

AGENDA 7a3
DATE 10-2-2018

DEPARTMENT OF PUBLIC WORKS

CITY OF NORTON SHORES



FISCAL YEAR END REPORT – 2018
July 2017 – June 2018

The Department of Public Works respectfully submits this report to the City Council as an overall review of various activities handled by the Department during FY-2018 under the direction of Gerald A. Bartoszek. Administrative Assistant, Sarah Romine, is responsible for initial customer assistance and all department clerical duties.

The report will highlight activities deemed significant to the function of the Department and its role within the City organization. The report also recognizes the superintendents and supervisors within the Department and includes Supplemental Reports for each Division within the Department.

During FY-2018 the Public Works Department responded to 180 after hour calls/emergency calls and business hour calls; primarily consisting of 108 sewer lift station calls, followed by 35 water main and water and sewer service calls. Other calls included 23 in the street system, 13 Emergency Miss Dig requests, and one miscellaneous call.

The Public Works Department is comprised of the following Divisions:

WATER & SEWER

Personnel - Matthew Anderson, Superintendent
Scott Houghtaling, Supervisor
Tara Smith, Administrative Assistant
Nine Utility Workers

The Water & Sewer Division of the Department of Public Works has been in existence prior to the founding of the City. The Division is responsible for the operation and maintenance of the water distribution system and the sewage collection system, as well as utility billing. This report will relate to activities conducted by the Water & Sewer Division, including field operations and office functions. Matthew Anderson serves as Water & Sewer Superintendent for the Division; Scott Houghtaling is the Water & Sewer Supervisor. Administrative Assistant, Tara Smith, is responsible for water and sewer billing, scheduling appointments, and all other clerical activities in the Division.

STREETS AND DRAINAGE

Personnel - Bryan DeGroot, Superintendent
Gordie Anderson, Supervisor
Donna Holmberg, Administrative Assistant
Kim Simonelli, Part Time Clerical
Nine Streets and Drainage Maintenance Workers

Activities handled by this Division provide for the maintenance of streets and drains within the jurisdiction of the City. Specific areas of responsibility include street surfaces, roadside areas, bridges, traffic signs, and traffic signal maintenance. In addition, the drainage system involves storm sewer, sub-drain and off-road outlet maintenance.

EQUIPMENT SERVICES

Personnel - Bryan DeGroot, Superintendent
Charles Borgman, Chief Mechanic
Two Mechanics

This activity provides for the maintenance of all equipment in the Equipment Fund. City personnel are responsible for preventive maintenance, as well as routine maintenance. Major repair work at times is contracted to specialists. Equipment Services recommends the specifications to be used to purchase new and replacement vehicles and other equipment, as well as preparation of the new equipment for use in the operations. This Division also decommissions the equipment being replaced and conducts the sale of the used equipment.

BUILDINGS AND GROUNDS

Personnel - Scott Ellison, Facilities Supervisor
Two Maintenance Workers

Maintenance and custodial responsibilities in City Hall and at the Library are the primary activity of this Division. Custodial duties of the DPW facility office area are also performed. Building and Grounds personnel also take care of various duties in support of the City Clerk's Office during elections. They maintain the heating and air conditioning systems in City Hall, the Library, and the Public Works facility on Mt. Garfield Road.

Another duty of Building and Grounds personnel is the care and grooming of the cemetery on Airport Road. Grass cutting, leaf removal, and general overall clean up and care to keep the property presentable at all times are primary activities. Additional duties dealing with the cemetery include the sale of grave sites as well as the preparation of graves for burial and the closure and restoration afterwards.

ENGINEERING SERVICES

Personnel - James R. Murphy, City Engineer

The City Engineer coordinates and oversees the development and construction of all of the City's major infrastructure improvements. Engineering Services provides the capability to respond to capital improvement requirements in our City, covering all aspects of growth in the public streets, drainage, water, and sewer systems. In addition, the division aids in the oversight of traffic signal and traffic control. Engineering Services also works towards the procurement of outside funding resources through grant application submission for public infrastructure projects. The Engineering Division also provides support to the site plan review process required by the Zoning Ordinance for all non-residential projects, subdivisions, and site condominiums.

PLANNING

Personnel - Robert W. Bilkie, City Planner/Zoning Administrator

The City Planner/Zoning Administrator is responsible for ordinance enforcement and site plan approval, as well as communications with the Michigan Department of Environmental Quality related to critical dune issues. He also is staff representative to the Planning Commission and Zoning Board of Appeals.

WATER & SEWER DIVISION FY-2018 REVIEW

The following are activities conducted by the Water & Sewer Division, both in field operations and office functions:

Water Supply

The City purchases its water supply from the West Michigan Regional Water Authority, which in turn purchases water on behalf of the City and Fruitport Charter Township from the City of Muskegon's Water Filtration Plant. Three large high service pumps, several miles of large transmission main, a booster station, and two water towers facilitate the delivery to the City's system.

Water Services

During FY-2018, Water & Sewer crews installed 30 water services ranging in size from 1" to 2". Service installations require the water main in the road right-of-way to be tapped under pressure and a copper service placed to the homeowner's property line, in addition to setting a water meter. Please see Attachment A for installation statistics since 2008. Repairs to 79 existing water services were also completed.

Sewer Connections

The Water & Sewer Supervisor approved the connections of 39 sewer services to the sanitary collection system. Inspections detail approved types of pipe, pipe size, connection fittings, grade, depth and pressure testing.

Water Meter Program

During FY-2018, Water & Sewer personnel also continued the meter change-out program with new meters being set. Throughout the city, a total of 813 residential and/or commercial meters were replaced or set. The City has 9,883 meters in the replacement program and 336 in the testing and repairing program.

Additional meters for irrigation have been set for homeowners and businesses to eliminate sewer charges on irrigation water. A total of 13 additional meters were set in FY-2018.

Water Main Breaks

During FY-2018, crews responded to a total of five water main breaks throughout the distribution system. Repairs were made during regular business hours and as after-hours emergencies, as needed.

Valve Maintenance

Once each year, all 1,457 mainline distribution valves are operated, recorded as being operable or inoperable, and repaired if necessary. The program has eliminated time consuming efforts to isolate portions of the distribution system during water main breaks, thus minimizing disruption of service to residents and businesses. During FY-2018, all of the mainline water main valves were exercised, and repairs to 62 valves were completed.

Large Meter Testing and Replacement

All large (1½" to 6") meters are periodically tested in place for accuracy depending on gallonage used per year, and size and age of the meter. Seven new large meters were set in FY-2018, and crews completed 35 large meter tests. There are a total of 336 large meters in the system.

Meter Reading

The City of Norton Shores' metering structure consists of 10,261 water meters. Meters are read on a quarterly basis, within three billing districts. Each district is read each month for a total of 41,044 readings per year. In addition, a total of 2,604 work orders for final readings, meter leaks, etc., were processed and completed in FY-2018.

Senior Citizen Discount

This program offers a 25% discount off quarterly water usage to eligible senior residents. Eligibility requires the senior resident to own and occupy the residence, be at least 62 years old, and have a total annual household income of less than \$23,341.

Breakdown of senior discounts per billing district:

McCracken	26	Total gallonage 1,476,000
East Broadway	30	Total gallonage 1,627,000
Henry	39	Total gallonage 2,174,000

Lift Station Maintenance

Daily operations include scheduled preventative maintenance on a weekly rotational basis of all 43 sanitary sewer lift stations and one dewatering station. Each station is checked for normal operations weekly which include electrical readings, pump hour readings, and complete assessment for any abnormalities. Semi-annually, all lift station wet wells are cleaned, and sludge is removed by the sewer vector truck. Pumps are then pulled and washed, oil is changed, and tolerances are checked for impeller clearance.

All lift station electrical usage is monitored for performance evaluation and weekly energy usage. See Attachment B.

City of Norton Shores Sewer Lift Stations by Address:

4316 Armstrong Road	2217 Lincoln Park Drive
874 Bradley Avenue	5395 Martin Road
3798 Brentwood Street	2117 Maryland Boulevard
1204 E. Broadway Avenue	3112 McCracken Street
1978 Channel Road	4049 Nob Hill Drive
1130 Edinborough Drive	2218 Norcrest Drive
351 Eric Avenue	2203 Norman Street
1070 Forest Park Road	3746 Norton Hills Drive
1310 Forest Park Road	3571 Peninsula Drive
1616 Forest Park Road	2369 Pleasant Hill
6239 Grand Haven Road	89 Pontaluna Road
6239-1/2 Grand Haven Road*	2195 Reneer Avenue
4341 Hackley Point Lane	4781 Rood Road
4162 Harbor Point Drive	1175 Seminole Road
3180 Henry Street	1797 Seminole Road
4210 Henry Street	2939 Sheffield Street
4993 Henry Street	1411 Sunbury Avenue
701 Lake Forest Drive	3797 Taylor Street
4461 Lake Harbor Road	4171 Treeline Drive
6260 Lake Harbor Road	3006 Valk Street
396 Lakshore Boulevard	418 Wellesley Drive
2830 Lincoln Street	861 Winslow Court

(*dewatering)

Consumer Confidence Reports

The annual drinking water Consumer Confidence Report was prepared and made available to all system customers. The Department of Environmental Quality and the Environmental Protection Agency require this report be made available to all water

customers to provide information as to the quality of water they drink. A copy of this report is attached as Attachment C.

