City of Appleton

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

Meeting Agenda - Final

Utilities Committee

Tuesday, January 23, 2024 | **4:30 PM** | **Council Chambers, 6th Floor**

1. Call meeting to order

2. Pledge of Allegiance

3. Roll call of membership

4. Approval of minutes from previous meeting

24-0075 Approval of the December 12, 2023 Utilities Committee Meeting minutes.

Attachments: December 12, 2023 Utilities Committee Meeting Minutes.pdf

5. Public Hearing/Appearances

6. Action Items

24-0076 Sole Source Engineering Services Contract to McMahon Associates as part of the 2024 Aeration Process Upgrades Project in the amount of $64,500 with a 12% contingency of $7,740 for a Project Total not to exceed $72,240.

Attachments: 240119_UC Sole Source Memo_AerationProcessUpgradesMcMahon.pdf

24-0077 Award Final Clarifier Tank Underdrain and Tank Drain Rehabilitation Contract to Sabel Mechanical in the amount of $44,411 with 15% contingency of $6,662 for a project total not to exceed $51,073.

Attachments: 240119_Memo_Final Clarifier Underdrain_Rehab Contract_Sabel.pdf

24-0088 Sole Source purchase of Final Clarifier Tank Underdrain and Tank Drain Pumps, Pump Rail Guide Systems, and Miscellaneous Pump Fittings from Quality Flow Systems in the amount of $89,960 with a 5% contingency of $4,500 for a total not to exceed $94,460.

Attachments: 240119_Memo_Final Clarifier Underdrain Pump Purchase.pdf
011924 Quality Flow Systems Sole Source Request.pdf

7. Information Items

24-0078 2021 Sludge Storage Addition Project Engineering Services Amendment #2 increasing the Applied Technologies, Inc. total contract amount by $7,500 from $529,339 to $536,839 and decrease unallocated contingency from $44,857 to $37,357.

Attachments: 240119_UC Memo_SSB AdditionProfessionalServices_ATI_Contract Amend N

24-0079 Monthly Reports for October, November, and December 2023:
- Wastewater Treatment Plant Synopsis and Receiving Station Revenue Report
- Water Treatment Facility Synopsis
- Water Distribution and Meter Team Monthly Report - November and December

Attachments: 2023 Q4 Wastewater Treatment Plant Synopsis.pdf
Receiving Station Revenue Report.pdf
2023 Q4 Water Plant Synopsis.pdf
11- November 2023 Water Main Breaks.pdf
12 - December 2023 Water Main Breaks.pdf

8. 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 Stempa at 920-832-5945 or Danielle Block at 920-832-6474.

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Meeting Minutes - Final
Utilities Committee

Tuesday, December 12, 2023 | **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. Pledge of Allegiance

3. Roll call of membership

Present: 4 - Meltzer, Doran, Firkus and Siebers

Excused: 1 - Del Toro

4. Approval of minutes from previous meeting

23-1465 Approval of the November 7, 2023 Utilities Committee Meeting minutes.

Attachments: November 7, 2023 Utilities Committee Meeting Minutes.pdf

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

Aye: 4 - Meltzer, Doran, Firkus and Siebers

Excused: 1 - Del Toro

5. Public Hearing/Appearances

6. Action Items

23-1466 Award of 2024A Stormwater Consulting Services Contract for 2024 Stormwater Management Plan Reviews to Brown and Caldwell in an amount not to exceed $50,000.

Attachments: 2024A-B Plan Review Award Util Memo BC and raSmith final.pdf

Siebers moved, seconded by Firkus, that the 2024A Stormwater Consulting Services Contract for 2024 Stormwater Management Plan Reviews to Brown and Caldwell in an amount not to exceed $50,000 be recommended for approval. Roll Call. Motion carried by the following vote:

Aye: 4 - Meltzer, Doran, Firkus and Siebers

Excused: 1 - Del Toro

23-1467 Award of 2024B Stormwater Consulting Services Contract for 2024 Stormwater Management Plan Review to raSmith in an amount no to exceed $50,000.

Attachments: 2024A-B Plan Review Award Util Memo BC and raSmith final.pdf

Siebers moved, seconded by Firkus, that the 2024B Stormwater Consulting Services Contract for 2024 Stormwater Management Plan Review to raSmith in an amount not to exceed $50,000 be recommended for approval. Roll Call. Motion carried by the following vote:

Aye: 4 - Meltzer, Doran, Firkus and Siebers

Excused: 1 - Del Toro

7. Information Items

23-1468 2024 Joint Chemical Consortium Quotation Awards

Attachments: 2024 Chemical Award Memo to UC 121223.pdf

The chemical quotations were reviewed.

23-1469 Monthly Report for October 2023:
- Water Distribution and Meter Team Monthly Report

Attachments: October 2023 Water Main Breaks.pdf

This report was presented.

