City of Appleton

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

Meeting Agenda - Final

Utilities Committee

Tuesday, October 25, 2016 | **5:30 PM** | **Council Chambers, 6th Floor**

1. Call meeting to order

2. Roll call of membership

3. Approval of minutes from previous meeting

16-1628 Approval of the October 11,2016 Utilities Committee Meeting minutes.

Attachments: October 11, 2016 Utilities Committee Meeting minutes.pdf

4. Public Hearings/Appearances

5. Action Items

16-1629 Award 2016I contract for the Cotter Street Stormwater Pond Design and Construction Related Services to RA Smith National in an amount not to exceed $30,428.

Attachments: Cotter Design Award Memo Util Cmte.pdf

6. Information Items

16-1653 Request sole source purchase of 42" PCCP water main pipe and fittings from U.S. Pipe for the 2017 South Oneida Street Water Main Relocation project. This item will be an Action Item at the Finance Committee meeting.

Attachments: Sole Source Purchase Request - US Pipe.pdf

16-1662 Contract Amendment to Strand and Associates for engineering services related to the Glendale Tower Project.

16-1630 Discussion of the following 2017 Utility Budgets:
- Water
- Wastewater
- Stormwater

16-1631 Monthly Reports for July, August, September 2016
- Wastewater Treatment Plant Synopsis and Receiving Station Revenue Report
- Water Treatment Plant Synopsis
- Water Distribution and Meter Team Monthly Report - September

Attachments: 2016 Q3 AWWTP Synopsis and Receiving Station Revenue Report.pdf
2016 Q3 AWTF Synopsis.pdf
Meter Team Reports September.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

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

Meeting Minutes
Utilities Committee

Tuesday, October 11, 2016 | **5:30 PM** | **Council Chambers, 6th Floor**

1. Call meeting to order

Chairperson Dannecker called the Utilities Committee meeting to order at 5:30 p.m.

2. Roll call of membership

Present: 4 - Dannecker, Meltzer, Reed and Jirschele

Excused: 1 - Baranowski

3. Approval of minutes from previous meeting

16-1550 Approval of the September 27, 2016 Utilities Committee Meeting minutes.

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

Aye: 4 - Dannecker, Meltzer, Reed and Jirschele

Excused: 1 - Baranowski

4. Public Hearings/Appearances

5. Action Items

16-1553 Approve Alternative G, a wet detention pond, for the Cotter Street Stormwater Management Alternatives Analysis Evaluation.

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

Aye: 4 - Dannecker, Meltzer, Reed and Jirschele

Excused: 1 - Baranowski

16-1564 Accept $349,790 Municipal Flood Control Grant from the Wisconsin Department of Natural Resources for the Northland Avenue Detention Pond Project.

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

Aye: 4 - Dannecker, Meltzer, Reed and Jirschele

Excused: 1 - Baranowski

6. Information Items

16-1551 Discuss Lions Park groundwater and soil conditions.

Discussed.

16-1563 Draft WDNR Compliance Schedule for AWWTP WPDES Reissuance.

Reviewed.

7. Adjournment

Reed moved, seconded by Meltzer, that the Utilities Committee meeting be adjourned at 5:45 p.m. Roll Call. Motion carried by the following vote:

Aye: 4 - Dannecker, Meltzer, Reed and Jirschele

Excused: 1 - Baranowski

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: October 18, 2016

RE: Award 2016I contract for the Cotter Street Stormwater Pond Design and Construction Related Services to RA Smith National in an amount not to exceed $30,428.

The Department of Public Works requests approval of the Cotter Street Stormwater Pond Design and Construction Related Services with RA Smith National in an amount not to exceed $30,428. After this contract, $195,535 will remain in the stormwater consulting services budget.

At the May 10, 2016 Utilities Committee meeting, a contract with RA Smith National was awarded for the Cotter Street Stormwater Management Alternatives Evaluation. The evaluation has been completed and at the October 11, 2016 Utilities Committee, Alternative G was approved. The May 2016 contract award also included language authorizing single source of the design and construction services contracts with RA Smith National without an RFP process.

