



City of Appleton

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

Meeting Agenda - Final Utilities Committee

Tuesday, April 27, 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

[21-0507](#) Approval of the April 13, 2021 Utilities Committee Meeting Minutes.

Attachments: [April 13, 2021 Utilities Committee Meeting Minutes.pdf](#)

4. **Public Hearings/Apearances**

5. **Action Items**

[21-0508](#) Elect a Vice-Chair for the Utilities Committee.

6. **Information Items**

[21-0510](#) Confirm Meeting Date and Time for the Utilities Committee to meet.

[21-0511](#) Designate a Contact Person who can answer specific questions about agenda items for the Utilities Committee.

[21-0567](#) Proposed postponement of 2021 Utility Construction Projects.

Attachments: [Postpone 2021 Sewer and Water Projects.pdf](#)

[21-0514](#)

Monthly Reports for January, February, and March 2021:

- Wastewater Treatment Plant Synopsis and Receiving Station Revenue Report
- Water Treatment Facility Synopsis
- Water Distribution and Meter Team Monthly Report - March

Attachments: [2021 Q1 Wastewater Synopsis.pdf](#)

[2021 Q1 Wastewater Effluent Quality Summary.pdf](#)

[Receiving Station Revenue Report.pdf](#)

[2021 Q1 Water Synopsis.pdf](#)

[Water Main Breaks March 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, April 13, 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.

Present: 5 - Meltzer, Fenton, Otis, Prohaska and Smith

2. Roll call of membership

Present: 5 - Meltzer, Fenton, Otis, Prohaska and Smith

3. Approval of minutes from previous meeting

[21-0429](#)

Approval of the April 7, 2021 Utilities Committee Meeting Minutes.

Attachments: [April 7, 2021 Utilities Committee Meeting Minutes.pdf](#)

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

Aye: 5 - Meltzer, Fenton, Otis, Prohaska and Smith

4. Public Hearings/Appearances

5. Action Items

[21-0438](#)

Request to sole source contract to Patrick Engineering for professional services needed to complete the Wastewater Electrical Distribution Upgrades Phase 5 (Final Phase), for a contract fee of \$259,600 and a contingency of 5% not to exceed a total contract of \$272,580.

Attachments: [2021 Electrical Distribution System Upgrades Design for 480v cabling and Power System Study.pdf](#)

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

Aye: 5 - Meltzer, Fenton, Otis, Prohaska and Smith

[21-0430](#)

Preliminary Resolution 2-P-21 for Sanitary Laterals, Storm Laterals and Storm Main be adopted and refer the matter to the Finance Committee to determine the assessment rate.

Attachments: [Resolution 2-P-21.pdf](#)

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

Aye: 5 - Meltzer, Fenton, Otis, Prohaska and Smith

[21-0431](#)

Award of 2021F Stormwater Consulting Services Contract for Morrison Street and Glendale Avenue reconstruction with Brown and Caldwell in an amount not to exceed \$32,775.

Attachments: [2021 Morrison Glendale Award memo_\(002\).pdf](#)

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

Aye: 5 - Meltzer, Fenton, Otis, Prohaska and Smith

6. Information Items

[21-0448](#)

2021 Water Treatment Facility Power Generation Test

Attachments: [Utilities Memo - 2021 WPPI Test and Payment.pdf](#)

This item was reviewed.

7. Adjournment

Otis moved, seconded by Prohaska, that the Utilities Committee Meeting be adjourned at 5:06 p.m.. Roll Call. Motion carried by the following vote:

Aye: 5 - Meltzer, Fenton, Otis, Prohaska and Smith



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

DEPARTMENT OF PUBLIC WORKS

Engineering Division
100 North Appleton Street
Appleton, WI 54911
TEL (920) 832-6474
FAX (920) 832-6489

TO: Members of the Finance and Utilities Committees
 FROM: Ross Buetow, Deputy Director/City Engineer *RMB*
 SUBJECT: Proposed Postponement of 2021 Utility Construction Projects
 DATE: April 21, 2021

The Engineering Division is currently assembling bid packages for our 2021 construction projects and have identified several proposed work locations where significant future changes to abutting properties is likely or where negotiations for required access/easements are still in progress. For these reasons, we are recommending that our staff continue to work on finalizing appropriate designs for these locations as more information becomes available, but postpone the bidding and construction until 2022.