8. Adjournment

Siebers moved, seconded by Firkus, that the Utilities Committee Meeting be adjourned at 4:42 p.m.. Roll Call. Motion carried by the following vote:

Aye: 4 - Meltzer, Doran, Firkus and Siebers

Excused: 1 - Del Toro

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Department of Utilities
Wastewater Treatment Plant
2006 E Newberry Street
Appleton, WI 54915
920-832-5945 tel.
920-832-5949 fax

TO: Chairperson Vered Meltzer and Members of the Utilities Committee

FROM: Interim Utilities Director, Chris Stempa

DATE: January 19, 2024

RE: ***Approve: Sole Source Engineering Services Contract to McMahon Associates as part of the 2024 Aeration Process Upgrades Project in the amount of $64,500 with a 12% contingency of $7,740 for a Project Total not to exceed $72,240***

BACKGROUND:

The Appleton Wastewater Treatment Plant (AWWTP) operates two early 1990's vintage positive displacement rotary lobe blowers which supply low-pressure air to a network of submerged diffusers located within the mixed liquor channel and the aeration tank inlet channels. These diffusers are designed to create turbulence within flow and keep solids in suspension. The channel aeration blower equipment was commissioned as part of a major upgrade project in the early 1990's and has proven to be reliable for over 30 years of operation. However, it has reached its useful life and one of the blowers now requires replacement. The 2024 CIP identified $600,000 in total funding that will implement a project that would replace existing aeration equipment with present-day blower technology.

After one of the blowers failed in early 2023, the engineering services of McMahon were solicited to provide a mixed liquor channel blower equipment alternatives evaluation. The evaluation compared four different blower technologies including the option of rehabilitating the existing 30-year-old units. The 2024 budget was formulated based on that evaluation. The engineering document was also provided to Focus on Energy to determine grant eligibility for selected technology alternative that provided the best simple payback exclusive of potential Focus on Energy grant funding. It should be noted that blower rehabilitation was eliminated from consideration because it was unlikely that the equipment would last another 20-years. Furthermore, that option came at the highest annual electrical cost when extrapolating over that period.

PROPOSAL

The McMahon proposal includes suite of engineering services which have become standard for the Utilities Department as part of larger construction projects like this one. Those services include the core elements associated with design, bidding, and construction management. The cost for professional services outlined in their proposal totals $64,500.

SOLE SOURCE JUSTIFICATION

The 2024 CIP Aeration Project Upgrades project identified $87,500 for engineering services which represents approximately 15% (industry standard) of the overall budget which totals $600,000. McMahon's proposal is 11% of the overall construction budget. The equipment alternatives evaluation McMahon completed in 2023 will be used as a springboard for the next phase of design. Contracting with another firm as part of formal Request for Proposal (RFP) process would not yield cost savings. First, the typical RFP process that the Utilities Department requires involves firms to generate detailed proposals from which they are evaluated and scored. That time and effort comes at a cost which is absorbed by the firms but passed back to the city as part of the total engineering service fees. Second, engineering firms do not typically rely on another firms work because of the potential risk exposure. As such, work completed by McMahon would likely be replicated at the cost of the Utilities Department without yielding measurable results. Lastly, McMahon's approach to the equipment alternatives evaluation is worth noting. The inclusion of existing blower rehabilitation as part of the energy payback calculations was not something initially considered by Utilities Department staff because of concerns pertaining to equipment longevity and/or reliability. By including that as part of the analysis, McMahon highlighted the increased delta in energy cost savings compared to the new technology alternatives. As recently as January 17, 2024, Focus on Energy indicated that based on the alternatives evaluation there is a potential energy incentive available totaling $21,000 which could be applied to a completed project further reducing the payback period.

McMahon has provided quality engineering services on a number of different projects at the AWWTP over the years and their proposal reflects the value the city would be receiving for the reasons previously described. As such, I recommend that McMahon be considered for a sole source contract as part of the 2024 Aeration Process Upgrades Project.

RECOMMNDATION

Approval of a sole source Engineering contract to McMahon Associates as part of the 2024 Aeration Process Upgrades Project in the amount of $64,500 with a 12% contingency of $7,740 for a Project Total not to exceed $72,240.

If you have any questions or require additional information regarding this project, please contact Chris Stempa at 920-832-5945.

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Department of Utilities
Wastewater Treatment Plant
2006 E Newberry Street
Appleton, WI 54915-3128
920-832-5945 tel.
920-832-5949 fax

To: Chairperson Vered Meltzer and Members of the Utilities Committee

From: Interim Utilities Director, Chris Stempa

Date: January 19, 2024

Re: **Utilities Committee Action:** Award Final Clarifier Tank Underdrain and Tank Drain Rehabilitation Contract to Sabel Mechanical in the amount of $44,411 with 15% contingency of $6,662 for a project total not to exceed $51,073.

