

AGENDA
NORTH SHORE WATER COMMISSION

400 West Bender Road
Glendale, WI 53217
Wednesday, December 14, 2016
8:00 A.M.

1. Call to order by the Chairman.
2. Approval of the minutes of the November meeting.
3. Monthly report of plant operations.
4. Discussion of annual operating budget.
5. Approval of monthly bills and estimated invoices.
6. Status report of current capital projects. Action may be taken to approve capital expenditures pertaining to these projects and authorize payment to vendors.
7. Discussion and possible action to accept aqua ammonia quotation from Hawkins.
8. Discussion of recent letter from Wisconsin Department of Natural Resources regarding Lead and Copper Rule (LCR) compliance.
9. Discussion of the condition of the Southwest and Southeast reservoirs and potential improvements that may be required by the Wisconsin Department of Natural Resources.
10. Discussion and possible action to approve the 2018 - 2022 Capital Improvement Plan.
11. Manager's report.
12. Date and time of the next regular Commission Meeting.
13. Adjournment.

**MINUTES OF THE
NORTH SHORE WATER COMMISSION
MEETING OF Wednesday, November 9, 2016**

A meeting of the North Shore Water Commission was held at the Filtration Plant, 400 West Bender Road, Glendale, Wisconsin on Wednesday, November 9, 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 October 12, 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 in October 2016 was lower than October 2015. There was a brief discussion about how flows have dropped throughout the years and 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. West, seconded by Mr. Eastman, and unanimously carried that the following bills and estimated invoices be approved and authorization was given to the Fiscal Agent to make such payments:

<u>Vendor</u>	<u>Amount</u>
A.C. Engineering (repair of circuit breaker and preventative maintenance for transformer)	6,487.50
BMO Harris Bank (credit card)	256.66
-- FedEx Office (printing services): \$141.56	
-- Google (monthly charge for apps): \$54.16	
-- Siteground (domain registration renewal): \$14.95	
-- Straight Talk (monthly phone plan - Foreman): \$45.99	
Clark Dietz (general engineering services)	760.00
Diversified Benefit Services (Section 125 Plan administration)	95.93

Earthlink (Bender phone)	148.00
Eurofins (cryptosporidium analysis)	780.00
Expeditors, Inc (televise storm sewer)	1,000.00
Fuchs & Boyle (legal service)	321.75
Grainger (general hardware, floor stripping and waxing supplies, socket, custodial supplies, tape, pressure transducers, and towel)	1,325.73
Great America (lease payment for copier/printer)	100.00
Hach (lamp and photocell assemblies for Hach 1720D instruments)	4,543.42
Hawkins (treatment chemicals: aqueous ammonia)	444.00
Idexx (collection vessels)	669.10
L&S Electric (repair of VFD and keypad)	849.00
Liesener Soils (top soil)	310.00
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)	19.96
Rotroff Jeanson (accounting services)	950.00
T-Mobile (mobile internet)	31.05
Time Warner Cable (internet services and Klode phone)	391.01
US Cellular (cellular phone)	4.25
Village Ace Hardware (hardware, hop head, surface protectors, and grass seed)	105.15
Village of Fox Point (gasoline)	88.68
Village of Whitefish Bay Water Utility (Klode water)	134.70
We Energies (Bender Electric)	14,084.53
We Energies (Bender Gas)	344.31
We Energies (Green Tree Electric)	16.12
We Energies (Henry Clay Electric)	16.93
We Energies (Klode Electric)	3,733.37
We Energies (Klode Gas)	9.57
Wisconsin State Lab of Hygiene (fluoride analysis)	25.00

SUB-TOTAL \$38,233.72

Maintenance Reserve

SUB-TOTAL \$0.00

TOTAL \$38,233.72

STATUS OF CAPITAL IMPROVEMENT PROJECTS AND APPROVAL OF PAYMENTS

Mr. Kiefer explained there was progress with the Chemical Feed Upgrade Project in regards to plumbing. He also explained that plant staff completed the valve replacement on High Service Pump #3 which required a plant shutdown. Mr. Kiefer praised his staff for doing a great job.

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 November 9, 2016 in the amount of \$2,964.09 for the Chemical Feed Project and \$2,903.27 for the Valve Replacement Project using the current capital allocation rates.

CHEMICAL QUOTATIONS

Mr. Kiefer presented his recommendations for acceptance of chemical quotations. He mentioned that all unit costs are the same or lower than last year. Some chemicals reduced by 20% from last year. Since chemical production is energy-intensive, Mr. Kiefer believes that low oil costs are driving the production costs down.

It was moved by Mr. West, seconded by Mr. Eastman, and unanimously carried to accept the chemical quotations as noted in Mr. Kiefer's memo dated November 9, 2016.

Accepted Quotations:

Univar: ammonium hydroxide (19%) - \$0.199/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

LETTER OF SUPPORT FOR DR. CHEN'S RESEARCH PROPOSAL

Mr. Kiefer explained that Dr. Chen of UWM has developed a sensor that can be used to detect waterborne contaminants. Consequently, Dr. Chen will be submitting a proposal to demonstrate how these sensors can work in a distribution system. Mr. Kiefer was asked to help with the project by providing water utility advice. He was also asked to place the sensors in Fox Point, Glendale, and Whitefish Bay. Mr. Kiefer convinced Dr. Chen to alter the scope of the project to put the sensors in a building instead.

Mr. Edlebeck asked where the evaluation would take place. Mr. Kiefer said it is now anticipated to take place at the Global Water Center, UWM, or at another facility.

Mr. West how much time would this effort require. Mr. Kiefer said that he would volunteer his time as needed, but didn't think it would take more than 40 hours per year.

The Commission discussed the concept of water sensors installed in the distribution system. It was the consensus of the Commission that Mr. Kiefer should not allow that testing to occur in Fox Point, Glendale or Whitefish Bay.

Mr. West briefly left the room. During his absence, Mr. Edlebeck moved to approve the letter of support drafted by Mr. Kiefer dated November 9, 2016 with the condition that Mr. Kiefer's involvement does not go beyond providing water utility advising and that the sensors are not tested in the distribution system. It was seconded by Mr. Eastman. Mr. Eastman and Mr. Edlebeck voted for the motion, and it carried. Mr. West re-entered the room after the vote.

SOUTHWEST RESERVOIR INSPECTION

Mr. Kiefer provided the Commission with a report regarding the condition of the southwest (SW)

reservoir. Mr. Kiefer discussed the content of the report using a system map as a visual aid.

Mr. Kiefer also provided the Commission with a draft of SEH's inspection report. He called the Commission's attention to the preliminary opinion of probable cost for bringing all 4 reservoirs up to code--approximately \$2.2 million.

Mr. Kiefer explained that he did not find it necessary to keep all 4 reservoirs in service. If the NW and SW reservoirs could be "mothballed," the overall project would drop in cost.

Mr. Edlebeck asked Mr. Kiefer why the NW reservoir should be abandoned if there is nothing wrong with it. Mr. Kiefer explained that having just 2 reservoirs would be more than sufficient. Furthermore, it would ultimately reduce the cost of the project.

Mr. Kiefer called the Commission's attention to a graph of annual pumpage from 1965 to 2015 provided in his report. In the early 1990's, there was a large reduction in water demand. The trend suggests there is continuing decline in water demand as we head into the future. It was Mr. Kiefer's conclusion that maintaining extra reservoir storage capacity would not be necessary, especially now that demand has greatly diminished.

Mr. West commented that if the NW and SW reservoirs are mothballed properly, they could be put back into service--after the necessary repairs and improvements are made to bring them up to code.

Mr. Kiefer went on to recommend that SEH provide additional services to determine if the NW and SW reservoirs can be safely abandoned and to develop a 5-year capital improvement plan to implement the necessary repairs and improvements.

After discussion of the topic, it was moved by Mr. West, seconded by Mr. Eastman, and unanimously carried, to authorize Mr. Kiefer to approve additional services so the engineer can study the mothballing of the NW and SW reservoirs and to develop a capital improvement plan for contemplated reservoir improvements.

GLENDALE'S REQUEST TO INSTALL A REMOTE METER BETWEEN GLENDALE AND FOX POINT WATER UTILITIES AND CLARK DIETZ'S ENGINEERING REPORT

Mr. Kiefer provided the Commission with a report from Clark Dietz which describes the costs and benefits of installing an interconnect meter (and all associated construction) between Fox Point and Glendale near W. Bradley Road. Mr. Kiefer briefly went through the report and explained that Mr. Eastman requested for this item to be placed on the agenda.

Mr. Eastman explained that the interconnection would benefit the systems in water age and fire flow. Given the other projects on the horizon, Mr. Eastman explained that this project is not as high of a priority as the anticipated reservoir project.

Mr. Kiefer asked for direction as to when the interconnection project should be completed. Mr. Eastman responded by saying that it would depend on the reservoir project.

Mr. Kiefer expressed his intention to exclude this project from the 5-year capital improvement plan because the reservoir work is higher priority. Mr. Eastman commented that is understandable given the

situation with the reservoir; however, he would like for the Commission to complete the project when the other high priority projects are completed.

Mr. Edlebeck commented that he would support Fox Point and Glendale in this project.

Mr. West commented on cost of the interconnection and thought it may be lowered if other alternatives are investigated. Mr. Eastman suggested that he go back to Clark Dietz to include alternatives in their report. When that report is finished, it would be brought back to the Commission.

It was the consensus of the Commission to wait for the revised report before taking any further action on the matter.

MANAGER'S REPORT

1. Plant staff discovered 2 small sinkholes in the southwest area of the Bender facility. After televising the sewer in the area, plant staff does not believe sinkholes were caused by a storm sewer failure. Plant staff intends to fill in sinkholes and monitor the situation over time.

During discussion of this item, Mr. Kiefer explained that up until a month ago, he was unaware that the Commission owned the storm sewer that takes the plant overflow discharge to a nearby creek. It was Mr. Kiefer's understanding that the Commission's overflow connected to a Glendale storm sewer.

Mr. Eastman explained that all of his records indicate that the storm sewer belongs to the Commission.

Mr. Kiefer responded by saying that he discussed the topic with a retired Commission employee. That employee also believes the line belongs to Commission. Mr. Kiefer explained that he accepts that the line belongs to the Commission, but was completely unaware of it until his investigation.

He went on to further explain how it will be important to understand more about the stormwater drain since the reservoir overflow will ultimately discharge to this line.

Mr. Eastman suggested that Mr. Kiefer contact Mr. Fuchs for assistance.

2. Wisconsin Department of Natural Resources and SEH engineers met at the Commission to discuss the condition of the southwest reservoir and alternatives for moving forward. Until further notice, the southwest reservoir is out of service and cannot be used.
3. Plant staff is draining the southeast reservoir so it can be inspected before the end of the year. Plant staff needs to know the condition of this particular reservoir before plans can be developed for handling the southwest reservoir.
4. Filters #1 and #8 leak an excessive amount of water into the reclaim basin. At low flow rates, they can no longer be operated.
5. A section of siding on the garage fell off during a recent wind storm. Because of the condition of underlying fascia and roof, plant staff believes it will need a new roof and siding next year.

