AGENDA 6a.3
DATE 10.6.2020

DEPARTMENT OF PUBLIC WORKS

CITY OF NORTON SHORES

FISCAL YEAR END REPORT – 2020
July 2019 – June 2020

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-2020 under the direction of Gerald Bartoszek until his retirement on May 27th at which point James R. Murphy took over the position. 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-2020 the Public Works Department responded to 155 after hour calls/emergency calls and business hour calls; primarily consisting of 83 sewer lift station calls, followed by 23 water and sewer service calls. Other calls included 26 in the street system, 17 Emergency Miss Dig requests, and three building and grounds call.

The Public Works Department is comprised of the following Divisions:

WATER & SEWER

Personnel - Matthew Anderson, Superintendent
Scott Houghtaling, Supervisor
Holly Hemond, Administrative Assistant
Laura Mattson, Part Time Clerical
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, Holly Hemond, 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
Kim Simonelli, Administrative Assistant
Laurel Sass, 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 - Ted Woodcock, 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 Environment, Great Lakes, and Energy (EGLE, formally known as DEQ) related to critical dune issues. He also is staff representative to the Planning Commission and Zoning Board of Appeals.

WATER & SEWER DIVISION
FY-2020 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-2020, Water & Sewer crews installed 35 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 2010. Repairs to 96 existing water services were also completed.

Sewer Connections

The Water & Sewer Supervisor approved the connection of 70 sewer services to the sanitary collection system. Inspections detail approved types of pipe, pipe size, connection fittings, grade, depth and pressure testing. See Attachment B.

Water Meter Program

During FY-2020, Water & Sewer personnel also conducted the meter change-out program with new meters being set. Throughout the city, a total of 622 residential and/or

commercial meters were replaced or set. The City has 10,159 meters in the replacement program and 201 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 seven additional meters were set in FY-2020.

Water Main Breaks

During FY-2020, crews responded to a total of 11 water main breaks throughout the distribution system. Repairs were made during regular hours and as after-hours emergencies.

Valve Maintenance

Once each year, all 1,476 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-2020, all 1,476 of the mainline water main valves were exercised, and repairs to 37 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. Four (4) new large meters were set in FY-2020, and crews were not able to complete any large meter testing. The FY-19 and FY-20 large meters are set to be tested during the summer/fall of 2020. There is a total of 328 large meters in the system.

Meter Reading

The City of Norton Shores' metering structure consists of 10,360 water meters. Meters are read on a quarterly basis, within three billing districts. Each district is read four times for a total of 41,044 readings per year. In addition, a total of 3,056 work orders for final readings, meter leaks, etc., were processed and completed in FY-2020.

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 $24,305.

Breakdown of senior discounts per billing district:

McCracken	29	Total gallonage 658,000
East Broadway	33	Total gallonage 733,000
Henry	49	Total gallonage 1,530,000

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 vactor 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 C.

City of Norton Shores Sewer Lift Stations by Address:

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

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 approximately 2,533 such requests during the FY-2020.

Mainline Sewer Cleaning

The mainline sewer cleaning program for FY-2020 consisted of cleaning approximately 85,368 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 (8) 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. Forty-six (46) construction samples were taken in FY-2020.

The City has been on a reduced Lead and Copper Sampling schedule since 1996 that requires testing every three (3) years. The next sampling period is scheduled from June 1, 2020 to September 30, 2020.

Fire Hydrant Maintenance

This program maintains the reliability of fire hydrants throughout the water distribution system. 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 1,648 City owned and 59 private hydrants were serviced during FY-2020, with 350 being painted and repairs made to 90 of them.

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 342 high hazard accounts and 388 low hazard accounts. EGLE also monitors this inspection process. See Attachment E.

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 F.

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 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 two (2) minutes 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, 2019 through June, 2020.

- Processing of 3,056 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 28 new accounts in the utility billing system.

- Mailing of 43,520 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 Department of Environment, Great Lakes, and Energy (EGLE) recertifies operators every three (3) 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	June 2019-July 2022
Scott Houghtaling	Certified S-1	Jan. 2018-Jan. 2021
Craig Lehan	Certified S-1	Dec. 2019-Jan. 2023
Eric Beishuizen	Certified S-2	Nov. 2018-Jan. 2022
Brandon Wilburn	Certified S-2	Nov. 2018-Jan. 2022
Josh Connell	Certified S-3	Nov. 2017-Jan. 2021
Dustin Vanderputte	Certified S-3	Nov. 2018-Jan. 2022
Jason Halter	Certified S-3	Nov. 2019-Jan. 2023
Scott Hannahs	Certified S-4	Apr. 2018-July. 2021
Eric Mattson	Certified S-4	Feb. 2020-Apr. 2023

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-2020 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.

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 144 signs were replaced, repaired, or installed by the Department of Public Works.

FUEL DISPENSATION FY-2020

Following is an itemization of the fuel dispensation for FY-2020:

Administration	251.9 gallons
Building & Grounds	1,291.2 gallons
Fire	14,030.0 gallons
Police	24,412.0 gallons
Recreation	2,507.0 gallons
Streets & Drainage	23,241.4 gallons
Water & Sewer	11,384.7 gallons
Total Gallons Dispensed	77,119.10 gallons

MISS DIG MICHIGAN UTILITIES DAMAGE PREVENTION ASSOCIATION

The Department of Public Works logged 2,514 staking requests during the FY-2020. 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 93 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 2,140 tons of yard waste and 1,955 cubic yards of ground brush from the Wood Road and Ross Park leaf sites in FY-2020.

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

Cars	3,726
Trailers	5,594
Pick-up trucks	7,684
Total	17,004

The total of all vehicles visiting Wood Road during FY-2020 was 17,004; the total counted during fiscal year 2019 was 16,454.

Vehicle counts are not recorded for the Ross Park site.

EQUIPMENT/MECHANICS DIVISION

The total number of vehicle services and repairs in FY-2020 was 946.

Following is a list of equipment purchased.

2- Police Utility vehicles
3- Chevrolet Silverados
1- Police Boat
2- International single-axle dump trucks
2- International tandem-axle dump trucks

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- 2015 Ford Explorer	$7,828.00
1- 2013 Ford Taurus Police Interceptor	$6,100.00
TOTAL	**$13,928.00**

FY-2020 GRAND TOTALS

Miles of streets maintained		**149**
Number of times local streets/sidewalks were plowed during FY-2019		**4/4**
Tons of salt usage for FY-2020		**1,304**
Gallons of liquid calcium chloride (de-icer) applied		**11,360**
Tons of winter mix asphalt patch used		**63**
Tons of bituminous hot mix used		**200.5**
Miles of streets swept		**586**
Debris collected from sweeping operation (cu. yd.)		**558**
Number of times gravel-surfaced roads graded		**21**
Tons of road gravel leveled & used to maintain surface		**97**
Gallons of 38% calcium chloride (brine) applied		**65,261**
Number of trees removed		**27**
Number of trees planted		**19**
Residential use of County Landfill:	Cars	**445**
	Trucks/Trailers	**468**
	Total Vehicles	**913**
Storm drain/under drain footage cleaned		**76,615**
Pounds of crack sealant dispensed		**21,640**
Square feet of sidewalk replaced		**875**
Acreage mowed along off-road drainage courses & along road right-of-way		**285**
Fuel dispensed (gallons)		**77,119.10**
Vehicle services		**946**
Gravel Road Improvements: Tons of Gravel/Miles		**0/0**

BUILDINGS & GROUNDS MAINTENANCE DIVISION
FY-2020 REVIEW

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

CITY BUILDING

- Worked with contractors on capital spending projects
- New logo mats delivered
- Worked with contractors on new Parks & Rec. garage
- Called in service for sewer backup in PD bathroom
- Installed four fans in PD garage
- New bottle fill drinking fountain installed
- Delivered and picked up voting equipment
- Fixed four lights in Ginka Memorial berm
- Old Parks & Recreation garage torn down
- Ordered new rugs for all entrances
- Called in service for sewer backup in City Hall and had new cleanout installed
- Installed more hand sanitizer stations
- Extra cleaning of all doors and surfaces every morning
- Installed new mirror in women's PD bathroom
- Second floor windows installed
- Windows installed in PD
- Put up signs on public entrances requiring face masks
- Sent out bid packets for roof project

