



# City of Appleton

100 North Appleton Street  
Appleton, WI 54911-4799  
www.appleton.org

## Meeting Agenda - Final Utilities Committee

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Tuesday, October 25, 2022

4:30 PM

Council Chambers, 6th Floor

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1. Call meeting to order

2. Roll call of membership

3. Approval of minutes from previous meeting

[22-1336](#) Approval of the October 11, 2022 Utilities Committee Meeting minutes.

**Attachments:** [October 11, 2022 Utilities Committee Meeting Minutes.pdf](#)

4. **Public Hearings/Apearances**

5. **Action Items**

[22-1347](#) Approve Wastewater rate increase of 7% for general service and special hauled waste service and compost fee to \$12/cu. yard to be effective January 1, 2023.

**Attachments:** [Wastewater Rate Increase.pdf](#)

6. **Information Items**

[22-1337](#) Monthly Reports for July, August, and September 2022:  
- Wastewater Treatment Plant Synopsis and Receiving Station Revenue Report  
- Water Treatment Facility Synopsis  
- Water Distribution and Meter Team Monthly Report - September

**Attachments:** [2022 Q3 Wastewater Plant Synopsis.pdf](#)

[2022 Q3 Water Plant Synopsis.pdf](#)

[Water Main Breaks - September 2022.pdf](#)

7. **Adjournment**

*Notice is hereby given that a quorum of the Common Council may be present during this meeting, although no Council action will be taken.*

*Reasonable Accommodations for Persons with Disabilities will be made upon Request and if Feasible.*

*For questions on the agenda, contact Chris Shaw at 920-832-5945 or Danielle Block at 920-832-6474.*



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## Meeting Minutes - Final Utilities Committee

---

Tuesday, October 11, 2022

4:30 PM

Council Chambers, 6th Floor

---

1. Call meeting to order

*Chairperson Meltzer called the Utilities Committee meeting to order at 4:30 p.m.*

2. Roll call of membership

**Present:** 5 - Meltzer, Doran, Firkus, Jones and Schultz

3. Approval of minutes from previous meeting

[22-1248](#)

Approval of the September 13, 2022 Utilities Committee Meeting minutes.

**Attachments:** [September 13, 2022 Utilities Committee Meeting Minutes.pdf](#)

**Jones moved, seconded by Firkus, that the Minutes be approved. Roll Call. Motion carried by the following vote:**

**Aye:** 5 - Meltzer, Doran, Firkus, Jones and Schultz

4. Public Hearings/Appearances

5. Action Items

[22-1249](#)

Approve changes to Municipal Code Chapter 24, Erosion and Sediment Control.

**Attachments:** [2022 Sept ESC Ord revisions combined.pdf](#)

**Firkus moved, seconded by Doran, that the Report Action Item be recommended for approval. Roll Call. Motion carried by the following vote:**

**Aye:** 5 - Meltzer, Doran, Firkus, Jones and Schultz

[22-1250](#)

Approve changes to Erosion and Sediment Control Program.

**Attachments:** [2022 Sept ESC Program combined.pdf](#)

**Firkus moved, seconded by Schultz, that the Report Action Item be recommended for approval. Roll Call. Motion carried by the following vote:**

**Aye:** 5 - Meltzer, Doran, Firkus, Jones and Schultz

[22-1274](#)

Request to approve 2023 Add-on Water Main Replacement Project List.

**Attachments:** [Utilities Committees - 10-11-22 - Project List - 2023 Add-on Water Main Replacements.pdf](#)

**Firkus moved, seconded by Jones, that the Report Action Item be recommended for approval. Roll Call. Motion carried by the following vote:**

**Aye:** 5 - Meltzer, Doran, Firkus, Jones and Schultz

## 6. Information Items

[22-1276](#)

2023 Utilities Department Budgets

*This item was discussed.*

[22-1251](#)

Monthly Reports for August 2022:  
- Water Distribution and Meter Team Monthly Report

**Attachments:** [Water Main Breaks - August 2022.pdf](#)

*This item was discussed.*

## 7. Adjournment

**Firkus moved, seconded by Jones, that the Utilities Committee meeting be adjourned at 4:52 p.m.. Roll Call. Motion carried by the following vote:**

**Aye:** 5 - Meltzer, Doran, Firkus, Jones and Schultz



"...meeting community needs...enhancing quality of life."

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Finance Department  
100 N. Appleton Street  
Appleton, WI 54912  
920-832-6442

**TO:** Chairperson Vered Meltzer and Members of the Utilities Committee

**FROM:** Kelli Rindt, Enterprise Fund Accounting Manager

**DATE:** October 19, 2022

**RE:** *Approve wastewater rate increase of 7% for general service and special hauled waste service and increase compost fee to \$12/cu. yard to be effective January 1, 2023.*

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**BACKGROUND:**

The Utility Department contracted with Trilogy Consulting in 2020 to complete a comprehensive rate study that reviewed cash flow needs and recommended an initial rate increase of 20% in 2021 and 4% annual rate increases for a five-year period starting in 2022 to funds operations and future capital improvements. The study also established rates for Phosphorus and TKN (Total Kjeldahl Nitrogen) processing for high-strength quantity and quality customers.