6. AC Engineering repaired the main utility breaker that failed earlier this year; the breaker was re-installed and tested at the Bender facility. It was left in service while the other breaker was put into storage in case the breaker fails again.
7. Plant staff started up cryptosporidium testing again to comply with WDNR regulations. Monitoring will be conducted monthly over the next 2 years.

NEXT MEETING

The next regular meeting was scheduled for Wednesday, December 14, 2016 at 8:00 AM.

ADJOURNMENT

It was moved by Mr. West, seconded by Mr. Eastman, and unanimously carried to adjourn at 9:20 A.M.

Submitted by:



Eric Kiefer, Plant Manager and Recording Secretary

11/10/2016

Date

NORTH SHORE WATER COMMISSION
 Monthly Summary of Operations
 Month of November, 2016
 12/13/2016

	WFB.	GLE.	FPT.	MEQ	Totals
M.G. Metered at Plant	28.159	39.663	25.909	0.000	93.731
M.G. Milwaukee Interconnect	0.000	0.000	0.000	0.000	0.000
M.G. Metered in System	1.657	3.043	-11.263	6.563	0.000
M.G. Charged to Members	29.816	42.706	14.646	0.000	87.168
M.G. Charged to All Users	29.816	42.706	14.646	6.563	93.731
M.G. Same Month Last Year (Members)	27.353	44.153	14.087	5.358	85.593
M.G. Same Month Last Year (All)	27.353	44.153	14.087	5.358	90.951
Accumulated M.G.	347.865	577.919	193.428	80.316	1199.528
Accumulated M.G. Last Year	333.597	613.845	185.096	61.169	1193.707
Accumulated % of Total Pumped	29.00%	48.18%	16.13%	6.70%	100.00%
Monthly % of Total Pumped	31.81%	45.56%	15.63%	7.00%	100.00%
Accumulated % Pumped of Members	31.08%	51.64%	17.28%		100.00%
Monthly % Pumped of Members	34.21%	48.99%	16.80%		100.00%
Average Daily Pumpage in M.G.	0.994	1.424	0.488	0.219	3.124

	Nov. 2016	Nov. 2015
Maximum Day Pumpage (MG)	3.656	3.388
Date of Max. Pumpage (Day)	30	6
Maximum Flow Rate (MGD)	6.303	6.026
Date of Max Flow (Day)	29	26
Hour of Max Flow (24 Hour Clock)	18	22
Average Station Pressure (PSI)	83.5	83.2
Avg. Total Cl Residual (mg/L) - Tap	2.75	2.38
Raw Water Temperature (F) - Max	53	46
Raw Water Temperature (F) - Ave	48	43
Raw Water Temperature (F) - Min	42	41
Tap Hardness (mg/L as CaCO3) - Max	140	140
Tap Hardness (mg/L as CaCO3) - Ave	135	135
Tap Hardness (mg/L as CaCO3) - Min	130	128

	Nov. 2016	Nov. 2015
Bender On-Peak Consumption (KWH)	55,751	47,403
Bender Off-Peak Consumption (KWH)	103,108	108,653
Klode On-Peak Consumption (KWH)	14,744	14,162
Klode Off-Peak Consumption (KWH)	29,682	27,160
Electrical Charge / KWH	\$0.08783	\$0.08771
KWH / M.G.	2,169	2,170
\$/ M.G.	\$190.48	\$190.33

Chemicals Applied	Nov. 2016		Nov. 2015	
	mg/L	\$/MG	mg/L	\$/MG
Ammonium Hydroxide	0.737	\$8.08	0.510	\$5.59
Sodium Hypochlorite	3.994	\$19.27	2.971	\$14.96
Fluoride	0.819	\$6.55	0.908	\$7.42
Alum	10.488	\$15.03	9.370	\$18.83
Carbon (PAC)	0.000	\$0.00	0.000	\$0.00
Polymer - Mussel Control	0.035	\$0.32	0.000	\$0.00
Phosphates	2.353	\$9.20	2.359	\$9.22
Cationic Polymer	1.045	\$6.62	0.792	\$5.15
Total Chemical Cost		\$65.07		\$61.17

Water Metering	Nov. 2016		Nov. 2015	
	M.G.	% Diff.	M.G.	% Diff.
Corrected High Service (Filters)	93.320	-0.4	90.372	-0.6
Total High Service	97.965	4.5	101.179	11.2
Communities	93.731	0.0	90.951	0.0

NORTH SHORE WATER COMMISSION
Income Statement
For the Ten Months Ending October 31, 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	\$ 556,726.70	\$ 556,726.70	0.00
466.02	Whitefish Bay-Operations	30,648.35	30,648.35	306,483.50	306,483.50	0.00
466.03	Fox Point-Operations	16,872.07	16,872.07	168,720.70	168,720.70	0.00
466.05	Wholesale Water Sales	6,181.64	4,166.67	67,791.85	41,666.70	26,125.15
	Sales for Resale	109,374.73	107,359.76	1,099,722.75	1,073,597.60	26,125.15
Other Operating Revenue						
474.00	Lab Services Income	900.00	1,166.67	9,120.00	11,666.70	(2,546.70)
474.02	Storm Water Analysis Revenue	389.00	0.00	523.00	0.00	523.00
	Total Operating Income	110,663.73	108,526.43	1,109,365.75	1,085,264.30	24,101.45
Operation and Maintenance Expenses						
Source of Supply						
600.00	Operation Supvsn & Engrng	66.01	71.50	723.12	715.00	8.12
601.00	Operations Labor & Expenses	85.57	110.58	1,047.19	1,105.80	(58.61)
602.01	Purchased Water	0.00	838.25	9,230.00	8,382.50	847.50
603.00	Miscellaneous Expenses	7.65	162.33	335.42	1,623.30	(1,287.88)
610.00	Maint Supervisn & Engrng	260.22	130.75	1,428.76	1,307.50	121.26
611.00	Maint of Structures & Imprvmnt	85.57	110.58	1,047.19	1,105.80	(58.61)
613.00	Maint. of Crib & Wet Well	0.00	331.42	3,555.00	3,314.20	240.80
617.00	Maint of Mis Water Source Plnt	0.00	0.00	248.22	0.00	248.22
	Total Source of Supply Expenses	505.02	1,755.41	17,614.90	17,554.10	60.80
Pumping Expenses						
620.00	Operations Supvsn & Engrng	1,220.68	1,371.75	13,635.23	13,717.50	(82.27)
621.00	Fuel for Power Production	9.57	337.25	1,420.21	3,372.50	(1,952.29)
623.00	Fuel/Power Purchased for Pmpng	17,850.95	20,434.33	192,514.36	204,343.30	(11,828.94)
624.00	Pumping Labor & Expenses	10,411.42	10,712.75	104,525.09	107,127.50	(2,602.41)
626.00	Miscellaneous Expenses	1,923.68	2,101.42	20,846.90	21,014.20	(167.30)
630.00	Maint Supervisn & Engrng	560.58	682.08	6,403.49	6,820.80	(417.31)
631.00	Maint of Structures & Imprvmnt	529.88	1,177.42	8,562.25	11,774.20	(3,211.95)
632.00	Maint of Power Prod Eqpt	0.00	326.33	3,399.77	3,263.30	136.47
633.00	Maint of Pumping Eqpt	2,171.17	4,954.83	17,746.28	49,548.30	(31,802.02)
	Total Pumping Expenses	34,677.93	42,098.16	369,053.58	420,981.60	(51,928.02)
Water Treatment Expenses						
640.00	Operation Suprvsn & Engrng	1,220.68	1,371.75	13,635.19	13,717.50	(82.31)
641.00	Chemicals	1,367.24	7,535.08	78,028.85	75,350.80	2,678.05
642.00	Operation Labor & Expenses	17,303.31	14,739.08	145,039.39	147,390.80	(2,351.41)
643.00	Miscellaneous	1,910.68	2,105.67	21,153.43	21,056.70	96.73
650.00	Maint Supervision & Engrng	330.06	357.58	3,615.85	3,575.80	40.05
651.00	Maint of Structures & Imprvmnt	625.11	876.08	8,274.68	8,760.80	(486.12)
652.00	Operation Supvsn & Engrng	3,667.47	5,960.08	69,254.80	59,600.80	9,654.00
	Total Water Treatment Expenses	26,424.55	32,945.32	339,002.19	329,453.20	9,548.99

NORTH SHORE WATER COMMISSION
Income Statement
For the Ten Months Ending October 31, 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	112.11	130.75	1,280.65	1,307.50	(26.85)
661.00	Storage Facilities Expenses	85.57	110.58	1,047.19	1,105.80	(58.61)
670.00	Maint Supervisn & Engrng	66.01	71.50	723.12	715.00	8.12
676.00	Maintenance of Meters	0.00	77.50	0.00	775.00	(775.00)
	Total Trans. & Distribution Expense	263.69	390.33	3,050.96	3,903.30	(852.34)
Customer Accounts Expenses						
906.00	Customer Service & Infor Exps	66.01	71.50	723.12	715.00	8.12
	Total Customer Accounts Expenses	66.01	71.50	723.12	715.00	8.12
Administration & General Expenses						
408.00	FICA Taxes	2,979.87	3,024.00	29,206.36	30,240.00	(1,033.64)
920.00	Admin & General Salaries	2,598.78	2,860.42	28,864.18	28,604.20	259.98
921.00	Office Supplies & Expenses	959.54	1,276.00	14,034.73	12,760.00	1,274.73
923.00	Outside Services Employed	2,651.75	8,060.67	66,466.48	80,606.70	(14,140.22)
924.00	Prop & P.L. Insurance	0.00	1,428.25	21,878.00	14,282.50	7,595.50
925.00	Injuries & Damages	0.00	3,362.00	34,401.50	33,620.00	781.50
926.00	Employee Pensions & Benefits	8,105.36	10,464.33	83,858.28	104,643.30	(20,785.02)
930.00	Miscellaneous General Expenses	48.40	552.67	5,487.51	5,526.70	(39.19)
930.03	Storm Water Labor	136.90	0.00	203.30	0.00	203.30
930.05	Storm Water Testing Supplies	201.10	0.00	355.50	0.00	355.50
932.00	Maintenance of General Plant	0.00	287.33	0.00	2,873.30	(2,873.30)
	Total Adm. & General Expenses	17,681.70	31,315.67	284,755.84	313,156.70	(28,400.86)
	Total Operations & Maintenance	79,618.90	108,576.39	1,014,200.59	1,085,763.90	(71,563.31)
	Net Operating Income	31,044.83	(49.96)	95,165.16	(499.60)	95,664.76
Nonoperating Income and Expense						
419.00	Interest Income	17.67	50.00	171.03	500.00	(328.97)
421.00	Misc Income	0.00	0.00	4,989.22	0.00	4,989.22
	Net Income	\$ 31,062.50	\$ 0.04	\$ 100,325.41	\$ 0.40	100,325.01

