

AGENDA Pa3  
DATE 9.6.16

DEPARTMENT OF PUBLIC WORKS

CITY OF NORTON SHORES



FISCAL YEAR END REPORT – 2016  
July 2015 – June 2016

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-2016 under the direction of Gerald A. Bartoszek. Administrative Assistant, Tara Smith, serves as the department secretary, 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-2016 the Public Works Department responded to 180 after hour calls, primarily consisting of 84 sewer lift station calls, followed by 39 water main and water service calls, and three sewer calls. Other calls included 28 in the street system, three equipment service calls, 18 Emergency Miss Dig requests, and five miscellaneous calls.

The Public Works Department is comprised of the following Divisions:

### **WATER & SEWER**

Personnel - Derek Gajdos, Superintendent  
Scott Houghtaling, Supervisor  
Kathy Lager, 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. Derek Gajdos serves as Water & Sewer Superintendent for the Division; Scott Houghtaling is the Water & Sewer Supervisor. Administrative Assistant, Kathy Lager, is responsible for water and sewer billing, scheduling appointments, and all other clerical activities in the Division.

### **STREETS AND DRAINAGE**

Personnel - Terry Sladick, Superintendent  
Brian Nummerdor, Supervisor  
Donna Holmberg, Administrative Assistant  
Stacy Stehouwer, 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 - Terry Sladick, 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 - Matt Anderson, 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 is 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-2016 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. The upgrades substantially completed during FY-2015 saw final completion and warranty work completed during FY-2016. No retail cost increases were necessary during FY-2016.

### **Water Services**

During FY-2015, Water & Sewer crews installed 66 water services ranging in size from ¾" 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 2004. Repairs to 122 existing water services were also completed.

### **Sewer Connections**

The Water & Sewer Supervisor approved the connections of 38 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-2016, Water & Sewer personnel also conducted the meter change-out program with new meters being set. Throughout the city, a total of 589 residential and/or commercial meters were pulled and replaced or set. The City has 9,776 meters in the replacement program and 325 in the testing and repairing program. The program consists of 15-year replacements to maintain the accuracy of the water meters. It has been proven that when interior parts of the register chambers in older meters become worn, 100% metering accuracy is lost.

Additional meters for irrigation have been set for homeowners and businesses to eliminate sewer charges on irrigation water. A total of 22 additional meters were set in FY-2016.

### **Water Main Breaks**

During FY-2016, crews responded to a total of nine water main breaks throughout the Norton Shores distribution system. Repairs were made during regular hours and as after-hours emergencies. The total cost to repair all nine breaks was \$65,644.92 including all labor and materials.

### **Valve Maintenance**

Once each year, all 1,440 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. Two valves were replaced in FY-2016. During FY-2016, all of the mainline water main valves were exercised, and repairs to four main line 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. One new large meter was set in FY-2016, and crews completed 63 large meter tests of the 63 that were scheduled due to staff shortages. There are a total of 325 large meters in the system.

### **Meter Reading**

The City of Norton Shores' metering structure consists of 10,101 water meters. Meters are read on a quarterly basis, within three billing districts, or reading one district each month, for a total of 40,404 readings per year. In addition, a total of 3,072 work orders for final readings, meter leaks, etc., were processed in FY-2016.

### **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 \$22,909.

Breakdown of senior discounts per billing district:

McCracken	36	Total gallonage 1,562,000
East Broadway	37	Total gallonage 1,649,000
Henry	52	Total gallonage 2,878,000

## 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 includes 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 vacor 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. Recent law changes allowed the City to make this report available online instead of mailing a copy to each individual consumer. This resulted in a savings of approximately \$3,500 annually. 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 Exhibit G.

### **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 personnel needed 1,553 man hours to complete approximately 2,407 such requests during the 2016 fiscal year.

### **Mainline Sewer Cleaning**

The mainline sewer cleaning program for FY-2016 consisted of cleaning approximately 145,141 ft. of pipe ranging in size from 8" 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. Any presence of fecal coliform bacteria would indicate contamination.

Sampling is also performed on new construction of water mains before they are put into service using the same sampling procedure. Twenty-seven construction samples were taken in FY-2016.

The City has been on a reduced Lead and Copper Sampling schedule since 1996 that required testing every three years. The City's 2016 Annual Water Sampling requirement notification stated that due to the City's change in water suppliers, the MDEQ has now imposing two Lead and Copper Sampling periods during the 2016 calendar year. The sampling periods were outlined as January 1<sup>st</sup> through June 30<sup>th</sup> and July 1<sup>st</sup> through December 31<sup>st</sup>. The first sampling period results identified all homes had significantly less than the maximum for copper and 30 of the 31 sites tested below the action level for lead. One site tested at the action threshold and assistance to the property owner to locate the source of the lead was given. The City will sample in the second half of 2016 and presumably be put back on the reduced monitoring schedule of every three years.

### **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 1,635 City owned and 59 private hydrants were serviced during FY-2016, and 353 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 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 329 high hazard accounts and 463 low hazard accounts. The MDEQ also monitors this inspection process. See Attachment C.

### **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. Please see Attachment D.

### **Water System Accountability**

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

### **Lift Station Telemetry**

All existing 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, 2015 through June, 2016.

- Processing of 3,072 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 59 new accounts in the utility billing system.
- Mailing of 43,620 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 (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:

Derek Gajdos	Certified S-1	Jan. 2015-Jan. 2018
Scott Houghtaling	Certified S-1	Jan. 2015-Jan. 2018
Craig Lehan	Certified S-1	Nov. 2013-Jan. 2017
Scott Ellison	Certified S-4	Jan. 2015-Jan. 2018
Tim Draft	Certified S-4	May 2016-July 2019
Scott Hannahs	Certified S-4	Jan. 2015-Jan. 2016
Eric Mattson	Certified S-4	Jan. 2014-April 2017

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.