LIBRARY

- Met with contractor regarding the new roof
- Had broken door glass repaired
- Replaced broken parking lot light
- Ordered mobile book shelves for kids' section
- Removed carpet and installed floor over pit area in kids' section
- Worked with contractor and MADL on Storyville project
- Had entire library re-keyed
- Replaced exit door to Community Room
- Called in service to clean sewer line
- Community Room carpet cleaned
- Had contractor replace all hinges on all outside doors
- Met with contractor to get estimates for power and data lines to be run under cement floor
- Cleaned the inside of all windows
- New carpet installed in library
- Washed all overhangs by doors and windows
- Sent out bid package for roof project

CEMETERY

- Graves sold: 23
- Pre-Paid Full body burial: 0
- Full body burials: 21
- Cremain burials: 28

- Pre-Paid cremain burials sold: 0
- Cremain graves solds: 18
- Re-Deed: 1
- Installed foundations: 29
- Replaced irrigation parts
- Added top soil to the edge of the new pavement
- Removed all decorations not allowed per Cemetery rules
- Planted 55 new trees along south fence
- Sent out bid packets for cemetery office new siding and doors
- Repaired winter burial sites
- Started putting top soil in low areas on west end of Cemetery
- Cemetery office siding and door project was completed

DPW Garage

- Replaced burnt out lights in office areas
- Put signs on doors requiring face masks

Old DPW Garage

- Worked with Consumers Energy on rebate to change lights in office to LED lamps
- Purchased and installed new LED lamps
- Repaired automatic gate
- Contractor installed new gutter system on back of building

ENGINEERING
FY-2020 REVIEW

2019 ADR/IRT Report:

Limits:	City Wide
Description:	Submission to the State's Asset Management Council a report of road work completed on City streets throughout the FY19.
Consultant:	City Staff
Year's Work:	City Staff compiled and submitted required data for the annual report.
Project Finished:	November 6, 2019

2019 CIPP Sewer Project:

Limits:	Various locations throughout the city.
Description:	Replacement of existing sewer at Ellis Road near Stariha Drive, CIPP Lining of Forest Park Road sewer near Stryker Drive and CIPP Lining and shortening of force main along McCracken Street sewer between Castle Court and railroad tracks to improve service and function of the system.
Consultant:	City Staff
Contractor:	Jackson-Merkey Contractors, Inc.
Year's Work:	City Staff completed the plans and bid package and let the project in April. Jackson-Merkey was awarded the contract for the work. The Cured in Place (CIPP) work was completed in the last week of August for Forest Park Road and McCracken Street. Upon further investigation, it was determined not to relocate the force main on McCracken Street. The job was completed with the lining of the one manhole on McCracken Street in October.
Funding:	Sewer Funds
Project Start:	July 15, 2019
Estimated Finish:	October 25, 2019

2019 Sidewalk Project:

Limits:	Pontaluna Road (Railroad Crossing) Mount Garfield Road (Grand Haven Road to US -31) Mount Garfield Road (Harvey Street to Fairfield Inn) Grand Haven Road (Pontaluna Road to Gateway Boulevard) Gateway Boulevard. Norton Center Drive North Gateway Boulevard Padelt Street
Description:	Construction of new sidewalk along the proposed routes.
Consultant:	ENG, Inc. of Grand Haven, MI
Contractor:	Anlaan Corporation, Grand Haven, Michigan
Year's Work:	ENG, Inc. was awarded the work by City Council and a kick-off meeting was held with Staff soon afterward. Staff worked with the consultant performed engineering survey work and design work in the fall and winter of 2018-19. During this time staff obtained the necessary

easements and permits and the project was let in May 2019. Anlaan Corp. was awarded the contract and work started on August 12, 2020. Work for the Padelt Street sidewalk was completed during August to be ready for the start of school in September. In the Fall, work was completed along Grand Haven Road, Norton Center Drive, Gateway Boulevard, North Gateway Boulevard, and Mount Garfield in the Fall. The final two sections of Mount Garfield Road between Grand Haven Road and US-31 and Harvey Street and Fairfield Inn was completed in November.

Staff submitted the necessary railroad agreements and permit applications. The City and ENG work with both the Mid-Michigan and CSX Railroads regarding their review of the permit application for grade crossings at Mount Garfield and Pontaluna Roads. After numerous delays and increased fees, the City notified the railroad that it will not be constructing the grade crossings at Mount Garfield and Pontaluna Roads. Final restoration work was completed in the Spring of 2020.

Funding: Capital Improvement and TIFA Funds
Project Start: August 12, 2019
Project Finish: November 22, 2019

2019 & 2020 Water Main Project:

Limits: Various locations throughout the City.
Description: Replacement of existing or placement of new water mains to improve service and function of the system. Project broken into two parts with Arbor, Reneer, Greisbach and Miller water mains done in the Summer of 2020 and remaining work to be done in 2021 as part of Part 2.
Description: Replacement of existing or placement of new water mains to improve service and function of the system.
Part 1: The replacement and looping of existing six (6)-inch water main with new eight (8)-inch ductile iron main in the existing Greisbach, Reneer & Arbor residential neighborhood and the replacement (up-sizing) of the existing water main in Miller Street.
Part 2: The placement of a new eight (8)-inch water main loop from the Mona Shores Middle School to Bonneville Drive, the placement of a new 12-inch water main loop between Pontaluna Road and Norton Pines Drive, and the replacement of existing cast iron water main with new 12-inch and 8-inch at Sheffield, Cleveland, and Fairfield Streets.
Consultant: Fleis & VandenBrink, Muskegon, Michigan
Contractor: Part 1: West Michigan Dirt Works, Muskegon, MI
Part 2: To be determined
Year's Work: The City awarded the engineering services for this project to Fleis and VandenBrink in May 2019. After the kick-off meeting, surveying work and preliminary design work for what would become Part 1 of the project was completed over the fall and winter. The necessary permits were obtained

for Part 1 and the project let in April 2020. Part 1 of this project was awarded to West Michigan Dirt Works, LLC and a pre-construction meeting was held in May with work started in the Arbor, Reneer, and Greibach neighborhood with the replacement of the existing force main and the installation of the water main on the Reneer-Arbor loop. Once the new main was installed and completed its testing, water services were adjusted from the old water main to the new. Work started on Miller Street the week of June 26th.

During this time, work continued on the design, plans, and easement descriptions for Part 2 of this work. It was decided to add the Sheffield/Fairfield portion of the work with the Sheffield Pump Station Sewer Project to save money and shorten construction time. City staff worked with Fleis & VandenBrink on the project design and plans. Legal descriptions were created for proposed easements and requests sent to the respective property owners. City staff continued its work with Fleis & VandenBrink on the project design and plans.

Funding: Water Funds

Part 1 Project Start: June 2020
Part 1 Project Finish: August 2020

Part 2 Estimated Start: Spring 2021
Part 2 Estimated Finish: Fall 2021

2020 Civil Bundle Project:

Limits: Various locations throughout the City.

Description: The work is a collection of various tasks that are being bundled into one project. The work includes storm sewer repairs on existing storm sewers located on Nina Lane, Wellesley Drive, Pontaluna Road, and Grand Haven Road; repair of the storm sewer outfall on Grand Haven Road at Seaway Drive (US-31BR); cured in place pipe lining (CIPP) on existing storm sewers located on Reneer Avenue, Summit Avenue, Estes Street, Seminole Road, Broadway Avenue, and Manitou Blvd; sidewalk construction along Henry Street from the existing sidewalk on Porter Road to Cedarwoods Trail and along Grand Haven Road from the existing sidewalk at Airport Road to Hidden Cove; CIPP of existing 1,400-feet of 24-inch concrete sanitary sewer interceptor at Hoyt Street and Seaway Drive and sanitary sewer service wye rehabilitation at 30 locations throughout the city.

