



City of Appleton

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

Meeting Agenda - Final Utilities Committee

Tuesday, October 27, 2020

5:00 PM

Council Chambers, 6th Floor

1. Call meeting to order

2. Roll call of membership

3. Approval of minutes from previous meeting

[20-1434](#) Approval of the October 13, 2020 Utilities Committee Meeting minutes.

Attachments: [October 13, 2020 Utilities Committee Meeting minutes.pdf](#)

4. **Public Hearings/Apearances**

5. **Action Items**

[20-1438](#) Revisions to: Chapter 20, Section 20-203(2) and Chapter 20, Section 20-69, Definitions, Pollutant

Attachments: [Amend Sec 20-69 .pdf](#)
[Amend Sec 20-203\(2\).pdf](#)
[Amend Sec 20-204\(b\).pdf](#)

[20-1440](#) Approve 2019 AWWTP Improvements Project Engineering Services Amendment #1 increasing the McMahon total contract amount by \$49,630 from \$169,886 to \$219,516.

Attachments: [2019 AWWTP Improvements Project McMahon Contract Amendment No1.pdf](#)

6. **Information Items**

[20-1439](#) Update on Service Line Warranty Program

[20-1435](#) 2021 Department of Utilities Budget Review

[20-1436](#) 2021 Department of Public Works Budget Review

20-1437

Monthly Reports for July, August, and September 2020:

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

Attachments: [3rd Qrt 2020 Quarterly WW Synopsis.pdf](#)

[3rd Qrt 2020 Effluent Quality Summary.pdf](#)

[Receiving Station Revenue Report.pdf](#)

[2020 Q3 Water Synopsis.pdf](#)

[Water Main Breaks September 2020.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.



City of Appleton

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Meeting Minutes - Final Utilities Committee

Tuesday, October 13, 2020

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

Aldersperson Smith arrived at 5:20 p.m.

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

3. Approval of minutes from previous meeting

[20-1285](#)

Approval of the September 22, 2020 Utilities Committee Meeting minutes.

Attachments: [September 22, 2020 Utilities Committee Meeting minutes.pdf](#)

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

Aye: 4 - Meltzer, Fenton, Otis and Prohaska

Excused: 1 - Smith

4. Public Hearings/Appealances

[20-1286](#)

Christine DeMaster and Erik Granum, Trilogy Consulting, LLC to present the Wastewater Rate Study.

Attachments: [Wastewater Rate Study Executive Summary - 20201008.pdf](#)
[Presentation - 20201013.pdf](#)

Trilogy Consulting presented the Wastewater Rate Study to Committee.

5. Action Items

[20-1287](#)

Request to approve rate increase effective January 1, 2021 as presented in Wastewater Rate Study.

Attachments: [WW Rate Increase memo Oct 2020 FINAL.pdf](#)

Fenton 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

[20-1288](#)

Approve second amendment to the 2020A Stormwater Management Plan Review contract with Brown and Caldwell by an increase of \$30,000 for a total contract amount not to exceed \$65,000.

Attachments: [2020A SWM Plan Review BC Second Amendment Memo Util Cmte.pdf](#)

Smith 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

[20-1289](#)

Approve second amendment to the 2020B Stormwater Management Plan Review contract with raSmith by an increase of \$25,000 for a total contract amount not to exceed \$65,000.

Attachments: [2020B SWM Plan Review raSmith Second Amendment Memo Util Cmte.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

[20-1290](#)

Discuss Stormwater Permit requirements for Post-Construction Stormwater Management.

Attachments: [2020 Post Construction Program Presentation October 2020.pdf](#)
[Post Construction 2020 Program to UC combined.pdf](#)

This item was discussed.

[20-1291](#)

2021 Department of Utilities Budget Review

This item was reviewed.

[20-1292](#)

2021 Department of Public Works Budget Review

This item was reviewed.

