AGENDA
NORTH SHORE WATER COMMISSION

400 West Bender Road
Glendale, WI 53217
Wednesday, January 11, 2017
8:00 A.M.

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1. Call to order by the Chairman.

2. Presentation of a report prepared by John Schafer regarding his independent study at UWM.

3. Presentation by SEH regarding their inspection of the southeast and southwest reservoirs and their recommendations for making repairs and improvements.

4. Approval of the minutes of the December meeting.

5. Monthly report of plant operations.

6. Discussion of annual operating budget.

7. Approval of monthly bills.

8. Status report of current capital projects. Action may be taken to approve capital expenditures pertaining to the projects and authorize payment to vendors.

9. Discussion of 2016 capital additions and retirements. Possible action may be taken regarding this matter.

10. Discussion and possible approval of the Control System Support and Preventative Maintenance Agreement with Starnet Technologies.

11. Discussion and possible approval of the 2017 SCADA Upgrade Service Agreement with Starnet Technologies.

12. Discussion and possible approval of the 2017 Software Support Agreement with Emerson Process Management Power & Water Solutions.

13. Update of the internship program. Possible action may be taken to continue the internship program and retain another intern in the month of February.

14. Discussion and possible action to approve the 2018 - 2022 Capital Improvement Plan and 2018-2037 Capital Improvement Plan.

15. Discussion of recommendations made by Mr. Kiefer for amending Articles 4, 5, and 6 of the Commission’s 1957 founding agreement.

16. Manager’s report.

17. Date and time of the next regular Commission Meeting.

18. Adjournment.

Clearwell Reservoir Repairs
Bender Road Water Treatment Plant
North Shore Water Commission
January 11, 2017

NSWC WTP Clearwell Reservoirs (4)

- Reservoirs No. 1 & No. 2 (East Tanks) - Original WTP construction in 1962
- Reservoirs No. 3 & No. 4 (West Tanks) - 1972 WTP expansion project

Reservoir	No. 1 (NE)	No. 2 (SE)	No. 3 (NW)	No. 4 (SW)
Volume (MG)	2,278,000	2,278,000	1,185,000	958,000

- Total Clearwell Reservoir storage volume 6,699,000 gallons
- Primary need for WTP clearwell reservoirs
  - Allow WTP to operate at fairly constant flow rate throughout day
  - Provide DNR required disinfectant contact time (CT value) to meet SWTR
- Typical average day pumpage: 3.7 mgd
- Typical maximum day pumpage: Up to 7 mgd
- Typical minimum day pumpage: 2.0 mgd
- Current WTP storage significantly exceeds needs
- All reservoirs are operated in parallel, different water residence time
- WTP reservoir CT value based on smallest reservoir (No. 4)

Reservoir Issues

- Reservoirs are required to be inspected every 5 years per DNR requirements
- Reservoirs are required to be drained and roof soaked for leakage test every 10 years
- SEH has been contracted to inspect one reservoir for NSWC every year since 2011

Reservoir	No. 1 (NE)	No. 2 (SE)	No. 3 (NW)	No. 4 (SW)
Inspection yr	2014	2012, 2016	2013	2011, 2016

- **Reservoir No. 4 - Primary Concerns (October 4, 2016 SEH inspection)**
  - West wall crack in concrete
  - Visible signs of water intrusion in at least three locations
  - Visible signs of water intrusion at expansion joint
- **Monday, November 7, 2016 meeting with DNR at Bender Road WTP**
  - DNR staff - Larry Landsness, Jake (SE WI engineer), Mark (new hire)
  - Concerns for evidence of water intrusion at Reservoir No. 4
  - Concerns on flat roof with no rubber membrane b/w concrete and soil
  - Concerns that none of reservoirs have overflow pipe
  - Concerns that similar expansion joint is in Reservoir No. 2
  - Recommended similar soak-down test for No. 2 in 2016 if possible
- **Reservoir No. 2 - Primary Concerns (November 16, 2016 SEH inspection)**
  - Visible signs of water intrusion at sidewall/ceiling interface (north wall)
  - Visible signs of active leakage at expansion joint

SEH Reservoir Rehabilitation Study - January 5, 2017

- Opinion of probable cost (OPC) for repairing access hatches
- OPC for repairing areas with leakage evidence for Reservoirs No. 2 and No. 4
- Discussion and OPC for creating non-buried roofs that meet DNR requirements
- Discussion and OPC for removing Reservoirs No. 3 and No. 4 from service
- OPC for modifying connection between Reservoir No. 1 and No. 2 to eliminate stagnant water areas in both reservoirs
- Discussion and OPC for adding reservoir overflow pipe system for Res. No. 1 and 2
- Provide reservoir rehabilitation project scope, budget and schedule options

Recommended Reservoir Rehabilitation Scope

- Improvements recommended only for East Reservoirs (No. 1 and No. 2)
- WTP storage needs provided by East Reservoirs
- Reservoirs No. 3 and No. 4 recommended to be removed indefinitely from service
    - West Reservoirs to be physically disconnected from reservoir piping system
- Install reservoir overflow piping system - downstream of UV Equipment
    - Supply piping to East Reservoirs to include overflow pipe on WTP southside
    - Configuration would allow Reservoirs No. 3 and 4 to be returned to service
- Add slope and membrane to Reservoir No. 1 and 2 roofs
    - Remove earthen cover; lightweight concrete for slope; flexible waterproof membrane; drainage mat over membrane; subdrainage piping
- East Reservoirs Repairs
    - Remove and repair expansion joints to eliminate water intrusion
    - Replace access hatches to meet DNR requirements
    - Install interconnection improvements to eliminate stagnant water areas
    - Install new 36" butterfly valve to allow taking one reservoir out of service
    - Install improvements in effluent valve pits (transducers & sump pumps)
    - Install access hatches to facilitate drain down pump
    - Install power supply stands for drain down pump and sump pumps

Opinions of Probable Cost

◆	Task 1	Abandon Reservoirs No. 3 and No. 4	$56,000
◆	Task 2	Overflow Piping Installation	$145,000
◆	Task 3	Roof Sloping & Waterproof Membrane	$670,000
◆	Task 4	Repairs & Improvements to Reservoirs No. 1 and No. 2	$298,000
	TOTAL OPC of Reservoir Rehabilitation		**$1,169,000**

Reservoir Improvements - Project Phases

◆	Year 1	Effluent Valve Pit Improvements	$27,000
◆	Year 2	Electrical Systems Improvements to Reservoirs No. 1 & 2	$53,000
◆	Year 3	Overflow Pipe Installation	$156,000
◆	Year 4	Roof Sloping & Waterproof Membrane; Repairs and Improvements to Reservoirs No. 1 and No. 2	$1,046,000
	TOTAL OPC of Reservoir Rehabilitation		**$1,282,000**

MINUTES OF THE
NORTH SHORE WATER COMMISSION
MEETING OF Wednesday, December 14, 2016

A meeting of the North Shore Water Commission was held at the Filtration Plant, 400 West Bender Road, Glendale, Wisconsin on Wednesday, December 14, 2016.

Meeting was called to order at 8:00 A.M. by Mr. Edlebeck.

Present: John Edlebeck, Chair; Mike West, Secretary; Dave Eastman, Member.

Also present: Eric Kiefer, Plant Manager & Recording Secretary

Absent: Paul Boening, Alternate for Whitefish Bay; Scott Botcher, Alternate for Fox Point; Rachel Reiss, Alternate for Glendale

MINUTES

It was moved by Mr. Eastman, seconded by Mr. West, and unanimously carried to approve the minutes for the meeting held November 9, 2016.

MONTHLY REPORT OF PLANT OPERATIONS

Mr. Kiefer provided the Commission with the monthly report of operations. During his presentation, Mr. Kiefer noted that pumpage this November is fairly close to last November. The report was placed on file without any motion.

ANNUAL OPERATING BUDGET

Mr. Kiefer presented the monthly financial reports and they were put on file without motion.

MONTHLY BILLS

It was moved by Mr. Eastman, seconded by Mr. West, and unanimously carried that the following bills and estimated invoices be approved and authorization was given to the Fiscal Agent to make such payments:

Vendor	**Amount**
Batteries Plus (batteries)	186.53
BMO Harris Bank (credit card)	1,064.15
-- Google (monthly charge for apps): $54.16	
-- Midwest Graphics (scanning prints to pdf): $964.00	
-- Straight Talk (monthly phone plan - Foreman): $45.99	
Clark Dietz (general engineering services)	1,380.00
Creative Safety Supply (label maker supplies)	569.96
Diversified Benefit Services (Section 125 Plan administration)	95.93
Earthlink (Bender phone)	153.97
Eric Kiefer (reimbursement for WQTC conference)	350.00

Eurofins (cryptosporidium analysis)	380.00
Fuchs & Boyle (legal service)	165.75
Grainger (general hardware, floor stripping and waxing supplies, lubricant, lamps, custodial supplies, drill bits, lifting straps, batteries, cordless tools)	1,663.70
Great America (lease payment for copier/printer)	100.00
Hawkins (treatment chemicals: aqueous ammonia and phosphate)	3,024.86
Hydrite (treatment chemical: sodium hypochlorite)	2,794.60
Idexx (Colilert growth media)	1,481.70
Minnesota Life (employee life insurance)	121.00
Northern Lake Service (analysis of water samples for compliance monitoring)	67.00
Office Copying Equipment (maintenance payment for copier/printer)	20.56
Rotroff Jeanson (accounting services)	950.00
SEH (engineering services regarding reservoirs)	3,100.00
T-Mobile (mobile internet)	62.10
UPS Store (shipping services)	173.20
Time Warner Cable (internet services and Klode phone)	391.01
US Cellular (cellular phone service)	4.25
Village Ace Hardware (hardware,antifreeze, rake, plumbing supplies, clamps, caulk, lamps, and containers)	173.50
Village of Fox Point (gasoline)	38.88
We Energies (Bender Electric)	13,915.24
We Energies (Bender Gas)	703.94
We Energies (Green Tree Electric)	18.43
We Energies (Henry Clay Electric)	19.24
We Energies (Klode Electric)	3,938.53
We Energies (Klode Gas)	11.58
Wilkens-Anderson (reagent water and turbidity standard)	793.14
William Reid LTD (replacement membrane and filling solution for chlorine probe)	200.14
Wisconsin DATCP (certification for water testing lab)	680.00
Wisconsin State Lab of Hygiene (microbiology proficiency program enrollment and fluoride analysis)	555.00
SUB-TOTAL	$39,347.89

Maintenance Reserve

SUB-TOTAL	$0.00
TOTAL	$39,347.89

STATUS OF CAPITAL IMPROVEMENT PROJECTS AND APPROVAL OF PAYMENTS

Mr. Kiefer explained there was much progress with the Chemical Feed Upgrade Project. Mr. Kiefer anticipates the project will probably be complete by the end of year; however, there is a chance that some of the work will need to be finished up in January. Mr. Kiefer explained the high service valve replacements for high service pump #3 is substantially complete. He noted that because of how everything worked out this year, it is not likely that high service pump #5 will be replaced in the foreseeable future. Therefore, staff did not work on any of those related valve replacements.

It was moved by Mr. Eastman, seconded by Mr. West, and unanimously carried to approve the payment request as presented in Mr. Kiefer's memoranda dated December 14, 2016 in the amount of $12,650.69 for the Chemical Feed Project and $6,247.06 for the Valve Replacement Project using the current capital allocation rates.

CHEMICAL QUOTATIONS

Mr. Kiefer explained that he would like to change his recommendation for one of the chemicals that was quoted last month. After contacting the vendors selected to provide chemicals in 2017, he discovered that Univar does not do mini-bulk delivery of aqua ammonia. Consequently, Mr. Kiefer would like to accept Hawkins' quotation instead which includes mini-bulk delivery.

It was moved by Mr. Edlebeck, seconded by Mr. West, and unanimously carried to accept the chemical quotations as noted in Mr. Kiefer's amended recommendations dated December 8, 2016.

Accepted Quotations:
Hawkins: ammonium hydroxide (19%) - $0.24/lb
Alexander: sodium hypochlorite (12.5%) - $0.694/gal
Rowell: hydrofluosilic Acid (23%) - $0.210/lb
Alexander: liquid Aluminum Sulfate - $275/dry ton
Hawkins: phosphate (LPC-132) - $0.440/lb
Hawkins: polymer (Flocculation Aid) - $0.65/lb
Nalco: polymer (Mussel Control) - $1.11/lb

LEAD AND COPPER RULE LETTER FROM WDNR

Mr. Kiefer explained that this item was placed on the agenda as requested by Dave Eastman. After introducing the topic, Mr. Kiefer explained that lead has recently been in the news with recent action taken by the City of Milwaukee to require full lead service replacements when a leak has been detected on the public side of the service. This topic was discussed by the Commission.

Mr. Kiefer went on to explain how the Commission and member utilities are currently regulated for lead and copper. He further explained that if the lead levels exceed the action level, all 3 members and the Commission would be responsible.

Mr. Eastman asked Mr. Kiefer to describe what would happen if the Commission exceeded the action level. Mr. Kiefer explained that under current regulations, there would be more testing. If the lead levels don't drop sufficiently, the DNR would require lead service line replacements.

Mr. Kiefer also explained that the Commission cannot alter its treatment unless approved by DNR. If testing indicated there was a problem with lead, the Commission would fast track the execution of any study that would be required by the DNR and implement recommended changes to treatment as soon as possible.

During this discussion, the topic of lead testing protocol was introduced. Mr. Kiefer made special note to all of the Commissioners that lead testing is not simple; it is confusing even for seasoned professionals. Mr. Kiefer explained that the 1st liter of water that comes out of the faucet is different in quality from the 2nd. And the 2nd sample is different from the 3rd, and so on.

Several Commissioners stated that they send people interested in lead testing to the North Shore Health Department. Mr. Kiefer commented that he has talked to them and can verify that they instruct people to take samples according to DNR's protocol.

The topic was discussed without any action taken by the Commission.

SOUTHEAST AND SOUTHWEST RESERVOIRS

Mr. Kiefer announced that the southeast reservoir was recently inspected. Unfortunately, the expansion joint in the southeast reservoir, much like the southwest reservoir, has failed. Consequently, both the southeast and southwest reservoirs cannot be used until they comply with regulatory code.

Using a diagram, Mr. Kiefer explained where the expansion was and what action needs to be taken to bring them up to code.

At the last Commission meeting, Mr. Kiefer stated the estimated cost to resolve the problem was around $2 - 2.5 million. By abandoning the northwest and southwest reservoirs and by proposing a creative alternative to installing "traditional" overflows, Mr. Kiefer now believes the cost is likely going to be between $1 - 1.3 million.

Mr. Kiefer stressed that the Commission does not have to act immediately on this matter since the northeast and northwest reservoirs are in good condition. Their capacity is still much greater than what is needed.

Mr. Edlebeck asked about several of the engineering details given in the draft report from SEH. Mr. Kiefer answered them as he could. Mr. Kiefer mentioned that the report is in draft form and hopefully, they will be finalized in about a month or so.

This matter was discussed without any action taken by the Commission.

CAPITAL IMPROVEMENT PLAN

Mr. Kiefer provided the Commission with a proposed 5-year capital improvement plan along with a proposed 20-year capital improvement plan and a memo detailing a new strategy for funding capital improvements.

Mr. Kiefer explained that he is concerned about how much year-to-year variation there is in the capital improvement plan. Considering the large capital improvement project on the horizon, he does not want to cause a large financial burden on the members in one year. Instead, he would like to have the ability to smooth the capital contributions over a longer period of time.

To accomplish that, Mr. Kiefer is suggesting that the Commission and the member utilities consider revising the Founding Agreement to allow for the Commission to use the Maintenance Reserve Fund, which is acting as an emergency fund, for normal capital improvement projects. Under the current agreement, the Maintenance Reserve Fund can only be used for very particular projects. Also, its balance must be maintained at a specific range.

Mr. Edlebeck asked Mr. Kiefer to explain the kinds of funds that are available to the Commission.

Mr. Kiefer stated that all funds come from member communities and the wholesale water agreement. He went on to explain that the Commission does not have any assets--they are all apportioned to member municipalities. With that, he explained that there is a General Fund with a $25,000 reserve and a Maintenance Reserve Fund with about $600,000.

Mr. Edlebeck also asked about borrowing. Mr. Kiefer explained that the Commission does not have borrowing authority. All borrowing, if necessary, must be done by its members.

Mr. Eastman and Mr. West explained the process their municipalities use to finance Commission projects. Mr. Eastman went on to explain that he relies on the 5-year capital improvement plan to determine how much money Glendale should borrow.

Mr. Eastman also mentioned that he does not believe Mr. Kiefer's proposed strategy for funding capital projects may not work with Glendale's strategy for handling capital improvements. He suggested that it would be best to continue using the existing process.

Mr. West expressed concern about the way in which the Maintenance Reserve Fund is restricted to certain activity. Mr. West and Mr. Edlebeck mentioned that the Founding Agreement should be updated to eliminate what Mr. Kiefer describes as confusing language about the "emergency fund."

Mr. West also explained that the Commission has a long history of transferring surplus funds into the Maintenance Reserve Fund. The practice was discontinued because of how the fund become overfunded. He suggested that kind of activity could resume if the Founding Agreement is amended.

It was the consensus of the Commission to continue discussion of this matter at the next regular Commission meeting. No action was taken at this time.

MANAGER'S REPORT

1. The southeast reservoir was drained and inspected. Leaks were found by the expansion joint. Until further notice, the southwest (SW) and southeast (SE) reservoirs are out of service and cannot be used until they comply with regulatory code.
2. Plant staff filled both the SE and SW reservoirs with water as per recommendation of SEH. The valves are closed so no water will be able to move through them.
3. Plant staff intends to monitor the condition of the SE and SW reservoirs throughout the winter.
4. Plant staff replaced all of the lamps and photosensors on the Hach filter turbidimeters.
5. Starnet Technologies met with plant staff to discuss the SCADA Upgrade Project next year. Wonderware and Inductive Automation software packages are still being evaluated.
6. Plant staff retained Midwest Graphics to scan all of the Commission's drawings/prints to pdf format.
7. The School Road magmeter was tested by L&R Meter Testing on December 1 and was found

to be accurate and in good condition.

