City of Appleton

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

Meeting Agenda - Final

Utilities Committee

Tuesday, October 26, 2021 | **5:00 PM** | **Council Chambers, 6th Floor**

1. Call meeting to order

2. Roll call of membership

3. Approval of minutes from previous meeting

21-1473 Approval of the October 12, 2021 Utilities Committee Meeting Minutes.

Attachments: October 12, 2021 Utilities Committee Meeting Minutes.pdf

4. Public Hearings/Appearances

5. Action Items

6. Information Items

21-1474 2022 Budget Discussion

21-1475 Monthly Reports for July, August, and September 2021:
- Wastewater Treatment Plant Synopsis and Receiving Station Revenue Report
- Water Treatment Facility Synopsis
- Water Distribution and Meter Team Monthly Report - September

Attachments: 2021 Q3 Wastewater Synopsis.pdf
3rd Qrt 2021 Effluent Quality Summary.pdf
Receiving Station Revenue Report.pdf
2021 Q3 Water Synopsis.pdf
Water Main Breaks September 2021.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 Paula Vandehey at 920-832-6474.

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Meeting Minutes - Final
Utilities Committee

Tuesday, October 12, 2021 | **5:00 PM** | **Council Chambers, 6th Floor**

1. Call meeting to order

Chairperson Meltzer called the Utilities Committee Meeting to order at 5:00 p.m.

2. Roll call of membership

Present: 4 - Meltzer, Smith, Doran and Thao

Excused: 1 - Martin

3. Approval of minutes from previous meeting

21-1376 Approval of the August 24, 2021 Utilities Committee Meeting Minutes.

Attachments: August 24, 2021 Utilities Committee Meeting Minutes.pdf

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

Aye: 4 - Meltzer, Smith, Doran and Thao

Excused: 1 - Martin

4. Public Hearings/Appearances

5. Action Items

21-1378 Approve Wastewater Rate Increase of 4% to be effective January 1, 2022.

Attachments: WW Rate Increase memo Oct 2021.pdf
Rate Sheet 2022.pdf
Comparison of Annual Wastewater Bills.pdf

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

Aye: 4 - Meltzer, Smith, Doran and Thao

Excused: 1 - Martin

21-1379 Request to Approve Change Order #1 for 2020G Stormwater Consulting Services Contract for Lightning Drive Culverts and Stormwater Practices 60% Preliminary Design with raSmith in an amount not to exceed $20,000.

Attachments: 2020G Lightning 60% Design Contract CO1 Memo Util Cmte 10-06-2021.pdf

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

Aye: 4 - Meltzer, Smith, Doran and Thao

Excused: 1 - Martin

6. Information Items

21-1377 Monthly Reports for August 2021:
- Water Distribution and Meter Team Monthly Report

Attachments: Water Main Breaks August.pdf

The report was reviewed.

7. Adjournment

Smith moved, seconded by Thao, that the Utilities Committee meeting be adjourned at 5:19 p.m.. Roll Call. Motion carried by the following vote:

Aye: 4 - Meltzer, Smith, Doran and Thao

Excused: 1 - Martin

Appleton Wastewater Treatment Plant
Operations Synopsis
July 2021 – September 2021

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 10.5 days. Dewatering processes functioned well and converted 19.2 million gallons (MG) of primary digested sludge to biosolids.

Summary of Treatment

Parameter	July	August	September	Average
Industrial Flow (MG)	27.3	29.2	26.6	27.7
Domestic Flow (MG)	437.9	384.3	260.6	360.9
Total Flow (MG)	465.1	413.5	287.2	388.6
Influent CBOD Load (Avg Daily lbs)	26,539	22,959	24,272	24,590
Influent TSS Load (Avg Daily lbs)	47,126	47,116	43,176	45,806
Influent Phosphorous Load (Avg Daily lbs)	513	460	498	490
Influent Ammonia Load (Avg Daily lbs)	1,861	1,620	1,966	1,816
Effluent CBOD Load (Avg Daily lbs)	557	430	296	428
Effluent TSS Load (Avg Daily lbs)	382	260	90	244
Effluent Phosphorous Load (Avg Daily lbs)	22	23	15	20
Effluent Ammonia Load (Avg Daily lbs)	74	28	9	37
% Treatment Removal of CBOD	97.9	98.1	98.8	98.3
% Treatment Removal of TSS	99.2	99.4	99.8	99.5
% Treatment Removal of Phosphorous	95.7	95.0	97.0	95.9
% Treatment Removal of Ammonia	96.0	98.3	99.5	97.9

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). Staab Construction (Staab) proceeded with construction activities during the reporting period. Although work has advanced, ongoing supply chain disruptions have impeded progress on the replacement of the primary clarifier drives and RAS pumps. Staab believes they can still meet the final project completion date of March 2022 if suppliers can deliver major equipment and parts during the early half of the final quarter of this year.
- Appleton Wastewater Plant Sludge Storage Building Addition: Applied Technologies, Inc. (ATI) advanced preliminary design work on the concept selected by Project Team staff which best met the needs of the AWWTP from a regulatory, functionality, reliability, efficiency, and capital cost standpoint. ATI is to present 30% design plans for review during the final quarter of 2021. The public bidding phase is projected to occur during the 1st quarter of 2022.