7. Adjournment

Smith moved, seconded by Prohaska, that the Utilities Committee be adjourned at 5:57 p.m.. Roll Call. Motion carried by the following vote:

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

ADOPTED:
PUBLISHED:
Office of the City Clerk

XX-20

AN ORDINANCE AMENDING SECTION 20-69 OF CHAPTER 20 OF THE MUNICIPAL CODE OF THE CITY OF APPLETON, RELATING TO DEFINITIONS.

(Utilities Committee – / /2020)

The Common Council of the City of Appleton does ordain as follows:

Section 1: That Section 20-69 of Chapter 20 of the Municipal Code of the City of Appleton, relating to definitions, is hereby amended to read as follows by adding the following definitions:

Sec. 20-69. Definitions.

Total Kjeldahal Nitrogen (TKN): The total amount of nitrogen bound in organize substances and nitrogen in ammonia (NH₃-N) within wastewater that is obtained through laboratory sample digestion, usually expressed as a concentration (i.e., mg/L).

Total Phosphorus (TP): Multi-step laboratory test which measures all the forms of phosphorus in the unfiltered wastewater sample (e.g., orthophosphate, condensed phosphate, and organize phosphate), usually expressed as a concentration (i.e., mg/L).

Section 2: This ordinance shall be in full force and effect from and after its passage and publication.

Dated: _____

Jacob A. Woodford, Mayor
City Law 19-1150

Kami Lynch, City Clerk

ADOPTED:
PUBLISHED:
Office of the City Clerk

XX-20

AN ORDINANCE AMENDING SECTION 20-203(2) OF CHAPTER 20 OF THE MUNICIPAL CODE OF THE CITY OF APPLETON, RELATING TO BASIS.

(Utilities Committee – / /2020)

The Common Council of the City of Appleton does ordain as follows:

Section 1: That Section 20-203(2) of Chapter 20 of the Municipal Code of the City of Appleton, relating to basis, is hereby amended to read as follows:

Sec. 20-203. Basis.

- (2) The quantity and quality of sewage discharged into the sewage system. The quantity of sewage shall be measured by meter, weir or other measuring device approved by the Utilities Manager and installed by the industry or user at its own expense. The quality of sewage shall be measured by the pounds of suspended solids, the pounds of biochemical oxygen demand (BOD), the pounds of total phosphorus (TP), and the pounds of total Kjeldahal nitrogen (TKN) contained therein. The determination of suspended solids, BOD, TP, and TKN contained in the waste shall and the pounds of biochemical oxygen demand (BOD) contained therein. The determination of suspended solids and BOD contained in the waste shall be in accordance with guidelines approved by the EPA and DNR establishing test procedures for the analysis of pollutants. To determine the quality of the sewage and waste, samplings and analyses of twenty-four (24) composite samples shall be made daily by and at the expense of the industry or user and accumulated over the billing period. The City shall have the right to access all measurement and analytical facilities and shall cause sufficient tests to be made to establish the validity of the information being supplied.

Section 2: This ordinance shall be in full force and effect from and after its passage and publication.

Dated: _____

Jacob A. Woodford, Mayor
City Law: 19-1150

Kami Lynch, City Clerk

ADOPTED:
PUBLISHED:
Office of the City Clerk

XX-20

AN ORDINANCE AMENDING SECTION 20-204(b) OF CHAPTER 20 OF THE MUNICIPAL CODE OF THE CITY OF APPLETON, RELATING TO RATES.

(Utilities Committee – / /2020)

The Common Council of the City of Appleton does ordain as follows:

Section 1: That Section 20-204(b) of Chapter 20 of the Municipal Code of the City of Appleton, relating to rates, is hereby amended to read as follows:

Sec. 20-204. Rates.