NORTH SHORE WATER COMMISSION
Income Statement
For the One Month and the Ten Months Ended October 31, 2016 and 2015

	<u>Current Month</u>	<u>Prior Year Month</u>	<u>Year to Date Actual</u>	<u>Prior YTD Date Actual</u>
Operating Revenues				
Sales for Resale				
466.01 Glendale-Operations	\$ 55,672.67	\$ 60,928.74	\$ 556,726.70	\$ 609,287.40
466.02 Whitefish Bay-Operations	30,648.35	31,558.93	306,483.50	315,589.30
466.03 Fox Point-Operations	16,872.07	18,635.33	168,720.70	186,353.30
466.05 Wholesale Water Sales	6,181.64	6,686.82	67,791.85	52,223.11
	<hr/>	<hr/>	<hr/>	<hr/>
Sales for Resale	109,374.73	117,809.82	1,099,722.75	1,163,453.11
Other Operating Revenue				
474.00 Lab Services Income	900.00	3,330.00	9,120.00	15,690.00
474.02 Storm Water Analysis Revenue	389.00	0.00	523.00	268.00
	<hr/>	<hr/>	<hr/>	<hr/>
Total Operating Income	110,663.73	121,139.82	1,109,365.75	1,179,411.11
Operation and Maintenance Expenses				
Source of Supply				
600.00 Operation Supvsn & Engrng	66.01	68.87	723.12	720.95
601.00 Operations Labor & Expenses	85.57	115.47	1,047.19	927.70
602.01 Purchased Water	0.00	0.00	9,230.00	9,464.00
603.00 Miscellaneous Expenses	7.65	0.00	335.42	721.64
610.00 Maint Supervisn & Engrng	260.22	128.11	1,428.76	1,227.10
611.00 Maint of Structures & Imprvmnt	85.57	115.47	1,047.19	963.95
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
	<hr/>	<hr/>	<hr/>	<hr/>
Total Source of Supply Expenses	505.02	427.92	17,614.90	33,526.00
Pumping Expenses				
620.00 Operations Supvsn & Engrg	1,220.68	1,329.28	13,635.23	13,234.17
621.00 Fuel for Power Production	9.57	76.21	1,420.21	1,653.53
623.00 Fuel/Power Purchased for Pmpng	17,850.95	18,587.75	192,514.36	190,736.51
624.00 Pumping Labor & Expenses	10,411.42	10,050.20	104,525.09	102,919.28
626.00 Miscellaneous Expenses	1,923.68	1,421.79	20,846.90	18,646.89
630.00 Maint Supervisn & Engrng	560.58	640.52	6,403.49	6,319.92
631.00 Maint of Structures & Imprvmnt	529.88	858.61	8,562.25	7,689.68
632.00 Maint of Power Prod Eqpt	0.00	0.00	3,399.77	3,262.27
633.00 Maint of Pumping Eqpt	2,171.17	1,153.75	17,746.28	25,959.88
	<hr/>	<hr/>	<hr/>	<hr/>
Total Pumping Expenses	34,677.93	34,118.11	369,053.58	370,422.13

NORTH SHORE WATER COMMISSION
Income Statement
For the One Month and the Ten Months Ended October 31, 2016 and 2015

	<u>Current Month</u>	<u>Prior Year Month</u>	<u>Year to Date Actual</u>	<u>Prior YTD Date Actual</u>
Water Treatment Expenses				
640.00	1,220.68	1,329.28	13,635.19	13,234.17
641.00	1,367.24	6,326.75	78,028.85	65,534.13
642.00	17,303.31	13,892.18	145,039.39	145,109.01
643.00	1,910.68	1,069.92	21,153.43	16,834.49
650.00	330.06	344.38	3,615.85	3,604.86
651.00	625.11	858.61	8,274.68	8,054.62
652.00	3,667.47	9,066.38	69,254.80	57,423.31
	<hr/>	<hr/>	<hr/>	<hr/>
Total Water Treatment Expenses	26,424.55	32,887.50	339,002.19	309,794.59
Transmission & Distribution Expenses				
660.00	112.11	128.11	1,280.65	1,204.92
661.00	85.57	115.47	1,047.19	891.45
670.00	66.01	68.87	723.12	720.95
676.00	0.00	0.00	0.00	417.35
	<hr/>	<hr/>	<hr/>	<hr/>
Total Trans. & Distribution Expenses	263.69	312.45	3,050.96	3,234.67
Customer Accounts Expenses				
906.00	66.01	68.87	723.12	720.95
	<hr/>	<hr/>	<hr/>	<hr/>
Total Customer Accounts Expenses	66.01	68.87	723.12	720.95
Administration & General Expenses				
408.00	2,979.87	2,942.58	29,206.36	27,475.06
920.00	2,598.78	2,755.02	28,864.18	28,797.51
921.00	959.54	1,252.38	14,034.73	11,223.14
923.00	2,651.75	2,057.75	66,466.48	78,463.46
923.01	0.00	0.00	0.00	527.29
924.00	0.00	0.00	21,878.00	15,125.00
925.00	0.00	0.00	34,401.50	38,153.50
926.00	8,105.36	7,769.00	83,858.28	87,787.55
930.00	48.40	52.40	5,487.51	8,163.59
930.03	136.90	0.00	203.30	126.02
930.05	201.10	0.00	355.50	151.45
932.00	0.00	0.00	0.00	2,557.17
	<hr/>	<hr/>	<hr/>	<hr/>
Total Adm. & General Expenses	17,681.70	16,829.13	284,755.84	298,550.74
	<hr/>	<hr/>	<hr/>	<hr/>
Total Operations & Maintenance	79,618.90	84,643.98	1,014,200.59	1,016,249.08
	<hr/>	<hr/>	<hr/>	<hr/>
Net Operating Income	31,044.83	36,495.84	95,165.16	163,162.03
Nonoperating Income and Expense				
419.00	17.67	20.71	171.03	227.74
421.00	0.00	151.00	4,989.22	6,023.00
	<hr/>	<hr/>	<hr/>	<hr/>
Net Income	\$ 31,062.50	\$ 36,667.55	\$ 100,325.41	\$ 169,412.77
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

NORTH SHORE WATER COMMISSION

Balance Sheet

October 31, 2016 and 2015

<u>Account</u>	<u>Description</u>	<u>Current Year</u>	<u>Prior Year</u>
Assets and Other Debits			
Cash			
131.01	Checking	\$ 191,734.76	270,742.53
131.02	Pay Pal Account	545.46	545.46
131.09	Petty Cash	50.00	50.00
135.01	LGIP - Emergency Fund	25,105.94	0.00
136.00	Temporary Investments	0.00	25,073.38
	Total Cash	217,436.16	296,411.37
142.00	Accounts Receivable	31,619.28	50,317.31
154.05	Storm Water Testing Inventory	274.59	283.24
165.00	Prepayments	6,696.10	6,301.88
174.01	Due (to)/from Utility Plant Fd	342.86	(26,815.79)
	Total Assets & Other Debits	\$ 256,368.99	326,498.01
Liabilities and Other Credits			
Liabilities			
232.00	Accounts Payable	\$ 34,337.98	40,361.51
233.00	Payable to Municipalities	2,649.26	2,765.49
234.00	Credit Card Payable-BMO Harris	(156.51)	705.98
	Sect125 Payable	742.33	763.38
242.07	Payroll Liabilities	909.54	950.62
242.09	Wages Payable	20,951.42	18,443.89
242.10	Accrued Payroll Taxes	1,602.78	1,410.96
	Total Liabilities	61,036.80	65,401.83
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 Contingency	13,707.50	13,707.50
216.92	Whitefish Bay Contingency	7,100.00	7,100.00
216.93	Fox Point Contingency	4,192.50	4,192.50
	Total Appropriations of Surplus	50,000.00	50,000.00
Balance Transferred from Income			
	Net Income	100,325.41	169,412.77
	Total Earned Surplus	195,332.19	261,096.18
	Total Liabilities & Other Credits	\$ 256,368.99	326,498.01

NORTH SHORE WATER COMMISSION
Plant Financing by Utility or Municipalities
For the Ten Months Ending October 31, 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	\$ 12,304.31	52,402.33	92,772.90	12,622.44	33,736.73
40-421.0 Whitefish Bay Charge for Pla	8,470.23	36,073.51	51,072.40	8,689.22	23,224.19
40-421.0 Fox Point Charges for Plant	4,768.98	20,310.39	28,115.60	4,892.26	13,075.86
	<u>25,543.52</u>	<u>108,786.23</u>	<u>171,960.90</u>	<u>26,203.92</u>	<u>70,036.78</u>
Total Capital Contributions					
Other Funding Sources					
40-466.0 Wholesale Water Sales	5,570.26	59,903.37	0.00	5,616.07	44,118.18
40-419.0 Interest	208.80	1,949.49	0.00	67.14	594.01
40-422.0 Miscellaneous Income	0.00	0.00	0.00	0.00	11,546.80
	<u>5,779.06</u>	<u>61,852.86</u>	<u>0.00</u>	<u>5,683.21</u>	<u>56,258.99</u>
Other Funding Sources					
	<u>31,322.58</u>	<u>170,639.09</u>	<u>171,960.90</u>	<u>31,887.13</u>	<u>126,295.77</u>
Total Funding Sources					
Utility Plant Expenditures					
Source of Supply					
	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Pumping Plant					
40-323 Other Power Production Eqpt	0.00	13,652.50	0.00	0.00	0.00
40-325 Electric Pumping Equipment	2,928.61	51,837.93	58,620.80	14,752.70	57,880.09
	<u>2,928.61</u>	<u>65,490.43</u>	<u>58,620.80</u>	<u>14,752.70</u>	<u>57,880.09</u>
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	3,692.37	41,719.13	77,506.70	570.39	30,725.22
	<u>3,692.37</u>	<u>41,719.13</u>	<u>77,506.70</u>	<u>570.39</u>	<u>32,608.22</u>
Tranmission & Distribution Plant					
40-341 Structures&Improvements-T	0.00	0.00	0.00	0.00	1,883.00
	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>1,883.00</u>
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	8,333.30	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	27,500.00	0.00	0.00
	<u>0.00</u>	<u>64,571.56</u>	<u>35,833.30</u>	<u>0.00</u>	<u>3,706.95</u>
Total Utility Plant Expenditu					
	<u>6,620.98</u>	<u>171,781.12</u>	<u>171,960.80</u>	<u>15,323.09</u>	<u>96,078.26</u>
Sources of Funding					
Over (Under) Expenditures	\$ <u>24,701.60</u>	<u>(1,142.03)</u>	<u>0.10</u>	<u>16,564.04</u>	<u>30,217.51</u>

