,328.57	\$1,408.28	\$1,492.78
High User - 3" Meter	100,000	\$433.27	\$649.91	\$688.90	\$730.23	\$774.05	\$820.49
Average 4" Meter	495,000	\$1,743.18	\$2,614.77	\$2,771.66	\$2,937.96	\$3,114.23	\$3,301.09
<b>Proposed Water Rate Structure 2</b>							
<b>Monthly Bill</b>	<b>Usage/Month (gal)</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Low User - 1" Meter	2,500	\$22.67	\$24.26	\$25.95	\$27.77	\$29.72	\$31.80
Average User - 1" Meter	7,500	\$32.27	\$34.53	\$36.95	\$39.53	\$42.30	\$45.26
High User - 1" Meter	15,000	\$49.42	\$52.88	\$56.58	\$60.54	\$64.78	\$69.31
High User - 2" Meter	235,000	\$788.28	\$843.46	\$902.50	\$965.68	\$1,033.27	\$1,105.60
High User - 3" Meter	100,000	\$433.27	\$463.60	\$496.05	\$530.77	\$567.93	\$607.68
Average 4" Meter	495,000	\$1,743.18	\$1,865.20	\$1,995.77	\$2,135.47	\$2,284.95	\$2,444.90
<b>Proposed Water Rate Structure 3</b>							
<b>Monthly Bill</b>	<b>Usage/Month (gal)</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Low User - 1" Meter	2,500	\$22.67	\$23.35	\$24.05	\$24.77	\$25.52	\$26.28
Average User - 1" Meter	7,500	\$32.27	\$33.24	\$34.24	\$35.26	\$36.32	\$37.41
High User - 1" Meter	15,000	\$49.42	\$50.90	\$52.43	\$54.00	\$55.62	\$57.29
High User - 2" Meter	235,000	\$788.28	\$811.93	\$836.29	\$861.37	\$887.22	\$913.83
High User - 3" Meter	100,000	\$433.27	\$446.27	\$459.66	\$473.45	\$487.65	\$502.28
Average 4" Meter	495,000	\$1,743.18	\$1,795.48	\$1,849.34	\$1,904.82	\$1,961.96	\$2,020.82

**Figure 1: Net Balance from Operations of Water System** shows the projected net income of the water system for each calendar year for each rate schedule.



The net balance of operations displayed in **Figure 1** includes the expenses of operation and maintenance, capital improvement projects, reserves, and debt service for each year.

**Figure 2: Cash Balance of Water System** shows the cumulative cash balance of the water system for each rate schedule over the study period.



The cash balances listed in **Figure 2** include the expenses of capital improvements, reserves, and debt service for each year. Typically, it is recommended for utility systems to have one year of operations and maintenance costs and one year of bond payments in cash for emergencies and fluctuations in users. A target water utility cash balance for the City of Waverly would be approximately \$1,600,000. Note that if maintenance projects were paused, the city would need approximately \$1,100,000 for typical operation and maintenance, reserves, and debt service.

### **Section 5: Recommendations – Water Department:**

After reviewing the impacts of the proposed rate schedules on the projected finances of the water department, it is recommended the City of Waverly implement **Rate Schedule 2** which raises the base rate and commodity charge by 7% annually. This rate schedule allows the City to begin moving rates closer towards the average to afford necessary capital improvements and maintenance projects during the planning period, while also taking on a reasonable amount of debt for the community. Currently, the City has the lowest water rates of surrounding communities per the 2023 City of Lincoln Rate Survey as seen in **Table 19**. Inflation in recent years has also been higher than in the past. Therefore, increasing rates is in the best interest of the water system and the community at large to ensure safe and reliable drinking water in the future.

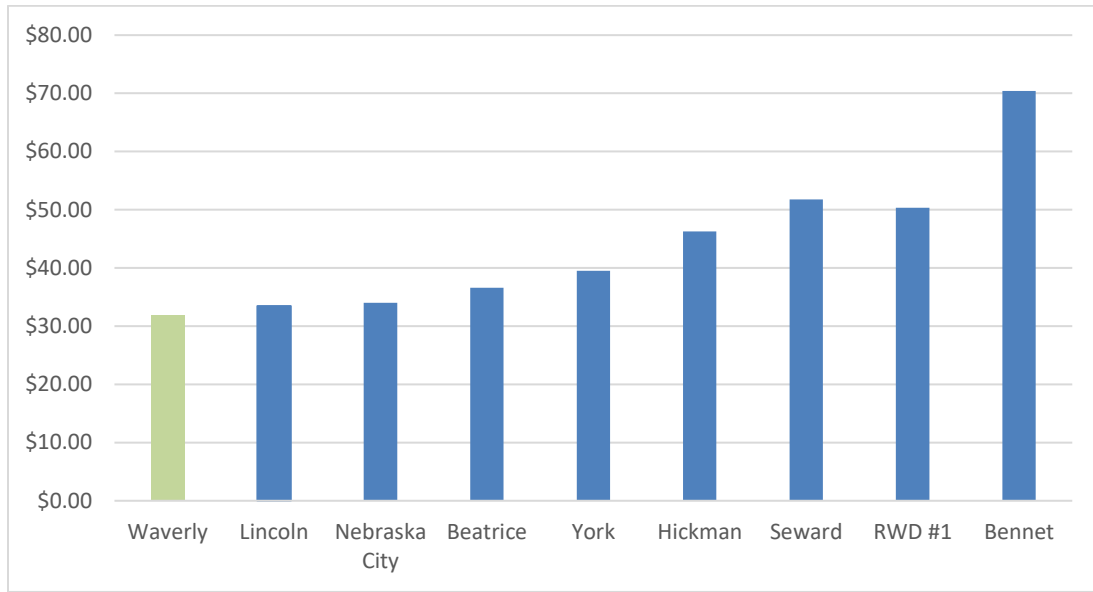
Next, it should also be noted that there were several water projects totaling about \$3M that were removed from the planning period to keep the necessary rate increases lower and more gradual. Those projects as well as others will likely need to be completed in the next planning period from 2029 to 2034. While planning for future projects beyond 2029 is outside the scope of this study, beginning to move rates in the right direction is prudent for long term utility success and customer satisfaction. To that end, JEO recommends revisiting the rates every 3-5 years and update them accordingly to reflect changed conditions.

The City of Lincoln, NE completed a water rate survey of surrounding communities in November 2023. The survey considered the average water bill for an average user and included both the base rate and commodity charge for the utilization of 7,480 gal/mo. The City of Waverly was included in this rate survey and the results are displayed below in **Table 19** and **Figure 3**. The rate survey can provide a good metric for comparing the rates of surrounding communities, although no two communities share the same needs, circumstances, and resources.

**Table 19: Existing Water Rate Survey Results**

<b>Community</b>	<b>2023 Average Monthly Water Bill</b>
Waverly	\$31.90
Lincoln	\$33.45
Nebraska City	\$33.99
Beatrice	\$36.58
York	\$39.51
Hickman	\$46.30
Seward	\$51.76
RWD #1	\$50.37
Bennet	\$70.39

**Figure 3: Existing Water Rate Survey Comparison**



To better visualize the impact of the proposed rate schedule (#2) on the rate survey comparison, **Table 20** and **Figure 4** have been created to show the City of Waverly’s position at the end of the planning period. Of note, all other communities average monthly water bills have been frozen in the year 2023 and is likely to underrepresent their year 2029 averages.

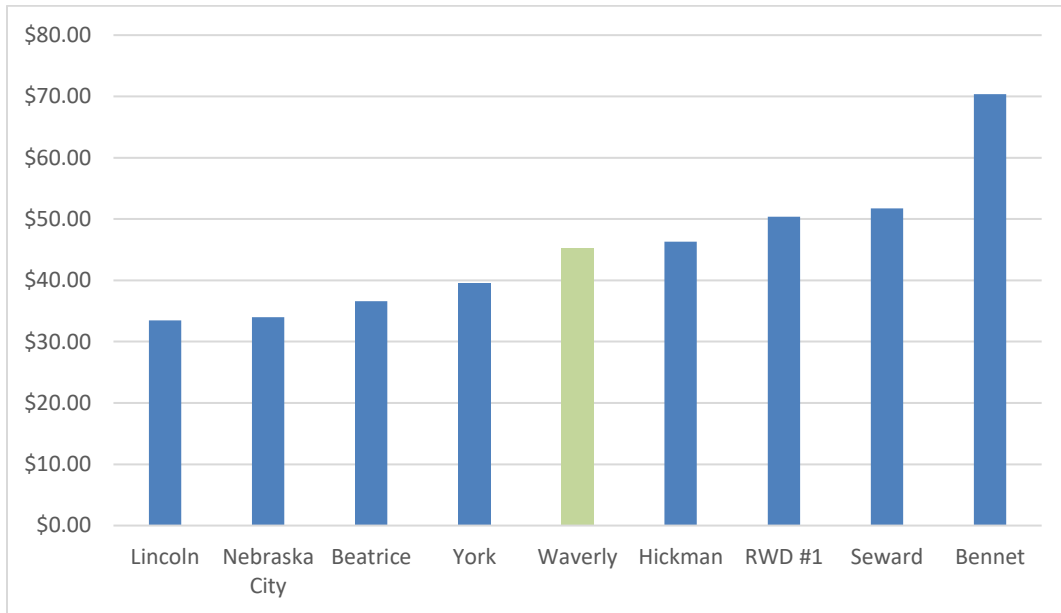
**Table 20: Proposed Water Rate Survey Results**

Community	2029 Average Monthly Water Bill <sup>1</sup>
Lincoln	\$33.45
Nebraska City	\$33.99
Beatrice	\$36.58
York	\$39.51
Waverly	\$45.26
Hickman	\$46.30
RWD #1	\$50.37
Seward	\$51.76
Bennet	\$70.39

<sup>1</sup> Only the City of Waverly’s average monthly water bill is projected to 2029, using proposed rate schedule 2. All other community’s average monthly water bills are shown as in 2023.

<sup>2</sup> For their water rate survey analysis, the City of Lincoln used a residential customer with a 3/4” meter using an average of 7,480 gallons/month. This example customer was used in projecting the 2029 average monthly water bill for the City of Waverly.

**Figure 4: Proposed Water Rate Survey Comparison**



## WASTEWATER SYSTEM

### Section 6: Existing Rate Schedule and System – Wastewater System:

The current City of Waverly wastewater rate system charges users a flat fee based on the user's class and a commodity fee based on the volume of water consumed by the user. This type of system is considered to be a uniform rate structure since the cost per 1,000 gallons does not change as the user consumes more water in a given month. The current system, shown below, separates users into three (3) categories: Residential, Commercial, and Industrial. The commodity fee is determined by averaging the water use in the winter months of January, February, and March for residential users and averaging the water use in the twelve (12) months of October through September for commercial and industrial users.

**Table 21: Existing Sewer Rate Schedule**

Customer Monthly Charge	Residents
Base Charges <sup>1</sup> (by Meter Size)	\$/Month
5/8"	\$36.17
3/4"	\$36.17
1"	\$36.17
1 1/2"	\$47.84
2"	\$55.48
3"	\$72.46
4"	\$113.23
Commodity Charges (by User Type)	\$/1,000 Gal
Residential (Dec-Feb Avg/Month)	\$3.52
Commercial (Oct-Sept Avg/Month)	\$5.02
Industrial (Oct-Sept Avg/Month)	\$6.88

<sup>1</sup>Base charges are based on meter size only and are independent of user type.