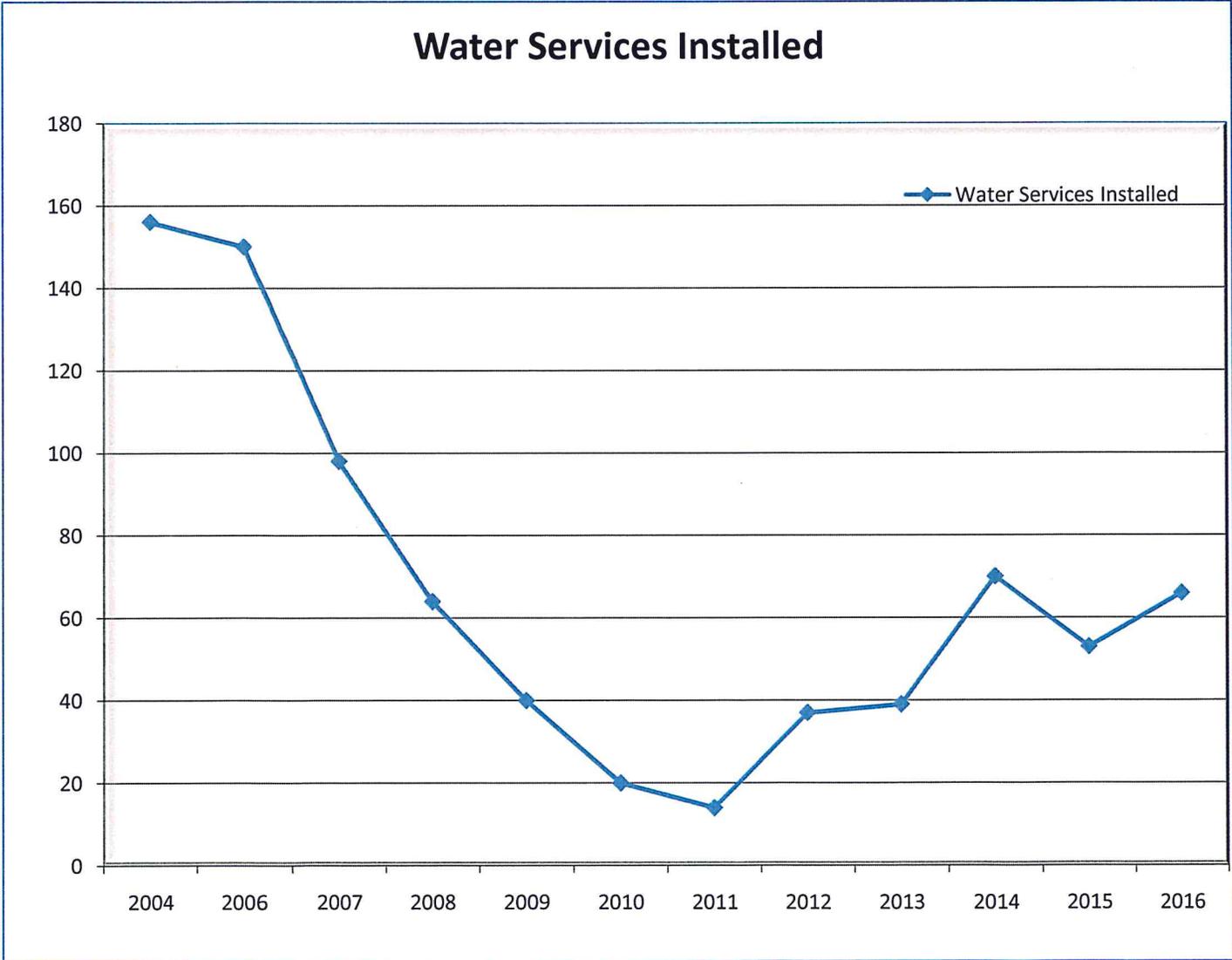
Class S-2: Distribution systems for type I public water supplies serving a population from 4,000 to 20,000.

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.

# NORTON SHORES ATTACHMENT A WATER SERVICE INSTALLATIONS

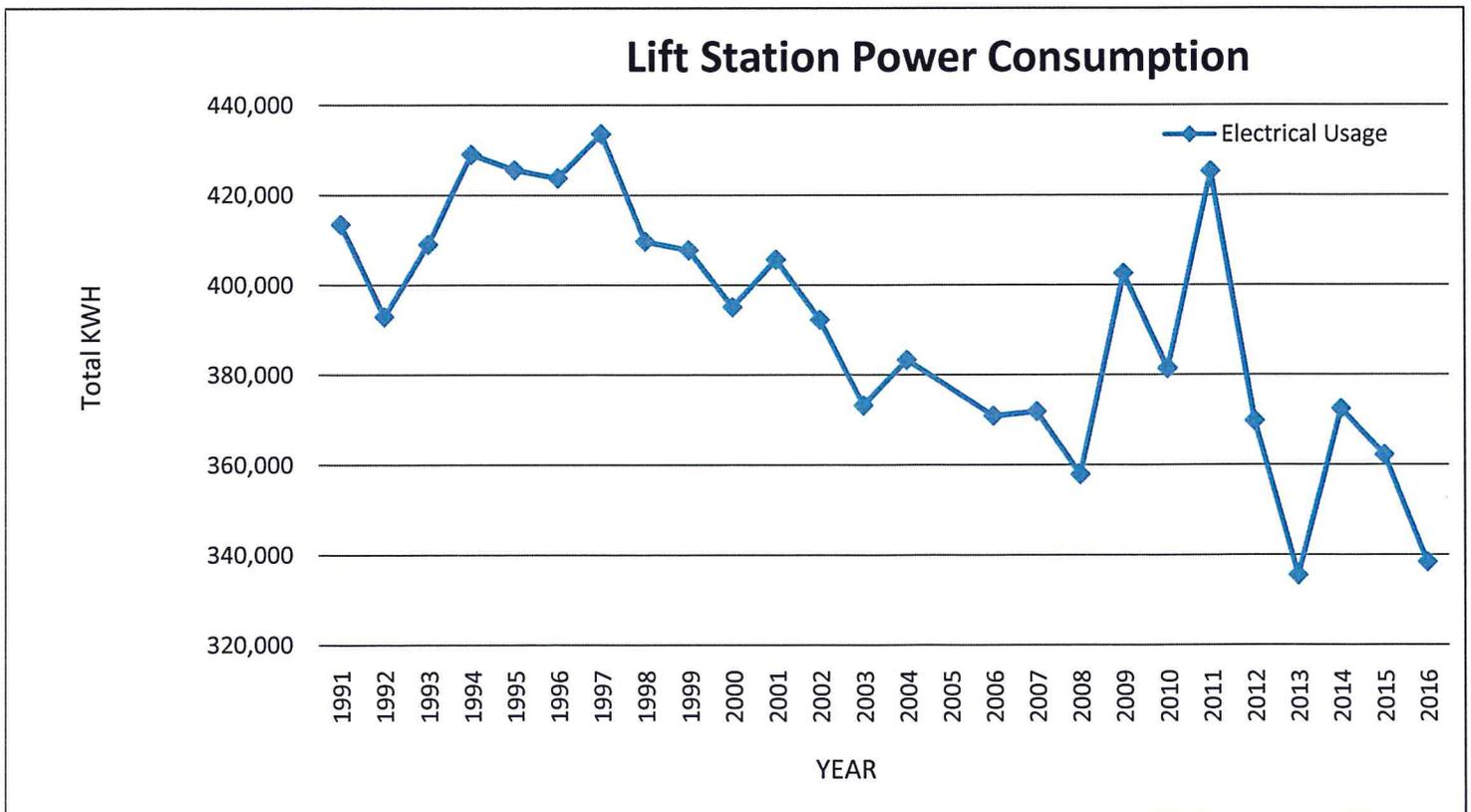
YEAR	TOTAL SERVICES
2004	156
2006	150
2007 FY-2006	98
2008	64
2009	40
2010	20
2011	14
2012	37
2013	39
2014	70
2015	53
2016	66



## Attachment B Lift Station Electrical FY 2016

1991	413,421	
1992	392,882	
1993	409,003	
1994	429,037	
1995	425,575	
1996	423,766	
1997	433,567	
1998	409,671	
1999	407,742	
2000	395,087	
2001	405,650	
2002	392,279	
2003	373,231	
2004	383,311	
2006	FY 2006	370,866
2007	371,866	
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	

\* In KWH





MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT  
ENVIRONMENTAL RESOURCE MANAGEMENT DIVISION

**2015 WATER SUPPLY CROSS CONNECTION REPORT**

Issued under authority of 1976 PA 399, as amended, and the administrative rules.

Failure to submit this form is a violation of the Act and may subject the water supply to enforcement penalties.

Administrative Rule R 325.11405 states in part that "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." Return the completed form by March 31, 2013 to the appropriate Department of Natural Resources and Environment (DNRE) district office. For district office addresses, visit [www.michigan.gov/dnre](http://www.michigan.gov/dnre) and click on Contacts.