Contract Scope

The following tasks are included in the pond design:

- Develop preliminary and final drawings and specifications for the Alternative G pond
- Attend meetings with City staff and the Developer during design
- Prepare a paving plan for the driveway modifications at Appleton Supply
- Hydrologic and hydraulic calculations for the pond
- Inlet capacity calculations
- Prepare updated estimates at design milestones
- Prepare the application and submit the Construction Site Permit to WDNR
- Provide Construction Related Services, including:
    - Respond to questions during bidding
    - Attending Preconstruction Conference
    - Respond to questions during construction
    - Verify earthwork quantities and confirm construction is consistent with design
    - Update the quantity and quality computer models per as-built survey data

Based on their performance during the evaluation phase and their qualifications as evaluated during the initial RFP process, the Department of Public Works recommends award of the 2016I contract for the Cotter Street Stormwater Pond Design and Construction Related Services to RA Smith National in an amount not to exceed $30,428.

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

DEPARTMENT OF PUBLIC WORKS - Engineering Division
MEMO

TO: Members of the Finance and Utilities Committees

FROM: Ross Buetow, Deputy Director of Public Works

SUBJECT: Sole source purchase of 42" water main pipe materials – South Oneida Street

DATE: October 19, 2016

The Department of Public Works is working with the Wisconsin Department of Transportation (WisDOT) on the design and reconstruction of South Oneida Street, planned to occur during 2017 and 2018. As part of the design process, WisDOT has informed the City that our existing 42" diameter water transmission line will need to be lowered at three locations to avoid future conflicts with their proposed storm system design. WisDOT is paying 90% of the cost, but the City is responsible for designing and bidding these water main relocations.

We have researched our records from the original pipe installation (1969) and were able to identify the original pipe manufacturer, US Pipe (aka Cretex), who is still in business today. We have reached out to this vendor to gather information on the logistics of the required pipe relocations. Under normal circumstances, the City would complete the design and require the contractor to purchase and install the main as part of their bid. However, due to the complexity of relocating this type of infrastructure and the extensive lead time to manufacture and deliver this type of pipe, there is not sufficient time between the design/bidding phase and the start date of construction to allow the contractor to purchase the pipe and still meet WisDOT's required schedule.

Therefore, we are requesting permission for the Department of Public Works to obtain sole source pricing and purchase all water main piping and associated fittings from the original pipe vendor (US Pipe) as needed to complete this project. In this circumstance, the sole source purchase of these pipe materials offers the following critical advantages to the City:

- The pipe material (PCCP) is a hybrid design primarily used for large transmission mains. PCCP consists of a concrete core, a thin steel cylinder, high tensile pre-stressing wires and a mortar coating. Our South Oneida Street transmission main and raw water line are the only locations in Appleton where this pipe has been used.
- US Pipe has in-depth knowledge of the existing pipe material and still maintains accurate records of the original 1969 installation, which will be invaluable in assisting the City during the design process.
- By using the original vendor, we have added assurance of consistency in materials between the original pipe materials and those we will be installing as part of this project.

- US Pipe is the only Midwest (Illinois) manufacturer of this type of pipe. The only other vendors are located in New Jersey, California or Ontario Canada. This will greatly reduce shipping costs and delivery times.
- US Pipe has design and support staff within driving distance of Appleton to assist us during the design and installation phases, which is not possible for the other vendors.

Please do not hesitate to contact me if you have any questions. Thank you for your consideration of our request.

H:\Word\Committees\2016\Sole Source Purchase Request - South Oneida Street Water Main Materials.doc

Appleton Wastewater Treatment Plant
Synopsis
July 2016 - September 2016

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), pH, phosphorous, and ammonia. (See Table 1). The plant maintained good treatment and a healthy microbiological population with a sludge retention time of eight days. Dewatering processes functioned well and converted 14.14 Million Gallons (MG) of primary digested sludge to biosolids.