As part of the rate approval process in 2020 it was acknowledged, that future rate needs would be reviewed annually and would be presented to committee for approval.

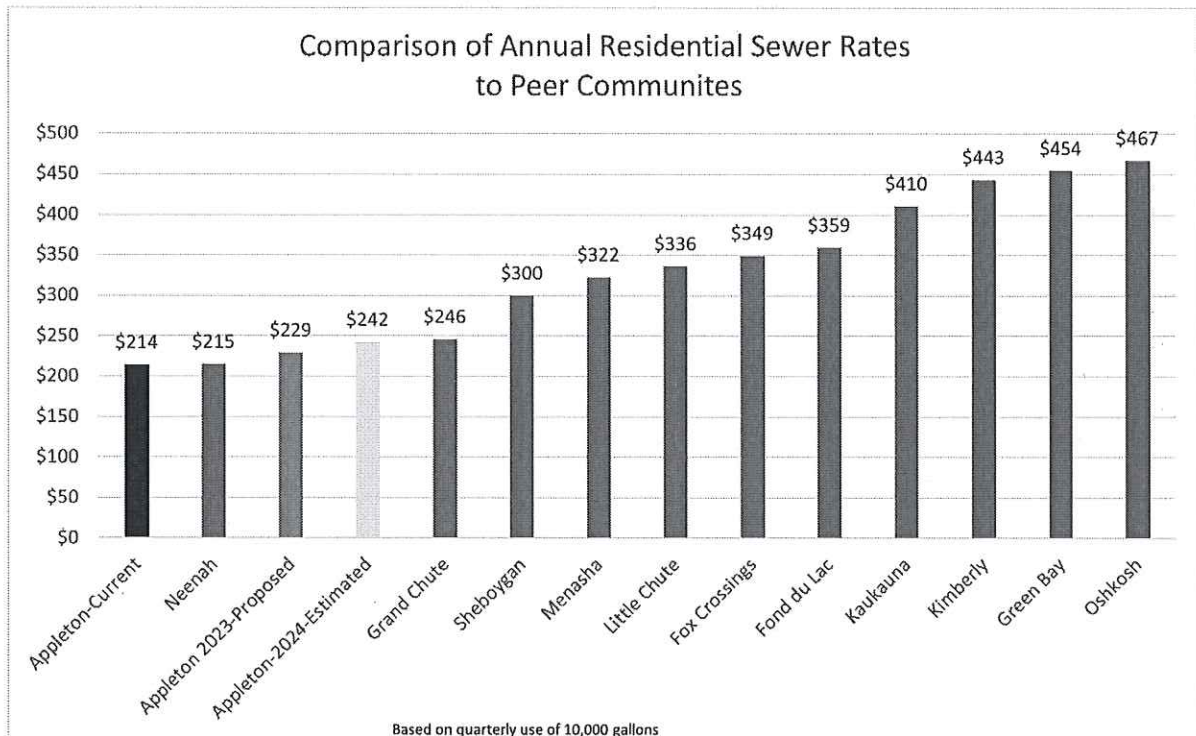
**FINANCIAL REVIEW:**

The planned 4% rate increase, as presented in the 2023 budget on page 519 (attachment A), does provide the revenue required to cover expenses, meets cash flow and debt coverage for the year 2023. However, the 4% annual rate increases for future years (2024-2026) will no longer provide the required revenue to meet cash flow needs and debt coverage ratios for 2024 and beyond. The capital improvement plan has increased \$11.2M from the plan that was reviewed as part of the 2020 study. This increase is due to several reasons including: increased costs of projects, new projects for required replacement of aging equipment and the addition of a multi-year project to replace motor control equipment to ensure reliability of the power system at the treatment plant.

After review of the projected 5-year plan, it was determined that annual rate increases of 7% would be needed starting in 2023 as well as future years (2024-2026) to meet cash flow and debt coverage requirements. The future rate increases will be reviewed annually and will be presented to committee for approval.

This increase is projected to provide \$1.1M additional revenue in 2023. Included with this memo (attachment B) is updated page 519 of the 2023 Budget and Service Plan that details the planned annual rate increases meeting all cash flow and debt coverage requirements in future years.

The proposed rate increase continues to provide a reasonable rate for service when compared to area communities. The average residential customer will see a quarterly increase of \$4 on the City service invoice.



**COMPOST RATE INCREASE:**

The current compost rate of \$8 per cu. yard has been in place since 2016. The proposed fee increases the rate to \$12 per cu. yard. This rate increase is due to increasing contractor fees to process compost and transport costs to deliver materials to the facility.

