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# **Wastewater Rate Study**

## **Executive Summary**

Prepared for the  
**City of Appleton**

by Trilogy Consulting, LLC

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## INTRODUCTION

The City of Appleton owns and operates a wastewater utility that includes a collection system, sewer interceptors, 14 lift stations, and a Wastewater Treatment Plant (WWTP). The utility provides wastewater service to over 28,000 customers within the City, including several high-strength industrial customers, a hauled waste customers from outside the sewer service area, and over 500 customers located in the Town of Grand Chute. The City is required to treat the following primary conventional pollutants at its wastewater treatment plant: organic pollutants or biological oxygen demand (BOD), total suspended solids (TSS), phosphorus (P), and ammonia nitrogen (NH<sub>3</sub>-N).

The City last completed a wastewater rate study in 2009. An overall increase of 5 percent was recommended and implemented on July 1, 2011. Since that time, there have been no adjustments to the general user rates.

This study consisted of: 1) determining overall recommended increases in user charge revenues to fund anticipated increases in operation and maintenance expenses, routine sewer main and equipment replacements and the WWTP upgrades; 2) a cost of service study to fairly allocate costs between different classes of customers; and 3) rate design to determine the user charge rates needed to recover costs. As part of the study, a six-year schedule of projected rate increases, and a ten-year forecast of Utility cash flows were developed.

The purpose of the Wastewater Rate Study was two-fold: 1) to recommend rates that would collect adequate revenues for the City of Appleton Wastewater Utility to fulfill its current and upcoming obligations; and 2) to allocate costs to all customer classes in proportion to their use of the wastewater system. In addition to the existing rates for BOD and suspended solids, this study included evaluating the costs associated with treating phosphorus and ammonia and establishing rates for these pollutants.

This study recommends that rates be increased in response to changes in expenses and customer sales that have occurred over the last 10 years, to fund the Utility's \$67.3 million capital improvement program over the next ten years, and to maintain an adequate level of reserve funds.

## KEY FINDINGS AND RECOMMENDATIONS

The evaluation of the Utility's financial condition over the last five years and projections for the next ten years resulted in the following findings:

- Appleton’s sewer user charge rates are currently very low compared to other area and peer communities.
- The Utility’s revenues increased slightly from year to year during the last five years (2015-2019). However, fluctuations in expenses and capital outlay have resulted in fluctuating cash flows. Cash flow was positive for every year except 2019, which saw a negative cash flow of just over \$450,000.
- Revenues for 2020 are projected to be about \$2.6 million, or 19 percent, less than 2019 revenues due to a reduction in waste from a hauled waste customer that represents about 15 percent of Utility revenues, and a reduction in operations for a large industrial customer. Due to this loss of revenues, cash flow for 2020 is projected to be negative.
- The Utility has expended approximately \$14.6 million on capital improvements during the last five years, or an average of \$2.9 million per year.
- The Utility has \$50.6 million of capital improvements planned for 2021-2026, or an average of \$8.4 million per year. The Utility plans to fund \$30.8 million of the 2021-2026 improvements through debt, \$4.9 million from existing reserves, and \$14.9 million through annual user charge revenues.
- The Utility needs to increase revenues by approximately \$5.0 million per year by 2026. Of this amount, \$3.0 million is to cover loss of revenues and increases in O&M expenses and \$2.0 million is to cover increased debt service and cash funded capital improvements, net of amounts to be drawn from existing reserves.

Two alternative scenarios for increasing revenues were evaluated and discussed with Utility staff – one that would increase revenues by 19.0 percent in 2021 and another 19 percent in 2022, and one that would increase revenues by 20 percent in 2021 and 4 percent per year for 2022-2026.

The recommended plan includes a 20 percent overall increase in 2021 and 4 percent per year increases in 2022-2026. This plan is projected to increase Utility revenues by about \$5.0 million by 2026. The schedule of rates and the comparison with area sewer rates are shown in the following tables. Even with the proposed increase in 2021, Appleton’s annual sewer charges for a typical residential customer will remain very low compared to other area and peer communities.

**Table 1 - Current and Proposed Rate Schedule**

Quarterly Minimum Charge	Connection Size	Current Rate	Proposed	Projected	Projected	Projected	Projected	Projected
			Rates - 2021	Rates - 2022	Rates - 2023	Rates - 2024	Rates - 2025	Rates - 2026
	5/8	\$13.60	\$15.40	\$16.00	\$16.60	\$17.30	\$18.00	\$18.70
	3/4	\$13.60	\$15.40	\$16.00	\$16.60	\$17.30	\$18.00	\$18.70
	1	\$25.00	\$27.70	\$28.80	\$30.00	\$31.20	\$32.40	\$33.70
	1 1/4	\$34.00	\$38.20	\$39.70	\$41.30	\$43.00	\$44.70	\$46.50
	1 1/2	\$44.00	\$49.00	\$51.00	\$53.00	\$55.10	\$57.30	\$59.60
	2	\$68.00	\$75.30	\$78.30	\$81.40	\$84.70	\$88.10	\$91.60
	2 1/2	\$0.00	\$106.60	\$110.90	\$115.30	\$119.90	\$124.70	\$129.70
	3	\$121.00	\$130.60	\$135.80	\$141.20	\$146.80	\$152.70	\$158.80
	4	\$199.00	\$207.70	\$216.00	\$224.60	\$233.60	\$242.90	\$252.60
	6	\$391.00	\$393.40	\$409.10	\$425.50	\$442.50	\$460.20	\$478.60
	8	\$622.00	\$622.00	\$646.90	\$672.80	\$699.70	\$727.70	\$756.80
	10	\$0.00	\$909.70	\$946.10	\$983.90	\$1,023.30	\$1,064.20	\$1,106.80
	12	\$0.00	\$1,204.00	\$1,252.20	\$1,302.30	\$1,354.40	\$1,408.60	\$1,464.90
	Units	Current Rate	Proposed Rates - 2021	Projected Rates - 2022	Projected Rates - 2023	Projected Rates - 2024	Projected Rates - 2025	Projected Rates - 2026
<b>Volume Charge</b>	\$/1,000 gallons	\$2.73	\$3.61	\$3.75	\$3.90	\$4.06	\$4.22	\$4.39
<b>Industrial Q/Q Rates</b>								
Volume	\$/1,000 gallons	\$1.73	\$2.34	\$2.43	\$2.53	\$2.63	\$2.74	\$2.85
BOD	\$/100 lbs	\$35.48	\$33.80	\$35.15	\$36.56	\$38.02	\$39.54	\$41.12
TSS	\$/100 lbs	\$11.26	\$11.40	\$11.86	\$12.33	\$12.82	\$13.33	\$13.86
Phosphorus	\$/100 lbs	NA	\$370.75	\$385.58	\$401.00	\$417.04	\$433.72	\$451.07
TKN	\$/100 lbs	NA	\$131.14	\$136.39	\$141.85	\$147.52	\$153.42	\$159.56
<b>Sanitary Waste Haulers</b>								
Volume	\$/ton	\$4.40	\$10.20	\$10.61	\$11.03	\$11.47	\$11.93	\$12.41
Per Load		\$9.45	\$11.30	\$11.75	\$12.22	\$12.71	\$13.22	\$13.75
Per Customer	per quarter	\$15.75	\$17.70	\$18.41	\$19.15	\$19.92	\$20.72	\$21.55

Figure 1 - Comparison of Annual Residential Wastewater Bills with Peer Communities