WSSN: 4850

- A. Name of water utility: City of Norton Shores County: Muskegon
- B. Year that the current written cross connection control program was approved by DNRE: 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: 329 Frequency of Reinspection: Once per Year  
- How many are Low Hazard accounts: 463 Frequency of Reinspection: Once per: 3 Years
- D. Number of accounts from "C" above that received their initial inspection in 2015: 9
- E. Total number of reinspections required and completed in 2015 based on degree of hazard:  
- High hazard reinspections required: 329 High hazard reinspections completed: 329  
- Low hazard reinspections required: 119 Low hazard reinspections completed: 119
- F. Number of accounts where a cross connection(s) was found to exist during inspections or reinspections in 2015: 50
- G. Number of accounts from "F" above where corrective actions have been completed: 0
- H. Total number of accounts from "C" above which are now in compliance with the local cross connection control program;  $H = C - (F - G)$ : 742
- I. Total number of backflow prevention devices in system requiring testing: 660
- J. Number of backflow prevention devices tested in 2015: 579

Narrative Description of Program

(Outline briefly any changes or significant findings since last reporting; use additional sheets if necessary.)

See attached sheet

Name: Derek Gajdos

Title: Water & Sewer Superintendent Date: 3-15-16

Attachment C (page 2)

2015 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 at the end of the calendar year, leaving corrections and re-inspections to be completed during the first quarter of the following year. All 50 accounts found during the 2015 calendar year having a cross connection violation will be addressed and enforcement completed during the first quarter of 2016. None of the violations posed an immediate health concern requiring immediate action or discontinuance of service.

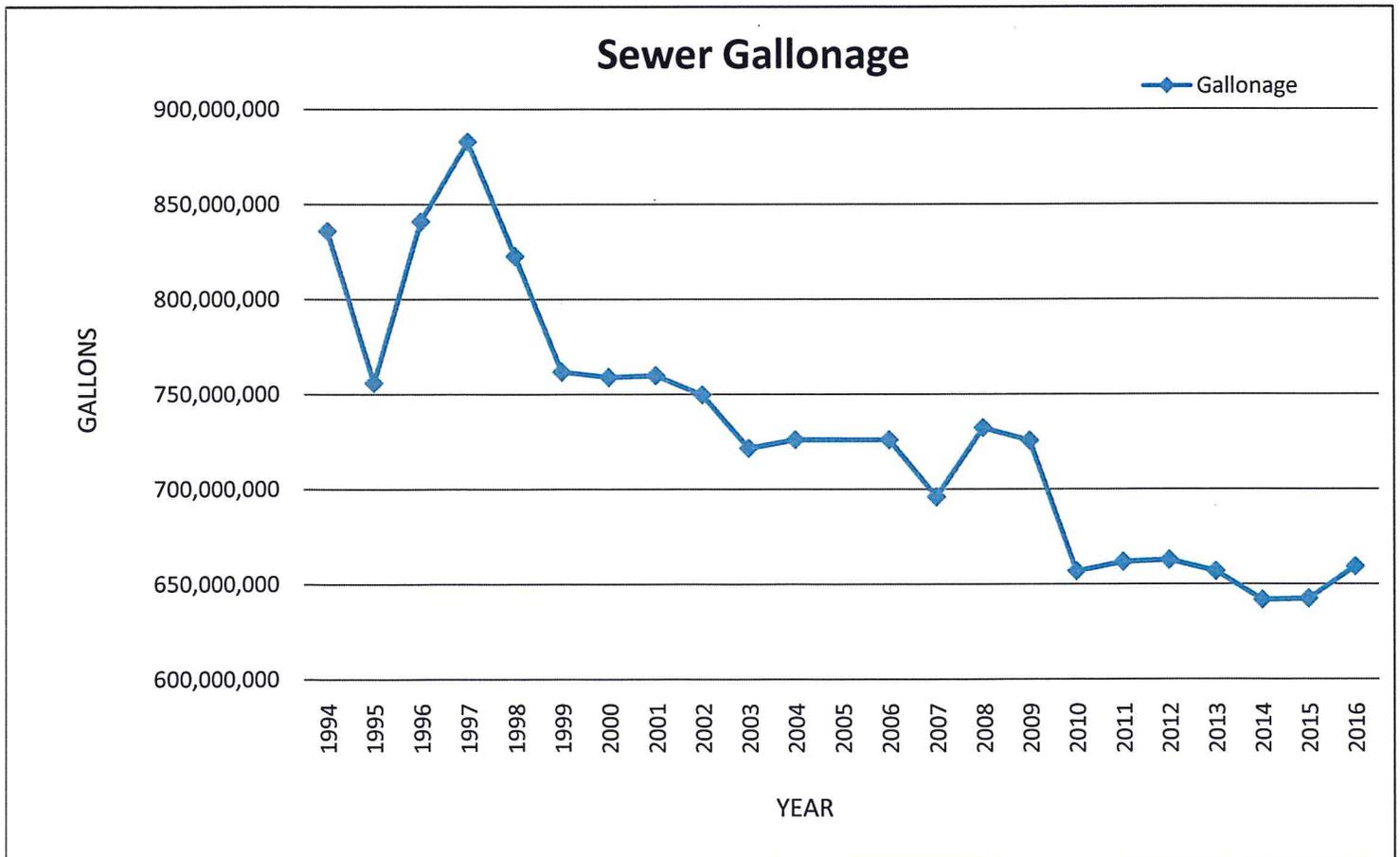
All testable backflow devices that required testing during the 2015 calendar year were tested or the cross connection was physically removed along with the device.

A completely revised and updated Cross Connection Control Program including residential accounts was introduced to the City Council in November of 2015 as an introductory review. It is my intention for a revised program to be formally proposed and considered sometime during the 2016 calendar year.

## Attachment D Sewer Gallonage FY 2016

1994	835,810,000
1995	755,820,000
1996	840,710,000
1997	882,740,000
1998	822,550,000
1999	761,760,000
2000	758,900,000
2001	759,752,000
2002	749,630,000
2003	721,550,000
2004	725,960,000
2006 FY 2006	725,890,000
2007	695,830,000
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