(b) The City shall determine the strength of normal domestic waste from its non-monitored customers by subtracting the industrial monitored loading by parameter from the total loading treated by the City. The net pounds of suspended solids, biochemical oxygen demand (BOD), total phosphorus (TP), and total Kjeldahal nitrogen (TKN) ~~biochemical oxygen demand (BOD) and total suspended solids~~ from the non-monitored customers shall be divided by 8.34 (a conversion factor) and then divided by the net billable flow (expressed in millions of gallons) from those non-monitored customers to determine whether the strength of the waste is within a reasonable range for a normal domestic household. The City will consider normal domestic strength waste to have a BOD concentration of not more than three hundred (300) milligrams per liter. Should this calculation for BOD be higher than three hundred (300) milligrams per liter, a review will be done of the city users to determine if there are additional users that should be monitored for high strength water. This methodology shall be followed to assure that the charges are proportionately made to all customers. No users shall pay less per one thousand (1,000) gallons than the current effective rate associated with the per unit costs for environmental treatment based on the waste characteristics determined to be applicable for domestic or industrial users.

Section 2: This ordinance shall be in full force and effect from and after its passage and publication.

Dated: _____

Jacob A. Woodford, Mayor

Kami Lynch, City Clerk



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

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: Chris Stempa, Utilities Deputy Director

DATE: October 22, 2020

RE: *Approve: 2019 AWWTP Improvements Project Engineering Services
Amendment #1 increasing the McMahon total contract amount by
\$49,630 from \$169,886 to \$219,516*

BACKGROUND:

The Appleton Wastewater Treatment Plant (AWWTP) Improvements Project engineering service contract was awarded to McMahon by Common Council in April 2019. This project was originally comprised by five individual projects identified in the 2019 budget that involve the rehabilitation, replacement, or improvements to address immediate needs and long term reliability. Those project elements include Return Activated Sludge (RAS) pump replacement, piping modifications (e.g. blended sludge, waste gas, and filtrate), primary clarifier concrete recoating, and outside secondary containment (chemical offload) repairs.

The filtrate tank repairs and piping modification contract was awarded by Common Council in early March 2020 in an effort to advance the work ahead of the other project elements because of implications to seasonal low-level ammonia effluents. That decision was necessary to ensure compliance with the Wisconsin Pollution Discharge Elimination System (WPDES) permit and specifically ammonia limits during warm weather months. This task demanded the focus of plant staff and McMahon to facilitate the work until it was successfully completed in May 2020. During that initial phase of active construction there were other critical operation and maintenance needs identified which were outside of McMahon's original contract scope. Additionally, the Utilities Department staff acknowledged synergies with parallel efforts required of 2020 Capital Improvement Projects (CIPs) that had not been initiated at that time. McMahon was asked to provide a contract amendment for authorization summarizing the new scope items highlighted below.

1. Plant Effluent Pumping Station #2 Pump Replacement (2020 CIP)
 - a. Perform hydraulic calculations to determine capacity of existing Plant Effluent Pumping Station in Building H.
 - b. Provide options for replacement of the three plant effluent pumps.
 - c. Provide options for increasing access to the lower level of Building H.

- d. Provide final design services for the Plant Effluent Pump replacement, including replacing piping and providing new drives.
 - e. Provide final design services for new controls for the Plant Effluent Pump Station.
 - f. Provide bidding and construction services for this project.
2. Primary Clarifier #5 and #6 Drive Replacement (2020 CIP)
 - a. Provide final design services for raising the bridge of the two clarifiers and replacing the drive units.
 - b. Provide survey services to determine elevations of the primary influent channel, clarifiers previously raised and clarifiers #5 and #6.
 - c. Observe condition of primary clarifiers #5 and #6 tankage and steel and provide memorandum.
 - d. Provide final design services for the coating of primary clarifier #5 and #6 tankage and steel.
 - e. Provide bidding and construction services for the work on Primary Clarifier #5 and #6.
3. B-Building Headworks Slide Gate Replacement
 - a. Observe condition of severely deteriorated aluminum slide gate in Headworks Building.
 - b. Provide plans and specifications for the replacement of the slide.
 - c. Provide bidding and construction services for this work
4. Blended Sludge Piping Replacement
 - a. Provide options for replacing compromised blended sludge piping in pipe chase and lower level of Digester Building.
 - b. Provide plans and specifications for the replacement of the blended sludge piping.
 - c. Provide bidding and construction services for this work.
5. B-Building and D-Building Programmable Logic Controllers (PLC's)
 - a. Provide plans and specifications for the upgrade of unsupported Schneider Quantum Processors to M580s with Programs to Unity Pro.
 - b. Design new communication cable for the PLC replacements.
 - c. Provide bidding and construction services for this work