NORTH SHORE WATER COMMISSION
Utility Plant Assets and Contributed Capital
October 31, 2016 and 2015

<u>Account</u>	<u>Description</u>	<u>Current Year</u>	<u>Prior Year</u>
Assets			
40-131.00	Savings	\$ 571,347.76	569,239.50
40-142.00	Receivable for Asset Additions	35,666.02	17,675.36
40-174.01	Due (to)/from Operations	(342.86)	26,815.79
		<hr/>	<hr/>
	Total Assets	\$ 606,670.92	613,730.65
		<hr/> <hr/>	<hr/> <hr/>
Liabilities and Contributed Capital			
Liabilities			
40-232.00	Accounts Payable Utility Plant	\$ 1,039.73	12,574.26
		<hr/>	<hr/>
	Total Liabilities	1,039.73	12,574.26
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
		<hr/>	<hr/>
	Total Reserve Balances	606,773.22	570,938.88
Current Year Capital Contributions and Other Funding Sources			
	Over (Under) Expenditures	(1,142.03)	30,217.51
		<hr/>	<hr/>
	Net Contributions to Capital	605,631.19	601,156.39
		<hr/>	<hr/>
	Total Liabilities & Contributed Capital	\$ 606,670.92	613,730.65
		<hr/> <hr/>	<hr/> <hr/>

NORTH SHORE WATER COMMISSION
Storm Water Income Statement
For the Ten Months Ending October 31, 2016

	Current Month		Year to Date	
Storm Water Analysis Revenue	\$ <u>389.00</u>	0.27	\$ <u>523.00</u>	0.04
Total Revenues	<u>389.00</u>	0.27	<u>523.00</u>	0.04
Expenses				
Storm Water Labor	136.90	0.10	203.30	0.02
Storm Water Testing Supplies	<u>201.10</u>	0.14	<u>355.50</u>	0.03
	338.00	0.24	558.80	0.04
Revenues	<u>389.00</u>		<u>523.00</u>	
Net Income	\$ <u><u>51.00</u></u>	0.04	\$ <u><u>(35.80)</u></u>	0.00

BILLS TO BE APPROVED AT COMMISSION MEETING OF**12/14/2016**

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	
	<hr/>	
	SUB-TOTAL	\$39,347.89
<u>Maintenance Reserve</u>		
	<hr/>	
	SUB-TOTAL	\$0.00
	<hr/>	
	TOTAL	\$39,347.89

11/30/2016 Checking account balance - Main	\$233,546.92
11/30/2016 Checking account balance - Secondary	\$545.46
11/30/2016 Local Government Investment Pool balance (Maintenance Reserve)	\$571,547.24
11/30/2016 Local Government Investment Pool balance (Emergency Fund)	\$25,114.71

North Shore Water Commission

Payment Request

Chemical Feed Upgrade Project (2016-2)

December 14, 2016

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

The Commission is requesting payment of \$12,640.69 for expenses assigned to this capital improvement project. The proportionate costs for the respective municipalities are as follows:

<i>Member</i>	<i>Capital Rate*</i>	<i>Amount Due</i>
<i>Fox Point</i>	<i>18.67%</i>	<i>\$2,360.02</i>
<i>Glendale</i>	<i>48.17%</i>	<i>\$6,089.02</i>
<i>Whitefish Bay</i>	<i>33.16%</i>	<i>\$4,191.65</i>

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

December 14, 2016

Pay Period	Employee Name	Hours	Cost
10/29/2016 to 11/12/2016	Brooks Angell	8.00	231.53
10/29/2016 to 11/12/2016	Duane Ziege	9.00	296.32
11/12/2016 to 11/26/2016	Eric Kiefer	6.00	206.73
11/12/2016 to 11/26/2016	Brooks Angell	23.00	669.34
11/12/2016 to 11/26/2016	Duane Ziege	16.50	531.47
11/26/2016 to 12/10/2016	Eric Kiefer	6.00	218.59
11/26/2016 to 12/10/2016	Brooks Angell	48.00	1,526.89
11/26/2016 to 12/10/2016	Duane Ziege	47.50	1,630.17
TOTAL			\$5,311.04

North Shore Water Commission
Chemical Feed Upgrade Project (2016-2)

Invoices for Meeting
Eric Kiefer
December 14, 2016

Vendor	Invoice Number	Units	Qty	Description	Line Cost
Allied Electronics	9006938380	Item	50	Terminal Block, Tri-level, 5.2 mm width, Feed-Through	246.50
Allied Electronics	9006938380	Item	2	Terminal Block, Tri-level, 5.2 mm width, End Cover	2.26
Allied Electronics	9006938380	Shipment	1	Shipping and Handling	14.94
Grainger	9284820660	Item	1	pH Meter, Combination Probe, Heavy Duty, S8000CD, Sensorex	153.30
Grainger	9288144257	Item	1	pH Meter, Low-Noise Cable Assembly, Sensorex	69.50
Grainger	9288144257	Item	1	pH Meter, Sensor Cartridge House for S8000, Sensorex	132.00
Grainger	9288144240	Item	1	pH Meter, Transmitter, TX2000, Sensorex	715.00
Grainger	9288144232	Item	1	pH Meter, Flow Cell, 3/4 in, CPVC, Sensorex	41.00
Grainger	9293588514	Item	4	Flexible Coupling, 2 in x 2 in, 4 in long, Stainless Steel Clamps, Elastomeric PVC	24.84
Grainger	9293588514	Item	2	Flexible Coupling, 1 in x 1 in, 4 in long, Stainless Steel Clamps, Elastomeric PVC	17.08
Grainger	9295596713	Item	1	pH Meter, Combination Probe, Heavy Duty, S8000CD, Sensorex	153.50
Grainger	9300290609	Item	1	pH Meter, Flow Cell, 3/4 in, CPVC, Sensorex	41.00
Grainger	9300290609	Item	1	pH Meter, Low-Noise Cable Assembly, Sensorex	69.50
Grainger	9300290609	Item	1	pH Meter, Sensor Cartridge House for S8000, Sensorex	132.00
Lincoln Contractors Suppl	R88559	Application	1	Rental, Core Drill, 3 Speed, Hand-held	46.00
Lincoln Contractors Suppl	R88559	Application	1	Rental, Core Drill Bit, 4 1/2 in	12.00
Lincoln Contractors Suppl	R88559	Application	1	Rental, Core Drill Bit, 3 in	12.00
Lincoln Contractors Suppl	R88559	Application	1	Rental, Damage Waiver	6.30
USA Bluebook	120283	Item	2	Chlorine Analyzer, CLX, HF Scientific, 0-10 ppm, Free Or Total	5,410.00
USA Bluebook	120283	Shipment	1	Shipping and Handling	30.93
TOTAL					\$7,329.65

North Shore Water Commission

Payment Request

Valve Replacements for High Service Pumps #3 and #5 (2016-3)

December 14, 2016

Expenses pertaining to the Valve Replacement Project were reviewed and approved by the Commission.

The Commission is requesting payment of \$6,247.06 for expenses assigned to this capital improvement project. The proportionate costs for the respective municipalities are as follows:

<i>Member</i>	<i>Capital Rate*</i>	<i>Amount Due</i>
<i>Fox Point</i>	<i>18.67%</i>	<i>\$1,166.33</i>
<i>Glendale</i>	<i>48.17%</i>	<i>\$3,009.20</i>
<i>Whitefish Bay</i>	<i>33.16%</i>	<i>\$2,071.53</i>

Respectfully,

Eric Kiefer

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

North Shore Water Commission

Valve Replacements for High Service Pumps #3 and #5 (2016-3)

Labor Assigned to Project

Eric Kiefer

December 14, 2016

Pay Period	Employee Name	Hours	Cost
10/29/2016 to 11/12/2016	Eric Kiefer	4.00	142.23
10/29/2016 to 11/12/2016	Brooks Angell	29.00	839.31
10/29/2016 to 11/12/2016	Duane Ziege	21.50	707.89
11/26/2016 to 12/10/2016	Brooks Angell	10.00	318.10
11/26/2016 to 12/10/2016	Duane Ziege	8.00	274.56
TOTAL			\$2,282.09

North Shore Water Commission

Valve Replacements for High Service Pumps #3 and #5 (2016-3)

Invoices for Meeting

Eric Kiefer

December 14, 2016

Vendor	Invoice Number	Units	Qty	Description	Line Cost
Graybar	988598800	Feet	900	Cable, SOOW, 12-3, Black (Carol, SOOW-12-3-BLK-CUT)	662.87
Graybar	988598800	Item	2	Plug, Valise, Plug, 5-15P, Elastogrip	40.02
Graybar	988598800	Item	2	Plug, Valise, Connector, 5-15R, Elastogrip	58.08
HD Supply Waterworks	G405742	Item	1	Spool Piece, Ductile Iron, 12 in diameter, 11 7/8 in, Primed	620.00
HD Supply Waterworks	G405742	Item	1	Spool Piece, Ductile Iron, 12 in diameter, 15 3/16 in, Primed	659.00
HD Supply Waterworks	G405742	Item	1	Spool Piece, Ductile Iron, 12 in diameter, 16 3/16 in, Primed	659.00
HD Supply Waterworks	G405742	Item	1	Spool Piece, Ductile Iron, 18 in diameter, 11 11/16 in, Primed	1,191.00
HD Supply Waterworks	G405742	Shipment	1	Shipping and Handling	75.00
TOTAL					\$3,964.97

North Shore Water Commission
2017 Chemical Bids
Plant Manager's Recommendations - Amended
December 8, 2016

Ammonium Hydroxide - nominal 19% by weight: mini bulk delivery

Hawkins: \$0.240/lb

Although Univar is the lowest cost provider, they are unable to provide mini-bulk delivery. Hawkins does provide mini-bulk delivery which is much safer and convenient for plant staff. Consequently, it is recommended that the Commission accept Hawkins' quotation.

Sodium Hypochlorite - nominal 12.5% by weight: 4000 gal delivered by tanker truck

Alexander: \$0.694/gal

Recommended because this vendor quoted the lowest unit price.

Hydrofluosilic Acid - nominal 23% by weight: 4500 gal delivered by tanker truck

Rowell: \$0.210/lb (\$420/ton)

Recommended because this vendor quoted the lowest unit price.

Liquid Aluminum Sulfate: full load delivered by tanker truck

Alexander: \$275/dry ton

Recommended because this vendor quoted the lowest unit price.

Phosphate (Blended 90% Ortho / 10% Poly): minibulk delivery

Hawkins: \$0.4400/lb (\$5.060/gal)

Recommended because Hawkins is the incumbant vendor tied with Carus for the lowest unit price.

Polymer (Flocculation Aid - CatFloc 8103 PLUS): 55 gal drum delivered

Hawkins: \$0.65/lb

Recommended because this vendor quoted the lowest unit price.