\* In gallons



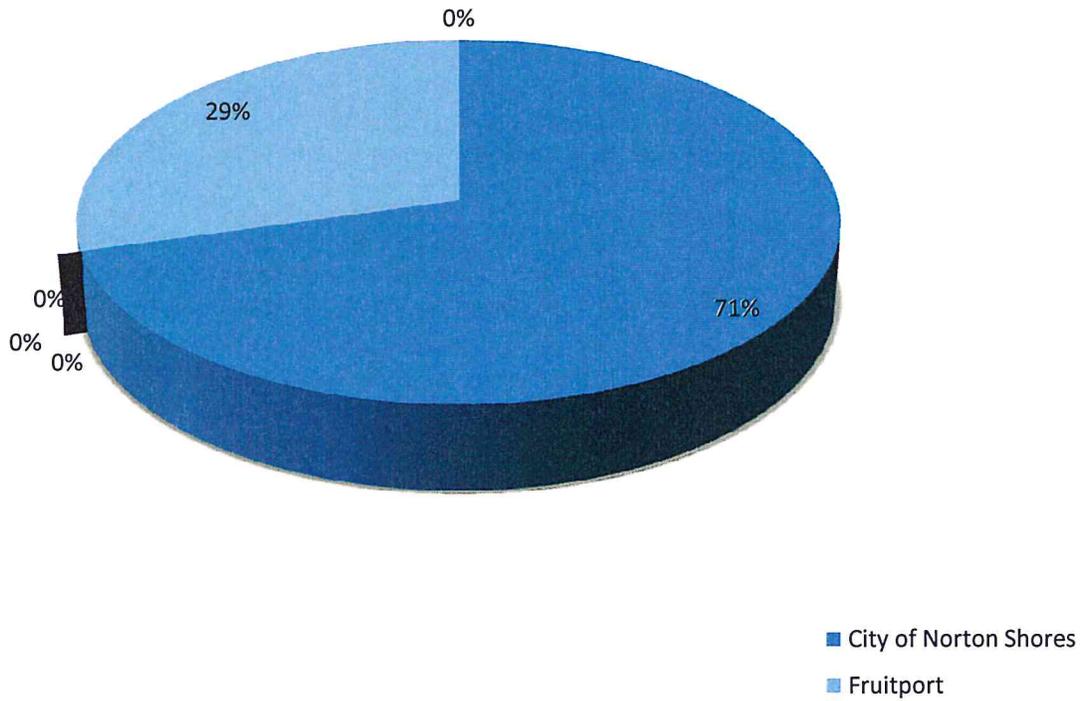
**Attachment E  
Water Purchase  
FY 2016**

**City of Norton Shores**  
951,586,000

**Fruitport**  
396,092,000

\* In Gallons

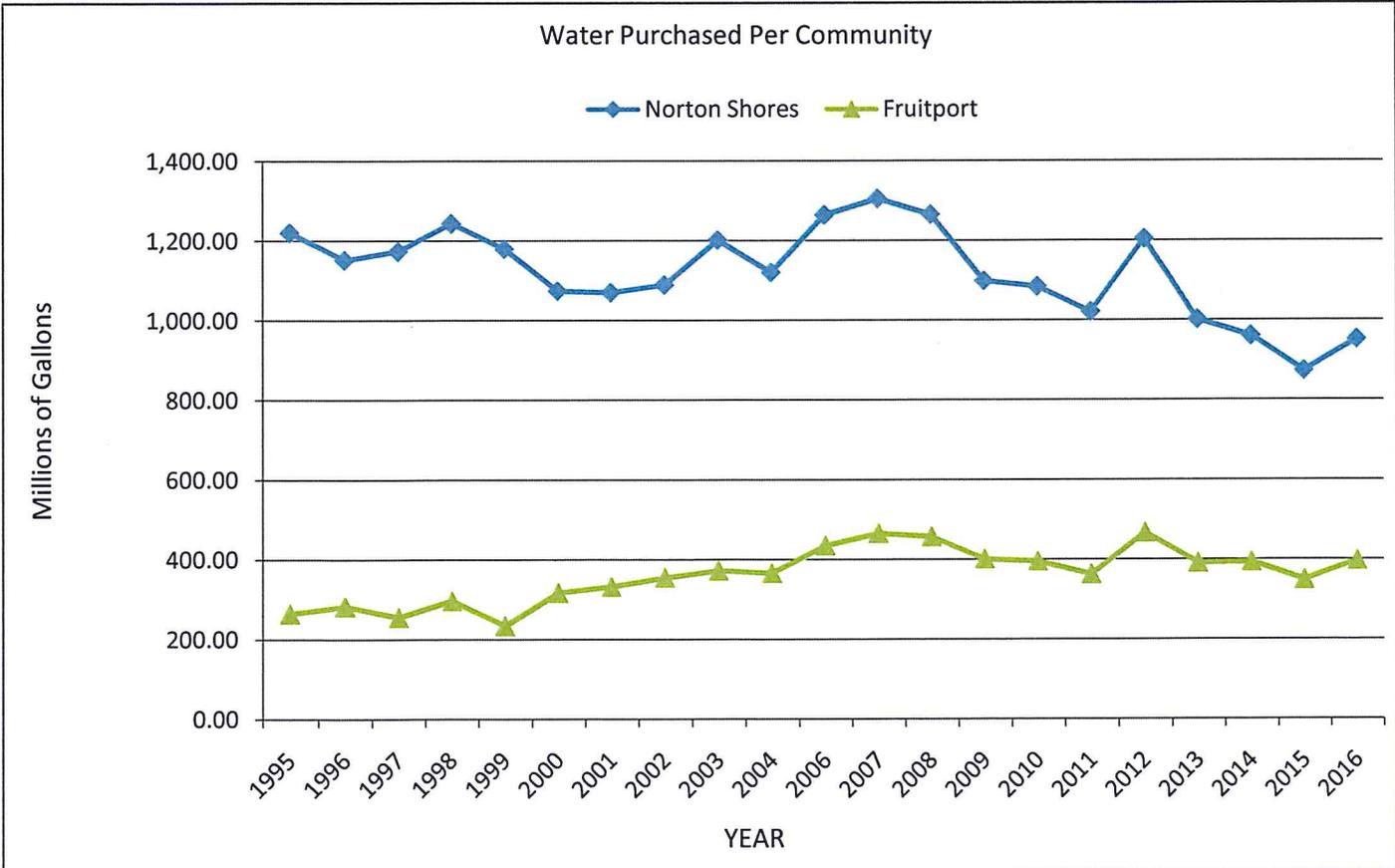
**Water Purchased**



# ATTACHMENT F COMMUNITY WATER PURCHASED

YEAR	NORTON	FRUITPORT
1995	1,220.00	263.80
1996	1,151.39	281.61
1997	1,172.98	254.99
1998	1,243.17	295.91
1999	1,178.99	233.26
2000	1,073.80	316.18
2001	1,069.81	331.08
2002	1,088.87	353.89
2003	1,201.26	370.91
2004	1,120.12	364.98
2006 FY 2006	1,263.99	433.93
2007	1,304.73	464.49
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

\*In Millions of Gallons





# ANNUAL CONSUMER CONFIDENCE REPORT

DEPARTMENT OF PUBLIC WORKS  
WATER AND SEWER DIVISION

*Derek Gajdos, Superintendent*  
**2015 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. Our water source was the City of Muskegon Heights from January 1<sup>st</sup> through April 15<sup>th</sup>. On April 15<sup>th</sup> the City of Norton Shores switched its water supplier to the City of Muskegon. Both plants treat water from one of the highest quality surface water sources in the world, Lake Michigan. The City of Norton Shores used over 914 million gallons of water in 2015.

Last year, as in years past, your tap water met all Environmental Protection Agency and State drinking water health standards. The Muskegon Heights Filtration Plant, 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, Derek Gajdos, 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 Heights Filtration Plant, 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, 2015 through December 31, 2015. 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. 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.