- 2021 Appleton Wastewater Plant Solids Dewatering Equipment Upgrades: McMahon Associates, Inc. (McMahon) continued engineering services as part of the Solids Dewatering Equipment Upgrades project. McMahon has continued to advance preliminary design work associated with the replacement and upgrade of the belt filter presses (BFP). The AWWTP will be adding one additional BFP (for a total of four new) which will provide the required dewatering capacity based on future growth projections and redundancy to facilitate critical maintenance events. McMahon is to present 30% design plans for review during the final quarter of 2021. The public bidding phase is projected to occur during the 1st quarter of 2022.
- 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. Common Council also approved the sole source purchase of the associated rebuild parts through the original equipment manufacturer, Evoqua. Work was anticipated to commence during the current reporting period. Unfortunately, supply chain disruptions contributed to significant delays with delivery of major parts and equipment. Complete shipments were finally received late in September which allowed Sabel to commence with the removal of drives on Secondary Clarifiers #3 and #6 on October 5, 2021. Final project completion is not anticipated to occur until the spring of 2022.

Regulatory Summary

- Monthly Discharge Monitoring reports for July, August, and September were filed electronically on time for regulatory compliance.

Laboratory

- All sampling and laboratory testing procedures were performed in accordance with requirements outlined in the AWWTP Wisconsin Pollutant Discharge Elimination System (WPDES) permit.
- Discharge Monitoring Report (DMR) and Health Department testing program objectives associated with sampling and analysis were met during the reporting period.
- Analysis of Single-Blind Proficiency samples for laboratory recertification occurred during the reporting period.
- Sampling of influent in support of Wisconsin State Lab of Hygiene COVID Sewage Surveillance continued during the reporting period.
- Analytical testing schedule was reviewed by Laboratory Staff and Supervisors. Changes were implemented in August 2021 and will be reviewed in the fourth quarter.

Staffing & Training

- The hiring process to fill the vacancy left by Liquids Operator Elizabeth Martin concluded with the hiring of Liquids Operator Travis Squires on July 19th.

EFFLUENT QUALITY SUMMARY
April 2020/2021 – September 2020/2021

Table 1 – 2020-2021 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*
April 2020	6	2	218	0.11	12	4.51	NA	NA	6.9/7.1
May 2020	6	3	413	0.16	20	4.33	4	<0.100	6.7/7.1
June 2020	9	3	586	0.11	17	5.45	2	<0.032	6.9/7.2
July 2020	4	2	311	0.25	30	0.73	4	<0.032	6.7/6.9
August 2020	6	3	189	0.30	19	1.15	11	<0.032	6.6/7.2
September 2020	6	3	191	0.34	23	0.81	8	<0.032	6.8/7.2
		Nov - April Period Average[3]			14				
		May - October Period Average[3]			23				

Table 2 – 2020-2021 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.)
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
		Nov - April Period Average[3]			21				
		May - October Period Average[3]			21				

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 2021 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	$ 110,206.08	$ 99,576.28	$ 112,441.21	$ 114,069.65	$ 128,729.06	$ 118,096.94	$ 155,925.24	$ 165,601.61	$153,077.94				$ 1,157,724.01
Buttles Custom Ag	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -				$ -
Hickory Meadows	$ 20,276.34	$ 25,312.36	$ 29,607.87	$ 35,278.49	$ 27,916.08	$ 27,265.29	$ 41,158.16	$ 45,576.74	$ 36,397.10				$ 288,788.43
Holland Sanitary Dist. 1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -				$ -
Jeff Waldvogel Trkg.	$ 28,287.42	$ 30,970.38	$ 34,544.27	$ 42,086.75	$ 39,497.32	$ 36,605.25	$ 41,926.97	$ 48,241.45	$ 40,306.58				$ 342,466.39
Movin Materials	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -				$ -
Waldvogel Trucking	$ 1,844.16	$ 1,556.53	$ 1,975.58	$ 1,869.36	$ 1,817.53	$ 1,893.85	$ 1,816.50	$ 1,645.17	$ 1,588.17				$ 16,006.85
2021 Total	$ 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	$ -	$ -	$ -	$ 1,804,985.68
2020 Total	$153,426.62	$137,976.81	$175,878.03	$179,887.25	$181,558.27	$202,129.38	$205,556.34	$175,571.51	$170,679.26	$195,882.29	$188,313.41	$ 180,651.32	$ 2,147,510.49

3% Rate Increase effective 1/1/18

1% Rate Increase effective 1/1/19

5% Rate Increase effective 10/1/20

Date: October 18, 2021

Copies: K. Rindt (via email)
C. Shaw (via email)
B. Kreski
Utilities Committee

Appleton Water Treatment Plant
Operations Synopsis
July, August, and September 2021

Performance Summary

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

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

Water Production. Compared with Q2 of 2021 (Q/Q) average production increased by over 2% consistent with seasonal demand variation. Compared with Q3 of 2020 (Y/Y), average water production also increased by over 2%.