Consultant: Prein & Newhof, Norton Shores, MI

Contractor: To be determined

Year's Work: The City obtained proposals for engineering services, with the work eventually being awarded to Prein & Newhof. The consultant started on gathering as-built plans, lift station data, and field survey work. City staff continued working with the consultant in gathering as-builts plan, lift station data, and field survey works for this project.

Funding:	Multiple Funds
Estimated Start:	Fall 2020
Estimated Finish:	Spring 2021

Airline Bridge Rehabilitation:

Limits:	Airline Road between Shettler Road and Getty Street.
Description:	Preventative maintenance and repairs to the bridge joints, deck, and piers.
Consultant:	Fleis & VandenBrink, Grand Rapids, Michigan
Contractor:	To be determined
Year's Work:	With Council's permission, Fleis & VanderBrink was awarded the engineering contract for this project in May 2019. A kick-off design meeting was held in June with staff providing as-built and historical information to the consultant. City staff worked with the engineer and MDOT throughout the year on design, obtaining additional as-built information and answering questions.
Funding:	MDOT Local Bridge Funds with a local match
Estimated Start:	Spring 2021*
Estimated Finish:	Summer 2021*
	*Please note that with the current highwater situation in Lake Michigan affecting water levels on Mona Lake and Little Black Creek at bridge location, this project may need to be postponed to allow water levels to drop to perform the necessary work on the underside of the bridge deck and beams.

Atwater Development, Harvey Street and Judson Road Sanitary Sewer:

Limits:	Harvey Street, Wilson Road to Judson Road and Judson Road, Harvey Street to Norton Pines (west of US-31)
Description:	Installation of gravity sewer along Harvey Street between Wilson Road and Judson Road, construction of a sanitary sewer lift (pump) station at the intersection of Judson and Harvey and sanitary sewer force main along Judson Road from Harvey Street to existing sewer just west of cul-de-sac near Norton Pines.
Consultant:	Utility/Site Design: Nederveld, Holland, MI Lift Station Design: Vriesman & Korhorn, Bryon Center Construction Engineering: Westshore Consulting, Muskegon, MI
Contractor:	West Michigan Dirt Works, Fruitport, MI
Year's Work:	A project kick-off meeting was held with Fleis & VandenBrink on June 24th. Work began with the placement of a sanitary manhole at Harvey Street just north of Wilson Road. Clearing for the proposed sewer lift station was completed. Work along Harvey Street will start up once the Atwater development water and sewer are completed.
Funding:	Sewer Funds.
Project Start:	June 22, 2020
Estimated Finish:	Late Fall 2020

Bridge and Street Asset Management Plan:

Limits:	City Wide
Description:	Asset management plan for both city bridges and roadways per state requirements.
Consultant:	City Staff
Year's Work:	City staff started preliminary work on its bridge asset management plans and worked with the State's TAMC manager to review both documents regarding format and requirements for submission. The existing road condition PASER ratings were completed in July 2019. In the meantime, TAMC introduced a new format for AM Plans and changed the submission date to October 2020. The new format was to include a Bridge, Street, and Compliance Asset Management Plan. Prein & Newhof was hired to assist in completing the new plan to the TAMC format.
Funding:	Street Funds
Project Start:	June 1, 2019
Estimated Finish:	October 2020

Broadway Avenue Reconstruction (Phase 2):

Limits:	Getty Street to Bailey
Description:	Reconstruction of existing roadway and water main along the proposed route.
Consultant:	Prein & Newhof, Grand Rapids, Michigan
Contractor:	Brenner Excavating, Hopkins, Michigan
Year's Work:	Design work, plans, specifications, and permits were completed and staff obtained the needed easements and MDOT let the job in May 2019. The proposed Mona Lake bike route was removed from this project. Brenner Excavating was the project's low bidder and work began July 8th with the placement of construction traffic controls. Milling of the existing pavement and placement of the 16-inch water main was completed by August. The new main was placed into service and the old water main abandoned. Next the installation and improvements to the storm sewer, placement of the aggregate base, grading of the roadway, placement of concrete curbing and sidewalks, installation of driveways, and placement of the leveling course of pavement was completed. The top courses of pavement were placed in October along with traffic signs and pavement marking so that the road may be open to traffic. There were issues with the top course of mainline pavement and the contractor returned to the project in May 2020, milled, and replaced the pavement and adjusted castings that needed addressing.
Funding:	STIP Grants with local matches along with Water and WMRWA Funds
Project Start:	July 8, 2019
Project Finish:	October 15, 2019 (main project) May 16, 2020 (pavement replacement)

HIP/HMA Overlay Project 2019 (FY20):

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. ENG, Inc., Surveying and Material Testing
Year's Work:	City Staff completed the design work and with Council's permission the three contract items were let, awarded and work started in July. The paving contractor lowered manhole and gate valve castings and the milling work and paving were completed in the Lakeview, Lakeshore, Baker, First, and Second Street neighborhood and milling completed in the Getz, Rood, Sternberg and Rousell neighborhood. The mill and fill portion of the contract was completed in August. Spot milling for the Hot-in-Place (HIP) recycling was completed early in August and soon after the HIP work was completed. Weak spots in the HIP surfaces were repaired and the top course was placed in September. In addition to the street work, the replacement of the HMA pavement at City Hall was done under this contract.
Funding:	MRF and Capital Improvement Funds
Project Start:	July 8, 2019
Project Finish:	September 26, 2019

HMA-HIP Street Project 2020 (FY21):

Limits:	Various locations throughout the City.
Description:	Surface replacement and/or rehabilitation of existing street surfaces at various locations throughout the City.
Consultant:	City Staff
Contractor:	Milling and Overlay: Michigan Paving & Materials, Grand Rapids, MI Hot-in-Place Recycling: Gallagher Asphalt, Thornton, IL Construction Engineering: OMM, Grand Rapids, MI
Year's Work:	City staff started collecting the necessary data for the project over the fall of 2019 to the Spring of 2020. The bid package was assembled and let on June 4, 2020. The project's three parts were let on June 4th and contracts awarded by City Council at their June 16th meeting. Staff sent contract documents to the individual firms for action and a pre-construction meeting is scheduled for July 7th.
Funding:	Capital Improvement and Municipal Road Funds
Estimated Start:	July 2020
Estimated Finish:	Late September 2020

Lake Harbor Bridge MDOT Loading:

Limits:	Lake Harbor Bridge over Mona Lake Channel
Description:	MDOT required load rating assessment after preventative maintenance and repairs to the bridge joints, deck, and piers.
Consultant:	City and Brechting Bridge, Spring Lake, MI
Year's Work:	Loading calculation and investigation work was completed on the bridge load rating per MDOT's requirements.
Funding:	Street Funds
Project Time:	June 2020

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:	Milbocker & Sons, Allegan, MI
Year's Work:	The City and its consultant worked on final plans and obtained the necessary permits and environmental clearances for the bridge project. The project was let through MDOT in January and the work was awarded to Milbocker & Sons of Allegan, MI. Work started in March with the closure of the bridge, placement of the detour, work on the pier caps and joints. Additional repair work to the southern catch basins. Placement of the deck membrane was prepped with the pavement, guard rail, painting, and pedestrian railing work below the bridge to be completed in May. The painting of the pier caps was done after the bridge was open to traffic to allow traffic flow during the 28-day cure wait time for the new concrete. The project was placed on hold for two weeks in April as a result of the Covid-19 pandemic to allow crew training to work under new conditions and safe space rules, but work was still completed on schedule.
Funding:	MDOT Local Bridge Funds with a local match
Project Start:	March 23, 2020
Project Finish:	Open to traffic on May 7, 2020. Final completion on June 26, 2020

Lake Harbor Park Channel Wall Repairs:

Limits:	Lake Harbor Park seawall along Mona Lake Channel near Lake Michigan
Description:	Repair/maintenance of a section of failing seawall.
Consultant:	City Staff
Contractor:	T. R. Ghezzi, LLC
Year's Work:	Staff obtained the needed permits from the State, Corps of Engineers, and County along with supporting documents for the repairs on the seawall. Work on the seawall started in the winter and was completed in February. Final restoration and walkway repair work were completed by May.
Funding:	Capital Improvement