Polymer (Mussel Control - Veligon TL-M): 55 gal drum delivered

Nalco: \$1.11/lb

Recommended because Nalco provided the only quotation for this proprietary chemical.

North Shore Water Commission

2017 Chemical Bid Tabulation

Eric Kiefer

11/8/2016

Ammonium Hydroxide - nominal 19% by weight

Unit: Drum / Mini bulk

Vendor	Quantity	Firm Price	Price	Surcharges / Fees	Firm Surcharges / Fees	Surcharges / Fees	Deposits
Hawkins [NSWC]	mini bulk	Yes	\$0.2400/lb	No	N/A	N/A	N/A
Univar [NSWC]	mini bulk or drums	Yes	\$0.1999/lb	No	N/A	N/A	N/A

Chlorine - sodium hypochlorite - nominal 12.5% by weight or 15% by volume

Unit: Bulk

Vendor	Quantity	Firm Price	Price	Surcharges / Fees	Firm Surcharges / Fees	Surcharges / Fees	Deposits
Alexander	tank truck	Yes	\$0.6940/gal (\$0.0692/lb)	No	N/A	N/A	N/A
Hydrite	tank truck	Yes	\$0.7481/gal (4000 gal min)	No	N/A	N/A	N/A
KA Steel	tank truck	Yes	\$0.8200/gal (4000 gal min)	No	N/A	N/A	N/A
Milport	tank truck	Yes	\$0.7290/gal (4000 gal min)	No	N/A	N/A	N/A
Univar [NSWC, Oak Creek]	tank truck	Yes	\$0.922/gal (4000 gal min)	No	N/A	N/A	N/A
Vertex	tank truck	Yes	\$0.7600/gal (4000 gal min)	No	N/A	N/A	N/A

Hydrofluosilic Acid - nominal 23% by weight

Unit: Bulk

Vendor	Quantity	Firm Price	Price	Surcharges / Fees	Firm Surcharges / Fees	Surcharges / Fees	Deposits
Alexander	tank truck	Yes	\$0.2130/lb (\$426/ton)	No	N/A	N/A	N/A
Hawkins [NSWC]	tank truck	Yes	\$0.2200/lb (\$440/ton)	No	N/A	N/A	N/A
Hawkins [Oak Creek]	tank truck	Yes	\$0.2300/lb (\$460/ton)	No	N/A	N/A	N/A
Milport	tank truck	Yes	\$0.2395/lb (\$479/ton) - 40000 lb min	No	N/A	N/A	N/A
Rowell [NSWC, Oak Creek]	tank truck	Yes	\$0.2100/lb (\$420/ton)	No	N/A	N/A	N/A
Univar [NSWC]	tank truck	Yes	\$0.2500/lb (\$500/ton) - full truck	No	N/A	N/A	N/A
Univar [Oak Creek]	tank truck	Yes	\$0.2600/lb (\$520/ton) - 40000 lb max	No	N/A	N/A	N/A

Liquid Aluminum Sulfate (Derived from Aluminum Trihydrate)

Unit: Bulk

Vendor	Quantity	Firm Price	Price	Surcharges / Fees	Firm Surcharges / Fees	Surcharges / Fees	Deposits
Alexander Chemical [NSWC]	tank truck	Yes	\$275.00/dry ton (\$0.13750/dry lb)	No	N/A	N/A	N/A
ChemTrade [NSWC]	tank truck	Yes	\$306.00/dry ton (\$0.15300/dry lb)	No	N/A	N/A	N/A
Martell [NSWC]	tank truck	Yes	\$322.00/dry ton (\$0.16100/dry lb)	No	N/A	N/A	N/A
Rowell [NSWC]	tank truck	Yes	\$365.00/dry ton (\$0.18250/dry lb)	No	N/A	N/A	N/A
USALCO [NSWC]	tank truck	Yes	\$390.70/dry ton (\$0.19535/dry lb)	No	N/A	N/A	N/A
Univar [NSWC]	full tank truck	Yes	\$333.00/dry ton (\$0.16650/dry lb)	No	N/A	N/A	N/A

Phosphate

Unit: Drums

Vendor	Quantity	Firm Price	Price	Surcharges / Fees	Firm Surcharges / Fees	Surcharges / Fees	Deposits
Carus [NSWC]	619 lb drum	Yes	\$0.4400/lb, Aquadene SK 7661	No	N/A	N/A	N/A
Hawkins [NSWC]	mini bulk	Yes	\$0.4400/lb (\$5.060/gal) LPC-132	No	N/A	N/A	N/A

Polymer (Flocculation Aid)

Unit: Drums

Vendor	Quantity	Firm Price	Price	Surcharges / Fees	Firm Surcharges / Fees	Surcharges / Fees	Deposits
Hawkins [NSWC]	450 lb drum	Yes	\$0.6500/lb, Aqua Hawk 6527	No	N/A	N/A	N/A
Nalco [NSWC]	55 gal drum	Yes	\$0.760/lb, CatFloc 8103 PLUS	No	N/A	N/A	N/A

Polymer (Mussel Control)

Unit: Drums

Vendor	Quantity	Firm Price	Price	Surcharges / Fees	Firm Surcharges / Fees	Surcharges / Fees	Deposits
Nalco	55 gal drum	Yes	\$1.11/lb, Veligon TL-M	No	N/A	N/A	N/A

North Shore Water Commission
Comparison of Chemical Quotations - Amended

December 8, 2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Increase / Unit	% Incr (Dec.)
Aqua Ammonia (\$/lb)	N/A	0.295	0.23	0.20	0.23	0.23	0.25	0.25	0.25	0.24	-0.010	-4.0%
Sodium Hypochlorite (\$/gal)	0.74	1.23	0.61	0.625	0.7168	0.715	0.729	0.729	0.699	0.694	-0.005	-0.7%
Hydrofluorosilic Acid (\$/lb)	0.256	0.32	0.36	0.3475	0.3475	0.337	0.2695	0.234	0.229	0.210	-0.019	-8.3%
Aluminum Sulfate (\$/dry ton)	243	476	476	480	480	480	480	480	343	275	-68.000	-19.8%
Potassium Permanagate (\$/lb)	2.3	3.45	2.5	N/A	N/A	N/A	N/A	NA	NA	NA	NA	NA
Phosphate (\$/month) & (\$/gal)	665 \$/month	1460 \$/month	6.22	6.66	6.93	6.93	6.0804	5.4	5.4	5.06	-0.340	-6.3%
Polymer - Floc. Aid (\$/lb)	0.79	0.86	0.86	0.85	0.875	0.92	0.78	0.78	0.76	0.650	-0.110	-14.5%
Polymer - Mussel Control (\$/lb) New 1/1/2012	N/A	N/A	N/A	N/A	1.11	1.11	1.11	1.11	1.11	1.110	0.000	0.0%



December 02, 2016

SUBJECT: Lead and Copper Rule Implementation at Community Public Water Systems

Dear Community Public Water System Official:

This letter is being sent to all Community Public Water System (System) officials clarifying the requirements of the Lead and Copper Rule (LCR) and providing updated U.S. EPA implementation recommendations. Recent events indicate that federal regulations do not adequately reduce the risk of lead exposure from drinking water and may result in health consequences due to elevated blood lead levels. The Centers for Disease Control and Prevention (CDC) is clear that all exposures to lead should be minimized¹.

The Department of Natural Resources (department) is responsible for ensuring compliance with the LCR. The department recommends that System officials go beyond LCR requirements to educate consumers about the danger of lead in drinking water and take additional actions to further reduce lead exposure through drinking water. Specifically:

1. *Assure your system is meeting and implementing all LCR requirements and associated U.S. EPA guidance² and protocols.*
 - a. Required actions:
 - i. Review the System's lead and copper monitoring site plan to ensure that sampling sites are appropriate and meet the required Tier criteria prior to future compliance sampling events (NR 809.547(1), Wis. Adm. Code).
 - ii. If optimizing corrosion control utilizing chemical addition, review and ensure the treatment strategy efficacy³ (NR 809.543(8), Wis. Adm. Code).
 - iii. Contact the department prior to any implementation of source water or water treatment changes; potential effects on water chemistry must be thoroughly examined³ (NR 809.542(1), Wis. Adm. Code).
 - b. Additional recommended actions:
 - i. Incorporate updated sampling instructions into future sampling events⁴.
 - ii. Review and update the System's distribution system materials inventory. Include all public and privately owned water piping materials, specifically any lead components².
 - iii. Avoid partial lead service line replacement (PLSLR) and proactively engage in a lead

¹ Center for Disease Control (CDC) information on lead and drinking water. <https://www.cdc.gov/nceh/lead/leadinwater/>

² Joel Beauvais, Office of Water, U.S. EPA, Letter sent to Commissioners, February 29, 2016. <https://www.epa.gov/sites/production/files/2016-03/documents/samplelettercommissionersfeb2016.pdf>

³ Peter C. Grevatt, Office of Ground Water & Drinking Water, U.S. EPA; Lead and Copper Rule Requirements for Optimal Corrosion Control Treatment for Large Drinking Water Systems Memorandum, November 03, 2015. <https://www.epa.gov/dwreginfo/memo-addressing-lead-and-copper-rule-requirements-optimal-corrosion-control-treatment>

⁴ Peter C. Grevatt, Office of Ground Water & Drinking Water, U.S. EPA, Clarification of Recommended Tap Sampling Procedures for Purposes of the Lead and Copper Rule Memorandum, February 29, 2016. <https://www.epa.gov/dwreginfo/memo-clarifying-recommended-tap-sampling-procedures-lead-and-copper-rule>

service line replacement program. PLSLRs have not been shown to reliably reduce drinking water lead levels in the short-term and are frequently associated with elevated lead levels for some period of time after replacement⁵.

2. *Proactively provide monitoring results and public educational information directly to all residents as soon as possible. Increase transparency and assistance to the public.*

c. Required actions:

- i. Systems must provide notice of test results to consumers at residences in which samples were taken as soon as practical, but no later than 30 days after receiving the test results (NR 809.546(4), Wis. Adm. Code).
- ii. Systems must distribute public education materials to all bill paying customers when lead monitoring results exceed an Action Level (NR 809.546(2), Wis. Adm. Code).

d. Recommended actions:

- i. Provide notice of test results and public educational materials directly to consumers at residences in which sample results exceeded 15 parts per billion (ppb); results must be provided within 24 hours of receiving test results (DNR recommendation).
- ii. Work with your local health department when an individual's home monitoring result is above 15 ppb or you have a community action level exceedance (DNR recommendation).
- iii. Demonstrate transparency in lead monitoring by making materials available within your community including sampling results, educational materials, and locations of lead service lines. If possible post this information on a website².
- iv. Distribute additional information regarding ways to protect consumers from exposure to lead in drinking water (including information on testing options) to vulnerable populations⁵.