SUMMARY

The cost of additional engineering services outlined as part of the McMahon Contract Amendment #1 totals \$49,630. The proposed costs take advantage of parallel engineering activities within McMahon's existing contract. It provides opportunity to receive greater value through economy of scale engineering services and public bid construction. As an example, the estimated fees for standalone engineering services comparable to those outlined in Amendment #1 for only the 2020 Plant Effluent Pumping Station #2 Pump Replacement totaled \$75,000.

This amendment would result in the contract amount increasing from \$169,886 to \$219,516. If you have any questions regarding this project, please contact Chris Stempa at ph: 832-5945.

Appleton Wastewater Treatment Plant

Operations Synopsis

July 2020 – September 2020

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 eight days. Dewatering processes functioned well and converted 17.8 Million Gallons (MG) of primary digested sludge to biosolids.

Summary of Treatment

Parameter	July	August	September	Average
Industrial Flow (MG)	30.1	33.8	36.6	33.5
Domestic Flow (MG)	324.9	205.2	212.4	247.5
Total Flow (MG)	355.0	239.0	249.0	281.0
Influent CBOD Load (Avg Daily lbs)	21,583	21,796	21,094	21,491
Influent TSS Load (Avg Daily lbs)	44,656	43,872	44,675	44,401
Influent Phosphorous Load (Avg Daily lbs)	395	431	441	422
Influent Ammonia Load (Avg Daily lbs)	1,995	2,028	1,796	1,940
Effluent CBOD Load (Avg Daily lbs)	460	402	408	423
Effluent TSS Load (Avg Daily lbs)	311	189	191	230
Effluent Phosphorous Load (Avg Daily lbs)	30	19	23	24
Effluent Ammonia Load (Avg Daily lbs)	72	73	57	67
% Treatment Removal of CBOD	97.9	98.2	98.1	98.0
% Treatment Removal of TSS	99.3	99.6	99.6	99.5
% Treatment Removal of Phosphorous	92.4	95.6	94.8	94.3
% Treatment Removal of Ammonia	96.4	96.4	96.8	96.5

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): Start-up of High-Pressure Blower #3 and new WAS pumps occurred during the first half of 2020. The installation and successful start-up of the new gas mix compressor glycol cooling system occurred during the current reporting period. The contractor continues to work on remaining punchlist items with final project completion set to occur during the final quarter of 2020.
- 2019 Appleton Wastewater Plant Improvement Projects: McMahon under 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, waste gas flare, and filtrate tank), primary clarifier concrete recoating, and outside secondary containment repairs for iron salt chemical offloading.
 - Filtrate Tank Repairs: Contracts were approved by Common Council in early March 2020 with Great Lakes Mechanical and R-Industries. These contracts were separated into two categories based on the discipline of work, filtrate tank piping modifications and filtrate tank concrete joint leak repairs. That work was advanced

ahead of the other project elements because of the consequences work proceeding during the months with low-level ammonia effluent limits. Work was successfully completed in May 2020.

- McMahon continued design and engineering services associated with bidding documents for RAS pumps replacement, process piping modifications, primary clarifier concrete recoating, and outside secondary containment repairs for iron salt chemical. Mid-November 17, 2020 was established as the public construction bid closing date.