8. Plant staff stopped feeding Veligon TL-M for the year and will resume treatment in the spring. This product is fed for mussel control and is normally turned off in the winter.

9. UWM professor, Dr. Harvey Bootsma, resumed his research regarding carbon dioxide levels in Lake Michigan. He has been allowed to install research equipment in the Klode Park Pumping Station.

NEXT MEETING

The next regular meeting was scheduled for Wednesday, January 11, 2017 at 8:00 AM.

ADJOURNMENT

It was moved by Mr. West, seconded by Mr. Eastman, and unanimously carried to adjourn at 9:17 A.M.

Submitted by:

12/15/2016

Eric Kiefer, Plant Manager and Recording Secretary — Date

NORTH SHORE WATER COMMISSION
Monthly Summary of Operations
Month of December, 2016
1/10/2017

	WFB.	GLE.	FPT.	MEQ	Totals
M.G. Metered at Plant	29.786	41.085	27.300	0.000	98.171
M.G. Milwaukee Interconnect	0.000	0.000	0.000	0.000	0.000
M.G. Metered in System	1.481	3.107	-11.621	7.033	0.000
M.G. Charged to Members	31.267	44.192	15.679	0.000	91.138
M.G. Charged to All Users	31.267	44.192	15.679	7.033	98.171
M.G. Same Month Last Year (Members)	28.253	43.589	14.134	6.240	85.976
M.G. Same Month Last Year (All)	28.253	43.589	14.134	6.240	92.216
Accumulated M.G.	379.132	622.111	209.107	87.349	1297.699
Accumulated M.G. Last Year	361.850	657.434	199.230	67.409	1285.923
Accumulated % of Total Pumped	29.22%	47.94%	16.11%	6.73%	100.00%
Monthly % of Total Pumped	31.85%	45.02%	15.97%	7.16%	100.00%
Accumulated % Pumped of Members	31.32%	51.40%	17.28%		100.00%
Monthly % Pumped of Members	34.31%	48.49%	17.20%		100.00%
Average Daily Pumpage in M.G.	1.009	1.426	0.506	0.227	3.167

	Dec. 2016	Dec. 2015
Maximum Day Pumpage (MG)	3.689	3.566
Date of Max. Pumpage (Day)	22	29
Maximum Flow Rate (MGD)	6.225	6.389
Date of Max Flow (Day)	21	13
Hour of Max Flow (24 Hour Clock)	20	2
Average Station Pressure (PSI)	83.5	82.7
Avg. Total Cl Residual (mg/L) - Tap	2.67	2.35
Raw Water Temperature (F) - Max	44	42
Raw Water Temperature (F) - Ave	39	40
Raw Water Temperature (F) - Min	35	37
Tap Hardness (mg/L as CaCO3) - Max	141	147
Tap Hardness (mg/L as CaCO3) - Ave	137	136
Tap Hardness (mg/L as CaCO3) - Min	132	130

	Dec. 2016	Dec. 2015
Bender On-Peak Consumption (KWH)	55,160	56,343
Bender Off-Peak Consumption (KWH)	107,098	101,701
Klode On-Peak Consumption (KWH)	14,550	15,132
Klode Off-Peak Consumption (KWH)	28,324	31,040
Electrical Charge / KWH	$0.08735	$0.08701
KWH / M.G.	2,090	2,215
$ / M.G.	$182.52	$192.69

	Dec. 2016		Dec. 2015	
Chemicals Applied	mg/L	$/MG	mg/L	$/MG
Ammonium Hydroxide	0.679	$7.45	0.474	$5.19
Sodium Hypochlorite	3.508	$16.93	3.094	$15.58
Fluoride	0.837	$6.70	0.888	$7.26
Alum	8.152	$11.68	9.797	$19.69
Carbon (PAC)	0.000	$0.00	0.000	$0.00
Polymer - Mussel Control	0.000	$0.00	0.008	$0.07
Phosphates	2.326	$9.09	2.342	$9.15
Cationic Polymer	0.781	$4.95	0.717	$4.66
Total Chemical Cost		$56.80		$61.60

	Dec. 2016		Dec. 2015	
Water Metering	M.G.	% Diff.	M.G.	% Diff.
Corrected High Service (Filters)	98.449	0.3	91.881	-0.4
Total High Service	109.169	11.2	107.152	16.2
Communities	98.171	0.0	92.216	0.0

NORTH SHORE WATER COMMISSION

Income Statement

For the Eleven Months Ending November 30, 2016

		Current Month	Current Month Budget	Year to Date Actual	Year to Date Budget	Variance Budget to Actual
Operating Revenues						
Sales for Resale						
466.01	Glendale-Operations	$ 55,672.67	$ 55,672.67	$ 612,399.37	$ 612,399.37	0.00
466.02	Whitefish Bay-Operations	30,648.35	30,648.35	337,131.85	337,131.85	0.00
466.03	Fox Point-Operations	16,872.07	16,872.07	185,592.77	185,592.77	0.00
466.05	Wholesale Water Sales	5,972.34	4,166.67	73,764.19	45,833.37	27,930.82
	Sales for Resale	109,165.43	107,359.76	1,208,888.18	1,180,957.36	27,930.82
Other Operating Revenue						
474.00	Lab Services Income	630.00	1,166.67	9,750.00	12,833.37	(3,083.37)
474.02	Storm Water Analysis Revenue	0.00	0.00	523.00	0.00	523.00
	Total Operating Income	109,795.43	108,526.43	1,219,161.18	1,193,790.73	25,370.45
Operation and Maintenance Expenses						
Source of Supply						
600.00	Operation Supvsn & Engnrg	67.52	71.50	790.64	786.50	4.14
601.00	Operations Labor & Expenses	75.23	110.58	1,122.42	1,216.38	(93.96)
602.01	Purchased Water	0.00	838.25	9,230.00	9,220.75	9.25
603.00	Miscellaneous Expenses	0.00	162.33	335.42	1,785.63	(1,450.21)
610.00	Maint Supervisn & Engrng	109.86	130.75	1,538.62	1,438.25	100.37
611.00	Maint of Structures & Imprvmnt	75.23	110.58	1,122.42	1,216.38	(93.96)
613.00	Maint. of Crib & Wet Well	0.00	331.42	3,555.00	3,645.62	(90.62)
617.00	Maint of Mis Water Source Plnt	0.00	0.00	248.22	0.00	248.22
	Total Source of Supply Expenses	327.84	1,755.41	17,942.74	19,309.51	(1,366.77)
Pumping Expenses						
620.00	Operations Supvsn & Engrg	1,224.47	1,371.75	14,859.70	15,089.25	(229.55)
621.00	Fuel for Power Production	11.58	337.25	1,431.79	3,709.75	(2,277.96)
623.00	Fuel/Power Purchased for Pmpng	17,891.44	20,434.33	210,405.80	224,777.63	(14,371.83)
624.00	Pumping Labor & Expenses	11,214.62	10,712.75	115,739.71	117,840.25	(2,100.54)
626.00	Miscellaneous Expenses	3,004.16	2,101.42	23,851.06	23,115.62	735.44
630.00	Maint Supervisn & Engrng	549.26	682.08	6,952.75	7,502.88	(550.13)
631.00	Maint of Structures & Imprvmnt	540.62	1,177.42	9,102.87	12,951.62	(3,848.75)
632.00	Maint of Power Prod Eqpt	0.00	326.33	3,399.77	3,589.63	(189.86)
633.00	Maint of Pumping Eqpt	7,201.25	4,954.83	24,947.53	54,503.13	(29,555.60)
	Total Pumping Expenses	41,637.40	42,098.16	410,690.98	463,079.76	(52,388.78)
Water Treatment Expenses						
640.00	Operation Suprvsn & Engrng	1,224.47	1,371.75	14,859.66	15,089.25	(229.59)
641.00	Chemicals	5,444.21	7,535.08	83,473.06	82,885.88	587.18
642.00	Operation Labor & Expenses	14,776.98	14,739.08	159,816.37	162,129.88	(2,313.51)
643.00	Miscellaneous	2,040.23	2,105.67	23,193.66	23,162.37	31.29
650.00	Maint Supervision & Engrng	337.60	357.58	3,953.45	3,933.38	20.07
651.00	Maint of Structures & Imprvmnt	540.62	876.08	8,815.30	9,636.88	(821.58)
652.00	Operation Supvsn & Engnrg	6,595.40	5,960.08	75,850.20	65,560.88	10,289.32
	Total Water Treatment Expenses	30,959.51	32,945.32	369,961.70	362,398.52	7,563.18

NORTH SHORE WATER COMMISSION

Income Statement

For the Eleven Months Ending November 30, 2016

		Current Month	Current Month Budget	Year to Date Actual	Year to Date Budget	Variance Budget to Actual
Transmission & Distribution Expenses						
660.00	Operation Supvsn & Engrng	109.86	130.75	1,390.51	1,438.25	(47.74)
661.00	Storage Facilities Expenses	75.23	110.58	1,122.42	1,216.38	(93.96)
670.00	Maint Supervisn & Engnrng	67.52	71.50	790.64	786.50	4.14
676.00	Maintenance of Meters	0.00	77.50	0.00	852.50	(852.50)
	Total Trans. & Distribution Expense	252.61	390.33	3,303.57	4,293.63	(990.06)
Customer Acounts Expenses						
906.00	Customer Service & Infor Exps	67.52	71.50	790.64	786.50	4.14
	Total Customer Accounts Expenses	67.52	71.50	790.64	786.50	4.14
Administration & General Expenses						
408.00	FICA Taxes	2,995.61	3,024.00	32,201.97	33,264.00	(1,062.03)
920.00	Admin & General Salaries	2,700.81	2,860.42	31,564.99	31,464.62	100.37
921.00	Office Supplies & Expenses	1,203.40	1,276.00	15,238.13	14,036.00	1,202.13
923.00	Outside Services Employed	1,115.75	8,060.67	67,582.23	88,667.37	(21,085.14)
924.00	Prop & P.L. Insurance	0.00	1,428.25	21,878.00	15,710.75	6,167.25
925.00	Injuries & Damages	0.00	3,362.00	34,401.50	36,982.00	(2,580.50)
926.00	Employee Pensions & Benefits	8,304.15	10,464.33	92,162.43	115,107.63	(22,945.20)
930.00	Miscellaneous General Expenses	40.40	552.67	5,527.91	6,079.37	(551.46)
930.03	Storm Water Labor	0.00	0.00	203.30	0.00	203.30
930.05	Storm Water Testing Supplies	0.00	0.00	355.50	0.00	355.50
932.00	Maintenance of General Plant	0.00	287.33	0.00	3,160.63	(3,160.63)
	Total Adm. & General Expenses	16,360.12	31,315.67	301,115.96	344,472.37	(43,356.41)
	Total Operations & Maintenance	89,605.00	108,576.39	1,103,805.59	1,194,340.29	(90,534.70)
	Net Operating Income	20,190.43	(49.96)	115,355.59	(549.56)	115,905.15
Nonoperating Income and Expense						
419.00	Interest Income	17.80	50.00	188.83	550.00	(361.17)
421.00	Misc Income	0.00	0.00	4,989.22	0.00	4,989.22
	Net Income	$ 20,208.23	$ 0.04	$ 120,533.64	$ 0.44	120,533.20

NORTH SHORE WATER COMMISSION

Income Statement

For the One Month and the Eleven Months Ended November 30, 2016 and 2015

		Current Month	Prior Year Month	Year to Date Actual	Prior YTD Date Actual
Operating Revenues					
Sales for Resale					
466.01	Glendale-Operations	$ 55,672.67	$ 60,928.74	$ 612,399.37	$ 670,216.14
466.02	Whitefish Bay-Operations	30,648.35	31,558.93	337,131.85	347,148.23
466.03	Fox Point-Operations	16,872.07	18,635.33	185,592.77	204,988.63
466.05	Wholesale Water Sales	5,972.34	5,052.60	73,764.19	57,275.71
	Sales for Resale	109,165.43	116,175.60	1,208,888.18	1,279,628.71
Other Operating Revenue					
474.00	Lab Services Income	630.00	3,000.00	9,750.00	18,690.00
474.02	Storm Water Analysis Revenue	0.00	0.00	523.00	268.00
	Total Operating Income	109,795.43	119,175.60	1,219,161.18	1,298,586.71
Operation and Maintenance Expenses					
Source of Supply					
600.00	Operation Supvsn & Engnrg	67.52	66.07	790.64	787.02
601.00	Operations Labor & Expenses	75.23	97.09	1,122.42	1,024.79
602.01	Purchased Water	0.00	0.00	9,230.00	9,464.00
603.00	Miscellaneous Expenses	0.00	0.00	335.42	721.64
610.00	Maint Supervisn & Engrng	109.86	116.41	1,538.62	1,343.51
611.00	Maint of Structures & Imprvmnt	75.23	97.09	1,122.42	1,061.04
613.00	Maint. of Crib & Wet Well	0.00	0.00	3,555.00	19,440.00
617.00	Maint of Mis Water Source Plnt	0.00	0.00	248.22	60.66
	Total Source of Supply Expenses	327.84	376.66	17,942.74	33,902.66
Pumping Expenses					
620.00	Operations Supvsn & Engrg	1,224.47	1,242.69	14,859.70	14,476.86
621.00	Fuel for Power Production	11.58	10.23	1,431.79	1,663.76
623.00	Fuel/Power Purchased for Pmpng	17,891.44	17,346.63	210,405.80	208,083.14
624.00	Pumping Labor & Expenses	11,214.62	9,554.32	115,739.71	112,473.60
626.00	Miscellaneous Expenses	3,004.16	1,623.86	23,851.06	20,270.75
630.00	Maint Supervisn & Engrng	549.26	582.05	6,952.75	6,901.97
631.00	Maint of Structures & Imprvmnt	540.62	761.37	9,102.87	8,451.05
632.00	Maint of Power Prod Eqpt	0.00	0.00	3,399.77	3,262.27
633.00	Maint of Pumping Eqpt	7,201.25	1,562.77	24,947.53	27,522.65
	Total Pumping Expenses	41,637.40	32,683.92	410,690.98	403,106.05

NORTH SHORE WATER COMMISSION

Income Statement

For the One Month and the Eleven Months Ended November 30, 2016 and 2015

		Current Month	Prior Year Month	Year to Date Actual	Prior YTD Date Actual
Water Treatment Expenses					
640.00	Operation Suprvsn & Engrng	1,224.47	1,242.69	14,859.66	14,476.86
641.00	Chemicals	5,444.21	0.00	83,473.06	65,534.13
642.00	Operation Labor & Expenses	14,776.98	14,973.21	159,816.37	160,082.22
643.00	Miscellaneous	2,040.23	1,624.05	23,193.66	18,458.54
650.00	Maint Supervision & Engrng	337.60	330.33	3,953.45	3,935.19
651.00	Maint of Structures & Imprvmnt	540.62	761.38	8,815.30	8,816.00
652.00	Operation Supvsn & Engnrg	6,595.40	6,964.25	75,850.20	64,387.56
	Total Water Treatment Expenses	30,959.51	25,895.91	369,961.70	335,690.50
Transmission & Distribution Expenses					
660.00	Operation Supvsn & Engrng	109.86	116.41	1,390.51	1,321.33
661.00	Storage Facilities Expenses	75.23	97.09	1,122.42	988.54
670.00	Maint Supervisn & Engnrng	67.52	66.07	790.64	787.02
676.00	Maintenance of Meters	0.00	0.00	0.00	417.35
	Total Trans. & Distribution Expenses	252.61	279.57	3,303.57	3,514.24
Customer Acounts Expenses					
906.00	Customer Service & Infor Exps	67.52	66.07	790.64	787.02
	Total Customer Accounts Expenses	67.52	66.07	790.64	787.02
Administration & General Expenses					
408.00	FICA Taxes	2,995.61	2,758.24	32,201.97	30,233.30
920.00	Admin & General Salaries	2,700.81	2,642.60	31,564.99	31,440.11
921.00	Office Supplies & Expenses	1,203.40	842.94	15,238.13	12,066.08
923.00	Outside Services Employed	1,115.75	1,870.25	67,582.23	80,333.71
923.01	Engineering Services	0.00	0.00	0.00	527.29
924.00	Prop & P.L. Insurance	0.00	0.00	21,878.00	15,125.00
925.00	Injuries & Damages	0.00	0.00	34,401.50	38,153.50
926.00	Employee Pensions & Benefits	8,304.15	7,742.30	92,162.43	95,529.85
930.00	Miscellaneous General Expenses	40.40	45.00	5,527.91	8,208.59
930.03	Storm Water Labor	0.00	0.00	203.30	126.02
930.05	Storm Water Testing Supplies	0.00	0.00	355.50	151.45
932.00	Maintenance of General Plant	0.00	0.00	0.00	2,557.17
	Total Adm. & General Expenses	16,360.12	15,901.33	301,115.96	314,452.07
	Total Operations & Maintenance	89,605.00	75,203.46	1,103,805.59	1,091,452.54
	Net Operating Income	20,190.43	43,972.14	115,355.59	207,134.17
Nonoperating Income and Expense					
419.00	Interest Income	17.80	21.88	188.83	249.62
421.00	Misc Income	0.00	0.00	4,989.22	6,023.00
	Net Income	$ 20,208.23	$ 43,994.02	$ 120,533.64	$ 213,406.79