According to the ordinances, the sewer system may also collect surcharges for high strength wastewater. The City defines high strength wastewater as wastewater containing greater than 250 mg/L of TSS, 250 mg/l of CBOD, or 400 mg/l of COD when CBOD cannot be accurately determined, and greater than 50 mg/l of grease and oil. Surcharges are collected from high strength wastewater users based on the surcharge fees in **Table 22**. Only one industrial user is currently being charged with surcharge fees.

**Table 22: Surcharge Fees**

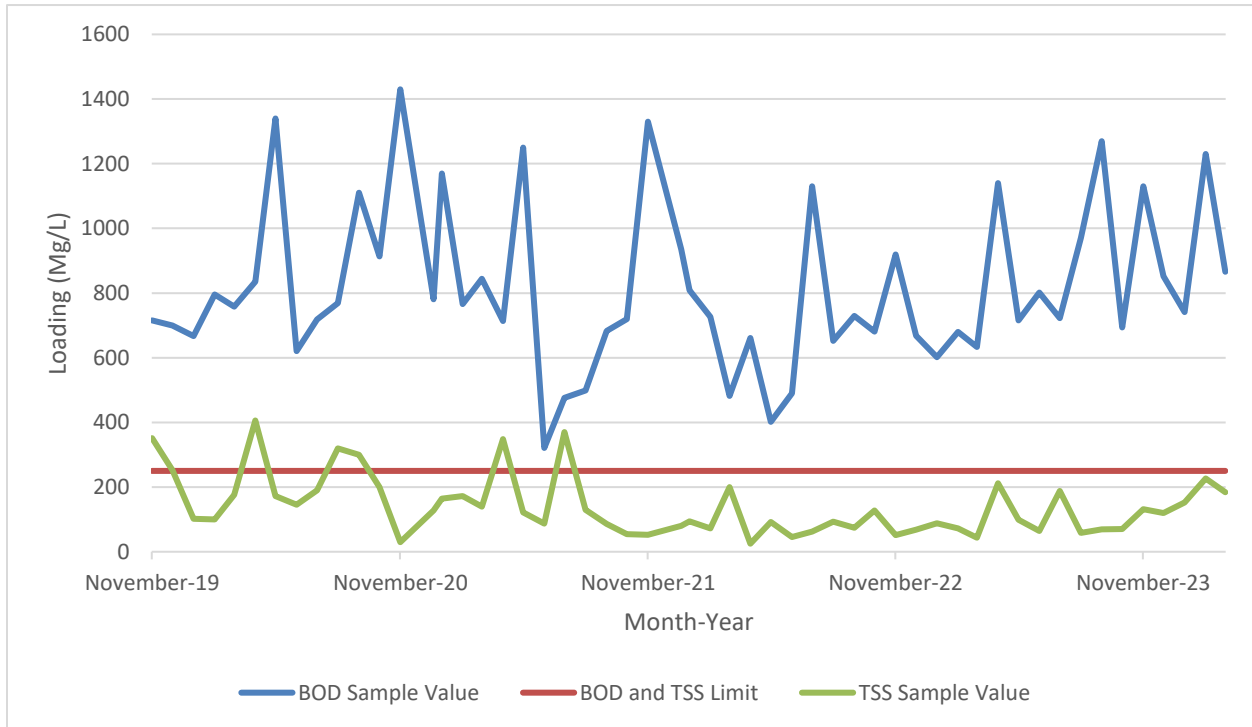
Wastewater Characteristic	Surcharge (\$/lb)
BOD <sup>1</sup>	\$0.84
COD <sup>1</sup>	\$0.50
TSS	\$0.43

<sup>1</sup>User is charged per pound of BOD or COD, whichever is greater.

MBA Poultry, the lone industrial user and largest user of both water and wastewater in the community, is subject to the surcharge fees listed in **Table 22**. Monthly loadings for MBA poultry were analyzed while reviewing the costs of the wastewater system. However, a review of the surcharge rates determined that

the current rates are in line with current industry standards, and that the charges applied to “high pollutant use” industrial wastewater users is adequate. **Table 23** below depicts the monthly sampling results from MBA Poultry.

**Table 23: MBA Poultry Monthly Loadings**



As depicted above, MBA Poultry consistently receives a surcharge fee for BOD, with an average value of 816 mg/L for this planning period. MBA Poultry occasionally receives a surcharge fee for TSS, with an average value of 141 mg/L for this planning period.

The City of Waverly currently has approximately 1,655 wastewater users. In accordance with the planning documents mentioned previously in this report, it was determined that an annual growth rate of approximately 2.2% would be used for wastewater usage and wastewater user growth from 2024-2029. These growth rates will match the planned population growth of the community over the planning period.

The following table shows the existing and projected number of users connected to the City of Waverly’s wastewater system by user type on an annual basis based on the above growth projections. Per discussion with City staff, variation in the 5/8” and 3/4” services are due to when an old 5/8” meter is upgraded, it receives a 3/4” short meter.



**Table 24: Wastewater System Historical and Projected Users**

	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
User Type	2021	2022	2023	2024	2025	2026	2027	2028	2029
Up to 1" Commercial	77	80	79	79	80	82	84	86	88
1.5" Commercial	11	12	12	12	12	12	13	13	13
2" Commercial	5	5	6	5	5	5	6	6	6
3" Commercial	5	5	5	5	5	5	5	5	6
4" Commercial	3	3	3	3	3	3	3	3	3
5/8"	521	509	501	423	423	423	423	423	423
3/4"	37	39	91	126	138	150	163	176	189
1"	950	994	1001	980	1003	1025	1047	1070	1094
1.5"	3	3	3	3	3	3	3	3	3
2"	1	1	2	1	1	1	1	1	1
4"	1	1	1	1	1	1	1	1	1
1.5 WA Industrial	3	2	2	2	2	2	2	2	3
2" WA IN Industrial	1	1	1	1	1	1	1	1	1
SW Manual Avg C <sup>1</sup>	1	1	1	1	0	0	0	0	0
SW Manual Avg <sup>1</sup>	13	8	13	10	0	0	0	0	0
SW Manual Avg I <sup>1</sup>	2	0	0	1	0	0	0	0	0
MBA Sewer	2	2	2	2	2	2	2	2	2
<b>Total</b>	<b>1,636</b>	<b>1,666</b>	<b>1,723</b>	<b>1,655</b>	<b>1,681</b>	<b>1,718</b>	<b>1,755</b>	<b>1,794</b>	<b>1,833</b>

<sup>1</sup> Per discussions with City Staff, Manual Average is for users that had a leak which figured into their sewer average for the year, and future leaks will not be projected.

The following table, **Table 25: Wastewater Projected Flow in Units of 1,000 Gallons**, shows the yearly wastewater usage, which will be used for determining the anticipated revenues later in the report.

**Table 25: Wastewater Projected Flow in Units of 1,000 Gallons**

	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
User Type	2021	2022	2023	2024	2025	2026	2027	2028	2029
Residential	75,055	76,180	76,516	76,930	78,623	80,352	82,120	83,927	85,773
Commercial	15,456	18,213	19,036	17,702	18,091	18,489	18,896	19,312	19,737
Industrial	32,894	29,226	28,989	27,368	27,970	28,586	29,215	29,857	30,514
<b>Total</b>	<b>123,405</b>	<b>123,618</b>	<b>124,541</b>	<b>122,000</b>	<b>124,684</b>	<b>127,427</b>	<b>130,231</b>	<b>133,096</b>	<b>136,024</b>

To determine the projected operating revenue and expenses for the wastewater system, records from 2021-2023 were reviewed. Projected budget values are listed in the following table, **Table 26: Wastewater System Operating Revenue Projection, 2024-2029, With No Rate Increase**. For the expenses anticipated to be influenced by inflation, an annual inflation rate of 4.0% was applied. Sales tax and depreciation expense were not included in the analysis.

**Table 26: Wastewater System Operating Revenue Projection, 2024-2029, With No Rate Increase**

Revenue	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
	2021	2022	2023	2024	2025	2026	2027	2028	2029
Charges for Services	\$1,453,458.46	\$1,424,899.37	\$1,451,036.71	\$1,461,830.90	\$1,489,461.39	\$1,522,225.63	\$1,555,706.83	\$1,589,924.27	\$1,624,889.68
City Fines	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Other Local Rev Receipts	\$200.00	\$11.00	\$0.00	\$100.00	\$200.00	\$300.00	\$400.00	\$500.00	\$600.00
Labor & Materials Sold	\$4,700.00	\$0.00	\$0.00	\$1,700.00	\$1,800.00	\$1,900.00	\$2,000.00	\$2,100.00	\$2,200.00
Insurance Adjustments	\$0.00	\$0.00	\$81,762.27	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Interest	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Contribution Income	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Interest Income	\$11,232.42	\$8,524.65	\$92,945.29	\$39,100.00	\$40,700.00	\$42,400.00	\$44,100.00	\$45,900.00	\$47,800.00
Infrastructure Fee	\$0.00	\$487.20	\$3,052.35	\$1,300.00	\$1,400.00	\$1,500.00	\$1,600.00	\$1,700.00	\$1,800.00
<b>Total Revenues</b>	<b>\$1,469,590.88</b>	<b>\$1,433,922.22</b>	<b>\$1,628,796.62</b>	<b>\$1,504,030.90</b>	<b>\$1,533,561.39</b>	<b>\$1,568,325.63</b>	<b>\$1,603,806.83</b>	<b>\$1,640,124.27</b>	<b>\$1,677,289.68</b>
Expenses	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
	2021	2022	2023	2024	2025	2026	2027	2028	2029
Regular Salaries	\$90,257.59	\$93,122.16	\$108,755.09	\$113,200.00	\$117,800.00	\$122,600.00	\$127,600.00	\$132,800.00	\$138,200.00
Overtime Salaries	\$3,309.84	\$3,587.24	\$3,333.77	\$3,500.00	\$3,700.00	\$3,900.00	\$4,100.00	\$4,300.00	\$4,500.00
Sub or Temp Salaries	\$0.00	\$0.00	\$2,022.66	\$2,200.00	\$2,300.00	\$2,400.00	\$2,500.00	\$2,600.00	\$2,800.00
Social Security	\$6,901.73	\$7,352.24	\$8,695.66	\$9,100.00	\$9,500.00	\$9,900.00	\$10,300.00	\$10,800.00	\$11,300.00
Health Insurance	\$21,299.01	\$22,705.31	\$24,201.09	\$25,200.00	\$26,300.00	\$27,400.00	\$28,500.00	\$29,700.00	\$30,900.00
Work Comp Insurance	\$228.00	\$614.76	\$783.57	\$900.00	\$1,000.00	\$1,100.00	\$1,200.00	\$1,300.00	\$1,400.00
Transfer to Debt Service	\$15,413.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Retirement	\$4,197.98	\$5,150.17	\$6,138.91	\$6,400.00	\$6,700.00	\$7,000.00	\$7,300.00	\$7,600.00	\$8,000.00
Clothing	\$109.92	\$164.92	\$220.69	\$300.00	\$400.00	\$500.00	\$600.00	\$700.00	\$800.00
Custodial Service	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Laboratory Services	\$4,787.08	\$5,304.96	\$5,814.51	\$6,100.00	\$6,400.00	\$6,700.00	\$7,000.00	\$7,300.00	\$7,600.00