Infrastructure Locating

One of the responsibilities the City has in owning and operating utilities is that of locating water and sewer lines for contractors or homeowners that intend to dig within the city. The City is required to be a member of the Miss Dig System for organizing locating requests. Water & Sewer Division completed 1,759 such requests during the FY-2018.

Mainline Sewer Cleaning

The mainline sewer cleaning program for FY-2018 consisted of cleaning 93,643 ft. of pipe ranging in size from 6" to 36". The sewer vactor truck cleans debris out of the sewer including sand, grease, roots and, occasionally, stones in an effort to eliminate sewage backups in the sewage collection system.

Bacteriological and Lead/Copper Sampling/System Review

This program, done once a week, includes collecting a total of eight water quality samples throughout the water distribution system. Samples are analyzed for chlorine and fluoride residuals and taken to the Muskegon Water Treatment Plant for coliform bacteria testing.

Sampling is also performed on new construction of water mains before they are put into service using the same sampling procedure. Twelve construction samples were taken in FY-2018.

The City has been on a reduced Lead and Copper Sampling schedule since 1996 that required testing every three years. The sampling period was scheduled from June 1, 2017 to September 30, 2017. The sampling period results identified that all of homes had less than the maximum Contaminate Level Goal (MCLG) for copper and 29 of the 30 sites tested below the MCLG for lead. One site tested above the action threshold and assistance was given to the property owner to locate the source of the lead.

Fire Hydrant Maintenance

This program maintains the reliability of fire hydrants throughout the water distribution area. Fire hydrants are operated annually to clean tuberculation from the water mains and to check for proper operation of the hydrants. The hydrants are then repaired, if necessary, and winterized for winter weather. During summer months, hydrants are sand blasted and painted. A total of 1,639 City owned and 59 private hydrants were serviced during FY-2018, and 309 were painted.

Cross Connection Control

This program is continuous throughout the year. It consists of inspecting all non-residential users (i.e., commercial, industrial, churches, schools and government users) connected to a City water supply for the possibility of internal plumbing cross connections. The severity of the cross connection may require backflow devices to protect the City's water distribution system from contamination. Testing of these devices is required annually and/or every three years depending on device type. Re-inspection of high hazard facilities are completed annually and the low hazard facilities every three years. The City has a total of 322 high hazard accounts and 470 low hazard accounts. The MDEQ also monitors this inspection process. See Attachment D.

Sewer Discharge Accountability

This program occurs monthly to monitor all billings from the Muskegon County Wastewater facility. The program is analyzed for extraordinary usages due to ground water infiltration or storm water discharge by City sewer customers. There have been incidents of users illegally discharging storm water to the sanitary sewer, thus raising monthly monitoring gallonage. These illegal connections are promptly removed. See Attachment E.

Water System Accountability

This program is done on a monthly basis to determine annual purchases and sales of water to Norton Shores customers. It also gives an indication of reliability for the water loss survey along with annual usages indicating growth in the community. See Attachments F, G and H.

Lift Station Telemetry

All lift stations are monitored through a telemetry Supervisory Control and Data Acquisition (SCADA) system. The unit is located at 1174 E. Mt. Garfield Road (Norton Shores garage), and after hours monitoring is located at 3228 Glade Street. The system checks all 44 stations within 90 seconds to determine the status of alarm conditions that may exist. The system is evaluated twice a year by simulating alarm conditions at the lift stations to test for reliability.

Office Billings

The following billing functions have been accomplished from July, 2017 through June, 2018.

- Processing of 2,604 work orders dealing with final readings, re-reads, turn-ons, turn-offs, leaks, frozen meters or services, high bills and new meter sets.

- Set up of 42 new accounts in the utility billing system.
- Mailing of 43,099 billings to customers, including past due notices, final billings and regular quarterly billings.

Michigan Department of Environmental Quality Certifications

Following is a list of Water & Sewer employees who are certified as Water Distribution System Operators. The Michigan Department of Environmental Quality (MDEQ) recertifies operators every three years. In order to be recertified, a certain number of training credit hours must be completed within the three year period. Certified, competent and professional operators are very important to the delivery of safe drinking water to Norton Shores residents. These employees and the certification level are:

Matt Anderson	Certified S-1	May 2016-July 2019
Scott Houghtaling	Certified S-1	Jan. 2018-Jan. 2021
Craig Lehan	Certified S-1	Dec. 2016-Jan. 2020
Tim Draft	Certified S-2	Nov. 2017-Jan. 2021
Eric Beishuizen	Certified S-3	Nov. 2017-Jan. 2021
Josh Connell	Certified S-3	Nov. 2017-Jan. 2021
Brandon Wilburn	Certified S-3	May 2018-July 2021
Scott Hannahs	Certified S-4	Apr. 2018-July. 2021
Eric Mattson	Certified S-4	Apr. 2017-Apr. 2020
Dustin Vanderputte	Certified S-4	Nov. 2017-Jan. 2021

Classification of distribution systems:

Rule 1902: The following four classifications are assigned to distribution systems for type I public water supplies:

- Class S-1: Distribution systems for type I public water supplies serving a population greater than 20,000.
- Class S-2: Distribution systems for type I public water supplies serving a population from 4,000 to 20,000.
- Class S-3: Distribution systems for type I public water supplies serving a population from 1,000 to 4,000.
- Class S-4: Distribution systems for type I public water supplies serving a population of less than 1,000.

STREETS & DRAINAGE DIVISION FY-2018 REVIEW

Streets & Drainage Division personnel are kept busy throughout the year with a wide scope of tasks.

Street sweeping begins early in the spring and continues until the snow begins to fall. Road repair work is continuous throughout the year and includes pavement crack sealing, repairs to asphalt shoulders and utility cuts, and in areas where water main breaks have occurred. In the fall, equipment is readied for inclement weather when, from November through April, crews spend many hours clearing City roadways of ice and snow.

The de-icing system continues to work well, utilizing a pre-wet system, which activates the road salt with liquid calcium chloride. This method de-ices to lower temperatures, begins to work more quickly, and sticks to the roadway reducing waste that occurs when dry salt bounces off the road. As this method de-ices to lower temperatures, sand is rarely used which, in turn, keeps our roads and drainage systems cleaner.

Tree branches are routinely trimmed or removed to avoid obstructed vision at intersecting roads. Dead or damaged trees are removed from the right-of-way; many are replaced by the Streets Division, as well.

Gravel roadways are graded on a regular basis and three brining applications are completed through the summer on roads that have property owner participation; beginning in 2018 all gravel roads are being treated with brine.

Streets personnel also maintain many major and local street right-of-way areas with scheduled mowing. City drains and drainage ditches are monitored continuously and kept clean of debris.

The Streets Division provides attendant service at the Wood Road leaf site seven days a week in the spring and fall and on weekends through the summer months.

Traffic control devices, i.e., signs, barricades, etc. are provided by the Streets Division for special events including the Ross Park Arts and Drafts Festival and the Motorcycle Hill Climb. Additionally, the City's many street signs are maintained throughout the year with damaged signs being repaired or replaced.

The Director of Public Works and the Streets & Drainage Superintendent continue to be active in the Muskegon Area Municipal Storm Water Committee. This committee is working cooperatively on a regional basis to address the Environmental Protection Agency's Storm Water requirements. This past year the focus has primarily been working on the development of a storm water ordinance to serve all member jurisdictions of the storm water group. The ordinance provides measures to handle storm water on newly developed property.

The Streets & Drainage Division continues to be a vital part of the City's service program.

STREET SIGNS

Street sign maintenance including installation, repair, and replacement is a continual task for the Streets Division. During this reporting period, a total of 395 signs were replaced, repaired, or installed by the Department of Public Works.

FUEL DISPENSATION FY-2017

Following is an itemization of the fuel dispensation for FY-2018:

Administration	291.8 gallons
Building & Grounds	1,180.6 gallons
Fire	16,211.5 gallons
Police	23,177.0 gallons
Recreation	2,469.4 gallons
Streets & Drainage	29,612.8 gallons
Water & Sewer	11,215.1 gallons
Total Gallons Dispensed	84,158.2 gallons

MISS DIG MICHIGAN UTILITIES DAMAGE PREVENTION ASSOCIATION

The Department of Public Works logged 1,759 staking requests during the FY 2018. These staking requests were submitted by contractors as well as DTE Energy, Consumers Energy, Frontier, Comcast Cable, and residential homeowners. The Divisions of Streets and Drainage, and Water and Sewer placed 61 orders for City utility installation and maintenance.

The City receives Miss Dig requests via computer and then distributes the information to Water & Sewer personnel to physically locate and mark all water & sewer utilities and storm drain infrastructures. Blue flags signify water; brown flags denote sanitary sewer, and green flags represent storm water. After staking, the clerical staff is notified, and the information is recorded as a completed order. Various flag colors represent the following utilities:

Yellow	Oil and Gas
Orange	Telephone and CATV
Red	Electric
Blue	Water
Green	Storm Drain
Brown	Sewer
Pink	Surveying

WOOD ROAD AND ROSS PARK LEAF DISPOSAL SITES

Great Lakes Nursery Soils, Inc. removed a total of 1,558 tons yards of yard waste and 1,930 cubic yards of ground brush from the Wood Road and Ross Park leaf sites.