BACKGROUND:

There are six (6) final clarifiers at the Appleton Wastewater Treatment Plant (AWWTP) that are used to separate mixed liquor sludge solids from the treated effluent. Each final clarifier is 100 feet in diameter and 18 feet deep with a volume equal to 1,060,000 gallons. The final clarifiers provide a quiescent zone that allows for the separation of suspended solids (and floating scum) before treated wastewater enters the chlorine contact tank for seasonal disinfection basin where it eventually is discharged to the Lower Fox River.

The final clarifiers were constructed as part of the early 1990's plant upgrade. An underdrain network was constructed beneath the final clarifiers to collect groundwater and alleviate the buoyant force pressure exerted on these concrete structures. The groundwater is conveyed through perforated drainpipes by gravity to a centralized collection sump. The 33-foot-deep sump is dewatered using two 15 hp centrifugal pumps that cycle based on liquid levels within the wetwell (also known as a sump). In late 2022, one of the two original pumps failed. A new pump was purchased and installed in early 2023, which subsequently failed in November 2023 and was sent for warranty repair. The remaining original pump failed, and staff were unable to retrieve it for inspection after the pump cable retrieval system failed. A temporary submersible pump system was installed in the wetwell with an above grade discharge house to maintain liquid levels until rehabilitation work could occur. It should be noted that there is urgency to complete this work in a timely manner. The inability to adequately relieve groundwater pressure exerted on an empty clarifier (e.g. emptied for reasons of emergency maintenance or process control) could generate enough buoyant force to lift or "float" a clarifier, resulting in catastrophic structural failure.

The final clarifier tank drainage wetwell is immediately adjacent and similar in design to the underdrain system. It is designed to pump out multiple or individual final clarifiers when

cleaning or maintenance is required. Similar to the underdrain system, the pumps are original to the 1990's upgrade and there is evidence of significant exterior corrosion of steel components (e.g., cable guide/retrieval system and discharge pipe).

REQUEST FOR QUOTATIONS

A Request for Quotation (RFQ) process was advanced to solicit costs from four reputable contractors experienced in wastewater treatment and wastewater lift station work. The scope of work specified was based solely on the requisite tasks that would reestablish functionality and long-term reliability to both pump systems. That scope includes replacement of the current pump bases, discharge piping, and guide wire retrieval system. The RFQ review process was completed on January 17, 2024, following a desktop engineering analysis which confirmed that quoted replacement components matched system hydraulic needs. The quotes are summarized below in Table 1. Sabel Mechanical (Sabel) provided the least cost quote and has successfully completed other project work for the Department of Utilities in the past.

Table 1: RFQ Summary

Company	Total
Sabel Mechanical	$44,411
August Winter	$74,100
Staab Construction	$73,000
Great Lakes Mechanical	$51,288

RECOMMENDATION:

I am requesting a contract award to Sabel Mechanical for Final Clarifier Tank Underdrain and Tank Drain Rehabilitation work in the amount of $44,411 with 15% contingency of $6,662 for a project total not to exceed $51,073. Funding for this contract would be provided under an existing Capital Improvement Program project that was established for this work in 2023.

If you have any questions or require additional information regarding this project please contact Chris Stempa at 920-832-5945.

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Department of Utilities
Wastewater Treatment Plant
2006 E Newberry Street
Appleton, WI 54915-3128
920-832-5945 tel.
920-832-5949 fax

To: Chairperson Vered Meltzer and Members of the Utilities Committee

From: Utilities Interim Director, Chris Stempa

Date: January 19, 2024

Re: **Approve: Sole Source purchase of Final Clarifier Tank Underdrain and Tank Drain Pumps, Pump Rail Guide Systems, and Miscellaneous Pump Fittings from Quality Flow Systems in the amount of $89,960 with a 5% contingency of $4,500 for a total not to exceed $94,460**.

BACKGROUND:

There are six (6) final clarifiers at the Appleton Wastewater Treatment Plant (AWWTP) that are used to separate mixed liquor sludge solids from the treated effluent. Each final clarifier is 100 feet in diameter and 18 feet deep with a volume equal to 1,060,000 gallons. The final clarifiers provide a quiescent zone that allows for the separation of suspended solids (and floating scum) before treated wastewater enters the chlorine contact tank for seasonal disinfection basin where it eventually is discharged to the Lower Fox River.