**Table 26: Wastewater System Operating Revenue Projection, 2024-2029, With No Rate Increase (cont.)**

<b>Expenses (cont.)</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Contracted or Secured Services	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Grant Expenditures	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Other Prof. & Tech Service	\$17,451.76	\$3,525.71	\$2,007.61	\$8,000.00	\$8,400.00	\$8,800.00	\$9,200.00	\$9,600.00	\$10,000.00
Natural Gas	\$1,785.78	\$3,546.64	\$3,519.51	\$3,700.00	\$3,900.00	\$4,100.00	\$4,300.00	\$4,500.00	\$4,700.00
Electricity	\$70,331.52	\$74,099.36	\$80,567.36	\$83,800.00	\$87,200.00	\$90,700.00	\$94,400.00	\$98,200.00	\$102,200.00
Gas and Oil	\$2,934.48	\$3,321.27	\$1,370.72	\$2,700.00	\$2,900.00	\$3,100.00	\$3,300.00	\$3,500.00	\$3,700.00
Garbage Service	\$1,768.00	\$1,705.30	\$1,692.14	\$1,800.00	\$1,900.00	\$2,000.00	\$2,100.00	\$2,200.00	\$2,300.00
Rentals or Leases	\$569.70	\$626.68	\$864.42	\$900.00	\$1,000.00	\$1,100.00	\$1,200.00	\$1,300.00	\$1,400.00
Postage	\$2,267.35	\$1,968.75	\$1,976.07	\$2,100.00	\$2,200.00	\$2,300.00	\$2,400.00	\$2,500.00	\$2,600.00
Telephone	\$2,328.21	\$2,350.76	\$2,491.89	\$2,600.00	\$2,800.00	\$3,000.00	\$3,200.00	\$3,400.00	\$3,600.00
Advertising and Printing	\$0.00	\$0.00	\$324.65	\$400.00	\$500.00	\$600.00	\$700.00	\$800.00	\$900.00
Supplies	\$9,259.73	\$13,613.36	\$20,360.10	\$21,200.00	\$22,100.00	\$23,000.00	\$24,000.00	\$25,000.00	\$26,000.00
Operation Supplies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Furniture and Equipment	\$4,796.24	\$24,057.35	\$73,878.80	\$35,700.00	\$37,200.00	\$38,700.00	\$40,300.00	\$42,000.00	\$43,700.00
School, Dues and Seminars	\$692.50	\$2,592.50	\$903.50	\$1,500.00	\$1,600.00	\$1,700.00	\$1,800.00	\$1,900.00	\$2,000.00
Property Insurance	\$7,602.92	\$9,400.11	\$12,229.78	\$12,800.00	\$13,400.00	\$14,000.00	\$14,600.00	\$15,200.00	\$15,900.00
Travel or Mileage	\$0.00	\$0.00	\$28.35	\$100.00	\$200.00	\$300.00	\$400.00	\$500.00	\$600.00
Service Fees	\$38,500.00	\$33,478.71	\$800.00	\$900.00	\$1,000.00	\$1,100.00	\$1,200.00	\$1,300.00	\$1,400.00

**Table 26: Wastewater System Operating Revenue Projection, 2024-2029, With No Rate Increase (cont.)**

<b>Expenses (cont.)</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Repair and Maintenance (Building)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Repair and Maintenance (Services)	\$143,137.45	\$1,403.14	\$2,092.75	\$50,900.00	\$128,000.00	\$128,000.00	\$128,000.00	\$128,000.00	\$128,000.00
Equipment Maintenance	\$6,846.23	\$42,496.71	\$43,445.26	\$32,200.00	\$33,500.00	\$34,900.00	\$36,300.00	\$37,800.00	\$39,400.00
Vehicle Maintenance	\$140.34	\$864.00	\$35.50	\$400.00	\$500.00	\$600.00	\$700.00	\$800.00	\$900.00
Other Misc. Objects	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Adjustments	\$15,208.17	\$0.00	\$0.00	\$5,300.00	\$5,600.00	\$5,900.00	\$6,200.00	\$6,500.00	\$6,800.00
Repair and Maintenance (WWTF)	\$60,708.41	\$41,435.98	\$214,919.12	\$64,000.00	\$66,600.00	\$69,300.00	\$72,100.00	\$75,000.00	\$78,000.00
<b>Total O&amp;M Expenses</b>	<b>\$532,833.69</b>	<b>\$398,488.09</b>	<b>\$623,473.48</b>	<b>\$497,900.00</b>	<b>\$594,600.00</b>	<b>\$614,700.00</b>	<b>\$635,500.00</b>	<b>\$657,100.00</b>	<b>\$679,600.00</b>
<b>Net Operating Revenue</b>	<b>\$936,757.19</b>	<b>\$1,035,434.13</b>	<b>\$1,005,323.14</b>	<b>\$1,006,130.90</b>	<b>\$938,961.39</b>	<b>\$953,625.63</b>	<b>\$968,306.83</b>	<b>\$983,024.27</b>	<b>\$997,689.68</b>

### **Capital Improvement Projects**

Through discussions with the City, two planned improvement projects were identified for the wastewater system. These projects include upsizing a developer driven sewer main extension and a new public works facility. The projects considered in this study and their estimated costs are illustrated in the following table. The start dates for these projects have yet to be determined, therefore an annual average cost of the total capital improvements projects was developed to account for any potential project sequencing.

**Table 27: Proposed Wastewater System Capital Improvement Projects During Planning Period**

<b>Proposed Capital Improvement Project</b>	<b>Planning Cost</b>
East Sewer Trunk Extension (Hwy 6 to Bluff Rd) – Pipe Size Upcharge Only	\$294,000.00
New Public Works Building	\$1,000,000.00
<b>Total Capital Improvements Projects Cost</b>	<b>\$1,294,000.00</b>
<b>Average Annual CIP Cost</b>	<b>\$258,800.00</b>

Additionally, the City has identified a few projects they would like to incorporate into their repair and maintenance budget. These projects are summarized below in **Table 28: Proposed Wastewater System Maintenance Projects During Planning Period**, and the average annual capital cost is included in the repair and maintenance expense item from 2025 through 2029 in **Table 26**.

**Table 28: Proposed Wastewater System Maintenance Projects During Planning Period**

<b>Proposed Maintenance Project</b>	<b>Planning Cost</b>
Replace Sludge Press Control Panels	\$75,000.00
Vapor Root Sewer Lines	\$50,000.00
CIPP Program	\$250,000.00
<b>Total Maintenance Project Cost</b>	<b>\$375,000.00</b>
<b>Average Annual Maintenance Cost Addition</b>	<b>\$75,000.00</b>

### Debt Service

The City of Waverly currently has two outstanding debt services for the wastewater system from various wastewater improvement projects over the past several years. The summaries of the bonds associated with these projects are provided in **Table 29: Wastewater Debt Service Summaries** and the amortization schedules during the planning period are summarized in **Table 30: Wastewater Amortization Expenses**. In order to evaluate the anticipated impact of the proposed capital improvement projects on the existing rate structure, no additional bonding has been proposed.

**Table 29: Wastewater Debt Service Summaries**

Bond Name	Description	Debt Service Remaining <sup>1</sup>	Retirement Year
2020 Combined Utility Rev Ref	Cancelled 2012 Combined Utility (WWTF & West Trunk Sewer Improvements) & 2018 Combined Utility Rev Ban (East Trunk Sewer Improvements)	\$1,828,180.00	2032
2021 Combined Utility Rev	Pay & Cancelled Refunding of Series 2016 Combined Utility Rev Ref (WWTF & West Trunk Sewer Improvements Refinancing)	\$1,969,503.75	2029

<sup>1</sup>Debt Service Remaining is calculated from end of fiscal year 2024.

**Table 30: Wastewater Amortization Expenses**

	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
	2021	2022	2023	2024	2025	2026	2027	2028	2029
<b>Principal Payment</b>									
2016 COM UT Rev Ref	\$250,000.00	\$2,560,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2020 CURR	\$3,145,000.00	\$205,000.00	\$205,000.00	\$210,000.00	\$210,000.00	\$210,000.00	\$215,000.00	\$215,000.00	\$215,000.00
2013 SWRF	\$120,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2021 CURRB	\$0.00	\$0.00	\$305,000.00	\$305,000.00	\$305,000.00	\$310,000.00	\$315,000.00	\$320,000.00	\$325,000.00
<b>Total</b>	<b>\$3,515,000.00</b>	<b>\$2,765,000.00</b>	<b>\$510,000.00</b>	<b>\$515,000.00</b>	<b>\$515,000.00</b>	<b>\$520,000.00</b>	<b>\$530,000.00</b>	<b>\$535,000.00</b>	<b>\$540,000.00</b>
<b>Interest Payments</b>									
2016 COM UT Rev Ref	\$71,382.50	\$32,269.27	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2021 GO WTF Ref	\$23,790.96	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2020 CURR	\$0.00	\$22,545.00	\$21,520.00	\$20,392.50	\$19,132.50	\$17,767.50	\$16,087.50	\$14,152.50	\$11,895.00
2021 CURRB	\$0.00	\$11,723.09	\$22,202.50	\$20,830.00	\$19,076.25	\$16,845.00	\$14,030.00	\$10,615.00	\$6,662.50
<b>Total</b>	<b>\$95,173.46</b>	<b>\$66,537.36</b>	<b>\$43,722.50</b>	<b>\$41,222.50</b>	<b>\$38,208.75</b>	<b>\$34,612.50</b>	<b>\$30,117.50</b>	<b>\$24,767.50</b>	<b>\$18,557.50</b>

### Cash Flow Analysis

Using information listed in the previous tables, the projected cash flows for the wastewater department were estimated. The previous capital improvement and maintenance projects were the degritter heat tape and insulation, West Sewer Main Extension (engineering), sewer televising, CIPP Program, and various maintenance projects at the WWTF. Values listed under capital projects for future years were selected and estimated after discussions with City of Waverly personnel, as summarized in **Table 27**. The projected cash flows are shown below in **Table 31: Wastewater Department Projected Cash Flow, With No Rate Increase**.

**Table 31: Wastewater Department Projected Cash Flow, With No Rate Increase**

	Actual	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected
<b>Projected Cash Flows</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Add Net Operating Activity	\$936,757	\$1,035,434	\$1,005,323	\$1,006,131	\$938,961	\$953,626	\$968,307	\$983,024	\$997,690
Add Proposed Bonds	\$2,490,000	\$2,510,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add Debt Service (Principal and Interest)	(\$3,610,173)	(\$2,831,537)	(\$553,723)	(\$556,223)	(\$553,209)	(\$554,613)	(\$560,118)	(\$559,768)	(\$558,558)
Add Capital Projects (Completed and Proposed)	(\$35,553)	(\$25,851)	(\$46,824)	(\$48,700)	(\$258,800)	(\$258,800)	(\$258,800)	(\$258,800)	(\$258,800)
<b>Net Change in Cash</b>	<b>(\$218,970)</b>	<b>\$688,046</b>	<b>\$404,776</b>	<b>\$401,208</b>	<b>\$126,953</b>	<b>\$140,213</b>	<b>\$149,389</b>	<b>\$164,457</b>	<b>\$180,332</b>
<b>Beginning Cash Balance</b>	\$4,026,559	\$3,807,589	\$4,495,636	\$4,900,412	\$5,301,620	\$5,428,573	\$5,568,786	\$5,718,175	\$5,882,632
<b>Ending Cash Balance</b>	\$3,807,589	\$4,495,636	\$4,900,412	\$5,301,620	\$5,428,573	\$5,568,786	\$5,718,175	\$5,882,632	\$6,062,964
<b>Total Cash Available</b>	<b>\$3,807,589</b>	<b>\$4,495,636</b>	<b>\$4,900,412</b>	<b>\$5,301,620</b>	<b>\$5,428,573</b>	<b>\$5,568,786</b>	<b>\$5,718,175</b>	<b>\$5,882,632</b>	<b>\$6,062,964</b>



**Section 7: Cost of Service and Proposed Wastewater Rate Structures:**

For the purposes of this study, the Cost of Service (COS) is determined by analyzing the fixed and variable expenses and applying them to the fixed and variable types of revenue of a wastewater system. Fixed expenses are the costs that are inherent to the operation of a wastewater system and do not generally increase or decrease with wastewater generation. Variable expenses are related to the amount of wastewater treated and vary with wastewater generation and season. The following table shows a breakdown of what portion of each expense is considered fixed or variable.