**RECOMMENDATION:**

Approve Wastewater rate increase of 7% as detailed on the attached rate sheet (attachment C) and increase compost fees from \$8 per cu. yard to \$12 per cu. yard. Should you have any questions regarding this project please contact me at phone: 832-6316.

## City of Appleton - Proposed Wastewater Rates for 2023

Quarterly Minimum Charge	Meter Size	effective 1/1/2022	effective 1/1/2023
		Current Rate	Proposed Rate
	5/8	\$16.00	<b>\$17.15</b>
	3/4	\$16.00	<b>\$17.15</b>
	1	\$28.80	<b>\$30.85</b>
	1 1/4	\$39.70	<b>\$42.50</b>
	1 1/2	\$51.00	<b>\$54.55</b>
	2	\$78.30	<b>\$83.75</b>
	2 1/2	\$110.90	<b>\$118.65</b>
	3	\$135.80	<b>\$145.30</b>
	4	\$216.00	<b>\$231.10</b>
	6	\$409.10	<b>\$437.75</b>
	8	\$646.90	<b>\$692.20</b>
	10	\$946.10	<b>\$1,012.35</b>
	12	\$1,252.20	<b>\$1,339.85</b>
<b>Volume Charge</b>	per/1,000 gallons	\$3.75	<b>\$4.00</b>
	Units	Current Rate	Proposed Rate
<b>Industrial Q/Q Rates</b>			
Volume	per/1,000 gallons	\$2.43	<b>\$2.60</b>
BOD	per/100 lbs	\$35.15	<b>\$37.60</b>
TSS	per/100 lbs	\$11.86	<b>\$12.70</b>
Phosphorus	per/100 lbs	\$385.58	<b>\$412.50</b>
TKN	per/100 lbs	\$136.39	<b>\$145.95</b>
<b>Sanitary Waste Haulers</b>			
Volume - Septic Tank	per/ton	\$10.60	<b>\$11.35</b>
Volume - Holding Tank	per/ton	\$1.80	<b>\$1.95</b>
Per Load		\$11.75	<b>\$12.55</b>
Per Customer	per quarter	\$18.40	<b>\$19.70</b>
<b>Hauled Waste Rates</b>			
Tier 1	per/ton	\$6.00	<b>\$6.40</b>
Tier 2	per/ton	\$8.30	<b>\$8.90</b>
Tier 3	per/ton	\$13.70	<b>\$14.65</b>
Tier 4	per/ton	\$18.80	<b>\$20.15</b>
Tier 5	per/ton	\$25.00	<b>\$26.75</b>

**CITY OF APPLETON 2023 BUDGET  
WASTEWATER UTILITY  
CALCULATION OF RATE INCREASE DOCUMENTATION**

	2022 Budget	2022 Projected	2023 Budget	2024 Projected	2025 Projected	2026 Projected	2027 Projected
<b>Revenues</b>							
Charges for Services	\$ 10,235,000	\$ 10,550,000	\$ 10,945,000	\$ 11,148,491	\$ 11,600,228	\$ 12,070,270	\$ 12,076,305
Miscellaneous	2,085,000	2,700,000	2,594,500	2,309,363	2,725,847	2,793,993	2,863,843
Total Revenues	12,320,000	13,250,000	13,539,500	13,457,854	14,326,075	14,864,262	14,940,147
<b>Expenses</b>							
Operating Expenses	7,950,951	8,206,754	8,396,743	8,659,495	8,959,280	9,188,059	9,473,700
Depreciation	3,525,000	3,475,000	3,725,000	4,100,000	4,300,000	4,500,000	4,665,000
Total Expenses	11,475,951	11,681,754	12,121,743	12,759,495	13,259,280	13,688,059	14,138,700
Operating Income	844,049	1,568,246	1,417,757	698,359	1,066,795	1,176,204	801,447
<b>Non-Operating Revenues (Expenses)</b>							
Interest Income	210,000	-	210,000	200,000	200,000	200,000	200,000
Interest Expense	(864,021)	(1,000,221)	(1,329,025)	(1,627,388)	(1,759,704)	(1,880,554)	(1,999,954)
Premium on Debt Issue	166,681	193,744	280,785	256,471	227,821	197,939	169,764
Debt Issue Costs	-	(164,863)	(160,000)	(135,000)	(135,000)	(135,000)	(135,000)
Loss on disposal of equipment	-	-	-	(300,000)	-	-	-
Total Non-Operating	(487,340)	(971,340)	(998,240)	(1,605,917)	(1,466,883)	(1,617,615)	(1,765,190)
Net Income Before Transfers	356,709	596,906	419,517	(907,559)	(400,089)	(441,412)	(963,743)
<b>Contributions and Transfers In (Out)</b>							
Capital Contributions	189,975	189,975	-	-	-	-	-
General Fund	(180,450)	(181,150)	(182,450)	(182,950)	(183,450)	(183,950)	(184,450)
Change in Net Assets	366,234	605,731	237,067	(1,090,509)	(583,539)	(625,362)	(1,148,193)
Total Net Assets - Beginning	107,429,580	107,429,580	108,035,311	108,272,378	107,181,870	106,598,331	105,972,969
Total Net Assets - Ending	\$ 107,795,814	\$ 108,035,311	\$ 108,272,378	\$ 107,181,870	\$ 106,598,331	\$ 105,972,969	\$ 104,824,776