The following is a summary of the affected locations:

Street	From	To	Acct 5371	Acct 5230	Acct 5431	Acct 4142
Easement (e/o Riverview Lane)	River Road	Bouten St	\$155,800.00			
WWTP	Weimar Ct	Newberry Ct	\$207,800.00			
Durkee St	College Ave	Washington St	\$52,520.00	\$25,850.00	\$9,100.00	
Morrison St	College Ave	Washington St	\$125,655.00	\$16,425.00	\$8,050.00	
Durkee St	Lawrence St	College Ave				\$175,330.00
Lawrence St	Appleton St	Durkee St				\$325,875.00
Morrison St	Lawrence St, s/o	College Ave				\$204,750.00
Oneida St	Lawrence St	College Ave				\$185,365.00
			\$541,775.00	\$42,275.00	\$17,150.00	\$891,320.00

The scope of these projects includes the reconstruction of sanitary sewers, storm sewers and/or water mains. The timing of any subsequent street paving projects will be adjusted accordingly as more information becomes available. If this request is approved, it would be our intent to re-budget for these projects in 2022.

Please feel free to contact me at 832-6485 if you have any questions regarding this request. Thank you for your consideration.

**Appleton Wastewater Treatment Plant
Operations Synopsis
January 2021 – March 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), and phosphorous. 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 16.1 Million Gallons (MG) of primary digested sludge to biosolids.

Summary of Treatment

Parameter	January	February	March	Average
Industrial Flow (MG)	33.9	31.0	32.9	32.6
Domestic Flow (MG)	227.8	206.4	389.0	274.4
Total Flow (MG)	261.7	237.4	421.9	307.0
Influent CBOD Load (Avg Daily lbs)	23,357	24,330	21,000	22,896
Influent TSS Load (Avg Daily lbs)	42,016	46,463	40,521	43,000
Influent Phosphorous Load (Avg Daily lbs)	474	464	418	452
Influent Ammonia Load (Avg Daily lbs)	1,956	2,404	1,882	2,081
Effluent CBOD Load (Avg Daily lbs)	486	573	837	632
Effluent TSS Load (Avg Daily lbs)	161	420	473	351
Effluent Phosphorous Load (Avg Daily lbs)	19	24	24	22
Effluent Ammonia Load (Avg Daily lbs)	811	988	189	663
% Treatment Removal of CBOD	97.9	97.6	96.0	97.2
% Treatment Removal of TSS	99.6	99.1	98.8	99.2
% Treatment Removal of Phosphorous	96.0	94.8	94.3	95.0
% Treatment Removal of Ammonia	58.5	58.9	90.0	69.1

Work in Progress:

- 2017 Appleton Wastewater Plant Improvement Projects: (WAS Pumping System Replacement, High Pressure Blower #3 Replacement, Digester Biogas Mix Compressor Glycol Cooling System): All new equipment has been successfully installed and utilized since 2020. Final project completion will occur in next quarter with the satisfactory closeout of various punch list items.
- 2019 Appleton Wastewater Plant Improvement Projects: McMahon is under a professional engineering service contract for the multi-process improvements project. 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) initiated construction activities in January 2021. Final project completion is scheduled for March 2022.
- Engineering Services RFP 2021 Appleton Wastewater Plant Sludge Storage Building Addition: During the 4th quarter of 2020 Requests for Proposals (RFP) were sent to four engineering firms as part of the 2021 Appleton Wastewater Plant Sludge Storage Building Addition. RFPs were submitted to the Utilities Department by each firm in early January

2021. Utilities Department staff evaluated and scored each proposal based on weighted criteria described in the RFP. The Applied Technologies, Inc. (ATI) proposal received the highest overall evaluation score by the review team and provided the greatest overall value using the point value calculation. Common Council approved contract award to ATI on February 3, 2021. ATI immediately initiated preliminary engineering services subsequent to contract execution. Engineering services to be delivered by ATI as part of the contract scope will provide a path forward to construct 5,000 cubic yards of additional biosolids storage capacity. The additional storage will address long time deficiencies associated with satisfying the Department of Natural Resources 180-day storage requirement which is based on annual production.

- Engineering Services RFP: 2021 Appleton Wastewater Plant Solids Dewatering Equipment Upgrades: During the 4th quarter of 2020 Requests for Proposals (RFP) were sent to four engineering firms as part of the 2021 Appleton Wastewater Plant Solids Dewatering Equipment Upgrades. RFPs were submitted to the Utilities Department by each firm in early January 2021. Utilities Department staff evaluated and scored each proposal based on weighted criteria described in the RFP. The McMahon Associates, Inc. (McMahon) proposal received the highest overall evaluation score by the review team and provided the greatest overall value using the point value calculation. Common Council approved contract award to McMahon on February 3, 2021. McMahon immediately initiated preliminary engineering services subsequent to contract execution. Engineering services to be delivered by McMahon as part of the contract scope will evaluate needs and the type of dewatering technology to be advanced as part of a 2022 construction project.