Table 1 – Wastewater Influent / Effluent Treatment Data

Characteristic	July 2016			August 2016			September 2016		
AWWTP Flows (MG)	Influent		Percent	Influent		Percent	Influent		Percent
Industrial Flow	52.7		16.2%	45.6		16.1%	42.8		12.1%
Domestic Flow	273.0		83.8%	238.1		83.9%	310.1		87.9%
Total Flow	325.7			283.7			352.9		
Pollutant Loadings (lbs)	Influent	Effluent	Removal	Influent	Effluent	Removal	Influent	Effluent	Removal
CBOD	918,703	11,491	98.7%	887,435	10,295	98.8%	967,260	11,944	98.8%
TSS	1,535,880	7,596	99.5%	1,534,614	6,067	99.5%	1,393,393	6,883	99.5%
Phosphorous	15,303	1,042	93.2%	15,611	993	93.6%	14,615	838	94.3%
Ammonia	57,434	1,969	96.6%	66,673	4,566	93.2%	56,994	5337	90.6%

Work Completed:

- 28,625 gallons of spent sulfuric acid (i.e. ferrous sulfate) was used for phosphorus removal during the reporting period. The chemical cost savings for using ferrous sulfate was approximately $20,610. As part of the Phosphorous Treatment Optimization study, 28,325 gallons of ferric chloride was purchased and fed at a cost $20,395 in an effort to evaluate chemical removal strategies.

- Monthly effluent ammonia removal averaged 93.5% through the three month period. The plant average effluent concentration for the three month period was 1.39 mg/L. This is in compliance with the ammonia limit for the time period.

Work in Progress:

- **Digester Improvements Project:** General contractor, August Winter and Sons, finished equipment installation and training for AWWTP staff in early September.

- **Scarlet Oak Lift Station Improvement Project:** The contractor completed punch list items and the lift station equipment was put in operation before August 1st. Training for AWWTP mechanical and instrumentation staff was completed in August.

Appleton Wastewater Treatment Plant
Synopsis
July 2016 - September 2016

Regulatory Summary

- Monthly Discharge Monitoring reports for July, August and September were filed electronically on time for regulatory compliance. The 2016 3rd quarter short form was also submitted.

- Plant management staff reviewed the language in the proposed Wisconsin Pollution Discharge Elimination System (WPDES) discharge permit. Comments were forwarded to WDNR staff for their review and comment.

Laboratory Program

- Program objectives for regulatory and process sampling and analysis were met including results for the Discharge Monitoring Report (DMR) and Health Department pool testing program.

- Lab personnel completed the analysis of Single Blind Proficiency samples for laboratory recertification.

- Lab staff efforts included second – half compliance monitoring sampling and pretreatment monitoring sampling to comply with 2016 requirements. They also aided operations staff in completing monitoring for the disinfection season which ended September 30th.

- Lab and operations staff are working cooperatively to implement a new probe for BOD analysis, and are undertaking a review of Phosphorus testing methods.

Appleton Wastewater Treatment Plant
Synopsis
July 2016 - September 2016

EFFLUENT QUALITY SUMMARY

July 2015 – September 2016

Effluent Parameter:	*CBOD mg/L*	*TSS mg/L*	*Total Phosphorus mg/L*	*Ammonia-Nitrogen mg/L*	*Chlorine Residual mg/L*	*Fecal Coliform Colonies/ 100 ml*	*pH s.u.*
WPDES LIMITS:	*25 mg/L monthly avg.*	*30 mg/L monthly avg.*	*1 mg/L monthly avg.*	*10 mg/L monthly avg.*	*0.037 mg/L daily limit*	*400 col/100ml geom. mean*	*6.0 - 9.0 daily limit*

2015

July	3	2	0.26	0.20	<0.01	10	6.8/7.2
August	3	2	0.56	0.49	<0.01	12	7.0/7.4
September	3	2	0.33	0.69	<0.01	37	7.0/7.3
October	6	6	0.53	0.95	NA	NA	7.1/7.2
November	2	3	0.45	0.21	NA	NA	7.2/7.3
December	4	7	0.26	0.97	NA	NA	7.1/7.1

2016

January	2	2	0.16	0.24	NA	NA	7.1/7.4
February	3	4	0.20	0.95	NA	NA	6.9/7.2
March	3	2	0.12	0.86	NA	NA	7.2/7.4
April	2	1	0.10	0.32	NA	NA	7.4/7.6
May	4	2	0.27	0.66	<0.01	2	7.0/7.4
June	3	2	0.28	0.75	<0.01	10	7.0/7.4
July	4	3	0.23	0.74	<0.01	7	6.8/7.1
August	4	3	0.18	1.92	<0.01	3	6.8/7.1
September	4	2	0.28	1.51	<0.01	15	6.7/6.9