NORTH SHORE WATER COMMISSION
Balance Sheet
November 30, 2016 and 2015

Account	Description		Current Year	Prior Year
Assets and Other Debits				
Cash				
131.01	Checking	$	232,766.92	294,806.94
131.02	Pay Pal Account		545.46	545.46
131.09	Petty Cash		50.00	50.00
135.01	LGIP - Emergency Fund		25,114.71	0.00
136.00	Temporary Investments		0.00	25,073.38
	Total Cash		258,477.09	320,475.78
142.00	Accounts Receivable		30,307.72	64,043.06
154.05	Storm Water Testing Inventory		274.59	283.24
165.00	Prepayments		6,696.10	6,299.12
174.01	Due (to)/from Utility Plant Fd		(10,625.74)	(27,135.82)
	Total Assets & Other Debits	$	285,129.76	363,965.38
Liabilities and Other Credits				
Liabilities				
232.00	Accounts Payable	$	37,948.33	32,401.48
233.00	Payable to Municipalities		2,559.56	2,089.61
234.00	Credit Card Payable-BMO Harris		949.05	0.00
	Sect125 Payable		854.00	855.38
242.07	Payroll Liabilities		901.77	922.61
242.09	Wages Payable		24,502.21	20,999.63
242.10	Accrued Payroll Taxes		1,874.42	1,606.47
	Total Liabilities		69,589.34	58,875.18
Earned Surplus				
Unappropriated Earned Surplus: Beginning of Year				
215.01	Glendale - Operations		20,586.70	18,762.75
215.02	Whitefish Bay - Operations		16,040.45	15,097.22
215.03	Fox Point - Operations		8,379.63	7,823.44
	Unappropriated Earned Surplus		45,006.78	41,683.41
Appropriations of Surplus				
215.11	Glendale Emergency		11,500.00	11,500.00
215.12	Whitefish Bay Emergency		8,127.50	8,127.50
215.13	Fox Point Emergency		5,372.50	5,372.50
216.91	Glendale Contigency		13,707.50	13,707.50
216.92	Whitefish Bay Contigency		7,100.00	7,100.00
216.93	Fox Point Contigency		4,192.50	4,192.50
	Total Appropriations of Surplus		50,000.00	50,000.00
Balance Transferred from Income				
	Net Income		120,533.64	213,406.79
	Total Earned Surplus		215,540.42	305,090.20
	Total Liabilities & Other Credits	$	285,129.76	363,965.38

NORTH SHORE WATER COMMISSION
Plant Financing by Utility or Municipalities
For the Eleven Months Ending November 30, 2016 and 2015

		Current Month	Year to Date This Year	Current Year Budget	PY Current Mo.	PY Year to Date
Capital Contributions from Members						
40-421.0	Glendale Charges for Plant	$ 2,826.31	55,228.64	102,050.19	5,628.65	39,365.38
40-421.0	Whitefish Bay Charge for Pla	1,945.61	38,019.12	56,179.64	3,874.74	27,098.93
40-421.0	Fox Point Charges for Plant	1,095.44	21,405.83	30,927.16	2,181.59	15,257.45
	Total Capital Contributions	5,867.36	114,653.59	189,156.99	11,684.98	81,721.76
Other Funding Sources						
40-466.0	Wholesale Water Sales	5,381.66	65,285.03	0.00	4,243.54	48,361.72
40-419.0	Interest	199.48	2,148.97	0.00	65.07	659.08
40-422.0	Miscellaneous Income	0.00	0.00	0.00	0.00	11,546.80
	Other Funding Sources	5,581.14	67,434.00	0.00	4,308.61	60,567.60
	Total Funding Sources	11,448.50	182,087.59	189,156.99	15,993.59	142,289.36
Utility Plant Expenditures						
Source of Supply						
		0.00	0.00	0.00	0.00	0.00
Pumping Plant						
40-323	Other Power Production Eqpt	0.00	13,652.50	0.00	0.00	0.00
40-325	Electric Pumping Equipment	5,798.39	57,636.32	64,482.88	5,919.80	63,799.89
		5,798.39	71,288.82	64,482.88	5,919.80	63,799.89
Water Treatment Plant						
40-331	Structures&Improvements-W	0.00	0.00	0.00	0.00	1,883.00
40-334	Other Water Treatment Equi	9,758.11	51,477.24	85,257.37	1,955.73	32,680.95
		9,758.11	51,477.24	85,257.37	1,955.73	34,563.95
Tranmission & Distribution Plant						
40-341	Structures&Improvements-T	0.00	0.00	0.00	0.00	1,883.00
		0.00	0.00	0.00	0.00	1,883.00
General Plant						
40-391.1	Computer Equipment	0.00	0.00	0.00	0.00	939.16
40-395	Laboratory Equipment	0.00	40,599.40	9,166.63	0.00	2,767.79
40-396	Power Operated Eqpt-Gen Pl	0.00	5,569.00	0.00	0.00	0.00
40-397.1	SCADA Equipment	0.00	18,403.16	30,250.00	7,177.56	7,177.56
		0.00	64,571.56	39,416.63	7,177.56	10,884.51
	Total Utility Plant Expenditu	15,556.50	187,337.62	189,156.88	15,053.09	111,131.35
Sources of Funding						
	Over (Under) Expenditures	$ (4,108.00)	(5,250.03)	0.11	940.50	31,158.01

NORTH SHORE WATER COMMISSION
Utility Plant Assets and Contributed Capital
November 30, 2016 and 2015

Account	Description		Current Year	Prior Year
Assets				
40-131.00	Savings	$	571,547.24	569,304.57
40-142.00	Receivable for Asset Additions		30,248.83	14,984.96
40-174.01	Due (to)/from Operations		10,625.74	27,135.82
	Total Assets	$	612,421.81	611,425.35
Liabilities and Contributed Capital				
Liabilities				
40-232.00	Accounts Payable Utility Plant	$	10,898.62	9,328.46
	Total Liabilities		10,898.62	9,328.46
Contributed Capital				
Reserve Balances:				
40-215.01	Glendale Plant Reserve		249,710.47	232,449.06
40-215.02	Whitefish Bay Plant Reserve		218,823.04	206,940.39
40-215.03	Fox Point Plant Reserve		138,239.71	131,549.43
	Total Reserve Balances		606,773.22	570,938.88
Current Year Capital Contributions and Other Funding Sources				
	Over (Under) Expenditures		(5,250.03)	31,158.01
	Net Contributions to Capital		601,523.19	602,096.89
	Total Liabilities & Contributed Capital	$	612,421.81	611,425.35

NORTH SHORE WATER COMMISSION
Storm Water Income Statement
For the Eleven Months Ending November 30, 2016

	Current Month		Year to Date	
Storm Water Analysis Revenue	$ 0.00	0.00	$ 523.00	0.04
Total Revenues	0.00	0.00	523.00	0.04
Expenses				
Storm Water Labor	0.00	0.00	203.30	0.01
Storm Water Testing Supplies	0.00	0.00	355.50	0.03
	0.00	0.00	558.80	0.04
Revenues				
Net Income	$ 0.00	0.00	$ (35.80)	0.00

BILLS TO BE APPROVED AT COMMISSION MEETING OF	**1/11/2017**
BMO Harris Bank (credit card)	332.55
-- Google (monthly charge for apps): $54.16	
-- Siteground (website hosting renewal): $185.40	
-- Straight Talk (monthly phone plan - Foreman): $45.99	
-- USPS (stamps): $47.00	
Buelow Vetter (legal services)	82.50
ChemTrade (treatment chemical: aluminum sulfate)	3,860.81
Cintas Fire Protection (fire extinguisher services)	225.25
City of Glendale (refund duplicate payment for storm water services)	196.00
City of Milwaukee (standby service)	1,350.00
CTW Corporation (mechanical contractor services to move valves and spool pieces)	2,200.00
Diversified Benefit Services (Section 125 Plan administration)	95.00
Earthlink (Bender phone)	153.95
Eric Kiefer (reimb for FedEx Office charges - coil bindings)	5.27
Eurofins (cryptosporidium analysis)	380.00
FedEx Freight (shipping charges for polymer)	53.00
Fuchs & Boyle (legal service)	39.00
Glendale Water Utility (environmental and storm water charges)	543.60
Grainger (hardness buffer, lamps, hardware, lab soap, door closer, ear plugs, custodial supplies, drain for air comp., floor finish, and floor stripper)	612.06
Great America (lease payment for copier/printer)	221.08
Hach (phosphate reagent)	516.42
Hawkins (treatment chemicals: aqueous ammonia and phosphate)	437.88
Home Depot (hardware, plumbling supplies, and ice melt)	169.82
Idexx (cases of Quantitray 2000)	386.44
L&R Meter Testing & Repair (School Road meter testing)	148.65
McMaster-Carr (outlet cover)	24.03
Minnesota Life / Securian (employee life insurance)	121.00
MMSD (4th quarter sludge disposal)	1,466.41
Nalco (treatment chemical: polymer)	342.00
Northern Lake Service (analysis of water samples for compliance monitoring)	627.00
Office Copying Equipment (maintenance payment for copier/printer & shipping for toner)	27.46
Rotroff Jeanson (accounting services)	950.00
Spectrum Business (internet services and Klode phone)	391.49
T-Mobile (mobile internet)	31.05
UPS Store (shipping services)	173.20
Time Warner Cable (internet services and Klode phone)	391.49
US Cellular (cellular phone service)	4.35
USA Bluebook (free chlorine reagent)	273.03
Village Ace Hardware (hardware, plumbing supplies, and wall plate)	35.22
Village of Fox Point (gasoline and diesel fuel)	70.39
Wallace Tree & Landscaping (snow removal)	500.00
Water Research Foundation (membership renewal)	3,193.79
We Energies (Bender Electric)	14,109.51
We Energies (Bender Gas)	1,642.20

We Energies (Green Tree Electric)		17.21
We Energies (Henry Clay Electric)		18.16
We Energies (Klode Electric)		3,808.71
We Energies (Klode Gas)		10.95
Wilkens-Anderson (plate count agar and quartz cuvette)		169.82
Wisconsin State Lab of Hygiene (fluoride analysis)		25.00
	SUB-TOTAL	$40,432.75
Maintenance Reserve		
	SUB-TOTAL	$0.00
	TOTAL	$40,432.75

12/31/2016 Checking account balance - Main	$304,303.47
12/31/2016 Checking account balance - Secondary	$545.46
12/31/2016 Local Government Investment Pool balance (Maintenance Reserve)	$571,767.49
12/31/2016 Local Government Investment Pool balance (Emergency Fund)	$25,124.39

North Shore Water Commission
Payment Request
Chemical Feed Upgrade Project (2016-2)
January 11, 2017

Expenses pertaining to the Chemical Feed Upgrade Project were reviewed and approved by the Commission.

The Commission is requesting payment of $26,623.98 for expenses assigned to this capital improvement project. The proportionate costs for the respective municipalities are as follows:

Member	*Capital Rate**	*Amount Due*
Fox Point	*18.67%*	*$4,970.70*
Glendale	*48.17%*	*$12,824.77*
Whitefish Bay	*33.16%*	*$8,828.51*

Respectfully,

_____
Eric Kiefer

**Rates approved at the January 14, 2015 Commission Meeting.*

North Shore Water Commission
Chemical Feed Upgrade Project (2016-2)
Labor Assigned to Project
Eric Kiefer
January 11, 2017

Pay Period	Employee Name	Hours	Cost
12/10/2016 to 12/24/2016	Brooks Angell	55.00	1,674.18
12/10/2016 to 12/24/2016	Duane Ziege	49.50	1,701.96
12/10/2016 to 12/24/2016	Eric Kiefer	31.00	1,200.83
12/24/2016 to 01/07/2017	Brooks Angell	30.00	885.99
12/24/2016 to 01/07/2017	Duane Ziege	30.00	986.59
12/24/2016 to 01/07/2017	Eric Kiefer	12.00	452.85
TOTAL			$6,902.40

North Shore Water Commission
Chemical Feed Upgrade Project (2016-2)
Invoices for Meeting
Eric Kiefer
January 11, 2017

Vendor	Invoice Number	Units	Qty	Description	Line Cost
Allied Electronics	9007077739	Item	17	Terminal Accessory, Bridge, 4 Pin, 6 mm Spacing, Phoenix Contact, FBS 4-6	33.32
Allied Electronics	9007063486	Item	25	Terminal Marker, Sheet of 100, 1050004	31.00
Allied Electronics	9007063486	Item	4	Enclosure, Fiberglass, 15.78 in x 13.9 in x 6.8 in, Screw (Bud Industries NF-6614)	364.60
Allied Electronics	9007063486	Shipment	1	Shipping and Handling	58.91
Allied Electronics	9007063487	Item	3	Circuit Breaker, Branch, K Curve, 1 Pole, 15 A, 10 kA, 240 VAC	82.83
Allied Electronics	9007063487	Shipment	1	Shipping and Handling	8.56
Allied Electronics	9007065567	Item	5	Power Supply, 24 VDC Out, 2.5 A, 100-264 V IN, DIN, Mean Well	97.00
Allied Electronics	9007065567	Shipment	1	Power Supply, 24 VDC Out, 2.5 A, 100-264 V IN, DIN, Mean Well	11.24
Allied Electronics	9007074059	Item	100	Terminal Accessory, Bridge, 2 Pin, 6 mm Spacing, Phoenix Contact, FBS 2-6	52.00
Allied Electronics	9007074059	Item	20	Terminal Accessory, Bridge, 3 Pin, 6 mm Spacing, Phoenix Contact, FBS 3-6	25.20
Allied Electronics	9007074059	Shipment	1	Shipping and Handling	21.13
Allied Electronics	9007102989	Item	3	Terminal Accessory, Bridge, 4 Pin, 6 mm Spacing, Phoenix Contact, FBS 4-6	5.88
American Bolt Corp	613268	Stick, 10 ft	8	Channel, 1 5/8 in x 10 ft, Greencoat (unistrut)	140.40
Beckhoff Automation	0320585-IN	Item	1	Beckhoff, Industrial PC, CX2030-0125	2,175.00
Beckhoff Automation	0320585-IN	Item	1	Beckhoff, Power Supply Unit, 24 VDC, CX2100-0004	283.00
Beckhoff Automation	0320585-IN	Item	4	Beckhoff, Extension, EtherCAT, EK1110-0000	307.60
Beckhoff Automation	0320585-IN	Item	3	Beckhoff, Coupler, EtherCAT, EK1100	426.00
Beckhoff Automation	0320585-IN	Item	4	Beckhoff, 4 Channel Analog Input Terminal, EL3024	696.00
Beckhoff Automation	0320585-IN	Item	4	Beckhoff, 8 Channel Digital Input Terminal, EL1808	224.40
Beckhoff Automation	0320585-IN	Item	4	Beckhoff, 4 Channel Digital Output Terminal, EL2004	150.80
Beckhoff Automation	0320585-IN	Item	4	Beckhoff, 4 Channel Analog Onput Terminal, EL4024	764.00
Beckhoff Automation	0320585-IN	Item	1	Beckhoff, Bus End Cap, EL9011	4.10
Beckhoff Automation	0320585-IN	Item	1	Touchscreen, Multitouch, 7 in, 800 x 480 resolution, Windows 7, Beckhoff CP2907-0000	956.00
Beckhoff Automation	0320585-IN	Item	1	Beckhoff, Connecting Kit, 3 m, C9900-K623	37.70
Beckhoff Automation	0320585-IN	Shipment	1	Shipping and Handling	33.59
Beckhoff Automation	0320687-IN	Item	1	Beckhoff, License for TC3 PLC, TC1200-0060	653.00
Beckhoff Automation	0320687-IN	Item	1	Beckhoff, License for TC3 OPC UA, TF6100-0060	232.00
Beckhoff Automation	0320687-IN	Item	1	Beckhoff, License for Modbus Server, TF6250-0060	232.00
Beckhoff Automation	0320983-IN	Item	1	Beckhoff, Coupler, EtherCAT, EK1100	142.00
Beckhoff Automation	0320983-IN	Shipment	1	Shipping and Handling	9.44
Grainger	9306073926	Item	1	pH Meter, Transmitter, TX2000, Sensorex	715.00
Grainger	9313047822	Item	2	Isolator, Universal Signal Conditioner with Analog Output	439.98
Grainger	9313099708	Item	3	Isolator, Universal Signal Conditioner with Analog Output	659.97
Grainger	9314929051	Item	80	Clamp, Strut, 1/2 in, Steel, 2 Piece Clam Style, Galvanized	124.80
Grainger	9314929051	Item	10	Clamp, Strut, 2 in, Steel, 2 Piece Clam Style, Galvanized	20.60
Grainger	9316551804	Bottle, 8 Oz	2	Cement, PVC, Gray, 711	15.92
Grainger	9316551804	Item	2	Polypropylene, 2 in x 2 in, Adapter, MPT x Camlock	8.98
Grainger	9316551804	Item	2	Polypropylene, 2 in Camlock Cap	21.26
Grainger	9316588350	Item	25	Isolator, Universal Signal Conditioner with Analog Output	5,499.75
Grainger	9316837187	Pack of 10	2	Chemical Spill Response, Boot Cover, 15 1/2 in, Clear	17.06
Grainger	9316837195	Item	1	Wire Duct, PVC, Gray, 1.26 in x 0.3 in x 6 ft	58.73
Grainger	9317110212	Item	2	Chemical Spill Response, Cabinet, 15 in x 9 1/2 in x 30 1/4 in	320.80
Grainger	9317412220	Item	1	Chemical Spill Response, Neutralizer for Bases, 40 lb	303.40
Grainger	9317412220	Item	4	Chemical Spill Response, Clay Floor Absorbent, 40 Lb	46.48
Grainger	9317412220	ag for 13 Gal Spi	2	Chemical Spill Response, Neutralizer for Acids, 40 lb	86.72
Grainger	9317412220	Item	2	Chemical Spill Response, Trash Can, HDPE, Yellow, Wheels	264.26
Grainger	9317412220	Pack of 50	2	Chemical Spill Response,Gloves, Nitrile, XL, Black	49.12
Grainger	9317412220	Pack of 50	2	Chemical Spill Response,Gloves, Nitrile, L, Black	49.12
Grainger	9317412220	Pack of 100	2	Chemical Spill Response, Trash Bags, 44 Gal, 1.10 Mil	114.52
Grainger	9317412220	Item	2	Chemical Spill Response, Goggles, Anti-Fog, Anti-Scratch	6.20