The following number of vehicles, by classification, was monitored at the Wood Road site:

Cars	3,554
Trailers	5,202
Pick-up trucks	<u>6,773</u>
Total	15,529

The total of all vehicles visiting Wood Road during FY 2018 was 15,529; the total counted during fiscal year 2017 was 16,755.

Vehicle counts are not recorded for the Ross Park site.

EQUIPMENT/MECHANICS DIVISION

The total number of vehicle services and repairs in FY 2018 was 883.

Following is a list of equipment purchased.

- 2-Chevrolet Malibu's
- 1-Ford F650
- 1-Chevrolet Silverado
- 1-Morbark Brush Chipper
- 2-Sure Trac utility trailers
- 1-LOOK utility trailer

As a result of the City purchasing equipment at State and Oakland County pricing, used equipment has been successfully liquidated through internet resources.

Following is a list of equipment sold:

1-2009 Ford F650 Utility Truck	\$24,025.00
1-2004 Chevrolet Silverado ½ ton	\$ 5,992.35
1-2010 GMC Canyon Pickup	\$ 5,303.55
1-2006 Chevrolet Silverado ½ ton	\$ 3,240.30
1-1990 Dakota Trailer	\$ 2,887.50
1-2007 Chevrolet Malibu	\$ 2,283.75
1-1984 Hudson Bros. Trailer	\$ 995.55

TOTAL \$44,728.00

FY-2018 GRAND TOTALS

Miles of streets maintained	149
Number of times local streets/sidewalks were plowed during FY-2018	17/7
Tons of salt usage for FY-2018	2,386
Gallons of liquid calcium chloride (de-icer) applied	16,691
Tons of winter mix asphalt patch used	53
Tons of bituminous hot mix used	192
Miles of streets swept	383
Debris collected from sweeping operation (cu. yd.)	414
Number of times gravel-surfaced roads graded	27
Tons of road gravel leveled & used to maintain surface	117
Gallons of 38% calcium chloride (brine) applied	41,732
Number of trees removed	43
Number of trees planted	15
Residential use of County Landfill:	
	Cars 325
	Trucks/Trailers 288
	Total Vehicles 613
Storm drain/under drain footage cleaned	70,370
Pounds of crack sealant dispensed	5,280
Square feet of sidewalk replaced	550
Acreage mowed along off-road drainage courses & along road right-of-way	285
Fuel dispensed (gallons)	84,158
Vehicle services	883
Gravel Road Improvements: Tons of Gravel/Miles	4,358/1.03

**BUILDINGS & GROUNDS MAINTENANCE DIVISION
FY-2018 REVIEW**

Following is a listing of the Buildings and Grounds Maintenance Division activity beyond normal daily routines and minor maintenance.

CITY BUILDING

- Installed new TV in PD training room
- Windemuller set meter to size new generator
- Received estimates for new 911 computer room
- Started Painting walls in Building dept.
- Set up and took down voting equipment for training
- Had valve on second boiler replaced, did not clear fault. Service still working on
- Second boiler worked on to repair fault
- Delivered and picked up voting equipment
- Picked up voting equipment
- Carpet replaced in Finance Dept.
- New board in #2 boiler for valve fault
- Used loader to push snow banks back
- Worked on info for LED lighting
- New standby generator ordered
- Washed down walls in hall inside PD garage with bleach water, mold from high humidity
in garage
- Ceiling track painted
- Contractor put up new ceiling tile
- New transfer switch installed

- New awning installed over Assessing entrance door
- New LED Lamps being installed (City Hall - DONE) Police Dept. waiting for Lamps to finish last room
- Installed new LED Exit signs
- New generator set, waiting for startup and training with manufacturer
- Generator reprogramed and running, training has been done

LIBRARY

- Had A/C unit recharged, was not cooling building
- Changed belts on air handler unit and greased bearings
- Pulled shaft from air handler unit and took to Van Hydraulic for repair
- Put shaft back in air handler along with new bearings
- Replaced air compressor
- Met with Tower Pinkster about library HVAC system
- Met with prospective contractors for the library HVAC system

CEMETERY

- Graves sold: 29
- Pre-Paid burials sold: 1
- Full body burials: 38
- Cremain burials: 25
- Pre-Paid cremain burials sol: 0
- Cremain graves solds: 8
- Re-Deed : 3
- Installed foundations: 29

- Received 3rd estimate for addition to storage building
- New sign was installed over Cemetery entrance
- New enter and exit signs installed at Cemetery
- Cemetery fence hit by car
- Cemetery fence repaired

Old DPW Garage

- Northside repaired A/C unit
- RTU was replaced on building
- Repaired electric gate
- Received estimates for lighting problem in building

**ENGINEERING
FY-2018 REVIEW**

2018 Sidewalk Project:

Limits: Pontaluna Road (Grand Haven Road to Schamber Drive)
 Lake Forest Drive (Seminole Road to Oakway Drive)
 Ellis Road (Harvey Street to US-31)

Description: Construction of new sidewalk along the proposed routes.

Consultant: City Staff

Contractor: Epic Excavating, Grand Rapids, MI

Year's Work: Using site survey and data collection for the proposed sidewalk, City Staff designed the proposed sidewalks. With the preliminary layout of the three sidewalks completed, the utility companies were contacted and easements sought. Staff also followed-up on easement requests sent to affected property owners. With only one easement of the requested four being granted, staff had to redesign the project to eliminate the need for easements and created final plans and specs. The Muskegon County SESC permit application was obtained and the project with Epic Excavating being the low bidder. The pre-construction meeting was held and work is scheduled to start in July. Public notification was sent to affected properties.

Funding: Capital Improvement and TIFA Funds

Start Date: July 9, 2018

Estimated Finish: Late Summer 2018

APWA Snow Plow Rodeo

Description: Regional APWA sponsored gathering and education activity highlighting winter road maintenance and skills sets for snow plowing.
Year's Work: Meetings and planning for outreach of the event.
Date: October 10, 2018

Broadway Avenue Reconstruction (Phase 1 & 2)

Limits: Getty Street to US-31
Description: Reconstruction of existing roadway and water main along the proposed route.
Consultant: Prein & Newhof, Grand Rapids, MI
Contractor: Jackson-Merkey Contractos, Inc. (Phase 1)
TBD (Phase 2)
Year's Work: Prein & Newhof, after being awarded the engineering design and construction inspection contract completed the design and bid documents for Phase 1 of the project. Working with City staff, all necessary permits were obtained and the first phase was let through MDOT. Jackson-Merkey was awarded the work and started removing existing pavement in June and began the installation of the upsized water main.
During the design phase, the City and Prein & Newhof worked with MDNR and MDOT in regards to a possible bike path grant (MDOT TAP & MDNR Trust Fund). Public meetings were held addressing the grants and road diet (Reducing the road from four lanes to two with center left turn lane).
Funding: STIP with local match
Start Date: June 18, 2018 (Phase 1)
Spring 2019 (Phase 2)
Estimated Finish: Fall 2018 (Phase 1)
Fall 2019 (Phase 2)

Forest Park Culvert Repair:

Limits: Forest Park east of Stryker Drive
Description: Replacement of failed 36-inch CMP roadway culvert.
Consultant: Prein & Newhof, Grand Rapids, MI
Contractor: McCormick Sand, Twin Lake, MI
Year's Work: The City, with the assistance of Prien & Newhof, obtained the MDEQ Joint Permit and Muskegon SESC permit for the emergency repairs to the failed culvert. The Contractor was retained and work began on the replacement of the CMP culvert with a RCP culvert. The contractor completed the emergency repairs to the failed culvert. Work involved the replacement of the failed CMP culvert with a RCP culvert. Additional issues regarding the existence of an old concrete box culvert along with water and sanitary sewer main conflicts complicated the repair work on the culvert.

Funding: Major Streets
Start Date: August 21, 2017
Finish Date: September 22, 2017

Forest Park Resurfacing Project:

Limits: Forest Park Road, Lake Harbor Road to Stryker Drive
Description: Milling and Resurfacing of existing roadway.
Consultant: City Staff
Contractor: Asphalt Paving, Inc. (API), Muskegon, Michigan
Year's Work: City staff completed the design work for the proposed resurfacing. The project was let with the construction work going to API and inspection work Westshore Consulting. Work on the project has started with the milling of the existing pavement and testing of the existing aggregate base. Weak spots in the aggregate base were repaired, compacted and retested. Work on the parking area and routine preventive maintenance of the sanitary lift station's cabinet and components were done while the road was closed. The road was re-graded and geo-reinforcement was placed to help reduce the settlement of the existing roadway of peat and muck material. The project was delayed briefly by a snow storm. After placement of the levelling and top pavement courses were placed west of the wooden culvert. The roadway was open to traffic on May 18th and the final paving of the lift station area was done on June 5th.

Funding: Capital Improvement Funds
Start Date: April 9, 2018
Finish Date: June 5, 2018

Grand Haven/Sternberg CMAQ Project:

Limits: Intersection of Grand Haven Road and Sternberg Road
Description: Installation of traffic loop and update Signal Equipment
Consultant: City Staff
Contractor: Strain Electric, Grand Rapids, MI
Year's Work: City staff designed the project and submitted the construction package to the State for their review and eventual bid letting through MDOT. The project was let through MDOT for a May 4th with Strain Electric being awarded the work. The pre-construction meeting held on June. Loops were placed in the thru lanes at the intersection on June 22nd.