**Table 32: Fixed and Variable Wastewater Expense Breakdown**

Category	Fixed Expenses	Variable Expenses
Regular Salaries	100%	0%
Overtime Salaries	100%	0%
Sub or Temp Salaries	100%	0%
Social Security	100%	0%
Health Insurance	100%	0%
Work Comp Insurance	100%	0%
Transfer to Debt Service	100%	0%
Retirement	100%	0%
Clothing	100%	0%
Custodial Service	100%	0%
Laboratory Services	75%	25%
Contracted or Secured Services	50%	50%
Grant Expenditures	25%	75%
Other Prof. & Tech Service	50%	50%
Natural Gas	25%	75%
Electricity	25%	75%
Gas and Oil	25%	75%
Garbage Service	50%	50%
Rentals or Leases	50%	50%
Postage	75%	25%
Telephone	100%	0%
Advertising and Printing	100%	0%
Supplies	50%	50%
Operation Supplies	50%	50%
Furniture and Equipment	50%	50%
School, Dues and Seminars	100%	0%
Property Insurance	100%	0%
Travel or Mileage	75%	25%
Service Fees	50%	50%

**Table 32: Fixed and Variable Wastewater Expense Breakdown (cont.)**

Category	Fixed Expenses	Variable Expenses
Repair and Maintenance (Building)	50%	50%
Repair and Maintenance (Services)	50%	50%
Equipment Maintenance	75%	25%
Vehicle Maintenance	100%	0%
Other Misc. Objects	100%	0%
Adjustments	100%	0%
Repair and Maintenance (WWTF)	50%	50%
Principal - 2016 COM UT Rev Ref	100%	0%
Interest - 2016 COM UT Rev Ref	100%	0%
Interest - 2021 GO WTF Ref	100%	0%
Principal - 2020 CURR	100%	0%
Principal - 2013 SWRF	100%	0%
Interest - 2020 CURR	100%	0%
Principal - 2021 CURRB	100%	0%
Interest - 2021 CURRB	100%	0%
Capital Improvements	100%	0%
Reserve	100%	0%

The following table shows the total expenses for the last three fiscal years separated into the total fixed and total variable costs. Totals exclude depreciation but include amortization and capital improvement projects.

**Table 33: Fixed and Variable Expenses**

Category	2021		2022		2023		Average	
	Qty.	%	Qty.	%	Qty.	%	Qty.	%
Total Fixed Expenses	\$835,701	81%	\$562,785	81%	\$988,804	81%	\$795,763	81%
Total Variable Expenses	\$197,860	19%	\$133,091	19%	\$235,217	19%	\$188,723	19%
<b>Total Expenses</b>	<b>\$1,033,561</b>	<b>100%</b>	<b>\$695,876</b>	<b>100%</b>	<b>\$1,224,020</b>	<b>100%</b>	<b>\$984,486</b>	<b>100%</b>

From the information in **Table 33**, it can be seen that the average fixed and variable expenses of the wastewater system are on average 81% and 19%, respectively.

This fixed expense percentage is higher than typical values due to the City's existing sewer bond payments being considered fixed expenses. As these debt payments represent such a high percentage of the expenses that the wastewater system will experience over the planning period, they were included in this analysis. Additionally, additional capital improvement projects are proposed throughout the planning period, all of which will be bonded or paid for with cash, further increasing the percentage of fixed expenses. Therefore, a priority will be made to raise enough revenue to cover these debt payments.

The following table shows the determination of the cost of service for the wastewater system. The fixed charge was calculated by dividing the fixed expenses by the average number of users within a given year. In a similar manner, the variable costs and gallons sold were used to calculate the commodity expense of wastewater treatment. The flow contributed from MBA Poultry was excluded from the average wastewater generated per user calculation to give a more realistic value for an average user.

**Table 34: Cost of Service**

	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Average</b>
System Users	1636	1666	1723	1675
Base Charge - Fixed Cost (per month per user)	\$42.57	\$28.15	\$47.82	\$39.51
Total Wastewater Generated Per Year Excluding MBA Poultry (gallons per year)	91,443,923	96,910,761	97,465,042	95,273,242
Average Monthly Wastewater Generated per User (gallons/user/month)	4,658	4,847	4,714	4,740
Volume Rate (per 1,000 gallons)	\$2.16	\$1.37	\$2.41	\$1.98
Volume Charge (per month per user)	\$10.08	\$6.66	\$11.38	\$9.37
<b>Average Sewer Expense (per month per user)</b>	<b>\$52.65</b>	<b>\$34.81</b>	<b>\$59.20</b>	<b>\$48.88</b>

### **Section 8: Proposed Wastewater System Rate Schedules:**

In order to develop proposed rate structures, a set of goals for the new rates was compiled.

- The first goal was to end the study period with a minimum cash reserve of approximately one year's worth of O&M costs and bond payments.
- The second goal was to have relatively steady increases in rates each year.
- The third goal was to end the planning period with a net balance of operations that was slightly positive. This goal allows the system to maintain its rates after 2029 without any further rate increases in the future to meet the known financial needs of the sewer system.
- The fourth goal was to limit increases such that the typical wastewater user's rates would be average for the surrounding area. Per a 2023 City of Lincoln Rate Survey, **Waverly currently has an average wastewater rate for the typical wastewater user in the surrounding area.**

The three (3) rate schedules proposed in this study attempt to fulfill the previously mentioned goals in different ways and are summarized as follows:

- Rate Schedule 1 consists of forgoing bonds and loans altogether and paying for all expenses, debts, and capital improvement projects with cash funds. As rate increases are not necessary, this Rate Schedule models nominal increases in rates to limit falling behind inflation. In order to meet the desired revenue requirements, annual increases to the base rates, commodity fees, and surcharge fees of 1% were modeled.
- Rate Schedule 2 consists of securing bonds equal in size to the total capital cost of the capital improvements projects included in the planning period and paying cash for all planned maintenance projects. It is anticipated that one bond will be issued for the capital improvement projects. The capital improvements bond will be issued in 2025 accounting for 100% of the total cost (\$1,294,000) of the proposed capital improvements. The bond will be on a 15-year repayment schedule with an estimated 3.75% interest rate. No rate increases are required for this schedule. While this schedule is able to maintain a healthy cash reserve without a rate increase, it should be noted that doing so comes at the cost of taking on more long-term debt and total cost to the utility as well as allowing inflation to eat into the purchasing power of cash reserves. Finally, interest rates are subject to change over the planning period and may not be as favorable as have been assumed in this report.
- Rate Schedule 3 consists of increasing rates higher than RS-1 to better counteract inflation. Due to past rate increases and financial planning, the wastewater system has a strong cash reserve and therefore bonds are not required to construct both the capital improvements and maintenance projects proposed for the planning period under this rate schedule. Ultimately, this schedule increases the base rate, commodity fee, and surcharge fees by 2% annually.

**Table 35: Wastewater System Proposed Rate Schedules** displays the three (3) proposed rate schedules for 2024-2029.

**Table 35: Wastewater System Proposed Rate Schedules**

Proposed Wastewater Rates - Current Rate Schedule						
Category	2024	2025	2026	2027	2028	2029
<b>Meter Size</b>	<b>Cost/Month</b>					
Up to 1" Commercial	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5" Commercial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" Commercial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
3" Commercial	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46
4" Commercial	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
5/8"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
3/4"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5"	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2"	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
4"	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
1.5 WA Industrial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" WA IN Industrial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
SW Manual Avg C	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg I	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
MBA Sewer	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
<b>Commodity Rate</b>	<b>Cost/1,000 Gal</b>					
Residential	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52
Commercial	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02
Industrial	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88
<b>Surcharge Rates</b>	<b>\$/lb</b>					
BOD (if over 250 mg/l)	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84
COD (if over 400 mg/l)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
TSS (if over 250 mg/l)	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43
Proposed Wastewater Rates - Schedule 1						
Category	2024	2025	2026	2027	2028	2029
<b>Meter Size</b>	<b>Cost/Month</b>					
Up to 1" Commercial	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
1.5" Commercial	\$47.84	\$48.32	\$48.80	\$49.29	\$49.78	\$50.28
2" Commercial	\$55.48	\$56.03	\$56.60	\$57.16	\$57.73	\$58.31
3" Commercial	\$72.46	\$73.18	\$73.92	\$74.66	\$75.40	\$76.16
4" Commercial	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
5/8"	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
3/4"	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02

1"	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
1.5"	\$47.84	\$48.32	\$48.80	\$49.29	\$49.78	\$50.28
2"	\$55.48	\$56.03	\$56.60	\$57.16	\$57.73	\$58.31
4"	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
1.5 WA Industrial	\$47.84	\$48.32	\$48.80	\$49.29	\$49.78	\$50.28
2" WA IN Industrial	\$55.48	\$56.03	\$56.60	\$57.16	\$57.73	\$58.31
SW Manual Avg C	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
SW Manual Avg	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
SW Manual Avg I	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
MBA Sewer	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
<b>Commodity Rate</b>	<b>Cost/1,000 Gal</b>					
Residential	\$3.52	\$3.56	\$3.59	\$3.63	\$3.66	\$3.70
Commercial	\$5.02	\$5.07	\$5.12	\$5.17	\$5.22	\$5.28
Industrial	\$6.88	\$6.95	\$7.02	\$7.09	\$7.16	\$7.23
<b>Surcharge Rates</b>	<b>\$/lb</b>					
BOD (if over 250 mg/l)	\$0.84	\$0.85	\$0.86	\$0.87	\$0.87	\$0.88
COD (if over 400 mg/l)	\$0.50	\$0.51	\$0.51	\$0.52	\$0.52	\$0.53
TSS (if over 250 mg/l)	\$0.43	\$0.43	\$0.44	\$0.44	\$0.45	\$0.45
<b>Proposed Wastewater Rates - Schedule 2</b>						
<b>Category</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Meter Size</b>	<b>Cost/Month</b>					
Up to 1" Commercial	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5" Commercial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" Commercial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
3" Commercial	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46
4" Commercial	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
5/8"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
3/4"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5"	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2"	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
4"	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
1.5 WA Industrial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" WA IN Industrial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
SW Manual Avg C	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg I	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
MBA Sewer	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
<b>Commodity Rate</b>	<b>Cost/1,000 Gal</b>					
Residential	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52
Commercial	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02
Industrial	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88
<b>Surcharge Rates</b>	<b>\$/lb</b>					
BOD (if over 250 mg/l)	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84