Grainger	9317412220	Item	2	Chemical Spill Response, Bib, Green, Large	14.70
Grainger	9317837392	Item	10	Sign, 7 in x 5 in, Danger, Electrical Hazard	42.60
Grainger	9318145654	Item	1	Wire Duct, PVC, Accessory, Cover, Gray, 1.26 in x 0.3 in x 6 ft	9.45
Grainger	9318390193	Pack of 50	1	Anchor, Drop In, 3/8 in	28.76
Grainger	9318390193	Item	44	Conduit Fitting, PVC, Coupler, 1 in	30.36
Grainger	9318390193	Item	20	Conduit Fitting, PVC, Lockunt, 1 in	12.00
Grainger	9318390193	Item	2	Cap, Flexible, 3 in	13.92
Grainger	9318529303	Item	4	Conduit Fitting, PVC, Male Adapter, 1 in	8.76
Grainger	9319031333	Pack of 3	1	Blade, Band, Carbon Steel, 3 ft x 8 7/8 in	34.08
Grainger	9319031333	Pack of 10	1	U-Bolt, Round, Zinc, 5/16in-18, 1 1/4 in Pipe	13.61
Grainger	9319031333	Pack of 25	1	Spring Nut, 1/4 in	38.16
Grainger	9319031333	Pack of 25	1	Spring Nut, 3/8 in	43.27
Grainger	9319031333	Item	2	Channel Connecting Plate, 1 5/8 in, Green	9.28
Grainger	9320251144	Item	2	Conduit Fitting, PVC, Conduit Body, 1 in, Muliple Configurations	13.72
Graybar	989000091	Feet	500	Wire, MTW, 12 AWG, Blue	72.61
Graybar	989000091	Feet	500	Wire, MTW, 12 AWG, Green	72.61
Graybar	989000091	Feet	500	Wire, MTW, 12 AWG, Red	72.61
Graybar	989000091	Feet	500	Wire, MTW, 12 AWG, White	72.61
Graybar	989000091	Feet	200	Conduit, PVC, 1 in	60.82
Graybar	989000091	Item	10	Conduit Fitting, PVC, Coupler, 1 in	1.78
Graybar	989000091	Item	20	Conduit Fitting, PVC, Elbow, 90 Deg with Bell, 1 in	11.97
Graybar	989000091	Item	20	Conduit Fitting, PVC, Male Adapter, 1 in	5.57
Graybar	989000091	Item	20	Conduit Fitting, Steel, Locknut, 1 in	6.13
Graybar	989000091	Item	2	Clamp, Strut, 1 in, Steel, 2 Piece Clam Style, Zinc Coated	2.75
Graybar	989000091	Item	9	Conduit Fitting, PVC, Conduit Body, 1 in, Type C	26.69
Graybar	989000091	Shipment	1	Shipping and Handling	14.41
Graybar	989104875	Item	10	Conduit Fitting, PVC, Conduit Body, 1 in, Type LB	23.57
Graybar	989104875	Item	10	Conduit Fitting, PVC, Conduit Body, Tee, 1 in	30.08
Graybar	989104875	Item	50	Clamp, Strut, 1 in, Steel, 2 Piece Clam Style, Zinc Coated	68.80
Graybar	989104875	Item	20	Electrical Box, Single Gang, Double Hub (Hubs on Opposite Side), 1 in	141.00
Graybar	989104875	Item	1	Shipping and Handling	29.15
McMaster-Carr	93470834	Item	1	Bit, Masonry, 1/2 in x 22 in, SDS, Rotary-Hammer Drill	65.49
McMaster-Carr	93470834	Shipment	1	Shipping and Handling	6.07
McMaster-Carr	94300499	Item	3	PVC, Sch 80, 2 in, Elbow, 45 Deg, Spigot x Socket	34.17
McMaster-Carr	94300499	Item	3	PVC, Sch 80, 2 in, Elbow, 45 Deg, Socket x Socket	27.75
McMaster-Carr	94300499	Shipment	1	Shipping and Handling	5.37
Modular Piping Supply	INV000232135	Item	12	Valve, Ball, 1/2 in, SXT, True Union, PVC Body, Viton Seals	285.00
Modular Piping Supply	INV000232135	Item	2	Valve, Ball, 1 in, SXT, True Union, PVC Body, EPDM Seals	59.54
Modular Piping Supply	INV000232135	Item	2	Valve, Ball, 1 1/2 in, SXT, True Union, PVC Body, EPDM Seals	99.50
Modular Piping Supply	INV000232135	Item	2	Valve, Ball, 2 in, SXT, True Union, PVC Body, EPDM Seals	130.42
Modular Piping Supply	INV000232135	Item	23	PVC, Sch 80, 1 in, Elbow, 90 Deg, Female x Female	42.55
Modular Piping Supply	INV000232135	Item	10	PVC, Sch 80, 1/2 in, Tee, Slip Socket	22.6
Modular Piping Supply	INV000232135	Item	10	PVC, Sch 80, 1/2 in, Tee, Threaded	26.1
Modular Piping Supply	INV000232135	Item	12	PVC, Sch 80, 1/2 in, Coupling, Slip Socket	19.44
Modular Piping Supply	INV000232135	Item	40	Compression Fitting, 3/8 in OD x 1/2 in MPT, White, Polypro	50.8
Modular Piping Supply	INV000232135	Item	2	PVC, Sch 80, 1/2 in MNPT x 1 in Barb, Adapter	4.34
Modular Piping Supply	INV000232135	Item	8	PVC, Sch 80, 1 in Spigot x 1/2 in FPT, Bushing	10.72
Modular Piping Supply	INV000232135	Item	2	PVC, Sch 80, 1 in MPT x 1/2 in FPT, Bushing	5.62
Modular Piping Supply	INV000232135	Item	8	PVC, Sch 80, 1 1/2 in x 1/2 in, Bushing, Socket x Socket	22.8
Modular Piping Supply	INV000232135	Item	8	PVC, Sch 80, 1 1/2 in, Elbow, 90 Deg, Socket x Socket	35.44
Modular Piping Supply	INV000232135	Item	8	PVC, Sch 80, 1 1/2 in, Nipple, Threaded, Close	13.84
Modular Piping Supply	INV000232135	Item	2	PVC, Sch 80, 1 1/2 in, Union, True Union, Viton Seals, Socket x Threaded	31.8
Modular Piping Supply	INV000232135	Item	1	PVC, Sch 80, 1 1/2 in x 1 1/2 in x 1 in, Reducing Tee, Socket x Socket x Socket	5.43
Modular Piping Supply	INV000232135	Item	4	PVC, Sch 80, 2 in x 2 in x 1 in, Reducing Tee, Socket x Socket	27.52
Modular Piping Supply	INV000232135	Item	7	PVC, Sch 80, 2 in, Adapter, Male x Socket	54.95
Modular Piping Supply	INV000232135	Item	1	PVC, Sch 80, 4 in Socket x 3 in Socket, Bushing	15.52
Modular Piping Supply	INV000232135	Item	1	PVC, Sch 80, 3 in x 2 in, Bushing, Socket x Socket	11.21
Modular Piping Supply	INV000232135	Item	1	PVC, Sch 80, 4 in, Flange, Slip, Solid	15.78
Modular Piping Supply	INV000232135	Item	2	PVC, Sch 80, 2 in x 2 in x 1 1/2 in, Reducing Tee, Socket x Socket	13.76
Modular Piping Supply	INV000232135	Item	2	PVC, Sch 80, 1 1/2 in, Tee, Socket x Socket x Socket	16.26
Modular Piping Supply	INV000232135	Item	9	PVC, Sch 80, 1 1/2 in, Elbow, 90 Deg, Female x Female	21.24
Modular Piping Supply	INV000232135	Item	40	Compression Fitting, 3/8 in OD x 3/8 in MPT, White, Polypro	49.6

Modular Piping Supply	INV000232135	Item	40	PVC, Sch 80, 1/2 in x 3/8 in, Bushing, Threaded x Threaded	116.4
Modular Piping Supply	INV000232135	Item	10	PVC, Sch 80, 2 in, Coupling, Socket x Socket	35.5
Modular Piping Supply	INV000232135	Item	1	PVC, Sch 80, 1/2 in, Elbow, 90 Deg, FPT x FPT	1.85
Modular Piping Supply	INV000232135	Feet	600	PVC, Sch 80, 1/2 in, Pipe	156
Modular Piping Supply	INV000232135	Item	30	PVC, Sch 80, 1/2 in, Coupling, Slip Socket	43.5
Modular Piping Supply	INV000232135	Item	20	PVC, Sch 80, 1/2 in, Elbow, 90 Deg, Socket x Socket	16
Village Ace Hardware	155525	Item	9	U-Bolt, Round, Zinc	14.5
TOTAL					$19,721.58

North Shore Water Commission

Summary of Plant Additions and Retirements in 2016

Preliminary Report

Eric Kiefer

1/10/2017

Additions

Project	ACT#	Description	Cost	Budget	% Over (Under)	Comments
2016-1	397.1	Replacement of plant uninterruptible power supply (UPS)	$18,403	$33,000	-44.23%	Original scope of project was going to include relocation of the UPS. Plans were changed to place replacement unit in same location. Original unit is still in plant and can be used for parts if new UPS fails.
2016-2	334	Chemical feed upgrade project - phase 2 continued	$77,368	$93,008	-16.82%	This project is the continuation of larger project spread over multiple years. This project involved the installation of new chemical feed equipment, lines, and infrastructure to a new location. Chemical feed systems that were affected include phosphate, phosphate for the ammonia carrier water, polymer, and aluminum sulfate.
2016-3	325	Valve replacements - high service #3 and #5	$52,370	$55,345	-5.38%	Scope of project was changed so that only high service #3 valves were replaced. The original valves for high service #5 valves have not been replaced; however, those replacement valves were procured and are onsite.
2016-4	395	Autoclave replacement	$2,829	$10,000	-71.71%	This equipment is for the laboratory.
2016-5	325	Low lift #3 VFD replacement	$5,690	$15,000	-62.07%	The VFD for low lift #3 was replaced with a new unit. The original VFD was refurbished and is a spare in case of an unexpected failure.
Hotplate 2016	395	Programmable hotplate	$1,306			Original hot plate was not listed as asset when purchased in 2005; it failed unexpected in 2016 and had to be replaced.
Turb 2016	395	New filter turbidimeters	$36,465			Original fiter turbidimeters are still installed and are functioning without problem. Extra units were purchased and installed to comply with DNR regulations.
Toro 2016	396	Lawn tractor	$5,569			Previous lawnmower was not listed as an asset; it failed unexpected in 2016.
Breaker 2016	323	New breaker Bender transfer switch	$13,653			Original breaker did not function properly and had to be replaced in 2016.
Total			$213,652	$206,353		

Retirements

Project		Description	Original Cost	Year of Purch.	Comments
--	395	Water distilling system for lab failed and could not be repaired.	$970	1977	Still stopped working and had to be removed. Commission now purchases reagent water instead of generating it onsite.
2016-3	325	12" Ball valves were demolished.	$6,928	1963	Ball and gate valves were replaced as part of valve replacement projects in 2015 and 2016.
2016-3	325	18" Ball valve were demolished.	$4,306	1963	
2016-3	325	12" Gate valves were demolished.	$2,659	1963	
2016-3	325	16" Gate valves were demolished.	$959	1963	
2016-3	325	18" Gate valves were demolished.	$2,216	1963	
2016-4	395	Original autoclave does not function and has been demolished.	$7,743	2004	
Total			$25,780		

Starnet TECHNOLOGIES

Control System Support and Preventative Maintenance Agreement
North Shore Water Commission
Water Production Facilities

The following is the scope of support and preventive maintenance to be performed by Starnet Technologies, Inc. for the North Shore Water Commission on their water production control system.

HARDWARE SUPPORT

Starnet Technologies will provide availability of 24-hour emergency on-site service for the control system. Parts that fail will be repaired or replaced as expeditiously as possible so as to minimize any down time. Our response time goal will be 4 hours. It is the customer's responsibility to stock spare parts for critical long lead-time items.

Labor provided by Starnet Technologies will be our standard rates minus 15%. Labor that would be at the 1.5 multiplier normally will be provided at 1.0 times our standard rates under this agreement. Labor that would be at the 2.0 multiplier normally will be provided at 1.5 times our standard rates under this agreement. See the attached rate schedule.

TELEPHONE SUPPORT

Up to (4) four hours per year of telephone support is included in this agreement.

PREVENTIVE MAINTENANCE

This agreement includes (8) eight 1-day (8 hour) trips per year for preventive maintenance of the control system hardware and software. These trips are intended to be on a non-emergency basis. Mileage for these trips is included.

These trips are intended for preventive maintenance and equipment calibration, but can also be used for upgrades, training, or other non-emergency support.

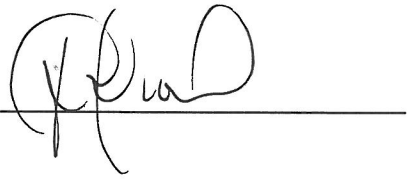
8520 Hollander Drive / P.O. Box 374 / Franksville, WI 53126-0374
Phone: (262) 886-0228 / FAX: (262) 886-0221
starnettech.com

Starnet Technologies will maintain an off-site backup of the Commission's software and configuration. During each preventive maintenance trip, Starnet Technologies will make a backup of Commission's system software for off-site backup.

Hydrolynk Software upgrades for the high service pump control touch screen are included at no charge.

Agreement price $12,028.00

This agreement is for a term beginning on the date Starnet Technologies receives the Commission's signed copy of this agreement as authorization, and ending on the same day of the following year. The agreement is automatically renewed for the next year by the parties at the stated amount plus CPI unless either party provides the other 30 days written notice to cancel the agreement or propose a change in the conditions.

NORTH SHORE WATER COMMISSION		STARNET TECHNOLOGIES
By: _____	By:	
Date: _____	Date:	1/5/2017

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Phone: (262) 886-0228 / FAX: (262) 886-0221
starnettech.com

Starnet TECHNOLOGIES

2017 Rate Schedule

Service Technician

Normal rate	$145.00
Over-time rate	$217.50
Double-time rate	$290.00
Discount rate	$123.25
Discount Double-time rate	$184.88

Engineer 1

Normal rate	$165.00
Over-time rate	$247.50
Double-time rate	$330.00
Discount rate	$140.25
Discount Double-time rate	$210.38

Engineer 2

Normal rate	$175.00
Over-time rate	$262.50
Double-time rate	$350.00
Discount rate	$148.75
Discount Double-time rate	$223.13

Engineer 3

Normal rate	$180.00
Over-time rate	$270.00
Double-time rate	$360.00
Discount rate	$153.00
Discount Double-time rate	$229.50

Travel

Overnight Lodging and Meals (Per Day)	$250.00
Mileage (Per Mile)	$0.67

Normal: Monday through Friday 7:00 am – 4:00 pm.

Overtime: Monday through Friday 4:00 pm – 7:00 am and all day Saturday.

Double-time: All day Sunday and Holidays.

Discount: A 15% discount from our normal rate is available for for service contract customers. There are no extra charges for over-time on this rate except Sundays and Holidays are billed at 1.5 times the discount rate.

Credit Card Payments: We no longer accept credit card payments.

8520 Hollander Drive • P.O. Box 374 • Franksville, WI 53126-0374
Telephone: 262/886-0228 • Fax: 262/886-0221
www.starnettech.com
www.arrowstations.com

Starnet TECHNOLOGIES

2017 SCADA Upgrade Project Agreement
North Shore Water Commission
Water Production Facilities

2017 SCADA UPGRADE PROJECT

The following is the scope of the SCADA upgrade services to be performed by Starnet Technologies for the North Shore Water Commission on their water production control system.

This agreement includes (19) nineteen 1-day (8 hour) trips for work on the 2017 SCADA Upgrade Project. These trips are intended to be on a non-emergency basis. Mileage for these trips is included.

Starnet will be working with the Commission staff toward completion of the SCADA upgrade project. Starnet will be providing services in 2017 as directed by the Plant Manager. The Commission anticipates the project will be continued in 2018.

Agreement price $28,567.00

This agreement is for a term beginning on the date Starnet Technologies receives the Commission's signed copy of this agreement as authorization, and ending on the same day of the following year.

NORTH SHORE WATER COMMISSION	STARNET TECHNOLOGIES
By: _____	By:
Date: _____	Date: 1/5/2017

8520 Hollander Drive / P.O. Box 374 / Franksville, WI 53126-0374
Phone: (262) 886-0228 / FAX: (262) 886-0221
starnettech.com

Emerson Process Management
Power & Water Solutions
200 Beta Drive
Pittsburgh, PA 15238

January 3, 2017

Eric Kiefer
North Shore Water Commission
400 W Bender Road
Glendale, WI 53217

Subject: Software Support Contract Renewal for 2017
Emerson Process Management Power & Water Solutions, Inc.
Offer No. WAS-AM-17DM0347

Dear Mr. Kiefer,

Emerson Process Management Power & Water Solutions, Inc. is pleased to submit this offer to North Shore Water Commission for 2017 Maintenance Support Renewal. The contract will cover the period December 31, 2016 to December 31, 2017 and subject to attached Support and Services Contract.

If you have any questions or require additional information please contact Michael Yamrus at (732) 682-0502.

Sincerely,

Diego Mora /Michael Yamrus

Emerson Process Management
Power & Water Solutions, Inc.

Attachments: Emerson Software Support and Services Contract for North Shore Water Commission

Software Support and Services Contract

This Contract entered into as of this 1st day of February 2017, between Emerson Process Management Power & Water Solutions, Inc. located at 200 Beta Drive, Pittsburgh, PA 15238 (hereinafter referred to as "Emerson") and North Shore Water Commission located at 400 W Bender Road, Glendale, WI 53217 (hereinafter referred to as Purchaser)

WITNESSETH

In consideration of the premises, the parties hereto agree as follows:

I. Scope of Work

Emerson will sell to the Purchaser and Purchaser will buy from Emerson the Software Support and/or Services as set forth in Emerson's offer # WAS-AM-17DM0347 dated January 3, 2017 and Schedule A (attached hereto).

II Definitions

"Software Support" is defined as assistance rendered to the Purchaser's personnel in the installation, configuration or operation of the Software, via telephone, email, fax or other electronic services.

"Updates" copies of new releases, upgrades and patches to The Software which are released by Emerson during the period covered by this Contract.

"The Software" the software that is licensed to the Purchaser at the commencement of this Contract. A list of The Software covered by this Contract is attached as Schedule A.

"On Site Software Support" services beyond Software Support that require the presence of Emerson personnel at the Purchaser's location.

"Equipment" The equipment covered by this Contract as set forth in Schedule A.

"Services" The services including maintenance services covered by this Contract as set forth in Schedule A.

"Commencement Date" The date this Contract is entered into as set forth above or the date Emerson accepts a purchase order for the work to be performed under this Contract.