Funding: CMAQ Grant with Matching Funds
Start Date: June 22, 2018
Finish Date: June 22, 2018

Harvey Street Reconstruction

Limits: Ellis Road to Hile Road
Description: Reconstruction and widening of existing roadway along the proposed route.
Consultant: Prein&Newhof, Grand Rapids, MI

Contractor: Brenner Excavating, Hopkins, MI
 Year's Work: City staff worked with the Little River Band of Ottawa Indians and secured a cost share agreement for the additional cost of engineering and construction to comply with the consultant's recommendation for a casino. With all easements and permits obtained and the project let through MDOT, work started in June 2017. The Contractor removed the existing pavement and worked the HMA base course along the east side of the roadway first and in July shifted its operation to the west side of the street. During this time work started on the underground utilities, aggregate base, sidewalk grading and concrete curb and gutter. Access to homes and businesses was maintained during the construction. The remaining work was completed in August with the placement of traffic signal detection loops placed at the Hile Road and Ellis Road intersections and upgrading of the pedestrian signals. The street was open to traffic on August 11, 2017.
 Funding: STIP & BIA Funds with local match
 Start Date: June 14, 2017
 Finish Date: August 11, 2017

Henry Street Bridge Repairs

Limits: Merrill S. Bailey (Henry Street) Bridge over Mona Lake
 Description: Preventative maintenance and repairs to the bridge joints, deck, and piers
 Consultant: Fleis&VandenBrink, Muskegon, MI
 Contractor: Anlaan, Grand Haven, MI
 Year's Work: The consultant completed its design and City staff obtained all necessary consents for access easements. MDEQ permits obtained and the US Army Corps of Engineers determined their permit was not required. Due to a change at the State's funding source for this project, staff worked with both the state and MPO to reclassify the funding on the project. The State obligation the project was let on the August 4, 2017 MDOT bid letting. Work began in late August with lane closures for joint repairs. Two-way traffic was maintained during the project. The contractor completed work on the replacement of the failed bridge deck joints in the month of September. They have brought in a barge to assist in repair work of the concrete repairs on the piers and caps were made. Once completed the bridge deck was sealed. Due to the setting in of cold weather, bridge painting, restoration and re-wrapping of the water main under the bridge was completed in the spring (May 2018).
 Funding: MDOT Local Bridge Funds with local match
 Start Date: August 21, 2017
 Finish Date: May 21, 2018

Henry Street Sidewalk, Randall Road to Forest Park Road

Limits: Randall Road to Forest Park Road
Description: Placement of concrete sidewalk.
Consultant: City Staff
Contractor: Ryan Excavating, Lowell, MI
Year's Work: Design and bid was completed in June 2017. Work started in July 2017 at the south end of the project (Randall Road) and proceeded north. Concrete sidewalk and ADA ramps were installed to a point just north of the Henry Street Bridge, with the retaining walls and remaining walk scheduled to be completed in August just as Henry Street Bridge work was to begin.
Funding: Capital Improvement Fund
Start Date: July 5, 2017
Finish Date: August 21, 2017

HIP/HMA Overlay Project 2017 (FY18)

Limits: Selected Streets
Description: Hot-in-Place recycling of existing asphalt pavements with the placement of HMA overlay.
Consultant: City Staff
Contractor: Gallagher Asphalt, Thornton, Illinois
Year's Work: Once the design and bid pack was completed, the project was let and contract awarded. Milling limits were marked and HIP work started and completed in August. MPM completed the overlay in September.
Funding: MRF and Capital Improvement Funds
Start Date: August 11, 2017
Finish Date: September 15, 2017

HMA Milling and Pavement Project 2017 (FY18)

Limits: Selected Streets
Description: Milling, aggregate base repair and HMA pavement placement of existing asphalt pavements.
Consultant: City Staff
Contractor: Michigan Pavement and Materials, Grand Rapids, Michigan
Year's Work: Final design work and specifications were completed and the project was bid and awarded in order for a June 2017 start. Work started on the pavement milling, aggregate base testing and repairs and replacement of bad castings. Pavement levelling and top course placed on the selected roadways with work completed in September 2017.
Funding: MRF and Capital Improvement Funds
Start Date: June 19, 2017
Estimated Finish: September 30, 2017

HMA Milling and Pavement & HIP Inspection for 2017 (FY18)

Limits: Selected Streets
Description: Engineering inspection of the City's HIP/HMA Overlay and Pavement Milling, aggregate base repair and HMA pavement placement projects.
Consultant: City Staff
Inspector: Westshore Consulting, Muskegon, Michigan
Year's Work: Westshore was hired to perform inspection and material testing of the project. Their work will continue until the completion of the HIP/HMA project in the fall of 2018.
Funding: MRF and Capital Improvement Funds
Start Date: June 19, 2017
Estimated Finish: September 30, 2017

HIP/HMA Overlay Project 2018 (FY19)

Limits: Selected Streets
Description: Mill and Replacement of HMA surfaced roadways and Hot-in-Place recycling of existing asphalt pavements with the placement of HMA overlay.
Consultant: City Staff
Contractor: Gallagher Asphalt, Thornton, IL for Hot-in-Place Recycling
Michigan Pavement & Material, Comstock Park, MI for HMA Mill and Pavement and HIP Overlay.
Year's Work: Westshore Consulting, Surveying and Material Testing
City crews reviewed the manhole and gate valve castings on the selected streets to determine which castings need replacement. Soils & Structures completed core bore of same streets. Staff completed the bid packages for this project. Project parts were let and the City awarded the work to the contractors above. A pre-construction meeting was held and public notification was sent to affected properties. Work to start in July, with prep work proceeding in late June.
Funding: MRF and Capital Improvement Funds
Start Date: July 2, 2018
Estimated Finished: October 2018

Lake Harbor Bridge Repairs

Limits: Lake Harbor Bridge over Mona Lake Channel
Description: Preventative maintenance and repairs to the bridge joints, deck, and piers.
Consultant: Fleis & VandenBrink, Grand Rapids, MI
Contractor: To be determined
Year's Work: Requests for Qualifications (RFQ) for engineering services were received and two firms were invited to provide proposals. City Council awarded the work to Fleis & VandenBrink and a project kick-off was held.
Funding: MDOT Local Bridge Funds with local match
Project Start: Spring 2020
Estimated Finish: Summer 2020

Lake Harbor Park Channel Erosion

Limits: North Side of Mona Lake Channel near Lake Harbor Road
Description: Restoration of eroded channel bank.
Consultant: City Staff
Contractor: City Street and Drainage Division
Year's Work: The City staff completed and submitted the necessary MDEQ/USACE Joint Permit and drawings for the restoration of the channel bank. The City also submitted and obtained the MDEQ and local SESC permit quickly, and after a persistent effort the USACE permit for the restoration of the channel bank. Once the necessary permits were obtained, City crews repaired the erosion damage done along the channel.
Funding: Park & Rec Funds
Start Date: April 23, 2018
Finished Date: May 2018

Maranatha Sewer Relocation

Limits: Maranatha Drive
Description: Relocation of existing sanitary sewer due to severe shoreline erosion along Lake Michigan.
Consultant: City Staff
Contractor: Jackson – Merkey Contractors, Muskegon, MI
Year's Work: City staff designed the relocation of the portion of the existing sanitary sewer that was in imminent danger of collapsing into Lake Michigan along with preparing; submitting and obtaining the necessary MDEQ Sewer and Critical Dunes Permits and local SESC permit. Jackson-Merkey was hired to perform the relocation work which started in late November and was completed in December.
Funding: Sanitary Sewer Funds
Start Date: November 29, 2017
Finished Date: December 1, 2017

Norton Cemetery Project 2017 (FY18)

Limits: Norton Cemetery
Description: Mill and recycling of existing aggregate base and new asphalt pavement.
Consultant: City Staff
Contractor: Reith-Riley, Grand Rapids, MI
Year's Work: Reith-Riley milled and mixed the old HMA pavement with existing aggregate to create a new roadway base for the cemetery roadways. The new base was proof rolled and HMA pavement placed. City crews placed topsoil and seed along the new pavement.
Funding: Capital Improvement Funds
Project Start: September 11, 2017
Project Finished: September 15, 2017

Porter Road Culvert Repairs

Limits: Porter Road Culvert just east of Henry Street
Description: Lining two interior joints of existing concrete culvert due to damage from water main break.
Consultant: City Staff
Contractor: Plummer's, Bryon Center, MI
Year's Work: City staff worked with Plummer's to line the southern two joints damaged by previous water main breaks to prevent future infiltration in of the soil into the existing culvert and its resulting undermining of Porter Road.
Funding: Water Fund
Project Start: December 4, 2017
Project Finished: December 6, 2017

Porter Road Water Main Repairs

Limits: Porter Road, just east of Henry Street
Description: Reconstruction of water main repair
Consultant: Prein & Newhof, Grand Rapids, MI
Contractor: Jackson-Merkey Contractor, Inc., Muskegon, MI
Year's Work: After the completion of the design, all necessary State permits obtained and project let. Work began with the closure of the eastbound lane and pavement milled. The existing water main was replaced with new ductile iron main. The culvert was inspected and a concrete collar placed around a defective joint. The main was tested and upon its successful results placed into service. The roadway was repaved and open to traffic.
Funding: Water Fund
Start Date: July 5, 2017
Finish Date: July 25, 2017

