



# City of Appleton

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

## Meeting Agenda - Final-revised Utilities Committee

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Tuesday, January 22, 2019

5:00 PM

Council Chambers, 6th Floor

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1. Call meeting to order

2. Roll call of membership

3. Approval of minutes from previous meeting

[19-0072](#) Approval of the January 8, 2019 Utilities Committee Meeting minutes.

**Attachments:** [January 8, 2019 Utilities Committee Meeting minutes.pdf](#)

4. **Public Hearings/Apearances**

5. **Action Items**

[19-0073](#) Approval to single source and award the 2019I Valley Road Stormwater Management Alternatives Evaluation in an amount not to exceed \$37,400 and authorization to single source the future design contract and construction related services contract with McMahon Associates, Inc.

**Attachments:** [2019 Valley Road Stormwater Evaluation Contract Award.pdf](#)

[19-0087](#) Approve Intergovernmental Agreement with the City of Menasha and Village of Fox Crossing for stormwater management related to the urbanization of Valley Road.

**Attachments:** [Valley Road.pdf](#)

6. **Information Items**

[19-0074](#) WPPI Capacity Agreement Revenue Summary

**Attachments:** [WPPI Capacity Agreement Revenue Summary.pdf](#)

[19-0075](#) 2018 Water Main Break History

**Attachments:** [Water Main Break History.pdf](#)

[19-0076](#)

Monthly Reports for October, November, December 2018

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

**Attachments:** [2018 Q4 Wastewater Synopsis.pdf](#)

[2018 Q4 Water Synopsis.pdf](#)

[Water Main Breaks December 2018.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

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Tuesday, January 8, 2019

5:00 PM

Council Chambers, 6th Floor

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1. Call meeting to order

*Chairperson Baranowski called the Utilities Committee meeting to order at 5:00 p.m.*

2. Roll call of membership

**Present:** 5 - Baranowski, Meltzer, Reed, Dvorachek and Raasch

3. Approval of minutes from previous meeting

[19-0008](#)

Approval of the December 11, 2018 Utilities Committee Meeting Minutes.

**Attachments:** [December 11, 2018 Utilities Committee Meeting Minutes.pdf](#)

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

**Aye:** 5 - Baranowski, Meltzer, Reed, Dvorachek and Raasch

4. Public Hearings/Appearances

5. Action Items

[19-0009](#)

Award Sole Source Stormwater Consulting Services Contract 2019G for French Road Urbanization Stormwater Analysis with raSmith in an amount not to exceed \$28,000.

**Attachments:** [2019G raSmith Contract Util Memo 01-08-2019 final.pdf](#)

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

**Aye:** 5 - Baranowski, Meltzer, Reed, Dvorachek and Raasch

[19-0051](#)

Award North Edgewood Sanitary Lift Station Design and Related Services to McMahon Associates, Inc. in the amount of \$105,031.00 with a 5% contingency of \$5,249.00 for a project total not to exceed \$110,280.00.

**Attachments:** [North Edgewood Sanitary Lift Station design.pdf](#)

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

**Aye:** 5 - Baranowski, Meltzer, Reed, Dvorachek and Raasch

## 6. Information Items

[19-0050](#)

Presentation - Historical Review of Appleton's Biosolids Composting Initiative

**Attachments:** [2019 Compost History Presentation 01-03-19.pdf](#)

*This item was presented.*

[19-0014](#)

Monthly Reports for November 2018:  
- Water Distribution and Meter Team Monthly Report

**Attachments:** [Water Main Breaks November 2018.pdf](#)

*The report was reviewed.*

## 7. Adjournment

**Dvorachek moved, seconded by Reed, that the Utilities Committee meeting be adjourned at 5:39 p.m. Roll Call. Motion carried by the following vote:**

**Aye:** 5 - Baranowski, Meltzer, Reed, Dvorachek and Raasch

## Department of Public Works – Engineering Division

### MEMO

**TO:** Utilities Committee

**FROM:** Paula Vandehey, Director of Public Works  
Sue Olson, Staff Engineer  
Pete Neuberger, Staff Engineer

**DATE:** January 14, 2019

**RE:** Approval to single source and award the 2019I Valley Road Stormwater Management Alternatives Evaluation in an amount not to exceed \$37,400 and authorization to single source the future design contract and construction related services contract with McMahon Associates, Inc.

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The Department of Public Works is requesting approval to single source and award the 2019I Valley Road Stormwater Management Alternatives Evaluation contract with McMahon Associates, Inc. in an amount not to exceed \$37,400, and approval to negotiate the future design contract and construction related services contract with McMahon Associates, Inc. to design and assist with constructing the selected alternative without an RFP process. After this contract, \$548,820 will remain in the stormwater consulting services budget.