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.
- Successful Analysis of Single-Blind Proficiency samples for laboratory recertification occurred during the reporting period.

Staffing & Training

- In response to COVID-19, adjustments have been made to staff schedules and work areas, as well as virtual meetings which limit group sizes and face-to-face contact among employees.

EFFLUENT QUALITY SUMMARY
July 2019/2020 – September 2019/2020

Table 1 – 2019 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>
April 2019	7	3	408	0.16	24	5.11	NA	NA	7.1/8.1
May 2019	5	2	257	0.13	19	2.88	5	<0.032	6.9/7.2
June 2019	4	2	224	0.15	18	1.46	3	<0.032	6.7/7.1
July 2019	5	2	150	0.14	13	1.85	4	<0.032	6.8/7.1
August 2019	4	1	98	0.17	14	1.60	10	<0.032	6.8/7.2
September 2019	5	3	525	0.17	21	2.33	53	<0.032	7.1/7.3
May - October Period Average⁽³⁾					17				

Table 2 – 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.)
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	4	2	204	0.16	17	1.72	1	<0.032	6.6/6.8
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
May - October Period Average⁽³⁾					22				

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 2020 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	\$ 78,336.68	\$ 78,457.11	\$ 88,498.49	\$ 92,808.40	\$ 99,535.11	\$ 100,563.41	\$ 103,701.53	\$ 107,300.47	\$101,620.13				\$ 850,821.33
Buttles Custom Ag *	\$ 4,350.46	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ 4,350.46
Dean Foods	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Hickory Meadows	\$ 36,386.43	\$ 26,652.57	\$ 52,134.86	\$ 47,032.79	\$ 37,834.45	\$ 47,374.78	\$ 52,505.79	\$ 24,017.66	\$ 25,463.54				\$ 349,402.87
Holland Sanitary Dist. 1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Jeff Waldvogel Trkg.	\$ 32,158.85	\$ 30,912.64	\$ 33,131.12	\$ 37,695.30	\$ 41,634.20	\$ 51,895.76	\$ 46,871.88	\$ 41,576.05	\$ 41,167.54				\$ 357,043.34
Movin Materials	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Waldvogel Trucking	\$ 2,194.20	\$ 1,954.49	\$ 2,113.56	\$ 2,350.76	\$ 2,554.51	\$ 2,295.43	\$ 2,477.14	\$ 2,677.33	\$ 2,428.05				\$ 21,045.47
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	\$ -	\$ -	\$ -	\$ 1,582,663.47
2019 Total	\$271,217.51	\$240,466.77	\$301,788.32	\$301,125.30	\$327,779.40	\$311,857.27	\$354,997.19	\$328,472.17	\$307,790.57	\$292,411.49	\$256,462.25	\$ 188,614.75	\$ 3,482,982.99

*Buttles Custom Ag new customer in November 2019

Holland Sanitary District 1 new customer in March 2018

Dean Foods new customer in April 2018

3% Rate Increase effective 1/1/18

1% Rate Increase effective 1/1/19

Effective 5/1/19 Dean Foods is billed with Jeff Waldvogel Trucking

Date: October 22, 2020
Copies: K. Rindt (via email)
C. Shaw (via email)
B. Kreski
Utilities Committee

**Appleton Water Treatment Plant
Operations Synopsis
July, August, and September 2020**

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 2020 (quarter over quarter or Q/Q), average water production increased by nearly 12%, however compared with Q3 of 2019 (year over year or Y/Y), average water production decreased slightly by about 1%.

Raw Water Quality. Q/Q lake turbidity more than doubled consistent with late summer and early fall lake conditions. Y/Y average raw water turbidity data were similar with substantial late September real-time turbidity spikes over 75 NTU from increased algae production and die-off.

Energy Efficiency. In terms of applied electrical energy, Q/Q efficiency declined by approximately 3% and Y/Y efficiencies declined by nearly 5% likely due to increased gravity filter backwashing in response to increased raw water turbidities.