Porter/Martin/Sternberg Intersection Improvements

Limits: Intersections of Porter & Martin Roads and Martin & Sternberg Roads
Description: Improve intersections so as to allow freer flow of traffic along the Porter – Martin – Sternberg corridor
Consultant: C2AE, Grand Rapids, MI
Contractor: Reith-Riley, Grand Rapids, MI
Year's Work: After the completion of the design, letting through MDOT and preconstruction meeting, work start in July with the Contractor removing old pavement and curbs at both intersections, placed new leaching basins at Porter Road, widened Porter Road and Sternberg radius and placed pavement. Pavement markings placed and signs installed, the project was completed in August, 2017.
Funding: MDOT CMAQ Grant and local matching funds
Start Date: July 10, 2017
Finish Date: August 3, 2017

Seaway Drive Water Main Break

Limits: Seaway Drive at Grand Haven Road
Description: Repair of 16-inch Cast Iron water main.
Consultant: City Staff
Contractor: Jackson – Merkey Contractors, Muskegon, MI
Year's Work: After the discovery of the water main break, City Staff worked with MDOT on lane closure and permission to work within the MDOT Right-of-Way (ROW). The break was isolated in a manner as to keep all costumers with water. The City met with Jackson-Merkey and a plan for our emergency repair was developed and put into action. The contractor was able to reuse the existing steel casing under Seaway Drive and the replacement pipe was installed, tested, passed and placed back into service. Restoration work soon followed.

Funding: Regional Water Funds
Project Start: May 14, 2018
Project Finished: June 1, 2018

Speed Studies

Limits: City wide
Description: Perform speed study and establish speed limits per State Law and accepted methods.
Consultants: City Staff
Year's Work: Work on a number of speed studies was completed to get speed limits in compliance with the new State law and results were presented to Council for their review and action as they are completed. These roadways include:

- Blanket Residential Street Analysis & Review
- Porter Road, Henry to Lake Harbor
- Henry Street, Porter to Pontaluna
- Harvey Street, Hile to Judson
- Seminole Road, Norton Avenue to Norton Hills Road
- Sternberg Road, Grand Haven Road to Harvey Street
- Thompson Road, Airport Road to Hile Road
- Hile Road, Henry Street to Martin Road
- Grand Haven Road, Mount Garfield Road to Wilson Road
- Black Lake Road, Pontaluna Road to Ottawa County Line
- Roosevelt Road, Norton Avenue to Seminole Road
- Broadway Avenue, Seaway Drive to Henry Street
- Harvey Street, Hile Road to Wilson Road
- Roberts Street, Sherman Blvd to Broadway Avenue
- Norton Avenue, Seminole Road to Roosevelt Road
- Henry Street, Porter to Mona Lake Bridge
- Forest Park Road: Henry Street to Lake Harbor Road
- Henry Street: Sherman Blvd. to Porter Road

- Hile Road: Grand Haven Road to Harvey Street
- Lincoln Street: Norton Avenue to Sherman Blvd.
- Martin and Wellesley Roads, Airport Road to Bryon Road
- Randall Road, Henry Street to Martin Road
- Summit Avenue, Getty Street to Stratford Street
- Farr Road, Martin Road to Grand Haven Road
- Martin Road, Ellis Road to Sternberg Road
- East Porter, Grand Haven Road to Robert Hunter Drive

Water System Asset Management Plan:

Limits: City of Norton Shores

Description: Project consists of creating an Asset Management Plan and Program for the City of Norton Shores water supply system. The scope of this project is to create a foundational Asset Management Plan that will efficiently meet the current requirements on the Michigan Department of Environmental Quality (MDEQ) and allow the City to add data/functionality in the future.

Consultant: Prein & Newhof, Muskegon, MI

Year’s Work: The consultant, with the assistance of City Staff, collected the required data necessary so that a Plan and Program may be submitted to the MDEQ and implemented by January 1, 2018 for all functionally and financially significant assets. This work was completed in accordance with the State Safe Drinking Water Act as recently amended. City Staff worked with Prein & Newhof regarding the project, review and final completion of required documents and plan which was submitted to the State per the December 31st deadline.

Funding: City Water Fund

Start Date: February 23, 2017

Finish Date: December 31, 2018

Major Private or Other Projects:

<u>Project:</u>	<u>Address:</u>	<u>Developer/Owner:</u>
Mercy Hospital Driveway	Sherman Blvd.	Mercy Hospital
Comerica Site Redevelopment	801 West Norton	GDK Construction

**PLANNING
FY-2018 REVIEW**

PLANNING AND ZONING DIVISION

Analysis

The year FY-2018 saw a significant drop in new residential development throughout the city with an additional 19 housing units constructed primarily in existing subdivisions. This drop is due largely to the lack of new residential lots available throughout the community.

Growth continued at a steady pace in the commercial and industrial sectors. Major commercial and office developments and site plans approved included the remodeling of the former Plumb's Store on Sherman Boulevard into the Great Lakes Fresh Market and the construction of a 17,000 square foot addition to the Babbitt's Sports Center facility on Airline Road. Additionally, new facilities approved and constructed during the year included the 5,700 building housing Jimmy John's and RX Optical on the former Comerica Bank site on Henry Street as well as four store and lock buildings for Tysman Properties on E. Pontaluna Road. Major industrial projects for the year included a 20,000 square foot addition to the Bay Logistics facility on E. Pontaluna Road and a 15,000 square foot addition to the Inter Dyne facility on Ellis Road. Additionally, the staff oversaw the site plan approval for future industrial projects including a 150,000 square foot facility for Blue Water development on Grand Haven Road, a 200,000 square foot facility for Grooters Development on E. Pontaluna Road, and a revised 68,000 square foot facility for Scentlok, also on E. Pontaluna Road.

Staff also administratively approved numerous other commercial, office and industrial site plans of a scope that did not require Planning Commission or City Council review, as well as 384 other site plans for improvements requiring building permits. These included new houses, additions, accessory buildings, fences, signs etc.

The staff participated in the update of the FEMA maps for the Lake Michigan Shoreline. These maps are used for the determination of flood insurance and are separate than those recently updated for the Mona Lake and Black Lake areas. The staff participated in the City's ongoing certification process for the MEDC Redevelopment Ready Communities program. The staff also presented to the Planning Commission and City Council a Zoning Ordinance amendment which provides standards for the regulation of snow and deer fences. Finally, with the help of Wiseman Inc., the staff completed the LUCA (Local Update of Census Addresses) for the upcoming 2020 United States Census. This list, which will be further updated in the next two years, will provide the foundation for the distribution of census surveys.

Activity Summary	2016	2017	2018
Administrative Site Plans	20	22	27
Land Divisions	4	3	3
Residential Lots Developed	0	0	0
Residential Site Plans	409	375	384
Site Plans	8	11	10
Special Use Permits	6	7	10
Variances	5	5	6
Zoning Ordinance Amendments	6	7	8
Zoning Ordinance Violations	35	38	45