COD (if over 400 mg/l)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
TSS (if over 250 mg/l)	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43
<b>Proposed Wastewater Rates - Schedule 3</b>						
<b>Category</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Meter Size</b>	<b>Cost/Month</b>					
Up to 1" Commercial	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
1.5" Commercial	\$47.84	\$48.80	\$49.77	\$50.77	\$51.78	\$52.82
2" Commercial	\$55.48	\$56.59	\$57.72	\$58.88	\$60.05	\$61.25
3" Commercial	\$72.46	\$73.91	\$75.39	\$76.90	\$78.43	\$80.00
4" Commercial	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
5/8"	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
3/4"	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
1"	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
1.5"	\$47.84	\$48.80	\$49.77	\$50.77	\$51.78	\$52.82
2"	\$55.48	\$56.59	\$57.72	\$58.88	\$60.05	\$61.25
4"	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
1.5 WA Industrial	\$47.84	\$48.80	\$49.77	\$50.77	\$51.78	\$52.82
2" WA IN Industrial	\$55.48	\$56.59	\$57.72	\$58.88	\$60.05	\$61.25
SW Manual Avg C	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
SW Manual Avg	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
SW Manual Avg I	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
MBA Sewer	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
<b>Commodity Rate</b>	<b>Cost/1,000 Gal</b>					
Residential	\$3.52	\$3.59	\$3.66	\$3.74	\$3.81	\$3.89
Commercial	\$5.02	\$5.12	\$5.22	\$5.33	\$5.43	\$5.54
Industrial	\$6.88	\$7.02	\$7.16	\$7.30	\$7.45	\$7.60
<b>Surcharge Rates</b>	<b>\$/lb</b>					
BOD (if over 250 mg/l)	\$0.84	\$0.86	\$0.87	\$0.89	\$0.91	\$0.93
COD (if over 400 mg/l)	\$0.50	\$0.51	\$0.52	\$0.53	\$0.54	\$0.55
TSS (if over 250 mg/l)	\$0.43	\$0.44	\$0.45	\$0.46	\$0.47	\$0.47

All rate structures assume the rates in 2024 are the same as the current rates since any changes to the ordinance won't take effect until the 2025 fiscal year.

**Table 36** through **Table 38** on the following pages illustrate the projected effects of the current and proposed rate structures on the net income and cash balance of the wastewater system from 2024 through 2029. The rate structure projections include cash and or loan payments from the wastewater system capital improvement projects previously discussed in **Table 27**. It should be noted that at the time this study was written, the 2024 fiscal year had not ended, so financial information was derived from projected revenue and expenses.

The following tables present a line item known as the reserve fund. This item consists of an amount that is calculated as a percentage of the total revenue each year. This percentage of the yearly revenue is intended to be completely spent each year on non-critical system improvements, replacements, and upkeep projects. In the event that additional funds are needed to cover system expenses, or to build a

suitable cash reserve, this fund can be used to cover these needs instead of capital improvements. This fund is represented by 5% of the yearly revenue for the five-year planning period included in the report.



**Table 36: Existing Wastewater Rate Schedule Projection**

City of Waverly, Nebraska Utility Rate Study Flow of Future Funds - Wastewater Current Rate Model						
<b>Monthly Sewer Use Rate Categories:</b>						
	All User Rates					
	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
<u>Base Charges (Based on Meter Size)</u>						
Up to 1" Commercial	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5" Commercial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" Commercial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
3" Commercial	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46
4" Commercial	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
5/8"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
3/4"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5"	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2"	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
4"	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
1.5 WA Industrial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" WA IN Industrial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
SW Manual Avg C	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg I	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
MBA Sewer	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
	\$/1,000					
<u>Commodity Charges</u>						
	Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal
Residential	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52
Commercial	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02
Industrial	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88
<u>Industrial Surcharge Fees</u>						
BOD (if over 250 mg/l)	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84
COD (if over 400 mg/l)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
TSS (if over 250 mg/l)	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43
<b>Average Yearly Revenue Increase:</b>	2.1%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
<b>Projected Years</b>						
	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Revenue &amp; Expenses</b>						
Wastewater Revenue	\$1,464,114	\$1,489,461	\$1,522,226	\$1,555,707	\$1,589,924	\$1,624,890
Other Income	\$42,200	\$44,100	\$46,100	\$48,100	\$50,200	\$52,400
<b>Total Operating Revenue</b>	<b>\$1,506,314</b>	<b>\$1,533,561</b>	<b>\$1,568,326</b>	<b>\$1,603,807</b>	<b>\$1,640,124</b>	<b>\$1,677,290</b>
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>	\$497,900	\$594,600	\$614,700	\$635,500	\$657,100	\$679,600
<b>Net Operating Revenue</b>	<b>\$1,008,414</b>	<b>\$938,961</b>	<b>\$953,626</b>	<b>\$968,307</b>	<b>\$983,024</b>	<b>\$997,690</b>
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$0	\$0	\$0	\$0	\$0
Existing Bond and Interest Payments	\$556,223	\$553,209	\$554,613	\$560,118	\$559,768	\$558,558
Proposed Bond and Interest Payments	\$0	\$0	\$0	\$0	\$0	\$0
<b>Other Obligations</b>						
Capital Improvements Projects	\$48,700	\$258,800	\$258,800	\$258,800	\$258,800	\$258,800
Reserve	\$73,206	\$74,473	\$76,111	\$77,785	\$79,496	\$81,244

<i>Total Other Obligations</i>	\$121,906	\$333,273	\$334,911	\$336,585	\$338,296	\$340,044
<b>Total Annual Revenue</b>	\$1,506,314	\$1,533,561	\$1,568,326	\$1,603,807	\$1,640,124	\$1,677,290
<b>Total Annual Expenses</b>	\$1,176,028	\$1,481,082	\$1,504,224	\$1,532,203	\$1,555,164	\$1,578,202
<b>Deficiency of Sewer Service Revenue</b>	---	---	---	---	---	---
<b>Beginning Cash Balance</b>	\$4,900,412	\$5,230,698	\$5,283,178	\$5,347,280	\$5,418,884	\$5,503,844
<b>Ending Cash Balance</b>	\$5,230,698	\$5,283,178	\$5,347,280	\$5,418,884	\$5,503,844	\$5,602,932

**Table 37: Proposed Wastewater Rate Schedule 1**

City of Waverly, Nebraska Utility Rate Study <u>Flow of Future Funds - Wastewater</u> <u>WW RS-1</u>						
<b>Monthly Sewer Use Rate Categories:</b>						
	All User Rates					
	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
<u>Base Charges (Based on Meter Size)</u>						
Up to 1" Commercial	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
1.5" Commercial	\$47.84	\$48.32	\$48.80	\$49.29	\$49.78	\$50.28
2" Commercial	\$55.48	\$56.03	\$56.60	\$57.16	\$57.73	\$58.31
3" Commercial	\$72.46	\$73.18	\$73.92	\$74.66	\$75.40	\$76.16
4" Commercial	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
5/8"	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
3/4"	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
1"	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
1.5"	\$47.84	\$48.32	\$48.80	\$49.29	\$49.78	\$50.28
2"	\$55.48	\$56.03	\$56.60	\$57.16	\$57.73	\$58.31
4"	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
1.5 WA Industrial	\$47.84	\$48.32	\$48.80	\$49.29	\$49.78	\$50.28
2" WA IN Industrial	\$55.48	\$56.03	\$56.60	\$57.16	\$57.73	\$58.31
SW Manual Avg C	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
SW Manual Avg	\$36.17	\$36.53	\$36.90	\$37.27	\$37.64	\$38.02
SW Manual Avg I	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
MBA Sewer	\$113.23	\$114.36	\$115.51	\$116.66	\$117.83	\$119.01
<u>Commodity Charges</u>						
	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal
Residential	\$3.52	\$3.56	\$3.59	\$3.63	\$3.66	\$3.70
Commercial	\$5.02	\$5.07	\$5.12	\$5.17	\$5.22	\$5.28
Industrial	\$6.88	\$6.95	\$7.02	\$7.09	\$7.16	\$7.23
<u>Industrial Surcharge Fees</u>						
BOD (if over 250 mg/l)	\$0.84	\$0.85	\$0.86	\$0.87	\$0.87	\$0.88
COD (if over 400 mg/l)	\$0.50	\$0.51	\$0.51	\$0.52	\$0.52	\$0.53
TSS (if over 250 mg/l)	\$0.43	\$0.43	\$0.44	\$0.44	\$0.45	\$0.45
<b>Average Yearly Revenue Increase:</b>	3.1%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
<b>Projected Years</b>						
	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Revenue &amp; Expenses</b>						
Wastewater Revenue	\$1,464,114	\$1,504,356	\$1,552,822	\$1,602,846	\$1,654,482	\$1,707,775
Other Income	\$42,200	\$44,100	\$46,100	\$48,100	\$50,200	\$52,400
<b>Total Operating Revenue</b>	<b>\$1,506,314</b>	<b>\$1,548,456</b>	<b>\$1,598,922</b>	<b>\$1,650,946</b>	<b>\$1,704,682</b>	<b>\$1,760,175</b>
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>	\$497,900	\$594,600	\$614,700	\$635,500	\$657,100	\$679,600
<b>Net Operating Revenue</b>	<b>\$1,008,414</b>	<b>\$953,856</b>	<b>\$984,222</b>	<b>\$1,015,446</b>	<b>\$1,047,582</b>	<b>\$1,080,575</b>
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$0	\$0	\$0	\$0	\$0
Existing Bond and Interest Payments	\$556,223	\$553,209	\$554,613	\$560,118	\$559,768	\$558,558
Proposed Bond and Interest Payments	\$0	\$0	\$0	\$0	\$0	\$0

<b>Other Obligations</b>						
Capital Improvements Projects	\$48,700	\$258,800	\$258,800	\$258,800	\$258,800	\$258,800
Reserve	\$73,206	\$75,218	\$77,641	\$80,142	\$82,724	\$85,389
<i>Total Other Obligations</i>	\$121,906	\$334,018	\$336,441	\$338,942	\$341,524	\$344,189
<b>Total Annual Revenue</b>	\$1,506,314	\$1,548,456	\$1,598,922	\$1,650,946	\$1,704,682	\$1,760,175
<b>Total Annual Expenses</b>	\$1,176,028	\$1,481,827	\$1,505,754	\$1,534,560	\$1,558,392	\$1,582,346
<b>Deficiency of Sewer Service Revenue</b>	---	---	---	---	---	---
<b>Beginning Cash Balance</b>	\$4,900,412	\$5,230,698	\$5,297,328	\$5,390,496	\$5,506,883	\$5,653,173
<b>Ending Cash Balance</b>	\$5,230,698	\$5,297,328	\$5,390,496	\$5,506,883	\$5,653,173	\$5,831,002