**2015 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 2015	NTU	0.06 - 0.19	0.19	TT=1	n/a	0	Soil runoff, lake sediment
Total Organic Carbon	ppm	1.36 – 1.68	1.69	TT	n/a	0	Naturally present in the environment
Fluoride	ppm	0.11 – 1.07	1.07	4.00	n/a	0	Added to promote strong teeth
Barium	ppm	0.00 - 0.02	0.02	2.00	n/a	0	Soil runoff, erosion, natural deposits

**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	24-34	34	80	n/a	0	By-product of drinking water chlorination
Haloacetic Acids	ppb	14-23	23	60	n/a	0	By-product of drinking water chlorination
Chlorine	ppm	0.27-1.70	1.70	4	n/a	0	Drinking water chlorination

**Regulated Monitoring in the Customer's Tap**

SUBSTANCE	UNITS	RANGE OF LEVELS DETECTED	90 <sup>th</sup> PERCENTILE	HIGHEST LEVEL ALLOWED MCL OR TT	IDEAL LEVELS MCLG	VIOLATION OR NUMBER OF SAMPLES EXCEEDING MCL	POSSIBLE SOURCES OF CONTAMINANT
Copper** 6-2014	ppb	0-119	44	1300	1300	0	Corrosion of household plumbing & erosion of natural deposits
Lead** 6-2014	ppb	0-8	0	15	0	0	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	IDEAL LEVELS MCLG	VIOLATION OR NUMBER OF SAMPLES EXCEEDING MCL	POSSIBLE SOURCES OF CONTAMINANT
Sodium 2013	ppm	n/a	11	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

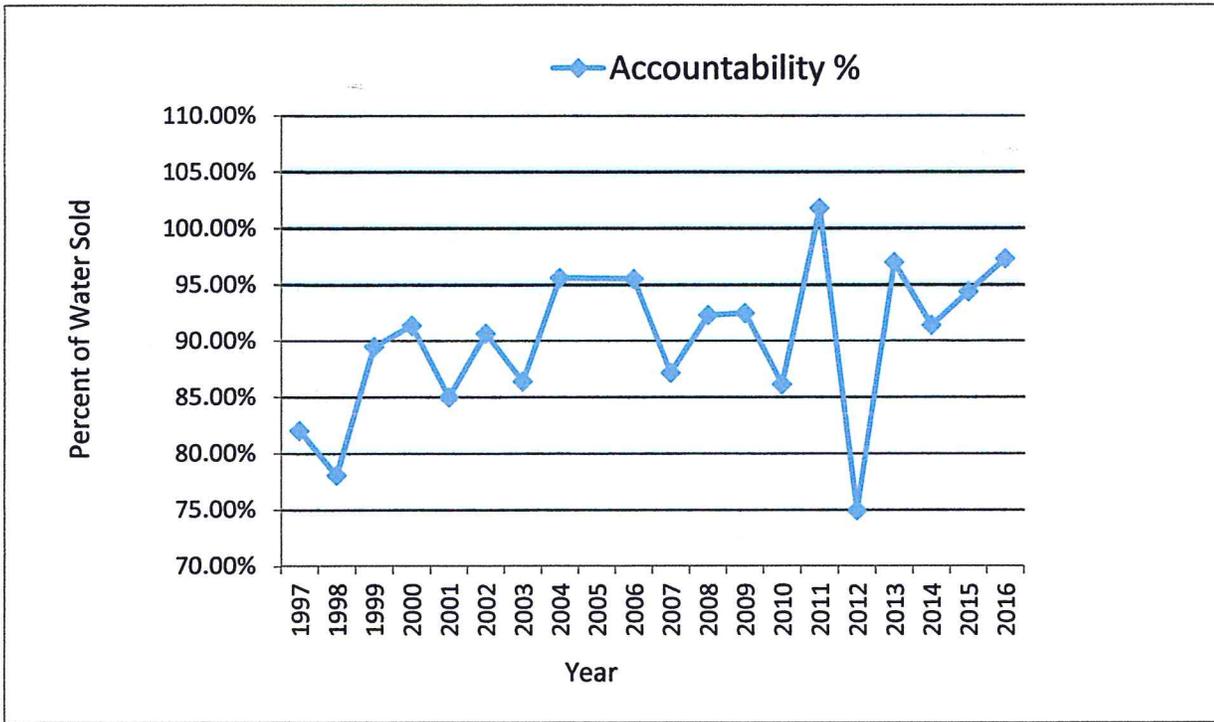
\*\*Results computed using the 90<sup>th</sup> percentile level. Monitoring period October 1, 2014-September 30, 2014

\*\*\* 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.

## Attachement H Historical Water System Accountability

YEAR	Accountability %	Water Purchased	Water Sold
1997	81.97%	1,172,980,000.00	961,467,000
1998	78.00%	1,243,170,000.00	969,633,000
1999	89.41%	1,178,990,000.00	1,054,161,000
2000	91.32%	1,073,800,000.00	980,582,000
2001	84.93%	1,069,810,000.00	908,607,000
2002	90.60%	1,088,870,000.00	986,480,000
2003	86.33%	1,201,260,000.00	1,037,093,000
2004	95.55%	1,120,120,000.00	1,070,291,000
2006	95.47%	1,263,990,000.00	1,206,689,000
2007	87.10%	1,304,632,000	1,136,396,000
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

\*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%.

## **STREETS & DRAINAGE DIVISION FY-2016 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.

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.

Streets crews regularly assist Republic Waste Services in removing yard waste from the leaf disposal sites to be transported to the composting facility in Coopersville. The Streets Division also 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 Hillclimb. 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 will provide measures to handle storm water on newly developed property. Also, a bi-monthly inspection process was implemented to promote good storm water housekeeping practices at City facilities.

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

## **FUEL DISPENSATION FY-2016**

Following is an itemization of the fuel dispensation for FY-2016:

Administration	272.9 gallons
Building & Grounds	968.9 gallons
Building Inspections	388.3 gallons
Fire	13,448.9 gallons
Police	22,883.8 gallons
Recreation	3,034.8 gallons
Streets & Drainage	25,611.9 gallons
Water & Sewer	11,654.5 gallons
Total Gallons Dispensed	78,264.0 gallons

## **MISS DIG MICHIGAN UTILITIES DAMAGE PREVENTION ASSOCIATION**

The Department of Public Works logged 2,407 staking requests during FY-2016. These requests were submitted by contractors, as well as DTE Energy, Consumers Energy, Frontier, Comcast Cable, and residential homeowners. The Divisions of Streets & Drainage and Water & Sewer placed 111 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**

Republic Waste Services and Great Lakes Nursery Soils, Inc. removed a total of 5,344 yards of yard waste from the Wood Road and Ross Park leaf sites.

The following numbers of vehicles, by classification, were monitored at the Wood Road site:

Cars	3,195
Trailers	5,843
Pick-up trucks	<u>7,741</u>
Total	16,779

The total of all recorded vehicles visiting the Wood Road site during FY-2016 was 16,779; the total counted during FY-2015 was 15,158.

No vehicle counts were recorded for the Ross Park site as the site is unattended.

**EQUIPMENT/MECHANICS DIVISION**

Care of the City’s equipment is a priority for the mechanics in the Equipment Division. In addition to handling routine maintenance and repair work on all City vehicles, this crew is also responsible for preparing and/or modifying new vehicles purchased by the City for all departments.

The total number of vehicle services during FY-2016 was 1,074.