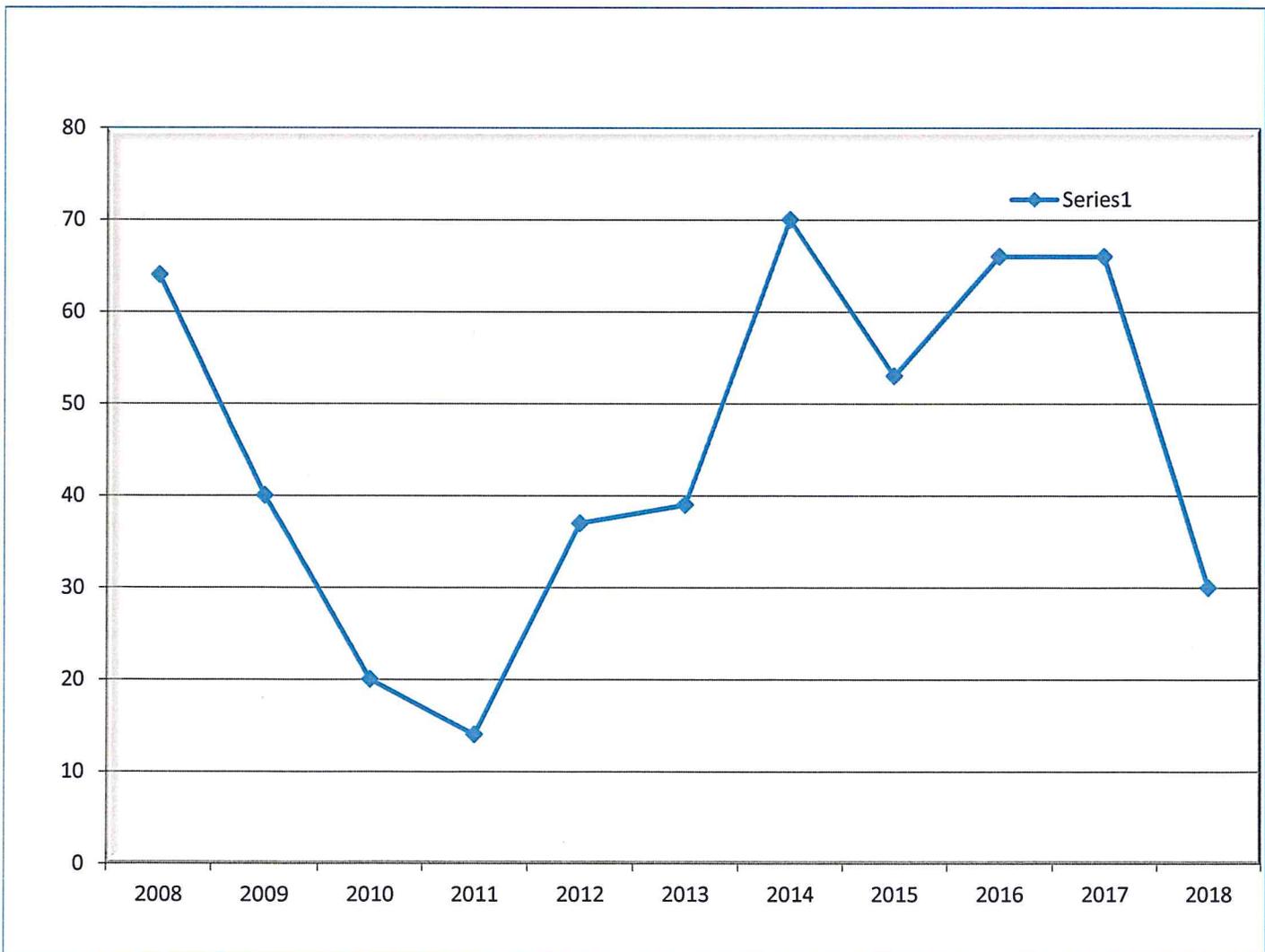
TABLE A

TOP TEN COMMERCIAL AND INDUSTRIAL PROJECTS

1. Bay Logistics Industrial Addition	1202 E. Pontaluna Road	\$4,000,000
2. Great Lakes Market Remodel	1663 E. Sherman Boulevard	\$ 862,126
3. Inter Dyne Industrial Addition	676 Elis Road	\$ 775,000
4. Knoll Group Industrial Remodel	2800 Estes Street	\$ 605,727
5. Babbitt's Commercial Addition	3712 Airline Road	\$ 604,693
6. Tysman Storage New Structures	1249 E. Pontaluna Road	\$ 490,000
7. Jimmy John's/RX Optical Comm.	3445 Henry Street	\$ 459,428
8. NBR Industrial Remodel	1210 E. Pontaluna Road	\$ 410,350
9. Pepsi Industrial Remodel	4900 Paul Court	\$ 358,500
10. Kohl's Commercial Remodel	5695 S. Harvey Street	\$ 276,534
TOTAL VALUE		\$ 8,842,358

NORTON SHORES ATTACHMENT A WATER SERVICE INSTALLATIONS

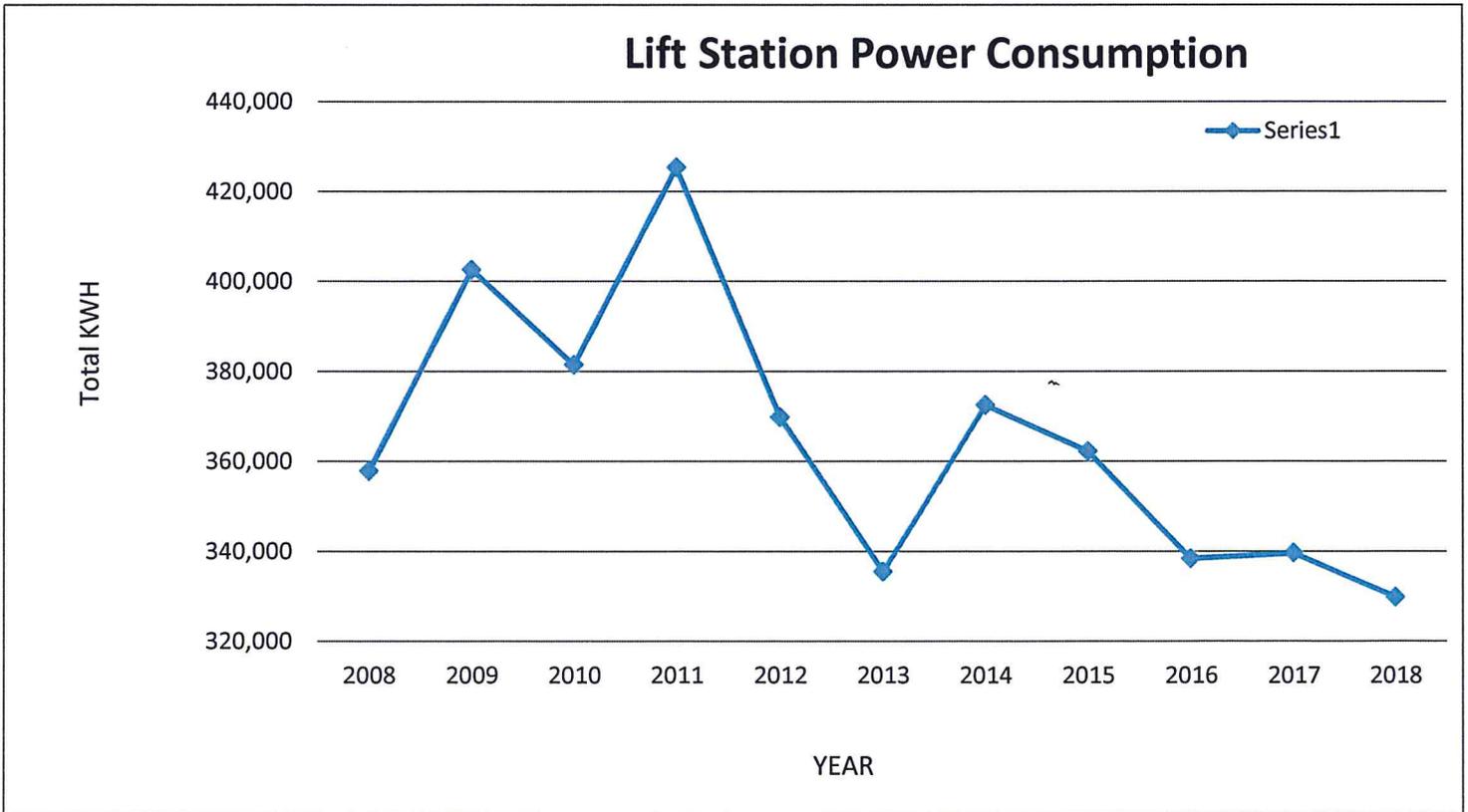
<u>YEAR</u>	<u>TOTAL SERVICES</u>
2008	64
2009	40
2010	20
2011	14
2012	37
2013	39
2014	70
2015	53
2016	66
2017	66
2018	30



Attachment B
Lift Station Electrical
FY 2018

<u>Year</u>	<u>Usage</u>
2008	357,807
2009	402,557
2010	381,430
2011	425,306
2012	369,789
2013	335,445
2014	372,454
2015	362,201
2016	338,340
2017	339,603
2018	329,831

* In KWH





ANNUAL CONSUMER CONFIDENCE REPORT

DEPARTMENT OF PUBLIC WORKS
WATER AND SEWER DIVISION

Matt Anderson, Superintendent
2017 Report

We are pleased to present you with the Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the water delivered to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. The Muskegon Water Filtration Plant treats water from one of the highest quality surface water sources in the world, Lake Michigan. The City of Norton Shores used over 982 million gallons of water in 2017.

Last year, as in years past, your tap water met all Environmental Protection Agency and State drinking water health standards. The Muskegon Filtration Plant and the Norton Shores Water Division vigilantly safeguards its water supply. We are pleased to report that our drinking water meets and exceeds Federal and State requirements.

This report is designed to give you detailed information which will assure you of the quality of your drinking water.

If you have any questions concerning this report or your water utility, please contact Water Superintendent, Matt Anderson, at (231) 799-6804. We want our valued customers to be informed about their water utility. If you want to learn more, please stop in our office, located at the Norton Shores City Hall, 4814 Henry Street.

The Muskegon Filtration Plant and the Norton Shores Water Division routinely monitor for contaminants in your drinking water according to, and in excess of, Federal and State laws. The following table shows the results of our monitoring for the period of January 1, 2017 through December 31, 2017. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk. It is just as important to understand that a contaminant, as defined in this report, includes natural elements and compounds as well as man-made compounds manufactured every day, many of which we all use in our daily activities. Even distilled water is not "pure" water because most distilled water has very small quantities of "contaminants".