WATER PLANT PARAMETERS	Previous (Q2 2020)			Current (Q3 2020)		
	April	May	June	July	August	September
Water Treated						
Finished (million gallons), total	236.6	271.2	271.2	297.3	313.6	267.1
Finished (million gallons / day), average	7.9	8.7	9.0	9.6	10.1	8.9
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	422.2	439.0	470.0	532.2	536.5	473.5
MWH / million gallons produced	1.78	1.62	1.73	1.79	1.71	1.77
Lake Turbidity (NTU), average	7.4	5.4	8.6	21.9	17.88	17.3
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)	43.2	55.6	71.5	79.6	76.1	65.5
Turbidity (NTU), average	0.02	0.02	0.02	0.02	0.02	0.03
%<0.15 NTU standard	100	100	100	100	100	100
pH (SU), average	8.9	8.8	8.8	8.8	8.8	8.7
Total Chlorine (mg/L)	1.98	1.98	1.94	1.91	1.92	1.91
Fluoride (mg/L)	0.68	0.75	0.73	0.72	0.74	0.73
Orthophosphate (mg/L)	0.73	0.84	0.84	0.79	0.77	0.68

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.

Safety

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

Operations

- Operated two UV Disinfection reactors continuously during the quarter.
- Switched to North Recarbonation basin in preparation to clean the South basin next quarter.
- Commenced construction phase for the Lake Station mechanical/electrical rehabilitation.
- Commenced maintenance and required upgrades project for the Ridgeway Tower.
- Commenced contract for Optimized Corrosion Control Treatment (OCCT) pipe loop testing apparatus and related plant sampling and supply water modifications.
- Continued gradual Main Pressure Zone pressure increase as recommended by Water Distribution System Master Plan.
- Completed final workshop of compliance project for America's Water Infrastructure Act (AWIA).

Staffing & Training

- Adjusted staff schedules and work areas to limit group sizes and face-to-face contact among employees.

WATER MAIN BREAK/ JOINT LEAK REPORT - SEPTEMBER 2020

YEARLY WATER MAIN BREAK COMPARISON

<u>MONTH 19</u>	<u>MONTH 20</u>	<u>YTD 19</u>	<u>YTD 20</u>
3	8	57	66

LOCATION	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**
907 W. Oklahoma St.	275475	CIP	6"	1924	5" Hole	6 Hours	983,495	\$5,979.65
NOTES: Break called in by APD of water coming through street.								
3311 N. McDonald St.	275508	DIP	12"	1977	3" Hole	4 Hours	371,894	\$2,261.12
NOTES: Break called in by APD of water coming through street.								
Kensington Dr. & Warehouse Rd.	275783	DIP	12"	1977	3" Hole	5 Hours	479,640	\$2,916.21
NOTES: Break called in as water was bubbling in street.								
2619 E. Henry St.	275819	DIP	8"	1972	4" Hole	5 Hours	810,382	\$4,927.12
NOTES: Break called in as water was bubbling in street.								
1821 W. Reid Dr.	275894	CIP	6"	1957	1.5" Hole	2 Hours	33,375	\$202.92
NOTES: Break occurred when we were flushing hydrants in this area.								

**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**
2920 S. Carpenter St.	276058	DIP	8"	1971	1" Hole	4 Hours	33,000	\$200.64
NOTES: Break was called in by resident to our after hours answering service. Estimating 4 hours based on site conditioning.								
2901 S. Carpenter St.	276067	DIP	8"	1971	3" Hole	3 Hours	150,000	\$912.00
NOTES: Break occurred at the same time as 2920 S. Carpenter but didn't notice until we turned off mid-block valve.								
3115 N. Roemer Rd.	276253	DIP	12"	1978	4" Hole	3 Hours	541,442	\$3,291.97
NOTES: Break called in to after hours answering service. Estimated duration is based on site condition upon arrival.								

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