Following is a list of City equipment replaced during FY-2016:

- 1 – Ford F-550 Crane Truck
- 1 – Suburu Tuff Vac Turf Vacuum
- 2 – Chevrolet Impalas
- 2 – Ford Police Interceptors

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 or traded in along with the sale or trade in price:

1 – 2008 Ford F-550 Crane Truck	\$18,705.00
1 – 2006 Agrimetel Turf Vacuum	\$ 5,515.00
1 – 2005 Ford Taurus	\$ 2,732.00
1 – 2004 Ford Taurus	<u>\$ 1,732.00</u>
<b>Total Sales</b>	<b>\$28,684.00</b>

**FY-2016 GRAND TOTALS**

Miles of streets maintained	149
Number of times local streets/sidewalks were plowed during FY-2016	7/6
Tons of salt usage for FY-2016	2,119
Gallons of liquid calcium chloride (de-icer) applied	13,465
Tons of winter mix asphalt patch used	51
Tons of bituminous hot mix used	144
Miles of streets swept	308
Debris collected from sweeping operation (cu. yd.)	611
Number of times gravel-surfaced roads graded	39
Tons of road gravel leveled & used to maintain surface	93
Gallons of 38% calcium chloride (brine) applied	23,960
Number of trees removed	46
Number of trees planted	9
Residential use of County Landfill:	
	Cars 252
	Trucks/Trailers <u>225</u>
	Total Vehicles 477
Storm drain/under drain footage cleaned	20,213
Pounds of crack sealant dispensed	34,956
Square feet of sidewalk replaced	1,087
Acreage mowed along off-road drainage courses & along road right-of-way	285
Fuel dispensed (gallons)	78,264
Vehicle services	1,074
Gravel Road Improvements: Tons of Gravel/Miles	4,155/.75

**BUILDINGS & GROUNDS MAINTENANCE DIVISION  
FY-2016 REVIEW**

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

**CITY BUILDING**

- Replace a broken light fixture on the building on the Henry Street side.
- Replaced bad door closer on west stairwell door going to Assessing.
- Had the parking lot lines repainted.
- Repaired broken flag pole light three times.
- Installed a new strike plate release on outside door going to weight room.
- Installed a new projector screen in large conference room.
- Setup and tore down voting machines.
- Repaired irrigation line in the back parking lot by the new Police Department garage.
- Installed two new sprinkler heads.
- Repaired five sprinkler heads.
- Used a planer and fixed the door to the main office in the Police Department and repainted the door.
- Performed generator load tests.
- Rebuilt six lights throughout City Hall.
- Installed a new outdoor light fixture above the boiler room door.
- Painted a new conduit in the Police Department outside of the evidence room.
- Had a Special Service Uniform closet re-keyed to the Police Master.
- Fixed a sink hole that started in the front drive in front of the Police Department entrance.

- DPW office got new desks.
- Built a table for fax machine and City maps in the Public Works office.
- Painted all the trim and doors in the stairwell to Assessing.
- Assessing got new carpet.
- Scraped and painted bad area in corner on stairwell by Assessing.
- Installed four new windows and two safety glass panels in the Police Department breakroom.
- Installed three new emergency lights on the exits of the new garage.
- Repainted new Director of Administrative Services office.
- Installed a new glass dry erase board in the Detective Bureau.
- Removed door in the Administrative conference room. Studs and drywall replaced the door.
- Scraped several old computer chairs that were in storage.
- Fixed the hot water valve on the shower in the men's locker room in the Police Department.
- Had two new locksets installed in Fire Prevention for safety.
- Mounted two new shelves for the Fire Ordinance officer.
- Got the boilers inspected and ready for winter.
- Winterized the irrigation system.
- Lakeshore Insulation insulated between the large and small conference rooms.
- Northside HVAC installed two new roof top units.
- Remodeled the women's restroom.
- Prepped the hallways for paint.
- Re-installed all wall hangings after painting was complete.
- Installed new white receptacles and switches in the hallway.

## LIBRARY

- Greased the bearings and tightened the belt on the air handler unit.
- Replaced broken thermostat in Community Room.
- Borgman Tree Service removed dead trees.
- Had the carpet cleaned in the Community Room and children's den.
- Bishop installed a new A/C compressor for library unit.
- Parking lot lines were painted and added two new handicap/van accessible spots.
- Streets Department installed two new handicap signs for new spots.
- Light for sidewalk on the south entrance was repaired.
- Changed two old style lights in the kitchen of the Community Room to the T8 lights.
- Repaired/adjusted two entrance doors that weren't closing properly.
- Had the boiler inspected.
- Fixed a water supply valve for the toilet in men's restroom.
- Moved a row of bookshelves behind the front desk to make room for a new copier. Also cleaned behind the bookshelves.
- Hung key access box for the Fire Department left of the main entrance.
- Installed a new weatherproof box on the receptacles outside of the entrances.
- Cleaned and dusted around all of the lights in the main library.
- Did extra cleaning on the tops of the bookshelves.
- Filled and drained the expansion tank on the boiler system.
- Re-siliconed the windows on the pit skylights on the east and west ends of the building.
- Changed the filters in the Community Room air handler.
- Replaced old faucets in the men's restroom with new faucets.
- Cleaned the coils on both condenser units.
- Installed new restroom signs on the doors to help navigate.

## CEMETERY

- Forty-six burials were performed.
- Sixty-nine graves were purchased.
- Twenty-nine tombstone foundations were installed.
- Three graves were re-deeded back to the City.
- Installed a solar light on the flag pole.
- Winterized the irrigation system.
- Updated the “Old” and “New” section books and transaction sheet.
- Planted flowers in the flower beds.
- Removed all artificial decorations from the winter.
- Fixed a broken pole on the “Rules and Regulations” sign on the entrance road.
- Pulled and backfilled six 4x4 posts that were deteriorating.
- Picked up all the Memorial Day flags and put in a plastic container for the V.F.W.

## DPW Garage

- The boiler was inspected.

## **ENGINEERING FY-2016 REVIEW**

### 2015 Hot-in-Place Recycling & HMA Milling & Overlay

Limits:	Various locations throughout the city
Description:	Hot-in-place recycling of selected streets with the placement of HMA Overlay on top of pavement. Other selected roadways to be milled down to aggregate and repaved with HMA material.
Consultant:	City staff
Contractors:	HIP Recycling: Gallagher Asphalt, Thornton, IL HMA Milling & Overlay: Rieth-Riley, Grand Rapids, MI Inspection: Westshore Consulting, Muskegon, MI
Year's Work:	Rieth-Riley's subcontractor performed the necessary milling operation of the roadways and adjustment and/or replacement of the water and sewer castings. Gallagher Asphalt completed its task of Hot-in-Place

Recycling of the selected street. Afterward Rieth-Riley placed the HMA pavement and overlays. Part of this work involved the placement of a crosswalk (sidewalk, signage and pavement markings) on Porter Road for Churchill Elementary School.

Start Date: June 17, 2015  
Finish Date: September 25, 2015

### **2015 Road Reconstruction Projects**

Limits: Castle Avenue, Lincoln to Leon; Mayfair Street, east of Leon; Wellwood Street, Mayfair to Southwood; and Schamber Drive north of Pontaluna.

Description: Reconstruction of existing paved roadways with replacement of existing sand sub-base and aggregate base along with improvements to storm drainage and placement of leaching basins. Replacement of existing cast iron water main with ductile iron.

Consultant: Prein & Newhof, Grand Rapids, MI

Contractor: Hallack Contractors, Hart, MI

Year's Work: Contractor worked on Castle Avenue with the placement of the new ductile iron watermain, installation of the storm water leaching basins, and placement of new road aggregate base and HMA pavement. Work on Schamber Drive involved the same (except to no water main work) and was completed ahead of schedule. The same was performed on Wellwood and Mayfair.

Start Date: June 15, 2015  
Finish Date: September 30, 2015

### **2015 Sidewalk Projects**

Limits: Getty Street, Overbrook to Airline; Harvey Street, Ellis to Sternberg; intersection at Henry Street and Sherman Boulevard; McDermott Street between Summit and Broadway

Description: Place concrete sidewalk along proposed routes.