The final clarifiers were constructed as part of the early 1990's plant upgrade. An underdrain network was constructed beneath the final clarifiers to collect groundwater and alleviate the buoyant force pressure exerted on these concrete structures. The groundwater is conveyed through perforated drainpipes by gravity to a centralized collection sump. The 33-foot-deep sump is dewatered using two 15 hp centrifugal pumps that cycle based on liquid levels within the wetwell (also known as a sump). In late 2022, one of the two original pumps failed. A new pump was purchased and installed in early 2023, which subsequently failed in November 2023 and was sent for warranty repair. The remaining original pump failed, and staff were unable to retrieve it for inspection after the pump cable retrieval system failed. A temporary submersible pump system was installed in the wetwell with an above grade discharge house to maintain liquid levels until rehabilitation work performed by an independent contractor (covered by a separate memorandum) and pump replacements could occur. It should be noted that there is urgency to complete this work in a timely manner. The inability to adequately relieve groundwater pressure exerted on an empty clarifier (e.g. emptied for reasons of emergency maintenance or process control) could generate enough buoyant force to lift or "float" a clarifier, resulting in catastrophic structural failure.

The final clarifier tank drainage wetwell is immediately adjacent and similar in design to the underdrain system. It is designed to pump out multiple or individual final clarifiers when cleaning or maintenance is required. Similar to the underdrain system, the pumps are original to the 1990's upgrade and there is evidence of significant exterior corrosion of steel components (e.g., cable guide/retrieval system and discharge pipe).

REQUEST FOR QUOTATIONS

The existing pumps in both the undertrain and tank drainage systems were manufactured by KSB. Quality Flow Systems is the sole manufacturer representative for our region. Crane Engineering is a vendor KSB pumps, parts, and service to a broader market but was asked to provide a quote to insure the City was receiving the least cost. Quality Flow Systems and Crane Engineering quoted four (4) replacement pumps, miscellaneous pump accessories, and a pump retrieval guide rail system (in lieu of cables). The RFQ review process was completed on January 17, 2024 following a desktop engineering analysis which confirmed that quoted replacement pumps matched system hydraulic needs. The quotations are summarized below in Table 1 below. Quality Flow Systems provided the least cost quote at $89,960.

Table 1: RFQ Summary

Company	Total
Crane Engineering	$104,056
Quality Flow Systems	$89,960

RECOMMENDATION:

I am requesting approval of a sole source purchase for four replacement KSB pumps, pump rail guide systems, and miscellaneous pump fittings from Quality Flow Systems in the amount of $89,960 with a 5% contingency of $4,500 for a total not to exceed $94,460. Funding for this contract would be provided under an existing Capital Improvement Program project that was established for this work in 2023.

If you have any questions or require additional information regarding this project please contact Chris Stempa at 920-832-5945.

SOLE SOURCE REQUEST

The undersigned certifies that the commodity/service shown below qualifies as a sole source request and meets one or more of the following requirements. The department has demonstrated, and the Purchasing Manager concurs that only one source exists, the price is equitable, and/or noncompetitive negotiation is in the best interests of the City.

☒ **Unique, proprietary, or one-of-a-kind**: Specific commodity/service is required and available from only one source, giving the City a superior and necessary benefit that cannot be obtained from other sources.

☐ **Inadequate competition:** Purchasing solicitation (bid, proposal, or quote) did not result in any qualified vendor responses and competition is determined to be inadequate.

☐ **Health or Safety Concern:** When a health or safety concern exists that is ***not*** an immediate threat but needs to be addressed in a period that does not allow for formal competitive procurement procedures.

☒ **Continuity of design:** Consistency with current commodity or service.

☐ **Emergency procurement:** A risk of human suffering or substantial damage to real or personal property exists requiring immediate attention.

☐ **Cooperative purchase:** Purchase from another governmental unit contract or state approved purchasing association.

☐ **Other:** Description provided below

PROPOSED DETAILS
Requesting dept: Wastewater
Product/service: Tank Underdrain & Drain Pumps, Pump Rail Guide Systems, Misc. Pump Fittings
Vendor name: Quality Flow Systems
Total cost: $89,960 w/ a 5% contingency, not to exceed $94,460

Justification and price quotation provided by the department, for the items to be considered and approved as a sole source purchase attached for review.

Jenifer Huss — Purchasing Manager

1/19/2024 — Date

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Department of Utilities
Wastewater Treatment Plant
2006 E Newberry Street
Appleton, WI 54915
920-832-5945 tel.
920-832-5949 fax

TO: Chairperson Vered Meltzer and Members of the Utilities Committee

FROM: Interim Utilities Director, Chris Stempa

DATE: January 19, 2024

RE: ***Information: 2021 Sludge Storage Addition Project Engineering Services Amendment #2 increasing the Applied Technologies, Inc. total contract amount by $7,500 from $529,339 to $536,839 and decrease unallocated contingency from $44,857 to $37,357***

The Appleton Wastewater Treatment Plant (AWWTP) Sludge Storage Building Addition project professional services contract for design, bidding, and construction management was awarded to Applied Technologies Inc. (ATI) in November 2020 by Common Council. In early 2022, Contract Amendment #1 totaling $30,038 for additional design and construction management services was approved by Common Council to accommodate unanticipated modifications to the original work scope after the contract was executed. Miron Construction was awarded the public bid contract for construction in July 2022. The construction Notice to Proceed was issued in early August 2022 with Substantial Completion identified as December 30, 2023.