YEAR 2016 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	$ 118,437.13	$124,789.23	$ 140,298.77	$ 138,987.23	$ 104,492.67	$ 114,404.27	$ 120,421.09	$ 109,336.22	$133,757.34				$ 1,104,923.95
Hickory Meadows	$ 25,223.73	$ 21,173.99	$ 42,742.19	$ 25,456.57	$ 13,815.17	$ 20,261.80	$ 24,533.30	$ 36,339.19	$ 52,732.26				$ 262,278.20
Jeff Waldvogel Trkg.	$ 26,878.60	$ 25,936.68	$ 28,830.91	$ 26,536.01	$ 27,584.51	$ 29,965.62	$ 30,097.86	$ 30,818.19	$ 24,924.46				$ 251,572.84
Waldvogel Trucking	$ 2,103.06	$ 2,944.38	$ 2,743.41	$ 3,093.38	$ 2,100.87	$ 2,039.84	$ 2,479.52	$ 2,905.33	$ 2,293.30				$ 22,703.09
2016 Total	$ 172,642.52	$174,844.28	$ 214,615.28	$ 194,073.19	$ 147,993.22	$ 166,671.53	$ 177,531.77	$ 179,398.93	$213,707.36	$ -	$ -	$ -	$ 1,641,478.08
2015 Total *	$74,477.92	$59,745.63	$115,103.25	$125,573.11	$116,373.53	$145,077.58	$87,128.58	$147,240.34	$139,098.92	$106,381.19	$141,165.31	$ 209,311.16	$ 1,466,676.52

* Tier Rate Structure increase effective July 1, 2015.

Date: October 12, 2016
Copies: K. Rindt (via email)
C. Shaw (via email)
B. Kreski
Utilities Committee

Appleton Water Treatment Plant
Operations Synopsis
July, August, September 2016

Summary

The table below presents selected water production and quality performance metrics for the current and previous reporting periods. All compliance parameters met or exceeded regulatory requirements. During the quarter, average water production increased by about 7% consistent with summer demand conditions. The average electrical energy "wire-to-water" efficiency ratio for the quarter improved by over 8% as the membrane process was placed into stand-by mode.

WATER PLANT PARAMETERS	Previous (Q2 2016)			Current (Q3 2016)		
	April	May	June	July	August	September
Water Treated						
Finished (million gallons)	262.9	284.3	286.3	299.7	314.8	282.1
Finished (million gallons / day)	8.8	9.2	9.5	9.7	10.1	9.4
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	560.1	592.9	645.6	661.5	613.1	503.1
MWH / million gallons produced	2.13	2.09	2.25	2.21	1.95	1.78
Turbidity						
Lake (NTU)	17.1	8.3	10.6	13.4	18.3	15.6
Finished (NTU)	0.02	0.02	0.02	0.05	0.04	0.03
Finished (<0.15 NTU standard)	100%	100%	100%	100%	100%	100%
Water System Microbial Quality						
Total Coliform Samples	81	81	82	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Disinfectant Contact Time						
Minimum CT Ratio Provided	1.8	2.5	4.0	3.2	5.4	4.0
Hardness						
Lake Total / Calcium (mg/L)	200/109	187/108	185/100	187/98	173/87	177/86
Finished Total / Calcium (mg/L)	102/21	97/16	95/10	88/12	87/12	83/15
Finished Water Quality						
Total Chlorine (mg/L)	1.80	1.75	1.74	1.55	1.83	1.97
pH (SU) Min/Max	8.5/8.8	8.3/8.8	8.3/9.0	8.2/8.6	8.1/8.8	8.4/8.8
Water Temperature (Degrees F)	43.5	58.1	71.1	75.9	77.7	70.5
Fluoride (mg/L)	0.68	0.67	0.69	0.62	0.68	0.71
Orthophosphate (mg/L)	0.70	0.74	0.72	0.73	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, 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 LT2 and DBPR2 sampling requirements. Support was provided to consecutive customers with shipping of DBPR2 samples.

Safety

- WTF Safety programs were maintained by completing scheduled safety inspections. There were no significant incidents to report.