**SCHEDULE OF CASH FLOWS**

Cash - Beginning of the Year	18,755,387	6,815,984	5,415,561	5,000,930	4,910,139	4,860,600	
+ Change in Net Assets	605,731	237,067	(1,090,509)	(583,539)	(625,362)	(1,148,193)	
+ Depreciation	3,475,000	3,725,000	4,100,000	4,300,000	4,500,000	4,665,000	
+ Long Term Debt	11,866,410	9,500,000	5,000,000	5,000,000	5,000,000	5,000,000	
- Contributed Capital	(189,975)	-	-	-	-	-	
- Fixed Assets	(26,201,569)	(13,524,210)	(6,049,123)	(6,142,252)	(6,134,177)	(6,598,652)	
- Software Acquisition	-	(45,000)	-	-	-	-	
- Principal Repayment	(1,495,000)	(1,925,000)	(2,375,000)	(2,665,000)	(2,790,000)	(2,805,000)	
+ Fixed Assets funded by DNR Rplcmnt Fund	-	631,720	-	-	-	-	
Working Cash - End of Year	\$ 6,815,984	\$ 5,415,561	\$ 5,000,930	\$ 4,910,139	\$ 4,860,600	\$ 3,973,755	
25% Working Capital Reserve (prior year's audited expenses)		2,347,031	2,477,055	2,617,458	2,725,609	2,813,141	
Coverage Ratio		1.64	1.63	1.16	1.26	1.22	1.14

**ASSUMPTIONS:**

Borrow 60-70% of capital expenditures as detailed in plan  
Interest rate at 5%; twenty year term for future borrowings  
Projected growth increase .05% for additional customer base each year  
Reduced Special Hauled Waste revenue in 2024 due to production limits during the Belt Filter Replacement project  
Includes 4% rate increase as recommend in 2020 rate study for 2022-2026. 5% rate increase for hauled waste customers for 2023  
Operating expenses to increase 3% per year. \$40,000 in 2025 for structural study at WWTP  
Includes estimated loss of early retirement of lift station in 2023 of \$300,000; this is net of sale on equipment  
Maintain a level of 25% working capital reserve and 1.20 coverage ratio as required by bond covenants

**RESULTS:**

An overall rate increase of 20% was implemented on 1/1/2021 as recommended in the rate study that was completed in 2020. Additional annual rate increases of 4% in 2022-2026 will be needed to fund capital improvement plan. The 2023 budget includes the recommend rate increase of 4%, subject to Utilities Committee approval prior to budget adoption. These increases may need to be modified if any changes in revenue from hauled waste customers or high strength customers changes in future years or if there are significant changes in the capital improvement plan for the utility.



**7% annual rate increase for 2023, 2024, 2025, 2026**  
**CITY OF APPLETON 2023 BUDGET**  
**WASTEWATER UTILITY**  
**CALCULATION OF RATE INCREASE DOCUMENTATION**

	2022 Budget	2022 Projected	2023 Budget	2024 Projected	2025 Projected	2026 Projected	2027 Projected
<b>Revenues</b>							
Charges for Services	\$ 10,235,000	\$ 10,550,000	\$ 11,755,000	\$ 12,344,139	\$ 13,214,833	\$ 14,146,941	\$ 14,154,014
Miscellaneous	2,085,000	2,700,000	2,644,500	2,466,393	2,999,458	3,194,423	3,194,423
Total Revenues	12,320,000	13,250,000	14,399,500	14,810,531	16,214,291	17,341,364	17,348,437
<b>Expenses</b>							
Operating Expenses	7,950,951	8,206,754	8,396,743	8,659,495	8,959,280	9,188,059	9,473,700
Depreciation	3,525,000	3,475,000	3,800,000	4,150,000	4,350,000	4,550,000	4,715,000
Total Expenses	11,475,951	11,681,754	12,196,743	12,809,495	13,309,280	13,738,059	14,188,700
Operating Income	844,049	1,568,246	2,202,757	2,001,036	2,905,011	3,603,305	3,159,737
<b>Non-Operating Revenues (Expenses)</b>							
Interest Income	210,000	-	210,000	200,000	200,000	200,000	200,000
Interest Expense	(864,021)	(1,000,221)	(1,329,025)	(1,627,388)	(1,759,704)	(1,880,554)	(1,999,954)
Premium on Debt Issue	166,681	193,744	280,785	256,471	227,821	197,939	169,764
Debt Issue Costs	-	(164,863)	(160,000)	(125,000)	(125,000)	(125,000)	(125,000)
Loss on disposal of equipment	-	-	-	-	(300,000)	-	-
Total Non-Operating	(487,340)	(971,340)	(998,240)	(1,295,917)	(1,456,883)	(1,607,615)	(1,755,190)
Net Income Before Transfers	356,709	596,906	1,204,517	705,119	1,448,127	1,995,690	1,404,547
<b>Contributions and Transfers In (Out)</b>							
Capital Contributions	189,975	189,975	-	-	-	-	-
General Fund	(180,450)	(181,150)	(182,450)	(182,950)	(183,450)	(183,950)	(184,450)
Change in Net Assets	366,234	605,731	1,022,067	522,169	1,264,677	1,811,740	1,220,097
Total Net Assets - Beginning	107,429,580	107,429,580	108,035,311	109,057,378	109,579,547	110,844,224	112,655,964
Total Net Assets - Ending	\$ 107,795,814	\$ 108,035,311	\$ 109,057,378	\$ 109,579,547	\$ 110,844,224	\$ 112,655,964	\$ 113,876,061