Valley Road from just east of Memorial Drive to just west of Oneida Street is programmed for reconstruction in 2021 per an agreement with the City of Menasha and the Village of Fox Crossing. This reconstruction will change the street from a rural section with roadside ditches to an urban section with curb and gutter. The specific street cross section was approved in October 2018 through the standard public information and Municipal Services Committee processes.

Changing a street from a rural to an urban cross section requires appropriate stormwater management. There are multiple regulations to consider, including but not limited to, WDNR NR 151 water quality standards, City of Appleton, City of Menasha and Village of Fox Crossing stormwater ordinances, TMDL requirements and possibly wetland regulations. Before pavement design can be finalized, the stormwater management practices must be determined and coordinated with the paving design. Design and construction are subject to future contracts and Committee and Council approval.

Staff is recommending to single source this contract to McMahon Associates because of the amount of work that they have already completed in this watershed for all three communities. They worked on the Red Oak Ravine project for the City of Appleton and have a model of the watershed already developed from various previous projects. It would not be cost effective for another consultant to repeat work that McMahon has already completed.

The following tasks are included in the Stormwater Management Alternatives Evaluation:

- Attend up to six (6) meetings with the three communities, regulatory agencies and stakeholders
- Perform a wetland delineation within the Valley Road right-of-way
- Create a list of all applicable regulations and permits
- Update the existing XPSWMM model for water quantity and refine it for this small scale project
- Evaluate the existing conveyance system and proposed alternatives with the updated XPSWMM model
- Create a WinSLAMM model for water quality
- Evaluate up to three alternatives to address the runoff for quantity and quality

- Perform up to three iterations of each alternative based on discussions with municipalities and regulatory agencies
- Prepare a report and cost estimates
- Develop a cost allocation methodology for each alternative for the three communities

Since the design scope of the stormwater practice(s) selected to address the runoff cannot be accurately identified at this time, staff is also requesting approval to negotiate the contract for the design and development of construction bid documents with McMahon Associates, Inc., provided their work on the alternative evaluation is deemed satisfactory. This future design contract is subject to approval of the Utilities Committee and Common Council at the appropriate time. Construction Related Services, if needed, will be budgeted in 2020 and a future contract for those services will also be subject to the approval of the Utilities Committee and Common Council at the appropriate time.

**CITY OF APPLETON/CITY OF MENASHA/VILLAGE OF FOX CROSSING**  
**Valley Road – west of Chain Drive to east of Forestview Court**

**INTERGOVERNMENTAL AGREEMENT**

**FOR STORMWATER MANAGEMENT RELATED TO THE URBANIZATION OF VALLEY ROAD**

PROJECT TITLE: Valley Road Urbanization

DATE: December 7, 2018

**PROPOSED IMPROVEMENT**

The City of Appleton, hereinafter called “Appleton”, the City of Menasha, herein called “Menasha” and the Village of Fox Crossing, herein called “Fox Crossing” through their undersigned duly authorized officers or officials, hereby enter into an agreement to address stormwater management related to the urbanization of Valley Road from west of Chain Drive to east of Forestview Court. Per a separate document, the cost share for roadway, sidewalk, storm sewer/inlets, engineering and inspection has been agreed upon. This agreement is to address stormwater management associated with the urbanization of the project as follows:

1. Appleton will be the lead agency for the project.
2. Appleton will hire McMahan Associates for consulting services including conducting a wetland determination, developing a stormwater management plan, and submitting for the applicable DNR permit(s).
3. The parties agree that the Total Suspended Solids and Total Phosphorous removed with this project are from sources in all three municipalities and will assist each community with meeting their TMDL goals. Therefore, a separate agreement shall be approved and signed by all three parties documenting ownership of the constructed stormwater practice(s), long-term maintenance responsibility, maintenance cost share, and water quality improvements granted to each community.
4. The cost share for McMahan’s consulting services will be based on frontage within each municipal boundary. City of Appleton 1722’ (34%), City of Menasha 1260’ (25%) and Village of Fox Crossing 2028’ (41%).
5. The cost share for the stormwater practice(s) shall be determined under a future agreement.

**City of Appleton**

Attest:

\_\_\_\_\_  
Printed Name:

By:

\_\_\_\_\_  
Timothy M. Hanna, Mayor

Attest:

\_\_\_\_\_  
Printed Name:

By:

\_\_\_\_\_  
Kami Scofield, City Clerk

Provision has been made to pay the liability  
that will accrue under this contract.