**Table 38: Proposed Wastewater Rate Schedule 2**

City of Waverly, Nebraska Utility Rate Study Flow of Future Funds - Wastewater <u>WW RS-2</u>						
<b>Monthly Sewer Use Rate Categories:</b>						
	All User Rates					
	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
<u>Base Charges (Based on Meter Size)</u>						
Up to 1" Commercial	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5" Commercial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" Commercial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
3" Commercial	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46	\$72.46
4" Commercial	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
5/8"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
3/4"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1"	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
1.5"	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2"	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
4"	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
1.5 WA Industrial	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84	\$47.84
2" WA IN Industrial	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48	\$55.48
SW Manual Avg C	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17	\$36.17
SW Manual Avg I	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
MBA Sewer	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23	\$113.23
<u>Commodity Charges</u>						
	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal
Residential	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52	\$3.52
Commercial	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02	\$5.02
Industrial	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88	\$6.88
<u>Industrial Surcharge Fees</u>						
BOD (if over 250 mg/l)	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84	\$0.84
COD (if over 400 mg/l)	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
TSS (if over 250 mg/l)	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43
<b>Average Yearly Revenue Increase:</b>	2.1%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
<b>Projected Years</b>						
	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
<b>Operating Revenue &amp; Expenses</b>						
Wastewater Revenue	\$1,464,114	\$1,489,461	\$1,522,226	\$1,555,707	\$1,589,924	\$1,624,890
Other Income	\$42,200	\$44,100	\$46,100	\$48,100	\$50,200	\$52,400
Total Operating Revenue	\$1,506,314	\$1,533,561	\$1,568,326	\$1,603,807	\$1,640,124	\$1,677,290
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>	\$497,900	\$594,600	\$614,700	\$635,500	\$657,100	\$679,600
<b>Net Operating Revenue</b>	\$1,008,414	\$938,961	\$953,626	\$968,307	\$983,024	\$997,690
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$1,294,000	\$0	\$0	\$0	\$0
Existing Bond and Interest Payments	\$556,223	\$553,209	\$554,613	\$560,118	\$559,768	\$558,558
Proposed Bond and Interest Payments	\$0	\$0	\$114,358	\$114,358	\$114,358	\$114,358

<b>Other Obligations</b>						
Capital Improvements Projects	\$48,700	\$258,800	\$258,800	\$258,800	\$258,800	\$258,800
Reserve	\$73,206	\$74,473	\$76,111	\$77,785	\$79,496	\$81,244
<i>Total Other Obligations</i>	\$121,906	\$333,273	\$334,911	\$336,585	\$338,296	\$340,044
<b>Total Annual Revenue</b>	\$1,506,314	\$2,827,561	\$1,568,326	\$1,603,807	\$1,640,124	\$1,677,290
<b>Total Annual Expenses</b>	\$1,176,028	\$1,481,082	\$1,618,582	\$1,646,561	\$1,669,522	\$1,692,560
<b>Deficiency of Sewer Service Revenue</b>	---	---	-3.2%	-3%	-1.8%	-0.9%
<b>Beginning Cash Balance</b>	\$4,900,412	\$5,230,698	\$6,577,178	\$6,526,921	\$6,484,167	\$6,454,769
<b>Ending Cash Balance</b>	\$5,230,698	\$6,577,178	\$6,526,921	\$6,484,167	\$6,454,769	\$6,439,498

**Table 39: Proposed Wastewater Rate Schedule 3**

City of Waverly, Nebraska Utility Rate Study Flow of Future Funds - Wastewater WW RS-3						
Monthly Sewer Use Rate Categories:						
	All User Rates					
	2024	2025	2026	2027	2028	2029
<u>Base Charges (Based on Meter Size)</u>						
Up to 1" Commercial	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
1.5" Commercial	\$47.84	\$48.80	\$49.77	\$50.77	\$51.78	\$52.82
2" Commercial	\$55.48	\$56.59	\$57.72	\$58.88	\$60.05	\$61.25
3" Commercial	\$72.46	\$73.91	\$75.39	\$76.90	\$78.43	\$80.00
4" Commercial	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
5/8"	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
3/4"	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
1"	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
1.5"	\$47.84	\$48.80	\$49.77	\$50.77	\$51.78	\$52.82
2"	\$55.48	\$56.59	\$57.72	\$58.88	\$60.05	\$61.25
4"	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
1.5 WA Industrial	\$47.84	\$48.80	\$49.77	\$50.77	\$51.78	\$52.82
2" WA IN Industrial	\$55.48	\$56.59	\$57.72	\$58.88	\$60.05	\$61.25
SW Manual Avg C	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
SW Manual Avg	\$36.17	\$36.89	\$37.63	\$38.38	\$39.15	\$39.93
SW Manual Avg I	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
MBA Sewer	\$113.23	\$115.49	\$117.80	\$120.16	\$122.56	\$125.02
<u>Commodity Charges</u>						
	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal	\$/1,000 Gal
Residential	\$3.52	\$3.59	\$3.66	\$3.74	\$3.81	\$3.89
Commercial	\$5.02	\$5.12	\$5.22	\$5.33	\$5.43	\$5.54
Industrial	\$6.88	\$7.02	\$7.16	\$7.30	\$7.45	\$7.60
<u>Industrial Surcharge Fees</u>						
BOD (if over 250 mg/l)	\$0.84	\$0.86	\$0.87	\$0.89	\$0.91	\$0.93
COD (if over 400 mg/l)	\$0.50	\$0.51	\$0.52	\$0.53	\$0.54	\$0.55
TSS (if over 250 mg/l)	\$0.43	\$0.44	\$0.45	\$0.46	\$0.47	\$0.47
<b>Average Yearly Revenue Increase:</b>	4.1%	<b>Inflation:</b>	4.0%	<b>Reserve Fund:</b>	5.0%	
Projected Years						
	2024	2025	2026	2027	2028	2029
<b>Operating Revenue &amp; Expenses</b>						
Wastewater Revenue	\$1,464,114	\$1,519,251	\$1,583,724	\$1,650,929	\$1,720,985	\$1,794,010
Other Income	\$42,200	\$44,100	\$46,100	\$48,100	\$50,200	\$52,400
<b>Total Operating Revenue</b>	<b>\$1,506,314</b>	<b>\$1,563,351</b>	<b>\$1,629,824</b>	<b>\$1,699,029</b>	<b>\$1,771,185</b>	<b>\$1,846,410</b>
<i>O &amp; M Expenses (Less Depreciation, Capital Improvements, and Debt Service)</i>	\$497,900	\$594,600	\$614,700	\$635,500	\$657,100	\$679,600
<b>Net Operating Revenue</b>	<b>\$1,008,414</b>	<b>\$968,751</b>	<b>\$1,015,124</b>	<b>\$1,063,529</b>	<b>\$1,114,085</b>	<b>\$1,166,810</b>
<b>Debt Service</b>						
Proposed Bond Issuance	\$0	\$0	\$0	\$0	\$0	\$0
Existing Bond and Interest Payments	\$556,223	\$553,209	\$554,613	\$560,118	\$559,768	\$558,558
Proposed Bond and Interest Payments	\$0	\$0	\$0	\$0	\$0	\$0

<b>Other Obligations</b>						
Capital Improvements Projects	\$48,700	\$258,800	\$258,800	\$258,800	\$258,800	\$258,800
Reserve	\$73,206	\$75,963	\$79,186	\$82,546	\$86,049	\$89,700
<i>Total Other Obligations</i>	\$121,906	\$334,763	\$337,986	\$341,346	\$344,849	\$348,500
<b>Total Annual Revenue</b>	\$1,506,314	\$1,563,351	\$1,629,824	\$1,699,029	\$1,771,185	\$1,846,410
<b>Total Annual Expenses</b>	\$1,176,028	\$1,482,571	\$1,507,299	\$1,536,964	\$1,561,717	\$1,586,658
<b>Deficiency of Sewer Service Revenue</b>	---	---	---	---	---	---
<b>Beginning Cash Balance</b>	\$4,900,412	\$5,230,698	\$5,311,477	\$5,434,002	\$5,596,067	\$5,805,535
<b>Ending Cash Balance</b>	\$5,230,698	\$5,311,477	\$5,434,002	\$5,596,067	\$5,805,535	\$6,065,287



The following table shows the resulting percentage of fixed and variable revenue for each year in the existing and proposed rate structures. Revenue from the base charge is considered fixed and revenue from the commodity charge is considered variable.

**Table 40: Fixed vs. Variable Wastewater Revenue**

Proposed Wastewater Rate Schedule 1						
Revenue Type	2024	2025	2026	2027	2028	2029
Fixed	50%	50%	50%	50%	50%	50%
Variable	50%	50%	50%	50%	50%	50%
Proposed Wastewater Rate Schedule 2						
Revenue Type	2024	2025	2026	2027	2028	2029
Fixed	50%	50%	50%	50%	50%	50%
Variable	50%	50%	50%	50%	50%	50%
Proposed Wastewater Rate Schedule 3						
Revenue Type	2024	2025	2026	2027	2028	2029
Fixed	50%	50%	50%	50%	50%	50%
Variable	50%	50%	50%	50%	50%	50%

In order to more accurately determine the impacts of the proposed rate structures on individual users, seven (7) hypothetical users were analyzed in regard to their monthly bill for each year of the study period.

The following table shows the projected monthly bill for each user type and what the monthly user bills would have been with the existing rate ordinance over the study period.

As MBA Poultry is the lone industrial user in town, with high wastewater production and high pollutant loadings commonly subject to surcharge rates, a separate projection was created for this user for each proposed rate schedule. Projected flows and loads are estimated from available historical data.

**Table 41: User Impacts WW RS-1**

Proposed Wastewater Rate Structure 1							
Monthly Bill	Usage/Month	2024	2025	2026	2027	2028	2029
<b>Residential</b>							
Low User - 1" Meter	1,500	\$41.45	\$41.86	\$42.28	\$42.71	\$43.13	\$43.56
Average User - 1" Meter	7,500	\$62.57	\$63.20	\$63.83	\$64.47	\$65.11	\$65.76
High User - 1" Meter	10,000	\$71.37	\$72.08	\$72.80	\$73.53	\$74.27	\$75.01
<b>Commercial</b>							
Low User - 3" Meter	20,000	\$172.86	\$174.59	\$176.33	\$178.10	\$179.88	\$181.68
Average User - 3" Meter	80,000	\$474.06	\$478.80	\$483.59	\$488.42	\$493.31	\$498.24
High User - 3" Meter	150,000	\$825.46	\$833.71	\$842.05	\$850.47	\$858.98	\$867.57
<b>Industrial</b>							
MBA - 4" Meter	2,242,044	\$32,197.77	\$32,519.74	\$32,844.94	\$33,173.39	\$33,505.12	\$33,840.18