III. Price

The Contract price is **$11,148.00**

IV. Terms of Payment

Emerson shall invoice Purchaser for the total Contract price within 30 days from the date of this Contract. For subsequent years, the invoices for annual payments will be issued on the Contract renewal date. Payment(s) is due and payable net 30 days from the date of each invoice.

In the event "On Site Software Support" or onsite Services are not included in the Contract price then the price shall be agreed upon either before the work is performed, or if performed on a time and material basis, in accordance with Emerson's current published price policy in effect, plus travel and living expenses. Emerson will invoice the Purchaser for the labor and material as required,

When Service is provided on a per diem basis, invoices shall be rendered upon completion of the Services and payment of per diem charges, plus travel and living expenses shall be due net 30 days from the date of invoice at the price in effect when the services are provided.

V. Termination

The initial term of this Contract shall be for one (1) year from the Commencement Date. Thereafter, this Contract can be renewed through Emerson. Such renewals must be in place 30 days prior to the expiration date of this Contract to ensure continuous maintenance support without lapse. Within 60 days prior to the above date(s) Emerson will provide a price for the extension of the Contract including any revisions to the Software and/or Equipment list.

This Contract may be terminated for convenience by either party, provided thirty (30) days advance written notice of termination is given and upon payment to Emerson of reasonable and proper termination charges, including, but not limited to all costs identified to this Contract which have been incurred up to the date of notice of termination. Payment shall be made within 30 days from date of invoice.

This Contract may be terminated by Emerson upon written notice if it determines that Purchaser changes, additions, deletions, or misuse or misapplication of the Equipment have degraded the performance of the specified Equipment or Software.

In the event Purchaser or Emerson commits a material breach of its undertaking so as to prevent completion of this Contract and thereafter fails on not less than thirty (30) days written notice to take steps to remedy such breach, the other party may, by written notice, terminate this Contract and recoveries of Purchaser and Emerson shall be determined by mutual agreement.

In the event that the Purchaser's equipment or software is altered, modified, changed, or, if any equipment or software is added or deleted, or moved within the premises, this Contract may be modified or terminated at Emerson's option. If, at any time, any such changes or attachments create a safety hazard, or interfere with the normal and satisfactory operation or maintenance of the Equipment, Emerson may, upon written notice to the Purchaser, require that such safety hazard or interference be promptly corrected at the Purchaser's expense. Emerson's continued maintenance of the Equipment and/or Software, which has been changed or, to which attachments have been made, does not constitute an approval of the change or attachment and at Emerson's option may be removed from the Equipment or Software listed in Schedule "A".

VI. Taxes

The price does not include any federal, state, or local property, license, privilege, sales, use, import duties, tariffs, fees, imposts, excise, turnover, added value, gross receipt, gross wages or similar taxes now or hereafter applicable in any manner to this transaction. Purchaser agrees to reimburse Emerson for any such taxes which Emerson is required to pay upon submission of Emerson invoice.

VII. Force Majeure

Emerson will not be liable for failure or delay in performance resulting from any cause beyond its reasonable control and for acts of God, the act or failure to act of Purchaser's customer, or other contractors. In the event of such delay, the time for performance/delivery will be extended by a period of time reasonably necessary to overcome the effect of the delay.

VIII. Warranties

1. Software Support

Emerson warrants to the Purchaser that the disk(s) on which the Updates are recorded is (are) free from defects in materials and workmanship under normal use and service for a period of ninety days from date of delivery. The Updates and any accompanying written materials (including instructions for use) are provided "as is" without warranty of any kind. Further, Emerson does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the Updates, The Software or written materials. The entire risk as to the results and performance of Updates and The Software is assumed by the Purchaser. Unless stated otherwise herein, third party software/ equipment shall be warranted and remedied on a pass through basis in the same manner and for the same period and extent provided by the original software/ equipment manufacturer.

Unless otherwise provided within this Contract, there is no warranty of any kind included hereunder with respect to The Software. Applications software programs not provided by Emerson are not covered under this warranty. Problems related to applications software programs provided by Emerson, including, but not limited to, problems caused by operator errors or lack of security procedures, virus related problems, unqualified file deletions or modifications, or lack of proper observance of system backup file maintenance are not covered under the warranty scope.

If this Contract includes On Site Software Support Services, Emerson warrants that the Services provided will reflect competent knowledge and judgment.

The warranty period shall expire 12 months from completion of the Service. In the case of a nonconformity in the warranty set forth herein above, and if Emerson is notified in writing of such nonconformity during the applicable warranty period, it shall be corrected by reperformance of the nonconforming portion of the Service. If such remedies are impracticable, Emerson may refund the purchase price for the nonconforming Service.

2. Equipment and Services

Emerson warrants that during the term of this Contract, the Equipment listed in Schedule "A" will be free from defects in materials or workmanship under normal use and care and Services provided under this Contract will be performed by trained personnel using proper equipment and instrumentation as applicable for the particular Service provided.

If Purchaser discovers any such warranty defect(s) and notifies Emerson of the alleged defect(s) during the term of this Contract or the applicable warranty period as set forth below, Emerson shall, at its option, correct any errors that are found by Emerson in the Services or repair or replace F.O.B. point of manufacture that portion of the Equipment found by Emerson to be defective.

Equipment repaired or replaced by Emerson pursuant to this Contract is warranted for a period extending to the end of the term of this Contract or for 90 days from the date of delivery of repaired or replaced Equipment, whichever is longer. Any Service provided pursuant to this Contract is warranted to the end of the term of

this Contract or for 90 days from completion the Service, whichever is longer.

All replacements or repairs necessitated by any causes not the fault of Emerson, including but not limited to, unsuitable power sources or environmental conditions, lightning, fire, flood, earthquakes, vandalism, accident, or misuse, improper installation, unauthorized modification or repair, or improper storage or handling by Purchaser or any third party, are not covered by this warranty, and shall be at the Purchaser's expense. Emerson shall not be obligated to pay any costs or charges incurred by the Purchaser or any other party except as may be agreed upon in writing in advance by Emerson.

Materials and/or Services required due to actual environmental or process conditions beyond the specifications of the Equipment performance capabilities are not part of the warranty scope.

Emerson will invoice for Services provided per the Purchaser's request, which are beyond the scope of warranty coverage hereunder using its then-current pricing policy. Payments for such invoices shall be made within thirty days of rendering of such Services and expenses.

Materials and/or Services required for system changes and additional training are not part of the scope of the warranty services. THE WARRANTIES SET FORTH IN THIS CONTRACT ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER STATUTORY, EXPRESS OR IMPLIED (INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE). THE REMEDIES SET FORTH, FOR THE TIME AND IN THE MANNER PROVIDED ABOVE, SHALL BE PURCHASER'S EXCLUSIVE REMEDIES FOR FAILURE OF EMERSON TO MEET ITS WARRANTY OBLIGATIONS, WHETHER BASED IN CONTRACT, IN TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY), OR OTHERWISE.

IX. Limitation of Liability

EMERSON SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE. EMERSON SHALL NOT BE LIABLE FOR FAILURES, REPAIRS OR DOWN TIME ON OR CAUSED BY EQUIPMENT OR SOFTWARE COVERED IN THIS CONTRACT. THE REMEDIES SET FORTH IN THIS CONTRACT ARE EXCLUSIVE AND UNDER NO THEORY OF RECOVERY, WHETHER BASED IN CONTRACT, IN TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY), UNDER WARRANTY OR OTHERWISE WILL EITHER EMERSON OR ITS SUPPLIERS OF ANY TIER: (A) BE LIABLE FOR ANY INDIRECT, INCIDENTIAL OR CONSEQUENTIAL DAMAGE WHATSOEVER; DAMAGE TO OR LOSS OF PROPERTY OR EQUIPMENT; LOSS OF PROFITS OR REVENUE; LOSS OF USE OF PURCHASER'S PROPERTY, EQUIPMENT OR POWER SYSTEM; INCREASED COSTS OF ANY KIND, INCLUDING BUT NOT LIMITED TO CAPITAL COST, FUEL COST OR CLAIMS OF CUSTOMERS OF PURCHASER; AND (B) BE LIABLE FOR AN AGGREGATE LIABILITY EXCEEDING THE TOTAL PRICE PAID TO EMERSON UNDER THIS CONTRACT. THIS ARTICLE SHALL PREVAIL OVER ANY PROVISIONS IN THIS CONTRACT.

X. Governing Law

This Contract shall be governed by the laws of the State of Missouri, without regard to its choice or conflict of law.

XI. Survival

The Limitation of Liability and Intellectual Property Rights provisions shall survive termination, expiration or cancellation of this Contract or the purchase order to which these terms and conditions apply. No amendment, modification or alteration of these terms and conditions shall be binding unless the same shall be in writing and duly executed by the parties. If any term or condition is under any circumstances deemed invalid, the remaining terms and conditions shall be construed with the invalid provision(s) deleted.

XII. Intellectual Property Rights/ Software License

Emerson retains for itself all of its intellectual property rights in and to any Emerson product, software and supporting documentation furnished hereunder.

The Updates and The Software are only licensed for installation on that equipment on which The Software was installed at the commencement of this Contract. Updates may be transmitted to the Purchaser via email, on physical media or downloaded from Emerson's web site, at the discretion of Emerson. The Purchaser is responsible for the installation of all Updates supplied under this Contract. The Updates are subject to the terms and conditions set forth in Emerson's applicable standard software license agreements for The Software. Any Updates and other information provided by Emerson under this Contract are considered standard offerings of Emerson, and Emerson and/or any applicable third party supplier to Emerson shall retain all rights of ownership in their respective products included in such Updates or other information.

Notwithstanding any other provisions herein to the contrary, Emerson or applicable third party owner shall retain all exclusive rights, interest and title to its respective firmware, The Software and Updates. Purchaser's use of the firmware, Updates and The Software shall be governed exclusively by Emerson's and/or third party owner's applicable license terms.

Information marked proprietary shall be disclosed in confidence on a need to know basis on the condition that it is not to be reproduced, copied or used for any other purpose than the purpose for which it is provided and shall not be disclosed to third parties without the written consent of Emerson.

XIII. Changes to Supply

In the event the Purchaser or Emerson request changes in the scope of supply, Emerson shall notify Purchaser of the effect on price, delivery, warranty, equipment performance or any other obligations assumed by Emerson under this Contract. Emerson will initiate work on any such changes upon receipt of an acceptable written change order.

All change orders shall indicate the adjustment to the Emerson scope of supply, the contract price and other relevant terms and conditions of the Contract.

XIV. Facilities and Access to Equipment

If this Contract includes Services to be performed on Purchaser's site, the Purchaser will furnish at no cost to Emerson suitable working space, storage space, adequate telephone, light, ventilation, regulated electric power, and outlets for testing purposes. These facilities will be within a reasonable distance from the Equipment covered by this Contract. Emerson shall have full and free access to Emerson-provided Equipment in order to provide the on-site Services provided under this Contract. Emerson shall not be liable for any expenses incurred by the Purchaser in removing, replacing or refurbishing any Purchaser equipment or any part of the Purchaser's building structure that restricts Emerson's access. The Purchaser will abide by OSHA regulations. The Purchaser shall inform Emerson of any known hazardous substance or condition at the site where services are to be performed (site), including, but not limited to, the presence of asbestos or asbestos containing materials. Purchaser will identify person(s) who will interface with Emerson under the terms of this Contract. Any maintenance or repair services performed on the Emerson-provided Equipment by unauthorized personnel resulting in additional material or corrective support service requirements by Emerson will be invoiced at applicable time and material rates and conditions of service then in effect.

XV. Emerson Personnel

Emerson reserves the right to determine the qualifications of and the source of Emerson personnel required to fulfill its obligations under this Contract. Unless agreed upon otherwise, the Parties agree that the Purchaser may not hire a Emerson Field Service Engineer/Technician for two years following termination of this Contract.

XVI. Exclusions

Excluded from these contracts are obsolete software application programs and parts.

XVII. Scope Changes

All Emerson services or equipment requested by Purchaser that are not within the scope of this Contract shall be reimbursed by Purchaser in accordance with the then current Emerson published rates including, if applicable, travel and living expenses.

XVII. Assignment Clause

Neither Emerson or Purchaser may assign this Contract in whole or in part without the prior written consent of the other Party.

XIX. Entire Agreement

This Contract, including the documents incorporated by reference herein and attachments hereto constitute the entire agreement between the parties. The terms hereof may not be modified or amended except in writing signed by the authorized representative of both Purchaser and Emerson.

IN WITNESS WHEREOF, the parties hereto have executed this Contract by their authorized representatives as of the date first set forth above.

NORTH SHORE WATER COMMISSION	EMERSON PROCESS MANAGEMENT POWER & WATER SOLUTIONS, INC.
BY: _____	BY: _____
Title:_____	Title:_____
Date: _____	Date:_____

Attachments

1. Emerson Offer # WAS-AM-17DM0347 dated January 3, 2017
2. Schedule A

SCHEDULE "A"

LICENSED SOFTWARE PRODUCT LIST
For: North Shore Water Commission

Software					
Item	**Description**	**Qty**	**Location**	**Area**	**Status**
1	OpenBSI Network Edition	2	-	-	Active
2	OpenEnterprise SCADA Server	1	-	-	Active
3	OpenEnterprise SCADA Redundancy	1	-	-	Active
4	OpenEnterprise Report Scheduler	1	-	-	Active
5	OpenEnterprise Paging	1	-	-	Active
6	OpenEnterprise WorkStation w/ HW Key	2	-	-	Active
7	ControlWave Designer	1	-	-	Active

LICENSED SOFTWARE PRODUCT SUPPORT AND OTHER LABOR SERVICES

1. **Scope**
   a. Emerson will provide Product Support Services for the licensed Software listed in this Schedule "A" in accordance with the clauses set forth in this Contract.

2. **Licensed Software Product Support**
   a. Emerson shall provide Software Updates which are release by Emerson during the period covered by this agreement. Such updates are only licensed for installation on that equipment on which Software was installed at the commencement of this agreement. Updates will be transmitted to the customer via email, physical media or downloaded from Emerson web site. The customer is responsible for installation of all Updates supplied under this agreement.
   b. Licensed Software Product Support services are available five (5) days per week, eight (8) hours per day, with a phone or email response time by the next business day. Standard Software Support services are available between 8:00am and 4:30pm EST, Monday through Friday, except on Emerson Holidays. A list of scheduled Emerson Holidays for the period covered by this Contract will be made available upon request.

3. **Other Labor Services**

   a. Support services for application hardware and software can be procured on as need basis using the following pricing guidelines. Such support services will be during normal working hours as mutually coordinated.
   b. Emerson will provide a 15% discount for additional labor in accordance with its current published price policy in effect when the work is performed beyond licensed software products.

Description	Rate
Service Engineer - Standard Time (hour)	$ 159.00
Service Engineer – Overtime (hour)	$ 303.00
Service Engineer - Sunday & Holiday (hour)	$ 377.00

Travel Time (hour)	$ 131.00
Mileage (mile)	$ 0.61
Expenses	Cost + 10%

❖ **Optional Virtual Training**

Virtual Training for almost the entire ControlWave catalog is available according to published schedule or alternately by customer request. With Virtual Training, a student is located anywhere and communicates with a live trainer and other students in the class via online web. A laptop computer, software and ControlWave Micro will be supplied for this course. This type of training is conducted online with a username and password, and features a live instructor and real time classmates. This training reduces the travel time and cost of traditional training, which we know is difficult in some cases. You can review a promo video of the virtual courses here: https://emersonprocess.adobeconnect.com/p11116600/ . Costs for this training range from $1,850. to $3,400. Depending upon course content and length. These training costs are not included in this specific offer unless requested.

NORTH SHORE WATER COMMISSION

Internship Description

Intern will be trained to operate a conventional surface water treatment plant with UV disinfection technology. In addition to operations training, Intern will be assigned additional projects by the Plant Manager. Anticipated projects include printing and applying labels on pipes, producing short training videos, and creating blog and wiki entries for internal staff use.

North Shore Water Commission Description

The North Shore Water Commission (NSWC) is a progressive drinking water treatment facility located in the City of Glendale, Wisconsin. It supplies water to its member utilities in Fox Point, Glendale, and Whitefish Bay and also supplies water on a wholesale basis to the City of Mequon.

Location

Intern will primarily work at 400 W Bender Rd, Glendale, WI.

Conditions

Work Schedule: Flexible and can range from 10 to 40 hours per week. All hours are to be worked between February 27, 2017 and May 26, 2017. It is expected that the Intern works at least 150 hours during this period. Intern may be required to work up to 40 hours between the hours of 7:00 PM to 7:00 AM.

Pay: Hourly rate is *$11 per hour*.

Certification Exam: Intern must commit to register and complete the waterworks operator examination (surface water subclass) scheduled for May 3, 2017 at the Commission's expense. A one-time bonus of $200 will be awarded to Intern if he/she successfully completes examination, achieves a passing score, and consequently receives valid certification from the State of Wisconsin.

Other: Internship is limited to students currently enrolled in the Environmental Health and Water Quality Technology program at Milwaukee Area Technical School (MATC), the Water Quality Technology program at Moraine Park Technical College, University of Wisconsin Milwaukee School of Freshwater Sciences, or a related program. Exceptions may be made on a case-by-case basis.

--Revised 01/05/2017--

No Benefits: This position will not receive benefits and will not be eligible for earning shift differentials.

Tasks and Responsibilities

Operations

- Make audio and visual observations of plant equipment.
- Perform laboratory analyses that require fine motor skill.
- Mix and dilute laboratory chemicals and reagents as needed.
- With supervision, make adjustments to equipment using human to machine interface.
- With supervision, turn water treatment equipment on and off.
- Perform janitorial work including sweeping, mopping, and cleaning of fixtures.

Anticipated Projects

- Gather and analyze data.
- Print and apply labels to pipes after sufficient surface preparation.
- Ascertain requirements of assignment and develop plan for completing assignment.
- Create video using mobile device or other audiovisual equipment.
- Edit, annotate, and post video to YouTube channel managed by the Commission.
- Develop and post content to blog, wiki, and other software platforms managed by the Commission.