Operations

- The annual sanitary sewer meter calibration check was completed.
- The annual inspection of water cathodic protection systems was completed.

RUPIP

- The transition to UV Disinfection was completed during the quarter. All membrane equipment was placed in stand-by mode.
- Two UV Disinfection reactors were in continuous service during the quarter.

Softener Recoating Project

- Completion of the work on #3 Softener is expected to be complete in early October.

Glendale Water Tower

- The tower was water tested in late September. It is expected to be in service in early October.

Staffing & Training

- All Water Treatment Facility vacancies have been filled.
- The Operations Supervisor completed annual supervisor training.

WATER SUMMARY FOR SEPTEMBER 2016

Work done by Construction Maintenance				
	Sep 15	Sep 16	YTD 15	YTD 16
Hydrants repaired	8	3	50	18
Hydrants replaced	0	1	6	4
Hydrant leaks	0	0	1	1
Valves replaced	1	0	5	1
Valves tested & inspected	0	37	17	1393
Valves Rebuilt	0	0	9	14
Valve boxes repaired	10	3	136	46
Curb boxes repaired	28	11	389	129
Curb boxes replaced	9	1	141	21
Lead or galvanized replaced	0	0	0	18
New services 1"	0	0	0	0
New services >1"	0	0	3	1
Water main breaks	1	15	51	59
Joint leaks repaired	0	0	1	0
Water quality	0	0	3	2
Service leaks (City side)	0	0	0	1
Work done by Meter Service Team				
	Sep 15	Sep 16	YTD 15	YTD 16
New accounts set with 3/4" or 1"	11	27	89	140
New accounts set with larger meter	0	0	5	2
Meters tested	558	812	5363	7248
Meters failed	29	23	132	390
Meters stalled	1	0	4	0
Service calls	83	102	1060	964
Final readings	436	418	3074	2990
Read meters - no reading	0	0	0	5
New meters installed	568	881	5585	7558
Exception meters inspected	0	0	0	0
Exception meters removed	0	0	0	0
Service leaks found	0	0	3	25
Cross connection inspections	524	836	5197	7036

WATER MAIN BREAK/JOINT LEAK REPORT SEPTEMBER 2016

LOCATION	Work Order	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	ESTIMATED DOLLAR VALUE OF WATER REVENUE LOSS**
1800 E. Northland Avenue	214912	DIP	12"	1976	two 4" holes	3 hours	980,248	$5,962.74
216 E. Capitol Drive	215060	DIP	12"	1978	4" hole	4 hours	648,305	$3,943.57
2717 N. Owaissa Street	215261	CIP	12"	1961	1/32" crack	3.5 days	253,922	$1,544.58
2717 N. Owaissa Street	215471	CIP	12"	1961	1/16" crack	2 hours	45,584	$277.28
120 S. Summit Street	215543	CIP	8"	1966	two 6" holes	3.5 hours	319,088	$1,940.98
1232 E. Park Hills Drive	215544	DIP	8"	1966	1/32" crack	5 hours	37,987	$231.07
1009 E. Capitol Drive	215606	DIP	12"	1977	4" hole	4 hours	648,305	$3,943.57
1115 E. Sunset Avenue	215670	DIP	8"	1974	2.5" hole	2 hours	126,622	$770.23
2013 N. Birchwood Avenue	215751	CIP	8"	1964	5" hole	1 hour	248,128	$1,509.33

**Water loss is calculated at the residential rate of $4.55 per 100 cubic feet.

WATER MAIN BREAK/JOINT LEAK REPORT SEPTEMBER 2016

LOCATION	Work Order	TYPE OF PIPE	SIZE	YEAR	BREAK	ESTIMATED DURATION	ESTIMATED WATER LOSS IN GALLONS	ESTIMATED DOLLAR VALUE OF WATER REVENUE LOSS**
2911 N. Ballard Road	215854	DIP	12"	1971	2" hole	3 hours	121,577	$739.54
1200 S. Oneida Street	215862	CIP	6"	Unknown	1/16"x10" split	16 hours	96,732	$588.41
949 E. Marquette Street	215863	CIP	6"	1953	1/16"x12" split	24 hours	174,118	$1,059.14
1617 E. Sylvan Avenue	215871	DIP	12"	1980	1" hole	3 hours	30,389	$184.85
801 E. Meadow Grove Boulevard	215883	DIP	12"	1979	4" hole	2 hours	324,153	$1,971.79
1200 S. Oneida Street	215884	CIP	6"	Unknown	4" hole	2 hours	324,153	$1,971.79
								$0.00
								$0.00
								$0.00