**SCHEDULE OF CASH FLOWS**

Cash - Beginning of the Year	18,755,387	6,815,984	6,275,561	7,523,607	9,331,032	11,768,595	
+ Change in Net Assets	605,731	1,022,067	522,169	1,264,677	1,811,740	1,220,097	
+ Depreciation	3,475,000	3,800,000	4,150,000	4,350,000	4,550,000	4,715,000	
+ Long Term Debt	11,866,410	9,500,000	5,000,000	5,000,000	5,000,000	5,000,000	
- Contributed Capital	(189,975)	-	-	-	-	-	
- Fixed Assets	(26,201,569)	(13,524,210)	(6,049,123)	(6,142,252)	(6,134,177)	(6,598,652)	
- Software Acquisition	-	(45,000)	-	-	-	-	
- Principal Repayment	(1,495,000)	(1,925,000)	(2,375,000)	(2,665,000)	(2,790,000)	(2,805,000)	
+ Fixed Assets funded by DNR Rplcmnt Fund	-	631,720	-	-	-	-	
Working Cash - End of Year	\$ 6,815,984	\$ 6,275,561	\$ 7,523,607	\$ 9,331,032	\$ 11,768,595	\$ 13,300,040	
25% Working Capital Reserve (prior year's audited expenses)		2,347,031	2,477,055	2,617,458	2,725,609	2,813,141	
Coverage Ratio		1.64	1.89	1.57	1.70	1.75	1.63

**ASSUMPTIONS:**

Borrow 60-70% of capital expenditures as detailed in plan.

Interest rate at 5%; twenty year term for future borrowings

Projected growth increase .05% for additional customer base each year

Reduced Special Hauled Waste revenue in 2024 due to production limits during the Belt Filter replacement project

Includes 7% proposed rate increase for 2023-2026

Operating expenses to increase 3.0% per year. \$40,000 in 2025 for structural study at WWTP

Includes estimated loss of early retirement of lift station in 2025 of \$300,000, this is net of sale on equipment

Maintain a level of 25% working capital reserve and 1.20 coverage ratio as required by bond covenants

**Appleton Wastewater Treatment Plant  
Operations Synopsis  
July 2022 – September 2022**

**Wastewater Treatment Program**

- The Appleton Wastewater Treatment Plant (AWWTP) final effluent met Wisconsin Department of Natural Resources (WDNR) discharge monitoring reporting limits for carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), phosphorous, and ammonia. The plant maintained good treatment and a healthy microbiological population with a sludge retention time of 9.0 days. Dewatering processes functioned well and converted 17.2 million gallons (MG) of primary digested sludge to biosolids.

**Summary of Treatment**

Parameter	July	August	September	Average
Industrial Flow (MG)	24.3	27.3	26.8	26.1
Domestic Flow (MG)	248.8	298.5	292.0	279.8
Total Flow (MG)	273.1	325.8	318.8	305.9
Influent CBOD Load (Avg Daily lbs)	19,573	22,055	22,400	21,343
Influent TSS Load (Avg Daily lbs)	43,781	48,577	44,171	45,510
Influent Phosphorous Load (Avg Daily lbs)	396	436	396	409
Influent Ammonia Load (Avg Daily lbs)	1,964	2,124	2,189	2,092
Effluent CBOD Load (Avg Daily lbs)	269	458	416	381
Effluent TSS Load (Avg Daily lbs)	67	406	205	226
Effluent Phosphorous Load (Avg Daily lbs)	13	20	15	16
Effluent Ammonia Load (Avg Daily lbs)	13	41	99	51
% Treatment Removal of CBOD	98.6	97.9	98.1	98.2
% Treatment Removal of TSS	99.8	99.2	99.5	99.5
% Treatment Removal of Phosphorous	96.7	95.4	96.2	96.1
% Treatment Removal of Ammonia	99.3	98.1	95.5	97.6