For more information please visit our webpage on lead and drinking water at <http://dnr.wi.gov/topic/drinkingwater/lead.html>.

The department will continue to work in partnership with you to address the risks of lead in drinking water. Thank you for your cooperation in implementing these actions. Progress on protecting consumers from exposure to lead in drinking water will be discussed at your next sanitary survey inspection. For additional details regarding the above items, please see the attached frequently asked questions (FAQ) document. Please contact your local DNR Representative if you have any questions.

Sincerely,



Steven B. Elmore
Director, Bureau of Drinking Water and Groundwater

cc: Water System Operators on File (by email)

enclosure: FAQ – Lead and Copper Rule letter

⁵ Report of the Lead and Copper Rule Working Group to the National Drinking Water Advisory Council, August 24, 2015. <https://www.epa.gov/sites/production/files/2016-01/documents/ndwaclcrwgfinalreportaug2015.pdf>

Frequently Asked Questions (FAQ) Lead and Copper Rule Letter

1. *Why are Community Water Systems being asked by the Department to go beyond the Lead and Copper Rule (LCR) requirements?*

Recent events and research suggests that the LCR does not adequately protect consumers from exposure to lead in public drinking water. According to The Center for Disease Control (CDC), exposure to lead can cause behavior problems and learning disabilities in young children, and can also affect the health of adults. US EPA issued three communications to states regarding measures that Community Water Systems should take in order to reduce the risk of lead exposure. We expect many of the recommendations in this letter will become part of the US EPA proposed rule revisions to the LCR in 2017. These recommendations will likely become requirements sometime after year 2020. .

2. *Why are community water systems being asked to inventory all lead components of their distribution system?*

The LCR requires systems to identify residences with lead service lines and copper plumbing with leaded solder in order to aid in establishing appropriate monitoring sites. Historically, once a System identified an adequate number of monitoring sites, Systems would stop looking for lead distribution system components, and a comprehensive inventory of the entire distribution system remained incomplete. As a result, many Systems are not aware of lead service lines and other lead components in their community that may contribute to lead exposure.

3. *Do Community Water Systems have to sample for lead at the same monitoring sites in each monitoring period?*

Yes. The Department has been working with municipal water systems to verify that sites chosen for LCR monitoring fit within the tiered criteria required for lead sampling . The Department will continue this work with all Community Water Systems during sanitary surveys to verify that sites representative of the tiered site selection criteria are being used. These must be used for LCR sampling during each monitoring period. The Department is working towards developing a program within its data system that will reject samples that are not part of an approved LCR Monitoring Site Plan.

- a. *If a residence has a lead service line replaced, should I have it removed from my Monitoring Site Plan?*

Yes. If a residence does not have a lead service line or copper plumbing with leaded solder, it should be removed from the Monitoring Site Plan and a new monitoring site meeting the Tier 1 criteria should be selected.

- b. *If a home used as a LCR monitoring site is sold, does the home have to stay on the Monitoring Site Plan?*

Frequently Asked Questions (FAQ) Lead and Copper Rule Letter

Yes. Systems may want to review the LCR sampling instructions and requirements with the new homeowner to make sure they are willing and able to complete sampling procedures.. If sampling cannot be continued at a site within a System's designated Monitoring Site Plan , a new monitoring site meeting the Tier 1 criteria must be selected and changes communicated to your local DNR representative.

4. *What specific instructions should Community Water Systems give their customers that are being asked to monitor for lead and copper at their homes as a part of LCR compliance monitoring?*

US EPA issued a memo clarifying proper sampling procedures on February 29, 2016. Language from this memo should be included with monitoring instructions given to customers who perform sampling on the Sytem's behalf. DNR also includes a copy of monitoring instructions in each System's final Monitoring Schedule mailed every January; these instructions can be copied and distributed to customers performing sampling.

<https://www.epa.gov/dwreginfo/memo-clarifying-recommended-tap-sampling-procedures-lead-and-copper-rule>

5. *Why should Partial Lead Service Line replacement be avoided? How can Systems work with customers to encourage the replacement of the private portion of lead service lines?*

Studies have shown that lead levels increase in drinking water in homes where Partial Lead Service Line replacement has been done. Some communities have implemented ordinances that require homeowners to replace their portion of the line when the system replaces the utility portion. Other communities have worked to identify other funding sources within their communities to assist with the replacement of the private portion of the line. Currently, there are funds available from the DNR to replace the private portion of the lead service line.

<http://dnr.wi.gov/Aid/documents/EIF/leadServiceLineFunding.html>

The American Waterworks Association has a guide available to help communicate with homeowners regarding lead service line replacement:

<http://www.awwa.org/portals/0/files/resources/publicaffairs/pdfs/finaleadservicelinecommguide.pdf>.

6. *Our system is adding orthophosphate for corrosion control; therefore, I do not need to worry about lead in our drinking water, correct?*

Orthophosphate is one way to limit the corrosion of lead distribution system materials. The specific chemical used and the feed rate should be reviewed periodically to ensure corrosion control is being optimized. The Department must be notified of any treatment changes that will effect water quality, per s. NR 810.20. New research shows that orthophosphate addition reduces the risk of exposure to lead in drinking water, but in order to completely eliminate the risk, lead service lines and other lead components must be removed.

Frequently Asked Questions (FAQ) Lead and Copper Rule Letter

- 7. Delivering monitoring results within 24 hours to customers who are a sampling site for LCR monitoring will be difficult if results come in on a Friday. Can we get this done in one business day instead?*

The Department encourages Systems to deliver the results to the effected customers within 24 hours. In the rare case that results are received from the lab on a Friday, the utility can decide whether it is possible or practical to get the results out by Saturday or wait until Monday.

**NORTH SHORE WATER COMMISSION
2018 - 2022 PROPOSED CAPITAL IMPROVEMENT PLAN**

(Staffing Level of 7 Employees: 1 Manager, 1 Foreman, 1 Technician Mechanic, 3 Op/Techs, 1 Relief Op/Tech)
December 13, 2016

2018 - Capital Improvement Plan **\$100,000**

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

2019 - Capital Improvement Plan **\$102,000**

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

IT Improvements (2019-2)	PCT	COST
Self-performed Labor	11%	\$2,000
Contracted Services	0%	\$0
Direct Purchase of Materials and Equipment	78%	\$14,000
Engineering	0%	\$0
Contingency	11%	\$2,000
		\$18,000

2020 - Capital Improvement Plan **\$136,000**

Filter Improvements (2020-1)	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 (2020-1)	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

2021 - Capital Improvement Plan **\$110,000**

Flat Roof Replacement (2021-1)	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

2022 - Capital Improvement Plan	\$1,300,000
--	--------------------

Reservoir Improvements - Major Construction (2022-1)	PCT	COST
Self-performed Labor	0%	\$0
Contracted Services	62%	\$800,000
Direct Purchase of Materials and Equipment	0%	\$0
Engineering	12%	\$150,000
Contingency	27%	\$350,000
		\$1,300,000

TOTAL EXPENDITURES	\$1,748,000
NUMBER OF YEARS	5
AVERAGE ANNUAL EXPENDITURES	\$349,600

North Shore Water Commission Strategy for Funding Capital Improvements

Eric Kiefer

December 12, 2016

Introduction

The North Shore Water Commission (Commission) operates and maintains the raw water intake, Klode Park pumping station, raw water transmission main, and Bender water filtration plant. While it does not own any of the infrastructure, plant staff makes recommendations to its members, via the Commission, for necessary capital improvements so the Commission can provide high quality drinking water that meets state and federal requirements.

Over the past several years, plant staff proposed capital improvements based on the assumption that the annual capital improvement budget will be set at or near \$200,000. Consequently, large projects have been split over multiple years to meet that expectation.

While this system worked well for recent projects, it does not work for several anticipated projects. In particular, it will not work well for the upcoming project to repair the southeast (SE) and southwest (SW) reservoirs and abandonment of the northeast (NE) and northwest (NW) reservoirs.

To properly address this problem while minimizing the financial burden on our members, it is my recommendation that the Commission change its strategy for funding capital improvements. I propose that member utilities contribute a fixed annual amount to the Maintenance Reserve Fund and allow the Commission to pay for said projects directly from this fund. By choosing to perform small projects over several years, the Commission can accumulate funds needed for large projects scheduled for the future.

Maintenance Reserve Fund

As it has been the case for many years, the Commission uses two (2) funds in its accounting system: the General Fund and the Maintenance Reserve Fund.

Under the current process, plant staff makes capital expenditures and reports them to the Commission at the next meeting; the Commission approves payment requests and each member pays their share. All of that activity occurs in the Maintenance Reserve Fund.

While the Founding Agreement does not mention the Maintenance Reserve Fund, it is understood that it has been established to act as an emergency fund. Article 6.08 states the purpose of the emergency fund is for, "paying the cost of any unusual or extraordinary maintenance, repairs, or replacements not recurring annually and caused by some extraordinary occurrence."

The Founding Agreement does not have any language for how to fund *routine* capital expenditures. Instead, it only deals with additions and replacements that are likely to be encountered infrequently. In fact, the Commission is currently using language in Article 8.09 entitled, "Expansion to 1985 Capacity," to handle all planned capital improvements.

Upcoming Capital Improvements

Over the next 20 years, I foresee a number of large projects that exceed the normal \$200,000 annual capital improvement budget. Some of them can be spread out over a number of years while others cannot. Below are a few examples.

Filter Improvements

As reported in the Unattended Water Treatment Facility Operations Evaluation by Clark Dietz and a number of Manager's Reports, the filter valve actuators need to be replaced. Valves do not operate correctly causing inefficiencies in operations and frequently intervention by operators. Replacement of filter actuators and pressure transducers will require approximately \$800,000. This project can be split over a number of years as shown in the proposed 2018 - 2037 capital improvement plan.

Reservoir Improvements

As recently reported, leaks have been discovered in 2 reservoirs. Consequently, the NE and NW reservoirs are planned to be abandoned. The SE and SW reservoirs require repairs and improvements to meet current regulatory code. Estimated to be \$1,300,000, this project cannot be spread over multiple years efficiently.

Basin Improvements

Despite staff's best efforts to keep them in good condition, all 5 basins require massive repairs. Equipment such as steel shafts, sprockets, gears, and chains are breaking faster than we can repair. For the first time in 2016, plant staff was unable to keep up with all of the repairs. Plant staff estimates repairs to cost \$1,150,000. Unlike the reservoirs, plant staff believes said repairs can be spread over 5 years.

UV Reactors

Our UV Reactors, installed in 2006, were designed to last 20 years. We should plan to replace the reactors, electrical equipment, controls, and other associated equipment within the next 20 years. At this point in time, plant staff estimates it will cost \$1,110,000. This includes anticipated improvements to allow for the Commission to receive cryptosporidium inactivation credit by the Wisconsin Department of Natural Resources. Staff operates the UV equipment in a manner that

should provide cryptosporidium inactivation, but cannot officially receive that recognition until other improvements are made. This project cannot be spread over multiple years.