Knowledge, Skills, Abilities

- Knowledge of computer systems for typical office use.
- Knowledge of basic chemistry and algebra to perform calculations.
- Knowledge of basic electrical, mechanical, and hydraulic principles.
- Proficiency with internet browsers and searching the Internet.
- Ability to understand and follow oral and written instructions.
- Ability to assemble and process information when necessary.
- Ability to deal with other employees and the general public in a courteous and tactful manner.
- Ability to work in diverse environment.
- Ability to climb steps and ladder.
- Understand and perform basic works skills such as:
    - Arrive to work as scheduled.
    - Dress appropriately.
    - Adhere to imposed deadlines.
    - Use professional and courteous language.

Supervisor

Intern will report to Plant Manager. Intern will also take direction from plant staff.

--Revised 01/05/2017--

Interested?

Please visit and complete the Interest Form. This form can be found by visiting our website at http://www.northshorewater.org/index.php#Job. If you cannot access the form, please contact Eric Kiefer at info@northshorewc.com or (414) 963-0160.

This position may be advertised until filled.

--Revised 01/05/2017--

NORTH SHORE WATER COMMISSION
2018 - 2022 PROPOSED CAPITAL IMPROVEMENT PLAN

(Staffing Level of 7 Employees: 1 Manager, 1 Foreman, 1 Technician Mechanic, 2 Op/Techs, 2 Relief Op/Tech)

January 6, 2017

2018 - Captial Improvement Plan		$154,000
Filter Improvements (2018-1)	**PCT**	**EXPENSE**
Self-performed Labor	12%	$12,000
Contracted Services	10%	$10,000
Direct Purchase of Materials and Equipment	70%	$70,000
Engineering	4%	$4,000
Contingency	4%	$4,000
		$100,000

SCADA HMI/Database Upgrade Phase 2 (2018-2)	**PCT**	**EXPENSE**
Self-performed Labor	11%	$5,000
Contracted Services	23%	$10,000
Direct Purchase of Materials and Equipment	57%	$25,000
Engineering	0%	$0
Contingency	9%	$4,000
		$44,000

Bender Garage Improvements (2018-3)	**PCT**	**EXPENSE**
Self-performed Labor	0%	$0
Contracted Services	80%	$8,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	0%	$0
Contingency	20%	$2,000
		$10,000

2019 - Captial Improvement Plan		$139,000
Raw Water Pump #2 and #4 Valve Replacements (2019-1)	**PCT**	**COST**
Self-performed Labor	7%	$6,000
Contracted Services	2%	$2,000
Direct Purchase of Materials and Equipment	83%	$70,000
Engineering	2%	$2,000
Contingency	5%	$4,000
		$84,000

2019 - Engineering of Reservoir Improvements Project (2019-2)	**PCT**	**COST**
Self-performed Labor	0%	$0
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	0%	$0
Engineering	91%	$50,000
Contingency	9%	$5,000
		$55,000

2020 - Captial Improvement Plan		$1,117,000
Reservoir Improvements - Major Construction (2020-1)	**PCT**	**COST**
Self-performed Labor	0%	$0
Contracted Services	75%	$833,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	10%	$117,000

Contingency	15%	$167,000
		$1,117,000

2021 - Captial Improvement Plan		$168,000

Filter Improvements (2021-1)	**PCT**	**COST**
Self-performed Labor	12%	$12,000
Contracted Services	10%	$10,000
Direct Purchase of Materials and Equipment	70%	$70,000
Engineering	4%	$4,000
Contingency	4%	$4,000
		$100,000

Security Camera Replacements (2021-2)	**PCT**	**COST**
Self-performed Labor	6%	$2,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	83%	$30,000
Engineering	0%	$0
Contingency	11%	$4,000
		$36,000

IT Improvements (2021-3)	**PCT**	**COST**
Self-performed Labor	6%	$2,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	88%	$28,000
Engineering	0%	$0
Contingency	6%	$2,000
		$32,000

2022 - Captial Improvement Plan		$110,000

Flat Roof Replacement (2022-1)	**PCT**	**COST**
Self-performed Labor	0%	$0
Contracted Services	91%	$100,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	0%	$0
Contingency	9%	$10,000
		$110,000

TOTAL EXPENDITURES	**$1,688,000**
NUMBER OF YEARS	**5**
AVERAGE ANNUAL EXPENDITURES	**$337,600**

NORTH SHORE WATER COMMISSION
2018 - 2037 PROPOSED CAPITAL IMPROVEMENT PLAN

(Staffing Level of 7 Employees: 1 Manager, 1 Foreman, 1 Technician Mechanic, 2 Op/Techs, 2 Relief Op/Tech)

January 6, 2017

2018 - Captial Improvement Plan		$154,000
Filter Improvements (2018-1)	**PCT**	**EXPENSE**
Self-performed Labor	12%	$12,000
Contracted Services	10%	$10,000
Direct Purchase of Materials and Equipment	70%	$70,000
Engineering	4%	$4,000
Contingency	4%	$4,000
		$100,000

SCADA HMI/Database Upgrade Phase 2 (2018-2)	**PCT**	**EXPENSE**
Self-performed Labor	11%	$5,000
Contracted Services	23%	$10,000
Direct Purchase of Materials and Equipment	57%	$25,000
Engineering	0%	$0
Contingency	9%	$4,000
		$44,000

Bender Garage Improvements (2018-3)	**PCT**	**EXPENSE**
Self-performed Labor	0%	$0
Contracted Services	80%	$8,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	0%	$0
Contingency	20%	$2,000
		$10,000

2019 - Captial Improvement Plan		$139,000
Raw Water Pump #2 and #4 Valve Replacements (2019-1)	**PCT**	**COST**
Self-performed Labor	7%	$6,000
Contracted Services	2%	$2,000
Direct Purchase of Materials and Equipment	83%	$70,000
Engineering	2%	$2,000
Contingency	5%	$4,000
		$84,000

2019 - Engineering of Reservoir Improvements Project (2019-2)	**PCT**	**COST**
Self-performed Labor	0%	$0
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	0%	$0
Engineering	91%	$50,000
Contingency	9%	$5,000
		$55,000

2020 - Captial Improvement Plan		$1,117,000
Reservoir Improvements - Major Construction (2020-1)	**PCT**	**COST**
Self-performed Labor	0%	$0
Contracted Services	75%	$833,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	10%	$117,000

Contingency	15%	$167,000
		$1,117,000

2021 - Captial Improvement Plan		$168,000

Filter Improvements (2021-1)	**PCT**	**COST**
Self-performed Labor	12%	$12,000
Contracted Services	10%	$10,000
Direct Purchase of Materials and Equipment	70%	$70,000
Engineering	4%	$4,000
Contingency	4%	$4,000
		$100,000

Security Camera Replacements (2021-2)	**PCT**	**COST**
Self-performed Labor	6%	$2,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	83%	$30,000
Engineering	0%	$0
Contingency	11%	$4,000
		$36,000

IT Improvements (2021-3)	**PCT**	**COST**
Self-performed Labor	6%	$2,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	88%	$28,000
Engineering	0%	$0
Contingency	6%	$2,000
		$32,000

2022 - Captial Improvement Plan		$110,000

Flat Roof Replacement (2022-1)	**PCT**	**COST**
Self-performed Labor	0%	$0
Contracted Services	91%	$100,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	0%	$0
Contingency	9%	$10,000
		$110,000

2023 - Captial Improvement Plan		$216,000

Raw Pump 3 Installation and VFD Cabinet (2023-1)	**PCT**	**COST**
Self-performed Labor	0%	$0
Contracted Services	91%	$100,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	0%	$0
Contingency	9%	$10,000
		$110,000

Filter Improvements (2023-2)	**PCT**	**COST**
Self-performed Labor	12%	$6,000
Contracted Services	10%	$5,000
Direct Purchase of Materials and Equipment	70%	$35,000
Engineering	4%	$2,000
Contingency	4%	$2,000
		$50,000

IT Improvements (2023-3)	PCT	COST
Self-performed Labor	7%	$4,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	89%	$50,000
Engineering	0%	$0
Contingency	4%	$2,000
		$56,000

2024 - Captial Improvement Plan	$110,000

Raw Pump 3 Installation and VFD Cabinet (2024-1)	PCT	COST
Self-performed Labor	0%	$0
Contracted Services	91%	$100,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	0%	$0
Contingency	9%	$10,000
		$110,000

2025 - Captial Improvement Plan	$100,000

Filter Improvements (2025-1)	PCT	EXPENSE
Self-performed Labor	12%	$12,000
Contracted Services	10%	$10,000
Direct Purchase of Materials and Equipment	70%	$70,000
Engineering	4%	$4,000
Contingency	4%	$4,000
		$100,000

2026 - Captial Improvement Plan	$280,000

Basin 1 Rehabilitation (2026-1)	PCT	EXPENSE
Self-performed Labor	0%	$0
Contracted Services	87%	$200,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	9%	$20,000
Contingency	4%	$10,000
		$230,000

Filter Improvements (2026-2)	PCT	COST
Self-performed Labor	12%	$6,000
Contracted Services	10%	$5,000
Direct Purchase of Materials and Equipment	70%	$35,000
Engineering	4%	$2,000
Contingency	4%	$2,000
		$50,000

2027 - Captial Improvement Plan	$280,000

Basin 2 Rehabilitation (2027-1)	PCT	EXPENSE
Self-performed Labor	0%	$0
Contracted Services	87%	$200,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	9%	$20,000
Contingency	4%	$10,000
		$230,000

Filter Improvements (2027-2)	PCT	COST
Self-performed Labor	12%	$6,000
Contracted Services	10%	$5,000
Direct Purchase of Materials and Equipment	70%	$35,000
Engineering	4%	$2,000
Contingency	4%	$2,000
		$50,000

2028 - Captial Improvement Plan	$280,000

Basin 3 Rehabilitation (2028-1)	PCT	EXPENSE
Self-performed Labor	0%	$0
Contracted Services	87%	$200,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	9%	$20,000
Contingency	4%	$10,000
		$230,000

Filter Improvements (2028-2)	PCT	COST
Self-performed Labor	12%	$6,000
Contracted Services	10%	$5,000
Direct Purchase of Materials and Equipment	70%	$35,000
Engineering	4%	$2,000
Contingency	4%	$2,000
		$50,000

2029 - Captial Improvement Plan	$280,000

Basin 4 Rehabilitation (2029-1)	PCT	EXPENSE
Self-performed Labor	0%	$0
Contracted Services	87%	$200,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	9%	$20,000
Contingency	4%	$10,000
		$230,000

Filter Improvements (2029-2)	PCT	COST
Self-performed Labor	12%	$6,000
Contracted Services	10%	$5,000
Direct Purchase of Materials and Equipment	70%	$35,000
Engineering	4%	$2,000
Contingency	4%	$2,000
		$50,000

2030 - Captial Improvement Plan	$280,000

Basin 5 Rehabilitation (2030-1)	PCT	EXPENSE
Self-performed Labor	0%	$0
Contracted Services	87%	$200,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	9%	$20,000
Contingency	4%	$10,000
		$230,000

Filter Improvements (2030-2)	PCT	COST

Self-performed Labor	12%	$6,000
Contracted Services	10%	$5,000
Direct Purchase of Materials and Equipment	70%	$35,000
Engineering	4%	$2,000
Contingency	4%	$2,000
		$50,000

2031 - Captial Improvement Plan		$330,000

SCADA Hardware Replacement (2031-1)	**PCT**	**EXPENSE**
Self-performed Labor	0%	$0
Contracted Services	89%	$250,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	7%	$20,000
Contingency	4%	$10,000
		$280,000

Filter Improvements (2031-2)	**PCT**	**COST**
Self-performed Labor	12%	$6,000
Contracted Services	10%	$5,000
Direct Purchase of Materials and Equipment	70%	$35,000
Engineering	4%	$2,000
Contingency	4%	$2,000
		$50,000

2032 - Captial Improvement Plan		$176,000

SCADA Software Update (2032-1)	**PCT**	**EXPENSE**
Self-performed Labor	0%	$0
Contracted Services	91%	$100,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	0%	$0
Contingency	9%	$10,000
		$110,000

IT Improvements (2032-2)	**PCT**	**COST**
Self-performed Labor	6%	$4,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	91%	$60,000
Engineering	0%	$0
Contingency	3%	$2,000
		$66,000

2033 - Captial Improvement Plan		$200,000

Remaining Filter Improvements (2033-1)	**PCT**	**EXPENSE**
Self-performed Labor	12%	$12,000
Contracted Services	10%	$10,000
Direct Purchase of Materials and Equipment	70%	$70,000
Engineering	4%	$4,000
Contingency	4%	$4,000
		$100,000

Basin Valve Actuator Replacements (2033-2)	**PCT**	**EXPENSE**
Self-performed Labor	12%	$12,000
Contracted Services	10%	$10,000

Direct Purchase of Materials and Equipment	70%	$70,000
Engineering	4%	$4,000
Contingency	4%	$4,000
		$100,000

2034 - Captial Improvement Plan		$340,000
Replace 2400V Electrical Equipment (2034-1)	**PCT**	**EXPENSE**
Self-performed Labor	0%	$0
Contracted Services	88%	$300,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	9%	$30,000
Contingency	3%	$10,000
		$340,000

2035 - Captial Improvement Plan		$1,110,000
UV Equipment Upgrade (2035-1)	**PCT**	**EXPENSE**
Self-performed Labor	0%	$0
Contracted Services	90%	$1,000,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	9%	$100,000
Contingency	1%	$10,000
		$1,110,000

2036 - Captial Improvement Plan		$270,000
Port Washington Road & Bradley Road Interconnection (2036-1)	**PCT**	**EXPENSE**
Self-performed Labor	0%	$0
Contracted Services	93%	$250,000
Direct Purchase of Materials and Equipment	0%	$0
Engineering	4%	$10,000
Contingency	4%	$10,000
		$270,000

2037 - Captial Improvement Plan		$130,000
IT Improvements (2037-1)	**PCT**	**EXPENSE**
Self-performed Labor	6%	$4,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	91%	$60,000
Engineering	0%	$0
Contingency	3%	$2,000
		$66,000

Security Camera Replacements (2037-2)	**PCT**	**COST**
Self-performed Labor	6%	$4,000
Contracted Services	0%	$0
Direct Purchase of Materials and Equipment	78%	$50,000
Engineering	0%	$0
Contingency	16%	$10,000
		$64,000

TOTAL EXPENDITURES	**$6,070,000**
NUMBER OF YEARS	**20**
AVERAGE ANNUAL EXPENDITURES	**$303,500**

North Shore Water Commission
Manager's Report of Operations

Period: December 13 - January 10

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1. CTW Corporation helped plant staff remove spool pieces and valves from that have been removed in recent valve replacement projects.
2. Plant staff improved security settings on VPN connections to remote facilities. In addition, plant staff installed a cellular modem at Glendale. If there is a problem with Time Warner Cable, the cellular modem will connect to plant to re-establish a communication link.
3. Plant staff fixed a sodium hypochlorite leak in the main containment area. A fitting crack which allowed the chemical to slowly leak out of pipe.
4. Plant staff continued to strip and wax floors on the main level of the Bender facility.
5. Plant staff continued to label pipes and tanks in the basement and in the lab.
6. Plant staff improved the drain system used for the analyzers in the lab.
7. Intern Mason Mueller's last day was December 23, 2016.

NORTH SHORE WATER COMMISSION

WHOLESALE WATER SALES

FOR YEAR: 2016

WHOLESALE INCOME BY COMPONENT

(Top: JAN-MAR, Bottom: APR-DEC)

MONTH	CUSTOMER	KGAL PURCHASED	WHOLESALE RATE ($/KGAL)	TOTAL VOLUME CHARGE	CAPITAL $/Kgal $0.792 / Kgal $0.820 / Kgal	OPERATING $ $0.943 / Kgal $0.910 / Kgal	CONVEYANCE $0.390 / Kgal $0.390 / Kgal	FACILITIES CHARGE FOR 2015 FACILITIES UPKEEP DISTRIBUTION OF CONVEYANCE CHARGE FOX PT: 0.60	GLEN: 0.20	WFB: 0.20	$500 / yr	NSWC REVENUE	AMOUNT BILLED
JANUARY	Mequon Water	6,879	$2.125	$14,617.88	$5,448.17	$6,486.90	$2,682.81	$1,609.69	$536.56	$536.56	$0.00	$11,935.07	$14,617.88
FEBRUARY	Mequon Water	6,347	$2.125	$13,487.38	$5,026.82	$5,985.22	$2,475.34	$1,485.20	$495.07	$495.07	$0.00	$11,012.04	$13,487.38
MARCH	Mequon Water	7,277	$2.125	$15,463.63	$5,763.38	$6,862.21	$2,838.04	$1,702.82	$567.61	$567.61	$500.00	$13,125.59	$15,963.63
APRIL	Mequon Water	6,291	$2.120	$13,336.92	$5,158.62	$5,724.81	$2,453.49	$1,472.09	$490.70	$490.70	$0.00	$10,883.43	$13,336.92
MAY	Mequon Water	6,916	$2.120	$14,661.92	$5,671.12	$6,293.56	$2,697.24	$1,618.34	$539.45	$539.45	$0.00	$11,964.68	$14,661.92
JUNE	Mequon Water	7,916	$2.120	$16,781.92	$6,491.12	$7,203.56	$3,087.24	$1,852.34	$617.45	$617.45	$0.00	$13,694.68	$16,781.92
JULY	Mequon Water	9,150	$2.120	$19,398.00	$7,503.00	$8,326.50	$3,568.50	$2,141.10	$713.70	$713.70	$0.00	$15,829.50	$19,398.00
AUGUST	Mequon Water	9,158	$2.120	$19,414.96	$7,509.56	$8,333.78	$3,571.61	$2,142.97	$714.32	$714.32	$0.00	$15,843.35	$19,414.96
SEPTEMBER	Mequon Water	7,026	$2.120	$14,895.12	$5,761.32	$6,393.66	$2,740.14	$1,644.08	$548.03	$548.03	$0.00	$12,154.98	$14,895.12
OCTOBER	Mequon Water	6,793	$2.120	$14,401.16	$5,570.26	$6,181.63	$2,649.26	$1,589.56	$529.85	$529.85	$0.00	$11,751.90	$14,401.16
NOVEMBER	Mequon Water	6,563	$2.120	$13,913.56	$5,381.66	$5,972.33	$2,559.56	$1,535.74	$511.91	$511.91	$0.00	$11,354.00	$13,913.56
DECEMBER	Mequon Water	7,033	$2.120	$14,909.96	$5,767.06	$6,400.03	$2,742.86	$1,645.72	$548.57	$548.57	$0.00	$12,167.10	$14,909.96
TOTALS		87,349		$185,282.40	$71,052.09	$80,164.19	$34,066.09	$20,439.65	$6,813.22	$6,813.22	$500.00	$151,716.32	$185,782.41