Miron immediately proceeded with the equipment submittal processes in August 2022 knowing the long equipment lead times, especially with the motor control centers (MCCs) and the new conveyor system. Active construction began in April 2023. Work progressed well through October 2023 with the building addition completed and most of the major new equipment installed. The exception was the new MCCs which supplied power the new exhaust fans and conveyor system. The MCCs were one of the first equipment submittals approved in 2022 knowing there was going to be a long lead time. Unfortunately, the lingering supply chain disruption impacted the MCC manufacture, Square D, was more than anticipated. The late arrival of that equipment resulted in the need for temporary power supply solution which necessitated additional construction services by ATI. The delay also pushed back equipment startup and commissioning that is tied to Substantial Completion. As such, the Substantial Completion date was pushed back until the end of January 2024 until the previously mentioned tasks are formally completed.

On January 17, 2024, ATI submitted Contract Amendment #2 for review and acceptance. Amendment #2 totals $7,500 and includes costs for additional construction management services resulting from delays in equipment delivery, installation, startup, and formal commissioning that have pushed back the Substantial Completion until the end of January 2024.

SUMMARY

The cost of additional engineering services outlined as part of the ATI Amendment #2 totals $7,500. This amendment would result in the contract amount increasing by $7,500 from $529,339 to $536,839 and decrease unallocated contingency from $44,857 to $37,357.

If you have any questions regarding this project, please contact Chris Stempa at ph: 832-5945.

Appleton Wastewater Treatment Plant
Operations Synopsis
October 2023 – December 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 16.3 million gallons (MG) of primary digested sludge to biosolids.

Summary of Treatment

Parameter	October	November	December	Quarter Average
Industrial Flow (MG)	35.1	35.9	39.7	36.9
Domestic Flow (MG)	299.3	301.1	301.2	300.5
Total Flow (MG)	334.4	337.0	340.9	337.4
Influent CBOD Load (Avg Daily lbs)	28,618	28,850	28,904	28,791
Influent TSS Load (Avg Daily lbs)	56,010	51,561	55,416	54,329
Influent Phosphorous Load (Avg Daily lbs)	449	487	535	490
Influent Ammonia Load (Avg Daily lbs)	2,811	2,486	3,093	2,797
Effluent CBOD Load (Avg Daily lbs)	524	649	482	552
Effluent TSS Load (Avg Daily lbs)	385	413	300	366
Effluent Phosphorous Load (Avg Daily lbs)	24	22	26	24
Effluent Ammonia Load (Avg Daily lbs)	79	114	211	135
% Treatment Removal of CBOD	98.2	97.8	98.3	98.1
% Treatment Removal of TSS	99.3	99.2	99.5	99.3
% Treatment Removal of Phosphorous	94.7	95.5	95.1	95.1
% Treatment Removal of Ammonia	97.2	95.4	93.2	95.3

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. Active construction continued during the quarter with the building addition approximately 95% complete. Remaining project highlights include conveyor commissioning and site restoration. Substantial completion projected in January 2024 and final completion is projected to occur late in the 2nd quarter of 2024.
- Phase I Appleton Wastewater Plant Belt Filter Press Equipment Upgrades: The construction contract with Staab Construction (Staab) in amount $5,063,000 was approved by Common Council on December 7, 2022. Construction activities during the reporting period included demolition of an obsolete biosolids hopper system and associated truck scale, installation of a new motor control center (MCC) to power the new belt filter presses (BFP), and HVAC work that will support the two new BFP units. The two new BFP units are scheduled for delivery in late January. February 2024 remains the contractual final completion date but will likely need to be extended because longer than expected equipment 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 99% complete with project public bidding projected to occur in the 1st quarter of 2024 based on the projected equipment lead times associated with the Phase I construction.

- Grit Trap Vortex System Drive and Raw Sludge Pump Replacement Projects – The construction contract with August Winter and Sons, Inc. in the amount of $573,355 was approved by Common Council on September 6, 2023. The contract was subsequently executed in early October. The construction submittal process immediately pursued with active construction not expected to occur until June 2024 because of extremely long equipment lead times.

- 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 completed design plans and specification during the reporting period. Public bidding commenced in December 2023 with a bid closing date of January 10th, 2024.