**Work in Progress:**

- 2019 Appleton Wastewater Plant Improvement Projects: The project includes replacement of the Return Activated Sludge (RAS) pumps, process piping modifications (e.g., blended sludge, filtrate, waste gas flare), outside secondary chemical offloading containment repairs, primary clarifiers #5 & #6 drive replacements (2020 CIP), and H-Building effluent pump replacements (2020 CIP). During the reporting period, Staab Construction (Staab) completed miscellaneous punch list items including work associated with change orders requested by the Utilities Department. Final project completion will occur in the fourth quarter of 2022.
- Appleton Wastewater Plant Sludge Storage Building Addition: The construction contract with Miron Construction in the amount of \$5,330,989 was approved by Common Council on July 20, 2022. The contract was subsequently fully executed with a formal notice to proceed issued by Applied Technologies, Inc. on August 2, 2022. The construction submittal process immediately pursued with active construction tentatively scheduled for March or April 2023.
- 2022 Phase I Appleton Wastewater Plant Belt Filter Press Equipment Upgrades: McMahon Associates, Inc. (McMahon) continued engineering services as part of the

Solids Dewatering Equipment Upgrades project. The AWWTP will be replacing all three existing Belt Filter Press (BFP) units and add one additional BFP. The additional BFP will provide the required dewatering capacity based on future growth projections and redundancy to facilitate critical maintenance events. Additions to the project scope followed a complete needs assessment coupled with substantial cost increases for equipment, materials, and labor since the original budget was forecasted necessitated a change to the preliminary bidding documents that would allow for a two-phase, multi-year construction project. Phase I construction is scheduled to be bid out in October 2022 and will focus on adding two new BFPs and upgrades to the HVAC systems which support the dewatering floor. Phase II construction planned later in 2023 will involve installation of two new BFPs following the demolition of the three existing dewatering units, removal of remnant control and electrical wiring, and various architectural improvements (e.g. protective floor coatings, painting, etc.). This phased approach provides budgetary relief while adding necessary operational flexibility during the first phase of construction.

- 2021 Secondary Clarifier Drive Rebuild Project: On June 2, 2021, Common Council approved contract award for the removal, rebuilding, and reinstallation of drive equipment on Secondary Clarifiers #1 through #6 to Sabel Mechanical. Sabel Mechanical successfully reinstalled the drives on Secondary Clarifiers #1 and #2 in August 2022. Sabel removed the last two drives on Secondary Clarifiers #4 and #5 for rebuilding in September. They plan on returning to site in early November for reinstallation and commissioning which will conclude this project.

### **Regulatory Summary**

- Monthly Discharge Monitoring reports for July, August, and September were filed electronically on time for regulatory compliance.
- The AWWTP Wisconsin Pollution Discharge Elimination System (WPDES) electronic permit application was submitted on October 2, 2021, as part of reissuance. The current WPDES permit expired on March 31, 2022. The AWWTP continues to operate under the expired permit limits until DNR reissues a permit. Procedurally, the DNR has yet to submit a draft permit for review and public comment. The exact timeline is not yet known for when that step will occur, but the DNR is anticipating that the reissued permit will be administered in January 2023.

### **Laboratory**

- All sampling and laboratory testing procedures were performed in accordance with requirements outlined in the AWWTP WPDES permit.
- Discharge Monitoring Report (DMR) and Health Department testing program objectives associated with sampling and analysis were met during the reporting period.
- Sampling of influent in support of Wisconsin State Lab of Hygiene COVID Sewage Surveillance continued during the reporting period.

**EFFLUENT QUALITY SUMMARY**  
**April 2021/2022 – September 2021/2022**

**Table 1 – 2021 Monthly Permit Summary**

Month	CBOD (mg/L)	TSS (mg/L)	TSS (lbs/day)	P (mg/L)	P <sup>(3)</sup> (lbs/day)	NH3-N <sup>(1)</sup> (mg/L)	Fecal <sup>(2)</sup> Coliform Colonies/ (100 ml)	Chlorine <sup>(2)</sup> Residual (mg/L)	pH (s.u.)
<b>Permit Limit</b>	<b>25</b>	<b>30</b>	<b>1,322<sup>(3)</sup></b>	<b>1</b>	<b>23<sup>(3)</sup></b>	<b>10, 11, 4.4, 18</b>	<b>400 col/100ml Geo.Mean</b>	<b>0.038 mg/L daily</b>	<b>6.0 - 9.0 daily limit</b>
April 2021	5	3	344	0.19	21	1.62	NA	NA	7.1/7.2
May 2021	5	2	180	0.21	21	1.00	4	<0.032	6.9/7.1
June 2021	5	2	206	0.25	22	0.52	4	<0.032	6.9/7.2
July 2021	4	2	382	0.16	22	0.36	5	<0.032	7.1/7.4
August 2021	4	2	259	0.21	23	0.25	28	<0.032	7.1/7.3
September 2021	4	1	90	0.19	15	0.12	4	<0.032	7.1/7.3
		<b>Nov - April Period Average<sup>(3)</sup></b>		<b>21.0</b>					
		<b>May - October Period Average<sup>(3)</sup></b>		<b>21.1</b>					