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

2017 Table of Contaminants
Regulated Monitoring at Treatment Plant

SUBSTANCE	UNITS	RANGE OF LEVELS DETECTED	HIGHEST LEVEL DETECTED	HIGHEST LEVEL ALLOWED MCL OR TT	IDEAL LEVELS MCLG	VIOLATION OR NUMBER OF SAMPLES EXCEEDING MCL	POSSIBLE SOURCES OF CONTAMINANT
Turbidity 2017	NTU	0.04 - 0.06	0.06	TT=1	n/a	0	Lake sediment
Total Organic Carbon	ppm	1.45 - 2.0	2.0	TT	n/a	0	Naturally present in the environment
Fluoride	ppm	0.45 - 0.83	.83	4.00	n/a	0	Added to promote strong teeth
Barium 2017	ppm	0.00 - 0.02	0.02	2.00	n/a	0	Discharge from drilling waste

Regulated Monitoring in the Distribution System

SUBSTANCE	UNITS	RANGE OF LEVELS DETECTED	HIGHEST LEVEL DETECTED	HIGHEST LEVEL ALLOWED MCL OR TT	IDEAL LEVELS MCLG	VIOLATION OR NUMBER OF SAMPLES EXCEEDING MCL	POSSIBLE SOURCES OF CONTAMINANT
Total Trihalomethanes	ppb	19 - 53	53	80	n/a	0	By-product of drinking water chlorination
Halooxetic Acids	ppb	9.2 - 39	39	60	n/a	0	By-product of drinking water chlorination
Chlorine	ppm	0.46 - 1.8	1.8	4	n/a	0	Drinking water chlorination

Regulated Monitoring in the Customer's Tap

SUBSTANCE	UNITS	RANGE OF LEVELS DETECTED	90 th PERCENTILE	HIGHEST LEVEL ALLOWED AL	IDEAL LEVELS AL	VIOLATION OR NUMBER OF SAMPLES EXCEEDING AL	POSSIBLE SOURCES OF CONTAMINANT
Copper** 2017	ppb	0-422	0.1	1300	1300	0	Corrosion of household plumbing & erosion of natural deposits
Lead** 2017	ppb	0-38	4	15	0	1	Corrosion of household plumbing & erosion of natural deposits

Unregulated/Special Monitoring

SUBSTANCE	UNITS	RANGE OF LEVELS DETECTED	HIGHEST LEVEL DETECTED	HIGHEST LEVEL ALLOWED MCL OR TT	POSSIBLE SOURCES OF CONTAMINANT
Sodium 2017	ppm	n/a	10	n/a	Erosion of natural deposits. Ice and snow removal
***Chlorate					Results of monitoring are available upon request
*** Hexavalent Chromium					Results of monitoring are available upon request
*** Total Strontium					Results of monitoring are available upon request
*** Total Vanadium					Results of monitoring are available upon request
*** Total Molybdenum					Results of monitoring are available upon request

Microbial Monitoring

SUBSTANCE	UNITS	NUMBER OF POSITIVE SAMPLES DETECTED	HIGHEST LEVEL ALLOWED MCL OR TT	IDEAL LEVELS MCLG	VIOLATION OR NUMBER OF SAMPLES EXCEEDING MCL	POSSIBLE SOURCES OF CONTAMINANT
Total Coliform Bacteria	each	0	Less than 1 positive monthly sample or less than 5% of monthly samples positive	0	0	Naturally present in the environment
Fecal Coliform and E. coli	each	0	Routine and repeat sample total coliform positive, and one is also fecal or E. coli positive	0	0	Human and animal fecal waste

**Results computed using the 90th percentile level. Monitoring period January 1, 2017 - December 31, 2017

*** Unregulated contaminants are those for which the EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER AND MUNICIPAL ASSISTANCE DIVISION

2017 WATER SUPPLY CROSS CONNECTION REPORT

*Issued under authority of 1976 PA 399, as amended, MCL 325.1001 et seq., and its administrative rules.
Failure to submit this form is a violation of the Act and may subject the water supply to enforcement actions.*

Return the completed form by March 31, 2018 to the appropriate Department of Environmental Quality (DEQ) district office to comply with administrative Rule R 325.11405 that states "a water utility shall report annually to the department on the status of the cross connection control program on a form provided by the department." For district office addresses, visit www.michigan.gov/deq and click on Locations.

WSSN: _____ 4850

A. Name of water system: City of Norton Shores County: Muskegon

B. Year that the current written cross connection control program was approved by DEQ: _____ 1981

C. Total number of industrial, commercial, institutional, residential, and governmental accounts that must be routinely reinspected for cross connections: _____ 792

Of this number,

- How many are High Hazard accounts: _____ 322 Frequency of Reinspection: Once per: _____ Year

- How many are Low Hazard accounts: _____ 470 Frequency of Reinspection: Once per: _____ 3 Years

D. Number of accounts from line "C" that received an initial inspection in 2017: _____ 3

E. Total number of reinspections required and completed in 2017 based on degree of hazard:

- High hazard reinspections required: _____ 322 High hazard reinspections completed: _____ 322

- Low hazard reinspections required: _____ 182 Low hazard reinspections completed: _____ 182

F. Number of accounts where a cross connection(s) was found to exist during inspections or reinspections in 2017: _____ 19

G. Number of accounts from line "F" where corrective actions have been completed: _____ 8

H. Total number of accounts from line "C" which are now in compliance with the local cross connection control program; $H = C - (F - G)$: _____ 781

I. Total number of backflow prevention devices in system requiring testing: _____ 681

J. Number of backflow prevention devices tested in 2017: _____ 561

Outline briefly any changes or significant findings since last reporting. Use additional sheets if necessary.

Narrative Description of Program:

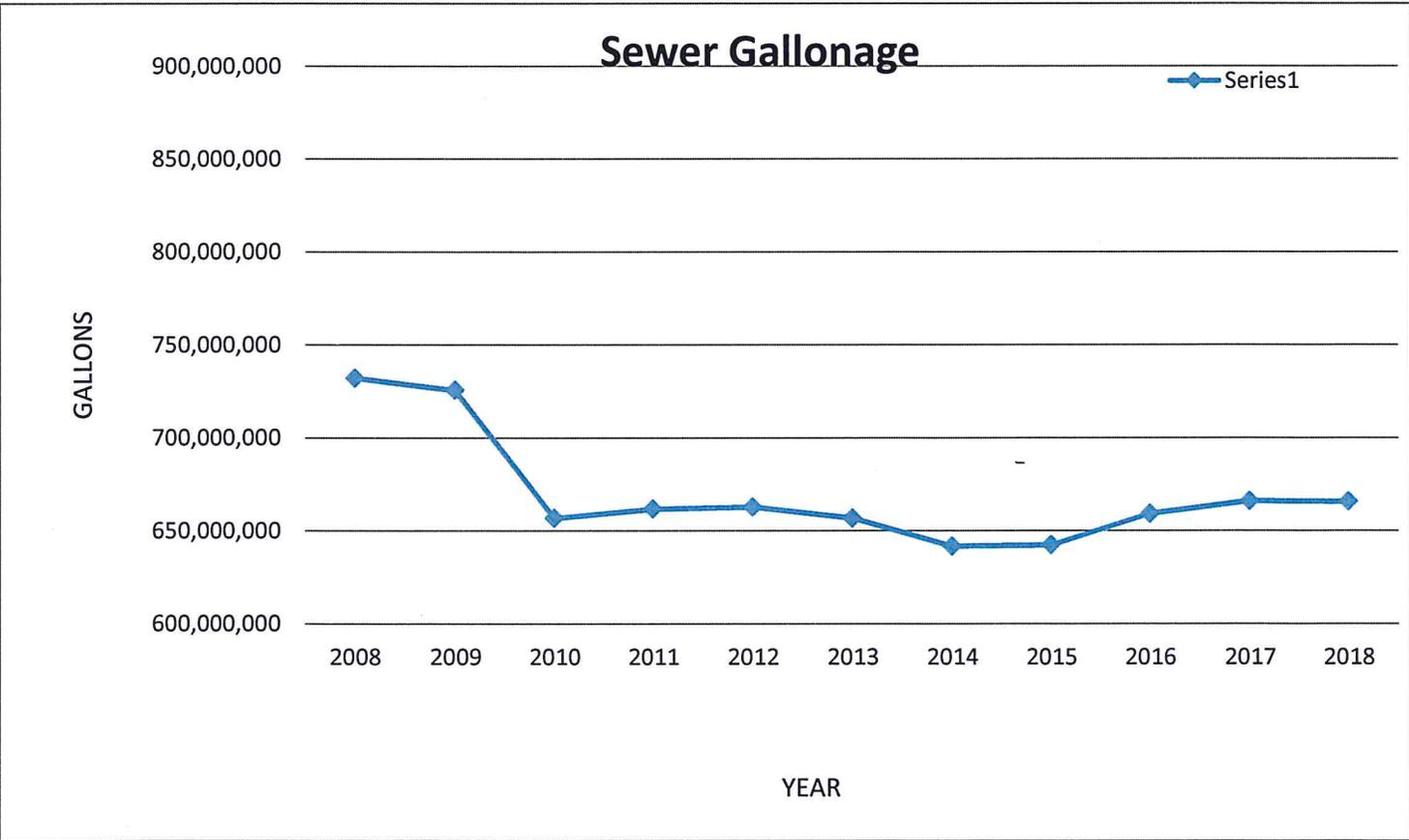
Name: Matt Anderson _____

Title: Water & Sewer Superintendent Date: 3-19-18

**Attachment E
Sewer Gallonage
FY 2018**

2008	732,130,000
2009	725,540,000
2010	656,730,000
2011	661,690,000
2012	662,750,000
2013	656,780,000
2014	641,690,000
2015	642,290,000
2016	659,160,000
2017	665,930,000
2018	665,640,000