Regulatory Summary

- Monthly Discharge Monitoring reports for October, November, and December 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 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

- Utilities Director Chris Shaw announced his retirement late in the quarter, with a last day of January 3rd, 2024. The Mayor and HR began the process to advertise the position, with interviews in January 2024.
- Staffing levels remain reduced following the resignation of one Wastewater Plant Operator in late 2023. A Wastewater Plant Operator hired in the 3rd quarter completed the training process by successfully passing the Wastewater Plant Operator Practical Exam.
- Maintained operations schedules with overtime and deferred maintenance work assignments as a result of the Wastewater Plant Operator training and vacancy.

- Common Council approved the additions of a Treatment Specialist and Safety, Training, & Public Relations Coordinator as part of the 2024 budget. Work began in the 4th quarter to advertise those positions and evaluate candidates. Interviews are scheduled for January 2024.

EFFLUENT QUALITY SUMMARY
July 2022/2023 – December 2022/2023

Table 1 – 2022 Monthly Permit Summary

Month	CBOD (mg/L)	TSS (mg/L)	TSS (lbs/day)	P (mg/L)	P[3] (lbs/day)	NH3-N [1] (mg/L)	Fecal[2] Coliform Colonies/ (100 ml)	Chlorine[2] Residual (mg/L)	pH (s.u.)
Permit Limit	*25*	*30*	*1,322 [3]*	*1*	*23 [3]*	*10, 11, 4.4, 18*	*400 col/100ml Geo.Mean*	*0.038 mg/L daily*	*6.0 - 9.0 daily limit*
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
October 2022	7	3	223	0.15	10	0.54	NA	NA	6.9/7.2
November 2022	6	5	486	0.19	19	0.89	NA	NA	6.9/7.3
December 2022	6	3	284	0.17	14	2.00	NA	NA	6.2/7.2
		Nov - April Period Average[3]			18.6				
		May - October Period Average[3]			14.0				

Table 2 – 2023 Monthly Permit Summary

Month	CBOD (mg/L)	TSS (mg/L)	TSS (lbs/day)	P (mg/L)	P[3] (lbs/day)	NH3-N [1] (mg/L)	Fecal[2] Coliform Colonies/ (100 ml)	Chlorine[2] Residual (mg/L)	pH (s.u.)
July 2023	4	1	104	0.27	19	0.66	3	<0.032	6.7/7.2
August 2023	4	2	177	0.31	24	1.07	3	<0.032	6.8/7.2
September 2023	5	3	220	0.40	27	0.79	12	<0.032	6.8/7.1
October 2023	6	4	385	0.27	24	0.95	NA	NA	6.8/7.2
November 2023	7	5	413	0.23	22	1.18	NA	NA	6.9/7.2
December 2023	5	3	300	0.29	26	2.26	NA	NA	6.7/7.2
		Nov - April Period Average[3]			24.1				
		May - October Period Average[3]			21.9				

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 30th. 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 2023 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	$ 24,775.04	$ 87,845.97	$ 135,520.54	$ 147,043.94	$ 154,606.46	$ 138,061.05	$ 153,077.03	$ 129,725.31	$116,600.40	$ 142,390.02	$ 144,145.83	$ 152,258.18	$ 1,526,049.77
Hickory Meadows	$ 16,496.13	$ 39,715.07	$ 86,342.34	$ 66,164.99	$ 47,542.59	$ 32,600.64	$ 29,379.84	$ 36,167.31	$ 31,851.46	$ 39,668.74	$ 34,496.61	$ 29,888.06	$ 490,313.78
Jeff Waldvogel Trkg.	$ 3,550.74	$ 6,998.07	$ 13,327.59	$ 18,096.78	$ 21,051.79	$ 19,501.51	$ 21,847.95	$ 21,782.35	$ 24,835.12	$ 22,867.23	$ 15,256.18	$ 10,401.63	$ 199,516.94
Nate Waldvogel Trkg.	$ 3,737.20	$ 14,627.86	$ 16,611.32	$ 16,954.86	$ 16,692.40	$ 18,018.94	$ 18,183.77	$ 17,620.22	$ 20,168.29	$ 19,755.15	$ 19,387.85	$ 17,290.83	$ 199,048.69
Waldvogel Trucking	$ 1,073.70	$ 2,169.20	$ 2,106.81	$ 2,363.40	$ 2,348.35	$ 1,922.67	$ 2,258.02	$ 2,565.07	$ 2,395.26	$ 2,749.92	$ 2,124.70	$ 2,774.75	$ 26,851.85
2023 Total	$ 49,632.81	$151,356.17	$ 253,908.60	$ 250,623.97	$ 242,241.59	$ 210,104.81	$ 224,746.61	$ 207,860.26	$195,850.53	$ 227,431.06	$ 215,411.17	$ 212,613.45	$ 2,441,781.03
2022 Total	$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	$197,486.74	$190,481.28	$ 142,568.74	$2,512,076.88

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
7% Rate Increase effective 01/01/23

*Nate Waldvogel Trucking - new hauler in 2023

Date: January 18, 2024
Copies: K. Rindt (via email)
C. Shaw (via email)
B. Kreski
Utilities Committee

Appleton Water Treatment Plant
Operations Synopsis
October, November, and December 2023

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 Q4 of 2022 (Y/Y) average production increased by over 8.2%. Production decreased by nearly 10% from Q3 of 2023.