**Table 2 – 2022 Monthly Permit Summary**

Month	CBOD (mg/L)	TSS (mg/L)	TSS (lbs/day)	P (mg/L)	P <sup>(3)</sup> (lbs/day)	NH3-N <sup>(1)</sup> (mg/L)	Fecal <sup>(2)</sup> Coliform Colonies/ (100 ml)	Chlorine <sup>(2)</sup> Residual (mg/L)	pH (s.u.)
April 2022	5	2	371	0.13	20	0.42	NA	NA	7.1/7.2
May 2022	5	2	171	0.13	13	0.10	168	<0.032	7.0/7.3
June 2022	4	1	118	0.12	14	0.11	5	<0.032	6.9/7.2
July 2022	4	1	67	0.17	13	0.18	10	<0.032	6.9/7.4
August 2022	5	4	406	0.22	20	0.40	4	<0.032	7.0/7.4
September 2022	4	2	205	0.17	15	1.11	4	<0.032	7.0/7.2
		<b>Nov - April Period Average<sup>(3)</sup></b>		<b>17.3</b>					
		<b>May - October Period Average<sup>(3)</sup></b>		<b>15.0</b>					

**NOTES:**

- 1) Seasonal NH3-N limits: 10 mg/L Jan. 1 – Mar. 31, 11 mg/L Apr. 1 – May 31, 4.4 mg/L June 1 – Sep 30, 18 mg/L Oct 1 – Dec 31.
- 2) Seasonal fecal and residual chlorine limits are in effect May 1st through September 30<sup>th</sup>. Limit of Detection 0.032 mg/L.
- 3) April 1, 2017 WPDES Reissuance with new TSS limits expressed as monthly concentration limit (mg/L) and loading limit (lbs). The future TMDL phosphorus limit will be 23 lbs/day expressed as a 6-month average during the months of May – October and November – April.

**YEAR 2022 RECEIVING STATION REVENUE**

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	\$ 155,140.59	\$130,533.65	\$ 156,997.30	\$ 182,013.10	\$ 144,798.81	\$ 152,868.28	\$ 169,189.98	\$ 139,270.91	\$ 89,065.61				\$ 1,319,878.23
Buttles Custom Ag	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Hickory Meadows	\$ 24,903.48	\$ 20,475.06	\$ 32,031.60	\$ 42,276.54	\$ 26,113.02	\$ 34,735.80	\$ 29,600.94	\$ 34,187.97	\$ 35,696.22				\$ 280,020.63
Holland Sanitary Dist. 1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Jeff Waldvogel Trkng.	\$ 34,629.34	\$ 34,267.37	\$ 38,307.65	\$ 39,227.94	\$ 45,610.75	\$ 45,195.54	\$ 47,505.15	\$ 42,033.78	\$ 38,975.02				\$ 365,752.54
Movin Materials	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Waldvogel Trucking	\$ 1,638.34	\$ 1,815.63	\$ 1,789.65	\$ 1,722.67	\$ 1,876.88	\$ 1,622.57	\$ 1,558.66	\$ 1,903.44	\$ 1,960.88				\$ 15,888.72
<b>2022 Total</b>	\$ 216,311.75	\$187,091.71	\$ 229,126.20	\$ 265,240.25	\$ 218,399.46	\$ 234,422.19	\$ 247,854.73	\$ 217,396.10	\$165,697.73	\$ -	\$ -	\$ -	\$ 1,981,540.12
<b>2021 Total</b>	\$160,614.00	\$157,415.55	\$178,568.93	\$193,304.25	\$197,959.99	\$183,861.33	\$240,826.87	\$261,064.97	\$231,369.79	\$217,146.14	\$172,718.91	\$ 173,227.16	\$ 2,368,077.89

- 3% Rate Increase effective 1/1/18
- 1% Rate Increase effective 1/1/19
- 5% Rate Increase effective 10/1/20
- 4% Rate Increase effective 01/01/22

Date: October 7, 2022  
Copies: K. Rindt (via email)  
C. Shaw (via email)  
B. Kreski  
Utilities Committee

**Appleton Water Treatment Plant  
Operations Synopsis  
July, August, September 2022**

**Performance Summary**

The table below presents selected water production and quality performance metrics for the current and previous reporting period.

Treated Water Quality. All compliance parameters met or exceeded regulatory requirements.

Water Production. Compared with Q2 of 2022 (Q/Q) average production increased by over 2%.

Raw Water Quality. Average Q/Q lake turbidity declined nearly 20% from Q2 2022. Y/Y levels also decreased by over 50% from Q3 2021.