North Shore Water Commission

Extended Monthly Report (Page 1) **December 2016**

	Whitefish Bay					Henry Clay Meter		Glendale					Green Tree Meter		Fox Point					Bayside Meters		School Road Meters		Total		Monthly	Wholesale
	Max	Daily	Daily	Cumul.	Cumul.	To WFB	To Glen	Max	Daily	Daily	Cumul.	Cumul.	To FP	To Glen	Max	Daily	Daily	Cumul.	Cumul.	P. Wash	Greenv.	To WFB	To FoxPt	Daily	Cumul.	Pumpage	
Date	(MGD)	(MG)	%	(MG)	%	(MG)	(MG)	(MGD)	(MG)	%	(MG)	%	(MG)	(MG)	(MGD)	(MG)	%	(MG)	%	(MG)	(MG)	(MG)	(MG)	(MG)	(MG)	RANK	
12/1/2016	1.657	0.965	31.79%	0.965	31.79%	0.000	0.010	1.737	1.259	41.47%	1.259	41.47%	0.000	0.116	1.518	0.812	26.75%	0.812	26.75%	0.139	0.067	0.000	0.027	3.036	3.036	23	
12/2/2016	1.769	0.869	29.28%	1.834	30.55%	0.000	0.020	1.853	1.296	43.67%	2.555	42.55%	0.000	0.125	1.444	0.803	27.06%	1.615	26.90%	0.137	0.066	0.035	0.000	2.968	6.004	27	
12/3/2016	1.621	0.861	29.34%	2.695	30.15%	0.010	0.000	1.872	1.285	43.78%	3.840	42.96%	0.000	0.121	1.530	0.789	26.88%	2.404	26.89%	0.137	0.063	0.018	0.000	2.935	8.939	29	
12/4/2016	1.705	0.896	30.92%	3.591	30.34%	0.080	0.000	1.635	1.196	41.27%	5.036	42.54%	0.000	0.100	1.545	0.806	27.81%	3.210	27.12%	0.152	0.063	0.024	0.000	2.898	11.837	31	
12/5/2016	1.718	0.868	29.57%	4.459	30.19%	0.000	0.010	1.762	1.275	43.44%	6.311	42.72%	0.000	0.124	1.457	0.792	26.98%	4.002	27.09%	0.139	0.065	0.021	0.000	2.935	14.772	30	
12/6/2016	1.875	1.003	30.96%	5.462	30.32%	0.000	0.010	1.899	1.383	42.69%	7.694	42.72%	0.000	0.143	1.643	0.854	26.36%	4.856	26.96%	0.133	0.066	0.048	0.000	3.240	18.012	8	
12/7/2016	1.853	0.905	30.53%	6.367	30.35%	0.010	0.000	1.815	1.252	42.24%	8.946	42.65%	0.000	0.114	1.420	0.807	27.23%	5.663	27.00%	0.142	0.066	0.034	0.000	2.964	20.976	28	
12/8/2016	1.942	0.965	30.33%	7.332	30.35%	0.000	0.070	2.089	1.346	42.30%	10.292	42.60%	0.000	0.167	1.680	0.871	27.37%	6.534	27.05%	0.147	0.067	0.027	0.000	3.182	24.158	12	
12/9/2016	1.845	0.939	31.35%	8.271	30.46%	0.000	0.030	1.886	1.232	41.14%	11.524	42.44%	0.000	0.125	1.488	0.824	27.51%	7.358	27.10%	0.148	0.067	0.033	0.000	2.995	27.153	25	
12/10/2016	1.839	0.941	30.19%	9.212	30.43%	0.030	0.000	2.123	1.344	43.12%	12.868	42.51%	0.000	0.124	1.637	0.832	26.69%	8.190	27.06%	0.154	0.065	0.027	0.000	3.117	30.270	17	
12/11/2016	1.873	1.000	32.38%	10.212	30.61%	0.170	0.000	1.773	1.236	40.03%	14.104	42.28%	0.000	0.091	1.634	0.852	27.59%	9.042	27.11%	0.167	0.066	0.041	0.000	3.088	33.358	18	
12/12/2016	1.923	0.984	28.99%	11.196	30.46%	0.000	0.030	1.837	1.419	41.81%	15.523	42.24%	0.000	0.107	1.858	0.991	29.20%	10.033	27.30%	0.145	0.068	0.026	0.000	3.394	36.752	5	
12/13/2016	1.823	0.955	28.10%	12.151	30.26%	0.000	0.020	1.958	1.378	40.54%	16.901	42.09%	0.000	0.069	1.967	1.066	31.36%	11.099	27.64%	0.141	0.067	0.026	0.000	3.399	40.151	4	
12/14/2016	1.886	0.918	30.12%	13.069	30.25%	0.000	0.000	1.826	1.296	42.52%	18.197	42.12%	0.000	0.122	1.394	0.834	27.36%	11.933	27.62%	0.142	0.065	0.026	0.000	3.048	43.199	21	
12/15/2016	1.870	0.913	30.18%	13.982	30.25%	0.010	0.000	1.834	1.280	42.31%	19.477	42.14%	0.000	0.113	1.469	0.832	27.50%	12.765	27.62%	0.143	0.066	0.026	0.000	3.025	46.224	24	
12/16/2016	1.892	0.935	29.49%	14.917	30.20%	0.000	0.010	2.062	1.390	43.83%	20.867	42.25%	0.000	0.140	1.407	0.846	26.68%	13.611	27.56%	0.146	0.067	0.026	0.000	3.171	49.395	14	
12/17/2016	1.653	0.957	31.33%	15.874	30.27%	0.060	0.000	1.763	1.267	41.47%	22.134	42.20%	0.000	0.109	1.627	0.831	27.20%	14.442	27.53%	0.157	0.065	0.026	0.000	3.055	52.450	20	
12/18/2016	1.884	0.963	31.70%	16.837	30.34%	0.090	0.000	1.693	1.220	40.16%	23.354	42.09%	0.000	0.094	1.654	0.855	28.14%	15.297	27.57%	0.169	0.066	0.026	0.000	3.038	55.488	22	
12/19/2016	1.919	0.952	29.98%	17.789	30.32%	0.010	0.000	1.855	1.350	42.52%	24.704	42.11%	0.000	0.129	1.474	0.873	27.50%	16.170	27.56%	0.156	0.067	0.026	0.000	3.175	58.663	13	
12/20/2016	1.865	0.950	29.84%	18.739	30.30%	0.010	0.000	1.793	1.364	42.84%	26.068	42.15%	0.000	0.129	1.574	0.870	27.32%	17.040	27.55%	0.151	0.067	0.026	0.000	3.184	61.847	11	
12/21/2016	2.210	1.070	29.55%	19.809	30.26%	0.000	0.010	2.147	1.479	40.85%	27.547	42.08%	0.000	0.121	2.531	1.072	29.61%	18.112	27.67%	0.183	0.064	0.026	0.000	3.621	65.468	3	
12/22/2016	1.955	1.107	30.01%	20.916	30.24%	0.000	0.040	2.465	1.583	42.91%	29.130	42.12%	0.000	0.169	1.646	0.999	27.08%	19.111	27.63%	0.185	0.076	0.056	0.000	3.689	69.157	1	
12/23/2016	2.894	1.182	32.05%	22.098	30.34%	0.190	0.000	2.257	1.504	40.78%	30.634	42.05%	0.000	0.152	1.734	1.002	27.17%	20.113	27.61%	0.193	0.074	0.062	0.000	3.688	72.845	2	
12/24/2016	1.743	0.938	29.62%	23.036	30.31%	0.070	0.000	1.884	1.301	41.08%	31.935	42.01%	0.000	0.129	1.813	0.928	29.30%	21.041	27.68%	0.189	0.072	0.012	0.000	3.167	76.012	16	
12/25/2016	1.893	0.953	31.90%	23.989	30.37%	0.100	0.000	1.711	1.149	38.47%	33.084	41.88%	0.000	0.089	1.675	0.885	29.63%	21.926	27.75%	0.184	0.069	0.016	0.000	2.987	78.999	26	
12/26/2016	1.875	0.931	30.32%	24.920	30.36%	0.060	0.000	1.711	1.249	40.67%	34.333	41.83%	0.000	0.106	1.754	0.891	29.01%	22.817	27.80%	0.183	0.070	0.000	0.014	3.071	82.070	19	
12/27/2016	1.907	0.969	29.98%	25.889	30.35%	0.010	0.000	1.784	1.358	42.02%	35.691	41.84%	0.000	0.130	1.656	0.905	28.00%	23.722	27.81%	0.176	0.069	0.029	0.000	3.232	85.302	9	
12/28/2016	1.917	0.961	29.61%	26.850	30.32%	0.000	0.020	1.759	1.380	42.51%	37.071	41.87%	0.000	0.136	1.661	0.905	27.88%	24.627	27.81%	0.176	0.070	0.026	0.000	3.246	88.548	7	
12/29/2016	1.864	0.951	29.65%	27.801	30.30%	0.000	0.010	1.800	1.359	42.38%	38.430	41.88%	0.000	0.138	1.573	0.897	27.97%	25.524	27.82%	0.175	0.070	0.026	0.000	3.207	91.755	10	
12/30/2016	1.912	1.004	30.91%	28.805	30.32%	0.000	0.000	1.846	1.349	41.53%	39.779	41.87%	0.000	0.129	1.669	0.895	27.56%	26.419	27.81%	0.170	0.070	0.036	0.000	3.248	95.003	6	
12/31/2016	1.780	0.981	30.97%	29.786	30.34%	0.050	0.000	1.903	1.306	41.22%	41.085	41.85%	0.000	0.116	1.747	0.881	27.81%	27.300	27.81%	0.181	0.070	0.021	0.000	3.168	98.171	15	
Plant Meters (MG)		29.786				*0.960*	*0.290*		41.085				*0.000*	*3.777*		27.300				*4.940*	*2.093*	*0.852*	*0.041*	98.171			
Max	2.894	1.182	32.38%					2.465	1.583	43.83%					2.531	1.072	31.36%							3.689			
Ave	1.883	0.961	30.35%					1.882	1.325	41.86%					1.641	0.881	27.79%							3.167			
Min	1.621	0.861	28.10%					1.635	1.149	38.47%					1.394	0.789	26.36%							2.898			
Distribution SCADA Read		1.481							3.107							-11.621								-7.033		Mequon	7.033
Dist. Adj. (Diff from Act.)						*0.000*	*0.000*						*0.000*	*0.000*						*0.000*	*0.000*	*0.000*	*0.000*				
Milwaukee Interconnect		0.000							0.000							0.000											
Total MG Charged		31.267		379.132					44.192		622.111					15.679		209.107						91.138	1210.35		87.349
% Charged (month)		34.31%							48.49%							17.20%											
% Charged (cumul.)		31.32%							51.40%							17.28%											

North Shore Water Commission

Extended Monthly Report (Page 2) **December 2016**

Flows Uncorrected for Distribution Activity

Date	High Service PSI (Gauge #1)			High Service PSI (Gauge #2)			WFB Tower PSI			Glen Standpipe PSI			FPT Standpipe PSI			WFB Standpipe Level (ft)			Glen Standpipe Level (ft)			FPT Tower Level (ft)			Monthly Pumpage RANK	Sum Master Meters (MGD)			WFB Flow (MGD)			Glen Flow (MGD)			FPT Flow (MGD)		
	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min		Max	Ave	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave	Min
12/1/2016	83.50	82.49	80.98	83.98	83.01	81.96	69.26	66.76	63.90	43.24	41.07	37.10	61.09	52.54	40.98	22.55	17.61	15.29	77.16	66.73	57.01	23.19	21.01	18.73	23	4.36	3.04	1.36	1.66	0.96	0.18	1.74	1.26	0.67	1.52	0.81	-0.05
12/2/2016	84.58	82.85	81.39	84.86	83.37	82.11	69.27	67.31	64.09	43.57	41.16	36.41	62.44	52.75	40.61	23.00	19.80	14.62	77.16	67.43	58.66	23.19	20.94	18.63	27	4.59	2.97	1.12	1.77	0.87	-0.10	1.85	1.30	0.54	1.44	0.80	-0.14
12/3/2016	84.84	82.98	81.65	84.92	83.51	82.10	69.21	67.39	64.78	45.03	41.36	38.36	62.15	53.08	41.57	23.08	18.79	13.75	77.16	69.70	61.88	23.16	21.02	18.74	29	4.24	2.93	0.79	1.62	0.86	0.25	1.87	1.28	0.57	1.53	0.79	-0.20
12/4/2016	84.29	82.98	81.46	84.73	83.50	82.25	69.89	67.27	64.61	45.74	41.73	38.06	62.24	52.95	41.99	22.99	18.46	13.49	77.22	69.92	59.81	23.18	20.97	18.69	31	4.50	2.90	0.59	1.70	0.90	0.24	1.64	1.20	0.53	1.55	0.81	-0.27
12/5/2016	84.15	82.65	81.60	84.65	83.17	82.14	69.19	67.11	64.43	43.86	41.34	37.85	62.24	52.58	41.45	21.69	16.23	11.83	77.07	65.86	54.42	23.18	20.96	18.64	30	4.70	2.93	1.28	1.72	0.87	0.23	1.76	1.27	0.67	1.46	0.79	-0.17
12/6/2016	85.32	83.16	81.53	85.85	83.69	81.96	70.40	67.16	64.48	44.63	41.13	37.74	63.03	53.17	41.05	21.69	18.02	13.95	74.53	67.54	58.17	23.19	20.96	18.64	8	4.70	3.23	1.58	1.88	1.00	0.42	1.90	1.38	0.87	1.64	0.85	0.07
12/7/2016	84.22	82.96	81.48	84.70	83.50	82.28	69.08	67.11	64.01	44.30	41.59	37.43	62.19	52.92	41.19	23.04	18.82	14.26	77.17	68.50	59.10	23.19	20.97	18.66	28	4.62	2.96	0.61	1.85	0.90	0.26	1.81	1.25	0.49	1.42	0.81	-0.29
12/8/2016	84.29	82.96	80.84	85.09	83.50	81.73	69.39	67.14	63.99	43.82	40.56	35.45	62.21	52.75	41.64	23.01	18.78	13.90	77.11	74.02	62.65	23.19	20.89	18.59	12	4.41	3.18	0.95	1.94	0.96	0.35	2.09	1.35	0.60	1.68	0.87	-0.15
12/9/2016	84.43	82.97	81.65	84.78	83.50	82.18	69.05	67.04	63.90	43.80	41.76	31.40	62.05	53.77	41.71	22.96	18.92	14.53	75.05	67.14	55.94	23.20	21.69	19.03	25	4.76	3.00	1.17	1.85	0.94	0.35	1.89	1.23	0.67	1.49	0.82	-0.14
12/10/2016	84.27	82.95	81.60	84.74	83.49	82.07	69.08	67.08	63.70	44.06	41.23	38.12	62.08	52.78	41.91	23.05	19.28	14.76	77.12	68.88	59.33	23.20	20.92	18.60	17	4.58	3.12	1.30	1.84	0.94	0.40	2.12	1.34	0.80	1.64	0.83	-0.15
12/11/2016	84.22	82.95	81.65	84.81	83.48	82.30	69.17	67.16	64.00	44.63	41.90	38.24	62.17	52.82	42.07	23.02	19.00	14.03	77.22	69.05	56.40	23.20	20.95	18.66	18	4.69	3.09	0.38	1.87	1.00	0.19	1.77	1.24	0.38	1.63	0.85	-0.30
12/12/2016	84.43	82.95	81.44	84.68	83.50	82.19	70.02	67.08	63.94	44.75	41.22	37.91	62.15	52.80	41.73	23.03	18.77	13.90	74.63	66.25	59.12	23.19	20.96	18.66	5	5.11	3.39	1.36	1.92	0.98	0.43	1.84	1.42	0.81	1.86	0.99	-0.10
12/13/2016	84.17	82.96	81.25	84.76	83.51	82.13	69.10	67.14	63.77	44.04	41.36	38.25	62.04	52.46	41.59	23.03	18.44	13.10	77.11	67.38	58.29	23.18	20.86	18.52	4	4.74	3.40	1.74	1.82	0.95	0.33	1.96	1.38	0.73	1.97	1.07	0.26
12/14/2016	84.15	82.94	81.56	84.78	83.51	82.29	69.19	67.05	63.76	43.77	41.45	38.39	62.23	53.00	41.86	23.01	18.26	13.06	76.29	67.50	59.62	23.19	21.01	18.73	21	4.78	3.05	1.66	1.89	0.92	0.37	1.83	1.30	0.82	1.39	0.83	0.06
12/15/2016	84.27	82.96	81.48	85.03	83.50	82.17	69.14	67.11	63.76	44.69	41.55	38.44	62.02	52.89	42.04	23.03	18.24	12.87	77.12	67.65	58.41	23.19	20.96	18.63	24	4.74	3.03	1.18	1.87	0.91	0.36	1.83	1.28	0.65	1.47	0.83	0.00
12/16/2016	84.24	82.95	81.44	85.02	83.50	81.84	69.49	67.07	64.01	44.57	41.51	38.54	62.19	52.88	41.93	23.14	18.15	12.92	77.08	66.55	56.28	23.19	20.97	18.66	14	5.07	3.17	1.46	1.89	0.93	0.31	2.06	1.39	0.76	1.41	0.85	0.10
12/17/2016	84.24	82.93	81.58	84.76	83.49	82.21	68.87	67.27	65.13	44.03	41.54	39.05	61.96	52.97	41.88	23.03	18.58	14.00	77.07	68.85	59.91	23.19	21.02	18.73	20	4.22	3.05	1.74	1.65	0.96	0.29	1.76	1.27	0.80	1.63	0.83	0.07
12/18/2016	84.22	82.92	81.63	84.57	83.48	82.29	68.90	67.26	63.87	43.41	41.91	38.24	62.12	52.95	41.64	23.09	18.55	13.50	76.21	67.57	57.43	23.19	21.02	18.74	22	4.75	3.04	1.81	1.88	0.96	0.44	1.69	1.22	0.83	1.65	0.86	0.00
12/19/2016	84.22	82.95	81.10	84.79	83.51	82.02	69.10	67.16	63.79	43.56	41.43	38.36	62.23	52.95	42.02	22.99	18.36	12.95	77.09	66.79	56.87	23.18	20.98	18.69	13	4.81	3.17	1.55	1.92	0.95	0.42	1.85	1.35	0.77	1.47	0.87	0.00
12/20/2016	84.27	82.69	79.90	84.90	83.25	80.71	68.98	66.97	63.89	43.36	41.29	37.85	62.11	52.68	41.43	23.00	16.99	11.88	75.86	63.53	52.07	23.18	20.98	18.72	11	4.96	3.18	1.85	1.87	0.95	0.31	1.79	1.36	0.87	1.57	0.87	0.05
12/21/2016	85.13	82.89	78.25	85.61	83.46	78.77	69.22	66.95	62.73	43.59	41.01	36.39	63.02	52.66	40.51	21.78	16.81	11.81	69.76	60.33	51.97	23.16	20.93	18.74	3	6.23	3.62	1.88	2.21	1.07	0.44	2.15	1.48	0.93	2.53	1.07	0.20
12/22/2016	85.34	83.31	81.41	85.77	83.89	82.08	69.75	67.18	63.90	43.57	40.93	35.65	63.17	53.40	41.87	23.00	18.89	14.04	77.07	65.71	55.82	23.19	21.07	18.80	1	5.12	3.69	2.13	1.96	1.11	0.39	2.47	1.58	0.97	1.65	1.00	0.00
12/23/2016	85.18	82.93	81.25	85.03	83.49	81.87	69.50	67.15	63.07	43.77	41.07	36.82	62.09	52.79	42.02	23.06	18.12	12.69	77.17	66.89	58.87	23.19	20.96	18.66	2	6.11	3.69	1.74	2.89	1.18	0.41	2.26	1.50	0.80	1.73	1.00	-0.06
12/24/2016	83.83	82.43	81.63	84.36	83.01	82.29	68.93	66.99	64.75	42.54	41.07	38.73	61.63	52.23	41.61	22.12	16.84	11.94	77.04	69.55	62.39	23.19	20.92	18.63	16	4.58	3.17	2.29	1.74	0.94	0.35	1.88	1.30	1.02	1.81	0.93	0.16
12/25/2016	84.19	82.62	81.68	85.07	83.18	82.17	68.98	66.83	64.47	44.01	41.58	38.15	61.97	52.43	41.86	22.32	17.65	13.62	77.11	70.90	62.68	23.19	20.91	18.59	26	4.84	2.99	1.71	1.89	0.95	0.32	1.71	1.15	0.58	1.67	0.88	0.00
12/26/2016	84.36	82.93	81.32	84.87	83.51	82.34	69.38	67.22	64.28	45.18	41.89	38.48	62.23	52.94	41.97	23.05	18.35	13.18	77.13	67.05	55.68	23.18	20.99	18.72	19	4.77	3.07	0.90	1.88	0.93	0.33	1.71	1.25	0.54	1.75	0.89	-0.06
12/27/2016	85.22	83.18	81.36	85.80	83.74	81.71	70.21	67.32	64.39	45.45	41.60	38.63	63.13	53.08	41.91	23.01	18.48	13.39	75.87	66.52	57.40	23.18	20.95	18.68	9	4.93	3.23	1.48	1.91	0.97	0.36	1.78	1.36	0.77	1.66	0.91	0.08
12/28/2016	84.34	82.94	81.46	85.13	83.50	82.27	69.39	67.19	64.05	45.10	41.37	37.96	62.18	52.98	41.93	22.79	18.12	12.97	76.66	66.31	56.51	23.20	21.02	18.73	7	4.93	3.25	1.31	1.92	0.96	0.35	1.76	1.38	0.76	1.66	0.91	0.04
12/29/2016	84.51	82.92	81.03	85.30	83.50	82.21	69.48	67.22	64.74	43.73	41.30	37.95	62.08	52.92	42.09	22.38	17.63	12.39	77.13	66.37	56.26	23.20	20.98	18.69	10	4.75	3.21	1.13	1.86	0.95	0.39	1.80	1.36	0.64	1.57	0.90	0.00
12/30/2016	84.22	82.93	81.63	84.78	83.51	82.13	68.99	67.02	64.37	44.41	41.28	37.07	61.95	52.83	41.71	22.05	17.89	13.61	77.11	67.15	58.63	23.19	20.94	18.63	6	4.96	3.25	1.12	1.91	1.00	0.39	1.85	1.35	0.60	1.67	0.90	0.00
12/31/2016	84.34	82.91	81.44	85.00	83.49	82.24	69.69	67.08	64.51	45.51	41.38	37.04	62.10	52.67	41.91	23.02	18.99	14.67	77.21	69.90	61.77	23.20	20.88	18.56	15	4.60	3.17	0.80	1.78	0.98	0.28	1.90	1.31	0.56	1.75	0.88	-0.15
MAX	85.34	83.31	81.68	85.85	83.89	82.34	70.40	67.39	65.13	45.74	41.91	39.05	63.17	53.77	42.09	23.14	19.80	15.29	77.22	74.02	62.68	23.20	21.69	19.03		6.225	3.69	2.29	2.89	1.18	0.44	2.465	1.583	1.02	2.531	1.072	0.26
AVE	84.42	82.91	81.28	84.94	83.46	81.97	69.33	67.12	64.10	44.18	41.37	37.55	62.21	52.86	41.67	22.78	18.25	13.45	76.51	67.53	58.04	23.19	20.99	18.68		4.812	3.17	1.35	1.88	0.96	0.32	1.882	1.325	0.71	1.641	0.881	-0.04
MIN	83.50	82.43	78.25	83.98	83.01	78.77	68.87	66.76	62.73	42.54	40.56	31.40	61.09	52.23	40.51	21.69	16.23	11.81	69.76	60.33	51.97	23.16	20.86	18.52		4.225	2.90	0.38	1.62	0.86	-0.10	1.635	1.149	0.38	1.394	0.789	-0.30