Raw Water Quality. Average turbidity Y/Y levels increased by over 6.6% from Q4 2022.

Energy Efficiency. Applied electrical energy efficiency Q/Q increased by nearly 15% from Q3 2023.

WATER PLANT PARAMETERS	Previous (Q3 2023)			Current (Q4 2023)		
	July	August	September	October	November	December
Water Treated						
Finished (million gallons), total	322.1	308.6	301.5	284.0	273.6	286.7
Finished (million gallons / day), average	10.4	10	10.1	9.2	9.1	9.3
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	555.6	544.5	506.2	332.8	437.4	459.8
MWH / million gallons produced	1.7	1.8	1.7	1.2	1.6	1.6
Lake Turbidity (NTU), average	15.51	15.94	11.92	13.00	10.48	8.02
Water System Microbial Quality						
Total Coliform Samples	81	81	81	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Finished Water Quality						
Water Temperature (Degrees F)	75.78	74.26	69.21	57.90	44.65	35.55
Turbidity (NTU), average	0.04	0.04	0.04	0.04	0.04	0.04
%<0.15 NTU standard	100	100	100	100	100	100
pH (SU), average	8.1	8.0	8.0	8.2	8.3	8.4
Total Chlorine (mg/L)	2.12	2.09	1.96	2.00	2.00	1.97
Fluoride (mg/L)	0.71	0.67	0.69	0.66	0.66	0.74
Orthophosphate (mg/L)	0.76	0.73	0.74	0.74	0.68	0.69

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 Water Treatment Facility Safety programs by completing scheduled safety inspections, fire prevention inspections, and monthly meetings. No significant incidents to report.

Operations

- Operated two UV Disinfection Reactors continuously during the quarter.
- Maintained Main Pressure Zone pressure increases as recommended by Water Distribution System Master Plan.
- Membrane Wash Water tank being cleaned out.
- Corrosion Control Treatment construction project ongoing.
- Lindbergh Standpipe cleaned & inspected.
- #3 Softener cleaning completed.
- South Recarbonation Basin cleaning completed.
- Air compressor replacement completed.
- #2 and #3 Contactor wash water pumps replaced.
- Sodium Hypochlorite tank relining and repair work completed.

Staffing & Training

- Staffing levels fully staffed.
- Maintained operation schedules and maintenance work assignments.

WATER MAIN BREAK/ JOINT LEAK REPORT - NOVEMBER 2024

YEARLY WATER MAIN BREAK COMPARISON

MONTH 22	MONTH 23	YTD 22	YTD 23
9	9	106	73

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* (Water Costs + Repair Costs)
N. Peach Tree La. & E. Apple Tree La.	11/5/2023	309269	CIP	8"	1969	1/16" Crack	6 Hours	99,869	$607.20	$9,607.20
NOTES: The break was found due to a call in by a resident. The duration was calculated by the time of the call until it was fixed.										
737 E. South River St.	11/17/2023	309269	CIP	8"	1946	1/16" Crack & 1 1/2" Hole	4 Hours	157,908	$960.08	$9,960.08
NOTES: The break was found due to a call in by a resident. The duration was calculated by the time of the call and the amount of water bubbling.										
3149 N. Durkee St.	11/22/2023	309269	CIP	8"	1964	1/16" Crack	7 Days	2,552,703	$15,520.43	$24,520.43
NOTES: The break was found due to water surfacing on the road. The duration was calculated by the time it was found until the time fixed.										
Lawe St. Draw Bridge	11/24/2023	309269	CIP	12"	1931	4" Crack	2 Hours	2,917,375	$17,737.64	$26,737.64
NOTES: The break was found due to a large hole in the ground. The duration was calculated by the pipe condition and information from the water plant.										
1610 N. Graceland Ave.	11/27/2023	309269	CIP	6"	1960	1/16" Crack	5 Hours	62,418	$379.50	$9,379.50
NOTES: The break was found due to water surfacing on the road. The duration was calculated by the time it was found until the time fixed.										