Energy Efficiency. Applied electrical energy efficiency Y/Y increased by over 7% from Q3 2021.

WATER PLANT PARAMETERS	Previous (Q2 2022)			Current (Q3 2022)		
	April	May	June	July	August	September
<b>Water Treated</b>						
Finished (million gallons), total	259.4	300.5	294.1	308.5	305.1	269.1
Finished (million gallons / day), average	8.6	9.7	9.8	9.9	9.8	9.0
<b>Electrical Energy (WTF)</b>						
Consumption (Megawatt-hours)	450.1	494.0	505.8	527.8	522.8	461.1
MWH / million gallons produced	1.7	1.6	1.7	1.7	1.7	1.7
<b>Lake Turbidity (NTU), average</b>	21.54	11.00	9.23	10.19	12.71	10.54
<b>Water System Microbial Quality</b>						
Total Coliform Samples	81	81	81	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
<b>Finished Water Quality</b>						
Water Temperature (Degrees F)	40.7	57.3	70.6	75.5	75.1	68.9
Turbidity (NTU), average	0.01	0.01	0.04	0.06	0.06	0.04
%<0.15 NTU standard	100	100	100	100	100	100
pH (SU), average	8.9	8.7	8.6	8.4	8.5	8.6
Total Chlorine (mg/L)	2.01	1.92	1.86	1.79	1.80	1.87
Fluoride (mg/L)	0.69	0.67	0.67	0.70	0.73	0.73
Orthophosphate (mg/L)	0.63	0.66	0.69	0.63	0.70	0.67

## **Laboratory**

- In support of plant operations, staff conducted analyses according to method protocols for pH, turbidity, alkalinity, hardness, free/total chlorine, ammonia, phosphorus, potassium permanganate, and fluoride.
- In support of distribution operations, staff performed required 81+ monthly Coliform bacteria analyses along with heterotrophic plate count (HPC) testing.
- Quarterly disinfection by-product rule monitoring with wholesale water customers (DBPR-2) was completed.

## **Safety**

- Maintained WTF Safety programs by completing scheduled safety inspections, fire prevention inspections, and monthly meetings. No significant incidents to report.
- Applied appropriate COVID-19 countermeasures as directed by city policy.
- Annual city-wide hearing and respirator tests held at Water Plant.

## **Operations**

- Operated two UV Disinfection reactors continuously during the quarter.
- Maintained Main Pressure Zone pressure increases as recommended by Water Distribution System Master Plan.
- Nature's Way transmission line repaired.
- Emergency outdoor lighting installed at the Lake Station.
- Completed cleaning and inspecting Glendale Tower.
- Faith Technologies worked on fire alarm system upgrade.
- Drained and cleaned #2 Sodium Hypo tank in preparation for relining.
- Kickoff meeting held for air compressor replacement project.

## **Staffing & Training**

- Staffing levels reduced by reassignment of one Water Plant Operator.
- Maintained normal staff schedules and work assignments.

## WATER MAIN BREAK/ JOINT LEAK REPORT - SEPTEMBER

### YEARLY WATER MAIN BREAK COMPARISON

MONTH 21	MONTH 22	YTD 21	YTD 22
5	4	88	92

LOCATION	BREAK DATE	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**	TOTAL DOLLAR VALUE FOR BREAK* <small>(Water Costs + Repair Costs)</small>
Natures Way	9/6/2022	309269	DIP	36"	1999	1/8" Hole & 2" Hole	248 Days	1,738,000	\$10,567.04	\$19,567.04
NOTES: Break was found by water on the road. The duration was calculated by going back to the beginning of the year due to the condition of the pipe.										
2101 Schaefer Cir.	9/8/2022	309269	DIP	8"	1979	1/32 Crack, 1-1/2" Split	7 Days	76,177	\$463.16	\$9,463.16
NOTES: Break was found by the water coming up in terrace. The duration was calculated by the soil saturation.										
Natures Way	9/21/2022	309269	DIP	36"	1999	3" Hole	24 Hours	500,000	\$3,040.00	\$12,040.00
NOTES: Break was found due to the water on the road. The duration was calculated based on when Hyd # 3327 was flushed compared to when Street Dept. saw water on road.										
72 Ramlen Ct.	9/29/2022	309269	CIP	6"	1957	1/64" Crack	128 days	7,629,925	\$46,389.94	\$55,389.94
NOTES: Break was found due to correlation. The duration was calculated by the date of the last hydrant test since the leak never surfaced and was running into a gravel trench										

<b>Total Cost =</b>	<b>\$96,460.14</b>
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\*In addition to the dollar value of water revenue lost, there is an average cost of \$9,000 to repair each water main break (including final restoration) and an average cost of \$630 to produce the lost water for each main break.

\*\*Water Loss is calculated at the residential rate of \$6.08 per 1000 gallons.