Raw Water Quality. Average Q/Q lake turbidity nearly tripled consistent with seasonal change. Y/Y levels also increased but not outside the range expected.

Energy Efficiency. Applied electrical energy efficiency Q/Q declined by nearly 3% and Y/Y efficiency declined by 4% consistent with increased plant discharge pressure.

WATER PLANT PARAMETERS	Previous (Q2 2021)			Current (Q3 2021)		
	April	May	June	July	August	September
Water Treated						
Finished (million gallons), total	253.6	291.3	317.1	302.1	310.0	283.6
Finished (million gallons / day), average	8.5	9.4	10.6	9.7	10.0	9.45
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	454.2	501.7	584.0	549.1	564.2	527.6
MWH / million gallons produced	1.79	1.72	1.84	1.82	1.82	1.86
Lake Turbidity (NTU), average	7.91	5.30	11.98	8.02	30.11	32.93
Water System Microbial Quality						
Total Coliform Samples	81	82	82	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Finished Water Quality						
Water Temperature (Degrees F)	48.4	60.0	72.9	75.7	76.9	69.3
Turbidity (NTU), average	0.02	0.02	0.02	0.02	0.02	0.02
%<0.15 NTU standard	100	100	100	100	100	100
pH (SU), average	8.8	8.8	8.7	8.7	8.6	8.7
Total Chlorine (mg/L)	1.95	1.97	1.87	1.82	1.83	1.90
Fluoride (mg/L)	0.74	0.66	0.68	0.67	0.68	0.69
Orthophosphate (mg/L)	0.64	0.70	0.71	0.72	0.75	0.75

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.
- Staff collected and processed raw and finished water samples to comply with Disinfection By-Products Rule (DBPR) sampling requirements. Provided support to consecutive customers with shipping of DBPR2 samples.
- In support of OCCT demonstration project, completed daily samples and orthophosphate analyses along with stagnant / flowing samples and related water quality analyses.
- Completed self-assessment as required in response to a single positive bacteriological sample result on September 8. Additional investigative sampling revealed no system issues. Positive result was likely due to inadvertent sample contamination by the sampler.

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.

Operations

- Operated two UV Disinfection reactors continuously during the quarter. Completed lamp replacements as scheduled.
- Completed construction phase for the Lake Station mechanical/electrical rehabilitation.
- Continued the testing phase for Optimized Corrosion Control Treatment (OCCT) pipe loop testing apparatus.
- Completed gradual Main Pressure Zone pressure increases as recommended by Water Distribution System Master Plan.
- Continued cleaning #4 Softener.

Staffing & Training

- Staffing levels reduced by long-term medical absence of one Water Plant Operator.
- Maintained normal staff schedules and work assignments.

WATER MAIN BREAK/ JOINT LEAK REPORT - SEPTEMBER

YEARLY WATER MAIN BREAK COMPARISON

SEPT. 20	SEPT. 21	YTD 20	YTD 21
8	5	66	88

LOCATION	BREAK DATE	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**
1310 S. Madison St.	9/3/2021	293134	CIP	6"	1929	6" Hole	4 Hours	1,632,830	$9,927.61
NOTES: Break was called in as water was bubbling out of the road. Duration is based on time of customer call and the soil saturation.									
216 E. Capitol Dr.	9/5/2021	293157	DIP	12"	1978	5" Hole	6 Hours	1,488,767	$9,051.70
NOTES: Break was found as water was bubbling out of the road. Duration is based on soil saturation.									
1609 N. Charlotte St.	9/9/2021	293283	CIP	8"	1940	6" X 1/4" Split & 6" X 1" Hole	9 days	3,117,000	$18,951.36
NOTES: Break was called in for water bubbling up. Duration is based on saturation of the soil.									
3535 N. Windward La.	9/27/2021	293915	DIP	8"	1980	2" X 7" Hole	4 Hours	782,000	$4,754.56
NOTES: Break was called in by APD. The duration of break was based on the soil saturation									
825 N. Rankin St.	9/28/2021	293989	CIP	8"	1949	7" Split	9 Months	20,492,010	$124,591.42
NOTES: Break was found by the Water Construction crew as they found City water in storm inlet. Duration was based on the type of break, deterioration of the pipe, soil saturation, and the washout around the catch basin.									

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 a 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.