Consultant: URS Corporation

Contractor: Kamminga & Roodvoets, Grand Rapids, MI

Year's Work: Through the use of various funding sources concrete sidewalk was placed at McDermott Street, Getty Street, Harvey Street and at the intersection of Henry and Sherman. City staff worked with URS on the design and inspection of the sidewalk and Kamminga & Roodvoet started work first on the Getty Street walk (which involved a significant retaining wall), then Harvey and McDermott, with the Henry Street walk finishing the work. Pedestrian crosswalk signals were added and/or involved as part of the project and meet ADA requirements.

Funding: Capital Improvement, TIFA, & CDBG funds

Start Date: September 14, 2015  
Finish Date: November 6, 2015

### **2016 Sidewalk Project**

Limits: Henry Street, Seminole Road to Forest Park Road; Harvey Street, Sternberg Road to Mt. Garfield Road

Description: Place concrete sidewalk along proposed route

Consultant: Moore & Bruggink, Grand Rapids, MI

Contractors: Harvey Street: Accurate Excavating, Muskegon, MI  
WMRA, Inc.: Grandville, MI

Year's Work: After the City had received a MDOT Safety Grant for the Henry Street portion of the work, City staff worked with Moore & Bruggink of Grand Rapids, on the design and construction oversight. Due to a delay in the Federal Government new funding bill, Henry Street was let in April 2016. Harvey Street was let in May 2016. The concrete sidewalk was completed first at Harvey Street, with the work at Henry Street currently under way. Pedestrian crosswalk signals were added and/or involved as part of the project to meet ADA requirements.

Funding: MDOT Safety Grant, TIFA Funds, and Capital Improvement Funds

Start Date: Harvey Street – May 9, 2016  
Henry Street – June 10, 2016

Finish Date: Harvey Street – June 10, 2016  
Henry Street – July 30, 2016

### **FY-2017 Local Streets Hot-in-Place/HMA Pavement Work**

Limits: Various streets throughout city

Description: The Hot-in-Place (HIP) pavement recycling with HMA Overlay of the milling and re-pavement of selected streets throughout the city

Engineer Inspector: Westshore Consulting, Muskegon, MI

HIP Contractor: Gallagher Asphalt, Thornton, IL

HMA Contractor: Asphalt Paving Inc., Muskegon, MI

Year's Work: City staff generated project log and bid specifications for this project and submitted it for letting after they obtained the necessary soil erosion and MDEQ critical dune permits. Work is scheduled to begin in late July, 2016.

Funding: TIFA, Municipal Road, and Capital Improvement Funds

Start Date: July, 2016

Finish Date: Fall, 2016

### **Airline Road Reconstruction**

Limits: Airline Road, between US-31 and Shettler Road

Description: Replacement of existing pavement and storm water improvements

Consultant: Paradigm, Grand Rapids, MI

Contractor: Milbocker & Sons, Allegan, MI

Year's Work: Project design was completed by Paradigm, under the guidance of City staff and submitted to the State (MDOT) for a Grade Inspection in October 2015 and a February 2016 letting. Milbocker & Sons were the low bidder and awarded the contract. Work was done in two parts, with the eastern portion of Airline between US-31 and Airport Road started on March 21, 2016. The old concrete pavement was removed, the road re-graded, storm system installed and new aggregate base and pavement placed. Once the eastern half was completed, then the western portion of Airline Road was closed between Airport and Shettler and the same work done. The roadway was open to traffic on June 17, 2016.

Funding: MDOT TIP and Capital Improvement Funds  
 Start Date: March 21, 2016  
 Finish Date: June 17, 2016

**Broadway Interconnection Valves**

Limits: Broadway Avenue, just east of Getty Street  
 Description: Removal of existing water main meter chamber and placement of interconnection gate valves.  
 Consultant: Prein & Newhof, Muskegon, MI  
 Contractor: Accurate Excavating, Muskegon, MI  
 Year's Work: After plans were reviewed and completed, the project was let and Accurate Excavating was awarded the contract. In June they removed the existing valve chamber and meter pit and installed isolation valve between the City's and Muskegon Heights water main at the intersection of Getty and Broadway.

Funding: Water Fund  
 Start Date: May 31, 2016  
 Finish Date: June 24, 2016

**Harvey Street Reconstruction**

Limits: Ellis Road to Hile Road  
 Description: The reconstruction of existing roadway along the proposed route.  
 Consultant: Prein & Newhof, Grand Rapids, MI  
 Year's Work: City staff worked with the Little River Band of Ottawa Indians traffic study that they are performing for the old race track property and its potential future impact on traffic. An agreement was established between the City and Tribe in the cost and widening the existing roadway to accommodate the additional traffic. The City's consultant is currently designing the proposed working for a 2017 letting.

Funding: MDOT & BIA STIP with local matches  
 Estimated Start: Spring, 2017  
 Estimated Finish: Summer, 2017

### **Hendrick 14-inch Gate Valve Placement**

Limits: Hendrick Road just east of Henry Street  
Description: Placement of new 14-inch gate valve and box on existing 14-inch sanitary force main to accommodate future maintenance work.  
Consultant: City staff  
Contractor: Accurate Excavator, Muskegon, MI  
Year's Work: Project was completed with the installation of new gate valve on the existing cast iron force main.  
Start Date: June 22, 2015  
Finish Date: July 10, 2015

### **Hendrick Road/Norton Hills Reconstruction**

Limits: Norton Hills Road – Norcrest Drive to Applewood Lane  
Hendrick Road/Stanwood Street – Henry Street to Churchill Drive  
Description: Reconstruction of Norton Hills Road, Hendrick Road, and Stanwood Street along with upsizing and replacement of cast iron water mains.  
Consultant: ENG, Lansing, MI  
Contractor: To be determined  
Year's Work: Working with City staff, the engineering consultant completed its investigations and design of the plans for an August 2016 Letting. This work also required the obtaining MDEW permits for the stream crossing at Stanwood (culvert replacement) and work in a Critical Dune Area (Norton Hills).  
Funding: Municipal Road Fund, Water Fund  
Estimated Start: August 29, 2016  
Estimated Finish: Late November, 2016

### **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: To be determined through MDOT letting  
Year's Work: After award of the contract, the City staff worked with the consultant to discuss the grant, past inspections of the bridge along with its repair recommendations and past repairs to joints. Staff provided the consultant with additional requested information. A meeting was held with the State to review the preliminary plans and specifications. Also, adjoining property owners are being approached for temporary easement for accommodate the work.  
Funding: MDOT Local Bridge Funds with local match  
Estimated Start: Spring, 2017  
Estimated Finish: Fall, 2017

### **Mona Kai Water Main**

Limits: Mona Kai Development, south of Eastowne  
Description: Replacement of existing water main with ductile iron water main  
Consultant: Fleis & VandenBrink, Muskegon, MI  
Year's Work: City staff has worked with Fleis & VandenBrink on design and permit work for this project. Staff pursued three required easements for construction and prepared plans for an August letting.  
Funding: Water Funds  
Estimated Start: Early Fall, 2016  
Estimated Finish: Late Fall 2016

### **Pontaluna Road Reconstruction**

Limits: US-31 to Harvey Street  
Description: Reconstruction of Pontaluna Road between US-31 and Harvey Street to be done concurrently with MDOT's US-31 bridge work.  
Consultant: City staff  
Contractor: Kamminga & Roodvoets, Grand Rapids, MI  
Year's Work: City staff performed design work and coordination with MDOT so as to include this proposed improvement with the State's proposed Pontaluna/US-31 bridge work. Work started in April and included improvement to the storm drainage, removal and replacement of the existing HMA pavement and aggregate base.  
Funding: Capital Improvement  
Start Date: April 4, 2016  
Estimated Finish: April 29, 2016

### **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: To be determined through MDOT letting  
Year's Work: Staff is working with C2AE on design and letting of this project.  
Funding: MDOT CMAQ Grant and local matching fund  
Estimated Start: Spring, 2017  
Estimated Finish: Summer, 2017

### **Regional Water System:**

Limits: Cities of Norton Shores, Muskegon, and Fruitport Charter Township  
Description: Construction of water transmission main(s) between the Cities of Muskegon and Norton Shores and Fruitport Charter Township with accompanying booster station, water tower, high service pumps, and SCADA system.