Approved as to form:

\_\_\_\_\_  
Anthony D. Saucerman, Finance Director

\_\_\_\_\_  
James P. Walsh, City Attorney

**City of Menasha**

Attest:  
\_\_\_\_\_  
Printed Name:

By:  
\_\_\_\_\_

Attest:  
\_\_\_\_\_  
Printed Name:  
\_\_\_\_\_

By:  
\_\_\_\_\_

**Village of Fox Crossing**

Attest:  
\_\_\_\_\_  
Printed Name:  
\_\_\_\_\_

By:  
\_\_\_\_\_

Attest:  
\_\_\_\_\_  
Printed Name:  
\_\_\_\_\_

By:  
\_\_\_\_\_



**WPPI Capacity Agreement Revenue**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
January	\$ -	\$ 9,732.58	\$ 9,218.23	\$ 8,774.38	\$ 8,418.13	\$ 8,372.75	\$ 8,790.93	\$ 8,274.65	\$ 8,205.38	\$ 8,415.50	\$ 8,044.15	\$ 7,969.60	\$ 8,218.93	\$ 7,353.95	\$ 6,438.42	\$ 6,343.26	\$ 7,151.93	\$ 7,658.25	\$ 137,381.02
February	\$ -	\$ 8,641.03	\$ 8,724.85	\$ 8,789.60	\$ 8,277.18	\$ 8,304.18	\$ 8,649.95	\$ 8,169.88	\$ 8,201.58	\$ 8,282.15	\$ 8,051.75	\$ 8,046.75	\$ 8,307.50	\$ 7,402.55	\$ 6,278.97	\$ 6,497.57	\$ 7,037.63	\$ 7,704.00	\$ 135,367.12
March	\$ -	\$ 8,677.23	\$ 8,818.18	\$ 8,757.23	\$ 8,389.55	\$ 8,384.18	\$ 8,674.70	\$ 8,274.65	\$ 8,214.90	\$ 8,205.95	\$ 8,061.28	\$ 7,912.45	\$ 8,084.63	\$ 7,471.13	\$ 6,364.70	\$ 6,482.13	\$ 8,054.23	\$ 8,455.10	\$ 137,282.22
April	\$ -	\$ 8,679.13	\$ 8,545.78	\$ 8,698.45	\$ 8,914.20	\$ 8,888.53	\$ 8,962.23	\$ 8,813.28	\$ 9,074.23	\$ 9,144.53	\$ 8,917.53	\$ 8,874.00	\$ 8,263.28	\$ 7,132.55	\$ 6,895.65	\$ 6,468.42	\$ 7,067.70	\$ 7,602.50	\$ 140,941.99
May	\$ -	\$ 8,635.30	\$ 8,618.15	\$ 8,494.33	\$ 8,448.83	\$ 8,485.43	\$ 8,221.33	\$ 8,150.13	\$ 8,461.23	\$ 8,086.05	\$ 7,920.08	\$ 8,104.63	\$ 7,256.80	\$ 6,398.99	\$ 6,480.42	\$ 6,607.29	\$ 7,302.03	\$ 7,914.00	\$ 133,585.02
June	\$ -	\$ 8,736.28	\$ 8,801.05	\$ 8,484.80	\$ 8,633.73	\$ 8,816.90	\$ 8,649.95	\$ 8,816.88	\$ 8,497.40	\$ 8,514.68	\$ 8,108.68	\$ 8,676.13	\$ 7,373.98	\$ 6,438.42	\$ 6,603.87	\$ 6,566.15	\$ 7,310.60	\$ 8,154.00	\$ 137,183.50
July	\$ -	\$ 8,938.20	\$ 9,239.20	\$ 8,976.30	\$ 9,439.55	\$ 9,068.35	\$ 8,859.50	\$ 8,769.25	\$ 8,996.53	\$ 8,314.65	\$ 8,388.70	\$ 8,896.15	\$ 7,393.98	\$ 6,596.15	\$ 6,507.86	\$ 8,567.60	\$ 7,453.48	\$ 8,268.50	\$ 142,673.95
August	\$ -	\$ 9,751.63	\$ 9,336.35	\$ 9,372.55	\$ 9,551.95	\$ 9,788.45	\$ 9,333.85	\$ 8,683.53	\$ 8,786.98	\$ 8,402.28	\$ 8,929.73	\$ 9,364.78	\$ 8,162.63	\$ 6,666.45	\$ 6,794.18	\$ 8,109.20	\$ 7,399.18	\$ 8,128.25	\$ 146,561.97
September	\$ 8,211.85	\$ 9,288.73	\$ 9,082.98	\$ 8,934.40	\$ 9,445.25	\$ 9,111.88	\$ 9,690.08	\$ 8,757.83	\$ 8,760.30	\$ 8,556.58	\$ 8,832.58	\$ 8,707.55	\$ 8,059.78	\$ 6,522.44	\$ 6,777.03	\$ 7,834.88	\$ 7,282.03	\$ 8,008.25	\$ 151,864.42
October	\$ 9,321.10	\$ 9,180.13	\$ 9,088.70	\$ 9,012.50	\$ 8,753.75	\$ 7,202.85	\$ 8,573.75	\$ 8,917.85	\$ 8,676.48	\$ 8,297.50	\$ 8,506.83	\$ 8,690.43	\$ 8,028.33	\$ 6,507.00	\$ 6,747.89	\$ 7,437.68	\$ 7,273.45	\$ 7,571.25	\$ 147,787.47
November	\$ 9,393.50	\$ 9,193.48	\$ 8,753.43	\$ 8,673.40	\$ 8,376.55	\$ 7,049.81	\$ 8,362.30	\$ 8,205.38	\$ 8,135.45	\$ 8,270.83	\$ 8,143.93	\$ 8,267.50	\$ 7,405.40	\$ 6,349.26	\$ 6,394.70	\$ 7,140.50	\$ 7,099.15	\$ 7,702.50	\$ 142,917.07
December	\$ 8,917.25	\$ 9,307.03	\$ 8,978.20	\$ 8,406.70	\$ 8,521.33	\$ 6,880.98	\$ 8,259.43	\$ 8,300.63	\$ 8,009.73	\$ 8,301.33	\$ 8,021.05	\$ 8,261.80	\$ 7,351.10	\$ 6,325.26	\$ 6,410.13	\$ 6,923.33	\$ 7,692.78	\$ 7,719.75	\$ 142,587.81
<b>YTD Total</b>	\$ 35,843.70	\$ 108,760.75	\$ 107,205.10	\$ 105,374.64	\$ 105,170.00	\$ 100,354.29	\$ 105,028.00	\$ 102,133.94	\$ 102,020.19	\$ 100,792.03	\$ 99,926.29	\$ 101,771.77	\$ 93,906.34	\$ 81,164.15	\$ 78,693.82	\$ 84,978.01	\$ 88,124.19	\$ 94,886.35	\$ 1,696,133.56