A New Strategy for Funding Capital Improvements

I recommend that the Commission consider a new strategy for funding capital improvements. Instead of budgeting for anticipated capital improvements in a single year, I propose that the Commission request a fixed annual amount from each community to be deposited in the Maintenance Reserve Fund. The Commission can select projects over a course of time that will allow for the accumulation of necessary funds. Large projects can be funded directly from the Maintenance Reserve Fund without causing an unexpected financial burden on member utilities.

In the proposed capital improvement plan (2018 - 2037), I recommend that members pay the Commission \$300,000 annually to fund \$6,000,000 in improvements over the next 20 years. This will allow the Commission to appropriately plan for future projects that exceed the typical annual capital improvement budget.

Recommended Course of Action

With large capital expenditures on the horizon, I strongly suggest that the Commission consider this new approach as soon as possible and take the following steps.

Step 1: Discuss with Member Utilities

This concept should be discussed with each member municipality. If all 3 members agree, the matter should be taken back to the Commission for further action.

Step 2: Legal Review

Considering restrictions on the "emergency fund," it is likely that the Founding Agreement will need to be amended. Legal services should be retained to investigate if it is necessary to amend the agreement and to provide any necessary assistance during the amendment process.

Step 3: Engineering Review

Engineering services should be retained to review and possibly adjust the 2018 - 2037 capital improvement plan prepared by plant staff.

Step 4: Budget

Implement changes so that the 2018 Capital Improvement Budget uses the new strategy.

**NORTH SHORE WATER COMMISSION
2018 - 2037 PROPOSED CAPITAL IMPROVEMENT PLAN**

(Staffing Level of 7 Employees: 1 Manager, 1 Foreman, 1 Technician Mechanic, 3 Op/Techs, 1 Relief Op/Tech)
December 12, 2016

MAINTENANCE RESERVE ENDING BALANCE 2017 (ESTIMATED) \$700,000

2018 - TOTAL CONTRIBUTION FROM MEMBERS \$300,000

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

EXPENDITURES \$100,000
NET ADDITION (LOSS) \$200,000

MAINTENANCE RESERVE ENDING BALANCE 2018 (ESTIMATED) \$900,000

2019 - TOTAL CONTRIBUTION FROM MEMBERS \$300,000

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

IT Improvements (2019-2)	PCT	COST
Self-performed Labor	11%	\$2,000
Contracted Services	0%	\$0
Direct Purchase of Materials and Equipment	78%	\$14,000
Engineering	0%	\$0
Contingency	11%	\$2,000
		\$18,000

EXPENDITURES \$102,000
NET ADDITION (LOSS) \$198,000

MAINTENANCE RESERVE ENDING BALANCE 2019 (ESTIMATED) \$1,098,000

2020 - TOTAL CONTRIBUTION FROM MEMBERS \$300,000

Filter Improvements (2020-1)	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 (2020-1)	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
EXPENDITURES	\$136,000
NET ADDITION (LOSS)	\$164,000
MAINTENANCE RESERVE ENDING BALANCE 2020 (ESTIMATED)	\$1,262,000

2021 - TOTAL CONTRIBUTION FROM MEMBERS	\$300,000
---	------------------

Flat Roof Replacement (2021-1)	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

EXPENDITURES	\$110,000
NET ADDITION (LOSS)	\$190,000

MAINTENANCE RESERVE ENDING BALANCE 2021 (ESTIMATED)	\$1,452,000
--	--------------------

2022 - TOTAL CONTRIBUTION FROM MEMBERS	\$300,000
---	------------------

Reservoir Improvements - Major Construction (2022-1)	PCT	COST
Self-performed Labor	0%	\$0
Contracted Services	62%	\$800,000
Direct Purchase of Materials and Equipment	0%	\$0
Engineering	12%	\$150,000
Contingency	27%	\$350,000
		\$1,300,000

EXPENDITURES	\$1,300,000
NET ADDITION (LOSS)	-\$1,000,000

MAINTENANCE RESERVE ENDING BALANCE 2022 (ESTIMATED)	\$452,000
--	------------------

2023 - TOTAL CONTRIBUTION FROM MEMBERS	\$300,000
---	------------------

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
EXPENDITURES		\$216,000
NET ADDITION (LOSS)		\$84,000
MAINTENANCE RESERVE ENDING BALANCE 2023 (ESTIMATED)		\$536,000
2024 - TOTAL CONTRIBUTION FROM MEMBERS		\$300,000
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
EXPENDITURES		\$110,000
NET ADDITION (LOSS)		\$190,000
MAINTENANCE RESERVE ENDING BALANCE 2024 (ESTIMATED)		\$726,000
2025 - TOTAL CONTRIBUTION FROM MEMBERS		\$300,000
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
EXPENDITURES		\$100,000
NET ADDITION (LOSS)		\$200,000
MAINTENANCE RESERVE ENDING BALANCE 2025 (ESTIMATED)		\$926,000
2026 - TOTAL CONTRIBUTION FROM MEMBERS		\$300,000
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
EXPENDITURES		\$280,000
NET ADDITION (LOSS)		\$20,000
MAINTENANCE RESERVE ENDING BALANCE 2026 (ESTIMATED)		\$946,000
2027 - TOTAL CONTRIBUTION FROM MEMBERS		\$300,000

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

EXPENDITURES \$280,000
NET ADDITION (LOSS) \$20,000

MAINTENANCE RESERVE ENDING BALANCE 2027 (ESTIMATED) \$966,000

2028 - TOTAL CONTRIBUTION FROM MEMBERS \$300,000

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

EXPENDITURES \$280,000
NET ADDITION (LOSS) \$20,000

MAINTENANCE RESERVE ENDING BALANCE 2028 (ESTIMATED) \$986,000

2029 - TOTAL CONTRIBUTION FROM MEMBERS \$300,000

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	
EXPENDITURES	\$280,000	
NET ADDITION (LOSS)	\$20,000	
MAINTENANCE RESERVE ENDING BALANCE 2029 (ESTIMATED)		\$1,006,000

2030 - TOTAL CONTRIBUTION FROM MEMBERS	\$300,000
---	------------------

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

EXPENDITURES	\$280,000
NET ADDITION (LOSS)	\$20,000

MAINTENANCE RESERVE ENDING BALANCE 2030 (ESTIMATED)	\$1,026,000
--	--------------------

2031 - TOTAL CONTRIBUTION FROM MEMBERS	\$300,000
---	------------------

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

EXPENDITURES	\$330,000
NET ADDITION (LOSS)	-\$30,000

MAINTENANCE RESERVE ENDING BALANCE 2031 (ESTIMATED)	\$996,000
--	------------------

2032 - TOTAL CONTRIBUTION FROM MEMBERS	\$300,000
---	------------------

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
EXPENDITURES		\$176,000
NET ADDITION (LOSS)		\$124,000
MAINTENANCE RESERVE ENDING BALANCE 2032 (ESTIMATED)		\$1,120,000
2033 - TOTAL CONTRIBUTION FROM MEMBERS		\$300,000
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
EXPENDITURES		\$100,000
NET ADDITION (LOSS)		\$200,000
MAINTENANCE RESERVE ENDING BALANCE 2033 (ESTIMATED)		\$1,320,000
2034 - TOTAL CONTRIBUTION FROM MEMBERS		\$300,000
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
EXPENDITURES		\$340,000
NET ADDITION (LOSS)		-\$40,000
MAINTENANCE RESERVE ENDING BALANCE 2034 (ESTIMATED)		\$1,280,000
2035 - TOTAL CONTRIBUTION FROM MEMBERS		\$300,000
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
EXPENDITURES			\$1,110,000
NET ADDITION (LOSS)			-\$810,000
MAINTENANCE RESERVE ENDING BALANCE 2035 (ESTIMATED)			\$470,000
2036 - TOTAL CONTRIBUTION FROM MEMBERS			\$300,000
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
EXPENDITURES			\$270,000
NET ADDITION (LOSS)			\$30,000
MAINTENANCE RESERVE ENDING BALANCE 2036 (ESTIMATED)			\$500,000
2037 - TOTAL CONTRIBUTION FROM MEMBERS			\$300,000
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
EXPENDITURES			\$130,000
NET ADDITION (LOSS)			\$170,000
TOTAL PAYMENTS BY MEMBERS			\$6,000,000
NUMBER OF YEARS			20
AVERAGE ANNUAL PAYMENT			\$300,000
TOTAL EXPENDITURES			\$6,030,000
NUMBER OF YEARS			20
AVERAGE ANNUAL EXPENDITURES			\$301,500
MAINTENANCE RESERVE ENDING BALANCE 2037 (ESTIMATED)			\$670,000

North Shore Water Commission Manager's Report of Operations

Period: November 9 - December 13

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.