Regulatory Summary

- Monthly Discharge Monitoring reports for January, February, and March were filed electronically on time for regulatory compliance.
- Monthly average effluent ammonia limit of 10 mg/L was exceeded for January and February. This was a result of construction work as part of the 2019 Improvements Project, which called for modifications to belt filter press (BFP) filtrate piping to improve access and install new equipment. The BFP filtrate piping carries ammonia rich water from the de-watering process to the aeration tanks, in which the ammonia is removed. During construction, BFP filtrate was redirected to another location in the aeration process that's not as effective removing ammonia. The BFP filtrate piping was returned to service in late February, and effluent ammonia concentrations returned to compliance for March.

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 Double-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.

Staffing & Training

- Staff continued COVID-19 adjustments to schedules and work areas, as well as virtual meetings which limit group sizes and face-to-face contact among employees.

EFFLUENT QUALITY SUMMARY
October 2019/2020 – March 2020/2021

Table 1 – 2019-2020 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.)
<i>Permit Limit</i>	<i>25</i>	<i>30</i>	<i>1,322 ⁽³⁾</i>	<i>1</i>	<i>23 ⁽³⁾</i>	<i>10, 11, 4.4, 18</i>	<i>400 col/100ml Geo.Mean</i>	<i>0.038 mg/L daily</i>	<i>6.0 - 9.0 daily limit</i>
October 2019	4	3	409	0.16	20	1.98	NA	NA	7.1/7.4
November 2019	5	3	333	0.13	15	2.91	NA	NA	7.2/7.4
December 2019	5	3	411	0.13	17	3.65	NA	NA	7.1/7.4
January 2020	8	3	256	0.11	11	4.41	NA	NA	6.9/7.5
February 2020	5	3	229	0.11	9	7.53	NA	NA	6.9/7.1
March 2020	9	3	586	0.11	19	5.45	NA	NA	6.9/7.2
Nov - April Period Average⁽³⁾					16				

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.)
October 2020	6	4	373	0.31	26	0.88	NA	NA	7.1/7.4
November 2020	6	3	286	0.19	18	0.59	NA	NA	6.9/7.2
December 2020	7	5	347	0.28	20	3.96	NA	NA	6.9/7.1
January 2021	7	2	161	0.27	19	11.70	NA	NA	6.9/7.3
February 2021	8	6	420	0.33	24	14.20	NA	NA	7.0/7.3
March 2021	7	4	473	0.22	25	1.74	NA	NA	7.0/7.2
Nov - April 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										\$ 322,223.57
Buttles Custom Ag	\$ -	\$ -	\$ -										\$ -
Hickory Meadows	\$ 20,276.34	\$ 25,312.36	\$ 29,607.87										\$ 75,196.57
Holland Sanitary Dist. 1	\$ -	\$ -	\$ -										\$ -
Jeff Waldvogel Trkg.	\$ 28,287.42	\$ 30,970.38	\$ 34,544.27										\$ 93,802.07
Movin Materials	\$ -	\$ -	\$ -										\$ -
Waldvogel Trucking	\$ 1,844.16	\$ 1,556.53	\$ 1,975.58										\$ 5,376.27
2021 Total	\$ 160,614.00	\$157,415.55	\$ 178,568.93	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 496,598.48
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: April 20, 2021
Copies: K. Rindt (via email)
C. Shaw (via email)
B. Kreski
Utilities Committee

**Appleton Water Treatment Plant
Operations Synopsis
January, February, and March 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 Q4 of 2020 (Q/Q) and Q1 of 2020 (Y/Y), average water production levels were essentially unchanged.

Raw Water Quality. Average Q/Q lake turbidity declined to relatively low levels consistent with winter season levels, and Y/Y levels were essentially unchanged.

Energy Efficiency. Applied electrical energy Q/Q and Y/Y efficiencies were essentially unchanged as well.