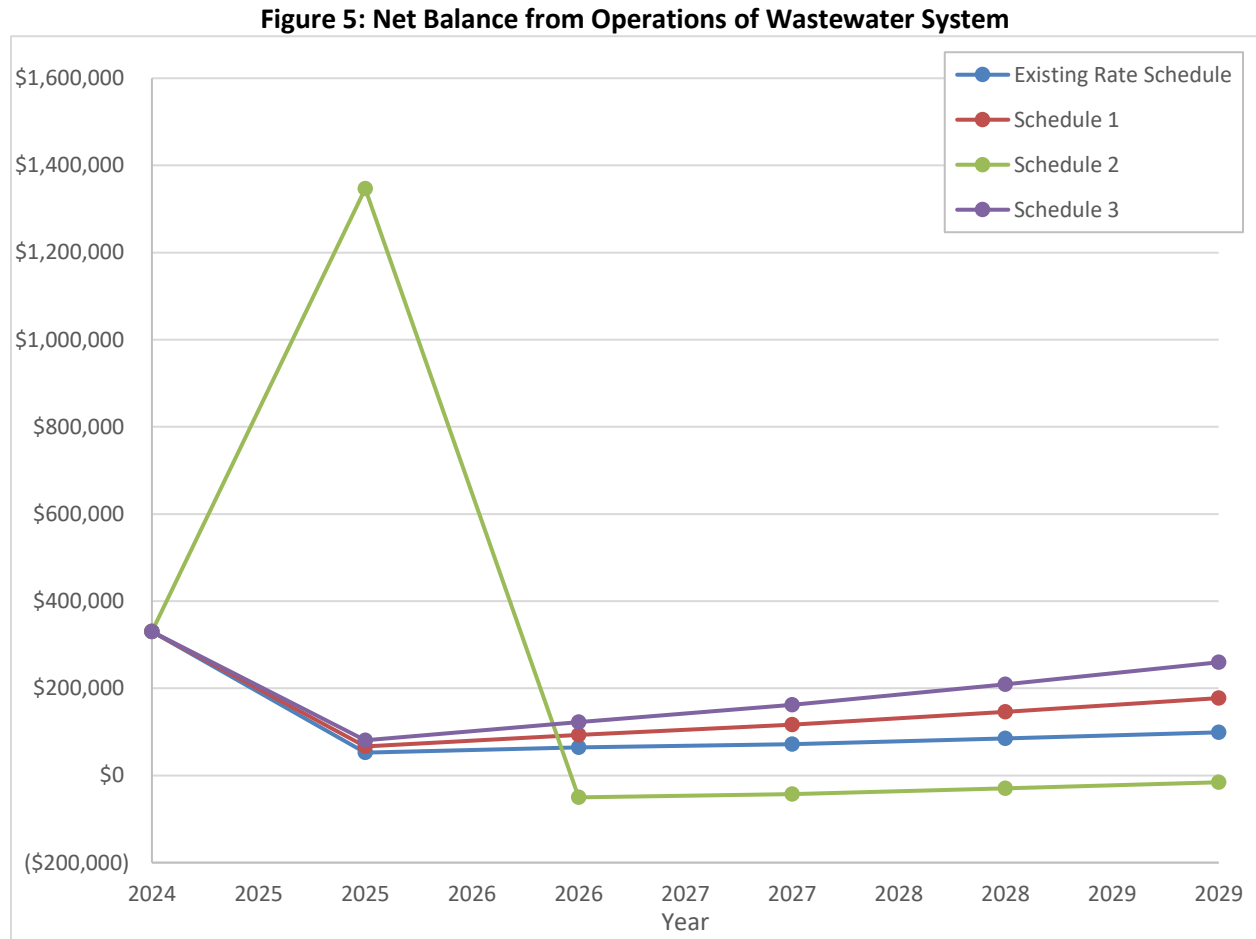
**Table 42: User Impacts WW RS-2**

Proposed Wastewater Rate Structure 2							
Monthly Bill	Usage/Month	2024	2025	2026	2027	2028	2029
<b>Residential</b>							
Low User - 1" Meter	1,500	\$41.45	\$41.45	\$41.45	\$41.45	\$41.45	\$41.45
Average User - 1" Meter	7,500	\$62.57	\$62.57	\$62.57	\$62.57	\$62.57	\$62.57
High User - 1" Meter	10,000	\$71.37	\$71.37	\$71.37	\$71.37	\$71.37	\$71.37
<b>Commercial</b>							
Low User - 3" Meter	20,000	\$172.86	\$172.86	\$172.86	\$172.86	\$172.86	\$172.86
Average User - 3" Meter	80,000	\$474.06	\$474.06	\$474.06	\$474.06	\$474.06	\$474.06
High User - 3" Meter	150,000	\$825.46	\$825.46	\$825.46	\$825.46	\$825.46	\$825.46
<b>Industrial</b>							
MBA - 4" Meter	2,242,044	\$32,197.77	\$32,197.77	\$32,197.77	\$32,197.77	\$32,197.77	\$32,197.77

**Table 43: User Impacts WW RS-3**

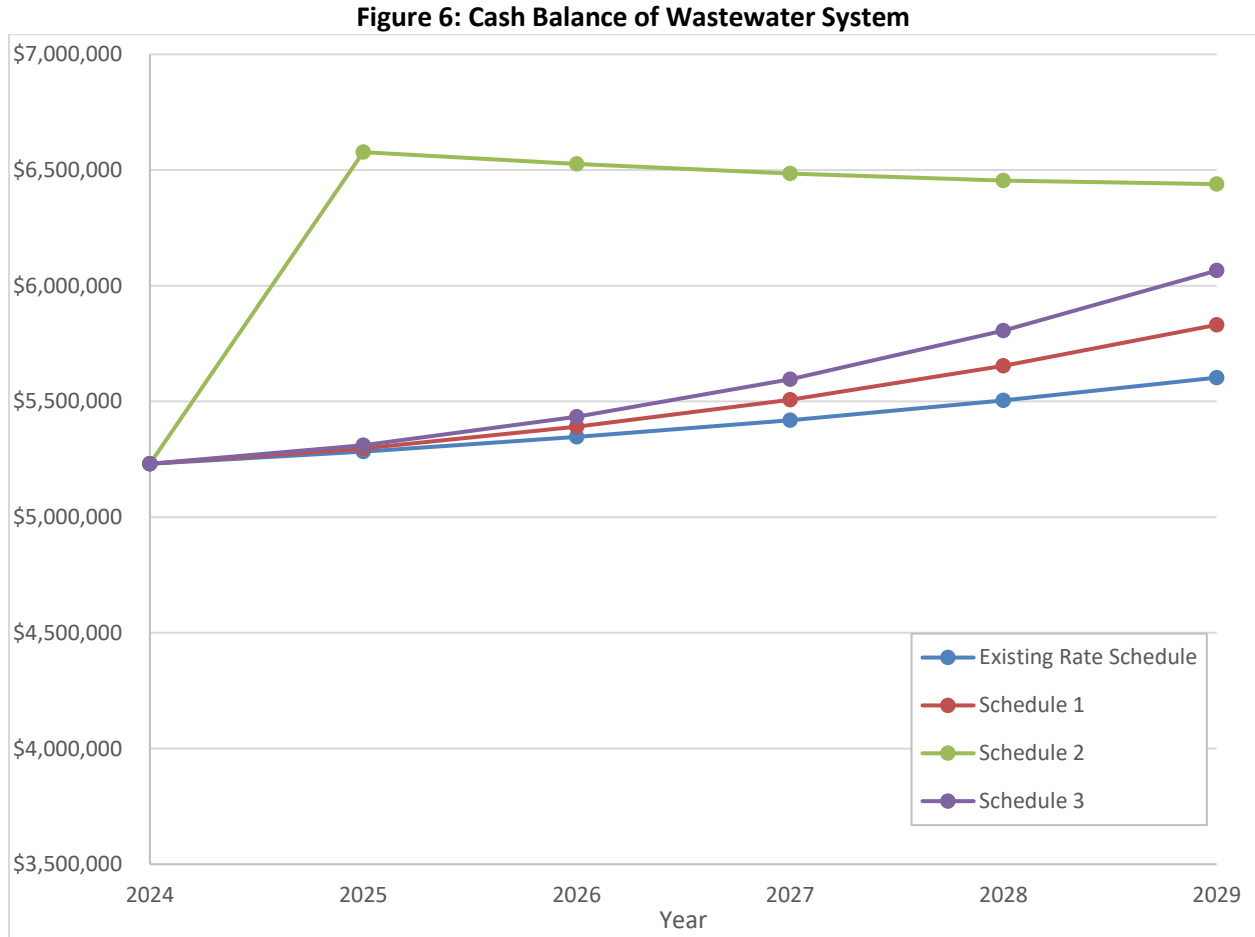
Proposed Wastewater Rate Structure 3							
Monthly Bill	Usage/Month	2024	2025	2026	2027	2028	2029
<b>Residential</b>							
Low User - 1" Meter	1,500	\$41.45	\$42.28	\$43.12	\$43.99	\$44.87	\$45.76
Average User - 1" Meter	7,500	\$62.57	\$63.82	\$65.10	\$66.40	\$67.73	\$69.08
High User - 1" Meter	10,000	\$71.37	\$72.80	\$74.25	\$75.74	\$77.25	\$78.80
<b>Commercial</b>							
Low User - 3" Meter	20,000	\$172.86	\$176.32	\$179.84	\$183.44	\$187.11	\$190.85
Average User - 3" Meter	80,000	\$474.06	\$483.54	\$493.21	\$503.08	\$513.14	\$523.40
High User - 3" Meter	150,000	\$825.46	\$841.97	\$858.81	\$875.98	\$893.50	\$911.37
<b>Industrial</b>							
MBA - 4" Meter	2,242,044	\$32,197.77	\$32,841.72	\$33,498.56	\$34,168.53	\$34,851.90	\$35,548.94

**Figure 5: Net Balance from Operations of Wastewater System** shows the net Income of the wastewater system for each calendar year for each rate schedule.



The net balance of operations displayed in **Figure 5** includes the expenses of operation and maintenance, capital improvement projects, reserves, and debt service for each year.

**Figure 6: Cash Balance of Sewer System** shows the cumulative cash balance of the wastewater system for each rate schedule over the study period.



The cash balances listed in **Figure 6** include the expenses of capital improvements, reserves, and debt service for each year. Typically, it is recommended for utility systems to have one year of operations and maintenance costs and one year of bond payments in cash for emergencies and fluctuations in users. A target wastewater utility cash balance for the City of Waverly would be between approximately \$1,200,000 and \$1,400,000, depending on the size of the bond payments included in the rate schedule.

### **Section 9: Recommendations – Wastewater Department:**

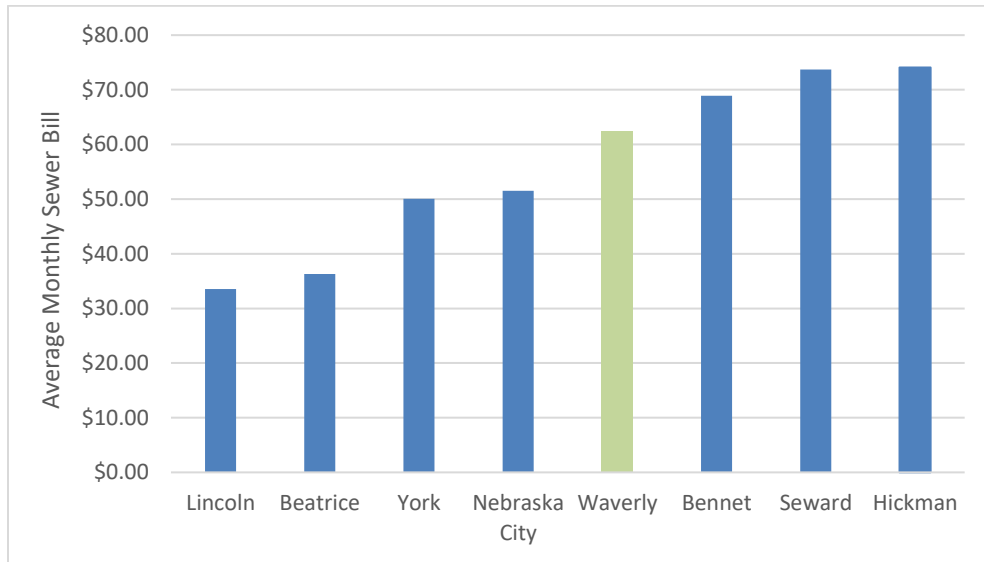
After reviewing the impacts of the proposed rate schedules on the projected finances of the wastewater department, it is recommended that the City of Waverly implement a rate schedule that provides an annual inflationary raise. The City is currently maintaining a high cash balance, and has the required funding to pay cash for all planned wastewater capital improvements and maintenance projects. However, **Rate Schedule 3** provides an annual 2% inflationary raise to reduce the effects of inflation on the city’s cash reserves. The proposed rate increases are gradual affecting the average user approximately \$1.30 per month per year and results in very strong wastewater financials for 2029. Finally, it is recommended that the City of Waverly revisit the rates every 3-5 years and update them accordingly to reflect changed conditions.