North Shore Water Commission

Extended Monthly Report (Page 2) November 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	Max
11/1/2016	90.76	56.31	2.18	90.87	56.72	2.62	71.49	66.72	54.54	44.04	40.99	31.56	62.03	54.44	41.31	22.32	16.04	12.09	77.14	58.66	45.90	22.34	16.25	11.52	30	5.07	2.26	-0.11	2.40	0.83	-0.22	1.96	0.84	0.00	1.66	0.59	-0.66	
11/2/2016	85.66	83.39	81.75	86.00	83.81	82.18	71.08	67.37	64.32	46.17	40.96	37.60	63.18	49.16	41.53	22.38	19.43	15.43	64.37	60.93	49.48	16.74	13.88	11.90	2	4.98	3.57	1.77	1.82	1.06	0.37	2.10	1.42	0.96	1.48	1.09	0.08	
11/3/2016	84.58	83.09	81.44	84.88	83.51	82.19	69.30	67.53	64.60	45.47	41.08	37.55	62.07	52.39	41.56	23.13	18.65	13.24	77.09	69.61	61.72	17.27	14.76	12.45	23	4.86	2.99	1.15	1.80	0.83	0.28	1.81	1.33	0.66	1.55	0.83	-0.17	
11/4/2016	84.34	83.09	81.68	84.62	83.51	82.23	69.19	67.34	64.08	44.53	41.70	39.11	62.21	52.42	41.68	22.56	17.76	13.07	77.09	68.09	57.56	17.61	15.18	12.85	27	4.42	2.96	1.89	1.73	0.88	0.42	1.88	1.24	0.64	1.49	0.84	0.00	
11/5/2016	84.36	83.15	81.75	84.66	83.56	82.34	69.11	67.25	64.72	42.89	41.38	38.05	62.09	53.26	41.95	23.01	18.57	13.83	77.06	67.81	59.80	17.99	15.57	13.29	19	4.39	3.07	1.98	1.58	0.96	0.45	1.92	1.29	0.95	1.59	0.81	0.06	
11/6/2016	84.75	83.09	81.41	85.40	83.51	82.04	69.78	67.18	66.01	44.71	41.76	38.45	62.32	52.40	41.52	23.03	22.09	16.93	77.04	68.63	55.17	18.05	15.64	13.38	5	4.78	3.26	1.31	1.51	1.15	0.51	1.95	1.23	0.52	1.69	0.88	0.00	
11/7/2016	84.34	83.04	81.51	84.66	83.46	82.03	69.11	67.90	65.16	43.88	40.63	37.42	62.17	52.36	41.67	23.00	19.55	13.90	75.78	68.95	59.34	18.43	16.00	13.64	17	5.05	3.08	1.53	1.82	0.78	0.44	1.96	1.44	0.82	1.70	0.87	-0.13	
11/8/2016	84.46	83.10	81.36	84.73	83.51	81.11	69.37	67.17	61.94	43.74	41.63	39.27	62.19	52.32	41.90	23.05	17.85	12.82	77.03	70.55	62.52	18.85	16.37	14.06	21	5.06	3.01	1.44	2.14	0.91	0.40	2.06	1.27	0.49	1.53	0.83	-0.13	
11/9/2016	84.39	83.01	80.19	84.87	83.42	80.53	69.23	67.10	60.16	43.57	41.44	37.90	62.08	52.20	41.32	23.06	18.12	13.03	72.76	67.31	60.34	19.23	16.76	14.48	14	5.67	3.11	1.62	2.23	0.92	0.43	2.04	1.31	0.85	1.81	0.87	0.00	
11/10/2016	84.48	83.09	81.27	84.77	83.49	81.88	70.09	67.15	61.40	44.22	40.89	38.92	62.24	51.48	41.08	23.08	17.76	12.40	71.54	68.71	62.29	23.20	21.33	18.98	3	5.07	3.54	1.75	2.20	0.98	0.39	2.14	1.47	0.96	1.76	1.09	0.12	
11/11/2016	84.48	83.11	80.93	84.67	83.52	81.47	69.35	67.34	63.29	44.78	41.53	39.06	62.24	52.72	41.80	22.85	17.83	12.95	77.11	71.40	66.62	23.19	20.86	18.51	20	4.89	3.04	1.63	1.76	0.91	0.31	2.30	1.31	0.51	1.84	0.83	-0.11	
11/12/2016	84.39	83.08	81.70	84.69	83.49	82.28	69.13	67.28	64.63	44.35	41.75	38.50	62.17	52.93	41.97	23.02	18.12	13.13	77.11	71.32	63.23	23.16	20.94	18.64	25	4.23	2.97	1.03	1.63	0.92	0.29	1.96	1.24	0.62	1.59	0.82	-0.11	
11/13/2016	84.31	83.09	81.75	84.61	83.49	82.27	69.03	67.18	64.58	42.89	41.66	38.50	62.18	52.84	41.79	23.11	18.39	13.37	76.69	68.10	57.83	23.19	20.91	18.63	12	4.54	3.13	1.36	1.88	0.97	0.38	2.02	1.31	0.91	1.66	0.85	-0.11	
11/14/2016	84.46	83.11	81.48	84.72	83.53	81.98	69.28	67.09	64.54	43.65	41.28	38.21	62.10	53.05	40.56	23.01	18.75	15.35	72.88	64.04	55.80	23.19	21.01	18.72	8	4.61	3.30	1.60	1.80	1.03	0.48	2.02	1.39	0.83	1.75	0.88	0.00	
11/15/2016	84.48	83.08	81.39	85.00	83.50	81.80	69.30	67.31	64.83	45.07	41.03	37.65	62.24	53.50	41.82	23.02	19.47	14.99	73.42	67.17	59.23	23.15	20.99	18.70	10	4.55	3.18	1.50	1.82	0.95	0.36	1.89	1.37	0.85	1.82	0.86	-0.12	
11/16/2016	84.48	83.10	81.03	84.66	83.51	81.33	69.49	67.51	64.81	43.77	41.34	38.15	62.21	53.00	41.28	23.05	18.34	12.81	77.12	68.32	57.15	23.18	20.99	18.72	13	4.91	3.11	1.03	1.69	0.88	0.39	2.23	1.34	0.62	1.76	0.88	-0.08	
11/17/2016	84.48	83.09	81.32	84.75	83.51	81.55	69.32	67.34	64.78	44.69	41.42	37.91	62.07	53.02	41.71	21.93	17.10	11.93	74.56	64.75	54.03	23.19	21.02	18.76	15	4.28	3.10	1.60	1.71	0.93	0.31	1.97	1.34	0.56	1.52	0.84	0.04	
11/18/2016	85.90	83.25	80.33	86.28	83.66	79.63	70.08	67.34	62.62	49.79	40.36	21.96	63.29	54.37	41.66	21.81	17.02	12.01	59.49	49.23	20.70	22.66	20.55	18.61	4	5.14	3.47	1.37	1.88	0.99	0.46	2.41	1.57	0.65	2.62	0.91	-0.12	
11/19/2016	84.41	83.06	79.69	84.79	83.49	80.22	69.17	67.13	64.55	45.59	41.24	37.64	62.29	52.27	41.64	22.98	18.13	13.75	77.11	67.97	58.03	22.73	20.16	17.81	7	5.08	3.35	2.09	1.80	1.02	0.47	2.33	1.44	0.71	1.59	0.88	0.10	
11/20/2016	84.84	83.05	81.51	85.03	83.49	82.27	69.23	67.25	64.58	45.00	41.38	37.67	62.19	52.33	41.98	23.09	18.61	13.67	77.17	69.97	61.92	23.19	20.66	18.33	11	4.98	3.16	0.75	1.78	0.97	0.25	1.80	1.31	0.51	1.66	0.88	-0.19	
11/21/2016	84.24	83.01	81.29	84.70	83.51	82.07	69.38	67.32	64.56	44.21	41.54	38.07	62.17	53.07	42.07	22.96	17.88	12.47	77.17	69.25	59.25	23.18	21.04	18.74	18	4.74	3.06	1.47	1.80	0.90	0.37	1.91	1.31	0.53	1.49	0.85	-0.06	
11/22/2016	84.27	82.99	81.46	84.68	83.49	82.06	69.34	67.29	64.67	44.96	41.39	38.15	62.21	52.77	42.01	21.59	16.64	11.93	77.11	67.77	57.85	23.18	20.89	18.56	15	4.74	3.10	1.45	1.79	0.92	0.32	1.88	1.32	0.70	1.65	0.86	0.06	
11/23/2016	84.46	82.99	81.58	85.04	83.51	82.14	70.09	67.21	64.48	45.00	41.29	38.16	62.13	52.88	41.65	21.18	16.47	12.19	77.07	66.93	57.31	23.18	20.95	18.63	9	4.56	3.20	1.38	1.72	0.96	0.49	1.90	1.37	0.75	1.52	0.87	0.00	
11/24/2016	85.03	83.03	81.63	85.41	83.56	82.28	69.81	67.25	63.86	45.41	41.61	37.24	62.88	52.88	42.07	21.80	16.83	12.27	77.12	68.41	60.35	23.18	20.93	18.66	28	4.69	2.91	0.58	1.68	0.89	0.00	1.81	1.18	0.44	1.83	0.84	-0.22	
11/25/2016	84.27	83.01	81.58	84.57	83.53	82.28	69.07	67.32	64.71	44.51	41.95	38.89	62.20	52.93	40.88	21.67	17.04	12.22	77.04	67.48	57.28	23.18	20.93	18.61	29	4.02	2.75	0.79	1.57	0.83	0.23	1.64	1.14	0.46	1.60	0.78	-0.07	
11/26/2016	84.43	82.96	81.56	84.76	83.48	82.17	71.11	67.14	64.90	44.58	41.68	39.18	62.08	52.84	41.03	23.08	17.91	13.49	77.09	67.50	58.88	23.18	20.93	18.60	26	4.44	2.96	1.71	1.76	0.92	0.25	1.79	1.21	0.77	1.71	0.83	0.06	
11/27/2016	84.19	82.96	81.68	84.58	83.48	82.29	69.06	67.36	65.15	44.10	41.80	39.26	62.21	52.71	41.93	23.02	18.33	13.49	77.08	67.83	58.43	23.22	20.91	18.57	23	4.07	2.99	1.96	1.63	0.91	0.35	1.68	1.21	0.81	1.65	0.86	-0.06	
11/28/2016	84.34	82.95	81.29	84.73	83.49	82.25	69.37	67.24	63.97	43.73	41.57	37.27	62.17	52.86	41.37	23.07	17.96	12.75	75.24	64.80	53.23	23.20	20.95	18.64	22	4.65	3.00	1.69	1.79	0.89	0.24	1.90	1.28	0.78	1.49	0.83	0.00	
11/29/2016	84.82	82.69	76.98	85.22	83.23	77.61	69.63	67.05	61.80	44.43	40.97	34.58	61.99	52.78	41.10	22.52	16.69	10.10	76.59	62.75	46.96	23.18	20.98	18.70	6	6.30	3.35	2.07	1.95	0.92	0.11	3.16	1.54	0.90	1.92	0.89	0.07	
11/30/2016	85.39	83.07	81.13	85.89	83.60	82.03	69.44	66.89	63.60	45.24	40.27	36.07	63.02	53.19	41.00	21.48	17.11	13.17	63.25	57.98	49.36	23.22	21.06	18.74	1	5.11	3.66	2.27	2.01	1.10	0.43	2.33	1.63	1.18	1.97	0.93	0.16	
MAX	90.76	83.39	81.75	90.87	83.81	82.34	71.49	67.90	66.01	49.79	41.95	39.27	63.29	54.44	42.07	23.13	22.09	16.93	77.17	71.40	66.62	23.22	21.33	18.98		6.303	3.66	2.27	2.40	1.15	0.51	3.157	1.627	1.18	2.618	1.091	0.16	
AVE	84.79	82.17	78.53	85.14	82.62	79.04	69.58	67.25	63.73	44.63	41.32	37.26	62.29	52.71	41.56	22.63</																						

NORTH SHORE WATER COMMISSION
 WHOLESALE WATER SALES
 FOR YEAR: 2016

WHOLESALE INCOME BY COMPONENT
 (Top: JAN-MAR, Bottom: APR-DEC)

FACILITIES CHARGE

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	FOR 2015 FACILITIES UPKEEP					AMOUNT BILLED
								DISTRIBUTION OF CONVEYANCE CHARGE			\$500 / yr	NSWC REVENUE	
								FOX PT: 0.60	GLEN: 0.20	WFB: 0.20			
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		\$0.000	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTALS		80,316		\$170,372.44	\$65,285.03	\$73,764.16	\$31,323.23	\$18,793.93	\$6,264.65	\$6,264.65	\$500.00	\$139,549.22	\$170,872.45