Consultant: URS Corporation Great Lakes, Grand Rapids, MI  
 Contractor: Contract A: Owen-Ames-Kimball, Grand Rapids, MI  
 Contract B: Jackson-Merkey Contractors, Muskegon, MI  
 Contract C: McCormick Sand, Twin Lake, MI  
 Contract D: Landmark Structures, Fort Worth, TX  
 Contract E: McCormick Sand, Twin Lake, MI  
 Contract F: Tetra Tech, Grand Rapids, MI  
 Year's Work: Staff continued to work with URS, City of Muskegon and Fruitport Township to oversee completion and construction of the proposed regional system.

Work for **Contract A & F** involved the SCADA (communication) system and fine tuning the network for the high service pumps, booster station, and water tower.

**Contract B:** Restoration work and punch list items completed by August 2015 for Contract B along the transmission main.

**Contract D:** Work on the water tower's construction continued with the milestone of lifting the bowl in place completed in July, 2015 and its placement into service in the Fall of 2015.

**Contract E:** The relocation and installation of the booster station was completed in July at the Black Creek Road site. Improvements were made to the pumps and equipment.

**Reliability Study:** Work for the required MDEQ Reliability Study for the City's, Township and WMRWA was contracted to Prein & Newhof of Grand Rapids, MI in December 2015. The consultant is and has performed the necessary tasks required by the State for the study.

Funding: Authority Water Fund/Bonds  
 Status of Work: Contract B: Completed, Summer of 2015  
 Contract D: Completed, Winter 2015  
 Contract E: Completed, Summer of 2015  
 Contract F: Active, schedule completion, Winter 2015  
 Reliability Study: Active, scheduled completion, Fall 2016

**Storm & Sanitary SAW Grant**

Limits: City wide  
 Description: Perform and establish asset management plans and practices for City storm and sanitary sewers.  
 Consultants: In house and Prein & Newhof, Grand Rapids, MI

Year's Work: Prein & Newhof worked with City staff on cataloging, inspection and assessing the condition and capacity of the City's sanitary and storm sewer systems. Also included in this year's work was the mapping and modeling of both systems and their capacities. The consultant started the risk of failure and consequences of failure studies. The financial analysis of the project has begun with the revenue, rate, and expense budget data submitted to the consultant.

Funding: State SAW Grant

**Major Private or Other Projects:**

<u>Project</u>	<u>Address</u>	<u>Developer/Owner</u>
BR US-31 (Seaway)	US-31 to Shoreline Drive	MDOT
Pontaluna/US-31	US-31	MDOT
Comerica Bank	Henry & Norton	Comerica Bank
Roosevelt Park Ground Water	Roosevelt Road	City of Roosevelt Park
MDOT – Railroad ADT	City RxR crossings	MDOT

**PLANNING  
FY-2016 REVIEW**

**PLANNING AND ZONING DIVISION**

**Analysis**

Fiscal year 2016 saw continued growth in new residential development throughout the city with an additional 62 housing units constructed primarily in existing subdivisions throughout the community. This represents a 29% increase over the previous year's total.

Growth continued to improve in the commercial and industrial sectors as well. Major commercial and office site plans approved included a 2,700 square foot addition to Executive Air at the Muskegon County Airport and a 7,000 square foot expansion to the Lakeshore Marketplace on Harvey Street to accommodate a new Home Goods facility. The major industrial projects for the year were a 21,000 square foot addition and major interior remodel at Air Master Systems on Norton Center Drive, interior remodeling and the installation of a nitrogen tank at R.W. Bakers on E. Mt. Garfield Road, a 3,000 square foot expansion to Applied Technology on Grand Haven Road, and a major retrofit of the Bay Logistics facility in the Grooters Industrial Park on E. Pontaluna Road. The City also saw expansion in institutional facilities with Maranatha completing major overhauls of buildings on their Lake Harbor Road campus, and St. Francis de Sales Church on McCracken Street continuing to make building and parking lot expansions to their facilities.

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

Staff presented to the Planning Commission and City Council various Zoning Ordinance updates in 2016. These included a front yard parking ordinance for residential districts to restrict parking to paved or gravel surfaces, and an amendment to the sign provisions of the Zoning Ordinance to permit electronic billboards. Staff also prepared the 2016 update of the City's Open Space and Recreation Plan. This plan is required to be updated every five years in order for the City to apply for State of Michigan recreational grants. The Planning Commission and City Council both ultimately adopted this update. Staff also assisted in the completion of the Target Market Analysis Housing Study. The study, partially funded by MSHDA and completed in conjunction with neighboring communities, specifically took a closer look at housing opportunities in the Seminole Road/Eastowne Development Corridor. On a related note, the City, in conjunction with the firm of Beckett and Raeder, commenced work on the Seminole Road PlacePlan. This plan will create site-specific recommendations for key redevelopment parcels including the Eastowne Development and the former Kmart property on Henry Street while improving connectivity between sites and promoting walk-ability, bike-ability and the creation of public spaces. Finally, throughout the year, staff assisted the water and sewer division in the continued updates to the City's GIS mapping system.

<b>Activity Summary</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Administrative Site Plans	25	20	20
Land Divisions	2	2	4
Residential Lots Developed	12	0	0
Residential Site Plans	257	357	409
Site Plans	6	8	8
Special Use Permits	4	7	6
Variances	12	8	5
Zoning Ordinance Amendments	5	7	6
Zoning Ordinance Violations	40	40	35

TABLE A

**TOP TEN COMMERCIAL AND INDUSTRIAL PROJECTS**

1.	Maranatha Bible Conference	4759 Lake Harbor Road	\$999,600
2.	Air Master Systems	6480 Norton Center Drive	\$950,000
3.	Home Goods: Addition	5133 Harvey Street	\$810,000
4.	Huntington Bank	3580 Henry Street	\$691,000
5.	Air Master Systems	6480 Norton Center Drive	\$426,000

6.	Essenta Components	1269 E. Mt. Garfield Road Ste E	\$390,000
7.	St. Francis Church	2947 McCracken Street	\$269,770
8.	Bay Logistics	1202 E. Pontaluna Road	\$170,000
9.	Executive Air	103 Sinclair Dr.	\$131,516
10.	R. W. Bakers	1129 E. Mt. Garfield Rd.	\$125,000
<b>TOTAL VALUE</b>			<b>\$4,962,886</b>