Project Start: November 21, 2019
Project Finish: Wall work completed in February with restoration in May 2020

Maranatha Sewer Relocation:

Limits: Lake Michigan Shoreline fronting Maranatha Campgrounds
Description: Preventative action to maintain existing sanitary sewer threatened by shoreline erosion.
Consultant: City Staff
Contractor: Jackson-Merkey Contractor, Inc.
Year's Work: The continuing shoreline erosion made it imperative to relocate the existing sewer line further inland from the collapse bluff over Lake Michigan. Staff performed a survey and design for the relocation and obtained the needed permits from EGLE and Muskegon County. Also, EGLE allowed for the modification to the current critical dune permit to accommodate the work. The work relocating the sewer line was completed in January. An additional sewer lead was connected to the relocated sewer in April and the final restoration was completed in May.
Funding: Sewer Funds
Project Start: January 22, 2020
Project Finished: January 28, 2020

MDOT Annual Permit:

Limits: City of Norton Shores
Description: Submission of the annual permit application to the Michigan Department of Transportation (MDOT) for the City's work in MDOT Right-of-Way.
Consultant: City Staff
Year's Work: Staff compiled the needed information and documentation for the MDOT annual permit application and submitted it to the State for review. The State granted the permit on December 4, 2019.

MDOT Railroad Inventory:

Limits: All Railroad Grade Crossings under City's jurisdiction.
Description: Two-year informational update of the City's existing railroad grade crossing as prescribed by State.
Contractor: To be Determined
Year's Work: Staff worked collecting traffic data and roadway classifications for the railroad crossings under its jurisdiction and once completed, submitted the data to the MDOT.
Finish Date: July 18, 2019

Mona Shores Mid-Bock Cross Walk (FY19):

Limits: Seminole Road and Padelt Street Intersection
Description: Placement of a mid-block crosswalk to service foot traffic to the high school.
Consultant: City Staff

Contractor:	Severence Electric, Kalamazoo, Michigan
Year's Work:	City Staff designed this project in-house and it was let by MDOT. Severence Electric of Kalamazoo was awarded the work which started in August after a July preconstruction meeting. Severence Electric installed the sidewalk, crosswalk pavement marking, and flashing signs. Work was completed before the start of school.
Funding:	MRF and Capital Improvement Funds
Project Start:	August 9, 2019
Project Finish:	August 30, 2019

MS4 Annual Permit:

Limits:	City of Norton Shores
Description:	Submission of the permit application to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) of the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Application Form (Reissuance)
Consultant:	City Staff and Muskegon Conservation District (MCD)
Year's Work:	City Staff and the MCD compiled the needed information and documentation for the MS4 permit application and submitted it to the State for review. A related meeting was held with County, MCD, and EGLE Staff on December 17th.
Submission Date:	November 26, 2019

Seminole Road Reconstruction, Phase 1 and Phase 2:

Limits:	Henry Street to Seaway Drive
Description:	Road Reconstruction, water main replacement, streetscape.
Consultant:	ENG, Inc., Grand Haven, MI
Contractor:	To be determined
Year's Work:	After the RFQ and RFP process, Council awarded in November the engineering work to ENG, Inc. of Grand Haven. ENG collected site data over the winter and staff assisted in the submission of required permits and studies for MDOT for this project (NEPA, environmental, traffic, and SHPO studies). Discussion with utility companies was also conducted regarding the relocation of existing utilities. Council approved an agreement with Frontier to relocate a portion of their overhead utilities. Plans are underway with staff involved in the review the documents.
Funding:	STIP Funds with local match and Regional Water Funds.
Estimated Start, Phase 1:	Spring 2021
Estimated Finish, Phase 1:	Summer 2021
Estimated Start, Phase 2:	Spring 2022
Estimated Finish, Phase 2:	Summer 2022

Sheffield Pump Station & Henry Street Sewer Study:

Limits:	Sheffield Pump Station
Description:	Replacement of existing pump station at Sheffield and feasibility study and possible removal of Henry Street Pump Stations and related sewer main work.
Consultant:	Prein & Newhof, Norton Shores, MI
Year's Work:	Staff worked with Prein & Newhof on a feasibility study to determine how best to address the existing pump station and the future option to eliminate a pump station and reduce future maintenance costs for sewer service in the Henry-Sheffield neighborhood. Reconstruction of the sanitary sewer system would be done based on the finding of the study. Prein & Newhof completed the feasibility study and provided staff its findings in late February.
Funding:	Sewer Funds
Project Start:	December 2019
Project Finish:	February 25, 2020

Sheffield Pump Station & Henry Street Sewer Reconstruction:

Limits:	Sheffield & Henry Pump Stations and accompanying sanitary sewers
Description:	Replacement of existing pump station at Sheffield and feasibility study and possible removal of Henry Street Pump Stations and related sewer main work.
Consultant:	Fleis & VandenBrink, Muskegon, MI
Contractor:	To be determined
Year's Work:	Based on Prein & Newhof's feasibility study, a second RFP was sought with Fleis & VandenBrink awarded the engineering contract by the City Council in May. This work will be coordinated with the 2020 Water Project, Part 2 to help with cost savings. A project kick-off was held with Fleis & VandenBrink on June 24th and design started.
Funding:	Sewer Funds
Estimated Start:	Spring 2021
Estimated Finish:	Summer 2021

Speed Studies

Limits:	Citywide
Description:	Perform speed study and establish speed limits per State Law and accepted methods.
Consultants:	City Staff
Year's Work:	Work on multiple speed studies was done for streets throughout the City to get speed limits in compliance with the new State law. Results were presented to Council for their review and actions as they are completed.

Major Private or Other Projects:

Project:	Address:	Developer/Owner:
Atwater Springs Dev.	Harvey Street	David Bos/Livingstone Dev.
Beach Street Shoreline Erosion	Beach Street	City of Muskegon
Blue Water Group	Grand Haven Road	Blue Water Group
Blue Photon	Porter Road	Private
Chick-Fil-A	Harvey Street	Private
Churchill Athletic Field Drive	Porter Road	Mona Shores Public School
Earthtronics	Airport Place	Earthtronics
Eastowne Development	Seminole Road	Redstone Development
Menards Expansion	Harvey Street	Private
Mercy/Trinity Health	Henry Street	Trinity Health
Mona Shores Public Schools	Varies Locations	Mona Shores Public Schools
Smart Vision Expansion	Robert Hunter Drive	Smart Vision

PLANNING
FY-2020 REVIEW

PLANNING AND ZONING DIVISION

Analysis

The year FY-2020 saw a slight increase in new residential development throughout the city with an additional 17 single-family housing units constructed primarily in existing subdivisions, an increase from 14 in FY-2019. This marginal increase is encouraging as there are few remaining residential lots in the City of Norton Shores. Some of these newly permitted homes are being constructed on lots that are created from land divisions.

Growth continued at a steady pace in the commercial and industrial sectors. Major commercial and office developments and site plans approved included a new 42,000 square foot industrial facility for Earthtronics on E. Ellis Road. Approval for a storage facility on Grand Haven Road was granted to 3rd Stall Properties to construct six buildings of eight units per building (48 total units). Another notable addition to the Norton Shores business community is the Plane Watch Food Truck Park. Located at the Pointes commercial center on the corner of E. Sternberg Road and Grand Haven Road, the food truck park consists of multiple food trucks, sitting areas, and a view of planes coming and going from the Muskegon County Airport. Mona Shores Public Schools received City Council approval to add onto two of the three elementary schools located in Norton Shores, as well as various site improvements. The third elementary school will undergo that process in FY-2021 and FY-2022. Menards received approval for the special use to add onto their existing outdoor warehouse, as well as other site improvements, however, construction has yet to begin.

Other projects that were permitted prior to FY-2020 and have been completed this fiscal year include the Renishaw industrial facility on Grand Haven Road, and the Blue Water

Industrial Building also on Grand Haven Road. While not completed, the new Mercy Health building is probably the most notable new construction in the City due to its location on Henry Street at the former K-mart site. The Chick-Fil-A construction was delayed by the COVID-19 pandemic, but has since begun with the hopes of opening in early 2021.