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

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* (Water Costs + Repair Costs)
1300 S. Lynndale Dr.	11/28/2023	309269	CIP	8"	1961	1/8" Crack	4 Hours	119,101	$724.13	$9,724.13
NOTES: The break was found due to water bubbling. The duration was calculated from the soil saturation and the time it took to repair.										
2018S. Greenview St.	11/30/2023	309269	CIP	8"	1955	4" Hole	4 Hours	648,305	$3,941.69	$12,941.69
NOTES: The break was found due to water bubbling. The duration was calculated by the soil saturation and the time of call to report until the time of repair.										
2300 N. Alexander St.	11/30/2023	309269	CIP	6"	1958	4" Hole	4 Hours	661,144	$4,019.76	$13,019.76
NOTES: The break was found due to water bubbling. The duration was calculate by the soil saturation and the time it broke until it was repaired.										
2612 S. Berry Dr.	11/30/2023	309269	CIP	8"	1968	1/16" Crack	3 Hours	121,557	$739.07	$9,739.07
NOTES: The break was found due to water coming up in the road. The duration was calculated by the time of the call to report until the time of repair.										
									Total Cost =	**$125,629.51**

*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.

WATER MAIN BREAK/ JOINT LEAK REPORT - December 2023

YEARLY WATER MAIN BREAK COMPARISON

MONTH 22	MONTH 23	YTD 22	YTD 23
13	13	121	86

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* (Water Costs + Repair Costs)
3133 N. Doris La.	12/2/2023	309269	CIP	8"	1969	1/16" Crack	24 Hours	399,478	$2,428.83	$11,428.83
NOTES: The break was found due to a call in by a resident. The duration was calculated by the time of the resident's intial call at 5:00 p.m. on 12/1/23 to APD.										
111 E. Water St.	12/3/2023	309269	CIP	4"	1935	1/16" Crack	24 Hours	199,739	$1,214.41	$10,214.41
NOTES: The break was found due to a call in by a resident. The duration was calculated by the soil saturation and the amount of water bubbling.										
505 S. Lee St.	12/3/2023	309269	CIP	6"	1954	1/16" Crack	5 Hours	59,763	$363.36	$9,363.36
NOTES: The break was found due to water surfacing on the road. The durataion was calculated by the time of call about water on the road and the soil saturation.										
1328 S. Memorial Dr.	12/5/2023	309269	CIP	8"	1928	1/16" Crack and 2" Hole	4 Hours	222,855	$1,354.96	$10,354.96
NOTES: The break was found due to water bubbling. The duration was calculated by the soil saturation.										
2517 S. Harmon St.	12/5/2023	309269	CIP	8"	1968	1/8" Crack	4 Hours	121,557	$739.07	$9,739.07
NOTES: The break was found due to water bubbling. The duration was calculated by the soil saturation.										

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

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* (Water Costs + Repair Costs)
S. Benoit St. & W. Spencer St.	12/8/2023	309269	CIP	6"	Pre-130	Two 5" Holes	4 Hours	2,025,954	$12,317.80	$21,317.80
NOTES: The break was found due to water bubbling. The duration was calculated by the soil saturation and the time it took to repair.										
2491 S. East St.	12/8/2023	309269	CIP	6"	1956	1/8" Crack and 2" Hole	10 Hours	203,858	$1,239.46	$10,239.46
NOTES: The break was found due to water bubbling. The duration was calculated by the soil saturation and the time it took to repair.										
E. Randall Ave. & N. Helen St.	12/11/2023	309269	CIP	8"	1962	1/16" Crack	24 Hours	837,952	$5,094.75	$14,094.75
NOTES: The break was found by testing hydrants and water bubbling up. The duration was calculated by a homeowner saying they first saw water 24 hours ago.										
N. Durkee St. & E. Roosevelt St.	12/15/2023	309269	CIP	6"	1930	1/16" Crack	4 Days	1,198,434	$7,286.48	$16,286.48
NOTES: The break was found due to a call in by a resident. The duration was calculated by the resident saying they first saw water four days before calling.										
1313 S. East St.	12/16/2023	309269	CIP	6"	1946	1/8" Crack	4 Hours	499,347	$3,036.03	$12,036.03
NOTES: The break was found due to a call in by a resident. The duration was calculated by the time of the call and the amount of water bubbling.										
123 E. Commercial St.	12/18/2023	309269	CIP	6"	Pre-1930	4" Hole	2 Hours	317,518	$1,930.51	$10,930.51
NOTES: The break was found due to a call in. The duration was calculated by the time of the call in and the soil saturation.										
1024 E. Park Hills Dr.	12/25/2023	309269	DIP	8"	1971	2" Hole and 3" Hole	4 Hours	505,239	$3,071.85	$12,071.85
NOTES: The break was found due to water bubbling. The duration was calculated by the soil saturation.										

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

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* (Water Costs + Repair Costs)
1420 N. Kenilworth Dr.	12/26/2023	309269	CIP	6"	1948	1/16" Crack	4 Hours	81,543	$495.78	$9,495.78

NOTES: The break was found due to a call about water bubbling. The duration was calculated from the time of the call until the time it was fixed.

Total Cost = $157,573.28

*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.