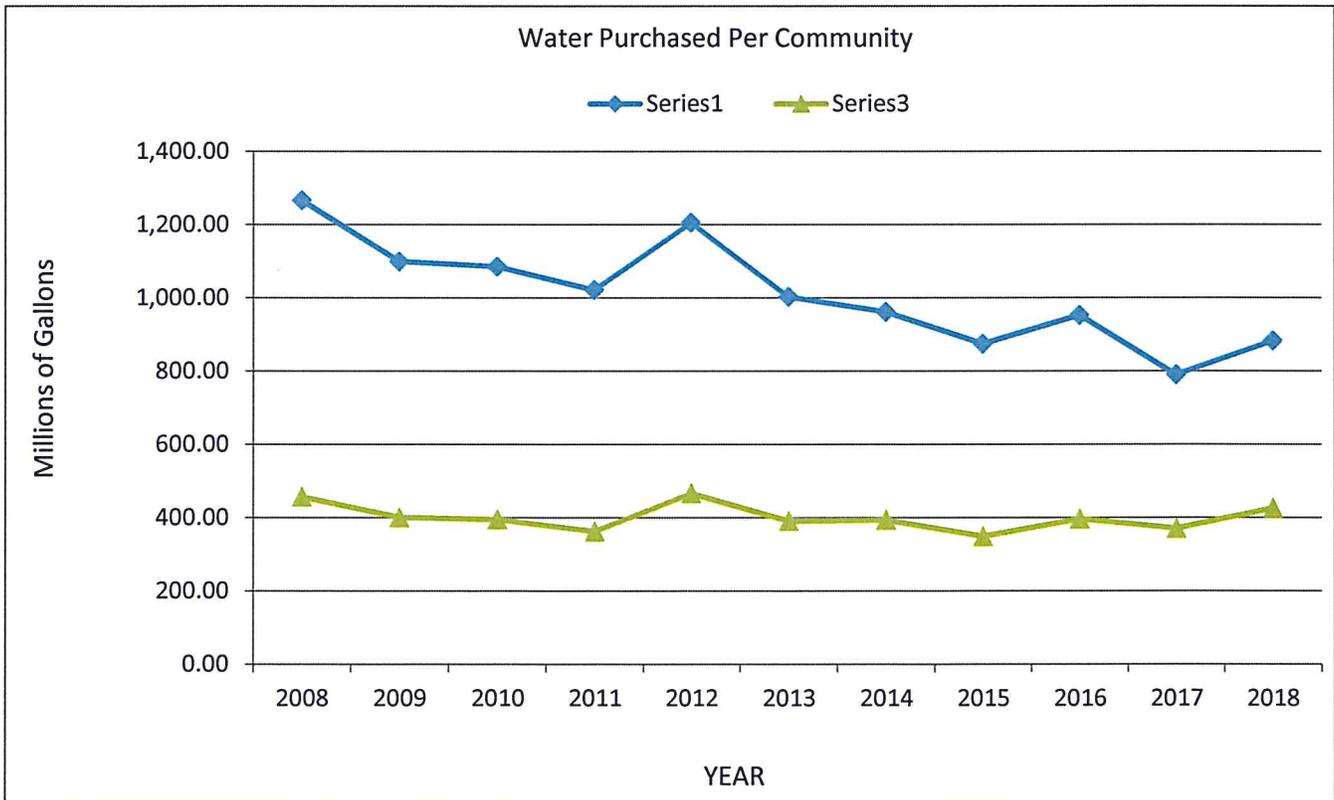
* In gallons



ATTACHMENT F COMMUNITY WATER PURCHASED

<u>YEAR</u>	<u>NORTON SHORES</u>	<u>FRUITPORT TOWNSHIP</u>
2008	1,265.31	456.37
2009	1,098.47	400.23
2010	1,084.48	394.50
2011	1,020.83	362.00
2012	1,204.25	466.11
2013	1,001.61	390.35
2014	960.40	392.91
2015	873.22	347.89
2016	951.59	396.10
2017	789.59	369.98
2018	881.50	425.30

*In Millions of Gallons



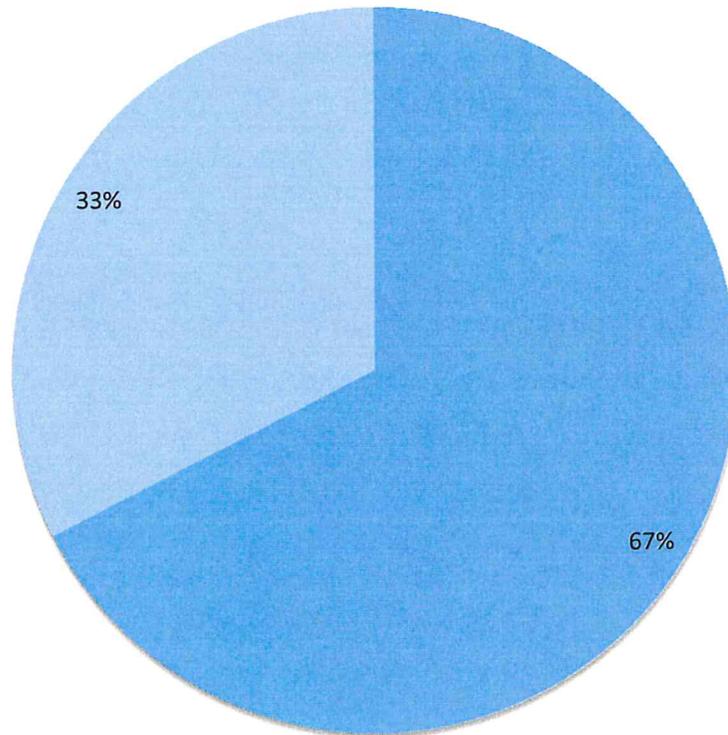
Attachment G
WMRWA Usage Totals
FY 2018

City of Norton Shores
881,504,000

Fruitport Township
425,302,000

* In Gallons

Water Purchased



■ City of Norton Shores
■ Fruitport Township

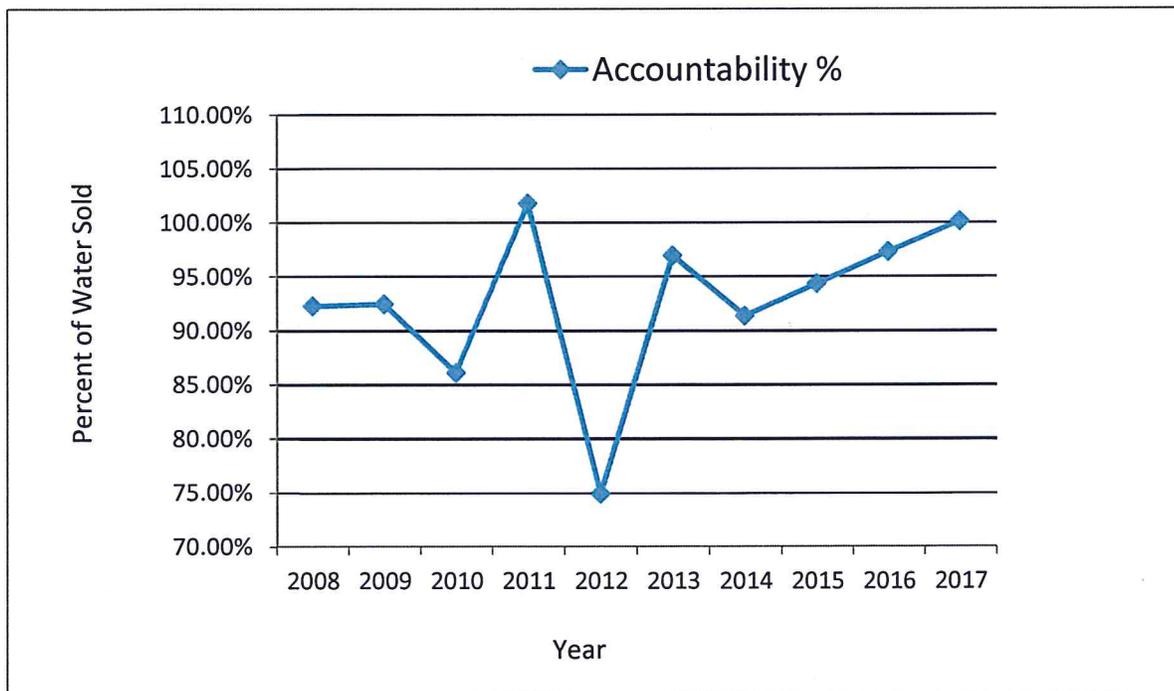
Attachement H

Historical Water System Accountability

Norton Shores Only

<u>Year</u>	<u>Accountability %</u>	<u>Water Purchased</u>	<u>Water Sold</u>
2008	92.24%	1,201,624,000	1,108,404,000
2009	92.42%	1,022,085,000	944,657,000
2010	86.09%	1,084,483,000	933,643,000
2011	101.74%	967,402,000	984,234,000
2012	74.86%	1,085,715,000	812,815,000
2013	96.92%	1,001,437,000	970,631,000
2014	91.34%	960,402,000	877,235,050
2015	94.31%	873,219,000	823,533,800
2016	97.26%	955,517,000	929,288,895
2017	100.09%	914,041,000	914,823,160
2018	92.72%	961,624,000	891,660,200

*In Gallons



American Water Works Association (A.W.W.A.) standard for acceptable water system loss is 10% or accountability of between 90% and 100%.