\*Progam began in September 2001

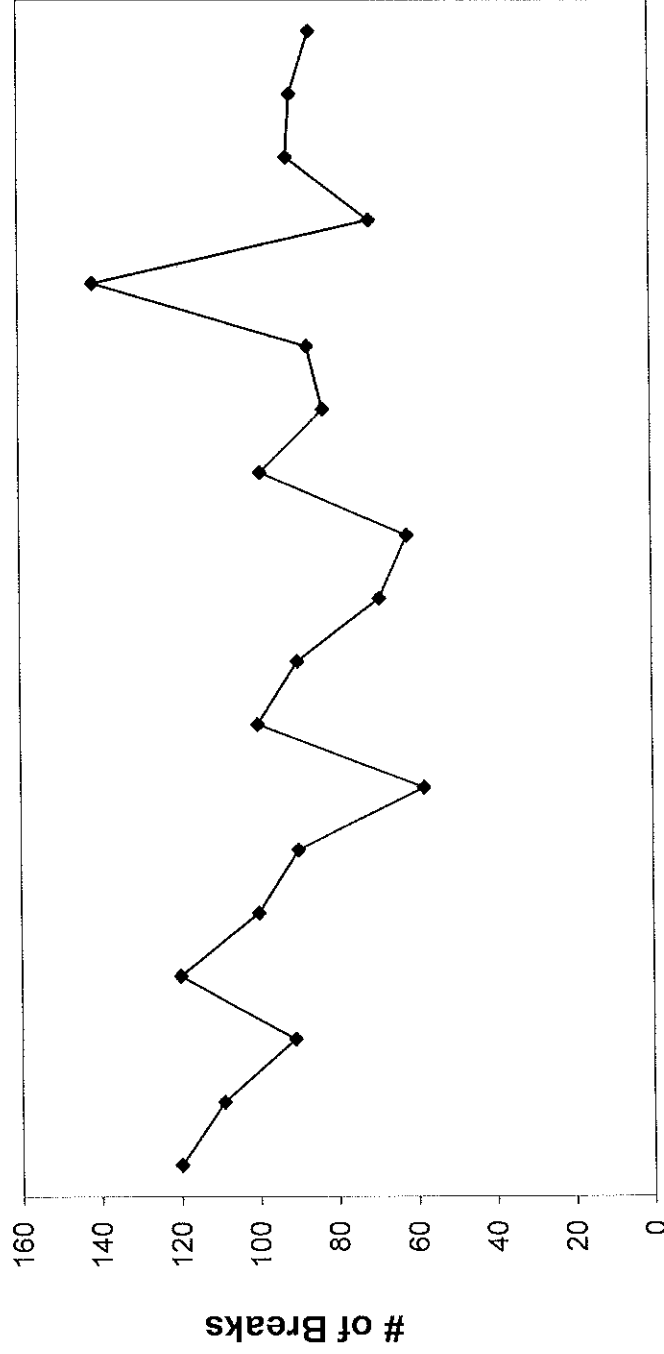
Date: January 10, 2019  
Copies: K. Rindt (via email)  
C. Shaw (via email)  
Utilities Committee