In FY-2020 no new residential developments were approved, but work continued on two previously approved residential developments: Atwater Springs, located at the corner of Harvey Street and Wilson Road, is close to breaking ground on their first building, and The Cottages at Mona Kai, located off of Seminole Road, has also been working toward breaking ground on more units.

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 274 other site plans for improvements requiring building permits. These included new houses, additions, accessory buildings, fences, signs etc.

Some commercial projects that also received administrative site plan approval included an addition at Port City Castings on E. Porter Road, an addition and site improvements at Muskegon Montessori on McCracken Street, and a few other commercial projects that are still going through the approval process, but have been delayed.

Staff participated in the City's ongoing certification process for the Michigan Economic Development Corporation (MEDC) Redevelopment Ready Communities (RRC) program. The Zoning & Planning Department received a grant to add a chapter to the City's Master Plan. The chapter will be for coastal resilience and how the City can take steps to protect one of our most treasured resources: The Great Lakes dunes. The grant was from Land Information Access Association (LIAA) a non-profit organization located in Traverse City, Michigan. LIAA seeks to put resources, data, maps, graphics, and other information into the hands of local communities and their stakeholders. The City is excited to receive this grant and work with LIAA in creating a new information resource for the City and its residents.

Activity Summary	**2017**	**2018**	**2019**	**2020**
Administrative Site Plans	22	27	10	6
Land Divisions	3	3	6	4
Residential Lots Developed	0	0	0	0
Residential Site Plans	375	384	337	274
Special Use Permits	7	10	11	12
Variances	5	6	6	6
Zoning Ordinance Amendments	7	8	4	2
Zoning Ordinance Violations	38	45	39	35

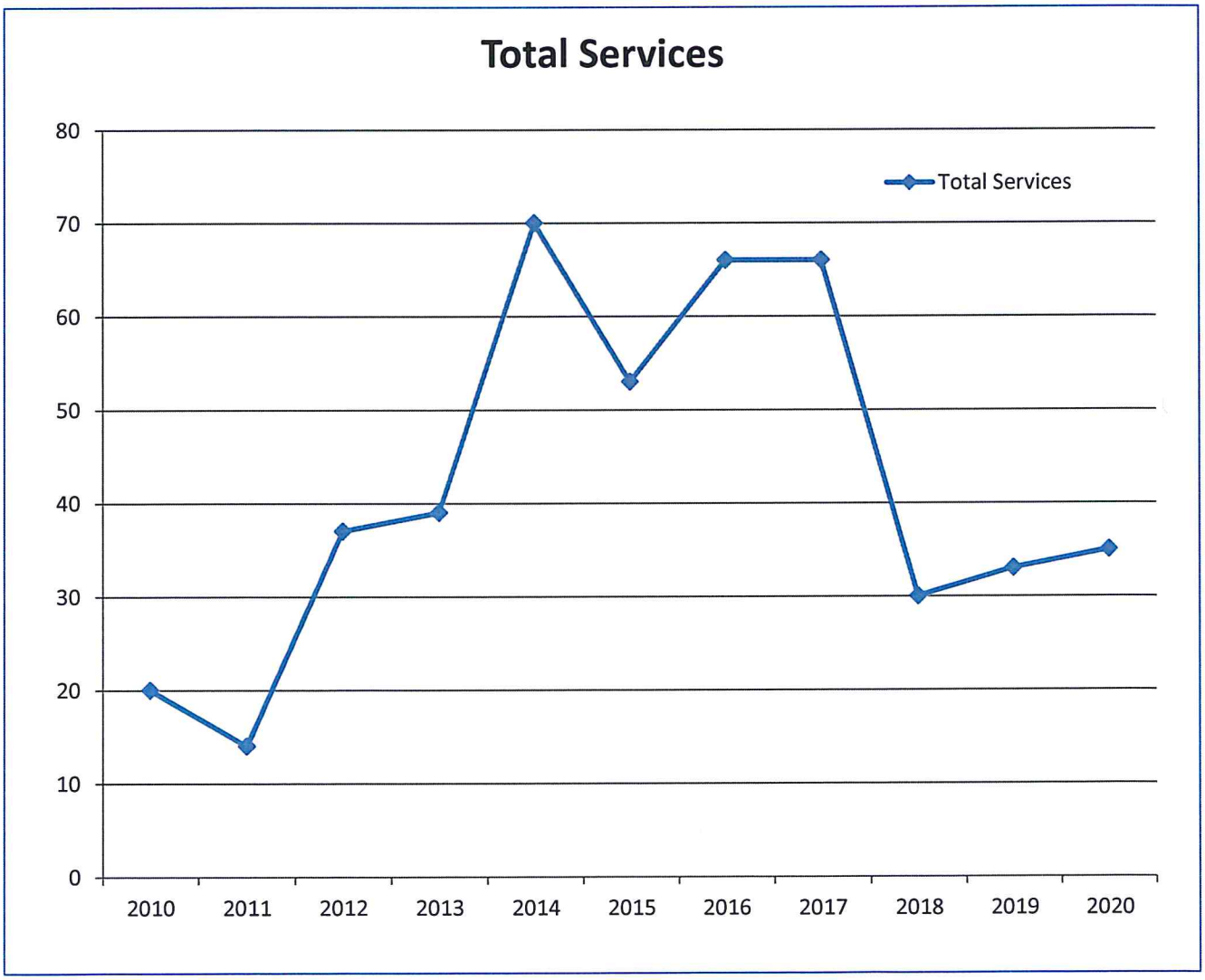
TABLE A

NOTABLE COMMERCIAL PROJECTS

1.	Chick-Fil-A	5607 Harvey Street
2.	Earthtronics	755 E. Ellis Road
3.	Trinity Health	3570 Henry Street
4.	Menards Warehouse Addition	5487 Harvey Street
5.	Smart Vision Lights Addition	5113 Robert Hunter Drive
6.	Hines Corporation Parking Lot	1218 E. Pontaluna Road
7.	Port City Castings Fire Pump Room	711 E. Porter Road
8.	3rd Stall Properties (Storage Units)	6701 Grand Haven Road