The City of Lincoln, NE completed a wastewater rate survey of surrounding communities in November 2023. The survey considered the average wastewater bill for an average user and included both the base rate and commodity charge for the utilization of 7,480 gal/mo. The City of Waverly was included in this rate survey and the results are displayed below in **Table 44** and **Figure 7**. The rate survey can provide a good metric for comparing the rates of surrounding communities, although no two communities share the same needs, circumstances, and resources.

**Table 44: Existing Wastewater Rate Survey Results**

<b>Community</b>	<b>2023 Average Monthly Sewer Bill</b>
Lincoln	\$33.54
Beatrice	\$36.31
York	\$50.05
Nebraska City	\$51.52
<b>Waverly</b>	<b>\$62.50</b>
Bennet	\$68.88
Seward	\$73.72
Hickman	\$74.08

**Figure 7: Existing Wastewater Rate Survey Comparison**



To better visualize the impact of the proposed rate schedule (#3) on the rate survey comparison, **Table 45** and **Figure 8** have been created to show the City of Waverly’s position at the end of the planning period. Of note, all other communities’ average monthly water bills have been frozen in the year 2023 and is likely to underrepresent their year 2029 averages.

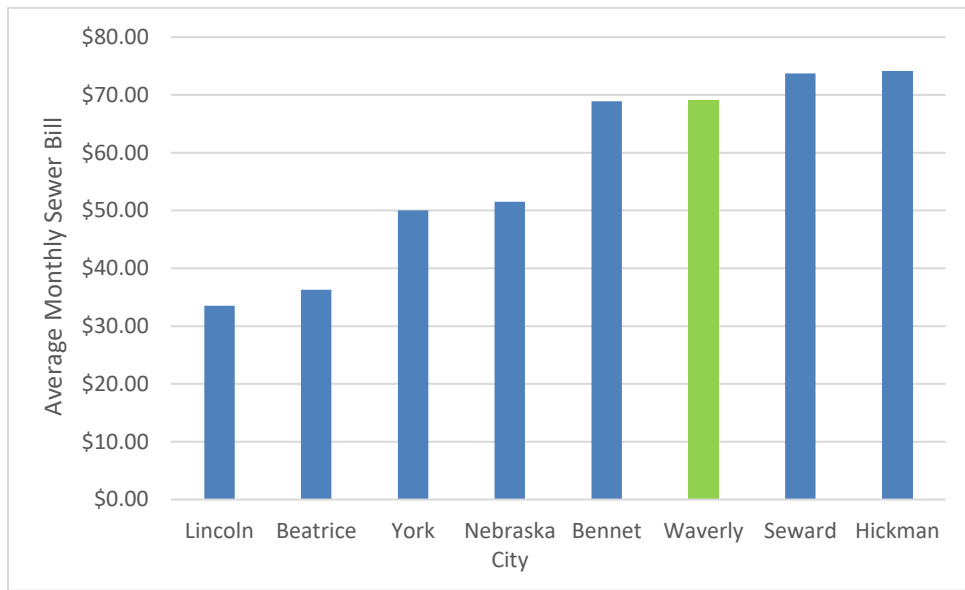
**Table 45: Proposed Wastewater Rate Survey Results**

Community	2029 Average Monthly Sewer Bill <sup>1</sup>
Lincoln	\$33.54
Beatrice	\$36.31
York	\$50.05
Nebraska City	\$51.52
Bennet	\$68.88
Waverly	\$69.08
Seward	\$73.72
Hickman	\$74.08

<sup>1</sup> Only the City of Waverly’s average monthly sewer bill is projected to 2029, using proposed rate schedule 3. All other community’s average monthly sewer bills are shown as in 2023.

<sup>2</sup> For their sewer rate survey analysis, the City of Lincoln used a residential customer with a 3/4” meter using an average of 7,480 gallons/month. This example customer was used in projecting the 2029 average monthly sewer bill for the City of Waverly.

**Figure 8: Proposed Wastewater Rate Survey Comparison**



**Section 10: Combined Utility Bill Analysis:**

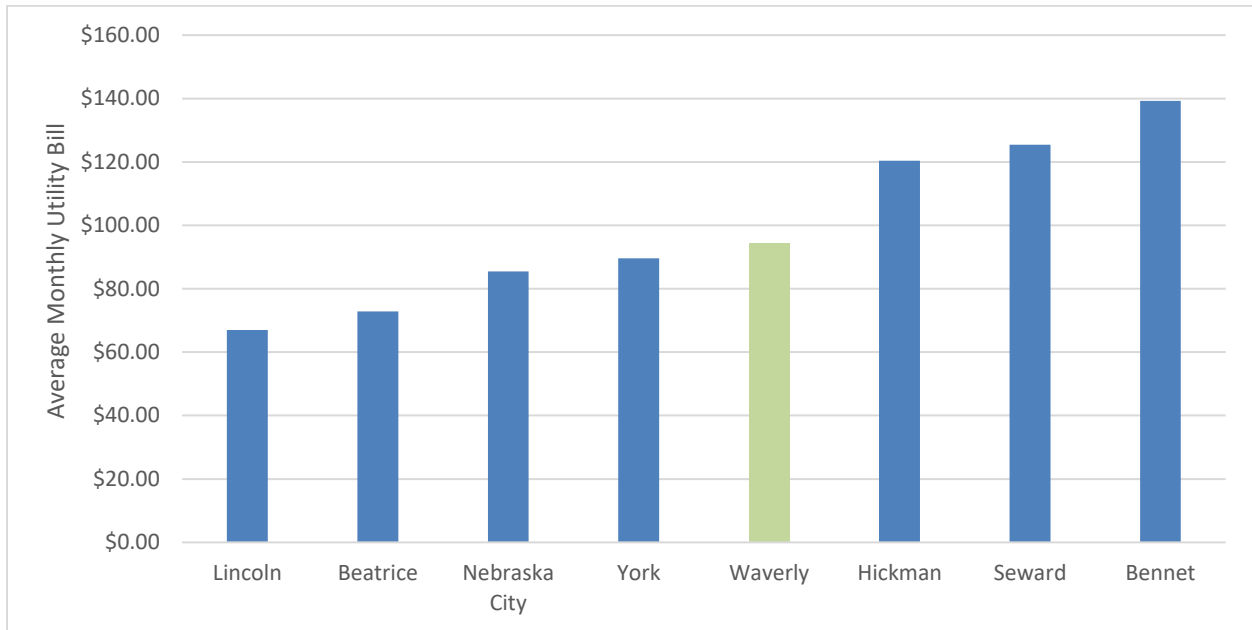
While the focus of this report has been on the water and sewer rates individually, as they use separate accounting and have separate rates and expenses associated with each, it is useful to realize that the combination of the water and sewer make up a singular utility bill. Therefore, the following tables **(46 and 47)** and figures **(9 and 10)** compare the combined overall utility bill of the surrounding communities included in the 2023 Lincoln, NE rate survey. It shall again be noted that while the rate survey can provide a good metric for comparing the rates of surrounding communities, no two communities share the same needs, circumstances, and resources.

**Table 46: Existing Total Utility Rate Survey Results**

Community	2023 Average Monthly Utility Bill
Lincoln	\$66.99
Beatrice	\$72.89
Nebraska City	\$85.51
York	\$89.56
Waverly	\$94.40
Hickman	\$120.38
Seward	\$125.48
Bennet	\$139.27



**Figure 9: Existing Total Utility Rate Survey Comparison**



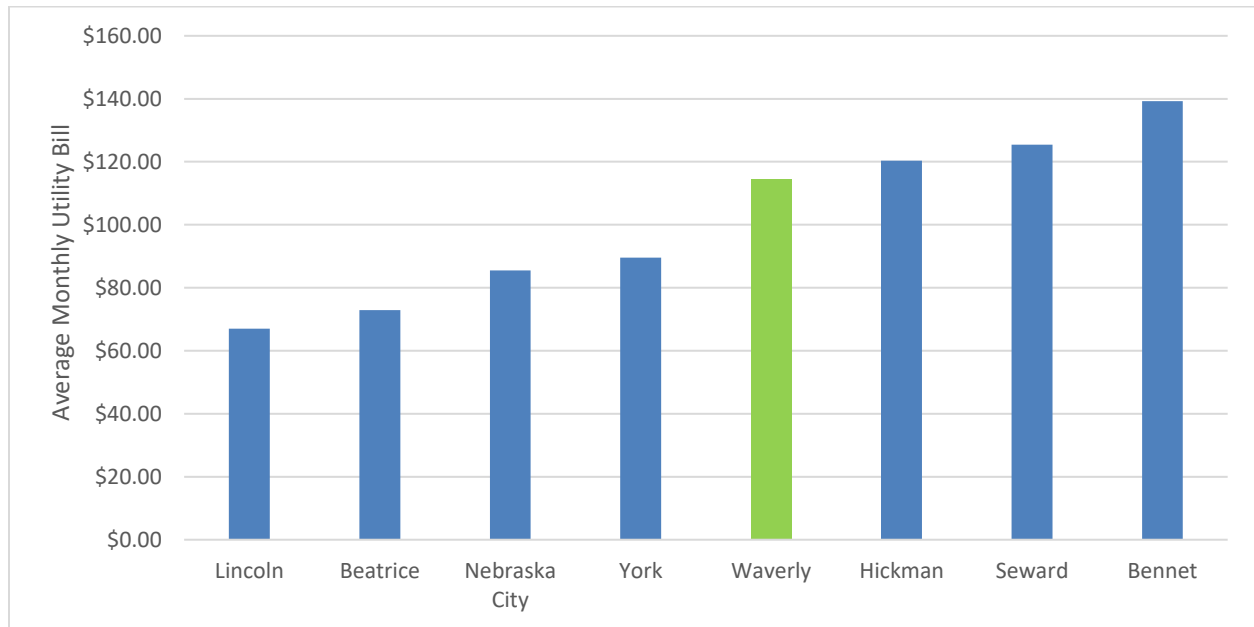
To better visualize the impact of the proposed rate schedules on the rate survey comparison, **Table 47** and **Figure 10** have been created to show the City of Waverly’s position at the end of the planning period. Of note, all other communities average monthly water bills have been frozen in the year 2018 and is likely to underrepresent their year 2029 averages.

**Table 47: Proposed Total Utility Rate Survey Results**

Community	2029 Average Monthly Sewer Bill <sup>1</sup>
Lincoln	\$66.99
Beatrice	\$72.89
Nebraska City	\$85.51
York	\$89.56
<b>Waverly</b>	<b>\$114.43</b>
Hickman	\$120.38
Seward	\$125.48
Bennet	\$139.27

<sup>1</sup> Only the City of Waverly’s average monthly utility bill is projected to 2029, using the proposed rate schedules. All other community’s average monthly utility bills are shown as in 2023.

**Figure 10: Proposed Total Utility Rate Survey Comparison**



Ideally, a utility would like to keep itself from being among the highest or lowest when comparing rates with surrounding communities. As can be seen above in **Table 47** and **Figure 10**, after implementing the proposed water and wastewater rate schedules, the City of Waverly’s projected total utility bill will maintain its relative position amongst the surrounding communities near the middle of the group.