<u>YEAR</u>	<u>BREAKS</u>
2000	120
2001	109
2002	91
2003	120
2004	100
2005	90
2006	58
2007	100
2008	90
2009	69
2010	62
2011	99
2012	83
2013	87
2014	141
2015	71
2016	92
2017	91
2018	86

**TOTAL =** 1759

**Average :** 92.6

## Water Main Break History



Years 2000- 2018

**Appleton Wastewater Treatment Plant  
Synopsis  
October 2018 – December 2018**

**Wastewater Treatment Program**

- The Appleton Wastewater Treatment Plant (AWWTP) final effluent met all Wisconsin Department of Natural Resources (WDNR) discharge monitoring reporting limits including carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), phosphorous, and ammonia. (See Effluent Quality Summary). The plant maintained good treatment and a healthy microbiological population with a sludge retention time of eight days. Dewatering processes functioned well and converted 18.4 Million Gallons (MG) of primary digested sludge to biosolids.

**Summary of Treatment**

Parameter	October	November	December	Average
Industrial Flow (MG)	58.3	54.5	52.4	55.0
Domestic Flow (MG)	437.2	286.8	289.8	338.0
Total Flow (MG)	495.5	341.3	342.2	393.0
Influent CBOD Load (Avg Daily lbs)	25,915	24,340	27,267	25,841
Influent TSS Load (Avg Daily lbs)	44,659	41,143	39,941	41,915
Influent Phosphorous Load (Avg Daily lbs)	368	437	454	420
Influent Ammonia Load (Avg Daily lbs)	1,930	2,246	2,101	2,092
Effluent CBOD Load (Avg Daily lbs)	607	664	437	569
Effluent TSS Load (Avg Daily lbs)	510	305	350	388
Effluent Phosphorous Load (Avg Daily lbs)	32	21	28	27
Effluent Ammonia Load (Avg Daily lbs)	119	153	300	191
% Treatment Removal of CBOD	97.7	97.3	98.4	97.8
% Treatment Removal of TSS	98.9	99.3	99.1	99.1
% Treatment Removal of Phosphorous	91.4	95.2	93.8	93.5
% Treatment Removal of Ammonia	93.8	93.2	85.7	90.9

**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):** Donohue & Associates finalized bidding documents during the reporting period. Bid advertisement was initiated on November 20, 2018 and a prebid conference held on December 4, 2018. Sealed bids were received and opened on December 20, 2018. August Winter and Sons Inc. was the least cost bid in the amount of \$1,721,500. Contract award process to occur in early January 2019.
- **Chemical Storage Room Rehab/Improvements Project:** August Winter & Sons Inc. initiated construction activities in January 2018. Construction activities continued during the reporting period with all new equipment installed. Final project punch list items were concluded in early December 2018. Receipt of construction as-build drawings and final equipment O&M manuals are anticipated in January 2019. AWWTP will resume high chemical dosing trials in the first week of January 2019 for TMDL phosphorus treatment evaluation purposes.
- **Biogas Utilization Study Update:** Donohue and Associates (Donohue) submitted a draft Digester Biogas Utilization Report for review in late 2017. At that time the Facilities Management Department (FMD) was concurrently working on a project that would add a high efficiency boiler to support the lower heating loop at the AWWTP. Subsequent discussions with FMD led to a decision by the Utilities Department to temporarily delay finalization of the report based on the technical support for a new lower loop boiler that would utilize a portion of the excess biogas being

produced. During the reporting period Donohue incorporated improvements within project bidding documents that will complement the proposed new biogas boiler and existing biogas boilers (e.g. new biogas conveyance piping, mixing, gas compression system, and operational strategies). These improvements are intended to further optimize the use of two existing upper loop boilers while facilitating the new lower loop biogas boiler (Great Lakes Mechanical awarded construction contract in 4<sup>th</sup> quarter) in addition to other potential future biogas utilization upgrades. With information from that parallel project phase known, the final Biogas Utilization Study Update will be finalized in January 2019.