**Water loss is calculated at the residential rate of $4.55 per 100 cubic feet.

WATER MAIN BREAK/JOINT LEAK DATA LOG SEPTEMBER 2016

Leak Location	Arterial, Collector, Freeway, Local	Type of Street Concrete/Asphalt	Major Break Minor Break	Catch Basin Draining Yes/No	Date/Time	Comments
1800 E. Northland Avenue	Arterial	Asphalt	Major	Yes 30' away	9/1/2016 5:00 a.m. Thursday	Fixed right away due to water loss and property damage.
216 E. Capitol Drive	Collector	Concrete	Major	Yes 75' away	9/3/2016 8:00 a.m. Saturday	Fixed right away due to water loss and property damage.
2717 N. Owaissa Street	Collector	Concrete	Minor	Yes 130' away	9/9/2016 11:00 p.m. Friday	Small leak. Let run until Tuesday in order to give a dental office adequate notice that the water would be off.
2717 N. Owaissa Street	Collector	Concrete	Major	Yes 130' away	9/13/2016 7:00 a.m. Tuesday	Fixed during normal work hours. Let run a short time to give the dental office enough time to prepare for no water.
120 S. Summit Street	Local	Asphalt	Major	Yes 150' away	9/14/2016 11:00 p.m. Wednesday	Third shift Sweepers discovered the break. The crew was immediately called in to make the repairs. There was a very large hole in the road with a lot of water loss.
1232 E. Park Hills Drive	Local	Concrete	Major	Yes 150' away	9/15/2016 3:15 a.m. Thursday	Throttled down and repaired as soon as we finished repairing the break on Summit Street.

WATER MAIN BREAK/JOINT LEAK DATA LOG SEPTEMBER 2016

Leak Location	Arterial, Collector, Freeway, Local	Type of Street Concrete/Asphalt	Major Break Minor Break	Catch Basin Draining Yes/No	Date/Time	Comments
1009 E. Capitol Drive	Collector	Concrete	Major	Yes 130' away	9/17/2016 12:00 a.m. Saturday	Fixed right away due to water loss and property damage.
1115 E. Sunset Avenue	Local	Concrete	Major	Yes 18' away	9/19/2016 2:30 p.m. Monday	Fixed right away due to water loss and property damage.
2013 N. Birchwood Avenue	Local	Concrete	Major	Yes 50' away	9/21/2016 11:00 a.m. Wednesday	Fixed right away during normal work hours.
2911 N. Ballard Road	Arterial	Concrete	Major	Yes 30' away	9/23/2016 4:30 a.m. Friday	Fixed during normal work hours.
1200 S. Oneida Street	Arterial	Concrete	Minor	Yes 50' away	9/23/2016 12:00 p.m. Friday	Scheduled the repair for early Saturday morning so a local business would not be without water during their operating hours.
949 E. Marquette Street	Local	Asphalt	Minor	Yes 150' away	9/23/2016 8:00 p.m. Friday	Let run and repaired on Saturday after we finished with the break on Oneida Street.

WATER MAIN BREAK/JOINT LEAK DATA LOG SEPTEMBER 2016

Leak Location	Arterial, Collector, Freeway, Local	Type of Street Concrete/Asphalt	Major Break Minor Break	Catch Basin Draining Yes/No	Date/Time	Comments
1617 E. Sylvan Avenue	Local	Terrace	Major	Yes 50' away	9/25/2016 8:00 p.m. Sunday	Fixed right away due to water loss and property damage.
801 E. Meadow Grove Boulevard	Collector	Concrete	Major	Yes 70' away	9/26/2016 6:30 a.m. Monday	Fixed right away due to water loss and property damage.
1200 S. Oneida Street	Arterial	Concrete	Major	Yes 80' away	9/26/2016 6:30 a.m. Monday	Fixed right away due to water loss and property damage.