NORTH SHORE WATER COMMISSION
FIVE HIGHEST DELIVERY DAYS*
2014 - 2015 - 2016

1/10/2017

	Total (MG)	WFB (MG)	WFB (%)	GLEN (MG)	GLEN (%)	FPT (MG)	FPT (%)
2014							
2/12/2014	5.312	1.202	22.63%	2.865	53.93%	1.245	23.44%
8/19/2014	5.086	1.039	20.43%	3.333	65.53%	0.714	14.04%
7/23/2014	5.034	1.563	31.05%	2.669	53.02%	0.802	15.93%
8/8/2014	4.862	1.491	30.67%	2.558	52.61%	0.813	16.72%
8/6/2014	4.809	1.451	30.17%	2.643	54.96%	0.715	14.87%
2015							
7/31/2015	5.597	1.795	32.07%	2.784	49.74%	1.018	18.19%
7/30/2015	5.179	1.498	28.92%	2.723	52.58%	0.958	18.50%
8/1/2015	5.114	1.664	32.54%	2.450	47.91%	1.000	19.55%
8/6/2015	5.082	1.719	33.83%	2.504	49.27%	0.859	16.90%
8/5/2015	4.983	1.665	33.41%	2.516	50.49%	0.802	16.09%
2016							
7/14/2016	5.631	1.680	29.83%	2.906	51.61%	1.045	18.56%
7/20/2016	5.591	1.780	31.84%	2.789	49.88%	1.022	18.28%
7/13/2016	5.482	1.880	34.29%	2.698	49.22%	0.904	16.49%
8/10/2016	5.202	1.577	30.32%	2.495	47.96%	1.130	21.72%
7/6/2016	5.045	1.577	31.26%	2.751	54.53%	0.717	14.21%
3-Year Total	*78.009*	*23.581*	***30.23%***	*40.684*	***52.15%***	*13.744*	***17.62%***
3-Year Ave	5.201	1.572		2.712		0.916	

*Water pumped to wholesale customer is excluded.

NORTH SHORE WATER COMMISSION **2016 Pumpage Report** **Whitefish Bay - Glendale - Fox Point, WI**

January 10, 2017 All values are in units of million gallon (MG) unless noted otherwise.

ALL METERING	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Total
Whitefish Bay	28.722	25.723	26.689	27.014	33.387	36.726	42.904	38.129	31.363	27.392	29.816	31.267	379.132
Glendale	49.461	55.851	45.318	43.994	50.486	56.143	68.572	63.105	53.286	48.997	42.706	44.192	622.111
Fox Point	15.454	13.805	14.047	15.864	18.614	20.298	24.319	23.278	17.592	15.511	14.646	15.679	209.107
Mequon	6.879	6.347	7.277	6.291	6.916	7.916	9.150	9.158	7.026	6.793	6.563	7.033	87.349
Member Pumpage	93.637	95.379	86.054	86.872	102.487	113.167	135.795	124.512	102.241	91.900	87.168	91.138	1,210.350
Total Pumpage	100.516	101.726	93.331	93.163	109.403	121.083	144.945	133.670	109.267	98.693	93.731	98.171	1,297.699

ALLOCATIONS % (MEMBERS)	Jan	Feb	Mar	Apr	Apr	June	Jul	Aug	Sep	Oct	Nov	Dec	Cumulative
Whitefish Bay	30.67%	26.97%	31.01%	31.10%	32.58%	32.45%	31.59%	30.62%	30.68%	29.81%	34.21%	34.31%	31.32%
Glendale	52.82%	58.56%	52.66%	50.64%	49.26%	49.61%	50.50%	50.68%	52.12%	53.32%	48.99%	48.49%	51.40%
Fox Point	16.50%	14.47%	16.32%	18.26%	18.16%	17.94%	17.91%	18.70%	17.21%	16.88%	16.80%	17.20%	17.28%

ALLOCATIONS % (ALL)	Jan	Feb	Mar	Apr	Apr	June	Jul	Aug	Sep	Oct	Nov	Dec	Cumulative
Whitefish Bay	28.57%	25.29%	28.60%	29.00%	30.52%	30.33%	29.60%	28.52%	28.70%	27.75%	31.81%	31.85%	29.22%
Glendale	49.21%	54.90%	48.56%	47.22%	46.15%	46.37%	47.31%	47.21%	48.77%	49.65%	45.56%	45.02%	47.94%
Fox Point	15.37%	13.57%	15.05%	17.03%	17.01%	16.76%	16.78%	17.41%	16.10%	15.72%	15.63%	15.97%	16.11%
Mequon	6.84%	6.24%	7.80%	6.75%	6.32%	6.54%	6.31%	6.85%	6.43%	6.88%	7.00%	7.16%	6.73%

STATISTICS	Max Day	Ave Day	Min Day
Whitefish Bay	1.880	1.033	0.621
Glendale	2.906	1.699	1.138
Fox Point	1.130	0.569	0.419
Mequon	0.418	0.239	0.187
Combined	5.978	3.546	2.262

NORTH SHORE WATER COMMISSION **2016 Summary of Operations** **Whitefish Bay - Glendale - Fox Point**

January 10, 2017

VARIABLE COSTS	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**AVE**
Chemicals ($/MG)	56.477	65.714	57.633	61.810	60.361	60.001	66.524	70.576	65.921	62.811	65.201	56.913	$62.50
Energy (KWH per MG)	2,065	1,964	2,101	2,093	2,014	1,831	1,959	2,073	2,025	2,035	2,169	2,090	2,035
Energy ($/MG)	$179.24	$172.68	$186.49	$187.89	$177.81	$161.62	$167.63	$170.93	$157.49	$180.54	$190.48	$182.52	$176.28
Energy ($/KWH)	0.0868	0.0879	0.0888	0.0898	0.0883	0.0883	0.0856	0.0825	0.0778	0.0887	0.0878	0.0873	$0.0866

PHYSICAL CHARACTERISTICS	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**AVE**
Average Pressure (PSI)	83.0	83.2	83.0	82.9	82.9	83.1	83.5	83.7	83.7	82.2	83.0	82.9	83.1
Average Water Temp (F)	34.6	33.5	37.1	41.3	45.5	54.4	50.8	57.4	52.6	53.6	47.9	38.4	45.6

WATER QUALITY	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**AVE**
Ave. Raw Turbidity (NTU)	6.8	11.7	6.5	10.0	3.5	0.7	0.7	0.8	0.7	0.7	2.6	1.2	3.8
Ave. Filter Effluent Turbidity (NTU)	0.05	0.05	0.05	0.05	0.06	0.05	0.06	0.05	0.05	0.06	0.05	0.05	0.05
Ave. Raw MPN Index (Total Coliform)	7.9	7.4	3.9	4.6	38.7	3.3	20.5	14.2	15.4	20.1	14.2	3.6	12.8
Ave. Raw pH	8.12	8.16	8.20	8.23	8.28	8.36	8.25	8.34	8.23	8.17	8.16	8.15	8.22
Ave. Tap pH	7.75	7.66	7.72	7.72	7.81	7.94	7.87	7.88	7.85	7.91	7.71	7.88	7.81
Ave. Tap Hardness (mg/L)	136	135	137	138	136	135	136	136	134	136	135	137	136
Ave. Tap Alkalinity (mg/L)	111	112	113	113	112	112	111	110	111	111	112	114	112
Ave. Tap Fluoride Res. (mg/L)	0.77	0.76	0.79	0.76	0.78	0.79	0.78	0.73	0.75	0.75	0.74	0.77	0.76
Ave. Tap Recative Phosphate Res. (mg/L)	0.69	0.67	0.63	0.70	0.71	0.67	0.69	0.68	0.69	0.66	0.69	0.68	0.68
Ave. Tap Total Chlorine Res. (mg/L)	2.38	2.66	2.39	2.37	2.40	2.43	2.50	2.45	2.26	2.34	2.75	2.67	2.47

ACTIVE CHEMICALS APPLIED (PPM)	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**AVE**
Sodium Hypochlorite	2.753	3.092	3.019	3.328	3.424	3.473	3.547	3.694	3.669	3.732	3.994	3.508	3.436
Aqua Ammonia	0.505	0.558	0.513	0.538	0.569	0.600	0.623	0.613	0.587	0.620	0.737	0.679	0.595
Fluoride	0.868	0.825	0.853	0.822	0.855	0.849	0.848	0.748	0.810	0.795	0.819	0.837	0.827
Alum	11.386	16.671	11.938	13.785	10.335	6.441	8.716	9.666	8.133	7.750	10.488	8.152	10.288
Phosphates	0.743	0.758	0.718	0.771	0.791	0.807	0.825	0.836	0.772	0.750	0.753	0.744	0.772
Polymer - Coagulant Aid	0.723	0.738	0.708	0.608	0.812	0.767	0.961	1.105	1.069	0.973	1.045	0.781	0.858
Polymer - Mussel Control	0.000	0.000	0.000	0.000	0.110	0.629	0.759	0.958	0.791	0.550	0.035	0.000	0.319

CHEMICALS APPLIED (ACT. LBS)	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**TOTAL**
Sodium Hypochlorite	2,306	2,621	2,348	2,584	3,122	3,504	4,284	4,115	3,341	3,069	3,120	2,870	37,284
Aqua Ammonia	423	473	399	418	519	605	752	683	535	510	576	556	6,449
Carbon	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluoride	727	700	663	638	779	857	1,025	833	738	654	639	685	8,938
Alum	9,537	14,132	9,285	10,702	9,422	6,499	10,528	10,767	7,406	6,374	8,192	6,669	109,513
Phosphates	623	643	559	598	722	814	996	931	703	617	588	609	8,403
Polymer - Coagulant Aid	606	626	551	472	740	774	1,161	1,231	973	800	816	639	9,389
Polymer - Mussel Control	0	0	0	0	101	634	917	1,067	720	453	27	0	3,919

2016
NORTH SHORE WATER COMMISSION
ANNUAL REPORT

400 West Bender Road
Glendale, Wisconsin

Whitefish Bay - Glendale - Fox Point

NORTH SHORE WATER COMMISSION
Payment Schedule for 2017
January 10, 2017

Calculation of the payment schedule for the three member municipalities has been completed pursuant to Sections 6.02 and 6.04 of the agreement. Please note that the payment schedule is subject to revision after the financial audit which is usually finalized at the March Commission Meeting.

Please note that this is the second year that the Commission authorized the inclusion of other revenue streams to offset the overall amount due by each member. Consequently, there will be less "surplus" at the end of the fiscal year.

	Percentage of Water Delivered	Annual Committment	Monthly Payment (Rounded)
Whitefish Bay	31.32%	$385,554.84	$32,129.57
Glendale	51.40%	$632,743.25	$52,728.60
Fox Point	17.28%	$212,719.91	$17,726.66

Approved annual operating budget amount for 2017: $1,315,618.00
Total annual committment approved by Commission for 2017: $1,231,018.00

To improve our ability to track payments, please include a reference number on your check in the following format: (WFB/GLEN/FPT)_OPS_(MM)_(YYYY). For example: Reference # for January 2017 payment from Glendale: GLEN_OPS_01_2017.

Respectfully,

_____
Eric Kiefer
Plant Manager

NORTH SHORE WATER COMMISSION
Information for Public Service Commission Reports
January 10, 2017

	Electrical Consumption for 2016 (KWH)
January	207580
February	199835
March	196108
April	194986
May	220365
June	221723
July	283970
August	277116
September	221308
October	200812
November	203285
December	205132
Total	2632220

	Estimated Electrical Consumption for Each Member (KWH)
Whitefish Bay @ 31.32%	824411
Glendale @ 51.4%	1352961
Fox Point @ 17.28%	454848

	Min Day (MG)	Date
Whitefish Bay*	0.747	9/28/2016
Glendale*	1.254	12/25/2016
Fox Point*	0.419	6/16/2016

** FPT & WFB: maintenance of reservoirs, GLEN: cold weather / low demand*

	Max Day (MG)	Date
Whitefish Bay^	1.880	7/13/2016
Glendale^	2.906	7/14/2016
Fox Point^	1.130	8/10/2016

^ hot weather