- **Briarcliff and Midway Improvement Projects:** McMahon finalized bidding documents in early October 2018. Bid advertisement was initiated on October 9, 2018 and a prebid conference held on October 23, 2018. Sealed bids were received and opened on November 5, 2018. Vinton Construction Company was the least cost bid in the amount of \$194,870. Common Council approved contract award on November 26, 2018. Start of construction is projected to occur in the spring of 2019.
- **Compost Site Evaluation:** Coker Composting and Consulting (Coker) was contracted in early 2018 to evaluate the viability of a concept biosolids compost facility and the technologies best suited for a hypothetical green-field site. The concept facility is to be scalable from 10,000 (comparable to current operations) to 40,000 wet tons (total projected future annual biosolids production). During the reporting period Coker developed concept alternatives that included green-field and hypothetical redevelopment sites within the City that could serve the needs of the Utilities Department and Appleton Department of Public Works (DPW). The hypothetical sites and technology alternatives being considered would facilitate Class B biosolids conversion to a Class A EQ biosolids compost and provide additional space for DPW annual leaf and snow storage needs. Coker has also provided the AWWTP with an updated biosolids storage building construction cost. The building expansion construction estimate will provide the AWWTP with a total 180-day storage capacity of 20,000 wet tons to meet future projected growth needs and will be used to compare against the selected compost technology option. .

### Regulatory Summary

- Monthly Discharge Monitoring reports for October, November, and December were filed electronically on time for regulatory compliance.
- Operations and Maintenance staff responded to an overflow of a digested sludge storage tank on December 2, 2018. The cause of the spill was attributed to a plugged overflow pipe. Staff initiated immediate spill countermeasures to contain, cleanup, and mitigate the effects of the spill. Less than five gallons of digested sludge was estimated to have seeped into the storm sewer. Following the spill event, staff incorporated improvements that will significantly mitigate a similar future occurrence. These include overflow trap modification with flushing connection to remove heavy material from the pipe and early warning SCADA alarms to prompt on duty staff when tank contents reach critical elevation. Spill documentation was completed and submitted to the WI DNR.

### Laboratory Program

#### **Work Completed:**

- Program objectives of sampling and analysis were met for the time period, including results for the Discharge Monitoring Report (DMR) and Health Department pool testing program.
- Submitted the following eDMR reports successfully:
  - October through December 2018 Long Forms
- Analysis of Single Blind Proficiency samples for laboratory recertification

- Completed Fox River Flow and Temperature Monitoring for Waste Load Allocation Season

**Work In Progress:**

- DATCP Pool Program State Audit

**Proposed Projects and Activities:**

- Compliance monitoring for 2019
- Review Laboratory weekly schedule of testing

**EFFLUENT QUALITY SUMMARY**  
**July 2017/2018 – December 2017/2018**

**Table 1 – 2017 Monthly Permit Summary**

Month	CBOD (mg/L)	TSS (mg/L)	TSS (lbs/day)	P (mg/L)	P (lbs/day)	NH3-N <sup>(1)</sup> (mg/L)	Fecal <sup>(2)</sup> Coliform Colonies/ (100 ml)	Chlorine <sup>(2)</sup> Residual (mg/L)	pH (s.u.)
<i>Permit Limit</i>	25	30	1,322 <sup>(3)</sup>	1	23 <sup>(3)</sup>	10, 11, 4.4, 18	400 col/100ml Geo.Mean	0.038 mg/L daily	6.0 - 9.0  daily limit
July 2017	3	2	231	0.17	15.8	1.10	32	<0.032	7.2/7.5
August 2017	4	4	317	0.26	22.9	1.14	19	<0.032	7.1/7.4
September 2017	4	3	284	0.30	25.4	0.66	29	<0.032	7.1/7.3
October 2017	4	5	408	0.23	20.7	0.56	NA	NA	7.2/7.4
November 2017	6	5	386	0.21	17.6	2.01	NA	NA	7.1/7.3
December 2017	6	5	408	0.25	20.1	5.80	NA	NA	7.1/7.3