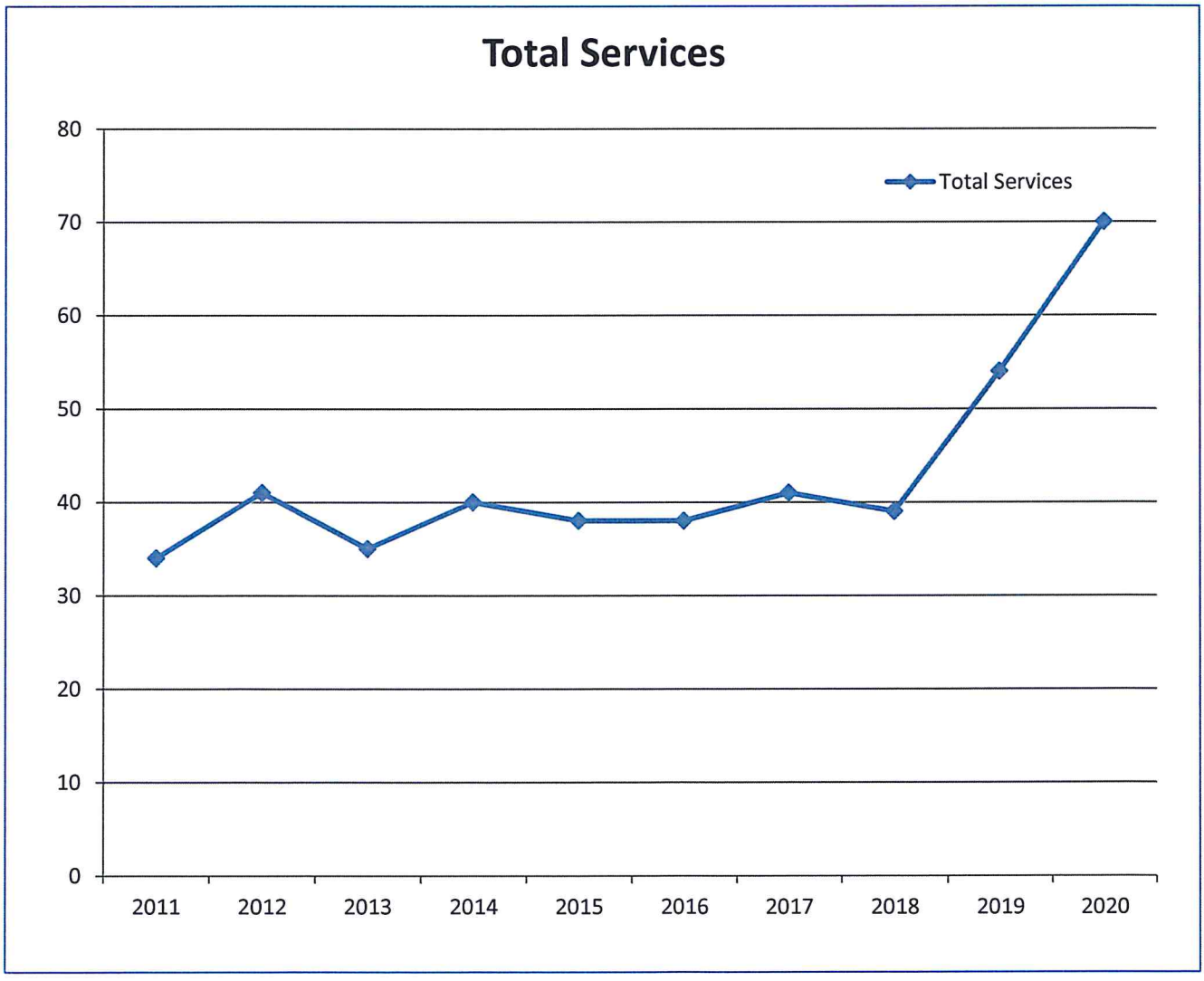
NORTON SHORES ATTACHMENT A
WATER SERVICE INSTALLATIONS

FISCAL YEAR	TOTAL SERVICES
2010	20
2011	14
2012	37
2013	39
2014	70
2015	53
2016	66
2017	66
2018	30
2019	33
2020	35



NORTON SHORES ATTACHMENT B
SANITARY SEWER INSPECTIONS

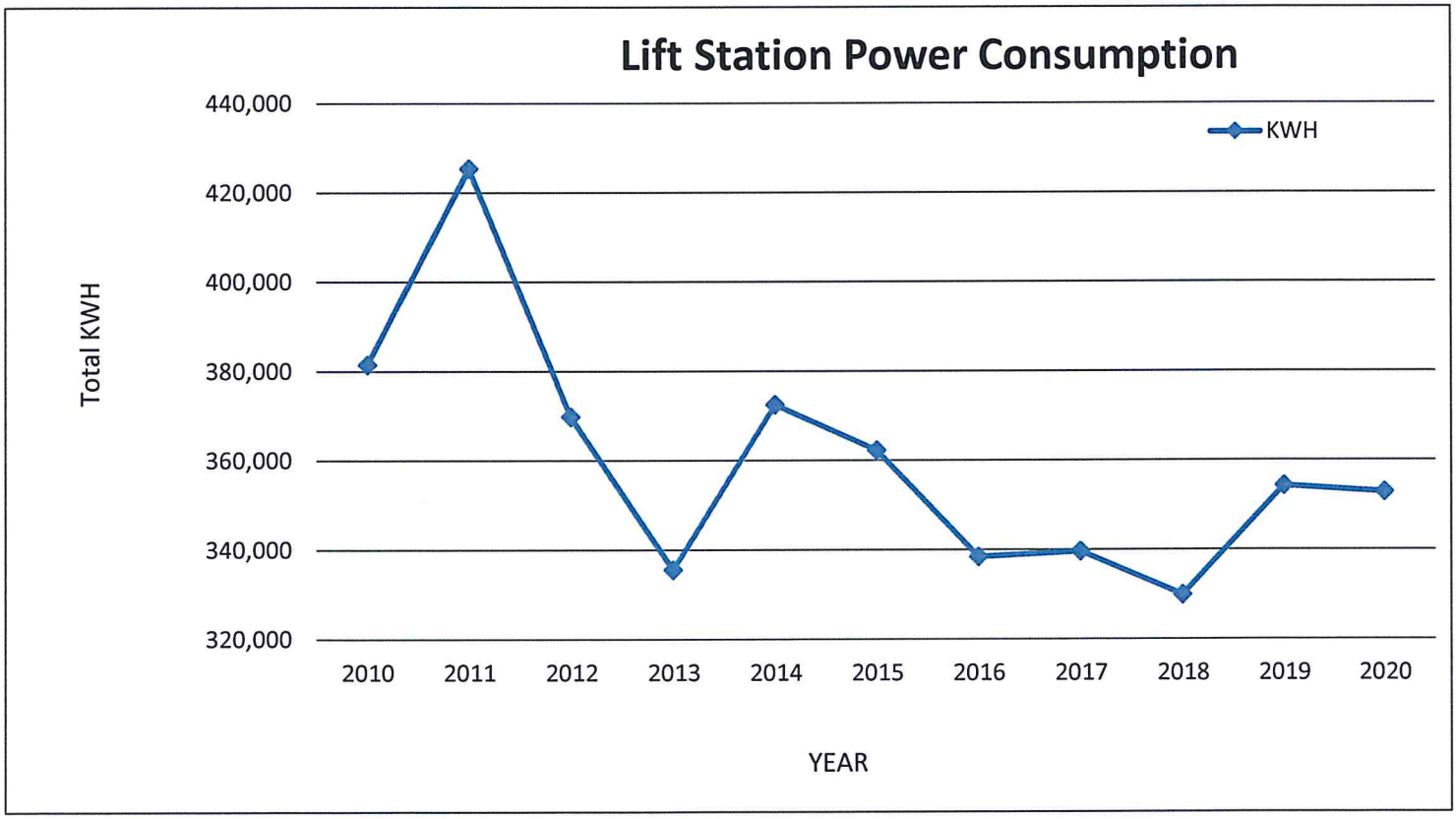
FISCAL YEAR	TOTAL SERVICES
2011	34
2012	41
2013	35
2014	40
2015	38
2016	38
2017	41
2018	39
2019	54
2020	70



Attachment C
Lift Station Electrical
FY 2020

Year	Usage
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
2019	354,251
2020	352,837

* In KWH



2019 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 2019	NTU	0.01 – 0.07	0.07	TT=1	n/a	0	Lake sediment
Total Organic Carbon	ppm	1.54 – 1.94	1.94	TT	n/a	0	Naturally present in the environment
Fluoride	ppm	0.40 – 0.80	0.80	4.00	n/a	0	Added to promote strong teeth
Barium 2019	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	11-46	46	80	n/a	0	By-product of drinking water chlorination
Haloacetic Acids	ppb	8.8 - 32	32	60	n/a	0	By-product of drinking water chlorination
Chlorine	ppm	0.30 – 1.82	1.82	4	n/a	0	Drinking water chlorination

Regulated Monitoring in the Customer's Tap

SUBSTANCE	UNITS	RANGE OF LEVELS DETECTED	90th PERCENTILE	HIGHEST LEVEL ALLOWED AL	IDEAL LEVELS MCLG	VIOLATION OR NUMBER OF SAMPLES EXCEEDING AL	POSSIBLE SOURCES OF CONTAMINANT
Copper** 2017	ppb	0-422	100	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
Number of Service Lines = 10,012			Number of Lead Service Lines = 190			Number of Service Lines with Unknown Material = 287	

Unregulated/Special Monitoring

SUBSTANCE	UNITS	RANGE OF LEVELS DETECTED	HIGHEST LEVEL DETECTED	HIGHEST LEVEL ALLOWED MCL OR TT			POSSIBLE SOURCES OF CONTAMINANT
Sodium 2019	ppm	n/a	12	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.