WATER PLANT PARAMETERS	Previous (Q4 2020)			Current (Q1 2021)		
	October	November	December	January	February	March
Water Treated						
Finished (million gallons), total	262.2	262.2	259.9	259.5	241.9	265.4
Finished (million gallons / day), average	8.5	8.4	8.4	8.4	8.6	8.6
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	473.6	454.1	481.1	475.7	442.1	484.2
MWH / million gallons produced	1.81	1.80	1.85	1.83	1.83	1.82
Lake Turbidity (NTU), average	13.9	30.87	5.63	2.21	1.43	4.70
Water System Microbial Quality						
Total Coliform Samples	82	82	81	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Finished Water Quality						
Water Temperature (Degrees F)	51.7	41.2	34.6	34.2	35.6	37.4
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	8.7	8.8	8.9	8.8	8.9
Total Chlorine (mg/L)	2.01	2.01	1.99	1.96	1.97	1.99
Fluoride (mg/L)	0.75	0.69	0.73	0.72	0.71	0.69
Orthophosphate (mg/L)	0.82	0.60	0.63	0.60	0.63	0.60

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.

Safety

- Maintained WTF Safety programs by completing scheduled safety inspections, fire prevention inspections, and monthly meetings. No significant incidents to report.
- Maintained appropriate COVID-19 countermeasures as directed by city policy.

Operations

- Operated two UV Disinfection reactors continuously during the quarter.
- Continued construction phase for the Lake Station mechanical/electrical rehabilitation. Major work completed includes installation of #2 Traveling Screen and the new fine screening system and associated controls; MCC and VFD replacements; and HVAC equipment installation.
- Continued the testing phase for Optimized Corrosion Control Treatment (OCCT) pipe loop testing apparatus.
- Continued pause for the winter months of gradual Main Pressure Zone pressure increases as recommended by Water Distribution System Master Plan.
- Continued cleaning #3 Softener.
- Completed repair of the Fluoride day tank.
- Successfully completed annual WPPI electrical generator capacity testing.

Staffing & Training

- Maintained staff schedules and work areas to limit group sizes and face-to-face contact among employees.
- Completed required CPR/First Aid training for staff Confined Space Entry qualification.

WATER MAIN BREAK/ JOINT LEAK REPORT - MARCH

YEARLY WATER MAIN BREAK COMPARISON

<u>MARCH 20</u>	<u>MARCH 21</u>	<u>YTD 20</u>	<u>YTD 21</u>
10	11	29	45

LOCATION	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**
1501 S. Rebecca La.	282952	DIP	8"	1977	1/32" Crack X 4" Split	61 Days	1,583,314	\$9,626.55
NOTES: Break was found with the Correlator. Duration is estimated to be running for a few month as the split was small and never surfaced.								
1215 Jardin Ct.	282956	CIP	6"	1946	1/16" X 16" Split	7 Days	1,708,209	\$10,385.91
NOTES: Break was found as water was bubbling out of the road. Duration is based on soil saturation. Water was running under snow bank and into catch basin .								
201 S. Matthais St.	289090	CIP	8"	1963	5" Hole	4 Hours	1,012,977	\$6,158.90
NOTES: Reported by APD for water bubbling out of road. Duration is based on the amount of soil blow out into the road.								
211 N. Appleton St.	283207	CIP	6"	Pre 1930	1/16" Crack	4 Hours	50,000	\$304.00
NOTES: Break was called in for water bubbling out of the road. Duration is from the time of call till repaired.								

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

LOCATION	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**
1631 E. Melrose Ave.	283261	CIP	6"	1953	1/32" Crack	8 Hours	35,309	\$214.68
NOTES: Break was found as water was bubbling out of the road. Crew used past experience to determine duration as it was raining and break was found after the rain stopped.								
839 E. John St.	283332	DIP	8"	1970	3" Hole	4 Hours	449,478	\$2,732.83
NOTES: Reported for water on the road. Duration is based on time of call and soil saturation.								
606 E. Mitchell Ave.	283355	DIP	8"	1978	3" Hole	4 Hours	364,672	\$2,217.21
NOTES: Break was found as water was bubbling out of the road. Duration is based on the amount of gravel/ dirt washed out.								
E. Emmers Dr. & S. Schaefer St.	283356	CIP	8"	1965	5" Hole	5 Hours	1,291,298	\$7,851.09
NOTES: Break was found as water was bubbling out of the road. Duration is based on the amount of gravel/ dirt washed out.								
1525 S. Irma St.	283378	DIP	8"	1977	1/64" Crack	29 Days	2,535,912	\$15,418.34
NOTES: Break was found as water was in the road. Duration is based on soil saturation and resident conversation.								
1621 N. Division St.	283462	CIP	6"	1950's	4" Hole	4 Hours	635,207	\$3,862.06
NOTES: Break was called in for water bubbling out of the road. Duration is from the time of call till repaired.								

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

LOCATION	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**
1621 N. Division St.	283510	CIP	6"	1950's	1/16" Crack	12 Hour	133,989	\$814.65
NOTES: Break was found as water was in the road. Duration is based on soil saturation.								

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.