**Table 2 – 2018 Monthly Permit Summary**

Month	CBOD (mg/L)	TSS (mg/L)	TSS (lbs/day)	P (mg/L)	P (lbs/day)	NH3-N <sup>(1)</sup> (mg/L)	Fecal <sup>(2)</sup> Coliform Colonies/ (100 ml)	Chlorine <sup>(2)</sup> Residual (mg/L)	pH (s.u.)
July 2018	5	5	354	0.61	40.8	0.77	10.5	<0.032	7.4/7.6
August 2018	6	4	375	0.64	50.6	1.40	56	<0.032	7.4/7.6
September 2018	6	4	940	0.56	71.0	1.49	10	<0.032	7.4/7.6
October 2018	5	4	510	0.26	31.8	0.89	NA	NA	7.4/7.6
November 2018	7	3	305	0.22	21.0	1.59	NA	NA	7.4/7.5
December 2018	5	4	673	0.30	27.9	3.25	NA	NA	6.2/7.5

**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 30<sup>th</sup>. 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.

**YEAR 2018 RECEIVING STATION REVENUE**

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	\$ 166,686.94	\$ 170,841.65	\$ 213,882.79	\$ 226,744.58	\$ 228,023.89	\$ 228,196.02	\$ 221,947.22	\$ 169,002.66	\$ 191,766.49	\$ 183,511.53	\$ 192,292.61	\$ 183,877.34	\$ 2,376,773.72
Dean Foods	\$ -	\$ -	\$ -	\$ 2,037.90	\$ 13,720.58	\$ 12,704.93	\$ 11,872.28	\$ 13,016.10	\$ 11,107.43	\$ 12,774.45	\$ 8,593.43	\$ -	\$ 85,827.10
Hickory Meadows	\$ 19,432.60	\$ 17,842.90	\$ 15,000.34	\$ 46,037.59	\$ 110,250.34	\$ 30,545.91	\$ 29,156.65	\$ 42,053.31	\$ 71,641.75	\$ 42,304.63	\$ 32,671.73	\$ 36,399.51	\$ 493,337.26
Holland Sanitary Dist. 1	\$ -	\$ -	\$ 5,694.90	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,694.90
Jeff Waldvogel Trkg.	\$ 41,977.54	\$ 34,849.86	\$ 42,214.17	\$ 53,380.94	\$ 62,244.52	\$ 59,778.35	\$ 57,347.03	\$ 50,438.03	\$ 51,878.69	\$ 61,693.34	\$ 37,918.73	\$ 36,079.78	\$ 589,800.98
Movin Materials	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Waldvogel Trucking	\$ 1,957.65	\$ 1,923.30	\$ 1,920.75	\$ 1,880.93	\$ 1,789.35	\$ 2,403.08	\$ 2,000.78	\$ 2,043.08	\$ 1,786.80	\$ 2,092.05	\$ 2,621.40	\$ 2,363.55	\$ 24,782.72
<b>2018 Total</b>	\$ 230,054.73	\$ 225,457.71	\$ 278,712.95	\$ 330,081.94	\$ 416,028.68	\$ 333,628.29	\$ 322,323.96	\$ 276,553.18	\$ 328,181.16	\$ 302,376.00	\$ 274,097.90	\$ 258,720.18	\$ 3,576,216.68
<b>2017 Total</b>	\$ 172,735.08	\$ 184,476.03	\$ 223,618.34	\$ 231,886.70	\$ 227,389.07	\$ 273,509.72	\$ 244,134.28	\$ 214,324.93	\$ 222,482.09	\$ 257,598.16	\$ 225,732.80	\$ 223,705.96	\$ 2,701,593.16

Movin Materials new hauler in April 2017  
Holland Sanitary District 1 new customer in March 2018  
Dean Foods new customer in April 2018  
3% Rate Increase effective 1/1/18

Date: January 15, 2019  
Copies: K. Rindt (via email)  
C. Shaw (via email)  
B. Kreski  
Utilities Committee

**Appleton Water Treatment Plant  
Operations Synopsis  
October, November, December 2018**

**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 Q3 of 2018 (quarter over quarter or Q/Q), average water production decreased by 14% consistent with reduction in seasonal demand. Compared with Q4 of 2017 (year over year or Y/Y), average water production decreased slightly by 1.8%.

Raw Water Quality. Average raw water turbidity decreased Q/Q by about 36% and Y/Y by about 38% as expected due to Lake Winnebago seasonal effects.

Energy Efficiency. In terms of applied electrical energy, Q/Q efficiency declined by about 2% due to increased backwash water volumes and UV reactor power requirements. However, Y/Y performance was unchanged.