ANNUAL CONSUMER CONFIDENCE REPORT

DEPARTMENT OF PUBLIC WORKS
WATER AND SEWER DIVISION

Matt Anderson, Superintendent

2019 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 917 million gallons of water in 2019.

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, 2019 through December 31, 2019. 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.

What does all of this mean?

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters per day for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

The Department of Environmental Quality 2003 Source Water Assessment is completed. A copy of our Source Water Assessment Plan is available by contacting City of Norton Shores Water and Sewer Division at (231) 799-6804.

The source of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material can pick up substances resulting from the presence of animals or from human activity.

In our continuing efforts to maintain a safe and dependable water supply, it may be necessary to make improvements in your water system. The costs of these improvements will be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

Thank you for allowing us to continue providing your family with clean, quality water this year.

In order to assure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Consumer Awareness of Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight defects in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Lead in drinking water is primarily from materials and components associated with home plumbing. City of Norton Shores is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential of lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Please call our office at (231) 799-6804 if you have questions.

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions.

Contaminants that may be present in source water include:

- **Microbial contaminants,** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic contaminants,** such as salts and metals, which can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- **Pesticides and herbicides,** which may come from a variety of sources such as agriculture and residential uses.
- **Radioactive contaminants,** which are naturally occurring or a result of oil and gas production and mining activities.
- **Organic chemical contaminants** (including synthetic and volatile organic chemicals) which are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems.

- Not- Detected (ND) - laboratory analysis indicates that the contaminant is not present.

- Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in $10,000.

- Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.

- Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

- Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

- Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment of other requirements which a water system must follow.

- Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

- Turbidity - is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

- Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

- Maximum Contaminant Level Goal - The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

- Maximum Residual Disinfectant Level Goal (MRDLG) - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

- Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

city of Norton Shores

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Monitoring Requirements Not Met for the City of Norton Shores

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During February 2019 we did not monitor or test for disinfection byproducts and therefore cannot be sure of the quality of our drinking water during that time. However, this violation **does not** pose a threat to your supply's water.

What should I do? There is nothing you need to do at this time. This is not an emergency. You do not need to boil water or use an alternative source of water at this time. Even though this is not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

The table below lists the contaminants we did not properly test for, how often we are supposed to sample for these contaminants, how many samples we are supposed to take, how many samples we took, when samples should have been taken, and the date we collected follow-up samples.

Contaminant	Required sampling frequency	Number of samples taken	When all samples should have been taken	Date additional samples were (or will be) taken
Disinfection Byproducts	2 samples per Quarter taken During a specific Month	0	02/01/2019 to 02/28/2019	03/05/2019

What happened? What is being done? We inadvertently missed taking a sample within this required sampling period. We are making every effort to assure this does not happen again. Samples taken since then show that all results met acceptable limits.

For more information, please contact Matt Anderson at 231-799-6804, or the Michigan Department of Environmental Quality at 616-356-0500.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Norton Shores.

CERTIFICATION: WSSN: 04850

I certify that this water supply has fully complied with the public notification regulations in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature: _____ Title: Superintendent Date Distributed: 5/3/19

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

EGLE

2019 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, 2020, to the appropriate Department of Environment, Great Lakes, and Energy (EGLE) 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 Michigan.gov/CommunityWater and then click on *District Offices Map and Contact Information.*

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 EGLE: 1981

C. Total number of industrial, commercial, institutional, ~~residential~~, and governmental accounts that must be routinely reinspected for cross connections: 730
Of this number,
- How many are High Hazard accounts: 342 Frequency of Reinspection: Once per: Year
- How many are Low Hazard accounts: 388 Frequency of Reinspection: Once per: 3-years

D. Number of accounts from line "C" that received an initial inspection in 2019: 11

E. Total number of reinspections required and completed in 2019 based on degree of hazard:
- High hazard reinspections required: 341 High hazard reinspections completed: 341
- Low hazard reinspections required: 117 Low hazard reinspections completed: 117

F. Number of accounts where a cross connection(s) was found to exist during inspections or reinspections in 2019: 63

G. Number of accounts from line "F" where corrective actions have been completed: 52

H. Total number of accounts from line "C" which are now in compliance with the local cross connection control program; H = C – (F - G): 719

I. Total number of backflow prevention devices in system requiring testing: 705

J. Number of backflow prevention devices tested in 2019: 585

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

Narrative Description of Program: Please see attached

Name: Matt Anderson

Title: Water & Sewer Superintendent Date: 3/16/20

2019 Norton Shores WSSN 4850 Water Supply Cross Connection Report Narrative:

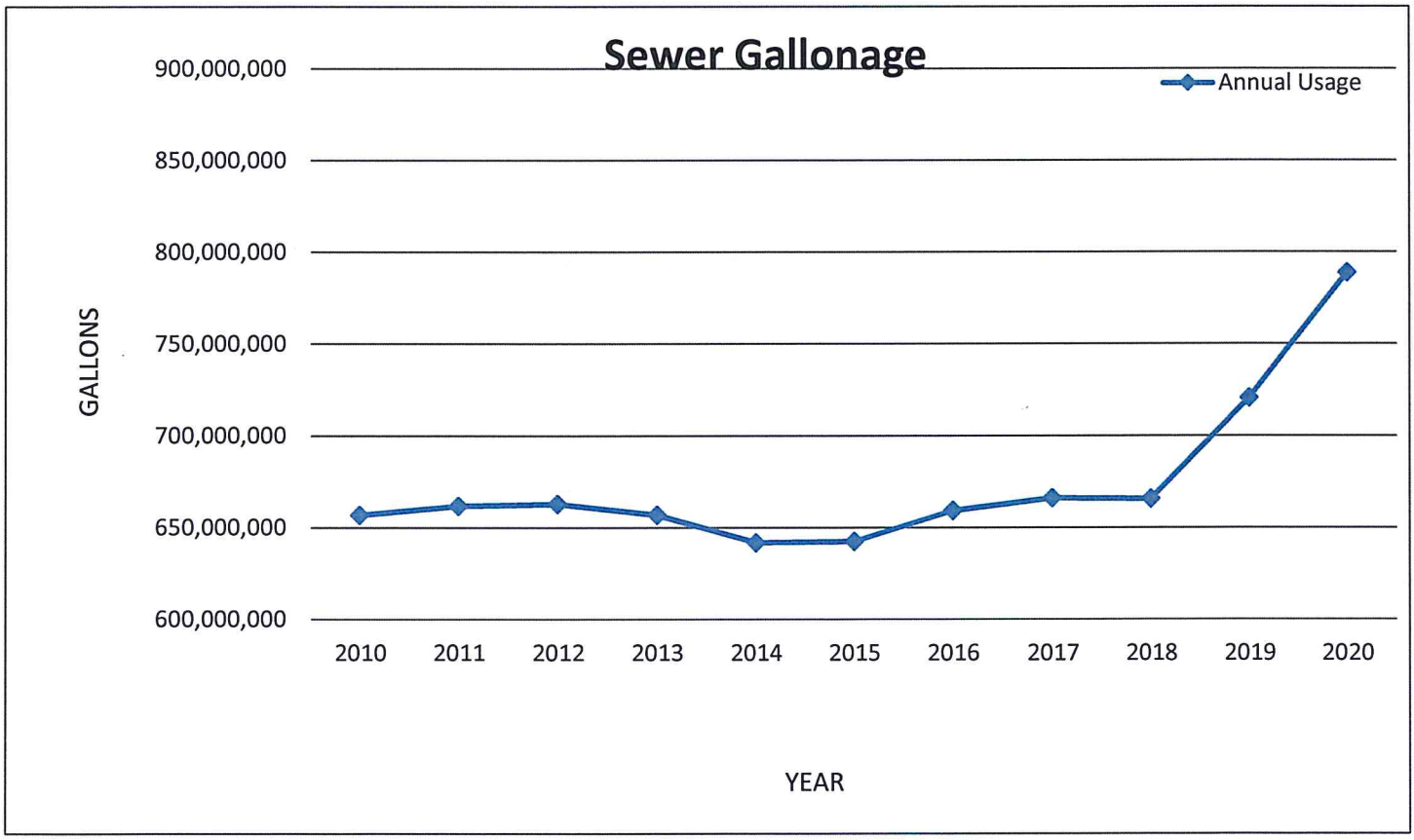
The City continued to inspect all non-single family residential accounts as outlined in the report. The City inspects its accounts towards the end of the calendar year, leaving corrections and re-inspections to be completed during the first quarter of the following year. Fifty-two (52) of the sixty-three (63) accounts found during the 2019 calendar year having a cross connection violation have been addressed and approved. The remaining fifteen (11) accounts have had letters sent for re-inspections and enforcement of these remaining accounts will be completed during the first quarter of 2020. None of the violations posed an immediate health concern requiring immediate action or discontinuance of service.

