

**Appleton Wastewater Treatment Plant  
Operations Synopsis  
April 2023 – June 2023**

**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 10 days. Dewatering processes functioned well and converted 18.6 million gallons (MG) of primary digested sludge to biosolids.

**Summary of Treatment**

<b>Parameter</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>Quarter Average</b>
Industrial Flow (MG)	29.0	27.1	25.7	27.2
Domestic Flow (MG)	602.3	398.3	265.5	422.0
Total Flow (MG)	631.2	425.4	291.2	449.3
Influent CBOD Load (Avg Daily lbs)	26,507	22,881	26,420	25,269
Influent TSS Load (Avg Daily lbs)	46,043	50,212	65,573	53,943
Influent Phosphorous Load (Avg Daily lbs)	437	461	550	483
Influent Ammonia Load (Avg Daily lbs)	1,809	1,789	2,740	2,113
Effluent CBOD Load (Avg Daily lbs)	784	664	409	619
Effluent TSS Load (Avg Daily lbs)	757	280	164	400
Effluent Phosphorous Load (Avg Daily lbs)	25	18	19	21
Effluent Ammonia Load (Avg Daily lbs)	89	115	140	115
% Treatment Removal of CBOD	97.0	97.1	98.5	97.5
% Treatment Removal of TSS	98.4	99.4	99.7	99.2
% Treatment Removal of Phosphorous	94.3	96.1	96.5	95.6
% Treatment Removal of Ammonia	95.1	93.6	94.9	94.5

**Project Updates**

- Appleton Wastewater Treatment 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 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 beginning in April 2023. Final completion is projected to occur in February 2024.
- 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 three existing Belt Filter Press (BFP) units and add one BFP. The additional BFP will provide the required dewatering capacity based on future growth projections and redundancy to facilitate critical maintenance events. The public bidding phase was initiated October 20, 2022, and closed on November 10, 2022, with Staab Construction as the least cost bidder at \$5,063,000. Contract award occurred at Common Council December 7, 2022, with the Notice to Award issued thereafter. Contract execution and formal Notice to Proceed occurred in January 2023. The construction submittal process immediately pursued

because due to the lengthy lead time (up to 52 weeks) associated with HVAC, electrical, and BFP equipment. Active onsite construction is not anticipated to occur until September 2023. Final completion is currently identified in February 2024 but will likely need to be extended because of the previously mentioned lead times.

- Phase II Appleton Wastewater Plant Belt Filter Press Equipment Upgrades: McMahon is currently under contract for Phase II Solids Dewatering Equipment Upgrades engineering services. The construction bid documents are approximately 90% complete with project public bidding projected to occur in late 2023 depending on the progress of the Phase I construction.
- Grit Trap Vortex System Drive and Raw Sludge Pump Replacement Projects – McMahon is under contract to provide engineering, contract administration, contract management, field services, and construction management services for the replacement of the grit vortex system drive units (No. 1 and No. 2) including the replacement of a raw sludge pump (No. 2). The original grit vortex system drive units and raw sludge pump are over 20 years old and have reached their useful life. McMahon developed preliminary design plans and specifications during the reporting period and anticipate advertisement as part of public bidding to occur in July 2023.
- Digester Circulation Piping, Blended Sludge Piping, and Heat Exchanger Replacement Project – McMahon is under contract to provide engineering, contract administration, contract management, field services, and construction management services as part of a project that will address the compromised integrity of pipe which support primary anaerobic digester processes (e.g., sludge feed, sludge circulation, and sludge heating pipe) caused by over 20 years of erosion and corrosion. McMahon advanced preliminary design plans and specification during the reporting period and anticipate publication as part of public bidding to occur in September 2023.

### **Regulatory Summary**

- Monthly Discharge Monitoring reports for April, May, and June 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 remains unknown for when that step will occur. However, we are anticipating that the reissued permit will be administered sometime in late 2023 or early 2024.

### **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.

### **Staffing & Training**

- Staffing levels remain reduced following the resignations of two Wastewater Plant Relief Operators in late 2022. One of those vacancies was filled in January 2023. The other Relief Operator vacancy was recently filled when an existing Wastewater Plant Operator

transferred positions. This in turn left two open Wastewater Plant Operator Positions. Two qualified Operator candidates are presently in the hiring process for the vacant Operator positions with expected start dates in the 3<sup>rd</sup> quarter of 2023.

- Maintained operations schedules with overtime and deferred maintenance work assignments as a result of the ongoing Wastewater Plant Operator vacancies.