WATER PLANT PARAMETERS	Previous (Q3 2018)			Current (Q4 2018)		
	July	August	September	October	November	December
<b>Water Treated</b>						
Finished (million gallons)	326.2	309.4	278.3	268.6	254.3	263.5
Finished (million gallons / day)	10.5	10.0	9.3	8.7	8.5	8.5
<b>Electrical Energy (WTF)</b>						
Consumption (Megawatt-hours)	563.9	510.0	460.3	441.6	441.3	460.6
MWH / million gallons produced	1.72	1.65	1.65	1.64	1.73	1.75
<b>Turbidity</b>						
Lake (NTU)	24.8	26.5	40.1	27.8	25.5	4.8
Finished (NTU)	0.02	0.02	0.03	0.02	0.02	0.03
Finished (<0.15 NTU standard)	100%	100%	100%	100%	100%	100%
<b>Water System Microbial Quality</b>						
Total Coliform Samples	81	82	81	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
<b>Disinfectant Contact Time</b>						
Minimum CT Ratio Provided	6.1	5.5	3.6	1.8	1.3	1.3
<b>Hardness</b>						
Lake Total (mg/L)	156	150	158	168	179	187
Finished Total (mg/L)	79	76	79	84	98	107
<b>Finished Water Quality</b>						
Total Chlorine (mg/L)	1.85	1.82	1.91	1.94	1.90	1.94
pH (SU) Min/Max	8.3/8.7	8.5/9.1	8.3/9.1	8.7/9.0	8.8/9.0	8.8/8.9
Water Temperature (Degrees F)	79.3	77.7	71.1	53.1	38.8	34.7
Fluoride (mg/L)	0.68	0.67	0.67	0.67	0.68	0.68
Orthophosphate (mg/L)	0.81	0.75	0.71	0.70	0.70	0.70



### **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.
- Completed Unregulated Contaminant Monitoring (UCMR4) sampling for the quarter.
- Completed Lake Winnebago Harmful Algal Blooms (HAB) monitoring with WDNR.

### **Safety**

- Maintained WTF 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.
- Continued database development for the implementation of the new plant data management and reporting system (Hach WIMS).
- Continued assessment/concept design phase for the Lake Station upgrade and Second Intake project.
- Commenced the Chemical Systems Upgrade Project Phase 1 with completion scheduled for the first half of 2019.
- Continued update to the Distribution System Master Plan in collaboration with DPW. Study completion scheduled for Q2 of 2019.
- Maintained finished water quality despite decreased Ultraviolet Transmittance (UVT) in filter effluent.

### **Staffing & Training**

- The Water Plant Operator vacancy resulting from a transfer to Relief Operator was filled by a Wastewater Plant Operator (effective 12/31/18).

# WATER MAIN BREAK/JOINT LEAK REPORT DECEMBER 2018

## YEARLY WATER MAIN BREAK COMPARISON

<u>DEC 17</u>	<u>DEC 18</u>	<u>YTD 17</u>	<u>YTD 18</u>
22	13	91	86

LOCATION	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**
Moorpark Avenue/Racine Street	249314	CIP	6"	1956	1/64" crack	4 hours	97,623	\$593.55
1005 N. Lawe Street	249312	CIP	8"	pre 1930's	1/4" crack	3 hours	275,358	\$1,674.18
711 S. Matthias Street	249313	CIP	8"	1963	1/8" crack	4 hours	134,559	\$818.12
1817 N. Linwood Avenue	249597	CIP	8"	1961	1/16" crack	4 hours	63,432	\$385.67
2219 N. Appleton Street	249622	CIP	6"	1952	12" split	5 hours	260,000	\$1,580.80
2625 S. Walden Avenue	249623	CIP	8"	1964	1/8" crack	5 hours	151,947	\$923.84
537 N. Appleton Street	249698	CIP	6"	1930	4" hole	3 hours	329,600	\$2,003.97
East Street / South River Street	249697	CIP	8"	1965	1/8" crack	21 days	15,580,010	\$94,726.46

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

## WATER MAIN BREAK/JOINT LEAK REPORT DECEMBER 2018

LOCATION	WORK ORDER	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	DOLLAR VALUE OF WATER REVENUE LOSS**
819 S. West Avenue	249831	CIP	6"	1931	1/32" crack	90 days	584,514	\$3,553.85
Bay Ridge Road/Crestview Drive	249842	CIP	8"	1966	1/8" crack	4 hours	150,106	\$912.64
415 W. Atlantic Street	249910	CIP	6"	1938	1/4" crack	8 hours	354,672	\$2,156.41
Oneida Street / Frances Street	250107	CIP	8"	1945	1/8" crack	6 hours	212,756	\$1,293.56
1325 S. Riverdale Drive	250187	CIP	6"	1956	1/16" crack	3 hours	40,000	\$243.20

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