All testable backflow devices that required testing during the 2019 calendar year were tested or the cross connection was physically removed along with the device.

Attachment F
Sewer Gallonage
FY 2020

Fiscal Year	Gallonage
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
2019	720,410,000
2020	788,620,000

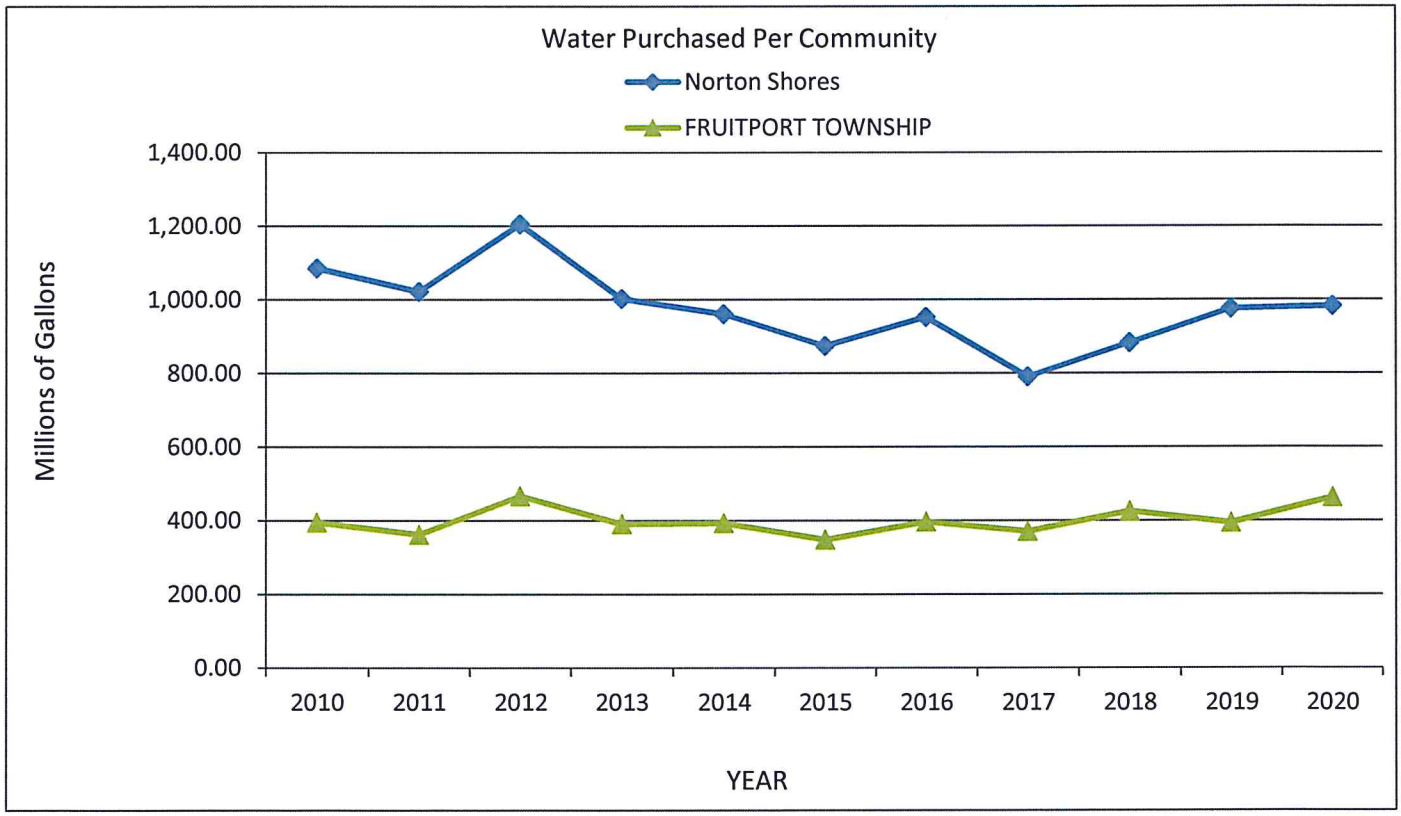
* In gallons



ATTACHMENT G
COMMUNITY WATER PURCHASED

(In Millions of Gallons)

FISCAL YEAR	NORTON SHORES	FRUITPORT TOWNSHIP
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
2019	975.13	393.74
2020	982.05	462.14

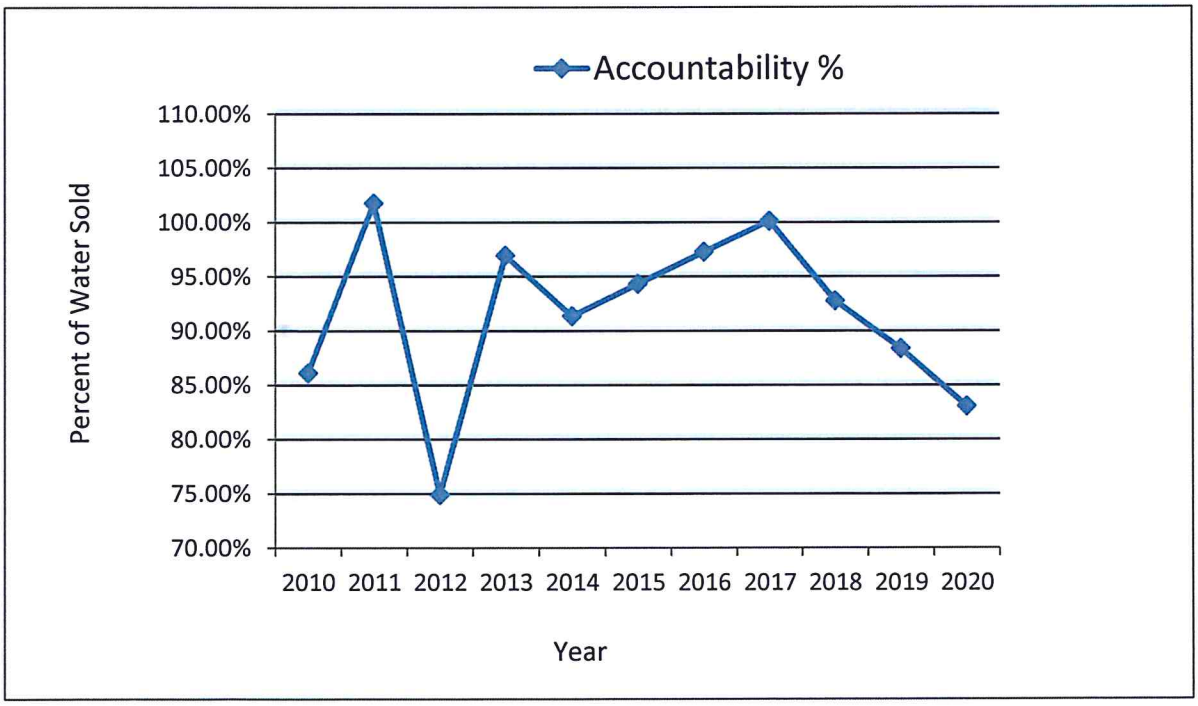


Attachement H
Historical Water System Accountability

Norton Shores Only

Year	Accountability %	Water Purchased	Water Sold
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
2019	88.32%	975,130,000	861,261,500
2020	83.02%	982,053,000	815,326,779

*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%.